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include predation by killer whales (*Orcinus orca*), parasitism, disease (bacterial and viral), trauma from trampling or rockslides, entrapment in ice, and exhaustion. During the past 100 or more years, natural mortality has probably been quite low in relation to harvest mortality. Fay (1982) considered that the poor understanding of natural mortality was one of the major gaps in our knowledge of walrus biology and ecology.

The Walrus Calicivirus (WCV), a form similar to the San Miguel Sea Lion Virus (SMSLV), was identified in walruses in 1977. SMSLV is known to cause skin lesions, probably abortion, and possibly encephalitis and pneumonia in other pinnipeds (Smith *et al.* 1983). The frequency of occurrence of WCV antibodies appeared to have increased slightly by 1983, and some of the strongest reactors in the 1983 sample were adult females that had aborted a fetus or had failed to conceive in that year (Fay *et al.* 1983, Barlough *et al.* 1986). The actual impact of WCV on the walrus population cannot be determined at this time, but it may have contributed to the recently observed decline in reproductive rates (see Reproduction).

Age-composition data, collected by observation of large numbers of walruses in the Bering and Chukchi seas, suggest that mortality of juvenile age classes was higher during the late 1970s and early 1980s than it was 10 or more years before. From data collected during the period of rapid population growth, Fay (1982) estimated that about 37% of all adult females would be accompanied by a calf in any given year, whereas the observed proportion of adult females with calves ranged from about 5% to 15% in 1981 to 1984. All readily identifiable age classes (calf to 4–5-year-old) were poorly represented in each sample year, indicating that the poor survival was not an isolated event in 1980 but had been taking place for several years (Fay *et al.* 1984*a*, Sease 1986). The cause of the increased mortality of juvenile walruses is unknown. An increase in mortality rates for juveniles as a population approaches carrying capacity is consistent with density-dependent theories of population regulation (Eberhardt 1977, Eberhardt and Siniff 1977, Fowler *et al.* 1980, Fowler and Smith 1981).

Mass natural mortality due to trampling has been observed at the Punuk Islands (Fay and Kelly 1980). Spontaneous stampeding into the water was observed there several times by Kelly and co-workers (pers. commun.). Calves are probably more susceptible than older age classes to trampling, but walruses other than calves may be predisposed to trampling if they are debilitated by such factors as exhaustion, disease, or poor physical condition (Fay and Kelly 1980, Fay 1982, Fay *et al.* 1984*a*). In several cases fetuses were aborted as a result of trampling (Fay and Kelly 1980).

The natural mortality at the Punuk Islands has taken place for thousands of years, primarily in October to December, during the walruses' southward migration. Most of the carcasses are of females and young (Burns 1965, Fay and Kelly 1980). Unusually high mortality occurred during fall 1978, with 466 carcasses on the Punuk Islands and an estimated 400 to 1,100 on nearby St. Lawrence Island (Fay and Kelly 1980).

Variation in the number of carcasses found on Punuk Island beaches has followed, in a general manner, variation in the size of the Pacific walrus population. Numbers of carcasses have been lowest during periods of low walrus abundance (*e.g.*, 1940s and 1950s). The high mortality in 1978 occurred when the Pacific walrus population is thought to have reached peak numbers. Factors causing the unprecedented high number of walruses to haul out on St. Lawrence and Punuk Islands in 1978 may have included weather and ice conditions, killer whales, disease, and starvation. Human disturbances, such as low-flying aircraft, may have contributed to the extremely high mortality. Unfortunately these are merely speculations.

Estimation of Natural Mortality.—Because the pregnancy rate for walruses is half that for other pinnipeds (see Reproduction), natural mortality must be very low. The Leslie equation of Eberhardt and Siniff (1977:185, equation 1) and the available estimates for reproductive parameters yield an estimated mortality rate of 0.04 given a growth rate of 0.067 (see Population Size). Assumptions are that (1) the pregnancy rate for mature females in a growing population, as given above, is 0.37; (2) the sex ratio at birth is 1:1; (3) the mean age of females giving birth to their first calf is 8 years; and (4) mortality rates are independent of age. Using the same parameters for a population that is not growing, the total annual mortality rate would be slightly below 0.10.

Taking into account the sampling errors in the estimates of the parameters involved, the fitted model is not unreasonable. In any case, the natural mortality rate must be low, and a low mortality rate is difficult to determine accurately, as are any changes in it (Fowler *et al.* 1980). This difficulty is especially true for walruses, because population segregation creates sampling problems. In addition, precise determination of the age of individuals is difficult, as it is with other mammals. Age determination is least precise for the older age classes that are included in calculations of mortality (Fay *et al.* 1986; Fay, pers. commun.). Thus, it is not reasonable to monitor the condition of the walrus population on the basis of observed changes in calculated mortality rates, except with a long time series of data.

Juvenile mortality has been indicated to be density-dependent for large mammals, including several species of marine mammals (Fowler *et al.* 1980, Fowler and Smith 1981). Direct measurement of juvenile mortality is difficult, but indirect assessment via age-composition data (see Natural Mortality) has suggested a marked increase in juvenile mortality since at least 1978 (Fay *et al.* 1984*a*, Sease 1986). Fay *et al.* (1988) believe that this method can be developed into a powerful tool for the assessment of juvenile survival and recruitment, thus allowing greater predictability of major fluctuations in the population size.

Research Needs.—Age-composition data have indicated that juvenile mortality rates increased after the mid-1970s. The causes of the increased mortality are unknown, as are the relative importance and magnitude of different natural mortality factors in relation to harvest mortality. The importance of the Walrus Calicivirus as a mortality factor, either by itself or in conjunction with other factors, is unknown. The causes of juvenile mortality need to be identified, and assessment of the level of such mortality should continue. In particular, what changes, if any, have taken place since the late 1970s and early 1980s?

EXPLOITATION

Although the Natives of the Bering-Chukchi region have harvested walruses for thousands of years, their catches may have been small in relation to all other mortality factors (Fay 1982). There is little information on the numbers of animals killed or wounded but not retrieved (rate of loss) by Native hunters. Exploitation by non-Natives has been the major source of mortality for Pacific walruses since Europeans first entered the Bering-Chukchi region. The following is a brief summary of exploitation of the walrus resource, beginning with the first western contact in the Bering-Chukchi region (Fay *et al.* 1984*a*, Sease 1986).

Russian Expansion—1648 to 1867

The impact on the walrus population by the Russian expansion into the region probably was not very great, because the Russians were interested primarily in furs, especially from sea otters (*Enhydra lutris*) and fur seals (*Callorhinus ursinus*). They harvested some walruses, and obtained many tusks from the Natives through trade and excise. The maximum yield of ivory from Alaskan waters probably represented about 1,000 walruses per year from 1821 to 1842 (Tikhmenev 1978). Catches during other periods were less than half that amount (Berkh 1974, Golovin 1979). In addition, catches during the entire Russian expansion period were primarily from the southern Bering Sea, and thus practically all were males. The impact of such harvests on the productivity of the population was less severe than it would have been with a harvest of females.

The Yankee Whalers—1848 to 1914

The whalers, primarily from New England, first reached the Bering Strait region in 1848 in search of bowhead whales (*Balaena mysticetus*), rather than walruses. Catches of walruses were small at first, but they increased as the stocks of whales were depleted (Bockstoce and Botkin 1982). The walrus catches were primarily of females because females yielded more oil and were more accessible than males in the Bering Strait-southern Chukchi region in summer. From about 1869 to 1880 the total catches and losses (animals killed but not retrieved) must have been in excess of 200,000 animals (Bockstoce and Botkin 1982). The walrus population decreased to half its former size during the 1870s, and half to two-thirds of the Natives on the Bering Sea islands died of starvation during the winter of 1878-79 (Nelson and True 1887, Allen 1895). Apparently the plight of the Natives was compounded by unusually harsh weather and ice conditions, and perhaps some other factors, but the drastic reduction of the walrus population was certainly a contributing cause. By 1890 the catch of walruses by the Yankee whalers had dwindled to very few animals. It ended by about 1914.

The Arctic Traders—1880 to 1930

The Arctic traders first appeared during the latter years of the whaling period. The traders harvested walruses on their own, but also traded with the Natives for tusks and hides. Little information exists about the numbers of walruses taken or the size of the walrus population during that period. Distribution records suggest that the population recovered slightly during the 1920s and 1930s (Fay *et al.* 1984*a*, Sease 1986). Apparently the recovery was sufficient to permit a major Soviet walrus harvesting venture, beginning in the 1930s.

Soviet Exploitation—1930 to 1960

In the 1930s the Soviet government initiated efforts to improve the economic welfare of the Natives of the Bering-Chukchi region and to pull them into the Soviet sphere of influence and away from influences of the United States. These efforts included the establishment of government-operated shore- and ship-based walrus harvests. The size of the catches increased to as many as 8,000 animals per year by the late 1930s (Krylov 1968). The total kill, including both the Soviet and Alaskan catches as well as losses, probably was at least 10,000 during most years from 1930 to 1960 (Fay *et al.* 1984*a*).

By the mid-1950s biologists from the United States and the Soviet Union independently concluded that the Pacific walrus population was severely reduced, guessing that it was no more than half of its pre-exploitation size (Fay 1957, Geller 1957, Kleinenberg 1957). The U.S.S.R. and the newly established Alaska Department of Fish and Game passed protective measures by 1960 to restrict the number of female walruses taken (Krylov *et al.* 1964, Burns 1965, Krylov 1968), and during the following 20 years, the walrus population rapidly increased in size (see Population Size and below).

Recent Trends—1960 to 1985

Walrus harvests take place in remote areas and under difficult logistical conditions. Animals killed and not retrieved have been a problem, at least since the use of firearms began, but such losses are difficult to estimate. Measured loss rates in the 1950s and 1960s were about 40% of the total number killed (Fay 1958, 1982; Kenyon 1958, 1960*b*; Krylov 1968). Higher loss rates have been estimated in more recent years (Alaska Dep. Fish and Game, unpubl. reports), but the basis of these estimates remains obscure. Harvest of walruses in Alaska is by Natives in small, remote villages, and a complete count, even of retrieved animals, is difficult to obtain. The estimated total kill, therefore, is probably somewhat low with respect to the number of animals retrieved; the number killed but lost may be overestimated.

Sease (1986) calculated harvest estimates for 1955 to 1985 (Table 2). The estimates for the Soviet catches and for the Alaskan catches prior to 1980 probably are reasonably accurate, because those estimates attempted to include the catches from all areas during the entire year. Alaskan catches since 1980 have been monitored only during the spring harvest and only at five locations (Gambell, Savoonga, Diomede, Nome-King Island, and Wales). The spring catches at Gambell, Savoonga, and Diomede constituted about 62% of the total annual harvest in Alaska in the 1970s. The estimates for the Alaskan catches from 1980 to 1984 in Table 2 were extrapolated from the spring catches at those three villages (Sease 1986). Estimated losses are based on the data of Fay (1958) and Kenyon (1958), which are the only documented loss rates.

From 1960 to 1972 the Alaska Department of Fish and Game restricted the number of female walruses that could be taken by Native hunters (Burns 1965). Enactment of the Marine Mammal Protection Act in 1972 removed those harvest restrictions by transferring jurisdiction from the Alaska Department of Fish and Game to the U.S. Fish and Wildlife Service. With the exception of a quota of 3,000 walruses per year that was in effect from 1975 to 1979, the size and composition of catches in Alaska have not been restricted since 1972, except that walruses can be taken only (1) by Aleuts, Eskimos, and Indians who reside in Alaska, (2) for subsistence purposes or the creation

TABLE 2.—Reported and estimated commercial (ship-based) and Native (shore-based) harvests of Pacific walruses from the Bering and Chukchi seas, 1955–85.

Year	Reported and estimated harvests		Estimated harvest loss	Estimated total kill
	Soviet	Alaskan		
1955	4,828	1,400	4,152	10,380
1956	5,814	1,400	4,809	12,023
1957	4,092	1,400	3,661	9,153
1958	4,038	1,500	3,692	9,230
1959	3,183	1,400	3,055	7,638
1960	2,866	2,356	3,481	8,703
1961	2,573	1,860	2,955	7,388
1962	1,818	1,690	2,339	5,847
1963	1,249	1,725	1,983	4,957
1964	1,500	1,040	1,693	4,233
1965	891	1,767	1,772	4,430
1966	909	2,828	2,491	6,228
1967	940	1,367	1,538	3,845
1968	939	1,436	1,583	3,958
1969	965	882	1,231	3,078
1970	988	1,422	1,607	4,017
1971	897	1,915	1,875	4,687
1972	1,518	1,325	1,895	4,738
1973	1,291	1,581	1,915	4,787
1974	1,205	1,410	1,743	4,358
1975	1,265	2,378	2,429	6,072
1976	1,271	2,989	2,840	7,100
1977	1,461	2,377	2,559	6,397
1978	1,500	2,224	2,483	6,207
1979	1,526	2,510	2,691	6,727
1980	1,982	2,784	3,177	7,943
1981	2,564	3,932	4,331	10,827
1982	3,569	2,696	4,177	10,442
1983	3,936	2,316	4,167	10,419
1984	5,000	5,747	7,165	17,912
1985	5,000	4,385	6,257	15,642

SOURCES: Soviet harvests—1955-65, Krylov 1968; 1965-85, Soviet Ministry of Fisheries. Alaskan harvests—1955-58, Fay 1958; 1959-85, Alaska Dep. Fish and Game, U.S. Fish and Wildl. Serv., unpubl. reports.

NOTE: Total harvest is the sum of those for Siberia and Alaska; losses are those walruses killed and not retrieved, estimated at 66.7% of the harvest (after Fay 1958); total kill is the sum of the harvest and the estimated harvest loss.

of authentic articles of Native handicraft, (3) in a nonwasteful manner, and (4) so long as the walrus population is not shown to be depleted. At least in part as a consequence of the changes in regulation, the average number of walruses taken annually by Alaska Eskimos rose from about 1,500 during the 1960s and early 1970s to about 3,500 by the early 1980s. The Soviets resumed ship-based harvesting in the early 1980s, and their harvests then increased from about 1,200 to 4,000. Thus, the total kill of walruses, including the estimated losses of sunk and mortally wounded animals, appears to have been at least 10,000 each year since 1981 (Fay *et al.* 1984*a*, Sease 1986). The loss rate in Alaskan and Soviet waters and the total kill in Alaska since 1980, however, are not adequately documented.

The age and sex compositions of Alaskan walrus harvests have changed since 1960. Mean ages of catches, which had remained fairly constant during the 1950s, began to increase after about 1960 at the three principal hunting locations in Alaska (Gambell and Savoonga on St. Lawrence Island and Ingaluk on Little Diomede Island). Samples from the 1980s suggested that the increase in mean age leveled off after about 1979 (Fay *et al.* 1988). Similar trends have been observed in nonselective samples from Soviet research cruises in the 1960s to 1980s (Krylov 1965, 1968; Fedoseev and Gol'tsev 1969; Fay *et al.* 1983, unpubl. data), as well as from samples of walruses that died of natural causes at the Punuk Islands. The "selective biases" for the Punuk samples, however, are not clearly understood (Fay *et al.* 1984*a*).

The sex ratio of the Soviet catch prior to 1960 appears to have been close to 1:1 (Freiman 1941, cited in Fay 1982); since 1960 the Soviets have limited their catches almost entirely to males, taking only limited numbers of females for scientific purposes (Fay, pers. commun.). Probably more females than males were taken in Alaska before 1960 (Burns 1965). The State of Alaska restricted the catch of females from 1960 to 1972 (Burns 1965), and from that time to the mid-1970s about one-fourth of the kills in Alaska were estimated to be females (Alaska Dep. Fish and Game, unpubl. reports). The proportion of females in the Alaskan catch increased significantly in the 1970s (Sease 1986). The increase was most significant at Diomede, where the proportion of females in the catches increased from about 25% in the 1960s to about 59% in the early 1980s, and at Savoonga, where it increased from about 11% to 34% in the same period (Sease 1986; Alaska Dep. Fish and Game, U.S. Fish and Wildl. Serv., unpubl. reports).

Research Needs.—Documentation of the loss rate associated with walrus harvests is the most pressing research need, along with development of methods to reduce losses. In addition, the size, age composition, and sex composition of the whole Alaskan harvest should be determined on a regular basis.

CONSERVATION ISSUES

Management and Exploitation

From the time of the first European contact until the late 1930s, constraints on the exploitation of walruses were economic in nature (*e.g.*, low prices for oil, hides, or tusks). In 1909 the U.S. government prohibited the commercial harvest of walruses within the territorial waters of Alaska, but apparently those regulations were not well enforced (Madsen and Douglas 1957) and harvests at sea and in Siberian waters were not affected at all. Commercial harvests stopped only after the markets for ivory and hides collapsed during World War I (Madsen and Douglas 1957, Bockstoce and Botkin 1982), but resumed soon after the war for a few more years (Brooks 1954, Burns 1965). The killing of walruses by U.S. citizens was banned, except for local use by Natives in Alaska, by the U.S. Department of Commerce in 1937 and the Congressional Walrus Act of 1941 (Fay 1982). About 10 years earlier, however, the Soviet Union had begun its most intensive exploitation of the same population. By the late 1950s biologists from the United States and the Soviet Union recognized that the walrus population was seriously reduced. By 1960 both Alaska and the Soviet Union had placed restrictions on the size and sex composition of catches (see Exploitation—Recent Trends). In addition, walruses received full protection on several important and regularly used haulouts.

As noted above (see Exploitation—Current Trends), the annual removal from the population, including catches and losses, appears to have been as high during the 1980s as it was during the peak of the Russian exploitation period in the 1930s and 1940s. The population may be much larger now, but it is probably composed of older and less productive animals than it was in the 1930s and 1940s. Simple arithmetic models suggest that between 1980 and 1990 the population will have been reduced significantly if harvest rates remain constant, even if recruitment increases after 1986 (Sease 1985; Fay *et al.* 1988). In those models, rates for recruitment into the adult population were derived from the proportions of juveniles (calf or 0-year-old to 4-5-year-old) in herds observed at sea (Fay *et al.* 1984*a*, unpubl. data). Certainly, rates of reproduction, recruitment, and mortality may change and mitigate the rate of decline, but despite this, the increased harvests in Alaska and the Soviet Union could result in a marked reduction of the population. Additional research is necessary to evaluate

current rates of reproduction, recruitment, and mortality, as well as possible changes in these parameters. With that information, more detailed population modeling may help to evaluate the current status of the walrus population and levels of allowable take.

The maximum sustainable level of exploitation for the future is difficult to predict without more sophisticated modeling. Harvests in the United States will probably be limited entirely to those by Alaska Natives for the purposes of subsistence and the creation of handicrafts. If the Native population continues to grow as it has in the recent past, harvests for these purposes may continue to increase.

One major, unresolved problem for management is the allocation of catches between the United States and the U.S.S.R. Unilateral management by both nations does little to simplify a very complex management problem. Communication between the two countries might have prevented the concurrent exploitation by the Soviet Union and protection by the United States that took place in the 1930s to 1950s. Both nations should strive to manage this and other shared resources cooperatively. The channels of communication necessary for exchange of biological information and management plans have been established, but improved communication has not yet led to development of an acceptable joint conservation and management program.

Petroleum Exploration and Development

The potential conservation issues associated with oil and gas lease exploration and development activities have been described above (see Distribution, Food Habits, and Mortality). All of the proposed outer continental shelf lease areas in the Bering–Chukchi region lie completely within the walruses' range. Contamination from a major oil spill could have long-term, adverse effects locally on walrus food resources; little is known about the effects of oil on walruses at the individual level, and even less is known about impacts at the population level (Hansen 1985). Ship and aircraft traffic could disrupt walruses at all times of the year in important breeding, nursery, and feeding areas and in migration corridors. Frequent disruptions in a particular location can cause walruses to abandon that area (Fedoseev, pers. commun.). Low-flying aircraft can cause stampedes that result in mortality, especially of calves. The responsible management agencies, currently the Minerals Management Service (U.S. Department of the Interior) and the National Ocean Service (U.S. Department of Commerce, National Oceanic and Atmospheric Administration), should monitor the locations and magnitudes of exploration and development as well as the locations of traffic lanes used by support ships and aircraft. Concurrent monitoring by the U.S. Fish and Wildlife Service of walrus seasonal distribution and movements, activity patterns, food habits, and food resources in and near affected areas will be necessary to identify future conflicts as quickly as possible, so that adverse impacts can be minimized.

Coastal Development

The conservation issues related to coastal development have been discussed above (see Distribution, Mortality). Since the late 1960s walruses have been establishing new haulouts and reestablishing old haulouts along the coast of Alaska, especially in the southeastern Bering Sea (Frost *et al.* 1982). These haulouts should be monitored to identify their relative importance, seasonal patterns of use by walruses, and the potential sources of disturbance at each. Additional preserves, similar to that at Round Island, may be needed to protect walruses at particular haulouts.

Fisheries Conflicts and Incidental Take

Conflicts with fisheries, through competition for or degradation of food resources, are not likely to present conservation problems in the foreseeable future (see Food Habits). Although some interest has been expressed in commercial harvesting of clams in the Bering Sea, the costs at present are too high. The responsible management agencies should continue to monitor the food habits and important feeding areas of walruses as well as the location and magnitude of the major commercial fisheries in the same region. Monitoring will be necessary to identify potential future conflicts as early as possible. Incidental take of walruses as a result of commercial fishing is not likely to be a conservation issue.

Environmental Contaminants

A variety of contaminants, including heavy metals, organochlorines, and hydrocarbons, have been identified in walrus tissues. The highest levels of cadmium ever recorded in any wild mammal have been found in walruses from the Bering Sea. Refined hydrocarbon compounds, presumably from ship ballast expelled at sea, also have appeared in walrus tissues; the sources of the other contaminants are unknown (Metsker, pers. commun.).

The potential for bioaccumulation and the adverse effects that environmental contaminants could have on the biology of pinnipeds are unknown, although polychlorinated biphenyls (PCBs) have tentatively been linked with abnormally high abortion rates in Baltic Sea ringed seals (Holden 1978, Jensen *et al.* 1979). Similarly, the adverse effects that environmental contaminants might have on the walrus population are unknown. Contaminants in walrus tissues may present a potential public health problem for the Natives who eat walrus meat. The nature and magni-

tude of the contaminant problem and the potential public health dangers are unknown at present and should be investigated.

RESEARCH AND MANAGEMENT RECOMMENDATIONS

1) Develop a Joint U.S.-U.S.S.R. Conservation Agreement.—The need for joint conservation of the Pacific walrus population by the United States and the Soviet Union is self-evident. Walruses are not restricted to the economic zones of either nation, and they are an important resource for both. Development of a U.S.-Soviet agreement would encourage cooperative research and monitoring programs and allow the allocation of catches to both countries, and, at the same time, greatly reduce the probability of future depletion of the stock. Channels of communication are open between the responsible regulatory agencies in the two nations via the Marine Mammal Project of the U.S.-U.S.S.R. Environmental Protection Agreement, but more frequent exchanges are needed so that the conservation program in each nation can be developed with full compatibility with the program in the other.

