

# NMFS's National Standards Guidelines

50 C.F.R. 600.310 et seq.

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## **Sec. 600.310 National Standard 1--Optimum Yield.**

(a) Standard 1. Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the U.S. fishing industry.

(b) General.

(1) The guidelines set forth in this section describe fishery management approaches to meet the objectives of National Standard 1 (NS1), and include guidance on:

- (i) Specifying maximum sustainable yield (MSY) and OY;
- (ii) Specifying status determination criteria (SDC) so that overfishing and overfished determinations can be made for stocks and stock complexes that are part of a fishery;
- (iii) Preventing overfishing and achieving OY, incorporation of scientific and management uncertainty in control rules, and adaptive management using annual catch limits (ACL) and measures to ensure accountability (AM); and
- (iv) Rebuilding stocks and stock complexes.

(2) Overview of Magnuson-Stevens Act concepts and provisions related to NS1--

(i) MSY. The Magnuson-Stevens Act establishes MSY as the basis for fishery management and requires that: The fishing mortality rate does not jeopardize the capacity of a stock or stock complex to produce MSY; the abundance of an overfished stock or stock complex be rebuilt to a level that is capable of producing MSY; and OY not exceed MSY.

(ii) OY. The determination of OY is a decisional mechanism for resolving the Magnuson-Stevens Act's conservation and management objectives, achieving a fishery management plan's (FMP) objectives, and balancing the various interests that comprise the greatest overall benefits to the Nation. OY is based on MSY as reduced under paragraphs (e)(3)(iii) and (iv) of this section. The most important limitation on the specification of OY is that the choice of OY and the conservation and management measures proposed to achieve it must prevent overfishing.

(iii) ACLs and AMs. Any FMP which is prepared by any Council shall establish a mechanism for specifying ACLs in the FMP (including a multiyear plan), implementing regulations, or annual specifications, at a level such that overfishing does not occur in the fishery, including measures to ensure accountability (Magnuson-Stevens Act section 303(a)(15)). Subject to certain exceptions and circumstances described in paragraph (h)

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of this section, this requirement takes effect in fishing year 2010, for fisheries determined subject to overfishing, and in fishing year 2011, for all other fisheries (Magnuson-Stevens Act section 303 note). "Council" includes the Regional Fishery Management Councils and the Secretary of Commerce, as appropriate (see Sec. 600.305(c)(11)). (iv) Reference points. SDC, MSY, acceptable biological catch (ABC), and ACL, which are described further in paragraphs (e) and (f) of this section, are collectively referred to as "reference points."

(v) Scientific advice. The Magnuson-Stevens Act has requirements regarding scientific and statistical committees (SSC) of the Regional Fishery Management Councils, including but not limited to, the following provisions:

(A) Each Regional Fishery Management Council shall establish an SSC as described in section 302(g)(1)(A) of the Magnuson-Stevens Act.

(B) Each SSC shall provide its Regional Fishery Management Council recommendations for ABC as well as other scientific advice, as described in Magnuson-Stevens Act section 302(g)(1)(B).

(C) The Secretary and each Regional Fishery Management Council may establish a peer review process for that Council for scientific information used to advise the Council about the conservation and management of a fishery (see Magnuson-Stevens Act section 302(g)(1)(E)). If a peer review process is established, it should investigate the technical merits of stock assessments and other scientific information used by the SSC or agency or international scientists, as appropriate. For Regional Fishery Management Councils, the peer review process is not a substitute for the SSC and should work in conjunction with the SSC. For the Secretary, which does not have an SSC, the peer review process should provide the scientific information necessary.

(D) Each Council shall develop ACLs for each of its managed fisheries that may not exceed the "fishing level recommendations" of its SSC or peer review process (Magnuson-Stevens Act section 302(h)(6)). The SSC recommendation that is the most relevant to ACLs is ABC, as both ACL and ABC are levels of annual catch.

(3) Approach for setting limits and accountability measures, including targets, for consistency with NS1. In general, when specifying limits and accountability measures intended to avoid overfishing and achieve sustainable fisheries, Councils must take an approach that considers uncertainty in scientific information and management control of the fishery. These guidelines describe how to address uncertainty such that there is a low risk that limits are exceeded as described in paragraphs (f)(4) and (f)(6) of this section.

(c) Summary of items to include in FMPs related to NS1. This section provides a summary of items that Councils must include in their FMPs and FMP amendments in order to address ACL, AM, and other aspects of the NS1 guidelines. As described in further detail in paragraph (d) of this section, Councils may review their FMPs to decide if all stocks are "in the fishery" or whether some fit the category of "ecosystem component species." Councils must also describe fisheries data for the stocks, stock

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complexes, and ecosystem component species in their FMPs, or associated public documents such as Stock Assessment and Fishery Evaluation (SAFE) Reports. For all stocks and stock complexes that are "in the fishery" (see paragraph (d)(2) of this section), the Councils must evaluate and describe the following items in their FMPs and amend the FMPs, if necessary, to align their management objectives to end or prevent overfishing:

- (1) MSY and SDC (see paragraphs (e)(1) and (2) of this section).
- (2) OY at the stock, stock complex, or fishery level and provide the OY specification analysis (see paragraph (e)(3) of this section).
- (3) ABC control rule (see paragraph (f)(4) of this section).
- (4) Mechanisms for specifying ACLs and possible sector-specific ACLs in relationship to the ABC (see paragraphs (f)(5) and (h) of this section).
- (5) AMs (see paragraphs (g) and (h)(1) of this section).
- (6) Stocks and stock complexes that have statutory exceptions from ACLs (see paragraph (h)(2) of this section) or which fall under limited circumstances which require different approaches to meet the ACL requirements (see paragraph (h)(3) of this section).

(d) Classifying stocks in an FMP--

(1) Introduction. Magnuson-Stevens Act section 303(a)(2) requires that an FMP contain, among other things, a description of the species of fish involved in the fishery. The relevant Council determines which specific target stocks and/or non-target stocks to include in a fishery. This section provides that a Council may, but is not required to, use an "ecosystem component (EC)" species classification. As a default, all stocks in an FMP are considered to be "in the fishery," unless they are identified as EC species (see Sec. 600.310(d)(5)) through an FMP amendment process.

(2) Stocks in a fishery. Stocks in a fishery may be grouped into stock complexes, as appropriate. Requirements for reference points and management measures for these stocks are described throughout these guidelines.

(3) "Target stocks" are stocks that fishers seek to catch for sale or personal use, including "economic discards" as defined under Magnuson-Stevens Act section 3(9).

(4) "Non-target species" and "non-target stocks" are fish caught incidentally during the pursuit of target stocks in a fishery, including "regulatory discards" as defined under Magnuson-Stevens Act section 3(38). They may or may not be retained for sale or personal use. Non-target species may be included in a fishery and, if so, they should be identified at the stock level. Some non-target species may be identified in an FMP as ecosystem component (EC) species or stocks.

(5) Ecosystem component (EC) species.

(i) To be considered for possible classification as an EC species, the species should:

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- (A) Be a non-target species or non-target stock;
- (B) Not be determined to be subject to overfishing, approaching overfished, or overfished;
- (C) Not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures; and
- (D) Not generally be retained for sale or personal use.

(ii) Occasional retention of the species would not, in and of itself, preclude consideration of the species under the EC classification. In addition to the general factors noted in paragraphs (d)(5)(i)(A)-(D) of this section, it is important to consider whether use of the EC species classification in a given instance is consistent with MSA conservation and management requirements.

(iii) EC species may be identified at the species or stock level, and may be grouped into complexes. EC species may, but are not required to, be included in an FMP or FMP amendment for any of the following reasons: For data collection purposes; for ecosystem considerations related to specification of OY for the associated fishery; as considerations in the development of conservation and management measures for the associated fishery; and/or to address other ecosystem issues. While EC species are not considered to be "in the fishery," a Council should consider measures for the fishery to minimize bycatch and bycatch mortality of EC species consistent with National Standard 9, and to protect their associated role in the ecosystem. EC species do not require specification of reference points but should be monitored to the extent that any new pertinent scientific information becomes available (e.g., catch trends, vulnerability, etc.) to determine changes in their status or their vulnerability to the fishery. If necessary, they should be reclassified as "in the fishery."

(6) Reclassification. A Council should monitor the catch resulting from a fishery on a regular basis to determine if the stocks and species are appropriately classified in the FMP. If the criteria previously used to classify a stock or species is no longer valid, the Council should reclassify it through an FMP amendment, which documents rationale for the decision.

(7) Stocks or species identified in more than one FMP. If a stock is identified in more than one fishery, Councils should choose which FMP will be the primary FMP in which management objectives, SDC, the stock's overall ACL and other reference points for the stock are established. Conservation and management measures in other FMPs in which the stock is identified as part of a fishery should be consistent with the primary FMP's management objectives for the stock.

(8) Stock complex. "Stock complex" means a group of stocks that are sufficiently

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similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar. At the time a stock complex is established, the FMP should provide a full and explicit description of the proportional composition of each stock in the stock complex, to the extent possible. Stocks may be grouped into complexes for various reasons, including where stocks in a multispecies fishery cannot be targeted independent of one another and MSY can not be defined on a stock-by-stock basis (see paragraph (e)(1)(iii) of this section); where there is insufficient data to measure their status relative to SDC; or when it is not feasible for fishermen to distinguish individual stocks among their catch. The vulnerability of stocks to the fishery should be evaluated when determining if a particular stock complex should be established or reorganized, or if a particular stock should be included in a complex. Stock complexes may be comprised of: one or more indicator stocks, each of which has SDC and ACLs, and several other stocks; several stocks without an indicator stock, with SDC and an ACL for the complex as a whole; or one of more indicator stocks, each of which has SDC and management objectives, with an ACL for the complex as a whole (this situation might be applicable to some salmon species).

(9) Indicator stocks. An indicator stock is a stock with measurable SDC that can be used to help manage and evaluate more poorly known stocks that are in a stock complex. If an indicator stock is used to evaluate the status of a complex, it should be representative of the typical status of each stock within the complex, due to similarity in vulnerability. If the stocks within a stock complex have a wide range of vulnerability, they should be reorganized into different stock complexes that have similar vulnerabilities; otherwise the indicator stock should be chosen to represent the more vulnerable stocks within the complex. In instances where an indicator stock is less vulnerable than other members of the complex, management measures need to be more conservative so that the more vulnerable members of the complex are not at risk from the fishery. More than one indicator stock can be selected to provide more information about the status of the complex. When indicator stock(s) are used, periodic re-evaluation of available quantitative or qualitative information (e.g., catch trends, changes in vulnerability, fish health indices, etc.) is needed to determine whether a stock is subject to overfishing, or is approaching (or in) an overfished condition.

(10) Vulnerability. A stock's vulnerability is a combination of its productivity, which depends upon its life history characteristics, and its susceptibility to the fishery. Productivity refers to the capacity of the stock to produce MSY and to recover if the population is depleted, and susceptibility is the potential for the stock to be impacted by the fishery, which includes direct captures, as well as indirect impacts to the fishery (e.g., loss of habitat quality). Councils in consultation with their SSC, should analyze the vulnerability of stocks in stock complexes where possible.

(e) Features of MSY, SDC, and OY.--

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(1) MSY. Each FMP must include an estimate of MSY for the stocks and stock complexes in the fishery, as described in paragraph (d)(2) of this section).

(i) Definitions.

(A) MSY is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological, environmental conditions and fishery technological characteristics (e.g., gear selectivity), and the distribution of catch among fleets.

(B) MSY fishing mortality rate ( $F_{msy}$ ) is the fishing mortality rate that, if applied over the long term, would result in MSY.

(C) MSY stock size ( $B_{msy}$ ) means the long-term average size of the stock or stock complex, measured in terms of spawning biomass or other appropriate measure of the stock's reproductive potential that would be achieved by fishing at  $F_{msy}$ .

(ii) MSY for stocks. MSY should be estimated for each stock based on the best scientific information available (see Sec. 600.315).

(iii) MSY for stock complexes. MSY should be estimated on a stock-by-stock basis whenever possible. However, where MSY cannot be estimated for each stock in a stock complex, then MSY may be estimated for one or more indicator stocks for the complex or for the complex as a whole. When indicator stocks are used, the stock complex's MSY could be listed as "unknown," while noting that the complex is managed on the basis of one or more indicator stocks that do have known stock-specific MSYs, or suitable proxies, as described in paragraph (e)(1)(iv) of this section. When indicator stocks are not used, MSY, or a suitable proxy, should be calculated for the stock complex as a whole.

(iv) Specifying MSY. Because MSY is a long-term average, it need not be estimated annually, but it must be based on the best scientific information available (see Sec. 600.315), and should be re-estimated as required by changes in long-term environmental or ecological conditions, fishery technological characteristics, or new scientific information. When data are insufficient to estimate MSY directly, Councils should adopt other measures of reproductive potential, based on the best scientific information available, that can serve as reasonable proxies for MSY,  $F_{msy}$ , and  $B_{msy}$ , to the extent possible. The MSY for a stock is influenced by its interactions with other stocks in its ecosystem and these interactions may shift as multiple stocks in an ecosystem are fished. These ecological conditions should be taken into account, to the extent possible, when specifying MSY. Ecological conditions not directly accounted for in the specification of MSY can be among the ecological factors considered when setting OY below MSY. As MSY values are estimates or are based on proxies, they will have some level of uncertainty associated with them. The degree of uncertainty in the estimates should be

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identified, when possible, through the stock assessment process and peer review (see Sec. 600.335), and should be taken into account when specifying the ABC Control rule. Where this uncertainty cannot be directly calculated, such as when proxies are used, then a proxy for the uncertainty itself should be established based on the best scientific information, including comparison to other stocks.

