# 1.0 REGULATORY IMPACT REVIEW

## 1.1 Introduction

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: 1) provides a comprehensive review of the level and incidence of effects associated with a proposed or final regulatory action; 2) provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problem; and, 3) ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-effective way. The RIR also serves as the basis for determining whether the proposed regulations are a "significant regulatory action" or a "significant guidance document" under the criteria provided in Executive Order (E.O.) 12866, as amended by E.O. 13258 and E.O. 13422, and provides some information that may be used in conducting an analysis of the effects on small business entities pursuant to the Regulatory Flexibility Act (RFA). This RIR analyzes the effects that the proposed changes to the National Standard guidelines at 50 CFR §§ 600.305 (General Section), 600.310 (NS1), 600.320 (NS3), and 600.340 (NS7).

## 1.2 Problems and Objectives

Since 2007, fisheries management within the US has experienced many changes with the implementation of annual catch limits (ACLs) and accountability measures (AMs). During this time, a number of lessons were learned and NMFS thinks the NS guidelines could be improved to enhance the utility of the guidelines for managers and the public. The purpose of this action is to facilitate compliance with requirements of the MSA to end and prevent overfishing, rebuild overfished stocks, and achieve optimum yield (OY) without establishing new requirements or requiring Councils or the Secretary to revise their Fishery Management Plans (FMPs). The objectives of this action are to improve and clarify the guidance within the guidelines, address concerns that have been raised during the implementation of annual catch limits (ACLs) and accountability measures (AMs), and provide flexibility to address fishery management issues.

## 1.3 Background on the Proposed Revisions

Section 301(a) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) contains 10 national standards for fishery conservation and management. Any FMP prepared under the MSA, and any regulation promulgated pursuant to the MSA to implement any such plan, must be consistent with these national standards. National Standard 1 (NS1) of the MSA states that conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the OY from each fishery for the U.S. fishing industry. National Standard 3 (NS3) of the MSA states that 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. National Standard 7 (NS7) of the MSA states that conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

Section 301(b) of the MSA requires that the Secretary establish advisory guidelines (which shall not have the force and effect of law), based on the national standards to assist in the development of fishery management plans. Guidelines for NS1, NS3, and NS7 were first published in 1977, 42 FR 34450 (July 5, 1977) and are codified in 50 CFR sections 600.310; 600.320; and 600.340, respectively. NMFS last revised the NS1 guidelines on January 16, 2009, to provide guidance for the implementation of requirements enacted by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006 for annual catch limits (ACLs) and accountability measures (AMs) to end and prevent overfishing. 74 FR 3178. The NS3 and NS7 guidelines were last revised in 1998. 63 FR 24212 (May 1, 1998).

From 2007 to 2012, the 46 federal FMPs have been amended to implement ACLs and AMs to end and prevent overfishing. This has been a transformative process for federal fisheries, because before the ACL requirement, some US fisheries were managed under a total allowable catch system, but the majority were managed through effort controls (e.g. days at sea, closures) or without explicit accountability. A number of concerns were raised during the

implementation of ACLs and AMs. NMFS published an Advance Notice of Proposed Rulemaking (ANPR) on May 3, 2012 (77 FR 26238) to solicit public comments on potential adjustments to the NS1 guidelines. The comment period on the ANPR was extended once (77 FR 39459; July 3, 2012) and then reopened (77 FR 58086; September 19, 2012) and ended on October 12, 2012. In March 2013, NMFS published a report that summarizes the comments received on the ANPR; the report is available online at: http://www.nmfs.noaa.gov/sfa/laws_policies/national_standards/ns1_revisions.html.

In addition to the ANPR, issues related to the national standard guidelines were discussed at other public forums. In May 2013, NMFS sponsored the Managing Our Nations Fisheries 3 conference in Washington, D.C. The conference focused on identifying ways to advance sustainability within U.S. fisheries. The discussions at the conference addressed Magnuson-Stevens Act reauthorization issues, as well as adjustments to current management that do not require legislation to implement. More information about the conference is available here: http://www.managingfisheries.org/. In September 2013, the National Research Council released its report titled "Evaluating the Effectiveness of Fish Stock Rebuilding Plans in the United States." This included an evaluation of success in stock rebuilding, an investigation of the effects of uncertainty, and identification of means to better account for social, economic and ecosystem factors in the rebuilding plans. The purpose of the report was to help NOAA and the regional fishery management councils better construct efficient and effective rebuilding plans. More information about the report is available here: http://www.nmfs.noaa.gov/sfa/laws_policies/national_standards/rebuilding.htm.