2) Develop Population Models.—According to the Marine Mammal Protection Act's regulatory definition of optimum sustainable populations (OSP), marine mammal populations are to be maintained within a range defined at the lower level to be that population which has the largest net annual growth increment (MNPL), and at the upper level to be the largest population supportable by the ecosystem of which it is a part (K). At this time no fully acceptable estimates of MNPL and K for walruses are available. Population modeling is necessary to evaluate those parameters before the Marine Mammal Protection Act can be implemented successfully. Results from population models, however, are only as accurate as the data upon which they are based. Additional research is necessary to supply the most accurate data possible for reproductive parameters, harvest characteristics, and population size (see recommendations 3-6).

3) Develop Better Methods to Assess Population Status.—Current methods (estimates of harvests and aerial surveys) for assessing trends in the walrus population's size and status are slow to detect changes, and typically do so only after any trends already are historical. Fay *et al.* (1988) stress the need for a new, more sensitive method of assessing the status of the walrus population. For example, monitoring the survival of young and recruitment into the adult population would allow more rapid identification of current trends and prediction of future trends. The ratios of dependent young to adult females can probably be assessed by annual visual sampling of herds in the Chukchi Sea in summer. Additional research on the method is needed before it can be applied.

4) Conduct Aerial Surveys.—Aerial surveys of the walrus population should be conducted at intervals of no more than 5 years. As noted above, coordination of surveys with the Soviets is essential for meaningful results. Additional research is needed to determine how to reduce the sampling variances and confidence limits for population estimates (see Population Size—Research Needs). Radiotelemetry could help to analyze activity patterns and to calculate the proportion of walruses on the ice versus in the water, at the surface versus underwater, out of the survey area, or otherwise uncountable during aerial surveys. Radiotelemetry also may improve our understanding of walrus distribution in the pack ice in September and October, thus allowing improvement of survey design and reduction in sampling variance (see recommendation 7).

5) Expand the Harvest Monitoring Program.—Continuation and expansion of the Alaskan harvest monitoring program are necessary to assess size and composition of the annual harvests, at least at the major hunting locations (Gambell, Savoonga, Nome-King Island, and Diomede) each year and from the other locations intermittently. Collection of comparable data from the Soviet harvests would also be desirable. The collection of teeth for age determination should continue each year at each location. Those data are essential for population modeling. The precision of age determination from sectioned walrus teeth is low for inexperienced personnel (Fay *et al.* 1986); therefore age determination should be performed by an experienced biologist or technician. Stomach contents from as many individuals as possible and reproductive organs from adult females should be collected at Gambell, Savoonga, and Diomede to monitor changes in food habits and reproductive performance. The harvest monitor program could be expanded to collect tissue samples for contaminant analysis at little or no additional cost.

A statistically sound sampling plan should be developed for the collection of tooth, stomach content, and reproductive organ samples. Interpretation of results from the analyses of current collections is difficult, because these collections may not be representative of the population. Samples are currently collected on a quota system, and sampling stops when the quota is filled. Gilbert (pers. commun.) has expressed the opinion that continuation of sampling throughout the season might lessen sampling biases caused by seasonal variation. A high variation among years has been observed in previous samples of stomach contents and

reproductive organs (Fay and Stoker 1982*a*,*b*; Fay *et al.* 1984*a*; Sease 1986).

A public education program should be developed in conjunction with the Eskimo Walrus Commission, regional and village Native corporations, and other Native groups. Such a program would provide a forum for government agencies to explain management decisions and procedures and to outline proposed management and research goals.

Harvest monitoring and enforcement should be separate programs. Native hunters frequently equate the harvest monitors with "game wardens," an association that can affect the collection of harvest data and samples adversely. The U.S. Fish and Wildlife Service is considering a program for the sealing and tagging of marine mammal products, including walrus tusks (Taylor, pers. commun.).

*6) **Conduct Random Sampling of Reproductive Organs.*** —Whenever possible, samples of reproductive organs should be collected from female walruses in a manner not subject to the selection biases of the Native walrus hunters. In recent years, nonselective samples have been collected during U.S.-Soviet research cruises. Random sampling would allow estimation of reproductive parameters that is more representative of the population as a whole. There is a lack of agreement among biologists about some parameters, such as age-specific fecundity, and some data sets suggest that several parameters have been changing during recent years (see Reproduction). Further analysis of earlier data is needed, and additional samples are needed to determine current reproductive parameters and to assess recent trends. Precise, unbiased estimates are necessary for accurately assessing the condition of the population as well as for inclusion in population models.

*7) **Obtain Better Information on Distribution and Migration.*** —The gaps in our knowledge of the distribution and the migration paths of walruses are described above (see Distribution). Whether the walrus population is composed of a single, mixed stock or of two (or more?) fairly discrete stocks will have a significant bearing on the development of an effective management plan. Assessment of potential conflicts with oil and gas lease development, offshore mining, and commercial fisheries will require a better understanding of distribution and migration. A radio-tagging and satellite tracking project, coupled with genetic studies and examination of possible local or regional differences in contaminant loads, would provide answers to some of the questions. Further monitoring of the use of terrestrial haulouts, especially in the southeastern Bering Sea, may indicate that more of those sites should be protected from human intrusion.

*8) **Obtain Better Information on Food Habits and Benthic Fauna.*** —The seasonal and regional feeding habits of walruses are poorly known. In addition to the samples of stomach contents collected periodically in the harvest monitoring program in the Bering Strait region, samples should be obtained where walruses concentrate during winter and summer and in migration. Those samples, coupled with benthic surveys, could help to identify the most important feeding areas and kinds of food, and would contribute toward assessment of the status of food resources and the ecological interactions between walruses and the benthic faunal community.

*9) **Reduce Harvest Losses.*** —The unretrieved kill was estimated in 1958 to be about 40% of the total kill (see Exploitation—Recent Trends). The exact current proportion is unknown. Regulation of the calibers of rifles to be used for hunting walruses and restrictions against killing walruses in the water are ways to reduce the unretrieved kill. These and other measures should be developed in consultation with the Eskimo Walrus Commission, regional and village Native corporations, and other Native groups. It is important to take whatever steps are possible to reduce harvest losses.

*10) **Monitor Development Activity.*** —The responsible management agencies (Minerals Management Service and National Oceanic and Atmospheric Administration) should continue to assess and take such actions as necessary to ensure that development activities in the Bering-Chukchi region relating to oil exploitation or fisheries do not affect walruses or their habitat adversely. These agencies should take actions to ensure that critical feeding areas are protected. Monitoring or patrolling particular walrus haulout areas may be necessary when the animals are vulnerable to human disturbance.

*11) **Obtain Information on Contaminant Sources and Effects.*** —Walrus tissues have been found to contain high levels of several contaminants (see Conservation Issues—Environmental Contaminants). Additional research is needed to determine the nature, level, and sources of contaminants, the effects of those contaminants on the health and reproduction of walruses, and the potential dangers (if any) for people of the Bering-Chukchi region who consume walrus meat.

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RE SJR 19

FINAL REPORT

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

SIXTH MEETING OF THE CONFERENCE OF THE PARTIES
OTTAWA, CANADA
JULY 12 TO 24, 1987

PREPARED BY

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AUGUST, 1987

BACKGROUND

In mid-May, 1987, I was contacted by Mr. Ron Somerville, Executive Director of the Alaska Outdoor Council (AOC), concerning representation of that organization at the Sixth Meeting of the Conference of the Parties to the Convention On International Trade In Endangered Species Of Wild Fauna And Flora (hereafter referred to as CITES). The Alaska Outdoor Council, having been informed that certain matters of great importance to our state were under consideration at the Sixth Conference, had made official arrangements to participate as a recognized Non Governmental Organization (NGO). However, my participation was to be contingent upon the availability of funds to cover transportation, per diem, minor expenses and personal compensation. Those funds were not directly available to the Alaska Outdoor Council, though several alternatives were being explored at the time. It was estimated that the total cost of the project would require something on the order of $ 8,000.

In early June, I was contacted by Mr. W. Lewis Pamplin, Jr., Director of the Alaska Department of Fish and Game's Division of Game. He had made the decision that one way or another, the required funds would be available, even if they had to come from his Division. On that assurance, I began making preparations for the conference. The most immediate need was to purchase reduced rate airline tickets within the required time period, which I did.

In early July, I received papers necessary for executing a professional services contract between myself (dba LIVING RESOURCES, INC.) and the Alaska Department of Fish and Game (see Attachment I). I was not party to all the steps involved in actually arranging for availability of the funds, and am therefore unable to comment on that. The net result, however, was that I was an official NGO representative of the Alaska Outdoor Council, being paid by the State of Alaska, to address issues of primary concern to trappers and to walrus hunters.

INTRODUCTION

CITES is an international convention that came into force in 1973. The guiding philosophy of the convention is that, "...wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come;" and that, "...international cooperation is essential for the protection of certain species of wild fauna and flora against over-exploitation through international trade...."

About 95 nations are party to the convention at this time. However, that number is always subject to change, depending on whether a nation pays it's annual assessment and meets other obligations.

The convention was initially developed as the result of public

concerns, interest and support, most notably lead by the International Union For the Conservation Of Nature. A great many other private organizations were also involved. Private sector (=public) involvement is therefore a cornerstone of the convention and the rights and privileges accorded to official NGO groups has been maintained within the structure of the CITES process and is considerable. It includes the rights to address delegates, from the floor at committee and plenary sessions. NGO's are very active in working with delegates on all sorts of matters.

Since the Convention, by definition, is an agreement among nations, national governments play the primary role in the decision making process, though many responsibilities seem to have been delegated to quasi-governmental agencies. Many nations, including the U.S., have their own CITIES Authorities to deal with domestic enforcement of commitments agreed to by the parties to CITES. The World Wildlife Fund underwrites the costs of maintaining groups in several countries, that monitor traffic in wild fauna and flora. The International Union for the Conservation of Nature maintains a Species Survival Commission and a Trade Specialist Group. The CITES Secretariat, currently headquartered in Switzerland, functions as a quasi-governmental organization that oversees and coordinates all of these activities. Thus, there is a continuous and significant exchange of information between nations, about international trade in living resources. Attachment II is a guide to the convention. It may be a useful reference for explaining CITES goals and processes.

In my opinion, the Convention as it is intended to function, is a positive and effective conservation tool. There are many examples of species actually being driven to extirpation or, more importantly to extinction as the result of commercial demand for products that enter into international trade. Examples of some species include the rhinoceros, the elephant , several parrots and cockatoos and a variety of rare tropical hardwoods. However, interested parties must be vigilant in order to insure that national delegates have factual and accurate information available to them about the real status of an organism.

Central to the CITES process is the listing of species on one of three appendices, each designating a different level of species welfare and the significance of international trade. Listing on Appendix I means that a species is currently threatened with extinction and is or may be further affected by international trade. Listing on Appendix II indicates concern that a species may become threatened with extinction and that it does enter into international trade. Appendix III indicates no immediate concern about the threat of extinction, but signals that there is a need or desire to monitor international trade. A listing on any appendix triggers regulatory and reporting regimes for international trade, that are supposed to be commensurate with the level of biological threat. additionally, organisms that resemble others that are listed on Appendix I or II, may also be subject to restrictions on international trade.

Usually, the listing of any species that moves in international trade is, a priory, the subject of considerable attention and debate, either formally or informally. There are groups on the "free trade" side of issues that work to oppose most listings, even those that are needed to protected disadvantaged species. Conversely, there are many active groups on the "animal rights" side of the issues, that work diligently to obtain the most restrictive listings for as many species as possible, including those that may be abundant. Restricting trade eliminates markets which, in turn, removes the economic incentive to take the birds, fishes, plants or animals. CITES protection that is accorded to so-called look alike species, which may be very abundant, can result in trade restrictions on the abundant species.

At the international level, CITES provides the framework for two major things: 1) designating the status of living resources that move in international commerce, and 2) triggering national and international regulatory regimes. It is within this setting that the different interest groups, primarily represented as NGO'S, try to achieve their goals. Clearly, there is both opportunity and incentive to selectively use (and misuse) information that encourages delegates to vote one way or another.

PROJECT OBJECTIVES

Since The Alaska Outdoor Council and the Alaska Department of Fish and Game, each with slightly different priorities, were responsible for my participation in this project, my efforts had to respond to the stated desires of both. My instructions from the Alaska Outdoor Council were:

1. To represent interests of the fur industry, particularly those of Alaskan trappers, in activities, discussions and deliberations relevant to actions by or through CITES that affect Alaskan participants in that industry.
2. To establish liaison with other NGO, government and non-official groups, particularly U.S. and Canadian, that may be able to work together in efforts to discourage or defeat unnecessary threats to trapping and to trade in furbearers.
3. To try and obtain a functional understanding of the CITES process and, as appropriate, to recommend steps that can be taken within Alaska to assure adequate availability and presentation of biological and socio-economic data that may be needed in a CITES type forum.
4. To assist in efforts to defeat the Dutch proposal that would list walruses on CITES Appendix II and to comment on future steps that should be taken in Alaska, pertinent to Pacific walrus.
5. To determine the need for participation of Alaskan NGO's at future CITES conferences.

It was apparent to me that AOC's objectives were closely intertwined and that active participation in an effort to defeat the walrus proposal would amount to first-hand experience with diverse components of the CITES process and the potential effectiveness of

NGO status.

My tasks on behalf of the State of Alaska, as stated in the Professional Services Agreement, were:

1. To coordinate state input at the 1987 CITES Conference of the Parties, through the Alaska Outdoor Council.
2. To attend and participate in the Sixth Conference of the Parties, in Ottawa, Canada, beginning July 12, 1987.
3. To prepare a report about convention and conference activities, along with my observations and findings; subject report to be submitted to the Department of Fish and Game no later than September 1, 1987.

Clearly, objectives of the State of Alaska and of the Alaska Outdoor Council were mainly mutually shared and completely compatible.

ACTIVITIES AND RESULTS

My activities can be categorized as having occurred in three phases: preparations for the CITES conference (3 1/2 days); attendance at the conference, and associated travel (14 days); follow-up and preparation of the draft report (in progress).

The first phase of my efforts, though basic, were not particularly noteworthy. They included such things as arranging for travel and hotel accommodations, correspondence and phone conversations with some of the groups I was to represent, contacts with the AOC and ADF&G, accumulation and review of recent research results and management data about walruses, establishment of liaison with the Wildlife Legislative Fund of America, review of past CITES procedures and actions, and review of available documents relevant to the July 1987 conference.

I departed for Ottawa at 12:30 am on Saturday, July 11, and arrived at 10:34 pm, finally getting to the hotel at 11:45 pm. Participation in the conference was from the 12th to 23rd. I departed Ottawa at 9:50 am on 24 July and arrived in Fairbanks at 9:55 pm. The main body of this report will be an account of events at the conference.

Phase three of this project mainly involved preparation of this report, though several ancillary activities also occurred. The latter included follow-up contacts with other participants, a presentation about the conference made to Interior members of the AOC and invited guests, and 2 meetings with members of the Alaska Trappers Association and their invited guests.

The following is a detailed though summarized account of my efforts at the CITES conference. It also includes my perceptions of events. My presentation is in the form of a review of daily events intended to provide information on how I found the system to work and what I, as an NGO, could or could not accomplish.

Sunday, July 12 (day 1): Primary goals were to register, confirm my credentials, pick up the CITES documents (voluminous !), meet key initial contacts, determine the probable time table for consideration of the walrus proposal, attend the opening ceremonies ,and try to develop some sort of strategy.

I registered during the morning, picked up 2 arm loads of documents and set out to find my fellow NGO representatives. Locating my fellow NGO's turned out to be an event of significance. I walked into the "operations center" of what were identified as conservationist lobbyists, which I considered myself to be. Though some conservationist organizations were part of the coalition that funded the operations center I was in, most seemed mainly inclined toward protectionist and animal rights causes. In all respects the large room was indeed a control center complete with video equipment, xerox machines, computers, phones, tables of pamphlets, typewriters, maps and other equipment. The place was bustling with activity and the few people I talked with were obviously energetic, very committed and very sincere and eager to accomplish their goals within the CITES arena. After informing folks of where I was from and what my intentions were, I was told that I did not belong there and was politely shown to the door. The whole experience was very useful and greatly influenced my strategy and enthusiasm.

To generalize greatly, there seemed to be 4 types of NGO organizations active at this CITES convention; protectionist and animal rights groups, mainline conservation and management groups, wildlife trade groups (i.e. fur and pet industries), and seemingly non-aligned observers.

I eventually located the operations room that was sponsored and supported by the Canadian Wildlife Federation. It was similar to the set up I previously saw, though smaller and without all the video equipment. The services of translators were available. There I met Ms. Carol Porter, of the Wildlife Legislative Fund Of America. Ms. Porter introduced me to other NGO,s that would be using the operations center, provided some orientation, and explained some of the CITES procedures. It was arranged that each day, after the CITES meetings were recessed, there was to be a debriefing meeting. Purpose of the daily meeting was to review events of the day, make individual progress reports, exchange ideas, enlist the support of sympathetic NGO's, obtain typing and translation services as needed, provide updated material and discuss other matters as appropriate. The official languages of the conference were English, French and Spanish. NGO's were advised to approach delegates, using one of those languages as appropriate. As things turned out, most delegates had a fair to good understanding of English.

Opening ceremonies of the Conference began at 5:00 pm and were to be followed by a reception given by the Canadian Government. Before the opening ceremonies, I briefly introduced myself to one of the U.S. delegates and came away with the very strong feeling that either NGO's were a nuisance to them, or that walruses were

something they did not want to discuss. I tried to find out when the walrus proposal was likely to be brought up for consideration, but the gentleman I spoke with did not know. I decided to try and locate delegates from other countries that have walruses within their jurisdictions, to determine their attitudes toward the Dutch proposal, and to find out when the proposal might come to the floor for consideration.

By the time of the reception, I had decided that it would be prudent to begin working simultaneously on two different approaches to the immediate problem of the walrus proposal: to try and get the Dutch to withdraw it prior to consideration at the plenary session, and to lobby delegates to vote against the proposal in the event that it might come to the floor.

During the reception by the Canadians I spoke with delegates from Hungary, England and Denmark. The Dane seemed inclined toward the proposal, though she indicated there was a bit of a conflict with respect to the wishes of the Greenland Home Rule Government, toward which Denmark has obligations. The Hungarian listened politely but asked no questions. The British representative was very interested in the matter and asked many questions about the biological status of walruses, particularly those of the Bering Sea stock. He informed me that the walrus proposal was likely to come up for discussion by the Scientific Committee on July 16 or 17. I then located representatives from the Greenland Home Rule Government and introduced myself. That contact turned out to be a very significant one.

I returned to the hotel very late and began drafting the outline of arguments against the Dutch proposal.

Monday, July 13 (day 2). In line with the decision to work along two parallel tracks, my goals for this day were to meet with as many delegates as possible, to try and organize a meeting of "range" states (nations that have populations of walruses), To prepare a paper of key points for other sympathetic NGO's to use in their conversations with delegates and to meet with the marine mammal specialists from Canada and Denmark (on loan to Greenland). Each of those was accomplished.

During part of the morning I attended the plenary session and made contact with the Soviet delegates during the first break. The Soviet delegate was receptive to my points and agreed to meet with other delegates from range states, if I could make appropriate arrangements. During the remainder of the morning I was able to arrange for use of the operations room provided by the Canadian Wildlife Federation, and to contact other delegates from the range states (U.S., Canada, Denmark/Greenland, Norway and the U.S.S.R.). Dr. Eric Born, the Danish biologist on loan to Greenland assisted me in contacting some of the delegates. We met for about 1 1/2 hours, starting at about 2:45 pm. We exchanged views about walruses, I made my pitch in opposition to the Dutch proposal and I asked them

if they would consider agreeing on a unified statement from the range states, if I prepared a draft for their editorial review. By the end of this mini-meeting I felt that all but Norway might either oppose the Dutch proposal, or at least not speak in favor of it.

Use of the NGO operations room was critical to me, for holding the meeting of range states. It was in the hotel close to the conference hall and was suitable for the meeting. Mr. Kenneth Brynaert, Executive Vice President of the Canadian Wildlife Federation, arranged for everyone to vacate the room for purposes of holding the meeting. That was a considerable inconvenience for which he deserves much thanks. The opportunity for an NGO to organize and convene such a meeting speaks to the role that NGO's can play.

During the daily debriefing I informed the NGO's of the days events, made note of their progress in meeting delegates, and arranged to have 3 documents typed. These would be, 1) the talking points for NGO's, 2) the "statement" of range states and 3) my critique of the Dutch proposal.

In the early evening I again met with the Danish biologist (Dr. Born) and with the representatives from Greenland. I learned a little about how the Greenland/Denmark connection works in an international forum and, more importantly, the rules by which members of the European Economic Community (EEC) operate when voting at an international meeting. EEC members are constrained to all vote the same way, or to abstain as a block. That put Denmark (an EEC member) in a very interesting position. They vote on behalf of themselves and for Greenland. Greenland was urging Denmark to vote against the Dutch proposal (The Netherlands is a member of the EEC), though at least one member of the Danish delegation was in favor of the proposal to put walruses on Appendix II. The Dutch would have a bit of a problem defending a proposal which they and all other EEC members might have to abstain from voting on, if the Danes decided to heed the wishes of Greenland.

During the late evening I drafted the statement of range states and continued working on my speech for a potential debate in the Plenary session.

Tuesday, July 14 (day 3). Goals for the day were to lobby as many delegates as possible, to meet for the second time with the representative from the U.K., and to begin working directly on the Dutch to consider withdrawing their proposal.

Off and on, I attended the meetings of the scientific committee. This committee debates all proposals and makes recommendations to the committee of the whole (i.e. the plenary meeting). During breaks and at lunch I met separately with delegates from Zimbabwe, Tanzania, Japan, India, Argentina, Ecuador and St. Lucia. Dr. Born and Mr. Hans Jacob Helms (of the Greenland Home Rule) arranged an evening meeting with the Dutch. I was also able to talk again with

a delegate from the U.K. about why the Dutch proposal was a poor one, and why I thought that walruses did not meet the criteria for listing on Appendix II.

Dr. Born had successfully arranged for a meeting with the Dutch delegation, as time would allow, during the evening. That meeting took place in the hotel room of the 2 Dutch delegates, starting at about 9:35 pm and lasting to about midnight. Five people were present including the 2 delegates from Holland, Dr. Born, Mr. Helms (Greenland Home Rule Government) and myself. A considerable part of the meeting was quite strained and argumentative, involving as it did the conflicts associated with pride of sponsorship on one hand and severe criticism of the proposal on the other. One of the Dutch delegates was a scientist (botanist) and became concerned about the scientific credibility of the proposal, though he adamantly defended the necessity to take some corrective action to insure that Pacific walrus are subject to some (any) kind of a meaningful management program. Lack of management and the perception of unregulated "head" hunting for ivory, were the main factors that motivated introduction of the proposal by the Dutch. In my opinion they were both very reasonable concerns, based on the information they were provided. However, magnitude of the problem is not as great as the Dutch were lead to believe.

Toward the end of the meeting, after the discussions became less charged, I suggested that the Dutch withdraw the proposal and that we explore other ways to make their concerns known. They could not agree to that at the time, though they did agree to ask for postponement of the matter in order to get more information and to check things out with superiors in Holland. A good first sign!

Wednesday, July 15 (day 4). My goals were to meet with as many of the delegates as possible and lobby against the walrus proposal. At last evenings strategy meeting, some of my fellow NGO's had told me that some delegates they lobbied, especially those from nations that depend on production of raw materials, were easily persuaded to oppose the listing of such an abundant species as the walrus.

