


MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke
Executive Director 

DATE: April 9, 1999

SUBJECT: Add Species Endorsements to Groundfish Licenses

ESTIMATED TIME
8 HOURS
(for all D-1 items)

ACTION REQUIRED

Develop alternatives for analysis.

BACKGROUND

In June 1995 the Council adopted the Groundfish License Limitation Program (LLP) for the Federal waters off Alaska's coast. Groundfish licenses were issued for the Gulf of Alaska (GOA) and the Bering Sea/Aleutian Islands (BSAI) areas based on landings made between January 1, 1988 and June 27, 1992. Sub-area endorsements were then applied to the general licenses based on landings made during a more recent qualifying period (January 1, 1992 through June 17, 1995). The sub-area endorsements identify where vessels will be allowed to fish when the LLP goes into place, which is expected to be January 1, 2000.

During the October 1998 Council meeting, the Council voted to add gear endorsements to the groundfish licenses. The Secretary of Commerce has yet to approve this amendment, but if he does each license will be designated whether it is eligible to use trawl gear, non-trawl gear, or both gear classes.

Table 1 provides the most recent estimate of the number of vessels that would qualify by size and gear type. Overall it appears that about 2,435 vessels will qualify for a groundfish license.

Table 1: Estimates of the Number of Vessels Qualified for Groundfish Licenses by Gear Type

Gear	GOA	BSAI	Total
Non-Trawl	1,935	295	2,060
Trawl	89	104	124
Both	193	133	225
Choice of Gear Types	18	16	26
Total	2,235	548	2,435

At this meeting the Council must consider whether they wish to have an analysis developed that would study adding species endorsements to the license. This issue was considered when the original program was being developed. Pages 94 through 105 from the September 17, 1994 EA/RIR are included as Attachment 1. Much of the discussion in the attachment deals with species grouping, target fisheries, and directed fishing standards.

Issues such as levels of species aggregation and minimum landings requirements will need to be addressed when developing alternatives for analysis. The discussion in Appendix I focused on issuing licenses for pollock, Pacific cod, rockfish, flatfish, and other groundfish. These species groups may still be appropriate, or additional detail may be requested. Minimum landings requirements will set a level of historic participation which must be met to earn a species endorsement. Differential levels could be set based on gear type, vessel size, or processing designation.

NMFS has already indicated that species endorsements could not be implemented by January 1, 2000. Given that advice, this analysis would need to be completed by April 2000 to be implemented on January 1, 2001.

The Council document entitled "Potential Elements and Options of Individual Fishing Quotas or License Limitation Programs in the North Pacific Groundfish and Crab Fisheries," dated June 15, 1993, details the reported species over time.

A fishery-specific license system potentially could be quite restrictive in terms of mobility and future expansion of capacity depending on the numbers of layers and qualifiers. For example, it would prohibit vessels which had only fished pollock from entering the flatfish fishery and vice-versa. If separate fishery licenses were issued without a North Pacific Umbrella license then the number of active vessels potentially could increase. As with FMP area licenses, there are two choices on the number of layers to include in the

Other Species	Alaska Mackerel, Sablefish, Squid, All Other Species
Flatfish	Rock Sole, Yellowfin Sole, Flathead Sole, Deep water Flats, Rook sole, Greenland Turbot, Arrowtooth, Other Flatfish, Shallow Water Flatfish
Rockfish	Pacific Ocean Perch, Thornyheads, Other Red Rockfish, Pelagic Rockfish, Northern, Sharpchin, Shortraker, Rougheye, Other Rockfish
Pacific cod	Pacific cod
Pollock	Pollock
Fishery Licenses	Species/Species Groups within each Fishery License

Table 3.13

Under Option 400,000 (and options 500,000 and 600,000), all species managed under the groundfish plans (with the exception of Demersal Shelf Rockfish in the S.E. Outside management area, currently managed by the State of Alaska, and sablefish caught with fixed gear IFQs), would fall under one of the licensed fisheries. Licenses would give the holder the right to fish in the specified fishery and to catch and retain any species and amount of bycatch as allowed by each of the definitions created for each fishery. These definitions would need to be determined, perhaps along lines similar to the directed fishing standards that already are in current regulations. Table 3.13 shows which species would fall under the different fishery licenses. Potential Fishery Definitions are discussed separately in a section that follows. It should be noted that more specific fishery definitions are included under the options 700,000 and 800,000, which were added in June. It should also be noted that the Council could, if it chose, specify more or fewer fisheries to be included. This of course would require additional analysis.

Licenses for Pollock, Pacific Cod, Flatfish, Rockfish, and Other Fisheries (Option 400,000). In January 1994, the Council discussed an alternative which would issue licenses by "species." In consultation with NMFs fishery managers and enforcement officers, it was determined that licenses by individual species would be extremely difficult to manage, monitor, and enforce. For example, petrale sole, Dover sole, yellowfin sole, starry flounder, arrowtooth flounder, flathead sole, Alaska plaice, and various other flatfish could be caught while fishing for rock sole. Without a license for any of the additional species, a fisher would be required to throw them back, exacerbating the discard problem. Therefore, it was determined that a license by fishery was probably more what the Council intended. Five fisheries (Pollock, Pacific cod, Flatfish, Rockfish, and Other) were defined by Council and NMFs personnel on the basis of directed fishing definitions and on the availability of catch data which consistently track the various species over time.²

The allocation process will be somewhat more complicated if there are a greater number of endorsement layers. Monitoring of transfers will also be somewhat more complex if there are more layers. There would be no reason to assume that the monitoring of catch will be any different under this option than under any of the previous options or under the current regulations. Enforcement should not vary significantly with the number of layers particularly with regard to FMP area or sub-area endorsements; regardless of the number of layers, a vessel will have to prove that it has a license for the area in which it is operating.

