Sounder

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New Northern Fisheries Show Potential

Two new salmon fisheries were developed in the north in 1979, on the Taku and Stikine Rivers. Both fisheries occurred on the lower reaches of these systems adjacent to the U.S.-Canada border, under the watchful eyes of American officials and fishermen. Both fisheries managed to tap a relatively untouched Canadian resource and to create an economic base in two very isolated places.

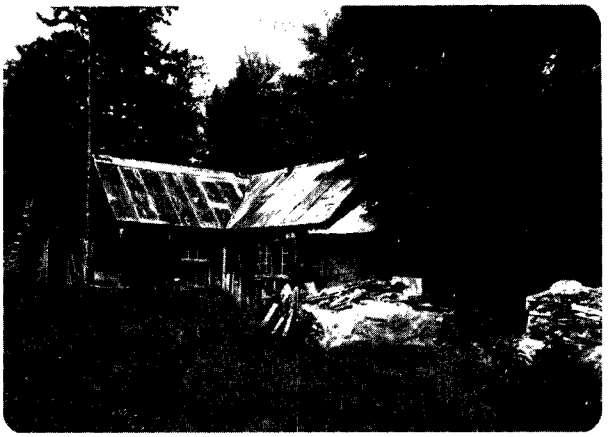
Taku River Fishery

Fifteen permits were issued on a first come-first served basis to commercially harvest salmon from the Taku River. It was designed as a test fishery to find out if indeed we could catch fish and if it could be done economically. Permits were issued to fishermen from Vancouver, Queen Charlotte Islands, Prince Rupert, Atlin, Whitehorse and Tulsequah.

The fishery began June 28, 1979 and an average of 3 days of fishing per week was permitted until October 7, when the fishery closed for the balance of the season. Each fisherman was allowed two nets of 100 feet each which could be fished as a set net or a drift net. Total catch for the season was:

Sockeye	12,794	Chum	15,779
Coho	6,030	Spring	77
Pink	14,328	Steelhead	214

A small percentage of the fish was used locally, and the remainder was sold to British Columbia Packers. Early in the season, B.C. Packers had lengthened the 3500 foot strip at Tulsequah to 5000 feet to accommodate large aircraft. An ice house was constructed at the end of the strip to cool the fish until the aircraft arrived. Initially, fish were flown to Terrace and trucked to Prince Rupert for processing, however, this was so costly that they were later flown to Dease Lake and then trucked to Prince Rupert.



Whitehorse district is renowned for its luxurious field accommodation.

Like everyone else this summer, we were short of manpower to manage this fishery. I wish to extend a "thanks for a job well done" to all the recruit fishery officers who were stationed at Tulsequah for two-week periods during the summer. All in all, the fishery went very well, considering it was a new venture.

Stikine River Fishery

Unlike the Taku, there has been provision for a commercial fishery on the Stikine for the past several years. Until this year, the commercial fishery consisted of a few fish being sold locally in Cassiar and Dease Lake and a few to the tourists at Telegraph Creek. Entry into the fishery required Canadian citizens and residency in the province of British Columbia for the previous six months. Approximately 30 fishermen took part in the fishery, most of whom were residents of Telegraph Creek and the Stikine Valley.

The fishing season on the Stikine opened June 1 and closed October 1 by regulation, however, it was June 28 before fishing actually

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Squid Fishery Shows Promise

Last fall, Canada and Japan co-operated in an exploratory squid survey off Canada's West Coast. The survey, under the direction of Dr. Frank Bernard from the Pacific Biological Station, utilized Japanese vessels and fishing methods to assess the squid stocks in the Canadian zone.

Two fishing companies from each country were involved–Sunshine Seafood Ltd. and the Canadian Fishing Company from Canada, and Ogata and Hokkaido Fisheries from Japan. Representatives from Canadian companies on board the vessels at all times during the venture were required to produce a detailed report on squid fishing methods and processing techniques used by the Japanese vessels.

Squid stocks on the West Coast have been known about for quite some time. These stocks were thought to be mainly composed of the species *gonatas* and *loligo*, although sampling suggests that two other species, *Onychoteuthis borealijaponica* and *Todarodes pacificus*, previously considered scarce, were in stocks of exploitable size. They were found in the areas of the seamounts 100-150 miles offshore, although the major concentration may be found outside the 200-mile limit.

The Japanese vessels were longliners converted for jigging. Each vessel was approximately 57 m in length, with a crew of 30. The vessels were equipped with automated jigging machines, beneath a row of 4,000 watt light bulbs and each equipped with two drums and approximately 50 m of nylon. The lines were made up of a 500 g weight attached to a 5 m line, followed by 25 lures placed I m apart and a final 50 m of line. The machines dropped lures smoothly, and retrieved them with a jerking motion. The line then travelled over a terminal pulley set above an inclined mesh tray on which the squid fall.

Gillnetting was employed on a small basis in the survey, and was strictly supervised by Dr. Bernard. By-catches were the major concern in the use of gillnets, but from this survey by-catches were found to be extremely small and consisting of fish of non-commercial value.

Initially the survey was to cover the entire Canadian zone, but due to low water temperatures in the northern area, it was confined to southern waters off Vancouver Island. Even with the limited coverage, however, Dr. Bernard felt that results of the first survey were very encouraging. A similar survey in early to mid-summer of 1980 is planned which would fully cover the Canadian waters.

Barry Ackerman
Fishery Officer
Offshore Division

(from information supplied by Dr. Bernard of the Pacific Biological Station in Nanaimo.)

Northern Fisheries...

began. Each fisherman was allowed one net with a maximum length of 450 feet which could be fished as a set net or a drift net. The river was fished 3 days per week for the following catch figures:

Sockeye	9,950	Chum	401
Coho	10,390	Spring	689
Pink	1,946	Steelhead	200

Fish were sold to British Columbia Packers who stationed a seiner and brine barge on the lower Stikine near the mouth of the Iskut River. Salmon were held in brine during the fishing week and flown to Prince Rupert during the closed time.

Manpower, transportation and communi-cation were problems as the patrolman from Telegraph Creek managed the commercial fishery at Iskut as well as a large Indian food fishery at Telegraph Creek, 135 miles away. Since there are no roads connecting the two areas, transportation was either by river or by air.

This expanded fishery was also a success in 1979, creating an economic lift for Telegraph Creek and proving the potential for future development.

We are presently developing a licencing system and management plans for both the Stikine and Taku Rivers as well as preparing for next season. 1980 will be an exciting year.

Larry Ottman, Fishery Officer
Whitehorse

Food Herring Fishery Roundup

Landings

The 1979/80 British Columbia food herring quota was reduced from 19,051 metric tons in 1978/79 to 4,990 metric tons because of the general decline of B.C.'s herring stocks, the apparent inability of most processors to produce top quality herring products, and the lower economic value of food herring in relation to roe herring.

Fishermen were paid $115/ton, an increase of $7/ton over that paid in the 1978/79 fishery. Furthermore, a premium rate of $139/ton was paid for landings in which 60% of the catch was over 20 cm in length, an increase of $19/ton over the 1978/79 rate.

Food herring landings totalled 4706 metric tons in the 1979/80 fishery, a decrease from the 14,080 metric tons landed in 1978/79. The landed value of the 1979/80 fishery was approximately $1.35 million, based upon a price of 13 cents per pound. The total landed value of the 1979/80 fishery was about one third of the landed value of the 1978/79 fishery.

Area 5 produced 37 percent of the food herring, or approximately 1,724 metric tons. The majority of herring, approximately 2,903 metric tons, was landed in Area 17. Overall, approximately 80% of the total herring was landed by seine vessels and the remainder by trawlers. Although it has been reported that two gillnetters participated in the 1979/80 fishery, there is no evidence to indicate that they landed any fish.

Processing

Twenty-eight processing plants (23 companies) and 13 cold storage facilities participated in the 1979/80 food herring fishery, and employed people for a period of 7 - 8 weeks. In the 1978/79 fishery, 33 processing plants and 12 cold storage facilities participated.

Once again, the majority of food herring was processed in the Lower Mainland of British Columbia. Seventeen processing plants and 13 cold storage facilities processed 2,591 metric tons (55.2%) in the Lower Mainland, 5 processing plants processed 1,730 metric tons (36.9%) in Prince Rupert; 3 plants processed 148 metric tons (3.2%) on southern Vancouver Island, and 3 plants processed 224 metric (4.8%) on northern Vancouver Island.

The appearance of roe herring gillnet punts changed significantly during the 1979 roe herring fishery. With a reduced quota in 1980, many more sophisticated, efficient punts may emerge on the fishing grounds. Shown above is a roe herring punt moored at French Creek during the 1979 fishery. (Photo by Peter Leitz)

The major market for whole frozen food herring has shifted from Europe to Japan. Despite this, B.C. companies which have been invested in by Japanese sources accounted for only 14.6% of the 1979/80 food herring production, a decrease of 11% since the 1978/79 fishery. Statistics show that the ten largest companies are increasing their production, and now account for 90% of the food herring processed.

Products

The majority of herring landed (3,551 metric tons) in the 1979/80 fishery was frozen whole for food. At the average price of 33¢/lb. U.S. f.o.b., the wholesale value of this product was approximately $2.5 million. Seven hundred and eighty nine metric tons were frozen whole for bait with an approximate wholesale value of $500,000, 115 metric tons were filleted with a value of $72 000 and 193 metric tons of herring were salted with an approximate value of $158,000.

The total wholesale value of the 1979/80 food herring fishery was approximately $3.3

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Spurious Emissions

Recent retirees include **Les Edgeworth**, executive director of SEP, **Ken Jackson**, shellfish co-ordinator, Inspection Division, and **Florence Campbell**, FVIP office manager. Best wishes are extended to Florence, Les and Ken.

* *

Roger Kearns, former fisheries biologist, stopped by the office during the Christmas holidays He is now with a tree pruning service in the Tacoma-Bremerton area in Washington.

* *

In the space age of the 80s, a letter takes a long time to get to the addressee. However, it is rumoured that even the Canada Post is faster than the communications system in parts of the south coast area. There, some district offices are without radios and therefore can't communicate with patrol boats and patrolmen.

* *

Holidaying in Mexico are the **Graingers, Hollands, Winsbys, Nick Seymour,** also **Larry Duke** and his family. Have to suppose **John Summers** is down there somewhere too.

Jay Barclay has accepted a 6-month secondment to Ottawa where he will work on the economic evaluation and preparation of documentation for an east coast salmon enhancement program.

* *

Winners of the recently created Hindsight Award were: **Dennis Brock** and **Jack Broome** for their outstanding accomplishment in the South Coast Division in 1979. This award will be presented annually within the South Coast to the most deserving candidates.

* *

The "meeting syndrome" has well and truly hit 1090 W. Pender, as anyone knows who tries to contact someone. It's been suggested that a weekly meeting quota per staff member should be established with no meetings being called prior to 10:00 a.m. daily.

* *

Promotions include: **Robin Harrison** who was the successful candidate in the recent competition for senior biologist, Fraser River, Northern B.C. and Yukon Division, and **Bill Webber** who won the competition for Commercial Fisheries and Licencing Advisor.

* *

Bill Winsby tried out his power saw recently on his leg. Pay heed, Les Edgeworth!

Food Herring...

million. Like landings, this was approximately one-third of the total wholesale value of the 1978/79 fishery. Because of the increased Japanese demand and the high prices paid in U.S. dollars for food herring by Japanese importers, B.C. processors swung away from the more diversified herring products which were processed in 1978/79.

Markets

From preliminary information, most of the whole frozen food herring from the 1979/80 fishery was exported to Japan where it is dried. To date, approximately 880 metric tons of whole frozen herring have been exported to Japan, with more than 50% of this total purchased by one large Japanese trading company Small amounts of herring fillets have been exported to West Germany, whole frozen food herring to Holland and bait herring to Alaska.

The shift of B.C. processors away from the European market to the Japanese market occurred in 1979. In 1978, 80.3% of B.C.'s whole frozen herring exports went to Europe, but from January to September of 1979, only 20.5% of B.C.'s exports were exported to Europe. Conversely, 5% of B.C.'s whole frozen exports went to Japan in 1978 but increased to 69.2% from January to September of 1979.

Increased Japanese demand has occurred because of a tremendous decrease in their landings from 66,000 metric tons in 1976 to 16,000 metric tons in 1978. Their landings are predicted to remain at this level until 1985. On the other hand, European imports of B.C. herring may have decreased because of the poor quality herring which was exported in the latter 1970s and because of the utilization of substitute products (such as mackerel and pilchard) by European consumers.

Trevor Proverbs, Research Officer
Economics and Statistical Services

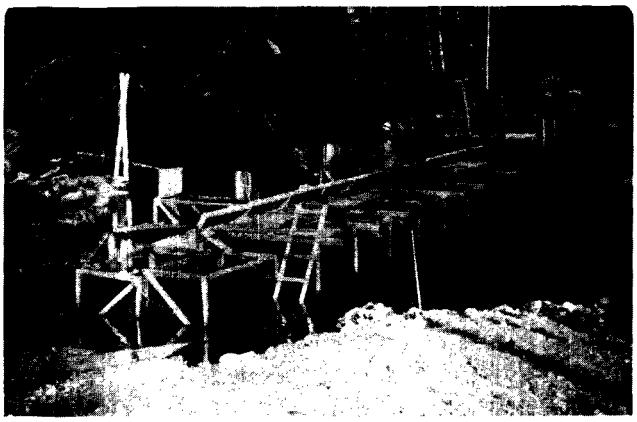
New Technique -

This Portable Fence Works

Enhancement Services Branch installed a removable adult collection fence this fall for the chum run at Mathers Creek on Louise Island of the Queen Chrlotte Islands. The fence structure was designed to be installed every year for the run and then dismantled and removed from the creek when not in use.

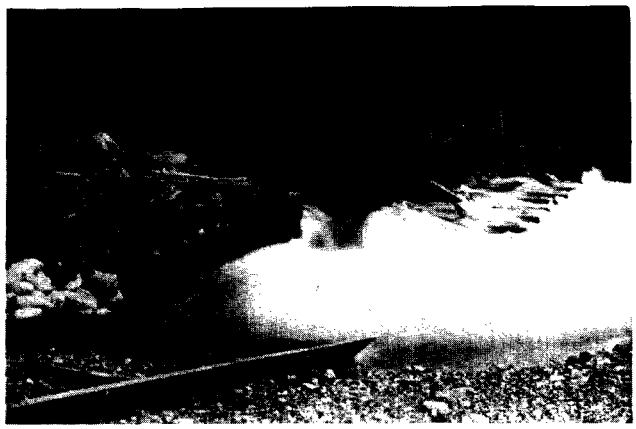
The project was initiated at the end of July, approximately two months before the anticipated start of the chum run. Design and construction had to be carried out simultaneously.

Fence abutments were conventional log-type used for most logging road bridges. These were installed within a one-week period in the middle of August. A steel frame superstructure, together with aluminum grilles and decking were designed, fabricated and delivered to the site by September 28. Work on the fence sill was difficult. With the short time allowed, the cut-off sill beams were to be made with concrete dam sacks, 1 m deep into the creek bed. These were sunk on pallets into excavations in the creek bed without dewatering. High flows in the creek prevented several attempts to install the timber sill beams on which the fence structure would sit. A final attempt was successful with the help of several divers.



The Mathers Creek portable counting fence in operation.

The fence spans 18.5 m between abutments with the sill beams 3.5 m apart. The fence structure is assembled from six units of welded square tubular steel. Each unit measures 1.8 m long by 1.5 m high. The base fits between timber guide beams and top is 3 m wide. All units are linked together by tubular steel at installation. Aluminum grillage panels and deck panels are fitted onto the steel structure. These 500 kg units were originally planned to be launched with a truck winch, pulling one at a time along the timber sills. The actual launching was made much easier using a rented loader.



The fence withstood flooding.

The fence was in service between October 14 and November 3. Due to the very poor showing of chums in Cumshewa Inlet this year, only a few adults were trapped at the fence. An egg-take was not carried out.

Within the same period, a flood condition was experienced at the fence. Water in the creek rose from 0.5 m to nearly 2 m. Due to the weir effect of the fence, water was backed-up to almost 3 m behind the fence, topping one abutment at its tip. This condition lasted for about a week before high water subsided. Inspection afterwards showed that the major components had stood up well under such loading. Minor damage resulted from the impact of two floating stumps bending some metalwork. The launching ramp area and the damsack apron downstream were partly washed out. The fence was dismantled and stored for next year's launching.

Plans have already been made to protect the fence against damage in future. These including constructing a log boom upstream to intercept debris, making one abutment higher, building a wall to protect the launching ramp and reinforcing the downstream apron.

Wai Leung
Sr. Project Engineer
Enhancement Services Branch

Guest Editorial

Basic Equipment

The process of acquiring a uniform for fishery officers has been a long hard battle even though the purpose and value of a uniform has been recognized for many years. In 1955, a year after uniforms were first issued to fishery officers, A.J. Whitmore, then the Supervisor of Fisheries, stated that "uniforms increased the effectiveness of these officers and the prestige of the department." W.R. Hourston, Director of Fisheries, in February, 1975 wrote "the most important purpose of our uniforms is that of identification and as such it contributes in a major way to the public image of our department." The Treasury Board stated that "It is the policy of the Government to provide appropriate items of clothing to employees where the work function is of a nature where special identification at the local, national and/or international level(s) will aid in the effective performance of duties."

The fishery officer uniform has been the subject of much controversy for decades, even prior to its original issue in 1954. The uniform progressed from the Eisenhower battle dress, to the brass button tunic, to the bush jacket, and finally to today's present issue.

Several uniform committees have come and gone with few, if any, positive results for the effort and monies expended. In 1974, one of these committees did achieve some success. Its task was to resolve two major problems. First, that the uniform issued to fishery officers was of a poor design considering the types of work and conditions encountered. Second, there was no current regional dress policy. Although unable to effect any changes in uniform design, this committee did develop a new regional policy of dress which was implemented in July 1976.

Today the major issues are still practicality, supply, and the total disregard by some to the uniform dress policy.

Surely it doesn't take much to tailor our present uniform more to the situations in which it is used. It should also take very little to make it more distinctive, so that we are not confused with Home Oil agents, Fish & Wildlife officers and RCMP officers. Recommendations to improve the design and distinctiveness were made long ago. The major hurdle left is the required national approval, which could be a long time in coming, based on the infrequency of National Uniform Committee meetings.

The lack of uniform issue to our new trainee fishery officers is an absolute disgrace. We spend considerable time and effort recruiting the best possible officers into the organization and then dump them in high profile, enforcement situations with no uniform. The recruit must use his own resourcefulness to beg, borrow or steal bits and pieces of uniform from his fellow officers and supplement what he is still missing from the local Army & Navy or Saan store. Not only does this have a tremendous impact on the morale of these officers, it also seriously diminishes our public image.

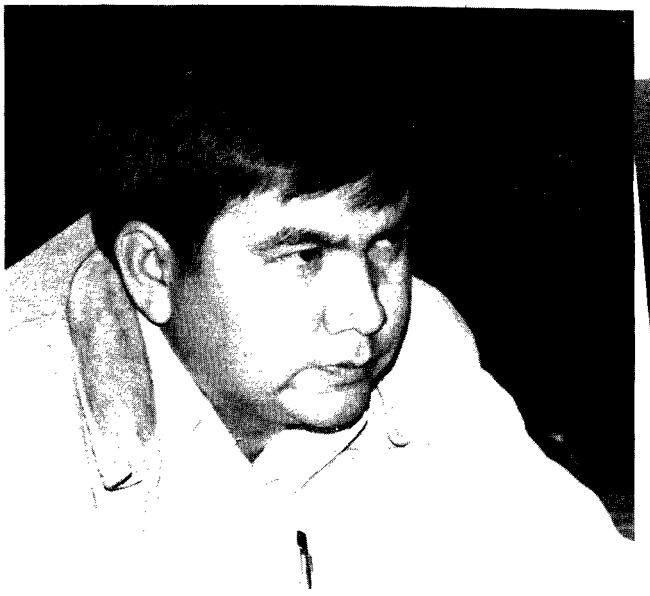
The failure of some officers, (and thank God the minority), to adhere to uniform dress policy is also a matter of serious concern. Blue jeans with patches on the butt, sweat shirt and running shoes do nothing for the image and morale of uniformed fishery officers, let alone the department or Government of Canada. Unfortunately, some of the responsibility for this situation must lie with supervisors, as the policy states, "It is the responsibility of each employee having supervisory responsibilities to uphold and enforce this uniform policy with respect to conduct and condition of wear." This does not negate the necessity for civilian dress during specific occasions or undercover operations.

It is high time for the fishery officer uniform issue to be resolved. The first step would be to get the changes to design quickly approved by the National Uniform Committee. Then a supplier must be secured who can consistently supply quality material with a delivery date that is NOT six months from the date of order. New officers should be issued uniforms immediately, and then a policy developed on deportment and which officers, if any, should be excluded from wearing the uniform and when. Finally, the conditions of uniform wear should be strictly enforced.

Finally these words seem appropriate to the uniform issue. "An idealist believes that the short run doesn't count; a cynic believes that the long run doesn't matter; a realist believes that what is done or left undone in the short run determines the long run."

Dennis Brock, District Supervisor, Nanaimo

Salmon Expectations–Points of View



Clockwise, from top left:
Willy McKenzie; Dennis Brock; Don McCulloch, (single picture) Ed Christiansen, Ray Kraft, Rob Wilson; Les Goodman; (single picture) Dennis Brock, Fred Fraser, Lee Straight, Robin Harrison.

Salty Smokey is a Hit on the "Tanu"

"I'm on fire—put me out" began the day for the crews of the "Tanu" and "Howay" at the CNS (Canadian National Steamships) pier, Vancouver last November.

The occasion was the visit to the "Tanu" by 'Smokey' Batzer, United States Coast Guard, (retired) of Philadelphia. Batzer conducted a Shipboard Damage Control and Fire Fighting demonstration, which was arranged by the Chief of the Ship Division, Captain Gordon Irving.

"Learning by doing", interspersed with colourful and "salty" anecdotes together with some "plain Jane and no damn nonsense" common sense was the order of the day.

From a Master's point of view the value of this type of "team training" cannot be stressed too strongly. The occasion also demonstrated to me how easy it is to slip into the comfortable rut of complacency caused by a certain amount of tunnel vision and a modicum of unquestioning acceptance of things the way they always were!

"Smokey" demonstrates the safe way to connect a nozzle in the dark, or when it must be handled alone.

Tony Preston, Master, F.P.V. "Tanu"

Coveted 'Hindsight' Awarded

This perpetual trophy, the "Hindsight Award' will be awarded each year to the person or persons who show the best hindsight for the year. The 1979 winners, Jack Broome, left, and Dennis Brock gleefully accept their award. (photo by Ray Kraft.)

Swan's Song

Dr. Wally Johnson, Les Edgeworth listen to Harold Swan's "requiem for a retiree". Les was presented with a chainsaw and other mementos, on the occasion of his retirement in December. (photo by Else Wilson)

The 1979 BQR Terminal Fishery

(or, Too Many Boats for Too Few Fish)

In recent years, enhanced chum salmon returning to the Big Qualicum spawning channel and river have been subject to a terminal fishery off the mouth of the Big Qualicum River. This fishery has been plagued with low quality of product, too few fish for too many boats, interception of unenhanced Little Qualicum chums (south of Big Qualicum River) and problems of allocation between user groups.

During the fall of 1979, the South Coast was closed to chum fishing for conservation purposes. Test fishing in Johnstone Strait during the closure did not identify the strength of the returning Big Qualicum River chum stocks. Anticipating the possibility of excess escapement to Big Qualicum River, while keeping in mind the weak status of the Little Qualicum River, the South Coast Management staff decided that a fishery off Big Qualicum River would not take place until 90 percent of the Big Qualicum chum escapement requirements (full escapement is 125,000 chums) were met.

On November 29, industry was advised that a fishery would be unlikely considering the low escapement to date at Big Qualicum, but that a final announcement would be made December 4, 1979.

During the morning of December 4, approximately 25,000 chum salmon escaped to the Big Qualicum River. Considering that 90 percent of Big Qualicum's chum requirement had now been reached, industry was informed that a final decision on a fishery would be made December 6, after the outside chum stock was assessed for strength. The outside stock was assessed visually by Nanaimo District staff aboard the "Atlin Post" and by Bud Recalma (seiner) as being able to support a small clean-up fishery. Industry was informed December 6 that a small clean-up fishery would take place commencing 4 p.m. Friday, December 7 for gillnets and 8 a.m. Saturday, December 8 for seines. Boundaries were designed to ensure adequate protection to Little Qualicum River chum salmon. The Department was not able to estimate the stock size or the potential stock available to the fishery.

The Fishery

Too few fish for too many boats. 150 gillnets caught 8,000 chums and 136 seines caught 2000 chums. In addition approximately 800 coho and 24 chinook were taken, the majority by gillnet. Weather conditions appeared to favour the gillnet fleet with the consensus among field staff that approximately 5,000 chums remained scattered throughout the area after final closure of the fishery.

From the period of outside chum stock assessment on December 5 and until the fishery opened December 7, approximately 4,000 chum salmon escaped to the Big Qualicum River.

The majority of the chums harvested were of low quality and were retained for personal consumption.

Alternatives

a) No Fishery

The majority of the companies appeared to support this idea, however if no fishing took place and a large excess escapement occurred at Big Qualicum River, the majority of gillnet and seine fishermen would be upset.

b) An Earlier Fishery

An earlier fishery would have ensured a larger abundance of better quality chums to the industry. However, there would not have been an adequate escapement of chum salmon to Big and Little Qualicum Rivers.

c) Fleet Reduction and/or Allocation

The fishery would have been announced on shorter notice, thereby reducing fleet size. As it was, industry received 30 hours notice.

The fishery could have been restricted to either gillnet, seine or Indian fishing. One of the problems of allocating to one user group is that the other user groups would disapprove.

Conclusions

In hindsight, the terminal fishery off Qualicum this year would have supported a gillnet fleet of about 100 or a seine fleet of about 50. (All excess escapement to the Big Qualicum hatchery are distributed to the Indian Food Fish Program.)

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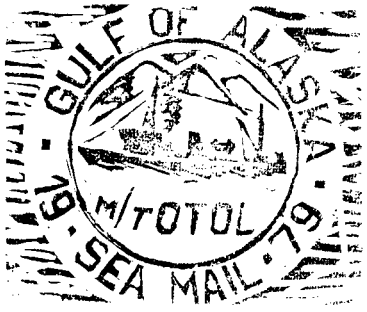
Life on a Polish Factory Ship



Good money, good food--but a long time away from home. The life of a man at sea may be the same no matter what country he's from. The "Sounder" interviewed the Third Officer of the Polish factory trawler "Otol", Adam Dziurbacz, about what his life was like at sea.

Adam is a young man, about 27 years old. He started as a senior fisherman on a Polish factory trawler after graduating from a technical school for fishermen. He became third officer about a year ago after receiving officer training.

As third officer, his duties are on the bridge. He works 8 hours and then gets 8 hours off, around the clock. What does he do on his time off? "Sleep!" he laughs.

On his shift, he is responsible for navigation. When the ship is on the fishing grounds, he uses one of several sonar sounders to look for fish, and to check that the net does not get caught on a rocky bottom.

The "Otol" processes its catch of hake into frozen fish, fillets and fish meal. It does not necessarily come into port when its cargo is full. Usually a "mother ship", a transport vessel about twice as big as the "Otol", will arrive on the fishing grounds to remove the processed fish and deliver mail, fresh water and supplies.

The "Otol", built in 1976, is one of about 60 ships owned by the Polish deepsea fishing company, Odra. The company fishes in the Bering Sea, Georges Bank (Labrador), Indian Ocean, Antarctica, Arabian Ocean, and off the north and south coasts of Africa.

The "Otol" is huge. It is 90 m long and has a crew of 80. Its gross tonnage is 2,395 metric tons. Cargo capacity is 900 metric tons of fish and 200 metric tons of fish meal.

The crew are paid in a manner similar to the crew of Canadian fishing boats--they are paid according to the amount of fish processed. To give an idea of the amount of fish they can catch, their last set on the fishing grounds yielded 45 metric tons of pollock.

Perhaps because of the round-the-clock activity, there are several mealtimes a day. A typical main meal would consist of soup, meat (such as pork chops), potatoes, pudding and fruit. Needless to say, fish is not regarded as a treat on board a factory ship (after working with them all day...).

What about booze? Well, as most of our Offshore Division knows, there *is* liquor on board, and some pretty potent stuff, too. But while drinking on the ship is permitted, we get the impression that most of the crew take their livelihood seriously and do not overindulge.

When we talked to Adam, he was spending his last few days on the ship before flying back to Poland. "When I leave Vancouver for Poland, I will have been away from my family for 178 days," he says. That's almost 6 months. He didn't say it, but you could tell it was a long time. Another crew was flying in from Poland the next day.

Adam has a wife and two small daughters aged 4 and 5. They have recently moved to a small town called Koszalin, about 15 km in from the coast.

Adam will have about 80 days in Poland with his family before he must go back to one of the company's ships. He didn't know where he would go next, but he would like the experience of fishing in--Antarctica!

Maxine Glover, Editor

Too many boats...

For the 1979 fishery, the only major allocation or restriction imposed on the fishery was that gillnets would fish first. The resulting fishery was one of too few fish for too many boats. Gillnets clearly made a better go of it than did seines. A good portion of the catch was retained for personal comsumption and did not show up as being delivered.

Colin MacKinnon
Management Biologist
South Coast

Japanese Examine Our SEP, Explain Theirs

Last fall, Professor Masakazu Yoshizaki, Mrs. Yoshiko Nishida and Mr. Yasuaki Shinkai of Japan visited public involvement and community development projects on Vancouver Island and the Lower Mainland.

The visitors' keen interest in volunteer and community enhancement activities stems from the fact that they are involved in a similar enhancement program in Sapporo called "Come Back Salmon". One fry per citizen has been released into the Toyohira River every year for the past three years as part of Sapporo's Salmon Baby Festival. The "Come Back Salmon" program is an attempt by over 2,000 volunteers to get public and industry support to clean up the heavily polluted river and to restore its salmon populations.

Professor Yoshizaki, a professor of anthropology at the University of Hokkaido, is studying the impact on and the reactions of man

Rain did not dampen the interest of the Japanese visitors touring the Goldstream project.

when he realizes that what he has done to his environment threatens his very existence and to what extent he will go to rectify the situation. Mrs. Nishida, a professor of children's education also at the University of Hokkaido, is studying the effects of man's treatment of his environment on his children, and how education about the importance of the environment may change the attitudes of the children. Mr. Shinkai is the marketing director for their program and has been so successful in publicizing the program that it is now self-supporting from the donations it receives from both industry and individuals. One of his marketing coups has been with a local liquor distiller, once one of the prime polluters of the river. The distiller is now marketing a liquor called "Baby Salmon". The bottle carries the program's logo, and the company donates 25 ¢ to the "Come Back Salmon" effort for each bottle sold.

The visitors participated in one of SEP's Educator's Package workshops in Qualicum with teachers from the surrounding area, and then flew to Sechelt for a firsthand look at how the package was being used in the classroom. Mrs. Nishida was particularly impressed with the package and the enthusiasm of the children. The group explored the Goldstream project in Victoria, with Howard English, principal architect of the Amalgamated Conservation Society's efforts, and Trevor Morris, SEP's community advisor for the area. Mr. English emphasized that members of the community can and should become actively involved in enhancing the resource. They also examined the provincial government's efforts on the Craigflower-Colquitz system, and toured the Nanaimo Community Development Project. The Japanese were most impressed with the volunteer work being done on these urban streams and could see how they could apply the new knowledge to their own program.

Rounding out their visit were tours of Capilano Hatchery, a volunteer project on Hastings Creek and B.C.I.T.'s small training facility on the Seymour River.

The visitors were most impressed with the concept of community advisors. Such positions, they suggest, would fit in well with their program. Many ideas and suggestions were exchanged throughout the three days and all thought the visit very successful. (Special Projects staff are still eagerly awaiting an invitation to Japan to learn more about the Japanese methods—particularly on promoting the enhancement of the resource through the sale of booze!)

James Boland
Head, Public Involvement

Jake, The Sockeye

This is the tale of a sockeye male
Who was known as Sneaky Jake.
And the life he led, from egg to redd
In a place called Babine Lake.

His life begins, of gills and fins
Leaving his rocky bed.
But for this young fry, the odds are high
That he'll never see a redd.

But this little fry, is quick and sly
And he's heard the tales told
From an elderly trout, he's been told about
The perils that shall unfold.

"Watch for bears and eagles, and flocks of sea gulls
And that ever--dangerous two--legged man,
For nets and claws and beaks and paws
They're out to get you if they can."

Then the wary fry, saw a gleam in his eye
As the trout made a lunge for his throat.
With a lightning dash, he escaped the gnash
But lost a fin to that damn cutthroat.

Never again, could he trust a friend
For he had the will to survive
And in his mind was drawn, that urge to spawn
And nothing would catch him alive.

Later that day he swam away,
His only companion was luck,
To Babine Lake, where a year it would take
Before he could swim to the chuck.

So he spent that year, roaming far and near
While his fin grew back like a knife.
Fate knew that the fin, would eventually win
A battle to save his life.

He jumped with glee, as he swam out to sea
Where his life made a radical change,
There were new hazards to face, in that wide open space
So his habits and ways had to change.

Through three more falls, of storms and squalls
He battled the perils of the sea.
Then one day, his mind went astray
When he met that sleek Marie.

A body like a dream, from "Field and Stream"
This one was worth a try.
"Come up the crick, and we'll do our trick"
He said, staring into her eyes.

She quickly agreed, that Jake was indeed
An excellent partner to find.
So they turned around, for Chatham Sound
With the Babine on their minds.

Jake took a dart, at some moving part
For hunger had finally come.
But Jake had a lure, from "Pacific Pure"
And it looked like the end of the game.

Marie swam by, with a tear in her eye
As Jake was dragged through the sea
But with a final flip, the hook tore his lip
And once again Jake was free.

It wasn't a minute, when a net had Jake in it
Along with a hundred other fish.
He writhed and rolled, but the net had a hold
His fate would be a seafood dish.

With one last hope, his fin sliced the web
He escaped in a weary state.
Then Marie swam by, and Jake gave a sigh,
Overwhelmed to see his mate.

Their course was set, past gaff and net,
Through clouds of silt and debris.
Only their skill, and determined will
Guided old Jake and Marie.

With a sigh of relief and almost disbelief
Marie swam through the counting gate.
When she turned to view, for Jake to come through,
The gate was slammed in his face.

The biologist said, "We've got enough redds
That's all we need this fall."
So Jake and the rest, never dug their nests
And died virgins outside the wall.

Randy Nelson, Fishery Officer, Terrace

What Will You Do?

SKIDS

Rear end starts to slide.

Know the defence

1. Take foot off accelerator at once – do not use brakes.
2. Do not jerk steering wheel.
3. Steer carefully so that front wheels at all times point straight down the road in direction of original travel.

Sudden regaining of traction when car is at an angle causing rear-end fishtailing.

Know the defence

1. Keep front wheels pointing straight down the road.
2. Avoid over-correcting.

(If you intend to use your brakes on ice without getting into a skid, pump the brakes with hard, rapid jabs rather than using continuous pressure.)

What You Can Expect
by Pat Phillips

Here is 1980—another year and another decade. I wonder how many New Year's resolutions have been broken already?

The mail seems to bring us more and more work because some people are not filling out forms correctly or are misusing them. Some common problems:

1. Travel Claims:

- Expense claims coming in without the necessary travel authority being completed and forwarded for approval BEFORE the trip. This covers all travel outside your headquarters area or district area.
- Times of travel not put on the Travel Claims.
- Reason for travel not included. New Travel Expense forms will have a space for reason for travel.
- The only telephone calls which can be claimed are calls on departmental business and weekly "home-calls" (subject to certain conditions). Department business calls must include to whom the calls were placed.
- Telephone requests for advances (forms completed at this end), is a service for **emergency** purposes only.

2. Field Purchase Authorities

- for purchases of over $100 with no reason for the emergency purchase. Remember that your signing authority is up to $100—anything over that must be fully explained.

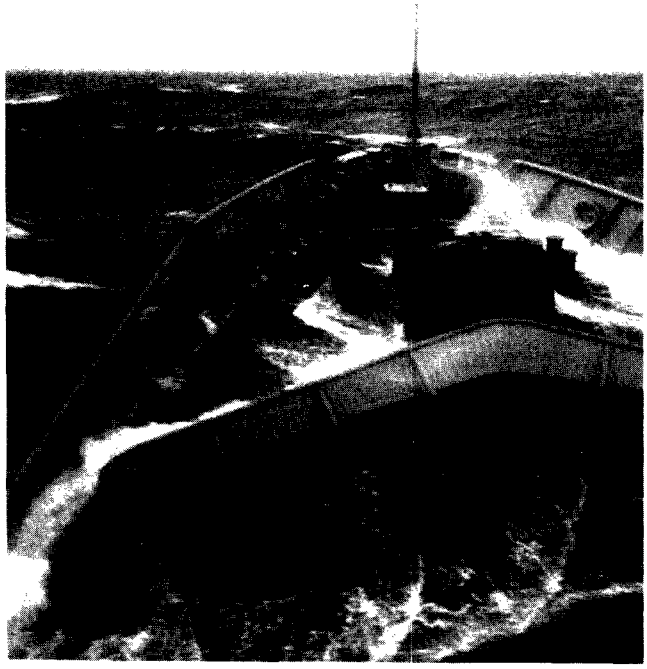
3. Invoices

- coming in not certified, field purchase authorities not signed.

4. Requests for Staffing

- accompanying the employment documents. These documents have to be held up until all signatures are obtained on the Staffing Request. It would be embarrassing if the Staffing Request was returned because no person-years were available, and the person was already on duty.

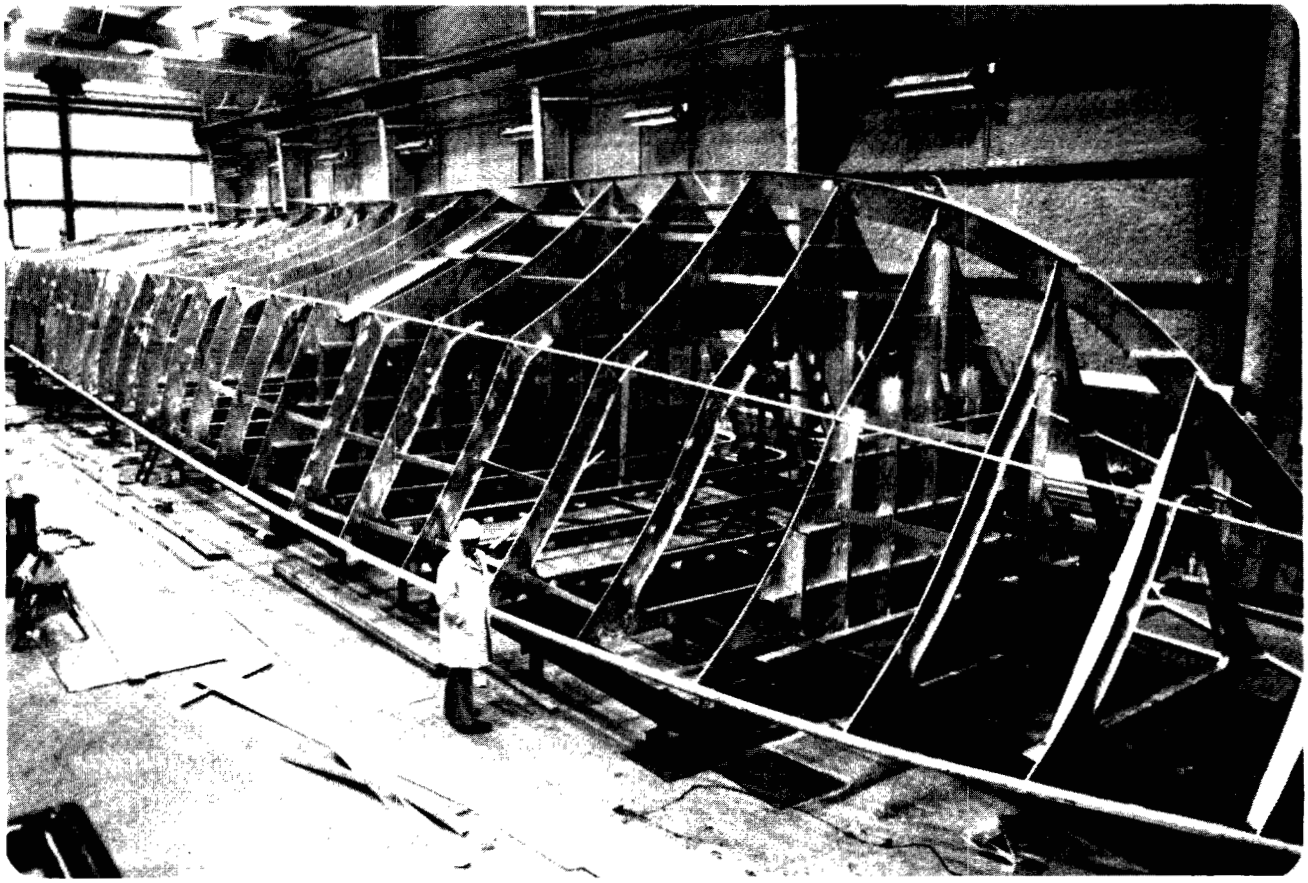
Iviney Receives Hecate Star



Winds in Hecate Strait were at SE 50 knots, maximum ship roll was 53^{O}– a perfect initiation to life at sea for Fred Iviney.

Fred proudly (if a little greenly) sports the Hecate Star, (you'll see it if you look closely), presented to him by the crew of the "Tanu". So even a personnel officer can have his ups and downs. (Was this an up or a down Fred?)

The "Howay II" Skeleton



The "Howay II", under construction at John Manley Shipyards in Vancouver is scheduled for completion in June 1981. Her length is 37.8 m (124 feet), and gross tonnage will be approximately 258 metric tons (285 tons). She will have a crew of 12. Cost: $6.6 million (also approximately). This ship will replace the 44-year old "Howay" still in use.

Fishery Officers, Circa 1972

Another "oldie", this one taken from New Westminster District's 1972 annual narrative report shows the fishery officers of the day. Back row, left to right: Tom Carscadden, Keith Elliott, John Bentley, Wayne Lowdon, Art Reynolds. Front row, left to right. Vern Knoop, Joe Hipp, Tom Moojalsky, Harry Burrow (district supervisor). Photo courtesy of Wayne Lowdon.

Unnatural Wild Virgin Enhanced Natural

Lots of people talk about natural stocks but they don't necessarily agree on what a natural stock is. Generally, there is agreement that the difference between natural and enhanced stocks is that genetic effects of unnatural selection occur with enhancement. Projecting this difference, the true natural stock must be a virgin (unexploited, unenhanced) wild stock from an undeveloped watershed. It must be unexploited because it has been clearly demonstrated that gillnet, troll and sport fisheries are highly selective and result in significant genetic changes. It must also have a natural watershed because the stresses and selective pressures applied by industrial effluents and possibly other man--made interferences result in unnatural genetic selection. Using these criteria there are no natural salmon stocks in the Pacific region.

Taking a more liberal definition of a wild (natural) stock as one which is not subjected to enhancement selective processes seems to make things easier. Has a fish stock which increased in abundance because of a fishway been subjected to enhancement selection? Is it unnatural? It might be argued that the stock's rate of production has not changed, so it probably hasn't undergone significant genetic change. If fish are "enhanced" in a spawning channel we assume they undergo "unnatural" selection. What about those in a side channel development which get the same or slightly less survival? For that matter, what about those fish which incubate in high quality natural spawning areas and have comparatively high levels of survival? Similar questions can be posed for hatcheries. If there is heavy selection in a conventional hatchery, are hatchery fish which are reared in a side channel, or released to the wild as fry considered to be more "natural" stock? What about those fish which are incubated in a gravel incubation box and then released into the natural environment? When is a fish "natural" or "unnatural"?

If enhancement was operated to reverse or compensate for the heavy selection occurring in the commercial, sport and food fisheries, would the enhancement fish, by being subjected to less net selection than in the unenhanced situation, be more natural than the fish spawning in an unenhanced river?

Clearly, we are caught in a word game; not a simple word game, but one with all sorts of value-laden words which imply that one uncertain definition is better than the other overlapping and equally uncertain definition. Probably we would be safer talking about enhanced and unenhanced stocks rather than natural and unnatural stocks. We must recognize, however, that there are levels of enhancement (at both stock and individual levels) which can probably be best designated by the increase in the rate of production (survival). (Stream improvement provides slight levels of enhancement whereas a hatchery provides more extensive enhancement and "natural" production provides no enhancement.)

I hope this suggestion doesn't "unnaturally" stimulate a "naturally wild" response, unless it is to "enhance" the "rate of production" of letters to the editor, or articles for the "Sounder".

Al Wood, Director, Staff Services, SEP

(Appreciate the "plug", but sentences like that sure aren't going to "hook" them.—Editor.)

Letter to the Editor

Dear Maxine:

I was surprised to say the least, when on examining the latest issue of the "Sounder", to see that the Department in Ottawa had forwarded to you some of my questions on the history of the Department. It was most pleasant when I received the next day, information from both Les Goodman and Ed Christiansen.

I had originally written the Minister in late July and other than the usual secretarial acknowledgement three weeks later, had heard nothing. I had hoped they'd do some digging into back files and archival data.

In closing I thank again those who have sent information and hope others might send along anything of historical value on the Department. The best for 1980 to you and the "Sounder".

Yours very sincerely,

Harry Burrow
General Delivery
2531 Chilco Road
Crofton, B.C.

Hey! It's a Photo Contest!

Deadline: February 29, 1980

Special Note: The motive behind sponsoring the photo contest is to bring to light good photos for a variety of departmental uses. Photos are needed for annual reports, newsletters, fact sheets, bulletins, displays and slide shows. Photos used for these purposes will, wherever possible, receive proper photo credit. All original photos or slides will be returned to the owner after the photo contest.

So go ahead and enter!

Categories

A. People (Fisheries employees at work.)
B. People ("general public". Remember, children are people too!)
C. Fish (including, but not limited to salmon, herring, shellfish, etc.)
D. Sport or Food Fishing, Commercial Fishing Industry (including canning, processing, etc.)
E. Sequence, or Before and After (any subject)
F. Facilities (fishways, hatcheries, counting fences, research station, labs, etc.)
G. Humourous
H. Special category (this category is for those very fine pictures that just can't be categorized. Photos here might be scenics, or convey a special mood or atmosphere.)

Rules

1. Entries can be colour prints, slides or black and white photos.
2. Attach each entry to a separate piece of paper using masking tape at the corners of the photo or slide.
   Do not write on the photo or slide frame.
   On the sheet of paper, write:
   - your name and address
   - the category you are entering
   - title or description of photo/slide, if appropriate.
3. You can enter as many times as you wish.
4. Those working on Fisheries projects or activities are eligible to enter.
5. Deadline for entries: February 29, 1980.
6. Send entries to:
   Maxine Glover, Editor
   "Sounder",
   Department of Fisheries and Oceans
   1090 West Pender Street
   Vancouver, B.C.
   V6E 2P1
7. All entries will be returned.
8. It is assumed that by entering the contest, entrants have granted permission to publish or use their photos/slides as the Department sees fit. It is further assumed that, where applicable, the photographer has obtained the written permission of his subject to publish or use the photo as the Department sees fit.
9. Prizes will be offered for each category. However, if in the opinion of the judges no entry in a category is worthy of a prize, none will be awarded.

Prizes

The major prizes are:
- 2 one-day sailboat cruises, donated by Fred Fraser and Kip Slater. (Kip will throw in diving if the winner is a diver.)
- one-day of fly fishing for cutthroat trout on the Harrison River with Don Buxton.
- one-day of steelhead fishing on the Squamish River with Joe Kambeitz
- a 16" x 20" enlargement of winning photo (or a favourite photo of the winner's).
- native Indian prints
- a print of the "Howay" by Hugh McNairnay
- bottles of "spirits"

In seine quote:

In fairy tales, trolls lurk under bridges and eat goats. In B.C., trolls lurk coastwide and eat salmon--all species and as much as possible.

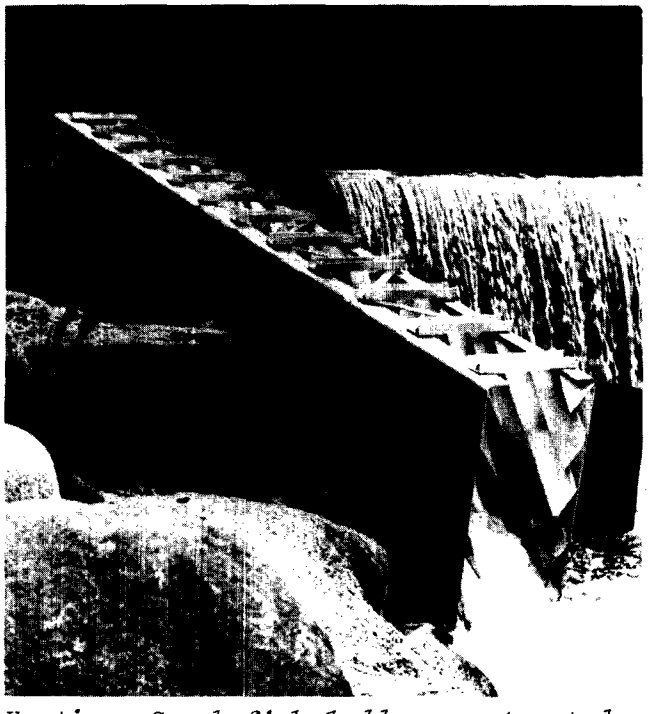
Gillette razor blades promise "a smooth clean shave", with no cuts. Gillnets give a "clean sweep fishery", with no escapement.