My notes reflect that the EEC nations met in closed session this morning. It had great relevance to my cause and I was informed of the outcome with respect to the walrus proposal. Great Briton suggested that the Dutch withdraw the proposal primarily because walruses did not meet the Berne Criteria for listing on Appendix II. Such a move by the Dutch would have several advantages. They would not have to defend a scientifically inaccurate proposal, the EEC nations would avoid the embarrassment of having to abstain in a vote, and the Greenland/Denmark connection would remain in tact without a crucial test. The advantages stated above are strictly my speculations.

I spent the day attending the scientific committee deliberations, which were fascinating, and lobbying delegates (just in case!). I was able to speak with delegates of Nepal, Isreal, Niger, Gambia,

Cameroon, France and Senegal. I also met with with several members of the press corps, at their request. At the NGO evening meeting the feedback was that the walrus proposal was probably dead. My opinion was the same, though I remained concerned about the few final skirmishes required in order for all involved parties to come away with something positive. There was virtually no direct feedback from the U.S. delegation, so I had little idea of their concerns or approach to any compromise meetings.

Lloyd Lowry (ADF&G), Matthew Iya (Alaska Eskimo Walrus Commission) and Ron Nalikak (Inuit Circumpolar Conference), arrived from Alaska during the afternoon. We had opportunity to meet and discuss matters at an evening reception sponsored by an organization called Indigenous Survival International. I informed them that I thought the Dutch proposal would eventually be withdrawn and that other than attendance of a U.S. delegate at the meeting of walrus range states, I could not get any action from them, nor predict what they might do.

Today I saw my first of several documents produced at this meeting by NGO's favoring the listing of walruses (ECO, vol. 1, issue 1). It is included, along with other documents pertinent to the walrus issue, as part of Attachment III. It indicates the capabilities and approaches that can be used to influence delegates.

Thursday, July 16 (day 5) Goals were to circulate my "Statement of Range States", seek concurrence in the event it may have to be used, meet with Canadian wildlife specialists, lobby delegates and begin to work on fur and trapping issues.

Another very timely NGO document favoring the listing of walruses, appeared today. This one (also part of Attachment III) attempts to explain why walruses do meet the Berne Criteria for inclusion on Appendix II. It should be noted that it follows, by 1 day, the U.K. position that walruses do not meet the Berne Criteria.

I circulated the draft Statement of Range States to the appropriate delegates, to hold until it might be needed. The Soviet delegate signed his copy immediately and gave me his permission to circulate it as I saw fit. Other range state delegates kept their copies.

I attended the scientific committee meeting, off and on , throughout the day, lobbied a few delegates (Pakistan, India, Kenya and Norway) and generally began to focus on issues other than walrus. I met with several Native representatives from northern Canada and discussed trapping issues in general and protectionist threats to trapping in particular. I did the same with representatives from the provinces of British Columbia, Yukon and Northwest Territories. It was interesting to have a little more time to look around at the exhibits, pick up some of the voluminous propaganda and watch some of the ever present videos, a good many of which show very gruesome horror scenes of animal abuse. One of the especially gruesome ones showed a supposedly "typical" head hunting expedition for walrus, on

St. Lawrence Island (note another effective method used in convincing delegates to vote the way one would like).

The NGO debriefing took place as usual, after the days official meetings were ended. I spent the evening with the Danish biologist and the Greenlanders and we solved all of the problems of the Arctic (at least the major ones). Actually, we were trying to figure out a better way to improve the exchange of information on a continuing basis.

Friday, July 17 (day 6). Somehow it was beginning to feel like I was in Ottawa at least 2 weeks already! My goals were to work with Lowry and Iya where possible, lobby some delegates (I was really beginning to enjoy that), confirm that the Dutch would seek a postponement of the walrus debate, and continue to gather information on fur issues to take back to Alaska.

The Dutch were as good as their word and, when the walrus issue came up, they asked for a postponement until Tuesday, July 21. I would have preferred that they had withdrawn the proposal. Not having done so would mean that the opposition would mount every kind of pressure they could bring to bear over the period from today to Tuesday. Though it would hopefully be ineffective, certain things, particularly documents circulated to delegates, would have to be reviewed and responded to. One such document appeared today and was entitled, "Supplemental Biological Information on Walrus (Odobenus rosmarus)" It was a blatant misuse of data, but again demonstrated one aspect of the methods and capabilities of some groups that take the CITES process very seriously. The document in question is also part of Attachment III. During the afternoon I obtained yet another document from the protectionist side entitled, "Walrus:Species In Crisis". Those 2 documents prompted Lowry and I to begin work on a joint document (Population Status and International Trade in Pacific Walrus, Odobenus rosmarus divergens).

Lowry, Iya and I, along with Canadian Inuit representatives participated in a rather lengthy press conference and interview session. I think it was arranged by the Canadian Inuit and designed to discuss the protectionist threats to rural life-styles and economies. I did not hear of any feedback from that session.

The CITES Conference had been chosen as the appropriate happening at which the formal signing of The Porcupine Caribou Agreement was to take place. That happened today. There was great pomp and circumstance, glorious speeches by U.S. Dept. of Interior and Canadian officials and by Natives from Alaska and the Yukon. The Great State of Alaska was not to be seen or heard. I got depressed about our absence and went off to lobby someone (it turned out to include Switzerland, Suriname, Bolivia and Costa Rica).

The Dutch requested a meeting with delegates of the walrus range states and NGO's from Alaska. That meeting began about 7:00 pm and lasted until 9:30 pm. In my opinion, it was the required procedure

in which they listened to what they already knew by now, informed the principal parties of their concerns and explored ways to withdraw the proposal but still get their points across. I think it was a very useful exercise for those of us from Alaska, especially Matthew Iya. All parties were made aware of the extent of international scrutiny, the unacceptable status of walrus management in Alaska and the unacceptability of head hunting as practiced only in Alaska. Once again the Greenlanders, especially Dr. Born, were particularly helpful to the Alaska position. Also, it was obvious to me that Lowry and Iya had been able to get through to the U.S. delegation.

The nuts and bolts of a trade out between the Netherlands and the U.S. were to be worked out tomorrow morning, starting at 9:00am.

Saturday, July 18 (day 7). The goal was to assist the U.S. delegate to develop a position that satisfied the Dutch, but strongly opposed their proposal.

The meeting was held as scheduled. The Alaska coalition (Lowry, Iya and myself) was present, as was a representative from Canada and Greenland. Most of the mutually desired points were quite obvious, at least to some of us. Lowry and Iya handled most of the discussions from the Alaska "side". I gave a hand written list of key points to Dr. Nancy Foster (FWS Office of Endangered Species) for consideration by the U.S. delegation in the formulation of their official statement.

The agreement was that the Dutch would make some introductory statements when the proposal came up in the scientific committee. In their remarks they would state their concerns about walruses and ask for comments from the range states that wished to be heard. The U.S. would address the points mutually agreed on. After the range states were given the opportunity to speak, the Dutch would graciously withdraw their proposal, as opposed to asking that it be left on the table for consideration in plenary session.

That was a satisfactory solution whereby all parties would be put on notice that the walrus management situation in Alaska was being scrutinized and the management situation had to improved up and, we would not be faced with a nasty floor fight during which all the horror stories about walrus hunting and black market trading of ivory would be discussed at length on the floor

After that meeting I met with a small group of NGO's and tried to organize a meeting of those interested in furbearers. and fur trade issues.

I spent an enjoyable afternoon with Lowry and Iya.

Sunday, July 19 (day 8). Today was a relaxed sort of work day. Iya, Nalikak and I participated in a picnic/outing sponsored by the

Canadian Wildlife Federation. There I met and talked with delegates from Sierra Leone, Zambia, Austria and Zaire. However, my main interest had now shifted to furbearers, and I spoke to several people about that. We got back to the city about 8:30 pm

Monday, July 20 (day 9). My main goals today were to get the Lowry/Burns document typed in English and French versions, work more actively with folks interested in furbearer related issues, and listen to the CITES deliberations.

Prior to the arrival of Lowry, interests of the State of Alaska were, as I understood things, to be dealt with by me, (so far as discretely possible), by a representative of the International Association of State Fish and Game Commissioners and, presumably by the official U.S. delegates. If a representative of the International was present at this conference, I was certainly unable to locate him or her, and there was no indication of any sort that the organization was representing Alaskan issues. There were no representatives in the U.S. delegation that were from Alaska and could knowledgeably speak to Alaskan issues on other than a policy or agency level.

Several issues of great importance were dealt with today in the scientific committee. Constructive and proper actions were recommended on, among other things, certain endangered birds that enter into the pet trade. It was gratifying to watch the system working to meet a real conservation needs. I spent most of the day listening to the deliberations meeting with various representatives from throughout northern Canada, and watching propaganda videos about various birds, mammals and reptiles.

At the evening meeting of NGO's, I arranged for an informal meeting of people that were interested in furbearer issues, to be convened on the evening of the 22 nd.

Tuesday, July 21 (day 10) Goals were to watch the proceedings on walruses, continue to make contact with people interested in furbearers and gather useful material to take back to Alaska.

The walrus proposal came to the floor and was disposed of in the manner previously arranged. The Dutch delegate made his points and I would urge that his stated concerns by dealt with in a meaningful way. The record of the floor discussions are also included as part of Attachment III. I asked one of the U.S. delegates for a copy of his statement, but my request was refused. However the Dutch delegate kindly provided my with copies of his statement, as well that of the U.S. delegation.

Today the animal rights people were really focusing on an anti-trapping program. I watched a video that showed lynx trapping. It made me and others around me almost ill in its gory vividness. There are over 700 active and involved people at this conference and

a majority of them could not avoid seeing this video, even if they wished to. The television is set up in the main corridor of the conference hall. I have been trapping since my youth and have never witnessed such apparent torture of animals in traps. I must say that without doubt the video had its intended effect on the audience. I can not imagine that such a video could be made without being completely staged. This sort of extreme emotional manipulation is going to be a fact of life that trappers have to deal with. The bobcat/lynx issue is already being raised in the CITES arena and one of the gentleman I met today was vigorously lobbying for more restrictive regulations on North American cats.

This evening after the NGO debriefing I met with those people that showed up to discuss furbearers and trapping. The list of interested people (not all of which were at our little meeting) that I was able to compile is included as part of Attachment IV. As it turned out, it was very hard to focus on any single and crucial issue, since there was no immediate crisis at this CITES conference. Perhaps the only concrete accomplishment at the fur meeting was to exchange names and addresses so that a communications network can be put in place. This will require follow-up.

Wednesday and Thursday, July 22 and 23 (days 11 and 12). Goals were to continue following the CITES process, make myself available to NGO's that wanted my assistance (reciprocity), continue talking furbearers, visit the offices of the Canadian Department of Oceans and Environment, and pick up available materials to take back to Alaska.

These 2 days are combined mainly for brevity and because there are few additional insights to be gained from my activities. I spent half a day with Canadian marine mammal specialists at the Dept. of Oceans and the Environment and about 2 hours with the president of a U.S. trappers organization called the National Trappers Association, Inc. I Also had the distinct pleasure of meeting and talking with Mr. Arthur Frayling (International Fur Trade Federation) and Mr. Joseph Poser (a fur merchant and broker). Both are influential in the fur trade and both are capable of funding programs dealing with trapping and trappers. Any information network should include them.

The remainder of my time was spent attending the CITES deliberations, updating notes of the meetings, mailing papers back to Alaska and working with other NGO's.

CONCLUSIONS AND RECOMMENDATIONS

I shall approach this section of the report in 3 phases: general comments, those specific to walruses and those specific to furbearers and trapping.

CITES is a very important convention affecting resource management on an international level. In many respects it functions as an

international version of our domestic Lacy Act, except that a very active program for monitoring international trade has been established and is continuing to be expanded. A program is being instituted which will link parties of the convention via computer terminals. CITES is the well intended product of private conservation groups throughout the world, as well as the product of many concerned governments. We have to applaud it's increasing effectiveness, while vigorously trying to insure that CITES actions are objective and based on realistic data of several kinds including but not limited to biology, ecology and economics.

In my opinion, the walrus proposal was withdrawn because it did not pass the first test of biological necessity for the proposed action and it did not meet even minimum standards for accuracy. However, those failings were recognized and vigorously brought forward because people that were very familiar with the issues were at the conference of the parties. Prior to the conference, many scientists reviewed and commented on the Dutch proposal. So far as I am aware, editorial comments as well as updated or new data were sent to the U.S. CITES Authority, to the Dutch, to the CITES Secretariat and to others. None of those comments seem to have found their way to the delegates at the conference either in the form of a more accurate proposal or as supplementary information sheets. Conversely, the protectionist NGO's were producing "updated scientific data" as the conference was in progress.

Attendance at a CITES conference is very costly. The people and the government of Alaska will be informed of CITES actions and activities if they demand to be kept informed by the U.S. CITES Authority, if they establish more formal lines of communications with organizations such as the Wildlife Legislative Fund of America and with the office of the CITES Secretariat. I do not anticipate a great many issues that will directly affect Alaska. However those that will affect us are very important. When an "Alaskan" issue comes up, we must be prepared to represent ourselves. The 1987 Conference amply demonstrated that no one will step forward to represent our interests.

We, as Alaskans, should not oppose CITES actions directed at resources that really need international protection from excessive trade. That means we should critically examine the actual biological status of a resource in question. If international trade is detrimental to endangered or threatened species, we should support actions to limit or more closely monitor that trade.

The NGO operation centers (there were 2) are critical to the functions that NGO's serve. These centers are funded by coalitions of NGO's that have common, or at least compatible goals. The center I worked out of was financed by the Canadian Wildlife Federation. At future CITES conferences where Alaskan matters are on the agenda, we should consider paying some portion of the costs for an operations center. In July, I was operating strictly on the shirt tails of the CWF.

I will now turn specifically to the walrus issue. The Dutch proposal was actually drafted in the U.S. Any party nation can introduce a proposal and any interest group can look for a national delegation to carry a proposal forward. CITES operates on the international level. Other levels of concern to resource users are at the national, state and municipal levels.

In my opinion, even though the Dutch proposal was withdrawn at the CITES convention, the general issues are still with us and in an immediate way. I anticipate that all of the energy and work that those in favor of the proposal put forward, will be focused on the up-coming reauthorization hearings for the Marine Mammal Protection Act. The CITES Conference will probably turn out to have been, in part, a dress rehearsal for those hearings. The protectionist organizations are now very familiar with the issues, having lobbied them from their perspective. The pamphlets, brochures and position statements have, in large part, been drafted and the horror video will again be ready to go. This time the "parties" will be congressman rather than international delegates. I would recommend that, so far as possible, the State try and accomplish 3 things prior to the reauthorization hearings: 1) make some substantive progress on return of management; 2) encourage FWS to institute the sealing regulations; and 3) work with the Eskimo Walrus Commission to eliminate the practice of head hunting. The latter will require development of alternative uses for walrus parts and development of locally based guiding operations. The thrust of the Dutch proposal was that the U.S. does not have an effective walrus management program. That situation should be rectified as soon as possible.

Attachment II is an accumulation of documents pertinent to the walrus issue as it was addressed at the CITES conference. That attachment deserves careful study as it is a practical primer to what gets done, how and by whom. Note the organizations that claimed sponsorship of the documents.

As previously stated, furbearer and trapping issues were a bit difficult to focus on at this CITES conference, if only because there was no immediate crisis. There was a message in that for me. That message was the necessity to establish a communications network with trappers and fur industry people and try and focus on key issues that people agree on. At the moment there are a lot of different organizations that are very interested in fur related issues and they were well represented at the Ottawa conference. However, it was as if they were unable to gear up for anything but a defensive type of strategy. Everyone will have their chance at the next CITES conference (if not sooner). Most certainly, bobcats, lynx and perhaps wolverines will be proposed for listing on Appendix I or II.

The lynx issue will be a very interesting first because the delegates have so not had to deal with cyclic species, and especially one that fluctuates between such extremes of abundance and scarcity.

The wolverine issue will be difficult for 2 reasons. It is a "rare" species even when abundant, and in the contiguous 48 states, its range is dwindling due to human expansion. That will be interpreted to mean that although the wolverine population in Alaska remains healthy. throughout most of their range they will be considered to be threatened, or worse.

Readers are referred to Attachment IM for a compilation of fur related information that I was able to obtain while in Ottawa. Of note is the list of contacts for future follow-up.

ACKNOWLEDGMENTS

For orientation and help while at the CITES conference I, on behalf of AOC and ADF&G, am indebted to Ms. Carol Porter (WLFA) and Mr. Kenneth Brynaert (CWF). It was a distinct pleasure to work with the modern version of the Danish Vikings, in the service of the Greenland Home Rule Government, especially Dr. Eric Born (a scientist and statesman), and Hans Jacob Helms (now I feel obligated to read "THE SAGAS"). Dr. Arthur Mansfield of the Canadian Department of Fisheries and Oceans was most helpful in providing and presenting information about walruses in Canada.

My fellow Alaskans, Lloyd Lowry and Matthew Iya, were much appreciated. Their activities forced a closer connection with the U.S. Delegation and both contributed to the final agreement with the Dutch. Their arrival was an increase from 1 loose cannon on a rolling deck, to 3.

SJR

27

SENATE COMMITTEE REPORT
FIRST COMMITTEE OF REFERRAL

DATE: 4/5/91 FURTHER:

Date of 5-Day Notice: Apr. 1st 1991
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: ____________

Resources Committee considered SJR 27

Support for the existing federal mining law system.

and recommended:

[ ] replace with ______ CS ____________________ [ ] same title [ ] new title

[ ] attached amendment(s)

[ ] ____________________ letter of intent adopted

[✓] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] further referral to ____________________

ATTACHES NEW FISCAL NOTE(S):

Department(s)/Date:

[ ] fiscal note(s) ____________

[ ] appropriation-no fiscal note

Department(s)/Date:

[✓] zero fiscal note(s) DNR 4/30/91

[ ] Governor's bill w/fiscal note

SIGNING DO PASS:

Rick Halford
[signature]
[signature]
[signature]

OTHER RECOMMENDATIONS:

[signature] No Rec
[signature] No Rec -

[signature] (Do Pass)
Chair: Signature and Recommendation

STEVE FRANK
DISTRICT K
SEAT A

119 N. Cushman, Rm. 213
Fairbanks, Alaska 99701

While in Juneau
P.O. Box V
Juneau, Alaska 99811
(907) 465-3709

Capitol Rm. 514

Alaska State Legislature

Senate

MEMBER
Finance Committee
Resources Committee
Legislative Council
Special Committee on Banking & Economic Development

VICE-CHAIR
Community & Regional Affairs Committee

TO: Senator Lloyd Jones, Chairman
Senate Resources Committee

FROM: Senator Steve Frank

RE: SJR 27 - "Relating to support for the existing federal mining law system."

DATE: April 17, 1991

I would like to request that you schedule SJR 27 for a hearing in the Senate Resources Committee at your earliest convenience.

There is currently a bill before Congress that would make significant changes to the federal mining law. Essentially they are more burdensome than the existing law and can be expected to further discourage exploration and mineral location.

In Alaska, over 100 million acres of land are already closed to mining. Operations that are allowed on the remaining land are subject to very stringent rules including federal, state and local fees, taxes, reclamation standards and environmental standards. A new, more restrictive federal law will only add to the complex, cost prohibitive network of regulations that currently apply to mining and will have the effect of minimizing and in many cases totally eliminating investment interests.

Regulatory compliance costs are so excessive now that the industry's competitive ability is being slowly destroyed. If approved, the congressional measure will have the effect of shrinking even further the remaining opportunity for the mining industry to develop the mineral resources left available for extraction.

The attached resolution stresses our support for the existing federal mining law system and urges Congress to do so as well.

Thank you for your consideration of this request.

FISCAL NOTE

STATE OF ALASKA
1991 LEGISLATIVE SESSION

BILL NO. SJR 27

Revision Date: _____ Department Affected: Natural Resources

Title: Federal Mining Laws BRU: Mining

Component: Mining Management/Operations

Sponsor: Senator Frank

Requestor: ~~Senate Resources Committee~~ **COMPONENT SERIAL NO.** 4 4 2 ___

Expenditures/Revenues: (Thousands of Dollars)

OPERATING	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	-0-	-0-	-0-	-0-	-0-	-0-
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	-0-	-0-	-0-	-0-	-0-	-0-

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

Estimate of current year impact: 0

ANALYSIS: (Attach a separate page if necessary.)

The resolution does not affect this department.

Prepared By: Carol Wilson Phone: 465-2400

Division: Commissioner's Office Date: 4-30-91

Approved by Commissioner: Harold Heinze cw/for

Agency: Natural Resources Date: 4-30-91

Distribution (by preparer): Legislative Finance, Legislative Sponsor, Requestor, OMB, & Impacted Agency(ies).

Rev 10/90

ALASKA MINERALS COMMISSION

April 17, 1991

Honorable Lloyd Jones
Alaska State Senate
P.O. Box V
Juneau, AK 99811

Dear Senator Jones:

On behalf of the Alaska Minerals Commission, I urge your timely support for passage of SJR 27 and HJR 35, "relating to support for the existing federal mining law system."

The resolutions echo a recommendation made by the Minerals Commission in its 1991 report to the Governor and Legislature supporting the existing 1872 mining law.

U.S. Congressman Rahall of West Virginia will be holding a hearing in Fairbanks on May 25, 1991, relating to proposed changes in the 1872 Law. It would be of enormous importance to be able to report at these hearings that the Legislature of the State of Alaska supports the existing Mining Law without the onerous and potentially damaging changes.

Sincerely,

Earl Beistline, Chairman
Alaska Minerals Commission
P.O. Box 80148
Fairbanks, AK 99708

EB/lvs5281t
41791b

SJR

29

SENATE COMMITTEE REPORT
FIRST COMMITTEE OF REFERRAL

Rules

DATE: 4/26/91

FURTHER: No further

Date of 5-Day Notice: 5-2-91
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: 5-7-91

Resources Committee considered SJR 29

~~Relating to the~~ proposed annual federal fee for recreational vessels.

and a majority of the committee recommends do pass

and recommended:

[ ] replace with _____ CS _____ [ ] same title [ ] new title

[ ] attached amendment(s)

[ ] _____ letter of intent adopted

[✓] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] further referral to _____

Fiscal Note

ATTACHES NEW FISCAL NOTE(S):

Department(s)/Date:

[ ] fiscal note(s) _____

Department(s)/Date:

[✓] zero fiscal note(s) S. Resources Committee - 5/6/91

[ ] appropriation-no fiscal note

[ ] Governor's bill w/fiscal note

SIGNING DO PASS:

OTHER RECOMMENDATIONS:

Chair: Signature and Recommendation (Do Pass)

SENATOR FRED F. ZHAROFF

ALASKA STATE LEGISLATURE

P. O. BOX 405, KODIAK, ALASKA 99615 (907) 486-5259

DURING SESSION:

P. O. BOX V, JUNEAU, ALASKA 99811 • (907) 465-3473 • 465-3474

DISTRICT N

ALASKA PENINSULA • ALEUTIAN CHAIN • BRISTOL BAY • KODIAK ISLAND • LAKE CLARK/LAKE ILIAMNA • PRIBILOF ISLANDS • SHUMAGIN ISLANDS

MEMORANDUM

TO: Senator Lloyd Jones
Chairman
Senate Resources Committee

FROM: Senator Fred F. Zharoff

DATE: April 30, 1991

RE: Senate Joint Resolution 29 - "Relating to the proposed annual federal fee for recreational vessels.