Implementation and administration of fishery licenses will not be significantly more difficult than area licenses, particularly if the number of defined licenses remains small. However, it may be difficult to determine if a vessel qualified in a particular year for a specific fishery because species reporting has changed over time. Enforcement of fishery-specific licenses will mean year-round monitoring of individual vessels to determine whether they are fishing within the bounds of their licenses. Retained catch standards for each of the fisheries licenses would have to be determined and enforced on the individual license holder throughout the year. Recent Council consideration of Directed Fishing Standards acknowledged the problems with enforcing those standards. According to NMFS enforcement officers, fishery licenses have the potential to be as difficult and costly to enforce as would an IFQ system, perhaps even more difficult because more enforcement would be required at-sea and in-season. It is clear that monitoring and enforcement will be very expensive to be effective. Unless the license program reduces the number of vessels participating from that under the status quo, there will be little increased benefits to offset increased costs. Table 3.14 briefly compares potential enforcement aspects of umbrella or area licenses, fishery licenses, and IFQs.

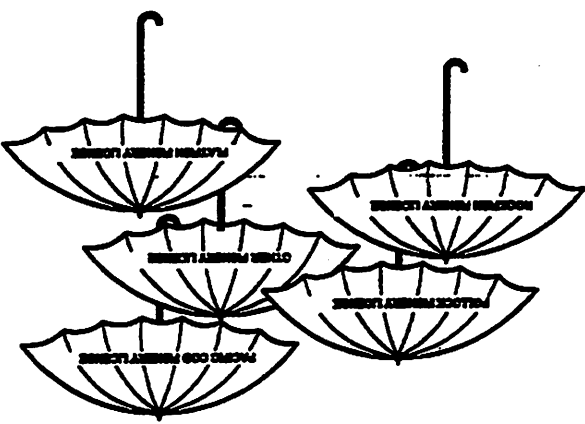


FIGURE 3.5B

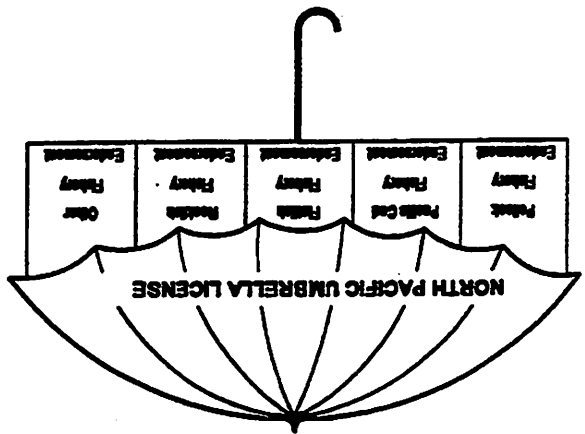


FIGURE 3.5A

system. Figure 3.5a depicts fishery endorsements under a North Pacific umbrella licenses, while Figure 3.5b shows a single layer of fishery licenses.

The example demonstrates a prominent characteristic of the license standard we have defined: it will always be the case that any vessel with a single fishery license (with the exception of a flatfish license) will not be required to have more than 51.5% of its total retained catch in its license category. (For a vessel with only

Pollock 10mt	P.Cod 20mt	POP 5mt	Thornyheads 5mt	O.Rockfish 5mt	O.Red Rfish 5mt	Total 196mt
Rock Sole 20mt	Squid 20mt	Rex sole 15mt				

Table 3.17

To understand how such a system might work, let's examine a potential scenario whereby a vessel has a license for the pollock fishery. Further assume that the vessel has just been boarded and it has been discovered that the vessel has a total of 171 mt of fish on board composed of the various species shown in Table 3.17 below. The vessel would not be cited in this case, because it has not exceeded the DFS for any individual species nor has it exceeded the FLS, even though its retained catch of pollock was just 52% of its total catch.

Directed Fishing Standards for Species Groups Within Fishery Licenses						
Fishery License Standards (FLS)	Pollock ≥20%	Pacific Cod ≥20%	Rockfish ≥20%	Flatfish ≥35%	Other ≥20%	
Rockfish DFS	POP ≥15%	Thornyheads ≥15%	Pelagic ≥15%	Other Red Rockfish ≥15%		
Flatfish DFS	Shortraker/Rougheye ≥15%		Sharpchin ≥15%	Northern ≥15%	Other ≥15%	
	R. Sole ≥20%	YF. Sole ≥20%	Flathead ≥20%	D. Water ≥20%	S. Water ≥20%	
Other Species DFS	G. Turbot ≥35%	Arrowtooth ≥35%	Rex sole 20%	Other Flat 20%		
	Atna Mack ≥20%	Sablefish ≥15%	Squid ≥20%	All Others ≥20%		

Table 3.16

Directed Fishing Standards species categories are more specific than the five fisheries license definitions used in this alternative. These would need to be aligned. One approach would be to create Fishery License Standards (FLS) which would aggregate species or species-groups used in the DFS to match the fishery licenses. Pollock and Pacific cod would remain defined as in the DFS, i.e., at 20%. All flatfish species including arrowtooth and turbot could be grouped together, as could all rockfish species including POP and thornyheads. The remaining species including sablefish, Atna mackerel, and squid would fall into the Other Fishery License. Flatfish, rockfish, and other species FLS could be set independently, but for discussion are assumed to be 20%. The FLS would limit the percentage amount of all species within that license group that may be retained by non-licensed vessels. Additionally, any catch of individual species within the fishery group could not exceed the DFS for that particular species, unless the vessel held a license for that fishery. Note that some adjustments of the DFS would have to occur. Such a license system is shown in Table 3.16.