* *

Maxine Glover, Editor
THE SOUNDER
1090 West Pender Street
Vancouver, B.C.
V6E 2P1

Sounder

Volume VIII Number 2 March 1980



Hastings Creek fish ladder constructed by Squaretailers Rod and Gun Club in 1978. Labour was all volunteer and many of the materials were donated.

Never Too Many Volunteers, But

Too Many To Handle

Public involvement in the Salmonid Enhancement Program has exceeded all expectations and it may be some time before Bryan Allen, SEP community advisor, catches up with the backlog of enhancement proposals.

Bryan is one of four community advisors in B.C. who respond to community groups and organize the projects they suggest. At the moment he has 27 projects on the Fraser River system and in the Squamish area.

"So far we're just responding to people who have come to us with their own proposals," Bryan says. "A lot of people have been skeptical about community involvement. But by the end of the fiscal year (March) we expect to have 35 projects. Right now the unit has 56 on the list and we expect as many as 70. Unless we get some help that won't be possible."

continued on page 2

Brunette River Diversion Promised

The Brunette River, where Bryan organized the transplant of 30,000 coho eggs in 1979, may undergo major changes in the near future. New Westminster Mayor Muni Evers has promised to make the downstream diversion of the Brunette for flood control purposes a first priority this year. At present the mouth of the Brunette flows through heavy industry on the New Westminster waterfront. Industrial waste has so clogged the lower Brunette that it is virtually useless for fisheries purposes. Diverting the river, says Bryan, will allow it to bypass the main polluters. Although the Brunette will never be as productive as it once was, it may well be in fit condition for the return of the 1979 coho in the fall of 1982.

Bryan Allen, SEP community advisor, surveys waste at mouth of Brunette River on New Westminster waterfront.

public involvement...

Indian bands, schools and rod and gun clubs show interest in SEP for the purposes of education, resource improvement and recreational benefits. But SEP also includes property owners and, in several instances, inmates from correctional centres.

"One thing that I stress is that we're not out to produce large populations of fish with school projects," says Bryan. "It's a cliche I know, but working with kids is an investment in the future."

Yet Bryan's job is not always a garden of roses. In the case of Schoolhouse Creek, east of New Westminster, Bryan had arranged for an enhancement project with the students of Montgomery Junior Secondary School. The fish population of the stream is minimal but a small number of cutthroat trout had been counted. Counted that is, before one resident began gaffing the fish as they spawned.

On the other hand, the Fraser River Coalition is laying charges to bring a stop to industrial dumping in Schoolhouse. All this commotion is centered around a stream that is little more than a metre wide.

Recent damage at Schoolhouse Creek near New Westminster. Creek was slated for salmon enhancement project.

In the case of Laurentian Creek, the situation is even worse. Bryan had made similar arrangements for an enhancement project on Laurentian but a routine trip to the creek two weeks ago may have cancelled his plans.

"They (industrial tenants) have completely devastated what was once the only natural stream in the area. This should never have happened. They've punched some debris into the creek. Right where the culvert comes out the alder cover has been removed. There wasn't much to begin with but now there's nothing. I myself have to go up and tell the kids that there's nothing there anymore."

The picture is quite different though at Hastings Creek, part of the Lynn Creek system in North Vancouver. There, the Squaretailers Rod and Gun Club, with the assistance of SEP installed a five metre fish ladder in 1978 to enable steelhead and coho populations to bypass a concrete culvert structure. The culvert was constructed in the late 1950s with flood precautions, not fish habitat in mind. As a result, it is an engineering monstrosity, about 20 metres high with three tiers of culverts--an impassable barrier for spawning fish.

For many years the fish had to be netted and carried over the structure. A Fisheries estimate put the cost of a fish ladder at between $50-70,000 but with volunteer labour and donations of construction materials, the rod and gun club managed to install an efficient system for one-tenth of that estimate. In the first year of installation, an estimated 15 steelhead and 50 coho used the ladder to pass through the culvert and lay their eggs.

"Up until SEP, Fisheries didn't have the manpower to go through with these projects," says Bryan. "A lot of people didn't see the need for it."

"There are actually instances (now) where a community program is so successful that the project evolves beyond the public involvement level."

Mike Youds, "Sounder" staff writer

IFAP on the Move

The marriage is over and the eleven-year-old offspring of the union, the Indian Fishermen's Assistance Program (IFAP for short), is being sent to a foster home. This is one way of looking at the transfer of the administration of IFAP from Fisheries and Oceans to the Native Brotherhood of B.C., effective April 1, 1980.

IFAP, a program developed and funded by the Department of Indian Affairs, is the brainchild of the Native Brotherhood, so it is fitting that the residual responsibilities (mainly relative to the orderly recovery of outstanding loans) be turned over to that organization. It is all the more fitting by reason of the fact that the Brotherhood is developing another unique and challenging assistance program for Indian fishermen.

Prior to the activation of IFAP, very, very few Indian fishermen were able to obtain bank financing and sound financial counselling. Now let's look at the record:

Total loans issued by IFAP	672
Total value of loans issued	$87,741,894
Outstanding loans January 31, 1980	215
Value of loans outstanding January 31, 1980	$ 3,300,000
Accounts in arrears as at January 31, 1980	91

In addition to issuing loans, IFAP also awarded $7,297,950 in grants, most of which had stringent mortgage conditions attached to them. A small number of these remain to be administered by the Native Brotherhood.

Going back to the loans records, it may be seen that Indian fishermen have proved that, as a segment of society, they are just as competent as the best when it comes to repaying loans and honoring the terms of collateral mortgage agreements. The fishermen are now able to deal effectively with banks and credit unions, and our country is the better for having dissolved what was an unpleasant discrimination against Indian people.

The success is a tribute to Indian fishermen, the Indian Fishermen's Development Board, the Native Brotherhood of B.C., the IFAP field counsellors, the Department of Indian Affairs and to our own Department of Fisheries and Oceans.

That IFAP has been a success can partly be shown in terms of loans repaid. Other illustrations of success cannot be measured--the effects on both Indian and non-Indian communities, the preservation of a life-style, and the improved morale of people who helped themselves.

continued on page 18

IFAP Squibs

"Now I know what is meant by trial by fire!"--Nelson Keitlah (presently chairman of the Indian Fishermen's Development Board) after his first Board meeting.

"John, you've got to learn to think like an Indian."--James Gosnell when he was chairman of the Indian Fishermen's Development Board.

"If you don't belong to the Native Brotherhood, you can't get IFAP assistance."--Rumor that was circulated in the early days of IFAP. The originator of this did not know that the first loan/grant decision gave approval to an application from a man who was *not* a member of the Brotherhood. The Board was not interested in whether or not any applicant belonged to any organization.

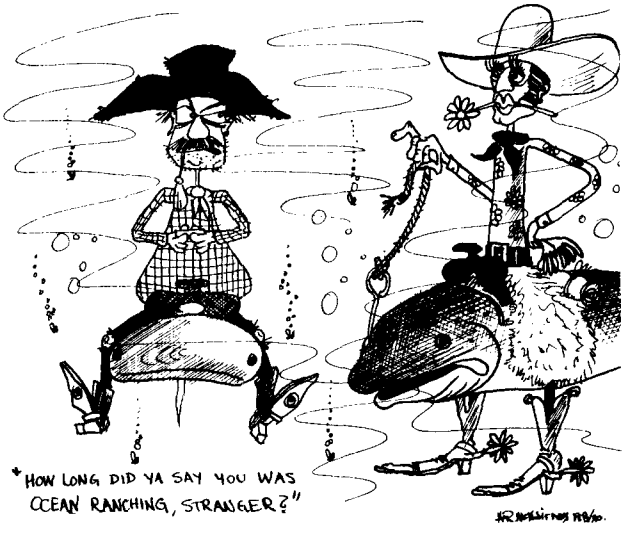
Contrary to what many people think, Indians *do* pay income tax on off-reserve earnings. On the B.C. coast, few Indian villages have on-reserve industries and the greatest earnings come from commercial fishing. Hence, very few of the coastal Indians can take advantage of the income tax exclusion.

Ocean Ranching—Boon or Boondoggle?

As the cartoon suggests, there are a few "queer" individuals intent on relying upon the homing instincts of salmonids to generate for them a tidy profit.

Ocean ranching is becoming a favourite topic among people in both the public and private sectors. It can be defined as the release of juvenile salmon (smolts) with subsequent recapture of adult migrants. The technique employs methods similar to those used for artificial propagation in hatcheries; collection of adults, spawning, incubation, ponding, feeding, tagging, and release as juveniles (size dependent on species).

Salmon are common property while at sea, available for harvest by traditional commercial and sports fisheries. Escapement to the capture site provides brood stock and hopefully, a profit from the sale of adults.



Current Status

In Oregon, ocean ranching became legal in 1973, allowing the release of chum, coho and chinook. To date, 20 permits have been issued. As an indication of the operational size contemplated, Weyerhauser Corporation has been given permission to release 20 million each of coho and chinook and 40 million chum; the total exceeds the entire production of all Oregon state and federal hatcheries combined. The magnitude and number of licences issued is presently under review, after smaller releases have been studied.

Private hatcheries have operated on a nonprofit basis in Alaska since 1974. Income from the sale of adults can only be utilized for debt retirement and facility expansion. The remainder (profit) must be allocated to fishery research and stock rehabilitation under state supervision. There are 18 hatcheries planned or in existence releasing chum, pink and sockeye.

Existing regulations forbid ocean ranching in Washington except for native groups. Net-pen rearing is allowed to serve the pan-size market. In California, ocean ranching legislation was recently defeated, primarily because of pressures exerted by the commercial fishing lobby.

In British Columbia, ocean ranching by the private sector is illegal. As an indication of the potential in this region, approximately $850,000 was generated by sale of surplus adults from SEP facilities in 1979. Estimated contribution to commercial and sports fisheries directly related to hatchery production is 20% of the coho and 25% of the chinook catch in Georgia Strait. With production levels increasing at each hatchery, this contribution can only increase.

Supporting Arguments

- private hatchery releases would benefit existing traditional fisheries. For example, in Oregon and Washington, it is estimated that 3 salmon are caught in commercial and sports fisheries for every 2 adults escaping to the collection area.

- natural stocks considered weak because of competition with artificially enhanced populations and suffering from an unfavourable benefit:cost ratio (making them impractical to enhance) could be increased by private enterprise. This could have application with depressed pink stocks in Georgia Strait.

- increased employment opportunities

in activities associated with a private operation (processing, cold storage, transportation). (This advantage would make ocean ranching particularly attractive in depressed locations.)

- total supply of salmon would be supplemented at no additional cost to the taxpayers. Increase in supply should depress the price of salmon to the consumers' advantage.

- in a world faced with dwindling energy supplies and renewable resources, ocean ranching makes more efficient use of energy, labour and production costs. Traditional fishery methods will undoubtedly face rapidly escalating costs in all areas of salmon harvesting.

Arguments Against

- large numbers of juveniles released into nearshore areas could severely strain the natural carrying capacity with competition and suppression of existing native stocks. Unknown effects on the organisms (e.g. shellfish) residing in the same area.

- in the open ocean range, there is little knowledge of the total food available. Adding to present Japanese and Russian releases (in excess of 1.1 billion juveniles) is certain to have an effect on food availability and consequently growth.

- management problems, already complicated by gear allocation, mixed-stock fisheries and enhanced vs. natural stock issues, would become more complex through the addition of another factor. Ocean ranching competes directly with traditional fisheries and is essentially another user group.

- genetic and disease transfer risks would increase. High probability of transplantation and straying with uncertain effect on natural stocks. Assuming the primary motivation of the ocean rancher is profit, other factors considered unimportant (preservation of genetic integrity, manipulation of timing) may be dismissed in pursuit of a maximum return on investment.

- during years with low returns overall, fishery managers would have to choose between ensuring a fair return to the private operator at the expense of the commercial fisherman. Expect intense lobbying efforts by both interest groups. Reduced exploitation to preserve weak natural stocks could, depending on the area, result in increased returns to a private hatchery.

- if the entire production of a river system could be released from a hatchery near the mouth, other competitive users (forestry, industrial, hydro) would be encouraged to pursue development plans.

The number and ranking of arguments presented on both sides is unimportant. Rather, the intent is to stimulate further discussion by all affected parties. It is perhaps idealistic to believe that future policy decisions on ocean ranching are made on an informed basis with maximum benefits to the fishery resource and people of Canada. Probably the most pragmatic solution to the controversy would be the implementation of private ocean ranching on a pilot scale.

Dave Wilson, Head
South Coastal Operations Unit, SEP

Travel Ad

If you're really desperate:

FOR A RESTFUL FISHING HOLIDAY:

Join us in the Herring Roe Fishery
(March-April)

Featuring:

- modest entrance fee of only $2000;
- unlimited choice of vessels;
- lots of activity to keep you entertained;
- therepeutic ocean swells to calm your nerves
- many neighbours to converse with;
- tours of B.C. isolated coastline
- creative methods for maximum fishing potential;
- the opportunity to get rich quick

And more. You'll never forget it!

Spurious Emissions

With the roe herring fishery at hand, some of the biological crew decided to introduce staff at 1090 to one of the many aspects of the resource. On a recent Monday morning, the entire building was well permeated with the distinctive smell of three-day-old rotted herring. It's rumoured that one division chief finally had his secretary locate a fumigator after two days of enduring the reduction plant aroma.

* *

Ken Pitre formerly chief, Offshore Division, has accepted a position with Resource Services Branch as regional troll biologist reporting to Rod Palmer.

* *

A recent arrival to 1090 W. Pender is Ken Campbell, who hails from Edmonton. Ken occupies the newly created position of Facilities Management.

* *

Heather Persons, information officer, SEP, is leaving to prepare instructional material for vocational teachers in the Instructor's Diploma Program at U.B.C.'s Centre for Continuing Education.

* *

Lyle Freeman has transferred to the Comox sub-district where he will once again become actively involved in the fishery officer ranks.

* *

Dorothy Rogers, Economics Section, switched her maiden name January 25, 1980 in favour of becoming Mrs. Gene Regnier. We wish Dorothy and Gene many years of happiness.

* *

Doug Rode engineering technician SEP, married Arlene Wards February 2, 1980, in Abbotsford where they will be residing. Best wishes to Doug and Arlene.

* *

Trevor Proverbs was the successful candidate for the position of head, Special Programs and Management Support Unit of the Offshore Commercial Fisheries Division.

* *

Jim Kent, operations room, moves to Ottawa to take a new position there in the Regulations Unit. We're hoping for fast action Jim.

* *

We understand Mickie Kitson, Prince Rupert district office is well on her way to recovery.

* *

Farewells and best wishes to Linda Newton, licencing supervisor who's taken an early retirement from Fisheries in favour of spending more time working at home. We hope to see you again, Linda.

* *

Another who's left is fishery officer, Jim Wallsmith, Offshore Division. Jim will be joining the Lacombe, Alberta, police department.

* *

Born...to Larry and Marion Ottman, Whitehorse, a baby boy, Glen Allen, 7 lb. 10 oz. on January 18, 1980.

...to Brian and Shirley Murray (Brian's relief "A" skipper for South Coast) a baby girl Melissa Emily Dallas, 9 lb. 2.5 oz. on February 9, 1980, and

...to Pam and Richard Palmer (Pam of Accounts), a baby girl, Alison Lesley. Alison was born on February 11 and weighed 9 lb. 5 oz.

...Jack and Evelyn Robinson (Jack is skipper of the "Arrow Post" based in Queen Charlotte City) a girl, Chloé Elizabeth, born January 31, 1980 and weighing 7 lb. 8 oz.

...to Debbie and Henry Nicholas (Henry is a radio operator) received a bit of static with the transmission of 7 lb. 14 oz. Patrick Henry on Sunday, February 10.

...to Gregg and Rose Morris, a girl, Kimberly Alicia on February 4, 1980, weighing 7 lb. 3 oz. Gregg is a senior engineer for SEP.

...to Tom and Anne Ho, a boy Raymond Elliott, born February 19, 1980, weighing 8 lb. 5 oz. Tom, project engineer for SEP, says Raymond's middle name is in honour of the winner of the recent federal election.

* *

CONTRACT EMPLOYEES... a diminishing resource!

* *

Chinese Visitors

The Resource Services Branch recently acted as hosts for a visiting scientific and technical group from the People's Republic of China. The group was composed of nine delegates plus interpreter and represented a wide range of interests ranging from publication and information services to higher education, telecommunications and government technical organizations. The head of the delegation, Wang Shuntong, is a member of the Secretariat of the Scientific and Technical Association of the People's Republic of China. Their visit to the West Coast was sponsored by the Canadian Broadcasting Corporation. The group was exposed to major Pacific Coast fishing and forestry concerns by spending one day with our staff and another with McMillan-Bloedel Ltd.

The tour group travelled to the Pacific Biological Station in Nanaimo where they toured the laboratory, live-holding, library and waterfront areas of the station site, and then met with the Director, F.C. Withler and senior staff for informal discussions.

In the afternoon, the group visited the Big Qualicum Project. The Chinese appeared particularly interested in the technical intricacies of rearing and tagging fish and the structure of the facilities.

Dick Harvey, project manager at Big Qualicum feeds his fish for the enchanted visitors from China.

Dr. John Davis
A/Director, R.S.B.

Huge Sport Fishing Survey Underway

The Tidal Sport Fishing Diary Program initiated last year has already shattered the old myth that sportfishing has little impact on saltwater species.

Bill Masse, acting chief of recreational research, says the results of the 1979 survey will be circulated within the next two months and will prove useful to both stock management personnel and sports fishermen. Although Bill and his assistant, Elaine Mactavish, are still busy compiling the 1979 results, he says one pattern is clear.

"People once considered sport fishing insignificant in terms of the total catch. But we have found that sportfishing could in fact have a very serious effect on stocks if not controlled properly."

In addition, the results will enable planners with the Salmonid Enhancement Program to better evaluate the impact of specific projects.

Of the 10,000 questionaires mailed to a non-select portion of the B.C. population, only 50 percent were returned. This is an unusually low response as compared to previous Fisheries surveys, Bill says. Thirty percent of those who responded to the survey were fishermen and half of these agreed to keep records of their fishing activity and catch during 1979.

A mail system was used because it is less costly and permits greater control over certain kinds of bias than the conventional field based creel methods.

Continued on page 13

Who's in Control ?

The controversial roe herring fishery is underway with fishermen's grievances partially relieved by the cancellation of a boat pooling plan. However, a number of outstanding problems involving fishery organization and market demand have yet to be overcome.

The pooling plan, a system where seine boat owners would voluntarily form two-boat pools and fish either in traditional roe herring grounds or in specially designated pocket areas, was cancelled because the appropriate regulation could not be promulgated after the fall of the Conservative government. The United Fishermen's and Allied Workers' Union had opposed the plan, calling instead for the adoption of a boat quota system. The boat quota system would have the government introduce a basic "per vessel quota". Union spokesman Bill Procopation insists that the vessel quota could be determined by setting a maximum herring catch for the year and dividing that by the number of fishing vessels. He said the proposed pooling plan would be inequitable.

"We must take the panic out of it and slow the fishery down," Procopation says. "During those committee sessions the Department said the quota system did work. It helps manage and conserve the system. The only reason they're not doing it is that they're in the back pocket of the corporations."

The union proposes a coast-wide quota not to exceed 35,000 tons, 5000 tons short of last year's catch. Some fishermen fear the herring stocks might be completely wiped out and suggested that the fishery should be cancelled this year.

"Who the hell knows whether there will be anything left at Tofino this year?" one fisherman asked. "Barkley is gone, Nootka is gone--so what's left? The strait is left, so let's conserve it."

Management Efforts

In an interview held later, Bob Humphreys of the Herring Fishery Co-ordination Centre, said the union's proposal for a coast-wide quota is unworkable and dangerous.

Union Spokesman Bill Procopation (right) outlines UFAWU demands to Dr. Wally Johnson, director-general flanked by Bob Humphreys, herring co-ordinator (far left). About 100 herring fishermen marched on 1090 W. Pender.

"Nothing is safe unless it is flexible," Bob said. He said the runs are forecast using average values for recruitment and as a result the estimated population figures are very tenuous.

"The pooling system is dead for this year but we'll bring together all suggestions for systems when the season is over, putting them before a committee and hopefully coming up with a system for 1981."

Bob said that fears of depleting the stocks are unjustified. He said roe herring catch is small compared to the amount of herring taken during the years of the herring reduction fishery. Herring were harvested at a rate of 200,000 tons per year between 1947 and 1967 for use as fish meal and oil.

"I don't think there is anywhere on this coast where the stocks have been depleted." He said that the decreasing tonnage of the annual herring catch may be because the fishery is carried out directly over the spawning grounds and is therefore hampering survival of the eggs at the larval stage.

Since it began in 1972, the roe

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Project Coordinators Tap Potential

In the Community Development Program of the SEP Special Projects Division there are four project co-ordinators responsible for 16 projects. SEP contracts with various community groups such as native Indians, local employment societies, prisoners and others, who, although very eager to participate in SEP, often have limited biological and administrative expertise. Part of the project co-ordinators' task is to develop these skills in the community groups.

Projects range in complexity from incubation boxes to small-scale hatcheries with capacities up to 3 million incubated eggs. The project co-ordinator ensures that each project is completed according to the terms of the contract; he/she is the "scientific authority" responsible for authorizing expenditures and ensuring that objectives are met within specified time limits.

In many cases, the complete SEP plan for fish production is not available when community groups are selected, so the project co-ordinator conceives a program according to the potential capabilities of the communities. Each project is discussed with the appropriate federal and provincial resource managers and management biologists and interested local groups such as logging companies and fish and game clubs. After the project is approved, the project co-ordinator acts as liaison between the contractor and these agencies to exchange information, resolve conflicts and encourage support of the project.

The objective of community development projects is to enable the communities to manage their own projects. The project co-ordinator, by providing all project bio-engineering expertise either personally or by consultation with appropriate fisheries experts, assumes the responsibility for using reliable techniques to successfully complete the project. Training in the use of these techniques is particularly important when working with native Indian contractors who are often completely inexperienced in project management.

Project co-ordinators find themselves doing things their mothers never dreamed they would be doing.

Although few communities, except those like Nanaimo, (see next story) possess knowledge of fisheries techniques, they are progressing rapidly through courses and on-the-job training authorized by the project co-ordinator.

Community development projects provide longer term objectives, training and employment opportunities. The projects are small-scale enhancement of fish stocks in small or isolated streams. The success of the individual projects depends on the responsibility of the communities involved.

SEP objectives to double the salmonid stocks in British Columbia cannot be met entirely by large-scale hatcheries because of fisheries management problems. Many communities in B.C. are ideally located to carry out enhancement of these endangered fish stocks. The project co-ordinator is the visible on-site representative of SEP in these communities.

Linda Patterson,
Project Co-ordinator, SEP

Editor's Note:

Other SEP project co-ordinators are Bob Armstrong, Alf Stefanson and Chris de H.-Wirth

Nanaimo SEP

A Multifaceted Community Development Project

In the earliest hours of these cold winter mornings Biologist Derek Connelly can be found with three other salmonid enhancement workers on the dark waters of the Nanaimo Estuary--transplanting eelgrass. They move with haste to beat the tides and with care so as not to disturb the delicate roots of the plant in its dormant stage during the night.

The transplant is one of the first of its kind on the B.C. coast and one of the largest ever attempted. If successful, valuable fry habitat long hampered by industrial activity will be restored.

The estuary program now underway is one of four parts of the Nanaimo River Salmonid Enhancement Project. Since it was established in November 1978, the project has undertaken also half a dozen stream improvements, built a new hatchery and compiled a complete biophysical inventory of the Nanaimo River system.

"By the end of March we will have deposited at the Biological Station a biophysical inventory according to the criteria and standards set by them. It will be the first one stored by them," says Cliff Shoop, project co-ordinator.

Situation is critical

The enhancement efforts come at a crucial period in the river's history.

Nanaimo River System
Comparative Population Figures

Steelhead	1966	2,600
	1979	1,000
Chum	1950	100,000
	1979	35,000
Chinook	1954	20,000
	1979	2,000
Coho	1938	100,000
	1979	4,000

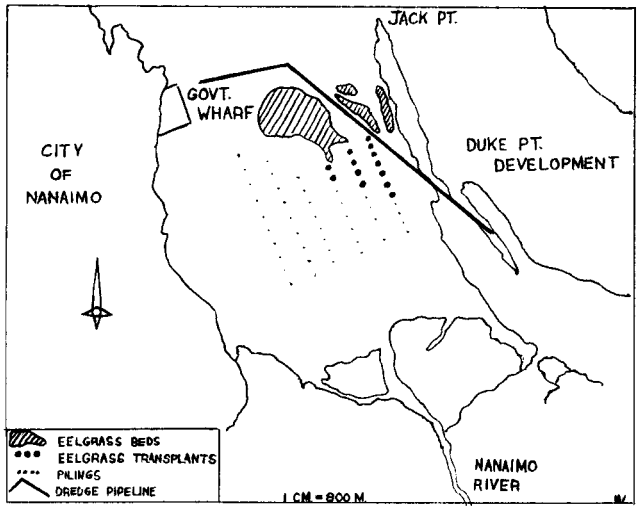
Salmon and trout runs on the Nanaimo have reached critically low levels (see table) and last year a severe flood--the second largest ever recorded--damaged many spawning and rearing areas. Logging on the river's upper reaches, over-use of the system's water and a large construction project on the estuary, the Duke Point development scheme, are all having an impact on the runs. Now, one year into the project, steelhead populations have reached such low levels that sportfishing for the species has been banned. The salmon population, says section leader Brian Blackman, is one-tenth of what it was in in the early 60s. "There is a multitude of water problems responsible," says Brian, "as well as more sport and commercial fishing." In spite of this he believes the situation can be improved.

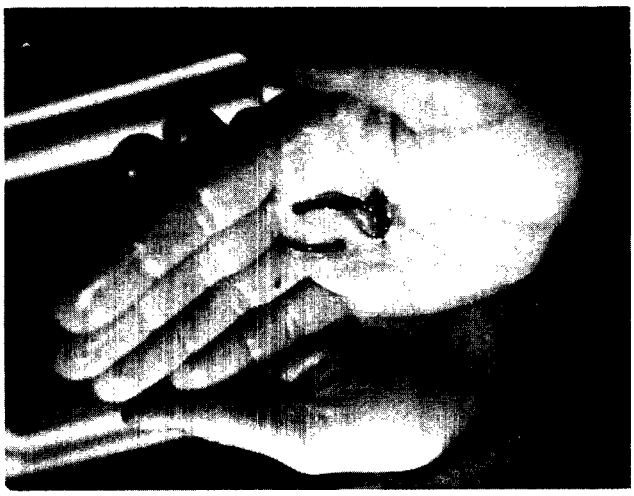
"We can now look at the river and say exactly where each species is spawning." With the new hatchery in operation, he says, fry can be reared and introduced into identified headwater areas where there are no competing species. "There is one area that could be used for 100,000 fry this August or September."

Hatchery taps mill water

Adequate water supplies are one of the greatest problems affecting the Nanaimo. The water is of good quality

Eel Grass Transplants





Two-month old fry with sac still attached--at new Nanaimo hatchery.

and therefore in high demand. In some instances water use permits have been issued that exceed the total flow of the stream involved.

To guarantee a constant water supply for the Nanaimo hatchery, SEP has arranged to tap the MacMillan-Bloedel Harmac well system. In addition, the hatchery has a back-up system available in the event of a breakdown.

"The secret of a successful hatchery is water supply and temperature control," says Shoop. "Each hatchery manager has his or her own methods--it's an intuitive thing. These people are dealing with living creatures and you feel things." Hatchery manager Paul Preston says there are still problems that have to be ironed out, (maintaining water pressure is one), but otherwise the operation is running smoothly.

"We've had a good success with survival," he says. The survival rate for coho has been 93%, but on one occasion 60,000 chinook eggs received from the Nanaimo Biological Station were lost because of over-maturity.

Students from the Malaspina College fisheries program take turns working in the hatchery to gain field experience. Another SEP worker is living at the hatchery and this produces added assurance that the system will continue running should any breakdown occur.

The Project plans to expand the hatchery and add several more outdoor tanks to the four indoor troughs now operating. The first steelhead eggs will be taken in April.

A prime chinook river

In the summer a regular staff of 12 swells to over 20 as Bob Pick, section leader of the project's biophysical inventory, organizes stream improvements. Last year SEP improved river conditions by constructing a fish ladder at White Rapids and removing log jams. Work on Haslam Creek, Polkinghorne side channel, Deadwood Creek, the Millstone River and the Chase River was also carried out.

"At the moment," says Bob, "we're concentrating our efforts to edit and complete a biophysical data report.

The Project is encountering severe flooding and sediment problems on the Polkinghorne--a side channel of the Nanaimo.

Removing bad eggs at Nanaimo hatchery. A 98 per cent survival rate for coho.

"There were 16,000 square metres of spawning gravel in the side channel which have been severely reduced by flooding. A hydraulic sampler has indicated a high mortality rate has occurred to date.

Brian Blackman as section leader of the life history section of the project is conducting surveys of anglers and compiling an inventory of biological patterns. He says an adult enumeration project conducted on the Nanaimo

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It usually takes more than three weeks to prepare a good impromptu speech.

- Mark Twain

SEP on Display

Visitors to the Vancouver Boat Show (Feb. 1-11) took an interest in SEP's new modular display depicting three major themes: why there is a need for SEP; SEP activities and tools; and benefits to all user groups resulting from the program. The display was manned by the two Lower Mainland community advisors Bryan Allen and Don McDermid and by Joe Kambeitz.

The display was also shown at the Vancouver Sportsmen's Show February 13-19 and will appear at the Prince George Sportsmen's Show in April.

Nanaimo SEP

River in conjunction with Pacific Biological Station personnel revealed that coho and chinook populations were below optimum levels. He says the steelhead population is also very poor. As a result of these surveys natural enhancement opportunities have been identified and will soon be carried out.

The regional biologist has requested data be gathered with the possibility of establishing rearing pens in some of the twenty lakes in the Nanaimo system.

Mike Youds, "Sounder" staff writer

(Mike is in his final year of Journalism at Vancouver Community College. As part of his training, he is writing and editing for the Sounder.)

Small Projects Add Up

Summary of Community Development Projects indicating total capacity of facilities (comprised of various species).

Project	Type of facility	Potential* Egg capacity of Facility
Kincolith	hatchery	600,000
Chehalis	incubation pits	1,000,000
False Creek	sea pens	10,000 chinook yearlings
Masset	incubation box	100,000
Kispiox	hatchery	150,000
Terrace	incubation boxes	300,000
Seymour	hatchery	100,000
Bella Bella	hatchery	1,000,000
Black Creek	enumeration program (CWT)	-
Sechelt	pen rearing	20,000 coho smolts
Alouette	incubation box	80,000
Port Renfrew	incubation boxes	1,000,000
Cowichan	hatchery	2,100,000
Sliammon	hatchery	1,600,000
Nanaimo	hatchery	1,100,000
Nimpkish	hatchery	3,000,000

*most of these projects have not yet reached full production.

Who's in Control?

herring fishery has been a lucrative affair carried out in a disorderly, often chaotic fashion. To deal with this situation, the following measures have been introduced:
- a co-operative program with the seine fleet to reduce the commotion over the herring stocks and the resultant break-up of herring schools.
- the closure of sensitive spawning areas to the fishery
- the limitation of gillnet gear to one net of maximum 75 fathoms length per licence instead of two nets for a total of 150 fathoms.

Market Difficulties

The roe herring market collapsed in 1979 after a supply shortage caused a sharp rise in prices. As a result there is now a 3,000 ton surplus of high-priced herring roe stored in Japan Before the Japanese companies can sell this surplus, by lowering the price, they must also market enough of this year's lower-priced herring to recoup their losses. Japanese consumers will likely resist purchasing herring roe if it remains at the high price of $25-$42 a pound. On the other hand B.C. fishermen are asking for an increase in the price per ton and blaming Japanese companies for last year's market problems.

Mike Youds, "Sounder" staff writer

Sport Survey will Prove Valuable

Of course, there is the inevitable bias when any self-respecting fisherman is asked, "how many fish did you personally catch this year?"

Mike Youds, "Sounder" staff writer

Revolver Competition

The first ever revolver competition for members of the Department of Fisheries and Oceans was held last fall. The competition was a "postal match", where anyone who wishes to participate, does so in his own locality and then mails his or her score. This does away with the necessity of all officers gathering in one place and incurring high travel costs. The match was open to all fishery officers, boat crews and wardens that had trained and qualified in the use of sidearms. The competition was the same as the basic training course, so it wasn't new to anyone.

Tim Panko, left, winner of the revolver competition. Brian Hume, right, placed second in the match.

The competition was out of a possible 600 points 60X, and scores show that fishery officers are competent and proficient when it comes to the use of sidearms. The winning score was posted by Tim Panko of Vancouver with 521-9X; second place was taken by Brian Hume of Coquitlam 511-7X; Frank Voysey of Clearwater was third with 482-12X. The average score of all officers who participated was 443-7X, which is very respectable considering that most officers had never been in a competition shoot before.

The big disappointment, however, was the poor turnout. Only ten fishery officers participated in the match, although I am sure there were more who would have liked to but did not have the time. (Also, the price of ammunition these days does not help to encourage officers to get out and practice.)

The idea behind the revolver competition was to encourage officers to get out to the range or out in the bush and do a little practicing. Most of us came back from Depot at Regina with a high degree of proficiency, but like anything else it begins to get rusty fast when not maintained.

I would like to thank all of those who did participate for their support and I hope that should the match be run again in 1980 that many more will participate.

Don Ross
Fishery Officer, Mission

Editor's Note:
Each shot is worth 10 points. The "X" score is given if a 10-pt bulls-eye hits a smaller, inner X-ring. These X's are used only for settling ties. A score of 520-16 X, for example, is higher than one of 519-18X, but 520-16X is lower than 520-18X.

Spurious Emissions

Jim Kent (Operations Room) received an unusual note from a gentleman in California. "Thank you Canada for your most recent show of friendship." Says Jim, "The State Department isn't the only one receiving thanks!"

* *

Most kids tying up a phone line for an hour would find their elders complaining. But when Sechelt Elementary School students and students in Sapporo, Japan took part in a trans-Pacific conference call to discuss their salmonid enhancement projects, teachers and parents were thrilled. The Sechelt students were involved in piloting the educator's package produced by SEP. They plan to build an incubation box next fall. Sapporo students are involved in a campaign to bring the chum back to the Sapporo River called Salmon Baby.

Justice, American Style

Oversuccessful Salmon Angler Nabbed

While many salmon anglers are happy to get two fish, a Eugene man fishing out of Winchester Bay managed to take fifteen fish. However, his boat broke down and he was towed in by the Coast Guard, after which he was cited by a Douglas County Sheriff's Deputy:

Justice of the Peace Duart Story of Reedsport considered and meted out the following penalties:

- the fish were confiscated and given to a charitable agency;
- the fisherman was fined $525, which was suspended;
- he was sentenced to thirty days in jail, which was also suspended;
- his hunting and fishing privileges were suspended for 18 months;
- he was put on probation to the court for 18 months;
- and his 19 foot inboard boat was confiscated and turned over to the Department of Fish and Wildlife.

Our tip of the sportsmen's hat to Justice Story.

Oregon Wildlife, September, 1979

Who Says There's No Justice?

Three men in Washington who collaborated to kill a 7-point bull elk illegally, some 2 1/2 miles inside the boundary of Mount Rainier National Park, were so proud of their achievement that one of them could not resist submitting a photo of himself with the magnificent prey in a popular northwestern fishing and hunting publication. Game men noted the absence of snow. Recalling the heavy snow during legal elk season in the area claimed as the kill spot, they started a year-long investigation. The three men were fined $1,000 each, got one-year jail sentences, and lost hunting privileges for three years. The jail sentences were suspended.

Oregon Wildlife, April, 1979

. . . But Here's What We Do In B.C.

"Cheap Salmon"

Think Salmon prices are too high? Well Judge Doug Greer in Courtenay agrees, it seems from his judgements, at least as far as illegally caught fish are concerned. An American brought before Judge Greer in June with 43 pounds over his limit was let off with a $25.00 fine and allowed to keep his salmon. That works out to 58¢ a pound. Judge Greer is obviously a believer in keeping inflation out of crime.

The next time you see the posted price of salmon in your local store, remember Judge Greer and the old adage "Crime does not pay!"

B.C. Wildlife Federation Newsletter, June 1979.

Ken Jackson Retires

Ken Jackson, former shellfish co-ordinator, was feted at a recent retirement party. In Ken's hand is a framed certificate honoring his twenty-two years of public service. It was signed by then-Prime Minister Joe Clark. Looking on is Inspection Division Chief Don Wilson, and Ken's wife Doris.

"He was a bold man that first ate an oyster." -- Dean Swift.

What's the matter--can't write? Then phone "Sounder" at 666-8537.

Let's Keep It Together

Fishery officers have varying degrees of experience. Some are one-year men, others are thirty-year men. A new fishery officer often has little experience regarding certain aspects of his new position, and may know nothing about his area. The senior officer on the other hand, has vast knowledge and experience but in many cases this information is not passed on to the new staff. The new officer has to struggle (in what many times feels like a hopeless effort), to gain access to information and a measure of control of the area. To add to his problems, the new officer moves into a completely different social life, with new friends to be made.

Most officers have attended the Canadian Fisheries Enforcement Course presented by the RCMP Academy at Regina. It offered excellent training in enforcement procedures. One aspect of the course emphasized the necessity for unity and consistency. Consistency within the department has to be worked out at various levels and in specific locations. Unity can start in the sub-district office.

Fellow officers at all levels must work together as a unit to carry out the various tasks or projects within the sub-district. It is at this point the more experienced officer can pass on valuable information on procedures, and more important, firsthand knowledge of the area itself to the junior staff.

To maintain unity, communication must be maintained at all levels--region to district, district to sub-district, and within sub-district staff. If communication goes, so does everything else. Officers in an effective sub-district communicate openings and closures to seasonal staff, discuss normal sub-district routine and incoming mail, and keep one another informed about what each is doing.

I think everybody has to do his or her part if we are going to "keep it together".

Joe Chambers,
Fishery Officer, Kitimat

Pacific Salmon Markets

The market for canned salmon this year has been so good that suppliers are experiencing shortages of chum and coho salmon.

Canadian processors have imported large quantities of canned salmon from the United States so it is anticipated that existing carry-overs will be adequate to supply the Canadian market until next season.

Export markets also have remained brisk throughout 1979 and into 1980 even though prices are up from last year. The 1980 world supply of canned salmon is expected to be up considerably due to large anticipated sockeye runs to Bristol Bay, Alaska. Since the frozen markets are depressed, more will be canned and this may cause prices to decline somewhat although no severe problems are expected in marketing the Canadian pack--especially of pink salmon.

Record returns of chum to Hokkaido Island in Japan and the largest Alaskan catches since 1941 stabilized frozen salmon markets in 1979. An estimated 87 million salmon were taken from Alaskan waters by last September and this caused prices to decline in both Europe and Japan.

As a result exports of frozen salmon from B.C. to Japan declined to 4,227 tonnes valued at $25 million in 1979 from 8,536 tonnes valued at $57 million in 1978.

It is predicted that 1980 markets for B.C. frozen salmon will remain slow because of another, forecasted, large Alaskan salmon catch. For future years — beyond 1980, it is expected that Japan will import substantially more salmon from B.C. Even if the Japanese market does not materialize, good opportunities in the canned and frozen markets will help avoid a glut in the marketplace.

Genetic or Environmental?

In recent years it has become apparent that salmon stocks from different hatcheries exhibit widely varying distributions in the fishery. Whether the determining factor is genetic make-up or rearing environment is unknown but an indication that both are important may be drawn from a study in which Big Qualicum coho stock was reared and released at Capilano Hatchery.

Mark recovery data and U.S. catch figures for 1978 were used to determine total estimated numbers in various fisheries for three groups of 1975 brood coho: Big Qualicum stock reared and released at Big Qualicum, Big Qualicum stock reared and released at Capilano and Capilano stock reared and released at Capilano. Estimated catch per 10,000 marked fish released and percentages were then calculated for each fishery. The table below lists the percent of each group recovered in each fishery. The U.S. fishery includes all recoveries in U.S. waters, the "outside" fishery includes the north and central coastal waters and those off the West Coast of Vancouver Island and the "inside" fishery includes sport and commercial recoveries for Georgia Strait.

The distribution of the Big Qualicum stock released from Big Qualicum is much wider than that of Capilano stock released from Capilano. A much greater percentage of the Big Qualicum coho was recovered in Johnstone Strait and the "outside" fisheries than was the case for Capilano coho, three-quarters of which were recovered in Georgia Strait. Big Qualicum stock released from Capilano exhibits a distribution between the other two. There were more Big Qualicum stock - Capilano site coho recovered in the U.S. and "inside" fisheries than for the Big Qualicum coho but fewer in the "outside" and Johnstone Strait fisheries. In all fisheries, the Big Qualicum-Capilano coho were closer in distribution to the Capilano coho. They also returned to the Capilano River to spawn; none were recovered in Big Qualicum River. The Capilano stock appeared generally to have a southern distribution compared to Qualicum stock.

That genetic makeup plays some part in the distribution of coho in the fisheries is demonstrated by the distribution of the Big Qualicum-Capilano coho between the other two groups. However, because the Big Qualicum-Capilano coho distribution is biased toward the Capilano coho distribution, and because they all returned to the Capilano River to spawn, it appears that the environmental factor of rearing and release site is more influential.

Roberta Cook
Data Analyst, SEP

Management Maxims:

- If not controlled, work will flow to the competent personnel until they submerge.

- The more time you spend in reporting what you are doing, the less time you have to do anything.

from *The Official Rules*, by Paul Dickson

Estimated Catch by Fishery and Group

Fishery	Stock: Big Qualicum Site: Big Qualicum	Big Qualicum Capilano	Capilano Capilano
U.S.	3%	9%	12%
Outside	35%	15%	9%
Juan de Fuca Str.	1%	2%	1%
Johnstone Str.	22%	9%	4%
Inside	38%	65%	74%
Total	99%	100%	100%

Management Information System Proposed for SEP

How many times have you found yourself hunting down the same information for the fifth time? And when you do finally get hold of it, isn't it always in a slightly different form than is required by the person requesting it? After this episode you make a solemn promise to yourself to revamp your filing system and get better organized. But inevitably the same thing happens two weeks later.

For what it's worth, you can take comfort in the fact that you're not alone and many others suffer from the same dilemma. Salmonid enhancement projects often involve the participation of a number of sections of the Department and sometimes outside agencies such as the Province of British Columbia. There is also a wide range of different types of projects, from large hatchery facilities and spawning channels to public participation projects which may involve a dozen students. All require the same information and have the same problems with it.

All may not be lost, however, as the SEP Planning Division is currently involved in the development of a Management Information System that will contain data on all of its funded projects and all proposals for SEP projects. Information on the facility type, location, costs, egg takes, releases, catch, escapement, economic data, projections, etc. will all be organized for you within a hierarchal data base which will be easy to use, revise and update.

What will this mean for you? By merely submitting a request (e.g. - How much did it cost in terms of capital, goods and services, and person-years to operate Project A this past fiscal year? or How did Project B's performance size up to what was projected?) the revelant information will be made available to you almost immediately. Think of the time saved and frustration avoided!

What is your contribution? To allow all related groups to obtain the greatest advantage from the Management Information System it will be necessary to provide an efficient and regular flow of data into the data base. Your co-operation is all that is necessary to help develop systematic methods for collecting and documenting the required information.

To ensure that all voices are heard and individual needs satisfied, a "data capture" system will be set up to co-ordinate groups responsible for data collection and groups who provide data (both of whom will use the end product). Let us know your problems so we can work together to solve them.

Cindy Brown, Economist,
SEP Planning and Evaluation

(For more information, feel free to contact Cindy Brown at 2039.)

IFAP on the Move...

The success is a tribute to Indian fishermen, the Indian Fishermen's Development Board, the Native Brotherhood of B.C., the IFAP counsellors, the Department of Indian Affairs and to our own Department of Fisheries and Oceans.

When IFAP passes to the Native Brotherhood, let us send with it good wishes and pride.

John Robinson
Manager, IFAP

A Nice Warm Feeling

Les Goodman, district supervisor in Kamloops sent us a copy of a B.C. 16 (report on salmon spawning) from 1931. J.L. Hill, the fishery officer in Quesnel at the time wrote, "In 1927 only 500 sockeye were counted on Chilco Lake spawning beds....this year, 1931, 2500 were counted."

Les writes, "This nucleus has been carefully tended on the spawning grounds and migrations by the field fishery officer staff, over the bleak years after the Hell's Gate slide. Now, 50 years after Mr. Hill's report, this same Chilko stock produced a total run of 1,600,000 sockeye in 1979."

What You Can Expect
by Pat Phillips

Most aspects of purchasing and invoicing problems have been covered. I note a gremlin removed some words in my last column and made something positive. Not so now.

REQUESTS FOR STAFFING must not accompany employment documents; they are to be submitted for the necessary approvals before hiring.

Do not hold up the request forms--submit as soon as you know when you will hire.

The form is straightforward, but must be completed fully. In Section i - under Section, this is to read the actual place of work, i.e. Vancouver, Tofino, etc.

Section ii is completed at this office.

Section iii is required to be completed by the Classification Unit. If the job description for the position is over two years old, you will be requested to update it.

Section iv - the first section is for CFT (Continuing Full-Time) positions; the rest of the blocks are self-explanatory. The second part of this section covers duration of employment. Please ensure that applicable sections are completed.

The duration of employment dates for term and casual employees stated here, must be reflected on the Duration of Term Employment Form.

If the form is used for acting pay, then Section i--position data is completed for the position to be filled. Section vi (page 2)--Employee Data is all about the employee and his present status.

The length of acting period is bound by collective agreement, and it is interesting to note that it is the agreement that covers the employee's own classification, not the one he is going to "act" in.

If the form is completed fully and correctly then there is no problem in having it signed and passed to Staffing for action.

Staffing requires the staffing form to be fully completed before Public Service Clearance numbers can be obtained.

Last Call for Pacific Salmon Book

In response to dozens of requests for more copies of the "*Pacific Salmon*" book, there will be a repeat offer for all Fisheries' employees. This will enable those of you who bought the book and wish more, as well as those who missed out on the offer entirely, to take advantage of the special low price. It's still only $15.57 per book, but the mailing cost per book is now $1.75 (we underestimated the packaging and mailing costs in the first offer).

While Douglas & McIntyre, the publishers, have informed us the supply is currently limited, there will be no limit on the number of books you wish to order for your own use, co-workers, or friends. However, should there be a shortage of books, copies will be awarded on a "first-come, first-served" basis (as determined by the receipt number issued for each order received). Those not receiving books may either wait for a second printing (the date is undecided, as yet), or have their cheques returned to them.

Out-of-towners: please send a cheque of money order payable to Pacific Salmon Book. Local residents: you may also place your order by mail, or drop by with a cheque (cash will be accepted in person, only). A copy of the book will be on hand, for those of you who haven't already seen it.

Contact: Linda Jamieson, 11th floor
1090 West Pender Street
Vancouver, B.C.
V6E 2P1
Telephone: 666-1727

N.B.: Last day to order: April 18, 1980

Goal: Best Use of Herring Stocks

Herring roe fisheries in British Columbia are presently managed on the basis of management units, which are major clusters of spawning grounds in close proximity. For management purposes, the fish that spawn in these aggregations are considered a stock. The biological discreteness of these stocks is largely unknown. Furthermore, these stocks mix on their migration routes, where they are intercepted by non-roe (mainly food and bait) fisheries, and on the offshore feeding grounds.

A federal-provincial project aimed at identifying herring stocks was initiated in 1979. The objectives of the study are to determine:

- unutilized and underutilized stocks
- non-roe fisheries operating mainly on fish not available to the roe fishery at the present time.
- the potential roe catch, by stock, which is taken in non-roe fisheries (this information is necessary for stock assessment and forecasts of available catch
- the extent to which the depletion of one stock would be offset by immigration from neighbouring stocks.

With good information on the identity and discreteness of stocks and a knowledge of their migration routes, together with other stock assessment information, it should be possible to increase the harvest of the resource by at least 10%. (The catch for the 1978-79 season was 49,895 metric tons with a wholesale value in excess of $170 million.)

To accomplish this objective, herring were tagged with an external orange Floy tag inserted on the left side immediately below the dorsal fin. These herring were tagged after the 1979-80 food fisheries in Trincomali Channel and Baynes Sound, and more herring will be tagged throughout the British Columbia coast subsequent to the 1980 roe fisheries. Tags will be recovered from the fishermen, in roe processing plants, and in food and bait processing plants. A reward of $2 per tag is being offered. Addressed, postage paid envelopes with space for entering tag recovery information will be available from processing plants and regional fisheries offices. Posters outlining tag return requirements are also being distributed. This project is managed by the Herring Program staff at the Pacific Biological Station, and is expected to continue until 1983.

Carl Haegele, Biologist
Pacific Biological Station, Nanaimo

From "Us"

"We" (meaning me, the editor) have got something to say. Thanks!

For this issue, we received seven unsolicited articles and items for the "Sounder" (Unsolicited means they arrived unasked for, without prodding--but most welcome.) Of those, five were from "the field".

Thanks to those who thought of the "Sounder" and wrote something without being asked.

Thanks to all those who wrote something after being asked.

Having said that, it's tempting to start on the usual "it's your staff newsletter, if you want it you've got to help it out occasionally" routine, followed by a general plea for articles, items, story ideas, letters--anything.

But no, this time I'm not going to say anything like that. Maybe the message will get through anyway.

Maxine Glover

Maxine Glover, Editor
THE SOUNDER
1090 West Pender Street
Vancouver, B.C.
V6E 2P1

Sounder

Volume VIII Number 3 April-May 1980

Photo contest exposes talent

The recent "Sounder" photo contest was a great success with a total of 405 slides and photographs entered. Talented amateur photographers have been found including the clerical staff at 1090, the Pacific Biological Station, a crewman, a fish quality specialist in Prince Rupert, community advisors, fishery officers, district office staff and even department heads!