I respectfully request the Senate Resources Committee to hold a hearing on SJR 29 at the earliest possible opportunity.

SJR 29 would place the Alaska Legislature on record as in support of the Congressional efforts to repeal the federal recreational vessel fees that are going into effect this year.

The vessel fees are a revenue generating measure that was included in the Omnibus Budget Reconciliation Act of 1990. They provide recreational vessel owners with absolutely no direct benefits. The fees are, in essence, a targeted tax that will be deposited in the U.S. Treasury for the purpose of funding all federal expenditures.

Two bills have been introduced in the U.S. Congress -- H.R. 534 by Rep. Robert W. Davis of Michigan and S. 843 by Sen. John B. Breaux of Louisiana -- to repeal the recreational vessel fees.

The following background information is attached:

1. "Boat Use Tax Fact Sheet" from the Office of Rep. Robert Davis.

2. Copy of H.R. 534, legislation to repeal the boat tax.

3. News release from the U.S. Department of Transportation regarding implementation of boat tax, dated March 28, 1991.

4. Recreational vessel fees Federal Register notice, dated March 28, 1991.

From Rep. Robert Davis

1.

BOAT USE TAX FACT SHEET

Background

First proposed in the FY 1981 Administration's budget request, the recreational boat use fee proposal has faced opposition annually since then. The Merchant Marine and Fisheries Committee has traditionally been opposed to the boat use fee, believing it to be a general tax rather than a fee for a specific service rendered by the Coast Guard. The boating community of approximately six million licensed boats already pays a motorboat fuel tax, which was also increased 5 cents per gallon as part of budget reconciliation, and this is calculated to collect $149 million in FY 1991. The recreational boat use fee was tested on the Floor of the House when it was offered as an amendment to the Coast Guard Authorization Act of 1987 and was resoundingly defeated by a vote of 287 to 119 on July 8, 1987.

Reconciliation instructions imposed by the House Concurrent Resolution on the Budget for FY 1991 directed the Merchant Marine and Fisheries Committee to implement a set of fees and taxes with savings totaling $200 million. The budget conference resulted in a combination of fees for licenses and inspections ($26 million), the graduated recreational boat use tax ($127 million), and a small increase in a shipping tonnage tax ($53 million).

Boat Use Tax

The Omnibus Budget Reconciliation Act of 1990 directs the Secretary of Transportation to establish an annual fee for recreational boats that are greater than 16 feet in length. There is a graduated schedule so that owners of larger vessels pay a higher fee and the fee applies only to vessels operating on navigable waters of the United States where the Coast Guard has a presence. This applies to all recreational vessels, including kayaks and canoes.

Greater than 16 ft., but less than 20 ft. -- not more than $25
20 ft. or more, but less than 27 ft. -- not more than $35
27 ft. or more, but less than 40 ft. -- not more than $50
40 ft. or more -- not to exceed $100.

No specific Coast Guard service is guaranteed in return for this tax and the proceeds go into the general treasury.

Collection of the Tax

The Coast Guard is preparing the regulations, which will be published in the Federal Register prior to implementation, and they should be in effect by Memorial Day weekend. The method of collection has not yet been determined.

H.R. 534

H.R. 534, to repeal the boat use tax, was introduced by Robert W. Davis (R.-Mich.) on January 15, 1991. To cosponsor, please call, ext. 52650.

(2)

102D CONGRESS
1ST SESSION

H. R. 534

To amend title 46, United States Code, to repeal the requirement that the Secretary of Transportation collect a fee or charge for recreational vessels.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 15, 1991

Mr. DAVIS (for himself and Mr. BATEMAN) introduced the following bill; which was referred to the Committee on Merchant Marine and Fisheries

---

A BILL

To amend title 46, United States Code, to repeal the requirement that the Secretary of Transportation collect a fee or charge for recreational vessels.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. COAST GUARD RECREATIONAL BOAT TAX REPEAL.

Section 2110 of title 46, United States Code, is amended—

(1) by repealing subsection (b);

(2) in subsection (c), by striking "subsections (a) and (b)," and inserting "this section,"; and

(3) by redesignating subsections (c) through (i) as subsections (b) through (h), respectively.

O

U.S. Department of Transportation

News:

Office of the Assistant Secretary for Public Affairs
Washington, D.C. 20590

(3)

FOR IMMEDIATE RELEASE
Thursday, March 28, 1991

CG 04-91
Contact: PAC Heflick
Tel.: (202) 267-0931

COAST GUARD PROPOSES ANNUAL FEES FOR RECREATIONAL VESSELS

The U.S. Coast Guard is soliciting public comment on a Notice of Proposed Rulemaking that would establish an annual fee for recreational vessels over 16 feet long that are operated on navigable waters of the United States where the Coast Guard has a presence.

Under the Omnibus Budget Reconciliation Act of 1990, the Secretary of Transportation is required to establish an annual fee for recreational vessels and collect it for a five-year period beginning in fiscal year 1991 through 1995. Congress has stated that the fee "is intended to require recreational boaters to share in the cost of existing Coast Guard programs, including search and rescue, boating safety, and aids to navigation. . .which provide substantial benefits to recreational boaters."

The proposed fees are: $25.00 for vessels over 16 feet but less than 20 feet; $35.00 for vessels at least 20 feet but less than 27 feet; $50.00 for vessels at least 27 feet but less than 40 feet; and $100.00 for vessels at least 40 feet in length. The fees collected for fiscal years 1991 through 1995 will be deposited in the U.S. Treasury and attributed to U.S. Coast Guard activities.

The fee would not apply to vessels 16 feet and under, public vessels, or certain Coast Guard Auxiliary vessels. The proposed rule also would exempt foreign vessels, lifeboats, racing vessels, yacht tenders, sailboards, rowboats, canoes, kayaks, and rowing sculls.

Navigable waters of the United States include the territorial seas, internal tidal waters, and certain internal non-tidal waters. Each Coast Guard district office maintains a list of navigable waters within its jurisdiction. "Where the Coast Guard has a presence" is broadly defined to mean "within Coast Guard district boundaries."

The Coast Guard proposes to require a decal affixed to the vessel as proof of payment. It would be valid for the federal fiscal year -- Oct. 1 - Sept. 30. Comments are also requested on whether the validity period should be a fiscal year, calendar year or some other time frame.

The Coast Guard will include procedures for obtaining the decal in the final rule. Options being considered include obtaining the decals in person, by mail, or by telephone, and permitting payment by cash, check, money order, or credit card. Convenience to the purchaser will be an important factor in this decision.

Full text of the Notice of Proposed Rulemaking is in the March 28, 1991, issue of the Federal Register (Part IV). Copies may be obtained from the Coast Guard by calling the toll-free boating safety hotline, 800-368-5647 -- in Washington D.C., call 267-0780.

Written comments should be mailed on or before May 13, 1991, to Commandant (G-LRA-2/3406) (CGD 90-067), U.S. Coast Guard Headquarters, 2100 Second St. S.W., Washington, D.C. 20593-0001, telephone (202) 267-1477.

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(4)

DEPARTMENT OF TRANSPORTATION

Coast Guard

33 CFR Part 1

[CGD 90-067]

RIN 2115-AD67

Recreational Vessel Fees

AGENCY: Coast Guard, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard proposes to establish a graduated annual fee for recreational vessel operated on navigable waters of the United States where the Coast Guard has a presence. Assessing the fee will require recreational boaters to share in the cost of Coast Guard programs from which they benefit, including search and rescue, boating safety, and aids to navigation. The amounts collected for fiscal years 1991 through 1995 will be deposited in the U.S. Treasury as offsetting receipts of the department in which the Coast Guard is operating and ascribed to Coast Guard activities.

DATE: Comments must be received on or before May 13, 1991.

ADDRESSES: Comments may be mailed to the Executive Secretary, Marine Safety Council (G-LRA-2/3406) (CGD 90-067), U.S. Coast Guard Headquarters, 2100 Second Street SW., Washington, DC 20593-0001, or may be delivered to room 3406 at the above address between 8 a.m. and 3 p.m., Monday through Friday, except Federal holidays. The telephone number is (202) 267-1477.

The Exceutive Secretary maintains the public docket for this rulemaking. Comments will become part of this docket and will be available for inspection or copying at room 3406, U.S. Coast Guard Headquarters.

FOR FURTHER INFORMATION CONTACT: Mr. Carlton Perry, Auxiliary, Boating, and Consumer Affairs Division, (202) 267-0979.

SUPPLEMENTARY INFORMATION:

Request for Comments

The Coast Guard encourages interested persons to participate in this rulemaking by submitting written data, views, or arguments. Persons submitting comments should include their name and address, identify this rulemaking (CGD 90-067) and the specific section of this proposal to which each comment applies, and give a reason for each comment. Persons wanting acknowledgment of receipt of comments should enclose a stamped, self-addressed postcard or envelope.

The Coast Guard will consider all comments received during the comment period. It may change this proposal in view of the comments.

The Coast Guard plans no public hearing. Persons may request a public hearing by writing to the Marine Safety Council at the address under **"ADDRESSES"**. If it determines that the opportunity for oral presentations will aid this rulemaking, the Coast Guard will hold a public hearing at a time and place announced by a later notice in the Federal Register.

Drafting Information

The principal persons involved in drafting this document are Carlton Perry, Project Manager, and Christena Green, Project Counsel, Office of Chief Counsel.

Background and Purpose

The Omnibus Budget Reconciliation Act of 1990 (the Act) amended section 2110 of title 46, United States Code, to require the Secretary of Transportation to establish a fee or charge for recreational vessels and collect it annually in fiscal years (FY) 1991 through 1995 from the vessel owner or operator. The fee is intended to require recreational boaters to share in the cost of Coast Guard programs from which they benefit, including search and rescue, boating safety, and aids to navigation, but for which direct user fees cannot be assessed. The proposed regulations would apply to recreational vessels greater than 16 feet in length, operated on the navigable waters of the United States where the Coast Guard has a presence. The amounts collected for fiscal years 1991 through 1995 will be deposited in the U.S. Treasury, ascribed to U.S. Coast Guard activities.

Discussion of Proposed Amendments

Section 1.30-1 Applicability

Under 46 U.S.C. 2110(b), the recreational vessel fee applies to recreational vessels that are greater than 16 feet in length and are operated on navigable waters of the United States where the Coast Guard has a presence. However, the same provision also provides that the fee, "does not apply to a public vessel, or a vessel deemed to be a public vessel under section 827 of title 14."

Section 1.30-5 Exemptions

The fee under 46 U.S.C. 2110(b) would not apply to most sailboards and manually propelled vessels such as rowboats, canoes, and kayaks because they are not over 16 feet in length. However, in calculating the expected amounts of receipts to be collected from recreational vessels, the Congressional Budget Office (CBO) did not include these types of vessels that are over 16 feet in length. The use of Coast Guard search and rescue, boating safety, and aids to navigation programs by these vessels that are over 16 feet in length is no greater than the use of these programs by the smaller vessels. Therefore, under the discretionary exemption provision of the Act, this proposal would exempt from recreational vessel fees: rowboats, canoes, kayaks, sailboards, racing shells, rowing sculls, racing kayaks, and other recreational vessels propelled by oars, paddles, poles or sails attached to an unsupported mast. This proposal would also exempt other vessels over 16 feet in length, including foreign vessels temporarily operated on navigable waters of the U.S.; ships' lifeboats; vessels used exclusively for racing; and numbered or documented vessel tenders. These vessels were also not in the data base considered by CBO in calculating the estimated receipts from recreational vessels.

Section 1.30-7 Definitions

The Coast Guard also proposes to define key terms related to the recreational vessel fee. This proposal generally relies on the existing definitions listed in subtitle II of title 46, United States Code, or subchapter S of title 33 Code of Federal Regulations, as follows:

Recreational vessel. This proposal would use the definition of "recreational vessel" in 46 U.S.C. 2101(25), "a vessel being manufactured or operated primarily for pleasure; or leased, rented, or chartered to another for the latter's pleasure."

Public vessel. This proposal would use the definition of "public vessel" in 46 U.S.C. 2101(24), "a vessel that is owned, or demise chartered, and operated by the United States Government or a government of a foreign country; and is not engaged in commercial service."

Vessel deemed a public vessel. This proposal would define "vessel deemed a public vessel" as a vessel accepted by the Coast Guard as an Auxiliary Operational Facility, under 33 CFR 5.43, and bearing a current Auxiliary Operational Facility Sticker. Under 14 U.S.C. 827, "Any motorboat or yacht, while assigned to authorized Coast Guard duty, shall be deemed to be a public vessel of the United States." The Coast Guard considered exempting from the fee only those vessels that actually performed such duty in the prior year, but determined that this would be

administratively burdensome and difficult to enforce. An Auxiliary vessel may only perform authorized Coast Guard duty after it has been accepted by the Coast Guard as meeting the requirements in section II of the CG-4951 inspection checklist and authorized to bear a Coast Guard Auxiliary Operational Facility sticker. The Coast Guard therefore, proposes to define a "vessel deemed a public vessel" as an Auxiliary vessel bearing a current Coast Guard Auxiliary Operational Facility sticker.

Navigable waters of the United States. This proposal would use the definition of "Navigable Waters of the United States" in 33 CFR 2.05-25, which include the territorial seas of the U.S.; internal waters of the U.S. subject to tidal influence, meeting specific criteria related to substantial interstate or foreign commerce. Under 33 CFR subpart 2.10, each Coast Guard district office maintains a list of waters within the district boundaries which the Coast Guard has decided to be navigable waters of the U.S. for the purposes of its jurisdiction.

Where the Coast Guard has a presence. Congress expressed its intent regarding the changes to 46 U.S.C. 2110 by stating in the Conference Report (Report 101-964, 27 October 1990), "The indirect user fee authorized by this subsection is intended to require recreational boaters to share in the cost of existing Coast Guard programs, including search and rescue, boating safety, and aids to navigation, for which no direct user fee may be assessed, but which provides (sic) substantial benefits to recreational boaters." The jurisdictional boundaries of the Coast Guard's Areas, Districts and Marine Inspection and Captain of the Port Zones are listed in 33 CFR part 3. This proposal would broadly define "where the Coast Guard has a presence" as "within the district boundaries" because Coast Guard district commanders are responsible for providing search and rescue, boating safety, and aids to navigation services within their district boundaries. The Coast Guard does not propose the Area limits because they are too broad—Western and Eastern Hemispheres—nor the listed unit zones because they are not Search and Rescue, Boating Safety, or Aids to Navigation zones.

Section 1.30-10 Fee Amounts.

This proposal would set the fee amount at the maximum allowed under 46 U.S.C. 2110 for each category of vessel length. The CBO estimated that the recreational vessel fee would generate $127 million in fiscal 1991 and $718 million over the five-year life of the fee. Although the Coast Guard has collected statistics on the numbers of numbered, undocumented vessels since 1960, the vessel length categories do not fully coincide with the length categories now used in 46 U.S.C. 2110. In considering the amount of the fee to set under 46 U.S.C. 2110, the Coast Guard relied on the numbers of vessels for the length categories maintained in its Boating Statistics 1989 (Commandant Publication P16754.3; June 1990) to derive the numbers of vessels for each of the length categories used in 46 U.S.C. 2110. The boating statistics for 1989 indicate there were 3,471,000 vessels over 16 feet but less than 20 feet; 1,156,000 vessels 20 feet but less than 27 feet; 397,000 vessels 27 feet but less than 40 feet; and 115,000 vessels at least 40 feet in length. The Coast Guard estimates that 80 percent of these vessels will be operated on the navigable waters of the U.S. where the Coast Guard has a presence. The decision to charge the maximum fees was based on these statistics.

Section 1.30-15 Evidence of Fee Payment

This proposal would require a recreational vessel owner to annually obtain a decal (by paying the appropriate fee) and to affix the decal to the vessel. The Coast Guard is considering potential agents and methods for collecting the annual fee, including provisions to obtain the decals in person, by mail, or by telephone, and which would permit payment by cash, check, money order, or credit card. Convenience to the purchaser will be an important factor in selecting the method to be utilized. The Coast Guard will include the procedures for obtaining the decal in the final rule. The Coast Guard is proposing that the decal be valid during the fiscal year for which it is issued to coincide with the fiscal year collection requirement in the statute. The Coast Guard recognizes that this proposal could require a boat owner to purchase two decals during calendar year 1991. The Coast Guard specifically solicits comment on whether the decal validity period should be fiscal year, calendar year or some other time frame.

Section 1.30-30 Penalties

This proposal includes two provisions on penalties. Under 46 U.S.C. 2110, a person failing to pay the fee would be liable to the U.S. Government for a civil penalty of not more than $5,000 for each violation and the Coast Guard may also assess appropriate additional charges to a vessel owner or operator to recover collection and enforcement costs associated with delinquent payment of the annual fee. These penalties and charges would be administered under the provisions of subpart 1.07 of this chapter.

Regulatory Evaluation

This proposal is major under Executive Order 12291 and significant under the Department of Transportation Regulatory Policies and Procedures (44 FR 11040; February 26, 1979). This proposal is expected to generate approximately $127 million from owners of recreational vessels in FY 1991, $135 million in FY 1992, $143 million in FY 1993, $152 million in 1994 and $161 million in FY 1995 for a total economic impact of approximately $718 million on the boating public over the five year period.

Although the proposal would exceed a $100 million annual effect on the economy, the fees would apply only to owners or operators of recreational vessels used on navigable waters of the U.S. where the Coast Guard has a presence. The fees for recreational vessels are unlikely to influence an individual's decision to purchase a recreational vessel, and therefore the fees are unlikely to have an effect on recreational vessel production and sales. The Coast Guard believes that even the maximum fee allowed for each category of vessel length is a minimal increase in the annual expense of owning and operating a recreational vessel.

Because the statute mandates establishment and collection of fees, the discretionary aspects of this rulemaking are limited to setting the amount of the fee within the statutory range for each category of vessel length. The usual cost/benefit analysis required for a Regulatory Impact Analysis is not appropriate. The proposed fees are not directly related to the cost of the Coast Guard programs that Congress intends the recreational boaters to support, i.e., search and rescue, boating safety, and aids to navigation. The fees to be paid by individual boaters are not directly related to his or her use of, or benefits derived from, these programs. Rather the fees are to be related solely to the length of the vessel. The revenues collected from these fees are not added to current Coast Guard appropriations and do not directly affect future appropriations for these programs.

The amendments to 46 U.S.C. 2110 removing long-standing prohibitions against charging fees for services provided to commercial vessels and maritime personnel, as well as the new mandate to establish fees for

recreational vessels, are consistent with other provisions of the Omnibus Budget Reconciliation Act designed to increase revenues to further reduce the budget deficit.

The collection of these fees does not alter or expand the functions, powers, responsibilities, or liability of the United States under any law for the performance of services. Recreational vessel owners paying the proposed fees, therefore, can expect no increase in the quantity, quality, or variety of services they receive from the Coast Guard.

The proposed fees will have no impact on government agencies and any difference in impact on geographical regions is related solely to the prevalence of navigable waters of the United States in the region.

Under 46 U.S.C. 2110(b), the fees can be set at not more than $25 for vessels greater than 16 feet but less than 20 feet; not more than $35 for vessels at least 20 feet but less than 27 feet; not more than $50 for vessels at least 27 feet but less than 40 feet; and not more than $100 for vessels at least 40 feet in length. The Coast Guard estimates that 80 percent of the total number of applicable recreational vessels over 16 feet in length will be operated on navigable waters of the U.S. where the Coast Guard has a presence. The following table lists the calculated fees collected at the maximum fee amount by category of vessel length.

Vessel length category	Number of vessels	Maximum fee amount ($)	Total fees collected ($)
>16'-<20'	3,471,000	25	86,775,000
20'-<27'	1,156,000	35	40,460,000
27'-<40'	397,000	50	19,850,000
40' and over	115,000	100	11,500,000
Totals	5,139,000		158,585,000
80% of totals	4,111,200		126,868,000
CBO estimate for FY 1991			127,000,000

Thus, establishing the fees uniformly at the maximum amount authorized by the statute will produce approximately the same amount estimated to be collected in the Congressional Budget Office report that was considered by Congress in enacting the statutory change.

Small Entities

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et. seq.*), the Coast Guard must consider whether this proposal will have a significant economic impact on a substantial number of small entities. "Small entities" include independently owned and operated small business that are not dominant in their field and that otherwise qualify as "small business concerns" under section 3 of the Small Business Act (15 U.S.C. 632). This proposal would apply the fee to recreational vessels, not uninspected passenger or other commercial business vessels. Because it expects the impact of this proposal on small entities to be minimal, the Coast Guard certifies under 5 U.S.C. 605(b) that this proposal, if adopted, will not have a significant economic impact on a substantial number of small entities.

Collection of Information

This proposal contains no collection of information requirements under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). Obtaining and placing a decal on a vessel is not a collection of information, but merely an exhibit of evidence of payment of the required fee, with no need to retain any receipt or other evidence of payment to show to a boarding officer.

Federalism

The Coast Guard has analyzed this proposal in accordance with the principles and criteria contained in Executive Order 12612 and has determined that this proposal should not have sufficient federalism implications to warrant the preparation of a Federalism Assessment. The Coast Guard invites comment from any State or local governmental entity that believes this proposal will have any such federalism implications.

Environment

The Coast Guard considered the environmental impact of this proposal and concluded that under section 2.b.2. of Commandant Instruction M16475.1B, this proposal is categorically excluded from further environmental documentation. This proposal is an administrative action, required by the Act to generate revenues, that clearly does not have any environmental impact. A Categorical Exclusion Determination is available in the docket for inspection or copying where indicated under "**ADDRESSES**."

List of Subjects in 33 CFR Part 1

Administrative practice and procedure, Authority delegations (Government agencies), Freedom of information, Penalties, Fees.

For the reasons set out in the preamble, the Coast Guard proposes to amend 33 CFR part 1 as follows:

1. Part 1 is amended by adding a new subpart 1.30—Recreational Vessel Fees to read as follows:

PART 1—GENERAL PROVISIONS

* * * * *

Subpart 1.30—Recreational Vessel Fees

Sec.

Subpart 1.30—Recreational Vessel Fees

Authority: 46 U.S.C. 2110; 49 CFR 1.46.

§ 1.30-1 Applicability.

This subpart establishes an annual fee for recreational vessels operated on navigable waters of the United States where the Coast Guard has a presence. The fee requirement will be effective in fiscal years 1991, 1992, 1993, 1994 and 1995. This subpart does not apply to recreational vessels 16 feet in length and under, public vessels, and vessels deemed public vessels under 14 U.S.C. 827.

§ 1.30-5 Exemptions.

The following recreational vessels are exempt from the vessel fee provisions of this subpart:

(a) Foreign vessels temporarily operated on navigable waters of the United States;

(b) Ships' lifeboats;

(c) Manually propelled rowboats, canoes, kayaks, sailboards, racing shells, rowing sculls, racing kayaks, and other recreational vessels propelled by oars, paddles, poles, or sails attached to an unsupported mast.