(2) Status determination criteria--

(i) Definitions.

(A) Status determination criteria (SDC) mean the quantifiable factors, MFMT, OFL, and MSST, or their proxies, that are used to determine if overfishing has occurred, or if the stock or stock complex is overfished. Magnuson-Stevens Act (section 3(34)) defines both "overfishing" and "overfished" to mean a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the MSY on a continuing basis. To avoid confusion, this section clarifies that "overfished" relates to biomass of a stock or stock complex, and "overfishing" pertains to a rate or level of removal of fish from a stock or stock complex.

(B) Overfishing (to overfish) occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis.

(C) Maximum fishing mortality threshold (MFMT) means the level of fishing mortality (F), on an annual basis, above which overfishing is occurring. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.

(D) Overfishing limit (OFL) means the annual amount of catch that corresponds to the estimate of MFMT applied to a stock or stock complex's abundance and is expressed in terms of numbers or weight of fish. The OFL is an estimate of the catch level above which overfishing is occurring.

(E) Overfished. A stock or stock complex is considered "overfished" when its biomass has declined below a level that jeopardizes the capacity of the stock or stock complex to produce MSY on a continuing basis.

(F) Minimum stock size threshold (MSST) means the level of biomass below which the stock or stock complex is considered to be overfished.

(G) Approaching an overfished condition. A stock or stock complex is approaching an overfished condition when it is projected that there is more than a 50 percent chance

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that the biomass of the stock or stock complex will decline below the MSST within two years.

(ii) Specification of SDC and overfishing and overfished determinations. SDC must be expressed in a way that enables the Council to monitor each stock or stock complex in the FMP, and determine annually, if possible, whether overfishing is occurring and whether the stock or stock complex is overfished. In specifying SDC, a Council must provide an analysis of how the SDC were chosen and how they relate to reproductive potential. Each FMP must specify, to the extent possible, objective and measurable SDC as follows (see paragraphs (e)(2)(ii)(A) and (B) of this section):

(A) SDC to determine overfishing status. Each FMP must describe which of the following two methods will be used for each stock or stock complex to determine an overfishing status.

(1) Fishing mortality rate exceeds MFMT. Exceeding the MFMT for a period of 1 year or more constitutes overfishing. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.

(2) Catch exceeds the OFL. Should the annual catch exceed the annual OFL for 1 year or more, the stock or stock complex is considered subject to overfishing.

(B) SDC to determine overfished status. The MSST or reasonable proxy must be expressed in terms of spawning biomass or other measure of reproductive potential. To the extent possible, the MSST should equal whichever of the following is greater: One-half the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years, if the stock or stock complex were exploited at the MFMT specified under paragraph (e)(2)(ii)(A)(1) of this section. Should the estimated size of the stock or stock complex in a given year fall below this threshold, the stock or stock complex is considered overfished.

(iii) Relationship of SDC to environmental change. Some short-term environmental changes can alter the size of a stock or stock complex without affecting its long-term reproductive potential. Long-term environmental changes affect both the short-term size of the stock or stock complex and the long-term reproductive potential of the stock or stock complex.

(A) If environmental changes cause a stock or stock complex to fall below its MSST without affecting its long-term reproductive potential, fishing mortality must be constrained sufficiently to allow rebuilding within an acceptable time frame (also see paragraph (j)(3)(ii) of this section). SDC should not be respecified.

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(B) If environmental changes affect the long-term reproductive potential of the stock or stock complex, one or more components of the SDC must be respecified. Once SDC have been respecified, fishing mortality may or may not have to be reduced, depending on the status of the stock or stock complex with respect to the new criteria.

(C) If manmade environmental changes are partially responsible for a stock or stock complex being in an overfished condition, in addition to controlling fishing mortality, Councils should recommend restoration of habitat and other ameliorative programs, to the extent possible (see also the guidelines issued pursuant to section 305(b) of the Magnuson-Stevens Act for Council actions concerning essential fish habitat).

(iv) Secretarial approval of SDC. Secretarial approval or disapproval of proposed SDC will be based on consideration of whether the proposal:

- (A) Has sufficient scientific merit;
  - (B) Contains the elements described in paragraph (e)(2)(ii) of this section;
  - (C) Provides a basis for objective measurement of the status of the stock or stock complex against the criteria; and
  - (D) is operationally feasible.
- (3) Optimum yield--

(i) Definitions--

(A) Optimum yield (OY). Magnuson-Stevens Act section (3)(33) defines "optimum," with respect to the yield from a fishery, as the amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery. OY may be established at the stock or stock complex level, or at the fishery level.

(B) In NS1, use of the phrase "achieving, on a continuing basis, the optimum yield from each fishery" means producing, from each stock, stock complex, or fishery: a long-term series of catches such that the average catch is equal to the OY, overfishing is prevented, the long term average biomass is near or above Bmsy, and overfished stocks and stock complexes are rebuilt consistent with timing and other requirements of section 304(e)(4) of the Magnuson-Stevens Act and paragraph (j) of this section.

(ii) General. OY is a long-term average amount of desired yield from a stock, stock complex, or fishery. An FMP must contain conservation and management measures, including ACLs and AMs, to achieve OY on a continuing basis, and provisions for

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information collection that are designed to determine the degree to which OY is achieved. These measures should allow for practical and effective implementation and enforcement of the management regime. The Secretary has an obligation to implement and enforce the FMP. If management measures prove unenforceable--or too restrictive, or not rigorous enough to prevent overfishing while achieving OY--they should be modified; an alternative is to reexamine the adequacy of the OY specification. Exceeding OY does not necessarily constitute overfishing. However, even if no overfishing resulted from exceeding OY, continual harvest at a level above OY would violate NS1, because OY was not achieved on a continuing basis. An FMP must contain an assessment and specification of OY, including a summary of information utilized in making such specification, consistent with requirements of section 303(a)(3) of the Magnuson-Stevens Act. A Council must identify those economic, social, and ecological factors relevant to management of a particular stock, stock complex, or fishery, and then evaluate them to determine the OY. The choice of a particular OY must be carefully documented to show that the OY selected will produce the greatest benefit to the Nation and prevent overfishing.

(iii) Determining the greatest benefit to the Nation. In determining the greatest benefit to the Nation, the values that should be weighed and receive serious attention when considering the economic, social, or ecological factors used in reducing MSY to obtain OY are:

(A) The benefits of food production are derived from providing seafood to consumers; maintaining an economically viable fishery together with its attendant contributions to the national, regional, and local economies; and utilizing the capacity of the Nation's fishery resources to meet nutritional needs.

(B) The benefits of recreational opportunities reflect the quality of both the recreational fishing experience and non-consumptive fishery uses such as ecotourism, fish watching, and recreational diving. Benefits also include the contribution of recreational fishing to the national, regional, and local economies and food supplies.

(C) The benefits of protection afforded to marine ecosystems are those resulting from maintaining viable populations (including those of unexploited species), maintaining adequate forage for all components of the ecosystem, maintaining evolutionary and ecological processes (e.g., disturbance regimes, hydrological processes, nutrient cycles), maintaining the evolutionary potential of species and ecosystems, and accommodating human use.

(iv) Factors to consider in OY specification. Because fisheries have limited capacities, any attempt to maximize the measures of benefits described in paragraph (e)(3)(iii) of this section will inevitably encounter practical constraints. OY cannot exceed MSY in any circumstance, and must take into account the need to prevent overfishing and rebuild overfished stocks and stock complexes. OY is prescribed on the

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basis of MSY as reduced by social, economic, and ecological factors. To the extent possible, the relevant social, economic, and ecological factors used to establish OY for a stock, stock complex, or fishery should be quantified and reviewed in historical, short-term, and long-term contexts. Even where quantification of social, economic, and ecological factors is not possible, the FMP still must address them in its OY specification. The following is a non-exhaustive list of potential considerations for each factor. An FMP must address each factor but not necessarily each example.

(A) Social factors. Examples are enjoyment gained from recreational fishing, avoidance of gear conflicts and resulting disputes, preservation of a way of life for fishermen and their families, and dependence of local communities on a fishery (e.g., involvement in fisheries and ability to adapt to change). Consideration may be given to fishery-related indicators (e.g., number of fishery permits, number of commercial fishing vessels, number of party and charter trips, landings, ex-vessel revenues etc.) and non-fishery related indicators (e.g., unemployment rates, percent of population below the poverty level, population density, etc.). Other factors that may be considered include the effects that past harvest levels have had on fishing communities, the cultural place of subsistence fishing, obligations under Indian treaties, proportions of affected minority and low-income groups, and worldwide nutritional needs.

(B) Economic factors. Examples are prudent consideration of the risk of overharvesting when a stock's size or reproductive potential is uncertain (see Sec. 600.335(c)(2)(i)), satisfaction of consumer and recreational needs, and encouragement of domestic and export markets for U.S. harvested fish. Other factors that may be considered include: The value of fisheries, the level of capitalization, the decrease in cost per unit of catch afforded by an increase in stock size, the attendant increase in catch per unit of effort, alternate employment opportunities, and economic contribution to fishing communities, coastal areas, affected states, and the nation.

(C) Ecological factors. Examples include impacts on ecosystem component species, forage fish stocks, other fisheries, predator-prey or competitive interactions, marine mammals, threatened or endangered species, and birds. Species interactions that have not been explicitly taken into account when calculating MSY should be considered as relevant factors for setting OY below MSY. In addition, consideration should be given to managing forage stocks for higher biomass than  $B_{msy}$  to enhance and protect the marine ecosystem. Also important are ecological or environmental conditions that stress marine organisms, such as natural and manmade changes in wetlands or nursery grounds, and effects of pollutants on habitat and stocks.

(v) Specification of OY. The specification of OY must be consistent with paragraphs (e)(3)(i)-(iv) of this section. If the estimates of MFMT and current biomass are known with a high level of certainty and management controls can accurately limit catch then OY could be set very close to MSY, assuming no other reductions are necessary for

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social, economic, or ecological factors. To the degree that such MSY estimates and management controls are lacking or unavailable, OY should be set farther from MSY. If management measures cannot adequately control fishing mortality so that the specified OY can be achieved without overfishing, the Council should reevaluate the management measures and specification of OY so that the dual requirements of NS1 (preventing overfishing while achieving, on a continuing basis, OY) are met.

(A) The amount of fish that constitutes the OY should be expressed in terms of numbers or weight of fish.

(B) Either a range or a single value may be specified for OY.

(C) All catch must be counted against OY, including that resulting from bycatch, scientific research, and all fishing activities.

(D) The OY specification should be translatable into an annual numerical estimate for the purposes of establishing any total allowable level of foreign fishing (TALFF) and analyzing impacts of the management regime.

(E) The determination of OY is based on MSY, directly or through proxy. However, even where sufficient scientific data as to the biological characteristics of the stock do not exist, or where the period of exploitation or investigation has not been long enough for adequate understanding of stock dynamics, or where frequent large-scale fluctuations in stock size diminish the meaningfulness of the MSY concept, OY must still be established based on the best scientific information available.

(F) An OY established at a fishery level may not exceed the sum of the MSY values for each of the stocks or stock complexes within the fishery.

(G) There should be a mechanism in the FMP for periodic reassessment of the OY specification, so that it is responsive to changing circumstances in the fishery.

(H) Part of the OY may be held as a reserve to allow for factors such as uncertainties in estimates of stock size and domestic annual harvest (DAH). If an OY reserve is established, an adequate mechanism should be included in the FMP to permit timely release of the reserve to domestic or foreign fishermen, if necessary.

(vi) OY and foreign fishing. Section 201(d) of the Magnuson-Stevens Act provides that fishing by foreign nations is limited to that portion of the OY that will not be harvested by vessels of the United States. The FMP must include an assessment to address the following, as required by section 303(a)(4) of the Magnuson-Stevens Act:

(A) DAH. Councils and/or the Secretary must consider the capacity of, and the extent to which, U.S. vessels will harvest the OY on an annual basis. Estimating the amount that

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U.S. fishing vessels will actually harvest is required to determine the surplus.

(B) Domestic annual processing (DAP). Each FMP must assess the capacity of U.S. processors. It must also assess the amount of DAP, which is the sum of two estimates: The estimated amount of U.S. harvest that domestic processors will process, which may be based on historical performance or on surveys of the expressed intention of manufacturers to process, supported by evidence of contracts, plant expansion, or other relevant information; and the estimated amount of fish that will be harvested by domestic vessels, but not processed (e.g., marketed as fresh whole fish, used for private consumption, or used for bait).

(C) Joint venture processing (JVP). When DAH exceeds DAP, the surplus is available for JVP.

(f) Acceptable biological catch, annual catch limits, and annual catch targets. The following features (see paragraphs (f)(1) through (f)(5) of this section) of acceptable biological catch and annual catch limits apply to stocks and stock complexes in the fishery (see paragraph (d)(2) of this section).

