

#289

Length and Age Data of Rockfishes Collected from B.C. Coastal Waters during 1977, 1978, and 1979

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Canadian Data Report of Fisheries
and Aquatic Sciences No. 289

W. Shaw, and C. P. Archibald
collected from 1977 to 1979
Data Rep. Fish. and Oceans

Length and age frequency data for rockfishes
(Scorpaenidae), collected during commercial fishing surveys.
This report will provide estimates of mortality rates of rockfishes.

August 1981

Key words: Length, Age, Mortality

W. Shaw, and C. P. Archibald
LENGTH AND AGE DATA OF ROCKFISHES COLLECTED FROM
collected from 1977 to 1979
Data Rep. Fish. and Oceans
B.C. COASTAL WATERS DURING 1977, 1978, AND 1979

L'auteur présente les données de longueur moyenne et d'âge moyen pour les échantillons de poisson de la famille des scorpaénidés, collectés lors des pêches commerciales. Ce rapport fournit des estimations des taux de mortalité des rockfishes.

Mots-clés: fréquence, âge, mortalité

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ABSTRACT

W. Shaw, and C. P. Archibald. 1981. Length and age data of rockfishes collected from B.C. coastal waters during 1977, 1978, and 1979. Can. Data Rep. Fish. Aquat. Sci. 289: 119 p.

Length frequency, average length at age with standard deviation and age frequency results are presented for eleven rockfish species (Scorpaenidae). The results are from research and commercial samples from commercial fishing grounds collected during 1977, 1978, and 1979. This report will provide a reference for a more intensive analysis of growth and mortality rates of rockfish, which is currently in preparation.

Key words: Length frequency, length at age, age frequency, rockfish.

RÉSUMÉ

W. Shaw, and C. P. Archibald. 1981. Length and age data of rockfishes collected from B.C. coastal waters during 1977, 1978, and 1979. Can. Data Rep. Fish. Aquat. Sci. 289: 119 p.

L'auteur présente les données de fréquence des longueurs, de la longueur moyenne par âge avec la déviation standard, et de la fréquence des âges de onze espèces de scorpènes (Scorpénidés). Les données proviennent d'échantillons commerciaux et de recherche qui ont été prélevés à des emplacements de pêche commerciale au cours de 1977, 1978 et 1979. Le présent rapport servira d'introduction à une analyse plus complète des taux de croissance et de mortalité des scorpéennes actuellement en préparation.

Mots-clés: fréquence des longueurs, longueur par âge, fréquence des âges, scorpène.

INTRODUCTION

Prior to the mid 1970s, Pacific ocean perch (Sebastes alutus) was the only rockfish species (Scorpaenidae) of significant commercial importance in Canada's west coast trawl fishery. From the catch statistics for 1968-1970, commercial landings of S. alutus averaged 8% of the total Canadian groundfish landings (Smith 1980). This was twice as much as the total landings of all other rockfish species combined. However, with the decline in S. alutus catch rates (Ketchen 1981) and the rise in development of new markets, commercial interest in the other rockfish species increased considerably. As a result, by 1977-1979, rockfish species other than S. alutus comprised 16-21% of the domestic groundfish landings; more than a fourfold increase since the beginning of the decade.

Concurrent with the rise of commercial interest in rockfishes other than S. alutus was the need for biological information to provide a basis for designing management strategies. This type of information is scarce for rockfishes in Canadian west coast waters, with the notable exception of preliminary work done by Westrheim (1975) and Westrheim and Harling (1975). In order to obtain this information, the Groundfish Program at the Pacific Biological Station has conducted research cruises on commercial fishing grounds and coordinated port sampling of commercial catches of these rockfish species since 1977. This report presents basic size and age compositions of these species and will serve as a reference report for an extensive analysis of growth and mortality rates, presently in preparation.

METHODS

DATA COLLECTION AND PRESENTATION

Length and age compositions of commercial and/or research samples are presented for eleven rockfish species. A listing of their scientific and common names is presented in Table 1.

Length and age information which was deemed usable is summarized into a series of tables (Tables 3-12) which lists length frequency, average length at age with standard deviation, and age frequency, by sex, for each species. Data are also segregated by year and by statistical area separately for research and commercial samples.

STATISTICAL AREAS

Figure 1 illustrates major statistical areas for the British

Columbia trawl fishery. All information from a statistical area for a given species in a given year was combined with the exception that research and commercial samples were always kept separate. This procedure ignores between-haul variation within an area, but results in the best overall estimate available for the length and age distribution from an area.

RESEARCH AND COMMERCIAL SAMPLES

During research cruises, commercial gear is used except for the inclusion of a 2.6-cm (1.12-in) mesh¹ liner sewn directly inside the codend. This liner prevents smaller fish from passing through the 8.9-cm (3.5-in) mesh of the normal codend. Retention of the smaller fish in the research catches gives a better representation of the size frequency and relative abundance of the fish stock in a particular area that is vulnerable to trawl gear. Research sampling of individual trawl catches of rockfish was similar to the method outlined by Westrheim (1967). Fish drawn from the total catch were sampled for fork length to the nearest centimetre, sexed, and double otoliths were taken for age determination.

Commercial sampling of landed trawl catches was done at dockside in Vancouver and Prince Rupert. Commercial samples were randomly selected from catches from known statistical areas and fork length, sex, and otoliths were measured/collected as on research cruises. A problem with commercial samples is that commercial boats tend to discard undersized fish at sea which further contributes to the underrepresentation of small fish in port samples.

The minimum sample size for both research and commercial data was 100 fish.

AGE DETERMINATION

The identification of annual rings or annuli on otoliths has long been used to age rockfish. Originally, these annuli were read from the surface of the otolith (Westrheim 1973). Recently, it has been discovered that thin cross sections of otoliths, or broken (through the region of the nucleus) and burnt otoliths reveal more rings that are interpreted as annuli than surface readings of otoliths from the same fish. Consequently, it is believed that surface readings underestimate the age of older rockfish (Beamish 1979). The current ageing procedure for rockfish is to break and burn or section all otoliths; these techniques are described by Baggenal (1973). A report describing the ageing procedures used by the Groundfish Program at the Pacific Biological Station is presently in preparation.

¹Mesh sizes are stretch measure between knots.

SAMPLE SIZE DIFFERENCES

In Tables 3-12 the number of fish differs among the length, average length at age, and age frequencies for the same samples. This is attributed to the different ageing procedures used. During 1977-1979, the ageing lab at the Pacific Biological Station was in a state of transition from surface ageing of rockfish otoliths to the more reliable sectioning or breaking-and-burning methods. Not all otoliths were aged using the "reliable" methods since it was initially thought that the inaccuracy of surface age estimates applied only to fish >20 yr of age. Therefore, all fish ≤ 20 yr were still aged by surface readings alone. Later it was found that the surface ages of 15- to 20-yr-old fish were also being underestimated, and so entire samples were then sectioned or broken and burnt. The data available for 1977-1979 contains samples aged by each of three techniques: samples entirely aged by surface readings; samples with otoliths sectioned or broken and burnt only if the surface age was >20 yr; and samples entirely sectioned or broken and burnt.

Since length information was not affected by this change in ageing techniques, all fish sampled could be included in the length frequency distribution. Thus, the sample size for length frequency is always the largest of the three.

For Tables 5, 8, 9, and 11 the sample size for average length-at-age is greater than for age frequency. The reason being that the age frequency includes only samples where all the otoliths were sectioned or broken and burnt, whereas the length-at-age information includes this type of sample plus samples where the otoliths were only sectioned or broken and burnt if the surface age was >20 yr. Of course, from these latter samples only the reliable ages (those ages >20 yr) were used. Such portions of samples could not be used in the age frequency section without biasing the frequency toward the older fish. No such bias occurred in the length-at-age section and the resulting larger sample size enabled the calculation of more accurate mean lengths at the older ages.

There is an exception to the above rule which is seen for the two species, *S. brevispinis* and *S. pinniger*, in Tables 5 and 9 and summarized in Table 2. For these rockfishes, the sample size for age frequency is greater than for the length-at-age data. In these cases, the majority or all of the samples available were those with otoliths sectioned/broken and burnt only if the surface age was >20 yr. These samples were included in the age frequency data since for all these samples the entire right-hand descending limb of the age distribution ("catch curve") was based on fish >20 yr and these fish comprised almost the entire number of fish in the sample. Thus the slope of the right-hand descending limb of the age distribution, which is an estimate of mortality rate, is based entirely on fish >20 yr that were reliably aged. The age frequency data, therefore, include very few fish aged ≤ 20 yr by surface readings and since the length-at-age data do not contain these fish, its sample size is smaller. It should be emphasized that the age distributions from such samples are not truly representative, even for fish >20 yr, but have been included since no other samples were available for these particular species, area, and year combinations. The reader is warned to interpret such age distributions with caution.

To summarize, the length data presented in this report are based on all fish collected either by research or commercial sampling and presented by species, area, and year. The length-at-age data are based on only those fish that were aged by sectioning or breaking and burning from either whole or portions of samples. The age frequency data, for the most part, are based on whole samples that were entirely sectioned or entirely broken and burnt. However, in some instances (particularly Tables 5 and 9) the whole samples included in the age frequency data contain a few surface aged otoliths for fish ≤ 20 yr. Essentially, the methods previously described maximize the sample size for each of the three data groups. Figure 2 is a schematic illustration which summarizes the methods used for presenting the data resulting from different ageing methods.

ACKNOWLEDGMENTS

We are grateful to our port samplers, Neville Venables and Bruce McCarter in Vancouver, and Fred Nolte in Prince Rupert, for the efficient coverage of their respective groundfish fisheries. The tedious task of ageing all research and commercial samples was completed by Doris Chilton and the ageing lab personnel. Mike Livingstone provided programming assistance which was greatly appreciated. We are also grateful for the support provided by the Ministry of Environment, Province of British Columbia.

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Table 1. Common and scientific names of rockfish species for which data were available. Species denoted by an asterisk are of major commercial importance.

| Common name | Scientific name |
|----------------------------------|-------------------------------|
| Rougheye rockfish | <u>Sebastodes aleutianus</u> |
| Pacific ocean perch* | <u>Sebastodes alutus</u> |
| Silvergray rockfish* | <u>Sebastodes brevispinis</u> |
| Darkblotched rockfish | <u>Sebastodes crameri</u> |
| Widow rockfish | <u>Sebastodes entomelas</u> |
| Yellowtail rockfish or greenies* | <u>Sebastodes flavidus</u> |
| Bocaccio | <u>Sebastodes paucispinis</u> |
| Canary rockfish* | <u>Sebastodes pinniger</u> |
| Redstripe rockfish | <u>Sebastodes proriger</u> |
| Yellowmouth rockfish* | <u>Sebastodes reedi</u> |
| Sharpchin rockfish | <u>Sebastodes zacentrus</u> |

Table 2. Listing of samples by species, by year, and by sample type where age frequency sample size (A/f) is greater than length-at-age sample size (L/A).

| Species | Area | Year | Sample type | A/f | L/A |
|------------------------------------|------|------|-------------|-----|-----|
| <u>S. brevispinis</u> (Table 5) | 5B | 1977 | Commercial | 191 | 154 |
| | 5B | 1978 | Commercial | 198 | 120 |
| | 5D | 1977 | Commercial | 457 | 249 |
| | 5D | 1978 | Commercial | 98 | 65 |
| <u>S. pinniger</u> (Table 9) | 3D | 1977 | Commercial | 120 | 77 |
| | 5A | 1978 | Commercial | 99 | 49 |
| | 5B | 1977 | Commercial | 101 | 46 |
| | 5B | 1978 | Commercial | 290 | 151 |
| | 5E | 1978 | Commercial | 100 | 57 |

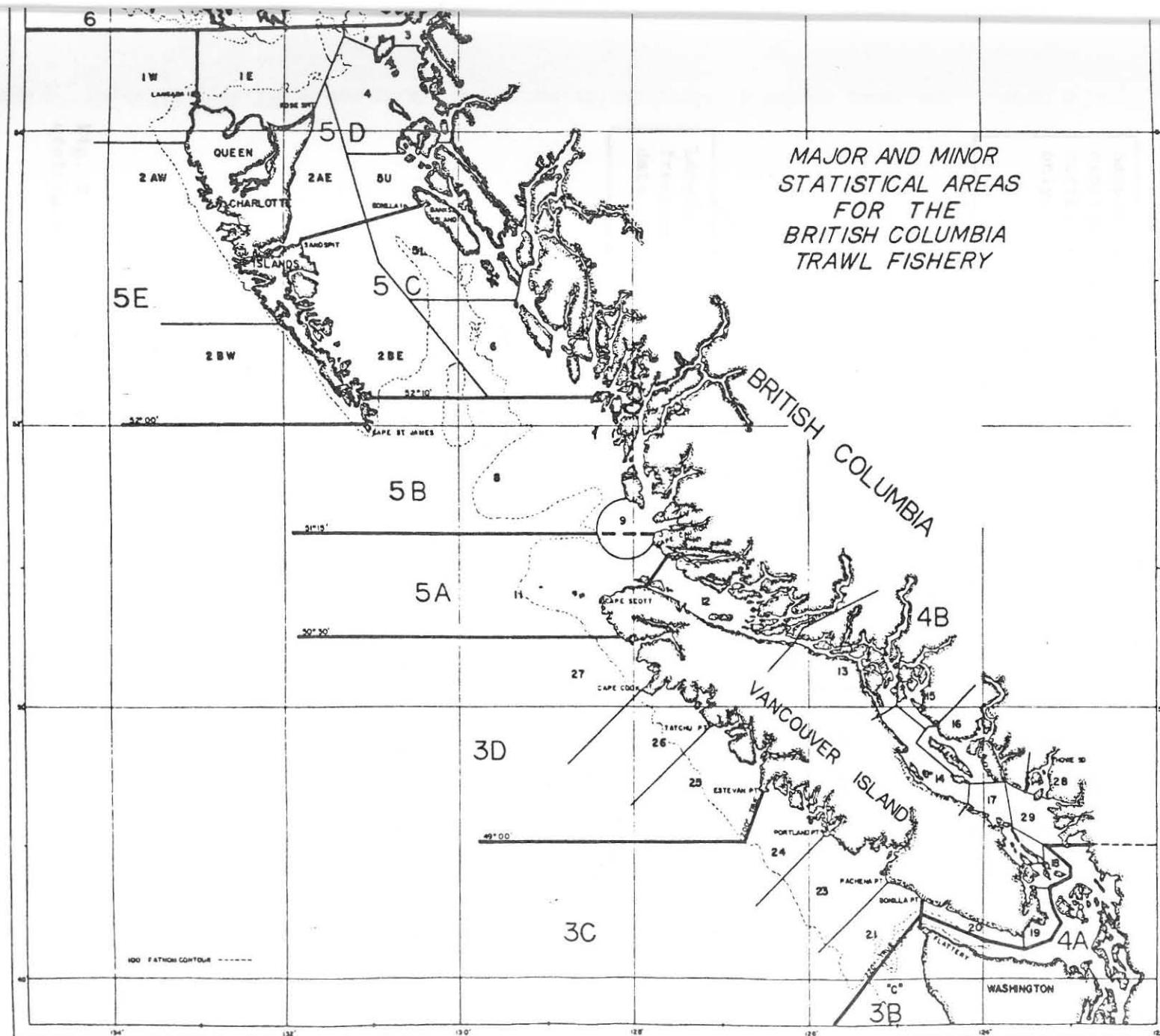


Fig. 1.

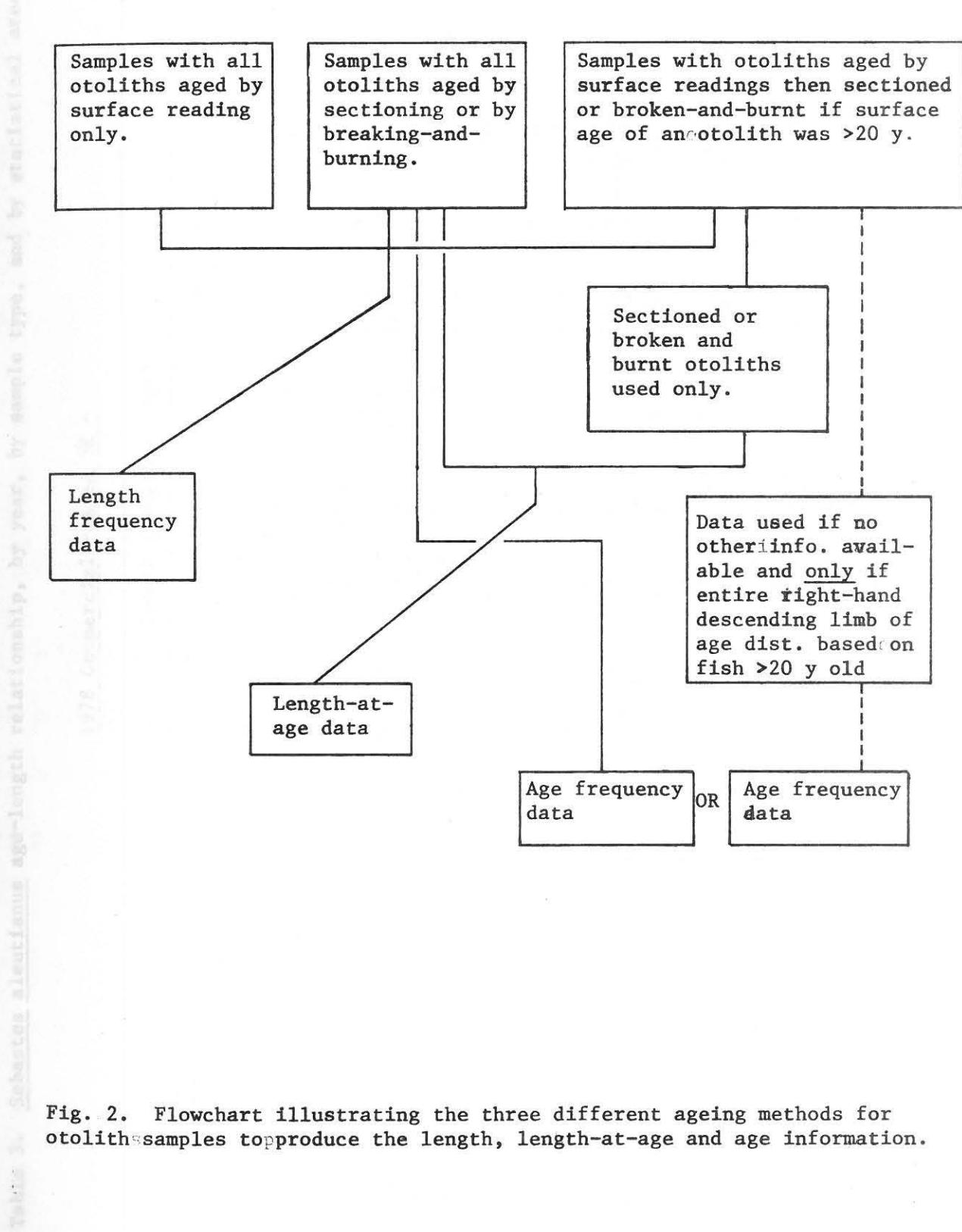


Fig. 2. Flowchart illustrating the three different ageing methods for otolith samples to produce the length, length-at-age and age information.

Table 3. *Sebastes aleutianus* age-length relationship, by year, by sample type, and by statistical area.

1978 Commercial - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------|-------------------------------|----|-----|----------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | | | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 36 | - | 1 | 1 | 16 | 1 | - | 1 | 40.0 | - | 40.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 37 | - | 0 | 0 | 17 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 38 | - | 0 | 0 | 18 | 1 | 1 | 2 | 43.0 | 43.0 | 43.0 | 0.00 | 0.00 | 0.00 | 1 | 1 | 2 |
| 39 | - | 0 | 0 | 19 | 2 | 3 | 5 | 43.0 | 44.0 | 43.6 | 4.24 | 1.73 | 2.51 | 2 | 3 | 5 |
| 40 | 5 | 1 | 6 | 20 | 4 | 3 | 7 | 44.0 | 42.3 | 43.3 | 2.71 | 0.58 | 2.14 | 4 | 3 | 7 |
| 41 | 3 | 2 | 5 | 21 | 3 | 5 | 8 | 44.3 | 41.8 | 42.8 | 2.31 | 4.09 | 3.58 | 3 | 5 | 8 |
| 42 | 10 | 4 | 14 | 22 | 6 | 1 | 7 | 44.0 | 42.0 | 43.7 | 2.53 | 0.00 | 2.43 | 6 | 1 | 7 |
| 43 | 13 | 11 | 24 | 23 | 5 | 1 | 6 | 43.6 | 43.0 | 43.5 | 1.95 | 0.00 | 1.76 | 5 | 1 | 6 |
| 44 | 11 | 10 | 21 | 24 | 1 | 2 | 3 | 44.0 | 44.0 | 44.0 | 0.00 | 0.00 | 0.00 | 1 | 2 | 3 |
| 45 | 22 | 10 | 32 | 25 | 7 | 7 | 14 | 42.6 | 45.4 | 44.0 | 2.37 | 2.51 | 2.77 | 7 | 7 | 14 |
| 46 | 18 | 15 | 33 | 26 | 4 | 2 | 6 | 44.5 | 46.5 | 45.2 | 2.08 | 0.71 | 1.94 | 4 | 2 | 6 |
| 47 | 13 | 10 | 23 | 27 | 5 | 3 | 8 | 46.6 | 46.3 | 46.5 | 3.36 | 0.58 | 2.56 | 5 | 3 | 8 |
| 48 | 6 | 11 | 17 | 28 | 4 | 4 | 8 | 45.3 | 45.8 | 45.5 | 2.22 | 2.22 | 2.07 | 4 | 4 | 8 |
| 49 | 6 | 4 | 10 | 29 | 2 | 4 | 6 | 43.5 | 44.8 | 44.3 | 2.12 | 2.99 | 2.58 | 2 | 4 | 6 |
| 50 | 1 | 1 | 2 | 30 | 11 | 9 | 20 | 46.3 | 46.7 | 46.4 | 2.05 | 2.78 | 2.35 | 11 | 9 | 20 |
| 51 | 2 | 2 | 4 | 31 | 3 | 1 | 4 | 44.7 | 46.0 | 45.0 | 1.53 | 0.00 | 1.41 | 3 | 1 | 4 |
| 52 | 0 | - | 0 | 32 | 3 | 1 | 4 | 45.0 | 45.0 | 45.0 | 2.65 | 0.00 | 2.16 | 3 | 1 | 4 |
| 53 | 0 | - | 0 | 33 | 6 | 2 | 8 | 43.5 | 43.5 | 43.5 | 1.87 | 0.71 | 1.60 | 6 | 2 | 8 |
| 54 | 0 | - | 0 | 34 | 2 | 0 | 2 | 45.5 | 0 | 45.5 | 4.95 | 0 | 4.95 | 2 | 0 | 2 |
| 55 | 0 | - | 0 | 35 | 1 | 4 | 5 | 45.0 | 44.0 | 44.2 | 0.00 | 0.82 | 0.84 | 1 | 4 | 5 |
| 56 | 0 | - | 0 | 36 | 2 | 2 | 4 | 46.5 | 46.0 | 46.3 | 0.71 | 1.41 | 0.96 | 2 | 2 | 4 |
| 57 | 1 | - | 1 | 37 | 2 | 1 | 3 | 45.5 | 43.0 | 44.7 | 0.71 | 0.00 | 1.53 | 2 | 1 | 3 |
| 58 | 0 | - | 0 | 38 | 3 | 1 | 4 | 44.3 | 48.0 | 45.3 | 1.15 | 0.00 | 2.06 | 3 | 1 | 4 |
| 59 | 1 | - | 1 | 39 | 1 | 0 | 1 | 44.0 | 0 | 44.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| Total | 112 | 82 | 194 | | | | | | | | | | | | | |

Table 3 (cont'd)

S. aleutianus1978 Commercial - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | | | |
|------------------------|-------------------------------|---|----|------------------------|------|------|--------------------------|---|------|-----------------|------|---|----------------------------|---|----|---|---|---|
| | | | | Age (yr) | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 40 | 9 | 6 | 15 | | 46.4 | 47.0 | 46.7 | | 2.01 | 1.26 | 1.72 | | 9 | 6 | 15 | | | |
| 41 | 2 | 2 | 4 | | 43.0 | 46.0 | 44.5 | | 0.00 | 1.41 | 1.91 | | 2 | 2 | 4 | | | |
| 42 | 1 | 1 | 2 | | 44.0 | 46.0 | 45.0 | | 0.00 | 0.00 | 1.41 | | 1 | 1 | 2 | | | |
| 43 | 1 | 0 | 1 | | 46.0 | 0 | 46.0 | | 0.00 | 0 | 0.00 | | 1 | 0 | 1 | | | |
| 44 | 0 | 3 | 3 | | 0 | 47.0 | 47.0 | | 0 | 1.73 | 1.73 | | 1 | 0 | 1 | | | |
| 45 | 2 | 4 | 6 | | 46.5 | 46.8 | 46.7 | | 0.71 | 2.63 | 2.07 | | 0 | 3 | 3 | | | |
| 46 | 2 | 0 | 2 | | 47.0 | 0 | 47.0 | | 1.41 | 0 | 1.41 | | 2 | 4 | 6 | | | |
| 47 | 2 | 2 | 4 | | 44.5 | 49.5 | 47.0 | | 2.12 | 0.71 | 3.16 | | 2 | 0 | 2 | | | |
| 48 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 49 | 1 | 0 | 1 | | 45.0 | 0 | 45.0 | | 0.00 | 0 | 0.00 | | 1 | 0 | 1 | | | |
| 50 | 3 | 4 | 7 | | 46.0 | 46.5 | 46.3 | | 1.00 | 2.38 | 1.80 | | 3 | 4 | 7 | | | |
| 51 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 52 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 53 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 54 | 1 | 0 | 1 | | 57.0 | 0 | 57.0 | | 0.00 | 0 | 0.00 | | 1 | 0 | 1 | | | |
| 55 | 0 | 1 | 1 | | 0 | 48.0 | 48.0 | | 0 | 0.00 | 0.00 | | 0 | 1 | 1 | | | |
| 56 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 57 | 0 | 1 | 1 | | 0 | 45.0 | 45.0 | | 0 | 0.00 | 0.00 | | 0 | 1 | 1 | | | |
| 58 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 59 | 1 | 0 | 1 | | 49.0 | 0 | 49.0 | | 0.00 | 0 | 0.00 | | 1 | 0 | 1 | | | |
| 60 | 2 | 0 | 2 | | 45.5 | 0 | 45.5 | | 2.12 | 0 | 2.12 | | 2 | 0 | 2 | | | |
| 61 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 62 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 63 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 64 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 65 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 66 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 67 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |
| 68 | 1 | 0 | 1 | | 80.0 | 0 | 80.0 | | 0.00 | 0 | 0.00 | | 1 | 0 | 1 | | | |
| 69 | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 0 | | | |

| | | | | | | | | | | | |
|----|---|---|---|------|---|------|------|---|------|---|---|
| 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 68 | 1 | 0 | 1 | 80.0 | 0 | 80.0 | 0.00 | 0 | 0.00 | 1 | 0 |

Table 3 (cont'd)

S. aleutianus

1978 Commercial - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | |
|------------------------|-------------------------------|----|-----|--------------------------|------|------|-----------------|------|------|--------------------------|----|-----|----------------------------|--|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | | |
| 70 | 1 | 0 | 1 | 45.0 | 0 | 45.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 73 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 74 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 75 | 1 | 0 | 1 | 60.0 | 0 | 60.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 76 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | |
| 77 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | |
| 78 | 1 | - | 1 | 51.0 | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 98 | 1 | - | 1 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 99 | 1 | - | 1 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| Totals | 112 | 82 | 194 | | | | | | | 112 | 82 | 194 | | |

Table 3 (cont'd)

Sebastes aleutianus

1979 Commercial - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | ~ | 1 | | 19 | 1 | ~ | 1 | 36.0 | ~ | 36.0 | 0.00 | ~ | 0.00 | 1 | ~ |
| 36 | 1 | ~ | 1 | 20 | 2 | ~ | 2 | 44.0 | ~ | 44.0 | 1.41 | ~ | 1.41 | 2 | ~ | 2 |
| 37 | 0 | ~ | 0 | 21 | 1 | 1 | 2 | 45.0 | 38.0 | 41.5 | 0 | 0.00 | 0.00 | 1 | 1 | 2 |
| 38 | 0 | 1 | 1 | 22 | 0 | 1 | 1 | 0 | 45.0 | 45.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 39 | 0 | 0 | 0 | 23 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 40 | 0 | 1 | 1 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 41 | 3 | 1 | 4 | 25 | 1 | 0 | 1 | 47.0 | 0 | 47.0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | 1 | 3 | 4 | 26 | 2 | 1 | 3 | 43.0 | 42.0 | 42.7 | 2.83 | 0.00 | 2.08 | 2 | 1 | 3 |
| 43 | 8 | 1 | 9 | 27 | 1 | 1 | 2 | 43.0 | 44.0 | 43.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 |
| 44 | 1 | 2 | 3 | 28 | 2 | 0 | 2 | 44.5 | 0 | 44.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 45 | 4 | 3 | 7 | 29 | 1 | 2 | 3 | 46.0 | 45.0 | 45.3 | 0.00 | 5.66 | 4.04 | 1 | 2 | 3 |
| 46 | 6 | 6 | 12 | 30 | 3 | 4 | 7 | 43.7 | 48.8 | 46.6 | 2.08 | 2.87 | 3.60 | 3 | 4 | 7 |
| 47 | 10 | 5 | 15 | 31 | 1 | 1 | 2 | 41.0 | 47.0 | 44.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 48 | 10 | 5 | 15 | 32 | 2 | 3 | 5 | 48.0 | 47.3 | 47.6 | 0 | 2.89 | 2.07 | 2 | 3 | 5 |
| 49 | 6 | 4 | 10 | 33 | 2 | 0 | 2 | 45.0 | 0 | 45.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 |
| 50 | 1 | 3 | 4 | 34 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 51 | 1 | 0 | 1 | 35 | 1 | 2 | 3 | 48.0 | 46.0 | 46.7 | 0 | 5.66 | 4.16 | 1 | 2 | 3 |
| 52 | 4 | 1 | 5 | 36 | 1 | 2 | 3 | 57.0 | 44.0 | 48.3 | 0 | 1.41 | 7.57 | 1 | 2 | 3 |
| 52 | 1 | 1 | 2 | 37 | 4 | 0 | 4 | 45.5 | 0 | 45.5 | 3.42 | 0 | 3.42 | 4 | 0 | 4 |
| 54 | 0 | 1 | 1 | 38 | 2 | 0 | 2 | 44.5 | 0 | 44.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 55 | 0 | ~ | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 1 | ~ | 1 | 40 | 2 | 1 | 3 | 49.0 | 47.0 | 48.3 | 0 | 0.00 | 1.15 | 2 | 1 | 3 |
| 57 | 1 | ~ | 1 | 41 | 0 | 2 | 2 | 0 | 44.5 | 44.5 | 0 | 3.54 | 3.54 | 0 | 2 | 2 |
| 58 | 1 | ~ | 1 | 42 | 2 | 1 | 3 | 44.5 | 46.0 | 45.0 | 2.12 | 0.00 | 1.73 | 2 | 1 | 3 |
| 59 | 1 | ~ | 1 | 43 | 2 | 1 | 3 | 49.5 | 48.0 | 49.0 | 3.54 | 0.00 | 2.65 | 2 | 1 | 3 |
| Total | 61 | 38 | 99 | 44 | 4 | 0 | 4 | 49.5 | 0 | 49.5 | 1.29 | 0 | 1.29 | 4 | 0 | 4 |

Table 3 (cont'd)

S. aleutianus1979 Commercial ~ Area 5E ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | | | |
|------------------------|-------------------------------|---|---|------------------------|------|------|--------------------------|------|------|-----------------|---|---|----------------------------|---|---|---|--|--|
| | | | | Age | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | (yr) | M | F | T | M | F | T | M | F | T | M | F | T | | |
| 45 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 46 | 4 | 0 | 4 | | 47.0 | 0 | 47.0 | 0.82 | 0 | 0.82 | 4 | 0 | 4 | | | | | |
| 47 | 1 | 2 | 3 | | 48.0 | 48.0 | 48.0 | 0.00 | 2.83 | 2.00 | 1 | 2 | 3 | | | | | |
| 48 | 1 | 1 | 2 | | 43.0 | 40.0 | 41.5 | 0 | 0.00 | 2.12 | 1 | 1 | 2 | | | | | |
| 49 | 1 | 0 | 1 | | 53.0 | 0 | 53.0 | 0 | 0 | 0.00 | 1 | 0 | 1 | | | | | |
| 50 | 4 | 4 | 8 | | 46.5 | 49.3 | 47.9 | 1.73 | 1.89 | 2.23 | 4 | 4 | 8 | | | | | |
| 51 | 1 | 1 | 2 | | 52.0 | 46.0 | 49.0 | 0 | 0.00 | 4.24 | 1 | 1 | 2 | | | | | |
| 52 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 53 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 54 | 2 | 1 | 3 | | 50.5 | 46.0 | 49.0 | 2.12 | 0.00 | 3.00 | 2 | 1 | 3 | | | | | |
| 55 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 56 | 1 | 1 | 2 | | 48.0 | 50.0 | 49.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | | | | | |
| 57 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 58 | 1 | 0 | 1 | | 59.0 | 0 | 59.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | | |
| 59 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 60 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 61 | 0 | 1 | 1 | | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | | |
| 62 | 1 | 0 | 1 | | 47.0 | 0 | 47.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | | |
| 63 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 64 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 65 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 66 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 67 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 68 | 1 | 0 | 1 | | 47.0 | 0 | 47.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | | |
| 69 | 1 | 0 | 1 | | 49.0 | 0 | 49.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | | |

Table 3 (cont'd)

S. aleutianus

1979 Commercial ~ Area 5E ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|----|---|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | M | F | T | |
| | | | | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | 70 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| | | | | 71 | 1 | 0 | 1 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| | | | | 78 | 1 | 1 | 2 | 48.0 | 45.0 | 46.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | |
| | | | | 82 | 0 | 1 | 1 | 0 | 54.0 | 54.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | |
| | | | | 90 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 1 | - | 1 | 18 | |
| | | | | 101 | 1 | - | 1 | 58.0 | - | 58.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| | Totals | | | | 61 | 38 | 99 | | | | | | | | 61 | 38 | 99 | |

Table 3 (cont'd) Sebastes aleutianus **1979 Research - Area 5E -**

Table 3 (cont'd)

S. aleutianus

1979 Research - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|---|---|------------------------|--------------------------|------|------|-----------------|-------|-------|--------------------------|----|----------------------------|---|---|---|
| | M | F | T | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| | | | | | M | F | T | M | F | T | M | F | T | | | |
| 45 | 1 | 2 | 3 | 45 | 63.0 | 49.5 | 54.0 | 0.00 | 12.02 | 11.53 | 1 | 2 | 3 | | | |
| 46 | 1 | 1 | 2 | 46 | 50.0 | 51.0 | 50.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 | | | |
| 47 | 0 | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 48 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 49 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 50 | 3 | 2 | 5 | 50 | 52.7 | 54.0 | 53.2 | 3.21 | 5.66 | 3.70 | 3 | 2 | 5 | | | |
| 51 | 0 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 52 | 0 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 53 | 0 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 54 | 0 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 55 | 3 | 1 | 4 | 55 | 48.0 | 49.0 | 48.3 | 1.73 | 0.00 | 1.50 | 3 | 1 | 4 | | | |
| 56 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 57 | 0 | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 58 | 1 | 1 | 2 | 58 | 47.0 | 51.0 | 49.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 | | | |
| 59 | 1 | 0 | 1 | 59 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 60 | 5 | 1 | 6 | 60 | 49.4 | 40.0 | 47.8 | 2.61 | 0.00 | 4.49 | 5 | 1 | 6 | | | |
| 61 | 1 | - | 1 | 61 | 46.0 | - | 46.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 62 | 0 | - | 0 | 62 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 63 | 0 | - | 0 | 63 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 64 | 0 | - | 0 | 64 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 65 | 0 | - | 0 | 65 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 66 | 0 | - | 0 | 66 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 67 | 1 | - | 1 | 67 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | | | | 116 | 78 | 194 | | | | | 116 | 78 | 194 | | | |

a) Total number of fish sampled for length - sex.

b) Total number of fish aged and deemed usable for growth estimates.

c) Standard deviation.

d) Total number of fish aged and deemed usable for mortality estimates.

- c) Standard deviation.
 d) Total number of fish aged and deemed usable for mortality estimates.