(d) A vessel that is used exclusively for racing;

(e) A vessel equipped with propulsion machinery of less than 10 horsepower that:

(1) Is owned by the owner of a vessel for which a valid certificate of number has been issued;

(2) Displays the number of that numbered vessel followed by the suffix "1" in a manner prescribed in § 173.27 (Example: DC 5678 EF 1 or DC-5678-EF-1; and

(3) Is used as a tender for direct transportation between that vessel and the shore and for no other purpose.

(f) A vessel equipped with propulsion machinery of less than 10 horsepower that is owned by the owner of a documented vessel and is used as a tender for direct transportation between

that vessel and the shore and for no other purpose.

§ 1.30–7 Definitions.

Fiscal year means the 12 month period beginning on October 1 of one calendar year and ending on September 30 of the following calendar year. The fiscal year is designated by the calendar year in which it ends, i.e., fiscal year 1991 begins on October 1, 1990, and ends on September 30, 1991.

Length means the straight line horizontal measurement of the overall length from the foremost part of the vessel to the aftermost part of the vessel, measured from end to end over the deck excluding sheer, and measured parallel to the centerline. Bow sprits, bumpkins, rudders, outboard motor brackets, handles, and other similar fittings, attachments, and extensions are not included in the measurement.

Navigable waters of the United States means the waters defined in § 2.05–25 of this subchapter, and includes the territorial seas of the United States; internal waters of the United States that are subject to tidal influence; and internal waters of the United States not subject to tidal influence meeting the criteria of that section. Under subpart 2.10 of this subchapter, a Coast Guard district office maintains a list of waters within the district which the Coast Guard has decided to be navigable waters of the United States for the purposes of its jurisdiction.

Operator means the person who is in control or in charge of a vessel while it is in use.

Owner means a person who claims lawful possession of a vessel by virtue of legal title or equitable interest therein which entitles the person to such possession.

Public vessel means a vessel that is owned, or demise chartered, and operated by the United States Government or a government of a foreign country; and is not engaged in commercial service.

Racing shell, rowing scull, and racing kayak means a manually propelled vessel that is recognized by a national or international racing association for use in competitive racing and one in which all occupants row, scull, or paddle, with the exception of a coxswain, if one is provided, and is not designed to carry and does not carry any equipment not solely for competitive racing.

Recreational vessel means a vessel being manufactured or operated primarily for pleasure; or leased, rented, or chartered to another for the latter's pleasure.

Sailboard means a sail propelled vessel with no freeboard and equipped with a swivel mounted mast not secured to a hull by guys or stays.

Use means operate, navigate, or employ.

Vessel includes every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.

Vessel deemed a public vessel means a vessel accepted by the Coast Guard, under the provisions in part 5 of this chapter, as an Auxiliary Operational Facility and bearing a current Auxiliary Operational Facility sticker.

Where the Coast Guard has a presence means the geographical areas over which the Coast Guard District Commanders exercise operational responsibility. These areas are described in part 3 of this chapter.

§ 1.30–10 Fee amounts.

The recreational vessel fees for the categories of vessel length are as follows:

(a) Vessels greater than 16 feet in length but less than 20 feet—$25;

(b) Vessels at least 20 feet in length but less than 27 feet—$35;

(c) Vessels at least 27 feet in length but less than 40 feet—$50; and

(d) Vessels at least 40 feet in length—$100.

§ 1.30–15 Evidence of fee payment.

(a) The owner or operator of each vessel subject to this subpart must pay the prescribed fee annually to the designated collection agent announced by the Coast Guard and obtain the appropriate evidence of fee payment for the fiscal year in which the vessel is to be operated.

(b) The evidence of fee payment must be securely attached to the forward half of the vessel within 6 inches of either the location of a vessel number issued under part 173 or 174 of this chapter, or, for vessels not issued a vessel number, where the number would be located, if issued.

(c) The evidence of fee payment will be valid during the fiscal year for which it is issued.

§ 1.30–30 Penalties.

(a) A person that violates this subpart by failing to pay a fee or charge established under this subpart is liable to the United States Government for a civil penalty of not more than $5,000 for each violation.

(b) The Coast Guard may assess additional charges to a vessel owner or operator to recover collection and enforcement costs associated with delinquent payments of the annual fee.

(c) Collection of these penalties and charges would be under the provisions of subpart 1.07 of this chapter.

Dated: March 22, 1991.

J.W. Kime,

Admiral, U.S. Coast Guard, Commandant.

[FR Doc. 91–7348 Filed 3–27–91; 8:45 am]

BILLING CODE 4910–14–M

M, Sweden, have discov- be the oldest remains of a in 1625, two emony on its ie creation of ion. onar to locate ted Lybske f-war, in the pelago, under r. ship had bro- ie wood was kish ting tood iver pot- em- und and k. and ran ning aid. lder own een the asa, the Danish kings ie Danes sur- l the ship, al- ation of the 1523. oration could 10 years.

News article

years studying American lobsters as they trot on his homemade treadmill.

He puts a custom-fitted oxygen mask over their heads, hooks some plastic wires into their hard bodies and — while they're cruising along at a kilometer an hour — measures the effects of the exercise on their cardiovascular and respiratory systems.

"When an animal is instrumented, I'm making measurements, and it's walking along the treadmill, I'm just really intrigued," Jorgensen said. "It's incredibly exciting."

The image of lobsters galloping for science may inspire a few chortles among non-academics. To Jorgensen, it represents the pursuit of knowledge at its purest.

"This is about the joy of learning about the world," the soft-spoken University of Puget Sound marine biologist says. "You learn something about how the lobster works, and you get a sense of understanding how other related animals work."

...a lobster is first fitted with an oxygen mask and walks the treadmill for about a half hour.

Among the things he's learned so far: "They respond basically in a similar way you would respond if somebody put you on a treadmill. The blood pressure goes up, the amount of blood the heart pumps goes up. The difference is our hearts beat faster, their hearts beat more forcefully."

To date, the professor estimates he's spent about $6,000 in university funds on the project. It's worth the money because ventures like his give his undergraduate students the kind of hands-on research experience often not available until graduate school, he says.

Why lobsters? Jorgensen, who's taught at UPS for eight years, says he's been interested in marine invertebrates for the last decade because relatively little is known about their physiology.

He picked the American lobster because they're easy to get, easy to monitor, and are representative of other crustaceans.

To show how the research works, Jorgensen recently took a couple of visitors into his cold storage lab. He plucked a blue and rust female lobster from her holding tank, switched on use data he's collected so far to apply for a federal government grant that would expand the research.

stride — all eight spiny legs trotting along, more or less coordinated. "It takes them a little while to get used to it," the professor says.

In an actual experiment, a lobster is first fitted with an oxygen mask, walks the treadmill for about a half hour and then is monitored for the next several hours, Jorgensen says.

He worries that some will view his research as inhumane. But he says the lobsters would have ended up in a boiling pot anyway because he gets them from a seafood distributor.

Jorgensen's lobsters appear to be well treated. They have plenty of room in their holding tanks, are supplied fresh sea water, and regularly feast on salmon and cod.

When they're deemed ready for retirement, most of the lobsters are taken to the Jorgensen household where he, his family and students gather for a lobster feed. By feasting time, he says, "they really have done double duty."

Boaters demand repeal of fee

Ketchikan Daily News 4/27/91

WASHINGTON (AP) — Members of Congress and boating organization leaders denounced a new fee on recreational boats Wednesday, saying it discriminates against a pastime wrongly stereotyped as a preserve of the rich.

"Contrary to pervasive opinion in Washington, boaters by and large are not fat cats," Nat Stone of the National Boating Federation told the House Coast Guard and Navigation Subcommittee.

But Rear Adm. Robert T. Nelson, the Coast Guard chief of staff, defended the fee and said the Bush administration would fight its repeal.

It is "intended to require that recreational boaters bear a larger share of the cost of existing Coast Guard programs from which they benefit," Nelson said.

Opponents fended off repeated attempts to impose a boating fee in the 1980s, but failed to block its inclusion in the deficit-reduction package enacted last fall.

The fee will be levied on an estimated 4.1 million of the 10 million boats registered in the United States that operate on waters under Coast Guard jurisdiction, exempting those less than 17 feet long.

It will range from $25 to $100 per vessel depending on its size. It is expected to generate $127 million this year and $161 million by 1995.

Subcommittee members and lawmakers testifying before the panel unanimously supported rescinding the fee. The repeal bill, sponsored by Rep. Bob Davis, R-Mich., has 157 co-sponsors. Similar legislation is pending in the Senate.

Opponents acknowledged the fee wouldn't exactly bankrupt anyone — especially owners of the 115,000 boats longer than 40 feet, who would be assessed the maximum of $100.

But they complained that while the new levy is routinely described as a "user fee," none of the revenue would be earmarked for Coast Guard programs.

"It all disappears into that sinkhole called the federal Treasury without any assurance that the boaters or the Coast Guard can ever expect to see the benefit of a single penny," Davis said.

No other form of recreation is singled out to raise money for the government or to defray the costs of running a federal agency, he said.

"Skydivers don't pay a tax for their sport, even though federal air traffic controllers are necessary," Davis said. "Snow skiers don't pay a tax for avalanche patrols or for rescue efforts on their behalf. Bird watchers don't pay for the benefits from the national wildlife refuges and parks."

The Coast Guard is taking public comment on proposed regulations and probably will begin collecting it this summer.

SJR

38

(File 1)

SENATE COMMITTEE REPORT
FIRST COMMITTEE OF REFERRAL

DATE: 1/15/92

FURTHER: Special Comte on Domestice/Internat'l Fisheries

Date of 5-Day Notice: Jan 22, 1992
(in accordance with Uniform Rule 23)

DATE TURNED INTO OFFICE: Feb 28, 1992

Resources Committee considered SJR 38

Opposing Individual Fishery Quota management systems for the Alaskan halibut and sablefish fisheries and other Alaskan fisheries.

and recommends:

[ ] replace with _____ CS _____(_____)

[ ] attaches amendment(s)

[ ] same title
[ ] new title
[ ] technical title change (HB only)

[ ] adopts _____ Letter of Intent

[ ] further referral to the _____

[ ] do pass

[ ] do not pass

[ ] no recommendation

[x] individual recommendations

NEW FISCAL NOTES: **Dept/Date**

[x] **zero** fiscal notes Sen Resources Cmte 1/28/92

[ ] fiscal notes _____

[ ] **appropriation**--no fiscal note

PREVIOUS FISCAL NOTES: **Dept/Date**

[ ] **Governor's bill** with fiscal notes:
zero fiscal notes _____
fiscal notes _____

DO PASS:

OTHER RECOMMENDATIONS:

Do not pass unless amended.

Lloyd Stroan Notice with Amendment

Chair: Signature and Recommendation

FISCAL NOTE No. 1

STATE OF ALASKA
1992 LEGISLATIVE SESSION

Bill Version: STR 38
(S) Publish Date: 3-2-92

Revision Date: _____ Department Affected: None

Title: Individual Fishery Quota Management BRU: _____

Component: _____

Sponsor: Senator Zharoff

Requestor: Senate Resources COMPONENT SERIAL NO. [ ][ ][ ][ ]

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL						
REVENUE FUND SOURCE:						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER FUND SOURCE:						
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

POSITIONS:

FULL-TIME	0.0	0.0	0.0	0.0	0.0	0.0
PART-TIME						
TEMPORARY						

Estimate of current year impact: _____

ANALYSIS: (Attach a separate page if necessary.)

Prepared By: Senator Lloyd Jones, Chairman Phone: 465-3743

Division: Senate Resources Date: 01-28-92

Approved by Commissioner: Senator Lloyd Jones, Chairman

Agency: _____ Date: January 28, 1992

Distribution (by preparer): Leg. Fin., Legislative Sponsor, Requestor, OMB/DBR, Gov. Legis. Ofc., & Impacted Agency(ies).

Rev 10/7/91

Alaska State Legislature

Please enter into the record my testimony to the Senate Resources Comm.
committee name

committee on SJR 13 , dated 1-29-92 .
bill/suuject

Please the attached Testimony.

13 pages to follow

Signed: _____
Testifier

Linda Behnken
Representing (Optional) Sitka Long Liners Assoc.

Address

Phone No.

9:86 Legislative Information Office

13 pages follow

Alaska State Legislature

Chair, Resources Committee
Vice-chair, Transportation Committee
Member, Rules Committee
Member, Committee on Committees

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Hyder, Myers Chuck, Kupreanof

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MEMORANDUM

To: Senate Resources Committee Members

From: Senator Lloyd Jones, Chair
Senate Resources Committee

Subject: SJR 38, opposing IFQs

Date: January 28, 1992

As you can see from your packet there is a substantial amount of information regarding the resolution opposing IFQs. You may wish to bring some or all the material to the meeting. Senate Joint Resolution 38 is scheduled only for public testimony, I do not plan to move the resolution from committee at this time.

I have asked Rick Lauber and Larry Cotter to make presentations to the committee prior to the public testimony via the teleconference network- in essence to give the committee background on this issue. Other witnesses will be allocated a three minute time period to present testimony.

The public hearing will close at 3:30 p.m. No further oral testimony is planned at this time.

Alaska State Legislature

Sen. Lloyd Jones, *Chair*
Sen. Sam Cotten, *Vice-Chair*
Sen. Dick Ellason, *Member*
Sen. Steve Frank, *Member*
Sen. Rick Halford, *Member*
Sen. Curt Menard, *Member*
Sen. Fred Zharoff, *Member*

P.O. Box V
Juneau, AK 99811

907 465-4907
Fax: 907 465-3922

Senate Resources Committee

MEMORANDUM

To: Senate Resources Committee Members

From: Senator Lloyd Jones, Chair
Senate Resources Committee

Subject: IFQ Scoping process

Date: February 19, 1992

Attached is a portion of the Draft Environmental Impact Review/Initial Regulatory Flexibility Analysis of the proposed individual fishing quota management alternatives for the halibut fisheries for Alaska. This document is the result of a review by the North Pacific Management Council(NPFMC) at their June 24-25 meeting.

This document(excerpts are included) discusses many of the factors which are included in the the IFQ plan. Senator Cotten had requested information regarding the scoping process. After talking to staff at NPFMC and at the National Marine Fisheries Service, it was concluded that their is no actual scoping document, rather it is a process. Mr. Chris Oliver, Management Plan Coordinator for the Gulf of Alaska, NPFMC mentioned there is no specific requirement for a socioeconomic impact study in the Magnuson Act. This document looks at the questions that were involved in the scoping process.

NPFMC did provide a notice of scoping process, which set the stage for things to come. Mr. Oliver and Mr. Marcus Hartly, an economist for NPFMC will attend the meeting from Anchorage to help explain this process.

Finally, the NPFMC has provided full documentation of the IFQ plan as it progressed. Members may obtain a copy via request. I should warn you it is quite lengthy. There are also transcripts of the scoping process which will be forwarded to the committee today.

5.0 DESCRIPTION OF THE SOCIAL ENVIRONMENT

This chapter describes the fishery as it presently exists under open access management and outlines present and historical participation in the fishery by fishermen and communities. The dependence of fishermen and communities on the fishery is described and discussed, with special attention given to the differing economies found in rural and urban communities. The material presented in this chapter is a summary drawn from literature available to the writer, and does not represent any focused research effort. For this reason, the assessment of social impacts of alternative management measures selected by the Council for review, presented in section 5.3, should be considered to be indicative of trends and issues and is not a definitive assessment.

Information considered in this chapter has been drawn from published materials (see bibliography) and the data files of the Alaska Commercial Fisheries Entry Commission (CFEC), Alaska Department of Fish and Game Subsistence Division (Subsistence Division), and the International Pacific Halibut Commission (IPHC). Additional data has been provided by the U.S. Department of Agriculture [Forest Service (USFS)], U.S. Department of Commerce [Bureau of Census and National Marine Fisheries Service (NMFS)], and the U.S. Department of Interior [Minerals Management Service (MMS) and Park Service].

5.1 Description of the halibut fishery under status quo (open access) management

The halibut fishery off Alaska draws participants from all three of the Northwest Pacific states - Alaska, Oregon and Washington - and a few participants from other states, too. Of the 3,823 halibut fishery permit holders, whose 1990 applications included postal zip codes, some 88 percent had Alaskan addresses, 8.7 percent had Washington State addresses and 2.3 percent addresses in Oregon. At first glance it would appear that the fishery is dominated by Alaskan residents, however it would appear both from the literature and other data sources that involvement in the fishery by Washington and Oregon residents is extensive and may extend to control of as many as a third of all permits. This is due to two factors; first, the short seasons existing in many of fisheries have caused Washington and Oregon owners to base their vessels, and land catches, in Alaska during the fishing year and, second, many permit holders are reported to have financial interests in more than one vessel.

The structure of the fishery has changed in recent years. In 1990, some 39.5 percent of vessels fishing for halibut were under 36 feet in length and their proportion of the total catch landed was 8.4 percent. This represents a significant structural change from the fleet of 1984, in which 49.3 percent of the vessels were under 36 feet long and landed 13.7 percent of all halibut. In terms of numbers of vessels, it can be seen in Table 5.1 that the smaller vessels (less than 36 feet long) increased from 1,371 in 1984 to 1,811 in 1990, a change of 32 percent, with most of the increase occurring in vessels between 31 and 35 feet in length; some 309 boats, or a 65 percent increase, were added to this sub-class. During this same period the average catch of smaller vessels declined to less than half the mean catch per boat in 1984. Vessels in the 36-55 feet-long class have more than doubled to 1,955 in 1990, and the average catch per vessel has declined to 77 percent of that in 1984. The larger vessels, those in excess of 56 feet in length, have almost tripled in number to 728 in 1990. The mean catch per vessel of this class in 1990 was 62 percent of that in 1984. Thus the stereotypical outcome of an open access fishery is found in the present-day halibut fishery; the number of vessels has increased, the average vessel size has increased, and the average output per vessel has declined. However, Table 5.1 shows that neither the vessel increases nor declines are uniform in the fishery and the impacts of these changes upon participants also vary.

Table 5.1: Vessel Size and Average Halibut Catch in the Fishery Off Alaska, 1984 and 1990

Vessel Size (ft)	Vessels (N)			Mean Catch/Boat ('000lbs)		
	1984	1990	Change	1984	1990	Change
< 26'	620	706	1.14	2,644	1,081	0.41
26-30'	304	349	1.15	3,724	1,785	0.48
31-35'	447	756	1.69	7,803	4,339	0.56
36-55'	941	1,955	2.08	14,416	11,044	0.77
56' >	255	728	2.85	57,455	35,717	0.62
All* Vessels	2,777	4,573	1.65	12,778	11,504	0.90

Vessel and catch data provided by IPHC, 1991
* Includes 210 vessels of unknown size fished in 1984 and 79 vessels in 1990.

These changes also reflect two other, social, parameters of the fisheries off Alaska. The Alaskan rural communities, in which the preponderance of smaller vessels are based, are socially and culturally tied to local fishing areas. In the case of Alaska Natives these areas have been defined since before the start of the commercial halibut fishery in 1878 (Betts and Wolfe, 1990). Thus investment in the smaller vessels is related to local operating areas, and this segment of the fleet is less mobile and thus less able to seek out new fishing areas.

The second parameter is the traditional involvement of rural communities - and some urban communities - in a seasonal round of fisheries for commercial and subsistence purposes. Typically these fisheries include salmon, halibut, herring, crab, sablefish and rockfish. The fishermen who participate in the halibut fishery usually fish commercially in at least two other fisheries (Langdon and Miller, 1984). With the increasing restrictions on days fished in the halibut fishery, and occasional conflicts with seasonal openings in other fisheries, the small boat fleet has taken fewer halibut in the commercial fishery because they are less mobile (and unable to fish in other areas) and have less fishing power. Heavy weather on fishing days also restricts the activities of the small boat fleet during halibut openings. The same segment of the fleet is also active in the subsistence fisheries, often using "commercial" gear, and halibut harvests in the subsistence sector are often substantial. Most rural Alaskan communities have mixed cash-subsistence economies; of which neither sector is sufficient to support the community's population. Rural communities which experience a loss of income from commercial fishing experience disruption in the balance between cash economy and subsistence economy activities, to the detriment of the local economy, society, and traditional culture (R.J. Wolfe, 1991, personal communication). Alaskan rural communities strike a balance in their mixed cash-subsistence economy in order to maintain community viability (Wolfe and Walker, 1987).

In a review of communities involved in the commercial or subsistence taking or use of halibut, it was found that 115 Alaskan communities had active participants in the fishery in the 1980s. Of these Alaskan communities, 101 were rural with mixed cash-subsistence economies (as determined by the Federal Subsistence Board), while 14 communities were urban centers with cash-based economies. In Alaska, as a whole, Wolfe and Bosworth (1990) estimate that approximately 80 percent of the population lives in urban areas, principally in and around Anchorage, Fairbanks, Juneau, the Kenai Peninsula, Kodiak City, and Sitka. One-fifth of the population, or some 110,000 people, lives in mixed-economy rural communities. Of this rural population, some 50,000 are Alaska Natives while 60,000 are Non-Natives. The communities with residents involved in the halibut fishery in Washington and Oregon can all be characterized as having cash-based economies, and most were urban centers.

Participation in the fishery varies from IPHC region to region. Overall, Langdon and Miller reported that one-fifth of their study sample of fishermen in 1982 derived 100 percent of their gross fishing income from the halibut fishery (1984:23). Given the length of seasons in the fishery, measured in days and hours, it can be surmised that these fishermen were part-time fishermen, who held other jobs. Area 2C, in particular, has this level of involvement in the halibut fishery but Area 3A also has a number of halibut-only fishermen (Wilkinson, 1990). Both areas have significant numbers of small boats under 31 feet in length, and access to alternative employment. Wolfe (1991) reports that families in mixed cash-subsistence economies typically patch together multiple income streams because individual sources of income tend to be small and insecure. Langdon and Miller found that 45.5 percent of commercial halibut fishermen worked solely in the fishing industry; 54.5 percent of the 1982 sample had at least one shore-side job.

Langdon and Miller reported the average size of crew on halibut vessels, including captain, to be 3.7 persons (1984:22). Noting that the structure of the fleet has changed and there are more larger vessels than before, but also that there have been technological advances in fishing gear and vessel design, it is estimated that there were some 16,920 fishermen active in the fishery in 1990. Average plant employment in Kodiak per day/shift was estimated to be 60 persons (Fricke, 1991) and the average involvement of plants in processing halibut was four days of processing for every day of fishing activity (Impact Assessment Inc., 1991a:Kodiak 21; Fricke, 1991). Thus, a "guesstimate" of involvement of processing workers in the 176 plants reported handling halibut landings from the 36 days of halibut fishing in 1990 can be derived. This "guesstimate" is that some 10,560 plant employees will process halibut at the point of landing and that the equivalent of 2,315 person-years of employment will be generated. Further processing plant employment, primarily in Washington and Oregon, is created by the re-processing of halibut to market requirements.