(1) Introduction. A control rule is a policy for establishing a limit or target fishing level that is based on the best available scientific information and is established by fishery managers in consultation with fisheries scientists. Control rules should be designed so that management actions become more conservative as biomass estimates, or other proxies, for a stock or stock complex decline and as science and management uncertainty increases. Examples of scientific uncertainty include uncertainty in the estimates of MFMT and biomass. Management uncertainty may include late catch reporting, misreporting, and underreporting of catches and is affected by a fishery's ability to control actual catch. For example, a fishery that has inseason catch data available and inseason closure authority has better management control and precision than a fishery that does not have these features.

(2) Definitions.

(i) Catch is the total quantity of fish, measured in weight or numbers of fish, taken in commercial, recreational, subsistence, tribal, and other fisheries. Catch includes fish that are retained for any purpose, as well as mortality of fish that are discarded.

(ii) Acceptable biological catch (ABC) is a level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty (see paragraph (f)(3) of this section), and should be specified based on the ABC control rule.

(iii) ABC control rule means a specified approach to setting the ABC for a stock or stock complex as a function of the scientific uncertainty in the estimate of OFL and any

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other scientific uncertainty (see paragraph (f)(4) of this section).

(iv) Annual catch limit (ACL) is the level of annual catch of a stock or stock complex that serves as the basis for invoking AMs. ACL cannot exceed the ABC, but may be divided into sector-ACLs (see paragraph (f)(5) of this section).

(v) Annual catch target (ACT) is an amount of annual catch of a stock or stock complex that is the management target of the fishery, and accounts for management uncertainty in controlling the actual catch at or below the ACL. ACTs are recommended in the system of accountability measures so that ACL is not exceeded.

(vi) ACT control rule means a specified approach to setting the ACT for a stock or stock complex such that the risk of exceeding the ACL due to management uncertainty is at an acceptably low level.

(3) Specification of ABC. ABC may not exceed OFL (see paragraph (e)(2)(i)(D) of this section). Councils should develop a process for receiving scientific information and advice used to establish ABC. This process should: Identify the body that will apply the ABC control rule (i.e., calculates the ABC), and identify the review process that will evaluate the resulting ABC. The SSC must recommend the ABC to the Council. An SSC may recommend an ABC that differs from the result of the ABC control rule calculation, based on factors such as data uncertainty, recruitment variability, declining trends in population variables, and other factors, but must explain why. For Secretarial FMPs or FMP amendments, agency scientists or a peer review process would provide the scientific advice to establish ABC. For internationally-assessed stocks, an ABC as defined in these guidelines is not required if they meet the international exception (see paragraph (h)(2)(ii)). While the ABC is allowed to equal OFL, NMFS expects that in most cases ABC will be reduced from OFL to reduce the probability that overfishing might occur in a year. Also, see paragraph (f)(5) of this section for cases where a Council recommends that ACL is equal to ABC, and ABC is equal to OFL.

(i) Expression of ABC. ABC should be expressed in terms of catch, but may be expressed in terms of landings as long as estimates of bycatch and any other fishing mortality not accounted for in the landings are incorporated into the determination of ABC.

(ii) ABC for overfished stocks. For overfished stocks and stock complexes, a rebuilding ABC must be set to reflect the annual catch that is consistent with the schedule of fishing mortality rates in the rebuilding plan.

(4) ABC control rule. For stocks and stock complexes required to have an ABC, each Council must establish an ABC control rule based on scientific advice from its SSC. The determination of ABC should be based, when possible, on the probability that an actual

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catch equal to the stock's ABC would result in overfishing. This probability that overfishing will occur cannot exceed 50 percent and should be a lower value. The ABC control rule should consider reducing fishing mortality as stock size declines and may establish a stock abundance level below which fishing would not be allowed. The process of establishing an ABC control rule could also involve science advisors or the peer review process established under Magnuson-Stevens Act section 302(g)(1)(E). The ABC control rule must articulate how ABC will be set compared to the OFL based on the scientific knowledge about the stock or stock complex and the scientific uncertainty in the estimate of OFL and any other scientific uncertainty. The ABC control rule should consider uncertainty in factors such as stock assessment results, time lags in updating assessments, the degree of retrospective revision of assessment results, and projections. The control rule may be used in a tiered approach to address different levels of scientific uncertainty.

(5) Setting the annual catch limit--

(i) General. ACL cannot exceed the ABC and may be set annually or on a multiyear plan basis. ACLs in coordination with AMs must prevent overfishing (see MSA section 303(a)(15)). If a Council recommends an ACL which equals ABC, and the ABC is equal to OFL, the Secretary may presume that the proposal would not prevent overfishing, in the absence of sufficient analysis and justification for the approach. A "multiyear plan" as referenced in section 303(a)(15) of the Magnuson-Stevens Act is a plan that establishes harvest specifications or harvest guidelines for each year of a time period greater than 1 year. A multiyear plan must include a mechanism for specifying ACLs for each year with appropriate AMs to prevent overfishing and maintain an appropriate rate of rebuilding if the stock or stock complex is in a rebuilding plan. A multiyear plan must provide that, if an ACL is exceeded for a year, then AMs are triggered for the next year consistent with paragraph (g)(3) of this section.

(ii) Sector-ACLs. A Council may, but is not required to, divide an ACL into sector-ACLs. "Sector," for purposes of this section, means a distinct user group to which separate management strategies and separate catch quotas apply. Examples of sectors include the commercial sector, recreational sector, or various gear groups within a fishery. If the management measures for different sectors differ in the degree of management uncertainty, then sector ACLs may be necessary so that appropriate AMs can be developed for each sector. If a Council chooses to use sector ACLs, the sum of sector ACLs must not exceed the stock or stock complex level ACL. The system of ACLs and AMs designed must be effective in protecting the stock or stock complex as a whole. Even if sector-ACLs and AMs are established, additional AMs at the stock or stock complex level may be necessary.

(iii) ACLs for State-Federal Fisheries. For stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments should include an ACL

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for the overall stock that may be further divided. For example, the overall ACL could be divided into a Federal-ACL and state-ACL. However, NMFS recognizes that Federal management is limited to the portion of the fishery under Federal authority (see paragraph (g)(5) of this section). When stocks are co-managed by Federal, state, tribal, and/or territorial fishery managers, the goal should be to develop collaborative conservation and management strategies, and scientific capacity to support such strategies (including AMs for state or territorial and Federal waters), to prevent overfishing of shared stocks and ensure their sustainability.

(6) ACT control rule. If ACT is specified as part of the AMs for a fishery, an ACT control rule is utilized for setting the ACT. The ACT control rule should clearly articulate how management uncertainty in the amount of catch in the fishery is accounted for in setting ACT. The objective for establishing the ACT and related AMs is that the ACL not be exceeded.

(i) Determining management uncertainty. Two sources of management uncertainty should be accounted for in establishing the AMs for a fishery, including the ACT control rule if utilized: Uncertainty in the ability of managers to constrain catch so the ACL is not exceeded, and uncertainty in quantifying the true catch amounts (i.e., estimation errors). To determine the level of management uncertainty in controlling catch, analyses need to consider past management performance in the fishery and factors such as time lags in reported catch. Such analyses must be based on the best available scientific information from an SSC, agency scientists, or peer review process as appropriate.

(ii) Establishing tiers and corresponding ACT control rules. Tiers can be established based on levels of management uncertainty associated with the fishery, frequency and accuracy of catch monitoring data available, and risks of exceeding the limit. An ACT control rule could be established for each tier and have, as appropriate, different formulas and standards used to establish the ACT.

(7) A Council may choose to use a single control rule that combines both scientific and management uncertainty and supports the ABC recommendation and establishment of ACL and if used ACT.

(g) Accountability measures. The following features (see paragraphs (g)(1) through (5) of this section) of accountability measures apply to those stocks and stock complexes in the fishery.

(1) Introduction. AMs are management controls to prevent ACLs, including sector-ACLs, from being exceeded, and to correct or mitigate overages of the ACL if they occur. AMs should address and minimize both the frequency and magnitude of overages and correct the problems that caused the overage in as short a time as possible. NMFS identifies two categories of AMs, inseason AMs and AMs for when the ACL is exceeded.

(2) Inseason AMs. Whenever possible, FMPs should include inseason monitoring and

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management measures to prevent catch from exceeding ACLs. Inseason AMs could include, but are not limited to: ACT; closure of a fishery; closure of specific areas; changes in gear; changes in trip size or bag limits; reductions in effort; or other appropriate management controls for the fishery. If final data or data components of catch are delayed, Councils should make appropriate use of preliminary data, such as landed catch, in implementing inseason AMs. FMPs should contain inseason closure authority giving NMFS the ability to close fisheries if it determines, based on data that it deems sufficiently reliable, that an ACL has been exceeded or is projected to be reached, and that closure of the fishery is necessary to prevent overfishing. For fisheries without inseason management control to prevent the ACL from being exceeded, AMs should utilize ACTs that are set below ACLs so that catches do not exceed the ACL.

(3) AMs for when the ACL is exceeded. On an annual basis, the Council must determine as soon as possible after the fishing year if an ACL was exceeded. If an ACL was exceeded, AMs must be triggered and implemented as soon as possible to correct the operational issue that caused the ACL overage, as well as any biological consequences to the stock or stock complex resulting from the overage when it is known. These AMs could include, among other things, modifications of inseason AMs or overage adjustments. For stocks and stock complexes in rebuilding plans, the AMs should include overage adjustments that reduce the ACLs in the next fishing year by the full amount of the overages, unless the best scientific information available shows that a reduced overage adjustment, or no adjustment, is needed to mitigate the effects of the overages. If catch exceeds the ACL for a given stock or stock complex more than once in the last four years, the system of ACLs and AMs should be re-evaluated, and modified if necessary, to improve its performance and effectiveness. A Council could choose a higher performance standard (e.g., a stock's catch should not exceed its ACL more often than once every five or six years) for a stock that is particularly vulnerable to the effects of overfishing, if the vulnerability of the stock has not already been accounted for in the ABC control rule.

(4) AMs based on multi-year average data. Some fisheries have highly variable annual catches and lack reliable inseason or annual data on which to base AMs. If there are insufficient data upon which to compare catch to ACL, either inseason or on an annual basis, AMs could be based on comparisons of average catch to average ACL over a three-year moving average period or, if supported by analysis, some other appropriate multi-year period. Councils should explain why basing AMs on a multi-year period is appropriate. Evaluation of the moving average catch to the average ACL must be conducted annually and AMs should be implemented if the average catch exceeds the average ACL. As a performance standard, if the average catch exceeds the average ACL for a stock or stock complex more than once in the last four years, then the system of ACLs and AMs should be re-evaluated and modified if necessary to improve its performance and effectiveness. The initial ACL and management measures may incorporate information from previous years so that AMs based on average ACLs can be applied from the first year. Alternatively, a Council could use a stepped approach where

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in year-1, catch is compared to the ACL for year-1; in year-2 the average catch for the past 2 years is compared to the average ACL; then in year 3 and beyond, the most recent 3 years of catch are compared to the corresponding ACLs for those years.

(5) AMs for State-Federal Fisheries. For stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments must, at a minimum, have AMs for the portion of the fishery under Federal authority. Such AMs could include closing the EEZ when the Federal portion of the ACL is reached, or the overall stock's ACL is reached, or other measures.

(h) Establishing ACL mechanisms and AMs in FMPs. FMPs or FMP amendments must establish ACL mechanisms and AMs for all stocks and stock complexes in the fishery, unless paragraph (h)(2) of this section is applicable. These mechanisms should describe the annual or multiyear process by which specific ACLs, AMs, and other reference points such as OFL, and ABC will be established. If a complex has multiple indicator stocks, each indicator stock must have its own ACL; an additional ACL for the stock complex as a whole is optional. In cases where fisheries (e.g., Pacific salmon) harvest multiple indicator stocks of a single species that cannot be distinguished at the time of capture, separate ACLs for the indicator stocks are not required and the ACL can be established for the complex as a whole.

(1) In establishing ACL mechanisms and AMs, FMPs should describe:

- (i) Timeframes for setting ACLs (e.g., annually or multi-year periods);
- (ii) Sector-ACLs, if any (including set-asides for research or bycatch);
- (iii) AMs and how AMs are triggered and what sources of data will be used (e.g., inseason data, annual catch compared to the ACL, or multi-year averaging approach); and
- (iv) Sector-AMs, if there are sector-ACLs.

(2) Exceptions from ACL and AM requirements--

(i) Life cycle. Section 303(a)(15) of the Magnuson-Stevens Act ``shall not apply to a fishery for species that has a life cycle of approximately 1 year unless the Secretary has determined the fishery is subject to overfishing of that species" (as described in Magnuson-Stevens Act section 303 note). This exception applies to a stock for which the average length of time it takes for an individual to produce a reproductively active offspring is approximately 1 year and that the individual has only one breeding season in its lifetime. While exempt from the ACL and AM requirements, FMPs or FMP amendments for these stocks must have SDC, MSY, OY, ABC, and an ABC control rule.

