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North Pacific Fishery Management Council Information Needs

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Ecosystem information that is made available to the NPFMC falls within two general areas, stock assessment and related ecosystem information contained therein annually and explicit requests from the Council to AFSC for research or analysis to address pressing management concerns.

Stock assessment:

Annual stock assessments provided to the NPFMC from the AFSC include environmental and ecosystem information incorporated in a variety of ways. Notable examples include the EBS pollock situation in 2008. In 2008, after period of biomass decline, the Council reduced the quota from the max permissible ABC (1.17 million t) to 1.0 million t due to concerns regarding poor recruitment indices as well as uncertainty in the projections for the future based upon changing environmental conditions. Other applications where environmental components are used in the assessment include factors affecting the availability of yellowfin sole to survey gear. Also, the control rule for pollock, Pacific cod, and Atka mackerel include a lower bound of biomass (20% of unfished) which if attained, would curtail directed fishing for those species.

An ecosystem considerations appendix has been produced as an appendix to the GOA and BSAI overall Stock Assessment and Fishery Evaluation documents since 1995. Ecosystem considerations have been included in single species stock assessments since the mid-2000s. An ecosystem assessment has been produced since 2005and ecosystem report cards are now employed to summarize trends and key indicators in the EBS and GOA and are being developed for the AI, the arctic as well as for BSAI crab and for halibut. All of this information is presented to and considered by the Council on an annual basis prior to TAC-setting.

Arctic FMP

AFSC staff was integral to the analyses and assessments which comprise much of the Arctic FMP that was adopted in 2009. This includes the development of reference points for the three main arctic species (snow crab, arctic cod and saffron cod) included in that FMP. As a direct result of these analyses the OY in the Arctic was reduced to 0.

Fishery Ecosystem Plans

AFSC staff were major developers of information and synthesis the development of a Fishery Ecosystem Plan (FEP) for the Aleutian Islands and will be involved in the development of a new FEP for the Bering Sea. Some of the lessons learned from the process of the AI FEP development include a key finding that interactions and relationships within the AI are distinct from Bering Sea and GOA, that information included has been directly used in discussions of area-specific stock assessment, analyses and the SSL EIS. Development of the FEP also began the process of the AI ecosystem assessment and selection of key indicators as well as the creation of a multi-agency Alaska Marine Ecosystem Forum. Some

limitations however are the lack of direct management outcomes, that information is frequently employed in an ad hoc manner. As development of a new FEP proceeds, consideration should also be given to provide a clear pathway for explicit information feed into the Council process.

Surveys related to changing oceanographic conditions and fishing pressure

AFSC staff have been responsive to surveys requested by the Council in order to inform specific management objectives. A survey was conducted in the Northern Bering Sea in order to be responsive to concerns that under warming conditions the fishing fleet may move into previously unfished area. This survey helped to inform the development of the Northern Bering Sea Research Area and led to the conclusion that limited interest and fishery impacts were occurring.

In response to major management discussions regarding the potential fishing effect on corals in canyons across the Bering Sea slope, the AFSC conducted a series of surveys on these canyons to document coral populations. Survey data have been presented several times to the Council and continues to be informative in Council decision-making for these regions.

Salmon bycatch stock of origin information

In response to ecosystem changes and fluctuations both in salmon oceanic abundance, and co-location with target species which impacts fishing operations, AFSC geneticists have provided stock of origin estimates for Chinook and chum salmon. Fisheries for which stock of origin information on these bycaught salmon include the Bering Sea pollock fishery and the GOA pollock fishery, GOA flatfish fisheries and GOA rockfish fisheries. These stock composition estimates are annually presented to the Council as well as employed in analyses of proposed management changes in these fisheries.