The contest specified eight separate categories which included employees at work, people, fish, facilities, humour, sequences, commercial and sport fishing, and a 'catch-all' group for entries that couldn't be categorized.

All winning photographs and others which didn't quite make it are being duplicated for possible use in Fisheries reports and publications. There is always an active search for the picture which will capture a specific mood or clearly depict what has taken pages to describe.

The "Sounder" photo contest has been one effective way to encourage amateurs to submit their slides and prints for Fisheries use, and to all who did, our sincere thanks.

Gayle Talbot
Assistant Editor

For contest winners see page 14.

Seal of approval, winner of the humour category in Sounder *photo contest.*

inside:

A NEW CREW FOR SOUNDER

I would like to announce that as of this issue, Mike Youds and Gayle Talbot are joining me in the production of *Sounder*. Mike is a graduate of journalism at Vancouver College and as co-editor he will be assisting me in writing, editing and designing *Sounder*. His special interests include resource-related writing. Although his experience in this vein relates to forestry and not fisheries, his community newspaper experience coupled with personal interests (he brags of having once hooked a man-sized chinook) should prove useful. Gayle, whom many of you already know as a former secretary at 1090 West Pender, will be assistant editor of *Sounder*. She, too, will be helping with writing and production. We are all looking forward to working with everyone in the Department. Keep those submissions and story ideas coming!

Maxine Glover

New co-editor of the Sounder *is Mike Youds.*

THE SOUNDER
Editors: Maxine Glover
Mike Youds
Assistant Editor: Gayle Talbot
1090 West Pender Street
Vancouver, B.C. V6E 2P1
Phone: 687-1442

Resource boards revitalized

Guests editorial by Howard Smith, director of policy planning and program development and evaluation

Important changes were implemented this year to the resource board system introduced in 1977 to review and deliver program proposals to the Director-General and his executive committee.

The Resource Board Co-ordinating Committee, in a paper completed in January, recommended new methods of operation which would upgrade the resource board process.

There are presently four resource boards each with about ten field, research, executive and technical personnel who have a good knowledge of the programs in their respective resource sectors. The Salmon, Shellfish, Herring and Groundfish Resource Boards meet periodically during the year to discuss policy and programs and to review project proposals from the Branches. From these meetings the board chairmen prepare written recommendations on projects and submit these to the Director-General and his executive for approval.

The terms of reference of the Resource Boards are as follows:
- to review, recommend and rank all regional programs and activities.
- to consider and recommend policy revision or development (such as that required as a basis for drawing up the recent geoduck regulations), and longer term (5 years) planning and program review.
- to review and evaluate current and completed programs and activities.

Though the terms of reference were clear, working to them proved to be difficult. For one thing, submissions to the boards often lacked detail, making it difficult for boards to effectively review and act on proposals. Second, the complaint often heard at other levels was repeated at the board level--when the "chips were down" it

Resource Boards continued...

was often difficult to evenly match allocations of money to Board priorities. The SEP planning cycle precedes that of other regional programs, hence the Salmon Resource Board did not meet early enough to integrate SEP program planning into total Regional planning for 1980-81. This is expected to be remedied for 1981-82.

Human nature also limited the effectiveness of the boards: Board members sometimes tended to champion programs for their own area; and attendance at board meetings often suffered as a result of operational demands on Board members.

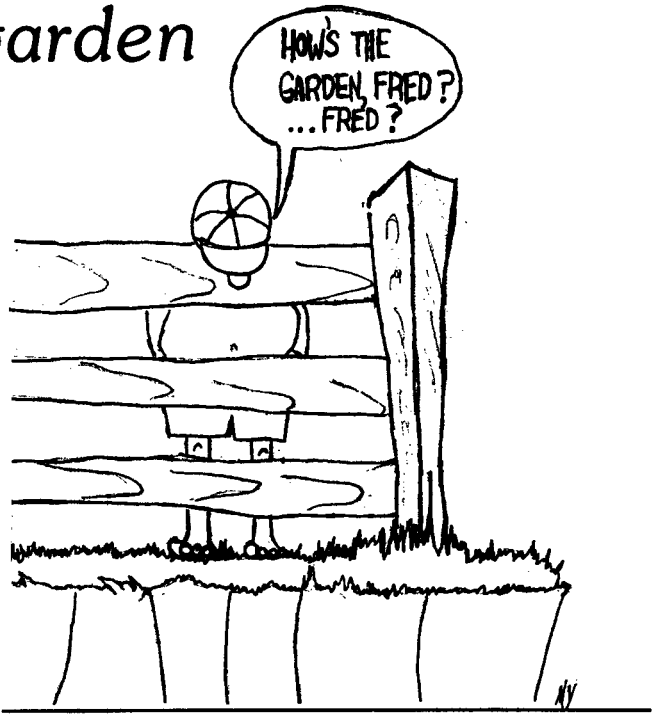
So what to do? There was general agreement that with only slight modifications, boards could be much more productive, and the very important process of exchanging views on activities in the several Branches could be strengthened.

The Resource Board Co-ordinating Committee recommended:

- the adoption of "program units" wherein Field Service managers serve as the focal points or "lead agency" in program development.
- that the Regional Executive Committee provide clear program priorities and target allocations in advance of Resource Board meetings.
- that Resource Boards, in response to Executive Committee direction and Field Service needs, establish resource sector priorities in advance of program reviews.
- that the Resource Board chairmen present their respective program proposals to the Executive Committee at a "program review" meeting scheduled prior to budget allocations.

An effectively functioning Resource Board process will enhance our depart ment's capabilities in Policy Development, Program Planning and Evaluation. The changes being recommended should help overcome some of the difficulties we have experienced in the past.

Fresh fish from the garden



The home of tomorrow will be laden with all kinds of futuristic delights: interactive video screens, robot servants and...fish gardens?

Fish gardens are the latest addition to the self-sufficiency craze. Dr. Anthony Provenzano, an oceanographer at Old Dominion University in Virginia, is experimenting with the practicability of domestic fish ponds where "people could grow their own fish--pollution free".

"More and more people are gardening," says Provenzano, "the fish garden would be a natural extension."

Fish gardening has been practiced in Europe and Asia for centuries but Provenzano is proposing a different system.

"We want high yield, low cost and good reliability," he says. "We want the fish garden to work with the vegetable garden. The fish would be fed, to a large extent, table scraps."

Because the average North American does not have enough space in the backyard for a pond, Provenzano is experimenting with plastic pools. He believes a do-it-yourself fish garden could be built for under $500 and the fish harvested for well under $1 a pound.

The perfect summer project. Get rid of that 99-decibel mower, tear up the lawn and start digging.

Inroads made into fisheries development

Fishing gear development, fish preservation and handling, exploratory and demonstration fishing providing new techniques and innovative ideas--all part of the work of the Fisheries Development Division of the Field Services Branch.

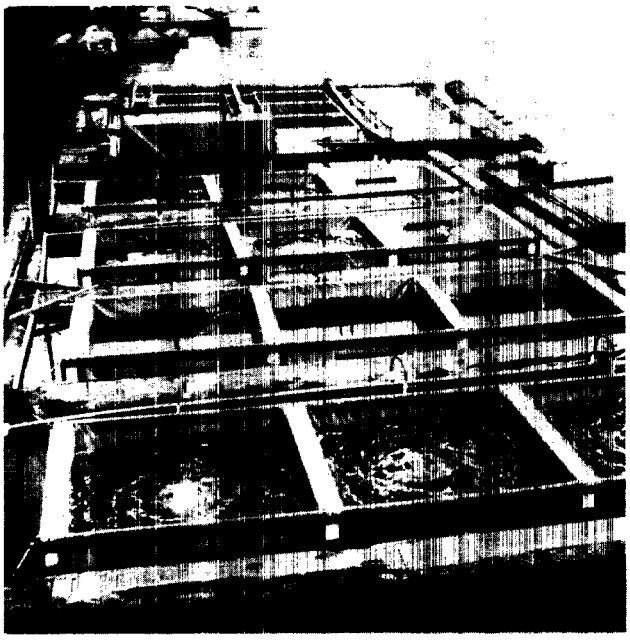
The Division, formerly known as The Industrial Development Division, is based at 1090 West Pender and utilizes some of the facilities of the Fisheries Technology Laboratory. There are two major types of projects undertaken by the Division:

- Federal projects which are funded by the federal government and carried out within the Department, or with industry, in collaboration with the Pacific Biological Station, the Vancouver Laboratory or other divisions.
- Federal/Provincial shared-cost projects which are carried out jointly or independently by the Department and the Marine Resources Branch of the B.C. Ministry of Environment, often with industry involvement. The Program deals with a variety of projects ranging from the introduction and development of new trawl gear and exploratory fishing for new grounds or species, through culture and handling methods for oysters and other shellfish, to marketing studies and mariculture techniques for seaweeds.

The Division is presently working with gear manufacturers to replace the non-spliceable ropes currently used in the construction of rope trawls with a spliceable rope. The new rope should substantially reduce the construction cost of these nets.

Another project underway is the development of an escape mechanism for blackcod traps which will prevent lost traps from continuing to fish. This project is being conducted jointly with the Biological Station.

In September of 1979, the Division in collaboration with the Pacific Biological Station performed an exploratory fishing and stock assessment trip for ocean perch on the West Coast of Vancouver Island.



Floating algal culture system at Bamfield Research Station. System was introduced by Development Division.

The trip was successful and resulted in a revision of the biomass and an increase in the allowable catch for ocean perch.

Another exploratory fishing trip utilizing the Mustad automated longline system was carried out on the West Coast of the Queen Charlotte Islands. The results of these exploratory trips will be available from the Pacific Biological Station by early summer.

In addition to project work the Division provides an advisory service on fishing technology available to both government and industry.

Personnel in the Division are Bob McIlwaine, division chief who is based at 1090 West Pender and Normal Sigmund, vessel and gear technologist, who is based at the Fisheries Technology Laboratory.

Mike Youds, Editor

* *

Biologists form association

Bud Graham, SEP planning co-ordinator, is currently involved in a membership drive for the Association of Professional Biologists of B.C.

The Association of Professional Biologists of British Columbia is a newly formed society in B.C. The group is a spin-off of the Canadian Society of Environmental Biologists and was formed for the purpose of giving biologists in B.C. better representation and participation.

In addition, it has generally been felt that biologists (and all British Columbians) would benefit from biologists securing legal standing for their profession similar to the status attributed professional associations belonging to lawyers, engineers and doctors.

The purposes of the society, as listed in the association's constitution, are:

- To ensure that Biology be recognized as a professional discipline in British Columbia as distinct from other legally established professional disciplines in the province.
- To ensure that persons registered as professional biologists develop and maintain high professional standards in management, research and education related to the biological resources of the province of British Columbia.
- To encourage and stimulate the development and application of sound biological principles for managing and conserving natural renewable resources.
- To inform and advise the public, the government and members of the association on the implications of policies and developments which may have biological significance with regard to the use of resources and to the management of the environment.
- To provide information on available sources of professional biological expertise in analytical and other ancilliary services involving the utilization, management and/or conservation of biological populations.
- To provide liason with similarly constituted associations of professional biologists in Canada for mutual professional development.

The association is currently involved in a membership drive to register as many members as possible. Only after 60% of the B.C. biologists are registered with the association can it proceed with the development of an exclusive act.

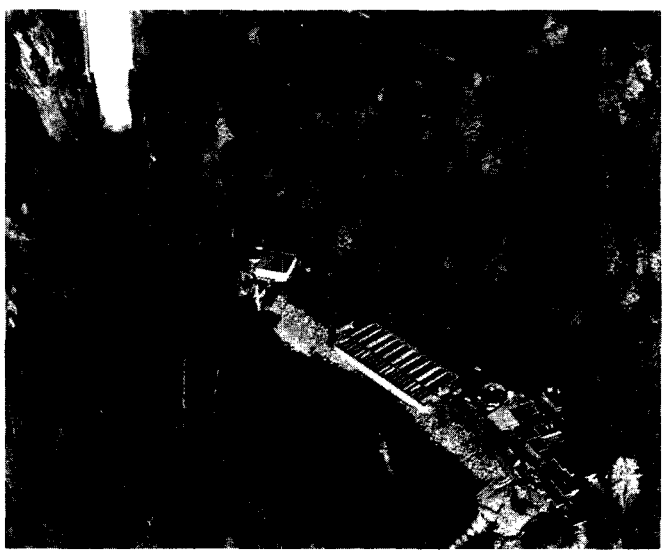
Qualifications for membership in the association are not rigid and are very similar to other professions (or to the American Fisheries Societies Registered Fisheries Scientist).

Bud Graham,
SEP Planning Co-ordinator

HATCHERY WINS DESIGN AWARD

The Department's Capilano Hatchery in North Vancouver has received an architectural award from the Royal Architect-Institute of Canada (RAIC) for high quality architectural design.

The award was presented March 13 by Senator Van Roggen, acting on behalf of the RAIC. Harold Swan, Al Lill and John McNally, of the Salmon Enhancement Program accepted the award at a ceremony in the Bayshore Inn.



New license procedures proposed

The License Section will be improving its administration procedures this year in response to several recommendations made in a recently completed report. The changes should result in better service to both fishermen and field officers says Alan Gibson, chief of the Management Services Division.

The report, by DPA Consultants Ltd., suggests a License Policy Working Group be set up to review licensing policies. The structure of the proposed working group is now being considered.

The report also states that the practice of issuing Personal Commercial Fishing Licences is costly for the department and should therefore be discontinued. The personal licences are intended to ensure that all fishermen aboard Canadian vessels are Canadian citizens. However, Commercial Fisheries Licence Manager, Bill Webber, says the Department does not plan to discontinue these licences. He says cancellation of personal commercial licenses would be out of step with the possible initiation of a saltwater, sport licensing system.

Other changes recommended and now in the planning stage are:

- a special telephone line installed in the Vancouver License office enabling field personnel to communicate directly with the Unit.
- a comprehensive licensing operations manual which will be available to field officers before the summer of 1980.
- an expanded relationship between Ministry of Justice lawyers and the Department to improve the handling of all legal matters involving licensing.
- the designation of one individual at each District Office to handle all license enquiries.

A number of recommendations in the report are still under review. This includes the introduction of larger and more easily read registration plates with spaces for validation stickers, much like interprovincial bus licence plates. Vessel owners should also be required to paint their CFV numbers on either side of the hull. Both these changes would allow easier identification from a distance, thereby improving the efficiency of patrols. The new plates will probably be introduced in conjunction with the cost recovery program.

Also under review is the proposed establishment of a complete on-line data system incorporating the issue of licences, effecting of transfers, production of financial reports and the update of the master file. The system would be introduced over a two-year period.

Mike Youds, Editor

Remember when

Les Goodman, district supervisor in Kamloops, recently uncovered an intriguing piece of memorabilia in the form of employee income figures for the year 1946-47. What makes the figures so intriguing is not their age but their value in terms of 1980 dollars. As Les writes, "today it could apply to annual increases in the interest rates on your mortgage, however in 1946-47 it represented the total annual pay of Fishery Officers in the Department of Fisheries".

In 1946, a fisheries inspector (or fishery officer) received $1,260 annually. The regional supervisor of fisheries faired a little better with an annual salary of $3,000. The chief supervisor topped the list of course, with a grand annual income of $4,200. Just imagine (in 1980 dollars) how much we'll all be making forty years from now in the year 2020.

LOUSCOONE FISHERY A SUCCESS

The Louscoone roe herring fishery on the west coast of the Queen Charlotte Islands culminated this year with a harvest of 312 tons taken by 60 gillnetters and 930 tons by 24 seines. The herring fleet consisted of the Central Native Co-op, Prince Rupert Co-op, and independants. Both gear types commenced fishing at 16:00 hours on March 19 with gillnets closing at 07:00 hours on March 21 and seines shortly after at 08:47. Roe maturity tests on the grounds had been recorded as high as 14.7% with average tests at 11.7%.

It was anticipated that no fishery would be held in Louscoone this year with a required spawning tonnage of 4,000 tons and a predicted return of 2,057 tons. A stock of 3,000 tons had been recorded in the area in late February and had built up to 5,500 tons by March 19. With an estimated excess of 1,500 tons from an existing fleet of 23 seines and 31 gillnetters, 1,200 tons was alloted to seines and 300 to gillnets. To ensure against overfishing by seines, it was decided that sets would be made on a one at a time basis. Representatives from the seine fleet were called to agree on a sharing basis for this tonnage.

It was agreed by the three participating groups that each would get a share according to what proportion of total fleet size each composed. Central Native made up 34% of the fleet so would get 34% of the tonnage. Once the fishery had started, three seines set at the same time with an estimated catch of 370 tons. Seines were then dispatched from the Sooke Post on an individual basis until fishing had expired. Each "catch" vessel dispatched was permitted to have a scout boat (another seine) which would give assistance in locating fish and after the set was made. Only the "catch" boat was permitted to make sets. Up to three or four "catch" boats operated at the same time. Once a set was made and catch estimated, another "catch" and scout boat was dispatched.

During the fishing time all other seines were to lay at anchor above Skindaskun Island. If any vessels moved from that position, the fishery would terminate immediately. The fishery was closed due to high incidence of immature and spawned-out fish. Seines fell short of their quota by 270 tons. Complete co-operation from the seine fleet made this type of fishery possible.

This year's Louscoone fishery was felt to be a success by most involved and no real complaints were received. Management methods worked well as danger of overfishing was kept to a minimum and total catch could be determined at any time during the fishery. Under normal circumstances, with each for himself, this technique would not be utilized.

Jerry Kozak
Fishery Officer

The evolving role

On the West Coast: enforcement only?

Editor's Note: Is the role of fishery officers changing? Some would argue that it already has changed, from a management-enforcement role to enforcement only. Sounder *asked Larry Duke, district officer in Victoria for his perspective.*

Once again the rumour mill is active and suggesting that fishery officers may be relegated to an enforcement-only role in the near future. The recent decentralization announcement may have rekindled this controversy.

Following are some general thoughts on this subject:

Fishery officers, by virtue of their training, experience, common sense and geographical location are often in the only position to accurately weigh the many factors which determine sound management actions. In addition they know the correct procedure to make such actions legal, something which is too often overlooked.

Perhaps the only rewarding aspect of a fishery officer's job is seeing an optimum escapement return two to four years down the road from the time when his management recommendations were heeded, even though they may have been unpopular with industry and his own managers.

Very often I feel that some officers are not receptive enough to biological input in their sub-districts. Personally I find it hard to get enough and welcome all I can get.

If field people are to remain in a stock management role, they must come up with a documented management plan. Too often the rationale for stock management action is contained only in someone's head. This fosters an aura of mystery bordering on the occult which is highly suspect to scientists and industry.

While gut feeling still plays a part in stock management, it is probably no longer an acceptable base for responding to the increasing amount of questioning which we are subjected to from industry.

I can think of no reason why all stock management options can not be documented, possibly in a matrix format for all commercial salmon fisheries, and using the same parameters currently used, such as test fish indexing, gear, present and iptimum escapements.

Again I stress documented, in order that the knowledge gained over the past 35 years is not wasted and lost every time someone retires, resigns or is transferred. Re-inventing the wheel every five years or so seems a completely counter-productive and costly process. I suspect that if we do not use the above approach, somebody else will do it for us in the very near future.

With our plates being heaped higher every year with new fisheries, complex new regulations and higher fishing pressures, some officers may favour an enforcement role, where their energies can be channeled to doing a better enforcement job.

I have often heard the sentiment expressed that "if someone gets the plums they had better be ready to swallow the pits". It is evident that the less palatable parts of the management role, such as legwork and responding to the complaints, could not be handled by officers if they were not involved in the rationale for a particular action.

I am of the opinion that a team approach will continue to be the only way to go and perhaps the director in a future *Sounder* could lay some fears to rest by further expanding on his management philosophy contained in the November/79 *Sounder*.

The Department will do what it will do in any event. Fishery officers are fortunate that they have the expertise and professionalism to be good at what they do, if it be management, enforcement or both.

Larry Duke, District Supervisor
Victoria

›f the fishery officer

On the East Coast: education and enforcement

reprint

Following an intensive six-month training course in Halifax, 29 young men from the Atlantic region graduated at a ceremony in Dartmouth as federal fisheries conservation and protection officers, and were posted to various points in the Maritimes.

As fisheries officers, the men will be responsible for enforcing the federal Fisheries Act, but will also spend some time informing anglers, commercial fishermen and the public of fisheries regulations, which have become increasingly complex.

Paul Sutherland, chief of the conservation and protection division, federal department of fisheries and oceans, Maritimes, says fisheries officers "realize the fact that if you are in an enforcement role, the regulations must be understood by fishermen". Since regulations have become "more complicated and difficult to understand, the key to the whole thing is information."

Florian Bryan, course instructor, agrees that working with the public is an important part of a fisheries officer's job. Mr. Bryan said this year's training placed special emphasis on teaching the prospective officers how to educate the fishermen to new regulations.

"It has been proven that the fishermen in certain areas are receptive to this approach."

During the course, the eighth held here since 1972, the officer-trainees also were encouraged to provide fishermen with information concerning technological changes in the industry, the necessity for fishing seasons and quotas, and migration patterns.

The trainees received instruction in law enforcement, biology, supervisory and human relations, administration, first aid, physical fitness, basic navigation and report writing. In addition, they spent a week at the fisheries research station in St. Andrews, N.B., where they attended lectures given by some of the world's leading marine scientists.

TOWARDS BETTER ENFORCEMENT

The Province's conservation officer corps has recently changed from a management-enforcement role to enforcement only. Here is the view from that side offered by Andy Ackerman, chairman of the Fraser River Task Force.

With the recent reorganization of the B.C. Ministry of Environment, the traditional role of the conservation officer has changed from a management-enforcement role to a majority enforcement role.

The Conservation Officer Service (as it is now called) has been removed from the Fish and Wildlife Branch and has become a separate enforcement agency for the entire Ministry. This means that instead of just enforcing laws relating to fish and wildlife, the conservation officer will also now be enforcing other Acts such as the Pollution Control Act and Water Act. This will require more time for enforcement, because of the increased jurisdiction of the conservation officer, and less time for the traditional management functions previously carried out by conservation officers.

The new role has caused concern for many conservation officers, because they value the management-related duties they have been performing. I feel that with more explanation and understanding of the new role, these concerns should be alleviated.

I personally agree that the conservation officer should have more time for enforcement duties in the future. In the past, valuable manpower and money have been taken from the enforcement budget for such management-related functions as creel census, game counts, etc. Compensation for this time was rarely given to the conservation officer staff and valuable enforcement programs had to be reduced or eliminated. Because of this lack of enforcement personnel and money, actual protection of the resource has suffered. I might add that this was not the case in every region, but anything different was the exception, not the rule.

RESULTS SEEN

The new priority enforcement role of the Conservation Officer Service has already had positive results. New priorities have been set for enforcement budgets for the province and its regions and more money for equipment and personnel is becoming available. Morale is improving and the overall efficiency of the conservation officer staff is increasing. The enforcement staff are now being permitted to program and carry out their duties on a more flexible basis, and such projects as undercover work and blitz programs are more frequent.

The concerns expressed by many conservation officers that we, as enforcement officers, will lose the valuable contact with biologists and other management staff and consequently any knowledge of fish and wildlife populations, are, I feel, unfounded. Although the conservation officers will be performing the enforcement role, they will still have to obtain their knowledge of the people, fish, wildlife, companies and major problems within their districts in order to carry out their enforcement duties properly. The difference between what happened in the past and what will happen in the future is that the conservation officers will now carry out management-related functions as part of their enforcement duties to obtain the knowledge of the resources they protect, rather than the reverse. I can also anticipate that conservation officers will still assist management staff for strictly management purposes when time permits, or when priorities are set by the regional directors, but I feel that once the conservation officers get more involved with enforcement of Ministry regulations, this time will be reduced.

MORE TIME FOR PROTECTION

I support the increased enforcement role because I feel that placing

a high priority on the protection of the resources through enforcement is long overdue. With increased management staff, the Ministry will be able to carry out management functions without needing a conservation officer's time for assistance, thus leaving more time for protection of the resources. Enforcement will finally be an entity unto its own and the resources will bet the protection they have been lacking for many years. Being involved with the Fraser River Task Force in the past few weeks, I can feel the excitement of our new role in enforcement of Ministry Acts and I am looking forward to this new role with optimism.

Fishery Officer Kevin Smiley

New recruitment policy for fishery officers

Technical colleges will no longer be the sole source of new fishery officers as this year the Department will be conducting an open competition with increased emphasis on recruiting officers with some firsthand knowledge of the B.C. fishing industry.

Wayne Shinners, director of the Field Services Branch, says the new recruitment policy will enable the department to select fishery officers who have direct experience in the industry. In the past, the emphasis was very much on resource management training with most recruits coming out of resource management programs given at prairie technical colleges.

"It is my personal opinion that it is now time for the Department to put some positive emphasis on recruiting fishery officer staff in particular from the B.C. fishing community at large. That is in no way to downgrade the resource management training that is required but to simply recognize that where possible a firsthand knowledge of the fishery is an asset."

This year recruiting information will be publicized and made available to Department staff in addition to being sent to the technical colleges. Recruitment posters will notify the public of the job opportunities. (The entry level for recruits will continue to be G.T.-1.) Wayne says that as a result of the new policy, there could be as many as 1,000 applicants in 1980 as compared to 400 in 1979. The Field Services Branch is faced with other recruiting problems as well.

"What we were seeing over the last few years is the movement of the class of '47--the last big hiring drive--through the ranks. Most of those fishery officers are retiring and as a result, we have been launching major recruitment programs right across the country."

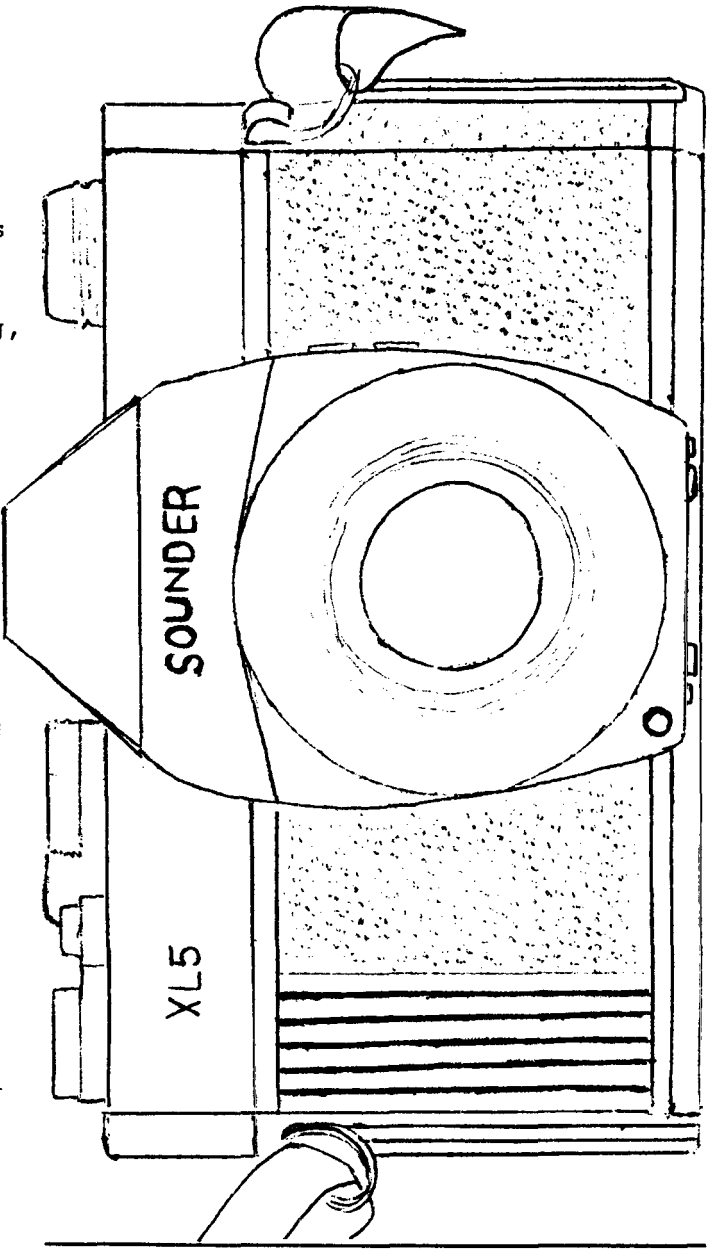
Because of the recent recruitment drives, many of the fishery officers now have only five years experience as compared to the 20 years experience that was common a few years ago.

In addition, most of the new recruits are highly trained and expect a lot out of a job, Wayne says. "The question is, what will we do with all these highly trained people in ten years time? We have a real challenge on our hands in keeping the staff motivated and challenged in their jobs."

Wayne says that west coast fishery officers are more management-responsible than their counterparts on Canada's east coast.

"Their management plan is put into effect at the beginning of the year whereas on the west coast we use expectations. I think you can truly say that these fishery officers are resource managers."

PIP photography: How we do it



The Public Involvement unit is barely eight months old, but right from the start it has had a planned photographic program.

The proof of its success is that P.I.P. won almost half of all the prizes awarded in the recent "Sounder" Photo Contest. The nine awards our community advisors received are just the beginning, for as they say, "There's a lot more where these came from".

The Rationale

Because of the nature of their work, (working with interested schools and other groups), a good graphic library was a necessity for community advisors. Starting and building such a library from scratch is a little easier than it sounds. It began with choosing the equipment. Each advisor would have a complete camera outfit and that all sets would be identical, with no exceptions. There were three reasons for this. There is a price break if you buy in quantity, Second, any specialized equipment such as microscope adapters or huge telephotos, could be kept in a pool for all to use. Last and most important, every role of film developed receives a critique. As suggestions for improvements, these comments can then be applied across the board for all the cameras, without the variables that different cameras might make.

Choosing Equipment

After much discussion, we eventually settled on the Pentax Kl000. Everyone agreed that the flat out manual operation feature of this camera was a necessity. We chose a lens which offered the greatest degree of flexibility we could find. The only difficulty with the zoom Tokina 28-85 mm is that it is slow. The F4 speed is not nearly fast enough in dim light: cloudy days, bushed-in streams, and a hand-held camera made for some awfully dark photos.

I could not recommend this lens to anyone who has just one chance to take a picture. The reason it works for

story by

Joe Kambeitz

the CA's is that they are out there all the time and they can wait for an opportune time to take the shot they want. If it's not today, they take it tomorrow. If you must shoot now, my advice is to buy a faster lens.

The film we use is Kodachrome 64. From this we can get an excellent picture that can be greatly enlarged for such things as posters and displays, as well as used in slide shows. Although we do use 200 ASA and faster film in low light conditions, I frown on it for general use. The increased grainyness makes it less useful for display photography. There also seems to be less latitude for the correct exposure in faster films.

How the System Works

When the CA's finish a roll, they mail it to me for developing. I examine the results carefully, (disregarding of course, the pictures of the new baby and odd moose picture). I select the few pictures I'm interested in keeping for the file and send all others back to the photographer with a critique of subject matter, technique, exposure, etc.

When I get a sizable collection, I duplicate all of them and send copies of these photos back to the original photographer. I must emphasize this point--I keep all the originals. This way we know just where to look when we need them. From time to time this collection is reviewed and any gaps in subject matter are filled by way of a photo assignment to one of our field staff. This way we can keep a broad spectrum of subjects up-to-date and usable.

In the future, we hope to have a photographic workshop, where the CA's and other interested people can sharpen their skills further.

It is said a picture is worth a thousand words. (Only if it's exposed correctly, you can find it three years later, if it's in focus, if you know who the guy sticking his tongue out in the background is, and, of course if it is not too grainy.)

Joe Kambeitz, Special Assistant, Public Involvement Program

At home on the range

SHRIMP PACIFICA — TRY IT!

Fisheries Librarian Paulette Westlake offers a sumptuous summer recipe she calls Shrimp Pacifica.

1 can sliced pineapple (ice cold) Medium size.
1 cup long grain rice
1 tsp. salt
2 cups rich chicken stock
½ cup cooking oil
1 clove garlic minced
1 medium onion chopped
1 green pepper cut in strips
1½ cups diced lean ham
2 tsp. curry powder
2 tbsp. chopped preserved ginger
2 tsp. soy sauce
2 cups cleaned cooked shrimp
2 green onions sliced

Remove 2 slices from can of pineapple and 1/3 can syrup. Chill remainder of can. Add rice to chicken stock and salt, cover tightly, bring to boil, turn heat low and simmer 20 minutes. Fluff rice with fork. Heat oil, toss in garlic, chopped onion, green pepper and ham. Cook until vegetables are shiny but still crisp. Combine curry powder, soy sauce to the 1/3 cup syrup, and chopped ginger. Heat through, stirring well. Add rice, shrimp, green onion and 2 slices of pineapple chopped into small pieces. Toss and heat well. Serve on a very warm platter. Surround with ice cold pineapple slices. Makes 6 servings.

PHOTO CONTEST WINNERS

Prizes awarded included two-one day sailboat cruises with Fred Fraser and Kip Slater, a one-day fishing trip with Don Buxton on the Harrison River, a one day fishing trip on the Squamish River with Joe Kambeitz, three 16 x 20 color prints and various bottled spirits.

CATEGORY	PRIZE	POINTS	WINNER'S NAME/TITLE	DESCRIPTION
A. Employees	Hon Mtn.	14	Don Bailey, Chief Head Recovery Program	measuring fish
B. People	1st	16	Joe Kambeitz Special Assistant, Public Involvement	public involvement-stream work
	2nd	16	Don Lawseth Community Advisor, Terrace	kids on water in a tire
C. Fish	1st	18	Dave Wilson, Head Fraser R., N.B.C. & Yukon SEP Operations	dead sockeye on the Raft River.
	2nd	16	Joe Kambeitz	fish skeleton on the sand
	Hon Mtn.	15	Gary Buechler Fishery Officer, Campbell River	dead fish on shore
	Hon Mtn.	15	Bryan Allen Community Advisor New Westminster	salmon jumping
	Hon Mtn.	15	Al Stefanson Project Co-ordinator Community Development	fish caught in a net
D. Sport/Food Commercial	1st	17	Lyle Reid Fish Quality Specialist Prince Rupert	herring fishery at Skincuttle '79
	2nd	16	Gary Buechler	Callistratus
	2nd	16	Joe Kambeitz	man holding fish
	Hon Mtn.	15	Gary Buechler	loading a catch
	Hon Mtn.	15	Lyle Reid	Callistratus fishing at night
E. Sequence	1st	17	Don Lawseth	Native net fishing
	2nd	16	Willy McKenzie Assistant District Supervisor Prince Rupert	boat sinking

CATEGORY	PRIZE	POINTS	WINNER'S NAME/TITLE	DESCRIPTION
F. Facilities	1st	17	Gary Buechler	Tanu
G. Humourous	1st	17	Dave Wilson	seal sequence
	2nd	16	Dean Nelson Steward, "Laurier"	reclining cat
	Hon Mtn.	15	Don Lawseth	river hitchhikers
H. Special	1st	17	Jean Pistone Assistant Admin. Co-ordinator Habitat Protection	sunset
	1st	17	Rick Harbo Project Manager Habitat Protection	anenome
	2nd	15	Donna Joneson Clerk Pacific Biological Station	island sunrise
	2nd	15	Lyle Reid	harbour sunset

SPURIOUS EMISSIONS

Bob McIlwaine, chief, Fisheries Development Division (formerly Industrial Development Division), is now located at 1090 W. Pender.

* *

Habitat Protection Unit at regional headquarters has been the site of a lot of staff departures including: Paul Sookachoff who has joined Ducks Unlimited at Williams Lake; Bill Schouwenburg is now with SEP as a planning biologist; Ian Birtwell has transferred to the research arm of Habitat Protection and is based at West Vancouver where he is now head, Pollutant Ecology Group, and acting program head, Habitat Protection Research Unit while Dr. Carey McCallister is on a one year secondment to Ottawa as acting director-general, Resource Services Directorate and Brian Tutty who has left for one year's development leave to work with Dr. Jim Buell in Oregon--he will be working throughout the U.S.A. as a consulting biologist.

* *

Ian Perceval will be retiring on April 25th as manager, Fishing Vessel Insurance Program, to move into the Interior.

* *

Fishery officer moves include Larry Ottman who moves to Prince George from Whitehorse, and Gary Buechler who goes to Offshore Division from Campbell River.

* *

Eddie and Mary Moore celebrate their 60th wedding anniversary on May 5. Eddie, who is now in his 80's, served in the Queen Charlotte and Prince Rupert areas for many years. At the time of his retirement, he was district supervisor at Nanaimo (the District then encompassed all of the east coast of Vancouver Island and the mainland from Sechelt to Cape Caution).

George Ibey, late of Madeira Park, passed away on February 17. George was a fishery officer in Port Hardy and moved to Pender Harbour where he was stationed until his retirement in 1970.

Don Buxton was the successful candidate in the recent competition for Chilliwack Hatchery manager's job; we understand that this hatchery was recently featured in *Construction West* magazine.

* *

Hillary Schwenk is the incumbent for the new position of human resources planning and training officer at Personnel--she comes from Ottawa where she worked with Customs and Excise. Hillary can be reached at 666-6286.

* *

Blaine McEachern has won a recent competition in Ottawa--he'll be senior analyst for the Marketing Services Branch, Department of Fisheries and Oceans.

* *

SEP has also had its share of staff departures in recent months. Dave Wilson, biologist, is joining Montreal Engineers; Roberta Cook has resigned to look for opportunities in field work; Lorna Bolmer has left for home to do ceramics; Anne Chalmers has gone to Europe; and Alice Fedorenko is holidaying in Hawaii and then, who knows?

* *

Recent births include a son, Kevin, for Agnes and Sy Mark. (Agnes is with keypunching section at 1090)--Kevin weighed in at 7 lb. 10.5 oz. on March 13th; a first grandson, Scott Chapman Webber, for Bill and Sue Webber--Scott was born February 17th and grandparents are doing well; and a son, Jeffrey Michael, born March 20th, weighed 9 lb. 1 oz., for proud parents Dean and Sharon Miller--Dean and Sue live at Dawson's Landing.

* *

Ronda Moore (nee Lee) left her position as non-resident sportfish and computer clerk in Licencing on March 31st--Ronda, married in January, plans to relax at home with her new hubby; Ronda's job has been assumed by Mary Kalyn.

* *

Kip Slater has been moved to comment on the p.7 photo in the January-February "Sounder" issue, which depicted one "Ray Kraft" looking suspiciously like Kip Slater. He writes, "I had no idea Ray Kraft was so good looking--but he has put on a little weight."

What you can expect

By Pat Phillips

I am sure there are many questions which you would like answers to, or further clarification on some matter which would be of interest to everyone. If so, please submit your questions to me and I will endeavor to set the matter straight, by directing it to other Departments for the 'official' answer.

One question I seem to be getting asked a lot these days is: Where do we mail Workers' Compensation Forms?

Jim Griffin of Personnel has sent me a memorandum dated November 2, 1977 wherein it is advised that the completed Form 7 - Employers' Report of Injury of Industrial Disease should be mailed direct to Labour, Canada, Government Employees Compensation, P.O. Box 8920, Vancouver, B.C. V6B 4E2.

Also Form 9 - Employer's Subsequent Statement should be directed to this address.

Please ensure that a copy is mailed to the Personnel Branch to be put on the employee's file.

Jim also has requested Labour Canada to send us a supply of their pamphlets Employers' Guide and If You Have An Accident and these will again be distributed.

Also remember your contract agency workers do not work directly for us but for the company they are hired from. Hence W.C.B. accidents should be reported to the company involved and not to us.

I see the travel rates have again been changed effective April 1, 1980 (T.B. Minute #77056) if you haven't been the new directive from Finance, please be sure to get a copy. There is quicker payment if the correct rates are shown.

Sounder

Volume VIII Number 4 June 1980

Columbian photo

Twisted hull is all that remained of Department patrol boat after it caught fire and exploded on the Fraser River in early spring. For more details see "Preventing the deadly boat fire", p. 5

Canadians fish for the last time

When halibut fishing in the fishing grounds of Shumagin, Kodiak and Yakutat, Alaska, closed at 0600 hours on June 4, 1980, many Canadian fishermen left behind a fishery which dominated their lives for the past twenty or thirty years.

An indication that an era in Canadian fishing would soon draw to a close was first given in 1977 when the U.S. announced that it intended to withdraw from the Halibut Convention on April 1, 1979.

This Convention, and its predecessors, date back to 1923, when the Canadian and U.S. governments first proclaimed their joint interest in the preservation of the halibut fishery of the northern Pacific Ocean and Bering Sea. It provided for the formation and support of the International Pacific Halibut Commission which was charged with the responsibility of developing and maintaining halibut stocks within Convention waters.

Beginning, however, with the extension of Canadian fishing jurisdiction to the 200 mile limit on January 1, 1977, and followed quickly by the extension of U.S. fishing jurisdiction in March of the same year, each country moved to

Alaska halibut fishery, p.3

inside

Guest editorial

In this issue, Director of Field Services Wayne Shinners explains the move towards decentralization in the Pacific Region.

The idea of a decentralized Field Services Branch, operating under the "area manager concept" of management, is not new. Back in 1977, Director General Dr. Walley Johnson, announced the decentralization of certain operational units to geographical areas of the region. In his speech to the Prince Rupert Chamber of Commerce in January of 1978, the Honorable Romeo LeBlanc confirmed the Department's committment to decentralization within the Pacific Region:

"Ever since assuming the Fisheries portfolio, I have proceeded on the basis of a conviction that we need to move the management function, the decision-making echelons into front line locations like this one.... The senior Prince Rupert position will be that of area manager for the whole North Coast. The idea is to shorten the lines of communication. The reflexes of management will be quickened because more decisions will be made on the spot."

Thus, it should have come as no surprise when, on April 2, 1980, Dr. Johnson advised staff:

"That the decentralization of certain functions to New Westiminster, Nanaimo and Prince Rupert will be effective no later than October 1st, 1980."

As Director of Field Services and therefore responsible for the area managers, it was my job to get on with completing

Director of Field Services, Wayne Shinners.

the process within the time-frame established. This was to be done with a minimum of disruption to ongoing operational programs.

Since the April 2 announcement, two meetings have been held with the staff involved to try to answer some of their concerns. Unfortunately, most of the concerns revolve around house prices and high mortgage rates, something I am sure everone realizes is outside the purview of Fisheries. But to confront the situation we have struck a staff-management committee to have an indepth look at the Prince Rupert housing situation and possibly to prepare a Treasury Board submission. Fisheries Headquarters in Ottawa, is receptive to this approach and has asked that this be done. The final outcome, however, of the submission deal, in particular, with the career plans and aspirations of individuals and to see how they can be reconciled with the decentralized organization.

I am personally a very strong supporter of a decentralized approach to fisheries management. Also implicit in the geographic moves is the commitment to the decentralization of the authority and responsibility for that management. with the increasing complexity of fisheries management I believe it is no longer

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decentralization...

possible for a small group of managers sitting in spledid isolation at 1090 West Pender to adequately respond to fisheries management problems. An area manager located within a geographic area of responsibility and having increased contact with industry and with his staff, will be in a far better position to respond in a timely and correct manner. Having said that, I am also aware that an aggressive area manager may tend to isolate his or her responsibilities from the rest of the Region and to build a fence around a geographic area. This can only be avoided by a well defined and understood regional Fisheries policy, determined by input from all staff who are involved and subsequently adopted by the area manager and staff.

Larry Duke, in a recent *Sounder* article, suggests that the move to decentralization may mean a move to enforcement-only for the fishery officer field staff. Nothing could be further from the truth. We, (Senior management) are trying to increase the amount of involvement in the management role by the local field staff. This is very basis. on which the area management concept was built. There is no question in my mind that a team approach, including fishery officers, management biologists and technicians, and habitat protection personnel, located close to the ongoing fishery, is the only way to go. It's either that, or a highly centralized decision-making organization operating out of 1090. We have attempted to reach a mid-point between these two extremes and we all know it does not work.

Wayne Shinners
Director, Field Services Branch

Alaska halibut fishery...

reserve fisheries within its national waters for domestic fleets, or to acquire reciprocal fishing privileges. The possible closure of U.S. halibut grounds to Canadian vessels became an issue in the bilateral negotiations on reciprocal fishing between Canada and the U.S. during 1978 and the early part of 1979.

On March 29, 1979, a Protocal amending the Convention was signed by Canada and the U.S. providing for a two-year extension of halibut fishing by Canadian vessels in U.S. waters in return for two year's fishing by American trawlers in Canadian waters. Both countries established strict quotas to govern these fisheries. The Canadian halibut quota in U.S. waters was set at 2 million pounds in 1979 and 1 million pounds in 1980.

In 1979 the U.S. State Department issued 34 permits to Canadian halibut vessels to fish in their waters. At the close of the first opening our vessels had caught only 1.8 million pounds and it was decided to "carry-over" the remaining 200,000 pounds to the next year.

This year 27 permits were issued to Canadian vessels to fish the remaining 1.2 million pound quota.

Many are hopeful that future access to these grounds will be negotiated, while others are extremely bitter that this valuable fishery was "lost" in the first place. Whatever personal feelings an individual may have about the Alaska Halibut fishery, it appears, for the present time at least, that he will have to put these aside and look to another sector of the B.C. commercial fishing industry to replace his lost income. The extent of this increased pressure on our domestic fisheries has yet to be determined, but it will most certainly be considerable.

Wendy Grider, Program Officer
Offshore Commercial Fisheries Division

Preventing the deadly boat fire

Mike Weston, a New Westminster fishery officer, was preparing a Department inspection boat for patrol duties in late March and had headed down the Fraser River after refueling. With no forewarning the boat, a 6 metre inboard-outboard Bertram, burst into flames. Mike grabbed hold of an extinguisher and soon had the flames under control--until the extinguisher exhausted itself. The flames flared up again and Mike, realizing it was too late to save the boat, dove overboard and swam to safety. Moments later flames had engulfed the whole boat and an explosion followed, twisting the hull of the craft out of shape. Crews from two nearby tugs later brought the flames under control, but not before the boat was a total write-off. Fortunately, Mike was not injured in the accident.

"The nature of the fire indicated that it was caused by a ruptured filler line or fuel line, we don't know for sure," says Wayne Lowdon, New Westminster fishery officer.

What is certain is the fact that small-boat fires are not uncommon. There were twice as many boat fires as there were boat sinkings in Canada last year. In the event of a fire, the wrong course of action can prove fatal for anyone on board.

Coast Guard Safety and Prevention Officer Mik Ball says Mike "did the smart thing" by not attempting to save the boat. Burning boats are floating bombs and the Coast Guard will usually not risk attempting to extinguish them.

Mik Ball says the regulations for extinguishers are inadequate. The required two-pound dry chemical extinguisher is "virtually useless for anything larger than a small cooking fire. "He recommends that a five-pound extinguisher be stored within reach of the operator. (But even the five-pound extinguisher may be inadequate, as Mike learned.) Mik says that in the event of an engine fire, the lid to the engine compartment should be opened only a crack and the extinguisher applied by inserting the hose.

Safety checks

During subsequent investigations of the accident, Wayne Lowdon compiled a series of safety points that anyone using small craft should consider:

- Metal fuel tanks are only good for four to six years and should be replaced if wear is evident.
- Always check the filler connections and hoses before use and replace if any leaks appear.
- Does the boat have adequate bilge and engine ventilation? (Not blowers)
- Does the blower work? Is it mounted high in the engine compartment and above the bilge water?
- Makeshift repairs, using tin foil for a fuse for example, should be corrected with proper parts as soon as possible.
- After an oil change, the bilge should be checked and cleaned out if necessary.
- All wiring should be adequately protected by fuses.
- If any wiring is no longer in use it should be removed to prevent possible shorting.
- The engine compartment should be checked before and after use to guard against leakage.

Wayne Lowdon, Fishery Officer

New chinook sport limit drafted

BY STEVE HEIZER

The Department is currently assessing regulation options for sport and commercial fisheries in the Strait of Georgia to alleviate a conservation problem with wild stocks of chinook salmon. In the past decade, commercial and sport catches have increased, sizes have decreased and escapements have dropped by an estimated 40 percent. With SEP producing more fish, harvest rates in general will probably increase and it is doubtful that wild chinook stocks can withstand much greater exploitation rates.

A proposed 20-inch minimum size limit on sport-caught chinook salmon, which would have significantly increased escapements of wild stocks, met with enormous resistance from sport fishermen in spite of proposed reductions in the commercial troll and net fishery catches. The corresponding reductions were clearly stated as being the commercial share of conservation costs.

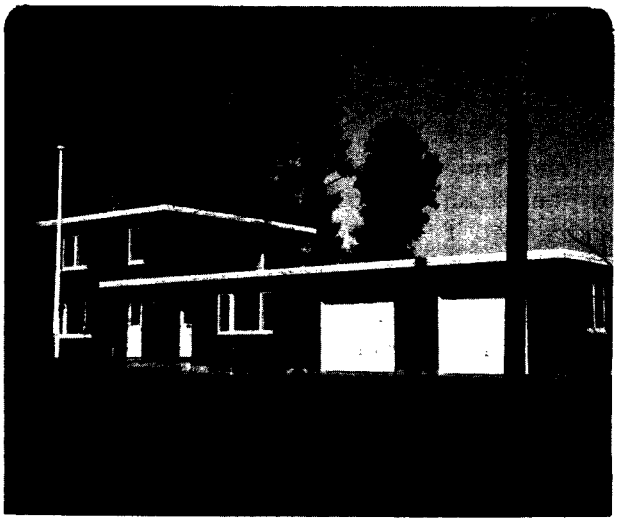
At a recent meeting with the Sport Fish Advisory Committee,(SFAC), biologists presented information to the members that indicated that an annual bag limit on chinooks might accomplish much the same effort as the 20-inch limit. The attractive aspect of this proposal is that it would not eliminate certain fisheries which target on small fish, nor would it affect nearly so many anglers (many never catch a 20-inch chinook because most chinook are taken during the winter months when they are smaller) while it might still achieve needed escapement targets.