(ii) International fishery agreements. Section 303(a)(15) of the Magnuson-Stevens Act applies ``unless otherwise provided for under an international agreement in which the United States participates" (Magnuson-Stevens Act section 303 note). This exception

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applies to stocks or stock complexes subject to management under an international agreement, which is defined as "any bilateral or multilateral treaty, convention, or agreement which relates to fishing and to which the United States is a party" (see Magnuson-Stevens Act section 3(24)). These stocks would still need to have SDC and MSY.

(3) Flexibility in application of NS1 guidelines. There are limited circumstances that may not fit the standard approaches to specification of reference points and management measures set forth in these guidelines. These include, among other things, conservation and management of Endangered Species Act listed species, harvests from aquaculture operations, and stocks with unusual life history characteristics (e.g., Pacific salmon, where the spawning potential for a stock is spread over a multi-year period). In these circumstances, Councils may propose alternative approaches for satisfying the NS1 requirements of the Magnuson-Stevens Act than those set forth in these guidelines. Councils must document their rationale for any alternative approaches for these limited circumstances in an FMP or FMP amendment, which will be reviewed for consistency with the Magnuson-Stevens Act.

(i) Fisheries data. In their FMPs, or associated public documents such as SAFE reports as appropriate, Councils must describe general data collection methods, as well as any specific data collection methods used for all stocks in the fishery, and EC species, including:

(1) Sources of fishing mortality (both landed and discarded), including commercial and recreational catch and bycatch in other fisheries;

(2) Description of the data collection and estimation methods used to quantify total catch mortality in each fishery, including information on the management tools used (i.e., logbooks, vessel monitoring systems, observer programs, landings reports, fish tickets, processor reports, dealer reports, recreational angler surveys, or other methods); the frequency with which data are collected and updated; and the scope of sampling coverage for each fishery; and (3) Description of the methods used to compile catch data from various catch data collection methods and how those data are used to determine the relationship between total catch at a given point in time and the ACL for stocks and stock complexes that are part of a fishery.

(j) Council actions to address overfishing and rebuilding for stocks and stock complexes in the fishery--

(1) Notification. The Secretary will immediately notify in writing a Regional Fishery Management Council whenever it is determined that:

(i) Overfishing is occurring;

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- (ii) A stock or stock complex is overfished;
- (iii) A stock or stock complex is approaching an overfished condition; or
- (iv) Existing remedial action taken for the purpose of ending previously identified overfishing or rebuilding a previously identified overfished stock or stock complex has not resulted in adequate progress.

(2) Timing of actions--

(i) If a stock or stock complex is undergoing overfishing, FMPs or FMP amendments must establish ACL and AM mechanisms in 2010, for stocks and stock complexes determined to be subject to overfishing, and in 2011, for all other stocks and stock complexes (see paragraph (b)(2)(iii) of this section). To address practical implementation aspects of the FMP and FMP amendment process, paragraphs (j)(2)(i)(A) through (C) of this section clarifies the expected timing of actions.

(A) In addition to establishing ACL and AM mechanisms, the ACLs and AMs themselves must be specified in FMPs, FMP amendments, implementing regulations, or annual specifications beginning in 2010 or 2011, as appropriate.

(B) For stocks and stock complexes still determined to be subject to overfishing at the end of 2008, ACL and AM mechanisms and the ACLs and AMs themselves must be effective in fishing year 2010.

(C) For stocks and stock complexes determined to be subject to overfishing during 2009, ACL and AM mechanisms and ACLs and AMs themselves should be effective in fishing year 2010, if possible, or in fishing year 2011, at the latest.

(ii) If a stock or stock complex is overfished or approaching an overfished condition.

(A) For notifications that a stock or stock complex is overfished or approaching an overfished condition made before July 12, 2009, a Council must prepare an FMP, FMP amendment, or proposed regulations within one year of notification. If the stock or stock complex is overfished, the purpose of the action is to specify a time period for ending overfishing and rebuilding the stock or stock complex that will be as short as possible as described under section 304(e)(4) of the Magnuson-Stevens Act. If the stock or stock complex is approaching an overfished condition, the purpose of the action is to prevent the biomass from declining below the MSST.

(B) For notifications that a stock or stock complex is overfished or approaching an overfished condition made after July 12, 2009, a Council must prepare and implement an FMP, FMP amendment, or proposed regulations within two years of notification, consistent with the requirements of section 304(e)(3) of the Magnuson-Stevens Act.

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Council actions should be submitted to NMFS within 15 months of notification to ensure sufficient time for the Secretary to implement the measures, if approved. If the stock or stock complex is overfished and overfishing is occurring, the rebuilding plan must end overfishing immediately and be consistent with ACL and AM requirements of the Magnuson-Stevens Act.

(3) Overfished fishery.

(i) Where a stock or stock complex is overfished, a Council must specify a time period for rebuilding the stock or stock complex based on factors specified in Magnuson-Stevens Act section 304(e)(4). This target time for rebuilding ( $T_{\text{target}}$ ) shall be as short as possible, taking into account: The status and biology of any overfished stock, the needs of fishing communities, recommendations by international organizations in which the U.S. participates, and interaction of the stock within the marine ecosystem. In addition, the time period shall not exceed 10 years, except where biology of the stock, other environmental conditions, or management measures under an international agreement to which the U.S. participates, dictate otherwise. SSCs (or agency scientists or peer review processes in the case of Secretarial actions) shall provide recommendations for achieving rebuilding targets (see Magnuson-Stevens Act section 302(g)(1)(B)). The above factors enter into the specification of  $T_{\text{target}}$  as follows:

(A) The "minimum time for rebuilding a stock" ( $T_{\text{min}}$ ) means the amount of time the stock or stock complex is expected to take to rebuild to its MSY biomass level in the absence of any fishing mortality. In this context, the term "expected" means to have at least a 50 percent probability of attaining the  $B_{\text{msy}}$ .

(B) For scenarios under paragraph (j)(2)(ii)(A) of this section, the starting year for the  $T_{\text{min}}$  calculation is the first year that a rebuilding plan is implemented. For scenarios under paragraph (j)(2)(ii)(B) of this section, the starting year for the  $T_{\text{min}}$  calculation is 2 years after notification that a stock or stock complex is overfished or the first year that a rebuilding plan is implemented, whichever is sooner.

(C) If  $T_{\text{min}}$  for the stock or stock complex is 10 years or less, then the maximum time allowable for rebuilding ( $T_{\text{max}}$ ) that stock to its  $B_{\text{msy}}$  is 10 years.

(D) If  $T_{\text{min}}$  for the stock or stock complex exceeds 10 years, then the maximum time allowable for rebuilding a stock or stock complex to its  $B_{\text{msy}}$  is  $T_{\text{min}}$  plus the length of time associated with one generation time for that stock or stock complex. "Generation time" is the average length of time between when an individual is born and the birth of its offspring.

(E)  $T_{\text{target}}$  shall not exceed  $T_{\text{max}}$ , and should be calculated based on the factors described in this paragraph (j)(3).

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(ii) If a stock or stock complex reached the end of its rebuilding plan period and has not yet been determined to be rebuilt, then the rebuilding  $F$  should not be increased until the stock or stock complex has been demonstrated to be rebuilt. If the rebuilding plan was based on a  $T_{target}$  that was less than  $T_{max}$ , and the stock or stock complex is not rebuilt by  $T_{target}$ , rebuilding measures should be revised, if necessary, such that the stock or stock complex will be rebuilt by  $T_{max}$ . If the stock or stock complex has not rebuilt by  $T_{max}$ , then the fishing mortality rate should be maintained at  $F_{rebuild}$  or 75 percent of the MFMT, whichever is less.

(iii) Council action addressing an overfished fishery must allocate both overfishing restrictions and recovery benefits fairly and equitably among sectors of the fishery.

(iv) For fisheries managed under an international agreement, Council action addressing an overfished fishery must reflect traditional participation in the fishery, relative to other nations, by fishermen of the United States.

(4) Emergency actions and interim measures. The Secretary, on his/her own initiative or in response to a Council request, may implement interim measures to reduce overfishing or promulgate regulations to address an emergency (Magnuson-Stevens Act section 304(e)(6) or 305(c)). In considering a Council request for action, the Secretary would consider, among other things, the need for and urgency of the action and public interest considerations, such as benefits to the stock or stock complex and impacts on participants in the fishery.

(i) These measures may remain in effect for not more than 180 days, but may be extended for an additional 186 days if the public has had an opportunity to comment on the measures and, in the case of Council-recommended measures, the Council is actively preparing an FMP, FMP amendment, or proposed regulations to address the emergency or overfishing on a permanent basis.

(ii) Often, these measures need to be implemented without prior notice and an opportunity for public comment, as it would be impracticable to provide for such processes given the need to act quickly and also contrary to the public interest to delay action. However, emergency regulations and interim measures that do not qualify for waivers or exceptions under the Administrative Procedure Act would need to follow proposed notice and comment rulemaking procedures.

(k) International overfishing. If the Secretary determines that a fishery is overfished or approaching a condition of being overfished due to excessive international fishing pressure, and for which there are no management measures (or no effective measures) to end overfishing under an international agreement to which the United States is a party, then the Secretary and/or the appropriate Council shall take certain actions as provided

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under Magnuson-Stevens Act section 304(i). The Secretary, in cooperation with the Secretary of State, must immediately take appropriate action at the international level to end the overfishing. In addition, within one year after the determination, the Secretary and/or appropriate Council shall:

(1) Develop recommendations for domestic regulations to address the relative impact of the U.S. fishing vessels on the stock. Council recommendations should be submitted to the Secretary.

(2) Develop and submit recommendations to the Secretary of State, and to the Congress, for international actions that will end overfishing in the fishery and rebuild the affected stocks, taking into account the relative impact of vessels of other nations and vessels of the United States on the relevant stock. Councils should, in consultation with the Secretary, develop recommendations that take into consideration relevant provisions of the Magnuson-Stevens Act and NS1 guidelines, including section 304(e) of the Magnuson-Stevens Act and paragraph (j)(3)(iv) of this section, and other applicable laws. For highly migratory species in the Pacific, recommendations from the Western Pacific, North Pacific, or Pacific Councils must be developed and submitted consistent with Magnuson-Stevens Reauthorization Act section 503(f), as appropriate.

(3) Considerations for assessing "relative impact." "Relative impact" under paragraphs (k)(1) and (2) of this section may include consideration of factors that include, but are not limited to: Domestic and international management measures already in place, management history of a given nation, estimates of a nation's landings or catch (including bycatch) in a given fishery, and estimates of a nation's mortality contributions in a given fishery. Information used to determine relative impact must be based upon the best available scientific information.

(1) Relationship of National Standard 1 to other national standards--General. National Standards 2 through 10 provide further requirements for conservation and management measures in FMPs, but do not alter the requirement of NS1 to prevent overfishing and rebuild overfished stocks.

(1) National Standard 2 (see Sec. 600.315). Management measures and reference points to implement NS1 must be based on the best scientific information available. When data are insufficient to estimate reference points directly, Councils should develop reasonable proxies to the extent possible (also see paragraph (e)(1)(iv) of this section). In cases where scientific data are severely limited, effort should also be directed to identifying and gathering the needed data. SSCs should advise their Councils regarding the best scientific information available for fishery management decisions.

(2) National Standard 3 (see Sec. 600.320). Reference points should generally be specified in terms of the level of stock aggregation for which the best scientific

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information is available (also see paragraph (e)(1)(iii) of this section). Also, scientific assessments must be based on the best information about the total range of the stock and potential biological structuring of the stock into biological sub-units, which may differ from the geographic units on which management is feasible.

(3) National Standard 6 (see Sec. 600.335). Councils must build into the reference points and control rules appropriate consideration of risk, taking into account uncertainties in estimating harvest, stock conditions, life history parameters, or the effects of environmental factors.

(4) National Standard 8 (see Sec. 600.345). National Standard 8 directs the Councils to apply economic and social factors towards sustained participation of fishing communities and to the extent practicable, minimize adverse economic impacts on such communities within the context of preventing overfishing and rebuilding overfished stocks as required under National Standard 1. Therefore, calculation of OY as reduced from MSY should include economic and social factors, but the combination of management measures chosen to achieve the OY must principally be designed to prevent overfishing and rebuild overfished stocks.

(5) National Standard 9 (see Sec. 600.350). Evaluation of stock status with respect to reference points must take into account mortality caused by bycatch. In addition, the estimation of catch should include the mortality of fish that are discarded.

(m) Exceptions to requirements to prevent overfishing. Exceptions to the requirement to prevent overfishing could apply under certain limited circumstances. Harvesting one stock at its optimum level may result in overfishing of another stock when the two stocks tend to be caught together (This can occur when the two stocks are part of the same fishery or if one is bycatch in the other's fishery). Before a Council may decide to allow this type of overfishing, an analysis must be performed and the analysis must contain a justification in terms of overall benefits, including a comparison of benefits under alternative management measures, and an analysis of the risk of any stock or stock complex falling below its MSST. The Council may decide to allow this type of overfishing if the fishery is not overfished and the analysis demonstrates that all of the following conditions are satisfied:

(1) Such action will result in long-term net benefits to the Nation;

(2) Mitigating measures have been considered and it has been demonstrated that a similar level of long-term net benefits cannot be achieved by modifying fleet behavior, gear selection/configuration, or other technical characteristic in a manner such that no overfishing would occur; and

(3) The resulting rate of fishing mortality will not cause any stock or stock complex to

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fall below its MSST more than 50 percent of the time in the long term, although it is recognized that persistent overfishing is expected to cause the affected stock to fall below its Bmsy more than 50 percent of the time in the long term.