Table 4. *Sebastes alutus* age-length relationship, by year, by sample type, and by statistical area. No samples deemed usable for age frequency analysis in areas 3C and 3D. See Table 3 for footnotes.

| 1979 Research - Area 3C - | | | | | | | | | | | | | |
|---------------------------|-------------------------------|-----|-----|----------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|
| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T |
| 25 | 1 | - | 1 | 4 | 1 | - | 1 | 25.0 | - | 25.0 | 0.00 | - | 0.00 |
| 26 | 0 | - | 0 | 5 | 2 | 1 | 3 | 29.0 | 31.0 | 29.7 | 2.83 | 0.00 | 2.31 |
| 27 | 1 | - | 1 | 6 | 1 | 2 | 3 | 33.0 | 31.0 | 31.7 | 0.00 | 0.00 | 1.15 |
| 28 | 0 | - | 0 | 7 | 1 | 3 | 4 | 31.0 | 34.0 | 33.3 | 0.00 | 0.00 | 1.50 |
| 29 | 0 | - | 0 | 8 | 1 | 2 | 3 | 33.0 | 33.0 | 33.0 | 0.00 | 0.00 | 0.00 |
| 30 | 0 | - | 0 | 9 | 6 | 9 | 15 | 34.8 | 37.1 | 36.2 | 1.33 | 2.26 | 2.21 |
| 31 | 2 | 3 | 5 | 10 | 7 | 9 | 16 | 37.0 | 38.0 | 37.6 | 1.73 | 1.66 | 1.71 |
| 32 | 0 | 0 | 0 | 11 | 27 | 21 | 48 | 38.0 | 39.1 | 38.5 | 1.43 | 2.77 | 2.16 |
| 33 | 4 | 3 | 7 | 12 | 17 | 10 | 27 | 37.1 | 38.3 | 37.5 | 1.43 | 1.57 | 1.58 |
| 34 | 2 | 5 | 7 | 13 | 25 | 15 | 40 | 38.2 | 40.0 | 38.9 | 1.42 | 1.73 | 1.75 |
| 35 | 5 | 2 | 7 | 14 | 26 | 14 | 40 | 39.1 | 39.9 | 39.4 | 1.86 | 1.64 | 1.81 |
| 36 | 16 | 5 | 21 | 15 | 22 | 24 | 46 | 39.1 | 41.3 | 40.2 | 1.54 | 1.65 | 1.92 |
| 37 | 24 | 10 | 34 | 16 | 15 | 9 | 24 | 39.1 | 41.8 | 40.1 | 2.33 | 2.39 | 2.64 |
| 38 | 42 | 1 | 53 | 17 | 10 | 16 | 26 | 40.8 | 42.8 | 42.0 | 1.48 | 1.81 | 1.92 |
| 39 | 27 | 23 | 50 | 18 | 3 | 10 | 13 | 39.3 | 43.0 | 42.2 | 1.15 | 1.56 | 2.15 |
| 40 | 22 | 25 | 47 | 19 | 0 | 12 | 12 | 0 | 42.8 | 42.8 | 0 | 1.91 | 1.91 |
| 41 | 17 | 17 | 34 | 20 | 2 | 5 | 7 | 37.5 | 44.4 | 42.4 | 0.71 | 0.89 | 3.46 |
| 42 | 7 | 21 | 28 | 21 | 1 | 0 | 1 | 40.0 | 0 | 40.0 | 0.00 | 0 | 0.00 |
| 43 | 3 | 22 | 25 | 22 | 0 | 3 | 3 | 0 | 44.7 | 44.7 | 0 | 1.15 | 1.15 |
| 44 | 1 | 30 | 31 | 23 | 0 | 3 | 3 | 0 | 44.3 | 44.3 | 0 | 1.53 | 1.53 |
| 45 | 1 | 18 | 19 | 24 | 1 | 5 | 6 | 43.0 | 45.2 | 44.8 | 0.00 | 1.30 | 1.47 |
| 46 | - | 21 | 21 | 25 | 0 | 3 | 3 | 0 | 46.0 | 46.0 | 0 | 2.00 | 2.00 |
| 47 | - | 7 | 7 | 26 | 1 | 4 | 5 | 44.0 | 45.3 | 45.0 | 0.00 | 2.22 | 2.00 |
| 48 | - | 1 | 1 | 27 | 0 | 9 | 9 | 0 | 44.9 | 44.9 | 0 | 1.36 | 1.36 |
| 49 | - | 1 | 1 | 28 | 2 | 2 | 4 | 40.0 | 40.5 | 40.3 | 1.41 | 6.36 | 3.77 |
| | | | | 29 | 0 | 8 | 8 | 0 | 44.8 | 44.8 | 0 | 1.28 | 1.28 |
| Total | 175 | 225 | 400 | | | | | | | | | | |

Table 4 (cont'd)

S. alutus1979 Research - Area 3C - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | |
|------------------------|-------------------------------|--------------------------|-----|------------------------|-----------------|------|------|--------------------------|------|------|--|--|
| | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | |
| | | M | F | T | M | F | T | M | F | T | | |
| 30 | 0 | 2 | 2 | 0 | 44.5 | 44.5 | 44.5 | 0 | 0.71 | 0.71 | | |
| 31 | 1 | 1 | 2 | 43.0 | 44.0 | 43.5 | 0.00 | 0.00 | 0.71 | | | |
| 32 | - | 1 | 1 | - | 45.0 | 45.0 | 45.0 | - | 0.00 | 0.00 | | |
| 33 | - | 1 | 1 | - | 46.0 | 46.0 | 46.0 | - | 0.00 | 0.00 | | |
| 34 | - | 2 | 2 | - | 45.5 | 45.5 | 45.5 | - | 2.12 | 2.12 | | |
| 35 | - | 2 | 2 | - | 45.5 | 45.5 | 45.5 | - | 2.12 | 2.12 | | |
| 36 | - | 2 | 2 | - | 44.5 | 44.5 | 44.5 | - | 3.54 | 3.54 | | |
| 37 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 38 | - | 4 | 4 | - | 46.0 | 46.0 | 46.0 | - | 0.82 | 0.82 | | |
| 39 | - | 1 | 1 | - | 44.0 | 44.0 | 44.0 | - | 0.00 | 0.00 | | |
| 40 | - | 2 | 2 | - | 45.0 | 45.0 | 45.0 | - | 1.41 | 1.41 | | |
| 41 | - | 3 | 3 | - | 44.7 | 44.7 | 44.7 | - | 1.15 | 1.15 | | |
| 42 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 43 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 44 | - | 1 | 1 | - | 44.0 | 44.0 | 44.0 | - | 0.00 | 0.00 | | |
| 45 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 46 | - | 2 | 2 | - | 45.0 | 45.0 | 45.0 | - | 0.00 | 0.00 | | |
| 47 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 48 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 49 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 50 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 51 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 52 | - | 1 | 1 | - | 44.0 | 44.0 | 44.0 | - | 0.00 | 0.00 | | |
| 53 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 54 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 55 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | |
| 56 | - | 1 | 1 | - | 49.0 | 49.0 | 49.0 | - | 0.00 | 0.00 | | |
| Total | 172 | 225 | 397 | | | | | | | | | |

Table 4 (cont'd)

Sebastes alutus

1979 Research - Area 3D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|
| | M | F | T | | M | F | T | M | F | T | M | F | T |
| | 1 | - | 1 | | 6 | 1 | - | 30.0 | - | 30.0 | 0.00 | - | 0.00 |
| 30 | 1 | - | 1 | 7 | 0 | 1 | 1 | 0 | 33.0 | 33.0 | 0 | 0.00 | 0.00 |
| 31 | 1 | - | 1 | 8 | 2 | 6 | 8 | 33.5 | 34.7 | 34.4 | 0.71 | 1.03 | 1.06 |
| 32 | 1 | - | 1 | 9 | 20 | 10 | 30 | 34.2 | 36.4 | 34.9 | 1.54 | 1.90 | 1.95 |
| 33 | 4 | 3 | 7 | 10 | 12 | 10 | 22 | 36.7 | 37.5 | 37.0 | 1.61 | 1.78 | 1.70 |
| 34 | 18 | 4 | 22 | 11 | 25 | 27 | 52 | 36.2 | 36.9 | 36.6 | 1.34 | 1.41 | 1.42 |
| 35 | 19 | 8 | 27 | 12 | 9 | 12 | 21 | 36.8 | 37.8 | 37.3 | 1.20 | 1.14 | 1.24 |
| 36 | 39 | 15 | 54 | 13 | 20 | 16 | 36 | 36.5 | 38.3 | 37.3 | 1.36 | 1.82 | 1.80 |
| 37 | 37 | 21 | 58 | 14 | 31 | 16 | 47 | 36.5 | 38.8 | 37.3 | 1.09 | 1.60 | 1.68 |
| 38 | 32 | 26 | 58 | 15 | 16 | 14 | 30 | 36.8 | 39.9 | 38.2 | 1.18 | 1.96 | 2.22 |
| 39 | 6 | 30 | 36 | 16 | 7 | 4 | 11 | 37.0 | 40.3 | 38.2 | 1.73 | 2.63 | 2.56 |
| 40 | 5 | 10 | 15 | 17 | 5 | 4 | 9 | 37.0 | 39.5 | 38.1 | 0.71 | 1.73 | 1.76 |
| 41 | 0 | 8 | 8 | 18 | 3 | 7 | 10 | 38.0 | 39.6 | 39.1 | 1.00 | 1.62 | 1.60 |
| 42 | 1 | 8 | 9 | 19 | 3 | 1 | 4 | 37.3 | 41.0 | 38.3 | 1.15 | 0.00 | 2.06 |
| 43 | - | 2 | 2 | 20 | 1 | 1 | 2 | 37.0 | 42.0 | 39.5 | 0.00 | 0.00 | 3.54 |
| 44 | - | 1 | 1 | 21 | 1 | 2 | 3 | 40.0 | 40.5 | 40.3 | 0.00 | 0.71 | 0.58 |
| 45 | - | 0 | 0 | 22 | 0 | 2 | 2 | 0 | 39.0 | 39.0 | 0 | 0.00 | 0.00 |
| 46 | - | 0 | 0 | 23 | 3 | 3 | 6 | 38.7 | 41.3 | 40.0 | 1.15 | 0.58 | 1.67 |
| 47 | - | 1 | 1 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 164 | 137 | 301 | | | | | | | | | | |

Table 4 (cont'd)

S. alutus1979 Research - Area 3D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | | | |
|------------------------|-------------------------------|-----|-----|------------------------|------|------|--------------------------|------|------|-----------------|---|------|--------------------------|--|--|
| | | | | Age (yr) | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | | | |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 31 | 1 | 0 | 1 | 42.0 | 0 | 42.0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | | | |
| 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 33 | 1 | 0 | 1 | 38.0 | 0 | 38.0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | | | |
| 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 35 | 1 | 0 | 1 | 38.0 | 0 | 38.0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | | | |
| 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 37 | 1 | 0 | 1 | 40.0 | 0 | 40.0 | 0.00 | 0 | 0 | 0.00 | 0 | 0.00 | | | |
| 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 48 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | - | - | - | | | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| 61 | 1 | - | 1 | 40.0 | - | 40.0 | 0.00 | - | - | 0.00 | - | - | | | |
| Total | 164 | 137 | 301 | | | | | | | | | | | | |

Table 4. (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|---------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 28 | - | 1 | 1 | 5 | - | 4 | 4 | - | 32.3 | 30.8 | - | 5.13 | 5.25 | - | 4 | 4 |
| 29 | - | 1 | 1 | 6 | - | 1 | 1 | - | 34.0 | 34.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 30 | - | 3 | 3 | 7 | - | 2 | 2 | - | 32.5 | 32.5 | - | 4.95 | 4.95 | - | 2 | 2 |
| 31 | 6 | 6 | 12 | 8 | 8 | 9 | 17 | 33.3 | 35.1 | 34.2 | 2.43 | 2.71 | 2.68 | 8 | 9 | 17 |
| 32 | 8 | 6 | 14 | 9 | 26 | 30 | 56 | 34.5 | 35.7 | 35.1 | 1.94 | 2.48 | 2.31 | 26 | 30 | 56 |
| 33 | 12 | 7 | 19 | 10 | 43 | 46 | 89 | 35.5 | 36.3 | 35.9 | 1.97 | 2.62 | 2.35 | 43 | 46 | 89 |
| 34 | 28 | 29 | 57 | 11 | 40 | 44 | 84 | 35.8 | 36.8 | 36.3 | 1.80 | 2.65 | 2.32 | 40 | 44 | 84 |
| 35 | 41 | 26 | 67 | 12 | 27 | 36 | 63 | 36.7 | 37.5 | 37.2 | 2.25 | 2.42 | 2.36 | 27 | 36 | 63 |
| 36 | 34 | 31 | 65 | 13 | 39 | 48 | 87 | 37.2 | 37.8 | 37.5 | 2.04 | 2.38 | 2.23 | 39 | 48 | 87 |
| 37 | 63 | 50 | 113 | 14 | 32 | 24 | 56 | 38.1 | 39.4 | 38.6 | 1.50 | 2.37 | 2.01 | 32 | 24 | 56 |
| 38 | 51 | 49 | 100 | 15 | 16 | 29 | 45 | 37.5 | 38.7 | 38.2 | 2.00 | 2.45 | 2.40 | 16 | 29 | 45 |
| 39 | 39 | 48 | 87 | 16 | 18 | 23 | 41 | 38.2 | 40.6 | 39.5 | 2.28 | 2.27 | 2.55 | 18 | 23 | 41 |
| 40 | 27 | 30 | 57 | 17 | 20 | 27 | 47 | 38.4 | 40.1 | 39.4 | 2.09 | 2.65 | 2.54 | 20 | 27 | 47 |
| 41 | 23 | 23 | 46 | 18 | 27 | 22 | 49 | 38.6 | 40.6 | 39.5 | 1.63 | 3.46 | 2.78 | 27 | 22 | 49 |
| 42 | 26 | 32 | 58 | 19 | 7 | 9 | 16 | 38.4 | 41.2 | 40.0 | 1.90 | 2.68 | 2.71 | 7 | 9 | 16 |
| 43 | 10 | 18 | 28 | 20 | 7 | 3 | 10 | 37.6 | 42.0 | 38.9 | 2.99 | 4.58 | 3.90 | 7 | 3 | 10 |
| 44 | 2 | 7 | 9 | 21 | 4 | 3 | 7 | 42.0 | 44.0 | 42.9 | 0.82 | 4.36 | 2.79 | 4 | 3 | 7 |
| 45 | 0 | 22 | 22 | 22 | 1 | 2 | 3 | 40.0 | 44.0 | 42.7 | 0.00 | 2.83 | 3.06 | 1 | 2 | 3 |
| 46 | 1 | 18 | 19 | 23 | 6 | 3 | 9 | 40.8 | 44.0 | 41.9 | 1.94 | 1.73 | 2.37 | 6 | 3 | 9 |
| 47 | - | 9 | 9 | 24 | 3 | 5 | 8 | 39.3 | 44.6 | 42.6 | 0.58 | 1.14 | 2.88 | 3 | 5 | 8 |
| 48 | - | 8 | 8 | 25 | 6 | 5 | 11 | 40.8 | 46.2 | 43.3 | 2.32 | 0.84 | 3.29 | 6 | 5 | 11 |
| 49 | - | 1 | 1 | 26 | 8 | 8 | 16 | 41.0 | 45.1 | 43.1 | 2.27 | 2.80 | 3.26 | 8 | 8 | 16 |
| 50 | - | 1 | 1 | 27 | 7 | 7 | 14 | 41.3 | 45.0 | 43.1 | 1.60 | 4.12 | 3.57 | 7 | 7 | 14 |
| | | | | 28 | 4 | 10 | 14 | 42.0 | 46.2 | 45.0 | 1.41 | 1.14 | 2.29 | 4 | 10 | 14 |
| | | | | 29 | 2 | 4 | 6 | 42.0 | 45.3 | 44.2 | 0.00 | 0.50 | 1.72 | 2 | 4 | 6 |
| Total | 371 | 426 | 797 | | | | | | | | | | | | | |

Table 4 (cont'd)

S. alutus1979 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|--------------------------|------|------|-----------------|------|------|--------------------------|---|---|----------------------------|---|---|
| | M | F | T | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| Age (yr) | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | 2 | 4 | 6 | 39.5 | 42.8 | 41.7 | 3.54 | 6.18 | 5.32 | 2 | 4 | 6 | | | |
| 31 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 32 | 1 | 2 | 3 | 42.0 | 42.5 | 42.3 | 0.00 | 3.54 | 2.52 | 1 | 2 | 3 | | | |
| 33 | 0 | 3 | 3 | 0 | 46.0 | 46.0 | 0 | 4.00 | 4.00 | 0 | 3 | 3 | | | |
| 34 | 3 | 1 | 4 | 41.3 | 47.0 | 42.8 | 0.58 | 0.00 | 2.87 | 3 | 1 | 4 | | | |
| 35 | 2 | 1 | 3 | 41.5 | 45.0 | 42.7 | 0.71 | 0.00 | 2.08 | 2 | 1 | 3 | | | |
| 36 | 0 | 2 | 2 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 2 | 2 | | | |
| 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 38 | 1 | 1 | 2 | 43.0 | 43.0 | 43.0 | 0.00 | 0.00 | 0.00 | 1 | 1 | 2 | | | |
| 39 | 1 | 0 | 1 | 39.0 | 0 | 39.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 40 | 0 | 1 | 1 | 0 | 42.0 | 42.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 41 | 1 | 0 | 1 | 44.0 | 0 | 44.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 42 | 1 | 0 | 1 | 39.0 | 0 | 39.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 43 | 1 | 1 | 2 | 39.0 | 45.0 | 42.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 | | | |
| 44 | 0 | 1 | 1 | 0 | 39.0 | 39.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 46 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 50 | 1 | 0 | 1 | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 52 | 0 | 1 | 1 | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 54 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 55 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |

| | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|
| 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 54 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 0 | 1 |
| 55 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 |

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Table 4 (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Ave. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|------|------|------------------|------|-----|--------------------------|-----|---|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 62 | 2 | 0 | 2 | 38.5 | 0 | 38.5 | 6.36 | 0 | 6.36 | 2 | 0 | 2 | | | | |
| 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 65 | 2 | 0 | 2 | 44.0 | 0 | 44.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 | | | | |
| 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 67 | 0 | 1 | 1 | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| 72 | 1 | - | 1 | 40.0 | - | 40.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| Totals | 371 | 426 | 797 | | | | | | | 371 | 426 | 797 | | | | |

Table 4 (cont'd)

Sebastes alutus

1979 Commercial - Area 5C -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|-------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 2 | - | 2 | | 9 | 1 | - | 35.0 | - | 35.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 33 | 2 | - | 2 | 9 | 1 | - | 1 | 35.0 | - | 35.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 34 | 0 | - | 0 | 10 | 2 | - | 2 | 35.5 | - | 35.5 | 0.71 | - | 0.71 | 2 | - | 2 |
| 35 | 2 | - | 2 | 11 | 1 | - | 1 | 36.0 | - | 36.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 36 | 3 | - | 3 | 12 | 3 | - | 3 | 34.0 | - | 34.0 | 1.73 | - | 1.73 | 3 | - | 3 |
| 37 | 3 | - | 3 | 13 | 2 | 1 | 3 | 39.0 | 41.0 | 39.7 | 1.41 | 0.00 | 1.53 | 2 | 1 | 3 |
| 38 | 4 | 1 | 5 | 14 | 3 | 1 | 4 | 39.3 | 41.0 | 39.8 | 0.58 | 0.00 | 0.96 | 3 | 1 | 4 |
| 39 | 11 | 0 | 11 | 15 | 1 | 0 | 1 | 39.0 | 0 | 39.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 40 | 10 | 3 | 13 | 16 | 3 | 0 | 3 | 41.3 | 0 | 41.3 | 1.53 | 0 | 1.53 | 3 | 0 | 3 |
| 41 | 33 | 1 | 34 | 17 | 8 | 5 | 13 | 40.3 | 43.4 | 41.5 | 2.25 | 0.55 | 2.37 | 8 | 5 | 13 |
| 42 | 34 | 9 | 43 | 18 | 15 | 6 | 21 | 40.3 | 43.7 | 41.2 | 1.62 | 1.21 | 2.17 | 15 | 6 | 21 |
| 43 | 24 | 10 | 33 | 19 | 4 | 7 | 11 | 40.3 | 42.5 | 37.8 | 2.50 | 2.17 | 12.76 | 4 | 7 | 11 |
| 44 | 16 | 13 | 39 | 20 | 7 | 0 | 7 | 40.9 | 0 | 40.9 | 1.07 | 0 | 1.07 | 7 | 0 | 7 |
| 45 | 3 | 7 | 10 | 21 | 2 | 1 | 3 | 42.5 | 43.0 | 42.7 | 0.71 | 0.00 | 0.58 | 2 | 1 | 3 |
| 46 | - | 7 | 7 | 22 | 4 | 4 | 8 | 40.0 | 44.8 | 42.4 | 2.00 | 0.96 | 2.92 | 4 | 4 | 8 |
| 47 | - | 4 | 4 | 23 | 4 | 2 | 6 | 41.3 | 46.0 | 42.8 | 1.71 | 1.41 | 2.86 | 4 | 2 | 6 |
| | | | | 24 | 6 | 2 | 8 | 41.8 | 47.5 | 43.3 | 1.17 | 0.71 | 2.82 | 6 | 2 | 8 |
| | | | | 25 | 8 | 5 | 13 | 41.6 | 46.0 | 43.3 | 1.69 | 1.58 | 2.72 | 8 | 5 | 13 |
| | | | | 26 | 8 | 4 | 12 | 43.3 | 45.3 | 43.9 | 0.89 | 0.96 | 1.31 | 8 | 4 | 12 |
| | | | | 27 | 11 | 3 | 14 | 42.8 | 46.3 | 43.6 | 1.08 | 1.53 | 1.87 | 11 | 3 | 14 |
| | | | | 28 | 8 | 3 | 11 | 42.1 | 46.0 | 43.2 | 1.13 | 1.00 | 2.09 | 8 | 3 | 11 |
| | | | | 29 | 8 | 2 | 10 | 42.4 | 45.0 | 42.9 | 1.06 | 0.00 | 1.45 | 8 | 2 | 10 |
| | | | | 30 | 3 | 2 | 5 | 41.7 | 47.0 | 43.8 | 0.58 | 1.51 | 3.03 | 3 | 2 | 5 |
| | | | | 31 | 2 | 1 | 3 | 42.5 | 47.0 | 44.0 | 0.71 | 0.00 | 2.65 | 2 | 1 | 3 |
| | | | | 32 | 4 | 0 | 4 | 42.0 | 0 | 42.0 | 1.41 | 0 | 1.41 | 4 | 0 | 4 |
| | | | | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 34 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 35 | 2 | 0 | 2 | 43.5 | 0 | 43.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| | | | | 36 | 2 | 0 | 2 | 41.5 | 0 | 41.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| | | | | 37 | 1 | 3 | 4 | 44.0 | 45.3 | 45.0 | 0.00 | 1.53 | 1.51 | 1 | 3 | 4 |
| | | | | 38 | 1 | 0 | 1 | 41.0 | 0 | 41.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Total 145 55 200

| | | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 37 | 1 | 3 | 4 | 44.0 | 45.3 | 45.0 | 0.00 | 1.53 | 1.51 | 1 | 3 | 4 |
| 38 | 1 | 0 | 1 | 41.0 | 0 | 41.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Total 145 55 200

Table 4 (cont'd)

S. alutus

1979 Commercial - Area 5C - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|---------------------|-------------------------------|--------------------------|---|------------------------|-----------------|------|------|--------------------------|------|-----|----|-----|----------------------------|--|--|
| | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T | | |
| | | M | F | T | M | F | T | M | F | T | | | | | |
| 40 | 2 | 0 | 2 | 42.5 | 0 | 42.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 | | | |
| 41 | 1 | 0 | 1 | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 42 | 0 | 1 | 1 | 0 | 43.0 | 43.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 43 | 1 | 0 | 1 | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 44 | 2 | 0 | 2 | 43.0 | 0 | 43.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | | |
| 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 46 | 2 | 0 | 2 | 43.0 | 0 | 43.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | | |
| 47 | 3 | 1 | 4 | 43.0 | 47.0 | 44.0 | 1.00 | 0.00 | 2.16 | 3 | 1 | 4 | | | |
| 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 51 | 2 | 1 | 3 | 42.0 | 45.0 | 43.0 | 1.41 | 0.00 | 2.00 | 2 | 1 | 3 | | | |
| 52 | 1 | - | 1 | 45.0 | - | 45.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 53 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 54 | 1 | - | 1 | 42.0 | - | 42.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| - | | | | | | | | | | | | | | | |
| 63 | 1 | - | 1 | 43.0 | - | 43.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 64 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 65 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 66 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 67 | 1 | - | 1 | 41.0 | - | 41.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 68 | 2 | - | 2 | 41.0 | - | 41.0 | 2.82 | - | 2.82 | 2 | - | 2 | | | |
| 69 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 70 | 1 | - | 1 | 41.0 | - | 41.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | | | | 145 | 55 | 200 | | | | 145 | 55 | 200 | | | |

Table 4 (cont'd)

Sebastes alutus1979 Commercial - Area 5D

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 33 | - | 1 | 1 | 9 | 5 | 3 | 8 | 36.4 | 35.7 | 36.1 | 0.55 | 1.53 | 0.99 | 5 | 3 | 8 |
| 34 | - | 2 | 2 | 10 | 4 | 7 | 11 | 37.3 | 36.8 | 37.0 | 1.50 | 1.86 | 1.67 | 4 | 7 | 11 |
| 35 | 1 | 1 | 2 | 11 | 4 | 3 | 7 | 36.5 | 37.0 | 36.7 | 1.29 | 2.64 | 1.79 | 4 | 3 | 7 |
| 36 | 6 | 5 | 11 | 12 | 1 | 2 | 3 | 37.0 | 41.0 | 39.7 | 0.00 | 0.00 | 2.31 | 1 | 2 | 3 |
| 37 | 7 | 4 | 11 | 13 | 0 | 2 | 2 | 0 | 36.5 | 36.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 |
| 38 | 4 | 2 | 6 | 14 | 1 | 1 | 2 | 39.0 | 33.0 | 36.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 39 | 7 | 0 | 7 | 15 | 3 | 2 | 5 | 38.0 | 39.5 | 38.6 | 1.00 | 2.12 | 1.52 | 3 | 2 | 5 |
| 40 | 13 | 2 | 15 | 16 | 0 | 4 | 4 | 0 | 42.5 | 42.5 | 0 | 1.29 | 1.29 | 0 | 4 | 4 |
| 41 | 9 | 6 | 15 | 17 | 1 | 0 | 1 | 37.0 | 0 | 37.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 42 | 10 | 1 | 11 | 18 | 1 | 2 | 3 | 39.0 | 41.0 | 40.3 | 0.00 | 0.00 | 1.15 | 1 | 2 | 3 |
| 43 | 5 | 1 | 6 | 19 | 1 | 0 | 1 | 37.0 | 0 | 37.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 44 | 1 | 4 | 5 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | 1 | 4 | 5 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 46 | - | 2 | 2 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | - | 1 | 1 | 23 | 3 | 0 | 3 | 39.3 | 0 | 39.3 | 0.58 | 0 | 0.58 | 3 | 0 | 3 |
| | | | | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 26 | 3 | 0 | 3 | 39.3 | 0 | 39.3 | 1.15 | 0 | 1.15 | 3 | 0 | 3 |
| | | | | 27 | 3 | 0 | 3 | 41.7 | 0 | 41.7 | 1.53 | 0 | 1.53 | 3 | 0 | 3 |
| | | | | 28 | 2 | 0 | 2 | 40.0 | 0 | 40.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 |
| | | | | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 33 | 2 | 1 | 3 | 40.0 | 45.0 | 41.7 | 0.00 | 0.00 | 2.89 | 2 | 1 | 3 |
| | | | | 34 | 3 | 0 | 3 | 41.0 | 0 | 41.0 | 1.00 | 0 | 1.00 | 3 | 0 | 3 |
| | | | | 35 | 2 | 0 | 2 | 40.0 | 0 | 40.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 |
| | | | | 36 | 0 | 1 | 1 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 37 | 0 | 2 | 2 | 46.0 | 46.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 | 2 |
| | | | | 38 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 39 | 0 | 1 | 1 | 0 | 45.0 | 45.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |

| | | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 36 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 37 | 0 | 2 | 2 | 0 | 46.0 | 46.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 |
| 38 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 39 | 0 | 1 | 1 | 0 | 45.0 | 45.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |

Table 4 (cont'd)

Sebastes alutus

1979 Commercial - Area 5D

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|---------------------|-------------------------------|----|----|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|---|---|---|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | Age (yr) | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 40 | 3 | 0 | 3 | | 40.7 | 0 | 40.7 | 1.15 | 0 | 1.15 | 3 | 0 | 3 | | | |
| 41 | 1 | 1 | 2 | | 40.0 | 46.0 | 43.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 | | | |
| 42 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 43 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 44 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 45 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 46 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 47 | 1 | 0 | 1 | | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 48 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 49 | 1 | 0 | 1 | | 40.0 | 0 | 40.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 50 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 51 | 1 | 0 | 1 | | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 52 | 1 | 0 | 1 | | 41.0 | 0 | 41.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 53 | 3 | 0 | 3 | | 42.7 | 0 | 42.7 | 2.08 | 0 | 2.08 | 3 | 0 | 3 | | | |
| 54 | 1 | 0 | 1 | | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 55 | 2 | 0 | 2 | | 41.5 | 0 | 41.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | | | |
| 56 | 1 | 0 | 1 | | 44.0 | 0 | 44.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 57 | 1 | 0 | 1 | | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 58 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 59 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 60 | 1 | 1 | 2 | | 42.0 | 44.0 | 43.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | | | |
| 61 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 62 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 63 | 1 | 1 | 2 | | 43.0 | 44.0 | 43.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 | | | |
| 64 | 0 | 2 | 2 | | 0 | 44.5 | 44.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 | | | |
| 65 | 2 | - | 2 | | 41.0 | - | 41.0 | 0.00 | - | 0.00 | 2 | - | 2 | | | |
| 70 | 2 | - | 2 | | 42.5 | - | 42.5 | 0.71 | - | 0.71 | 2 | - | 2 | | | |
| 76 | 1 | - | 1 | | 41.0 | - | 41.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | 63 | 36 | 99 | | | | | | | | 63 | 36 | 99 | | | |

Table 4 (cont'd)

Sebastes alutus

1978 Commercial - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 27 | 3 | - | 3 | 7 | 1 | - | 1 | 27.0 | - | 27.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 28 | 0 | - | 0 | 8 | 2 | - | 2 | 27.0 | - | 27.0 | 0.00 | - | 0.00 | 2 | - | 2 | |
| 29 | 0 | - | 0 | 9 | 0 | 4 | 4 | 0 | 34.5 | 34.5 | 0 | 2.52 | 2.52 | 0 | 4 | 4 | |
| 30 | 0 | - | 0 | 10 | 2 | 2 | 4 | 35.5 | 37.5 | 36.5 | 0.71 | 0.71 | 1.29 | 2 | 2 | 4 | |
| 31 | 0 | 1 | 1 | 11 | 1 | 1 | 2 | 34.0 | 35.0 | 34.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 | |
| 32 | 0 | 1 | 1 | 12 | 0 | 2 | 2 | 0 | 35.0 | 35.0 | 0 | 4.24 | 4.24 | 0 | 2 | 2 | |
| 33 | 0 | 0 | 0 | 13 | 3 | 9 | 12 | 37.7 | 38.6 | 38.3 | 1.15 | 1.67 | 1.56 | 3 | 9 | 12 | |
| 34 | 1 | 0 | 1 | 14 | 1 | 1 | 2 | 36.0 | 39.0 | 37.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | |
| 35 | 1 | 3 | 4 | 15 | 4 | 2 | 6 | 37.3 | 39.5 | 38.0 | 1.89 | 0.71 | 1.90 | 4 | 2 | 6 | |
| 36 | 10 | 1 | 11 | 16 | 5 | 2 | 7 | 37.8 | 41.0 | 38.7 | 0.84 | 1.41 | 1.80 | 5 | 2 | 7 | |
| 37 | 19 | 3 | 22 | 17 | 1 | 3 | 4 | 38.0 | 39.7 | 39.3 | 0.00 | 2.08 | 1.89 | 1 | 3 | 4 | |
| 38 | 27 | 7 | 34 | 18 | 2 | 2 | 4 | 37.5 | 40.5 | 39.0 | 2.12 | 0.71 | 2.16 | 2 | 2 | 4 | |
| 39 | 59 | 19 | 78 | 19 | 0 | 2 | 2 | 0 | 41.0 | 41.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 | |
| 40 | 46 | 33 | 79 | 20 | 1 | 1 | 2 | 39.0 | 40.0 | 39.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 | |
| 41 | 25 | 37 | 62 | 21 | 2 | 7 | 9 | 39.5 | 41.1 | 40.8 | 2.12 | 3.29 | 3.03 | 2 | 7 | 9 | |
| 42 | 11 | 57 | 68 | 22 | 7 | 12 | 19 | 38.6 | 42.8 | 41.3 | 1.27 | 2.55 | 3.00 | 7 | 12 | 19 | |
| 43 | 5 | 22 | 27 | 23 | 6 | 17 | 23 | 39.3 | 42.9 | 42.0 | 0.52 | 1.90 | 2.29 | 6 | 17 | 23 | |
| 44 | 0 | 30 | 30 | 24 | 21 | 18 | 39 | 39.2 | 42.8 | 40.9 | 1.63 | 2.18 | 2.63 | 21 | 18 | 39 | |
| 45 | 0 | 21 | 21 | 25 | 29 | 25 | 54 | 39.3 | 42.3 | 40.7 | 1.28 | 2.21 | 2.33 | 29 | 25 | 54 | |
| 46 | 1 | 16 | 17 | 26 | 22 | 32 | 54 | 39.1 | 42.5 | 41.1 | 1.31 | 2.37 | 2.60 | 22 | 32 | 54 | |
| 47 | 0 | 17 | 17 | 27 | 21 | 19 | 40 | 39.0 | 42.2 | 40.5 | 1.66 | 2.34 | 2.56 | 21 | 19 | 40 | |
| 48 | 1 | 18 | 19 | 28 | 13 | 26 | 39 | 39.5 | 42.0 | 41.2 | 1.39 | 3.18 | 2.96 | 13 | 26 | 39 | |
| 49 | - | 5 | 5 | 29 | 7 | 10 | 17 | 39.1 | 42.9 | 41.4 | 1.46 | 2.64 | 2.89 | 7 | 10 | 17 | |
| 50 | - | 3 | 3 | 30 | 5 | 11 | 16 | 40.8 | 42.5 | 42.0 | 1.64 | 3.05 | 2.76 | 5 | 11 | 16 | |
| 51 | - | 0 | 0 | 31 | 8 | 3 | 11 | 40.8 | 43.7 | 41.5 | 1.16 | 2.89 | 2.11 | 8 | 3 | 11 | |
| 52 | - | 1 | 1 | 32 | 6 | 3 | 9 | 40.0 | 45.0 | 41.7 | 2.37 | 3.46 | 3.57 | 6 | 3 | 9 | |
| Total | 209 | 295 | 504 | | | | | | | | | | | | | | |

Table 4 (cont'd)

S. alutus1978 Commercial - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|---|----|--------------------------|------|------|-----------------|------|------|--------------------------|---|---|----------------------------|---|---|---|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | Age (yr) | M | F | T | M | F | T | M | F | T | M | F | T |
| 33 | 6 | 6 | 12 | 33 | 39.2 | 44.5 | 41.8 | 1.17 | 2.95 | 3.51 | 6 | 6 | 12 | | | |
| 34 | 5 | 4 | 9 | 34 | 39.2 | 43.3 | 41.0 | 1.30 | 3.50 | 3.16 | 5 | 4 | 9 | | | |
| 35 | 2 | 7 | 9 | 35 | 41.0 | 44.3 | 43.6 | 1.41 | 2.75 | 2.83 | 2 | 7 | 9 | | | |
| 36 | 3 | 6 | 9 | 36 | 39.7 | 44.2 | 42.7 | 1.53 | 3.60 | 3.71 | 3 | 6 | 9 | | | |
| 37 | 3 | 3 | 6 | 37 | 41.0 | 45.7 | 43.3 | 1.73 | 2.08 | 3.08 | 3 | 3 | 6 | | | |
| 38 | 3 | 1 | 4 | 38 | 39.7 | 42.0 | 40.3 | 1.15 | 0.00 | 1.50 | 3 | 1 | 4 | | | |
| 39 | 1 | 0 | 1 | 39 | 39.0 | 0 | 39.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 40 | 1 | 3 | 4 | 40 | 41.0 | 44.7 | 43.8 | 0.00 | 2.89 | 2.99 | 1 | 3 | 4 | | | |
| 41 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 42 | 0 | 7 | 7 | 42 | 0 | 45.1 | 45.1 | 0 | 2.41 | 2.41 | 0 | 7 | 7 | | | |
| 43 | 1 | 1 | 2 | 43 | 40.0 | 45.0 | 42.5 | 0.00 | 0.00 | 3.54 | 1 | 1 | 2 | | | |
| 44 | 1 | 1 | 2 | 44 | 40.0 | 46.0 | 43.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 | | | |
| 45 | 1 | 3 | 4 | 45 | 39.0 | 48.0 | 45.8 | 0.00 | 1.00 | 4.57 | 1 | 3 | 4 | | | |
| 46 | 2 | 4 | 6 | 46 | 44.0 | 46.8 | 45.8 | 5.66 | 2.99 | 3.71 | 2 | 4 | 6 | | | |
| 47 | 1 | 4 | 5 | 47 | 46.0 | 43.8 | 44.2 | 0.00 | 2.75 | 2.59 | 1 | 4 | 5 | | | |
| 48 | 3 | 1 | 4 | 48 | 39.3 | 47.0 | 41.3 | 2.08 | 0.00 | 4.19 | 3 | 1 | 4 | | | |
| 49 | 1 | 3 | 4 | 49 | 42.0 | 45.3 | 44.5 | 0.00 | 2.31 | 2.52 | 1 | 3 | 4 | | | |
| 50 | 2 | 2 | 4 | 50 | 39.5 | 45.5 | 42.5 | 0.71 | 0.71 | 3.51 | 2 | 2 | 4 | | | |
| 51 | 0 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 52 | 1 | 0 | 1 | 52 | 38.0 | 0 | 38.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 53 | 0 | 2 | 2 | 53 | 0 | 45.0 | 45.0 | 0 | 4.24 | 4.24 | 0 | 2 | 2 | | | |
| 54 | 0 | 1 | 1 | 54 | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 55 | 0 | 2 | 2 | 55 | 0 | 44.0 | 44.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 | | | |
| 56 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 57 | 0 | 2 | 2 | 57 | 0 | 41.5 | 41.5 | 0 | 3.54 | 3.54 | 0 | 2 | 2 | | | |
| 58 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 59 | 0 | 1 | 1 | 59 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |

Table 4 (cont'd)

S. alutus1978 Research - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | | | |
|------------------------|-------------------------------|---|---|------------------------|------|------|--------------------------|------|------|------------------|-----|-----|----------------------------|---|---|---|--|--|
| | | | | Age | | | No. of fish ^b | | | Ave. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | yr | M | F | T | M | F | T | M | F | T | M | F | T | | |
| 60 | 1 | 2 | 3 | | 39.0 | 42.5 | 41.3 | 0.00 | 3.54 | 3.21 | 1 | 2 | 3 | | | | | |
| 61 | 1 | 2 | 3 | | 39.0 | 39.0 | 39.0 | 0.00 | 0.00 | 0.00 | 1 | 2 | 3 | | | | | |
| 62 | 0 | 1 | 1 | | 0 | 44.0 | 44.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | | |
| 63 | 1 | 2 | 3 | | 45.0 | 41.7 | 43.0 | 0.00 | 4.35 | 4.36 | 1 | 2 | 3 | | | | | |
| 64 | 3 | 3 | 6 | | 37.7 | 41.7 | 39.7 | 0.58 | 3.05 | 2.95 | 3 | 3 | 6 | | | | | |
| 65 | 0 | 4 | 4 | | 0 | 39.3 | 39.3 | 0 | 1.50 | 1.50 | 0 | 4 | 4 | | | | | |
| 66 | 2 | 2 | 4 | | 39.0 | 45.0 | 42.0 | 0.00 | 4.24 | 4.24 | 2 | 2 | 4 | | | | | |
| 67 | 0 | 2 | 2 | | 0 | 43.0 | 43.0 | 0 | 5.66 | 5.66 | 0 | 2 | 2 | | | | | |
| 68 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 69 | 0 | 1 | 1 | | 0 | 39.0 | 39.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | | |
| 70 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 71 | 1 | 2 | 3 | | 37.0 | 39.0 | 38.3 | 0.00 | 0.00 | 1.15 | 1 | 2 | 3 | | | | | |
| 72 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 73 | 0 | 1 | 1 | | 0 | 40.0 | 40.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | | |
| 74 | 1 | 0 | 1 | | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | | |
| 75 | - | 1 | 1 | | - | 41.0 | 41.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | | | |
| Totals | | | | 125 | 155 | 280 | | | | | 125 | 155 | 280 | | | | | |