A 1975 study indicated that 5.6 percent of anglers caught over 30 fish a year. The study suggested that if these anglers were limited to 30 fish, some 400,000 chinook and coho would be reallocated to other fishermen and to escapements. What this means in terms of increased chinook escapements will require considerable effort to assess, but the SFAC supported a 30 chinook annual bag limit and more recently the B.C. Wildlife Federation also went on record as supporting this measure.

The Department is unsure as to exactly what additional escapement a 30 chinook annual bag limit will achieve, but feels it is a significant first step within the recreational fishing sector towards chinook conservation. Following a period of assessment, additional regulatory changes may be required if they are shown to be necessary for conservation purposes.

The concept of an annual bag limit, though unpopular in the past, offers encouraging possibilities for reasonable relief to the problem while causing as little hardship to anglers as possible.

Steve Heizer is the Department's South Coast salmon management biologist.



Introducing the new re-located Parksville Field Services Office, pictured above, now in Qualicum Beach. The old RCMP Building was turned over to Fisheries and Oceans last November and officially opened April 21 without ceremony. The new address is 181 W. Sunningdale, Box 1270, Qualicum Beach. "The original 'guest room' is intact with ensuite plumbing and very good security for overnighters," writes Ray Kraft, fishery officer in Qualicum Beach.

In defence of the much-maligned dogfish

BY DICK BEAMISH

Anyone visiting the waterfront recently will notice that even though some fishermen have good catches there isn't the formal enthusiasm that is associated with the landing of a successful trip. Dogfish are back in demand. Many fishermen have no love for dogfish and are quick to explain that it is only the money that forces them to harvest a species they would like to see destroyed. While dogfish are not as cherished as other species they have provided a source of income for West Coast fishermen for more than 70 years.

A BRIEF HISTORY

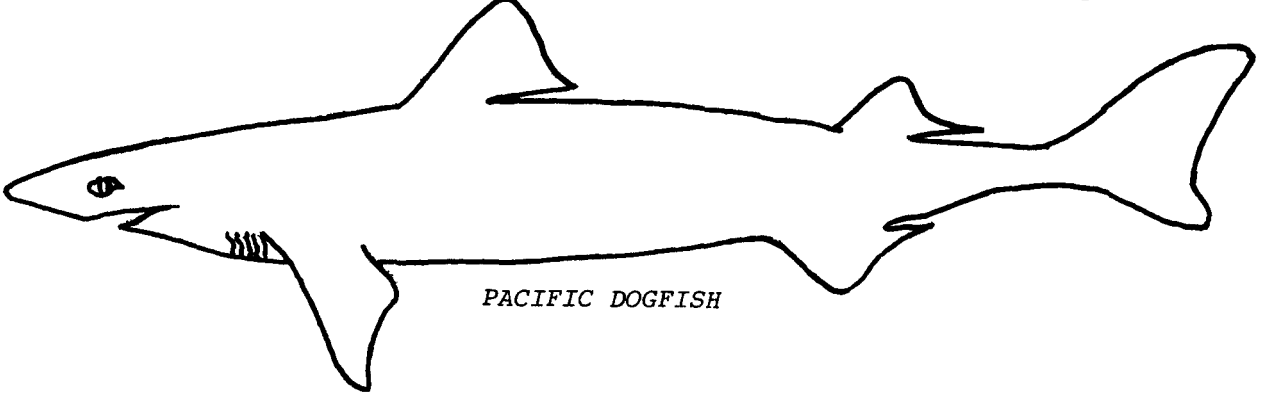
The first commercial fishery for dogfish began in the 1870s. From 1920 to 1940 it is estimated that an average of as much as 5000 t/year were harvested. Between 1937 and 1949 a major fishery occurred for dogfish in the Strait of Georgia, off the West Coast of Vancouver Island and in Hecate Strait. Landings by Canadian vessels during this period increased from 6000 t in 1937 to a maximum of 32,000 t in 1944. Despite the continued high demand for dogfish, landings declined to an average of 14,000 t annually during 1946-49. The fishery collapsed almost completely in 1950 when synthetic Vitamin A was introduced. Until 1977 there was no demand for dogfish and they were regarded as a nuisance to other fisheries. During this period there were eleven subsidized programs to reduce this nuisance but landings were small and none of these programs had much of an impact on the stocks.

A developing market for dogfish spurred the re-establishment of the commercial fishery in the Strait of Georgia in 1977. Landings increased in 1978, and in 1979 approximately 4300 t were landed in the Strait of Georgia. It it argued by some fishermen that is should be the Department's policy to use the current fishery to attempt to eradicate the species. In order to understand the management philosophy of the Department it is important that some aspects of dogfish biology are understood.

CYCLES OF ABUNDANCE

Dogfish grow very slowly and don't mature until they are about 20 to 25 years old. Females retain young for two years prior to giving birth to an average of 7 pups. Juveniles remain in the midwater for about 15 years. During this period they feed primarily on jellyfish and other planktonic organisms. During the 1940s it is thought that there were as many juveniles in the midwater as adults on the bottom. Even though the adult stocks were fished to a low level, the stocks recovered sooner than expected because of the absence of fishing and the recruitment of this accumulated stock of juveniles. However, heavy fishing pressure on adults during the 1940s reduced the number of females and hence the number of births. This reduced the size of the 1942-1947 year classes and introduced cycles of abundance into the population.

It is the Department's policy to have a sustainable dogfish fishery. This policy attempts to provide an income for fishermen and shore workers by maintaining a continuous supply of dogfish for processors thereby maintaining markets. This policy will result in a reduction of the current stock size by about 50%



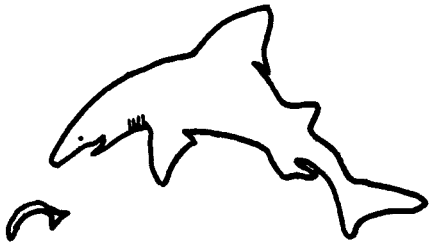
PACIFIC DOGFISH

and thus reduce the nuisance caused by dogfish to other fisheries. Exploitation at a rate which would result in a reduction in stock size greater than 50% would be undesireable. It is known from other dogfish fisheries that excess fishing pressure will quickly reduce the size of the stocks. Because the current price paid for dogfish is very low it is doubtful if fishing efforts will be maintained resulting in a collapse of the fishery and a loss of markets. Clearly, the best policy for all concerned is to attempt to maintain a sustainable fishery.

FUTURE DEMAND

There also is a more philosophical question about the value of eradicating predators that man does not like--and we must admit that we are selective in our dislikes since we don't take offense at the predation of birds on young salmon, or salmon on herring, or lingcod on Pacific cod etc. Biologists understand little about community relationships at sea. Without some kind of balance or control we would not have the variety of animals we now find. Until more is known about these controlling factors, we would be very careful about making major alterations in the community. For example, we might find that juvenile dogfish play a key role in reducing the number of predators on juvenile fishes such as herring. There is also the more economic argument that we are never certain what species will be in demand 10 years from now and dogfish, or products derived from dogfish, could make dogfish the single most important species on the West Coast--as it was 35 years ago.

Dick Beamish, Director
Resources Services Branch



Students join department for summer

The Department has taken advantage of funds available from the Employment and Immigration Commission to hire students this summer for 28 projects with Field Services Branch and six projects with SEP.

The Field Services Branch projects will primarily involve work on a sport fishery creel survey in Georgia Strait from May to September, and on the Troll Logbook Program in Victoria, Vancouver, Tofino, Ucluelet and Prince Rupert. There are also some projects on the Queen Charlotte Islands, Atnarko, Babine, Nass and Meziadin Rivers and at Rivers-Smith Inlets. Sport fishermen also will be surveyed on the Fraser River Bar fisheries as far upstream as Chilliwack. Three projects are situated in Whitehorse as well.

Project leaders are contracted to carry out the job and are responsible for hiring, supervising and paying students working on the various projects.

It is hoped that by using these students on the Georgia Strait Creel Survey Program, the Department will be able to improve its coverage of the sport fishery and get a better appreciation of the sport effort and catch. Similarly, the students will prove invaluable in ensuring the success of the Troll Logbook Program and the other enumeration programs they will be participating in throughout B.C. and the Yukon. It is hoped that the students hired under this program will receive a good introduction to our Department, its roles and responsibilities. It is also hoped that they will gain an appreciation of the fishery resource, and the future jobs available to them in this field.

Frances Dickson
Program Planning Development and Evaluation Officer
Field Services Branch

Counting on it: the use of comp

SEP's little Apple

At the Puntledge River Hatchery near Courtenay a Manager inserts a small vinyl disc into the receptor of a micro-computer, presses several keys and within a minute is provided with information that requires two to three hours of computation if done by hand.

The Apple II "micro" computer, installed in April on a six month trial basis at the hatchery and at 1090 West Pender, is quickly proving to be an invaluable tool for SEP needs.

"The need has been so great," says Cam West, SEP assessment biologist, "that it is being used for more immediate uses than its original purpose.

The Apple II is primarily intended to serve as an information system for production hatcheries. The Puntledge River hatchery was selected as the test site because it is the most complex and modern fish production unit in B.C. Using the new salmonid growth model, a series of equations developed by biologist Bill McLean for determining hatchery management requirements and data storage programs. The computer will help field personnel deal with an expanding and increasingly complex workload. The system has also been used in predicting gas supersaturation in hatchery water supplies, and for designing enhancement facilities that meet biological engineering criteria.

Demand for the computer, because of its speed and accuracy, has shown it to be just as effective in providing operational data for SEP planners. SEP planning also is using a micro-computer for stock management predictions, stream management models and as a storage and information system for bookkeeping. The cost savings in terms of reduced labour are phenomenal.

"The computer has probably half paid for itself in the last two months," Cam says.

"This print-out here would normally take about three days of work. Now, with the computer, it takes about 15 minutes."

SEP Biologist Dave Harding and the Apple II mini-computer.

There is much more to the system than meets the eye though.

"Once data is entered you have a permanent record which can be copies in a few seconds for distribution and data can be analyzed in a very short period without any need for hand calculations.

The seven dollar discs, each carrying the equivalent of 20 pages of typed material, can be mailed or packeted for transport to other, sister computers.

With the rise of the micro-computer market, unit costs are decreasing and electronic data processing is becoming commonplace.

The key advantage of the "home" micro-computer is its simplicity. A brief introduction is all that is necessary to learn rudimentary details of the computer's operation.

"On the sixth floor here it's in general usage with no problem," Cam says.

The all-too-familiar checking, double-checking and cross-checking of hatchery figures that is commonplace is being reduced. As the system is expanded, it will improve hatchery management, and, in the long term, add to the efficiency and success of SEP.

Mike Youds,
Co-Editor

uters in fisheries management

FEDS, SUMFEDS & MARFEDS

Prepared from an article written for Datacon Magazine.

Behind the acronyms FEDS, SUMFEDS, and MARFEDS lie vast seas of information available at the fingertips of Department administrators, economists, statisticians, marine biologists and oceanographers.

FEDS, the Fisheries Experimental Data Base System, is the sum of all Fisheries information contained in the Datacrown system 2000 computer. The system operates out of Room 311 of the Burrard Building under the guidance of Harry Hsu, director of the Computer Services Division. Datacrown of Toronto operates the data base on a 22-hour-a-day basis.

Operational since 1975, FEDS contains detailed information on fishermen, fishing vessels, licences, gear, landings and catch statistics. SUMFEDS is a second data base which contains summaries from 1964 to the present of vessel landings, gear used, days fished and weight, value and species of catch. A third data base is MARFEDS, which contains all marking tag recovery information gathered by SEP.

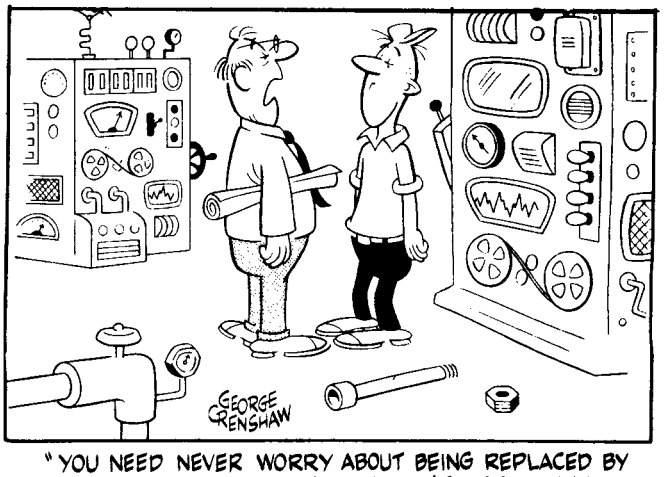
FEDS terminals, located at 1090 West Pender, at three district offices and at serveral sub-district offices along the B.C. coast, are connected by telephone lines to the Datacrown telecommunications network node in Vancouver. The system enables the users in those offices to use the data bases held in Datacrown's computer facility in Toronto.

What was the total halibut income for each vessel in Alaska waters only, and in Canadian waters only? How many herring were caught in Management Unit Three in 1976? What was the total income of salmon trollers operating in areas 12 and 27 in 1979? These are the kinds of questions that FEDS can answer. The availability of accurate statistical information ensures more efficient control and protection of the resource and assists in policy-making decisions by providing the facts needed in industrial or international negotiations regarding marine fishing rights.

The Department has been utilizing computer systems for data capture and processing since the mid-1960's but as the amount of information increased, (over one million pieces of information on sales alone) the old system became inadequate in serving the growing requirements of users for ad hoc enquiries and customized analysis.

The Pacific region was the first area to implement the FEDS system because it already had gathered a massive amount of data including information on several thousand licenced B.C. commercial fishing vessels, their respective licences, registered owners and the 20 different types of gear (trolling, seine, gillnet, etc) they are permitted to use.

The data now held in the FEDS system covers details in machine-readable form on every licenced Canadian fisherman and vessel, licence classification, vessel landings and catch by fish species, number caught, weight and value both for the Atlantic and Pacific Fisheries. In addition, data also is available on fishing season timetables, fishing trip durations and "effort" (number of days spent fishing for actual catch), ports and fishing vessel movements. As well, data on inland lake and river fish populations for each province is available.



"YOU NEED NEVER WORRY ABOUT BEING REPLACED BY AUTOMATION, HOOPER. THEY HAVEN'T YET INVENTED A MACHINE THAT DOES ABSOLUTELY NOTHING."

Fish dumping must stop

BY CAPT. BARNEY OGMUNDSEN

This article was submitted to the Herring Wrap-up Meeting held in mid-May. Barney is regularly skipper of the Howay but is temporarily serving as captain of the disabled Laurier.

Fish-dumping--the common practice of leaving behind large amounts of dead or damaged fish after a commercial harvest--is a dangerous, possibly fatal blind spot for the Department.

The Department is somewhat inclined in the matter of fisheries to restrict vision and to look at this or that fish, at one area or another; it may be asked "how shall we save our herring, or salmon, or halibut?" Specialists may look at one type of gear or one method of catching fish and forget to see the wider circumstances that surround each of them. It is therefore understandable that no consideration has yet been given to the far reaching results of the practice of dumping fish; yet it is imperative that we immediately and forever ban the dumping of caught fish into our oceans.

There is a prevalent idea that the amount of such fish dumped is trifling. Test sets come to mind and it is true that probably no more than 500 lbs. to a set will be killed and this may be an unavoidable sacrifice to our need to evaluate fish stocks. Yet consider the losses elsewhere. Gillnets lose fish out of their nets, fish full of spawn, fish that drop to the bottom and stay there. It is estimated the amount wasted here is about one percent of the total catch. Seine boats invariably have small bags of fish caught in the net after the seine has been opened and the fish are allowed to swim out. An educated guess at the mortality here would reach five or six hundred pounds per set. With the drums now used, combined with very deep nets, it is impossible to avoid this waste.

No one who knows any of the effects of dumped fish on the grounds would suggest that we can continue to build our stocks of any species in the face of such pollution. Before continuing with our count of the waste of fish, let us look at the results of dumping.

When great quantities of dead fish are dumped in an area, the ground is transformed to what is called "live grounds"--live with sea fleas. No doubt sea fleas have their place in the food chain, but the place is a very long way from our tables. Fish left in the area move away or are attacked by disease. The fleas enter the gill and appear to be eating the fish alive. Fishermen have taken halibut from live grounds where nothing but the head and skin came up. During the fifties, hundreds of tons of herring were dumped in Hecate Straits on the flats, and the few Halibut caught on those grounds would come up with sea fleas. Today, there are practically no halibut and almost no herring on the flats in Hecate Strait.

The herring waste from gillnets and seines is a well-known fact. To this amount may be added the small salmon thrown back by both trawlers and seine boats. Trollers, by law, "release" fish too small for the market. They are released, usually without scales, most often with their gills pierced, rarely with any chance of survival. In some areas (Swiftsure, south side of Forty Mile Bank, etc.) one boat will catch twenty undersize fish to get one of marketable size. Seine boats while catching salmon in other areas (San Juan, Blue Line, Namu, Queen Charlotte Sound) are allowed by the Salmon Commission and Department of Fisheries and Oceans to fish while young stocks of salmon and grilse are working their way out of their feeding grounds. Consequently, a great percentage of the grilse are wounded by the nets and shovelled off the decks. It is impossible to estimate the loss of fish when they are being dumped by the shovel-full.

MASSIVE LOSSES

The greatest loss, however, must occur out on the banks where the trawlers fish. There, the salmon, rockfish, halibut and

Fish dumping continued...

other flatfish, ocean perch and hake, feed on the herring stocks. Some eat the very small herring, but spring salmon and dog salmon go deep and eat larger herring. There is no way for a trawler to selectively fish while making a set. A trawler sets where the herring are, and deposits the catch on the deck. He selects the species he can sell, and the rest; such as halibut, are thrown overboard and the small unsaleable fish (chiefly herring) are shovelled off the deck and hosed down the side. Inevitably halibut spleens are broken by the sudden rise from the bottom and their tails and fins are often worn off. Herring are squashed and to suppose that they will live is to refuse to understand the process of dragging. Along with the herring and other fish, a good bit of the bottom is hosed from the deck (kelp and grass loaded with spawn).

To estimate the tonnage of such loss, remember that each drag will lift a ton, more or less. Of that ton, at least a quarter will be non saleable fish. Taking into account that these are rough figures, though they are probably far lower than the actual, the annual loss of fish would be 100,000 tons of herring in B.C. alone. This does not include the foreign fleet, only the one hundred and fifty-one Canadian trawlers licenced to fish in our waters. The trawler will argue that these fish dumped on the grounds are food for cod, turbot, etc., and good for their fishery--at the cost of food for our salmon stocks.

NEW LAWS REQUIRED

Unless the Department moves to prevent this waste of food, and the damage to the grounds, it will be faced with an even greater reduction of the resource. In time, our great banks will be destroyed in the same way that England's were devastated. It is easy to understand why Japan and Russia have to send their fleets so far from home. Only a few fishing grounds remain. Scotland protected its fishing grounds for so many years but has now seen their imminent destruction by trawlers who operate in the same manner as described above.

As a footnote, the policy of having sports fishermen "release" undersize fish deserves mention. To release mangled and half dead fish is no solution to overfishing. It would be far more sensible and in keeping with environmental protection for the Department to close areas where many undersize fish are being caught.

This analysis merely calls attention to the problem. Department research staff should verify or refute the arguments. If the Department can bring about new laws ensuring that no fish will be dumped at sea, it may bring about changes in our industry that will have profound effect both in our time and in the future.

Prince Charles chatting with Inspection Officer Ann Davies. Behind them stands Ken Thitchener, superintendent of the Campbell Avenue Fisherman's Wharf.

Ann and the Prince

On Tuesday April 1, His Royal Highness the Prince of Wales visited Campbell Avenue Fisherman's Wharf in Vancouver as part of His official visit to Canada. His tour included brief stops at the canning and packing facilities of the companies at the wharf.

The Prince's itinerary was rigidly set with numerous TV and press photographers on hand. But an introduction was managed between Prince Charles and Fisheries Inspection Officer Ann Davies, who was covering this area in carrying out her duties for the Fish Inspection Branch.

Jim Snell
Inspection Branch

SEP task force to probe management opportunities

The SEP Management Enhancement Task Force, comprising 18 women met for the first time on May 8.

The Task Force was formed in response to a request from Harold Swan, acting in his capacity as chairman of the SEP Management Committee. He asked that an examination be conducted within SEP of the reasons why women do not normally advance to the more senior positions.

At the Task Force's first meeting a paper on the group's deliberations was prepared, the condensed form of which follows:

The primary goal of the management Enhancement Task Force is to provide capable and competent women for senior executive roles. The group is aware of the potential dangers inherent in "affirmative action" but feels that:

- SEP should keep pace with the capabilities being generated through experience, education and training among the female work force.
- opportunities should be maximized for women to attain their individual levels of potential. It is essential that SEP maximize the use of its available resources.
- the Task Force will endeavor to improve attitudes regarding the employment of women in any capacity.

Problem Areas

The following facets of SEP operations were identified as problem areas:

Attitudes - Deep-seated, entrenched attitudes held by men and women alike preclude tolerance of "average" abilities in women, while there is an acceptance of the fact that all male employees do not have to be outstanding. Women lack the trust and support of a team situation and this results in isolation and an inhibiting fear of failure. Suggested solutions to these problems include the provision of counselling or employee assistance programs, improved communications and informal means of recognizing grievances. Some form of specialized training could bolster confidence among female employees.

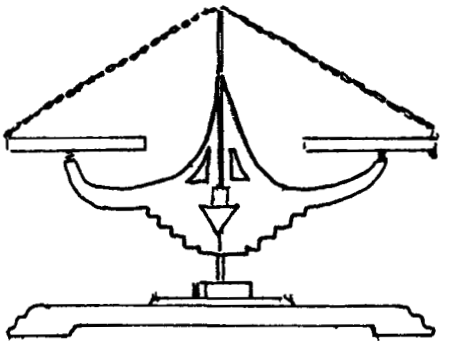
Hiring and staff practices - Women employees *have not always* been aware of the potential benefits of lateral transfers to their long-term careers. In addition, the Task Force felt that there is a lack of established procedure for "first level" recruiting and that when hiring, attempts should be made to draw upon capabilities from within the Department. The group felt also that women well-qualified for promotion were at a disadvantage in the competitive arena due to various factors unrelated to ability. To make up for this, it was suggested that women be included as board members for competitions where there are female candidates.

Communications - The Task Force felt that basic government policies in the area of classification and staffing are not widely understood, nor is there a clear understanding of SEP organizational relationships, government financial and budgeting methods. Training in this area as well as regular staff meetings would help alleviate this problem. One proposal was that an information network, modelled on the existing external "Women's Network", be established within SEP.

Career Development - Career profiles of women employees are to be examined to see if they include a succession of more responsible assignments, as they do with men. Women have had difficulty in gaining the exposure appropriate to their aspirations. While the Task Force felt that experience should be gained within the existing framework, alternative approaches such as field camps and management traineeships for women should also be explored.

Training and Education - The Task Force felt that all staff could benefit from courses in effective communication, and also suggested that course materials developed in cooperation with Malaspina College be made available to interested staff.

The Task Group in its report to Mr. Swan noted that the concerns expressed were not unique to SEP, nor to women. In fact considerable interest had been expressed in this exercise by staff throughout the Department. In light of this, the Task Group suggested that the Regional Executive might wish to request that a Regional examination be undertaken and that the Personnel Branch could play an important role in coordinating future efforts.



Out of the past

Patrolling the Fraser by oar

Among her library files, Fisheries Librarian Paulette Westlake recently uncovered the Fourth Annual Report of the Deputy Minister of Fisheries, circa 1887. While the submissions of the B.C. guardians are somewhat vague, one has to sympathize with their working conditions. The following is an extract from the report of Mr. John Buie, Fishery guardian on the Fraser River.

Very few persons have any idea of the amount of salmon yearly taken out of the Fraser. This season, the canneries put up 6,182,683 one pound tins. In preparing the fish for canning, at least one quarter of the weight of fresh salmon is lost; adding this it will be found that canners used 8,243,584 lbs. of fresh salmon. The salmon used for the freezers, sent away in ice, sold by local dealers and consumed by the white population along the river, amounted to 1,481,000 lbs. The consumption by natives along the Fraser and in the interior must amount to some millions of pounds; salmon being one of their principal articles of diet. I think I am well within the mark when I say that, the Indian consumption, together with the 9,674,584 lbs. taken by the whites, will make the total catch on the Fraser River along 12,000,000 or 13,000,000 lbs. Imagine a train of twenty cars with 20,000 lbs. in each car leaving the Fraser every morning, including Sundays, for a whole month! Comment is unnecessary.

This year, for the first time, it became possible to get a correct estimate of the number of boats fishing during the season, and I find that the 12 canneries took out licenses for 358 boats. Licenses were also granted to 109 outside boats, making a total of 467 nets dragging the Fraser day and night. Next season I think there will be a large increase in this number if the thing is permitted; but, in my opinion, it is about time that some limit should be placed on the number of nets allowed in this river, and I think the Fisheries Department cannot too soon take this matter into serious consideration.

In referring to the protective service on this river I must say I found the cannerymen willing to comply with all the requirements of the Fisheries Act, and when any of their boats were found trespassing I am satisfied it was without their knowledge or consent. But where such a large number of boats is engaged, and nearly all manned by natives, whose only idea of wrong is being caught at it, I think you cannot help agreeing with me that something more efficient than two guardians in rowboats is required during the fishing season. In this connection, let me remind you that taking both arms of the river there are over 70 miles of fishing grounds to be looked after, as well as an indefinite distance above tidal water.

* *

In the Charlottes

Governments embark on rehab program

The Department and the provincial Ministry of Environment announced in mid-May a four part federal-provincial program to investigate and rehabilitate steep logging slopes in the Queen Charlotte Islands.

Fisheries Minister LeBlanc emphasized that the problem was "intended to complement rather than duplicate basic research studies such as those undertaken on Carnation Creek on Vancouver Island, where ecological processes in a logged coastal watershed are being evaluated.

"This program will attempt to develop operational guidelines which can be used by both forestry and fishery personnel, to resolve on-site problems as they are recognized, before they escalate to the level we saw in the Charlottes last year," said LeBlanc.

An extensive assessment of all major watersheds is to be undertaken to provide information on the severity and extent of soil movement and its effects on both forest site productivity and stream habitat. Alternative forest harvesting methods will be considered as well as long term effects of treatments such as thinning and planting as affecting slope stability. Where damage has already occurred to streams, rehabiliation programs will determine the time, extent and success of increasing stream production. Forest site rehabilitation will be implemented in those areas where mass erosion has taken place.

Of primary concern will be the siltation of Riley Creek as well as Bonanza, Gregory and East and West Security Creeks, all with runs of pinks.

The Department will finance $180,000 of the program's $800,000 budget.

Kip Slater, District Supervisor for the Queen Charlotte District, says the program will "give nature a ten year start on rehabilitation" which would normally take at least 15 years. Clean-up of logging operations on the West Coast of the Queen Charlottes is particularly difficult, says Kip, because of poor weather data for the area. Heavy storms blow down any remaining stands of trees in unstable areas. A large deer grazing population as well as the instability of steep slopes which have most of their soil eroded away in the large clearcut areas, add to the problem further.

The committee formed to assess the problem of environmental damage is headed by professional from a wide range of backgrounds. John Lamb, Queen Charlottes fishery officer, and Dave Toews of Habitat Protection will respresent Fisheries. The Department is, however, unable to provide manpower to assist in on-site work because staff workloads are already heavy, says Kip.

Last year's confrontation between Queen Charlotte fishery officers and loggers, and the controversy which surrounded it, no doubt precipitated the formation of the federal-provincial program, says Kip.

"This sudden concern came from the confrontation at Riley Creek and was about as subtle as a sledgehammer." Several loggers were arrested for refusing to heed Department warnings that continued logging would result in landslides.

"It got results," adds Kip.

Kip feels this intensive investigation into restoring the slopes of Rennell Sound and the damage done to Riley Creek and other sites, will develop methods of more effective stabilization to other logged areas in B.C.

Gayle Talbot
Editorial Assistant

Tips for the novice angler

BY LEE STRAIGHT

The irony of ironies is that when the weather is so gorgeous it beckons even the occasional sport fisherman on to the seas, the fishing off the Lower Mainland is at its worst.

From June to mid-August high-water run-off from the Fraser and Squamish rivers clouds local fishing grounds. The fish may be down there but they simply cannot spot a fishing lure. Do not despair though, for with a bit of know-how and luck, the elusive salmon can be found.

Deep trolls, using as much as a pound of lead sinker, or the commonly-used downrigger gear, have brought fair local fishing despite the muddy sea surface.

Outstanding as the most effective June-August coho lure, is the good old herring dodger and herring strip. Lacking that bait, a Flashtail or hoochie; or any brass, copper, chrome, nickel or half-and-half wobbling spoon, about 1½" to 3" long can be effective.

Strip baits are attached by a special tandem hookup, sold in most sport shops. Lures are attached to the dodger by a 20-to-30-inch length of monofilament ("nylon") leader, no thinner than 20-pound-test and up to 30-pound-test. Thinner leaders can be cut on the dodger edge by a fleeing salmon. That terminal hookup is held down by no less than an eight-ounce sinker (four or six in clear water), attached six feet above the dodger if it's tied in place, or 15 to 25 feet above it if the "slip" type of sinker is employed.

The line is paid out no less than 50 feet and up to 100 back of the boat, trolled as slow as the motor will permit without stalling. Check the gear often for weeds, tangles, torn bait or fish too small to detect. Start with rented tackle from the marina or from a friend of recognized skill. Get your advice from the same sources, or from the *"B.C. Tidal Waters Sport Fishing Guide"*.

In June, try the south shore of Bowen Island from Cowan Point on the east to Cape Roger Curtis on the west. If time permits, try further west at Salmon Rock, Gower Point and northwest to Camp Byng and Roberts Creek.

Lee Straight photo

In July, the waters are clearing. The coho and remnants of the chinook run spread to the east, around Point Atkinson and all shores of Bowen Island and occasionally along West Vancouver. There is a remnant run of heavy chinook in north Howe Sound (McNab Creek, Defense Islands, Britannia Beach) from July 1 to August 15.

During August and September coho literally swarm along West Vancouver and south Bowen Island. And all the time, the deadly combo of dodger-and-bait-or-lure is THE basic rig.

Spurious emissions

The Spurious Writer is not mystic--please forward items for this column to the Editors.

Lucky in the Western. Kay Olsen has left Economics Marketing Unit with her winnings for a more relaxing life ac home--Good luck, Kay.

* *

There have been many Fishery Officer moves, including Jack Trent who has left Comox and transferred to Campbell River. Kent Harper who has moved from Steveston to Mission; Don Ross who has left Mission after winning the competition for sub-district officer, Coquitlam; Tim Panko was successful in the competition for waterfront officer, Prince Rupert, and he leaves New Westminster; Bob Martinolich leaves Kitimat for Bella Bella after winning that competition; and Bruce MacDonald who won the Alert Bay position and leaves Port Alberni.

* *

The Regulations and Investigations Division has been joined by a new junior investigator, Sally Hutchinson who hails from Vancouver.

* *

Kate Glover, on a recent trip to Vancouver, tells us she is looking forward to her return from Ottawa on August 15th; Kate is on a one year's secondment to Ottawa where she has been editing the Fisheries and Oceans News among other duties.

* *

Born to Lanny and Cathy Kalnin, a baby boy weighing 8 lb. 15 oz. on April 27, 1980, a brother for Robin.

* *

Information Director, Shirley Popham, is away indefinitely on sick leave--Our best wishes to you, Shirley.

* *

A new employee to the Department is Michael Friedlaender who started May 1 as commercial fisheries policy analyst with SEP Planning Group; Michael met many of us when he was formerly with a consulting firm.

* *

Back from maternity leave is Sharon Henderson who takes up once again her computer programming activities.

John Tuyttens, left, accepts gift from Les Goodman on the occasion of his retirement in April.

Joining the Department on a permanent basis is Peter Leitz as Research Officer, Economics and Statistics Unit; Peter has just graduated from U.B.C. with a Bachelor of Commerce and has worked part-time with the Department for several years.

* *

"Sounder" editor, Mike Youds, has won a $100 award ("post hoc" scholarship) from the International Association of Business Communicators in B.C. It will be presented to him in June by Gerry Porter, journalism co-ordinator at Vancouver Community College.

* *

Jeanette Black is a new member of the library at 1090 where she will be responsible for interlibrary loans and staff requests. Jeanette trained as a library technician at Vancouver Community College and was previously employed at the West Vancouver Laboratory in charge of its library.

* *

We understand that Lloyd Webb is in hiding until his hair grows back after his Regina training.

* *

Passed away on May 14, 1980, in St. Paul's Hospital, Vancouver, A.W. "Mac" MacDonald, engineer on the "Cutter Rock", based in Prince Rupert. Mac joined the Department on June 19, 1964, and worked all his time with the Ship Division in the north coast area.

* *

Dick Beamish is the new Director for Resource Services Branch. Dick will be headquartered in Nanaimo with frequent trips to Vancouver.

Sounder

Volume VIII Number 5 July-August 1980

Your Contract My Contract

Al Wood, director of planning and evaluation, is not a contract worker, but here he takes time out to explain some of the finer details of this controversial policy.

Mention contracting out within the Fisheries domain and you're likely to get looks that are noncommital, querulous, steely-eyed or downright irate. That's probably because many people aren't too familiar with the term and those who are familiar with it usually have very definite views on the subject.

Like it or not, contracting out is here to stay; in fact, we can probably expect even more of it. Understanding contracting out, how it came about, and why it is necessary are key ingredients to acceptance.

"What is contracting out?"

It is the process by which government makes contracts with individuals or companies to do jobs.

"Why are we contracting out?"

The government is pushing contracting out as a means of stimulating business in the private sector, thereby helping the economy. Also, contracting out saves government person-years; this is important because of the government initiative to control the growth of the civil service.

Government departments are allocated a fixed number of person years. This policy, federally administered, is intended to help curb excessive government spending and control unnecessary growth within the public service.

continued on page 2

Strange new world awaits those who dive in rich waters of the West Coast. Here, a diver photographs an inquisitive octopus in the clear waters of Jervis Inlet. Photo was taken by Rick Harbo of the Habitat Protection Branch.
more on Rick's work see the book reviews, pg. 14 and Spurious Emissions, pg. 19.

inside

Contracts...

In Fisheries' case, because manpower needs far exceed its person-year allotment, there is a people deficit. This deficit was made up by using agency personnel (the government makes a service contract with an agency, which hires and pays the personnel it supplies to us), or by contracting the work out.

"Why don't we use more agency personnel?"

The use of agency personnel has been greatly reduced because of the undesirable "master-servant" relationship which it created--one in which an individual hired and paid by an agency does the work for another company (under that company's direct supervision), but does not receive company benefits. In other words, agency personnel were actually employed not by Fisheries, but by an agency; as such, they were not entitled to any of the benefits to which Fisheries employees are entitled, even though they were doing the work for us under our day-to-day supervision. This situation is clearly explosive and it has now been minimized. However, the use of agency personnel will continue to be useful in temporarily filling existing vacancies (due to vacation, sick leave, or attrition) or providing short-term assistance.

So, that leaves us with contracting out as an alternative to the use of both person-years and agency personnel.

"What are the benefits?"

The benefits of contracting out are numerous: it saves person-years, it assures final reporting within a couple of months of completion of field work (as a term of the contract), and while contracting out may sometimes appear to cost more than doing the job in-house, there may be savings in reduced cost for services (such as record keeping) and materials (such as desks, phones, and office space).

"What about the risks?"

One of the biggest concerns about contracting out has been that the private sector may be unfamiliar with fisheries techniques. A few years ago outside expertise in some highly specialized areas (such as marking) was somewhat limited. However, expertise has grown rapidly, and today we have some highly skilled and conscientious people doing contract work for us. (In fact, many very capable former Fisheries employees are now doing contract work for us.)

"Contracting out contracting out"

If this baffled you so far, try this on: Fisheries Technical staff contracts out the contracting to support service staff, who in turn contract out contracting out to DSS. Contracting out to other government groups? Yes, because Fisheries pays at each level.

Al Wood, Director
SEP Planning and Evaluation

Soundings

Staff members who read *Sounder* on a regular basis may have noticed the recent streamlining of its format and content. We have attempted to offer a greater variety of stories in a simpler style of presentation. This is done with the hope that *Sounder* will stimulate more feedback from you and thereby become an even better newsletter in the future. Your submissions, ideas and assistance will make this change possible.

On pages 15 and 16 of this issue we have included a *Sounder* readership survey, intended to provide us with an idea of what you want. Don't let the image of a conventional staff newsletter interfere with your answers, for *Sounder* can be much more than that.

THE SOUNDER
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Challenges ahead

Dr. Dick Beamish, former research scientist at the Pacific Biological Station (PBS) in Nanaimo, was recently appointed the new director of Resource Services. His new responsibilities include the direction of salmon, groundfish, herring, shellfish and habitat research at the PBS. He has authored more than 60 scientific articles related to fisheries and his research in Winnipeg during the early 1970s resulted in the first warnings of the effects of acid rain.

Dick will continue to work out of his PBS office where the majority of Resource Services staff are employed.

Dr. Richard Beamish, new Resource Services Director

Dialogue

What do you see as the role of the Resource Services Branch?

I don't think that anyone in the Branch would dispute that our major objective is to supply research in support of Fisheries management. And I've argued that, while some of our staff have difficulty with that objective, if we don't do it then who else is going to supply that kind of advice to management? So our research has to be oriented towards that problem.

Do you feel that it's adequate right now?

No.

In what areas is it inadequate?

Well first of all it's a really difficult problem to provide the correct management advice. We're doing it in some areas of the fisheries. The Branch, before we changed the orientation two years ago, was not really oriented (in salmon for example) towards what we would call the population dynamics of salmon. So while there was a lot of good research going on, a lot of it wasn't directed at solving immediate management problems and we're changing that now. We simply have to do it.

I'm also putting greater emphasis on trying to solve some of the herring problems. Though we worked on it in the past we probably haven't put enough effort into it.

The changes I'm making are all directed at providing more relevent and more immediate services for management. Now there is a problem with that and that is, to do good science, we also have to look at some of the long-term aspects of the fisheries. Our scientists feel, and I think this is supported right across Canada, that we have been replying to a lot of short-term requirements. While this is necessary in the initial stages of managing the fisheries, (certainly Wayne Shinners, Director of Field Services, agrees with me on this) that we're just going to have to do some long-term research. Otherwise we're going to burn our candles at both ends.

So introducing more long-term projects is one of your central aims?

Well initially we're not going to be able to do a lot of long-term work because there are simply too many problems involving salmon and herring. We're not going to be able to allow any of our scientists to spend much time on long-term research. But ultimately, we are going to have to increase the amount of time scientists

dialogue...

are allowed to spend on things that are not of immediate importance to solving management problems and I would guess that we're doomed in Fisheries unless we can get that input.

From your groundfish work, do you think that is a fishery which could be expanded?

There are some areas in the groundfish fishery that will tolerate some expansion. Pacific hake -- there's a product that can be marketed. There's enough hake in the Canadian zone to allow a doubling of the groundfish fishery. So there are some encouraging signs there. But groundfish will always be a minor component of the fishery -- worth about $27 million now, landed value, including halibut.

What are your priorities now?

Well the first priority is to emphasize the herring research and to get more money into the program. At the moment our funds and staff are limited. You just don't have any flexibility. You simply can't direct somebody to suddenly become a herring expert. We did the best we could. We have asked for volunteers and we've done a little bit of staffing in that area. We'll have to do a lot more. But the main objective is to have a multi-directional examination of problems in herring and to see if we can begin to identify what problems there actually are. How many herring do we have? How many can we harvest? What's the best way of harvesting them? And we'd better get those answers within the next few years. That's the top priority.

The second priority is to develop a unit that looks at new strategies in managing salmon -- what some people call salmon manageability, or what used to be called population dynamics. The unit will work very closely with management and fishermen as well as examine our current techniques for estimating escapements and managing salmon. We also want to interact more closely with fishermen and industry.

Letters

Editor,

The Canadian Coast Guard is increasingly concerned with safety and the means to decrease the number of incidents together with the loss of life and property involved.

The Boating Safety Detachment, together with many of the SAR vessels, offer courtesy safety inspections to both pleasure craft and small fishing vessels. In the event that you have not already received a courtesy inspection, we invite you to participate in this program.

Additional information on courtesy inspections or on any marine safety equipment may be obtained from the above address or by calling our office at 732-4701.

Jack Ickringill
Regional Manager
Search and Rescue
Canadian Coast Guard

Editor,

As always, I enjoy reading *Sounder*. Yet in all good journalism, there has to be those times when an error occurs. In the April-May, 1980 issue, I found the birth announcement of our son. I wish to clarify one point. "Sue" had nothing to do with it! From most recent observations, only Sharon and I are living in the residence at Dawsons Landing.

Bye for now.

Dean Miller,
Fishery Officer,
Dawsons Landing

Editor,

I was reading the Sounder the other day, when I suddenly realized it has changed. Are the articles more relevant? Is the format improved? Does Fisheries organization have more to talk about? I can't pin it down. All I have to say is I like it and must congratulate you on your results to date.

Al Wood, Director
SEP Planning and Evaluation

SEP Report

Mixed results forecasted

Rob Morley, staff officer for SEP economic planning prepared a report for the Salmonid Enhancement Board on the goals and performance of SEP to date. The following is a condensed version of that report.

Phase I Performance

We are currently at year four of the seven years of SEP Phase I. If all projects which have been initiated are carried through to projected completion, the performance of Phase I will be as follows:

National Income

- benefit/cost ratio of 1.7:1.0 with net benefits of $250 million = 109 % of target despite extension of program from 5 to 7 years;
- due mainly to windfall benefits of lake fertilization, Japanese chum hatchery technology and higher chinook survival rates;
- partially due to a lack of emphasis on other goals.

Employment

- 1050 PY's of employment for otherwise unemployed people = 230% of target;
- due to fortunate contracting of major facilities and the unexpected success of Community Economic Development Projects.

Regional Development

- $115 million (discounted to 1976 at 10%) of income to the less developed region = 89% of target;
- due to building fewer projects than anticipated in northern area.

Native People

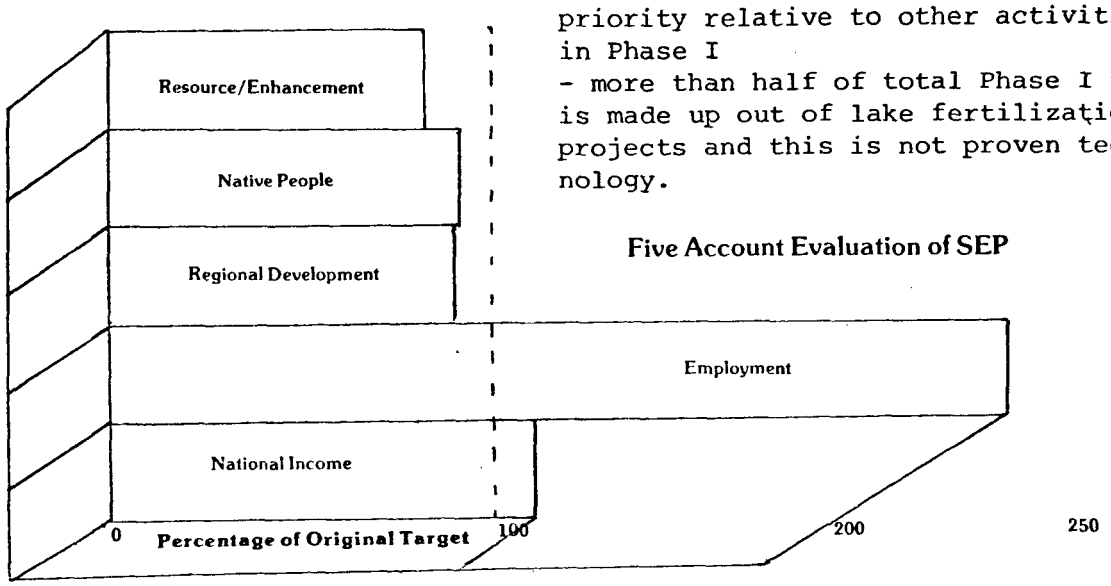
- equivalent of 66 permanent continuing person-years of highest valued Native jobs = 92% of target;
- due to less Native employment at major facilities than expected, fewer projects in northern areas;
- moderated by the success of the CEDP.

Resource and Environment Preservation

- 80% of target;
- fallen down in areas of threatened stocks and stock manageability;
- species balance is not what was anticipated (see chart);
- educator's package has benefited cultural/educational goals.

Fish Production

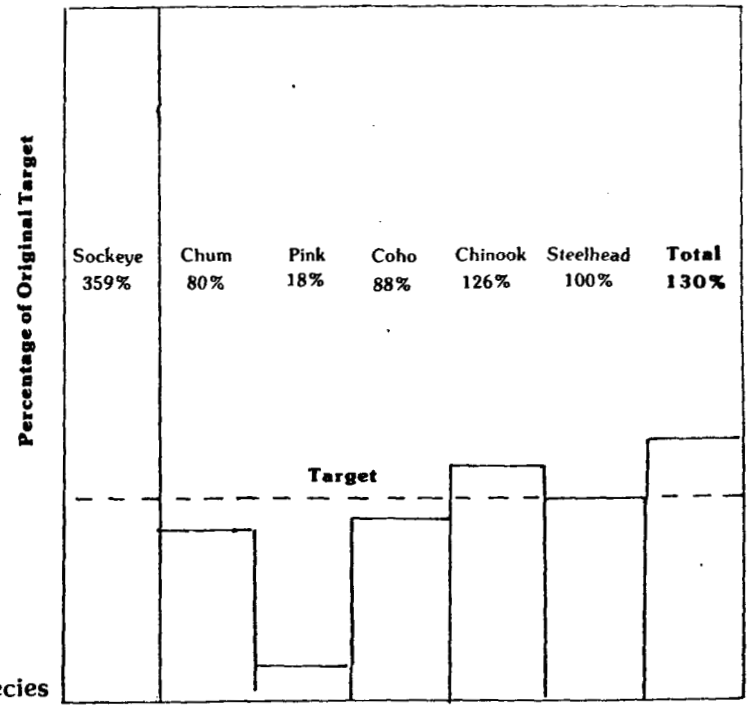
- overall production is about 65 million pounds = 130% of target;
- on a species by species basis only, chinook and sockeye are above what was expected due to lake fertilization and higher chinook survival rates;
- pinks are far below target because inexpensive technology has not been developed and the good existing opportunities have been rated as low priority relative to other activities in Phase I
- more than half of total Phase I target is made up out of lake fertilization projects and this is not proven technology.



SEP forecast...

Impact of Cost Recovery/ Investment Restraints

- if the industry is not restrained from making unnecessary new investments in harvesting vessels and equipment the benefits will be dissipated and the national income goals will not be met;
- without effective investment restraint the benefit-cost ratio would fall from 1.7:1.0 to 0.8:1.0 and the net benefits would fall from $250 million to minus $114 million;
- at present no investment restraint/ cost recovery program has been implemented.



Phase 1 - Production Relative to Species

Lake enrichment brings greater returns and raises more questions

The process is simple. Take one lake with a population of sockeye, add specific amounts of nutrients to nourish minute plants (phytoplankton), which in turn nourish zooplankton, the staple food of the sockeye. But lake enrichment, after ten years of careful research and multiplied sockeye returns, still is at an experimental stage with all the inherent checks and balances of a pioneer project.

"As head of the lake enrichment program," says Dr. John Stockner, "I'm almost saying that we need a failure so that we can study it to say why it occurred. Was it escapement? Was it survival? Was it growth? But so far we haven't had it."

The facts speak for themselves. On an average basis, juvenile sockeye survival has been doubled in the lakes where fertilization has lasted the duration of sockeye life cycles. Hobiton Lake, first fertilized in 1977, will see the return of the 1976 brood as four-year-old fish in 1980. Last year's escapement was estimated at 4,000 adult sockeye. This year, 12,000 sockeye have already been counted and the catches of

the native food fishery in the area are the best in 20 years. Henderson Lake, first fertilized in 1976, has risen from an average sockeye escapement of 5-10,000 to well over 20,000 with an estimated total possible production of 60,000 fish in 1979, and perhaps even greater production in 1980.

In 1980, a total of 13 lakes are undergoing fertilization and the program is seen as a major factor behind spiralling production figures for sockeye. As a result of the fertilization to date,

lake enrichment...

three basic conclusions are possible, John says.

"First, we know that a lake, when not fertilized, returns to its previous level of production." In lakes where fertilization was terminated in the month of September, primary and secondary production levels have returned to original levels of production by the following spring.

"Second, we know that fertilizing does not significantly alter the food chain. There is no significant change in the ecosystem. No pathogenic bacteria, or fish diseases or algae bloom; nothing to seriously impact the environment."

"Third, once you start fertilizing lakes, it's difficult to expect increased sockeye production if there is not sufficient escapement of spawning adults. Hence, we will probably be fertilizing for some years to come."

Fourth, preliminary results indicate that the greatest success for lake fertilization will be in lakes where lake spawners occur or in lakes that have inlet streams providing stable winter flows ensuring good egg-to-fry survival.

The effects of discontinued fertilization were learned during a three year hiatus period during the mid-1970s in Great Central Lake.

"After ten years we've learned a lot about where the fertilizer goes--to the nanoplankton, a very small form of phytoplankton, and to bacteria. But originally we thought it was the diatoms that were the first to utilize the nitrogen and phosphorus."

Lake enrichment research has also revealed that 70 percent of carbon produced at the primary level is produced by small life forms (nanoplankton).