## **Sec. 600.315 National Standard 2--Scientific Information.**

(a) Standard 2. Conservation and management measures shall be based upon the best scientific information available.

(1) Fishery conservation and management require high quality and timely biological, ecological, environmental, economic, and sociological scientific information to effectively conserve and manage living marine resources. Successful fishery management depends, in part, on the thorough analysis of this information, and the extent to which the information is applied for:

(i) Evaluating the potential impact that conservation and management measures will have on living marine resources, essential fish habitat (EFH), marine ecosystems, fisheries participants, fishing communities, and the nation; and

(ii) Identifying areas where additional management measures are needed.

(2) Scientific information that is used to inform decision making should include an evaluation of its uncertainty and identify gaps in the information. Management decisions should recognize the biological (e.g., overfishing), ecological, sociological, and economic (e.g., loss of fishery benefits) risks associated with the sources of uncertainty and gaps in the scientific information.

(3) Information-limited fisheries, commonly referred to as "data-poor" fisheries, may require use of simpler assessment methods and greater use of proxies for quantities that cannot be directly estimated, as compared to data-rich fisheries.

(4) Scientific information includes, but is not limited to, factual input, data, models, analyses, technical information, or scientific assessments. Scientific information includes data compiled directly from surveys or sampling programs, and models that are mathematical representations of reality constructed with primary data. The complexity of the model should not be the defining characteristic of its value; the data requirements and assumptions associated with a model should be commensurate with the resolution and accuracy of the available primary data. Scientific information includes established and emergent scientific information. Established science is scientific knowledge derived and verified through a standard scientific process that tends to be agreed upon often without controversy. Emergent science is relatively new knowledge that is still evolving and being verified, therefore, may potentially be uncertain and controversial. Emergent science should be considered more thoroughly, and scientists should be attentive to effective communication of emerging science.

(5) Science is a dynamic process, and new scientific findings constantly advance the state of knowledge. Best scientific information is, therefore, not static and ideally entails developing and following a research plan with the following elements: Clear statement of objectives; conceptual model that provides the framework for interpreting results, making

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predictions, or testing hypotheses; study design with an explicit and standardized method of collecting data; documentation of methods, results, and conclusions; peer review, as appropriate; and communication of findings.

(6) Criteria to consider when evaluating best scientific information are relevance, inclusiveness, objectivity, transparency and openness, timeliness, verification and validation, and peer review, as appropriate.

(i) Relevance. Scientific information should be pertinent to the current questions or issues under consideration and should be representative of the fishery being managed. In addition to the information collected directly about the fishery being managed, relevant information may be available about the same species in other areas, or about related species. For example, use of proxies may be necessary in data-poor situations. Analysis of related stocks or species may be a useful tool for inferring the likely traits of stocks for which stock-specific data are unavailable or are not sufficient to produce reliable estimates. Also, if management measures similar to those being considered have been introduced in other regions and resulted in particular behavioral responses from participants or business decisions from industry, such social and economic information may be relevant.

(ii) Inclusiveness. Three aspects of inclusiveness should be considered when developing and evaluating best scientific information:

(A) The relevant range of scientific disciplines should be consulted to encompass the scope of potential impacts of the management decision.

(B) Alternative scientific points of view should be acknowledged and addressed openly when there is a diversity of scientific thought.

(C) Relevant local and traditional knowledge (e.g., fishermen's empirical knowledge about the behavior and distribution of fish stocks) should be obtained, where appropriate, and considered when evaluating the BSIA.

(iii) Objectivity. Scientific information should be accurate, with a known degree of precision, without addressable bias, and presented in an accurate, clear, complete, and balanced manner. Scientific processes should be free of undue nonscientific influences and considerations.

(iv) Transparency and openness.

(A) The Magnuson-Stevens Act provides broad public and stakeholder access to the fishery conservation and management process, including access to the scientific information upon which the process and management measures are based. Public comment should be solicited at appropriate times during the review of scientific information. Communication with the public should be structured to foster understanding of the scientific process.

(B) Scientific information products should describe data collection methods, report sources of uncertainty or statistical error, and acknowledge other data limitations. Such products should explain any decisions to exclude data from analysis.

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Scientific products should identify major assumptions and uncertainties of analytical models. Finally, such products should openly acknowledge gaps in scientific information.

(v) **Timeliness.** Mandatory management actions should not be delayed due to limitations in the scientific information or the promise of future data collection or analysis. In some cases, due to time constraints, results of important studies or monitoring programs may be considered for use before they are fully complete. Uncertainties and risks that arise from an incomplete study should be acknowledged, but interim results may be better than no results to help inform a management decision. Sufficient time should be allotted to audit and analyze recently acquired information to ensure its reliability. Data collection methods are expected to be subjected to appropriate review before providing data used to inform management decisions.

(A) For information that needs to be updated on a regular basis, the temporal gap between information collection and management implementation should be as short as possible, subject to regulatory constraints, and such timing concerns should be explicitly considered when developing conservation and management measures. Late submission of scientific information to the Council process should be avoided if the information has circumvented the review process. Data collection is a continuous process, therefore analysis of scientific information should specify a clear time point beyond which new information would not be considered in that analysis and would be reserved for use in subsequent analytical updates.

(B) Historical information should be evaluated for its relevance to inform the current situation. For example, some species' life history characteristics might not change over time. Other historical data (e.g., abundance, environmental, catch statistics, market and trade trends) provide time-series information on changes in fish populations, fishery participation, and fishing effort that may inform current management decisions.

(vi) **Verification and validation.** Methods used to produce scientific information should be verified and validated to the extent possible.

(A) Verification means that the data and procedures used to produce the scientific information are documented in sufficient detail to allow reproduction of the analysis by others with an acceptable degree of precision. External reviewers of scientific information require this level of documentation to conduct a thorough review.

(B) Validation refers to the testing of analytical methods to ensure that they perform as intended. Validation should include whether the analytical method has been programmed correctly in the computer software, the accuracy and precision of the estimates is adequate, and the estimates are robust to model assumptions. Models should be tested using simulated data from a population with known properties to evaluate how well the models estimate those characteristics and to correct for known bias to achieve accuracy. The concept of validation using simulation testing should be used, to the extent possible, to evaluate how well a management strategy meets management objectives.

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(vii) Peer review. Peer review is a process used to ensure that the quality and credibility of scientific information and scientific methods meet the standards of the scientific and technical community. Peer review helps ensure objectivity, reliability, and integrity of scientific information. The peer review process is an organized method that uses peer scientists with appropriate and relevant expertise to evaluate scientific information. The scientific information that supports conservation and management measures considered by the Secretary or a Council should be peer reviewed, as appropriate. Factors to consider when determining whether to conduct a peer review and if so, the appropriate level of review, include the novelty and complexity of the scientific information to be reviewed, the level of previous review and the importance of the information to be reviewed to the decision making process. Routine updates based on previously reviewed methods require less review than novel methods or data. If formal peer review is not practicable due to time or resource constraints, the development and analysis of scientific information used in or in support of fishery management actions should be as transparent as possible, in accordance with paragraph (a)(6)(iv) of this section. Other applicable guidance on peer review can be found in the Office of Management and Budget Final Information Quality Bulletin for Peer Review.

(b) Peer review process. The Secretary and each Council may establish a peer review process for that Council for scientific information used to advise about the conservation and management of the fishery. 16 U.S.C. 1852(g)(1)(E). A peer review process is not a substitute for an SSC and should work in conjunction with the SSC (see Sec. 600.310(b)(2)(v)(C)). This section provides guidance and standards that should be followed in order to establish a peer review process per Magnuson-Stevens Act section 302(g)(1)(E).

(1) The objective or scope of the peer review, the nature of the scientific information to be reviewed, and timing of the review should be considered when selecting the type of peer review to be used. The process established by the Secretary and Council should focus on providing review for information that has not yet undergone rigorous peer review, but that must be peer reviewed in order to provide reliable, high quality scientific advice for fishery conservation and management. Duplication of previously conducted peer review should be avoided.

(i) Form of process. The peer review process may include or consist of existing Council committees or panels if they meet the standards identified herein. The Secretary and Council have discretion to determine the appropriate peer review process for a specific information product. A peer review can take many forms, including individual letter or written reviews and panel reviews.

(ii) Timing. The peer review should, to the extent practicable, be conducted early in the process of producing scientific information or a work product, so peer review

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reports are available for the SSC to consider in its evaluation of scientific information for its Council and the Secretary. The timing will depend in part on the scope of the review. For instance, the peer review of a new or novel method or model should be conducted before there is an investment of time and resources in implementing the model and interpreting the results. The results of this type of peer review may contribute to improvements in the model or assessment.

(iii) Scope of work. The scope of work or charge (sometimes called the terms of reference) of any peer review should be determined in advance of the selection of reviewers. The scope of work contains the objectives of the peer review, evaluation of the various stages of the science, and specific recommendations for improvement of the science. The scope of work should be carefully designed, with specific technical questions to guide the peer review process; it should ask peer reviewers to ensure that scientific uncertainties are clearly identified and characterized, it should allow peer reviewers the opportunity to offer a broad evaluation of the overall scientific or technical product under review, as well as to make recommendations regarding areas of missing information, future research, data collection, and improvements in methodologies, and it must not change during the course of the peer review. The scope of work may not request reviewers to provide advice on policy or regulatory issues (e.g., amount of precaution used in decision-making) which are within the purview of the Secretary and the Councils, or to make formal fishing level recommendations which are within the purview of the SSC.

(2) Peer reviewer selection. The selection of participants in a peer review should be based on expertise, independence, and a balance of viewpoints, and be free of conflicts of interest.

(i) Expertise and balance. Peer reviewers must be selected based on scientific expertise and experience relevant to the disciplines of subject matter to be reviewed. The group of reviewers that constitute the peer review should reflect a balance in perspectives, to the extent practicable, and should have sufficiently broad and diverse expertise to represent the range of relevant scientific and technical perspectives to complete the objectives of the peer review.

(ii) Conflict of interest. Peer reviewers who are federal employees must comply with all applicable federal ethics requirements. Potential reviewers who are not federal employees must be screened for conflicts of interest in accordance with the NOAA Policy on Conflicts of Interest for Peer Review Subject to OMB's Peer Review Bulletin or other applicable rules or guidelines.

(A) Under the NOAA policy, peer reviewers must not have any conflicts of interest with the scientific information, subject matter, or work product under review, or any aspect of the statement of work for the peer review. For purposes of this section, a conflict of interest is any financial or other interest which conflicts with the service of the

individual on a review panel because it: could significantly impair the reviewer's objectivity, or could create an unfair competitive advantage for a person or organization.

(B) No individual can be appointed to a review panel if that individual has a conflict of interest that is relevant to the functions to be performed. For reviews requiring highly specialized expertise, the limited availability of qualified reviewers might result in an exception when a conflict of interest is unavoidable; in this situation, the conflict must be promptly and publicly disclosed. Conflicts of interest include, but are not limited to, the personal financial interests and investments, employer affiliations, and consulting arrangements, grants, or contracts of the individual and of others with whom the individual has substantial common financial interests, if these interests are relevant to the functions to be performed.

(iii) Independence. Peer reviewers must not have contributed or participated in the development of the work product or scientific information under review. For peer review of products of higher novelty or controversy, a greater degree of independence is necessary to ensure credibility of the peer review process. Peer reviewer responsibilities should rotate across the available pool of qualified reviewers or among the members on a standing peer review panel to prevent a peer reviewer from repeatedly reviewing the same scientific information, recognizing that, in some cases, repeated service by the same reviewer may be needed because of limited availability of specialized expertise.

(3) Transparency. A transparent process is one that ensures that background documents and reports from peer review are publicly available, subject to Magnuson-Stevens Act confidentiality requirements, and allows the public full and open access to peer review panel meetings. The evaluation and review of scientific information by the Councils, SSCs or advisory panels must be conducted in accordance with meeting procedures at Sec. 600.135. Consistent with that section, public notice of peer review panel meetings should be announced in the Federal Register with a minimum of 14 days and with an aim of 21 days before the review to allow public comments during meetings. Background documents should be available for public review in a timely manner prior to meetings. Peer review reports describing the scope and objectives of the review, findings in accordance with each objective, and conclusions should be publicly available. Names and organizational affiliations of reviewers also should be publicly available.

(4) Publication of the peer review process. The Secretary will announce the establishment of a peer review process under Magnuson-Stevens Act section 302(g)(1)(E) in the Federal Register along with a brief description of the process. In addition, detailed information on such processes will be made publicly available on the Council's Web site, and updated as necessary.

(c) SSC scientific evaluation and advice to the Council. Each scientific and statistical committee shall provide its Council ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch, preventing

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overfishing, maximum sustainable yield, achieving rebuilding targets, and reports on stock status and health, bycatch, habitat status, social and economic impacts of management measures, and sustainability of fishing practices. 16 U.S.C. 1852(g)(1)(B).

