ARDA and the Prairie Wetlands

It is indeed a pleasure to appear before such a distinguished group this morning to discuss the ARDA program and its implications on the wetlands of the Canadian prairies. At the outset I would like to point out that the views expressed are my own as seen from my position as wildlife co-ordinator of the Canada Land Inventory. They are not necessarily those of the Canadian Wildlife Service who pays my salary nor are they the views of ARDA to whom I have been seconded. I will attempt to outline for you the general ARDA program and, in particular, those programs which may have a major influence on waterfowl habitat in Canada.

The Agricultural Rehabilitation and Development Act (ARDA) was passed in June, 1961, in recognition of the fact that incomes and standards of living in many of the rural areas of Canada were unacceptably low. From 1962 to 1965 ARDA operated under a series of pilot agreements, signed with the various provincial governments to improve the management and use of lands and other resources in rural areas. During this initial three year period, ARDA activities were directed specifically to the agricultural industry but cognizance was taken of the interrelationships between agricultural land resources and forests, water, wildlife and recreation.

The name "ARDA" is still used but the name of the Act was changed in the second federal-provincial agreement to

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"Agricultural and Rural Development Act". The new name reflects a change in the focus and scope of the program. Rather than stressing improvements in agriculture, the ARDA program now places emphasis on the social and economic needs of rural people and on developing various resources to meet those needs.

In April 1965, the federal government and all ten provinces entered into a new five year general agreement which provides for the following federal-provincial projects:

1. Physical, social and economic research projects such as feasibility studies and economic or social surveys and planning.
2. The establishment of viable farming operations by consolidation, regrouping and improvement of existing farms.
3. Withdrawal of land of low agricultural capability from farming and putting it to other uses more suited and more useful to the region, such as forestry, wildlife and recreation.
4. Financial and other assistance for rehabilitation and re-establishment of rural people in effective employment.
5. Provision of specially trained rural development officers to provide community and area leadership in the design and implementation of ARDA projects.
6. Land development programs in agriculture, forestry, wildlife and recreation in specially designated low

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income areas to provide alternate income and employment opportunities.

7. Implementation of comprehensive watershed management plans including soil and water conservation, erosion control, pollution abatement, stream flow maintenance, etc.

The ARDA program is also integrated with other attempts at fighting poverty in rural Canada. It involves liaison with other federal agencies such as the Central Mortgage and Housing Corporation, Departments of National Health and Welfare, Agriculture, Fisheries and Indian Affairs and Northern Development.

A special Fund for Rural Economic Development, known as FRED, was established for implementation of comprehensive regional development plans in special areas. Such plans involve adjustments and input to educational facilities, technical and vocational training, land acquisition, resettlement costs for families, provision of housing, resources development and administrative organizations. For example, a FRED program recently agreed to by the federal government and the Province of Manitoba calls for comprehensive development of the Interlake region in Manitoba, an area of approximately 20,000 square miles between Lake Winnipeg and Lake Manitoba, at a total cost of 85 million dollars.

Of major importance to the entire ARDA program is the Canada Land Inventory. This program of evaluation

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assessment and mapping of Canada's land resources in the settled area of Canada will be carried out to determine land capabilities for agriculture, forestry, wildlife and recreation. Also included and of use to all resource sectors is the mapping of climatic and socio-economic data and present land use. The Inventory is a joint federal-provincial program, in which the federal government acts as co-ordinator and sponsor, provides technical assistance and full financing, and is responsible for data processing compilation of maps, and publication of the results nationally.

It may well be at this time to define the word "capability" since it underlies the classification of all sectors. Capability is the inherent potential of land to produce a sustained yield of a specific crop or group of crops. It assumes reflects good management practises that are feasible and practical within the framework of present day technology and economics. Capability ratings are applied to areas regardless of their present vegetative cover, their present soil and site condition or their present land use.

The Wildlife Sector of the Inventory is divided into two parts; an ungulate inventory conducted by provincial wildlife agencies and a waterfowl inventory conducted by the Canadian Wildlife Service. In the waterfowl classification the term "land" refers to both land and water. The unit of classification may be a land unit with its component wetlands forming a complex or it may be an individual marsh or wetland

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if its size or importance warrants the separation, or, if it has a different capability from the surrounding land. Thus the waterfowl inventory is not a wetlands inventory but an assessment of the capability of land to produce waterfowl.

The Canada Land Inventory is designed primarily for planning. It will provide information essential to land resource planning at the regional, provincial and federal levels. It will not provide detailed information of the kind necessary for managing individual farms or small watersheds. More specifically, the waterfowl inventory will be an invaluable tool to the wildlife administrator. It will enable him to set priorities for acquisition and preservation of important waterfowl habitat and point out research priorities in many areas of waterfowl ecology. Perhaps most important it will provide a basis for considering the quantity and quality of habitat available for waterfowl now and in the future.