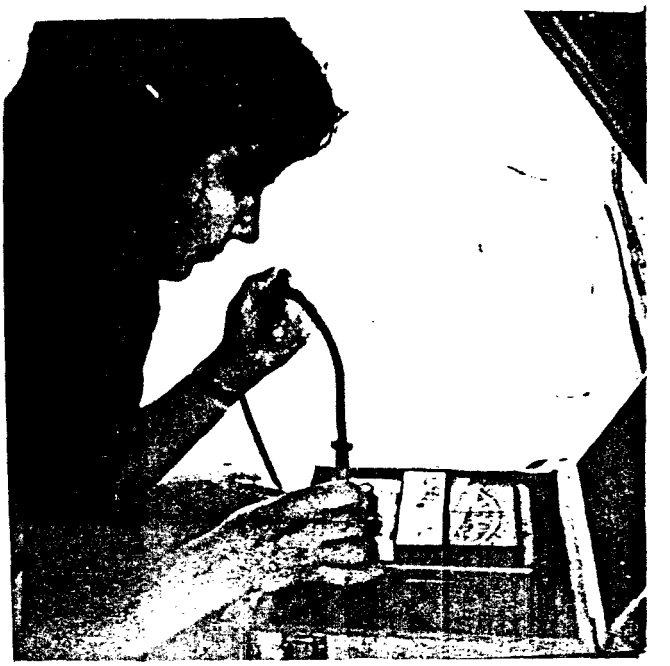
A new adjunct of the lake fertilization program is estuary fertilization--a pilot program being introduced in Masset Inlet in the Queen Charlottes. The program may be a means of enhancing pink populations currently below SEP targets. As well, the unique character of Masset Inlet, a moderately flushed coastal inlet, similar to that of a lake, will help to determine the significance of increased nutrients to the food chains of the estuarine and coastal marine environment.

In spite of its successes, the future of lake enrichment is not guaranteed. There are three possible situations which could result in its cancellation on one or a number of lakes, John says.

First, an increase in sticklebacks, a sockeye salmon competitor for the food resource in certain lakes, could result in diminished growth of juvenile sockeye and eliminate one of the many benefits of lake fertilization. Fertilization of Long Lake was recently terminated because of a rise in stickleback population as a result of lake enrichment as well as a very low escapement in 1979.

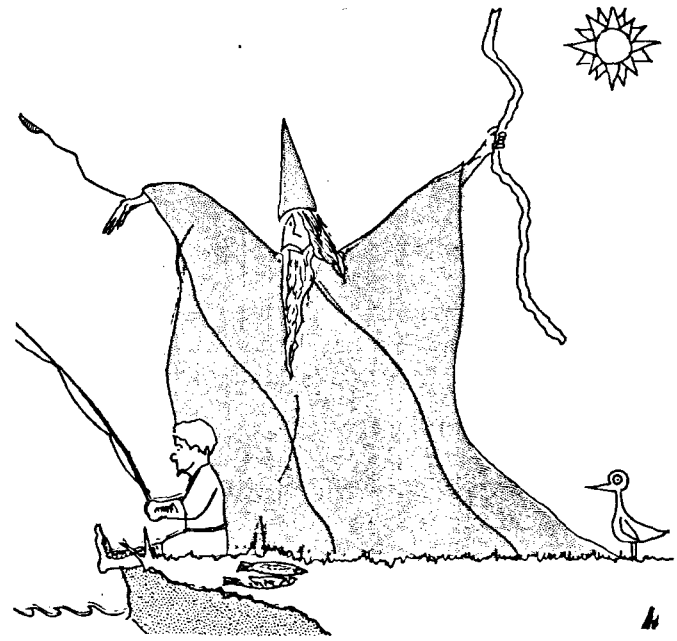
Second, fertilization of Hobiton Lake was temporarily stopped because of cost/benefit factors--the lake was simply too small and production potential too low to justify the expense of treatment.

Third, in the future, certain lakes with large returning sockeye adults may create management problems and accordingly, modifications would be necessary in fertilization tactics.



Biologist Anne Page measures limnology at Kennedy Lake on Vancouver Island.

Toil, foil, WEP and widgetry



A "fairy tale" presented by John Davis as the opening statement of the Regional Salmon Meeting held in May.

Once upon a time in a land far away but rather similar to Middle Earth, lived a group known as the Little People. The pride and sustenance of the Little People was based upon a resource known as "widgets", which were cute and cuddly and good to eat. As the Little People grew in number and prospered, the value of widgets increased. Some officials were assigned the task of managing widget production and conservation and the managers fought a continuous battle with wild beasts, dragons and invading hordes who regularly ravaged and carried off the widgets The managers' lives were full of crises and they were constantly criticized by all sectors of the populace. The widget farmers were outraged, the hunting gentry incensed over losses of wild widgets, and the Hill People demanded a greater share of wild stocks according to historic rights.

Learned wizards, skilled in the black arts, were commissioned by the rulers to learn more about the widgets and attempt to solve the Kingdom's problems. The wizards, who worked in a castle across the Great Waters, decided to employ their skills according to the way they saw the problem. Some wizards tired to make widgets that could outrun dragons, and others were attempting crossbreeding with skunk lizards to repel predation. Others tried to teach widgets to fly with little success as they proved nervous, afraid of heights, and were attracted by bonfires and candles. It was even charged that the wizards had forgotten what the problem was and were doing strange experiments.

A third group, at the insistence of the King, was trying to enhance widget production under the new widget enhancement program (W.E.P.). This group did not work very closely with the others and it was often said that W.E.P. was controlled by the dark forces of "Outer Earth." Some attempts at enhancing widgets by fertilizing the fields were encouraging, however wild widgets, being sensitive and discriminating creatures, took offense at the type of fertilizer common to the Kingdom and took to the hills where they were prey to all manner of beasts and horrors.

As time went on, the crises intensified and the people became more and more concerned as it was evident that the precious widget resource was in decline. The dragons grew fat and sleek and invading hordes more and more resourceful and mobile. Enhanced widgets could sometimes outrun dragons but wild widgets became very rare. In the end, there was little left but clean-picked little bones scattered over hillsides.

The people of the Kingdom rose in revolt, deposed the rulers and committed atrocities among the former bureaucrats. Some who survived were sent to serve in the great galley Tanu, while others were sold into slavery in the fish mines near the clammy castle ruled by Prince Rupert the Glum. Anarchy reigned in the kingdom and people had to eat roots and berries. Never did they trust a ruler or official. The cruel winds scattered the bones of the widgets and in time, not a trace of them remained in the entire Kingdom.

John Davis, Associate Director
Resource Services Branch

New approaches to abalone management

Attempting to keep pace with B.C.'s commercial abalone fishery has required major changes in management strategies to ensure that the fishery does not exceed the limits of the resource.

The changes in abalone management have all taken place recently. In 1979, following limited entry in 1977 and a season closure in 1978, a coast-wide allowable catch was established and the harvest was set at 1,103,752 kg down from the 2,207,505 kg landed in both 1977 and 1978. The 1979 season began with a short wide-open fishery followed by a quota fishery in which each licenced abalone vessel was assigned 22,075 kg of abalone. This latter plan was introduced to accommodate the smaller vessel operators and to provide for the fresh local markets both of which would be seriously impaired by a short wide-open fishery. It was a controversial plan highly disputed by the larger vessel operators.

Making sample measurements of abalone shell.

1980 Abalone Management Plan

Management plans were again modified in 1980 when abalone fishermen were faced with a further reduction in allowable catch. Based on the analysis of data from biological surveys which provided information on the annual sustained yield, the allowable catch was decreased to 551,876 kg. The decision was made to divide the allowable catch equally among each licence holder.

Like all plans, it had its negative and positive sides. On the negative side, the larger vessel operators argued that the plans eliminated the competitive nature of the fishery and did not consider their larger capital investment. Also, the long season (April 15 - November 30, 1980) placed an additional workload on Fishseries staff. On the plus side, the fishery was managed on a sustained yield basis and harvest levels should not exceed annual coast-wide production. (This contrasts with earlier years when catch levels exceeded annual production and stocks were being depleted as older abalone were fished.) In addition, the plan does not curtail the local fresh market and affords some protection for the small vessel operators who pioneered the industry.

Whatever the plan, abalone management has responded to the concerns of the fishery and the resource, and we have moved from a period of over-harvest to a period in which catches reflect what the resource can support.

Paul Sprout
Biologist, Habitat
Protection Branch

Now you can tell them how you earn your bread and butter. Explain by wearing--a Fisheries T-SHIRT!

Orders are being taken by Colin McKinnon (2914) or Judy Weisner (3575). You can have any colour so long as it is light blue, and in sizes small to extra large. A full-colour Fisheries crest is on the front.

All this is available for a mere $10.00!

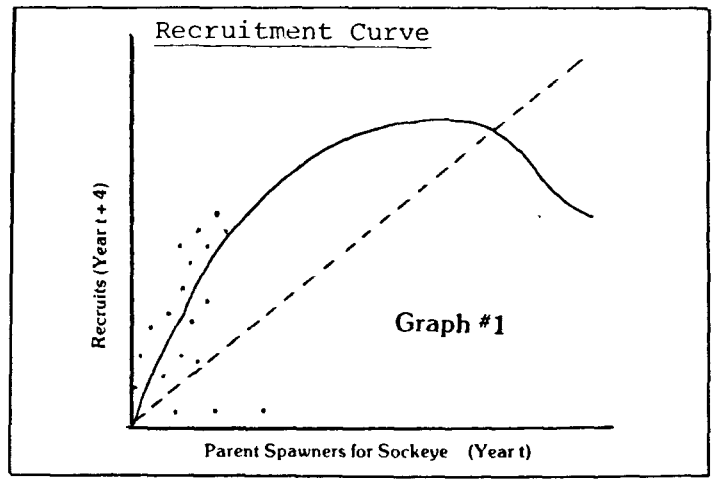
Salmon workshop provides know-how, stimi

Management biologists from the Department, the International Pacific Salmon Fisheries Commission, UBC and SFU met in early June for an intensive one week course on salmon management. Margaret Peters, SEP planning biologist, later prepared the following article for Sounder. *As a precursory note though, staff who do not have specialized knowledge or interest in the more complex side of salmon management, may be slightly baffled.* Sounder *would appreciate your comments in this regard.*

The UBC salmon workshop proved valuable not only as an educational experience, but also as a valuable source of new ideas and methods for managing the intangible science of salmon populations.

Under the direction of Dr. Ray Hilborn and Dr. Carl Walters, daily activities included two lectures on topics related to management of the resource, and a management problem analysis session The latter, afternoon session included a laboratory on data analysis and computer programming in Applesoft BASIC on the Apple II computer. The morning lectures were designed to highlight advantages and disadvantages in using the various management tools that are now available. Additionally, alternate theories and models, which fisheries biologists could use in their daily data analysis, were reviewed.

One of the management "tools" discussed was the use of stock-recruitment curves to estimate the future returns in catch and escapement from the adult spawning stock that produced them. The parent spawning stock refers to the initial escapement at a given year (t) and recruitment is the the sum of catch plus escapement taken at the year (t+x) when the brood stock returns. Graph #1 shows an example of this recruitment curve.



This typical curve, commonly known as the "Ricker Curve", has been the subject of continued use and discussion since its development. One variation of the curve, the Ludwig Procedure, was used by the management biologists in the computer laboratory session to develop recruitment curves. The distinction here is that in addition tc producing the Ricker-shaped curve to fit the data, where no counting errors are assumed, it also generates a curve which is corrected for measurement errors. Essentially, all the data points are adjusted by comparison between the other data points and another curve is drawn. The advantage here is that these graphs can indicate more clearly the present state of the stock. Graphs #2, 3 and 4 identify the possible outcomes of this type of analysis. This analysis can be done by hand or much more readily by a computer program.

Two parameters that are also required to draw these graphs are the average productivity and the replacement value for the stock. Unfortunately, these values for specified stock are often unknown. One might know the size of the stock but not its productivity, or vice versa. In addition, these parameters are not constant. Changes in stock size and short and long-term environmental variations all contribute to possible variations of these parameters. Greater inaccuracies arise when the basic "tools", catch and escapement, used to develop this entire management scheme, are questioned. As these components are the two major types of data employed for fisheries management, their accuracy should be as representative of the fishery resource as possible. Efforts must be made to improve these "tools" but accomplishing this ideal should not impede a continual development of more novel management options.

The afternoon problem analysis sessions proved extremely valuable to

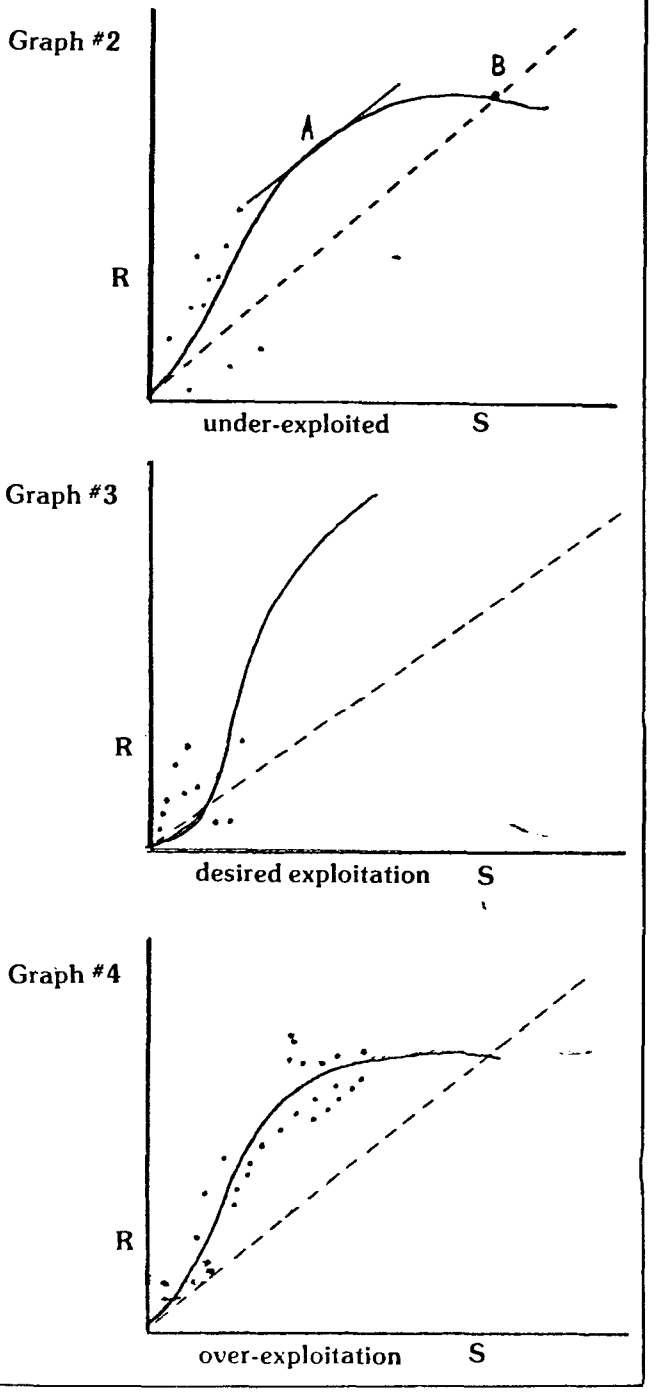
both the management biologists and university staff. Each management biologist present had the opportunity to relate a data analysis or fisheries-related problem which he or she is faced with in doing his or her work. Other fisheries biologists, university staff and graduate students in turn provided input as to alternate ways for solving the problem. For example, Morley Farwell, management biologist for North Coast Division, related the lack of an accurate enumeration method to determine the numbers of salmon that escape the seine fishery in the Fisher-Fitz Hugh area of the gillnet fishery in the Bella Coola gillnet area. The first true escapements are taken at the Atnarko River counting fence, approximately 84 km from the Bella Coola River mouth, and 216 km from the fishery. Suggestions were made to introduce test fisheries between the seine fishery and the gillnet fishery using mark-recapture techniques and another test fishery at the mouth of Bella Coola River.

This problem and others such as mixed stock fisheries, within season control, enhanced and unenhanced stocks, bag limits, gear allocation and international fisheries were open to the group for suggestions on improvement. Some of these fisheries problems were addressed by biologists from the South Coast and Fraser Regions of Resource Services and IPSFC as they related to their own areas of study.

Basic computer programming and modelling on the Apple II computer, as it relates with data analysis of catch and escapement, was the most well received section of the entire course. Ray and Carl, and graduate students of UBC, instructed the whole group from start to finish. Everyone was shown how to get the computer going, input the diskette and key punch data, and run and write simple programs.

In addition main programs were designed by the instructors prior to the workshop to get these laboratory sessions underway. These programs enabled biologists to develop stock-recruitment curves from their own catch and escapement data, produce an additional model of stock, operate the long term Georgia Strain chinook and coho model, and manage the Skeena sockeye and pink fisheries. From here the imagination and innovations in managing hypothetical fisheries through computer simulation just expanded. By manipulating a fishery over several years using various regulatory options, different to those which are presently used, some surprising and often alarming re-

Hypothetical Sockeye Stock-Recruitment



salmon workshop...

sults were produced. Management biologists could actually visualize the alternative effects their changes had on managing their fisheries or stocks in a different manner. The enthusiasm and confidence developed even more when some of their new management decisions provided escapements and catches larger, or smaller, than ever imagined.

All exercises proved beneficial to those who attended this section of the course, especially when the running of the computer programs did not run up any expense in terms of computer dollars. As this "home" computer system is completely self-contained, the only cost outside the initial computer and diskette costs, is the electricity to operate it. However, the system also has the advantage in hooking up with main terminals like System 2000 or the UBC terminals, and linking up by telephone with other Apple II computers.

Since the Salmon Management Workshop took place, a smaller two-day workshop has taken place for developing more specific programs to analyze some of the fisheries problems that were raised during the afternoon problem-analysis sessions. A few weeks ago a group of enthusiastic biologists met for a workshop to attempt solving the Fisher-Fitz Hugh fishery enumeration problem.

In retrospect, the workshops provide valuable opportunities for both the government and university groups to share their knowledge and experience in addressing real-life management and enhancement problems.

Margaret Peters
SEP Planning Biologist

Promising results for Quinsam Pink

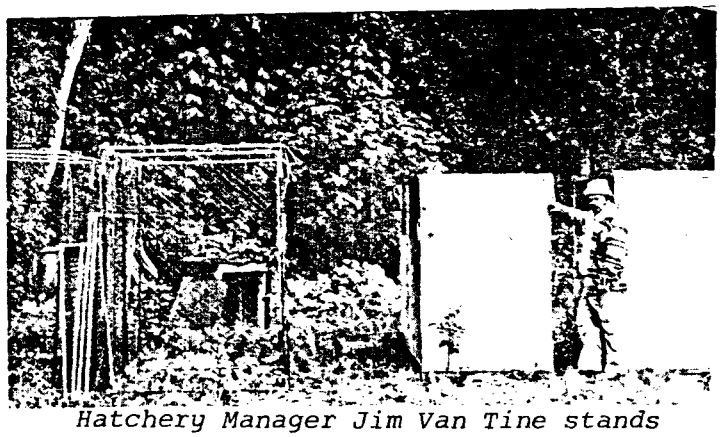
An experiment in rearing pink salmon in portable estuary pens has produced excellent results and may speed the species' revival in the Quinsam River.

The experiment was conducted last spring by the Quinsam hatchery staff. Their initial tests demonstrated that pink salmon reared in estuary pens rather than at the hatchery exhibited higher growth and lower mortality rates. The system is simple and requires a minimum amount of care and attention.

"Although one year's operation is too short a time period to make any conclusions," manager Jim Van Tine says, "rearing in estuary pens was a success and it certainly surprised a lot of people."

There were two general objectives to the pink rearing experiments: 1) to re-establish Quinsam River pink stocks that have been reduced by overfishing and 2) to find enhancement techniques for pink salmon.

During the preliminary part of the experiments, 400,000 eggs were hatched



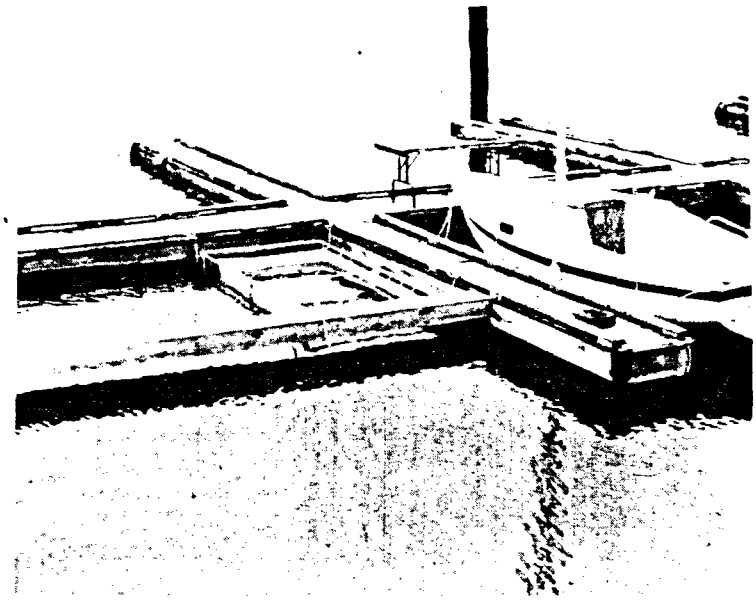
Hatchery Manager Jim Van Tine stands next to rearing pens used in experiment.

in Heath trays. Half the alevins were placed in gravel upwelling boxes, the other remained in the incubation trays. The alevins in the trays used up their yolk sacs six weeks before the box alevins The tray alevins grew well in the initial stages of development, however, the box alevins reached a similar size two weeks after "buttoning-up".

"What concerns me about the six week premature growth among Heath tray fry, " Jim says, "is that they ate their food but they never grew. Perhaps their stomachs were not properly developed."

Quinsam pink...

At the fry stage, 280,000 pinks were transported to the mouth of the Campbell River, the mainstem of the Quinsam. These fry were placed in three varieties of rearing containers. Two sea-pen varieties (4' wide x 8' long x 6' deep), a marquisette pen hung on a pipe frame on the inside of a wire-covered predator net and a perforated aluminum pen, were submerged and attached to the marina wharf. Four standard 6' diameter rearing tubs were also set up at the marina. Two submersible pumps provided either fresh surface water or salt water to the tanks. A fourth set of fry were reared at the hatchery. A student was hired to care for the pens and tubs at the Marina.



Pens are they appeared submerged at the mouth of the Campbell River.

In 50-55 days the net-pen fry had grown from 0.2 to 0.8 g with an average mortality of just seven percent. This low mortality contrasted markedly with the 31 percent mortality rate observed among the hatchery reared pinks. There were similar growth rates in all the tests.

Why the marked difference in mortality? Jim believes it was the salinity and especially the stratified salinity that prevails in estuary conditions, that was largely responsible for the high survival rate among the net-pen fish.

The water in all situations was a constant 8-10°C, but in the estuary the surface water has a salt content of two to four parts per thousand (ppt). Because of the presence of a second layer of water, 1.3 to 2.75 m deep with 25-28 ppt salinity, the fish in the net-pens can select the degree of salinity that suits them best.

The most successful variety of estuary rearing container was the aluminum pen (5 mm thick metal screened with holes 5 mm in diameter).

"The marquisette pens are just an ideal medium for algal culture, " Jim says. "They were almost impossible to clean."

The aluminum net-pens had almost no algal growth and were far easier to clean.

The experimental pink-rearing in the Campbell River estuary has demonstrated the potential benefits of this enhancement technique and has opened the door to its possible use this year at the newly re-opened Bear River Hatchery, located 50 km north of Campbell River.

Mike Youds, Coeditor

Dental plan cancelled

Dental insurance coverage for Local 20147 of the Public Service Alliance of Canada, Environment Component, was terminated as of August 31, 1980.

To halt Vanfed payroll deductions for dental insurance premiums, employees are required to complete a Cancellation Notice. The cancellation forms are available at Personnel Services, 1112 W. Pender.

Employees who have had dental insurance premiums in addition to a monthly Vanfed payroll deduction must now amend their payroll deduction. All deductions made for premiums after August 1980 will be refunded to each member by Kaynor Insurance Consultants Ltd.

Book reviews

Is there a book you would like to introduce to Department staff? Is there a book you would like to warn them about? Send us a review.

Tidepool and Reef: Marinelife Guide to the Pacific Northwest Coast, by Rick M. Harbo. Hancock House. $4.95.

The advantage of this guide over others available for some time, is the quality of illustrations. Marine guides produced by the Provincial Museum in Victoria offer good descriptions, but often what is needed for identification purposes is a good, color photograph. Rick, a biologist with the Habitat Protection Branch, has used his skill as an underwater photographer and the results are an optical delight. The guide also offers a brief description of each life form.

Shrimps of the Pacific Coast of Canada, by T.H. Butler. Canadian Bulletin of Fisheries and Aquatic Sciences 202. Supply and Services Canada 1980. $18.

This is the first attempt to provide a comprehensive reference work on shrimps in the B.C. region. Eighty-five species are listed, seventeen recorded for the first time. The accounts include keys, detailed descriptions and illustrations, notes on colour, distingushing characteristics ranges, first known local sitings, and information on biology. Also included are sections of shrimp parasites, sexing of shrimps, the use of the keys and an index to scientific and common names. The author, T.H. Butler, is head of the Shellfish Program at the Pacific Biological Station. The illustrator, A.A. Denbigh, is scientific illustrator for the Pacific Biological Station. An excellent reference for anyone interested in West Coast Marine life.

A basketstar, taken by Rick Harbo

The Canadian Woman's Guide to Money by Monica Townson and Frederick Staphenhurst. McGraw-Hill, 1979. McGraw-Hill, 1979.

The authors try to make sense of a woman's finances, whatever her circumstances--working or not working, single, married, separated, divorced, or widowed. A complete "how to" of financial survival, the *Canadian Woman's Guide to Money* covers not just the basic principles of personal money management, but practices in credit granting, taxation, insurance, pension plans, and other money-related areas that often hurt women in dollars that count. *

Equal Employment Policy for Women; Strategies for Implementation in the United States, Canada and Western Europe, edited by Ronnie Steinberg Ratner. Temple University Press, Philadelphia, 1980.

The original essays in this collection make up the first comparative discussion of equal pay and equal opportunity policy for women. The countries included are Sweden, Austria, West Germany, France, Great Britain, Canada and the United States. The editor concludes this volume with an essay which assesses solutions in progress and suggests more effective ways to implement equal pay and opportunity policy in the Western hemisphere. *

* *Reprinted from the* Equal Opportunities for Women Newsletter.

Bulletin

Getting Hired: preparing for a Selection Board

Bulletin is a new Sounder *feature aimed at providing Department staff with career information. Any suggestions? We'd like to hear from you. The following articles is reprinted from the* Equal Opportunities for Women Newsletter. *by the Public Service Commission. Selection Boards are, of course, a concern of all staff.*

Congratulations! You have been invited to an interview. Your job application has been reviewed by the screening board and your written qualifications meet the basic requirements of the position. Now they want to evaluate you, personally. Meticulous preparation for this vital step in the selection process will dramatically increase your chances of success.

Long-term preparation

It is important that you develop the skills and obtain the training required to move in your desired direction. Make a habit of reading career-oriented publications and engaging in career-oriented activities. Ensure that your manager is aware of your aspirations; she/he or a department personnel officer are your best sources of career counselling. Seek out challenging assignments on either a job-related or volunteer basis and interact with people who have expertise in your chosen field.

Short-term preparation

Some thoughtful effort on your part will be necessary in order to make a favourable impression on the selection board. Begin to assemble your study materials. As indicated on the permanent competition poster, you should have already contacted the responsible staffing officer to get further information such as a statement of qualifications and/or a job description. A thorough examination of these items should give you some indication of the questions you might be asked. Follow this up by reading the annual report of the department; you will get a good overview of its objectives. Literature and other material readily available from departmental libraries are also useful sources of information.

Should you require further clarification of your prospective position, the responsible staffing officer may put you in touch with the appropriate line manager or the person currently holding the position. In addition, you could ask the line manager for other information such as details of the structure of the department, its mandate and function, and how it interrelates with other departments.

You should also spend some time anticipating areas of questioning by the selection board and preparing well-informed succinct replies. Practice these answers until you sound natural and competent. You should also compose one or two pertinent questions for the selection board that would demonstrate your interest and knowledge in the field.

The selection board

There are no constraints on the size of a selection board although a three-member board is most common. This generally includes the responsible staffing officer, the line manager, and another knowledgeable resource person. Normally, at least one of the board members will be a woman.

The body of the interview is structured around the assessment of rated requirements, which include the knowledge, abilities, and personal suitability factors. Candidates may also be marked on desirable qualifications, not to exceed 10 percent of marks allotted for rated requirements. The selection board usually assigns assessment weights to the three factors. For example, personal suitability may be allotted 40 percent of points for one position, but only 10 percent for another. This variance may occur between positions where knowledge can be acquired through on-the-job training and where advanced knowledge is immediately essential.

A good rating on the knowledge factor depends on correctly answering

questions based on information in the advertisement and the statement of qualifications. The abilities factor measures skills necessary to good job performance, such as good oral and written communication. Role-playing and scenario situations are also normal assessment techniques and may be used along with the standard question and answer procedure. A separate test to assess abilities or knowledge may also be scheduled. Personal suitability may be measured by such elements as interest, co-operation, and the general attitude of the candidate. Appraisals and reference checks may also influence this factor. Knowledge, skills, and personal suitability, whether gained through volunteer work experience or through paid employment are equally valuable.

A recent survey of 108 employers in Canada revealed that the skills they consider to be the most valuable in employees are: the ability to communicate; a willingness to take initiative and to accept responsibility; leadership potential; and motivation. These ranked above all other considerations regardless of the type of job.

Conducting yourself before the section board

It is good policy to arrive for your interview a few minutes early. Present your most professional appearance. Allow the board to take the lead role in the interview process. The board members will be most impressed by a friendly, alert, and positive attitude. Think carefully before answering a question and reply in a distinct and concise manner. Should you not understand a question, request clarification. It is acceptable to take along a sample of any outstanding work you have produced and present it upon request. Expect the interview to last an hour and half or so. Above all stay relaxed, calm and natural, or at least give that appearance.

After the interview

Be prepared to wait up to four weeks for notification of the result of the interview. After the interview, many

If successful, you will receive a letter of offer of employment that contains all the necessary information such as the effective date of appointment and the authority for determining your salary.

After you have mastered the responsibilities of the job and attained some experience, it will be time once again to prepare for another selection board.

Good luck!

What you can expect

by Pat Phillips

I missed an issue by being on holidays. You were all supposed to know that I had gone to Reno, but it was deleted because of limited space. Shows you where I stand in the *Sounder*!

Those that are busy with decentralization and removals--a reminder when submitting your claims. It helps if the Record of Travel Expense claim is done in chronological order so the trip can be followed right from start to finish.

Another reminder is that the form "Requests for Staffing" for every position being filled, be they CFT, Term, or Casual, must be approved before anyone is taken on strength. They should be sent in quickly to allow time for all approval signatures and Public Service Clearance numbers.

As Field Services staff are aware, Irene MCCracken retired on June 27, 1980 to enjoy the leisure side of life. She will be missed by all Branches, for her willingness to help in any problem and, especially by me--as she has been my right hand for many years.' We had a lunch for her at Eddies Place for Fish on Wednesday, July 16 which at her request, had a limited attendance. We had circulated a card made for her by HUgh McNairnay and put the donations in a piggy bank to be used as she desired. We all, I know, wish her the very best in her retirement years.

I feel I should be quite satisfied with my writing efforts. Not sure if I'm being overenthusiastic, but I have received no questions. One cannot help but think "all's well", but is it?

Spurious emissions

Two well-known headquarters staff have retired after many years of service with the Department.

Irene McCracken retired on June 27 after 25 years of federal service. Irene worked with the Licencing Unit prior to transferring to Field Services Branch Administration. Irene plans to do some travelling with her free time.

Alice Sunderland retired on July 14th. Alice met most of us when working with Information Branch but spent part of her last year with Personnel Branch.

* *

Lonnie Hindle was the successful candidate for the job of Indian advisor, Field Services Branch. Lonnie commences his new duties in August.

* *

Brian Richman leaves Port Hardy in September to assume the duties of his new job as training officer, Field Services Branch.

* *

Newly married are: Carol(nee Lambert) of Whitehorse District Office to Bruce Laurie of Whitehorse on July 12 and Cameron West, biologist, SEP Facility Evaluation in Vancouver, to Kim Holland, Small Projects, SEP, on June 21.

* *

Four new fishery officer trainees joined the Department June 2: Cindy Sherlock to Campbell River, Gordon Curry to Victoria, Richard Grindrod to Bella Bella and Vic Fradette to Masset.

* *

Fishery officer moves have been numerous

Floyd McKee	from Masset to Vancouver Waterfront
Doug Swift	from Comox to Coquitlam
Ken Penny	from Mission to Comox
Doug Burnip	from Victoria to Coquitlam
Brian Hume	from Coquitlam to Port Alberni
Jack Trent	from Comox to Campbell River
Gary Gulash	from Rivers Inlet to Kitimat
Greg Klimes	from New Westminster to Rivers Inlet
George Vardy	from Port Hardy to Prince Rupert
Scotty Roxburgh	from Coquitlam to Whitehorse

Shirley Popham, director of the Information Branch, Pacific Region died July 24 after a bout with cancer.

* *

The new executive director for SEP is Dr. Ward Falkner from Winnipeg.

* *

The fifth floor at 1090 will be seeing a new face as receptionist. Chris Cote's last day at Fisheries, was Friday, July 11. As a parting gift, she received a pair of coordinated wood-frame mirror pictures and a bouquet of flowers from friends in the Department. Chris joined Fisheries in March, 1977.

* * *

For the benefit of out-of towners or those who haven't yet noticed, winning photos in the *Sounder* photo contest are now on display on the tenth floor of 1090 W. Pender across from the elevators.

* * *

Hugh McNairnay former Department employee and artist of the "Howay" India ink prints, still has some of the works available. The prints are 15 by 22 inches and part of a limited edition of 200. His address is R.R.#3, Hadow: Road, Salmon Arm, B.C. V0E 2T0

* * *

Pacific Region Personnel Services will be holding preretirement planning sessions the week of October 22, 1980. Interested employees 45 years of age and over should notify Hilary Schwenk, human resource planning and training officer at 1112 W. Pender, through their supervisor as soon as possible. Priority in attending these informative two-day sessions will be given to employees closest to retirement.

* *

Various E.O.W. literature is available for Department employees to browse through in the Human Resources Section of Pacific Region Personnel Services, 1112 W. Pender. This literature includes the 1979 E.O.W. Report, accession lists of books and films available from the Office of Equal Opportunities for Women, P.S.C. in Ottawa, minutes of meetings of the Interdepartmental Committee on E.O.W., *Rapport* newsletters, lists of statistical information, profiles of senior women executives and more.

* *

Sharon Henderson, programmer - analyst, has transferred from Computer Services Division Support Services Branch, to SEP Planning.

* *

Colin MacKinnon was the successful candidate for unit head, Fraser River, Northern B.C. and Yukon, SEP Facilities. Enhancement Program Facilities.

* *

Al Gould, formerly non-salmon biologist, South Coast Division, has transferred to Colin's former job to assume the duties of Johnstone Strait management biologist.

* *

Switchboard Operator, 5th floor, Chris Cote, left the Department on July 11th to join Evergreen Tours in Vancouver; we'll all miss you, Chris and wish you all the best in your new job.

* *

Obert Sweitzer, assistant supervisor, Kamloops District, is leaving Pacific Region for Ottawa, where he will assume the duties of Indian food fish specialist.

* *

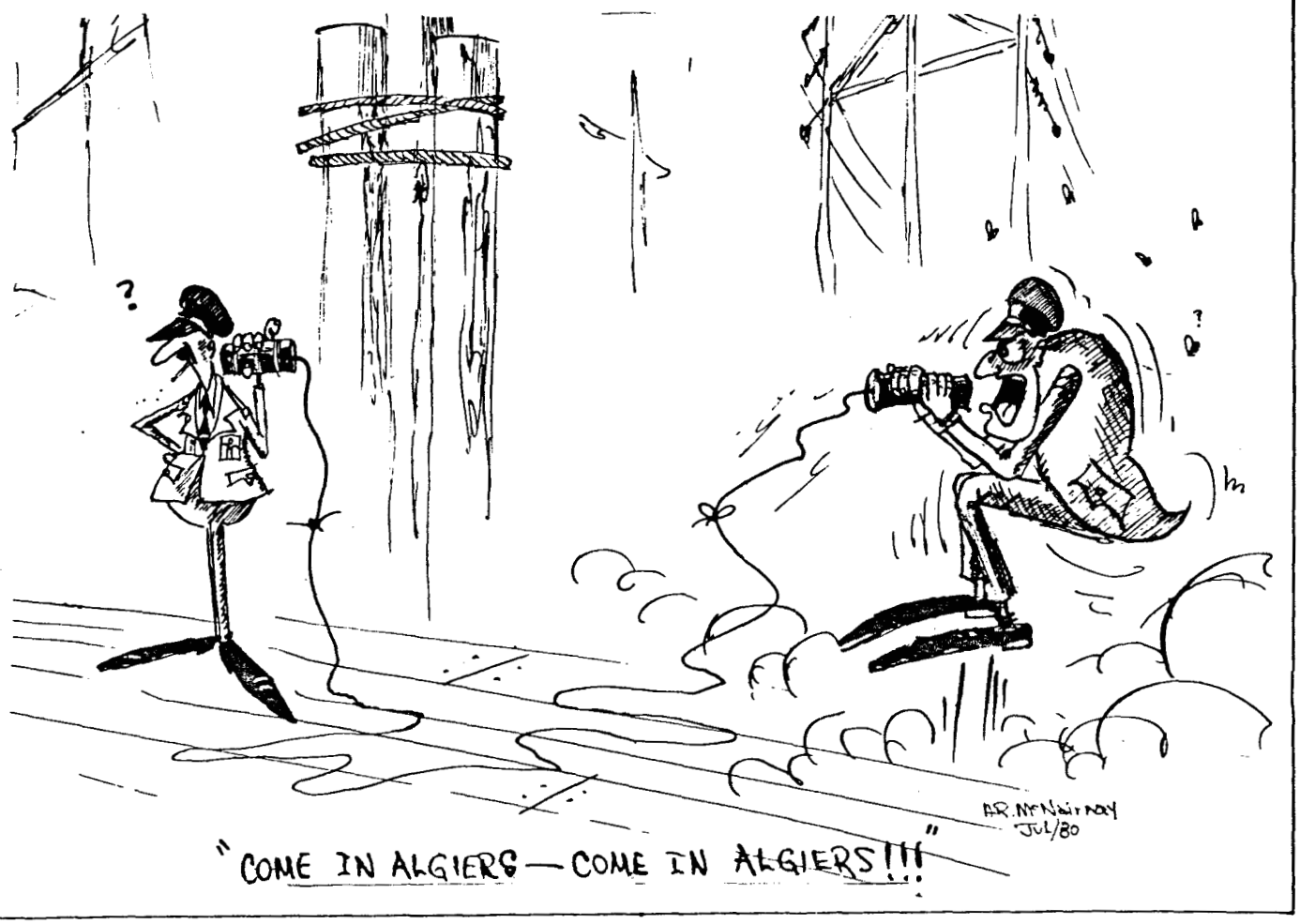
While preparing a Department slide file, Gayle Talbot heard an enlightening fact about the *Sounder* photo contest. On a meticulously tape-recorded explanation of the slides, Community Advisor Don Lawseth said, "Here is the slide, taken by Trevor Morris, for which I won a bottle of scotch."

Sorry, Trevor.

* *

Maclean's magazine recently featured an eye-catching article on sport diving in B.C., entitled "Diving bubbles on the rise" (June 9, 1980, p.58). Sharing the photo credits in the article was Rick Harbo, project biologist with the Habitat Protection Branch. Diving and underwater photography was originally a hobby but has become a part-time business for Rick. He has just had published a guide to marine life in B.C., entitled *Tide Pool and Reef*, and also is contributing editor for *Diver Magazine* of Vancouver. He uses a Nikon in an underwater housing with a Honeywell flash.

See September Sounder for an expose on the woes of radio communications.



Sounder
Readership Survey

To improve Sounder, we, the editors, must first know how you, the reader, feel about your newsletter. Is Sounder more exciting than an income tax guide or more spellbinding than a soap opera? What purpose can Sounder serve for you? The following sets of questions are designed to inform us of your opinion of Sounder. You may remain anonymous but identification (sign at the bottom) will help us to refer to you if a story is suggested. The survey should require only 10 minutes to complete.

General

1. How much of Sounder do you read? (Check one)

   _____All _____Less than half

   _____Most _____None

2. What is your general opinion of Sounder? (Check one or more)

   _____Awful _____Improved greatly

   _____Too cutsey _____Too long

   _____Needs improvement _____Too short

3. Have you submitted stories to Sounder? Why or why not?

   _____

4. Offhand, do you know who to contact regarding Sounder story ideas or submissions? _____

Content

1. Please rank in order from most interesting (1) to least interesting (8) of the following types of stories (note examples given):

   _____New policies in the field (Decentralization, Proposed bag limits),

   _____New policies in the office (SEP Management Enhancement Task Force Group)

   _____Project reports (lake fertilization, rearing experiments)

   _____Fishery reports (herring fishery, abalone quotas)

   _____How-to/technical advice/procedures ("What You Can Expect", radio problems)

   _____Personal viewpoints (editorials, satire, environmental considerations)

   _____Special interest (recipes, historical, book reviews)

   _____Staff notices ("Spurious Emmissions", "Letters to the Editors")

CUT ALONG THIS LINE

Survey cont'd...

2. What kind of stories would you like to see introduced in Sounder? List your top three in order from most important (1) to least (3).

_____Profiles of staff members

_____Question and answer interview with staff members

_____A bulletin of career information

_____Notice of staff events (golf tournaments, baseball games etc.)

_____

_____Others (please elaborate)_____

3. Sounder, by vitue of its specialized audience, deals predominantly with stories about marine creatures.

_____I read fish stories

_____I would rather read about Jackie O. or _____

4. Would you like to see Sounder _____more often?

_____less often?

_____continue as is?

Personal Information

What is your position and/or involvement with the Department of Fisheries and Oceans?_____

How long have you worked for the Department in the Pacific Region?_____

Do you have any additional story ideas or comments regarding Sounder or this survey?_____

_____

_____

_____

Signed, _____

Upon competion of this survey tear out and deposit or mail to Maxine Glover Editor "Sounder" Department of Fisheries and Oceans, Ninth floor, 1091 W. Pender Street. Vancouver B.C. V6E 2P1.

Thank you!

CUT ALONG THIS LINE

Sounder

Volume VIII Number 6 September 1980

Thompson shoulders a growing burden

This is the first of a series on B.C.'s major salmon rivers and problems stemming from their multiple use.

A homemade sign amid the tumbleweed above Savona makes an almost desperate plea to motorists on the TransCanada Highway: "Save the Thompson River". Elsewhere in the Kamloops region, residents wear badges bearing the same request and Kamloops newspapers feature headline after headline on the city's most serious ongoing problem: the uncertain future of the Thompson River.

The City of Kamloops has applied to the provincial Waste Management Branch for a permit to double the volume of sewage discharged into the Thompson River. The application marks the latest development in a ten-year controversy over the deterioration of the Thompson River. One newspaper account claimed the Thompson is a "dying river", eutrophic because of large amounts of waste material in the water. Others, such as John Carter of the B.C. Wildlife Federation, fear that the new permit, if it goes ahead, will seal the fate of the famed sport fishing river. Mike Nassichuk, acting chief of the Water Quality Unit (Habitat Protection Division) states that the relationship between the algal growths in the Thompson River and salmon populations has yet to be throughly studied.

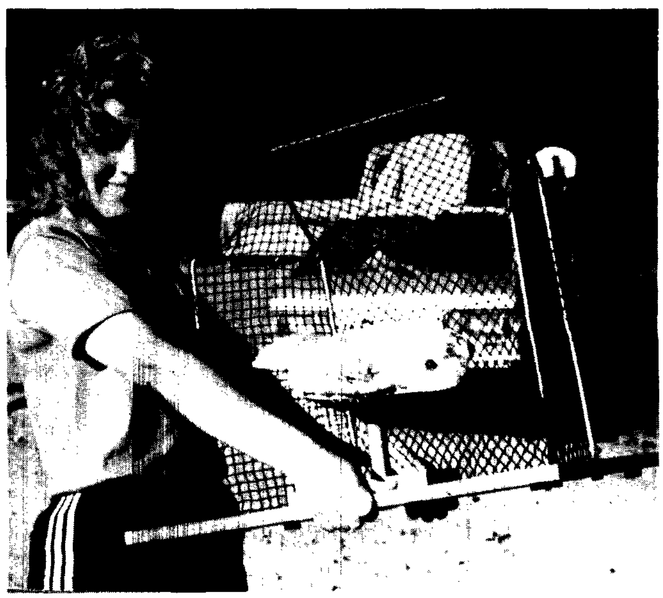
"The excessive algal growths and altered benthic invertebrate communities could have serious negative impacts on salmon" he says. He also states that the problem in the river is compounded by the fact that there are two major effluent discharges into the river, the City of Kamloops and the Weyerhauser pulp mill. Therein lies the problem.

continued on page eight

inside

It's no secret, but it is safe. Salmon are undergoing sex changes while others will never spawn, see page six.

In 1896, they dammed the Quesnel River to "mine" its gold. Amazingly, the remains of the dam and the salmon population are still there, see page ten.



1090 triumphs

Judy Wiesner, Secretary for the South Coast Division, holds a rare fish caught in recent baseball playoffs in Nanaimo. Locally known as the Wet Flounder Trophy, the fish was netted by the wonder-team from 1090 W. Pender for second overall standing in the federal baseball league. For more, see page 15.

Lance stole the show

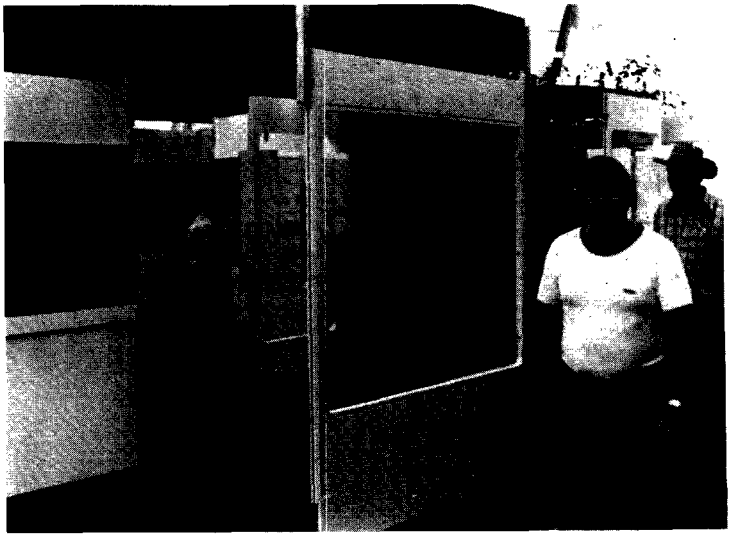
Near the gates of the 1980 Pacific National Exhibition, through which over a million visitors passed this year, the federal government set up its impressive candy-cane-colored, big-tent display of works and wonders.

Though not nearly as popular as the Wild Mouse or the world's largest demolition derby, the Canada Pavilion was greeted with a favorable public response during its first year at the exhibition.

The Fisheries and Oceans display was situated in the far corner of the second tent, across from the CUSO display (featuring Bimbo, operator of the one-man weaving machine). Visitors questioned for their opinions of the Fisheries display responded favorably, but with constructive criticisms as well.

"There should be more stuff labelled here because there are a lot of kids going through. My kids ask questions and I can't answer all of them," one man said.

The display consisted of several panels of photographs, with brief captions, a model of a salmon's cardiovascular system ("Wow, far out and freaky"), a fish tank with several native cod inside, and a small pool with nothing in it. The display was overshadowed by other, more fascinating displays by other government departments.



Revellers at PNE display: foreign visitors impressed.

Most impressed by the Fisheries display were foreign visitors, who often spoke with regret about their dead or dying fisheries.

"I think we're very fortunate," one woman said, "but what you need here is a sounding board because I like to sound off about some of these things,"

"Make sure you put that in!" she said, waving her index finger.

Soon after, the crowd tapered off. The display stood empty while outside a band burst into full brass jubilation. Lance Harrison and his Dixieland Jazz Band had stolen the show.

Mike Youds, co-editor

THE SOUNDER
Editors: Maxine Glover
Mike Youds
Assistant Editor: Gayle Talbot

1090 West Pender Street
Vancouver, B.C. V6E 2P1

A reminder...

To all staff members who receive Sounder, we are awaiting your response to the July-August readership survey. So far, the response rate seems good, but we hope to hear from a lot more people. This is your opportunity to let us know what you would like to read in Sounder.

Bulletin New hiring policy introduced

The Public Service Commission of Canada, (PSC) the body which formulates and implements policy on staffing in the Public Service, has established a new policy for job competition practices in the Yukon and Northwest Territories.

Essentially, the new policy is to staff northern positions, whenever reasonable, from within the northern labour market. The primary goal is to promote and maximize the use of northern resources and talents, and to reverse previous tendencies which presumed transience on the part of the northern labour market.