The principal gear used in the directed halibut fishery is longline gear, but there are a number of hand and power trollers in the fishery in Area 2C. Longline vessels commonly fish the sablefish, Pacific cod, rockfish and halibut fisheries. Many vessels also fish for salmon in season. The dominance of the 35-55 feet-long size class can be attributed to the State of Alaska's 58-feet length-overall rule for salmon seiners in the Gulf of Alaska. Similarly, the dominance of the 31-35 feet-long class in Area 4E (East Bering Sea) can be attributed to the 32-feet length-overall rule for Bristol Bay salmon seiners. Seine vessels, typically with a forward house, can be easily rigged for longlining (Bell, 1981) but the traditional halibut schooner is less able to engage in the salmon fishery. The Alaska Native halibut fishery traditionally used hand lines with one or two hooks, or short skates of longline fished from canoes or bidarkas. Today, handlines are used in the commercial halibut fishery by Alaska Natives in only a few places (for example, Nelson Island) with most Native fishermen using long line gear from small boats. Handlines continue to be used in the subsistence halibut fishery. Native fishermen traditionally also trolled with their hand lines, and some modern salmon trollers also use troll gear for halibut today (Kelley, 1991). Since the key to present-day fisheries in the waters off Alaska is flexibility in gear and vessel configuration, combination vessels designed for multiple gears and fisheries have evolved and now dominate the fleet.

5.1.1. Present participation in the fishery

In this section, information on participation in the fishery will be summarized by IPHC halibut area. However, an initial discussion of the participation of fishermen from Oregon and Washington in the fishery off Alaska will provide some background on the wide-ranging activities of these participants.

5.1.1.1 Present participation in the fishery by residents of Washington and Oregon

Present participation in the halibut fishery takes two forms: the participation of vessels and crews from Washington and Oregon in the fishery, and the processing of halibut caught in the fishery. For 1990, the IPHC reports that some 11.8% of permit holders for the halibut fishery off Alaska resided outside Alaska, based on a survey of addresses. This information does not necessarily reveal the full extent of the participation by residents of Washington and other states in the halibut fishery.

Many vessels owned by non-Alaskans are based in Alaskan ports during the fishing season and maintain postal addresses in those ports (cf. Impact Assessment Inc., 1991:Newport 20; Morris, 1987). Of the vessels owned by non-Alaskan permit holders (about 318 boats), 15.1 percent were under 35 feet in length, 61 percent were 35 to 60 feet, 21.1 percent were between 61 and 90 feet, and 2.8

percent were longer than 91 feet. The vessels engaged in the fishery and owned by non-Alaskans tend to be larger, on average, than vessels owned by Alaskans. This tendency is shown in Table 5.3.

The size of these larger vessels reflects two factors; first, the availability of capital for investment in the fishery off Alaska by residents of Washington and Oregon and, second, the distances travelled and natural elements encountered in prosecuting the fishery.

Given that non-Alaskan permit holders are 11.8 percent of all permit holders, ownership of 27.7 percent of vessels between 61 feet and 90 feet in length, and 18.4 percent of vessels over 90 feet indicates that these vessels are dedicated longliners or combination longliners/seiners continuing the historic involvement of the "Seattle" boats in the halibut fishery. These vessels are often also involved in the longline fisheries for sablefish, rockfish, and Pacific cod, as well as the salmon seine fisheries. Involvement in the halibut fishery using vessels under 58 feet which can also fish in the salmon seine fishery by non-Alaskan fishermen is proportionately the same as Alaskan residents. The involvement of non-Alaskans in the fishery with vessels less than 35 feet in length is significantly less, at 3 percent, than that of Alaskans. Given the distance from Puget Sound to the Alaskan fishing grounds, particularly those of the Alaskan Peninsula, Aleutian Islands and Bristol Bay, it is not surprising that the involvement of non-Alaskans has been with larger combination vessels.

Vessels from Washington State took approximately 10,995,000 pounds of halibut in Alaskan waters in 1990. Some 70.3 percent of this harvest was caught in Area 3. Table 5.4 shows the distribution of the commercial catch by Washington vessels.

While the Washington vessels were predominant in the Aleutian Islands and Bering Sea fisheries for halibut, it should be noted that in 1990 the catches from these westerly areas were less than 15% of the total catches taken by the Washington fleet.

The fishing patterns of vessels from "other states," i.e. other than Alaska and Washington, are similar to that of the Washington vessels. Owners from these "other states" hold 117 permits, the majority of which (87) are held by residents of Oregon. In 1990, these vessels harvested some 3,104,000 pounds of halibut, or 5.9 percent of the total catch off Alaska. While their effort was in the Gulf of Alaska and to the west, they took 78 percent of their catch in Area 3.

To summarize, using IPHC permit data, non-Alaskan vessels represent some 11.8 percent of the vessels in the halibut fleet but took 26.8 percent of the catch in 1990. Their primary fishing grounds are in Areas 3A and 3B, with larger longliner vessels fishing along the Aleutian chain and in the Bering Sea.

Langdon and Miller (1983) describe the Puget Sound vessels as having a median length of 64 feet, with a range from 31 feet to greater than 81 feet. The average tonnage of these vessels was 35 net registered tons (nrt) with a range from 5 nrt to greater than 65 nrt. The size of crew on these vessels ranged from 2 to 8, including the captain, with a mean size of crew of 5.25 fishermen.

Fishermen

Langdon and Miller (1983) described the Puget Sound fishermen engaged in the halibut fishery. This information, although dated, is considered to be indicative of the participation by fishermen from Washington and Oregon in the fishery. In 1982, the average age of all Puget Sound fishermen sampled was 45.7 years, with a range from 21 years to 70 years of age. The average age of captains was 49.8 years, and of crewmen 37.4 years. The study found that half of all the fishermen had

Table 5.2: Number and Distribution of Permit Holders in the Halibut Fishery, 1990

State of Residence	N*	%#
Alaska	3,371	88.2
California	19	0.5
Oregon	87	2.3
Washington	335	8.7
(Seattle)	(186)	(4.9)
(Everett)	(75)	(2.0)
Other States	11	0.3
Total*	3,823	100.0

* Does not include 100 permits for which no zip-code was provided; # percentages are rounded. Information provided by G. Williams, IPHC (personal communication)

Table 5.3: Percentage of vessels, by address of owners, by size class engaged in the halibut fishery off Alaska in 1990

Address of owner	Percent of vessels by size class			
	<35'	35-60'	61-90'	>90'
Alaska	90.7%	86.1%	65.3%	71.4%
Other States	3.0	10.1	27.7	18.4
Not known	6.3	3.8	7.0	10.2
N	1613	1919	242	49

Information from G. Williams, IPHC (personal communication)

Table 5.4: Distribution of the 1990 commercial catch of halibut off Alaska by vessels from Washington State

Catch by WA vessels	IPHC regulatory area 2C	3A	3B	4A	4B	4C	4D	4E	All AK
% of total	8.2	19.8	23.5	33.1	42.5	44.6	78.5	36.1	20.9
% of WA total	7.4	51.8	18.5	7.6	5.1	2.1	7.2	0.1	

Total Catch off Alaska: 52,607,000 lbs.
Catch by Washington vessels: 10,995,000 lbs.
Information from G. Williams, IPHC (personal communication)

Table 5.5: 1990 Population, Distribution of Halibut Permits, and Commercial Landings of Fish Taken Off Alaska in Non-Alaskan States/Communities (Areas 2C; 3A and B; 4A,B,C,D, and E)

State/Community	Population N	Halibut Permits	Halibut Landings Lbs
Oregon, State of	2,842,321	87	402,769
Astoria	10,069	10	387,848
Newport	8,437	7	14,921
Oregon (general)		70	0
Washington, State	4,866,692	335	3,534,458
Anacortes	11,451	17	73,575
Bellingham	52,179	23	946,629
Blaine	2,489	4	196,144
Everett	69,961	7	260,007
Neah Bay	916	#	38,572
Port Angeles	17,710	19	27,571
Seattle	516,259	75	1,890,705
Westport	1,892	3	13,569
Washington (general)		187	87,686
Other States	n/a	30	0
Canada			
Prince Rupert	n/a	1	1,061,694
Totals		453	4,998,321

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.
n/a Data not available.
IPHC permit data are based upon postal zip codes; CFEC data indicate that halibut permit holders reported elsewhere reside here.

achieved a high school education or better, and that 91 percent of those interviewed were married. All fishermen in the Langdon and Miller sample were Euro-American in cultural heritage, and 54.6 percent claimed to be of Norwegian descent.

Experience in the halibut fishery was an important factor in commitment to the fishery; the median years of experience of halibut fishing for captains was 26 years, and for crewmen, 10.5 years. Kinship relations with other fishermen were also important; some 54 percent of captains in Langdon and Miller's study (1983) were related to other halibut fishermen. Some 29 percent of crewmen were similarly related.

Earnings from the halibut fishery averaged 72.2 percent of all 1982 fishing related earnings for the men in Langdon and Miller's study (1983). However, the median earnings from halibut fishing were 89 percent of all fishing incomes. Some 54 percent of crewmen and 41 percent of captains derived some income from activities outside fishing. The changes in the management of the halibut fishery since 1982 will have reduced considerably the proportions of personal income derived from that fishery; however more recent income estimates are unavailable in the literature for this group of halibut fishermen.

Present Participation in the Halibut Fishery: Processing

Bell (1981) notes that the amounts of fish directly landed in the Puget Sound region from the Alaskan fishery has declined as non-Alaskan vessels switched to landing in Alaskan ports. He suggests two factors behind this trend; first, the pattern of season and area closures, and voluntary "lay-ups," after the signing of the Pacific Halibut Convention in 1923 and, second, the advent of convenient air transport permitted crews and supplies easy access to vessels fishing from Alaskan ports, and permitted more efficient operation of vessels as fishing vessels rather than cargo transports. Approximately 3.8 percent of all halibut landings from the fishery off Alaska occur in Seattle, making it the sixth-ranked port in volume of halibut landed. Bellingham ranks 17th in importance as a port for landing halibut caught off Alaska. Washington State ports handled some 6.7 percent of halibut landings from Alaskan waters in 1990 (see Table 5.5).

While the importance of Puget Sound ports as first ports of landing has declined since the days of the company steamer and schooner halibut fishery, they have retained their pre-eminence as processing and marketing points. The costs of processing fish and shipping to fill individual customer's orders are such that Alaskan processing plants cannot compete effectively with plants located in the continental United States. Customers seek rapid filling of their orders; plants based in the Puget Sound area are able to deliver product, if they have it in stock, to any customer in the continental United States by road or rail freight within five working days. Small lots and specialty orders can be easily handled by the Washington and Oregon processors. Alaskan plants are dependent upon air and sea freight services to deliver to the continental United States. Air freight is expensive; sea freight may take as long as two weeks to arrive in the continental United States before it can begin its road or rail journey to the customer. For these reasons the Alaskan plants usually produce headed-and-gutted (H&G) or filleted product which is boxed and frozen in wholesale lots. This product is then shipped to Washington or Oregon for reprocessing to customers' orders and distribution to market. The IPHC reports that in 1984 there were 28 plants in Washington State and 4 in Oregon receiving and processing Pacific halibut caught off Alaska; in 1990, this had increased to 32 plants in Washington State and 8 in Oregon.

5.1.1.2 Participation in the halibut fishery of Southeast Alaska (Area 2C)

Area 2C extends northwest from the United States-Canada boundary line in the Dixon Passage to Cape Spencer. The Alexander Archipelago and an adjacent narrow coastal strip of mountains, glaciers, and icefields comprise this region of Alaska. With the exception of roads linking Haines and Skagway with the interior, transportation in Area 2C is by air or sea. The Alaskan ferry system, or "marine highway," links the majority of communities with Haines and Skagway to the north, and Prince Rupert, B.C. and Bellingham, WA to the south. The region's climate is relatively mild and wet, and supports extensive coastal forests. Most of the land area in Area 2C is held by USFS in the Tongass National Forest, but the Park Service also has extensive holdings of land in the Glacier Bay National Park. The activities of both agencies affect land and marine resource use by the approximately 65,000 residents of Area 2C.

While the region's major population center (Juneau) is fully integrated into the national economy, most of the region's smaller communities are supported by a traditional mixed cash-subsistence economy, in which there co-exist a subsistence sector and a market sector (Wolfe and Walker, 1987). In the region's market sector economy, four industries dominate: commercial fishing, timber products, tourism, and employment generated by State oil revenues (Alaska Dept. of Fish and Game, 1989:2). State, local, and Federal government employment is of considerable importance, particularly in the vicinity of Juneau, the State capital. In Area 2C, the commercial fishing industry employed 24.6 percent of the labor force (Langdon and Miller, 1983). During the 1980s, logging or timber products were important sources of employment (i.e. over 25 percent) in Coffman Cove, Craig, Hoonah, Hydaburg, Klawock, North Whale Pass, and Thorne Bay. Fish processing plants are located in the predominantly non-Native communities of Ketchikan, Craig, Petersburg, Wrangell, Sitka, Juneau, Gustavus, and Pelican, and seasonal plants are in six other communities. In the ten predominantly Native and nine non-Native rural communities of southeast Alaska, commercial fishing is an important element in the cash or market sector of the local economy. During the 1980s, in the subsistence sector of the regional economy, about 4.5 million pounds of wild foods were processed annually by rural communities for family consumption. Of these foods about 51 percent was fish, including halibut; 27 percent was game; 19 percent was marine invertibrates, and 3 percent marine mammals.

As can be seen in Table 5.6, commercial and subsistence fishing for halibut are found in nearly every community in southeast Alaska. In 1987, subsistence harvest of fish and shellfish included 235,000 pounds of Dungeness crab, 565,000 pounds of halibut, and 131,000 salmon. The take of subsistence halibut was equivalent to 4.9 percent of the commercial harvest in 1987 (Alaska Dept. of Fish and Game, 1989:9-11). Subsistence harvest information is available for all Southeast Alaskan communities except Juneau and Ketchikan for which surveys of subsistence harvest and use have not been carried out. The most important commercial fishery to local communities, whose residents have limited entry permits, is that for salmon. Halibut fishing has occupied an important place in the spring, fall and winter fisheries, and herring, crab, sablefish, and rockfish complement the fisheries for halibut and salmon in the seasonal round of activities in Area 2C.

In 1984, 55.3 percent of commercial vessels fishing in Area 2C for halibut were less than 36 feet in length; this proportion of the fleet had decreased to 44.5 percent in 1990 although the absolute number of fishing boats in this size class increased from 558 to 662. The catch of the smallest boats, less than 26 feet long, decreased from 2,084 pounds in 1984 to 1,195 pounds in 1990, and their share of the overall catch in Area 2C dropped from 9 percent to 3.8 percent. Boats less than 26 feet long form 20.7 percent of Area 2C's fleet. Vessels between 36 and 55 feet long formed 48.5 percent of the fleet and took 67.8 percent of the catch in 1990, although average individual boat catches declined by 3 percent between 1984 and 1990 to 9,101 pounds. These vessels, and larger classes too, were typically mobile within the Archipelago and would then move to the west following the sablefish and halibut openings in Area 3A. It has been estimated that approximately 12 percent of the fleet

Table 5.6: 1990 Population, Distribution of Halibut Permits and Landings in Southeast Alaskan Communities (Area 2C)

Community	Pop. N	Native Pop. %	Halibut Permits N	Halibut Commerc. Lbs.	Halibut Subsist.* Lbs.
Juneau	26,751	11.2	213	390,151	n/a
Ketchikan	13,459	11.1	128	1,036,245	n/a
Sitka	8,588	21.4	278	3,638,138	206,112
Petersburg	3,207	10.9	215	2,283,585	102,303
Wrangell	2,479	17.9	109	556,897	47,597
Metlakatla	1,407	80.2	27	234,650	11,256
Craig	1,260	32.3	65	677,596	16,884
Haines	1,238	18.9	74	44,198	18,322
Hoonah	795	79.9	59	703,747	29,733
Klawock	722	66.0	13	**	22,815
Kake	700	84.1	43	**	14,700
Skagway	692	4.6	2	**	4,429
Angoon	638	88.6	53	**	14,929
Thorne Bay	569	2.8	6	**	22,020
Hydaburg	384	84.9	28	**	9,178
Saxman	369	71.1	#	**	3,727
Gustavus	258	2.0	17	39,327	10,202
Pelican	222	18.3	40	1,132,088	12,632
Coffman Cove	186	0.0		**	5,264
Klukwan	129	83.7	#	**	150
Port Alexander	119	5.8	17	**	3,713
Hollis	111	18.0		**	1,032
Hyder	99	1.3	2	**	4,712
Tenakee Springs	94	5.1	5	**	4,362
Edna Bay	86	0.0	23	**	5,452
North Whale Pass	75	0.0	0	**	1,586
Port Protection	62	5.6	#	**	2,220
Elfin Cove	57	7.1	19	**	1,767
Kasaan	54	56.0	1	**	540
Point Baker	39	5.6	18	**	1,365
Meyers Chuck	37	0.0	5	**	2,853
Excursion Inlet##				1,052,386	
Killisnoo##				245	
Misc. SE Alaska Ports				3,676	
Totals	64,886		1,460	11,792,929	

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.

* 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).

** Any commercial landings were at other ports or are shown in the Misc. S.E. Alaska Ports category.

n/a Data not available.

IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

These are cannery or floating processor sites.

Table 5.7: Fleet Composition, Size Class, and Percent of Catch in the Halibut Fishery Off Alaska, 1984 and 1990 (Area 2C)

IPHC Area	Vessel Size (ft)	1984 N	1984 % Fleet	1984 % Catch	1990 N	1990 % Fleet	1990 % Catch
2C	< 26'	250	24.8	9.0	308	20.7	3.8
	26-30'	132	13.1	5.7	132	8.9	3.0
	31-35'	176	17.4	15.5	222	14.9	8.7
	36-55'	357	35.3	57.8	722	48.5	67.8
	56' >	22	2.2	7.4	84	5.6	16.2
	n/a	72	7.1	4.5	22	1.5	0.6

Area, vessel, and catch data provided by IPHC, 1991; all percentages are rounded.
n/a Vessel size data not available for these vessels.

which longlines for sablefish and halibut in the southeast Alaska and East Yakutat districts moves yet further west as the season advances and continues longlining in the West Yakutat, Kodiak, and southwest districts (J. Gharrett, personal communication). The smaller vessels, that is those less than 30 feet in length, rarely fish outside southeast Alaska.

Fishermen

Langdon and Miller's survey of fishermen found that crew size on vessels in Area 2C varied with the rural or urban nature of the community in which the fishermen resided. For urban communities, from which the larger vessels fished, crew size including captain averaged 3.6 persons in 1982, while for rural communities crew size averaged 3.0 persons. If crew sizes remained equivalent to those in 1982, it is estimated that 4,768 fishermen fished commercially for halibut in 1990 in Area 2C.

A similar disparity between urban and rural residence was found in kinship and crew patterns; Langdon and Miller found that rural crews were more likely to be formed with kinfolks than those fishing from urban communities. It should be noted here that crews from Native villages tend to be larger, and with greater involvement of kin, because of the cultural basis of fishing as a family economic activity and the cultural pattern of initiating young people into traditional occupations. Since the family is the "economic firm" in subsistence activities (a "domestic mode of production"), transfer of this pattern of activity to the commercial fishery is appropriate both culturally and economically in the mixed economy of rural communities.

The fishermen of southeast Alaska participate in a number of commercial fisheries. Langdon and Miller's data showed that halibut fishermen fished for a mean of 2.62 species, with a median of 2.48 species, during the fishing year. A 45-year old non-Native fisherman, self-described as a "seiner," from Angoon reported his seasonal round of fishing in 1990 as follows: "January: bait; February: crab; March: sac roe [herring], brown crab, and get ready for black cod; April, May: black cod (2 weeks here, 6 weeks off Seward coast); June: halibut (hits third opening), get ready for seining; July, August: seining; September: one day black cod, halibut, and usually fall dogs [salmon]" (Martha Betts, 1991). According to Betts (1991), the pattern described by the seiner above is atypical; he fishes for crab and black cod "outside" the islands of the Alexander Archipelago while most seiners do not. Angoon and Kake fishermen, mostly Tlinget, seine for salmon, hand-troll for salmon (during seine closures) using skiffs, and long-line for halibut using seine boats. Some fishermen also use their boats as halibut tenders for other fishermen fishing from skiffs. Langdon and Miller (1983) reported that only 7.9 percent of the fishermen interviewed in Area 2C fished in just one fishery, while 42.9 percent fished in two directed fisheries, typically halibut and salmon. One-fifth of the fishermen in Langdon and Miller's sample fished for four or more species during the course of the year.

The demography of fishermen varies with residence in rural or urban communities. The mean age of all fishermen surveyed by Langdon and Miller in 1982 was 38.8 years, with a median of 34.6 years. Fishermen from urban communities were younger, however, with an average age of 37 years compared to the mean age of 44 years in rural communities. Urban fishermen had completed more years of formal education than those from rural communities in Langdon and Miller's sample; 13.1 years of schooling compared to 10.1 years. Both of these indicators suggest that life in urban communities offers more opportunities for training and employment.

Income from the fishery varies considerably. For the communities with a mixed cash-subsistence economy, the halibut fishery is very important. A 50-year old Tlinget hand troller from Angoon, reporting on his 1990 season, said that "Angoon just wants to make living, not be huge highliners... one quarter of total income from fishery is from halibut. It's an important fishery. There are three

24-hour openings, whole summer of trolling [for salmon] won't equal what you make on halibut, considering costs" (Martha Betts, 1991). As shown in Table 5.8, the mean personal taxable income in the rural community of Angoon is approximately half that of Juneau, emphasizing the importance of earnings from the commercial fishery to the small communities of Area 2C.

Fish Processing

In 1984, IPHC reported that there were 28 plants processing halibut in Area 2C communities. By 1990, this number had grown to 38 plants, reflecting the 167 percent increase in halibut catch to some 9,693,000 pounds. Table 5.6 shows the ports in which landings were made in southeast Alaska. With the exception of Craig, Hoonah, and Metlakatla, all the ports in which landings were made to processors had Native populations of less than 25 percent of their overall population. Employment in the plants in 1990 is estimated to be of the order of 3,800 persons on a seasonal basis. Sablefish, salmon, halibut, and herring, with some crab and rockfish are processed by these plants. The halibut fishery is estimated, conservatively, to provide the equivalent of 180 full-time year-round jobs in processing plants in southeast Alaska.

5.1.1.3 Present participation in the halibut fishery of Area 3A

Area 3A extends from the western end of Kodiak Island eastwards across the Gulf of Alaska to Cape Spencer. Within this region, three sub-regions can be easily defined - Prince William Sound, including Yakutat; Cook Inlet and the Kenai Peninsula; and Kodiak Island. This region has the largest halibut catches off Alaska, and the highest number of halibut fishery permit holders (1,602 or 42 percent of permits). Tables 5.9 and 5.10 outline the population and communities of the region, and detail commercial, and estimated subsistence, landings in the region.

As in southeast Alaska, communities fall into rural and urban types. The urban areas of the Kenai peninsula and Anchorage dominate the economy of Alaska; since more than half the population of the state lives in this sub-region this is not surprising. Valdez, Whittier, and Seward have primarily market-oriented economies in contrast to the other communities in the other sub-regions in Area 3A. Because the Division of Subsistence, Alaska Department of Fish and Game, has focused its research on those communities defined as rural by the Alaska Boards of Fish and Game, the non-commercial harvest of fish in this area is but sketchily known for the communities of the Kenai Peninsula. Mixed cash-subsistence economies are found in the rural villages of Area 3A. The Kodiak Island communities produce about 5.5 million pounds of subsistence foods for family use annually; data for Prince William Sound communities for subsistence harvests prior to 1989 suggest a similar level of family consumption of wild foods (Wolfe, 1991). Kodiak, Homer, and Seward are the principal halibut ports and the sites of 31 processing plants in 1990. Cordova, Kenai, and Yakutat are the next most important ports, with 15 processing plants.