As noted earlier, DFS are only applied to species which are closed to fishing. As an example, assume fishing is closed for flathead sole, and that the Coast Guard has boarded a vessel with the following catch on board: Pollock 40 mt, D.W. Flatfish 40 mt, Flathead sole 20 mt, Rex sole 21 mt. The vessel is not in violation because its bycatch percentage of flathead sole is below the DFS at 19.9% (i.e., $20 \div (40+40+21)$). If the rex sole fishery were also closed then the vessel would be in violation for both flathead and rex sole because the basis for determining bycatch has changed: flathead sole is 25% of the open species (i.e., $20 \div (40+40)$) and rex sole is 26% of the open fisheries, both of which exceed the 20% DFS for those species. The Coast Guard would determine that the vessel was engaged in directed fishing for both flathead sole and rex sole and could cite the vessel.

The difference between the DTS and the FLS/DFS system is the specificity in defining bycatch rates. The DTS requires bycatch rates for each target fishery. Under the FLS/DFS, bycatch rates were set uniformly for all fisheries. Obviously, there are pros and cons for each system. Primarily, there is a tradeoff between

Note the allowable bycatch rates are defined in terms of the amount of the target species on board							
Target	Pollock	P. Cod	Rockfish	Flatfish	O. Species	Bycatch Total	Target as a % of Total Catch
	100.00%	15.00%	5.00%	5.00%	5.00%	30.00%	76.9%
	20.00%	100.00%	5.00%	20.00%	20.00%	65.00%	60.6%
	10.00%	10.00%	100.00%	10.00%	20.00%	50.00%	66.7%
	10.00%	10.00%	10.00%	100.00%	20.00%	50.00%	66.7%
	10.00%	10.00%	10.00%	10.00%	100.00%	40.00%	71.4%

Table 3.18

An alternative way to define fishery licenses would be to specify acceptable bycatch rates of each non-licensed species (or Fishery Group) for each License type in a Defined Target System (DTS). This would allow more specificity when setting allowable bycatch rates. A hypothetical example of such a system is shown in the table below.

A Defined Target System for Fishery Licenses

One problem with using FLS as a standard for licenses is that DFS for a given bycatch species vary depending on the target species. For example, the allowable bycatch of sablefish in the pollock and Pacific cod fisheries is set at 1%, while in the rockfish fisheries it is 15%. For the FLS to work as outlined, bycatch allowances under DFS would have to be set consistently for each directed fishery. If this is something the Council would rather not do, then an alternative exists as defined below.

It should be pointed out that DFS would still be invoked for licensed operators when a particular species was closed. For example, if sablefish closes to directed fishing, then the only vessels directly affected would be those with licenses for the Other Species fishery. For these vessels, retained sablefish could no longer exceed a set percentage of the total of their catch of licensed species. Finally, it should be noted that the Regional Director would maintain the authority to declare any species a "prohibited" species during the season.

For vessels with multiple licenses, the same FLS would apply. For example, if a vessel had both a pollock license and a Pacific cod license, then it would be able to retain as much pollock and Pacific cod as it wished as long as the season remained open. With regard to retained catch of non-licensed species, the same formulas would hold. Specifically, the DFS would apply to all non-licensed species and the retained catch of each non-licensed fishery group (flatfish, rockfish, and other species) would have to remain below the FLS. The vessel depicted above would be able to retain an additional 6 mt (using 20% as the FLS, with 35% for flatfish or non-licensed species), 2 mt from each group, as long as the DFS were not exceeded. In general, it will always be true that vessels with multiple licenses will need a greater percentage of licensed species on board. The vessel with both pollock and Pacific cod licenses would now need at least 57.1% of its total retained catch to be pollock or Pacific cod. This would increase to 76.9% if FLS were set at 10%.

a flatfish license the requirement climbs to 56%. It should be noted that the actual percentage (51.5%) is a function of the allowable retention for non-licensed species. In general, the minimum allowable catch of the licensed species will never be required to be greater than a fixed percent of the total catch. That percentage will be equal to $1 \div [100\% + \sum \text{non-licensed } \%]$, in this case $1 \div 195\% = 51.5\%$. If the FLS were tightened to 10% for all fishery licenses, then single license vessels would have to ensure that the licensed species made up at least 71.4% (i.e., $1 \div 140\%$) of the total retained catch on board.

Table 3.14

Area or Umbrella Licenses	Fishery Licenses	IFQs
Pre-Season Enforcement Activities		
Each vessel will be issued a license stating areas of legal operation.	Each vessel will be issued a license stating the fisheries in which the vessel may participate. The license may also show the species for which the vessel does not have a license and the amounts on a percentage basis of those non-licensed species it may retain without violation.	Each IFQ recipient will be issued documentation showing the species and the absolute amount of each it may retain from a given area for the year.
At-sea Monitoring and Enforcement		
Vessels observed operating in the EEZ will be checked against license rolls. Vessels in violation will be subject to penalties. No boardings will be necessary to check for compliance.	All as to left. In addition, vessels may be boarded to see whether the retained species on board are within the vessel's licenses. Vessel compliance with the license may vary from tow to tow, therefore rules regarding the timeliness for compliance may have to be developed.	Same as umbrella licenses. In addition vessels may be boarded to see whether retained species and amounts are within remaining IFQ amounts. Determining violations is absolute; once a vessel exceeds its quota there is no way to come back within compliance.
Monitoring of Catch Reporting		
All catch reports will be monitored. Any catch reported from areas not within the vessel licenses will be subject to penalties.	Catch reports will be monitored for license violations. Rules will have to be developed determining which reports to use and the level of aggregation to check for violations; tow records, trip records, weekly reports, annual totals.	Catch reports will immediately show violations. Once an excess of a given species is reported the vessel is in violation. Rule determining the appropriate reports to use for determining IFQ catch will have to be developed.