Table 4 (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | |
|---------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| | 2 | - | 2 | | 4 | - | 1 | 44.0 | 44.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 | |
| 32 | 2 | - | 2 | 5 | - | 0 | 0 | - | 0 | - | 0 | 0 | - | 0 | 0 | 0 | |
| 33 | 2 | - | 2 | 6 | - | 0 | 0 | - | 0 | - | 0 | 0 | - | 0 | 0 | 0 | |
| 34 | 8 | 3 | 11 | 7 | - | 1 | 1 | - | 39.0 | 39.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 |
| 35 | 13 | 8 | 21 | 8 | - | 1 | 1 | - | 37.0 | 37.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 |
| 36 | 26 | 15 | 41 | 9 | 3 | 5 | 8 | 35.7 | 37.0 | 36.5 | 2.08 | 1.58 | 1.77 | 3 | 5 | 8 | 8 |
| 38 | 50 | 29 | 79 | 10 | 22 | 21 | 43 | 36.0 | 36.9 | 36.4 | 1.23 | 1.80 | 1.58 | 22 | 21 | 43 | 43 |
| 39 | 64 | 37 | 101 | 11 | 21 | 31 | 52 | 35.6 | 37.1 | 36.5 | 1.50 | 1.43 | 1.63 | 21 | 30 | 51 | 51 |
| 40 | 61 | 48 | 109 | 12 | 11 | 27 | 38 | 36.6 | 37.9 | 37.5 | 1.80 | 1.56 | 1.72 | 11 | 27 | 38 | 38 |
| 41 | 35 | 64 | 99 | 13 | 8 | 19 | 27 | 37.6 | 39.0 | 38.6 | 1.06 | 1.97 | 1.85 | 8 | 19 | 27 | 27 |
| 42 | 17 | 93 | 110 | 14 | 5 | 16 | 21 | 38.0 | 39.7 | 39.3 | 0.00 | 1.78 | 1.71 | 5 | 13 | 18 | 18 |
| 43 | 2 | 101 | 103 | 15 | 5 | 18 | 23 | 37.8 | 40.6 | 40.0 | 3.11 | 1.15 | 2.03 | 5 | 18 | 23 | 23 |
| 44 | 1 | 70 | 71 | 16 | 1 | 15 | 16 | 39.0 | 41.0 | 40.9 | 0.00 | 1.65 | 1.67 | 1 | 15 | 16 | 16 |
| 45 | - | 79 | 79 | 17 | 1 | 7 | 8 | 40.0 | 42.3 | 42.0 | 0.00 | 1.80 | 1.85 | 1 | 6 | 7 | 7 |
| 46 | - | 69 | 69 | 18 | 9 | 10 | 19 | 38.4 | 42.0 | 40.4 | 1.33 | 1.15 | 2.19 | 7 | 7 | 14 | 14 |
| 47 | - | 27 | 27 | 19 | 5 | 1 | 15 | 39.4 | 41.8 | 41.0 | 1.95 | 1.62 | 2.04 | 4 | 10 | 14 | 14 |
| 48 | - | 9 | 9 | 20 | 5 | 5 | 10 | 39.2 | 43.6 | 41.4 | 0.84 | 2.41 | 2.88 | 5 | 3 | 9 | 9 |
| 49 | - | 3 | 3 | 21 | 0 | 7 | 7 | 0 | 40.3 | 40.3 | 0 | 1.11 | 1.11 | 0 | 6 | 7 | 7 |
| | | | | 22 | 4 | 7 | 11 | 38.8 | 42.3 | 41.0 | 0.96 | 2.87 | 2.90 | 3 | 7 | 10 | 10 |
| | | | | 23 | 7 | 14 | 21 | 39.3 | 42.2 | 41.2 | 0.76 | 1.85 | 2.10 | 5 | 14 | 19 | 19 |
| | | | | 24 | 18 | 22 | 40 | 39.2 | 42.8 | 41.2 | 1.52 | 1.51 | 2.33 | 16 | 18 | 37 | 37 |
| | | | | 25 | 24 | 39 | 63 | 39.3 | 43.8 | 42.1 | 1.23 | 2.12 | 2.85 | 23 | 29 | 56 | 56 |
| | | | | 26 | 18 | 52 | 70 | 39.3 | 43.6 | 42.5 | 2.32 | 2.03 | 2.82 | 16 | 47 | 64 | 64 |
| | | | | 27 | 26 | 54 | 80 | 39.5 | 43.5 | 42.2 | 1.61 | 2.06 | 2.66 | 23 | 40 | 72 | 72 |
| | | | | 28 | 20 | 69 | 89 | 39.5 | 43.5 | 42.5 | 1.43 | 2.01 | 2.49 | 13 | 48 | 76 | 76 |
| | | | | 29 | 10 | 37 | 47 | 40.0 | 43.5 | 42.7 | 1.41 | 1.95 | 2.33 | 9 | 34 | 43 | 43 |
| Total | 314 | 683 | 997 | | | | | | | | | | | | | | |

Table 4 (cont'd)

S. alutus1979 Commercial ~ Area 5E ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|--|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 30 | 11 | 24 | 35 | 30 | 40.7 | 44.2 | 43.1 | 1.42 | 2.37 | 2.65 | 10 | 23 | 33 | | | |
| 31 | 2 | 15 | 17 | 31 | 40.5 | 43.7 | 43.4 | 0.71 | 2.22 | 2.34 | 2 | 15 | 17 | | | |
| 32 | 3 | 11 | 14 | 32 | 40.3 | 43.8 | 43.1 | 0.58 | 1.25 | 1.86 | 4 | 10 | 14 | | | |
| 33 | 3 | 4 | 7 | 33 | 40.7 | 43.0 | 42.0 | 1.53 | 0.82 | 1.63 | 3 | 5 | 8 | | | |
| 34 | 4 | 11 | 15 | 34 | 39.8 | 43.5 | 42.5 | 2.22 | 2.38 | 2.83 | 3 | 10 | 13 | | | |
| 35 | 6 | 5 | 11 | 35 | 37.3 | 43.4 | 40.1 | 2.25 | 1.82 | 3.73 | 6 | 5 | 11 | | | |
| 36 | 3 | 10 | 13 | 36 | 40.0 | 44.9 | 43.8 | 1.00 | 2.23 | 2.92 | 5 | 10 | 15 | | | |
| 37 | 1 | 8 | 9 | 37 | 35.0 | 45.1 | 44.0 | 0.00 | 1.89 | 3.81 | 5 | 9 | 14 | | | |
| 38 | 2 | 6 | 8 | 38 | 39.5 | 43.2 | 42.3 | 4.95 | 2.04 | 3.06 | 9 | 4 | 13 | | | |
| 39 | 0 | 3 | 3 | 39 | 0 | 45.3 | 45.3 | 0 | 1.53 | 1.53 | 4 | 4 | 8 | | | |
| 40 | 1 | 1 | 2 | 40 | 40.0 | 44.0 | 42.0 | 0.00 | 0.00 | 2.83 | 5 | 2 | 7 | | | |
| 41 | 0 | 2 | 2 | 41 | 0 | 47.0 | 47.0 | 0 | 1.41 | 1.41 | 2 | 7 | 9 | | | |
| 42 | 0 | 5 | 5 | 42 | 0 | 43.2 | 43.2 | 0 | 3.70 | 3.70 | 1 | 9 | 10 | | | |
| 43 | 0 | 4 | 4 | 43 | 0 | 44.3 | 44.4 | 0 | 0.96 | 0.96 | 0 | 16 | 16 | | | |
| 44 | 0 | 3 | 3 | 44 | 0 | 45.3 | 45.3 | 0 | 2.52 | 2.52 | 0 | 10 | 10 | | | |
| 45 | 0 | 2 | 2 | 45 | 0 | 44.0 | 44.0 | 0 | 2.83 | 2.83 | 0 | 9 | 9 | | | |
| 46 | 1 | 7 | 8 | 46 | 36.0 | 44.9 | 43.8 | 0.00 | 2.19 | 3.73 | 1 | 11 | 12 | | | |
| 47 | 2 | 7 | 9 | 47 | 40.5 | 43.7 | 43.0 | 2.12 | 2.81 | 2.92 | 2 | 8 | 10 | | | |
| 48 | 1 | 2 | 3 | 48 | 40.5 | 45.5 | 43.7 | 0.00 | 0.71 | 3.21 | 0 | 3 | 3 | | | |
| 49 | 0 | 3 | 3 | 49 | 0 | 46.7 | 46.7 | 0 | 1.53 | 1.53 | 0 | 3 | 3 | | | |
| 50 | 3 | 5 | 8 | 50 | 39.7 | 46.0 | 43.6 | 2.89 | 2.24 | 4.00 | 3 | 5 | 8 | | | |
| 51 | 3 | 1 | 4 | 51 | 40.0 | 43.0 | 40.8 | 1.00 | 0.00 | 1.71 | 3 | 1 | 4 | | | |
| 52 | 0 | 1 | 1 | 52 | 0 | 45.0 | 45.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 53 | 1 | 7 | 8 | 53 | 39.0 | 45.0 | 44.3 | 0.00 | 0.41 | 2.49 | 1 | 5 | 6 | | | |
| 54 | 0 | 3 | 3 | 54 | 0 | 44.3 | 44.3 | 0 | 1.53 | 1.53 | 0 | 3 | 3 | | | |
| 55 | 2 | 5 | 7 | 55 | 39.5 | 44.6 | 43.1 | 0.71 | 1.34 | 2.73 | 2 | 4 | 6 | | | |
| 56 | 2 | 2 | 1 | 56 | 38.5 | 44.5 | 41.5 | 2.12 | 2.12 | 3.87 | 2 | 2 | 4 | | | |
| 57 | 0 | 3 | 3 | 57 | 0 | 42.3 | 42.3 | 0 | 2.31 | 2.31 | 0 | 3 | 3 | | | |
| 58 | 2 | 1 | 3 | 58 | 36.5 | 46.0 | 39.7 | 0.71 | 0.00 | 5.51 | 2 | 1 | 3 | | | |
| 59 | 1 | 1 | 2 | 59 | 38.0 | 45.0 | 41.5 | 0.00 | 0.00 | 4.95 | 1 | 1 | 2 | | | |

| | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|
| 56 | 2 | 2 | 1 | 50.0 | 44.0 | 41.0 | - | - | - | - | - |
| 57 | 0 | 3 | 3 | 0 | 42.3 | 42.3 | 0 | 2.31 | 2.31 | 0 | 3 |
| 58 | 2 | 1 | 3 | 36.5 | 46.0 | 39.7 | 0.71 | 0.00 | 5.51 | 2 | 1 |
| 59 | 1 | 1 | 2 | 38.0 | 45.0 | 41.5 | 0.00 | 0.00 | 4.95 | 1 | 1 |

Table 4 (cont'd)

S. alutus

1979 Commercial - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | | | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|------|------|------------------|------|---|--------------------------|-----|-----|----------------------------|---|---|--|
| | | | | | No. of fish ^b | | | Ave. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 60 | 1 | 2 | 3 | 38.0 | 44.0 | 42.0 | 0.00 | 1.41 | 3.61 | 1 | 2 | 3 | | | | | |
| 61 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 0 | 0 | | | | | |
| 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| 63 | 1 | 2 | 3 | 38.0 | 43.0 | 41.3 | 0.00 | 2.83 | 3.51 | 1 | 2 | 3 | | | | | |
| 64 | 0 | 2 | 2 | 0 | 43.0 | 43.0 | 0 | 4.24 | 4.24 | 0 | 2 | 2 | | | | | |
| 65 | 0 | 4 | 4 | 0 | 45.7 | 45.7 | 0 | 0.50 | 0.50 | 0 | 3 | 3 | | | | | |
| 66 | 1 | 2 | 3 | 39.0 | 45.0 | 43.0 | 0.00 | 1.41 | 3.61 | 1 | 2 | 3 | | | | | |
| 67 | - | 1 | 1 | - | 46.0 | 46.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | | | |
| 68 | - | 2 | 2 | - | 44.5 | 44.5 | - | 2.12 | 2.12 | - | 1 | 1 | | | | | |
| 69 | - | 2 | 2 | - | 44.5 | 44.5 | - | 0.71 | 0.71 | - | 2 | 2 | | | | | |
| 70 | - | 1 | 1 | - | 42.0 | 42.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | | | |
| Totals | | | | 280 | 669 | 949 | | | | | 280 | 669 | 949 | | | | |

Table 4 (cont'd)

Sebastes alutus1979 Research ~ Area 5E ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 5 | - | 5 | 8 | 1 | - | 1 | 36.0 | - | 36.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 35 | 5 | - | 5 | 8 | 1 | - | 1 | 36.0 | - | 36.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 36 | 12 | - | 12 | 9 | 1 | - | 1 | 36.0 | - | 36.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 37 | 11 | 4 | 16 | 10 | 1 | 1 | 2 | 38.0 | 39.0 | 38.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 |
| 38 | 17 | 10 | 27 | 11 | 1 | 0 | 1 | 47.0 | 0 | 47.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 39 | 15 | 22 | 37 | 12 | 1 | 2 | 3 | 36.0 | 39.0 | 38.0 | 0.00 | 1.41 | 2.00 | 1 | 2 | 3 |
| 40 | 15 | 29 | 44 | 13 | 1 | 0 | 1 | 39.0 | 0 | 39.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 41 | 15 | 14 | 29 | 14 | 2 | 0 | 2 | 39.5 | 0 | 39.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 42 | 14 | 12 | 26 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 43 | 10 | 11 | 21 | 16 | 2 | 0 | 2 | 38.0 | 0 | 38.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 |
| 44 | 6 | 13 | 19 | 17 | 0 | 5 | 5 | 0 | 42.4 | 42.4 | 0 | 1.52 | 1.52 | 0 | 5 | 5 |
| 45 | 4 | 16 | 20 | 18 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 46 | 0 | 9 | 9 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 1 | 10 | 11 | 20 | 1 | 1 | 2 | 41.0 | 43.0 | 42.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 |
| 48 | 1 | 4 | 15 | 21 | 2 | 0 | 2 | 41.0 | 0 | 41.0 | 4.24 | 0 | 4.24 | 2 | 0 | 2 |
| | | | | 22 | 3 | 1 | 4 | 39.7 | 46.0 | 41.3 | 1.53 | 0.00 | 3.40 | 3 | 1 | 4 |
| | | | | 23 | 0 | 3 | 3 | 0 | 42.3 | 42.3 | 0 | 3.79 | 3.79 | 0 | 3 | 3 |
| | | | | 24 | 4 | 3 | 7 | 41.3 | 42.7 | 41.9 | 0.96 | 2.52 | 1.77 | 4 | 3 | 7 |
| | | | | 25 | 9 | 5 | 14 | 41.1 | 40.0 | 40.7 | 1.90 | 2.92 | 2.27 | 9 | 5 | 14 |
| | | | | 26 | 7 | 9 | 16 | 40.6 | 43.6 | 42.3 | 2.51 | 2.79 | 3.00 | 7 | 9 | 16 |
| | | | | 27 | 4 | 7 | 11 | 40.3 | 44.4 | 42.9 | 1.71 | 1.27 | 2.51 | 4 | 7 | 11 |
| | | | | 28 | 10 | 4 | 14 | 40.3 | 41.3 | 40.6 | 2.41 | 2.87 | 2.47 | 10 | 4 | 14 |
| | | | | 29 | 4 | 4 | 8 | 39.8 | 41.3 | 40.5 | 3.20 | 2.99 | 2.98 | 4 | 4 | 8 |
| Total | 126 | 155 | 281 | | | | | | | | | | | | | |

Table 4 (cont'd) *S. alutus* brevispinis age-length relationship, by sample type, and by statistical area. See Table 3 for footnotes.

1979 Research - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | |
|---------------------|-------------------------------|---|----|--------------------------|------|------|------------------|------|------|--------------------------|---|----|----------------------------|--|
| | | | | No. of fish ^b | | | Ave. length (cm) | | | Stand. Dev. ^c | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | | |
| 30 | 1 | 6 | 7 | 37.0 | 41.8 | 41.1 | 0.00 | 3.60 | 3.76 | 1 | 6 | 7 | | |
| 31 | 5 | 5 | 10 | 40.2 | 41.4 | 40.8 | 3.03 | 1.82 | 2.44 | 5 | 5 | 10 | | |
| 32 | 3 | 4 | 7 | 41.3 | 43.0 | 42.3 | 1.53 | 3.56 | 2.81 | 3 | 4 | 7 | | |
| 33 | 3 | 1 | 4 | 36.3 | 40.0 | 37.3 | 0.58 | 0.00 | 1.89 | 3 | 1 | 4 | | |
| 34 | 2 | 4 | 6 | 38.0 | 40.3 | 39.5 | 4.24 | 1.89 | 2.66 | 2 | 4 | 6 | | |
| 35 | 2 | 2 | 4 | 36.5 | 41.0 | 38.8 | 0.71 | 1.41 | 2.75 | 2 | 2 | 4 | | |
| 36 | 3 | 3 | 6 | 39.3 | 40.3 | 39.8 | 4.51 | 0.58 | 2.93 | 3 | 3 | 6 | | |
| 37 | 3 | 9 | 12 | 40.7 | 42.2 | 41.8 | 2.52 | 2.64 | 2.59 | 3 | 9 | 12 | | |
| 38 | 3 | 2 | 5 | 41.0 | 43.5 | 42.0 | 2.65 | 0.71 | 2.35 | 3 | 2 | 5 | | |
| 39 | 1 | 7 | 8 | 42.0 | 42.0 | 42.0 | 0.00 | 3.51 | 3.25 | 1 | 7 | 8 | | |
| 40 | 4 | 2 | 6 | 39.8 | 40.0 | 39.8 | 2.06 | 1.41 | 1.72 | 4 | 2 | 6 | | |
| 41 | 2 | 1 | 3 | 36.5 | 45.0 | 39.3 | 2.12 | 0.00 | 5.13 | 2 | 1 | 3 | | |
| 42 | 1 | 1 | 2 | 39.0 | 40.0 | 39.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 | | |
| 43 | 0 | 3 | 3 | 0 | 41.0 | 41.0 | 0 | 1.00 | 1.00 | 0 | 3 | 3 | | |
| 44 | 0 | 2 | 2 | 0 | 43.5 | 43.5 | 0 | 4.95 | 4.95 | 0 | 2 | 2 | | |
| 45 | 3 | 2 | 5 | 37.7 | 40.0 | 38.6 | 2.08 | 0.00 | 1.95 | 3 | 2 | 5 | | |
| 46 | 0 | 2 | 2 | 0 | 38.5 | 38.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 | | |
| 47 | 1 | 2 | 3 | 37.0 | 44.0 | 41.7 | 0.00 | 4.24 | 5.03 | 1 | 2 | 3 | | |
| 48 | 2 | 1 | 3 | 37.0 | 39.0 | 37.7 | 0.00 | 0.00 | 1.15 | 2 | 1 | 3 | | |
| 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 50 | 5 | 3 | 8 | 40.8 | 42.3 | 41.4 | 2.28 | 4.04 | 2.88 | 5 | 3 | 8 | | |
| 51 | 1 | 2 | 3 | 37.0 | 46.0 | 43.0 | 0.00 | 1.41 | 5.29 | 1 | 2 | 3 | | |
| 52 | 3 | 4 | 7 | 43.7 | 42.5 | 43.0 | 1.15 | 3.51 | 2.65 | 3 | 4 | 7 | | |
| 53 | 1 | 4 | 5 | 41.0 | 42.3 | 42.0 | 0.00 | 2.06 | 1.87 | 1 | 4 | 5 | | |
| 54 | 4 | 1 | 5 | 39.3 | 41.0 | 39.6 | 3.20 | 0.00 | 2.88 | 4 | 1 | 5 | | |
| 55 | 3 | 2 | 5 | 40.3 | 46.5 | 42.8 | 2.08 | 0.71 | 3.70 | 3 | 2 | 5 | | |
| 56 | 2 | 5 | 7 | 40.5 | 42.4 | 41.9 | 3.54 | 4.34 | 3.93 | 2 | 5 | 7 | | |
| 57 | 0 | 1 | 1 | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | |
| 58 | 3 | 3 | 6 | 36.7 | 43.7 | 40.2 | 2.08 | 3.21 | 4.54 | 3 | 3 | 6 | | |
| 59 | 0 | 2 | 2 | 0 | 37.5 | 37.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 | | |

Table 5. *Sebastes brevispinis* age-length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1978 Commercial ~ Area 3C ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 42 | - | 1 | 1 | 21 | - | 2 | 2 | - | 49.0 | 49.0 | - | 0.00 | 0.00 | - | 2 | 2 |
| 43 | - | 0 | 0 | 22 | 1 | 1 | 2 | 47.0 | 49.0 | 48.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 |
| 44 | - | 0 | 0 | 23 | 1 | 2 | 3 | 50.0 | 51.0 | 50.7 | 0.00 | 1.41 | 1.15 | 1 | 2 | 3 |
| 45 | - | 0 | 0 | 24 | 2 | 2 | 4 | 51.5 | 53.5 | 52.5 | 2.12 | 0.71 | 1.73 | 2 | 2 | 4 |
| 46 | 1 | 0 | 1 | 25 | 1 | 3 | 4 | 55.0 | 53.0 | 53.5 | 0.00 | 3.61 | 3.11 | 1 | 3 | 4 |
| 47 | 1 | 2 | 3 | 26 | 4 | 3 | 7 | 52.0 | 52.3 | 52.1 | 0.82 | 1.53 | 1.07 | 4 | 3 | 7 |
| 48 | 1 | 2 | 3 | 27 | 3 | 1 | 4 | 55.7 | 52.0 | 54.8 | 1.15 | 0.00 | 2.06 | 3 | 1 | 4 |
| 49 | 1 | 5 | 6 | 28 | 6 | 1 | 7 | 52.7 | 54.0 | 52.9 | 2.42 | 0.00 | 2.27 | 6 | 1 | 7 |
| 50 | 5 | 2 | 7 | 29 | 1 | 3 | 4 | 56.0 | 55.3 | 55.5 | 0.00 | 1.53 | 1.29 | 1 | 3 | 4 |
| 51 | 3 | 1 | 4 | 30 | 6 | 2 | 8 | 54.5 | 54.5 | 54.5 | 2.59 | 2.12 | 2.33 | 6 | 2 | 8 |
| 52 | 5 | 4 | 9 | 31 | 1 | 2 | 3 | 55.0 | 57.5 | 56.7 | 0.00 | 0.71 | 1.53 | 1 | 2 | 3 |
| 53 | 8 | 2 | 10 | 32 | 1 | 0 | 1 | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 54 | 2 | 6 | 8 | 33 | 2 | 5 | 7 | 55.0 | 58.0 | 57.1 | 2.83 | 1.58 | 2.27 | 2 | 5 | 7 |
| 55 | 9 | 2 | 11 | 34 | 0 | 1 | 1 | 0 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 56 | 7 | 2 | 9 | 35 | 1 | 0 | 1 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 57 | 4 | 4 | 8 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 58 | 5 | 5 | 10 | 37 | 1 | 1 | 2 | 55.0 | 60.0 | 57.5 | 0.00 | 0.00 | 3.54 | 1 | 1 | 2 |
| 59 | 1 | 2 | 3 | 38 | 3 | 0 | 3 | 55.0 | 0 | 55.0 | 1.73 | 0 | 1.73 | 3 | 0 | 3 |
| 60 | 1 | 5 | 6 | 39 | 0 | 1 | 1 | 0 | 60.0 | 60.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 61 | - | 1 | 1 | | | | | | | | | | | | | |
| Totals | 54 | 46 | 100 | | | | | | | | | | | | | |

Table 5 (cont'd)

S. brevispinis1978 Commercial ~ Area 3C ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|---|---|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 40 | 3 | 2 | 5 | 40 | 54.0 | 59.5 | 56.2 | 2.00 | 0.71 | 3.35 | 3 | 2 | 5 | | | | |
| 41 | 2 | 0 | 2 | 41 | 53.5 | 0 | 53.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | | | | |
| 42 | 2 | 0 | 2 | 42 | 56.5 | 0 | 56.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 | | | | |
| 43 | 2 | 0 | 2 | 43 | 57.5 | 0 | 57.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | | | | |
| 44 | 2 | 1 | 3 | 44 | 57.0 | 58.0 | 57.3 | 1.41 | 0.00 | 1.15 | 2 | 1 | 3 | | | | |
| 45 | 1 | 0 | 1 | 45 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 46 | 1 | 0 | 1 | 46 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 47 | 1 | 3 | 4 | 47 | 59.0 | 57.3 | 57.8 | 0.00 | 3.06 | 2.63 | 1 | 3 | 4 | | | | |
| 48 | 1 | 0 | 1 | 48 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 49 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 50 | 0 | 1 | 1 | 50 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 60 | 1 | - | 1 | 60 | 60.0 | - | 60.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| Totals | 50 | 37 | 87 | | | | | | | | 50 | 37 | 87 | | | | |

Table 5 (cont'd)

Sebastes brevispinis

1978 Commercial ~ Area 5A ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | 0 | 1 | | 21 | 2 | 2 | 47.0 | 48.5 | 47.8 | 1.41 | 2.12 | 1.71 | 2 | 1 | 3 |
| 37 | - | 1 | 1 | 21 | 2 | 2 | 4 | 47.0 | 48.5 | 47.8 | 1.41 | 2.12 | 1.71 | 2 | 1 | 3 |
| 38 | - | 0 | 0 | 22 | 1 | 4 | 5 | 51.0 | 50.3 | 50.4 | 0.00 | 3.10 | 2.70 | 1 | 3 | 4 |
| 39 | - | 0 | 0 | 23 | 4 | 6 | 10 | 48.0 | 49.0 | 48.6 | 3.37 | 3.41 | 3.24 | 3 | 5 | 8 |
| 40 | - | 1 | 1 | 24 | 3 | 4 | 7 | 50.3 | 50.8 | 50.6 | 4.04 | 4.57 | 3.99 | 3 | 4 | 7 |
| 41 | 1 | 0 | 1 | 25 | 2 | 1 | 3 | 47.5 | 53.0 | 49.3 | 2.12 | 0.00 | 3.51 | 2 | 1 | 3 |
| 42 | 1 | 0 | 1 | 26 | 0 | 5 | 5 | 0 | 53.6 | 53.6 | 0 | 3.65 | 3.65 | 0 | 5 | 5 |
| 43 | 3 | 3 | 6 | 27 | 0 | 2 | 2 | 0 | 53.0 | 53.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 |
| 44 | 2 | 3 | 5 | 28 | 1 | 1 | 2 | 52.0 | 54.0 | 53.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 |
| 45 | 0 | 4 | 4 | 29 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 46 | 6 | 4 | 10 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 5 | 4 | 9 | 31 | 1 | 1 | 2 | 52.0 | 57.0 | 54.5 | 0.00 | 0.00 | 3.54 | 1 | 1 | 2 |
| 48 | 6 | 7 | 13 | 32 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 49 | 9 | 5 | 14 | 33 | 1 | 1 | 2 | 54.0 | 51.0 | 52.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 |
| 50 | 5 | 7 | 12 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 51 | 9 | 8 | 17 | 35 | 1 | 2 | 3 | 56.0 | 51.5 | 53.0 | 0.00 | 3.54 | 3.61 | 1 | 2 | 3 |
| 52 | 8 | 8 | 16 | 36 | 0 | 1 | 1 | 0 | 51.0 | 51.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 53 | 12 | 8 | 20 | 37 | 0 | 1 | 1 | 0 | 56.0 | 56.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 54 | 11 | 9 | 20 | 38 | 0 | 1 | 1 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 55 | 6 | 3 | 9 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 56 | 5 | 2 | 7 | 40 | 0 | 1 | 1 | 0 | 59.0 | 59.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 57 | 3 | 7 | 10 | 41 | 0 | 1 | 1 | 0 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 58 | 0 | 7 | 7 | 42 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 59 | 0 | 4 | 4 | 43 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 60 | 0 | 1 | 1 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 | 0 | 3 | 3 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 62 | 0 | 1 | 1 | 46 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 63 | 1 | 1 | 2 | 47 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 64 | - | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | - | 1 | 1 | 49 | 1 | 0 | 1 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| Total | 93 | 102 | 195 | | | | | | | | | | | | | |

Table 5 (cont'd)

S. brevispinis

1978 Commercial - Area 5A - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|---|---|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| | | | | | M | F | T | M | F | T | M | F | T | M | F | T |
| 50 | 0 | 1 | 1 | 0 | 0 | 59.0 | 59.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 51 | 0 | 1 | 1 | 0 | 0 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 60 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 0 | 1 | 0 | 1 | | | |
| 61 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | | |
| 62 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | | |
| 63 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | 0 | | | |
| 64 | - | 1 | 1 | - | 58.0 | 58.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 | | | |
| Totals | 24 | 37 | 61 | | | | | | | | 23 | 34 | 57 | | | |

Table 5 (cont'd)

Sebastes brevispinis

| 1979 Commercial - Area 5A - | | | | | | | | | | | | | | | | |
|-----------------------------|-------------------------------|-----|-----|----------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 39 | 1 | - | 1 | 9 | 1 | - | 1 | 39.0 | - | 39.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 40 | 0 | - | 0 | 10 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 41 | 1 | - | 1 | 11 | 0 | 1 | 1 | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 42 | 1 | - | 1 | 12 | 2 | 2 | 4 | 44.0 | 45.0 | 44.5 | 0.00 | 0.00 | 0.58 | 2 | 2 | 4 |
| 43 | 4 | 1 | 5 | 13 | 1 | 1 | 2 | 41.0 | 51.0 | 46.0 | 0.00 | 0.00 | 7.07 | 1 | 1 | 2 |
| 44 | 4 | 3 | 7 | 14 | 2 | 1 | 3 | 43.5 | 48.0 | 45.0 | 0.71 | 0.00 | 2.65 | 2 | 1 | 3 |
| 45 | 2 | 2 | 4 | 15 | 3 | 4 | 7 | 45.0 | 50.3 | 48.0 | 2.00 | 4.50 | 4.40 | 3 | 4 | 7 |
| 46 | 2 | 1 | 3 | 16 | 3 | 3 | 6 | 46.0 | 50.3 | 48.2 | 4.00 | 5.51 | 4.92 | 3 | 3 | 6 |
| 47 | 5 | 0 | 5 | 17 | 8 | 2 | 10 | 48.5 | 48.5 | 48.5 | 4.57 | 3.54 | 4.20 | 8 | 2 | 10 |
| 48 | 2 | 6 | 8 | 18 | 2 | 9 | 11 | 50.5 | 49.9 | 50.0 | 7.78 | 3.52 | 4.00 | 2 | 9 | 11 |
| 49 | 1 | 3 | 4 | 19 | 3 | 3 | 6 | 51.3 | 54.3 | 52.8 | 7.37 | 2.52 | 5.19 | 3 | 3 | 6 |
| 50 | 2 | 2 | 4 | 20 | 2 | 3 | 5 | 50.0 | 54.7 | 52.8 | 2.83 | 5.86 | 5.07 | 2 | 3 | 5 |
| 51 | 0 | 4 | 4 | 21 | 2 | 2 | 4 | 48.0 | 56.0 | 52.0 | 1.41 | 2.83 | 4.97 | 2 | 2 | 4 |
| 52 | 7 | 3 | 10 | 22 | 1 | 2 | 3 | 54.0 | 52.5 | 53.0 | 0.00 | 4.95 | 3.61 | 1 | 2 | 3 |
| 53 | 3 | 4 | 7 | 23 | 3 | 3 | 6 | 51.0 | 54.7 | 52.8 | 7.00 | 3.21 | 5.27 | 3 | 3 | 6 |
| 54 | 13 | 8 | 21 | 24 | 1 | 1 | 2 | 54.0 | 54.0 | 54.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 |
| 55 | 12 | 4 | 16 | 25 | 2 | 2 | 4 | 52.5 | 60.5 | 56.5 | 0.71 | 0.71 | 4.65 | 2 | 2 | 4 |
| 56 | 12 | 5 | 17 | 26 | 5 | 1 | 6 | 54.8 | 54.0 | 54.7 | 2.17 | 0.00 | 1.97 | 5 | 1 | 6 |
| 57 | 7 | 7 | 14 | 27 | 2 | 5 | 7 | 54.5 | 56.6 | 56.0 | 2.12 | 3.91 | 3.46 | 2 | 5 | 7 |
| 58 | 11 | 10 | 21 | 28 | 6 | 3 | 9 | 53.5 | 56.3 | 54.4 | 1.76 | 2.08 | 2.24 | 6 | 3 | 9 |
| 59 | 4 | 7 | 11 | 29 | 3 | 5 | 8 | 53.7 | 59.8 | 57.5 | 1.53 | 2.05 | 3.63 | 3 | 5 | 8 |
| 60 | 4 | 11 | 15 | 30 | 2 | 7 | 9 | 57.0 | 57.3 | 57.2 | 1.41 | 4.07 | 3.56 | 2 | 7 | 9 |
| 61 | 1 | 6 | 7 | 31 | 7 | 7 | 14 | 56.6 | 58.3 | 57.4 | 1.90 | 3.40 | 2.79 | 7 | 7 | 14 |
| 62 | - | 6 | 6 | 32 | 1 | 7 | 8 | 55.0 | 58.7 | 58.3 | 0.00 | 1.80 | 2.12 | 1 | 7 | 8 |
| 63 | - | 4 | 4 | 33 | 2 | 7 | 9 | 55.5 | 56.0 | 55.9 | 3.54 | 6.32 | 5.62 | 2 | 7 | 9 |
| 64 | - | 1 | 1 | 34 | 2 | 1 | 3 | 56.5 | 57.0 | 56.7 | 2.12 | 0.00 | 1.53 | 2 | 1 | 3 |
| 65 | - | 1 | 1 | 35 | 1 | 2 | 3 | 55.0 | 62.5 | 60.0 | 0.00 | 0.71 | 4.36 | 1 | 2 | 3 |
| 66 | - | 1 | 1 | 36 | 3 | 2 | 5 | 54.7 | 58.5 | 56.2 | 0.58 | 3.54 | 2.77 | 3 | 2 | 5 |
| Total | 99 | 100 | 199 | | | | | | | | | | | | | |

Table 5 (cont'd)

S. brevispinis1979 Commercial - Area 5A - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | |
|------------------------|-------------------------------|---|---|--------------------------|------|------|-----------------|------|------|--------------------------|---|---|-------------------------------|--|
| | M | F | T | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | |
| | | | | M | F | T | M | F | T | M | F | T | | |
| 37 | 2 | 1 | 3 | 55.5 | 52.0 | 54.3 | 2.12 | 0.00 | 2.52 | 2 | 1 | 3 | | |
| 38 | 3 | 0 | 3 | 55.7 | 0 | 55.7 | 1.15 | 0 | 1.15 | 3 | 0 | 3 | | |
| 39 | 1 | 1 | 2 | 57.0 | 60.0 | 58.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | |
| 40 | 4 | 1 | 5 | 57.3 | 63.0 | 58.4 | 2.75 | 0.00 | 3.51 | 4 | 1 | 5 | | |
| 41 | 1 | 1 | 2 | 60.0 | 62.0 | 61.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | | |
| 42 | 3 | 0 | 3 | 59.0 | 0 | 59.0 | 1.00 | 0 | 1.00 | 3 | 0 | 3 | | |
| 43 | 0 | 1 | 1 | 0 | 56.0 | 56.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | |
| 44 | 1 | 1 | 2 | 58.0 | 62.0 | 60.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 | | |
| 45 | 2 | 1 | 3 | 58.0 | 65.0 | 60.3 | 0.00 | 0.00 | 4.04 | 2 | 1 | 3 | | |
| 46 | 1 | 0 | 1 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 47 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 48 | 0 | 1 | 1 | 0 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | |
| 49 | 2 | 2 | 4 | 55.5 | 61.0 | 58.3 | 0.71 | 2.83 | 3.59 | 2 | 2 | 4 | | |
| 50 | 2 | 0 | 2 | 57.5 | 0 | 57.5 | 4.95 | 0 | 4.59 | 2 | 0 | 2 | | |
| 51 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 55 | 1 | 0 | 1 | 60.0 | 0 | 60.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 56 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 57 | 2 | 0 | 2 | 57.0 | 0 | 57.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | |
| 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 59 | 0 | 1 | 1 | 0 | 66.0 | 66.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | |

Table 5 (cont'd)

Sebastes brevispinis1979 Research - Area 5A -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 41 | - | 1 | 1 | 11 | - | 1 | 1 | - | 45.0 | 45.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 42 | - | 0 | 0 | 12 | - | 0 | 0 | - | 0 | 0 | - | 0. | 0 | - | 0 | 0 |
| 43 | 2 | 1 | 3 | 13 | - | 3 | 3 | - | 46.0 | 46.0 | - | 3.46 | 3.46 | - | 3 | 3 |
| 44 | 4 | 8 | 12 | 14 | 3 | 2 | 5 | 46.3 | 49.5 | 47.6 | 2.08 | 4.95 | 3.36 | 3 | 2 | 5 |
| 45 | 5 | 3 | 8 | 15 | 2 | 7 | 9 | 48.5 | 49.1 | 49.0 | 0.71 | 2.67 | 2.35 | 2 | 7 | 9 |
| 46 | 10 | 5 | 15 | 16 | 2 | 1 | 3 | 47.5 | 50.0 | 48.3 | 3.54 | 0.00 | 2.89 | 2 | 1 | 3 |
| 47 | 12 | 4 | 16 | 17 | 2 | 3 | 5 | 51.0 | 53.0 | 52.2 | 1.41 | 2.65 | 2.28 | 2 | 3 | 5 |
| 48 | 7 | 8 | 15 | 18 | 1 | 3 | 4 | 45.0 | 53.7 | 51.5 | 0.00 | 1.53 | 4.51 | 1 | 3 | 4 |
| 49 | 4 | 12 | 16 | 19 | 4 | 9 | 13 | 50.5 | 50.7 | 50.6 | 3.32 | 2.60 | 2.69 | 4 | 9 | 13 |
| 50 | 22 | 18 | 40 | 20 | 1 | 3 | 4 | 49.0 | 53.0 | 52.0 | 0.00 | 1.00 | 2.16 | 1 | 3 | 4 |
| 51 | 7 | 15 | 22 | 21 | 4 | 6 | 10 | 52.0 | 52.0 | 52.0 | 3.37 | 1.41 | 2.21 | 0 | 2 | 2 |
| 52 | 9 | 13 | 22 | 22 | 6 | 3 | 9 | 51.8 | 52.0 | 51.9 | 1.60 | 1.00 | 1.36 | 0 | 2 | 2 |
| 53 | 14 | 24 | 38 | 23 | 6 | 5 | 11 | 53.0 | 51.8 | 52.5 | 2.53 | 1.64 | 2.16 | 2 | 4 | 6 |
| 54 | 10 | 18 | 28 | 24 | 3 | 6 | 9 | 52.7 | 55.0 | 54.2 | 2.08 | 2.19 | 2.33 | 0 | 3 | 3 |
| 55 | 9 | 18 | 27 | 25 | 1 | 8 | 9 | 55.0 | 54.0 | 54.1 | 0.00 | 2.93 | 2.76 | 0 | 2 | 2 |
| 56 | 6 | 8 | 14 | 26 | 2 | 3 | 5 | 53.0 | 54.0 | 53.6 | 2.83 | 1.00 | 1.67 | 1 | 2 | 3 |
| 57 | 3 | 5 | 8 | 27 | 3 | 7 | 10 | 54.3 | 56.4 | 55.8 | 2.52 | 3.87 | 3.52 | 0 | 3 | 3 |
| 58 | - | 4 | 4 | 28 | 3 | 5 | 8 | 53.7 | 53.2 | 53.4 | 3.21 | 1.30 | 2.00 | 1 | 3 | 4 |
| 59 | - | 5 | 5 | 29 | 0 | 4 | 4 | 0 | 55.5 | 55.5 | 0 | 1.91 | 1.91 | 0 | 2 | 2 |
| 60 | - | 4 | 4 | 30 | 4 | 6 | 10 | 54.3 | 56.2 | 55.4 | 1.26 | 1.94 | 1.90 | 0 | 4 | 4 |
| 61 | - | 1 | 1 | 31 | 1 | 2 | 3 | 50.0 | 54.0 | 52.7 | 0.00 | 1.41 | 2.52 | 1 | 1 | 2 |
| 62 | - | 1 | 1 | 32 | 2 | 3 | 5 | 53.5 | 56.0 | 55.0 | 3.54 | 1.73 | 2.55 | 0 | 3 | 3 |
| | | | | 33 | 3 | 2 | 5 | 52.3 | 54.0 | 53.0 | 2.08 | 2.83 | 2.24 | 0 | 2 | 2 |
| | | | | 34 | 3 | 1 | 4 | 53.3 | 56.0 | 54.0 | 0.58 | 0.00 | 1.41 | 1 | 1 | 2 |
| | | | | 35 | 1 | 1 | 2 | 53.0 | 56.0 | 54.5 | 0.00 | 0.00 | 2.12 | 0 | 1 | 1 |
| | | | | 36 | 1 | 3 | 4 | 56.0 | 60.0 | 59.0 | 0.00 | 1.00 | 2.16 | 0 | 2 | 2 |
| | | | | 37 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| | | | | 38 | 4 | 2 | 6 | 54.5 | 59.0 | 56.0 | 1.00 | 1.41 | 2.53 | 2 | 1 | 3 |
| | | | | 39 | 0 | 1 | 1 | 0 | 57.0 | 57.0 | 0 | 0.00 | 0.00 | - | 1 | 1 |

| | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|
| 36 | 1 | 3 | 4 | 56.0 | 60.0 | 59.0 | 0.00 | 1.00 | 2.10 | - | - |
| 37 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 0 | 0 |
| 38 | 4 | 2 | 6 | 54.5 | 59.0 | 56.0 | 1.00 | 1.41 | 2.53 | 2 | 1 |
| 39 | 0 | 1 | 1 | 0 | 57.0 | 57.0 | 0 | 0.00 | 0.00 | - | 1 |