This rural/urban split can be seen in the distribution of income in communities in Area 3A. In Table 5.11, the communities with processing facilities have incomes nearly double those without. The villages with no processing facilities are also those with high Native populations although, as we have seen in southeast Alaska, this is not necessarily concomitant with rural, low-income, mixed economy communities. The lack of available capital in the rural communities, and lack of diversified employment, serves to keep investment in the fisheries by residents of these communities relatively low, and promotes the use of a mixed cash-subsistence economy as the most economically efficient. Where rural communities have both a high Native population and relatively low cash incomes, investment in vessels is lower as is the harvest of halibut. These relationships can be found in Table 5.12.

Table 5.8: Population, Mean Household Size, and Mean Taxable Income for Selected Communities with Halibut Harvests (Area 2C)

Community	Population (N)	Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Juneau	26,751	11.2	2.66	24,250
Petersburg	3,207	10.9	2.77	21,211
Angoon	638	88.6	4.09	11,563

Population data is from the 1990 census, U.S. Bureau of Census
* Household size in mean number of persons
** Mean taxable income per income return, 1981-1985; Alaska Department of Revenue.

Table 5.9: 1990 Population and Distribution of Halibut Permits and Landings in Southcentral Alaskan Communities (Area 3A)--Kodiak Island, Prince William Sound and Yakutat Communities

Community	Pop. N	Native Pop. %	Halibut Permits N	Halibut Commerc. Lbs.	Halibut Subsist.* Lbs.
Kodiak City	6,365	14.0	404	11,573,328	325,252
Valdez	4,068	5.7	29	598,497	n/a
Other Kodiak	3,643	9.5	#	**	n/a
Kodiak Station	2,291	0.6	0	**	n/a
Cordova (Eyak)	2,110	14.9	114	1,816,665	33,971
Yakutat	534	62.1	39	918,046	22,428
Old Harbor	284	92.6	12	**	16,103
Whittier	243	8.6	8	280,882	n/a
Port Lions	222	73.5	21	**	19,003
Ouzinkie	209	94.2	20	**	7,064
Larsen Bay	147	71.4	6	**	6,806
Tatitlek	119	77.9	1	**	2,785
Chenega Bay	94	77.0	0	**	3,882
Akhiok	77	96.2	#	**	1,871
Karluk	71	100.0	#	**	3,202
Port Bailey##				728,754	n/a
Alitak##				689,458	n/a
Totals	20,477		654	16,605,630	
Other Area 3A Communities	306,832		948	12,965,282	
Totals	327,309		1,602	29,570,912	

Population data are from the 1990 Census; 1990 permit and commercial landings data are from IPHC files.
* 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** Any commercial landings were at other ports.
n/a Data not available.
\# IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.
These are cannery/floating processor sites.

Table 5.10: 1990 Population and Distribution of Halibut Permits and Landings in Southcentral Alaskan Communities (Area 3A)--Kenai Peninsula and Anchorage Area Communities.

Community	Pop. N	Native Pop. %	Halibut Permits N	Halibut Commerc. Lbs.	Halibut Subsist.* Lbs.
Anchorage	226,338	5.1	196	42,994	n/a
Matsu area	31,027	3.7	#	**	n/a
Kenai area	13,522	3.2	#	**	n/a
Kenai City	6,327	6.1	99	1,223,591	53,147
Wassila	4,028	4.7	23	**	n/a
Sterling	3,802	1.7	9	**	n/a
Homer	3,660	3.0	293	5,877,869	94,428
Soldotna	3,482	3.1	73	**	n/a
Palmer	2,866	3.5	9	**	n/a
Nikiski	2,743	4.0	14	**	n/a
Seward	2,699	12.9	52	5,183,281	n/a
Big Lake	1,477	0.7	2	**	n/a
Fritz Creek	1,426	1.0	0	**	n/a
Anchor Point	866	1.8	53	**	n/a
Ninilchik	456	17.0	30	195,724	5,700
Kasilof	383	0.0	47	**	n/a
Seldovia	316	24.4	29	441,823	2,496
Willow	285	1.4	4	**	n/a
Cooper Landing	243	1.7	1	**	n/a
Port Graham	166	87.6	#	**	7,736
Hope	161	2.9	0	**	n/a
English Bay	158	79.0	#	**	6,051
Tyonek	154	92.9	0	**	n/a
Moose Pass	81	6.6	0	**	n/a
Clam Gulch	79	0.0	14	**	n/a
Halibut Cove	78	0.0	#	**	n/a
Sub-Totals	306,832		948	12,965,282	
Other Area 3A Communities	20,477		654	16,605,630	
Totals	327,309		1,602	29,570,912	

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.

* 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish.

** Any commercial landings were at other ports.

n/a Data not available.

IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

Table 5.11: Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests

Community	Population (N)	Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Kodiak (City)	6,356	14.0	2.92	19,953
Kenai	6,327	6.1	2.70	24,995
Homer	3,660	3.0	2.54	18,515
Cordova	2,110	14.9	2.61	20,560
Yakutat	534	62.1	2.94	19,166
Ouzinkie	209	94.2	3.07	11,204
Port Graham	166	87.6	2.77	10,682

Population data is from the 1990 census, U.S. Bureau of Census
* Household size in mean number of persons
** Mean taxable income per income return, 1981-1985; Alaska Department of Revenue.

Table 5.12: Numbers and size of vessels used for commercial halibut fishing and catch, by community type, defined by proportion of Native population and mean personal income*.

Community Type	Vessel size <5 tons (N) a	>5 tons (N) b	Ratio of b/a (%)
Population with less than 25% Native	1,217	1,199	98.5
Population with more than 25% Native	355	157	44.2
Mean personal income less than $17,000	285	167	58.6
Mean personal income more than $17,000	1,284	1,183	92.1
	Mean Commercial Halibut Catch by Vessel Size (lbs)		
Population with less than 25% Native	1,306	16,788	1285.4
Population with more than 25% Native	1,498	8,915	595.1

* Mean personal annual income per income tax return, 1981-1985

Table 5.13: Fleet Composition by Area, Size Class, and Percent of Catch in the Halibut Fishery Off Alaska, 1984 and 1990

IPHC Area	Vessel Size (ft)	1984 N	1984 % Fleet	1984 % Catch	1990 N	1990 % Fleet	1990 % Catch
3A	< 26'	299	23.1	3.9	327	13.9	1.0
	26-30'	150	11.6	3.2	177	7.5	0.9
	31-35'	220	17.0	9.4	371	15.8	5.7
	36-55'	411	31.8	40.1	1,005	42.8	40.1
	56' >	111	8.6	40.9	423	18.0	51.5
	n/a	103	8.0	2.4	43	1.8	0.7

Area, vessel, and catch data provided by IPHC, 1991; all percentages are rounded.
n/a Vessel size data not available for these vessels.

The seiners with Alaskan limited entry permits are limited to 58 feet in length overall (50 feet between rudder and stemposts), and these vessels dominate the halibut fleet (table 5.13). In 1984 there were 411 boats in the 36-55 feet-long size class operating in area 3A; by 1990, this segment of the fleet had increased by 246 percent to 1,005 boats. The average catch per boat in this size class, 19,436 pounds in 1984, had fallen 41 percent to 11,501 pounds of halibut in 1990. Vessels 56 feet or more in length also increased in number, from 111 to 423, between 1984 and 1990, and their average halibut catch per boat decreased 52 percent to 35,073 pounds. The largest drop in catches occurred in the fleet of boats less than 30 feet in length. These small boats increased 12 percent, from 449 to 504 boats, between 1984 and 1990 but their average halibut catch per boat fell 67 percent from 3,163 pounds to 1,049 pounds.

The increased fishing effort in Area 3A is attributed largely to vessels over 35 feet in length moving from Area 2C to fish halibut openings further to the west and to fish in the black cod fishery. While investment in new vessels did occur, the restrictions on fishing days and areas caused vessel owners to move to new regions in order to find fish and meet their bills. The small boats, however, were not mobile and thus their reduced catches could not be increased by fishing in other areas.

Prince William Sound Sub-Region.

In the Prince William Sound sub-region, the principal fisheries are for salmon using seines, drift gillnets and set gillnets. Crab, herring and sablefish are also important commercial and subsistence species. Processors operated in four ports, Yakutat, Cordova, Valdez, and Whittier, and vessels fished for halibut throughout Area 3A in 1990. Langdon and Miller note that smaller boats (up to 15 nrt) predominated in the local fleet fishing for halibut in 1982 (1984:14). Valdez, an urban community, and Cordova are the major population centers, and there are six rural villages, including Yakutat, in this sub-region. Two villages can be considered to be Native villages. Total population for the sub-region's fishing communities in 1990 was 7,003, of whom 58 percent lived in Valdez. Subsistence fishing was an important part of the mixed economy of the rural communities, both Native and Non-Native villages.

The Prince William Sound sub-region is a meeting place for Native cultures, due to its rich and diversified marine habitat, including significant marine mammal populations. The Eyak Indians have lived in the Cordova and Copper River area for some 3,000 years. Tlinget Indians are found in Yakutat and Cordova, while Athabaskan Indians remain in the Copper River area. Members of the Chugach Eskimos are in Tatitlek and Cordova, and in many of the other communities, too. Aleuts live in all the coastal communities of the sub-region. Principal land holder is the Federal government; the Chugach National Forest covers much of the Prince William Sound and Copper River watersheds.

Employment in the area has historically revolved around commercial fishing and the mining of gold, copper and other minerals (Schroeder at al, 1987). Tourism has increased as an economic activity, with development of guided and charter boat fishing services and the cruise ship services. Yakutat has a mixed cash-subsistence economy, for example, in which the cash employment sector includes government services (7 percent), schools (22 percent), commercial fishing and fish processing (32 percent), tourism (22 percent), and transportation (10 percent). With the exception of government employment, all wage-sector employment is seasonal. The development of Valdez as the terminus for the Trans-Alaska Pipeline and the Richardson Highway has led to rapid development of a marine services and transportation sector in that port coupled with a diversified industrial base supporting the oil industry. Whittier is also a transportation center as it is the terminus of the Alaskan Railroad, which links it, and western Prince William Sound to Anchorage. Cordova was the site of large scale copper mining activities between 1905 and the 1930's, when the mines closed; it and the other, smaller, communities have depended upon the seafood industry as the basis of the cash economy

since that time. Employment of local residents in the commercial halibut fishery in the Prince William Sound sub-region is estimated to be some 698 fishermen and 146 full-time equivalent (FTE) workers in processing plants. Seasonally, it is estimated that some 2,805 individual workers process halibut.

Cook Inlet/Kenai Peninsula Sub-Region

Some 307,000 people resided in the communities in or abutting this sub-region. Residents held 948 halibut permits and it is estimated that the fishery employed some 3,120 fishermen. and 294 FTE processing workers. The number of processing jobs has increased since 1984 with the addition of 12 new plants for a total of 34 processing halibut in 1990. The fish processing sector of the sub-region's economy is estimated to employ 1,838 FTE workers; because of the seasonal nature of processing operations some 6,000 workers are involved during the course of a year.

The economy of the region is dominated by that of Anchorage and the development of the Cook Inlet and Kenai Peninsula oilfields. Founded in 1914 as a railroad construction camp, Anchorage is now the principal transportation center for central, western and Arctic Alaska, and is the state's center for banking and financial services, industry, and the wholesale and retail trades and their distribution networks. The city has grown very rapidly since the 1960's and has absorbed many local communities into its suburbs. The Kenai Peninsula/Cook Inlet communities have developed recreational and charter-boat fishing and other tourist facilities to serve Anchorage's population. Anchorage has a fleet of fishing vessels and 4 fish processing plants which handled 42,994 pounds of halibut in 1990. Persons with Anchorage addresses held 196 halibut permits in 1990.

The Kenai Peninsula has developed a diversified economy including oil production and refining, recreation and tourism, commercial fishing and fish processing, transportation and communications, and government services (Schroeder, 1987:569). The majority of the communities are "new" Non-Native towns; in 1890 only English Bay, Kasilof, Kenai, Ninilchik, Seldovia, and Seward were settlements. These towns, and Tyonek, had the only substantial proportions, that is more than 12 percent, of Native people in their populations. English Bay, Port Graham and Tyonek are in fact Native communities.

Homer, sometimes referred to as the "halibut capital," was developed as a farming, ranching, and fishing community. Some 293 halibut permits are held by persons with Homer addresses. However, since Homer shares its postal zip-code with English Bay, Halibut Cove and Port Graham, some permits are in fact held by residents of those communities. Ten fish processing plants handled 5,877,869 pounds of halibut in 1990. Principal employment opportunities in Homer are divided between fishing and fish processing (23 percent), commercial services and government (38 percent), and farming or homesteading (10 percent).

Kenai and Seward also handle major landings of halibut. Seward, the southern terminus of the Alaska railroad, has 8 fish processing plants and some 52 residents hold halibut permits. Seward receives landings from vessels fishing in the Prince William Sound sub-region in addition to those of the local fleet fishing off the Kenai Peninsula, in the lower Cook Inlet, and southwesterly towards Kodiak.

Kodiak Sub-Region

Kodiak Island has a major urban center, the city of Kodiak, and five Native villages. Kodiak City is a predominantly Euro-American community with substantial Native and Filipino minority populations. Most of the Filipino, and the newly established Latin-American, community work in the 12 fish

processing plants active in the port. Crab, halibut, salmon and groundfish - including sablefish and Pacific cod - are the principal commercial fisheries, with herring and shrimp as secondary fisheries. In recent months it has been reported that the groundfish fleet based in Kodiak has been switching from an emphasis on trawling to fishing with longlines and pot gear (for Pacific cod); this gear is similar to that used for halibut. Langdon and Miller (1984) report that the specialized, larger Kodiak halibut vessels fished throughout the Gulf of Alaska and Bering Sea grounds. Both Langdon and Miller (1984) and Tetra Tech (1981) report that the smaller vessels fished close to Kodiak Island, and Tetra Tech reported that 80 percent of the small boat fleet fished exclusively for halibut on the grounds adjacent to Kodiak Island.

Kodiak Island and other nearby islands, including Afognak, Sitkalidak, and the Trinity Islands form a network of bays, fjords, and other bottom habitat which support an extremely productive fishery. The communities of the islands are accessible by sea or air, but the road system only extends from Kodiak to its immediate satellite communities. The remote villages, all with predominantly Native populations, are Ahkiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions. None of the villages have fish processing plants, although there are seasonal canneries at Port Bailey and Alitak. Mixed cash-subsistence economies are found in all the communities, and halibut is important both for subsistence use and commercial sale. Native employment is in fishing rather than processing; most processing workers in Kodiak are Filipinos or Latin Americans. Seasonal summer employment is also available, but the majority of these employees are recruited from other states (Impact Assessment, Inc, 1991). It is estimated that there is year-round employment for some 2,800 FTE workers in fish processing on the Island (of which 336 FTE jobs are related to halibut), and some 1,523 fishermen are employed in the halibut fishery. Impact Assessment Inc (1991) that currently 3,200 fishermen work in kodiak's fisheries, of whom 672 are skippers and 2,500 crew.

Fishermen

Estimates for the number of fishermen engaged in the halibut fishery are for 1,523 in the Kodiak subregion, some 3,120 in the cook Inlet/Kenai Peninsula area, and 698 for the Prince William Sound subregion, for an estimated total of 5,341 in Area 3A. These fishermen do not include those from other areas who fish for and/or land halibut in Area 3A, nor does it include all fishermen who fish for subsistence use.

Langdon and Miller (1984) reported that the mean age of Kodiak halibut fishermen was 37.1 years, with a median age of 34.5. The rural/urban difference in demographic patterns discussed earlier is evident in the fishermen interviewed by Langdon and Miller; fishermen from the rural villages had a mean of 10.6 years of formal education, while those resident in Kodiak had a mean of 14.2 years. Rural fishermen had a mean of 14.4 years of experience in the halibut fishery in 1982, while Kodiak City fishermen had 6.8 years of experience. Some 88 percent of rural fishermen in Langdon and Miller's study were Aleuts, which is comparable to the proportion of Aleuts in the villages, and the urban sample was 95 percent Euro-American. Rural fishermen in Langdon and Miller's Kodiak Island sample received, in 1982, 39 percent of their gross earnings from the halibut fishery, while urban fishermen earned 31 percent. Of those vessel owners in the Kodiak study, 73 percent were sole owners of their vessels, and the balance had partners in their fishing vessel financing.

As noted earlier, there is significant participation by non-Alaskan vessels in the Area 3A fishery. Table 5.4 shows that Washington State-based vessels took 19.8 percent of the catch from Area 3A in 1990. For these vessels, this catch represented 51.8 percent of all halibut catches taken off Alaska by residents of Washington State. Similar patterns of fishing, but on a smaller scale, can be found

for other non-Alaskan residents. Estimates of the numbers of non-Alaskan vessels and fishermen are not available at this time.

Fish Processing

There were 66 processing plants active in the halibut fishery in Area 3A in 1990, an increase of 18 plants over those active in the fishery in 1984. Ports which had significantly increased their processing capacity were Seward and Whittier (5 additional plants each), Homer (4 additional plants), and Valdez and Anchorage (3 additional plants each). There were 4 plants that withdrew from the halibut fishery in other ports in the region during the period 1984-1990. It is estimated that some 786 full-time equivalent (FTE) jobs were created in the processing sector by the halibut fishery in 1990; this is approximately 15 percent of the 5,153 FTE employees in the area's fish processing industry. Because of the seasonal nature of the fishery, the number of processing workers who actually work on halibut lines is estimated to be of the order of 11,000.

Processing line workers in Kodiak are largely of Filipino descent. Relatively few, in proportion to their numbers in the population at large, Native Alaskans work in the processing plants. Much of the seasonal labor for the processing of salmon is recruited outside the region.

5.1.1.4 Present participation in the halibut fishery by residents of Alaska Peninsula (Area 3B)

Seven of the ten fishing communities of the southwestern Alaska Peninsula are involved with the Area 3B halibut fishery.

Some 50 percent of halibut permit holders for 1990 have Sand Point addresses, and Langdon and Miller (1984) note that 45 percent of thefishermen for halibut resided in Sand Point in 1982 at the time of their survey. The principal centers of fishing activity are Sand Point and King Cove, with Chignik also a major player. Although on the Peninsula, Nelson Lagoon is on the north side facing Bristol Bay and has no commercial or subsistence fishery for halibut and pursues a salmon set-net fishery.

The villages active in the fishery have predominantly Native populations; however the population is a blend of Scandinavian, Scots, Aleut and Eskimo groups, and fishermen prefer to describe themselves as "locals." Sealers and fishermen from Seattle and the Pacific Northwest settled in Sand Point and King Cove at the turn of century, married Aleut or Eskimo women, and combined commercial fishing with the customary subsistence use of local resources to develop a very resilient mixed economy.

The major fisheries in the area are salmon, crab, Pacific cod and other groundfish, shrimp and halibut. A longline fishery for both halibut and Pacific cod has developed, and the catches are delivered to processors in Chignik, Sand Point and King Cove. In 1990, King Cove ranked 8th, Sand Point 14th, and Chignik ranked 18th in the volume of landings of halibut caught off Alaska according to IPHC landings data. Some 98 percent of these landings were taken in the immediate vicinity of the ports; the balance was caught in halibut openings to the West, in Area 4A, or in the Bering Sea.

The Area 3B fleet changed between 1984 and 1990; small skiffs declined 75 percent in number of boats and 88 percent in average catch of halibut per boat to a fleet of 8 skiffs with an average harvest of 940 pounds in 1990. The vessels in the 36-55 feet long class increased by 25 percent, and the average catch of halibut per boat increased by 8 percent to 13,326 pounds. There was also an increase in the number of vessels over 55 feet in length in 1990; since 1984 this segment has

Table 5.14: 1990 Population and Distribution of Halibut Permits and Landings in Southwest Alaskan Communities (Area 3B)

Community	Pop. N	Native Pop. %	Halibut Permits N	Halibut Commerc. Lbs.	Halibut Subsist.* Lbs.
Sand Point	878	57.1	58	1,058,103	n/a
King Cove	541	79.8	38	1,598,466	n/a
Chignik Bay	188	53.4	9	918,322	9,062
Cold Bay	148	4.4	0	**	n/a
Chignik Lake	133	89.1	#	**	3,259
Perryville	108	92.8	2	**	5,130
Nelson Lagoon	83	93.2	0	**	0
False Pass	68	86.7	3	**	2,604
Chignik Lagoon	53	85.4	7	**	1,919
Ivanof Bay	36	92.5	0	**	1,462
Totals	2,236		117	3,574,891	

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data shown are from IPHC files.
* 1990 Subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** Any commercial landings were at other ports.
\# IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

Table 5.15: Fleet Composition by Area, Size Class, and Percent of Catch in the Halibut Fishery Off Alaska, 1984 and 1990

IPHC Area	Vessel Size (ft)	1984 N	1984 % Fleet	1984 % Catch	1990 N	1990 % Fleet	1990 % Catch
3B	< 26'	24	7.2	2.8	5	1.3	0.1
	26-30'	12	3.6	1.3	3	0.8	<0.1
	31-35'	40	12.0	6.3	46	12.0	4.9
	36-55'	157	47.0	29.1	195	50.8	29.7
	56' >	92	27.5	57.5	131	34.1	64.7
	n/a	9	2.7	2.9	4	1.0	0.6

Area, vessel, and catch data provided by IPHC, 1991; all percentages are rounded.
n/a Vessel size data not available for these vessels.

Table 5.16: Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests

Community	Population (N)	Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Sand Point	878	57.1	2.85	24,254
King Cove	541	79.8	2.98	19,167
Chignik Bay	188	53.4	3.48	16,403

Population data is from the 1990 census, U.S. Bureau of Census
* Household size in mean number of persons
** Mean taxable income per income tax return, 1981-1985; Alaska Department of Revenue.

increased by 42 percent to 131 vessels and average catch has increased 4 percent to 42,962 pounds per vessel.

The communities in Area 3B are stable ones and growing steadily. In King Cove, for example, nearly 70% of the 1987 year-round population had lived in the community for 16 years or longer (Miller, 1987). The movement of the fishing fleets through the area increases the population of King Cove by some 100 fishermen and 350 processing workers each summer. The processing workers live in company bunk houses, and are recruited from other parts of the United States. Chignik Lagoon has a similar in-migration of seasonal fishermen; in 1986, 36 houses (62 percent of the dwellings) in the community were owned by fishermen who lived in the community for three to six months each year. Seattle, Kodiak City and Anchorage were the most common winter addresses for these seasonal families (Morris, 1987).

Although household size is high, relative to the state average, so are the relative incomes of residents of selected Area 3B communities. Since there is a mixed cash-subsistence economy in Area 3B, the fishery makes a substantial contribution to both sectors. In Sand Point in 1987, 87 percent of employment was in commercial fishing and fish processing (Impact Assessment Inc, 1991) and King Cove had a similar reliance on fishery employment. Construction trades, marine services, education and government, and trade accounted for the balance of employment in both communities.