Potential Target Fishery Definitions

NMFS now uses two types of "Target" fishery definitions: (1) Directed Fishing Standards, which are used to ensure that vessels do not fish for target species which are approaching or have exceeded the annual harvest quota (TAC), and (2) Observer Program/Vessel Incentive Program target fishery definitions, with which the NMFS determines level of observer coverage, and compliance to VIP standards.

The Directed Fishing Standards (DFS) are geared to prohibit vessels from "targeting" a species which has been closed to fishing. Because DFS are used to prevent bycatch in excess of the "unavoidable bycatch rate," they are defined in the negative. A vessel is not in violation unless it exceeds an applicable directed fishing standard for a species which is closed to fishing. It is technically incorrect to apply DFS for any species which is open at the time. For example, a vessel which is actually targeting on pollock while the pollock season is open, will never be "Directed Fishing" for pollock. Thus, using the DFS to define fishery licenses would mean that the DFS would be applied only to those species for which the vessel did not possess a license. In order to discuss the implications of this further, it will be necessary to describe the current DFS fully. These are shown in the table on the next page. The DFS, following the recent regulatory amendment, are defined the same regardless of FMP area or gear with the exception that some species or species groups are defined specific to the different FMPs.

Table 3.15 Current Directed Fishing Standards

Bering Sea and Aleutian Islands Directed Fishing Standards												
	Pollock	P. cod	Atka mackerel	Arrow tooth	Yellowfin	Other flatfish	Rock sole	Greenland turbot	Sablefish	Aggregated rockfish	Squid	Other
Pollock	na	20	20	35	20	20	20	20	1	1	5	na
P. cod	20	na	20	35	20	20	20	20	1	1	5	20
Atka mackerel	20	20	na	35	20	20	20	20	1	1	5	20
Arrowtooth	0	0	na	na	0	0	0	0	0	0	0	0
YFS	20	20	20	35	na	35	35	35	1	1	5	20
Other flatfish	20	20	-20	35	na	35	35	35	-1	-1	5	20
Rocksole	20	20	20	35	35	35	35	35	1	1	5	20
Greenland turbot	20	20	20	35	20	20	20	20	na	15	15	20
Sablefish	20	20	20	35	20	-20	-20	-20	na	15	15	20
Rockfish?	20	20	20	35	20	20	20	20	35	15	15	20
Squid	20	20	20	35	20	20	20	20	1	1	5	na
Other	20	20	20	35	20	20	20	20	1	1	5	na

Gulf of Alaska Directed Fishing Standard												
	Pollock	P. cod	Deepwater flatfish	Rock sole	Flathead sole	Shallow water flatfish	Arrow tooth	Sable fish	Aggregated rockfish	DSR Southeast	Atka mackerel	Other species
Pollock	na	20	20	20	20	20	20	35	1	5	10	20
P. cod	20	na	20	20	20	20	20	35	1	5	10	20
Deep flatfish	20	20	na	20	20	20	20	35	15	15	1	20
Rock sole	20	20	20	na	20	20	20	35	15	15	1	20
Flathead sole	20	20	20	20	na	20	20	35	15	15	1	20
Shallow flatfish	20	20	20	20	20	na	20	35	1	5	10	20
Arrowtooth	0	0	0	0	0	0	0	na	0	0	0	0
Sablefish	20	20	20	20	20	20	20	35	na	15	1	20
Rockfish?	20	20	20	20	20	20	20	35	15	15	1	20
DSR S.E. Outside	20	20	20	20	20	20	20	35	15	15	na	20
Atka mackerel	20	20	20	20	20	20	20	35	1	5	10	na
Other species	20	20	20	20	20	20	20	35	1	5	10	na
Aggregated non-groundfish species	20	20	20	20	20	20	20	35	1	5	1	20

To determine whether a vessel is in violation, i.e., it is "directed fishing" for a closed species, divide the amount of the particular closed species into the total amount of all species which are currently open, i.e., if species W and X are closed and species Y and Z are open then the bycatch % of X is checked against the DFS of X as follows: $\text{Bycatch\% of X} = \frac{X_{\text{mt}}}{Y_{\text{mt}} + Z_{\text{mt}}}$. Note that the catch of W is immaterial to the consideration of the bycatch of X.

'Includes other rockfish, other red rockfish-Bering Sea, Pacific ocean perch, sharpchin/northern-Aleutian Islands, and shortraker/rougheye.

'Includes Pacific ocean perch, shortraker/rougheye, other rockfish, northern rockfish, pelagic rockfish, and thornyheads.

complexity and precision. With the benefit of added precision under the DTS comes greater complexity for fishers, regulators, and enforcement officers. This same complexity was cited as the primary reason for redefining DFS in 1994. [DFS EA/RIR, 1994].

Discards, Full Utilization, and Full Retention under Fishery Licenses

The State of Alaska has proposed linking the license limitation program to a full-retention mandate. This section will discuss discard issues as outlined in Section 3.1.4 and their relationship to fishery licenses.

As Section 3.1.4 notes, there are three causes of economic discards: (1) there is a race for fish, perhaps resulting from imposing TAC or PSC limits, or from behavioral characteristics of particular species; (2) catching capacity exceeds processing capacity, and (3) the catch consists of fish of different relative value. License limitation does not appear to address any of the three causal-factors consistently. Therefore, license limitation with or without fishery endorsements cannot be expected to significantly reduce economic discards.

As discussed above, fishery endorsements will require some system of directed fishing standards on individual vessels. This will undoubtedly mean greater amounts of regulatory discards if the vessel is to remain legal. It has been that proposed full-retention be mandated as part of the license limitation program. Under a system of fishery licenses and fishery license standards of the type discussed above, it would be virtually impossible to remain within the bounds of both the license and the full-retention mandate unless: (1) each vessel was licensed to participate in every fishery, or (2) fishing patterns and practices changed dramatically from those under the status quo. If the first scenario were true, there would be no point in having fishery endorsements. The second scenario is one of the results intended by the proposers of the full-retention mandate, which is being analyzed fully on a separate track.