In summary, ARDA is a joint federal-provincial program. The Act permits the federal government to enter into cost sharing agreements with the provinces to undertake projects designed to meet the objectives set forth in the Act and to conduct research related to those objectives either directly or in co-operation with the provinces. The federal government cannot undertake projects, other than research, on its own. In short, all ARDA projects are initiated by the provincial government, the federal government provides

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overall direction to the program and contributes toward the costs of the projects.

The foregoing thumbnail sketch does not do justice to the ARDA program nor does it indicate the probable effect of the program on wetlands and waterfowl in the farming regions of Canada. Let us now look more closely at the programs of land use adjustment and soil and water conservation which have the greatest potential effect.

Land use and farm adjustment projects are a very important part of the ARDA program. They are important to ARDA as a means of increasing the income and productivity of people and important to wildlife administrators because of the beneficial or detrimental effect of the projects on waterfowl habitat. The objectives of the program are to assist in establishing economically viable farm units through enlargement, consolidation, regrouping and improvement of existing marginal or submarginal farms; and, in other cases, to assist in withdrawing from agriculture, land that is unsuitable for farming, for conversion to other uses.

A large proportion of farms on the prairies with gross sales less than $5,000 will prove to be unviable. In the many instances where the lack of viability is a direct result of too little land and capital, rather than low soil capability, farm consolidation and enlargement will be carried out. In other instances, where it is desirable to take land

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out of production a program of retraining and re-establishment to enable those leaving farm employment to adjust to other employment opportunities, will be initiated. Equally essential to the success of the program will be provision of adequate credit and management training to the operators of the remaining expanded farms.

This program could have a marked effect on small wetlands in some areas. Improved farm management in areas where soils have a high capability for agricultural production may result in vigorious drainage and filling programs being carried out by individual farmers or groups of farmers. On the level plains where temporary water areas predominate, such a program may indirectly benefit waterfowl by eliminating the number of breeding areas which go dry before the broods hatch, or areas which will not sustain broods throughout the breeding season. On the rolling prairies, such as the morainic areas of southern Manitoba which contain high quality waterfowl production habitat, filling programs will have a detrimental effect.

"Marginal" and "sub-marginal" as applied to farm land usually refer to the capability of the land for sustained agricultural production. Land which is arable but near the minimum level to farm economically is considered marginal, while land which cannot be used efficiently in farming, no matter what size of unit or method used is considered sub-marginal. Marginality of land, however, is not a fixed thing. Because of technological change, economic change, supply and demand and improvements in

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transportation, lands which are marginal or sub-marginal today, may be changed to viable farm units tomorrow. However, because improvements in agricultural technology have and will enable us to improve production on the better lands, marginal and sub-marginal lands may be diverted to other uses. We should always bear in mind, however, that the situation can change as world demands for food increase.

The agricultural land that makes up the bulk of our pothole habitat may be marginal or sub-marginal for agriculture because of the pattern and frequency of slopes, low lying basins with excess soil moisture or basins with water. These features can be changed easily by levelling and draining but such programs on a large scale basis are neither feasible nor economically sound at this time. They may well be within the next decade.

Soil and water conservation and development is a potentially large area for ARDA activity which can have a profound effect on waterfowl. In viewing this activity a clear distinction must be made between provincial objectives which normally center around development, and the federal responsibility which should be primarily to ensure that the land and water resource is preserved and where possible, enhanced in the long term national interest. ARDA recognizes that it will be necessary to provide assistance to individual landowners if a national responsibility in maintaining basic soil and water resources is to be fulfilled. However, neither

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the individual landowners nor provincial governments are generally able to give suitable priority to conservation measures which promise little immediate economic return. A notable exception is in Ontario where the provincial government recently signed an agreement for a four year, 20 million dollar program of small watershed development.

An active program of soil and water conservation can go a long way to helping us solve our problems of vanishing waterfowl habitat but we are not taking full advantage of this section of the ARDA Agreement. To gain full benefit we must be actively involved in planning soil and water conservation programs and in demonstrating that such programs will result in an economic return to the landowner.

For the balance of the time allotted me, I would like to look into the future of waterfowl habitat on the Canadian prairies, to point out the areas of conflict between waterfowl and other land resources and to suggest ways and means of reducing this conflict to the benefit of all resource users.

The main conflict between agriculture and waterfowl probably will center around lands which have a high to moderate capability for agricultural production. These are the lands that fall within the capability classes 1 to 4. Conflicts will occur also on lands of lower capability where individual landowners will attempt to improve the productive capacity of their farms by filling and draining

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the water areas.

On Class 1 agricultural lands ARDA will be primarily concerned with farm consoildation and enlargement in order to create viable farm units. They will also be involved in training programs to increase the efficiency of farmers and to improve their farm management techniques. Class 1 agricultural lands generally have a low capability for the production of waterfowl; water areas, where they are present are subject to drying early in the season with detrimental results to brood production. Thus any improvement on these lands either by the landowner or through a land improvement program, will have little adverse effect on the overall waterfowl population. Drainage of small marshes or levelling of the gently sloping land, typical of the higher quality agricultural land, may even be to our benefit in that waterfowl will not attempt to nest on areas which, in the past, have left broods stranded without water.