In December 2013, the Marine Fisheries Advisory Committee Recreational Fishing Group presented NMFS with a white paper on recreational fisheries perspectives. The paper included recommendations for possible changes to the MSA, as well as possible changes to fishing regulations and policy. The full report can be found here: http://www.nmfs.noaa.gov/sfa/management/recreational/2014_summit/pre-summit_resources.html. In February 2014, the Commission on Saltwater Recreational Fisheries Management published its report, A Vision for Managing America's Saltwater Recreational Fisheries, providing recommendations for management measures to address the needs of recreational community (Morris and Deal 2014). The report can be found here: http://asafishing.org/uploads/Marine_Visioning_Report_January_2014.pdf. Lastly, NMFS provided updates on the NS1 guidelines at Council Coordination Committee (CCC) meetings in 2013 and 2014. The CCC consists of the chairs, vice chairs, and executive directors from each regional fishery management council, or other staff, as appropriate. This committee meets twice each year to discuss issues relevant to all councils, including issues related to the implementation of the MSA. More information about CCC meetings can be found here: http://www.nmfs.noaa.gov/sfa/management/councils/ccc/ccc.htm.

## 1.4 Description of Fisheries

The fisheries in the Exclusive Economic Zone (EEZ) are described in detail in each federal fishery management plan (FMP). The most recent amendment to a given FMP contains the most updated information for that fishery. Information regarding the Regional Fisheries Management Councils' (Councils) FMPs can be found at the following websites, respectively, and the information from those amendments is incorporated here by reference: New England (http://www.nefmc.org/), Mid-Atlantic (http://www.mafmc.org/fishery-management-plans), South Atlantic (http://safmc.net/resource-library/fishery-management-plans-amendments), North Pacific (https://alaskafisheries.noaa.gov/sustainablefisheries/fmp.htm), Pacific (http://www.pcouncil.org/), and Western Pacific (http://www.wpcouncil.org/fishery-plans-policies-reports/). Atlantic Highly Migratory Species (HMS) fisheries are managed by the Secretary of Commerce (Secretary). The FMP for these fisheries can be found at: http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/index.html.

Many of the stocks managed under federal FMPs also occur in state, territorial or tribal waters, which require the Councils and the Secretary to manage such stocks in cooperation with the entities who have primary management responsibility in those waters. Also, some of the stocks are highly migratory such that much or most of the stock is caught by foreign fishermen and managed by international regional fishery management organizations.

Fish stocks managed by the 46 Federal FMPs are the subject of this action, especially the 478 stocks listed in the NMFS' Status of U.S. Fisheries Report to Congress. The FMPs and stocks are listed by Council in Quarterly Updates of the NMFS "2013 Status of U.S Fisheries" which can be found at: http://www.nmfs.noaa.gov/sfa/fisheries_eco/status_of_fisheries/status_updates.html

National estimates of the economic impacts resulting from federally managed fisheries are not currently available. However, the economic impacts of each federally managed fishery should be found in each FMP and/or the most recent amendment to that FMP. The most recent estimates of the economic impacts resulting from all U.S. fisheries are provided in the 2012 Fisheries Economics of the U.S. report, which can be found at: http://www.st.nmfs.noaa.gov/Assets/economics/documents/feus/2012/FEUS2012_NationalOverview.pdf. Estimates are provided for both the commercial and recreational sectors. Just as many stocks occur in state and territorial as well as federal waters, many fishermen, vessels, seafood dealers, and seafood processors that operate in federal fisheries also operate in state and territorial fisheries. Thus, these economic impact estimates may only slightly overestimate the actual economic impacts resulting from the activities of these entities while engaged in federal fisheries.

## 1.5 Description of Management Actions and Alternatives

**1.5.1 Action 1.** Revise the general section of the NS guidelines regarding the importance of identifying fishery management objectives within an FMP.

**Alternative 1 – No Action.** Do not revise the current NS guidelines. Currently section (b) of the National Standard General guidelines (50 CFR 600.305) describes the importance of identifying fishery management objectives within a FMP. The existing guidance directs Councils to identify what the fishery management plan (FMP) is designed to accomplish in terms of management objectives. The guidance also instructs Councils to balance biological constraints with human needs, reconcile present and future costs and benefits, and integrate the diversity of public and private interests. Lastly, if objectives are in conflict, priorities should be established among them by the Council.

**Preferred Alternative 2.** Revise section (b) of the NS General guidelines to encourage Councils to reassess the objectives of their fishery management plan on a regular basis to reflect the changing needs of the fishery over time. This revision is being proposed because the current General guidelines do not address this issue. Objectives of FMPs are rarely reassessed by Councils. There are, however, some recent examples from the Mid-Atlantic Council and South Atlantic Council, which have conducted "visioning" projects to identify long-term objectives for their fisheries. NMFS wants to encourage such visioning projects or similar processes through this proposed revision. Having well defined and updated objectives also provides the context within which the Secretary will judge the consistency of an FMP's conservation and management measures with the national standards.

**1.5.2 Action 2.** Consolidate guidance on identifying whether stocks require conservation and management within 50 CFR 600.305.