General Licenses with Endorsements for Each Fishery and FMP Area (Option \$500,000). This alternative combines the concepts of FMP area endorsements and fishery endorsements. Recipients would be allowed to participate in a given fishery within an FMP area only if they qualified in that FMP for that particular fishery. As discussed above, fishery licenses will have to be defined either using the FLS/DFS system or the DTS. If the Council wished to specify different allowable bycatch rates by FMP, either the FLS or the DTS could be used. Again, the trade-off between precision and complexity should be noted.

As with previous elements within this component, there are several ways to configure the system. Figure 3.6a depicts a three layer system with a North Pacific Umbrella License, an FMP area general license, and FMP

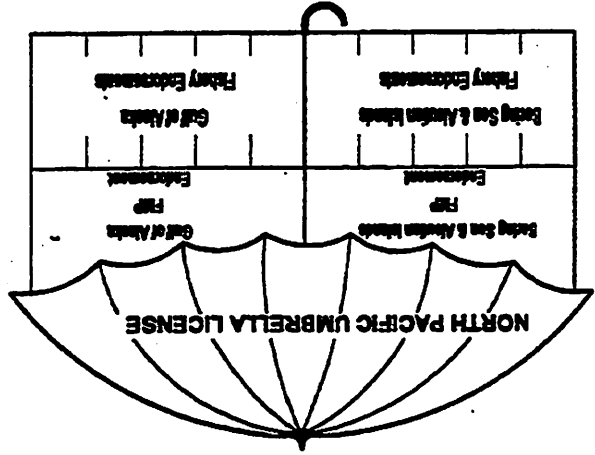


FIGURE 3.6A

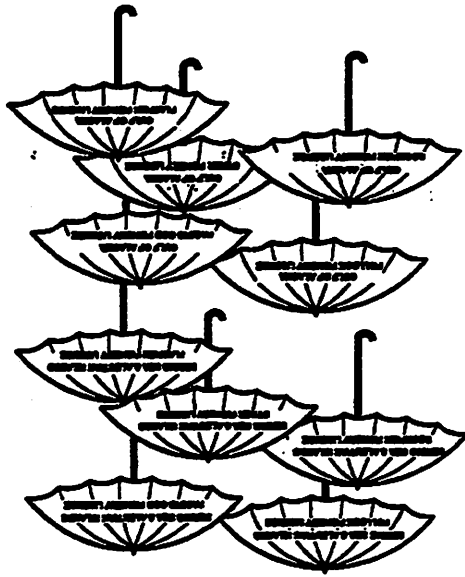


FIGURE 3.6B

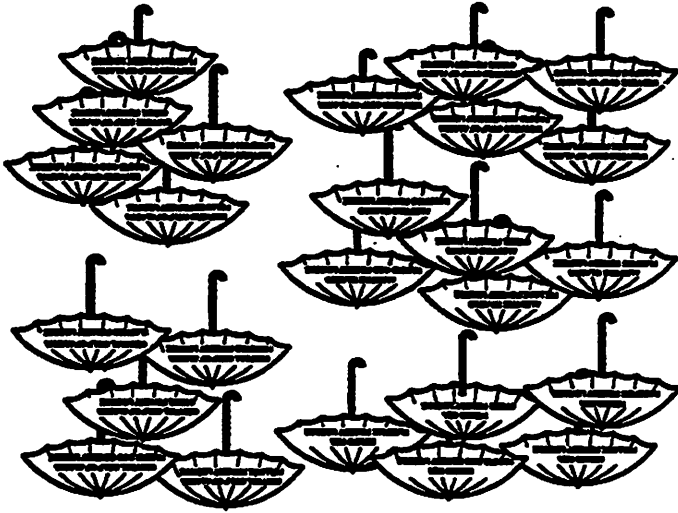


FIGURE 3.7b

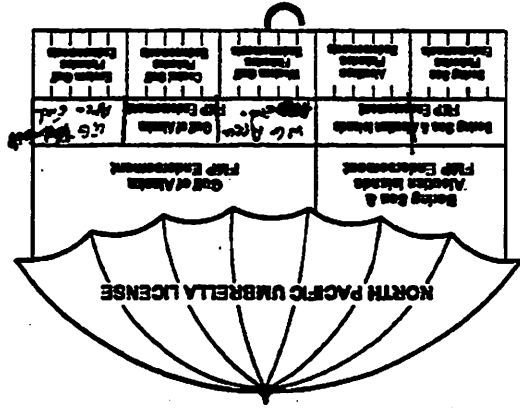


FIGURE 3.7a

General Licenses with Endorsements for Each Fishery and FMP Sub-Areas (Option 600,000). This alternative has greater potential to restrict mobility of the fleet and future expansion of capacity than any previous alternative. Given the dynamics of fish populations and seafood markets, this may not necessarily