(1) SSC scientific advice and recommendations to its Council are based on scientific information that the SSC determines to meet the guidelines for best scientific information available as described in paragraph (a) of this section. SSCs may conduct peer reviews or evaluate peer reviews to provide clear scientific advice to the Council. Such scientific advice should attempt to resolve conflicting scientific information, so that the Council will not need to engage in debate on technical merits. Debate and evaluation of scientific information is the role of the SSC.

(2) An SSC member may participate in a peer review when such participation is beneficial to the peer review due to the expertise and institutional memory of that member, or beneficial to the Council's advisory body by allowing that member to make a more informed evaluation of the scientific information. Participation of an SSC member in a peer review should not impair the ability of that member to fulfill his or her responsibilities to the SSC.

(3) If an SSC as a body conducts a peer review established under Magnuson-Stevens Act section 302(g)(1)(E) or individual members of an SSC participate in such a peer review, the SSC members must meet the peer reviewer selection criteria as described in paragraph (b)(2) of this section. In addition, the financial disclosure requirements under Sec. 600.235, Financial Disclosure for Councils and Council committees, apply. When the SSC as a body is conducting a peer review, it should strive for consensus and must meet the transparency guidelines under paragraphs (a)(6)(iv) and (b)(3) of this section. If consensus cannot be reached, minority viewpoints should be recorded.

(4) The SSC's evaluation of a peer review conducted by a body other than the SSC should consider the extent and quality of peer review that has already taken place. For Councils with extensive and detailed peer review processes (e.g., a process established pursuant to Magnuson-Stevens Act section 302(g)(1)(E)), the evaluation by the SSC of the peer reviewed information should not repeat the previously conducted and detailed technical peer review. However, SSCs must maintain their role as advisors to the Council about scientific information that comes from a peer review process. Therefore, the peer review of scientific information used to advise the Council, including a peer review process established by the Secretary and the Council under Magnuson-Stevens Act section 302(g)(1)(E), should be conducted early in the scientific evaluation process in order to provide the SSC with reasonable opportunity to consider the peer review report and make recommendations to the Council as required under Magnuson-Stevens Act section 302(g)(1)(B).

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(5) If an SSC disagrees with the findings or conclusions of a peer review, in whole or in part, the SSC must prepare a report outlining the areas of disagreement, and the rationale and information used by the SSC for making its determination. This report must be made publicly available.

(6) Annual catch limits (ACLs) developed by a Council may not exceed its SSC's fishing level recommendations. 16 U.S.C. 1852(h)(6). Per the National Standard 1 Guidelines, the SSC fishing level recommendation that is most relevant to ACLs is acceptable biological catch (ABC), as both ACL and ABC are levels of annual catch (see Sec. 600.310(b)(2)(v)(D)). The SSC is expected to take scientific uncertainty into account when making its ABC recommendation (Sec. 600.310(f)(4)). The ABC recommendation may be based upon input and recommendations from the peer review process. Any such peer review related to such recommendations should be conducted early in the process as described in paragraph (c)(4) of this section. The SSC should resolve differences between its recommendations and any relevant peer review recommendations per paragraph (c)(5) of this section.

(d) SAFE Report. The term SAFE (Stock Assessment and Fishery Evaluation) report, as used in this section, refers to a public document or a set of related public documents, that provides the Secretary and the Councils with a summary of scientific information concerning the most recent biological condition of stocks, stock complexes, and marine ecosystems in the fishery management unit (FMU), essential fish habitat (EFH), and the social and economic condition of the recreational and commercial fishing interests, fishing communities, and the fish processing industries. Each SAFE report must be scientifically based with appropriate citations of data sources and information. Each SAFE report summarizes, on a periodic basis, the best scientific information available concerning the past, present, and possible future condition of the stocks, EFH, marine ecosystems, and fisheries being managed under Federal regulation.

(1) The Secretary has the responsibility to ensure that SAFE reports are prepared and updated or supplemented as necessary whenever new information is available to inform management decisions such as status determination criteria (SDC), overfishing level (OFL), optimum yield, or ABC values (Sec. 600.310(c)). The SAFE report and any comments or reports from the SSC must be available to the Secretary and Council for making management decisions for each FMP to ensure that the best scientific information available is being used. The Secretary or Councils may utilize any combination of personnel from Council, State, Federal, university, or other sources to acquire and analyze data and produce the SAFE report.

(2) The SAFE report provides information to the Councils and the Secretary for determining annual catch limits (Sec. 600.310(f)(5)) for each stock in the fishery; documenting significant trends or changes in the resource, marine ecosystems, and fishery over time; implementing required EFH provisions (Sec. 600.815(a)(10)); and assessing the relative success of existing relevant state and Federal fishery management

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programs. The SAFE report should contain an explanation of information gaps and highlight needs for future scientific work. Information on bycatch and safety for each fishery should also be summarized. In addition, the SAFE report may be used to update or expand previous environmental and regulatory impact documents and ecosystem descriptions.

(3) Each SAFE report should contain the following scientific information when it exists:

(i) Information on which to base catch specifications and status determinations, including the most recent stock assessment documents and associated peer review reports, and recommendations and reports from the Council's SSC.

(A) A description of the SDC (e.g., maximum fishing mortality rate threshold and minimum stock size threshold for each stock or stock complex in the fishery) (Sec. 600.310(e)(2)).

(B) Information on OFL and ABC, preventing overfishing, and achieving rebuilding targets. Documentation of the data collection, estimation methods, and consideration of uncertainty in formulating catch specification recommendations should be included (Sec. 600.310(f)(2)). The best scientific information available to determine whether overfishing is occurring with respect to any stock or stock complex, whether any stock or stock complex is overfished, whether the rate or level of fishing mortality applied to any stock or stock complex is approaching the maximum fishing mortality threshold, and whether the size of any stock or stock complex is approaching the minimum stock size threshold; and

(C) The best scientific information available in support of management measures necessary to rebuild an overfished stock or stock complex (if any) in the fishery to a level consistent with producing the MSY in that fishery.

(ii) Information on sources of fishing mortality (both landed and discarded), including commercial and recreational catch and bycatch in other fisheries and a description of data collection and estimation methods used to quantify total catch mortality, as required by the National Standard 1 Guidelines (Sec. 600.310(i)).

(iii) Information on bycatch of non-target species for each fishery.

(iv) Information on EFH to be included in accordance with the EFH provisions (Sec. 600.815(a)(10)).

(v) Pertinent economic, social, community, and ecological information for assessing the success and impacts of management measures or the achievement of objectives of each FMP.

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(4) Transparency in the fishery management process is enhanced by complementing the SAFE report with the documentation of previous management actions taken by the Council or Secretary including a summary of the previous ACLs, ACTs, and accountability measures (AMs), and assessment of management uncertainty.

(5) To facilitate the use of the information in the SAFE report, and its availability to the Council, NMFS, and the public:

(i) The SAFE report should contain, or be supplemented by, a summary of the information and an index or table of contents to the components of the report. Sources of information in the SAFE report should be referenced, unless the information is proprietary.

(ii) The SAFE report or compilation of documents that comprise the SAFE report and index must be made available by the Council or NMFS on a readily accessible Web site.

(e) FMP development.--(1) FMPs must take into account the best scientific information available at the time of preparation. Between the initial drafting of an FMP and its submission for final review, new information often becomes available. This new information should be incorporated into the final FMP where practicable; but it is unnecessary to start the FMP process over again, unless the information indicates that drastic changes have occurred in the fishery that might require revision of the management objectives or measures.

(2) The fact that scientific information concerning a fishery is incomplete does not prevent the preparation and implementation of an FMP (see related Sec. Sec. 600.320(d)(2) and 600.340(b)).

(3) An FMP must specify whatever information fishermen and processors will be required or requested to submit to the Secretary. Information about harvest within state waters, as well as in the EEZ, may be collected if it is needed for proper implementation of the FMP and cannot be obtained otherwise. Scientific information collections for stocks managed cooperatively by Federal and State governments should be coordinated with the appropriate state jurisdictions, to the extent practicable, to ensure harvest information is available for the management of stocks that utilize habitats in state and federal managed waters. The FMP should explain the practical utility of the information specified in monitoring the fishery, in facilitating inseason management decisions, and in judging the performance of the management regime; it should also consider the effort, cost, or social impact of obtaining it.

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(4) An FMP should identify scientific information needed from other sources to improve understanding and management of the resource, marine ecosystem, the fishery, and fishing communities.

(5) The information submitted by various data suppliers should be comparable and compatible, to the maximum extent possible.

(6) FMPs should be amended on a timely basis, as new information indicates the necessity for change in objectives or management measures consistent with the conditions described in paragraph (d) of this section (SAFE reports). Paragraphs (e)(1) through (5) of this section apply equally to FMPs and FMP amendments.

### **Sec. 600.320 National Standard 3--Management Units.**

(a) Standard 3. To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

(b) General. The purpose of this standard is to induce a comprehensive approach to fishery management. The geographic scope of the fishery, for planning purposes, should cover the entire range of the stocks(s) of fish, and not be overly constrained by political boundaries. Wherever practicable, an FMP should seek to manage interrelated stocks of fish.

(c) Unity of management. Cooperation and understanding among entities concerned with the fishery (e.g., Councils, states, Federal Government, international commissions, foreign nations) are vital to effective management. Where management of a fishery involves multiple jurisdictions, coordination among the several entities should be sought in the development of an FMP. Where a range overlaps Council areas, one FMP to cover the entire range is preferred. The Secretary designates which Council(s) will prepare the FMP, under section 304(f) of the Magnuson-Stevens Act.

(d) Management unit. The term "management unit" means a fishery or that portion of a fishery identified in an FMP as relevant to the FMP's management objectives.

(1) Basis. The choice of a management unit depends on the focus of the FMP's objectives, and may be organized around biological, geographic, economic, technical, social, or ecological perspectives. For example:

- (i) Biological--could be based on a stock(s) throughout its range.
- (ii) Geographic--could be an area.
- (iii) Economic--could be based on a fishery supplying specific product forms.

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(iv) Technical--could be based on a fishery utilizing a specific gear type or similar fishing practices.

(v) Social--could be based on fishermen as the unifying element, such as when the fishermen pursue different species in a regular pattern throughout the year.

(vi) Ecological--could be based on species that are associated in the ecosystem or are dependent on a particular habitat.

(2) Conservation and management measures. FMPs should include conservation and management measures for that part of the management unit within U.S. waters, although the Secretary can ordinarily implement them only within the EEZ. The measures need not be identical for each geographic area within the management unit, if the FMP justifies the differences. A management unit may contain, in addition to regulated species, stocks of fish for which there is not enough information available to specify MSY and OY or to establish management measures, so that data on these species may be collected under the FMP.

(e) Analysis. To document that an FMP is as comprehensive as practicable, it should include discussions of the following:

(1) The range and distribution of the stocks, as well as the patterns of fishing effort and harvest.

(2) Alternative management units and reasons for selecting a particular one. A less-than-comprehensive management unit may be justified if, for example, complementary management exists or is planned for a separate geographic area or for a distinct use of the stocks, or if the unmanaged portion of the resource is immaterial to proper management.

(3) Management activities and habitat programs of adjacent states and their effects on the FMP's objectives and management measures. Where state action is necessary to implement measures within state waters to achieve FMP objectives, the FMP should identify what state action is necessary, discuss the consequences of state inaction or contrary action, and make appropriate recommendations. The FMP should also discuss the impact that Federal regulations will have on state management activities.

(4) Management activities of other countries having an impact on the fishery, and how the FMP's management measures are designed to take into account these impacts. International boundaries may be dealt with in several ways. For example:

(i) By limiting the management unit's scope to that portion of the stock found in U.S. waters;

(ii) By estimating MSY for the entire stock and then basing the determination of OY for the U.S. fishery on the portion of the stock within U.S. waters; or

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(iii) By referring to treaties or cooperative agreements.

## **Sec. 600.325 National Standard 4--Allocations.**

(a) Standard 4. Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various U.S. fishermen, such allocation shall be:

- (1) Fair and equitable to all such fishermen.
- (2) Reasonably calculated to promote conservation.
- (3) Carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

(b) Discrimination among residents of different states. An FMP may not differentiate among U.S. citizens, nationals, resident aliens, or corporations on the basis of their state of residence. An FMP may not incorporate or rely on a state statute or regulation that discriminates against residents of another state. Conservation and management measures that have different effects on persons in various geographic locations are permissible if they satisfy the other guidelines under Standard 4. Examples of these precepts are:

(1) An FMP that restricted fishing in the EEZ to those holding a permit from state X would violate Standard 4 if state X issued permits only to its own citizens.

(2) An FMP that closed a spawning ground might disadvantage fishermen living in the state closest to it, because they would have to travel farther to an open area, but the closure could be justified under Standard 4 as a conservation measure with no discriminatory intent.

(c) Allocation of fishing privileges. An FMP may contain management measures that allocate fishing privileges if such measures are necessary or helpful in furthering legitimate objectives or in achieving the OY, and if the measures conform with paragraphs (c)(3)(i) through (c)(3)(iii) of this section.