Soils in the Class 2 agricultural lands have moderate limitations that restrict the range of crops or require moderate conservation practices. The limitations of the soils in this class include gentle to moderate slopes and wetness which is correctable by drainage. Class 2 agricultural lands generally are low in waterfowl capability except when the limitation to agriculture is due to topography or wetness and especially when they are associated with lands of a lower class that have wetness as the main limitation. For

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example, a large portion of the pothole country west of Minnedosa, Manitoba, an area of good waterfowl habitat, is shown on the agricultural capability map as a complex made up of 70% class 2 with a limitation of topography and 30% class 6 with a limitation of wetness. Development or improvement of farmlands in this type of complex can have a marked effect on waterfowl production especially when agricultural improvement entails filling, draining and levelling. It is not unrealistic to assume that one day, under the auspices of ARDA, an attempt will be made to convert the 30% of the land, now in water areas, to a productive capacity equal to the surrounding lands.

Even without the threat of government supported drainage programs, landowners will continue to modify and improve the landscape for agriculture. The numerous woodlots which dot the countryside are not providing a monetary return to the farmer and his natural reaction is to remove them to make room for crops. The increased production that the farmer realizes on recently cleared land for the first few years pays for the cost of clearing the land.

Class 3 agricultural lands have more severe limitations than Class 2 but under good management the soils are fair to moderately high in productivity for a fairly wide range of field crops. Like the previous class, areas with limitations of topography and wetness are the important areas to waterfowl; waterfowl capability

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on these lands is higher because of the greater abundance of basins capable of holding water. The activity of ARDA within this class will be in the form of farm consolidation and enlargement. It is unlikely that any large scale drainage programs will be attempted but such programs may become economically sound if the demand for food increases. Individual farmers may still attempt to change the landscape; in many instances they will be successful in improving the productive capacity of their land but in other cases will only suceed in destroying valuable waterfowl habitat.

Lands in class 4 are marginal for agriculture with severe limitations that reduce the range of crops or that present a high risk of crop failure. It is very unlikely that attempts will be made to improve the land for field crops, except on an individual farm basis. Programs for alternate land use will be initiated, but most will have little adverse effect on waterfowl populations, and in fact, may be beneficial.

I mentioned earlier that the Canada Land Inventory will be an invaluable tool to the land use planners. It will be an invaluable tool to the wildlife administrator as well because it will enable him to take an overall look at the land and place wildlife in its proper perspective. It will also enable him to set priorities for research and development which will ensure maximum benefits for wildlife within the framework of good land use.

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In order to meet the problem of declining waterfowl habitat, we are attempting to preserve, through acquisition and easement, as many prairie wetlands as possible. Obviously it will not be possible to preserve all wetlands that exist today, but we must, if the program is to be a success, preserve the best wetlands for all time. To do this I velieve that we should concentrate our efforts in those areas which are most likely to be affected by future land use. We should attempt to preserve all wetlands on lands that have a high capability for waterfowl, classes 1 to 3, that fall within the agricultural lands with a capability of class 2 or 3. We should not be concerned with wetlands on agriculture class 1 lands, not only because they have a generally low capability for waterfowl but also because the best use for class 1 lands is agriculture. We should not be immediately concerned with acquiring or renting wetlands that occur on lands with an agricultural capability lower than class 3 because they are unlikoly to be changed in the near future. The exception, however, is in class 4 where top quality waterfowl habitat could be affected by poor farm management.

Such a program would cover a relatively small portion of the waterfowl breeding grounds on the prairies and would affect less than one half of the agricultural lands. To be effective, however, we must increase substantially the amount we are prepared to pay for annual leases. I think that we will have to rent wetlands from farmers at an annual

Source as if Peret has done some research on this, or as if the capability maps were already complete

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rate equivalent to the net value of crops produced in ajoining fields. There is a natural reluctance to place such a high value on waterfowl habitat, but we must if wetlands are to continue to exist on high value agricultural lands. The total cost of such an easement program may not be higher than the present program, but the cost per unit area will be substantially greater.

A problem that we will face in the very near future will be one of increasing the productivity of wetlands in order to maintain present populations on less habitat. Detailed ecological studies of high waterfowl capability lands should be undertaken with the view to applying the results to lands of lower capability. We should be planning now to increase per unit productivity of the wetlands that occur on lands of low agriculture capability. We should be looking also to the soil and water conservation programs which may be undertaken under sponsorship of ARDA so that we can ensure the maximum benefits to waterfowl. We can do this by knowing the habitat requirements of waterfowl and by incorporating that knowledge in the design of multi-purpose impoundments. We will have to work very closely with the agriculturists and hydrologists and be prepared to offer useful suggestions in soil and water conservation.

In closing, ARDA is a massive social program with agricultural emphasis. Am emphasis that exists because agriculture offers the best road to the solution of exieting social and economic problems in the rural areas of Canada.

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It is our job to explore the alternate routes and to make them known to federal and provincial ARDA administrations as well as to the landowners who are seeking relief from their problems.