

Fluharty framework	North Pacific Fishery Management Council FMPs / managed fisheries					
	BSAI, GOA Groundfish	BSAI Crab	Alaska Scallop	Alaska Salmon	Arctic	Halibut
1. Cease overfishing and develop rebuilding plans for overfished species.	Most stocks are assessed annually; FMP establishes a maximum fishing mortality threshold (OFL control rule) annually; A stock is considered overfished if biomass drops below MSST	Each stock is assessed annually, with OFL and ACL compared to previous year's catch; A stock is considered overfished if biomass drops below MSST; Rebuilding plans in place as required for BS tanner crab, BS snow crab, St. Matt's blue king crab, and Prib's blue king crab	FMP defines overfishing as a fishing rate in excess of the natural mortality rate, and provides rationale for why sufficient conservatism is built into establishing an annual OY cap (equal to MSY) of 1.24 million lbs.	FMP establishes an MSY control rule, a maximum fishery mortality threshold, and MSST; If a stock or stock complex is declared overfished or if overfishing is occurring, Council will request that the State of Alaska assess the factors leading to the decline and report to the Council the management measures the State will implement to prevent overfishing and rebuild the fishery	Management policy is to prohibit all commercial harvests of fish until sufficient information is available to support the sustainable management of a commercial fishery; FMP explains that no stock assessments have been conducted for the target stocks	Up to IPHC; Council only addresses allocation
2. Delineate extent of ecosystem/interactions.	Ecosystem characteristics are assessed annually in the Ecosystem Considerations appendix to the SAFE report; Programmatic SEIS (2004) analyzed impacts on prohibited species, forage fish, non-specified species, habitat, seabirds, and marine mammals; Ecosystem-level variables analyzed were pelagic forage availability, removal of top predators, introduction of non-native species, energy removal, energy redirection, species diversity, functional diversity (in terms of trophic relationships and structural habitat), and genetic diversity	FMP identifies predators and biological associations but doesn't have an explicit section on ecosystem interactions	FMP has a three-sentence section on ecological relationships: "Scallop predators have not been well studied. Scallops are likely prey to various fish and invertebrates during the early part of their life cycle. Flounders are known to prey on juvenile weathervane scallops, and seastars may also be important predators."	Not explicitly addressed in FMP	FMP describes physical, biological, and human ecosystem characteristics as well as the influence of climate change	No FMP exists because halibut are managed under the Northern Pacific Halibut Act rather than the Magnuson-Stevens Act; Council only addresses halibut allocation issues

Fluharty framework	North Pacific Fishery Management Council FMPs / managed fisheries					
	BSAI, GOA Groundfish	BSAI Crab	Alaska Scallop	Alaska Salmon	Arctic	Halibut
3. Develop a conceptual model of the foodweb	Not in FMP	Not in FMP	Not in FMP	Not in FMP	Not in FMP	??
4. Describe habitat needs of different life history stages of animals and plants in the “significant foodweb” and develop conservation measures	FMP includes habitat descriptions and EFH designations for each managed species by life stage where sufficient information exists; Identifies predators and biological associations; Describes EFH conservation measures adopted by the Council	FMP includes habitat descriptions and EFH designations for each managed species by life stage where sufficient information exists; Identifies predators and biological associations; Describes EFH conservation measures adopted by the Council	FMP includes an EFH designation for weathervane scallop late juveniles and adults; Describes EFH conservation measures adopted by the Council; Very little food web information (see #2 above)	FMP includes habitat descriptions and EFH designations for each managed species by life stage where sufficient information exists; Identifies predators and biological associations; Describes EFH conservation measures adopted by the Council	FMP includes EFH designations for Arctic cod, saffron cod, and snow crab by life stage where sufficient information exists; Describes habitat for several ecosystem component species	??
5. Calculate total removals – including incidental mortality and relate them to standing biomass, production, optimum yields, natural mortality and trophic structure	FMP provides mechanisms for setting and apportioning TAC and prohibited species catch limits	FMP provides mechanisms for setting TAC and GHL; For stock assessment purposes, “catch” includes all fishery removals, including retained catch and discard losses, for those stocks where non-target fishery removal data are available	FMP explains basis for setting OY	FMP’s MSY escapement goals account for biological productivity and ecological factors, including consumption of salmon by a variety of marine predators	FMP discusses the small commercial and subsistence fisheries that occur in state waters but does not quantify removal levels	Up to IPHC; Council only addresses allocation
6. Does council assess how uncertainty is characterized and define what buffers against uncertainty are included in management actions	Uncertainty is factored into status determinations, with OFL and ABC estimated annually using the tier system based on availability of information	Uncertainty is factored into status determinations, with OFL and ABC estimated annually using the tier system based on availability of information	Not explicitly (?)	Not explicitly (?)	FMP acknowledges substantial uncertainty including the absence of stock assessments – hence the policy to prohibit commercial harvests until sufficient information is available	Up to IPHC