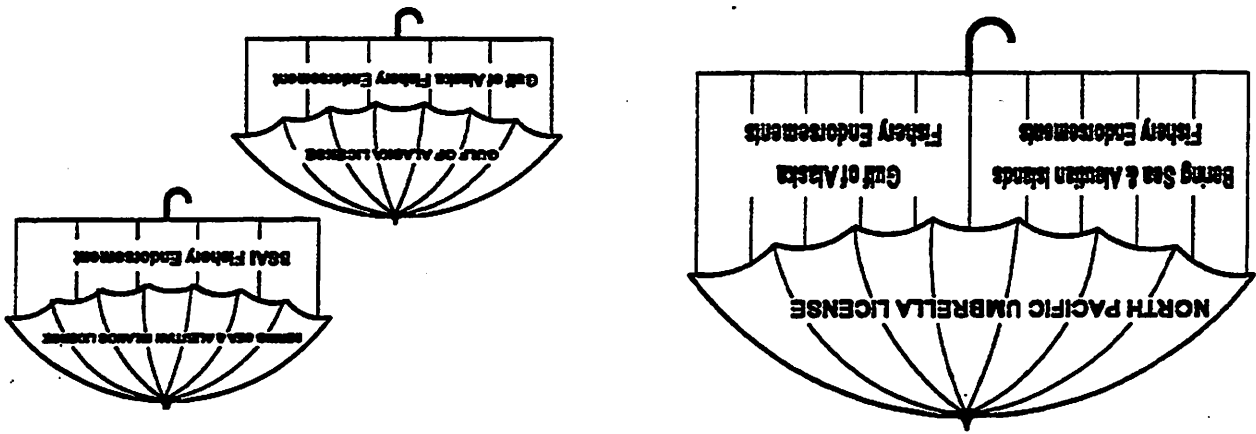


FIGURE 3.6d

FIGURE 3.6c

Assuming a multi-layered system under a North Pacific umbrella license, FMP specific fishery licenses will be more restrictive in terms of mobility and future expansion of fleet mobility than any of the previous options. They will also be more complicated in terms of implementation, monitoring, and enforcement than any of the previous alternative elements. It is the fishery-specific nature of the license which adds the greatest amount of complexity.

Alternatively, Figure 3.6b depicts FMP specific fishery licenses without any additional layers. Figure 3.6c drops the middle layer of endorsements creating FMP specific fishery endorsements under a North Pacific umbrella license. Finally, Figure 3.6d shows a system which drops the North Pacific umbrella, and creates FMP umbrella licenses with FMP specific fishery endorsements. As with earlier elements, the configuration of the license system in terms of the number of layers does not really impact the number of licenses issued, but rather the transferability and the potential number of vessels that may enter the fisheries in the future. These issues will be discussed in more detail in Section 3.2.7.

be a positive attribute. It also would be most difficult and expensive to implement, monitor, and enforce. Configurations 700,000 and 800,000 restrict mobility and flexibility even more because their licenses are more specific.

As with the other elements, the number of layers embedded in the system is an important variable, particularly with regard to transferability and ultimately the number of vessels that may enter the fishery following implementation. Figure 3.7a depicts a four-layer system with a North Pacific Umbrella License, FMP area endorsements, sub-area endorsements and finally sub-area specific fishery endorsements. Alternatively, Figure 3.7b uses only sub-area specific fishery licenses. Figure 3.7c depicts a system which drops the layer of sub-area endorsements while keeping the sub-area specific fishery endorsements. Figure 3.7d drops the FMP endorsements keeping the North Pacific umbrella licenses, sub-area endorsements, and sub-area specific fishery endorsements. Figure 3.7e drops the North Pacific Umbrella, while keeping the FMP umbrella license with sub-area endorsements and sub-area specific fishery endorsements. Figure 3.7f drops the sub-area layer from the previous configuration. Finally, Figure 3.7g uses a sub-area umbrella license with sub-area specific fishery endorsements.