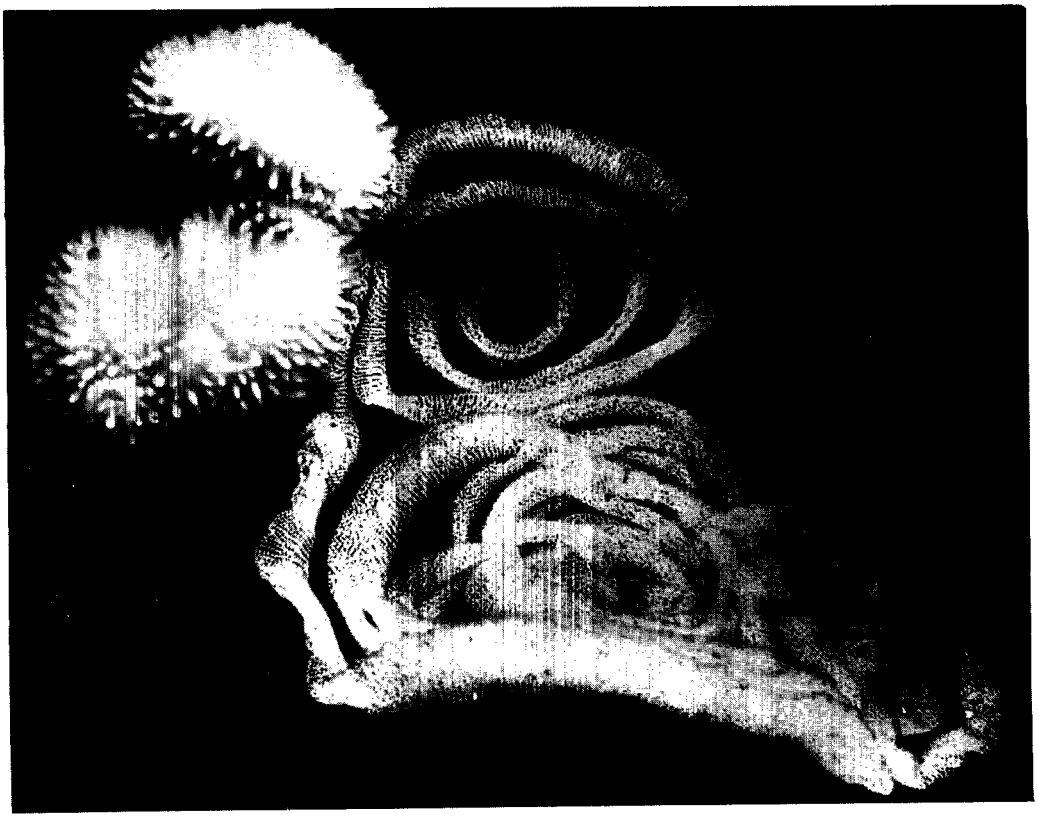
A further objective is to support efforts at training and developing northern staff. The practical effect of this policy will be to provide Northerners a first opportunity for northern positions and will, in effect, eliminate Southerners from competing should a qualified Northerner be found. Those most affected will be southern fishery officers who aspire to spend some time gathering experience in the Yukon.

The following sequence expresses the list of prorities to be considered when determining the type of staffing action to be taken:

1) Intradepartmental or interdepartmental competitions open to the north.
2) Consideration of participants in the Northern Careers Program, which promotes the entry of native Indians into federal government jobs.
3) Open competitions within the north.
4) Intradepartmental or interdepartmental competitions open to the south.
5) Open competitions in the south.

It should be emphasized that there will be some degree of flexibility available to tailor the application of these policies to specific positions, and that in some cases arrangements may be concluded with the PSC to bypass some of the preceding steps. However, the overall intent of the policy is clear, and exemptions will have to be justified.

Gary Norberg,
Staffing Officer,
Personnel Division



Minute ribbons of small, white nudibranches (sea slugs), Adelaria, are often found laying their eggs on kelp fronds. - Rick Harbo photo

They shall not return

Somewhere in the vast underwater expanse of Georgia Straight there are 40,000 female salmon who rose from the incubators of Capilano Hatchery as a mixture of males and females. And there are another 40,000 salmon out there who, for possibly the first time in history, will not return to spawn with others of their generation.

Both groups are the subject of pioneer experiments being conducted by the Department's Nutrition and Applied Endocrinology Program at the West Vancouver Laboratory of the Resource Services Branch, in cooperation with the Capilano Hatchery.

Program Head Ed Donaldson is working on the three-year-old experiment with Biologist George Hunter. The two are now awaiting the results of the first pilot scale experiments. Success could mean significant increases in the value of the Pacific salmon resource as well as new and advanced stock management techniques for hatcheries.

In the first experiment, the alevins were given the natural female sex hormone, 17 beta estradiol, which effectively changes the males into females. The objective of sex alteration is to increase the number of roe-producing salmon among the Capilano stock. Several species including chum and chinook are being tested under experimental conditions. (Some of the work on chum is being conducted by Dr. Joachim Stoss a NATO postdoctoral fellow from West Germany.)

The positive results of the treatment with the female hormone have already been established at the West Vancouver laboratory. All female groups of coho salmon have been successfully reared to adulthood and spawned. In June, 40,000 hormone treated fish were released with the Capilano hatchery stocks. These fish have been nose tagged and their adipose and ventral fins have been clipped for identification.

The second experiment involves the chemical sterilization of salmon so that the sex drive, which is assoicated with sexual maturation, is eliminated.

- Dave Wilson photo.

Spawned-out sockeye on a bank of the Raft River: must the buck stop here?

"It is all based on the assumption that sexual maturation is what draws the salmon back to spawn," Ed explains.

Without sexual maturation, salmon do not spawn and remain in the ocean to grow larger, and larger. In fact, it is not yet known how large sterilized salmon may eventually grow. But contrary to the news reports of a Vancouver TV station, the Program is not breeding "superfish".

"The growth will likely taper off as the fish get larger," George says, "so what you would probably get is an over-all increase in the average size of fish from the treated stock."

The initial results of the experiments will be known this fall when the jacks from the first treated stocks would normally return to Capilano. In the case of the sterile salmon (this time the hormone 17 alpha methyltestosterone is used), the fish will remain in the ocean to be taken either by fishermen, marine predators or the ravages of time. Head recovery information gathered from fishermen and hatchery staff will help to determine the fate of the hormone treated salmon. Capilano coho are ideally suited for the experiment because it is believed that these fish stocks largely remain in Georgia Strait. It would be a wasted effort to treat salmon that migrate beyond the reaches of Canadian fishermen.

"The genetic make-up of the fish is not being tampered with. All we're doing is intercepting the genetic message."

Apart from providing larger catches for the commercial and Indian food fisheries, and "trophy fish" for the sport fishery, the sex hormone treatment may allow hatcheries to become more efficient through the elimination of jack salmon. Jacks are male salmon that mature precociously, returning to their native waters after only one year at sea. In terms of resource management, jacks represent lost productivity as they are too small to be caught by the commercial fishery. In addition, an increase in the proportion of females would mean that a hatchery operating at optimal capacity could obtain the same number of eggs from a lower total escapement while a hatchery in the process of building up stocks could obtain more eggs from the normal escapement.

The potential hazards of biological tampering, especially in the form of genetic engineering, have recently been in the public limelight. Many biologists share that view because results of genetic engineering experiments are not entirely predictable. Yet there are no serious risks of this type involved with the West Van experiments, George says, "because the genetic make-up of the fish is not being tampered with. All we're doing is intercepting the genetic message".

"Extremely low concentration of hormone are used, lower than those present in normal maturing salmon and laboratory experiments have shown that treated fish grow normally, and in the case of the feminized fish, reproduce normally."

Mike Youds, co-editor

U.S. geneticist shares interest

A Washington State University geneticist has found a way to produce sexless rainbow trout.

Dr. Gary Thorgaard has produced trout without reproductive organs by dipping the fish eggs in a hot water bath at a certain stage of development. The process creates trout with three sets of chromosomes instead of the usual two. Theoretically, the energy normally devoted to reproduction will, in the treated trout, go to growth.

Dr. Thorgaard has been working on a $3,000 grant from the Inland Empire Fly Fishing Club. A similar technique was used last winter at the West Van lab by a visiting geneticist from Norway, Dr. Terje Refstie, except in this case irradiated milt was used followed by cold shock to produce all female fry.

The Nutrition and Applied Endocrinology Program at the West Vancouver Laboratory has included rainbow trout in some of its sex control experiments. The Program has been working with the Abbotsford Hatchery to produce sterile rainbow trout for a small experimental lake in the B.C. Interior. The experiment, done with sex hormones, is intended to produce trophy fish for the lake. The name of the lake is a well-kept secret.

Campbell River speaks its mind

Good sport fishing means good business in Campbell River, but that's only one reason why the Campbell River sport Fishing Advisory Committee has become an effective aid in fisheries management.

As the only group of its kind in B.C., the Committee is the brainchild of Norm Lemmen, Campbell River district supervisor who established it two years ago as a means of overcoming community indifference with Department policies. The Committee meets once a month, for an evening of discussion, and normally assumes a low profile within the coastal tourist centre. Yet the essence of the Committee's value is its very existence.

"When the Committee was first formed," Norm says, "there was a problem in getting fisheries information to sport fishermen. And also, there was no input in this part of the District except from Comox."

So Norm approached several local interest groups -- fishing guides, sport gear merchants and rod and gun clubs-- with the aim of creating a regular information exchange between the Department and the community. At first, the groups involved turned down Norm's proposal because they could not get along with one another. An offer from the Campbell River Chamber of Commerce to provide a boardroom and secretarial services spurred his efforts though and the Committee has been meeting on a congenial basis ever since. It maintains a stance that is independent of municipal interests, although several members work for the District of Campbell River.

"Most of the contention comes in when we're aiming our closures at one particular gear type or user," Norm explains. "For example, the mouth of the Campbell River has a single-hook restriction at the moment."

But the Committee is less of an advisory body than a relayer of public information. Norm serves as the advisor or resource person as discussions range from pollution problems to illegal foreign canning factories. The members share an interest not only in sport fishing but also in proper fisheries management, fishing guide quality, commercial fishing, stock conservation and environmental quality. They do not merely dwell on these concerns during a monthly session, but carry committee business with them into the community as merchants, guides, conservation officers and informed citizens.

"We've got away from this attitude of confrontation."

Kevin Storries, Committee chairman and owner of Kevin's Pro Shop in Campbell River, also sits on the Sport Fishing Advisory Board.

"I've been really happy since we've formed this committee," Kevin says. "We've got away from this attitude of confrontation."

"Locally I find it very effective and Norm is very open to suggestions."

The Committee is attempting now to gather funds for the purchase of the Roderick Haig-Brown property, adjacent to the Campbell River, to fulfill the late environmentalist's wishes to have the area designated as a park. The plans, formulated by Haig-Brown himself in the early 1970s, include salmonid enhancement work to develop an old creek bed as an outdoor classroom for the observation and study of salmon in their spawning cycle. In cooperation with local interest groups, the Committee has approached the federal and provincial environment ministries with a sense of urgency -- the current owners will subdivide and sell the land if the necessary $250,000 is not raised within a year.

The Committee also is examining the severity of pollution in Buttle Lake. A report prepared by the Provincial Fish and Wildlife Branch has pointed to the lethal contamination of Buttle Lake fish within several years if levels of trace minerals continue to increase.

One suspected source of the contaminants is a tailings dump. The Committee has planned an information meeting and letters of inquiry followed by a full public meeting on the issue.

The Haig-Brown parkland acquisition and the Buttle Lake examination will be tests of ability for the Committee, -- as to whether it can turn informative talk into constructive action.

But for Norm the Committee is a worthy effort simply because of the level of rapport it has encouraged between the Department and the community.

"I would reccommend it for other communities where there is a large sport fishery. The locals are happy with it because they're finally speaking with one voice instead of five or six."

Mike Youds, co-editor

International cooperation proves valuable

Canadian trawlers in cooperation with Soviet, Greek and Polish processing vessels, began hauling in their nets Aug. 7 in the British Columbia Hake Cooperative Fishery.

The operation involves the utilization of Canadian mid-water trawl vessels which deliver their catch to foreign processing ships. The hake is processed into either a headed and gutted or filleted form, and then marketed in the foreign countries involved.

Twelve Canadian trawlers will participate in the 1980 fishery. The Canadian fishermen are represented by the Hake Consortium of British Columbia, which negotiates the contracts with foreign countries and is responsible for the organization of the operation.

Following successful negotiations by the Hake Consortium, three countries were allocated hake quotas this year by the Department of Fisheries & Oceans. Poland was allocated 5,000 t, the Soviet Union 8,000 t, and Greece 6,000 t. If the total allocation is harvested, the value of the fishery to Canadian fishermen will be approximately $3 million, which is 25 percent of the 1979 value of trawl-caught groundfish.

The 1980 fishery is the third year of the Hake Cooperative arrangements. The initial Hake Cooperative Fishery started in 1978, utilizing two Canadian trawlers and two Polish processing ships. The total catch was 1,814 t with a landed value of approximately $240,000. In 1979 eight Canadian trawlers delivered hake to both Polish and Soviet vessels. 3,102 and 1,131 t were delivered to Polish and Soviet processers respectively. The value of the fishery was approximately $560,000.

Hake taken by Canadian trawlers are cleaned aboard Polish processing vessel.

The 1980 fishery is expected to be extremely successful. It has recently been reported that the abundance of hake is considerable, due partly to the absence of Soviet vessels in U.S. waters. This means some of the 100,000 t usually taken by the Soviet fleet may be available for harvest in Canadian waters.

In the future it is hoped that joint hake cooperative ventures with foreign countries will combine both catching and on-shore processing arrangements, as well as experiments in the production of hake surimi, a type of fish cake.

Trevor Proverbs
Offshore Commercial Fisheries Division
Field Services Branch

Increased wastes on Thompson

...continued from page one.

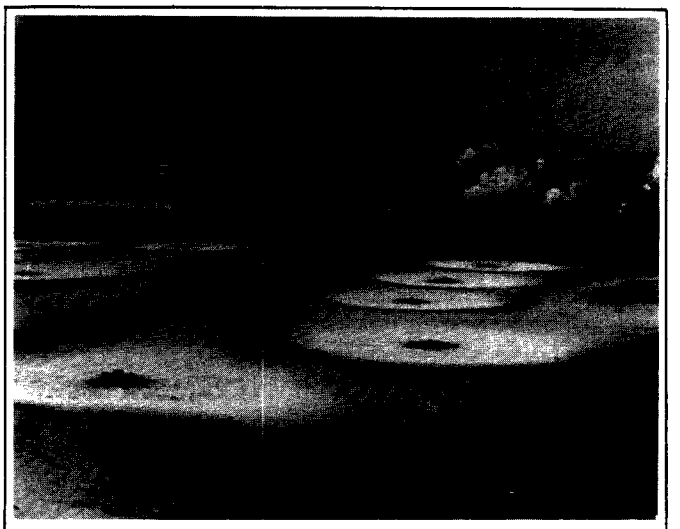
As the largest tributary of the Fraser River, the Thompson is one of Canada's most valuable salmon rivers -- producing over $10 million worth of salmon annually for Canada and another $6.3 million for the U.S. The Thompson represents 32 percent of Fraser escapements. Its waters are famous for producing trophy-sized steelhead.

The South Thompson drains the great Shuswap Lake system east of Kamloops. The North Thompson drains an area stretching 300 miles to the north. At Kamloops they meet and from there on the water is discolored, and unsightly. But the water's appearance is so far the only proven detriment and it will not move the polluters to clean up their operations.

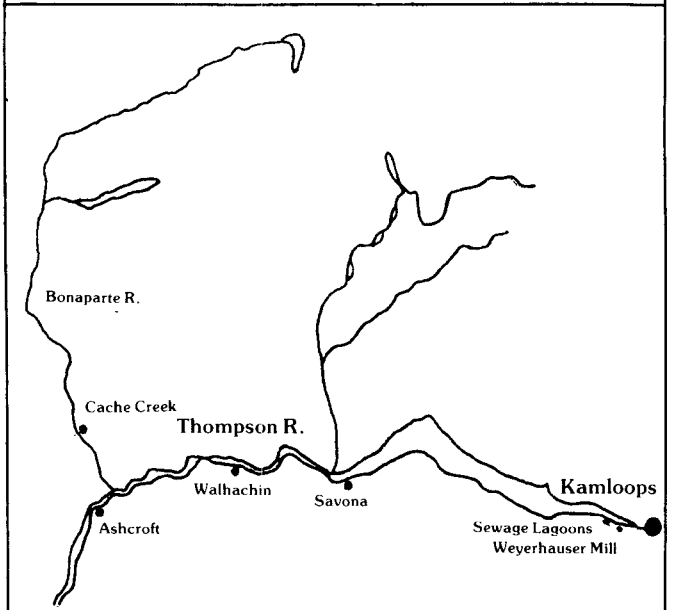
Unlike the effluent problem on the lower Fraser River, the polluters on the Thompson are known to all. The City itself, by way of its sewage lagoons near Kamloops Lake, currently dumps about 8 million gallons per day into the river. City officials argue that it would be useless to spend millions of dollars on sewage treatment facilities when the other major polluter dumps far more waste into the River. The Weyerhauser pulp mill is authorized to discharge a maximum of 60 million gallons per day of waste into the Thompson. It is only since the mill began operation in 1965 that the water quality has declined. Fishing resorts have closed down and residents complain that the fishing has dropped off or that the river bottom is too slippery (because of algal growth) to wade for salmon fishing. The problem has long been a major political issue in the Kamloops region. Yet Kamloops is one of B.C.'s fastest growing cities and its sewage problem can only get worse. At one point a public referendum was called for, to determine whether citizens would be willing to pay the estimated $80 million (or as much as $200 per taxpayer) for a land disposal sewage system. The Kamloops Dailey Sentinel claimed in one editorial that provincial and federal governments are "dragging their feet -- and that's where environmental groups should be directing their efforts" (instead of at city officials). On another occasion, Kamloops-Shuswap MP Nelson Riis introduced a motion in the House of Commons against the discharge of "treated" sewage into the Thompson, and called for federal assistance.

"We cannot afford to go the cheapest route," Riis said. His motion was defeated.

A federal-provincial task force established in 1973 to investigate the Kamloops effluent problem resulted only in minor clean-up measures. The city began adding alum to its wastes so that the phosphorus level (which causes



Weyerhauser pulp mill near Kamloops Lake. The mill dumps an estimated 60 million gallons a day.



Kamloops region with locations of major polluters: how much is too much?

eutrophication) would drop. Also, under the direction of Pollution Control Branch, the city instituted a variable drawdown system to regulate waste output according to river flow. But the lagoon system has other problems. Last June it was discovered that over a million litres per day were leaking from the lagoons.

To date there have been two serious alterations in the biological state of the river, says Mike Nassichuk.

"No doubt there is increased growth of benthic algae and changes in the composition of benthic invertebrate communities."

Benthic invertebrates include insect larvae and certain kinds of worms which are an important food source for juvenile salmon, he says. Also, a study funded by Weyerhauser and the federal government has recorded higher diatom growth rates downstream from Kamloops Lake compared to the North and South Thompson rivers "so there is a nutrient problem in the river". Levels of phosphorous in the Weyerhauser effluent has increased over the past few years further increasing the total level of phosphorous entering the river. Mike adds that "the maintenance of a high degree of water quality in the Thompson River is mandatory for the protection of the river's salmon."

Les Goodman, the Department's district supervisor in Kamloops, shakes his head in disgust when asked to comment on the problem.

"It's a sad bloody commentary on the City and Weyerhauser," Les says. "It would be an absolute calamity with fisheries resources in the Pacific Region if something happened to the Thompson."

Save the Thompson? A simple plea in the face of a complex problem. No one yet knows which pollutants are at fault (they believe it is phosphorus) and until researchers find that out, there can be no clean-up. But Kamloops will likely recieve its permit and that may lead to more problems.

"How much is too much?" Les asks. "There are so many unknowns."

Weyerhauser, Kamloops have alternatives

There are feasible if not affordable alternatives to the costly solution of a land disposal sewage system in Kamloops. There are also affordable solutions to the Weyerhauser waste problem.

Sewage effluent irrigation may seem'd unsanitary, but it is a far cleaner and more ecologically sound method of waste disposal than the practice of dumping. Treated sewage effluents can be a valuable source of water and nutrients for land irrigation systems -- a resource that is in short supply in the Kamloops region.

In California, primary effluents are used for the surface or spray irrigation of fodder, seed and fibre crops. For dairy and produce crops the effluent undergoes secondary treatment. Treated sewages may also be used to irrigate timber--a very slow crop in the Kamloops region due to the dry climate.

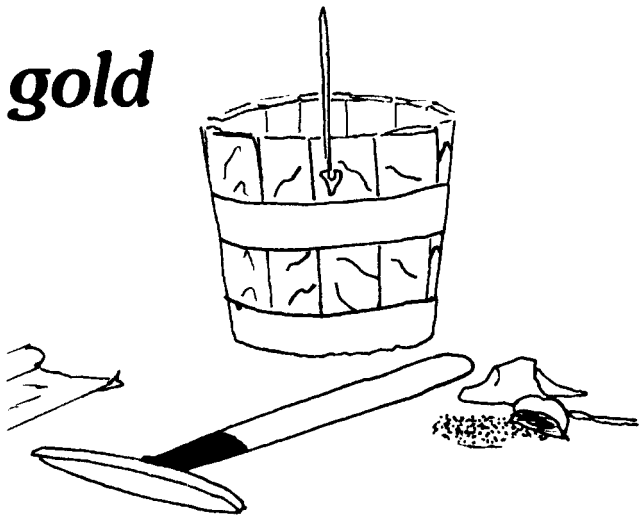
The Pollution Control Branch recommends the use of only secondary-treated sewage for irrigation in B.C. to reduce the numbers of pathogenic bacteria and viruses that may be present.

The solution to the bulk of the Kamloops problem -- Weyerhauser's 150 million litres per day -- is close at hand. Weyerhauser has just had installed in its largest mill at Longview, Washington, a wastewater disposal system that will effectively eliminate mill waste in the Columbia River. The system utilizes micro-organisms which, after devouring the pulp waste, starve and are disposed of at a landfill site. The end result is 13 t of micro-organism carcasses each day, not microorganism quantity with the current construction boom in Kamloops.

Mike Youds, co-editor

Out of the past

Dam the river, dig the gold



SEP engineers have located a site for a chinook hatchery on the Quesnel River near Quesnel Lake. Modern-day escapements to the river have averaged about 1000 chinook. Small numbers of pink salmon spawn farther downstream, and the Horsefly River sockeye migrate through the Quesnel River and Lake.

What's especially interesting about this is that it's almost a miracle there are any fish left after what happened at the turn of the century.

Here are excerpts of an article which appeared in the *British Columbia Mining Record* of June 1898!

A Plucky Undertaking
Operations of the Golden River
Quesnelle Ltd.

Not quite two years have elapsed since the enterprise known as the "Golden River Quesnelle Limited" was successfully launched in London under the auspices of a gentleman who is now acting in the capacity of the Company's managing director, Major C.T. Dupont, of Victoria. Eighty thousand shares, of the par value of one pound placed on the market, and at once subscribed for, the whole amount being fully paid up, and in the autumn of the same year, (1896), with this abundant available capital, preliminary operations were commenced at Quesnelle. The feasibility of the Company's scheme of damming back the waters of the South Fork of the Quesnelle River from the Lake, in order to recover the gold from the channel bottom, had been frequently discussed by "old-timers" in Cariboo, many years before, but the credit of working out the details, and of perfecting the plans for this bold engineering undertaking, rests with Mr. Joseph Hunter, M.P.P., to whom the satisfactory completion of the work under his personal direction, must afford the greatest possible gratification. Before, however, British capital was enlisted in this enterprise, steps were taken to thoroughly test the value of the gravel in the channel of the river, both by dredging and diving operations, and it was not until the very promising results of the experimental work became known that it was decided to engage in the enterprise of damming the outlet from the lake. Incidentally it may be mentioned, as testifying to the richness of the ground, that one man employed as a diver, obtained a bucket full of gravel from behind a large boulder, at a spot in the river where the current was running very swiftly, and extracted therefrom gold dust and nuggets to the value of fourteen dollars.

Quesnel River as it enters Quesnel Lake. Proposed hatchery is on left side of uppermost bend. Remains of dam are just below bridge.

(Major Dupont):..."We have spent a very large sum of money--about $275,000 --in building roads, purchasing machin-

Mining...

ery, and in the construction of the dam, but from the reports I have received from our mining engineer of the prospecting work that has lately been done since the dam was completed, we have every reason to be satisfied with the outlook."

"When do we intend to start active mining? Oh, directly the spring freshets are over, and then we will commence on a large scale....

"Our engineer tells us that we shall be able to keep the water dammed back in the lake for 190 days in the year, which will give us plenty of time for mining."

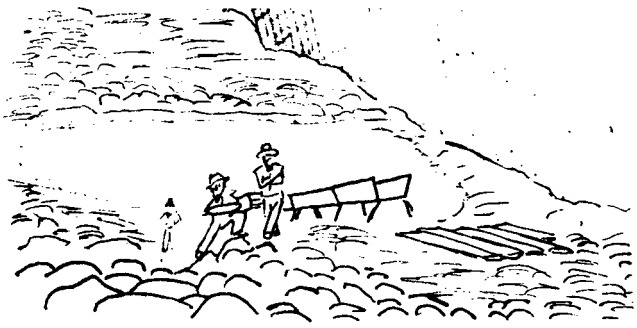
The dam has a base of forty-six feet of gravel, puddled with clay, between this and the crib-work. The dam consists of five massive benches or stages, dovetailed and bolted together, with three-fourths inch square bolts, each from eighteen to thirty-six inches long. If you put these bolts end to end, they would extend to a distance of nine miles. Then the whole is solidly bolted to piles, driven deep into the ground--from twelve to twenty feet deep, and loaded with stone and gravel carefully packed. The entire length of the dam is 800 feet, and it springs from a solid abutment on the north side of the river, and is built from thence in a curve, (the segment of a curve with a radius of 415 feet) terminating in an abutment on the opposite shore, against solid rock....

Our engineer tells us that we shall be able to keep the water dammed back in the lake, below the level of the dam, for 190 days in the year, which will give us, you see, plenty of time for mining.

"Do we intend to mine during the winter months? Well, that is a question for future consideration. The principal operations, will, however, be conducted before and after the freshet."

(Engineers report): The gates were closed at the commencement of April, and the bed of the river was prospected very extensively, not by panning, but by shovelling large quantities of gravel, from one to two hundred yards at a time, into sluice-boxes; and, without having reached bed-rock, or cleaned up any bed-rock, in every instance the most satisfactory results were obtained, returns giving from $1.73 per cubic yard to $9.10 per cubic yard. This gravel was really dug from under water, the result of seepage from the banks and the melting of the snow, and notwithstanding that the dam-gates were closed, a certain amount of water continued to flow. This, however, will not interfere with mining work in the future, when the arrangements for complete drainage will be completed. In shovelling the gravel from beneath the water, as miners will understand, a good proportion of the gold was left behind. As a matter of fact gold could be plainly seen on the ground under the water when the men ceased shovelling. What the results will be when the bed-rock is cleaned up may be left to the imagination, but over the three miles of channel examined, in no instance were the results obtained less satisfactory than those quoted above.

contributed by George Neilson, SEP Engineer



Salmon posters

A new set of attractive posters on life cycles of Pacific salmon is now available from the B.C. Wildlife Federation. There are six posters in the set, one on each of the west coast salmon species. Cost for the whole set is $6.00. They may be obtained by phoning the Federation at 576-8288 and leaving a mailing address.

Rescue at Pachena Bay

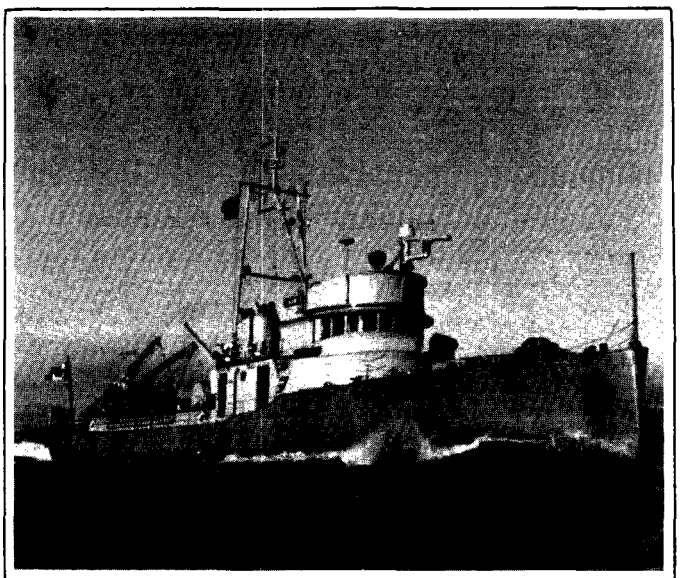
Caught in a heavy Pacific gale with daylight quickly fading, it was all Dave McLellan and Jink Barber could do to keep their 10 m boat, the Daleson, from breaking up on the west coast of Vancouver Island. Winds from the northwest at 95 km/h and 12 m waves were too much for the troller, and they had no life-saving equipment on board.

At 1600 hours, October 25, 1979, the Bamfield Lifeboat Station received a distress call from the Daleson. McLellan advised the Coast Guard of the conditions and suggested that he make a run for Bamfield. The Coast Guard told him to sit tight. A call went out to the F.P.V. Laurier, then moored at Bamfield, and within five minutes Capt. Gosse and his crew of 11 were on their way.

It was by no mean the first rescue mission for the Laurier. As one of five Department vessels involved in the co-ordinated Search and Rescue (SAR) program, the Laurier has gone to the aid of hundreds of disabled vessels. Never had conditions been so rough though; it was certainly their most dangerous call.

By 1639, the Laurier was abeam of Cape Beale light and taking in water through the engine room escape hatch. The seas were rising. To avoid a shorting of the port generator, Capt. Gosse ordered the starboard auxilliary generator to kick in. The flooding stopped as the Laurier reached Sea Bird Rocks, at the entrance of Pachena Bay, and put the sea astern.

Meanwhile, the Daleson's anchor line had given way and McLellan was using full power to keep his bow into the waves. For a half-hour McLellan struggled in this fashion, until the Laurier was able to get close enough to drop a Zodiac into the mountainous swells. The Zodiac, with Second Officer Jim Wilcox and Seamen Ken Keith aboard, conked out before reaching the Daleson. Before the two could get the engine started, the pull cord broke and they were forced to row back to the Laurier. They hardly made any progress before



Above, the Laurier on patrol. Below, the crew from left to right (front): Dean Nelson, Chief Engineer Terry Grondin, Capt. Gosse, Chief Mate Mike Galley, (rear): Brian Heesterman, Ken Keith, Paul Allen, Steve Desmond, Lindsey White and Brian Heugh. Missing from photo are Jim Wilcox and K. Lind.

one of the oars snapped. Gosse had no choice but to "back" the Laurier closer to shore, with a 3.5 m draught in only six m of water, to rescue his crew. No sooner had they been retrieved than another lifeboat was over the side, this time reaching the Daleson. The

Laurier...

troller could not be saved. By 1805, just 35 minutes after arriving, the Laurier was headed out of Pachena Bay, dead slow.

"By this time," Capt. Gosse wrote later, "the seas at the entrance had increased to the point that as we went over the crests both screws came out of the water."

Her crew safe on dry land, the Daleson broke up the following day. Casualties: Jim Wilcox' wrist watch.

Honoring a courageous rescue, the Coast Guard presented the Laurier's crew with bravery awards on Aug. 14. The crew had "displayed expert seamanship...under extremely dangerous conditions," said Jack Ickringill, SAR regional manager. Another, Departmental award will be presented to the crew of the Laurier in the near future.

Mike Youds, with SAR reports

Canyon clear

For over twenty years the vicinity of Seymour Canyon known as the Ledge Pool, just below the Vancouver watershed gate, was periodically closed to sport fishermen. A rock-slide during the 1950s prevented spawning coho, steelhead and chinook from bypassing the slide during periods of low water. There they gathered, in pools below the slide, "sitting ducks" had the closure not been enforced. Suddenly, late this summer, the fishermen were back. The barrier was gone.

With the combined efforts of SEP Public Involvement, the B.C. Wildlife Federation, BCIT, the Squaretailers' Rod and Reel Club and the North Shore Rod and Gun Club, several tons of rock were carefully dynamited from the middle of the river. The whole project took only three days from conception to completion.

"The fish are going to get up there in much better shape," says fishery warden officer Max Tsharre, who initiated the project. Previously, fish were dying of exhaustion shortly after passing the barrier, or bashing themselves to pieces trying to surmount it. In effect, the barrier was a hamper to the small but productive hatchery operated by BCIT and the Department farther upstream.

"There was nothing in writing," says Bryan Allen, SEP community advisor for the area, "it was just something we knew we had to do."

"It was the first time the GVRD (Greater Vancouver Regional District) has given a verbal go-ahead--instantly."

Following the approval, volunteers from the various groups moved in equipment and labored one Sunday with Bill Southgate, stream clearance foreman technician with SEP. Instead of a large blast, several small blasts were used to prevent further erosion of the sheer canyon walls.

Mike Youds, co-editor

Seymour River's Ledge Pool.

SEP Educator's Package

Workshops a must for SEP teaching

It's fall. The leaves are turning, the kids are back in school and the SEP Educator's Package is lying on your desk. Here is what you should not do with it:

1) Hide it.
2) Return it and ask for your money back
3) Relegate it to the bottom of the pile.

The best way to use the SEP Educator's Package, and to prepare for the teaching role that arrives with it, is to first attend one of the SEP Educator workshops. Linda Bermbach, who designed the Package, offered a workshop on its use last spring and only half a dozen staff attended.

"Those who attended said they certainly would not want to receive the Package without previous instruction," she says.

"It would be futile."

If you missed the workshop, there is no cause for alarm because another one is planned. No date has been set for the second workshop says James Boland, Head of SEP Public Information.

Spurious emissions

Sorely missed by all employees of the Department will be Lloyd Heddon, Head, Material Management, who has accepted a job close to home with the Correction Branch, Chilliwack Forest Camps, where he won't need to commute many miles each day!

* *

Also leaving the Department is Norm Sigmund, Fisheries Development Division, who plans to spend his retirement at home with his wife.

* *

Decentralization is happening!! Ron Kadowaki and Paul Sprout have both moved to Prince Rupert and Don Anderson is following quickly; Jim Mitchell, Steve Heizer and Dennis Chalmers are all moving to Nanaimo. The official decentralization date for Prince Rupert remains at October 1, 1980, but full office accommodation will not be available in Nanaimo and New Westminster probably until April, 1981.

* *

UBC Zoology Grad Brenda Wishart replaces Jarslawgwiedza Gwiadza as scale lab technician. Brenda has worked for the past three summers at the West Vancouver lab. Jarslawgwiedza is touring the world.

The Kitimat District office will be moved very shortly to Bella Coola in response to an announcement by the Minister and Director-General.

* *

Emily Lee has resigned her position as secretary, Financial Management Division, to return to university where she will take a final year of Education which will qualify her to teach elementary school. Emily plans to teach English to new Canadians.

* *

We understand that Fishery Officer Randy Nelson placed first in Terrace's fourth annual 'King of the Mountain' footrace setting a new record for that race. Apparently, this was just a warm-up for Randy in preparation for the 26 mile Seattle marathon race to be held in November.

* *

Randy Gomm, biologist South Coast Division, left the Department in September 5th to join the Coquitlam Fire Department- his beard, 1973 vintage, is going too!

* *

Rick Harbo is leaving Habitat Protection Unit to become the Shellfish Biologist, South Coast Division.

Dick Crouter, Director-General, Maritimes Region, recently paid a visit to Vancouver and appears to be thriving amid the "Maritime Malaise".

* *

Ian Devlin, Engineer, Inspection Unit, is on temporary assignment (Sept-Oct) to the Resource Allocation Branch, Ottawa.

* *

Leslie McFee has left Purchasing Unit, Vancouver, to work in the Kamloops District Office.

* *

Tom Mosely is the new mark recovery technician. Tom has previously worked under contract for the Mark Recovery Program.

* *

Jan Sewell, former administration clerk on the 6th floor at 1090 W. Pender, has taken a job at the Pallant Creek Hatchery.

* *

Keith Simpson, Mark Recovery Biologist, married Jody Hawley Sept. 6 and will soon be headed to Revelstoke for a job with the provincial Fish and Wildlife Branch.

Dan de Montreuil, SEP engineering technician and his wife Flora are the proud parents of their first child, a son, Paul Cordell who weighed in at 8 lb 9 oz. on August 11, 1980.

* *

A recent note from Sandy Argue says he is planning to come "home" for Christmas. A former management biologist in South Coast Division, Sandy now works in New Caledonia.

* *

Born to Bud Graham, SEP planning biologist and his wife Barbara, a little girl, Courtenay Frances, on August 3rd, 1980.

* *

Pat Burton is the new Chief, Information Branch, Pat comes from Consumer and Corporate Affairs, Ottawa.

* *

Successful candidate in the recent competition for assistant hatchery manager, Chilliwack Hatchery, was Leslie Schubert presently at Capilano Hatchery.

* *

Moving back to Pacific Region Headquarters from Ottawa is Phil Murray who will be handling Licence Appeals.

Steve Heizer photos *Diane Paxton photo*

Members of the champion team from 1090, from left to right; Diane Paxton up to bat; James Boland up in air as backcatcher; Steve Heizer and Colin McKinnon fall over each other in celebration of league victory in Nanaimo

more Spurious...

Born to Ernie Quiring, electronics technician, and wife Maryanne, a daughter, Angela. Angela was born Wednesday, Sept. 3 -- a sister for Melissa.

* *

Born to David and Debbie Meerburg, on June 28, was a daughter, Leslie Marie. David is Head, North Coast Operations Unit, SEP.

* *

Val Chaley, receptionist for the Special Projects Division, is leaving her job Sept. 25 to seek her fortune in Edmonton.

* *

Bern Hawley has come out of retirement to work on contract for Ottawa concerning Indian Land Claims.

* *

Gayle Talbot who formerly worked for Bob Humphreys, Herring Coordinator, is engaged to Paul Crouser. They will be married October 25.

Dr. Wally Johnson, Director-General of the Department's Pacific Region, has been appointed the first chairman of the newly created Fisheries and Oceans Research Advisory Board. Replacing Wally as acting Director-General will be Wayne Shinners, formerly Field Services Director.

* *

Doug Johnston, ADM, Pacific and Freshwater has arrived in Vancouver to set up his office here on the 11th floor -- announcement expected soon!

* *

Two summer weddings among the SEP planning group staff recently. Lilly Jear married David Ng Aug. 24. Lilly has changed her surname to Jear-Ng. The day after, Margaret Peters was wed to Gary Birch. Margaret is not changing her surname.

* *

CHRISTMAS IS COMING!! - book December 5th on your calendar for the regional headquarters party to be held in the Legion Hall, 49th and Fraser. Organizers are Colin MacKinnon, Muriel Kinnear and Judy Weisner - more information next issue.

What you can expect

by Pat Phillips

Here is what's new:

New form numbers - all the forms we are currently using have been renumbered and we will look to Administration, Support Services Branch to advise us of the changes in due course.
Envelopes - the new envelopes have arrived, if you haven't received your requisitioned supply, please follow up.
Requisition for Supplies - the 1851 is now FP0258, and with more confusing signature boxes on the bottom.
Hospitality Forms - the long 8 1/2" x 14" -Application for Hospitality is no longer being accepted. Now there are 2 forms to complete: 1. Application to Extend Hospitality (no number); 2. Hospitality Expense Claim (GC 168a).

There still appears to be a problem with persons submitting Travel Expense Claims; times must be put on the Record to Travel Expenses to substantiate meal costs.

Purpose of travel is still to be put in Section (2) on the Travel Expense Claim if you're not using the new form which has this section. Please ensure this shows on the Travel Expenses Claim even though you've submitted a Travel Authority.

Don't forget to put your full first name, i.e. "JOHN" DOE. Often your address and postal code are not put in the 'Send Cheque to' space if you have any money due.

Sounder

Newsletter of the Department of Fisheries and Oceans, Pacific Region

Volume VIII Number 7 November 1980

Chilling reception greeted Rick Harbo, Project Manager with the Water Quality Unit, as he photographed a mated pair of wolf-eels guarding their eggs. Divers often hand-feed sea urchin roe to wolf eels, and some can be trusted to take food from a diver's mouth. Photo was taken at Egmont, B.C.

Kemano's second coming

In compliance with a Supreme Court decision in August, Alcan agreed to increase water flow on the Nechako River as requested by the Department. Although the decision establishes a precedent for Department jurisdiction, it does not solve the long-standing issue of Kemano power development. As part of Sounder's continuing series on B.C.'s major salmon rivers, Bob Robertson, Habitat Protection Engineer, prepared the following article on the story behind Kemano development.

It was the provincial government that, before 1939, first investigated the power potential of the Kemano area on the Nechako River. These studies indicated that a substantial energy potential existed, although development would not be economically feasible without the establishment of a large initial power load. The Province therefore approached the Aluminum Company of Canada with plans for the private development of an aluminum smelter in the area.

continued on page eight

Soundings yield poor results

With the *Sounder* readership survey in August, we set out to determine exactly what a Fisheries and Oceans newsletter should be all about. Should it deal strictly with Department concerns or should it be a conventional staff newsletter with more emphasis on the people behind the scenes?

Using the information compiled from the survey, we wanted to be able to produce a *Sounder* that would be valuable to all Pacific Region staff. A seven percent response rate makes this goal difficult, if not impossible. Yet if we consider the thirty-two respondents representative of a crossection of Pacific Region staff (as they seem to be) their ideas can be heeded.

A majority of the respondents read all of *Sounder* while a smaller number read most of it and only a few read less than half. A majority thought *Sounder* has improved, from which we infer that they are satisfied with its direction.

The most popular kinds of stories deal with new policies in the field, staff notices (Spurious Emissions, for example) and project reports. To a lesser degree, stories with personal viewpoints (now in short supply), fishery reports, and new policies in the office are popular. A regular question and answer interview (Dialogue) and a regular column on career information (Bulletin), also received endorsement. Only a small proportion of the respondents preferred people stories to fish stories (which have always been predominant). The average time spent working for the Department in the Pacific Region was 8.3 years.

Coincidently, *Sounder* has been around for eight years, too. It began in 1972 as the revamped NOB (Northern Operations Branch) News. How has the *Sounder* changed over the past eight years? It's smaller these days, fitting handily into a briefcase. It has a larger circulation, now reaching almost all Pacific Region staff. But most important of all is that its editorial policy has changed. *Sounder* was originally intended to act as a sounding board; as a vent for staff frustrations, ideas or opinions. Now, a greater portion of *Sounder* is prepared by the editors, and the will of staff to speak out on issues and concerns seems to be waning. Yet never before have fisheries resources been so controversial, so in the forefront of public and private concern. *Sounder* can help in this regard by keeping staff informed, but contributions are just as essential.

The most valuable role of a Fisheries and Oceans newsletter is performed by the staff themselves. It is the role played when a large and diffuse organization assumes a human voice, not necessarily speaking for it, but speaking of it and coloring over the greyness often associated with bureaucracies. It's a simple role but one that can do much to enhance a job, a workplace or a relationship.

The next *Sounder* will be the Christmas issue--a good opportunity to start contributing. In the meantime, we shall attempt to make *Sounder* an interesting and more provocative communications aid.

Mike Youds,
Editor

THE SOUNDER
Editors: Maxine Glover
Mike Youds
Assistant Editor: Gayle Crouser

1090 West Pender Street
Vancouver, B.C. V6E 2P1
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Letters

Editor,

I am researching and documenting the evolution of British Columbia's fishing gear and processing machinery as part of the development of a National Historic Site about the West Coast's fishing heritage. Fishermen and the fishing companies have given me access to vast amounts of information in this field, but the Fisheries Department has unfortunately proved to be a much less generous source. For more than two years I have been trying to find documents relating to the Southern Area, especially the Fraser River area, and am particularly interested in locating cannery inspection reports, fisheries officers reports, and diaries. I have discovered that no fisheries records for the period after 1915 are available apart from a few relating to the north.

I sincerely hope that Fisheries Department employees who have knowledge of any historical documents or artifacts will pass on that information to local maritime museums or archives. In the Northern Region the major research effort on fishing history is being done by the North Coast Maritime Museum; in the south it is being conducted by the Vancouver Maritime Museum and by Parks Canada. Documents relating to the Southern Area should be referred to the Special Collections Division at the University of British Columbia, the major repository for B.C. fishing records.

Please remember that historical resources can never be replaced once they are destroyed; their preservation enriches the heritage of all whose work is related to the B.C. fishery.

Yours sincerely,

Duncan Stacey
Industrial Historian
6220 Danube Road
Richmond, B.C.
V7C 3H9

Editor,

Many thanks for the circulated letter regarding the *Sounder*. It's good to know that we haven't been cut off at the press. But, what is more important is that the *Sounder* has not been chopped as an economy move.

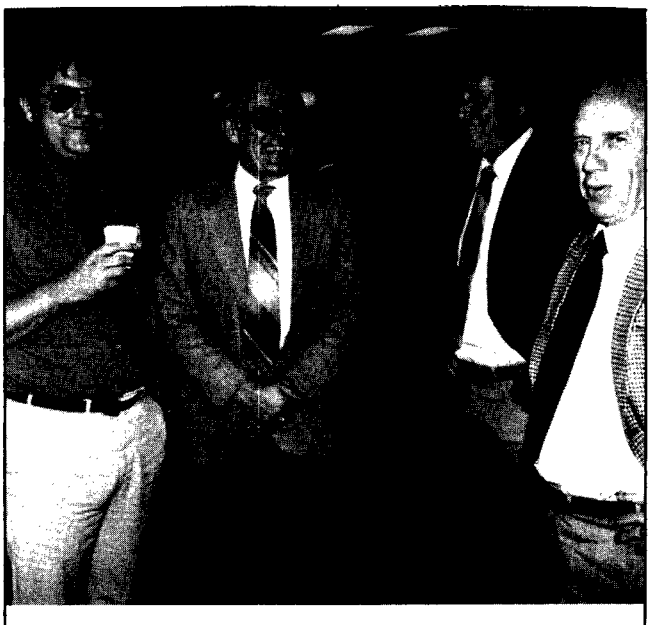
Do you know that Les Goodman (Kamloops), Ted Epps (Nanaimo) and Jock Embleton, FVIP (Vancouver), are the last of the Fishery Officer classes of 1947 and 1948? Those were the first training classes for Fishery Officers and the 1947 lot had to pay their own way to and through the three-month session. There must be a story there somewhere.

Best wishes to all on the *Sounder*, at headquarters and in the field.

Thanks again. Cheers.

John Robinson,
Comox, B.C.

The circulation of this issue of Sounder has been increased to 750 but we were caught short with the last issue and many individuals on our mailing list did not receive copies. We apologize for the shortage.



Farewell for Lloyd Heddon, former Head of Materiel Management Unit, presented a study in smiles. From left to right are: Gary Norberg, Acting Personnel Manager; Lloyd; Warren Parkinson, Manager of Small Craft Harbors; and Stan Wallace, Operations Manager.

The view of Phase Two

An interview with SEP Executive Director Dr. Ward Falkner

In August of this year Dr. Ward Falkner replaced Les Edgeworth as Executive Director of SEP. Ward hails from Winnipeg where he joined the Department in 1971 after being Chief of Fisheries for the Province of Manitoba. In 1975 he joined the Freshwater Institute, Western Region, as head of the Fisheries Resources Section. From there, he became Director of Fishing and Industry Services and then went on to Ottawa to head the Resource Allocation Branch. In addition to working on an exchange program in China and directing the Canadian Freshwater Fisheries Development Program in El Salvador, he chaired a committee examining SEP job allocation.

Dr. Ward Falkner

Dialogue

What attracted you to this position?

I came because I personally believe that this is one of the most exciting fisheries programs in North America, if not the world. Certainly North America. That's first and foremost. Secondly, it's a tremendous challenge. The Program is half way through Phase One and we're looking at the potential for development of Phase Two. One can see some things coming to fruition yet there's a new challenge on the horizon and we're hoping to launch into a new second phase. We're hoping, on the basis of our work, we'll be able to convince the necessary individuals that in entering Phase Two there will be benefits from SEP; that it will be a profitable investment.

What was the outcome of the recent SEP Board meeting?

It was a vote of confidence for staff to proceed towards development of Phase Two, and to seek required funding. We also agreed to seek compensation for the constraints on funding that have occurred because of the way the program has changed. The program was originally a five-year program and has been extended to seven years. Funds were requested in 1976 dollars. In 1976 we received approval for $150 million but inflation has eaten away at that and the loss has not been compensated for. So we're saying that, because of these constraints, what we were going to do initially with the $150 million is becoming increasingly difficult. The Board examined the possibilities of additional funding to compensate for the constraints that have been applied as the result of inflation.

Has there been any change in regard to emphasis on hatcheries versus community development?

No. The Board did not recommend any changes. As a matter of fact, they more or less accepted the balanced program as it exists at the present time.

Some have described SEP as a program which can do no evil. How would you react to that?

Well I think that's not entirely true. The only way you can be sure of doing no evil is to do nothing, and then the evil is inactivity. I think that because of what we're doing and because of the unknowns, there are certain risks in regard to manageability which relate to (for example) mixed stocks--all of these factors are particularly important. We don't have all the answers any more than Fisheries'

management has all the answers in terms of stock management. But one assumes there's a certain risk in order to do something the same way that you assume a certain risk when you walk across the street.

What about the Salmonid Enhancement Task Group? It's a unique approach to resource management. Do you see it as a sign of things to come?

Yes, the Task Group is a sign of things to come. It's getting to be a necessity; increased public participation and more and more representation by user groups in terms of allocation and management of common property resources. The Task Group is a sounding board whereby we can test what we're doing. Also, it's a mechanism for the public, through their representation on the Task Group, to make a meaningful input into the program. I think that the communications system that's built up through this exchange will take time. We simply can't walk out, select a group of 25 people and expect them to make meaningful input overnight, or that SEP staff will immediately make meaningful presentations back to them. In the short period I've been here, I've seen the evolution of this process. It's becoming much more efficient and much more effective.