(1) Definition. An "allocation" or "assignment" of fishing privileges is a direct and deliberate distribution of the opportunity to participate in a fishery among identifiable, discrete user groups or individuals. Any management measure (or lack of management) has incidental allocative effects, but only those measures that result in direct distributions of fishing privileges will be judged against the allocation requirements of Standard 4. Adoption of an FMP that merely perpetuates existing fishing practices may result in an allocation, if those practices directly distribute the opportunity to participate in the fishery. Allocations of fishing privileges include, for example, per-vessel catch limits, quotas by vessel class and gear type, different quotas or fishing seasons for recreational and commercial fishermen, assignment of ocean areas to different gear users, and limitation of permits to a certain number of vessels or fishermen.

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(2) Analysis of allocations. Each FMP should contain a description and analysis of the allocations existing in the fishery and of those made in the FMP. The effects of eliminating an existing allocation system should be examined. Allocation schemes considered, but rejected by the Council, should be included in the discussion. The analysis should relate the recommended allocations to the FMP's objectives and OY specification, and discuss the factors listed in paragraph (c)(3) of this section.

(3) Factors in making allocations. An allocation of fishing privileges must be fair and equitable, must be reasonably calculated to promote conservation, and must avoid excessive shares. These tests are explained in paragraphs (c)(3)(i) through (c)(3)(iii) of this section:

(i) Fairness and equity.

(A) An allocation of fishing privileges should be rationally connected to the achievement of OY or with the furtherance of a legitimate FMP objective. Inherent in an allocation is the advantaging of one group to the detriment of another. The motive for making a particular allocation should be justified in terms of the objectives of the FMP; otherwise, the disadvantaged user groups or individuals would suffer without cause. For instance, an FMP objective to preserve the economic status quo cannot be achieved by excluding a group of long-time participants in the fishery. On the other hand, there is a rational connection between an objective of harvesting shrimp at their maximum size and closing a nursery area to trawling.

(B) An allocation of fishing privileges may impose a hardship on one group if it is outweighed by the total benefits received by another group or groups. An allocation need not preserve the status quo in the fishery to qualify as "fair and equitable," if a restructuring of fishing privileges would maximize overall benefits. The Council should make an initial estimate of the relative benefits and hardships imposed by the allocation, and compare its consequences with those of alternative allocation schemes, including the status quo. Where relevant, judicial guidance and government policy concerning the rights of treaty Indians and aboriginal Americans must be considered in determining whether an allocation is fair and equitable.

(ii) Promotion of conservation. Numerous methods of allocating fishing privileges are considered "conservation and management" measures under section 303 of the Magnuson-Stevens Act. An allocation scheme may promote conservation by encouraging a rational, more easily managed use of the resource. Or, it may promote conservation (in the sense of wise use) by optimizing the yield in terms of size, value, market mix, price, or economic or social benefit of the product. To the extent that rebuilding plans or other conservation and management measures that reduce the overall harvest in a fishery are necessary, any harvest restrictions or recovery benefits must be allocated fairly and equitably among the commercial, recreational, and charter fishing sectors of the fishery.

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(iii) Avoidance of excessive shares. An allocation scheme must be designed to deter any person or other entity from acquiring an excessive share of fishing privileges, and to avoid creating conditions fostering inordinate control, by buyers or sellers, that would not otherwise exist.

(iv) Other factors. In designing an allocation scheme, a Council should consider other factors relevant to the FMP's objectives. Examples are economic and social consequences of the scheme, food production, consumer interest, dependence on the fishery by present participants and coastal communities, efficiency of various types of gear used in the fishery, transferability of effort to and impact on other fisheries, opportunity for new participants to enter the fishery, and enhancement of opportunities for recreational fishing.

**Sec. 600.330 National Standard 5--Efficiency.**

(a) Standard 5. Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

(b) Efficiency in the utilization of resources--

(1) General. The term "utilization" encompasses harvesting, processing, marketing, and non-consumptive uses of the resource, since management decisions affect all sectors of the industry. In considering efficient utilization of fishery resources, this standard highlights one way that a fishery can contribute to the Nation's benefit with the least cost to society: Given a set of objectives for the fishery, an FMP should contain management measures that result in as efficient a fishery as is practicable or desirable.

(2) Efficiency. In theory, an efficient fishery would harvest the OY with the minimum use of economic inputs such as labor, capital, interest, and fuel. Efficiency in terms of aggregate costs then becomes a conservation objective, where "conservation" constitutes wise use of all resources involved in the fishery, not just fish stocks.

(i) In an FMP, management measures may be proposed that allocate fish among different groups of individuals or establish a system of property rights. Alternative measures examined in searching for an efficient outcome will result in different distributions of gains and burdens among identifiable user groups. An FMP should demonstrate that management measures aimed at efficiency do not simply redistribute gains and burdens without an increase in efficiency.

(ii) Management regimes that allow a fishery to operate at the lowest possible cost (e.g., fishing effort, administration, and enforcement) for a particular level of catch and initial stock size are considered efficient. Restrictive measures that unnecessarily raise any of those costs move the regime toward inefficiency. Unless the use of inefficient techniques or the creation of redundant fishing capacity contributes to the attainment of other social or biological objectives, an FMP may not contain management measures that impede the use of cost-effective techniques of harvesting, processing, or marketing, and should avoid creating strong incentives for excessive investment in private sector fishing capital and labor.

(c) Limited access. A "system for limiting access," which is an optional measure under section 303(b) of the Magnuson-Stevens Act, is a type of allocation of fishing privileges that may be considered to contribute to economic efficiency or conservation. For example, limited access may be used to combat overfishing, overcrowding, or overcapitalization in a fishery to achieve OY. In an unutilized or underutilized fishery, it may be used to reduce the chance that these conditions will adversely affect the fishery in

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the future, or to provide adequate economic return to pioneers in a new fishery. In some cases, limited entry is a useful ingredient of a conservation scheme, because it facilitates application and enforcement of other management measures.

(1) Definition. Limited access (or limited entry) is a management technique that attempts to limit units of effort in a fishery, usually for the purpose of reducing economic waste, improving net economic return to the fishermen, or capturing economic rent for the benefit of the taxpayer or the consumer. Common forms of limited access are licensing of vessels, gear, or fishermen to reduce the number of units of effort, and dividing the total allowable catch into fishermen's quotas (a stock-certificate system). Two forms (i.e., Federal fees for licenses or permits in excess of administrative costs, and taxation) are not permitted under the Magnuson-Stevens Act, except for fees allowed under section 304(d)(2).

(2) Factors to consider. The Magnuson-Stevens Act ties the use of limited access to the achievement of OY. An FMP that proposes a limited access system must consider the factors listed in section 303(b)(6) of the Magnuson-Stevens Act and in Sec. 600.325(c)(3). In addition, it should consider the criteria for qualifying for a permit, the nature of the interest created, whether to make the permit transferable, and the Magnuson-Stevens Act's limitations on returning economic rent to the public under section 304(d). The FMP should also discuss the costs of achieving an appropriate distribution of fishing privileges.

(d) Analysis. An FMP should discuss the extent to which overcapitalization, congestion, economic waste, and inefficient techniques in the fishery reduce the net benefits derived from the management unit and prevent the attainment and appropriate allocation of OY. It should also explain, in terms of the FMP's objectives, any restriction placed on the use of efficient techniques of harvesting, processing, or marketing. If, during FMP development, the Council considered imposing a limited-entry system, the FMP should analyze the Council's decision to recommend or reject limited access as a technique to achieve efficient utilization of the resources of the fishing industry.

(e) Economic allocation. This standard prohibits only those measures that distribute fishery resources among fishermen on the basis of economic factors alone, and that have economic allocation as their only purpose. Where conservation and management measures are recommended that would change the economic structure of the industry or the economic conditions under which the industry operates, the need for such measures must be justified in light of the biological, ecological, and social objectives of the FMP, as well as the economic objectives.

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## **Sec. 600.335 National Standard 6--Variations and Contingencies.**

(a) Standard 6. Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

(b) Conservation and management. Each fishery exhibits unique uncertainties. The phrase "conservation and management" implies the wise use of fishery resources through a management regime that includes some protection against these uncertainties. The particular regime chosen must be flexible enough to allow timely response to resource, industry, and other national and regional needs. Continual data acquisition and analysis will help the development of management measures to compensate for variations and to reduce the need for substantial buffers. Flexibility in the management regime and the regulatory process will aid in responding to contingencies.

(c) Variations.

(1) In fishery management terms, variations arise from biological, social, and economic occurrences, as well as from fishing practices. Biological uncertainties and lack of knowledge can hamper attempts to estimate stock size and strength, stock location in time and space, environmental/habitat changes, and ecological interactions. Economic uncertainty may involve changes in foreign or domestic market conditions, changes in operating costs, drifts toward overcapitalization, and economic perturbations caused by changed fishing patterns. Changes in fishing practices, such as the introduction of new gear, rapid increases or decreases in harvest effort, new fishing strategies, and the effects of new management techniques, may also create uncertainties. Social changes could involve increases or decreases in recreational fishing, or the movement of people into or out of fishing activities due to such factors as age or educational opportunities.

(2) Every effort should be made to develop FMPs that discuss and take into account these vicissitudes. To the extent practicable, FMPs should provide a suitable buffer in favor of conservation. Allowances for uncertainties should be factored into the various elements of an FMP. Examples are:

(i) Reduce OY. Lack of scientific knowledge about the condition of a stock(s) could be reason to reduce OY.

(ii) Establish a reserve. Creation of a reserve may compensate for uncertainties in estimating domestic harvest, stock conditions, or environmental factors.

(iii) Adjust management techniques. In the absence of adequate data to predict the effect of a new regime, and to avoid creating unwanted variations, a Council could guard against producing drastic changes in fishing patterns, allocations, or practices.

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(iv) Highlight habitat conditions. FMPs may address the impact of pollution and the effects of wetland and estuarine degradation on the stocks of fish; identify causes of pollution and habitat degradation and the authorities having jurisdiction to regulate or influence such activities; propose recommendations that the Secretary will convey to those authorities to alleviate such problems; and state the views of the Council on unresolved or anticipated issues.

(d) Contingencies. Unpredictable events--such as unexpected resource surges or failures, fishing effort greater than anticipated, disruptive gear conflicts, climatic conditions, or environmental catastrophes--are best handled by establishing a flexible management regime that contains a range of management options through which it is possible to act quickly without amending the FMP or even its regulations.

(1) The FMP should describe the management options and their consequences in the necessary detail to guide the Secretary in responding to changed circumstances, so that the Council preserves its role as policy-setter for the fishery. The description should enable the public to understand what may happen under the flexible regime, and to comment on the options.

(2) FMPs should include criteria for the selection of management measures, directions for their application, and mechanisms for timely adjustment of management measures comprising the regime. For example, an FMP could include criteria that allow the Secretary to open and close seasons, close fishing grounds, or make other adjustments in management measures.

(3) Amendment of a flexible FMP would be necessary when circumstances in the fishery change substantially, or when a Council adopts a different management philosophy and objectives.

## **Sec. 600.340 National Standard 7--Costs and Benefits.**

(a) Standard 7. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

(b) Necessity of Federal management--

(1) General. The principle that not every fishery needs regulation is implicit in this standard. The Magnuson-Stevens Act requires Councils to prepare FMPs only for overfished fisheries and for other fisheries where regulation would serve some useful purpose and where the present or future benefits of regulation would justify the costs. For example, the need to collect data about a fishery is not, by itself, adequate justification for preparation of an FMP, since there are less costly ways to gather the data (see Sec. 600.320(d)(2)). In some cases, the FMP preparation process itself, even if it does not culminate in a document approved by the Secretary, can be useful in supplying a basis for management by one or more coastal states.

(2) Criteria. In deciding whether a fishery needs management through regulations implementing an FMP, the following general factors should be considered, among others:

(i) The importance of the fishery to the Nation and to the regional economy.

(ii) The condition of the stock or stocks of fish and whether an FMP can improve or maintain that condition.

(iii) The extent to which the fishery could be or is already adequately managed by states, by state/Federal programs, by Federal regulations pursuant to FMPs or international commissions, or by industry self-regulation, consistent with the policies and standards of the Magnuson-Stevens Act.

(iv) The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.

(v) The economic condition of a fishery and whether an FMP can produce more efficient utilization.

(vi) The needs of a developing fishery, and whether an FMP can foster orderly growth.

(vii) The costs associated with an FMP, balanced against the benefits (see paragraph (d) of this section as a guide).

(c) Alternative management measures. Management measures should not impose unnecessary burdens on the economy, on individuals, on private or public organizations, or on Federal, state, or local governments. Factors such as fuel costs, enforcement costs, or the burdens of collecting data may well suggest a preferred alternative.

(d) Analysis. The supporting analyses for FMPs should demonstrate that the benefits of fishery regulation are real and substantial relative to the added research, administrative,

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and enforcement costs, as well as costs to the industry of compliance. In determining the benefits and costs of management measures, each management strategy considered and its impacts on different user groups in the fishery should be evaluated. This requirement need not produce an elaborate, formalistic cost/benefit analysis. Rather, an evaluation of effects and costs, especially of differences among workable alternatives, including the status quo, is adequate. If quantitative estimates are not possible, qualitative estimates will suffice.