Table 5 (cont'd)

S. brevispinis

1979 Research - Area 5A - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | | |
|------------------------|-------------------------------|---|---|------------------------|--------------------------|------|------|-----------------|------|------|--------------------------|----------|----------------------------|---|---|---|--|
| | M | F | T | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T | |
| | | | | | M | F | T | M | F | T | M | F | T | | | | |
| 40 | 0 | 3 | 3 | 40 | 0 | 59.0 | 59.0 | 0 | 1.00 | 1.00 | - | 3 | 3 | 3 | - | - | |
| 41 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 42 | 0 | 1 | 1 | 42 | 0 | 55.0 | 55.0 | 0 | 0.00 | 0.00 | - | 1 | 1 | 1 | - | - | |
| 43 | 1 | - | 1 | 43 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | - | - | - | - | - | - | |
| 44 | 1 | - | 1 | 44 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | - | - | - | - | - | - | |
| Totals | | | | 65 106 171 | | | | | | | | 23 75 98 | | | | | |

Table 5 (cont'd)

Sebastes brevispinis

1977 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 41 | - | 1 | 1 | 14 | | | | | | | | | | 2 | 1 | 3 |
| 42 | - | 0 | 0 | 15 | - | 1 | 1 | - | 51.0 | 51.0 | - | 0.00 | 0.00 | 1 | 1 | 2 |
| 43 | - | 0 | 0 | 16 | 1 | 2 | 3 | 49.0 | 51.5 | 50.7 | 0.00 | 0.71 | 1.53 | 2 | 3 | 5 |
| 44 | - | 0 | 0 | 17 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 8 | 4 | 12 |
| 45 | 1 | 0 | 1 | 18 | 1 | 0 | 1 | 45.0 | 0 | 45.0 | 0.00 | 0 | 0.00 | 4 | 1 | 5 |
| 46 | 2 | 0 | 2 | 19 | 0 | 3 | 3 | 0 | 50.3 | 50.3 | 0 | 3.21 | 3.21 | 5 | 6 | 11 |
| 47 | 4 | 1 | 5 | 20 | 2 | 3 | 5 | 50.5 | 50.0 | 50.2 | 2.12 | 2.00 | 1.79 | 7 | 6 | 13 |
| 48 | 0 | 4 | 4 | 21 | 3 | 1 | 4 | 50.0 | 49.0 | 49.8 | 0.00 | 0.00 | 0.50 | 3 | 1 | 4 |
| 49 | 7 | 2 | 9 | 22 | 3 | 1 | 4 | 51.7 | 51.0 | 51.5 | 0.58 | 0.00 | 0.58 | 3 | 1 | 4 |
| 50 | 9 | 6 | 15 | 23 | 3 | 3 | 6 | 53.3 | 54.7 | 54.0 | 2.52 | 7.64 | 5.14 | 3 | 3 | 6 |
| 51 | 7 | 4 | 11 | 24 | 0 | 3 | 3 | 0 | 53.3 | 53.3 | 0 | 2.52 | 2.52 | 0 | 3 | 3 |
| 52 | 9 | 5 | 14 | 25 | 2 | 5 | 7 | 53.0 | 56.6 | 55.6 | 0.00 | 2.41 | 2.64 | 2 | 5 | 7 |
| 53 | 13 | 8 | 21 | 26 | 2 | 0 | 2 | 56.5 | 0 | 56.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| 54 | 11 | 7 | 18 | 27 | 2 | 4 | 6 | 55.5 | 56.3 | 56.0 | 0.71 | 0.96 | 0.89 | 2 | 4 | 6 |
| 55 | 11 | 7 | 18 | 28 | 3 | 3 | 6 | 52.7 | 55.3 | 54.0 | 3.21 | 2.31 | 2.90 | 3 | 3 | 6 |
| 56 | 10 | 11 | 21 | 29 | 2 | 4 | 6 | 53.0 | 56.5 | 55.3 | 1.41 | 1.73 | 2.34 | 2 | 4 | 6 |
| 57 | 5 | 9 | 14 | 30 | 8 | 5 | 13 | 52.4 | 55.4 | 53.5 | 2.26 | 1.82 | 2.54 | 8 | 5 | 13 |
| 58 | 1 | 13 | 14 | 31 | 1 | 3 | 4 | 49.0 | 55.3 | 53.8 | 0.00 | 2.52 | 3.77 | 1 | 3 | 4 |
| 59 | 0 | 6 | 6 | 32 | 0 | 5 | 5 | 0 | 55.2 | 55.2 | 0 | 1.30 | 1.30 | 0 | 5 | 5 |
| 60 | 1 | 8 | 9 | 33 | 1 | 7 | 8 | 51.0 | 57.7 | 56.9 | 0.00 | 3.09 | 3.72 | 1 | 7 | 8 |
| 61 | 0 | 3 | 3 | 34 | 2 | 3 | 5 | 53.5 | 58.7 | 56.6 | 0.71 | 0.58 | 2.88 | 2 | 3 | 5 |
| 62 | 1 | 2 | 3 | 35 | 6 | 2 | 8 | 55.0 | 60.5 | 56.4 | 1.10 | 0.71 | 2.72 | 6 | 2 | 8 |
| 63 | - | 1 | 1 | 36 | 2 | 2 | 4 | 53.0 | 58.0 | 55.5 | 1.41 | 1.41 | 3.11 | 2 | 2 | 4 |
| 64 | - | 1 | 1 | 37 | 1 | 3 | 4 | 54.0 | 58.7 | 57.5 | 0.00 | 1.15 | 2.52 | 1 | 3 | 4 |
| | | | | 38 | 2 | 3 | 5 | 55.0 | 56.0 | 55.6 | 2.83 | 0.00 | 1.52 | 2 | 3 | 5 |
| | | | | 39 | 0 | 1 | 1 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| Total | 92 | 99 | 191 | | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|----|---|---|---|---|------|------|---|------|------|---|---|---|
| 38 | 2 | 3 | 5 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 39 | 0 | 1 | 1 | 0 | | | | | | | | |

| | | | |
|-------|----|----|-----|
| Total | 92 | 99 | 191 |
|-------|----|----|-----|

Table 5 (cont'd)

S. brevispinis

1977 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|---------------------|-------------------------------|----|-----|------------------------|--------------------------|------|------|-----------------|------|----|--------------------------|-----|----------------------------|---|---|
| | | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | |
| 40 | 1 | 4 | 5 | 55.0 | 56.0 | 55.8 | 0.00 | 2.16 | 1.92 | 1 | 4 | 5 | | | |
| 41 | 2 | 1 | 3 | 55.0 | 55.0 | 55.0 | 2.83 | 0.00 | 2.00 | 2 | 1 | 3 | | | |
| 42 | 2 | 1 | 3 | 55.0 | 59.0 | 56.3 | 1.41 | 0.00 | 2.52 | 2 | 1 | 3 | | | |
| 43 | 2 | 2 | 4 | 56.5 | 59.5 | 58.0 | 0.71 | 2.12 | 2.16 | 2 | 2 | 4 | | | |
| 44 | 0 | 1 | 1 | 0 | 57.0 | 57.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 45 | 4 | 1 | 5 | 54.0 | 58.0 | 54.8 | 2.71 | 0.00 | 2.95 | 4 | 1 | 5 | | | |
| 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 47 | 1 | 2 | 3 | 54.0 | 59.5 | 57.7 | 0.00 | 2.12 | 3.51 | 1 | 2 | 3 | | | |
| 48 | 0 | 1 | 1 | 0 | 60.0 | 60.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 49 | 0 | 1 | 1 | 0 | 59.0 | 59.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 50 | 1 | 4 | 5 | 54.0 | 60.8 | 59.4 | 0.00 | 2.22 | 3.58 | 1 | 4 | 5 | | | |
| 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 52 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 56 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 57 | 1 | 0 | 1 | 60.0 | 0 | 60.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 58 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 59 | 1 | 0 | 1 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 60 | 1 | 0 | 1 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 67 | 1 | 0 | 1 | 62.0 | 0 | 62.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 80 | - | 1 | 1 | - | 62.0 | 62.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| Totals | 68 | 86 | 154 | | | | | | | 92 | 99 | 191 | | | |

Table 5 (cont'd)

Sebastes brevispinis1978 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 40 | - | 1 | 1 | 11 | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| 41 | - | 0 | 0 | 12 | - | - | - | - | - | - | - | - | - | 1 | 2 | 3 |
| 42 | - | 0 | 0 | 13 | - | - | - | - | - | - | - | - | - | 0 | 2 | 2 |
| 43 | 2 | 1 | 3 | 14 | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 44 | 2 | 0 | 2 | 15 | - | - | - | - | - | - | - | - | - | 2 | 2 | 4 |
| 45 | 0 | 1 | 1 | 16 | - | - | - | - | - | - | - | - | - | 5 | 5 | 10 |
| 46 | 1 | 1 | 2 | 17 | - | - | - | - | - | - | - | - | - | 2 | 3 | 5 |
| 47 | 2 | 1 | 3 | 18 | - | - | - | - | - | - | - | - | - | 5 | 4 | 9 |
| 48 | 2 | 1 | 3 | 19 | - | - | - | - | - | - | - | - | - | 9 | 6 | 15 |
| 49 | 3 | 1 | 4 | 20 | - | - | - | - | - | - | - | - | - | 14 | 12 | 26 |
| 50 | 9 | 5 | 14 | 21 | 2 | 2 | 4 | 53.0 | 56.5 | 54.8 | 1.41 | 0.71 | 2.22 | 2 | 2 | 4 |
| 51 | 11 | 6 | 17 | 22 | 2 | 0 | 2 | 52.5 | 0 | 52.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 52 | 9 | 5 | 14 | 23 | 1 | 2 | 3 | 50.0 | 56.5 | 54.3 | 0.00 | 2.12 | 4.04 | 1 | 2 | 3 |
| 53 | 13 | 4 | 17 | 24 | 1 | 3 | 4 | 51.0 | 56.0 | 54.8 | 0.00 | 1.73 | 2.87 | 1 | 3 | 4 |
| 54 | 17 | 5 | 22 | 25 | 4 | 3 | 7 | 51.8 | 58.0 | 54.4 | 1.71 | 0.00 | 3.55 | 4 | 3 | 7 |
| 55 | 8 | 10 | 18 | 26 | 2 | 4 | 6 | 51.0 | 57.8 | 55.5 | 1.41 | 1.50 | 3.73 | 2 | 4 | 6 |
| 56 | 7 | 8 | 15 | 27 | 2 | 3 | 5 | 56.0 | 57.0 | 56.6 | 1.41 | 1.73 | 1.52 | 2 | 3 | 5 |
| 57 | 11 | 13 | 24 | 28 | 2 | 1 | 3 | 54.0 | 57.0 | 55.0 | 0.00 | 0.00 | 1.73 | 2 | 1 | 3 |
| 58 | 2 | 12 | 14 | 29 | 5 | 2 | 7 | 53.4 | 56.5 | 54.3 | 0.89 | 0.71 | 1.70 | 5 | 2 | 7 |
| 59 | 1 | 8 | 9 | 30 | 4 | 6 | 10 | 53.3 | 57.2 | 55.6 | 2.22 | 1.83 | 2.76 | 4 | 6 | 10 |
| 60 | 1 | 6 | 7 | 31 | 1 | 3 | 4 | 53.0 | 56.3 | 55.5 | 0.00 | 1.15 | 1.91 | 1 | 3 | 4 |
| 61 | - | 5 | 5 | 32 | 1 | 4 | 5 | 56.0 | 57.8 | 57.4 | 0.00 | 2.50 | 2.30 | 1 | 4 | 5 |
| 62 | - | 1 | 1 | 33 | 0 | 3 | 3 | 0 | 61.7 | 61.7 | 0 | 2.89 | 2.89 | 0 | 3 | 3 |
| 63 | - | 1 | 1 | 34 | 0 | 1 | 1 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 64 | - | 0 | 0 | 35 | 2 | 2 | 4 | 54.5 | 57.0 | 55.8 | 0.71 | 1.41 | 1.71 | 2 | 2 | 4 |
| 65 | - | 1 | 1 | 36 | 3 | 1 | 4 | 54.0 | 60.0 | 55.5 | 1.73 | 0.00 | 3.32 | 3 | 1 | 4 |

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 62 | - | 1 | 1 | 33 | 0 | 3 | 3 | 0 | 61.7 | 61.7 | 0 | 2.89 | 2.89 | 0 | 3 | 3 |
| 63 | - | 1 | 1 | 34 | 0 | 1 | 1 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 64 | - | 0 | 0 | 35 | 2 | 2 | 4 | 54.5 | 57.0 | 55.8 | 0.71 | 1.41 | 1.71 | 2 | 2 | 4 |
| 65 | - | 1 | 1 | 36 | 3 | 1 | 4 | 54.0 | 60.0 | 55.5 | 1.73 | 0.00 | 3.32 | 3 | 1 | 4 |

Table 5 (cont'd)

Table 5 (cont'd)

S. brevispinis

1978 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | |
|---------------------|-------------------------------|----|-----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|-----|----------------------------|---|---|--|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| | | | | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 40 | 2 | 1 | 3 | 40 | 54.5 | 61.0 | 56.7 | 0.71 | 0.00 | 3.79 | 2 | 1 | 3 | | | | |
| 41 | 1 | 0 | 1 | 41 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 42 | 3 | 1 | 4 | 42 | 54.0 | 61.0 | 55.8 | 2.65 | 0.00 | 4.11 | 3 | 1 | 4 | | | | |
| 43 | 2 | 5 | 7 | 43 | 54.5 | 59.2 | 57.9 | 0.71 | 1.48 | 2.61 | 2 | 5 | 7 | | | | |
| 44 | 0 | 1 | 1 | 44 | 0 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 45 | 0 | 1 | 1 | 45 | 55.0 | 55.0 | 55.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 46 | 1 | 1 | 2 | 46 | 54.0 | 62.0 | 58.0 | 0.00 | 0.00 | 5.66 | 1 | 1 | 2 | | | | |
| 47 | 2 | 0 | 2 | 47 | 54.0 | 0 | 54.0 | 4.24 | 0 | 4.24 | 2 | 0 | 2 | | | | |
| 48 | 1 | 0 | 1 | 48 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 49 | 1 | 0 | 1 | 49 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 50 | 1 | 0 | 1 | 50 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 51 | 1 | 0 | 1 | 51 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 52 | 1 | 0 | 1 | 52 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 53 | 0 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 54 | 1 | 0 | 1 | 54 | 59.0 | 0 | 59.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 55 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 56 | 0 | 0 | 0 | 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 57 | 1 | 0 | 1 | 57 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 58 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 59 | 1 | 1 | 2 | 59 | 57.0 | 60.0 | 58.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | | | |
| 60 | 0 | 1 | 1 | 60 | 59.0 | 59.0 | 59.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 61 | 1 | 0 | 1 | 61 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 62 | 1 | 0 | 1 | 62 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 63 | 0 | 0 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 64 | 0 | 0 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 65 | 0 | 0 | 0 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 66 | 1 | 0 | 1 | 66 | 60.0 | 0 | 60.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 80 | - | 1 | 1 | - | 63.0 | 63.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 | | | | |
| Totals | 61 | 59 | 120 | | | | | | | | 101 | 97 | 198 | | | | |

Table 5 (cont'd)

Sebastes brevispinis1979 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|---|------|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | - | 1 | 12 | - | 1 | 42.0 | - | 42.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 42 | 1 | - | 1 | 12 | 1 | - | 1 | 42.0 | - | 42.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 43 | 0 | - | 0 | 13 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 44 | 0 | - | 0 | 14 | 2 | - | 2 | 46.0 | - | 46.0 | 1.41 | - | 1.41 | 2 | - | 2 |
| 45 | 1 | - | 1 | 15 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 46 | 4 | 1 | 5 | 16 | 2 | 1 | 3 | 48.5 | 46.0 | 47.7 | 3.54 | 0.00 | 2.89 | 2 | 1 | 3 |
| 47 | 4 | 0 | 4 | 17 | 2 | 1 | 3 | 51.5 | 51.0 | 51.3 | 0.71 | 0.00 | 0.58 | 2 | 1 | 3 |
| 48 | 9 | 0 | 9 | 18 | 2 | 1 | 3 | 46.5 | 49.0 | 47.3 | 0.71 | 0.00 | 1.53 | 2 | 1 | 3 |
| 49 | 11 | 2 | 13 | 19 | 4 | 0 | 4 | 47.3 | 0 | 47.3 | 1.26 | 0 | 1.26 | 4 | 0 | 4 |
| 50 | 7 | 2 | 9 | 20 | 3 | 2 | 5 | 51.0 | 50.0 | 50.6 | 3.46 | 0.00 | 2.51 | 3 | 2 | 5 |
| 51 | 15 | 3 | 18 | 21 | 1 | 0 | 1 | 46.0 | 0 | 46.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 52 | 9 | 3 | 12 | 22 | 5 | 0 | 5 | 48.8 | 0 | 48.8 | 1.30 | 0 | 1.30 | 5 | 0 | 5 |
| 53 | 4 | 5 | 9 | 23 | 4 | 1 | 5 | 51.3 | 52.0 | 51.4 | 2.50 | 0.00 | 2.19 | 4 | 1 | 5 |
| 54 | 7 | 7 | 14 | 24 | 1 | 2 | 3 | 48.0 | 54.5 | 52.3 | 0.00 | 0.71 | 3.79 | 1 | 2 | 3 |
| 55 | 2 | 2 | 4 | 25 | 5 | 1 | 6 | 51.2 | 51.0 | 51.2 | 2.59 | 0.00 | 2.32 | 5 | 1 | 6 |
| 56 | - | 1 | 1 | 26 | 1 | 2 | 3 | 52.0 | 52.5 | 52.3 | 0.00 | 0.71 | 0.58 | 1 | 2 | 3 |
| | | | | 27 | 5 | 2 | 7 | 50.0 | 50.5 | 50.1 | 0.71 | 2.12 | 1.07 | 5 | 2 | 7 |
| | | | | 28 | 4 | 1 | 5 | 50.8 | 53.0 | 51.2 | 2.50 | 0.00 | 2.39 | 4 | 1 | 5 |
| | | | | 29 | 6 | 2 | 8 | 50.5 | 53.0 | 51.1 | 1.52 | 0.00 | 1.73 | 6 | 2 | 8 |
| | | | | 30 | 5 | 2 | 7 | 50.6 | 55.0 | 51.9 | 1.67 | 1.41 | 2.61 | 5 | 2 | 7 |
| | | | | 31 | 5 | 2 | 7 | 50.6 | 52.5 | 51.1 | 2.41 | 2.12 | 2.34 | 5 | 2 | 7 |
| | | | | 32 | 1 | 1 | 2 | 52.0 | 54.0 | 53.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 |
| | | | | 33 | 4 | 3 | 7 | 52.8 | 54.0 | 53.3 | 1.50 | 0.00 | 1.25 | 4 | 3 | 7 |
| | | | | 34 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 35 | 0 | 1 | 1 | 0 | 53.0 | 53.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 36 | 1 | 0 | 1 | 49.0 | 0 | 49.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 37 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0 | 0 | 0 | 0 |

Table 5 (cont'd)

S. brevispinis

1979 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|---|---|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 40 | 3 | 1 | 4 | 40 | 52.3 | 55.0 | 53.0 | 2.31 | 0.00 | 2.31 | 3 | 1 | 4 | | | | |
| 41 | 1 | - | 1 | 41 | 51.0 | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 42 | 0 | - | 0 | 42 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 43 | 0 | - | 0 | 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | 1 | - | 1 | 44 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| Totals | 71 | 26 | 97 | | | | | | | | 71 | 26 | 97 | | | | |

Table 5 (cont'd)

Sebastes brevispinis1979 Research - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|---------------------|-------------------------------|-----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 41 | 2 | 1 | 3 | 16 | - | 1 | 1 | - | 51.0 | 51.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 42 | 2 | 3 | 5 | 17 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 43 | 2 | 2 | 4 | 18 | 2 | 1 | 3 | 51.0 | 51.0 | 51.0 | 1.41 | 0.00 | 1.00 | 2 | 1 | 3 |
| 44 | 2 | 5 | 7 | 19 | 0 | 2 | 2 | 0 | 53.0 | 53.0 | 0 | 2.83 | 2.83 | 0 | 2 | 2 |
| 45 | 5 | 3 | 8 | 20 | 1 | 0 | 1 | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 46 | 0 | 4 | 4 | 21 | 6 | 7 | 13 | 51.0 | 53.3 | 52.2 | 2.10 | 2.75 | 2.65 | 1 | 3 | 4 |
| 47 | 4 | 1 | 5 | 22 | 1 | 2 | 3 | 52.0 | 54.5 | 53.7 | 0.00 | 4.95 | 3.79 | 0 | 2 | 2 |
| 48 | 6 | 5 | 11 | 23 | 8 | 5 | 13 | 51.5 | 56.2 | 53.3 | 1.77 | 2.68 | 3.15 | 1 | 2 | 3 |
| 49 | 8 | 2 | 10 | 24 | 6 | 6 | 12 | 52.2 | 55.3 | 53.8 | 3.06 | 1.63 | 2.86 | 3 | 2 | 5 |
| 50 | 9 | 3 | 12 | 25 | 2 | 5 | 7 | 55.5 | 57.6 | 57.0 | 2.12 | 3.21 | 2.94 | 0 | 2 | 2 |
| 51 | 17 | 9 | 26 | 26 | 4 | 7 | 11 | 51.8 | 56.3 | 54.6 | 1.50 | 2.50 | 3.11 | 0 | 2 | 2 |
| 52 | 12 | 8 | 20 | 27 | 4 | 3 | 7 | 53.3 | 55.0 | 54.0 | 2.99 | 2.65 | 2.77 | 2 | 0 | 2 |
| 53 | 9 | 4 | 13 | 28 | 3 | 3 | 6 | 54.3 | 60.7 | 57.5 | 0.58 | 1.15 | 3.56 | 1 | 2 | 3 |
| 54 | 17 | 5 | 22 | 29 | 6 | 5 | 11 | 54.8 | 55.8 | 55.3 | 1.47 | 0.84 | 1.27 | 3 | 3 | 6 |
| 55 | 12 | 10 | 22 | 30 | 6 | 5 | 11 | 55.2 | 57.0 | 56.0 | 1.94 | 2.00 | 2.10 | 5 | 3 | 8 |
| 56 | 12 | 13 | 25 | 31 | 1 | 4 | 5 | 56.0 | 56.3 | 56.2 | 0.00 | 0.50 | 0.45 | 1 | 2 | 3 |
| 57 | 9 | 10 | 19 | 32 | 2 | 3 | 5 | 54.5 | 57.3 | 56.2 | 4.95 | 4.73 | 4.44 | 1 | 3 | 4 |
| 58 | 5 | 13 | 18 | 33 | 0 | 2 | 2 | 0 | 58.5 | 58.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 |
| 59 | 3 | 11 | 14 | 34 | 2 | 3 | 5 | 54.5 | 60.0 | 57.8 | 4.95 | 1.00 | 3.96 | 1 | 2 | 3 |
| 60 | 3 | 9 | 12 | 35 | 2 | 2 | 4 | 56.0 | 58.0 | 57.0 | 1.41 | 1.41 | 1.63 | 2 | 2 | 4 |
| 61 | 2 | 6 | 8 | 36 | 1 | 1 | 2 | 52.0 | 59.0 | 55.5 | 0.00 | 0.00 | 4.95 | 1 | 1 | 2 |
| 62 | 1 | 2 | 3 | 37 | 4 | 1 | 5 | 56.8 | 60.0 | 57.4 | 2.87 | 0.00 | 2.88 | 2 | 1 | 3 |
| 63 | - | 1 | 1 | 38 | 4 | 4 | 8 | 54.5 | 59.0 | 56.8 | 3.42 | 1.83 | 3.49 | 3 | 3 | 6 |
| Total | 142 | 130 | 272 | 39 | 2 | 3 | 5 | 54.5 | 58.3 | 56.8 | 0.71 | 0.58 | 2.17 | 2 | 2 | 4 |

63 - 1 1
 Total 142 130 272

39 2 3 5 54.5 58.3 56.8 0.11 0.00
 39 2 3 5 54.5 58.3 56.8 0.11 0.00

Table 5 (cont'd)

S. brevispinis

1979 Research - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------|-------------------------------|---|---|----------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|---|---|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 40 | 3 | 0 | 3 | 40 | 56.7 | 0 | 56.7 | 0.58 | 0 | 0.58 | 2 | 0 | 2 | | | | |
| 41 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 42 | 2 | 2 | 4 | 42 | 56.5 | 55.5 | 56.0 | 0.71 | 4.95 | 2.94 | 2 | 0 | 2 | | | | |
| 43 | 2 | 0 | 2 | 43 | 57.5 | 0 | 57.5 | 0.71 | 0 | 0.71 | 1 | 0 | 1 | | | | |
| 44 | 2 | 0 | 2 | 44 | 57.5 | 0 | 57.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 | | | | |
| 45 | 0 | 2 | 2 | 45 | 59.0 | 59.0 | 0 | 0 | 2.83 | 2.83 | 0 | 2 | 2 | | | | |
| 46 | 0 | 1 | 1 | 46 | 61.0 | 61.0 | 0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 47 | 1 | 0 | 1 | 47 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 48 | 0 | 2 | 2 | 48 | 58.5 | 58.5 | 0 | 0 | 2.12 | 2.12 | 0 | 1 | 1 | | | | |
| 49 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 50 | 2 | 2 | 4 | 50 | 55.5 | 60.0 | 57.8 | 0.71 | 2.83 | 3.10 | 0 | 1 | 1 | | | | |
| 51 | 0 | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 52 | 1 | 0 | 1 | 52 | 57.0 | 0 | 57.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 53 | 1 | 0 | 1 | 53 | 59.0 | 0 | 59.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 54 | 0 | 1 | 1 | 54 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 55 | 2 | 0 | 2 | 55 | 54.5 | 0 | 54.5 | 0.71 | 0 | 0.71 | 1 | 0 | 1 | | | | |
| 56 | 0 | 1 | 1 | 56 | 63.0 | 63.0 | 0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 57 | 0 | 0 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 58 | 0 | 1 | 1 | 58 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0.00 | 0 | 0 | 0 | | | | |
| 59 | 0 | 0 | 0 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 60 | 2 | 0 | 2 | 60 | 59.5 | 0 | 59.5 | 2.12 | 0 | 2.12 | 1 | 0 | 1 | | | | |
| 61 | 1 | 0 | 1 | 61 | 60.0 | 0 | 60.0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 | | | | |
| 62 | 1 | 0 | 1 | 62 | 62.0 | 0 | 62.0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 | | | | |
| 63 | 1 | 0 | 1 | 63 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 | | | | |
| 64 | 0 | 0 | 0 | 64 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | | | | |
| 65 | 2 | 1 | 3 | 65 | 60.0 | 60.0 | 60.0 | 2.53 | 0.00 | 2.53 | - | - | - | | | | |
| 66 | 0 | - | 0 | 66 | 0 | 0 | 0 | 0 | - | 0 | - | - | - | | | | |
| 67 | 0 | - | 0 | 67 | 0 | 0 | 0 | 0 | - | 0 | - | - | - | | | | |
| 68 | 1 | - | 1 | 68 | 57.0 | - | 57.0 | 0.00 | - | 0.00 | - | - | - | | | | |
| Totals | | | | 92 | 89 | 181 | | | | | 48 | 51 | 99 | | | | |

Table 5 (cont'd)

Sebastes brevispinis

1978 Commercial - Area 5C -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 44 | - | 2 | 2 | 11 | - | 2 | 2 | - | 45.0 | 45.0 | - | 1.41 | 1.41 | - | 2 | 2 |
| 45 | - | 1 | 1 | 12 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| 46 | 1 | 1 | 2 | 13 | 2 | 2 | 4 | 48.0 | 46.0 | 47.0 | 1.41 | 1.41 | 1.63 | 2 | 2 | 4 |
| 47 | 1 | 2 | 3 | 14 | 1 | 1 | 2 | 48.0 | 48.0 | 48.0 | 0.00 | 0.00 | 0.00 | 1 | 1 | 2 |
| 48 | 10 | 2 | 12 | 15 | 2 | 0 | 2 | 49.5 | 0 | 49.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| 49 | 5 | 1 | 6 | 16 | 0 | 2 | 2 | 0 | 47.5 | 47.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 |
| 50 | 9 | 2 | 11 | 17 | 2 | 1 | 3 | 49.0 | 44.0 | 47.3 | 1.41 | 0.00 | 3.06 | 2 | 1 | 3 |
| 51 | 17 | 3 | 20 | 18 | 1 | 1 | 2 | 52.0 | 49.0 | 50.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 |
| 52 | 30 | 7 | 37 | 19 | 3 | 2 | 5 | 50.0 | 52.5 | 51.0 | 1.73 | 0.71 | 1.87 | 3 | 2 | 5 |
| 53 | 12 | 14 | 26 | 20 | 4 | 5 | 9 | 59.8 | 51.2 | 50.6 | 2.06 | 0.84 | 1.59 | 4 | 5 | 9 |
| 54 | 12 | 10 | 22 | 21 | 2 | 1 | 3 | 49.5 | 53.0 | 50.7 | 0.71 | 0.00 | 2.08 | 2 | 1 | 3 |
| 55 | 6 | 20 | 26 | 22 | 7 | 0 | 7 | 52.0 | 0 | 52.0 | 1.29 | 0 | 1.29 | 7 | 0 | 7 |
| 56 | 2 | 1 | 3 | 23 | 2 | 3 | 5 | 50.0 | 53.3 | 52.0 | 2.83 | 2.89 | 3.08 | 2 | 3 | 5 |
| 57 | 2 | 7 | 9 | 24 | 4 | 6 | 10 | 51.0 | 53.5 | 52.5 | 1.41 | 1.76 | 2.01 | 4 | 6 | 10 |
| 58 | 2 | 6 | 8 | 25 | 7 | 4 | 11 | 50.1 | 54.3 | 51.6 | 1.68 | 2.63 | 2.84 | 7 | 4 | 11 |
| 59 | 0 | 3 | 3 | 26 | 5 | 5 | 10 | 51.6 | 54.6 | 53.1 | 1.14 | 2.19 | 2.28 | 5 | 5 | 10 |
| 60 | 2 | 0 | 2 | 27 | 3 | 1 | 4 | 51.3 | 53.0 | 51.8 | 3.06 | 0.00 | 2.63 | 3 | 1 | 4 |
| 61 | - | 0 | 0 | 28 | 8 | 8 | 16 | 52.0 | 53.8 | 52.9 | 2.62 | 0.89 | 2.09 | 8 | 8 | 16 |
| 62 | - | 1 | 1 | 29 | 6 | 5 | 11 | 51.8 | 54.2 | 52.9 | 0.41 | 0.84 | 1.38 | 6 | 5 | 11 |
| | | | | 30 | 8 | 2 | 10 | 51.8 | 56.0 | 52.6 | 1.28 | 1.41 | 2.17 | 8 | 2 | 10 |
| | | | | 31 | 5 | 7 | 12 | 52.0 | 55.6 | 54.1 | 2.12 | 2.44 | 2.87 | 5 | 7 | 12 |
| | | | | 32 | 4 | 6 | 10 | 52.0 | 55.0 | 53.8 | 0.82 | 1.41 | 1.93 | 4 | 6 | 10 |
| | | | | 33 | 4 | 4 | 8 | 51.8 | 56.0 | 53.9 | 0.96 | 1.83 | 2.64 | 4 | 4 | 8 |
| | | | | 34 | 4 | 2 | 6 | 51.8 | 57.0 | 53.5 | 3.86 | 2.83 | 4.23 | 4 | 2 | 6 |
| | | | | 35 | 2 | 2 | 4 | 53.0 | 57.0 | 55.0 | 1.41 | 2.83 | 2.94 | 2 | 2 | 4 |
| | | | | 36 | 3 | 1 | 4 | 54.7 | 52.0 | 54.0 | 3.21 | 0.00 | 2.94 | 3 | 1 | 4 |
| | | | | 37 | 4 | 2 | 6 | 54.0 | 57.0 | 55.0 | 0.82 | 2.83 | 2.10 | 4 | 2 | 6 |
| | | | | 38 | 1 | 1 | 2 | 53.0 | 54.0 | 53.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 |
| | | | | 39 | 1 | 3 | 4 | 52.0 | 56.0 | 55.0 | 0.00 | 1.73 | 2.45 | 1 | 3 | 4 |

| | | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 36 | 3 | 1 | 4 | 54.0 | 54.0 | 54.0 | 0.82 | 2.83 | 2.10 | 4 | 2 | 6 |
| 37 | 4 | 2 | 6 | 54.0 | 57.0 | 55.0 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 |
| 38 | 1 | 1 | 2 | 53.0 | 54.0 | 53.5 | 0.00 | 0.00 | 0.71 | 1 | 3 | 4 |
| 39 | 1 | 3 | 4 | 52.0 | 56.0 | 55.0 | 0.00 | 1.73 | 2.45 | 1 | | |

Total 111 83 194

Table 5 (cont'd)

S. brevispinis

1978 Commercial - Area 5C - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|---------------------|-------------------------------|----|-----|------------------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----------------------------|---|---|---|
| | M | F | T | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| | | | | | M | F | T | M | F | T | M | F | T | | | |
| 40 | 3 | 1 | 4 | 40 | 54.3 | 57.0 | 55.0 | 0.58 | 0.00 | 1.41 | 3 | 1 | 4 | | | |
| 41 | 1 | 0 | 1 | 41 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 42 | 1 | 2 | 3 | 42 | 53.0 | 56.0 | 55.0 | 0.00 | 1.41 | 2.00 | 1 | 2 | 3 | | | |
| 43 | 1 | 0 | 1 | 43 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 44 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 45 | 1 | 0 | 1 | 45 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 46 | 0 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 47 | 0 | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 48 | 1 | 0 | 1 | 48 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 49 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 50 | 1 | 0 | 1 | 50 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 51 | 1 | 0 | 1 | 51 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 52 | 0 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 53 | 0 | 0 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 54 | 2 | 0 | 2 | 54 | 55.0 | 0 | 55.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | | |
| 55 | 1 | 0 | 1 | 55 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 56 | 1 | 0 | 1 | 56 | 60.0 | 0 | 60.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 63 | 1 | 1 | 2 | | 60.0 | 58.0 | 59.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | | | |
| Totals | 110 | 83 | 193 | | | | | | | | 110 | 83 | 193 | | | |

Table 5 (cont'd)

Sebastes brevispinis

1979 Commercial ~ Area 5C ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d M F T | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|---|---|---|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 41 | 1 | - | 1 | 9 | 1 | - | 1 | 41.0 | - | 41.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 42 | 1 | 1 | 2 | 10 | 2 | - | 2 | 47.0 | - | 47.0 | 4.24 | - | 4.24 | 2 | - | 2 |
| 43 | 1 | 1 | 2 | 11 | 2 | 1 | 3 | 45.5 | 46.0 | 45.7 | 0.71 | 0.00 | 0.58 | 2 | 1 | 3 |
| 44 | 2 | 0 | 2 | 12 | 3 | 1 | 4 | 45.3 | 46.0 | 45.5 | 0.58 | 0.00 | 0.58 | 3 | 1 | 4 |
| 45 | 6 | 2 | 8 | 13 | 2 | 4 | 6 | 46.5 | 46.3 | 46.3 | 4.95 | 1.26 | 2.42 | 2 | 4 | 6 |
| 46 | 2 | 4 | 6 | 14 | 4 | 3 | 7 | 48.3 | 45.3 | 47.0 | 2.87 | 2.52 | 2.94 | 4 | 3 | 7 |
| 47 | 0 | 1 | 1 | 15 | 4 | 1 | 5 | 49.0 | 51.0 | 49.4 | 3.37 | 0.00 | 3.05 | 4 | 1 | 5 |
| 48 | 4 | 2 | 6 | 16 | 5 | 1 | 6 | 47.2 | 47.0 | 47.3 | 3.90 | 0.00 | 3.49 | 5 | 1 | 6 |
| 49 | 3 | 2 | 5 | 17 | 3 | 2 | 5 | 49.7 | 45.5 | 48.0 | 2.08 | 4.95 | 3.67 | 3 | 2 | 5 |
| 50 | 16 | 1 | 17 | 18 | 5 | 0 | 5 | 49.0 | 0 | 49.0 | 2.24 | 0 | 2.24 | 5 | 0 | 5 |
| 51 | 4 | 1 | 5 | 19 | 0 | 1 | 1 | 50.0 | 50.0 | 50.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 52 | 10 | 0 | 10 | 20 | 2 | 1 | 3 | 49.5 | 54.0 | 51.0 | 0.71 | 0.00 | 2.65 | 2 | 1 | 3 |
| 53 | 7 | 1 | 8 | 21 | 3 | 3 | 6 | 51.3 | 53.7 | 52.5 | 1.53 | 4.16 | 3.08 | 3 | 3 | 6 |
| 54 | 3 | 5 | 8 | 22 | 5 | 3 | 8 | 53.6 | 54.0 | 53.8 | 1.82 | 1.00 | 1.49 | 5 | 3 | 8 |
| 55 | 2 | 4 | 6 | 23 | 5 | 2 | 7 | 51.2 | 54.5 | 52.1 | 1.92 | 0.71 | 2.27 | 5 | 2 | 7 |
| 56 | 3 | 3 | 6 | 24 | 5 | 1 | 6 | 51.6 | 57.0 | 52.5 | 1.67 | 0.00 | 2.66 | 5 | 1 | 6 |
| 57 | 0 | 2 | 2 | 25 | 2 | 2 | 4 | 52.0 | 55.5 | 53.8 | 1.41 | 0.71 | 2.22 | 2 | 2 | 4 |
| 58 | 1 | 1 | 2 | 26 | 2 | 1 | 3 | 52.5 | 62.0 | 55.7 | 0.71 | 0.00 | 5.51 | 2 | 1 | 3 |
| 59 | - | 0 | 0 | 27 | 2 | 2 | 4 | 51.0 | 55.0 | 53.0 | 1.41 | 1.41 | 2.58 | 2 | 2 | 4 |
| 60 | - | 0 | 0 | 28 | 2 | 0 | 2 | 56.0 | 0 | 56.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 |
| 61 | - | 1 | 1 | 29 | 0 | 1 | 1 | 0 | 56.0 | 56.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 62 | - | 1 | 1 | 30 | 1 | 2 | 3 | 51.0 | 57.5 | 55.3 | 0.00 | 4.95 | 5.13 | 1 | 2 | 3 |
| 63 | - | 0 | 0 | 31 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 64 | - | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 65 | - | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | - | 1 | 1 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 35 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 |
| | | | | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 37 | 0 | 1 | 1 | 0 | 66.0 | 66.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 39 | 0 | 1 | 1 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |

| | | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|------|------|------|------|------|------|------|---|---|---|
| 66 | - | 1 | 1 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 35 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 0 | 0 | 0 | |
| | | | | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 37 | 0 | 1 | 1 | 0 | 66.0 | 66.0 | 0 | 0.00 | 0.00 | 0 | 0 | 0 | 0 |
| | | | | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |

Table 5 (cont'd)

S. brevispinis1979 Commercial - Area 5C - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|-----|---|-----------------|---|------|--------------------------|---|------|----------------------------|----|-----|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 40 | 0 | - | 0 | 40 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 41 | 1 | - | 1 | 41 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 42 | 2 | - | 2 | 42 | 2 | - | 2 | 54.5 | - | 54.5 | 2.12 | - | 2.12 | 2 | - | 2 | |
| 43 | 0 | - | 0 | 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 44 | 0 | - | 0 | 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 45 | 0 | - | 0 | 45 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 46 | 0 | - | 0 | 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 47 | 0 | - | 0 | 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 48 | 0 | - | 0 | 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 49 | 0 | - | 0 | 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 50 | 1 | - | 1 | 50 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| Totals | | | | 66 | 34 | 100 | | | | | | | | 66 | 34 | 100 | |

Table 5 (cont'd)

Sebastes brevispinis1977 Commercial - Area 5D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 40 | 2 | - | 2 | 11 | - | - | - | - | - | - | - | - | - | 1 | 1 | 2 |
| 41 | 2 | 1 | 3 | 12 | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 42 | 2 | 1 | 3 | 13 | - | - | - | - | - | - | - | - | - | 1 | 9 | 10 |
| 43 | 3 | 1 | 4 | 14 | 1 | - | 1 | 44.0 | - | 44.0 | 0.00 | - | 0.00 | 4 | 9 | 13 |
| 44 | 4 | 6 | 10 | 15 | 1 | - | 1 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 10 | 12 | 22 |
| 45 | 7 | 10 | 17 | 16 | 1 | - | 1 | 45.0 | - | 45.0 | 0.00 | - | 0.00 | 11 | 7 | 18 |
| 46 | 5 | 8 | 13 | 17 | 1 | - | 1 | 45.0 | - | 45.0 | 0.00 | - | 0.00 | 13 | 4 | 17 |
| 47 | 16 | 9 | 25 | 18 | 3 | - | 3 | 46.0 | - | 46.0 | 5.20 | - | 5.20 | 16 | 18 | 34 |
| 48 | 16 | 8 | 24 | 19 | 0 | 2 | 2 | 51.0 | 51.0 | 0 | 2.83 | 2.83 | 2.83 | 29 | 15 | 44 |
| 49 | 29 | 11 | 40 | 20 | 0 | 1 | 1 | 52.0 | 52.0 | 0 | 0.00 | 0.00 | 0.00 | 38 | 21 | 59 |
| 50 | 23 | 21 | 44 | 21 | 5 | 3 | 8 | 45.8 | 49.0 | 47.0 | 5.17 | 5.57 | 5.18 | 5 | 3 | 8 |
| 51 | 33 | 16 | 49 | 22 | 2 | 3 | 5 | 54.0 | 50.0 | 51.6 | 7.07 | 5.20 | 5.55 | 2 | 3 | 5 |
| 52 | 26 | 12 | 38 | 23 | 5 | 6 | 11 | 49.6 | 50.8 | 50.3 | 2.41 | 3.13 | 2.76 | 5 | 6 | 11 |
| 53 | 32 | 18 | 50 | 24 | 1 | 3 | 4 | 52.0 | 50.0 | 50.5 | 0.00 | 1.00 | 1.29 | 1 | 3 | 4 |
| 54 | 18 | 17 | 35 | 25 | 11 | 7 | 18 | 51.8 | 52.0 | 51.9 | 3.68 | 3.96 | 3.68 | 11 | 7 | 18 |
| 55 | 16 | 16 | 32 | 26 | 5 | 5 | 10 | 52.4 | 51.8 | 52.1 | 3.36 | 3.42 | 3.21 | 5 | 5 | 10 |
| 56 | 16 | 9 | 25 | 27 | 5 | 2 | 7 | 50.6 | 53.0 | 51.3 | 0.55 | 1.41 | 1.38 | 5 | 2 | 7 |
| 57 | 9 | 5 | 14 | 28 | 8 | 12 | 20 | 51.3 | 54.5 | 53.2 | 1.49 | 2.54 | 2.69 | 8 | 12 | 20 |
| 58 | 5 | 7 | 12 | 29 | 4 | 4 | 8 | 51.8 | 54.3 | 53.0 | 0.96 | 1.26 | 1.69 | 4 | 4 | 8 |
| 59 | 4 | 7 | 11 | 30 | 14 | 12 | 26 | 52.5 | 55.2 | 53.7 | 1.91 | 2.90 | 2.72 | 14 | 12 | 26 |
| 60 | 1 | 1 | 2 | 31 | 0 | 5 | 5 | 0 | 55.2 | 55.2 | 0 | 2.49 | 2.49 | 0 | 5 | 5 |
| 61 | 0 | 1 | 1 | 32 | 5 | 1 | 6 | 53.0 | 56.0 | 53.5 | 2.24 | 0.00 | 2.35 | 5 | 1 | 6 |
| 62 | 0 | 0 | 0 | 33 | 3 | 1 | 4 | 52.7 | 54.0 | 53.0 | 0.58 | 0.00 | 0.82 | 3 | 1 | 4 |
| 63 | 2 | 0 | 2 | 34 | 3 | 1 | 4 | 52.3 | 54.0 | 52.8 | 1.15 | 0.00 | 1.26 | 3 | 1 | 4 |
| 64 | - | 0 | 0 | 35 | 3 | 4 | 7 | 55.0 | 55.0 | 55.0 | 2.00 | 1.41 | 1.53 | 3 | 4 | 7 |
| 65 | - | 0 | 0 | 36 | 5 | 1 | 6 | 55.4 | 56.0 | 55.5 | 3.21 | 0.00 | 2.88 | 5 | 1 | 6 |
| 66 | - | 1 | 1 | 37 | 4 | 2 | 6 | 53.3 | 58.5 | 55.0 | 2.63 | 0.71 | 3.41 | 4 | 2 | 6 |
| | | | | 38 | 3 | 4 | 7 | 51.7 | 56.8 | 54.6 | 1.15 | 1.71 | 3.05 | 3 | 4 | 7 |
| | | | | 39 | 4 | 1 | 5 | 53.5 | 58.0 | 54.4 | 0.58 | 0.00 | 2.07 | 4 | 1 | 5 |

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 66 | - | 1 | 1 | 37 | 4 | 2 | 6 | 53.3 | 58.5 | 55.0 | 2.63 | 0.71 | 3.41 | 4 | 2 | 6 |
| | | | | 38 | 3 | 4 | 7 | 51.7 | 56.8 | 54.6 | 1.15 | 1.71 | 3.05 | 3 | 4 | 7 |
| | | | | 39 | 4 | 1 | 5 | 53.5 | 58.0 | 54.4 | 0.58 | 0.00 | 2.07 | 4 | 1 | 5 |

Total 271 186 457

Table 5 (cont'd)

S. brevispinis

1977 Commercial - Area 5D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|---------------------|-------------------------------|--------------------------|----|------------------------|-----------------|------|------|--------------------------|------|---|---|----|----------------------------|-----|-----|---|
| | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T | M | F | T |
| | | M | F | T | M | F | T | M | F | T | | | | | | |
| 40 | 9 | 6 | 15 | 54.2 | 56.7 | 55.2 | 2.05 | 1.63 | 2.21 | 9 | 6 | 15 | | | | |
| 41 | 5 | 0 | 5 | 55.0 | 0 | 55.0 | 1.58 | 0 | 1.58 | 5 | 0 | 5 | | | | |
| 42 | 1 | 1 | 2 | 54.0 | 56.0 | 55.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | | | | |
| 43 | 4 | 0 | 4 | 55.3 | 0 | 55.3 | 2.22 | 0 | 2.22 | 4 | 0 | 4 | | | | |
| 44 | 1 | 0 | 1 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 45 | 3 | 1 | 4 | 55.0 | 58.0 | 55.8 | 0.00 | 0.00 | 1.50 | 3 | 1 | 4 | | | | |
| 46 | 0 | 1 | 1 | 0 | 61.0 | 61.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 47 | 3 | 0 | 3 | 53.7 | 0 | 53.7 | 2.52 | 0 | 2.52 | 3 | 0 | 3 | | | | |
| 48 | 1 | 0 | 1 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 49 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 50 | 7 | 2 | 9 | 56.3 | 56.0 | 56.2 | 2.29 | 2.83 | 2.22 | 7 | 2 | 9 | | | | |
| 51 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 52 | 4 | 0 | 4 | 55.8 | 0 | 55.8 | 2.06 | 0 | 2.06 | 4 | 0 | 4 | | | | |
| 53 | 2 | 0 | 2 | 57.0 | 0 | 57.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 | | | | |
| 54 | 2 | 0 | 2 | 55.5 | 0 | 55.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | | | | |
| 55 | 1 | 0 | 1 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 56 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 57 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 59 | 4 | 0 | 4 | 53.5 | 0 | 53.5 | 0.58 | 0 | 0.58 | 4 | 0 | 4 | | | | |
| 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 61 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 63 | 2 | 0 | 2 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | | | | |
| 64 | 1 | 0 | 1 | 63.0 | 0 | 63.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 66 | 0 | 1 | 1 | 0 | 58.0 | 58.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 67 | 1 | - | 1 | 57.0 | - | 57.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 68 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 69 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0.00 | 0 | - | 0 | | | | |
| 70 | 1 | - | 1 | 63.0 | - | 63.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| Totals | | | | 157 | 92 | 249 | | | | | | | 271 | 186 | 457 | |

Table 5 (cont'd)

*Sebastes brevispinis*1978 Commercial - Area 5D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 37 | - | 1 | 1 | 14 | - | - | - | - | - | - | - | - | - | 1 | 1 | 2 |
| 38 | - | 0 | 0 | 15 | - | - | - | - | - | - | - | - | - | 0 | 1 | 1 |
| 39 | 1 | 1 | 2 | 16 | - | - | - | - | - | - | - | - | - | 0 | 3 | 3 |
| 40 | 5 | 4 | 9 | 17 | - | - | - | - | - | - | - | - | - | 3 | 1 | 4 |
| 41 | 6 | 2 | 8 | 18 | - | - | - | - | - | - | - | - | - | 4 | 3 | 7 |
| 42 | 4 | 5 | 9 | 19 | - | - | - | - | - | - | - | - | - | 3 | 4 | 7 |
| 43 | 14 | 4 | 18 | 20 | - | - | - | - | - | - | - | - | - | 5 | 4 | 9 |
| 44 | 7 | 3 | 10 | 21 | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 |
| 45 | 4 | 6 | 10 | 22 | 2 | 2 | 4 | 50.5 | 54.0 | 52.3 | 0.71 | 1.41 | 2.22 | 2 | 2 | 4 |
| 46 | 4 | 3 | 7 | 23 | 3 | 1 | 4 | 52.3 | 56.0 | 53.3 | 0.58 | 0.00 | 1.89 | 3 | 1 | 4 |
| 47 | 3 | 3 | 6 | 24 | 1 | 0 | 1 | 49.0 | 0 | 49.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 48 | 8 | 2 | 10 | 25 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 49 | 8 | 2 | 10 | 26 | 1 | 1 | 2 | 49.0 | 55.0 | 52.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 50 | 14 | 3 | 17 | 27 | 0 | 3 | 3 | 0 | 56.3 | 56.3 | 0 | 5.13 | 5.13 | 0 | 3 | 3 |
| 51 | 18 | 2 | 20 | 28 | 2 | 0 | 2 | 52.0 | 0 | 52.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 |
| 52 | 35 | 6 | 41 | 29 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 53 | 22 | 11 | 33 | 30 | 4 | 1 | 5 | 54.5 | 55.0 | 54.6 | 3.11 | 0.00 | 2.70 | 4 | 1 | 5 |
| 54 | 13 | 4 | 17 | 31 | 3 | 2 | 5 | 54.0 | 55.5 | 54.6 | 2.65 | 3.54 | 2.70 | 3 | 2 | 5 |
| 55 | 11 | 19 | 30 | 32 | 6 | 1 | 7 | 53.5 | 53.0 | 53.4 | 1.76 | 0.00 | 1.62 | 6 | 1 | 7 |
| 56 | 9 | 3 | 12 | 33 | 2 | 1 | 3 | 52.7 | 57.0 | 53.8 | 0.58 | 0.00 | 2.22 | 2 | 1 | 3 |
| 57 | 5 | 5 | 10 | 34 | 2 | 0 | 2 | 54.5 | 0 | 54.5 | 3.54 | 0 | 3.54 | 2 | 0 | 2 |
| 58 | 2 | 2 | 4 | 35 | 3 | 2 | 5 | 54.7 | 56.5 | 55.4 | 1.15 | 0.71 | 1.34 | 3 | 2 | 5 |
| 59 | 2 | 3 | 5 | 36 | 2 | 0 | 2 | 52.5 | 0 | 52.5 | 3.54 | 0 | 3.54 | 2 | 0 | 2 |
| 60 | 2 | 0 | 2 | 37 | 2 | 0 | 2 | 54.5 | 0 | 54.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 61 | - | 0 | 0 | 38 | 2 | 2 | 4 | 55.0 | 57.5 | 56.3 | 0.00 | 2.12 | 1.89 | 2 | 2 | 4 |
| 62 | - | 1 | 1 | 39 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |

| | | | | | | | | | | | | | | | | |
|----|---|---|---|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 60 | 2 | 0 | 2 | 37 | 2 | 0 | 2 | 54.5 | 0 | 54.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 61 | - | 0 | 0 | 38 | 2 | 2 | 4 | 55.0 | 57.5 | 56.3 | 0.00 | 2.12 | 1.89 | 2 | 2 | 4 |
| 62 | - | 1 | 1 | 39 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |

Total 197 95 292

Table 5 (cont'd)

S. brevispinis

1978 Commercial - Area 5D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|---------------------|-------------------------------|---|---|-------------|--------------------------|----|---|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 38 | - | - | - | 40 | 1 | 1 | 2 | 54.0 | 59.0 | 56.5 | 0.00 | 0.00 | 3.54 | 1 | 1 | 2 | |
| 39 | - | - | - | 41 | 0 | 1 | 1 | 0 | 55.0 | 55.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| 40 | - | - | - | 42 | 0 | 1 | 1 | 0 | 57.0 | 57.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| 41 | - | - | - | 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 42 | - | - | - | 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 43 | - | - | - | 45 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 44 | - | - | - | 46 | 2 | - | 2 | 54.5 | - | 54.5 | 2.12 | - | 2.12 | 2 | - | 2 | |
| 45 | - | - | - | 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 46 | - | - | - | 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 47 | - | - | - | 49 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 48 | - | - | - | 50 | 1 | - | 1 | 57.0 | - | 57.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 49 | - | - | - | 51 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 50 | - | - | - | 52 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 51 | - | - | - | 53 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 52 | - | - | - | 54 | 1 | - | 1 | 59.0 | - | 59.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 53 | - | - | - | 61 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| 54 | - | - | - | 65 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| Totals | | | | 46 | 19 | 65 | | | | | | | | 62 | 36 | 98 | |

Table 6. Sebastes crameri age-length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1979 Research - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|---------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|-------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 25 | 4 | 3 | 7 | 7 | - | 1 | 1 | - | 25.0 | 25.0 | - | 0.00 | 0.00 | - | 1 |
| 26 | 4 | 6 | 10 | 8 | 1 | 4 | 5 | 26.0 | 27.5 | 27.2 | 0.00 | 1.73 | 1.64 | 1 | 4 | 5 |
| 27 | 1 | 7 | 8 | 9 | 1 | 6 | 7 | 26.0 | 26.7 | 26.6 | 0.00 | 1.21 | 1.13 | 1 | 6 | 7 |
| 28 | 1 | 13 | 14 | 10 | 0 | 15 | 15 | 0 | 28.4 | 28.4 | 0 | 1.50 | 1.50 | 0 | 15 | 15 |
| 29 | 2 | 10 | 12 | 11 | 0 | 14 | 14 | 0 | 29.1 | 29.1 | 0 | 1.86 | 1.86 | 0 | 14 | 14 |
| 30 | - | 16 | 16 | 12 | 1 | 9 | 10 | 28.0 | 30.2 | 30.0 | 0.00 | 3.49 | 3.37 | 1 | 9 | 10 |
| 31 | - | 13 | 13 | 13 | 3 | 5 | 8 | 26.7 | 31.0 | 29.4 | 2.08 | 2.74 | 3.25 | 3 | 5 | 8 |
| 32 | - | 11 | 11 | 14 | 2 | 10 | 12 | 28.0 | 30.9 | 30.4 | 1.41 | 1.91 | 2.11 | 2 | 10 | 12 |
| 33 | - | 6 | 6 | 15 | 2 | 5 | 7 | 25.0 | 30.3 | 24.4 | 0.00 | 2.22 | 11.16 | 2 | 5 | 7 |
| 34 | - | 12 | 12 | 16 | 2 | 8 | 10 | 25.5 | 32.3 | 30.9 | 0.71 | 1.98 | 3.35 | 2 | 8 | 10 |
| 35 | - | 21 | 21 | 17 | - | 8 | 8 | - | 33.5 | 33.5 | - | 2.20 | 2.20 | - | 8 | 8 |
| 36 | - | 33 | 33 | 18 | - | 4 | 4 | - | 31.8 | 31.8 | - | 1.26 | 1.26 | - | 4 | 4 |
| 37 | - | 25 | 25 | 19 | - | 3 | 3 | - | 34.3 | 34.3 | - | 2.08 | 2.08 | - | 3 | 3 |
| 38 | - | 7 | 7 | 20 | - | 5 | 5 | - | 36.2 | 36.2 | - | 0.84 | 0.84 | - | 5 | 5 |
| 39 | - | 4 | 4 | 21 | - | 5 | 5 | - | 34.0 | 34.0 | - | 2.12 | 2.12 | - | 5 | 5 |
| | | | | 22 | - | 9 | 9 | - | 34.4 | 34.4 | - | 1.94 | 1.94 | - | 9 | 9 |
| | | | | 23 | - | 6 | 6 | - | 34.8 | 34.8 | - | 1.94 | 1.94 | - | 6 | 6 |
| | | | | 24 | - | 5 | 5 | - | 36.6 | 36.6 | - | 1.14 | 1.14 | - | 5 | 5 |
| | | | | 25 | - | 5 | 5 | - | 35.4 | 35.4 | - | 0.89 | 0.89 | - | 5 | 5 |
| | | | | 26 | - | 10 | 10 | - | 35.5 | 35.5 | - | 1.43 | 1.43 | - | 10 | 10 |
| | | | | 27 | - | 10 | 10 | - | 36.2 | 36.2 | - | 0.63 | 0.63 | - | 10 | 10 |
| | | | | 28 | - | 8 | 8 | - | 36.6 | 36.6 | - | 0.92 | 0.92 | - | 8 | 8 |
| | | | | 29 | - | 7 | 7 | - | 36.4 | 36.4 | - | 1.62 | 1.62 | - | 7 | 7 |
| Total | 12 | 187 | 199 | | | | | | | | | | | | | |

Table 6 (cont'd)

S. crameri

1979 Research - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|-----|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | - | 5 | 5 | - | - | 37.2 | 37.2 | - | 1.79 | 1.79 | - | 5 | 5 | | | |
| 31 | - | 3 | 3 | - | - | 37.3 | 37.3 | - | 1.53 | 1.53 | - | 3 | 3 | | | |
| 32 | - | 3 | 3 | - | - | 36.7 | 36.7 | - | 0.58 | 0.58 | - | 3 | 3 | | | |
| 33 | - | 4 | 4 | - | - | 36.5 | 36.4 | - | 1.91 | 1.91 | - | 4 | 4 | | | |
| 34 | - | 4 | 4 | - | - | 36.8 | 36.8 | - | 1.26 | 1.26 | - | 4 | 4 | | | |
| 35 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | | |
| 36 | - | 1 | 1 | - | - | 36.0 | 36.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| 37 | - | 1 | 1 | - | - | 37.0 | 37.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| 38 | - | 1 | 1 | - | - | 37.0 | 37.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| 39 | - | 1 | 1 | - | - | 37.0 | 37.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| 47 | - | 1 | 1 | - | - | 36.0 | 36.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| Totals | 12 | 186 | 198 | | | | | | | | | 12 | 186 | 198 | | |

Table 7. Sebastes entomelas age-length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1979 Research - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|----|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 45 | 1 | - | 1 | 18 | 3 | 1 | 4 | 47.3 | 51.0 | 48.3 | 2.52 | 0.00 | 2.75 | 3 | 1 | 4 | |
| 46 | 1 | - | 1 | 19 | 2 | 0 | 2 | 48.5 | 0.0 | 48.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | |
| 47 | 5 | - | 5 | 20 | 2 | 3 | 5 | 47.5 | 51.3 | 49.8 | 0.71 | 1.53 | 2.39 | 2 | 3 | 5 | |
| 48 | 16 | - | 16 | 21 | 5 | 0 | 5 | 51.2 | 0 | 51.2 | 1.30 | 0 | 1.30 | 5 | 0 | 5 | |
| 49 | 9 | 1 | 10 | 22 | 11 | 1 | 12 | 50.0 | 53.0 | 50.3 | 1.10 | 0.00 | 1.36 | 11 | 1 | 12 | |
| 50 | 18 | 1 | 19 | 23 | 8 | 2 | 10 | 49.0 | 53.5 | 49.9 | 1.60 | 2.12 | 2.47 | 8 | 2 | 10 | |
| 51 | 15 | 2 | 17 | 24 | 7 | 0 | 7 | 50.7 | 0 | 50.7 | 1.25 | 0 | 1.25 | 7 | 0 | 7 | |
| 52 | 12 | 1 | 13 | 25 | 7 | 2 | 9 | 49.3 | 54.0 | 50.3 | 1.25 | 0.00 | 2.35 | 7 | 2 | 9 | |
| 53 | 3 | 4 | 7 | 26 | 0 | 1 | 1 | 0 | 53.0 | 53.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | 89 |
| 54 | 1 | 5 | 6 | 27 | 3 | 1 | 4 | 50.3 | 53.0 | 51.0 | 1.53 | 0.00 | 1.83 | 3 | 1 | 4 | |
| 55 | 1 | 1 | 2 | 28 | 1 | 0 | 1 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| 56 | - | 3 | 3 | 29 | 2 | 1 | 3 | 49.0 | 54.0 | 50.7 | 1.41 | 0.00 | 3.06 | 2 | 1 | 3 | |
| | | | | 30 | 4 | 0 | 4 | 50.0 | 0 | 50.0 | 2.16 | 0 | 2.16 | 4 | 0 | 4 | |
| | | | | 31 | 5 | 0 | 5 | 59.0 | 0 | 49.0 | 1.87 | 0 | 1.87 | 5 | 0 | 5 | |
| | | | | 32 | 1 | 0 | 1 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | 34 | 1 | 0 | 1 | 46.0 | 0 | 46.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 35 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 36 | 0 | 1 | 1 | 0 | 54.0 | 54.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| | | | | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | 38 | 2 | 1 | 3 | 50.0 | 49.0 | 49.7 | 4.24 | 0.00 | 3.06 | 2 | 1 | 3 | |
| | | | | 39 | 2 | 1 | 3 | 51.0 | 56.0 | 52.7 | 1.41 | 0.00 | 3.06 | 2 | 1 | 3 | |
| | | | | 40 | 3 | 1 | 4 | 52.0 | 56.0 | 53.0 | 1.00 | 0.00 | 2.16 | 3 | 1 | 4 | |
| | | | | 41 | 2 | 1 | 3 | 51.0 | 54.0 | 52.0 | 1.41 | 0.00 | 2.00 | 2 | 1 | 3 | |
| | | | | 42 | 2 | 0 | 2 | 49.5 | 0 | 49.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | |
| | | | | 43 | 3 | 0 | 3 | 52.0 | 0 | 52.0 | 1.73 | 0 | 1.73 | 3 | 0 | 3 | |
| | | | | 44 | 1 | 1 | 2 | 52.0 | 56.0 | 54.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 | |
| | | | | 45 | 1 | - | 1 | 48.0 | - | 48.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| Total | 82 | 18 | 100 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 43 | 3 | 0 | 3 | 52.0 | 0 | 52.0 | 1.73 | 0 | 1.73 | 3 | 0 | 3 |
| 44 | 1 | 1 | 2 | 52.0 | 56.0 | 54.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 |
| 45 | 1 | - | 1 | 48.0 | - | 48.0 | 0.00 | - | 0.00 | 1 | - | 1 |

Total 82 18 100

Table 7 (cont'd)

S. entomelas

1979 Research - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|---------------------|-------------------------------|---|---|-------------|--------------------------|----|------|-----------------|---|------|--------------------------|---|---|----------------------------|----|-----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 46 | 1 | - | 1 | 46 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 47 | 0 | - | 0 | 47 | 0 | - | 0 | 0 | - | 0.00 | 0 | - | 0 | | | |
| 48 | 0 | - | 0 | 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 49 | 0 | - | 0 | 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 50 | 0 | - | 0 | 50 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 51 | 1 | - | 1 | 51 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 52 | 0 | - | 0 | 52 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 53 | 0 | - | 0 | 53 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 54 | 0 | - | 0 | 54 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 55 | 0 | - | 0 | 55 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 56 | 0 | - | 0 | 56 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 57 | 0 | - | 0 | 57 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 58 | 1 | - | 1 | 58 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | | | | | 82 | 18 | 100 | | | | | | | 82 | 18 | 100 |

Table 8. *Sebastodes flavidus* age-length relationship, by year, by sample type, and by statistical area. (Age frequency for 1978 Commercial - Area 5D - not usable). See Table 3 for footnotes.

1978 Research ~ Area 3D ~

Table 8 (cont'd)

S. flavidus1978 Research - Area 3D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|---------------------|-------------------------------|---|-----|-------------|--------------------------|---|------|-----------------|---|------|--------------------------|----|-----|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | 2 | - | 2 | 30 | 45.5 | - | 45.5 | 2.12 | - | 2.12 | 2 | - | 2 | | | |
| 31 | 3 | - | 3 | 31 | 49.0 | - | 49.0 | 1.00 | - | 1.00 | 3 | - | 3 | | | |
| 32 | 0 | - | 0 | 32 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 33 | 1 | - | 1 | 33 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 34 | 1 | - | 1 | 34 | 48.0 | - | 48.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 35 | 3 | - | 3 | 35 | 46.7 | - | 46.7 | 2.52 | - | 2.52 | 3 | - | 3 | | | |
| 36 | 0 | - | 0 | 36 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 37 | 1 | - | 1 | 37 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 38 | 0 | - | 0 | 38 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 39 | 0 | - | 0 | 39 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 40 | 0 | - | 0 | 40 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 41 | 0 | - | 0 | 41 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 42 | 0 | - | 0 | 42 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 43 | 2 | - | 2 | 43 | 48.0 | - | 48.0 | 1.41 | - | 1.41 | 2 | - | 2 | | | |
| Totals | | | 199 | 83 | 282 | | | | | | 199 | 83 | 282 | | | |

Table 8 (cont'd)

Sebastes flavidus1979 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | - | 1 | | 10 | 4 | 2 | 6 | 42.8 | 42.5 | 42.7 | 1.71 | 2.12 | 1.83 | 4 | 2 |
| 37 | 1 | - | 1 | 10 | 4 | 2 | 6 | 42.8 | 42.5 | 42.7 | 1.71 | 2.12 | 1.83 | 4 | 2 | 6 |
| 38 | 0 | 3 | 3 | 11 | 12 | 5 | 17 | 42.8 | 44.8 | 43.4 | 2.59 | 2.17 | 2.58 | 12 | 5 | 17 |
| 39 | 1 | 1 | 2 | 12 | 7 | 8 | 15 | 44.1 | 45.1 | 44.7 | 1.07 | 3.04 | 2.32 | 7 | 8 | 15 |
| 40 | 1 | 2 | 3 | 13 | 12 | 7 | 19 | 44.1 | 46.3 | 44.9 | 1.44 | 4.31 | 2.94 | 12 | 7 | 19 |
| 41 | 6 | 4 | 10 | 14 | 11 | 5 | 16 | 45.4 | 47.0 | 45.9 | 1.91 | 3.94 | 2.68 | 11 | 5 | 16 |
| 42 | 14 | 12 | 26 | 15 | 7 | 4 | 11 | 46.0 | 51.0 | 47.8 | 1.73 | 2.83 | 3.25 | 7 | 4 | 11 |
| 43 | 17 | 7 | 24 | 16 | 9 | 4 | 13 | 46.2 | 48.0 | 46.8 | 1.09 | 3.16 | 2.01 | 9 | 4 | 13 |
| 44 | 28 | 10 | 38 | 17 | 14 | 4 | 18 | 46.4 | 47.5 | 46.7 | 2.21 | 3.42 | 2.45 | 14 | 4 | 18 |
| 45 | 32 | 6 | 38 | 18 | 3 | 8 | 11 | 44.7 | 50.3 | 48.7 | 3.06 | 2.87 | 3.80 | 3 | 8 | 11 |
| 46 | 49 | 10 | 59 | 19 | 7 | 2 | 9 | 47.0 | 51.5 | 48.0 | 1.00 | 0.71 | 2.18 | 7 | 2 | 9 |
| 47 | 42 | 11 | 53 | 20 | 7 | 3 | 10 | 46.6 | 50.3 | 47.7 | 1.27 | 3.21 | 2.58 | 7 | 3 | 10 |
| 48 | 39 | 14 | 53 | 21 | 10 | 4 | 14 | 46.4 | 49.5 | 47.3 | 1.78 | 2.89 | 2.49 | 5 | 0 | 5 |
| 49 | 21 | 16 | 37 | 22 | 8 | 2 | 10 | 46.5 | 52.0 | 47.6 | 1.51 | 1.41 | 2.72 | 4 | 0 | 4 |
| 50 | 5 | 10 | 15 | 23 | 10 | 4 | 14 | 47.0 | 49.5 | 47.7 | 1.05 | 5.20 | 2.89 | 3 | 0 | 3 |
| 51 | 1 | 14 | 15 | 24 | 6 | 4 | 10 | 48.3 | 50.8 | 49.3 | 1.63 | 1.90 | 2.06 | 2 | 0 | 2 |
| 52 | 3 | 6 | 9 | 25 | 6 | 1 | 7 | 47.7 | 51.0 | 48.1 | 2.73 | 0.00 | 2.79 | 3 | 0 | 3 |
| 53 | - | 8 | 8 | 26 | 4 | 0 | 4 | 47.5 | 0 | 47.5 | 1.29 | 0 | 1.29 | 2 | 0 | 2 |
| 54 | - | 1 | 1 | 27 | 4 | 1 | 5 | 46.3 | 51.0 | 47.2 | 0.50 | 0.00 | 2.17 | 2 | 0 | 2 |
| 55 | - | 3 | 3 | 28 | 3 | 0 | 3 | 47.0 | 0 | 47.0 | 1.00 | 0 | 1.00 | 2 | 0 | 2 |
| 56 | - | 1 | 1 | 29 | 4 | 1 | 5 | 47.3 | 51.0 | 48.0 | 2.22 | 0.00 | 2.55 | 2 | 1 | 3 |
| Total | 260 | 139 | 399 | | | | | | | | | | | | | |

Table 8 (cont'd)

S. flavidus

1979 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|-----|------|-----------------|---|------|--------------------------|----|-----|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | 4 | - | 4 | 30 | 47.5 | - | 47.5 | 1.73 | - | 1.73 | 1 | - | 1 | | | |
| 31 | 7 | - | 7 | 31 | 47.4 | - | 47.4 | 1.51 | - | 1.51 | 6 | - | 6 | | | |
| 32 | 4 | - | 4 | 32 | 47.8 | - | 47.8 | 0.96 | - | 0.96 | 4 | - | 4 | | | |
| 33 | 2 | - | 2 | 33 | 48.5 | - | 48.5 | 0.71 | - | 0.71 | 1 | - | 1 | | | |
| 34 | 3 | - | 3 | 34 | 48.7 | - | 48.7 | 0.58 | - | 0.58 | 1 | - | 1 | | | |
| 35 | 6 | - | 6 | 35 | 47.0 | - | 47.0 | 2.45 | - | 2.45 | 4 | - | 4 | | | |
| 36 | 4 | - | 4 | 36 | 47.8 | - | 47.8 | 0.96 | - | 0.96 | 3 | - | 3 | | | |
| 37 | 2 | - | 2 | 37 | 48.5 | - | 48.5 | 0.71 | - | 0.71 | 2 | - | 2 | | | |
| 38 | 0 | - | 0 | 38 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 39 | 2 | - | 2 | 39 | 47.5 | - | 47.5 | 0.71 | - | 0.71 | 1 | - | 1 | | | |
| 40 | 0 | - | 0 | 40 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 41 | 0 | - | 0 | 41 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 42 | 1 | - | 1 | 42 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 43 | 3 | - | 3 | 43 | 48.3 | - | 48.3 | 1.15 | - | 1.15 | 3 | - | 3 | | | |
| 44 | 0 | - | 0 | 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 45 | 1 | - | 1 | 45 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 0 | - | 0 | | | |
| 46 | 0 | - | 0 | 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 47 | 0 | - | 0 | 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 48 | 1 | - | 1 | 48 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 49 | 0 | - | 0 | 49 | 0 | - | 0 | 0 | - | 0 | | | | | | |
| 50 | 0 | - | 0 | 50 | 0 | - | 0 | 0 | - | 0 | | | | | | |
| 51 | 1 | - | 1 | 51 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | | | | | | |
| Totals | | | | 189 | 70 | 259 | | | | | 146 | 53 | 199 | | | |

Table 8 (cont'd)

Sebastes flavidus

1979 Research - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 2 | ~ | 2 | 6 | - | 1 | 1 | - | 42.0 | 42.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 37 | 2 | ~ | 2 | 6 | - | 1 | 1 | - | 42.0 | 42.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 38 | 2 | 1 | 3 | 7 | 2 | 0 | 2 | 38.5 | 0 | 38.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 39 | 4 | 1 | 5 | 8 | 4 | 2 | 6 | 39.0 | 43.5 | 40.5 | 1.41 | 2.12 | 2.74 | 4 | 2 | 6 |
| 40 | 7 | 3 | 10 | 9 | 8 | 2 | 10 | 42.4 | 44.0 | 42.7 | 0.92 | 2.83 | 1.42 | 8 | 2 | 10 |
| 41 | 6 | 2 | 8 | 10 | 14 | 13 | 27 | 41.4 | 43.2 | 42.2 | 1.69 | 3.10 | 2.59 | 14 | 13 | 27 |
| 42 | 14 | 9 | 23 | 11 | 17 | 6 | 23 | 41.9 | 42.2 | 42.0 | 2.14 | 1.72 | 2.00 | 17 | 6 | 23 |
| 43 | 12 | 2 | 14 | 12 | 12 | 8 | 20 | 44.3 | 44.1 | 44.2 | 1.71 | 2.03 | 1.79 | 12 | 8 | 20 |
| 44 | 28 | 5 | 33 | 13 | 6 | 7 | 13 | 43.7 | 48.0 | 46.0 | 1.37 | 2.58 | 3.03 | 6 | 7 | 13 |
| 45 | 32 | 8 | 40 | 14 | 9 | 5 | 14 | 45.3 | 47.6 | 46.1 | 1.32 | 3.71 | 2.57 | 9 | 5 | 14 |
| 46 | 30 | 5 | 35 | 15 | 5 | 5 | 10 | 45.0 | 47.4 | 46.2 | 3.32 | 1.34 | 2.70 | 5 | 5 | 10 |
| 47 | 35 | 9 | 44 | 16 | 6 | 4 | 10 | 45.0 | 48.5 | 46.4 | 1.10 | 1.00 | 2.07 | 6 | 4 | 10 |
| 48 | 33 | 8 | 41 | 17 | 15 | 3 | 18 | 45.9 | 49.3 | 46.5 | 1.44 | 4.04 | 2.31 | 15 | 3 | 18 |
| 49 | 11 | 10 | 21 | 18 | 17 | 4 | 21 | 45.6 | 49.0 | 46.2 | 1.33 | 0.82 | 1.84 | 17 | 4 | 21 |
| 50 | 7 | 2 | 9 | 19 | 30 | 4 | 34 | 45.7 | 49.3 | 46.1 | 1.18 | 3.10 | 1.85 | 30 | 4 | 34 |
| 51 | 3 | 5 | 8 | 20 | 7 | 0 | 7 | 47.0 | 0 | 47.0 | 1.41 | 0 | 1.41 | 7 | 0 | 7 |
| 52 | 1 | 1 | 2 | 21 | 5 | 1 | 6 | 46.2 | 50.0 | 46.8 | 1.10 | 0.00 | 1.83 | 5 | 1 | 6 |
| 53 | ~ | 1 | 1 | 22 | 3 | 1 | 4 | 47.7 | 48.0 | 47.8 | 0.58 | 0.00 | 0.50 | 3 | 1 | 4 |
| 54 | ~ | 1 | 1 | 23 | 5 | 0 | 5 | 47.8 | 0 | 47.8 | 1.10 | 0 | 1.10 | 5 | 0 | 5 |
| | | | | 24 | 3 | 0 | 3 | 47.0 | 0 | 47.0 | 0.00 | 0 | 0.00 | 3 | 0 | 3 |
| | | | | 25 | 3 | 1 | 4 | 48.3 | 48.0 | 48.3 | 1.53 | 0.00 | 1.26 | 3 | 1 | 4 |
| | | | | 26 | 2 | 0 | 2 | 47.5 | 0 | 47.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| | | | | 27 | 2 | 1 | 3 | 48.5 | 49.0 | 48.7 | 0.71 | 0.00 | 0.58 | 2 | 1 | 3 |
| | | | | 28 | 5 | 1 | 6 | 46.8 | 47.0 | 46.8 | 1.30 | 0.00 | 1.17 | 5 | 1 | 6 |
| | | | | 29 | 6 | 1 | 7 | 47.2 | 48.0 | 47.3 | 2.32 | 0.00 | 2.14 | 6 | 1 | 7 |

Total 227 73 300

| | | | | | | | | | | | | |
|----|---|---|---|------|------|------|------|------|------|---|---|---|
| 27 | 2 | 1 | 3 | 48.5 | 49.0 | 48.7 | 0.71 | 0.00 | 0.30 | 2 | 1 | 3 |
| 28 | 5 | 1 | 6 | 46.8 | 47.0 | 46.8 | 1.30 | 0.00 | 1.17 | 5 | 1 | 6 |
| 29 | 6 | 1 | 7 | 47.2 | 48.0 | 47.3 | 2.32 | 0.00 | 2.14 | 6 | 1 | 7 |

Total 227 73 300

Table 8 (cont'd)