How do you see this season's poor fishery as relating to SEP? Has it been a blow to SEP?

I think there are negative aspects related to what took place--the fishing situation. And I think that those negative aspects, i.e. criticisms etcetera, the fact that stocks were down, fishing times restricted, to a certain degree have to reflect on all of Fisheries' credibility. A person might say, "those people, they're not doing a very good job of managing the fisheries, how can we trust them to do the job?" Of course this negative thinking can reflect on SEP. I haven't noticed that it has. No one has said that because of the fishery we don't trust you in terms of SEP. Rather, there has been by certain fishing organizations, agreement that we really have to get our act in order and one of the ways is through additional funding of SEP. There is a negative aspect, but I think that it has been outweighed by a positive aspect and a feeling that we need to get on with the job. We need to really push for more funds.

Do you think there will be additional funds?

I hope so. I'm optimistic and I think that's the only way to be.

Province-wise

B.C. boosts oyster farms

The B.C. government wants to double the size of the B.C. oyster growing industry and is offering the B.C. Oyster Growers' Association an initial $160,000 low interest loan to work towards that goal.

One of the problems faced by the industry is the lack of sufficient oyster seed in the province. The Growers' Association has an oyster seed development fund from which oyster farms can receive loans. Environment Minister, Stephen Rogers, and Industry and Small Business Minister, Don Phillips, announced the loan and said that new legislation affecting the industry may be introduced.

Oyster fishermen at Buckley Bay.

Bulletin Opinions sought for Committee report

A considerable amount of interest has been shown in the Equal Opportunities for Women area of the departmental Affirmative Action Program. A small group of SEP women formed the Management Enhancement Task Force earlier this year and met to establish goals for management enhancement, outline major areas of concern and suggest corrective action.

These areas of concern included the lack of resources set aside for the training and development of women, and the lack of opportunity to gain relevant experience in any given area for career progression.

Hiring and staffing practices were another area of concern, focusing on the lack of established procedures for "first level" recruiting. It was suggested that increased efforts should be made to draw on capabilities from within the department before looking elsewhere. It was also perceived that women well qualified for promotion are at a disadvantage in the competitive arena due to various factors unrelated to ability. This disadvantage exists regardless of staffing policies and regulations offering legalistic protection to employees and providing reassurance that selection is made on the basis of merit.

Inadequate communications were thought to be the cause of diverse difficulties. It was considered that information such as job openings, human rights, government structure, grievance procedures, and how competitions and boards work, should be made available to parties who have an interest in the information, or who are touched upon by the decision being made. This information could be made available by and through many sources: supervisors, personnel services, networking, co-workers, government agencies, departmental information centres (bulletin boards/ central files) in-house courses or articles in *Sounder*.

Attitudes concerned the Task Force: women's own attitudes about their capabilities and goals, and external attitudes such as prejudice, reluctance to delegate work, and stereotyping. It was considered that management should take an active role in encouraging women with potential to attain their goals by supportive attitudes (commendation on work well done, delegating work and so on).

The SEP Management Enhancement Task force presented these areas of concern to the Pacific Region Employee Training and Development Committee and suggested possible corrective actions.

Before the Committee makes recommendations to the Regional Executive Committee on these concerns, we would like to receive any ideas and suggestions on this topic from other interested Pacific Fisheries employees. Please write to Hilary Schwenk, Human Resources Planning and Taining Officer, 1112 W. Pender Street, Vancouver B.C. V6E 2S1, or call 666-6286.

Hilary Schwenk,
Planning and Training Officer

Anchors away! Captain Tony Preston guides Chinese delegation aboard the F.P.V. Tanu.

Canada's whaling decision

"Shameful" and "contemptible" are words commonly used to describe the official Canadian position on a proposed ban of commercial whaling. Canada's vote at a July meeting of the International Whaling Commission in Brighton, England, helped to quash a move by 13 western nations to place a worldwide moratorium on whaling.

Australia, Argentina, Denmark, France, New Zealand, the Netherlands, Mexico, Oman, the Seychelles, Sweden, Switzerland, Britain and the U.S. voted for the moratorium believing that continued harvesting will drive the whale to extinction. Canada voted otherwise, arguing that certain whale species can support a controlled harvest.

Killer whale frolicking in Georgia Strait.

In response to a request from Sounder, Dan Goodman, International Directorate for the International Fisheries Relations Branch, sent the following statement presented to the IWC by Canadian Commissioner M.C. Mercer.

Mr. Chairman - I would like to elaborate on the position of the Government of Canada regarding the proposed moratorium on all commercial whaling. Canada votes against the proposed moratorium in reflection of a policy which recognizes that marine mammals are a harvestable resource subject to the needs of conservation. Such is implicit in the Whaling Convention under which we, in good faith, must operate. It is our view that, in the absence of a clear and scientifically justified recommendation from the Scientific Committee in support of a moratorium on commercial whaling, such action is unnecessary and that conservation requirements can be adaquately met under the "New Management Procedure" of stock classification and quotas which in essence provides for selective moratoria (zero quotas) based on scientific analyses of stock status. In opposing the moratorium on all commercial whaling we are also cognisant of the fact that the operation of the present management regime, while not without significant room for improvement, has been generally acceptable in that the recommendations of the Scientific Committee have nearly always been accepted and that they have resulted, in most cases, in significant quota reductions and full protection of many stocks. We are also concerned that, in response to passage of the moratorium proposal, Commission members might lodge objections and then conduct whaling operations at levels above those which would have been acceptable under the existing management regime. This would clearly be a retrogressive development that none of us would wish to see.

Finally Mr. Chairman, Commissioners are aware that Canada is an advocate of negotiating a new convention of broader scope and which would cover all cetaceans. It is our view, however, that a moratorium on all commercial whaling, not based on scientific grounds, is inconsistent with the expressed purposes and with Article V of the present Convention.

Sport fishing big business

License fees of $3.4 million went into Icelandic coffers from sport fishermen taking salmon in that country's rivers in 1978.

Kemano's history

continued from page one

Before 1952 the Upper Nechako watershed above the Grand Canyon was comprised of nine major lakes as shown in the map on page eight. Salmon did not ascend this area but were prevalent immediately downstream of the canyon. The chinook salmon populations for the sixteen years of record prior to development averaged 1,800 spawners and approached 7,500 on occasion. The sockeye populations in the Stuart, Stellako and Nadina River systems were beginning to recover, as a result of the fishway completion, from the effects of the Hells Gate slide.

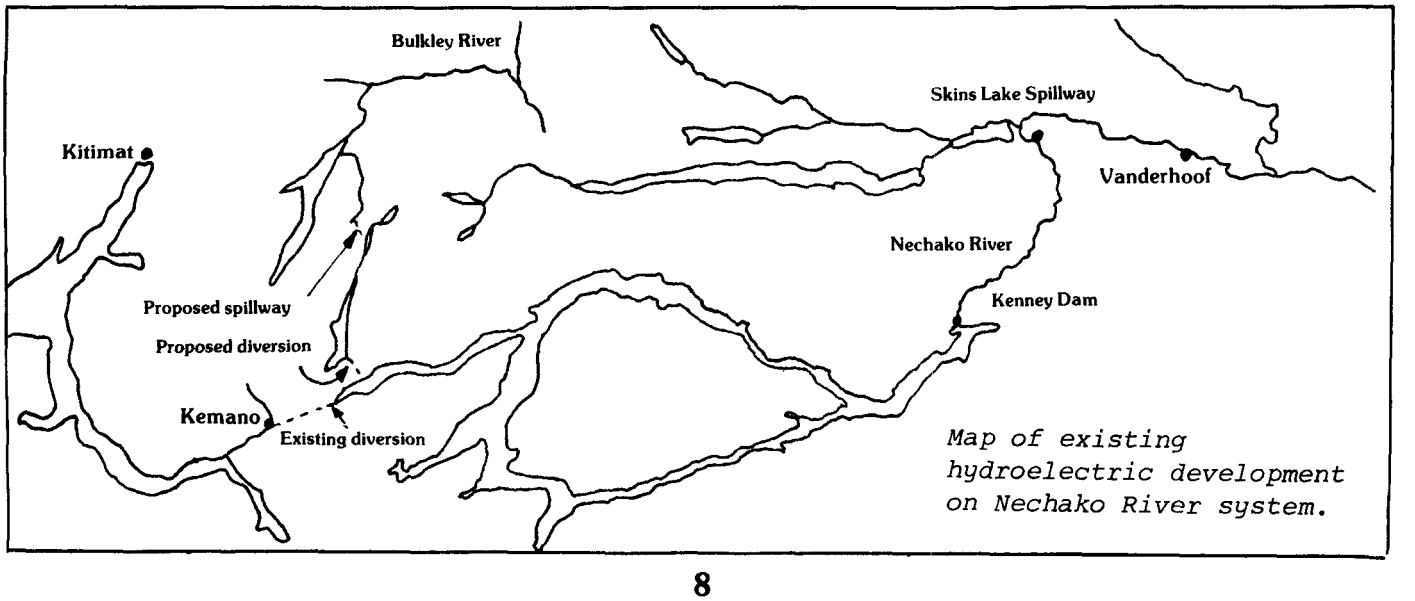
Kemano I

The Aluminum Company of Canada made a water licence application to the provincial Comptroller of Water Rights in 1949 requesting water diversion and power generation rights to the Nanika and Upper Nechako River basins. A public hearing into this application was held in November of that year. The Department of Fisheries appeared at these hearings and requested adequate provisions for fish habitation and temperature control flows into the Upper Nechako River. Deep water outlets in the dam structure to permit release of cold reservoir water were also requested. Those requests were considered necessary to prevent the loss of Nechako River sockeye stocks and Upper Nechako River chinook stocks.

Despite these requests the water licence was issued in December 1950 giving Alcan the rights to all water in the Nechako River upstream of the Grand Canyon and all water in the Nanika River upstream of Glacier Creek. There were no provisions in the licence for fisheries resource maintenance flows or for water temperature control structures. This licence would be subject to review in 1999 at which time any unused portions of the licence could be withdrawn.

Alcan proceeded with the project in two phases. The first phase included a 100-metre high earthfilled dam at the Grand Canyon on the Nechako River, a diversion tunnel leading through the Coast Range from Tahtsa Lake to a powerhouse on the Kemano River, and a spillway structure which would permit excess water to be released from the reservoir into the Skins Lake/Cheslatta River system, a tributary to the Upper Nechako River.

Reservoir filling commenced in 1952 and resulted in a substantial draining of the Upper Nechako River. The filling period took three years. Kemano powerhouse began operation in August, 1954. Once the reservoir was full, the Skins Lake spillway was activated, which resulted in massive scouring of the Cheslatta River system. These circumstances persisted for a period of eight years, which was followed by a 12-year period of erratic flow control.



Map of existing hydroelectric development on Nechako River system.

It was not until 1973 that spawning and incubation flows were brought into balance. Estimated catch and escapements of the Nechako chinook stocks for pre and post-development periods are shown below.

Study Years		Annual Escapement	Annual Catch
1935-52	16 years	1,800	9,000
1953-60	8 years	368	1,840
1961-72	12 years	483	2,415
1973-78	6 years	1,500	7,500

Kemano II

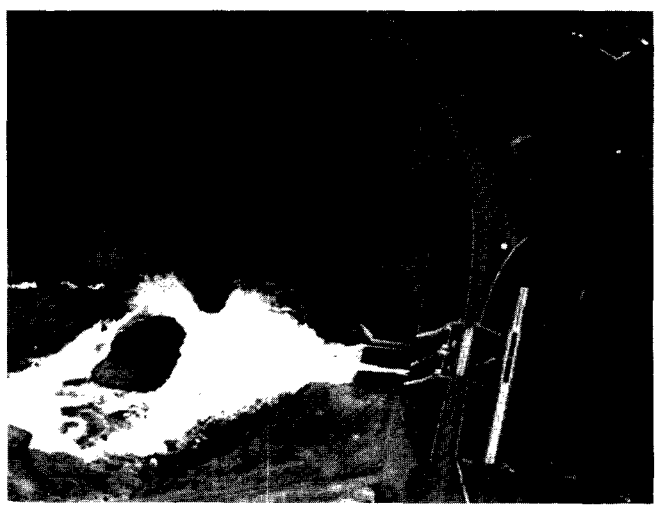
In 1970 the B.C. Energy Board indicated an interest in purchasing the unutilized water rights from Alcan and developing the Kemano II project as a provincial power supply. This proposal included the additional diversion to the Nechako reservoir of the Morice and Dean Rivers. At the request of B.C. Hydro, the Department and the International Pacific Salmon Fisheries Commission undertook studies in 1974 and 1975 to determine the impact on the fisheries resources. Flow recommendations for the protection or salmon stocks were subsequently provided.

"It was not until 1973 that spawning and incubation flows were brought into balance."

B.C. Hydro has not pursued Kemano II development and Alcan has now indicated an interest in proceeding with the Nechako and Nanika diversions in accordance with their initial licence. This would involve the expansion of the Kemano powerplant to utilize the remainder of the Nechako reservoir inflow plus the waters of Nanika and Kidprice lakes. The average flow at the outlet of Kidprice Lake is approximately 1,100 cfs (cubic feet per second), so the total diversion to the Kemano River, including the present diversion and with no provision for fisheries flow releases, would be in order of 8,500 cfs annually. The development would require a dam on the Nanika River below Kidprice Lake and a diversion tunnel from Nanika Lake to the Nechako reservoir. A second diversion tunnel between the Nechako reservoir and Kemano powerplant would also be required. The Company has hired Envirocon Ltd. to undertake an environmental impact assessment of this development. Their reports are expected to be submitted to government agencies by the latter part of this year.

In December 1978, the Kemano powerhouse was connected to the B.C. transmission grid. Alcan, from that point to the present day, has been selling surplus power to B.C. Hydro and this, coupled with an unusually dry period during last fall and winter, has resulted in a marked decrease in the amount of water released over the spillway and into the chinook salmon spawning grounds. During the past winter this discharge was reduced to approximately 450 cfs which is about one-third the amount considered necessary to safeguard chinook salmon production. The spawning areas were inspected by the Habitat Protection Division (HPD) during the course of the winter, but damage to eggs or alevins could not be proven. However, several redds were found to be partially exposed and extensive losses could have occurred if weather conditions had been more severe prior to egg hatching.

It was Alcan's intention to maintain this flow level throughout the past summer and as long as necessary to replenish reservoir storage. This would have placed the chinook and sockeye populations at considerable risk and the Department therefore requested an increase in spill to provide a minimum of 1,000 cfs in the Upper Nechako River plus any additional flow necessary to



Skins Lake Spillway

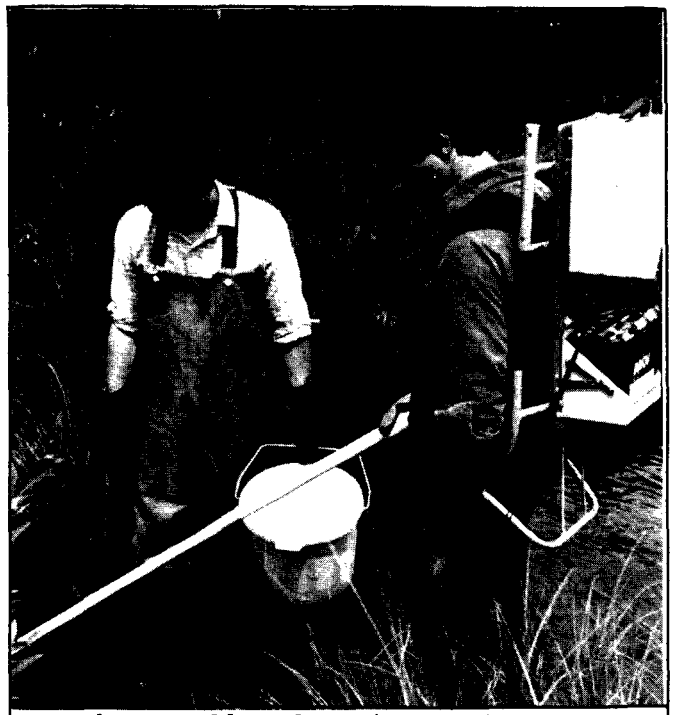
Kemano...

maintain acceptable water temperatures in the lower river. Alcan would not comply with this request, and court action was subsequently initiated by the Department under Section 20 (10) of the Fisheries Act. This resulted in an injunction being served on Alcan on August 5, 1980 ordering the release of 8,000 cfs prior to August 20, 1980, 1,100 cfs from then until March 31, 1981 and 2,000 cfs from April 1 to June 30, 1981 as requested by the Department. The Company is now operating under this flow regime.

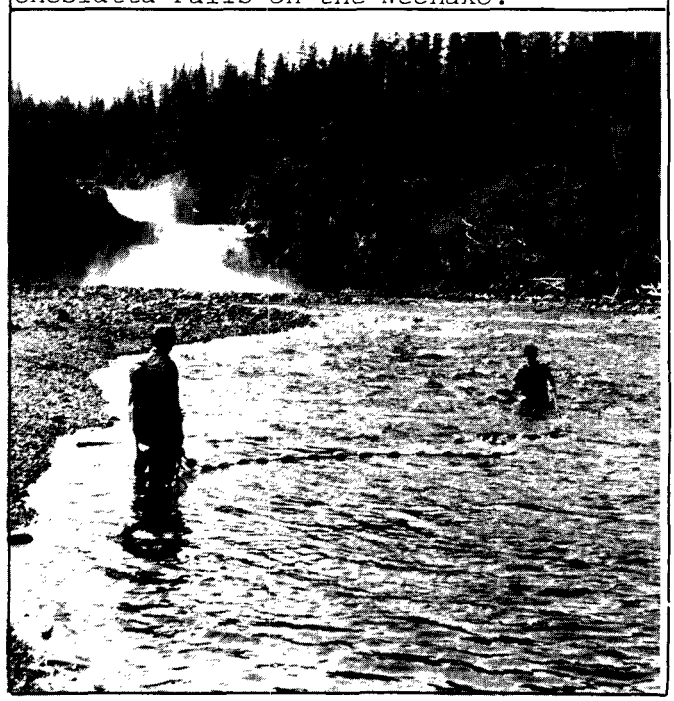
In setting the above flows it was recognized that a number of data gaps existed. Therefore, the Department and IPSFC are undertaking additional field investigations in co-operation with Alcan and their consultants. The primary studies are directed towards providing a better understanding of the rearing and incubation needs of chinook salmon and the behaviour of adult sockeye during their migration through the lower Nechako River. To date HPD staff have been documenting the seasonal distribution of juvenile chinook in the mainstem and several tributaries between Cheslatta Falls and the Stuart River. This has now been done at discharges ranging between 400 and 8,000 cfs. Chinook spawning distribution has also been documented throughout the system, and several redds were surveyed to allow examination at several stages during the incubation period. Eggs were planted in a number of exposed or very shallow redds and these will be examined during the winter to provide information on the required depth of coverage. Subgravel oxygen levels and water temperatures will also be determined in each of these redds. The chinook studies are expected to continue until June 1981.

Approximately 100 radio tags were applied to sockeye salmon captured by IPSFC and Envirocon near Quesnel. These fish were followed through the system by boat and helicopter to determine their rate of migration and areas of delay. Some of the tags were followed as far upstream as the Nadina spawning channel above Francois Lake. Others were caught in the Indian food fishery near Fort Fraser. A report on this study is now in preparation.

Bob Robertson,
Habitat Protection Engineer



Rob Russell and Kevin Conlin electro-shocking fish in a tributary stream of the Nechako River. Below, Tom Cleugh and Rob Russell netting juveniles below Cheslatta Falls on the Nechako.



Observe, Record and Report

"He said they know who Janet is."

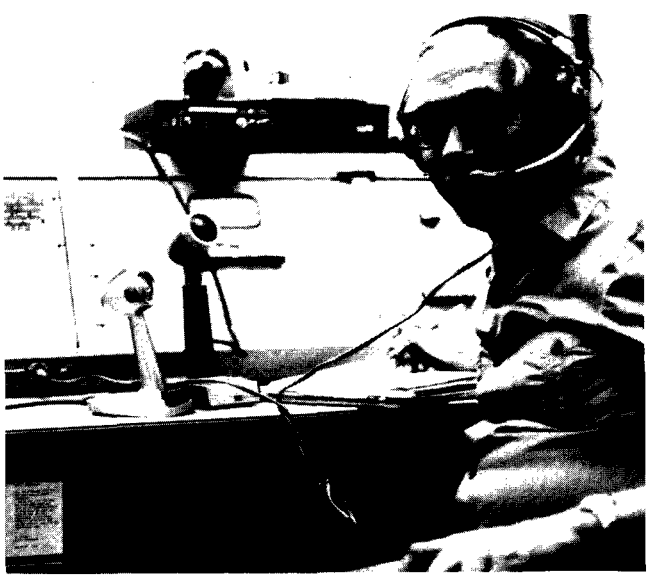
"The caller, who only gave the name Janet (pseudonym), asked me to tell Trevor that a small white cabin cruiser was fishing inside the boundary, while others are well outside the boundary."

"She said that Trevor will know who she is."

Ken Dunlop, radio operator at 1090 W. Pender, called Trevor Fields, Victoria fishery officer, at his home. The message also was relayed to Gordon McEachen at the Department office in Duncan. Janet was familiar to both of them, and they acted on it.

The call is typical of those received round the clock by the Observe, Record and Report Program (ORR), now in its second year. The program is based at 1090 W. Pender, 4th floor, and relies upon the efforts of federal fishery officers and provincial conservation officers as well as the RCMP. Its purpose is to provide a citizen's "hot line" for fish, wildlife, pollution and litter offences. A toll-free number, Zenith 2235, has been posted throughout the province.

Tom Moojalsky, who heads the ORR program, says the public's response attests to the program's success. So far, over 900 calls have been made.



Ken Dunlop, one of five Department radio operators who take ORR calls.

"My own impression is that the program is working very well, although we have had some growing pains."

The main problem, Tom says, is that conservation officers do not always return their incident reports. Without the completed reports, there is no way of knowing if a call has been entirely effective.

Another problem, says Radio Operator John Inkpen, is reaching provincial conservation officers.

"You call conservation officers and you can't get hold of them. There's no problem with fishery officers because we work for the Department and we know where to reach them."

One example was a call from Blue River reporting two hunters shooting moose out of season. John's report went something like this:

"We have no phone number for conservation officer in Blue River, however caller said there is a patrolman in Blue River. He doesn't know the patrolman's name. Called conservation officer in Clearwater. No answer. Called conservation officer in Valemont. He was not home and person said that Blue River is not his area. Called RCMP in Blue River. Recording said to call Zenith 50000. Called that number. Operator said that the Zenith number was only for local people. Called RCMP in Clearwater where a recording said to call Zenith 50000. Called original caller and asked to call Zenith 50000. Caller said he would.

Excepting wild moose hunts, most calls are reporting fishery offences (a 60-40 ratio). On that basis alone, ORR is working.

Mike Youds
Editor

Herring are people food

The Pacific herring has long been taken for granted by fishermen and consumers who have always sought the higher priced, more flavorful species. But the herring's time has arrived, at least in foreign kitchens. Here, Herring Coordinator Bob Humphreys explains why.

Early in the development of the British Columbia roe herring fishery, the Department of Fisheries and Oceans recognized the need to diversify markets for herring as much as possible. It is not wise to put all one's herring eggs in one basket--so to speak! European countries, especially West Germany and the Netherlands, were looking for sources of herring supplies due to the depletion of their own stocks.

Pacific herring are, on the average, smaller than their Atlantic counterparts, but in flavour and texture they are every bit as good, if not better. And, contrary to popular local belief, the lowly herring's flesh is deemed a valuable source of human protein in many parts of the world. In many European countries, herring are sought after and valued as a delicacy to delight the palates of the most fastidious gourmets. Nations have been built on the backbones of herring.

After several disastrous attempts at harvesting and handling high-quality, high-value herring for human consumption, the 1979 herring fishery was conducted under strict licencing conditions which stipulated the size of load a vessel could carry, the refrigeration or cooling method to be used, and the maximum delivery and processing times allowed. These restrictions, coupled with a successful cooperative effort between enforcement and inspection personnel resulted in a significant improvement in product quality.

Consequently, the 1980 food herring fishery, which is scheduled to begin coastwide on or after November 12, will be conducted in much the same manner as last year's fishery with just a few minor differences. Last year the allowable harvest of food herring was 4,550 t and an additional 2,275 t were taken under permit for domestic bait. This year the food and bait fishery will be combined and the total allowable catch increased to 9,120 t: Area 1 - 455 t; Area 5 - 1,820 t; Central Coast - 455 t; Area 13 - 910 t; Areas 17 and 18- 5460 t.

All catches are subject to stock availability and strength as estimated by Department personnel at the time of the proposed fishery.

Fishing vessels will again be required to transport their own catches (without packers) in quantities of not more than 23 t with delivery in refrigerated or chilled seawater or properly iced in boxes. Deliveries must be unloaded within 18 hours of capture and processing other than by icing or chilling must commence within 24 hours of delivery.

With a domestic fishery well underway, it is possible to foresee the development of a domestic market for herring in Canada. The rising cost of beef and traditional fish species such as salmon and cod may mean that cost-conscious people will seek alternatives. At least part of this need could be fulfilled by the Pacific herring.

Bob Humphreys
Regional Herring Coordinator

Where Kingfisher meets Campbell

Tersely referred to as the Kingfisher Proposal, it is a grandiose plan embodying salmonid enhancement, wildlife refuge, educational resources, tourist attractions and a tribute to one of Canada's foremost conservationists -- but all for a price.

The price that Campbell River fund-raisers have been attempting to meet to pay for the marsh area on the lower part of Kingfisher Creek is $250,000. This amount will go to Howard Pease, the present owner of the land. The land will then be added to an area already ceded to the Province by the late Roderick Haig-Brown, to be incorporated, as he wished, into a park for the preservation and study of salmonids. But the price tag for complete development of the plan will amount to almost $400,000 and the key question at the moment is who will pay?

The Campbell River Fisheries Advisory Committee and the Municipal Hall have so far managed to raise over $100,000 and a local resident has offered to match that with a loan. But the plan has arrived at this point only after a long, frustrating search for assistance from the provincial and federal governments. Unless residents can gain the favor of the senior levels of government, the price may not be met and the land will be sold for subdivision or industrial park.

The Kingfisher Proposal is not new. A Department study conducted by Senior Engineer George Nielsen in 1975 concluded that "the estimated costs of the project are excessive in comparison to the anticipated low benefits to the Fisheries resource (16 adult spawners in 1974)". The costs at that time, for diversion of the creek back on to the undeveloped property and for purchasing the property, were less than half of what they are now. Yet something else has changed as well.

Anne Haig-Brown contacted SEP Community Advisor Bob Hurst last year, wondering what the Department was planning to do with the creek. Bob toured the area and realized that its potential for salmonid enhancement far exceeded that considered in the 1975 study. He suggested that Kingfisher Creek be diverted around the present residential culvert, as planned, and in addition be channelled through the marsh land to create a much greater area for rearing grounds. Bob had a hydrologist examine the creek and marsh and it was concluded that the creek could support the channel system. In addition, Bob has envisioned the park as a refuge for nonpredatory birds such as Canada geese and an ongoing field study area for local schools.

Believed to once support a significant coho population Kingfisher Creek was destroyed as a salmon stream by urban development. The area surrounding the creek was purchased at the turn of the century by Hubert Pidcock, from one of the original settlers in the area. In 1936, Roderick and Anne Haig-Brown bought the land and Pidcock's house, which still stands surrounded by forest above the Campbell River. For many years Roderick Haig-Brown fished the waters of the Campbell; for many years he was the province's outspoken advocate of conservation. He once wrote:

"I still don't know why I fish or why other men fish, except that we like it and it makes us think and feel. But I do know that if it were not for the strong quick life of rivers, for their sparkle in the sunshine, for the cold greyness of them under rain and the feel of them about my legs as I set my feet down on rocks or sand or gravel, I should fish less often. A river is never quite the same from one day to the next. It has its own life and its own beauty and the creatures it nourishes are alive and beautiful also. Perhaps fishing is for me only an excuse to be near rivers. If so, I'm glad I thought of it."

Power to the southpaws

"Pooh looked at his two paws. He knew that one of them was right, and he knew that when you had decided which of them was right, then the other was left, but he never could remember how to begin. "Well," he said slowly..."

A.A. Milne
The House at Pooh Corner

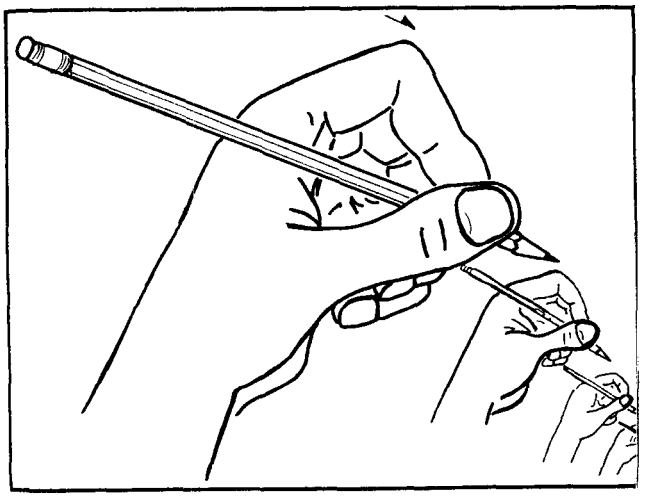
None of us chooses between left-handedness and right-handedness. Most young children are like Pooh, decidedly undecided. Yet somehow, somewhere along the line, the human brain kicks in and says, "Okay kid, right hand does the important stuff. Left hand, you do the mindless tasks and the dirty work." Or vice versa.

I happen to be among the five to 12 percent of the population who do it all with the left. No handicap, it just seems to be an inexhaustible source of inane conversations ("Do you eat with your left hand?" "No, I generally use my teeth."). So it comes as a surprise to see fellow left-handers pleading for equal rights. What do they want, left-sided flush levers?

Traditionally though, "left-handers" have been the victims of discrimination. Some researchers suggest that King George VI developed a stammer because his governess at Buckingham Palace forced him to change his writing hand to the right. After all, a left-handed king? Unthinkable.

The right-hand bias may have something to do with the "sword and shield" theory. Since that coveted organ, the heart, is located on the left side of the chest, the ancients saw fit to grasp their shields on the left side as the right hand went forth to take its toll. Our ancestors could be forgiven had they not carried the bias to extremes and made the left the butt of the language.

"Gauche" say the French to whoever is left-handed. "Gauche" also meaning crooked or awkward , while the French word for right is "droit", which means just or honest. The Italian left hand is called the "manca", which means defective. And of course we all know the difference between right and wrong.



The Bible hasn't done anything for the left-hand cause either. There is the Vision of Judgement in Matthew 25:

"Then shall he say also unto them on the left hand. Depart from me, ye cursed, into everlasting fire, prepared for the devil and his angels..."

One African tribe shared the same bitterness for the left hand: "If a child should seem to be naturally left-handed the people pour boiling water into a hole in the earth, and then place the child's left hand in the hole, ramming the earth down around it; by this means the left hand becomes so scalded that the child is bound to use the right hand." Poor kid, he'll probably stammer when he grows up.

What is it though, that makes a body left-handed or right-handed?

The brain, like most of the body, is bilaterally symmetrical -- it has two sides. The functions of either side of the brain differ between left-handed and right-handed people. Scientists are uncertain as to whether this arrangement is hereditary or determined by some element in a child's environment.

Left-handed people can take heart though, our numbers are on the rise. One American study revealed that the number of "left-handers" as a percentage of the total population increased by five times between 1930 and 1972. Permissiveness is cited as the main reason for the increase. In an earlier era, things might have been d-d-d-di-different.

Mike Youds

Spurious emissions

Pam McNally formerly secretary to the Director-General has moved to the 11th floor where she assumes the position, Executive Assistant to Doug Johnston, Assistant Deputy Minister.

* *

Executive Assistant to Executive Director of SEP, Else Wilson has taken one year's leave of absence from her job.

* *

Successful candidates in the recent competition for Senior Management Technicians, South Coast Division, are Alf Stefanson and Bob Armstrong who return to management biology from SEP.

* *

Recent births to staff include: a 7 lb 6 oz daughter, Erin Nancy Robertson, born on September 18th to Dave Barrett and Linda Robertson - a sister for Scott; a daughter Cheryl weighing in at 8 lb 12 oz on September 25th to Pat and Al Moore; a son, Travis, to Deborah and Steve McFarlane, weighing 6 lb 12 oz on October 20th,

* *

Ed Zyblut now Chief, Offshore Division, is on secondment in Halifax where he will be participating in development of 1981 groundfish fishing plans for the east coast; Hank Scarth, Area Conservation Chief, P.E.I. Area, is in Vancouver on secondment where he will be coordinating input for publication of 1981 fishing plans for all major species, amongst other duties.

* *

Rob Borkowsky has joined Economics and Statistics Branch as Chief, Data Development and Statistical Services Unit (Chief Statistician). Rob previously worked as a consultant in Vancouver.

* *

Gary Norberg is acting/Regional Manager while Fred Iviney is on a two year SAPP secondment as Project Manager, Human Resources Management Working Group, Pacific and Freshwater Fisheries.

* *

Madeleine Holbrook, secretary, Intergovernmental Affairs, has transferred to SEP as secretary to Executive Director, SEP.

Fishery Officer Mike Setter has been promoted to Quatsino Sub-District Officer, Port Hardy, moving from Tahsis; Fishery Officer Chris Curtis has been transferred from Offshore Division to Second Officer, Qualicum.

* *

Ten new trainees have joined Field Services Branch as recruit Fishery Officers. Initial postings will be:

Rob Melvin - Offshore
David Rekdal - New Westminster
Mike Orrey - Campbell River
Brian Spilsted - Queen Charlotte City
Eric Robertson - Comox
Suzy Julian - Steveston
Barry Kanester - Port Alberni
Doug Kelly - Offshore
John Burdek - Whitehorse
Charles McKay - Nass River

* *

Married, Friday, October 24, was Judy Weisner to Robert Glenn - Judy was the successful candidate in a recent competition and will be transferring to Resource Services Branch, 10th floor, on return from her honeymoon.

* *

New staff joining SEP Engineering are engineers Ian Ross and James Young, and draftsmen Lionel Yec and George Moi.

Proud angler is Garth McKenzie, son of Willy McKenzie, Assistant District Supervisor in Prince Rupert.

What you can expect

by Pat Phillips

Again the advertising that looks like invoices are in the mail. File in your wastepaper baskets if you get one, 'The International Telex - Directory "ITV" world edition pamphlets.

A travel Directive Amendment is out regarding a change for the Extended Period/Travel Status. It should read $19.90 and not $19.25 for all provinces, and $22.90 for N.W.T. & Yukon, as read the figures on the directive dated October 9, 1980.

Don't forget to submit Termination Notice (02-1225) for any employee leaving the service. This form must be submitted immediately upon termination -- even if you've phoned in a 'last day worked' date. It is important to give a complete mailing address -- don't leave this for personnel to complete from employment documents, this is particularly important for final cheque mailing (exception -- patrolmen/guardians).

Complete the section Reason for Termination, either 1, 2, 3, 4, 5, or 6.

Under remarks, if you were satisfied with the employee -- so state. Would you recommend rehiring -- so state. If the employee had any outstanding qualifications -- so state. Shortcomings -- so state.

And most important, date and sign the form.

Don't procrastinate when having to complete the form. It greatly assists Pay & Benefit clerks in finalizing "pay".

Do you issue Local Purchase Authorities? Please state on the L.P.A., the reason for purchase, i.e., if for paint - for speedboat 13K1234, or painting storage shed. For repairs to departmental vehicles and/or boats - always use the identification numbers. If the purchases are for special programs, identify. This makes easier line object coding by Finance's verification clerks and puts the cost where they belong.

"We on the Pacific coast are very much concerned with the threat of increased tanker traffic. When tanker traffic is increased, not only is the danger of eco-disasters increased, but inevitably the day-by-day increment of seepage and small spills is increased, and this has a very detrimental effect upon our fisheries. Quite frankly we are not happy with the very inadequate response so far from the government.

"As we look at the salmonid enhancement program, we are happy that it exists, but we wonder what the point is of trying to provide this program, on the one hand, while on the other we do not preserve the existing fish habitat."

—Jim Manly, MP for Cowichan-Malahat-The Islands

Next issue:

328,000,000 gallons of oil spilled into the world's oceans in 1979.

What are the effects?

SOUNDER

Newsletter of the Department of Fisheries and Oceans, Pacific Region

Volume VIII Number 8 December 1980

Merry Christmas and a Happy 1981!

Of agreements, conventions and spirit

"Here's the rule for bargains: 'Do other men, for they would do you.' That's the true business precept."

--Charles Dickens

With a bit of the old and a bit of the new in this issue of *Sounder,* we welcome the new year and wish to all the staff of Fisheries and Oceans the very best of the season.

A fair portion of this *Sounder* relates to the pending Canadian-American fisheries treaty, which must rank as one of the greatest accomplishments of the passing year. It is remarkable that in the face of resource scarcity, two countries can work together to find a more equitable and beneficial system. In its hostile and uneasy state, the world could do well to measure itself in this spirit.

Guest editorial Not yet a treaty

Garnet Jones, Advisor for International and Intergovernmental Affairs, prepared the following summary of the Canadian-American fishery negotiations.

Over the last month the fishing industry and general public have been asking questions regarding a new U.S./Canada salmon agreement. There is a general feeling that an agreement has been reached between the two countries and will be ratified by the respective governments in the near future. In fact, that is not the case at all. What we do have is an agreed record of a negotiating session, held in late October, that outlines certain principles that both countries agree to, along with specific provisions for management of Fraser River, management of transboundary rivers and an interception limitation scheme. The negotiations do however recommend that on the basis of the agreed record, as well as other documents prepared at previous sessions, the two parties proceed to elaborate the agreed approaches and develop them into a convention at an early date.

In brief, the agreed record of the October meeting outlines a convention that would meet the conservation objectives of both sides by requiring both sides to cut back proportionally in fisheries that have conservation problems.

In addition, the convention will:

- provide for research and analysis to determine with greater accuracy the number of salmon intercepted by each country, which is required not only for the limitation schemes but more importantly as background for management and enhancement purposes.

- put a four-year freeze on interceptions at the base period levels (1971-74). The freeze will give both countries time to plan cooperative enhancement programs and to work out mutually beneficial adjustments in fisheries. Of the biggest benefits to Canada, the Noyes Island fishery, will be pulled back immediately to 130,000 fish from approximately 470,000.

THE SOUNDER
Editors: Maxine Glover
Mike Youds

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Vancouver, B.C. V6E 2P1
Phone: 687-1442

Government of Canada | Gouvernement du Canada
Fisheries and Oceans | Pêches et Océans

MEMBER OF
INTERNATIONAL ASSOCIATION OF BUSINESS COMMUNICATORS IN BRITISH COLUMBIA

• provide the U.S. with 33.6 percent of the Fraser River pink total allowable catch for a period to be negotiated, and then return to 33.6 percent or 2.1 million pinks, whichever is less.

• transfer the management responsibility for the Fraser River stocks back to Canada from the IPSFC, thus allowing Canada to meet management and fisheries development goals.

• presents two proposals for U.S. entitlement to Fraser River sockeye. These proposals are presently being analyzed in relation to enhancement proposals over various time periods.

• provide for coordination of enhancement where enhanced fish contribute to intercepting fisheries (will avoid development of fisheries on mixtures of strong enhanced stocks and weak natural runs).

• provide Canada with benefits for the transboundary river production either through development of fisheries on the Canadian section of the rivers, or adjustments to U.S. or Canadian fisheries on U.S. stocks elsewhere.

• provide for cooperative management and enhancement of boundary streams, for example, setting escapement goals, total allowable catches and enhancement targets.

• provide Canada with an immediate entitlement on the Taku and Stikine Rivers close to the 1979 catch levels.

• provide for a technical dispute settlement.

Departmental staff are presently involved in a thorough review of the overall proposal, as well as developing positions on the remaining issues yet to be discussed with the United States. It is anticipated that this groundwork will be required for further negotiations that will possibly take place in the spring of 1981.

Garnet Jones
Advisor,
International, Intergovernmental Affairs

Letters

Editor,

I have been asked by BCIT to attempt to get a current address from all of the BCIT graduates working for the Department of Fisheries and Oceans and to find what their present jobs are. I would appreciate your help in this matter as the only other way is for me to go through personnel files, which would be a long and tedious job. Please contact me as soon as possible if you are a graduate or if you happen to know one. Thank you.

Brian A. Richman
Training and Career Development
Officer Field Services

It has come to the attention of the Hindsight Award Committee that the newly created trophy is absent from its resting place. That is to say, the Award Committee is at a loss to explain this to the forthcoming District Three Christmas gathering in Parksville on December 12.

Jack Broome (left) and Dennis Brock on the occasion of the presentation of the 1979 Hindsight Award.

If anyone has any idea where the trophy is, we would very pleased to have it returned (to the District Three office) or the good spirits of the evening may be dampened.

Hindsight Award Committee

Canada-U.S. salmon negotiations

A treaty for all seasons

The stage is set, a new series of west coast Canadian-American fishing agreements are in the offing awaiting ratification by the governments of both countries. Canada's Special Negotiator, Michael Shepherd headed the Canadian negotiating team in Lynwood, Washington, where the new agreement was recently drafted. The talks "were so much different from the name-calling of those of ten years ago," he reported. Here, in an article originally prepared for The Fisherman, he explains the intricacies of the proposed agreement.

In dollar value, about 20 percent of the salmon caught annually by Canadian fishermen and the same amount caught by United States fishermen in Southeast Alaska and Washington, consist of salmon bound for the rivers of the other country. These "interceptions" present two serious management problems. First, without an agreement, there is no way for one country to insist that the other country cooperate to cut back fisheries on intercepted stocks when a conservation problem develops; the home country essentially bears the full burden of cutbacks to preserve the stocks. For example, Canada's 1980 problems of protecting Fraser River chinook and Nass River sockeye runs . Second, because it does not make economic sense for a country to build enhancement facilities that largely benefit intercepting fisheries in the other country, a number of promising projects on both sides of the line have been shelved. Such discouragement of enhancement benefits no one.

Canada has additional concerns.First, under the present Fraser River Treaty Canada cannot manage the Fraser River sockeye and pink stocks and must share with the United States any enhancement of these runs on a 50:50 basis in the Fraser Convention Area. The Fraser is a Canadian river, maintained through sacrifices of the Canadian people. Continuations of a regime of shared management authority and 50:50 sharing just does not fit into today's scheme of things. Second, Canada receives virtually no benefits from production of salmon rivers which arise in Canadian territory and flow to the sea through the United States (primarily northern rivers such as the Taku, Stikine and Yukon). United States fishermen are the primary beneficiaries of these runs and Canada has only limited opportunities to fish them in the rivers. Third, Canada perceives that the United States has the upper hand in interceptions and that Canada's citizens (who must foot the bill for protection of local runs) are therefore subsidizing United States fishermen. Some in the United States feel the opposite.

"The United States shares Canadian objectives with respect to conservation and enhancement and acknowledges the need for equity."

From the Canadian point of view, the objectives of an agreement are: better conservation, encouragement and not discouragement of enhancement, "repatriation" of the Fraser, benefits from transboundary rivers, and equity in interceptions.

The United States shares Canadian objectives with respect to conservation and enhancement and acknowledges the need for equity. It has special objectives as well, particularly with respect to development of coastwide coordination of chinook and coho management and the need to avoid undue disruption of historic fisheries when implementing any agreement.

For the Fraser, the negotiators are proposing a formula which would transfer management authority for sockeye and pinks from the present Salmon Commission to Canada; Canada would conduct all research, set escapement targets and build all enhancement facilities on the river. Canadian fishermen would reap all benefits of

future enhancement beyond the levels of production occurring during 1971-74 (the base period of the overall Agreement). This would be achieved by limiting the United States catch of sockeye and pinks to levels existing during 1971-74.

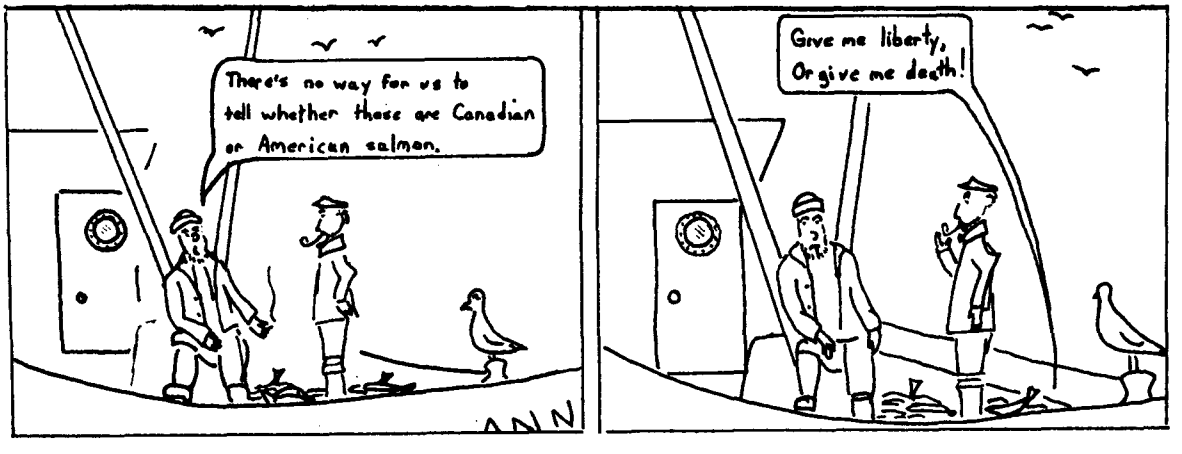
As enhancement came on line, therefore, with United States catches frozen, Canadians would reap all the excess production over the 1971-74 levels. The formula provides for some adjustments, at least in the early years of the Agreement; when runs were weak, United States fishermen would take less than the 1971-74 entitlement and would be repaid in later years when the runs were enhanced. The basic entitlement of United States fishermen would be 2.24 million sockeye (their average catch during 1971-74) or 35 percent of the total catch of Fraser sockeye, wherever caught, whichever is less. This is less than the approximately 40 percent United States fishermen took during 1971-74. For pink salmon, during the early years of the Agreement, United States fishermen would be permitted to take 33.6 percent of the total catch (the percentage they took in 1971-74). Thereafter they would be limited to 2.1 million (their average catch in 1971-74) or 33.6 percent whichever is less. This formula once more would provide Canadian fishermen with the full benefits of enhancement.

The concept of the United States getting a share of the total catch, wherever caught, rather than a fixed percentage of the catch in the Convention Area (as the present Fraser Convention provides) troubles some people. However, there are sound reasons for taking this approach. When enhancement boosts production beyond present levels, United States fishermen will be limited by the numbers of salmon caught and it could not matter less where Canadians take the remainder of the catch. When the runs are low and the United States fishermen are limited by percentages, a formula along the old line presents problems.

Under the existing Fraser River Salmon Convention, there is a premium for Canada to take Fraser-bound sockeye and pinks outside the Convention Area because such salmon do not have to be shared 50:50 with the United States. This situation stimulates development of Canadian fisheries on Fraser stocks further and further away from the river where Fraser fish are often mixed with other, often weaker Canadian stocks. This can and does create management problems. The existence of such artificial incentives to bad management are not in the best interests of Canadian fishermen and should not, I believe, be part of a new Agreement; runs should be managed as a whole and not on the basis of whether or not they are fished on one side or another of a boundary line unrelated to the distribution of the stocks.

Decisions on how and where Canadian fisheries take place should be made by Canadian administrators working with Canadian fishermen on the basis of what will produce more fish rather than on the dictates of an outmoded sharing formula which threatens sound conservation.

Dr. Mike Shepherd,
Canadian negotiator,
Canada/U.S. Salmon Negotiations



Treaty broadens SEP horizons

They are big rivers, born in the tablelands beyond the great glacial mountains of the Alaskan Panhandle; Canadian Rivers producing Canadian salmon. But their wealth is lost. Forging through virgin forests and ice still weighing as though 10,000 years have not passed, they enter the United States to feed the growing fishing fleets of the Alaskan coast.

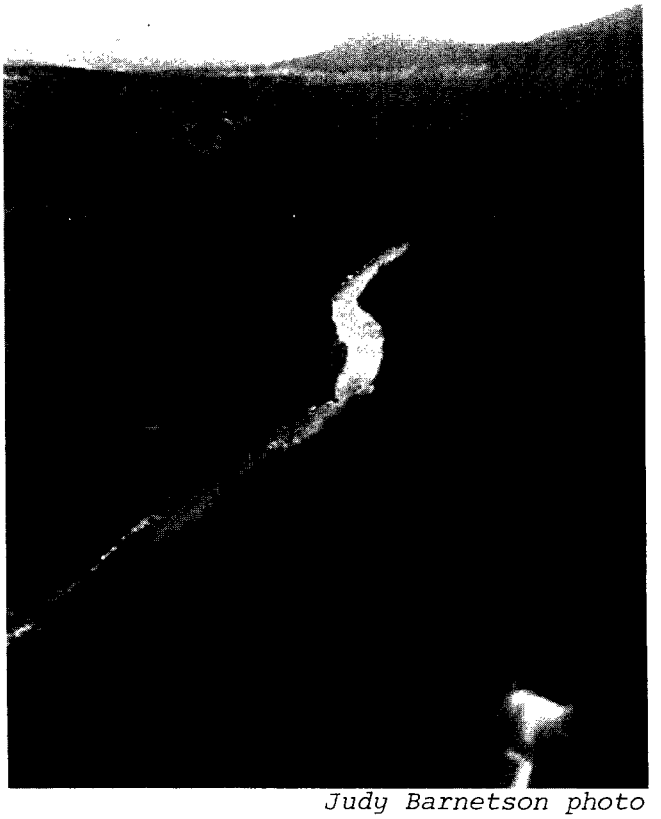
Until recently, the Alaskan Panhandle --that massive imposition of land that forms the continental coastline from Portland Canal to Tweedsmuir Glacier-- has discouraged salmonid enhancment efforts on Canadian Rivers that flow through it. Only American fishermen, who harvest the Canadian stocks, would benefit from enhancement. But the newly drafted Canadian-American fishing treaty may have opened up the rivers to enhancement possibilities. Included in the treaty is an agreement that will allow Canada to receive credit for fish that spawn in Canadian waters but which are harvested by Alaskan fishermen.