Fishermen

Langdon and Miller note that the average age of Sand Point fishermen in 1982 was 40.7 years. Fishermen resident in Sand Point had a mean of 10.5 years of education. Halibut fishing in 1982 provided 35.9 percent of mean personal gross income, but the median gross personal income from halibut was 10 percent, indicating that some fishermen fished only for halibut, while the majority fished for salmon or other species in addition to halibut. Sand Point, unlike King Cove, has a fleet of vessels considered to be "local;" IAI note that, of the fleet of 21 groundfish vessels delivering to the Sand Point plant, 17 were 58 feet-long salmon limit seiners and only one boat was from "Outside," although some of the skippers and crew were seasonal residents from Anchorage and Seattle (IAI, 1991a). The resident fleet in Sand Point numbered 127 in 1986, up from 91 vessels in 1980. Of these vessels the majority fished in the salmon fishery in 1986 "and a handful were involved in the halibut and herring fisheries" (IAI, 1991a: Sand Point Profile 18). It is estimated that some 280 fishermen resident in Area 3B fished for halibut in 1990.

The seasonal migration of fishermen north and west from Washington State is reflected in table 5.4, and a similar pattern of fishing exists, on a smaller scale, for fishermen from Oregon. Area 3B provided 18.5 percent of the total catch of Washington-based vessels, which took 23.5 percent of Area 3B's halibut harvest. Prior to 1970, crews on "local" vessels were largely kin-based and few non-residents were employed. In 1986, it was estimated, for Sand Point, that half of the crews on local seine vessels were non-residents outside the kinship system of hiring. Most of these fishermen came from Washington, Oregon and California, with some from the Mid-West (IAI, 1991a). All "outside" boats were crewed by non-residents. Non-resident fishermen are thus significantly involved in the area 3B halibut harvests, but estimates of their participation are not available.

Fish Processing

In 1990 there were 4 fish processing plants in Area 3B, a gain of one plant for Chignik. Plants were located in King Cove (1), Sand Point (1) and Chignik (2) (IPHC, 1991). Chignik has had a

commercial salmon and halibut processing plant (first, in 1880, a saltery; then, a cannery, and now processor/freezer facilities) since the beginning of the halibut fishery. In 1982 it was estimated that some 600 non-resident seasonal workers worked on the processing lines of the original plant (J.M. Morris, 1987), and the workforce has expanded with the building of the second plant in 1988. King Cove's processing facility was built in 1911 as a salmon packing plant, but it also handles halibut, crab, herring and groundfish in season. In 1987 the plant employed 336 seasonal workers and 5 permanent employees (C. Miller, 1987).

Sand Point has had a salmon processing plant since 1931, although the community had been active in the Pacific cod fishery since 1890 (Langdon, 1982). Until 1986, processing workers had been principally local residents. However, the new owners of the plant, Trident Seafoods, adopted a policy of hiring non-residents on six-month contracts and lodging them in company bunkhouses. Employment at the plant ranges from some 360 persons at the height of the Pacific cod fishery to between 60 and 180 workers at other times. Although the plant operated almost year round until 1988, seasonal closures of fisheries since then have affected the flow of fish for processing, and the plant has ceased operations for periods of time (IAI, 1991a).

5.1.1.5 Present participation in the halibut fishery in Areas 4A, 4B, 4C, and 4D (Aleutian and Pribilof Islands)

These areas extend west of Unimak Pass (Cape Lutke) along both sides of the Aleutian Island chain, and west of a line running approximately from Unimak Pass to Cape Mohican on Nunivak Island and then to Cape Prince of Wales on the Seward Peninsula. The principal civilian communities with year-round settlements are Akutan, Unalaska/Dutch Harbor, Atka, and Nikolski on the Aleutian Islands, and St. Paul and St. George on the Pribilofs. While there was some commercial fishing for halibut by military personnel at Adak, none was reported from the base at Shemya Station in 1990 (IPHC, 1991). Population and halibut harvest data is shown below in table 5.17. This area is sparsely populated, with a civilian population of 4,688 in 1990. Landings from these sections of Area 4 are not negligible; Akutan ranked 9th in reported landings of halibut caught off Alaska while Unalaska ranked 12th. It should be noted that some deliveries to these two ports were made by vessels fishing in the eastern Bering Sea and Bristol Bay (Area 4E), but the amounts in 1990 were of the order of 27,000 pounds only (IPHC, 1991).

The four Aleutian Island communities, Unalaska, Atka, Akutan and Nikolski, have been permanent year-round communities occupied by the Aleut peoples since pre-contact days. All are located in sites with good access to marine resources such as marine mammals, salmon streams, and marine fish and shell-fish grounds. Halibut has traditionally been a species sought and used by the Aleuts for subsistence (Schroeder et al, 1987). The Aleuts of the Pribilofs are the descendants of Aleuts from Atka and Unalaska transported to the Pribilofs as seal hunters by Russian fur traders (Veltre and Veltre, 1981).

Large scale commercial fishing, including that for halibut, has developed in the Aleutian Islands since 1970. Originally linked to the development of the king crab fishery, ports such as Unalaska and Akutan developed very rapidly. Unalaska had a population of 342 people in 1970; 1,322 people in 1980, and 3,089 people in 1990 (IAI, 1991a). This growth has gone through boom and bust cycles; the crab fishery declined in 1981 and 1982 to a shadow of its former self, and the pollock fishery did not fully develop until 1988. There were no recorded commercial landings of halibut in the Aleutian Islands 1967 to 1973, and this fishery developed as stocks and fishing days declined in Areas 2A, 2C, and 3A, and vessels moved westward in search of fish.

Table 5.17: 1990 Population, Distribution of Halibut Permits and Landings in Aleutian Islands and West Bering Sea Communities (Areas 4A,B,C,D)

Community	Pop. N	Native Pop. %	Halibut Permits N	Halibut Commerc. Lbs.	Halibut Subsist.* Lbs.
Adak Station	4,633	0.8	3	1,970	n/a
Unalaska/ Dutch Harbor	3,089	15.1	10	1,096,677	n/a
Saint Paul	763	87.7	14	145,152	n/a
Shemya Station	664	0.2	0	**	n/a
Akutan	589	39.6	10	1,417,727	n/a
Saint George	138	96.8	10	43,587	n/a
Atka	73	96.8	4	12,604	n/a
Nikolski	36	96.0	#	**	n/a
Totals	9,985		51	2,717,717	
(Civilian)	(4,688)				

Population data are from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.
* 1990 subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).
** Any commercial landings were at other ports.
n/a Data not available
IPHC permit data are based on postal zip codes; many Alaskan communities share zip codes, and CFEC data indicate that halibut permit holders reported elsewhere reside here.

Table 5.18: Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests

Community	Population (N)	Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Unalaska	3,089	15.1	2.57	20,055
Saint Paul	763	87.7	3.68	17,369
Akutan	589	39.6	4.50	8,241

Population data is from the 1990 census, U.S. Bureau of Census
* Household size in mean number of persons
** Mean taxable income per income tax return, 1981-1985; Alaska Department of Revenue.

Akutan is a village with 589 residents in 1990, and a large processing facility employing, in peak months from January through March, 500 or so non-resident seasonal employees. Akutan Bay has been a seasonal location for floating processors for crab and salmon since 1920, but the on-shore facility was not built until 1981 and began processing in 1982. The company which owns the plant, Trident Seafoods, also owns the plant in Sand Point and applies the same policy of preferring to employ temporary contract workers recruited outside the community. Year-round operation of these plants was feasible during the period 1985-89, but closures in the groundfish fishery have led to seasonal closures of these plants, too, in the past two years (IAI, 1991b).

The use of contract, non-resident labor in fish processing in the Aleutian Islands has led to dual economies being developed. While Unalaska can be said to have an urban, cash-based economy, all the other communities have a mixed cash-subsistence economy. Table 5.18 shows the disparity in taxable income between Unalaska and Akutan residents which reflects this. Saint Paul, during 1981-1985, shows a relatively high level of personal income; it must be noted that these were the last of the years of Federal employment in fur sealing.

Subsistence harvests of marine resources have been described for Atka, Unalaska, and the Pribilofs by Veltre and Veltre (1981, 1982 and 1983), but Schroeder at al (1987) note that no systematic measurement of harvest and use levels has been undertaken and thus baseline projections of use are not possible. Schroeder et al report that ethnographic accounts of the communities in the region indicate that there is a high dependence on fish, shell-fish and marine mammals for subsistence purposes. They suggest that "This dependence is probably higher in Atka, Akutan, Nikolski, St. George and St. Paul, where other food supplies are more expensive and often more difficult to obtain than in other communities" (Schroeder et al, 1987:494). Veltre and Veltre recorded subsistence use of marine mammals and fish in a survey of Pribilovian communities in 1981. At that time halibut were the principal fish consumed; on St. Paul subsistence consumption per household was 513 pounds/year, while on St. George the subsistence use per household was 270 pounds/year.

Participation in the harvesting of fish by local residents of the Aleutian communities and the Pribilofs is also restricted. IAI (1991b) report that Unalaska has three fleets of vessels using the port. It was estimated in 1991 that 33 vessels belong to local residents and operate year round from the port; these vessels are a mix of longliners and crabbers. A second fleet, owned and operated by non-residents of Unalaska, is some 507 vessels strong and is based in Unalaska each fishing season. The third, transient, fleet is upwards of 575 vessels and uses the port for supplies and occasional landings. Of these fleets it is estimated that some 200 vessels longline for halibut.

Similarly, Akutan has only twelve locally owned skiffs involved in fishing for the processor; between 90 and 100 company-owned vessels and non-resident vessels under contract to the plant supply most of the fish delivered to the plant. Some 40 of these larger vessels fish for halibut (IAI, 1991b:4-53).

St. Paul and St. George have a different problem; their isolation and previous dependence upon commercial fur sealing have created difficulties in establishing a commercial fishing industry on the Pribilof Islands. St. Paul has one, recently developed, on-shore plant which processes groundfish, crab and halibut. In 1990 all halibut deliveries to the plant were made by locally-owned vessels, some 18 boats in all. St. George had a floating processor, the Galaxy, moored in the harbor and halibut was delivered there. Local vessels are small, between 18 and 40 feet in length, and unable to fish far from the Islands. The IPHC created Area 4C as a fishery development area for the Pribilofs and stipulated that vessels which did not land halibut on the Pribilofs had to obtain a vessel clearance prior to the opening of Area 4C for fishing and before unloading catch (IPHC 1991 Regulation 13-2). IAI reports that in spite of these restrictions, "outside" vessels took two-thirds of the halibut quota in

Table 5.19: Fleet Composition by Area, Size Class, and Percent of Catch in the Halibut Fishery Off Alaska, 1984 and 1990

IPHC Area	Vessel Size (ft)	1984 N	1984 % Fleet	1984 % Catch	1990 N	1990 % Fleet	1990 % Catch
4	< 26'	47	33.6	4.7	66	18.7	2.1
	26-30'	10	7.1	2.3	37	10.5	1.5
	31-35'	11	7.9	9.5	117	33.1	6.6
	36-55'	16	11.4	9.5	33	9.3	16.2
	56' >	30	21.4	71.8	90	25.4	73.0
	n/a	26	18.6	2.1	10	2.8	0.5

Area, vessel, and catch data provided by IPHC, 1991; all percentages are rounded.
n/a Vessel size data not available for these vessels.

Area 4C in 1990 and landed their catches in Unalaska, and local fishermen made very little money and perhaps a net loss on their operations (IAI, 1991b:4-33).

Fishermen

There is no information available in the literature on participants in the commercial halibut fishery in areas 4A, 4B, 4C, and 4D. The fishermen operating 26 local vessels in the Pribilofs are Aleuts from the Islands, as described above, who primarily fish for halibut, and there are local fishermen fishing from skiffs in Akutan and Unalaska (IAI, 1991a). IAI report that the out-of-state fishermen and processing workers who comprise the commercial fishing work-force are largely from the Pacific Nortwest states and California, and state that, "as a group, locals, and Aleuts in particular, are very under-represented in the harvesting of marine resources" (IAI, 1991a:Unalaska-19). The number of halibut fishing permits held by Unalaska residents has fallen from a high of 30 in 1983 to a low of 10 in 1990. Income earned from 13 permits fished in 1987 was $361,827 and 77 fishermen were employed on local halibut vessels fishing from Unalaska (IAI, 1991a).

Fish processing

Information on fish processing is described in the previous sections. Again there is no information in the literature on fish processing employment related to the halibut fishery. The plants on Saint Paul Island and in Akutan used seasonal workers from communities outside the region in 1990 (IAI, 1991b), and the majority of workers in Unalaska and on the floating processors are also from outside the region. Year-round processing of seafood in Unalaska has promoted some stability in employment, and it appears that some of the seasonal employees have settled in the community, hence the population increase.

5.1.1.6 Participation in the halibut fisheries by communities in the Bristol Bay-Eastern Bering Sea (Area 4E)

The principal communities involved in the halibut fishery are in the Nelson Island/Nunivak Island area. The broad shelf of the Bristol Bay seabed drops off into deeper water, and halibut grounds are found close to shore in this area. Alaska Natives in this area are predominantly Yup'ik Eskimos, and with the exception of Bethel, Dillingham, and Nome, the rural villages - twenty in number - engaged in the halibut fishery for commercial or subsistence use have populations less than 700 people. Population data and the distribution of halibut permits are shown in table 5.20.

Schroeder et al report that the communities of the region have been found to have mixed cash-subsistence economies (1987:225). In approximate order of importance, cash-economy employment available to residents of the region include government, education and service sector jobs; commercial fishing for salmon in Bristol Bay, the Yukon and Kuskokwim Rivers; commercial fishing for herring and halibut in the Nelson Island and Nunivak area; and employment in sales and services. Schroeder et al report that "there is very limited employment generated by a private business sector, which is virtually non-existent in most villages (1987:225-6).

Subsistence activities continue in all the communities of the region, with the exception of King Salmon which is a government "town" servicing the air strip, since these are the most economic activities which yield the most consistent return to families. Schroeder et al note that local residents continue to rely on local fish and wildlife resources for most of the protein and fats they consume. In the Nelson Island area, for example, the community of Tununak harvests halibut from June through August each for subsistence use. Some 93 percent of the households in Tununak engage

Table 5.20: 1990 Population, Distribution of Halibut Permits and Landings in East Bering Sea Communities (Area 4E)

Community	Pop. N	Native Pop. %	Halibut Permits N	Halibut Commerc. Lbs.	Halibut Subsist.* Lbs.
Bethel	4,674	67.6	#	**	n/a
Nome	3,500	58.5	1	**	n/a
Dillingham	2,017	57.0	20	**	0
King Salmon	696	5.9	2	**	n/a
Emmonak	642	91.2	0	**	n/a
Togiak	613	94.3	17	**	n/a
Naknek	575	50.6	13	**	n/a
Pilot Station	463	94.2	#	**	n/a
Toksook Bay	420	93.7	8	**	n/a
New Stuyahok	391	94.0	3	**	n/a
Manokotak	385	92.9	5	**	n/a
Chefornak	320	96.1	#	**	n/a
Tununak	316	95.0	#	3,413	29,514
Newtok	207	94.7	1	**	n/a
Aleknagik	185	89.6	2	**	n/a
Mekoryak	177	95.6	17	7,730	n/a
Nightmute	153	97.5	#	**	n/a
South Naknek	136	85.5	7	**	n/a
Egegik	122	76.0	1	**	268
Port Heiden	119	64.1	1	**	167
Sheldon Point	109	95.1	1	**	n/a
Levelock	88	100.0	0	**	396
Pilot Point	53	85.4	#	**	186
Ugashik	7	100.0	1	**	0
Bristol Bay (General)				25,401	n/a
Totals	16,369		100	36,544	

Population data are taken from the 1990 U.S. Census; 1990 permit and commercial landings data are from IPHC files.

* 1990 subsistence landings data are estimated from Alaska Dept. of Fish and Game baseline studies for 1987; estimated landings are in pounds of dressed fish (H&G).

** Any commercial landings were at other ports or are shown in the Bristol Bay (general) category.

n/a Data not available.

\# IPHC permit data are based upon postal zip codes; many Alaskan communities share zip codes and CFEC data indicate that halibut permit holders reported elsewhere reside here.

Table 5.21: Population, Mean Household Size, and Mean Taxable Income for Selected Alaskan Communities with Halibut Harvests

Community	Population (N)	Native Pop. (%)	Household Size (N)*	Mean Taxable Income ($)**
Alaska, State	530,043	16.2	2.80	
Toksook Bay	420	93.7	4.77	10,034
Tununak	316	95.0	4.05	8,223
Nightmute	153	97.5	5.28	8,112

Population data is from the 1990 census, U.S. Bureau of Census
* Household size in mean number of persons
** Mean taxable income per income return, 1981-1985; Alaska Department of Revenue.

Table 5.22: Fleet Composition by Area, Size Class, and Percent of Catch in the Halibut Fishery Off Alaska, 1984 and 1990 (Areas 4A, 4B, 4C, 4D, and 4E)

IPHC Area	Vessel Size (ft)	1984 N	1984 % Fleet	1984 % Catch	1990 N	1990 % Fleet	1990 % Catch
4	< 26'	47	33.6	4.7	66	18.7	2.1
	26-30'	10	7.1	2.3	37	10.5	1.5
	31-35'	11	7.9	9.5	117	33.1	6.6
	36-55'	16	11.4	9.5	33	9.3	16.2
	56' >	30	21.4	71.8	90	25.4	73.0
	n/a	26	18.6	2.1	10	2.8	0.5

Area, vessel, and catch data provided by IPHC, 1991; all percentages are rounded.
n/a Vessel size data not available for these vessels.

in this harvesting activity, and all households reported consuming halibut in 1987. The amount of halibut consumed was 93.4 pounds per capita in 1987.

Population, household size, and annual taxable income data are shown in table 5.21 for selected communities in the region. Tununak, in the period 1981-1985, had mean taxable income per tax return of $8,223. This demonstrates a reliance on a mixed cash-subsistence economy common to the other rural villages in Area 4E.

In 1990, the IPHC established a special commercial halibut fishery development zone in Area 4E, with similar rules to those established for Area 4C off the Pribilofs (see above). This change encouraged a number of local fishermen to fish in the halibut fishery using Bristol Bay limit seiners (i.e. under 32 feet in length). Vessels landed halibut at buying stations/processing plants at Mekoryak, on Nunivak Island, and at Tununak, Nelson Island. Other catches were landed in various ports around Bristol Bay and transhipped to processors. Four vessels from "Outside" took another 24,000 pounds and landed their catches in Unalaska (see table 5.22).

Fishermen

There are no data available in the literature surveyed on the commercial fishermen participating in the eastern Bering Sea fishery for halibut. For vessels from "outside" the region, it would appear, from IAI (1991a) and Langdon and Miller (1984), that the descriptors for the Seattle fishermen and vessels are appropriate.

Fish processing

Halibut buying stations and/or processing plants are reported by the IPHC for Mekoryak and Tununak. There is no information about these operations in the literature surveyed.

5.1.2 Historical fishing practices and dependence on the fishery

The fisheries for halibut off Alaska have been prosecuted since prehistoric times by Alaska Natives. In historic times and to the present the halibut fisheries have continued to provide food for local people and fish for trade and commerce. The development of the commercial fishery in the late 1800's by schooner and dory fishermen from Washington, Oregon and California has resulted in long standing ties to the present fishery by fishermen from those states. The linkages have changed over time; halibut schooner and, later, steamer fishermen settled in communities such as Ketchikan, Petersburg, Kodiak, Sand Point, and King Cove. From these communities they developed local halibut fisheries and fisheries for other species as part of an annual round of commercial fishing.

Processing plants were built in many communities, and the large schooners and steamers delivering fresh halibut on ice to the States of Washington and Oregon in the first quarter of this century have been replaced by the container shipment of frozen product to reprocessing plants in those states or abroad. Changes in the management of fisheries, to the derby fishery for example, hastened the demise of historic patterns of involvement in the commercial halibut fishery. It is now largely an Alaskan-based fishery, with some 88% of permit holders having postal addresses in the state in 1990. Involvement in the fishery by fishermen from Washington and Oregon is usually with vessels which travel to Alaska, and then are based in a port for the duration of the fishing year. These vessels typically land at local plants and to all intents and purposes are indistinguishable from their Alaskan counterparts.

Historically, economic dependence on the fishery for a year-round livelihood by individual fishermen lasted from 1900 to 1950. Fishing companies relinquished their company vessels and concentrated on the businesses of processing and marketing fish in the period after the First World War, permitting independent fishing ventures to increase and prosper for a while. Overfishing of the resource, stagnant or declining over-the-dock prices, and increasing operating costs were offset by investment in new technologies, different approaches to management, and finally diversification into other fisheries. Bell reports that the average fishing season, measured from first port clearance to last landing, for a Seattle-based vessel participating in the halibut fishery was 272 days in 1930, 224 days in 1931, 99 days in 1954, and 173 days in 1965 (Bell, 1981:121). Over the same period productivity per fisherman increased by a factor of 2.34, and crew size shrank by a third from an average of 9.3 men per vessel to 6 men.

The number of days actually spent fishing for halibut has decreased over time; in some years voluntary industry schemes had vessels laying-up for periods of time. In other years maximum poundage per fisherman was set as the cut- ff point. By 1977, the IPHC had established a season of four "openings" totalling 73 fishing days for Southeast Alaska during the fishing year. In the same year, Area 3A had three openings totaling 47 days; 3B was open for a total of 65 days on four occasions; and Area 4A was open for 227 days consecutively (TetraTech, 1981:14). In 1991, the halibut fishery in Areas 2C, 3A, and 3B is scheduled for three 24-hour openings; in Area 4A, there will be four 24-hour openings (IPHC, 1991). To reduce fishing pressure further, the openings coincide so that vessels cannot move from one area to another.

Thus, the historical dependence on the fishery for a livelihood by some fishermen has been replaced by dependence on the fishery as part of a seasonal round of other fishing activities. Or, in the case of some part-time fishermen, by periods of employment ashore between fishing seasons.

5.1.2.1 Historic participation of Washington and Oregon fishermen

The Indian tribes of the Pacific Northwest have traditionally fished for halibut for subsistence. The coastal Yurok and the Tolowa of California are reported by Bell to have fished for halibut in pre-contact times (Bell, 1981:17). Bell also notes that the Indian fishery for halibut along the coast northwards to Cape Flattery was "relatively limited due to too few good harbors, poor watercraft for offshore fishing and the presence of more abundant and accessible anadromous species, particularly salmon, in nearly all coastal rivers." (Bell, 1981:17). The Makah tribe of northwest Washington did however fish the areas north of Cape Flattery and out to sea, and have continued to do so until the present. In 1952, the Makah sued for rights to the halibut fishery "in common" with United States fishermen as stipulated in the Makah Treaty, negotiated at Neah Bay in 1855 (Bell, 1981:20). Although the suit was unsuccessful, the Makah continued and expanded a commercial halibut fishery developed in the 1940's with a fleet of longliners based in Neah Bay.

The non-Indian fisheries began in the 1870's with halibut taken in a small boat fishery in Puget Sound supplying local markets. New England schooners entered the halibut fishery in 1888. Although Bell reports that the schooners left the fishery after two seasons (Bell, 1981:21-23), they opened up the possibility of a fresh halibut fishery for East Coast markets, and by the turn of the century auxiliary-powered schooners and steamers were longlining for halibut from Puget Sound ports. These vessels would fish the grounds off Cape Flattery and the west coast of Vancouver Island in the summer months, and the relatively sheltered waters of the Alexander Archipelago, Southeast Alaska, in the fall and winter.