S. flavidus

1979 Research - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|-----|----|----------------------------|---|---|--|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| | | | | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 30 | 5 | 0 | 5 | 30 | 48.0 | 0 | 48.0 | 1.22 | 0 | 1.22 | 5 | 0 | 5 | | | | |
| 31 | 7 | 1 | 8 | 31 | 48.7 | 49.0 | 48.8 | 1.11 | 0.00 | 1.04 | 7 | 1 | 8 | | | | |
| 32 | 1 | 0 | 1 | 32 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 33 | 6 | 0 | 6 | 33 | 47.8 | 0 | 47.8 | 1.60 | 0 | 1.60 | 6 | 0 | 6 | | | | |
| 34 | 3 | 0 | 3 | 34 | 49.0 | 0 | 49.0 | 3.00 | 0 | 3.00 | 3 | 0 | 3 | | | | |
| 35 | 2 | 0 | 2 | 35 | 48.0 | 0 | 48.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | | | |
| 36 | 2 | 0 | 2 | 36 | 47.0 | 0 | 47.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | | | |
| 37 | 3 | 0 | 3 | 37 | 47.7 | 0 | 47.7 | 1.15 | 0 | 1.15 | 3 | 0 | 3 | | | | |
| 38 | 2 | 0 | 2 | 38 | 48.5 | 0 | 48.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | | | | |
| 39 | 2 | 0 | 2 | 39 | 47.5 | 0 | 47.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | | | | |
| 40 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 41 | 1 | 0 | 1 | 41 | 47.0 | 0 | 47.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 42 | 1 | 1 | 2 | 42 | 50.0 | 53.0 | 51.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | | | |
| 43 | 1 | - | 1 | 43 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 44 | 1 | - | 1 | 44 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 45 | 2 | - | 2 | 45 | 49.0 | - | 49.0 | 2.83 | - | 2.83 | 2 | - | 2 | | | | |
| 46 | 0 | - | 0 | 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 47 | 0 | - | 0 | 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 48 | 0 | - | 0 | 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 49 | 0 | - | 0 | 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 50 | 1 | - | 1 | 50 | 51.0 | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 51 | 0 | - | 0 | 51 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 52 | 1 | - | 1 | 52 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| Totals | | | | | 227 | 72 | 299 | | | | | 227 | 72 | 299 | | | |

Table 8 (cont'd)

Sebastes flavidus

1978 Commercial - Area 5D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | |
| 35 | 1 | - | 1 | 21 | 15 | - | 15 | 47.3 | 0.0 | 47.3 | 1.79 | 0 | 1.79 | |
| 36 | 0 | 1 | 1 | 22 | 8 | - | 8 | 46.9 | 0.0 | 46.9 | 1.13 | 0 | 1.14 | |
| 37 | 2 | 1 | 3 | 23 | 7 | 1 | 8 | 47.3 | 51.0 | 47.8 | 1.11 | 0.00 | 1.67 | |
| 38 | 3 | 4 | 7 | 24 | 11 | 0 | 11 | 48.0 | 0.0 | 48.0 | 1.55 | 0 | 1.55 | |
| 39 | 6 | 3 | 9 | 25 | 6 | 1 | 7 | 48.5 | 54.0 | 49.3 | 3.39 | 0.00 | 3.73 | |
| 40 | 13 | 11 | 24 | 26 | 5 | 1 | 6 | 47.4 | 53.0 | 48.3 | 2.19 | 0.00 | 3.01 | |
| 41 | 19 | 8 | 27 | 27 | 4 | 0 | 4 | 47.8 | 0.0 | 47.8 | 1.50 | 0 | 1.50 | |
| 42 | 13 | 7 | 20 | 28 | 4 | 1 | 5 | 48.0 | 56.0 | 49.6 | 0.82 | 0.00 | 3.65 | |
| 43 | 29 | 10 | 39 | 29 | 2 | 0 | 2 | 47.0 | 0.0 | 47.0 | 0.00 | 0 | 0.00 | |
| 44 | 47 | 12 | 59 | 30 | 11 | 1 | 12 | 49.0 | 55.0 | 49.5 | 1.67 | 0.00 | 2.35 | |
| 45 | 59 | 13 | 72 | 31 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 46 | 99 | 11 | 110 | 32 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 47 | 90 | 7 | 97 | 33 | 4 | - | 4 | 49.3 | - | 49.3 | 0.96 | - | 0.96 | |
| 48 | 65 | 11 | 76 | 34 | 2 | - | 2 | 48.0 | - | 48.0 | 0.00 | - | 0.00 | |
| 49 | 47 | 13 | 60 | 35 | 2 | - | 2 | 47.0 | - | 47.0 | 1.41 | - | 1.41 | |
| 50 | 15 | 13 | 28 | 36 | 4 | - | 4 | 48.5 | - | 48.5 | 0.58 | - | 0.58 | |
| 51 | 5 | 14 | 19 | 37 | 2 | - | 2 | 48.5 | - | 48.5 | 0.71 | - | 0.71 | |
| 52 | 2 | 9 | 11 | 38 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | |
| 53 | 3 | 6 | 9 | 39 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 54 | 0 | 3 | 3 | 40 | 4 | - | 4 | 48.8 | - | 48.8 | 0.96 | - | 0.96 | |
| 55 | 1 | 1 | 2 | 41 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| 56 | - | 1 | 1 | 42 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | | | | 43 | 1 | - | 1 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | |
| | | | | 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | | | | 45 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | |
| | | | | 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | | | | 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | | | | 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | | | | 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |

| 46 | 0 | - | 0 | 0 | - | 0 | 0 | - |
|----|---|---|---|---|---|---|---|---|
| 47 | 0 | - | 0 | 0 | - | 0 | 0 | - |
| 48 | 0 | - | 0 | 0 | - | 0 | 0 | - |
| 49 | 0 | - | 0 | 0 | - | 0 | 0 | - |

Table 8 (cont'd)

S. flavidus

1978 Commercial ~ Area 5D ~ (cont'd)

Table 8 (cont'd)

Sebastes flavidus1979 Commercial ~ Area 5D ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | - | 1 | | 9 | - | 1 | - | 44.0 | 44.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 37 | 1 | - | 1 | 10 | - | 3 | 3 | - | 43.7 | 43.7 | - | 1.53 | 1.53 | - | 3 | 3 |
| 38 | 1 | - | 1 | 11 | 2 | 2 | 4 | 45.5 | 46.5 | 46.0 | 3.54 | 4.95 | 3.56 | 2 | 2 | 4 |
| 39 | 1 | 2 | 3 | 12 | 4 | 2 | 6 | 46.3 | 45.0 | 45.8 | 1.71 | 0.00 | 1.47 | 4 | 2 | 6 |
| 40 | 3 | 2 | 5 | 13 | 8 | 0 | 8 | 45.9 | 0 | 45.9 | 2.30 | 0 | 2.30 | 8 | 0 | 8 |
| 41 | 12 | 2 | 14 | 14 | 6 | 2 | 8 | 45.0 | 49.5 | 46.1 | 1.41 | 0.71 | 2.42 | 6 | 2 | 8 |
| 42 | 8 | 7 | 15 | 15 | 2 | 7 | 9 | 46.0 | 50.7 | 49.7 | 1.41 | 2.56 | 3.08 | 2 | 7 | 9 |
| 43 | 13 | 11 | 24 | 16 | 4 | 5 | 9 | 46.0 | 53.6 | 50.2 | 1.41 | 2.07 | 4.35 | 4 | 5 | 9 |
| 44 | 34 | 5 | 39 | 17 | 6 | 3 | 9 | 48.3 | 48.7 | 48.4 | 0.82 | 4.93 | 2.55 | 6 | 3 | 9 |
| 45 | 53 | 8 | 61 | 18 | 8 | 1 | 9 | 47.1 | 56.0 | 48.1 | 1.13 | 0.00 | 3.14 | 8 | 1 | 9 |
| 46 | 62 | 7 | 69 | 19 | 6 | 1 | 7 | 46.3 | 54.0 | 47.4 | 1.03 | 0.00 | 3.05 | 6 | 1 | 7 |
| 47 | 63 | 13 | 76 | 20 | 5 | 0 | 5 | 47.6 | 0 | 47.6 | 0.89 | 0 | 0.89 | 5 | - | 5 |
| 48 | 69 | 3 | 72 | 21 | 8 | 2 | 10 | 46.9 | 52.5 | 48.0 | 1.89 | 0.71 | 2.91 | 1 | - | 1 |
| 49 | 40 | 3 | 43 | 22 | 13 | 0 | 13 | 47.8 | 0 | 47.8 | 1.86 | 0 | 1.86 | 4 | - | 4 |
| 50 | 15 | 11 | 26 | 23 | 7 | 0 | 7 | 47.0 | 0 | 47.0 | 1.83 | 0 | 1.83 | 1 | - | 1 |
| 51 | 8 | 9 | 17 | 24 | 8 | 1 | 9 | 47.6 | 54.0 | 48.3 | 2.00 | 0.00 | 2.83 | 0 | - | 0 |
| 52 | - | 9 | 9 | 25 | 6 | 0 | 6 | 47.3 | 0 | 47.3 | 1.03 | 0 | 1.03 | 1 | - | 1 |
| 53 | - | 7 | 7 | 26 | 3 | 1 | 4 | 46.7 | 50.0 | 47.5 | 2.31 | 0.00 | 2.52 | 1 | - | 1 |
| 54 | - | 8 | 8 | 27 | 2 | 0 | 2 | 48.5 | 0 | 48.5 | .71 | 0 | 0.71 | 0 | - | 0 |
| 55 | - | 3 | 3 | 28 | 7 | 0 | 7 | 49.0 | 0 | 49.0 | 1.15 | 0 | 1.15 | 0 | - | 0 |
| 56 | - | 2 | 2 | 29 | 4 | 0 | 4 | 47.8 | 0 | 47.8 | 1.71 | 0 | 1.71 | 0 | - | 0 |
| Total | 383 | 112 | 495 | | | | | | | | | | | | | |

Table 8 (cont'd)

S. flavidus

1979 Commercial - Area 5D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | | |
|---------------------|-------------------------------|---|---|--------------------------|------|------|-----------------|------|------|--------------------------|----|-----|----------------------------|---|---|---|--|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | | |
| | M | F | T | Age (yr) | M | F | T | M | F | T | M | F | T | M | F | T | |
| 30 | 7 | 0 | 7 | 48.0 | 0 | 48.0 | 0.82 | 0 | 0.82 | 3 | - | 3 | | | | | |
| 31 | 7 | 1 | 8 | 49.3 | 52.0 | 49.6 | 2.14 | 0.00 | 2.20 | 4 | - | 4 | | | | | |
| 32 | 4 | - | 4 | 48.8 | - | 48.8 | 1.50 | - | 1.50 | 0 | - | 0 | | | | | |
| 33 | 2 | - | 2 | 49.0 | - | 49.0 | 1.41 | - | 1.41 | 1 | - | 1 | | | | | |
| 34 | 2 | - | 2 | 50.5 | - | 50.5 | 0.71 | - | 0.71 | 0 | - | 0 | | | | | |
| 35 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 36 | 4 | - | 4 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 3 | - | 3 | | | | | |
| 37 | 1 | - | 1 | 48.0 | - | 48.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | | |
| 38 | 2 | - | 2 | 46.5 | - | 46.5 | 0.71 | - | 0.71 | 1 | - | 1 | | | | | |
| 39 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 0 | - | 0 | | | | | |
| 40 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 41 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 42 | 2 | - | 2 | 49.5 | - | 49.5 | 0.71 | - | 0.71 | 0 | - | 0 | | | | | |
| 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 45 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | |
| 48 | 1 | - | 1 | 49.0 | - | 49.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | | |
| 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | | | | |
| 50 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | | | | |
| 51 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | | | | |
| 52 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | | | | |
| 53 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | | | | | |
| 54 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | | | | | | | | |
| Totals | | | | 143 | 32 | 175 | | | | 73 | 27 | 100 | | | | | |

Table 8 (cont'd)

Sebastes flavidus

1979 Research - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 31 | 1 | 1 | 2 | .2 | 1 | - | 1 | 46.0 | - | 46.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 32 | 2 | 0 | 2 | 3 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 33 | 6 | 0 | 6 | 4 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 34 | 3 | 3 | 6 | 5 | 4 | 1 | 5 | 34.8 | 34.0 | 34.6 | 2.63 | 0.00 | 2.30 | 4 | 1 | 5 |
| 35 | 4 | 6 | 10 | 6 | 10 | 9 | 19 | 35.0 | 35.6 | 35.3 | 1.63 | 1.01 | 1.37 | 10 | 9 | 19 |
| 36 | 11 | 6 | 17 | 7 | 19 | 6 | 25 | 36.2 | 35.0 | 35.9 | 2.37 | 2.19 | 2.34 | 19 | 6 | 25 |
| 37 | 11 | 6 | 17 | 8 | 8 | 8 | 16 | 37.5 | 38.4 | 37.9 | 1.51 | 2.45 | 2.02 | 8 | 8 | 16 |
| 38 | 9 | 4 | 13 | 9 | 7 | 7 | 14 | 37.3 | 40.1 | 38.7 | 2.14 | 3.08 | 2.95 | 7 | 7 | 14 |
| 39 | 7 | 1 | 8 | 10 | 7 | 3 | 10 | 38.9 | 39.0 | 38.9 | 3.39 | 2.65 | 3.03 | 7 | 3 | 10 |
| 40 | 2 | 2 | 4 | 11 | 1 | 0 | 1 | 37.0 | 0 | 37.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 41 | 3 | 1 | 4 | 12 | 4 | 1 | 5 | 37.8 | 37.0 | 37.6 | 1.26 | 0.00 | 1.14 | 4 | 1 | 5 |
| 42 | 1 | 2 | 3 | 13 | 0 | 1 | 1 | 0 | 44.0 | 44.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 43 | 0 | 4 | 4 | 14 | 0 | 1 | 1 | 0 | 43.0 | 43.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 44 | 0 | 1 | 1 | 15 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 45 | 0 | - | 0 | 16 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 46 | 1 | - | 1 | 17 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 47 | 1 | - | 1 | 18 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 19 | 1 | - | 1 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| Total | 62 | 37 | 99 | Totals | 62 | 37 | 99 | | | | | | | 62 | 37 | 99 |

Table 9. *Sebastes pinniger* age-length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1977 Commercial - Area 3D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 34 | 1 | - | 1 | 8 | - | - | - | - | - | - | - | - | - | 1 | 2 | 3 |
| 35 | 0 | - | 0 | 9 | - | - | - | - | - | - | - | - | - | 1 | 2 | 3 |
| 36 | 1 | - | 1 | 10 | - | - | - | - | - | - | - | - | - | 2 | 7 | 9 |
| 37 | 1 | - | 1 | 11 | - | - | - | - | - | - | - | - | - | 3 | 2 | 5 |
| 38 | 0 | 2 | 2 | 12 | - | - | - | - | - | - | - | - | - | 5 | 3 | 8 |
| 39 | 1 | 0 | 1 | 13 | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 40 | 1 | 1 | 2 | 14 | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 41 | 0 | 2 | 2 | 15 | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 |
| 42 | 1 | 4 | 5 | 16 | - | - | - | - | - | - | - | - | - | 1 | 2 | 3 |
| 43 | 1 | 1 | 2 | 17 | - | - | - | - | - | - | - | - | - | 2 | 2 | 4 |
| 44 | 1 | 2 | 3 | 18 | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 |
| 45 | 1 | 1 | 2 | 19 | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 |
| 46 | 1 | 3 | 4 | 20 | - | - | - | - | - | - | - | - | - | 1 | 0 | 1 |
| 47 | 1 | 0 | 1 | 21 | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 |
| 48 | 1 | 1 | 2 | 22 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 1 | 0 | 1 |
| 49 | 1 | 0 | 1 | 23 | 4 | 3 | 7 | 52.8 | 57.3 | 54.7 | 2.06 | 4.93 | 4.03 | 4 | 3 | 7 |
| 50 | 5 | 0 | 5 | 24 | 2 | 1 | 3 | 52.0 | 51.0 | 51.7 | 1.41 | 0.00 | 1.15 | 2 | 1 | 3 |
| 51 | 4 | 4 | 8 | 25 | 2 | 1 | 3 | 52.5 | 58.0 | 54.3 | 2.12 | 0.00 | 3.51 | 2 | 1 | 3 |
| 52 | 5 | 0 | 5 | 26 | 3 | 0 | 3 | 54.7 | 0 | 54.7 | 1.15 | 0 | 1.15 | 3 | 0 | 3 |
| 53 | 10 | 1 | 11 | 27 | 1 | 0 | 1 | 58.0 | 0 | 58.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 54 | 31 | 1 | 32 | 28 | 4 | 0 | 4 | 53.8 | 0 | 53.8 | 1.26 | 0 | 1.26 | 4 | 0 | 4 |
| 55 | 13 | 1 | 14 | 29 | 2 | 0 | 2 | 54.5 | 0 | 54.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| 56 | 6 | 0 | 6 | 30 | 6 | 0 | 6 | 53.7 | 0 | 53.7 | 1.37 | 0 | 1.37 | 6 | 0 | 6 |
| 57 | 2 | 0 | 2 | 31 | 2 | 0 | 2 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 |
| 58 | 3 | 3 | 6 | 32 | 3 | 0 | 3 | 54.3 | 0 | 54.3 | 0.58 | 0 | 0.58 | 3 | 0 | 3 |

Table 9 (cont'd)

S. pinniger1977 Commercial - Area 3D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 59 | - | 0 | 0 | 33 | 2 | 0 | 2 | 52.5 | 0 | 52.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| 60 | - | 0 | 0 | 34 | 3 | 0 | 3 | 54.7 | 0 | 54.7 | 1.15 | 0 | 1.15 | 3 | 0 | 3 |
| 61 | - | 0 | 0 | 35 | 3 | 0 | 3 | 54.3 | 0 | 54.3 | 0.58 | 0 | 0.58 | 3 | 0 | 3 |
| 62 | - | 0 | 0 | 36 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 63 | - | 1 | 1 | 37 | 4 | 0 | 4 | 53.0 | 0 | 53.0 | 1.63 | 0 | 1.63 | 4 | 0 | 4 |
| | | | | 38 | 4 | 0 | 4 | 54.5 | 0 | 54.5 | 2.08 | 0 | 2.08 | 4 | 0 | 4 |
| | | | | 39 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 42 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 43 | 3 | 0 | 3 | 54.0 | 0 | 54.0 | 1.00 | 0 | 1.00 | 3 | 0 | 3 |
| | | | | 44 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 45 | 3 | 1 | 4 | 55.0 | 53.0 | 54.5 | 3.00 | 0.00 | 2.65 | 3 | 1 | 4 |
| | | | | 46 | 4 | - | 4 | 54.3 | - | 54.3 | 1.26 | - | 1.26 | 4 | - | 4 |
| | | | | 47 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| | | | | 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 49 | 3 | - | 3 | 53.7 | - | 53.7 | 1.15 | - | 1.15 | 3 | - | 3 |
| | | | | 50 | 3 | - | 3 | 56.0 | - | 56.0 | 2.00 | - | 2.00 | 3 | - | 3 |
| | | | | 51 | 2 | - | 2 | 55.0 | - | 55.0 | 1.41 | - | 1.41 | 2 | - | 2 |
| | | | | 52 | 1 | - | 1 | 57.0 | - | 57.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| | | | | 53 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 54 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 55 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 56 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 57 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| | | | | 67 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 |

| | | | | | | | | | | | | | |
|-------|----|----|-----|--------|------|---|------|------|---|------|----|----|-----|
| | 67 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| Total | 92 | 28 | 120 | Totals | 71 | 6 | 77 | | | | 92 | 28 | 120 |

Table 9.

Sebastes pinniger

1978 Research - Area 3D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | | |
| | 9 | - | 1 | | 10 | 3 | 5 | 8 | 47.0 | 45.6 | 46.1 | 1.00 | 1.67 | 1.55 | 3 | 5 | 8 | |
| 42 | 1 | - | 1 | 9 | - | 1 | 1 | - | 47.0 | 47.0 | 47.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 |
| 43 | 1 | 1 | 2 | 10 | 3 | 5 | 8 | 47.0 | 45.6 | 46.1 | 1.00 | 1.67 | 1.55 | 3 | 5 | 8 | | |
| 44 | 1 | 0 | 1 | 11 | 5 | 1 | 6 | 45.2 | 50.0 | 46.0 | 2.17 | 0.00 | 2.76 | 5 | 1 | 6 | | |
| 45 | 4 | 1 | 5 | 12 | 1 | 0 | 1 | 45.0 | 0 | 45.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 46 | 2 | 1 | 3 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 47 | 2 | 4 | 6 | 14 | 1 | 1 | 2 | 47.0 | 50.0 | 48.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | |
| 48 | 6 | 0 | 6 | 15 | 1 | 0 | 1 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 49 | 5 | 2 | 7 | 16 | 5 | 0 | 5 | 48.6 | 0 | 48.6 | 0.89 | 0 | 0.89 | 5 | 0 | 5 | | |
| 50 | 13 | 3 | 16 | 17 | 1 | 0 | 1 | 49.0 | 0 | 49.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | |
| 51 | 8 | 3 | 11 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 52 | 6 | 1 | 7 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 53 | 14 | 2 | 16 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 54 | 7 | 2 | 9 | 21 | 0 | 3 | 3 | 0 | 50.7 | 50.7 | 0 | 0.58 | 0.58 | 0 | 3 | 3 | | |
| 55 | 9 | 3 | 12 | 22 | 0 | 3 | 3 | 0 | 49.3 | 49.3 | 0 | 2.52 | 2.52 | 0 | 3 | 3 | | |
| 56 | 3 | 4 | 7 | 23 | 7 | 1 | 8 | 51.3 | 53.0 | 51.5 | 2.14 | 0.00 | 2.07 | 7 | 1 | 8 | | |
| 57 | 1 | 1 | 2 | 24 | 3 | 2 | 5 | 50.3 | 55.0 | 52.2 | 0.58 | 1.41 | 2.68 | 3 | 2 | 5 | | |
| | | | | 25 | 2 | 3 | 5 | 51.5 | 53.7 | 52.8 | 0.71 | 1.53 | 1.64 | 2 | 3 | 5 | | |
| | | | | 26 | 7 | 3 | 10 | 50.9 | 54.7 | 52.0 | 0.69 | 1.53 | 2.05 | 7 | 3 | 10 | | |
| | | | | 27 | 4 | 0 | 4 | 53.0 | 0.0 | 53.0 | 1.63 | 0.00 | 1.63 | 4 | 0 | 4 | | |
| | | | | 28 | 1 | 0 | 1 | 53.0 | 0.0 | 53.0 | 0.00 | 0.00 | 0.00 | 1 | 0 | 1 | | |
| | | | | 29 | 1 | 1 | 2 | 54.0 | 56.0 | 55.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | | |
| | | | | 30 | 3 | 1 | 4 | 52.3 | 57.0 | 53.5 | 1.53 | 0.00 | 2.65 | 3 | 1 | 4 | | |
| | | | | 31 | 4 | 0 | 4 | 54.0 | 0.0 | 54.0 | 1.41 | 0.00 | 1.41 | 4 | 0 | 4 | | |
| | | | | 32 | 4 | 0 | 4 | 52.3 | 0.0 | 52.3 | 1.50 | 0.00 | 1.50 | 4 | 0 | 4 | | |
| | | | | 33 | 4 | 1 | 5 | 53.5 | 56.0 | 54.0 | 3.42 | 0.00 | 3.16 | 4 | 1 | 5 | | |
| | | | | 34 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| | | | | 35 | 4 | - | 4 | 51.8 | - | 51.8 | 2.36 | - | 2.36 | 4 | - | 4 | | |
| | | | | 36 | 4 | - | 4 | 53.3 | - | 53.3 | 0.50 | - | 0.50 | 4 | - | 4 | | |
| | | | | 37 | 2 | - | 2 | 50.5 | - | 50.5 | 2.12 | - | 2.12 | 2 | - | 2 | | |
| | | | | 38 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| | | | | 39 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |

Total 83 28 111

Table 9 (cont'd)

S. pinniger1978 Research - Area 3D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|-----|------------------------|--------------------------|------|------|-----------------|------|----|--------------------------|-----|----------------------------|---|---|---|
| | M | F | T | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| | | | | | M | F | T | M | F | T | M | F | T | | | |
| 40 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 41 | 2 | - | 2 | 53.5 | - | 53.5 | 2.12 | - | 2.12 | 2 | - | 2 | | | | |
| 42 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 45 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 49 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 50 | 2 | - | 2 | 54.0 | - | 54.0 | 1.41 | - | 1.41 | 2 | - | 2 | | | | |
| 51 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 52 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 53 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 54 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| Totals | 79 | 26 | 105 | | | | | | | 79 | 26 | 105 | | | | |

Table 9 (cont'd)

Sebastes pinniger

1979 Commercial - Area 3D -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 36 | 1 | - | 1 | 6 | 1 | - | 1 | 40.0 | - | 40.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 37 | 1 | - | 1 | 7 | 0 | 1 | 1 | 0 | 48.0 | 48.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 38 | 0 | - | 0 | 8 | 0 | 1 | 1 | 0 | 41.0 | 41.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| 39 | 0 | - | 0 | 9 | 1 | 0 | 1 | 37.0 | 0 | 37.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 40 | 2 | - | 2 | 10 | 3 | 2 | 5 | 42.7 | 47.0 | 44.4 | 2.31 | 2.83 | 3.21 | 3 | 2 | 5 |
| 41 | 2 | 1 | 3 | 11 | 3 | 5 | 8 | 42.3 | 46.6 | 45.0 | 5.69 | 2.30 | 4.14 | 3 | 5 | 8 |
| 42 | 1 | 1 | 2 | 12 | 9 | 7 | 16 | 44.4 | 49.3 | 46.6 | 2.51 | 2.98 | 3.61 | 9 | 7 | 16 |
| 43 | 3 | 0 | 3 | 13 | 1 | 4 | 5 | 48.0 | 42.3 | 47.4 | 0.00 | 4.50 | 3.91 | 1 | 4 | 5 |
| 44 | 4 | 1 | 5 | 14 | 1 | 1 | 2 | 41.0 | 51.0 | 46.0 | 0.00 | 0.00 | 7.07 | 1 | 1 | 2 |
| 45 | 1 | 3 | 4 | 15 | 3 | 3 | 6 | 47.7 | 50.0 | 48.8 | 4.51 | 3.00 | 3.66 | 3 | 3 | 6 |
| 46 | 1 | 1 | 2 | 16 | 4 | 2 | 6 | 50.5 | 53.5 | 51.5 | 3.11 | 4.95 | 3.62 | 4 | 2 | 6 |
| 47 | 2 | 4 | 6 | 17 | 1 | 1 | 2 | 48.0 | 55.0 | 51.5 | 0.00 | 0.00 | 4.95 | 1 | 1 | 2 |
| 48 | 8 | 3 | 11 | 18 | 5 | 2 | 7 | 50.2 | 53.0 | 51.0 | 2.17 | 5.66 | 3.21 | 5 | 2 | 7 |
| 49 | 2 | 7 | 9 | 19 | 3 | 3 | 6 | 52.0 | 54.0 | 53.0 | 1.00 | 2.65 | 2.10 | 3 | 3 | 6 |
| 50 | 12 | 2 | 14 | 20 | 0 | 1 | 1 | 49.0 | 49.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| 51 | 16 | 6 | 22 | 21 | 4 | 1 | 5 | 50.8 | 53.0 | 51.2 | 0.96 | 0.00 | 1.30 | 4 | 1 | 5 |
| 52 | 24 | 0 | 24 | 22 | 4 | 0 | 4 | 52.5 | 0 | 52.5 | 3.11 | 0 | 3.11 | 4 | 0 | 4 |
| 53 | 26 | 3 | 29 | 23 | 3 | 1 | 4 | 49.7 | 51.0 | 50.0 | 1.53 | 0.00 | 1.41 | 3 | 1 | 4 |
| 54 | 27 | 1 | 28 | 24 | 2 | 0 | 2 | 51.0 | 0 | 51.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 |
| 55 | 15 | 2 | 17 | 25 | 3 | 1 | 4 | 51.7 | 51.0 | 51.5 | 2.52 | 0.00 | 2.08 | 3 | 1 | 4 |
| 56 | 8 | 1 | 9 | 26 | 3 | 0 | 3 | 50.3 | 0 | 50.3 | 0.58 | 0 | 0.58 | 3 | 0 | 3 |
| 57 | 5 | 2 | 7 | 27 | 6 | 0 | 6 | 52.0 | 0 | 52.0 | 1.26 | 0 | 1.26 | 6 | 0 | 6 |
| 58 | 2 | - | 2 | 28 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 29 | 3 | 0 | 3 | 52.3 | 0 | 52.3 | 2.08 | 0 | 2.08 | 3 | 0 | 3 |
| Total | 163 | 38 | 201 | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger1979 Commercial - Area 3D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d M F T |
|------------------------|-------------------------------|---|---|--------------------------|------|------|-----------------|------|------|--------------------------|---|---|--|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | |
| | Age (yr) | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | 4 | 0 | 4 | | 51.8 | 0 | 51.8 | 1.50 | 0 | 1.50 | 4 | 0 | 4 |
| 31 | 1 | 0 | 1 | | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 32 | 7 | 0 | 7 | | 53.6 | 0 | 53.6 | 2.07 | 0 | 2.07 | 7 | 0 | 7 |
| 33 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 34 | 5 | 0 | 5 | | 53.0 | 0 | 53.0 | 1.22 | 0 | 1.22 | 5 | 0 | 5 |
| 35 | 4 | 0 | 4 | | 52.3 | 0 | 52.3 | 0.96 | 0 | 0.96 | 4 | 0 | 4 |
| 36 | 6 | 0 | 6 | | 53.0 | 0 | 53.0 | 0.89 | 0 | 0.89 | 6 | 0 | 6 |
| 37 | 1 | 0 | 1 | | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 38 | 2 | 1 | 3 | | 54.5 | 49.0 | 52.7 | 3.54 | 0.00 | 4.04 | 2 | 1 | 3 |
| 39 | 2 | 0 | 2 | | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 |
| 40 | 4 | 0 | 4 | | 53.5 | 0 | 53.5 | 1.73 | 0 | 1.73 | 4 | 0 | 4 |
| 41 | 2 | 0 | 2 | | 55.0 | 0 | 55.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 |
| 42 | 6 | 0 | 6 | | 55.0 | 0 | 55.0 | 2.19 | 0 | 2.19 | 6 | 0 | 6 |
| 43 | 3 | 0 | 3 | | 53.0 | 0 | 53.0 | 2.00 | 0 | 2.00 | 3 | 0 | 3 |
| 44 | 3 | 0 | 3 | | 56.0 | 0 | 56.0 | 2.65 | 0 | 2.65 | 3 | 0 | 3 |
| 45 | 2 | 0 | 2 | | 52.5 | 0 | 52.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| 46 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 47 | 1 | 0 | 1 | | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 48 | 7 | 1 | 8 | | 53.7 | 48.0 | 53.0 | 1.38 | 0.00 | 2.39 | 7 | 1 | 8 |
| 49 | 4 | - | 4 | | 53.3 | - | 53.3 | 1.71 | - | 1.71 | 4 | - | 4 |
| 50 | 5 | - | 5 | | 54.6 | - | 54.6 | 1.67 | - | 1.67 | 5 | - | 5 |
| 51 | 3 | - | 3 | | 53.7 | - | 53.7 | 0.58 | - | 0.58 | 3 | - | 3 |
| 52 | 6 | - | 6 | | 53.0 | - | 53.0 | 1.26 | - | 1.26 | 6 | - | 6 |
| 53 | 2 | - | 2 | | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 2 | - | 2 |
| 54 | 3 | - | 3 | | 53.3 | - | 53.3 | 0.58 | - | 0.58 | 3 | - | 3 |
| 55 | 3 | - | 3 | | 54.7 | - | 54.7 | 0.58 | - | 0.58 | 3 | - | 3 |
| 56 | 2 | - | 2 | | 54.5 | - | 54.5 | 2.12 | - | 2.12 | 2 | - | 2 |
| 57 | 3 | - | 3 | | 53.3 | - | 53.3 | 2.08 | - | 2.08 | 3 | - | 3 |
| 58 | 0 | - | 0 | | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 59 | 2 | - | 2 | | 53.5 | - | 53.3 | 2.12 | - | 2.12 | 2 | - | 2 |

| | | | | | | | | | | | | |
|----|---|---|---|------|---|------|------|---|------|---|---|---|
| 58 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 59 | 2 | - | 2 | 53.5 | - | 53.3 | 2.12 | - | 2.12 | 2 | - | 2 |

Table 9 (cont'd)

S. pinniger

1979 Commercial - Area 3D - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | |
|------------------------|-------------------------------|----|-----|--------------------------|---|------|-----------------|---|------|--------------------------|----|-----|-------------------------------|--|
| | M | F | T | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | |
| | | | | M | F | T | M | F | T | M | F | T | | |
| 60 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| 61 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| 62 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| 63 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| 64 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| 65 | 2 | - | 2 | 56.5 | - | 56.5 | 0.50 | - | 0.50 | 2 | - | 2 | - | |
| 66 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | |
| 67 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | |
| 68 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | |
| 69 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | |
| 70 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | |
| 75 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | |
| Totals | 163 | 38 | 201 | | | | | | | 163 | 38 | 201 | | |

Table 9 (cont'd)

Sebastes pinniger1978 Commercial - Area 5A -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 40 | 1 | - | 1 | 7 | - | - | - | - | - | - | - | - | - | 1 | - | 1 |
| 41 | 2 | - | 2 | 8 | - | - | - | - | - | - | - | - | - | 1 | - | 1 |
| 42 | 1 | - | 1 | 9 | - | - | - | - | - | - | - | - | - | 5 | - | 5 |
| 43 | 2 | - | 2 | 10 | - | - | - | - | - | - | - | - | - | 4 | 1 | 5 |
| 44 | 1 | - | 1 | 11 | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 45 | 1 | - | 1 | 12 | - | - | - | - | - | - | - | - | - | 0 | 0 | 0 |
| 46 | 2 | 2 | 4 | 13 | - | - | - | - | - | - | - | - | - | 1 | 2 | 3 |
| 47 | 2 | 2 | 4 | 14 | - | - | - | - | - | - | - | - | - | 3 | 2 | 5 |
| 48 | 8 | 2 | 10 | 15 | - | - | - | - | - | - | - | - | - | 2 | 2 | 4 |
| 49 | 9 | 1 | 10 | 16 | - | - | - | - | - | - | - | - | - | 5 | 2 | 7 |
| 50 | 12 | 1 | 13 | 17 | - | - | - | - | - | - | - | - | - | 1 | 3 | 4 |
| 51 | 9 | 2 | 11 | 18 | - | - | - | - | - | - | - | - | - | 3 | 3 | 6 |
| 52 | 14 | 2 | 16 | 19 | - | - | - | - | - | - | - | - | - | 2 | 0 | 2 |
| 53 | 9 | 2 | 11 | 20 | - | - | - | - | - | - | - | - | - | 4 | 0 | 4 |
| 54 | 5 | 2 | 7 | 21 | 9 | - | 9 | 50.2 | - | 50.2 | 1.09 | - | 1.09 | 9 | 0 | 9 |
| 55 | 2 | 1 | 3 | 22 | 2 | 1 | 3 | 52.5 | 56.0 | 53.7 | 0.71 | 0.00 | 2.08 | 2 | 1 | 3 |
| 56 | 1 | 1 | 2 | 23 | 1 | 0 | 1 | 49.0 | 0 | 49.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 24 | 2 | 0 | 2 | 52.5 | 0 | 52.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| | | | | 25 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 26 | 2 | 0 | 2 | 51.5 | 0 | 51.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 |
| | | | | 27 | 2 | 0 | 2 | 51.5 | 0 | 51.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| | | | | 28 | 2 | 0 | 2 | 50.5 | 0 | 50.5 | 2.12 | 0 | 2.12 | 2 | 0 | 2 |
| | | | | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 81 | 18 | 99 | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger

1978 Commercial - Area 5A - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|------|------|-----------------|------|----|--------------------------|----|---|----------------------------|---|---|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | M |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 2 | 0 | 2 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | 1 | 1 | 1 | 1 |
| 32 | 4 | 0 | 4 | 51.3 | 0 | 51.3 | 1.26 | 0 | 1.26 | 4 | 0 | 4 | 1 | 1 | 1 | 1 |
| 33 | 4 | 0 | 4 | 52.8 | 0 | 52.8 | 1.50 | 0 | 1.50 | 4 | 0 | 4 | 1 | 1 | 1 | 1 |
| 34 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 35 | 4 | 0 | 4 | 51.5 | 0 | 51.5 | 1.91 | 0 | 1.91 | 4 | 0 | 4 | 1 | 1 | 1 | 1 |
| 36 | 2 | 0 | 2 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | 1 | 1 | 1 | 1 |
| 37 | 1 | 0 | 1 | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 38 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 39 | 3 | 1 | 4 | 52.3 | 51.0 | 52.0 | 2.08 | 0.00 | 1.83 | 3 | 1 | 4 | 1 | 1 | 1 | 1 |
| 40 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | 0 | - | 0 | - | 0 | 0 |
| 41 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | - | 1 | 1 |
| 42 | 2 | - | 2 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 2 | - | 2 | 1 | - | 2 | 1 |
| 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| 44 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| 45 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| 47 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | - | 1 | 1 |
| Totals | 47 | 2 | 49 | | | | | | | 81 | 18 | 99 | | | | |

Table 9 (cont'd)

Sebastes pinniger1977 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|----|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 37 | 1 | - | 1 | 8 | - | - | - | - | - | - | - | - | - | - | 1 | 1 | |
| 38 | 1 | 3 | 4 | 9 | - | - | - | - | - | - | - | - | - | - | 0 | 0 | |
| 39 | 1 | 0 | 1 | 10 | - | - | - | - | - | - | - | - | - | - | 0 | 0 | |
| 40 | 0 | 1 | 1 | 11 | - | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 41 | 0 | 3 | 3 | 12 | - | - | - | - | - | - | - | - | - | - | 2 | 5 | 7 |
| 42 | 1 | 1 | 2 | 13 | - | - | - | - | - | - | - | - | - | - | 2 | 1 | 3 |
| 43 | 0 | 0 | 0 | 14 | - | - | - | - | - | - | - | - | - | - | 0 | 1 | 1 |
| 44 | 1 | 0 | 1 | 15 | - | - | - | - | - | - | - | - | - | - | 5 | 6 | 11 |
| 45 | 1 | 2 | 3 | 16 | - | - | - | - | - | - | - | - | - | - | 4 | 2 | 6 |
| 46 | 6 | 0 | 6 | 17 | - | - | - | - | - | - | - | - | - | - | 4 | 5 | 9 |
| 47 | 6 | 3 | 9 | 18 | - | - | - | - | - | - | - | - | - | - | 2 | 3 | 5 |
| 48 | 0 | 2 | 2 | 19 | - | - | - | - | - | - | - | - | - | - | 4 | 1 | 5 |
| 49 | 7 | 1 | 8 | 20 | - | - | - | - | - | - | - | - | - | - | 3 | 1 | 4 |
| 50 | 6 | 2 | 8 | 21 | 3 | 3 | 6 | 50.7 | 54.7 | 52.7 | 2.08 | 2.31 | 2.94 | 3 | 3 | 6 | |
| 51 | 7 | 3 | 10 | 22 | 0 | 1 | 1 | 0 | 53.0 | 53.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| 52 | 8 | 5 | 13 | 23 | 5 | 1 | 6 | 49.2 | 53.0 | 49.8 | 1.48 | 0.00 | 2.04 | 5 | 1 | 6 | |
| 53 | 8 | 4 | 12 | 24 | 2 | 1 | 3 | 50.0 | 51.0 | 50.3 | 1.41 | 0.00 | 1.15 | 2 | 1 | 3 | |
| 54 | 4 | 2 | 6 | 25 | 2 | 0 | 2 | 49.5 | 0 | 49.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | |
| 55 | 5 | 0 | 5 | 26 | 2 | 2 | 4 | 51.5 | 54.5 | 53.0 | 0.71 | 2.12 | 2.16 | 2 | 2 | 4 | |
| 56 | 1 | 3 | 4 | 27 | 1 | 0 | 1 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| 57 | 1 | 0 | 1 | 28 | 4 | 0 | 4 | 52.8 | 0 | 52.8 | 0.96 | 0 | 0.96 | 4 | 0 | 4 | |
| 58 | - | 0 | 0 | 29 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| 59 | - | 1 | 1 | | | | | | | | | | | | | | |
| Total | 65 | 36 | 101 | | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger

1977 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|----|--------------------------|------|------|-----------------|------|------|--------------------------|----|-----|----------------------------|---|---|
| | M | F | T | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T |
| Age (yr) | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31 | 2 | 0 | 2 | 52.0 | 0 | 52.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | - | - | - |
| 32 | 2 | 0 | 2 | 52.0 | 0 | 53.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | - | - | - |
| 33 | 0 | 1 | 1 | 0 | 59.0 | 59.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | - | - | - |
| 34 | 4 | - | 4 | 53.8 | - | 53.8 | 1.50 | - | 1.50 | 4 | - | 4 | - | - | - |
| 35 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 36 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 37 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 38 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| 39 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| 40 | 2 | - | 2 | 54.5 | - | 54.5 | 2.12 | - | 2.12 | 2 | - | 2 | - | - | - |
| 41 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 42 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| 43 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 44 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| 45 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 47 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | - | - | 0 |
| 50 | 1 | - | 1 | 57.0 | - | 57.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| 68 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | - | - | - |
| Totals | 37 | 9 | 46 | | | | | | | 65 | 36 | 101 | | | |

Table 9 (cont'd)

Sebastes pinniger1978 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|---|----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 37 | 1 | 1 | 2 | 9 | - | - | - | - | - | - | - | - | - | - | 1 | 1 | |
| 38 | 1 | 0 | 1 | 10 | - | - | - | - | - | - | - | - | - | 1 | 0 | 1 | |
| 39 | 2 | 0 | 2 | 11 | - | - | - | - | - | - | - | - | - | 2 | 2 | 4 | |
| 40 | 3 | 1 | 4 | 12 | - | - | - | - | - | - | - | - | - | 3 | 2 | 5 | |
| 41 | 0 | 1 | 1 | 13 | - | - | - | - | - | - | - | - | - | 3 | 1 | 4 | |
| 42 | 1 | 0 | 1 | 14 | - | - | - | - | - | - | - | - | - | 8 | 2 | 10 | |
| 43 | 3 | 0 | 3 | 15 | - | - | - | - | - | - | - | - | - | 10 | 4 | 14 | |
| 44 | 7 | 1 | 8 | 16 | - | - | - | - | - | - | - | - | - | 8 | 10 | 18 | |
| 45 | 2 | 0 | 2 | 17 | - | - | - | - | - | - | - | - | - | 9 | 10 | 19 | |
| 46 | 3 | 4 | 7 | 18 | - | - | - | - | - | - | - | - | - | 13 | 8 | 21 | |
| 47 | 9 | 4 | 13 | 19 | - | - | - | - | - | - | - | - | - | 15 | 4 | 19 | |
| 48 | 8 | 6 | 14 | 20 | - | - | - | - | - | - | - | - | - | 16 | 7 | 23 | |
| 49 | 19 | 5 | 24 | 21 | 17 | 6 | 23 | 51.3 | 53.5 | 51.9 | 2.31 | 4.32 | 3.02 | 17 | 6 | 23 | |
| 50 | 31 | 4 | 35 | 22 | 14 | 1 | 15 | 51.7 | 52.0 | 51.7 | 2.02 | 0.00 | 1.94 | 14 | 1 | 15 | |
| 51 | 26 | 4 | 30 | 23 | 13 | 4 | 17 | 51.2 | 55.5 | 52.2 | 1.77 | 4.80 | 3.21 | 13 | 4 | 17 | |
| 52 | 28 | 5 | 33 | 24 | 5 | 3 | 8 | 51.6 | 58.0 | 54.0 | 2.30 | 1.00 | 3.78 | 5 | 3 | 8 | |
| 53 | 30 | 9 | 39 | 25 | 10 | 2 | 12 | 52.2 | 60.0 | 53.5 | 2.25 | 1.41 | 3.68 | 10 | 2 | 12 | |
| 54 | 21 | 5 | 26 | 26 | 4 | 0 | 4 | 51.8 | 0 | 51.8 | 1.71 | 0 | 1.71 | 4 | 0 | 4 | |
| 55 | 9 | 3 | 12 | 27 | 3 | 1 | 4 | 54.3 | 60.0 | 55.8 | 2.52 | 0.00 | 3.50 | 3 | 1 | 4 | |
| 56 | 11 | 6 | 17 | 28 | 4 | 0 | 4 | 52.0 | 0 | 52.0 | 2.83 | 0 | 2.83 | 4 | 0 | 4 | |
| 57 | 5 | 4 | 9 | 29 | 5 | 0 | 5 | 52.2 | 0 | 52.2 | 1.92 | 0 | 1.92 | 5 | 0 | 5 | |
| 58 | 3 | 1 | 4 | 30 | 6 | 1 | 7 | 52.3 | 59.0 | 53.3 | 0.82 | 0.00 | 2.63 | 6 | 1 | 7 | |
| 59 | - | 4 | 4 | 31 | 3 | - | 3 | 52.7 | - | 52.7 | 1.53 | - | 1.53 | 3 | - | 3 | |
| 60 | - | 1 | 1 | 32 | 7 | - | 7 | 52.9 | - | 52.9 | 2.91 | - | 2.91 | 7 | - | 7 | |
| 61 | - | 1 | 1 | 33 | 6 | - | 6 | 52.8 | - | 52.8 | 1.83 | - | 1.83 | 6 | - | 6 | |
| 62 | - | 1 | 1 | 34 | 2 | - | 2 | 54.0 | - | 54.0 | 2.83 | - | 2.83 | 2 | - | 2 | |
| | | | | 35 | 6 | - | 6 | 52.7 | - | 52.7 | 0.82 | - | 0.82 | 6 | - | 6 | |
| | | | | 36 | 5 | - | 5 | 54.0 | - | 54.0 | 1.41 | - | 1.41 | 5 | - | 5 | |
| | | | | 37 | 3 | - | 3 | 53.0 | - | 53.0 | 2.00 | - | 2.00 | 3 | - | 3 | |
| | | | | 38 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | |
| | | | | 39 | 2 | - | 2 | 53.0 | - | 53.0 | 2.83 | - | 2.83 | 2 | - | 2 | |

Total 223 71 294

Table 9 (cont'd)

S. pinniger1978 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|--------------------------|----|------|-----------------|---|------|--------------------------|----|-----|----------------------------|---|---|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 40 | 6 | - | 6 | 54.3 | - | 54.3 | 2.50 | - | 2.50 | 6 | - | 6 | | | |
| 41 | 3 | - | 3 | 56.0 | - | 56.0 | 2.00 | - | 2.00 | 3 | - | 3 | | | |
| 42 | 1 | - | 1 | 58.0 | - | 58.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 43 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 44 | 1 | - | 1 | 57.0 | - | 57.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 45 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 46 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 47 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| 48 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 49 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 50 | 2 | - | 2 | 55.5 | - | 55.5 | 2.12 | - | 2.12 | 2 | - | 2 | | | |
| 51 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | 0 |
| 52 | 2 | - | 2 | 54.5 | - | 54.5 | 2.12 | - | 2.12 | 2 | - | 2 | | | |
| 53 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | | | | 133 | 18 | 151 | | | | 221 | 69 | 290 | | | |

Table 9 (cont'd)

Sebastes pinniger1979 Commercial - Area 5B -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | 1 | 2 | | 2 | 1 | 3 | 43.0 | 43.0 | 43.0 | 1.41 | 0.00 | 1.00 | 2 | 1 | 3 |
| 41 | 1 | 1 | 2 | 9 | 2 | 1 | 3 | 43.0 | 43.0 | 43.0 | 1.41 | 0.00 | 1.00 | 2 | 1 | 3 |
| 42 | 3 | 0 | 3 | 10 | 3 | 2 | 5 | 45.3 | 44.0 | 44.8 | 3.06 | 1.41 | 2.39 | 3 | 2 | 5 |
| 43 | 3 | 4 | 7 | 11 | 7 | 3 | 10 | 43.6 | 44.3 | 43.8 | 1.90 | 1.15 | 1.69 | 7 | 3 | 10 |
| 44 | 5 | 1 | 6 | 12 | 3 | 5 | 8 | 46.3 | 48.8 | 47.9 | 2.08 | 6.69 | 5.33 | 3 | 5 | 8 |
| 45 | 3 | 3 | 6 | 13 | 4 | 3 | 7 | 45.5 | 49.3 | 47.1 | 3.79 | 2.89 | 3.76 | 4 | 3 | 7 |
| 46 | 2 | 1 | 3 | 14 | 3 | 1 | 4 | 47.7 | 49.0 | 48.0 | 1.53 | 0.00 | 1.41 | 3 | 1 | 4 |
| 47 | 2 | 0 | 2 | 15 | 4 | 2 | 6 | 51.0 | 51.5 | 51.2 | 2.94 | 3.54 | 2.79 | 4 | 2 | 6 |
| 48 | 6 | 1 | 7 | 16 | 6 | 3 | 9 | 49.0 | 55.3 | 51.1 | 2.97 | 2.31 | 4.11 | 6 | 3 | 9 |
| 49 | 6 | 2 | 8 | 17 | 5 | 3 | 8 | 51.6 | 54.7 | 52.8 | 2.07 | 0.58 | 2.25 | 5 | 3 | 8 |
| 50 | 6 | 0 | 6 | 18 | 1 | 1 | 2 | 49.0 | 55.0 | 52.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 51 | 7 | 3 | 10 | 19 | 3 | 4 | 7 | 49.3 | 53.5 | 51.7 | 4.04 | 1.00 | 3.30 | 3 | 4 | 7 |
| 52 | 7 | 1 | 8 | 20 | 2 | 3 | 5 | 50.0 | 52.7 | 51.6 | 0.00 | 8.50 | 6.19 | 2 | 3 | 5 |
| 53 | 7 | 1 | 8 | 21 | 5 | 2 | 7 | 50.6 | 54.5 | 51.7 | 1.14 | 4.95 | 2.93 | 5 | 2 | 7 |
| 54 | 6 | 8 | 14 | 22 | 1 | 0 | 1 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 55 | 1 | 3 | 4 | 23 | 1 | 1 | 2 | 52.0 | 53.0 | 52.5 | 0.00 | 0.00 | 0.71 | 1 | 1 | 2 |
| 56 | 1 | 1 | 2 | 24 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 57 | - | 1 | 1 | 25 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 58 | - | 2 | 2 | 26 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 59 | - | 1 | 1 | 27 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 28 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| | | | | 29 | 2 | - | 2 | 53.5 | - | 53.5 | 0.71 | - | 0.71 | 2 | - | 2 |
| Total | 66 | 34 | 100 | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger

1979 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|------|-----------------|---|------|--------------------------|----|-----|----------------------------|--|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 30 | 0 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | |
| 31 | 1 | - | 1 | 53.0 | - | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 32 | 1 | - | 1 | 55.0 | - | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 33 | 1 | - | 1 | 51.0 | - | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 34 | 1 | - | 1 | 51.0 | - | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 35 | 3 | - | 3 | 52.0 | - | - | 52.0 | 1.00 | - | 1.00 | 3 | - | 3 | 1 | | |
| 36 | 1 | - | 1 | 52.0 | - | - | 52.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 37 | 1 | - | 1 | 51.0 | - | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 38 | 0 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | |
| 39 | 0 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | |
| 40 | 0 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | |
| 41 | 2 | - | 2 | 53.0 | - | - | 53.0 | 1.41 | - | 1.41 | 2 | - | 2 | 1 | | |
| 42 | 0 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | |
| 43 | 1 | - | 1 | 53.0 | - | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| 44 | 0 | - | 0 | 0 | - | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | |
| 45 | 1 | - | 1 | 54.0 | - | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 | 1 | | |
| Totals | 66 | 34 | 100 | | | | | | | | 66 | 34 | 100 | | | |

Table 9 (cont'd)

Sebastes pinniger1978 Commercial - Area 5C -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 31 | - | 1 | 1 | 6 | - | 1 | 1 | - | 31.0 | 31.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 32 | - | 2 | 2 | 7 | 4 | 4 | 8 | 36.5 | 36.5 | 36.5 | 1.29 | 2.65 | 1.93 | 4 | 4 | 8 |
| 33 | 3 | 1 | 4 | 8 | 8 | 11 | 19 | 38.0 | 36.9 | 37.4 | 1.77 | 2.43 | 2.19 | 8 | 11 | 19 |
| 34 | 0 | 4 | 4 | 9 | 43 | 22 | 65 | 39.2 | 39.2 | 39.2 | 2.97 | 2.58 | 2.82 | 43 | 22 | 65 |
| 35 | 6 | 5 | 11 | 10 | 39 | 25 | 64 | 40.8 | 39.7 | 40.3 | 2.40 | 2.73 | 2.56 | 39 | 25 | 64 |
| 36 | 8 | 8 | 16 | 11 | 30 | 20 | 50 | 41.1 | 40.8 | 41.0 | 2.66 | 4.27 | 3.36 | 30 | 20 | 50 |
| 37 | 11 | 8 | 19 | 12 | 22 | 22 | 44 | 42.0 | 43.9 | 43.0 | 3.46 | 3.65 | 3.65 | 22 | 22 | 44 |
| 38 | 11 | 8 | 19 | 13 | 13 | 18 | 31 | 41.3 | 43.6 | 42.6 | 2.50 | 4.16 | 3.68 | 13 | 18 | 31 |
| 39 | 18 | 11 | 29 | 14 | 9 | 4 | 13 | 44.0 | 44.5 | 44.2 | 3.61 | 3.00 | 3.31 | 9 | 4 | 13 |
| 40 | 26 | 13 | 39 | 15 | 5 | 7 | 12 | 45.6 | 47.3 | 46.6 | 1.52 | 4.07 | 3.26 | 5 | 7 | 12 |
| 41 | 28 | 10 | 38 | 16 | 2 | 1 | 3 | 47.0 | 51.0 | 48.3 | 5.66 | 0.00 | 4.62 | 2 | 1 | 3 |
| 42 | 18 | 12 | 30 | 17 | 3 | 5 | 8 | 45.7 | 51.6 | 49.4 | 3.21 | 2.30 | 3.93 | 3 | 5 | 8 |
| 43 | 15 | 14 | 29 | 18 | 1 | 5 | 6 | 49.0 | 53.6 | 52.8 | 0.00 | 2.61 | 2.99 | 1 | 5 | 6 |
| 44 | 7 | 9 | 16 | 19 | 1 | 2 | 3 | 47.0 | 53.5 | 51.3 | 0.00 | 0.71 | 3.79 | 1 | 2 | 3 |
| 45 | 10 | 7 | 17 | 20 | 6 | 0 | 6 | 50.2 | 0 | 50.2 | 1.94 | 0 | 1.94 | 6 | 0 | 6 |
| 46 | 6 | 4 | 10 | 21 | 1 | 3 | 4 | 52.0 | 54.7 | 54.0 | 0.00 | 1.53 | 1.83 | 1 | 3 | 4 |
| 47 | 9 | 7 | 16 | 22 | 3 | 0 | 3 | 48.7 | 0 | 48.7 | 1.53 | 0 | 1.53 | 3 | 0 | 3 |
| 48 | 4 | 4 | 8 | 23 | 1 | 1 | 2 | 48.0 | 57.0 | 52.5 | 0.00 | 0.00 | 6.36 | 1 | 1 | 2 |
| 49 | 5 | 3 | 8 | 24 | 3 | - | 3 | 52.3 | - | 52.3 | 0.58 | - | 0.58 | 3 | - | 3 |
| 50 | 11 | 0 | 11 | 25 | 2 | - | 2 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 2 | - | 2 |
| 51 | 11 | 7 | 18 | 26 | 3 | - | 3 | 51.7 | - | 51.7 | 0.58 | - | 0.58 | 3 | - | 3 |
| 52 | 14 | 1 | 15 | 27 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| 53 | 6 | 4 | 10 | 28 | 4 | - | 4 | 50.8 | - | 50.8 | 0.96 | - | 0.96 | 4 | - | 4 |
| 54 | 1 | 3 | 4 | 29 | 4 | - | 4 | 50.3 | - | 50.3 | 1.26 | - | 1.26 | 4 | - | 4 |
| 55 | 0 | 2 | 2 | 30 | 4 | - | 4 | 50.8 | - | 50.8 | 0.50 | - | 0.50 | 4 | - | 4 |
| 56 | 1 | 1 | 2 | 31 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 57 | - | 2 | 2 | 32 | 2 | - | 2 | 52.5 | - | 52.5 | 0.71 | - | 0.71 | 2 | - | 2 |
| Total | 229 | 151 | 380 | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger1978 Commercial - Area 5C - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | |
|------------------------|-------------------------------|---|---|--------------------------|-----|------|-----------------|---|------|--------------------------|-----|-----|----------------------------|--|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | | |
| 33 | 3 | - | 3 | 51.0 | - | 51.0 | 0.00 | - | 0.00 | 3 | - | 3 | | |
| 34 | 2 | - | 2 | 51.5 | - | 51.5 | 2.12 | - | 2.12 | 2 | - | 2 | | |
| 35 | 4 | - | 4 | 52.3 | - | 52.3 | 1.50 | - | 1.50 | 4 | - | 4 | | |
| 36 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | |
| 37 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | |
| 38 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 39 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 40 | 1 | - | 1 | 51.0 | - | 51.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 41 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | |
| 42 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | |
| 43 | 1 | - | 1 | 56.0 | - | 56.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 44 | 1 | - | 1 | 54.0 | - | 54.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| 45 | 1 | - | 1 | 52.0 | - | 52.0 | 0.00 | - | 0.00 | 1 | - | 1 | | |
| Totals | | | | 229 | 151 | 380 | | | | 229 | 151 | 380 | | |

Table 9 (cont'd)

Sebastes pinniger

1979 Commercial - Area 5C -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|---|---|-----------------|------|------|--------------------------|------|------|----------------------------|---|---|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| | | | | | | | | | | | | | | | | | |
| 42 | 1 | - | 1 | 10 | 2 | 5 | 7 | 43.5 | 46.4 | 45.6 | 2.12 | 1.34 | 1.99 | 2 | 5 | 7 | |
| 43 | 0 | - | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 44 | 0 | - | 0 | 12 | 1 | 2 | 3 | 50.0 | 52.0 | 51.3 | 0.00 | 1.41 | 1.53 | 1 | 2 | 3 | |
| 45 | 1 | 2 | 3 | 13 | 0 | 1 | 1 | 0 | 53.0 | 53.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | 1 |
| 46 | 0 | 0 | 0 | 14 | 1 | 1 | 2 | 48.0 | 50.0 | 49.0 | 0.00 | 0.00 | 1.41 | 1 | 1 | 2 | |
| 47 | 0 | 2 | 2 | 15 | 2 | 1 | 3 | 48.5 | 50.0 | 49.0 | 0.71 | 0.00 | 1.00 | 2 | 1 | 3 | |
| 48 | 3 | 1 | 4 | 16 | 1 | 0 | 1 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| 49 | 3 | 0 | 3 | 17 | 0 | 2 | 2 | 0 | 55.5 | 55.5 | 0 | 2.12 | 2.12 | 0 | 2 | 2 | |
| 50 | 8 | 2 | 10 | 18 | 4 | 1 | 5 | 51.0 | 55.0 | 51.8 | 2.16 | 0.00 | 2.59 | 4 | 1 | 5 | |
| 51 | 9 | 1 | 10 | 19 | 0 | 2 | 2 | 0 | 54.5 | 54.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 | |
| 52 | 11 | 0 | 11 | 20 | 1 | 1 | 2 | 50.0 | 54.0 | 52.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 | |
| 53 | 15 | 2 | 17 | 21 | 1 | 1 | 2 | 52.0 | 58.0 | 55.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 | |
| 54 | 14 | 3 | 17 | 22 | 2 | 0 | 2 | 51.5 | 0 | 51.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | |
| 55 | 4 | 2 | 6 | 23 | 4 | 1 | 5 | 52.8 | 59.0 | 54.0 | 2.22 | 0.00 | 3.39 | 4 | 1 | 5 | |
| 56 | 1 | 0 | 1 | 24 | 2 | 0 | 2 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | |
| 57 | - | 2 | 2 | 25 | 2 | 0 | 2 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | |
| 58 | - | 1 | 1 | 26 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| 59 | - | 1 | 1 | 27 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 28 | 1 | 0 | 1 | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 29 | 2 | 0 | 2 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | |
| | | | | 30 | 5 | 0 | 5 | 52.2 | 0 | 52.2 | 0.84 | 0 | 0.84 | 5 | 0 | 5 | |
| | | | | 31 | 3 | 0 | 3 | 52.7 | 0 | 52.7 | 0.58 | 0 | 0.58 | 3 | 0 | 3 | |
| | | | | 32 | 4 | 0 | 4 | 52.3 | 0 | 52.3 | 1.71 | 0 | 1.71 | 4 | 0 | 4 | |
| | | | | 33 | 2 | 0 | 2 | 51.5 | 0 | 51.5 | 0.71 | 0 | 0.71 | 2 | 0 | 2 | |
| | | | | 34 | 2 | 0 | 2 | 51.0 | 0 | 51.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | |
| | | | | 35 | 3 | 0 | 3 | 53.7 | 0 | 53.7 | 0.58 | 0 | 0.58 | 3 | 0 | 3 | |
| Total | 70 | 19 | 89 | | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger

1979 Commercial - Area 5C - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|----|----|----------------------------|---|--|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | |
| 36 | 5 | 0 | 5 | 36 | 52.6 | 0 | 52.6 | 2.07 | 0 | 2.07 | 5 | 0 | 5 | | | |
| 37 | 7 | 0 | 7 | 37 | 53.1 | 0 | 53.1 | 1.95 | 0 | 1.95 | 7 | 0 | 7 | | | |
| 38 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 39 | 5 | 0 | 5 | 39 | 53.8 | 0 | 53.8 | 0.84 | 0 | 0.84 | 5 | 0 | 5 | | | |
| 40 | 1 | 0 | 1 | 40 | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 41 | 1 | 0 | 1 | 41 | 52.0 | 0 | 52.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 42 | 2 | 0 | 2 | 42 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 2 | 0 | 2 | | | |
| 43 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 44 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 45 | 1 | 0 | 1 | 45 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 46 | 0 | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 47 | 0 | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 48 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 49 | 0 | 1 | 1 | 49 | 0 | 57.0 | 57.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 50 | 0 | - | 0 | 50 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 51 | 0 | - | 0 | 51 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 52 | 0 | - | 0 | 52 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | |
| 53 | 1 | - | 1 | 53 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | 70 | 19 | 89 | | | | | | | | 70 | 19 | 89 | | | |

Table 9 (cont'd)

Sebastes pinniger

1978 Commercial - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 47 | 1 | 2 | 3 | 13 | - | - | - | - | - | - | - | - | - | 1 | - | 1 |
| 48 | 3 | 0 | 3 | 14 | - | - | - | - | - | - | - | - | - | 0 | 1 | 1 |
| 49 | 2 | 0 | 2 | 15 | - | - | - | - | - | - | - | - | - | 1 | 4 | 5 |
| 50 | 6 | 2 | 8 | 16 | - | - | - | - | - | - | - | - | - | 1 | 3 | 4 |
| 51 | 10 | 2 | 12 | 17 | - | - | - | - | - | - | - | - | - | 1 | 3 | 4 |
| 52 | 5 | 8 | 13 | 18 | - | - | - | - | - | - | - | - | - | 2 | 6 | 8 |
| 53 | 5 | 5 | 10 | 19 | - | - | - | - | - | - | - | - | - | 2 | 5 | 7 |
| 54 | 6 | 5 | 11 | 20 | - | - | - | - | - | - | - | - | - | 2 | 10 | 12 |
| 55 | 7 | 5 | 12 | 21 | 2 | 10 | 12 | 50.0 | 55.8 | 54.8 | 0.00 | 1.69 | 2.72 | 2 | 10 | 12 |
| 56 | 2 | 10 | 12 | 22 | 0 | 3 | 3 | 0 | 55.7 | 55.7 | 0 | 3.79 | 3.79 | 0 | 3 | 3 |
| 57 | - | 6 | 6 | 23 | 1 | 1 | 2 | 51.0 | 57.0 | 54.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 58 | - | 4 | 4 | 24 | 4 | 1 | 5 | 50.5 | 59.0 | 52.2 | 1.29 | 0.00 | 3.96 | 4 | 1 | 5 |
| 59 | - | 3 | 3 | 25 | 1 | 1 | 2 | 51.0 | 59.0 | 55.0 | 0.00 | 0.00 | 5.66 | 1 | 1 | 2 |
| 60 | - | 1 | 1 | 26 | 0 | 3 | 3 | 0 | 56.0 | 56.0 | 0 | 3.00 | 3.00 | 0 | 3 | 3 |
| | | | | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 29 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 30 | 1 | 0 | 1 | 51.0 | 0 | 51.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 33 | 1 | 1 | 2 | 54.0 | 58.0 | 56.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 |
| | | | | 34 | 2 | 0 | 2 | 54.0 | 0 | 54.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 |
| | | | | 35 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 36 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 37 | 1 | 0 | 1 | 50.0 | 0 | 50.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| | | | | 38 | 4 | 0 | 4 | 55.0 | 0 | 55.0 | 0.82 | 0 | 0.82 | 4 | 0 | 4 |
| | | | | 39 | 3 | 0 | 3 | 51.3 | 0 | 51.3 | 1.53 | 0 | 1.53 | 3 | 0 | 3 |
| Total | 47 | 53 | 100 | | | | | | | | | | | | | |

Table 9 (cont'd)

S. pinniger

1978 Commercial - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|------|------|-----------------|------|----|--------------------------|-----|---|----------------------------|--|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 40 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 41 | 2 | 0 | 2 | 51.0 | 0 | 51.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 | | | | |
| 42 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 44 | 1 | 0 | 1 | 55.0 | 0 | 55.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 45 | 1 | 0 | 1 | 56.0 | 0 | 56.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 46 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 47 | 1 | 0 | 1 | 54.0 | 0 | 54.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 49 | 1 | 0 | 1 | 53.0 | 0 | 53.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 50 | 2 | 0 | 2 | 53.0 | 0 | 53.0 | 2.83 | 0 | 2.83 | 2 | 0 | 2 | | | | |
| 51 | 0 | 1 | 1 | 0 | 53.0 | 53.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 52 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 53 | 1 | - | 1 | 53.0 | - | 53.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 54 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 55 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 56 | 2 | - | 2 | 53.5 | - | 53.5 | 2.12 | - | 2.12 | 2 | - | 2 | | | | |
| 75 | - | - | | | | | | | | 1 | - | 1 | | | | |
| Totals | 36 | 21 | 57 | | | | | | | 47 | 53 | 100 | | | | |

Table 10. *Sebastodes proriger* age - length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1978 Commercial - Area 5A -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|----|----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| 30 | 2 | - | 2 | 8 | 3 | 1 | 4 | 30.7 | 32.0 | 31.0 | 0.58 | 0.00 | 0.82 | 3 | 1 | 4 | |
| 31 | 5 | - | 5 | 9 | 5 | 4 | 9 | 31.4 | 34.0 | 32.6 | 1.14 | 1.41 | 1.81 | 5 | 4 | 9 | |
| 32 | 7 | 1 | 8 | 10 | 3 | 9 | 12 | 31.4 | 35.0 | 34.2 | 0.58 | 1.00 | 1.75 | 3 | 9 | 12 | |
| 33 | 2 | 5 | 7 | 11 | 0 | 5 | 5 | 0 | 34.2 | 34.2 | 0 | 1.10 | 1.10 | 0 | 5 | 5 | |
| 34 | 1 | 8 | 9 | 12 | 0 | 5 | 5 | 0 | 34.6 | 34.6 | 0 | 1.82 | 1.82 | 0 | 5 | 5 | |
| 35 | 3 | 4 | 7 | 13 | 2 | 5 | 7 | 33.0 | 38.2 | 36.7 | 1.41 | 0.84 | 2.69 | 2 | 5 | 7 | |
| 36 | 1 | 5 | 6 | 14 | 2 | 2 | 4 | 36.5 | 39.5 | 38.0 | 2.12 | 4.95 | 3.56 | 2 | 2 | 4 | |
| 37 | 1 | 3 | 4 | 15 | 1 | 8 | 9 | 32.0 | 40.6 | 39.7 | 0.00 | 2.20 | 3.54 | 1 | 8 | 9 | |
| 38 | 1 | 4 | 5 | 16 | 2 | 3 | 5 | 35.0 | 41.7 | 39.0 | 2.83 | 0.58 | 3.94 | 2 | 3 | 5 | |
| 39 | - | 8 | 8 | 17 | 1 | 4 | 5 | 32.0 | 40.5 | 38.8 | 0.00 | 1.29 | 3.96 | 1 | 4 | 5 | |
| 40 | - | 3 | 3 | 18 | 1 | 3 | 4 | 35.0 | 40.3 | 39.0 | 0.00 | 2.08 | 3.16 | 1 | 3 | 4 | |
| 41 | - | 9 | 9 | 19 | 0 | 2 | 2 | 0 | 40.0 | 40.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 | |
| 42 | - | 7 | 7 | 20 | 1 | 1 | 2 | 35.0 | 39.0 | 37.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 | |
| 43 | - | 2 | 2 | 21 | 0 | 3 | 3 | 0 | 43.0 | 43.0 | 0 | 1.73 | 1.73 | 0 | 3 | 3 | |
| 44 | - | 4 | 4 | 22 | 0 | 1 | 1 | 0 | 41.0 | 41.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| | | | | 23 | 0 | 2 | 2 | 0 | 42.0 | 42.0 | 0 | 0.00 | 0.00 | 0 | 2 | 2 | |
| | | | | 24 | 0 | 1 | 1 | 0 | 41.0 | 41.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| | | | | 25 | 0 | 1 | 1 | 0 | 41.0 | 41.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| | | | | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | 27 | 0 | 1 | 1 | 0 | 44.0 | 44.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| | | | | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | | | 30 | 0 | 1 | 1 | 0 | 40.0 | 40.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | |
| | | | | 31 | 1 | - | 1 | 36.0 | - | 36.0 | 0.00 | - | 0.00 | 1 | - | 1 | |
| Total | 23 | 63 | 86 | Totals | 22 | 62 | 84 | | | | | | | 22 | 62 | 84 | |

Table 10 (cont'd)

Sebastes proriger

1979 Research - Area 5A -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 26 | 1 | 1 | 2 | 6 | 1 | - | 1 | 28.0 | - | 28.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 27 | 1 | 0 | 1 | 7 | 1 | 3 | 4 | 29.0 | 28.0 | 28.3 | 0.00 | 1.73 | 1.50 | 1 | 3 | 4 |
| 28 | 10 | 1 | 11 | 8 | 2 | 4 | 6 | 27.5 | 29.3 | 28.7 | 0.71 | 0.96 | 1.21 | 2 | 4 | 6 |
| 29 | 8 | 3 | 11 | 9 | 2 | 1 | 3 | 28.0 | 34.0 | 30.0 | 0.00 | 0.00 | 3.46 | 2 | 1 | 3 |
| 30 | 6 | 2 | 8 | 10 | 3 | 9 | 12 | 29.3 | 34.6 | 33.3 | 0.58 | 1.33 | 2.63 | 3 | 9 | 12 |
| 31 | 3 | 5 | 8 | 11 | 8 | 17 | 25 | 30.1 | 33.8 | 32.6 | 1.96 | 1.60 | 2.42 | 8 | 17 | 25 |
| 32 | 3 | 7 | 10 | 12 | 7 | 16 | 23 | 28.7 | 33.3 | 31.9 | 1.11 | 1.77 | 2.65 | 7 | 16 | 23 |
| 33 | 1 | 8 | 9 | 13 | 0 | 7 | 7 | 0 | 35.1 | 35.1 | 0 | 1.07 | 1.07 | 0 | 7 | 7 |
| 34 | 1 | 13 | 14 | 14 | 0 | 3 | 3 | 0 | 33.7 | 33.7 | 0 | 1.53 | 1.53 | 0 | 3 | 3 |
| 35 | - | 15 | 15 | 15 | 1 | 1 | 2 | 29.0 | 33.0 | 31.0 | 0.00 | 0.00 | 2.83 | 1 | 1 | 2 |
| 36 | - | 6 | 6 | 16 | 1 | 0 | 1 | 30.0 | 0 | 30.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 37 | - | 2 | 2 | 17 | 1 | 0 | 1 | 29.0 | 0 | 29.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 38 | - | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 39 | - | 0 | 0 | 19 | 1 | 1 | 2 | 26.0 | 35.0 | 30.5 | 0.00 | 0.00 | 6.36 | 1 | 1 | 2 |
| 40 | - | 2 | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 41 | - | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | - | 1 | 1 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | 26 | 0 | 1 | 1 | 0 | 40.0 | 40.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 27 | 0 | 2 | 2 | 0 | 41.0 | 41.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 |
| | | | | 28 | 1 | - | 1 | 33.0 | - | 33.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| | | | | 29 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 |
| Total | 34 | 66 | 100 | | | | | | | | | | | | | |

Table 10 (cont'd)

S. proriger1979 Research - Area 5A - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|--------------------------|---|------------------------|-----------------|------|------|--------------------------|------|---|----|----|----------------------------|--|--|
| | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T | | |
| | | M | F | T | M | F | T | M | F | T | | | | | |
| 30 | 2 | - | 2 | 30.0 | - | 30.0 | 0.00 | - | 0.00 | 2 | - | - | 2 | | |
| 31 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 32 | 1 | - | 1 | 32.0 | - | 32.0 | 0.00 | - | 0.00 | 1 | - | - | 1 | | |
| 33 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 34 | 1 | - | 1 | 32.0 | - | 32.0 | 0.00 | - | 0.00 | 1 | - | - | 1 | | |
| 35 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 36 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 37 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 38 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 39 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 40 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | - | 0 | | |
| 41 | 1 | - | 1 | 32.0 | - | 32.0 | 0.00 | - | 0.00 | 1 | - | - | 1 | | |
| Totals | | | | 34 | 65 | 99 | | | | | 34 | 65 | 99 | | |

Table 11. *Sebastodes reedi* age-length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1977 Commercial - Area 5A -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | - | 1 | | 9 | 1 | 1 | 31.0 | 37.0 | 34.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 31 | 1 | - | 1 | 9 | 1 | 1 | 2 | 31.0 | 37.0 | 34.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |
| 32 | 0 | - | 0 | 10 | 1 | 1 | 2 | 35.0 | 38.0 | 36.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 |
| 33 | 0 | - | 0 | 11 | 3 | 1 | 4 | 38.7 | 39.0 | 38.8 | 1.53 | 0.00 | 1.26 | 3 | 1 | 4 |
| 34 | 0 | - | 0 | 12 | 4 | 2 | 6 | 39.0 | 39.0 | 39.0 | 2.94 | 1.41 | 2.37 | 4 | 2 | 6 |
| 35 | 1 | 2 | 3 | 13 | 6 | 2 | 8 | 37.8 | 39.0 | 38.1 | 1.60 | 1.41 | 1.55 | 6 | 2 | 8 |
| 36 | 3 | 1 | 4 | 14 | 6 | 11 | 17 | 40.0 | 40.6 | 40.4 | 3.29 | 3.14 | 3.10 | 6 | 11 | 17 |
| 37 | 2 | 3 | 5 | 15 | 13 | 11 | 24 | 41.8 | 43.0 | 42.3 | 1.54 | 2.19 | 1.93 | 13 | 11 | 24 |
| 38 | 6 | 4 | 10 | 16 | 17 | 14 | 31 | 40.9 | 42.4 | 41.6 | 1.34 | 1.08 | 1.41 | 17 | 14 | 31 |
| 39 | 6 | 4 | 10 | 17 | 20 | 14 | 34 | 42.1 | 42.6 | 42.3 | 1.21 | 1.22 | 1.22 | 20 | 14 | 34 |
| 40 | 10 | 8 | 18 | 18 | 15 | 9 | 24 | 41.9 | 42.1 | 42.0 | 1.81 | 2.85 | 2.20 | 15 | 9 | 24 |
| 41 | 18 | 4 | 22 | 19 | 9 | 7 | 16 | 42.6 | 42.0 | 42.4 | 1.71 | 1.41 | 1.59 | 9 | 6 | 15 |
| 42 | 27 | 16 | 43 | 20 | 4 | 7 | 11 | 43.8 | 44.4 | 44.2 | 1.26 | 2.82 | 2.32 | 4 | 7 | 11 |
| 43 | 25 | 26 | 51 | 21 | 7 | 7 | 14 | 43.6 | 44.9 | 44.2 | 1.62 | 1.57 | 1.67 | 7 | 7 | 14 |
| 44 | 21 | 24 | 45 | 22 | 7 | 10 | 17 | 42.7 | 44.8 | 43.9 | 2.36 | 2.10 | 2.38 | 7 | 10 | 17 |
| 45 | 18 | 8 | 26 | 23 | 6 | 10 | 16 | 43.3 | 46.0 | 44.8 | 0.95 | 1.22 | 1.76 | 6 | 9 | 15 |
| 46 | 6 | 13 | 19 | 24 | 3 | 6 | 9 | 43.7 | 45.2 | 44.7 | 1.15 | 1.83 | 1.73 | 3 | 6 | 9 |
| 47 | 2 | 12 | 14 | 25 | 6 | 4 | 10 | 45.5 | 46.8 | 46.0 | 1.76 | 1.26 | 1.63 | 6 | 4 | 10 |
| 48 | 0 | 8 | 8 | 26 | 2 | 7 | 9 | 44.0 | 46.7 | 46.1 | 0.00 | 2.69 | 2.62 | 2 | 7 | 9 |
| 49 | 1 | 6 | 7 | 27 | 3 | 2 | 5 | 45.3 | 48.0 | 46.4 | 1.53 | 0.00 | 1.82 | 3 | 2 | 5 |
| 50 | - | 2 | 2 | 28 | 1 | 6 | 7 | 46.0 | 47.4 | 47.2 | 0.00 | 1.82 | 1.72 | 1 | 6 | 7 |
| 51 | - | 1 | 1 | 29 | 2 | 0 | 2 | 44.0 | 0 | 44.0 | 0.00 | 0 | 0 | 2 | 0 | 2 |
| Total | 147 | 142 | 289 | | | | | | | | | | | | | |

Table 11 (cont'd)

S. reedi1977 Commercial ~ Area 5A ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|--------------------------|------|------|-----------------|------|------|--------------------------|-----|-----|----------------------------|---|---|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 30 | 2 | 3 | 5 | 45.0 | 47.0 | 46.2 | 1.41 | 3.00 | 2.49 | 1 | 3 | 4 | | | |
| 31 | 2 | 1 | 3 | 46.0 | 47.0 | 46.3 | 1.41 | 0.00 | 1.15 | 2 | 1 | 3 | | | |
| 32 | 1 | 2 | 3 | 46.0 | 48.0 | 47.3 | 0.00 | 1.41 | 1.53 | 1 | 2 | 3 | | | |
| 33 | 2 | 1 | 3 | 45.5 | 49.0 | 46.7 | 0.71 | 0.00 | 2.08 | 2 | 1 | 3 | | | |
| 34 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 36 | 1 | 0 | 1 | 45.0 | 0 | 45.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 38 | 1 | 2 | 3 | 45.0 | 48.5 | 47.3 | 0.00 | 3.54 | 3.21 | 1 | 2 | 3 | | | |
| 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 40 | 1 | 0 | 1 | 46.0 | 0 | 46.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 41 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | | |
| 42 | - | 1 | 1 | - | 48.0 | 48.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | |
| Totals | | | | 147 | 142 | 289 | | | | 146 | 140 | 286 | | | |