FIGURE 3.7C

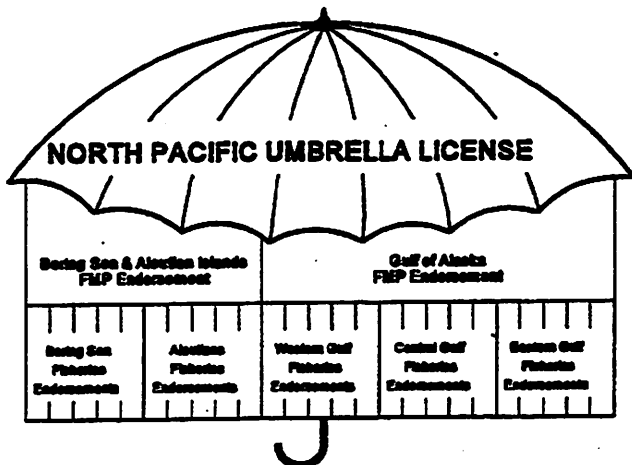


FIGURE 3.7D

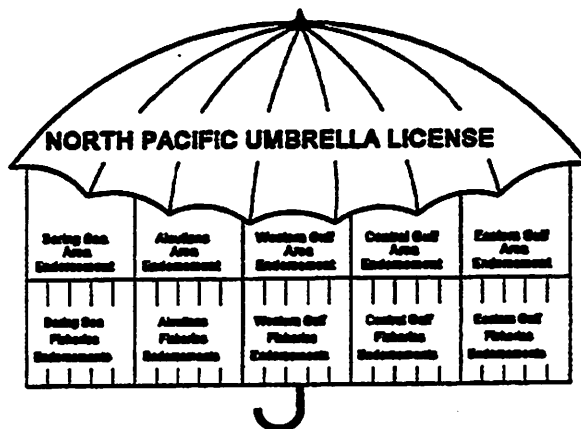


FIGURE 3.7E

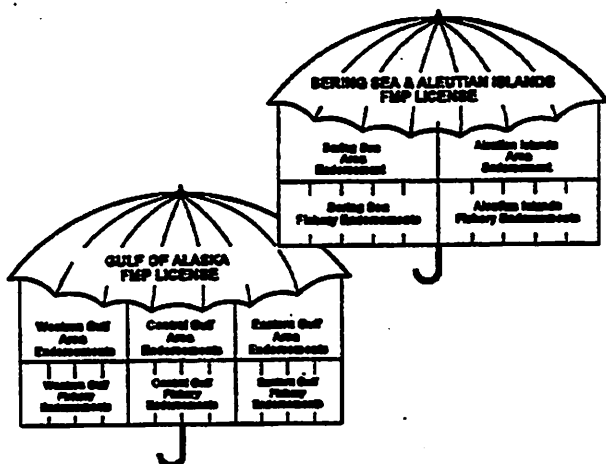
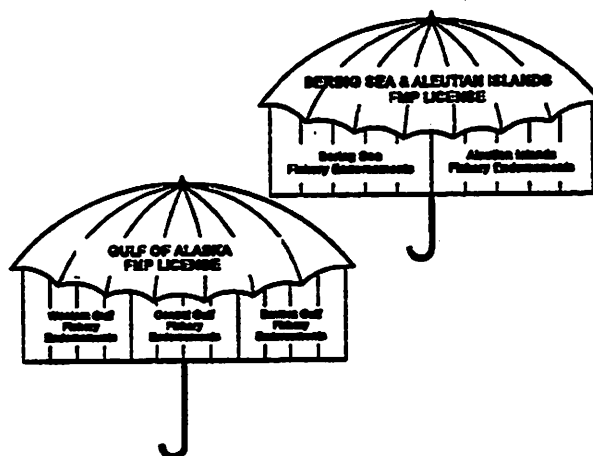


FIGURE 3.7F



This system would be more restrictive to fleet mobility and flexibility than a more general fishery license system particularly if species endorsements were required. In that case, fewer vessels would have the right to pursue a species than under the more general system. Another drawback with a more specific species license would come in the development of standards for allowable bycatch under the different licenses, (see

Fisheries For Which Licenses would be Issued Under License Option 700,000 and 800,000		Bering Sea and Aleutian Island Fishery Licenses			GOA Fishery Licenses	
Yellowfin Sole	Turbot	Rockfish	Arrowtooth	Sablefish	Rockfish	Flathead Sole
Other Flatfish	Pollock	Rockfish	Rockfish	Squid (All Gears)	Deep Water Flats	Shallow Water Flats
Pollock	Pollock	Pacific Cod	Alaska Mackerel	Alaska Mackerel	Pollock	Pacific Cod
						Turbot/Arrowtooth

Table 3.20

Conspicuously absent are: (1) arrowtooth flounder fisheries in both FMP areas, (2) rockfish, flathead sole, and turbot fisheries in the GOA, and (3) the sablefish trawl fishery in the Bering Sea. Also, the BSAI squid fishery is changed from being non-gear specific (open to both trawling and fixed gear) to a fixed gear only fishery. These omissions have several ramifications. First, reducing the number of licensed fisheries will tend to reduce the complexity of the program. Adding the fisheries back in would result in the licensed fisheries shown in Table 3.20.

Fisheries For Which Licenses would be Issued Under License Option 700,000 and 800,000		Bering Sea and Aleutian Island Fishery Licenses			GOA Fishery Licenses	
Pollock	Other Flatfish	Rockfish	Squid (Fixed Gear)	Rocksole	Deep Water Flats	Shallow Water Flatfish
Pollock	Pollock	Yellowfin Sole	Alaska Mackerel	Yellowfin Sole	Pollock	Pacific Cod
						Alaska Mackerel

Table 3.19

Licenses for Specified Fisheries by FMP Sub-Areas (Option 700,000). This element is very similar to the previous element, including the depictions in Figures 3.7a-g showing the different potential layers of endorsements. The main difference is that fisheries are defined more precisely than in the earlier options. Additionally, several fisheries currently managed under the Groundfish FMPs would not be included under the license system. Table 3.19 below shows the fishery defined under this element.

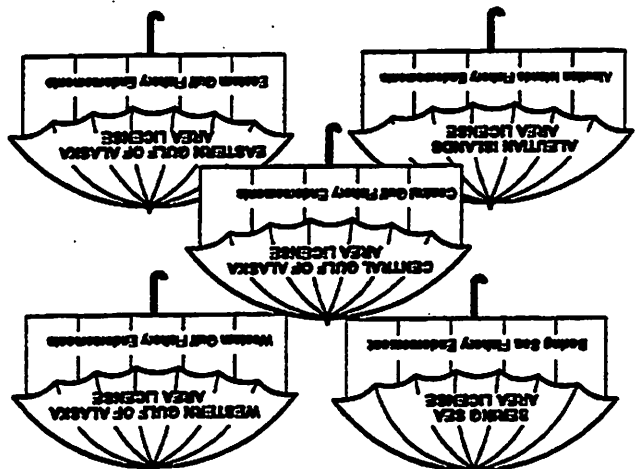


FIGURE 3.70

Nearly all of the harvest is taken by 15 vessels and 9 companies. Of the 237 vessels that participated in the rockfish fishery in 1993, 15 accounted for 99% of the total catch, with the top four vessels capturing 51% of the total catch. Nine companies accounted for 98% of the total catch and the top four garnered 80%. These companies and vessels will have to curtail their fisheries if rockfish is eliminated as directed fisheries. The net wholesale value of the rockfish catch totals about \$14 million. *Sebastes* bycatch adds another \$2.6 million to that net wholesale value.

The shore based catch was dominated by trawlers also. They took 88% of the harvest and 54% of the value, with pollock and Pacific cod being their primary targets. Shore-based longliners depended heavily on sablefish; rockfish were a minimal part of the harvest or ex-vessel revenue.

The following catch statistics refer only to catch totals associated with vessels which harvested rockfish, flathead sole, and arrowtooth flounder in the Gulf for the 1993 period. Catcher processors caught over 88% of the rockfish and 24% of the demersal shelf rockfish harvested in 1993. One hundred percent of the flathead sole and over 80% of Pacific cod, pollock, and shallow water flatfish were harvested by shore-based catcher vessels. The rockfish fishery in the Gulf contributes 36% of the weight and ex-vessel value of the catcher-processor fishery, but only 1% of the ex-vessel value for shore-based vessels. Trawlers account for 87% of the catcher processor harvest and 58% of their ex-vessel value, and pollock and rockfish are their primary species. Catcher/processor longliners mainly target Pacific cod and sablefish. The longline fishery for rockfish amounted to less than 1% of the total harvest or ex-vessel revenue in the Gulf of Alaska.