Fluharty framework	North Pacific Fishery Management Council FMPs / managed fisheries					
	BSAI, GOA Groundfish	BSAI Crab	Alaska Scallop	Alaska Salmon	Arctic	Halibut
7. Has council set an ecosystem goal[s] and developed indices of ecosystem health as targets for management?	Not explicitly (?)	FMP includes an explicit Habitat Objective “to support king and Tanner crab populations and maintain a healthy ecosystem” but no associated indices of ecosystem health	Not explicitly (?)	Not explicitly (?)	“The Council’s management policy for the Arctic EEZ is an ecosystem-based management policy that proactively applies judicious and responsible fisheries management practices, based on sound scientific research and analysis, to ensure the sustainability of fishery resources, to prevent unregulated or poorly regulated commercial fishing, and to protect associated ecosystems for the benefit of current users and future generations.”	Up to IPHC; Council only addresses allocation
8. Describe long term monitoring data and how they are used.	Reflected in SAFE Ecosystem Considerations appendix (?)	??	??	??	FMP acknowledges significant data gaps	??
9. Assess the ecological, human and institutional elements of the ecosystem which most significantly affect fisheries, and are outside Council/NMFS jurisdiction and define a strategy to address those influences.	FMP identifies non-fishing activities that may adversely affect EFH for managed species and recommends conservation measures	FMP identifies non-fishing activities that may adversely affect EFH for managed species and recommends conservation measures	FMP identifies non-fishing activities that may adversely affect EFH for managed species and recommends conservation measures	FMP identifies non-fishing activities that may adversely affect EFH for managed species and recommends conservation measures	FMP identifies non-fishing activities that may adversely affect EFH for managed species and recommends conservation measures	Up to IPHC; Council only addresses allocation
10. Is there a Fishery Ecosystem Plan/ Fishery Management Plan employing EBFM?	FMP employs many aspects of EBFM	FMP employs many aspects of EBFM	Not exactly (?)	Not exactly (?)	FMP employs many aspects of EBFM	No

Fluharty framework	North Pacific Fishery Management Council FMPs / managed fisheries					
	BSAI, GOA Groundfish	BSAI Crab	Alaska Scallop	Alaska Salmon	Arctic	Halibut
11. Does the Council have a lead entity designated to advance EBFM in the Council process?	Not explicitly but the Ecosystem Committee is exploring this	Not explicitly but the Ecosystem Committee is exploring this	Not explicitly but the Ecosystem Committee is exploring this	Not explicitly but the Ecosystem Committee is exploring this	Not explicitly but the Ecosystem Committee is exploring this	Not for halibut
12. Are ecosystem models developed and available for use in the Council process?	Food web models are available	No (?)	No (?)	No (?)	No	No (?)
13. Are decision support tools for EBFM / trade-off analysis employed [e.g., management strategy evaluation, risk assessments, ecosystem indicators, scenarios]?	Not exactly (?)	Not exactly (?)	Not exactly (?)	Not exactly (?)	No	No (?)
14. To what extent are spatial management tools applied [besides EFH measures above] to accomplish EBFM?	FMP employs time, area, and gear restrictions and has spatial management areas for a variety of purposes (bycatch reduction, habitat protection, avoiding conflicts with subsistence fisheries, etc.)	FMP provides for closed areas to protect subsistence fisheries, protect habitat for target or non-target species, prevent conflicts between fisheries, and avoid navigational hazards	FMP provides for closed areas to minimize bycatch and protect habitat	FMP authorizes commercial fishing for salmon in the East Area, delegates the regulation of commercial and sport fisheries in the East Area to the State of Alaska, and prohibits commercial fishing in the West Area	No commercial fishing for target species is authorized in the Arctic Management Area, and thus no spatial restrictions are specified	IPHC uses management areas
15. Other indicators of EBFM implementation	For BSAI groundfish species identified as key prey of Steller sea lions (walleye pollock, Pacific cod, Atka mackerel), directed fishing is prohibited in the event that the spawning biomass of such a species is projected in the stock assessment to fall below B20% in the coming year	FMP summarizes measures to minimize crab bycatch in other fisheries	FMP discusses measures to limit bycatch of prohibited species including salmon, halibut, king crab, Tanner crab, and herring but doesn't appear to discuss bycatch of scallops in other fisheries	??	??	??