Table 11 (cont'd)

Sebastes reedi

1978 Research - Area 5A -

| Fork length (cm) | Growth (length at age) | | | | | | | | | | | | | | | |
|---------------------|-------------------------------|----|----|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 36 | 1 | - | 1 | 17 | - | 1 | 1 | - | 39.0 | 39.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 37 | 0 | - | 0 | 18 | - | 4 | 4 | - | 41.0 | 41.0 | - | 0.82 | 0.82 | - | 4 | 4 |
| 38 | 1 | - | 1 | 19 | - | 1 | 1 | - | 43.0 | 43.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 39 | 0 | 1 | 1 | 20 | 1 | 3 | 4 | 36.0 | 43.7 | 41.8 | 0.00 | 1.15 | 3.95 | 1 | 3 | 4 |
| 40 | 4 | 1 | 5 | 21 | 6 | 4 | 10 | 44.3 | 44.0 | 44.2 | 1.97 | 0.82 | 1.55 | 6 | 4 | 10 |
| 41 | 5 | 2 | 7 | 22 | 0 | 8 | 8 | 0 | 43.6 | 43.6 | 0 | 1.60 | 1.60 | 0 | 8 | 8 |
| 42 | 12 | 4 | 16 | 23 | 15 | 6 | 21 | 44.9 | 44.5 | 44.8 | 1.53 | 1.05 | 1.40 | 15 | 6 | 21 |
| 43 | 21 | 17 | 38 | 24 | 17 | 10 | 27 | 43.1 | 44.2 | 43.5 | 2.09 | 1.14 | 1.85 | 17 | 10 | 27 |
| 44 | 42 | 18 | 60 | 25 | 17 | 11 | 28 | 43.9 | 45.2 | 44.4 | 1.60 | 1.33 | 1.60 | 17 | 11 | 28 |
| 45 | 37 | 16 | 53 | 26 | 19 | 12 | 31 | 43.6 | 45.1 | 44.2 | 1.68 | 1.83 | 1.86 | 19 | 12 | 31 |
| 46 | 27 | 19 | 46 | 27 | 15 | 6 | 21 | 45.0 | 46.2 | 45.3 | 1.31 | 2.32 | 1.68 | 15 | 6 | 21 |
| 47 | 11 | 20 | 31 | 28 | 16 | 12 | 28 | 44.5 | 46.3 | 45.3 | 2.07 | 1.36 | 1.97 | 16 | 12 | 28 |
| 48 | 4 | 12 | 16 | 29 | 9 | 7 | 16 | 43.6 | 45.9 | 44.6 | 2.24 | 2.34 | 2.50 | 9 | 7 | 16 |
| 49 | 0 | 13 | 13 | 30 | 15 | 10 | 25 | 44.5 | 47.0 | 45.5 | 1.19 | 1.76 | 1.90 | 15 | 10 | 25 |
| 50 | 2 | 2 | 4 | 31 | 3 | 5 | 8 | 44.0 | 46.8 | 45.8 | 1.00 | 2.28 | 2.31 | 3 | 5 | 8 |
| 51 | - | 3 | 3 | 32 | 8 | 2 | 10 | 45.5 | 48.0 | 46.0 | 1.60 | 0.00 | 1.76 | 8 | 2 | 10 |
| | | | | 33 | 3 | 3 | 6 | 44.7 | 49.0 | 46.8 | 1.15 | 0.00 | 2.48 | 3 | 3 | 6 |
| | | | | 34 | 6 | 6 | 12 | 45.2 | 48.0 | 46.6 | 1.17 | 1.79 | 2.07 | 6 | 6 | 12 |
| | | | | 35 | 6 | 3 | 9 | 46.2 | 48.0 | 46.8 | 2.23 | 1.00 | 2.05 | 6 | 3 | 9 |
| | | | | 36 | 3 | 3 | 6 | 44.3 | 46.3 | 45.3 | 0.58 | 0.58 | 1.21 | 3 | 3 | 6 |
| | | | | 37 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 38 | 0 | 2 | 2 | 0 | 48.0 | 48.0 | 0 | 4.24 | 4.24 | 0 | 2 | 2 |
| | | | | 39 | 1 | 1 | 2 | 45.0 | 51.0 | 48.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 |

Table 11 (cont'd)

S. reedi

1978 Research ~ Area 5A ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|--------------------------|------|------|-----------------|------|------|--------------------------|-----|-----|----------------------------|---|---|
| | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T |
| 40 | 2 | 1 | 3 | 46.0 | 47.0 | 46.3 | 1.41 | 0.00 | 1.15 | 2 | 1 | 3 | | | |
| 41 | 0 | 1 | 1 | 0 | 49.0 | 49.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 42 | 1 | 0 | 1 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 43 | 1 | 0 | 1 | 45.0 | 0 | 45.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 44 | 1 | 0 | 1 | 47.0 | 0 | 47.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | |
| 45 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 46 | 0 | 1 | 1 | 0 | 49.0 | 49.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 47 | 1 | 1 | 2 | 47.0 | 50.0 | 48.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | | |
| 48 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 49 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 51 | 0 | 1 | 1 | 0 | 50.0 | 50.0 | 0.00 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 53 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 56 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 57 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 58 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 59 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 60 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | |
| 71 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | |
| Totals | | | | 167 | 128 | 295 | | | | 167 | 128 | 295 | | | |

Table 11 (cont'd)

Sebastes reedi

1979 Commercial ~ Area 5A ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|----|-----|-----------------|------|------|--------------------------|------|------|----------------------------|----|-----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | 1 | 2 | | 19 | 2 | 1 | 3 | 42.0 | 43.0 | 42.3 | 4.24 | 0.00 | 3.06 | 2 | 1 |
| 38 | 1 | 1 | 2 | 20 | 2 | 3 | 5 | 42.5 | 41.3 | 41.8 | 0.71 | 1.15 | 1.10 | 2 | 3 | 5 |
| 39 | 2 | 0 | 2 | 21 | 3 | 7 | 10 | 43.0 | 43.1 | 43.1 | 1.73 | 2.41 | 2.13 | 3 | 7 | 10 |
| 40 | 0 | 4 | 4 | 22 | 4 | 9 | 13 | 41.5 | 44.0 | 43.2 | 1.91 | 2.74 | 2.71 | 4 | 9 | 13 |
| 41 | 2 | 2 | 4 | 23 | 9 | 11 | 20 | 43.2 | 43.5 | 43.4 | 0.97 | 1.29 | 1.14 | 9 | 11 | 20 |
| 42 | 5 | 5 | 10 | 24 | 16 | 13 | 29 | 43.8 | 44.9 | 44.3 | 2.23 | 1.85 | 2.11 | 16 | 13 | 29 |
| 43 | 13 | 12 | 25 | 25 | 5 | 5 | 10 | 44.8 | 42.2 | 43.5 | 1.64 | 1.30 | 1.96 | 5 | 5 | 10 |
| 44 | 14 | 6 | 20 | 26 | 4 | 0 | 4 | 45.0 | 0 | 45.0 | 1.41 | 0 | 1.41 | 4 | 0 | 4 |
| 45 | 4 | 9 | 13 | 27 | 0 | 2 | 2 | 0 | 46.5 | 46.5 | 0 | 0.71 | 0.71 | 0 | 2 | 2 |
| 46 | 2 | 7 | 9 | 28 | 2 | 0 | 2 | 43.0 | 0 | 43.0 | 1.41 | 0 | 1.41 | 2 | 0 | 2 |
| 47 | 4 | 6 | 10 | 29 | 0 | 1 | 1 | 0 | 47.0 | 47.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 30 | 1 | - | 1 | 47.0 | - | 47.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| Total | 48 | 52 | 100 | Totals | 48 | 52 | 100 | | | | | | | 48 | 52 | 100 |

Table 11 (cont'd)

Sebastes reedi

1979 Research - Area 5A -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|----|-----|-----------------|------|------|--------------------------|------|------|----------------------------|----|-----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | 2 | 3 | | 10 | - | 1 | - | 37.0 | 37.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 37 | 1 | 2 | 3 | 10 | - | 1 | 1 | - | 37.0 | 37.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| 38 | 2 | 0 | 2 | 11 | 1 | 0 | 1 | 39.0 | 0 | 39.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 |
| 39 | 5 | 5 | 10 | 12 | 1 | 4 | 5 | 37.0 | 41.5 | 40.6 | 0.00 | 3.32 | 3.51 | 1 | 4 | 5 |
| 40 | 2 | 6 | 8 | 13 | 2 | 1 | 3 | 41.0 | 39.0 | 40.3 | 1.41 | 0.00 | 1.53 | 2 | 1 | 3 |
| 41 | 6 | 8 | 14 | 14 | 4 | 9 | 13 | 39.0 | 42.8 | 41.6 | 0.82 | 2.17 | 2.57 | 4 | 9 | 13 |
| 42 | 5 | 6 | 11 | 15 | 4 | 10 | 14 | 42.5 | 41.7 | 41.9 | 2.38 | 2.11 | 2.13 | 4 | 10 | 14 |
| 43 | 4 | 9 | 13 | 16 | 7 | 11 | 18 | 41.1 | 42.3 | 41.3 | 2.12 | 2.00 | 2.07 | 7 | 11 | 18 |
| 44 | 4 | 11 | 15 | 17 | 2 | 8 | 10 | 42.5 | 43.0 | 42.9 | 0.71 | 1.85 | 1.66 | 2 | 8 | 10 |
| 45 | 0 | 8 | 8 | 18 | 2 | 7 | 9 | 42.5 | 43.3 | 43.1 | 0.71 | 3.45 | 3.02 | 2 | 7 | 9 |
| 46 | 0 | 8 | 8 | 19 | 2 | 3 | 5 | 41.0 | 44.3 | 43.0 | 0.00 | 0.58 | 1.87 | 2 | 3 | 5 |
| 47 | 1 | 5 | 6 | 20 | 1 | 5 | 6 | 41.0 | 45.2 | 44.5 | 0.00 | 2.49 | 2.81 | 1 | 5 | 6 |
| 48 | - | 2 | 2 | 21 | 3 | 3 | 6 | 44.3 | 46.0 | 45.2 | 2.52 | 0.00 | 1.83 | 3 | 3 | 6 |
| | | | | 22 | 1 | 2 | 3 | 41.0 | 46.5 | 44.7 | 0.00 | 2.12 | 3.51 | 1 | 2 | 3 |
| | | | | 23 | - | 1 | 1 | - | 46.0 | 46.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| | | | | 24 | - | 1 | 1 | - | 46.0 | 46.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| | | | | 25 | - | 1 | 1 | - | 47.0 | 47.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| | | | | 26 | - | 1 | 1 | - | 43.0 | 43.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| | | | | 27 | - | 1 | 1 | - | 45.0 | 45.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| | | | | 28 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| | | | | 29 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 |
| | | | | 30 | - | 1 | 1 | - | 46.0 | 46.0 | - | 0.00 | 0.00 | - | 1 | 1 |
| Total | 30 | 70 | 100 | Totals | 30 | 70 | 100 | | | | | | | 30 | 70 | 100 |

Table 11 (cont'd)

Sebastes reedi

1979 Commercial ~ Area 5B ~

Table 11 (cont'd)

S. reedi1979 Commercial - Area 5B - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|------|------|-----------------|------|----|--------------------------|-----|---|----------------------------|---|---|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | M | M | F | T | M | F | T | M | F | T | M | F | T |
| 40 | 1 | - | 1 | 48.0 | - | 48.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 60 | 4 | - | 4 | 48.5 | - | 48.5 | 2.52 | - | 2.52 | 4 | - | 4 | | | | |
| 61 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 62 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 63 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 64 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 65 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 66 | 1 | - | 1 | 50.0 | - | 50.0 | 0.00 | - | 0.00 | 1 | - | 1 | | | | |
| 67 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 68 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 69 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | | | | |
| 70 | 2 | - | 2 | 49.0 | - | 49.0 | 0.50 | - | 0.50 | 2 | - | 2 | | | | |
| Totals | 49 | 51 | 100 | | | | | | | 49 | 51 | 100 | | | | |

Table 11 (cont'd)

Sebastes reedi1977 Commercial - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|-----|-----|-----------------|------|------|--------------------------|------|------|----------------------------|-----|-----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | | | | | | | | | | | | | | | | |
| 34 | - | 1 | 1 | 9 | 2 | - | 2 | 36.5 | 0 | 36.5 | 2.12 | 0.00 | 2.12 | 2 | - | 2 |
| 35 | 5 | 3 | 8 | 10 | 2 | 4 | 6 | 37.0 | 36.8 | 36.8 | 1.41 | 1.26 | 1.17 | 2 | 4 | 6 |
| 36 | 5 | 4 | 9 | 11 | 8 | 7 | 15 | 37.9 | 37.3 | 37.6 | 2.36 | 2.14 | 2.20 | 8 | 7 | 15 |
| 37 | 9 | 11 | 20 | 12 | 11 | 5 | 16 | 37.5 | 38.0 | 37.7 | 1.92 | 2.92 | 2.18 | 11 | 5 | 16 |
| 38 | 14 | 10 | 24 | 13 | 6 | 4 | 10 | 37.5 | 38.5 | 37.9 | 1.22 | 2.08 | 1.60 | 6 | 4 | 10 |
| 39 | 32 | 16 | 48 | 14 | 16 | 14 | 30 | 39.1 | 39.6 | 39.3 | 1.34 | 1.74 | 1.53 | 16 | 14 | 30 |
| 40 | 31 | 31 | 62 | 15 | 30 | 20 | 50 | 40.0 | 39.4 | 39.7 | 1.71 | 1.82 | 1.76 | 30 | 20 | 50 |
| 41 | 40 | 38 | 78 | 16 | 18 | 22 | 40 | 40.6 | 40.2 | 40.4 | 1.10 | 1.66 | 1.43 | 18 | 22 | 40 |
| 42 | 46 | 28 | 74 | 17 | 21 | 21 | 42 | 40.0 | 40.5 | 40.3 | 1.40 | 1.12 | 1.27 | 21 | 21 | 42 |
| 43 | 29 | 24 | 53 | 18 | 8 | 14 | 22 | 39.8 | 41.0 | 40.5 | 0.71 | 1.80 | 1.60 | 8 | 14 | 22 |
| 44 | 14 | 12 | 26 | 19 | 3 | 10 | 13 | 41.3 | 40.5 | 40.7 | 1.15 | 0.97 | 1.03 | 3 | 10 | 13 |
| 45 | 2 | 4 | 6 | 20 | 8 | 4 | 12 | 41.6 | 40.5 | 41.3 | 1.69 | 1.29 | 1.60 | 8 | 4 | 12 |
| 46 | 0 | 1 | 1 | 21 | 12 | 5 | 17 | 41.5 | 43.2 | 42.0 | 1.31 | 1.30 | 1.50 | 12 | 5 | 17 |
| 47 | 0 | - | 0 | 22 | 10 | 13 | 23 | 42.6 | 42.2 | 42.3 | 1.26 | 1.68 | 1.50 | 10 | 13 | 23 |
| 48 | 0 | - | 0 | 23 | 13 | 9 | 22 | 42.4 | 43.2 | 42.7 | 0.87 | 1.30 | 1.12 | 13 | 9 | 22 |
| 49 | 0 | - | 0 | 24 | 12 | 10 | 22 | 42.3 | 42.9 | 42.6 | 1.23 | 1.10 | 1.18 | 12 | 10 | 22 |
| 50 | 0 | - | 0 | 25 | 20 | 12 | 32 | 42.6 | 42.9 | 42.7 | 0.83 | 1.00 | 0.90 | 20 | 12 | 32 |
| 51 | 0 | - | 0 | 26 | 11 | 4 | 15 | 42.5 | 42.8 | 42.6 | 1.37 | 0.50 | 1.18 | 11 | 4 | 15 |
| 52 | 0 | - | 0 | 27 | 11 | 3 | 14 | 41.7 | 42.3 | 41.9 | 1.19 | 0.58 | 1.10 | 11 | 3 | 14 |
| 53 | 0 | - | 0 | 28 | 3 | 1 | 4 | 43.3 | 44.0 | 43.5 | 1.15 | 0.00 | 1.00 | 3 | 1 | 4 |
| 54 | 0 | - | 0 | 29 | 1 | 0 | 1 | 42.0 | 0 | 42.0 | 0.00 | 0.00 | 0.00 | 1 | 0 | 1 |
| 55 | 1 | - | 1 | 30 | 0 | 1 | 1 | 0 | 44.0 | 44.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 42 | 1 | - | 1 | 42.0 | - | 42.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| | | | | 60 | 1 | - | 1 | 55.0 | - | 55.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| Totals | 228 | 183 | 411 | Totals | 228 | 183 | 411 | | | | | | | 228 | 183 | 411 |

Table 11 (cont'd)

Sebastes reedi

1978 Commercial ~ Area 5E ~

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|------|-------------|--------------------------|----|----|-----------------|------|------|--------------------------|------|------|----------------------------|----|----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | 1 | 2 | 8 | 1 | - | 1 | 32.0 | - | 32.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 32 | 1 | 1 | 2 | 8 | 1 | - | 1 | 32.0 | - | 32.0 | 0.00 | - | 0.00 | 1 | - | 1 |
| 33 | 3 | 3 | 6 | 9 | 5 | 3 | 8 | 35.4 | 35.7 | 35.5 | 0.89 | 1.53 | 1.07 | 5 | 3 | 8 |
| 34 | 6 | 10 | 16 | 10 | 9 | 15 | 24 | 35.8 | 35.9 | 35.8 | 1.48 | 1.68 | 1.58 | 9 | 15 | 24 |
| 35 | 13 | 16 | 29 | 11 | 12 | 17 | 29 | 37.5 | 36.9 | 37.2 | 1.68 | 2.54 | 2.20 | 12 | 16 | 28 |
| 36 | 26 | 24 | 50 | 12 | 6 | 15 | 21 | 36.8 | 37.1 | 37.0 | 0.98 | 2.22 | 1.92 | 6 | 15 | 21 |
| 37 | 23 | 28 | 51 | 13 | 12 | 7 | 19 | 39.2 | 38.6 | 38.9 | 1.70 | 1.27 | 1.54 | 12 | 7 | 19 |
| 38 | 35 | 28 | 63 | 14 | 6 | 5 | 11 | 38.5 | 39.0 | 38.7 | 1.87 | 2.92 | 2.28 | 6 | 5 | 11 |
| 39 | 42 | 32 | 74 | 15 | 8 | 9 | 17 | 40.3 | 41.4 | 40.9 | 1.58 | 1.74 | 1.73 | 8 | 9 | 17 |
| 40 | 87 | 48 | 135 | 16 | 12 | 7 | 19 | 40.7 | 41.0 | 40.8 | 2.10 | 3.32 | 2.53 | 12 | 7 | 19 |
| 41 | 107 | 82 | 189 | 17 | 17 | 16 | 33 | 41.6 | 42.8 | 42.2 | 1.46 | 1.24 | 1.45 | 16 | 16 | 32 |
| 42 | 172 | 154 | 326 | 18 | 6 | 7 | 13 | 41.3 | 41.9 | 41.6 | 1.97 | 0.69 | 1.39 | 5 | 6 | 11 |
| 43 | 133 | 186 | 319 | 19 | 8 | 4 | 12 | 42.5 | 41.8 | 42.3 | 1.41 | 1.26 | 1.36 | 5 | 3 | 8 |
| 44 | 66 | 138 | 204 | 20 | 8 | 15 | 23 | 40.9 | 42.6 | 42.0 | 2.70 | 0.83 | 1.86 | 2 | 7 | 9 |
| 45 | 27 | 72 | 99 | 21 | 23 | 16 | 39 | 41.7 | 42.4 | 42.0 | 1.46 | 1.86 | 1.65 | 12 | 9 | 21 |
| 46 | 15 | 23 | 38 | 22 | 18 | 24 | 42 | 42.7 | 43.4 | 43.1 | 1.33 | 1.28 | 1.33 | 7 | 14 | 21 |
| 47 | 10 | 7 | 17 | 23 | 14 | 23 | 37 | 43.0 | 43.3 | 43.2 | 1.75 | 1.15 | 1.39 | 12 | 19 | 31 |
| 48 | 5 | 3 | 8 | 24 | 11 | 19 | 30 | 43.0 | 43.2 | 43.1 | 1.10 | 1.13 | 1.11 | 12 | 18 | 30 |
| 49 | 4 | 7 | 11 | 25 | 12 | 18 | 30 | 43.4 | 43.9 | 43.7 | 1.78 | 1.88 | 1.82 | 17 | 19 | 36 |
| 50 | - | 2 | 2 | 26 | 15 | 18 | 33 | 43.4 | 44.3 | 43.9 | 1.45 | 2.54 | 2.13 | 20 | 19 | 39 |
| | | | | 27 | 8 | 8 | 16 | 42.8 | 44.3 | 43.5 | 0.89 | 1.16 | 1.26 | 11 | 9 | 20 |
| | | | | 28 | 7 | 7 | 14 | 42.7 | 44.1 | 43.4 | 1.50 | 1.35 | 1.55 | 12 | 10 | 22 |
| | | | | 29 | 2 | 10 | 12 | 43.0 | 43.5 | 43.4 | 1.41 | 1.08 | 1.08 | 2 | 12 | 14 |
| Total | 775 | 864 | 1639 | | | | | | | | | | | | | |

Table 11 (cont'd)

S. reedi

1978 Commercial - Area 5E - (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|------|------|-----------------|------|------|--------------------------|-----|-----|----------------------------|---|---|--|
| | M | F | T | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | M | F | T | |
| | M | F | T | M | F | T | M | F | T | M | F | T | M | F | T | | |
| 30 | 2 | 1 | 3 | 30 | 41.5 | 46.0 | 43.0 | 3.54 | 0.00 | 3.61 | 5 | 5 | 10 | | | | |
| 31 | 0 | 4 | 4 | 31 | 0 | 42.8 | 42.8 | 0 | | 1.26 | 1.26 | 0 | 5 | 5 | 5 | | |
| 32 | 1 | 0 | 1 | 32 | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 0 | 1 | 0 | 1 | | | |
| 33 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 34 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 35 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 36 | 1 | 0 | 1 | 36 | 43.0 | 0 | 43.0 | 0.00 | 0 | 0.00 | 0 | 1 | 0 | 1 | | | |
| 37 | 0 | 0 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 38 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 39 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 40 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 41 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| 42 | 1 | 0 | 1 | 42 | 48.0 | 0 | 48.0 | 0.00 | 0 | 0.00 | 0 | 1 | 0 | 1 | | | |
| 53 | - | 1 | 1 | | - | 43.0 | 43.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 | | | |
| Totals | 225 | 269 | 494 | | | | | | | | | 212 | 249 | 461 | | | |

Table 11 (cont'd)

Sebastes reedi1979 Commercial - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|-----|-----|-----------------|------|------|--------------------------|------|------|----------------------------|-----|-----|---|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T | |
| | 1 | - | 1 | 11 | - | 1 | 1 | - | 39.0 | 39.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 |
| 35 | 1 | - | 1 | 11 | - | 1 | 1 | - | 39.0 | 39.0 | - | 0.00 | 0.00 | - | 1 | 1 | 1 |
| 36 | 0 | 1 | 1 | 12 | 1 | 3 | 4 | 35.0 | 37.7 | 37.0 | 0.00 | 2.08 | 2.16 | 1 | 3 | 4 | |
| 37 | 1 | 2 | 3 | 13 | 0 | 2 | 2 | 0 | 40.0 | 40.0 | 0 | 1.41 | 1.41 | 0 | 2 | 2 | |
| 38 | 3 | 2 | 5 | 14 | 3 | 3 | 6 | 40.0 | 41.3 | 40.7 | 1.73 | 0.58 | 1.37 | 3 | 3 | 6 | |
| 39 | 3 | 3 | 6 | 15 | 5 | 5 | 10 | 39.6 | 43.2 | 41.4 | 2.70 | 3.35 | 3.44 | 5 | 5 | 10 | |
| 40 | 9 | 5 | 14 | 16 | 6 | 9 | 15 | 41.3 | 42.6 | 42.1 | 1.21 | 1.51 | 1.49 | 6 | 9 | 15 | |
| 41 | 25 | 19 | 44 | 17 | 7 | 7 | 14 | 41.4 | 41.7 | 41.6 | 1.81 | 0.76 | 1.34 | 7 | 7 | 14 | |
| 42 | 54 | 38 | 92 | 18 | 17 | 17 | 34 | 41.9 | 42.6 | 42.3 | 1.92 | 0.94 | 1.52 | 17 | 17 | 34 | |
| 43 | 42 | 65 | 107 | 19 | 15 | 21 | 36 | 41.9 | 42.6 | 41.2 | 1.16 | 1.18 | 7.16 | 15 | 21 | 36 | |
| 44 | 34 | 45 | 79 | 20 | 11 | 10 | 21 | 42.2 | 43.3 | 42.7 | 0.98 | 1.64 | 1.42 | 11 | 10 | 21 | |
| 45 | 12 | 22 | 34 | 21 | 8 | 15 | 23 | 42.6 | 42.5 | 42.5 | 1.69 | 1.06 | 1.27 | 8 | 15 | 23 | |
| 46 | 1 | 2 | 3 | 22 | 11 | 13 | 24 | 41.8 | 43.3 | 42.6 | 1.33 | 1.43 | 1.50 | 11 | 13 | 24 | |
| 47 | 2 | 2 | 4 | 23 | 12 | 28 | 40 | 43.0 | 43.1 | 43.1 | 0.95 | 1.72 | 1.52 | 12 | 28 | 40 | |
| 48 | 1 | 1 | 2 | 24 | 10 | 15 | 25 | 42.9 | 43.3 | 43.2 | 1.79 | 1.18 | 1.43 | 10 | 15 | 25 | |
| 49 | - | 1 | 1 | 25 | 20 | 13 | 33 | 43.2 | 43.7 | 43.4 | 0.83 | 1.25 | 1.03 | 20 | 14 | 33 | |
| | | | | 26 | 18 | 9 | 27 | 43.1 | 42.9 | 43.0 | 1.30 | 2.52 | 1.75 | 18 | 9 | 27 | |
| | | | | 27 | 17 | 18 | 35 | 43.2 | 43.2 | 43.2 | 1.09 | 1.42 | 1.26 | 17 | 18 | 35 | |
| | | | | 28 | 9 | 9 | 18 | 43.7 | 44.0 | 43.8 | 1.73 | 0.71 | 1.29 | 9 | 9 | 18 | |
| | | | | 29 | 8 | 3 | 11 | 43.1 | 45.0 | 43.6 | 1.36 | 1.73 | 1.63 | 8 | 3 | 11 | |
| | | | | 30 | 1 | 0 | 1 | 44.0 | 0 | 44.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 31 | 3 | 1 | 4 | 42.7 | 43.0 | 42.8 | 1.53 | 0.00 | 1.26 | 3 | 1 | 4 | |
| | | | | 32 | 4 | 0 | 4 | 44.0 | 0 | 44.0 | 2.45 | 0 | 2.45 | 4 | 0 | 4 | |
| | | | | 33 | 1 | 0 | 1 | 42.0 | 0 | 42.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | |
| | | | | 34 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| | | | | 35 | - | 1 | 1 | - | 47.0 | 47.0 | - | 0.00 | 0.00 | - | 1 | 1 | |
| | | | | 36 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | |
| | | | | 37 | - | 2 | 2 | - | 45.5 | 45.5 | - | 3.54 | 3.54 | - | 2 | 2 | |
| Total | 188 | 208 | 396 | Totals | 187 | 205 | 392 | | | | | | | 187 | 205 | 392 | |

Table 11 (cont'd)

Sebastes reedi1979 Research - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | Age frequency ^d | | |
|------------------------|-------------------------------|-----|-----|-------------|--------------------------|-----|-----|-----------------|------|------|--------------------------|------|------|----------------------------|-----|-----|
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| | 1 | - | 1 | | 10 | 2 | 1 | 3 | 36.5 | 35.0 | 36.0 | 2.12 | 0.00 | 1.73 | 2 | 1 |
| 32 | 1 | - | 1 | 10 | 2 | 1 | 3 | 36.5 | 35.0 | 36.0 | 2.12 | 0.00 | 1.73 | 2 | 1 | 3 |
| 33 | 0 | - | 0 | 11 | 4 | 6 | 10 | 37.5 | 37.2 | 37.3 | 1.91 | 1.60 | 1.64 | 4 | 6 | 10 |
| 34 | 1 | - | 1 | 12 | 4 | 9 | 13 | 37.3 | 38.2 | 37.9 | 2.22 | 1.56 | 1.75 | 4 | 9 | 13 |
| 35 | 3 | 6 | 9 | 13 | 9 | 14 | 23 | 37.9 | 38.6 | 38.3 | 1.69 | 2.06 | 1.92 | 9 | 14 | 23 |
| 36 | 9 | 11 | 20 | 14 | 7 | 9 | 16 | 39.0 | 39.2 | 39.1 | 1.29 | 1.99 | 1.67 | 7 | 9 | 16 |
| 37 | 11 | 16 | 27 | 15 | 4 | 8 | 12 | 40.8 | 38.6 | 39.3 | 0.96 | 2.77 | 2.50 | 4 | 8 | 12 |
| 38 | 18 | 28 | 46 | 16 | 4 | 8 | 12 | 40.3 | 40.3 | 40.3 | 2.22 | 1.49 | 1.66 | 4 | 8 | 12 |
| 39 | 6 | 17 | 23 | 17 | 5 | 13 | 18 | 40.4 | 40.8 | 40.7 | 1.52 | 2.09 | 1.91 | 5 | 14 | 18 |
| 40 | 19 | 13 | 32 | 18 | 6 | 7 | 13 | 42.2 | 41.6 | 41.8 | 1.33 | 1.99 | 1.68 | 6 | 7 | 13 |
| 41 | 19 | 19 | 38 | 19 | 3 | 2 | 5 | 41.0 | 38.5 | 40.0 | 1.00 | 2.12 | 1.87 | 3 | 2 | 5 |
| 42 | 14 | 16 | 30 | 20 | 0 | 3 | 3 | 0 | 42.0 | 42.0 | 0 | 1.00 | 1.00 | 0 | 3 | 3 |
| 43 | 13 | 18 | 31 | 21 | 3 | 6 | 9 | 39.0 | 44.7 | 42.8 | 6.08 | 2.16 | 4.49 | 3 | 5 | 8 |
| 44 | 14 | 7 | 21 | 22 | 6 | 5 | 11 | 41.2 | 42.6 | 41.8 | 1.94 | 1.14 | 1.72 | 5 | 4 | 9 |
| 45 | 4 | 7 | 11 | 23 | 6 | 3 | 9 | 43.5 | 44.7 | 43.9 | 1.05 | 1.15 | 1.17 | 6 | 2 | 8 |
| 46 | 1 | 4 | 5 | 24 | 6 | 8 | 14 | 42.3 | 44.6 | 43.6 | 1.37 | 2.45 | 2.31 | 5 | 8 | 13 |
| 47 | 1 | 1 | 2 | 25 | 8 | 6 | 14 | 42.1 | 43.5 | 42.7 | 1.25 | 1.22 | 1.38 | 5 | 6 | 11 |
| 48 | - | 2 | 2 | 26 | 6 | 1 | 7 | 43.3 | 44.0 | 43.4 | 1.63 | 0.00 | 1.51 | 6 | 1 | 7 |
| | | | | 27 | 6 | 1 | 7 | 42.3 | 45.0 | 42.7 | 1.63 | 0.00 | 1.80 | 5 | 1 | 6 |
| | | | | 28 | 4 | 0 | 4 | 44.3 | 0 | 44.3 | 1.26 | 0.00 | 1.26 | 4 | 0 | 4 |
| | | | | 29 | 3 | 0 | 3 | 44.3 | 0 | 44.3 | 0.58 | 0.00 | 0.58 | 3 | 0 | 3 |
| | | | | 30 | 0 | 1 | 1 | 0 | 46.0 | 46.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 |
| | | | | 31 | 0 | - | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 |
| | | | | 32 | 1 | - | 1 | 44.0 | - | 44.0 | 0.00 | 0.00 | 0.00 | 1 | - | 1 |
| Total | 134 | 165 | 299 | Totals | 97 | 111 | 208 | | | | | | | 91 | 108 | 199 |

Table 12. *Sebastes zacentrus* age-length relationship, by year, by sample type, and by statistical area. See Table 3 for footnotes.

1979 Research - Area 5E -

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|----|-----|-------------|--------------------------|---|----|-----------------|------|------|--------------------------|------|------|----------------------------|---|----|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | M | F | T |
| 20 | 1 | - | 1 | 8 | 4 | - | 4 | 22.5 | - | 22.5 | 0.58 | - | 0.58 | 4 | - | 4 |
| 21 | 1 | 1 | 2 | 9 | 5 | 2 | 7 | 22.8 | 24.0 | 23.1 | 1.48 | 1.41 | 1.46 | 5 | 2 | 7 |
| 22 | 5 | 1 | 6 | 10 | 11 | 4 | 15 | 23.7 | 25.3 | 24.1 | 1.10 | 3.30 | 1.92 | 11 | 4 | 15 |
| 23 | 9 | 1 | 10 | 11 | 17 | 3 | 20 | 24.6 | 26.7 | 24.9 | 1.06 | 1.53 | 1.32 | 17 | 3 | 20 |
| 24 | 14 | 0 | 14 | 12 | 10 | 4 | 14 | 24.5 | 27.8 | 25.4 | 1.90 | 4.57 | 3.11 | 10 | 4 | 14 |
| 25 | 21 | 4 | 25 | 13 | 6 | 5 | 11 | 26.7 | 27.4 | 27.0 | 1.37 | 2.07 | 1.67 | 6 | 5 | 11 |
| 26 | 13 | 4 | 17 | 14 | 7 | 3 | 10 | 25.9 | 29.3 | 26.9 | 1.35 | 1.53 | 2.13 | 7 | 3 | 10 |
| 27 | 15 | 4 | 19 | 15 | 9 | 2 | 11 | 26.4 | 28.0 | 26.7 | 1.81 | 2.83 | 1.95 | 9 | 2 | 11 |
| 28 | 11 | 2 | 13 | 16 | 3 | 3 | 6 | 26.3 | 29.0 | 27.7 | 1.15 | 4.36 | 3.20 | 3 | 3 | 6 |
| 29 | 14 | 4 | 18 | 17 | 7 | 2 | 9 | 26.9 | 33.5 | 28.3 | 1.07 | 0.71 | 3.08 | 7 | 2 | 9 |
| 30 | 5 | 3 | 8 | 18 | 3 | 1 | 4 | 29.0 | 34.0 | 30.3 | 0.00 | 0.00 | 2.50 | 3 | 1 | 4 |
| 31 | 4 | 1 | 5 | 19 | 1 | 3 | 4 | 25.0 | 34.7 | 32.3 | 0.00 | 0.58 | 4.86 | 1 | 3 | 4 |
| 32 | 0 | 2 | 2 | 20 | 0 | 2 | 2 | 0 | 32.0 | 32.0 | 0 | 2.83 | 2.83 | 0 | 2 | 2 |
| 33 | 1 | 6 | 7 | 21 | 1 | 7 | 8 | 28.0 | 34.4 | 33.6 | 0.00 | 1.13 | 2.50 | 1 | 7 | 8 |
| 34 | - | 16 | 16 | 22 | 3 | 1 | 4 | 28.7 | 34.0 | 30.0 | 2.08 | 0.00 | 3.16 | 3 | 1 | 4 |
| 35 | - | 24 | 24 | 23 | 1 | 2 | 3 | 28.0 | 35.5 | 33.0 | 0.00 | 0.71 | 4.36 | 1 | 2 | 3 |
| 36 | - | 9 | 9 | 24 | 5 | 3 | 8 | 28.8 | 34.0 | 30.8 | 1.48 | 1.00 | 2.96 | 5 | 3 | 8 |
| 37 | - | 2 | 2 | 25 | 2 | 5 | 7 | 28.5 | 35.4 | 33.4 | 0.71 | 1.34 | 3.55 | 2 | 5 | 7 |
| 38 | - | 2 | 2 | 26 | 5 | 7 | 12 | 29.0 | 35.0 | 32.5 | 1.22 | 1.53 | 3.37 | 5 | 7 | 12 |
| | | | | 27 | 0 | 8 | 8 | 0 | 35.0 | 35.0 | 0 | 0.93 | 0.93 | 0 | 8 | 8 |
| | | | | 28 | 3 | 2 | 5 | 28.7 | 34.0 | 30.8 | 1.53 | 1.41 | 3.19 | 3 | 2 | 5 |
| | | | | 29 | 0 | 3 | 3 | 0 | 34.7 | 34.7 | 0 | 0.58 | 0.58 | 0 | 3 | 3 |
| Total | 114 | 86 | 200 | | | | | | | | | | | | | |

Table 12 (cont'd)

S. zacentrus

1979 Research ~ Area 5E ~ (cont'd)

| Fork length (cm) | Length frequency ^a | | | Age (yr) | Growth (length at age) | | | | | | | | | Age frequency ^d | | |
|------------------------|-------------------------------|---|---|-------------|--------------------------|------|------|-----------------|------|-----|--------------------------|-----|---|----------------------------|--|--|
| | | | | | No. of fish ^b | | | Av. length (cm) | | | Stand. Dev. ^c | | | | | |
| | M | F | T | | M | F | T | M | F | T | M | F | T | | | |
| 30 | 1 | 1 | 2 | 29.0 | 35.0 | 32.0 | 0.00 | 0.00 | 4.24 | 1 | 1 | 2 | | | | |
| 31 | 2 | 3 | 5 | 29.0 | 35.7 | 33.0 | 0.00 | 1.15 | 3.74 | 2 | 3 | 5 | | | | |
| 32 | 1 | 4 | 5 | 30.0 | 34.3 | 33.4 | 0.00 | 1.50 | 2.30 | 1 | 4 | 5 | | | | |
| 33 | 0 | 1 | 1 | 0 | 36.0 | 36.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 34 | 0 | 1 | 1 | 0 | 36.0 | 36.0 | 0 | 0.00 | 0.00 | 0 | 1 | 1 | | | | |
| 35 | 1 | 1 | 2 | 30.0 | 33.0 | 31.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | | | |
| 36 | 1 | 1 | 2 | 33.0 | 36.0 | 34.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | | | |
| 37 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 38 | 1 | 1 | 2 | 31.0 | 34.0 | 32.5 | 0.00 | 0.00 | 2.12 | 1 | 1 | 2 | | | | |
| 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 40 | 1 | 0 | 1 | 29.0 | 0 | 29.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | | |
| 42 | 1 | 0 | 1 | 30.0 | 0 | 30.0 | 0.00 | 0 | 0.00 | 1 | 0 | 1 | | | | |
| 43 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | | | |
| 44 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | - | 0 | 0 | | | | |
| 45 | - | 1 | 1 | - | 38.0 | 38.0 | - | 0.00 | 0.00 | - | 1 | 1 | | | | |
| Totals | | | | 112 | 86 | 198 | | | | 112 | 86 | 198 | | | | |