The economic ramifications of excluding *Sebastes* rockfish, flathead sole, and arrowtooth flounder in the Gulf of Alaska are summarized in the following discussion. Information and considerations leading to these conclusions are presented more fully in Appendix VI. A larger fleet fishes on rockfish (includes Pacific ocean perch, shortraker/rougheye, other slope, Northern, pelagic shelf, and thornyheads for purposes of this discussion) in the Gulf of Alaska than on either flathead sole or arrowtooth flounder. The rockfish fleet in 1993 had 22 catcher/processors (15 trawlers and 7 longliners) and about 212 shore-based catcher vessels. The shore-based fleet included 164 longliners, 5 trawlers, and 43 vessels using other gear.

Exclusion of *Sebastes* Rockfish, Flathead Sole, and Arrowtooth Flounder in the GOA

Potential benefits of converting the BSAI squid fishery to fixed-gear only are also difficult to assess. Currently, the fixed gear take of squid is less than 0.3% of the total squid harvest in an average year. Additionally, the squid TAC has not been fully taken. The restriction proposed would guarantee future access to fixed gear fishers. The following section discusses more fully some of the potential benefits and costs of eliminating these fisheries, with particular emphasis on the Gulf rockfish fisheries.

Potential benefits of eliminating the arrowtooth fisheries could be found in the potential elimination of halibut bycatch for a fishery with a low economic return per halibut caught. Potential benefits of eliminating the flathead sole fishery may be along the same lines. Potential benefits of eliminating the BSAI trawl-sablefish fishery are somewhat difficult to find, unless it is making more sablefish available to the fixed gear IFQ fishery. In that case, a more appropriate approach may be to amend of the BSAI FMP to change the trawl/fixed gear allocation of sablefish.

Second, if the species omitted were to remain under open access, they probably will be harvested by both licensed and non-licensed vessels. If the fisheries are in fact over-capitalized, leaving some fisheries open will do little to protect them which could lead to additional problems. In the case of the arrowtooth fishery, under-utilization has been caused by the lack of markets and by high bycatch rates of halibut. If this fishery were the only opportunity for non-licensed vessels then it would be likely that they would fish rather indiscriminately with regard to halibut bycatch. This could cause both the unlicensed arrowtooth fishery and other licensed fisheries to be closed early.

the discussion on FLS and DTS above) and complexities in the regulations and enforcement of the system.

Some bycatch of rockfish will be taken even if not provided for with a specific license in the GOA. Because rockfish is such a valuable species, it is possible that a significant number of all vessels operating in the GOA might 'top off' with rockfish while prosecuting other directed groundfish fisheries. With the current 15% directed fishing standard, and using 1994 TACs, as much as 30,000 mt of rockfish could be taken as bycatch, far exceeding actual TACs available for rockfish. This, although theoretically possible, is highly unlikely given the halibut bycatch rates in other fisheries where rockfish are found.

Other Considerations

An alternative to deleting subject species from licenses would be to issue licenses for them, but make them bycatch only at the appropriate allowable retention rate. The rationale for this approach would be to avoid contentious allocational decisions in the future, if it is determined that directed fishing could resume on these species. For example, if problems are overcome with arrowtooth flounder flesh-consistency, or if it becomes a viable surimi base, there may be incentive for fishermen and fisheries managers to begin directed fishing on these species. If licenses are issued up front, as part of the current CRP process, the field of players in these fisheries will already be determined, thereby simplifying the transition. This is simply an alternative approach if the Council determines that directed fishing on these species is not a desirable practice at this time.

An additional factor, when considering deletion of these species from directed fishing, is the potential impact on halibut bycatch in the GOA. Directed rockfish fisheries have, in the past, accounted for a significant portion of the overall 2,000 mt halibut PSC cap in the GOA. From 1990 through 1993, the amount of halibut bycatch mortality has been 768 mt, 789 mt, 486 mt, and 266 mt respectively. The lower rates in 1993 may be a result of a combination of factors including the delay of the directed rockfish fisheries until July 1, lower amounts of effort on these species, and lower overall TACs for these species. In any event, there are potential halibut bycatch mortality savings associated with the elimination of directed fisheries for rockfish. These savings may impact the extent to which other fisheries are fully prosecuted, depending upon the extent to which the halibut PSC cap is a constraining factor for the other fisheries. It should be noted however that the next best opportunity for the displaced vessels may be deepwater flatfish, which also has a high bycatch of halibut. If more effort is put into these or other flatfish fisheries then any savings of halibut bycatch may be lost.

If it is assumed that species not specified in the license program will no longer have directed fishing, then we can conclude that this element will be less likely to lead to increased overall utilization of the fishery resources. For the species included in the program, the increased specificity of the fishery definitions will make it the most restrictive of the elements examined. The precision which makes this a restrictive program also leads to a very complex system for fishers, administrators, and enforcement officers.

A final issue worth mentioning is the proposal to make squid fisheries in the BSAI a fixed gear only fishery. Currently, the TAC for squid is 3,110 mt, with only 224 mt taken through mid-August of this year. All 224 mt was taken by trawl gear and virtually all of it was discarded. In 1993, 683 mt was taken from an available DAP apportionment of 1,700 mt. Again, this was all taken by trawl gear and most (approximately 85%) was discarded. Although designation of this fishery to fixed gear only would not appear to impose hardships or significant costs on the trawl fleet, such designation has no apparent benefits either, unless fixed gear fisheries are developed which target on, and retain, these squid.