(1) Burdens. Management measures should be designed to give fishermen the greatest possible freedom of action in conducting business and pursuing recreational opportunities that are consistent with ensuring wise use of the resources and reducing conflict in the fishery. The type and level of burden placed on user groups by the regulations need to be identified. Such an examination should include, for example: Capital outlays; operating and maintenance costs; reporting costs; administrative, enforcement, and information costs; and prices to consumers. Management measures may shift costs from one level of government to another, from one part of the private sector to another, or from the government to the private sector. Redistribution of costs through regulations is likely to generate controversy. A discussion of these and any other burdens placed on the public through FMP regulations should be a part of the FMP's supporting analyses.

(2) Gains. The relative distribution of gains may change as a result of instituting different sets of alternatives, as may the specific type of gain. The analysis of benefits should focus on the specific gains produced by each alternative set of management measures, including the status quo. The benefits to society that result from the alternative management measures should be identified, and the level of gain assessed.

**Sec. 600.345 National Standard 8--Communities.**

(a) Standard 8. Conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to:

- (1) Provide for the sustained participation of such communities; and
- (2) To the extent practicable, minimize adverse economic impacts on such communities.

(b) General.

(1) This standard requires that an FMP take into account the importance of fishery resources to fishing communities. This consideration, however, is within the context of the conservation requirements of the Magnuson-Stevens Act. Deliberations regarding the importance of fishery resources to affected fishing communities, therefore, must not compromise the achievement of conservation requirements and goals of the FMP. Where the preferred alternative negatively affects the sustained participation of fishing communities, the FMP should discuss the rationale for selecting this alternative over another with a lesser impact on fishing communities. All other things being equal, where two alternatives achieve similar conservation goals, the alternative that provides the greater potential for sustained participation of such communities and minimizes the adverse economic impacts on such communities would be the preferred alternative.

(2) This standard does not constitute a basis for allocating resources to a specific fishing community nor for providing preferential treatment based on residence in a fishing community.

(3) The term "fishing community" means a community that is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew, and fish processors that are based in such communities. A fishing community is a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or on directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops).

(4) The term "sustained participation" means continued access to the fishery within the constraints of the condition of the resource.

(c) Analysis.

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(1) FMPs must examine the social and economic importance of fisheries to communities potentially affected by management measures. For example, severe reductions of harvests for conservation purposes may decrease employment opportunities for fishermen and processing plant workers, thereby adversely affecting their families and communities. Similarly, a management measure that results in the allocation of fishery resources among competing sectors of a fishery may benefit some communities at the expense of others.

(2) An appropriate vehicle for the analyses under this standard is the fishery impact statement required by section 303(a)(9) of the Magnuson-Stevens Act. Qualitative and quantitative data may be used, including information provided by fishermen, dealers, processors, and fisheries organizations and associations. In cases where data are severely limited, effort should be directed to identifying and gathering needed data.

(3) To address the sustained participation of fishing communities that will be affected by management measures, the analysis should first identify affected fishing communities and then assess their differing levels of dependence on and engagement in the fishery being regulated. The analysis should also specify how that assessment was made. The best available data on the history, extent, and type of participation of these fishing communities in the fishery should be incorporated into the social and economic information presented in the FMP. The analysis does not have to contain an exhaustive listing of all communities that might fit the definition; a judgment can be made as to which are primarily affected. The analysis should discuss each alternative's likely effect on the sustained participation of these fishing communities in the fishery.

(4) The analysis should assess the likely positive and negative social and economic impacts of the alternative management measures, over both the short and the long term, on fishing communities. Any particular management measure may economically benefit some communities while adversely affecting others. Economic impacts should be considered both for individual communities and for the group of all affected communities identified in the FMP. Impacts of both consumptive and non-consumptive uses of fishery resources should be considered.

(5) A discussion of social and economic impacts should identify those alternatives that would minimize adverse impacts on these fishing communities within the constraints of conservation and management goals of the FMP, other national standards, and other applicable law.

## **Sec. 600.350 National Standard 9--Bycatch.**

(a) Standard 9. Conservation and management measures shall, to the extent practicable:

(1) Minimize bycatch; and

(2) To the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

(b) General. This national standard requires Councils to consider the bycatch effects of existing and planned conservation and management measures. Bycatch can, in two ways, impede efforts to protect marine ecosystems and achieve sustainable fisheries and the full benefits they can provide to the Nation. First, bycatch can increase substantially the uncertainty concerning total fishing-related mortality, which makes it more difficult to assess the status of stocks, to set the appropriate OY and define overfishing levels, and to ensure that OYs are attained and overfishing levels are not exceeded. Second, bycatch may also preclude other more productive uses of fishery resources.

(c) Definition--Bycatch. The term ``bycatch" means fish that are harvested in a fishery, but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic discards and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality). Bycatch does not include any fish that legally are retained in a fishery and kept for personal, tribal, or cultural use, or that enter commerce through sale, barter, or trade. Bycatch does not include fish released alive under a recreational catch-and-release fishery management program. A catch-and-release fishery management program is one in which the retention of a particular species is prohibited. In such a program, those fish released alive would not be considered bycatch. Bycatch also does not include Atlantic highly migratory species harvested in a commercial fishery that are not regulatory discards and that are tagged and released alive under a scientific tag-and-release program established by the Secretary.

(d) Minimizing bycatch and bycatch mortality. The priority under this standard is first to avoid catching bycatch species where practicable. Fish that are bycatch and cannot be avoided must, to the extent practicable, be returned to the sea alive. Any proposed conservation and management measure that does not give priority to avoiding the capture of bycatch species must be supported by appropriate analyses. In their evaluation, the Councils must consider the net benefits to the Nation, which include, but are not limited to: Negative impacts on affected stocks; incomes accruing to participants in directed fisheries in both the short and long term; incomes accruing to participants in fisheries that target the bycatch species; environmental consequences; non-market values of bycatch species, which include non-consumptive uses of bycatch species and existence values, as well as recreational values; and impacts on other marine organisms. To evaluate conservation and management measures relative to this and other national standards, as well as to evaluate total fishing mortality, Councils

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must—

(1) Promote development of a database on bycatch and bycatch mortality in the fishery to the extent practicable. A review and, where necessary, improvement of data collection methods, data sources, and applications of data must be initiated for each fishery to determine the amount, type, disposition, and other characteristics of bycatch and bycatch mortality in each fishery for purposes of this standard and of section 303(a)(11) and (12) of the Magnuson-Stevens Act. Bycatch should be categorized to focus on management responses necessary to minimize bycatch and bycatch mortality to the extent practicable. When appropriate, management measures, such as at-sea monitoring programs, should be developed to meet these information needs.

(2) For each management measure, assess the effects on the amount and type of bycatch and bycatch mortality in the fishery. Most conservation and management measures can affect the amounts of bycatch or bycatch mortality in a fishery, as well as the extent to which further reductions in bycatch are practicable. In analyzing measures, including the status quo, Councils should assess the impacts of minimizing bycatch and bycatch mortality, as well as consistency of the selected measure with other national standards and applicable laws. The benefits of minimizing bycatch to the extent practicable should be identified and an assessment of the impact of the selected measure on bycatch and bycatch mortality provided. Due to limitations on the information available, fishery managers may not be able to generate precise estimates of bycatch and bycatch mortality or other effects for each alternative. In the absence of quantitative estimates of the impacts of each alternative, Councils may use qualitative measures. Information on the amount and type of bycatch should be summarized in the SAFE reports.

(3) Select measures that, to the extent practicable, will minimize bycatch and bycatch mortality.

(i) A determination of whether a conservation and management measure minimizes bycatch or bycatch mortality to the extent practicable, consistent with other national standards and maximization of net benefits to the Nation, should consider the following factors:

- (A) Population effects for the bycatch species.
- (B) Ecological effects due to changes in the bycatch of that species (effects on other species in the ecosystem).
- (C) Changes in the bycatch of other species of fish and the resulting population and ecosystem effects.
- (D) Effects on marine mammals and birds.
- (E) Changes in fishing, processing, disposal, and marketing costs.
- (F) Changes in fishing practices and behavior of fishermen.
- (G) Changes in research, administration, and enforcement costs and management

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effectiveness.

(H) Changes in the economic, social, or cultural value of fishing activities and nonconsumptive uses of fishery resources.

(I) Changes in the distribution of benefits and costs.

(J) Social effects.

(ii) The Councils should adhere to the precautionary approach found in the Food and Agriculture Organization of the United Nations (FAO) Code of Conduct for Responsible Fisheries (Article 6.5), which is available from the Director, Publications Division, FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy, when faced with uncertainty concerning any of the factors listed in this paragraph (d)(3).

(4) Monitor selected management measures. Effects of implemented measures should be evaluated routinely. Monitoring systems should be established prior to fishing under the selected management measures. Where applicable, plans should be developed and coordinated with industry and other concerned organizations to identify opportunities for cooperative data collection, coordination of data management for cost efficiency, and avoidance of duplicative effort.

(e) Other considerations. Other applicable laws, such as the MMPA, the ESA, and the Migratory Bird Treaty Act, require that Councils consider the impact of conservation and management measures on living marine resources other than fish; i.e., marine mammals and birds.

**Sec. 600.355 National Standard 10--Safety of Life at Sea.**

(a) Standard 10. Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

(b) General.

(1) Fishing is an inherently dangerous occupation where not all hazardous situations can be foreseen or avoided. The standard directs Councils to reduce that risk in crafting their management measures, so long as they can meet the other national standards and the legal and practical requirements of conservation and management. This standard is not meant to give preference to one method of managing a fishery over another.

(2) The qualifying phrase "to the extent practicable" recognizes that regulation necessarily puts constraints on fishing that would not otherwise exist. These constraints may create pressures on fishermen to fish under conditions that they would otherwise avoid. This standard instructs the Councils to identify and avoid those situations, if they can do so consistent with the legal and practical requirements of conservation and management of the resource.

(3) For the purposes of this national standard, the safety of the fishing vessel and the protection from injury of persons aboard the vessel are considered the same as "safety of human life at sea." The safety of a vessel and the people aboard is ultimately the responsibility of the master of that vessel. Each master makes many decisions about vessel maintenance and loading and about the capabilities of the vessel and crew to operate safely in a variety of weather and sea conditions. This national standard does not replace the judgment or relieve the responsibility of the vessel master related to vessel safety. The Councils, the USCG, and NMFS, through the consultation process of paragraph (d) of this section, will review all FMPs, amendments, and regulations during their development to ensure they recognize any impact on the safety of human life at sea and minimize or mitigate that impact where practicable.

(c) Safety considerations. The following is a non-inclusive list of safety considerations that should be considered in evaluating management measures under national standard 10.

(1) Operating environment. Where and when a fishing vessel operates is partly a function of the general climate and weather patterns of an area. Typically, larger vessels can fish farther offshore and in more adverse weather conditions than smaller vessels. An FMP should try to avoid creating situations that result in vessels going out farther, fishing longer, or fishing in weather worse than they generally would have in the absence of management measures. Where these conditions are unavoidable, management measures should mitigate these effects, consistent with the overall management goals of the fishery.

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(2) Gear and vessel loading requirements. A fishing vessel operates in a very dynamic environment that can be an extremely dangerous place to work. Moving heavy gear in a seaway creates a dangerous situation on a vessel. Carrying extra gear can also significantly reduce the stability of a fishing vessel, making it prone to capsizing. An FMP should consider the safety and stability of fishing vessels when requiring specific gear or requiring the removal of gear from the water. Management measures should reflect a sensitivity to these issues and provide methods of mitigation of these situations wherever possible.

(3) Limited season and area fisheries. Fisheries where time constraints for harvesting are a significant factor and with no flexibility for weather, often called "derby" fisheries, can create serious safety problems. To participate fully in such a fishery, fishermen may fish in bad weather and overload their vessel with catch and/or gear. Where these conditions exist, FMPs should attempt to mitigate these effects and avoid them in new management regimes, as discussed in paragraph (e) of this section.

(d) Consultation. During preparation of any FMP, FMP amendment, or regulation that might affect safety of human life at sea, the Council should consult with the USCG and the fishing industry as to the nature and extent of any adverse impacts. This consultation may be done through a Council advisory panel, committee, or other review of the FMP, FMP amendment, or regulations. Mitigation, to the extent practicable, and other safety considerations identified in paragraph (c) of this section should be included in the FMP.

(e) Mitigation measures. There are many ways in which an FMP may avoid or provide alternative measures to reduce potential impacts on safety of human life at sea. The following is a list of some factors that could be considered when management measures are developed:

- (1) Setting seasons to avoid hazardous weather.
- (2) Providing for seasonal or trip flexibility to account for bad weather (weather days).
- (3) Allowing for pre- and post-season "soak time" to deploy and pick up fixed gear, so as to avoid overloading vessels with fixed gear.
- (4) Tailoring gear requirements to provide for smaller or lighter gear for smaller vessels.
- (5) Avoiding management measures that require hazardous at-sea inspections or enforcement if other comparable enforcement could be accomplished as effectively.
- (6) Limiting the number of participants in the fishery.
- (7) Spreading effort over time and area to avoid potential gear and/or vessel conflicts.
- (8) Implementing management measures that reduce the race for fish and the resulting incentives for fishermen to take additional risks with respect to vessel safety.