Although the treaty has not been ratified, SEP Planning is already surveying enhancement possibilities on at least three major rivers: the Stikine, the Alsek and the Taku. The reason for this is twofold, says Sandy Johnston, management biologist in the Whitehorse District.

"There are two trains of thought. First, that enhancement of these rivers could be done to obtain local benefits, and also, it could be used as a political lever to show that we have a real interest in these stocks."

However, Judy Barnetson, SEP Planning biologist, is quick to add that SEP Planning is not yet trying to identify projects that might produce fish for local benefit.

"We're not enhancing yet," Judy says, "and we still haven't received the go-ahead for any real enhancement. All we're doing is looking at enhancement possibilities as a way of evaluating the



Judy Barnetson photo
The Tatshenshini River.

international position. If we have an idea of the ultimate numbers of enhanced stocks and the different ways we could manage them, then we have a much clearer idea of the relative catch between the two countries and what it's worth to us."

In addition to traditional native fisheries, commercial freshwater test fisheries on two of the rivers, the Taku and the Stikine, began in the late 1970s. The remoteness of the fisheries presents new problems of manpower, transportation and communications. For the Taku fishery, catches have to be flown to Dease Lake and then trucked to Prince Rupert. The fisheries have been successful though.

The new agreement will allow full cooperation between the two countries on enhancement efforts, a crucial step in improving runs on rivers that disregard national borders.

For some time the Alaskans have been intent on building stocks in these

rivers, even without Canadian cooperation. In spite of Alaska's oil wealth, commercial fishing is an important factor in the state economy. A large hatchery is under construction at Juneau, near the mouth of the Taku River, with an expected production of 1.2 million adult chum and 600,000 adult coho. Sandy says the addition of hatchery stocks has led to a deep concern for the future of native stocks. But the Americans also are concerned, Judy explains.

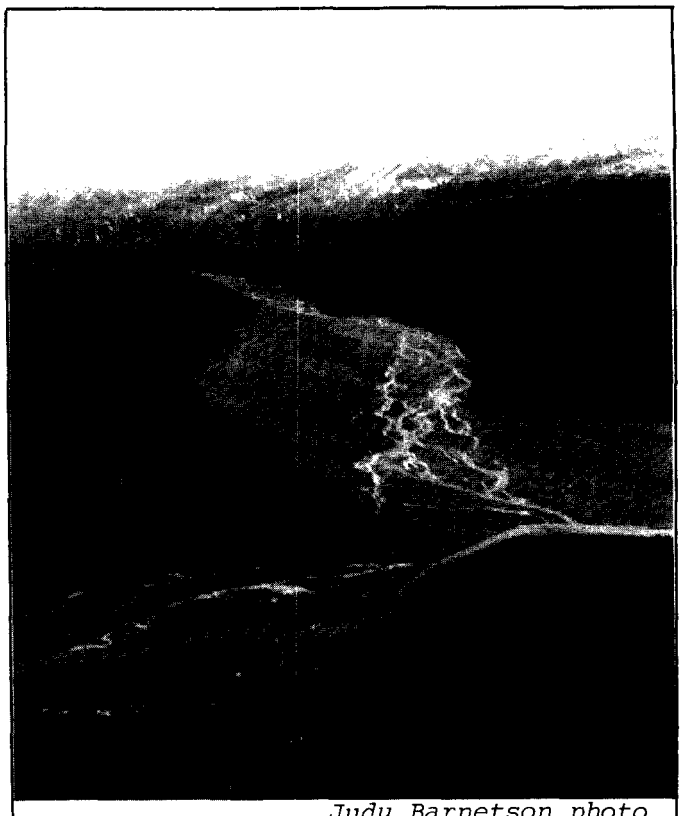
"The Alaskans have always had great ideas about how to go about enhancing Canadian stocks. Alaska has invested at least some of its enhancement money in reconnaissance on Canadian rivers. In many ways, they are more familiar with those river systems than we are."

Several years ago, Alaska suggested removing a portion of Tweedsmuir Glacier to open the upper portions of the Alsek River to salmon. However, on a recent trip to the Alsek, SEP Planners found that the glacier has receded and no longer blocks the passage of spawning fish. Re-introducing stocks into the upper Alsek is one of the enhancement projects being considered. At its upper reaches, the Alsek is less than 10 km away from the head waters of one of its downstream tributaries, the Tatshenshini. It may be possible to move eggs, fry or adults between the two systems.

The region presents a whole range of new problems for salmonid enhancement and management of stocks. Glaciation is the dominant factor in the hydrology of the area. River siltation and rapid channel movement could pose difficulties for enhancement efforts. Still, the potential is only now being recognized. Blasting a waterfall on the Tuya River could open up an additional 150 kilometres of watershed and the Lake Enrichment Program has considered fertilizing several lakes in the area.

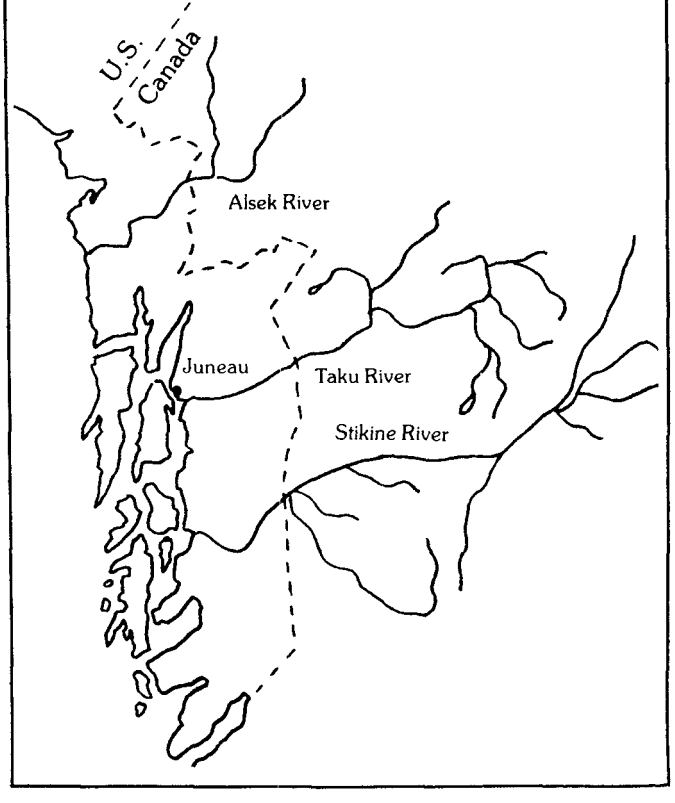
"Right now SEP Planning is focusing on identifying large-scale fish production opportunities, by whatever means possible," Judy says.

Mike Youds,
Editor



Judy Barnetson photo

Above, the upper portion of the Alsek River as it descends from the Coast Mountains. One local claims to have seen salmon spawning near the foot of the glaciers. Below, map showing the relative location of the three major rivers.



Two area troll

Reprieve for wild chinooks

Unenhanced chinook stocks in the Strait of Georgia are in serious trouble. Escapements of chinook salmon have dropped off to drastic lows due to a combination of factors including habitat destruction, that vague catch-all phrase "ocean survival" and over-exploitation.

This year, the Department is addressing this problem on several fronts, one of which is to reduce exploitation of these stocks. A constraint to this management option is that the impacted fisheries still be viable or lucrative fisheries. Therefore, a two area troll system has been adopted.

The concept of two area troll licencing is not new. Two area trolls were first proposed for the Strait of Georgia in 1971 and since then have evolved into the current regulation scheme. Salmon fishermen, upon receiving their 1981 troll licences, will be required to choose between trolling inside or outside the strait, but not in both areas. The inside area lies between the statistical Area 18 and 19 boundary on the south, and from Seymour Narrows to Frederick Arm in Area 13 on the north.

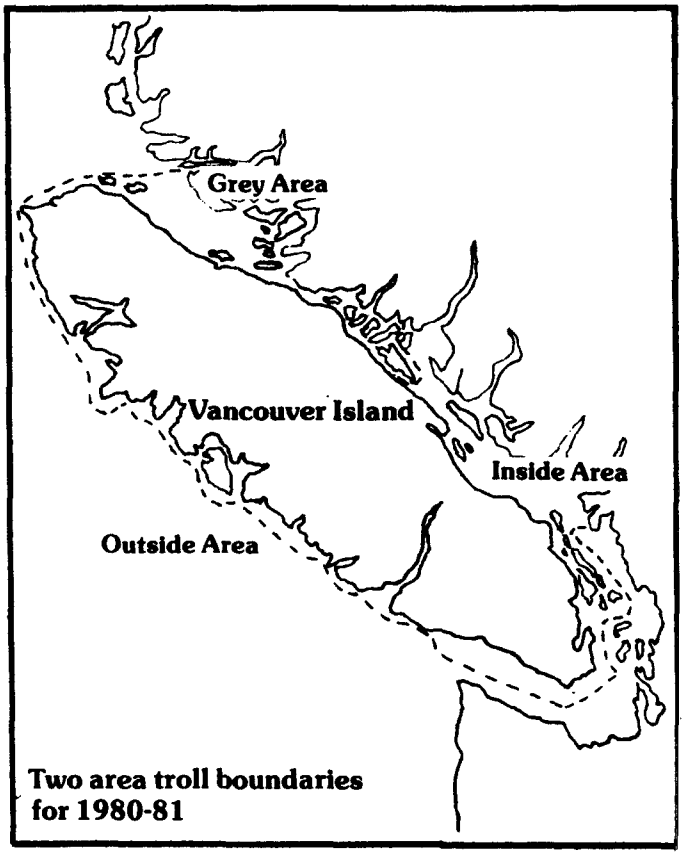
Outside fishermen will still be allowed to net fish in the Strait of Georgia, but inside fishermen will be allowed only to troll, Areas 12 and 13, north of the northern boundary of the inside area will be a "grey area", so called since both inside and outside fishermen will be permitted to fish in these waters. Inside fishermen, however, will be only allowed to troll in the grey area.

The reasoning behind this regulation is that a number of West Coast "highliners" come inside the Strait of Georgia to "wet their lines" or take advantage of the April 15 opening on chinook salmon. The major portion of their earnings comes from fishing later on the West Coast, so the catch from this period represents a relatively insignificant portion of their earnings. Their catch, however, has been estimated to be around 35 percent of the total catch in the Strait of Georgia.

Through the enforcement of a two area troll, Georgia Strait commercial chinook fishing will be reduced by an anticipated 60 percent. This reduction will have two desirable effects: first, it will increase the catch of the smaller, local boats that opt to fish inside. Second, it will allow an estimated additional contribution of some 11,000 chinook adults to escapement.

The choice of fishing either inside or outside will be made for the 1981 salmon season and will not be reversible during that season. After the 1981 season, the two-area troll licence will be reviewed.

Steve Heizer, Biologist
South Coast Division
Nanaimo



Two area troll boundaries for 1980-81

Room to move

Office space at 1090—where is it?

Attention, regional headquarters staff, clear a path between the space dividers, stack those boxes in the corner, sit down (on the boxes if necessary) and read this: extra space at 1090 is at a premium and will remain that way for some time.

There is no easy solution to the overcrowding problem at Department headquarters. Indeed, even the problem is complicated. The allocation of office space is governed by the Department of Public Works and Treasury Board and is based upon functional guidelines. Under this approach all normal work positions in the government have been categorized into five main profiles: Manager, office/professional, technical specialist, secretarial and support personnel. Each profile consists of an assumed job description, common titles associated with that profile, activities performed, furniture entitlement and a resultant floor entitlement.

Additional space is also allocated on the basis of per capita population for support, circulation and growth. Support can be allocated either to work stations or to form common storage, meeting, reception, group equipment and coat storage areas.

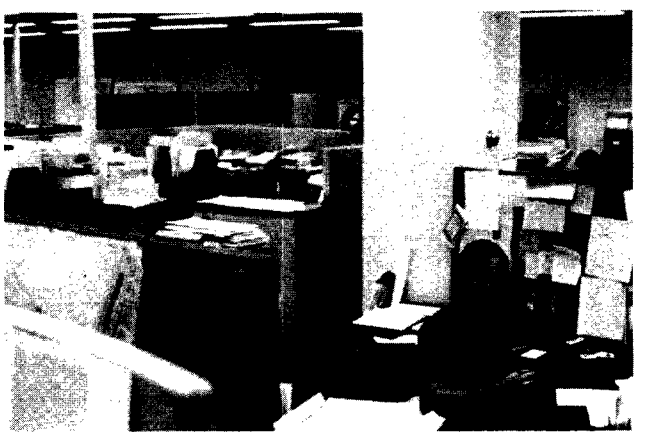
One would assume, because of these allocations, that no overcrowding should exist. However, a work station under the functional guidelines only has furniture as defined by Treasury Board furniture directives. For example: The officer position (officer, administrator officer, ex-assistant, senior clerk, supervisor, group head, professional, technologist, technical officer, researcher, scientist, architect, engineer), which most individuals in the headquarters fall under, allows space only for a single pedestal desk, rotary chair, file cabinet and one side chair. Imposition of extra items over and above the approved entitlements requires not only additional area for the unit itself, but room for circulation as well. Lease agreements do not provide for extra space to meet this need without Treasury Board approval.

Further complicating the situation at the regional headquarters is the actual determination of our office population and special purpose areas. The region is currently in the process of reorganization, with the formation of the Assistant Deputy Minister's office, decentralization plans, branch changes and the implications of various departmental submissions. Space is allocated only against authorized person years, which normally assumes only one individual is employed for each person year.

Facility management is currently acquiring the necessary data and preparing plans for all floors which, when finalized and approved, will become the basis of future re-arrangements and negotiations with public works for lease amendments.

In summation, there is a genuine concern about our present accommodations at the regional headquarters. It will require the cooperation of staff at all levels to ensure adequate details are produced and made known to ensure proper facilities are provided.

Ken Campbell
Chief Facilities Management
Support Services Branch



HPD's Steve Samis in fourth floor jam.

The high cost of oil—our oceans are p

The age of fossil fuels has left its mark on the world's coastlines. Names of the worst oil spills linger in the memory like so many wars--the Torrey Canyon, Santa Barbara, Chedabucto Bay, Amoco Cadiz, and the greatest of them all, last year's Ixtoc I well blowout in Mexico's Bay of Campeche. Here, on the world's oceans, the high cost of oil is most apparent, and the cost is rising.

The Oil Spill Intelligence Report, published annually by an American institute questionably named the Centre for Short-Lived Phenomena, was more disturbing this year. Nearly 1.5 million tons of oil were spilled in 1979, a 56 percent increase over the previous year. In 159 major accidents more than 250 people, 50,000 birds and an estimated 270,000 fish were killed. The spillage, however, represents only oil lost in transit. The total amount of petroleum hydrocarbons annually released into the marine environment exceeds six million tons per year. The immediate affects are staggering, but what about the long-term harm?

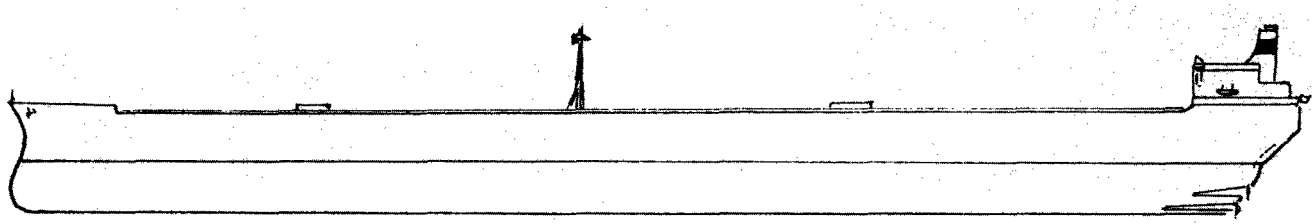
The camera accompanying Heyerdahl's Ra II expedition documented the ubiquity of oil in the oceans; a sailor dipped his hand into the blue of the mid-Pacific and withdrew a handful of black goo. Scenes such as this detract from the aesthetic appeal of the oceans, but they do not necessarily mean that serious harm is being done by oil. The complete facts about the effect of oil, in its many forms, are not known. Dr. Michael Waldichuk, Senior Scientist with the Department, gave the following summary in a booklet published by the International Oceanographic Commission:

"Permanent damage by oil to an ecosystem has still to be demonstrated, and a health hazard to man through exposure to oil or consumption of oil-contaminated sea food has not been unequivocally documented."

He does not rule out the possibility of long-term harm, though.

Another, more alarming account is given by writer Noel Mostert in his book, *Supership:*

"Oil poisons, smothers, burns, coats, taints; among many consequences, it can start carcinogenic processes in sea animals, affect reproduction, and cause genetic change; it affects respiratory organs and clogs the filtering mechanisms of fish; it affects, as we have seen at the Cape, the balance and independence of a bird such as the penguin; it causes imbalance in the cycles of plant life, when it doesn't kill altogether; its degrading properties process consumes large quantities of dissolved oxygen, which is vital to life in the sea."



In the last 15 years, oil tankers have become the world's largest ships. The latest supertankers , weighing as much as 800,000 tons, have ten times the tonnage of the old Queen Elizabeth, the largest ship in its day. These ships, too large to enter major seaports, are not seen by most people. Some have draughts of over 30 metres and are so long that crew members have taken to travelling the decks by motorcycle.

›aying the price

Unlike many coastlines around the world, the Canadian west coast has never suffered a major oil spill. However, through negligence or mechanical failure, more than 400 minor oil spills occur every year along the B.C. coast.

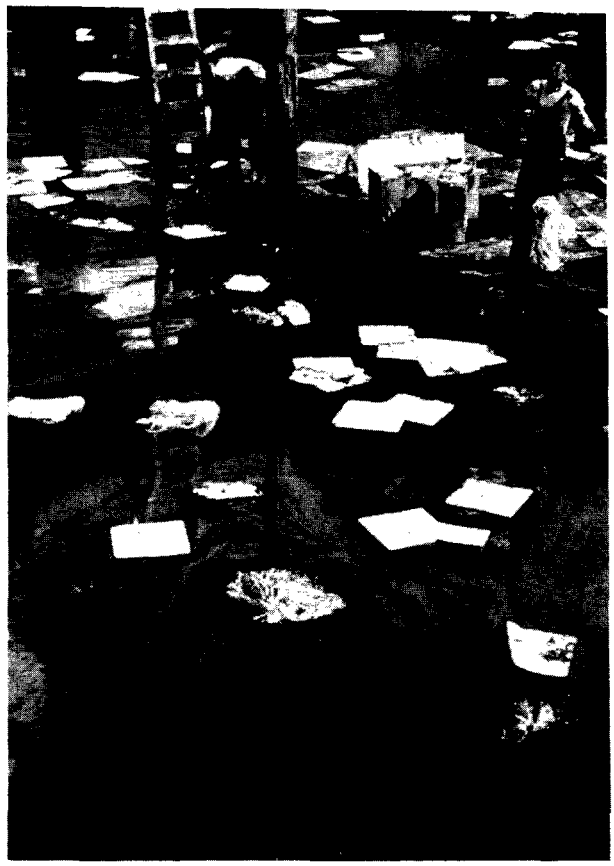
Steve Pond, regional environmental emergency coordinator with Environmental Protection Service (EPS) and a former East Coast biologist with the Department of Fisheries and Oceans, says cleanup ability has vastly improved.

Yet Steve concurs that increased tanker traffic around Vancouver and through the Strait of Juan de Fuca has increased the risk of a large oil spill.

A cooperative effort by the EPS, the Canadian Coast Guard and the petroleum industry, has introduced cleanup facilities that are available in most regions of the coast. The Department of Fisheries and Oceans also participates in the effort since it is primarily under the Fisheries Act that polluters are held responsible for spills.

"The Department of Fisheries is valuable for identifying what places have to be cleaned up," Steve says. "To us it's really important to know that. We want to know what the fish managers think so we can establish priorities. You have to do it in an orderly way."

"They also give us up-to-date information on small spills--whether they're serious or not."



Workers use oil-absorbent materials to mop up minor spill at Steveston.

The EPS offers fishery officers a provincial emergency program that teaches how to clean-up oil spills. Keith Hebran, a former fishery officer in Queen Charlotte City, is one of the instructors of the one-week course. Steve estimates thirty people take the course each month.

Mike Youds,
Editor

Oil—from Valdez to Puget Sound

Dr. Michael Waldichuk, senior scientist with the Resource Services Branch, prepared the original version of this article for the June 1980 issue of Marine Pollution Bulletin (Vol. 2 No. 6)

In January 1980, U.S. President Jimmy Carter endorsed an all-American plan of the Northern Tier Pipeline Co., Seattle, to build a 2400 km pipeline from an oil port in Port Angeles, on the Washington State side of Juan de Fuca Strait, to Clearbrook, Minnesota. This decision received considerable reaction in Canada because of the potential oil pollution hazards created by the increased tanker traffic that was expected to arise from implementation of this plan. The political leaders

Oil...

at both the federal and provincial (British Columbia) levels had originally supported the totally overland proposal of Foothills Pipeline Ltd, of Calgary, Alberta, for a pipeline from the existing line between Prudhoe Bay and Valdez, Alaska, traversing through Alaska, Yukon Territory, northeastern British Columbia and Alberta to hook up with an existing pipeline at Edmonton, Alberta.

What are the environmental risks in either of the foregoing proposals? The marine route poses the ever-present danger of grounding, collision and capsizing for a variety of reasons. The northwest Pacific can be a hostile environment at any time of year, but particularly in winter. Even the most modern up-to-date ships, with the most sophisticated navigational and propulsion equipment, can have problems. The 269 m tanker The Prince William Sound, carrying 831,000 bbl of Alaskan crude oil, lost its main propulsion and generator systems on the night of 17 January 1980 and went adrift in the Gulf of Alaska. Only sheer luck prevented the tanker from grounding and causing a major oil spill during the 14 hours adrift before power was restored.

Fortunately, there has been no major oil spill so far on the Pacific coast of Canada or Alaska. Small spills are fairly commonplace. About 100,000 gallons of diesel oil were spilled from a Japanese fishing vessel grounded in the Pribilof Islands in November 1979, and some of this fuel oil washed ashore at important fur seal and bird breeding grounds. With larger-scale tanker transport of oil, the statistics favour an increasing possibility of a major oil spill. The prevailing winds are westerly along the outer coast of British Columbia and southeast Alaska, and the surface currents of the West Wind Drift set toward the coast, as attested by the Japanese fishing net floats that can be found along the outer coast of Vancouver Island. Any major oil spill, even outside the 200 mile zone of extended jurisdiction, could be expected to drift ashore eventually.

In Juan de Fuca Strait, the risk of an oil spill from grounding, collision or other mishaps increases as the number of tankers increases. There is a great deal of commercial traffic in this 30 kilometre wide strait at all times of year. At present, there are on the average 108 tanker movements per month inside Juan de Fuca Strait. During the salmon fishing season of late summer and early autumn, there are hundreds of American and Canadian fishing vessels in the strait. Heavy fog is common at this time of year. It is true that the Canadian Coast Guard has a vessel management system with a traffic separation scheme to guide incoming and outgoing vessels for this part of the coast, but so far it is voluntary, with the hope that it will eventually become mandatory. A bilateral Canada/U.S. agreement signed in December 1979 for vessel traffic management, which it is hoped will be able to effectively control tanker traffic in Juan de Fuca Strait. More sophisticated navigational systems to reduce environmental risks with tanker traffic in Juan de Fuca and Puget Sound will be developed under the agreement. One can be quite certain that a major oil spill of 100,000 t in Juan de Fuca Strait would result in severe fouling of both American and Canadian shores and could lead to severe disruption of all fishing activities. Efforts are being made to avoid this.

Clearly, oil companies are highly optimistic of locating new major oil reserves in the Arctic. Judging by some of the initial discoveries in the Beaufort Sea by Canadian and American firms, this optimism may be not unfounded. The US Geological Survey has estimated that the Beaufort Basin of the nothern Alaskan coast contains about 500 million bbl of oil. Oil companies have recently bid $1 billion for leases to drill for oil and gas in that basin. If predictions are borne out, we can expect a major increase in tanker traffic, with its attendant risks, along the Pacific coast of North America in the next decade or two.

Radio system a headache

Mike Brown, fisheries guardian at Naden Harbor in the Queen Charlotte Islands, lives alone in a cabin for most of the year. The "Pillar Rock" brings his supplies from Masset on a regular basis. There are several logging camps in the area but they are not in a position to supply him with food or other services. Each day he runs a small gas generator to charge the batteries for his radio, his only direct link to the outside world.

Good radio communications in the Queen Charlotte Islands are far more critical than most areas of the coast. Charter vessel patrolmen like Marvin Boyd on the "James Island" are in Skincuttle Inlet from late July to the end of October without ever leaving the area. The "Arrow Post" takes fuel, fresh grub and mail supplies on regular patrols, but these seasonal employees are quite literally on their own except for daily radio contact.

Our radio schedule starts a 0755 and runs to 0815. That is 20 minutes for three subdistrict officers (Sandspit, Masset, Charlotte City) to talk to 12 patrolmen and guardians, three patrol vessels, and to pass on information to the district office. With less than 1½ minutes per vessel it's not hard to run overtime and into the next District's radio schedule.

Most of this is done on one frequency (Echo) with some on Foxtrot or Charlie. Our patrolmen cannot afford to have our other frequencies installed as a good single sideband (SSB) with radio with a tunable receiver and transmit modes costs over $6,000. Consequently, we have a poor exchange of information among our staff with rushed and incompleted radio conferences. This situation creates a real safety hazard and inefficiency.

To overcome this problem will require the addition of two very high frequency (VHF) repeaters, several base stations, and two dozen portaphones. A fishery officer could bounce a signal through his vehicle to a repeater. The repeater would signal, via a portable, a guardian walking a creek to get the latest figures or to ensure he is not injured. Districts could operate throughout the day without having to interrupt each other.

In time, the VHF radio could be coded or scrambled to prevent interception and enable maximum privacy. VHF is easier to code than SSB or high frequency (HF).

Our single sideband or HF radios used for longer range communication should all be replaced. We are using 15-year-old vacuum tube radios with some solid state. The newer all-solid-state SSB radios are more powerful and more dependable. They don't even need crystals--a technician can set the desired receiving and transmitting frequencies

Parts ordered for our radios can take months. The Masset base radio was inoperable for three months this season, waiting for a replacement power supply.

Radio...

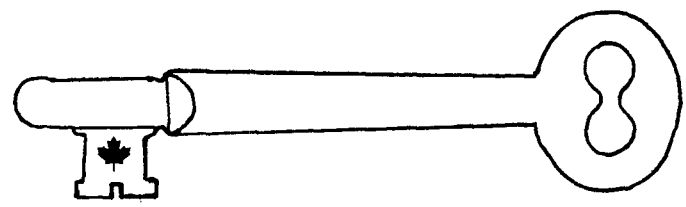
In short, we are working with dated equipment that needs to be replaced so we can do our work efficiently.

The food and bait herring fishery is underway. There are 18 seines and one trawler working near Langara Island in Area 1. The Arrow Post is there and he‡ main radio is out of commission. Occasionally we get catch figures, if we're lucky.

Kip Slater
District Supervisor,
Queen Charlotte Islands

Access to Information

The questions are coming



Within a year, government employees will be answering questions put to them via Bill C-43, access to information legislation, and the onus is on both the public and the government to see that the new system works effectively.

In a lecture given at the Holiday Inn, Harborside, Dennis Orchard, secretary of communications for the Privy Council Office, said the coming legislation has had "a remarkable, positive reception from the public." He added though, that those in the public service are not all that happy about it.

"A small minority think it's plain mindless. Nothing like it has ever before been experienced and it will mean a fair degree of change for public servants," he said.

The bill states that "any Canadian, permanent resident or corporation, has right of access to any record under government control, subject to specific exemptions."

It is those exemptions that are the crucial and most controversial element of access to information legislation. In the American "freedom of information" law, too few exemptions have been more than a headache to government workers. In some instances laws have become useless and court cases have been hampered. The Americans, Dennis said, are preparing to revise their freedom of information law.

On the other hand, too many exemptions could stifle the whole purpose of the bill, that is, to provide the people with information that is rightfully theirs. Unable to find a happy medium for Canadian legislation, the government has decided to include a multitude of exemptions but at the same time allow for a wide interpretation of the exemptions. Orchard admits that the exemptions are numerous.

"If you want to hide behind them you can."

"It is a cumbersome and blunt policy."

"The case that I'm making is that there is some degree of obligation for the public and the media to play it carefully."

The system will involve a $15 or $20 minimum charge for requests, depending on the effort involved with filling each request. The fee may be waived in special cases, although Dennis anticipates some fees running into the thousand dollar range. The individual need not explain why the information is needed. There also will be a 30-day deadline on all requests.

As to how much the bill will end up costing, Dennis said "we can only guess." He said one federal department has estimated the bill will

Access...

require more than 300 extra person-years to be properly facilitated, from that department alone. However, that figure may be an exaggeration since in the first year of New Brunswick's access to information legislation, only eight requests were made. But the bill could cost the Canadian government millions of dollars, Dennis said.

He also generalized on the changing role of the public servant. Any manager must have responsibility for community relations, he said.

"You share accountablity right up the line. The public servant is no longer anonymous."

Access to information legislation is, in part, "a recognition that you simply cannot work in a comfortable, private little world."

Mike Youds,
Editor

Alaskan imports save Rupert season

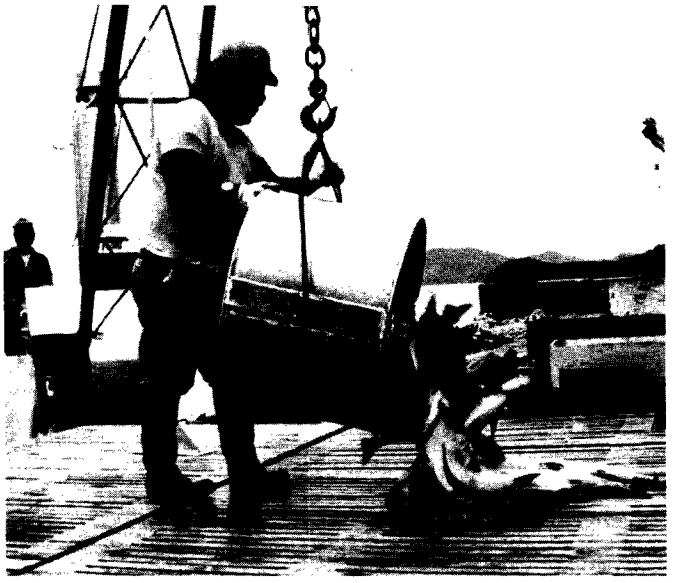
With extended closures and generally lower than normal catches in Northern subdistricts, deliveries of salmon to Prince Rupert processing plants from local fisheries were down substantially for the 1980 season.

At the onset of the season most processors indicated they would be hiring far fewer seasonal staff and expected summer operations to be very slow. As it turned out, most plants were able to operate at near normal capacity with the aid of a very lucrative salmon import operation from Alaska.

A successful sockeye fishery in Bristol Bay, Alaska, started the flow of salmon into Rupert in early July. Approximately four million kg of good quality sockeye were delivered to Prince Rupert under an agreement between Canadian and U.S. authorities. Initially it was thought that the Bristol Bay salmon would make up the bulk of the imports, but with good returns, extended fishing areas and times, coupled with a lack of processing facilities for Southeast Alaska fisheries, Prince Rupert plants were soon called upon to handle much of the excess from all Alaskan waters. A number of U.S. and Canadian packing ships made regular trips during the summer, delivering by October a total of 8.5 million kg of mixed salmon. This brought the total salmon imported to 12.5 million kg for the season. Most of the salmon was purchased by Canadian processors but a small amount was custom processed and returned to the American market.

Although this operation did not ease the impact of the poor season experienced by local fishermen, it did allow local processors to operate at near normal capacity and provided much needed summer employment for local residents.

Tim Panko
Fisheries Officer
Prince Rupert



Red tide report

Shellfish Coordinator Sing Liem provides an update

The barbecued oysters were delicious, though a little seafood sauce would have added spice. A good meal, but what's this tingling sensation on the lips, and on the tongue, too. You go to lie down on a cot and, for some reason, stumble right over it. There is one thing you must do: call for an ambulance --you have paralytic shellfish poisoning (PSP).

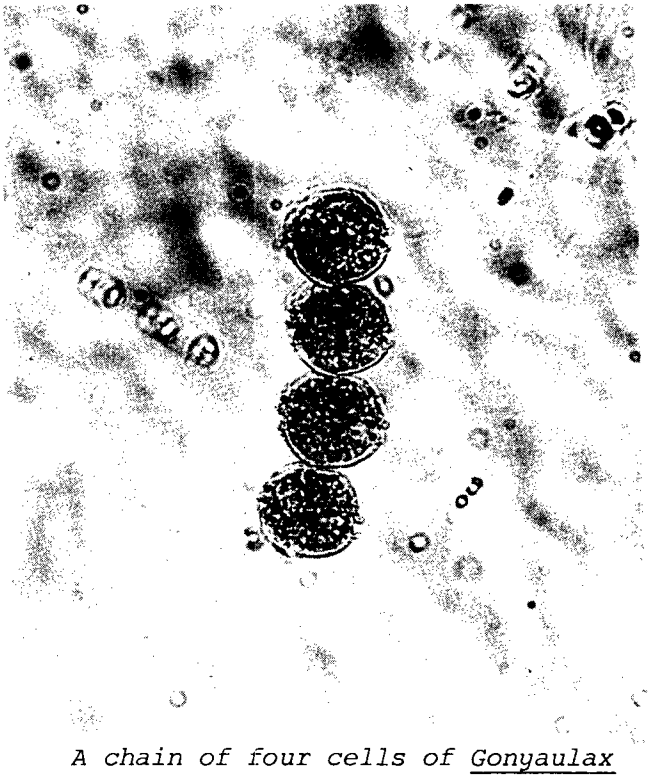
The tingling sensation will soon spread to the extremities of your limbs and the loss of muscular coordination will increase to the point of paralysis, including an inability to breathe. Induce vomiting, take a fast-acting laxative and drink a solution of baking soda. There is no known antidote for PSP, but quick action could save your life.

It may happen that those who read this will never find themselves victims of PSP, but red tide will always be a very real health hazard on the B.C. coast. This year was an record year for PSP outbreaks throughout the Johstone and Georgia Straits. The first PSP outbreak occurred on Gilford Island, where on May 17, a man died after eating toxic butter clams. On May 13, the entire

What is red tide? A red tide is the name associated with the sighting of a red discoloration of the water caused by the sudden explosive reproduction of red-colored marine organisms. One of these marine organisms, called the *Gonyaulax* contains minute amounts of PSP. Bivalve molluscs, which are filter feeders, concentrate the organism in their digestive tracts. The shellfish themselves are immune to the poison, but any warm-blooded animal (including man) that eats shellfish containing PSP toxin, does not enjoy the same immunity and may become very ill.

Some of the factors required for a bloom are water temperature, salinity of the water, availability of nutrients, vitamins and sunlight. The actual triggering factor of a *Gonyaulax* bloom is not known. With the *Gonyaulax* present in its dormant spore stage throughout our coastal waters, toxic blooms can happen anywhere on the coast when the right water conditions are present. Blooms usually occur during the summer and fall, between May and October. However, a late November bloom occurred in Barkley sound in 1971 and in the Egmont and Jervis Inlet area in 1980.

Other red-colored marine organisms, such as the noctiluca, which frequently bloom on our coast, are harmless. Accordingly, the sighting of a red discoloration of the water can only be taken as a warning that the waters may be infested with the *Gonyaulax* organism. Analyses of water samples by the Pacific Biological Station at Nanaimo, or analysis of clam samples, must be done to confirm the nature of the bloom. It should also be noted that without producing any visible discoloration, *Gonyaulax* may be present in sufficient



A chain of four cells of Gonyaulax acatenella, one of the organisms causing paralytic shellfish poison.

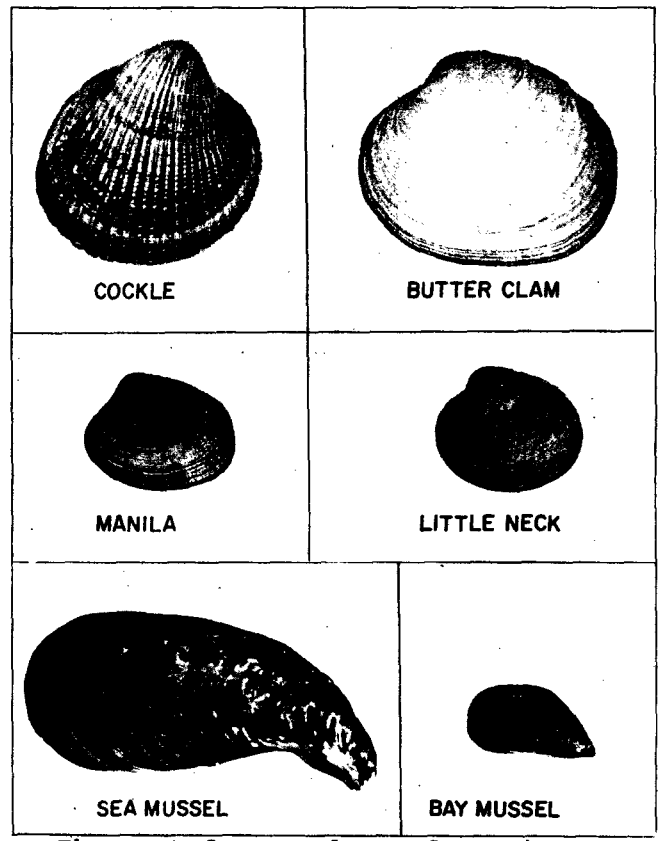
quantities to cause shellfish to become poisonous.

There is no difference in appearance between safe and toxic shellfish. At the present time the only reliable method for detecting the PSP toxic is the mouse bioassay method. The Fish Inspection laboratories in Vancouver, Victoria on Prince Rupert, prepare the extracts from the shellfish. The extract is sent to the National Health and Welfare laboratories in Vancouver or Ottawa for determination of the PSP level in the shellfish sample.

With PSP outbreaks occurring regularly in open waters, the entire South and Central Coast (Areas 1 to 11) and the West Coast of Vancouver Island (Areas 21 to 27) have been closed for the harvesting of bivalve molluscs. Only commercial harvesting, under permit during the winter months (November 1 to April 30) is allowed in these areas. The Johnstone Strait and Strait of Georgia (Areas 12 to 20 and 28) have traditionally been open for the recreational and commercial harvesting of bivalve molluscs throughout the year. Closures are instituted when PSP blooms are detected. With this year's record number of PSP outbreaks in the Strait of Georgia, the Deptpartment certainly has to review the concept that the Strait of Georgia is not as susceptible to PSP outbreaks as the West Coast of Vancouver Island.

In the early 1970s about 52 sampling locations were established throughout the B.C. coast to monitor the PSP outbreaks. Biweekly survey samples were sent by the local fishery officer to the Inspection laboratories. Except for Area 24, this survey monitoring program has been replaced by a commercial lot monitoring program and in the summertime eight mussel sampling stations established in the Strait of Georgia sumbit weekly mussel samples to our laboratories. When a bloom is suspected, the local fishery officer is contacted to provide us with survey samples.

Because PSP blooms cannot be predicted, the PSP monitoring program can only confirm that a PSP bloom has taken place. In general there is a one



The most frequently used species of edible molluscs that may become toxic.

to two week time lag before a PSP bloom is detected.

The success of the PSP monitoring program is dependent on the cooperation of many different departments, in particular, the full cooperation received from all the Conservation and Protection Officers, the National Health and Welfare laboratory staff and Inspection staff were instrumental in the early resumption of the commercial harvesting of bivalve mollusc under permit.

Sing Liem
Shellfish Inspection Coordinator
Field Services Branch

Paradise Lost?

Yes, they still smile in Hawaii.

My recent honeymoon took place amid the exaggerared reports of violence and death that have eminated from the Hawaiian Islands. Before arriving I had entertained the possibility of having to avoid the beaches, to leave the hotel only when surrounded by a flock of tourists (preferably American) and armed with a beach met and heavy camera equipment.

During our first week on Kauai, which is much less commercialized than Oahu (home of Honolulu, with its famed Waikiki Beach), a friendly native populace went out of its way to provide directions, recommend bargain shops, and give good, off-season rates for a car rental (far better than Waikiki). Lumahai Beach, (remember "South Pacific?") was deserted for the two hours we were there. No one accosted us. The same was true for Kauai's many other scenic and uninhabited areas.

Our stay at Waikiki, however, was a big mistake. We were tackled every 100 feet, not by muggers but by overzealous peddlers. "Have you just arrived in Hawaii?" "I've got a great deal for you in time-sharing condominiums ... "And the all to familiar, "Smoke man?" We learned to ignore them.

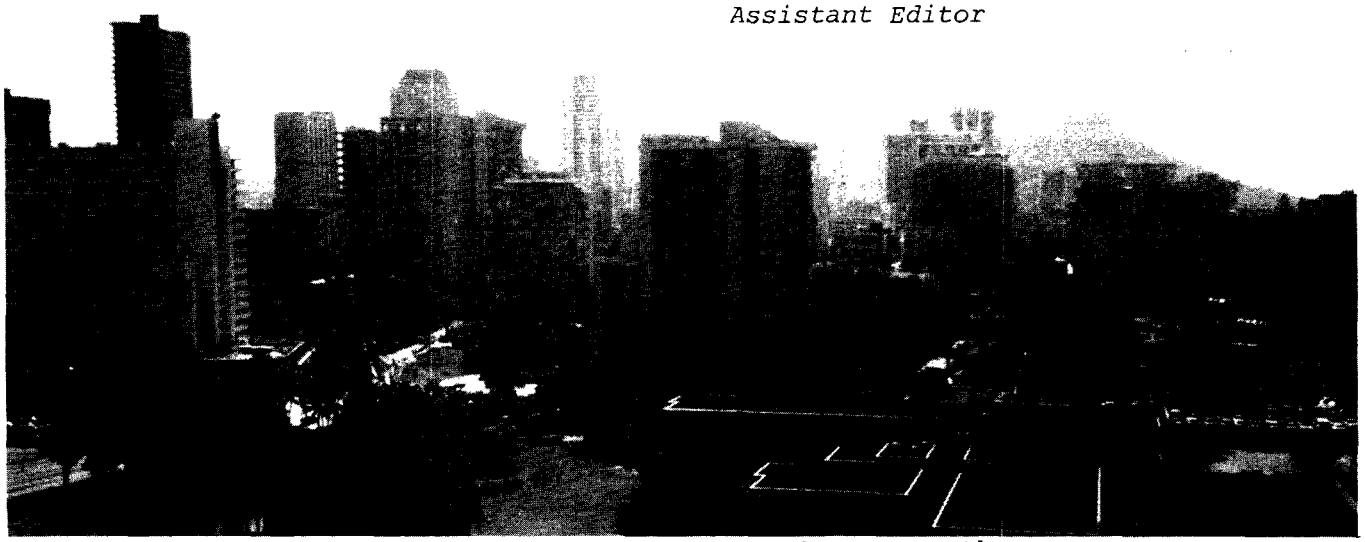
A taxi driver claimed there are only 23 hotels in Waikiki, but they all stand on one strip of land best described as a sardine sandwich. An agile tourist could travel around Waikiki by simply hopping balconies.

Only in this dense cloud of humanity did we sense any unrest among the people. We saw no incidents of violence. No Canadian grannies were snatched from the sidewalk. No plaintive screams from naive Canadian hotel patrons. There did appear to be the same crowd of street people common to all urban centres. (I wouldn't flash cash on Davie or Hastings Street, either.)

As we relaxed one evening, safe on the 14th floor of our hotel, a newscast reported yet another murdered Canadian. Were our previous fears confirmed? Not really. There is bound to be a higher incidence of crime in a large population centre. Waikiki is typical.

Tourism creates facades, even in paradise. Every so often the real social conditions will steal over the facade and take an innocent victim. Don't tempt criminals and if you ever have the misfortune to meet one, do exactly as he says. If you still desire a quiet, uninterrupted vacation, don't go to Honolulu or Waikiki. The other islands have much more to offer and stores that will sell all the items you would find on Oahu.

Gayle Crouser,
Assistant Editor



The backside of Waikiki: more to vacation land than meets the eye.

Sport licences help management

Fisheries managers at long last will find out how many people fish for sport in B.C. tidal waters. Also, a mechanism will be established for recovering fisheries management and enhancement costs from the sport fishery.

Those are the two major objectives of the tidal water sportfishing licence announced by the Minister on October 28,1980. A tag system and seasonal chinook bag limit proposal were not included in the package at this time but not ruled out for future consideration.

The Minister also announced plans to implement a charter boat registration program with the single aim of gathering the information needed to design a charter boat licence system for future implementation.

The sportfishing licence will be the culmination of many years of work by many individuals in the Department. Discussion of the licence with sportfishing groups and related industry people has been going on since the 1960s. Some details of the licence remain to be finalized but the highlights are a resident adult (age 16 and over) licence for $5, and a non-resident yearly licence for $20. A two-day licence will be available to non-residents for $10.

One program that will benefit greatly from the new licence is the Sportfishing Tidal Diary Program. This program in its second year of development is an experimental program aimed at developing an accurate sport catch statistical system based on diaries kept by sportfishermen. The licence will eliminate the need to sample the entire population of B.C. to identify the angling population as we have done in these first two years. No doubt many other programs will benefit from the sportfishing licence.

Bill Masse,
Acting Chief,of Recreational Research

What you can expect

by Pat Phillips

Here it is almost the end of 1980 and not being sure when this edition will get to you, I take this opportunity to wish you all a very Merry Christmas. And of course, the best, especially in all paper work, for 1981.

I am looking forward to the annual meeting so we can iron out some of the paper 'input' problems that some of the district clerks are having. Maybe there is a lack of communication from this end. I hope to run a complete column of our problems, as related at the meeting, in case some of the other Branches are having similar difficulties.

I hope that right after the New Year we will have a new clerk to help us out here, and to provide some of the budget reports that have not been issued since Irene left. They haven't been forgotten. Now that Management Biology is back with the Field Services Branch, I must relearn new collator, cost code numbers and signing authorities. Staff have been patient and I appreciate it.

Next issue: The Fraser estuary

Spurious emissions

Successful candidates in recent competitions within Habitat Protection Unit are: Mike Nassichuk, Chief Water Quality Unit, and Rod Bell-Irving, Chief, Water Use Unit.

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Recent births include a baby girl, Unit are: Mike Nassichuk, chief, Water weighing 6 lb. 7 oz. on November 6, 1980, to Trudy and Don Lawseth a daughter, Andrea Erica, born on November 6, 1980, weighing 7 lb. 10 oz., and to Mary and Alain Ho, SEP Engineer, a son, Arthur, born October 1, 1980, weighing 6 lb. 8 oz.

* *

Lloyd Webb has left Fraser River, N.B.C. and Yukon Management Biology Unit to join the Fisheries Development Unit as vessel and gear technologist Robin Dickson has left North Coast Management Biology Unit to assume duties of fish culture officer, Capilano Hatchery and Cam Wilson has left South Coast Management Biology Unit to assume duties of fish culture officer, Chilliwack Hatchery.

* *

Recent newcomers to Field Services Branch are: Sandy MacIntyre, district clerk, Queen Charlotte City and Linda McAuliffe, secretary, North Coast Division, Prince Rupert.

* *

Ed Zyblut has returned from his brief secondment to Halifax and assumed his new duties as Chief, Offshore Division; Ian Devlin has also returned to Vancouver from his secondment to Ottawa headquarters office.

* *

Ralph Drew, senior chemist, Inspection Division, left at the end of November on a one-year's leave of absence; in his new role he'll be Operations Manager, Technational Research & Development Corp. Ltd., a company which is engaged in development of new processing and refining techniques for the B.C. and Yukon Placer Mining Industry.

Seconded to the Director-General's office is Rod Palmer as Director of Policy, Planning and Program Development.

* *

Successful candidate in the recent competition for manager, Kitimat hatchery is Dave McNeil who leaves Snootli Hatchery, Bella Coola.

* *

Staff changes in F.V.I.P include Bill Guerin and Dave Dyke who have returned to the Department, and a newcomer, clerk receptionist, Debbie Guinn.

* *

John Yarish, Inspection, has transferred to Victoria District. Fishery Officer moves include:
Mike Setter from Tahsis to Port Hardy,
Mike Weston from Surrey to Tahsis, and
Kent Harper from Mission to Vancouver Waterfront.

* *

Secretary moves within Field Services Branch include Raenelle March who has transferred from Fraser R., Northern B.C. and Yukon Division to Herring Coordinator and Licence Appeals, and Pam MacKenzie who has tranferred from North Coast Division to Management Services Division.

* *

Keith Simpson, mark recovery biologist, has been granted three years leave of absence to join the Fish and Wildlife Branch at Revelstoke where he will be conducting research designed to lead to better management of grizzly bears and caribou.

* *

Three new economists have joined the Economics and Statistics Branch: Mary MacGregor, sport fish economist; Alan Barber, commercial fisheries policy analyst; and Doug MacDonald, program evaluation economist.

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Newcomers to SEP Engineering as reported in last issue are:
James Yong, Lionel Yee and George Mui.
We apologise for the misspelling.