**Alternative 1 – No Action.** Do not revise the current NS guidelines to provide guidance on how to identify which stocks require conservation and management. The MSA and NS guidelines indirectly touch upon this issue in several places. For example, the guidelines for NS1, 3, and 7 provide guidance on: which stocks that need ACLs, managing stocks as a unit, and deciding whether to manage a fishery, respectively.

NS1 states that "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." The current NS1 guidelines explain that as a default, all stocks in an FMP are considered "in the fishery" unless the Council identifies them as an ecosystem component (EC) species. FMPs are required to provide the mandatory measures described in MSA section 303(a) including ACLs and AMs for all "stocks in the fishery," but those measures are not required for EC species.

NS3 states that "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." The NS3 Guidelines provide guidance on structuring appropriate management units for stocks and stock complexes and instruct that 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" (see 50 CFR 600.320(d)(1)). The NS3 guidelines also state that a management unit may contain stocks for which data is not available to specify MSY and OY or to establish management measures, so that data on those stocks may be collected.

NS7 states that "Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication." The guidelines state that MSA 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." The NS7 Guidelines provide seven criteria for determining whether a fishery needs management through regulations implementing an FMP (see 50 CFR 600.340(b)(2)).

**Preferred Alternative 2.** Consolidate guidance on identifying whether stocks require conservation and management within 50 CFR 600.305; provide a list of factors that could be considered in making that determination; and revise the NS1, NS3, and NS7 guidelines to use consistent terminology.

The list of factors is intended to provide some structure to a Council's determination of the conservation and management needs of stocks within their jurisdiction. Any stocks or stock complexes that are predominately caught in Federal waters and are overfished or subject to overfishing, or likely to become overfished or subject to overfishing, would be considered to require conservation and management. Councils could still choose to identify stocks within their FMP as ecosystem component species. Consistent with these proposed revisions, the NS1 guidelines would be revised to remove the use of the term "in the fishery." The NS1 guidelines would explain that stocks and stock complexes that require conservation and management would need ACLs, other reference points, and accountability measures. Other stocks that are identified in the FMP (i.e., ecosystem component species or stocks that the fishery interacts with but are managed primarily under another FMP) would not be required to have ACLs, other reference points, or accountability measures. The NS3 guidelines would be revised to explain that the stocks in the fishery management unit are considered to be in need of conservation and management. Lastly, 50 CFR 600.340(b) within the NS7 guidelines would be deleted and much of the guidance would be consolidated into the description of factors to consider when deciding which stocks require conservation and management within 50 CFR 600.305.

**1.5.3 Action 3.** Revise the guidelines to provide flexibility in managing data limited stocks.

**Alternative 1 – No Action.** Do not revise the current NS guidelines to provide flexibility in managing data limited stocks. The current NS1 guidelines describe the overall framework for specifying MSY, SDCs, ACLs, and other reference points (see 50 CFR 600.310(d)(1)-(2) and (f)), but does not provide explicit guidance for addressing the requirement for these reference points in data limited situations. Paragraph 50 CFR 600.310(h)(3) of the current NS1 guidelines explains that there are limited circumstances that may not fit the standard approaches to specification of reference points and management measures than those described in the NS1 guidelines, and provides a few examples of those limited circumstances.

**Preferred Alternative 2:** Revise the guidelines to provide flexibility in managing data limited stocks. NMFS acknowledges that it may not be possible to estimate MSY or MSY based proxies for some stocks and recognizes that alternative management approaches may be appropriate for such stocks. NMFS proposes the following two options to address data limited stocks:

> **Preferred Option A:** Explain within the SDC section of the NS1 guidelines (50 CFR 600.310(e)(2)(ii)) that when data are not available to specify SDCs based on MSY or MSY proxies, alternative types of SDCs that promote sustainability of the stock or stock complex can be used. For example, SDC could be based on recent average catch, fish densities derived from visual census surveys, length/weight frequencies or other methods.
>
> **Preferred Option B:** Provide some additional examples within paragraph (h) of the current NS1 guidelines of the limited circumstances that may not fit the standard approaches to specification of reference points and management measures set forth in the guidelines. NMFS proposes to include the following examples of the circumstances that may not fit the standard approaches: "stocks for which data are not available to either set reference points based on MSY or MSY proxies, or manage to reference points based on MSY or MSY proxies."

**1.5.4 Action 4.** Revise the guidance on stock complexes.

**Alternative 1 – No Action.** Do not revise the current NS1 guidelines. The current NS1 guidelines describe stock complexes as a "group of stocks that are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar" (50 CFR 600.310(d)(8)). Stock complexes are often created when there is not enough information to set reference points at the individual stock level. Therefore, the status of stocks within a complex is generally unknown. The NS1 guidelines note that stock complexes can be managed in several different ways, including: the use 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 or 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). In practice, few stock complexes are managed with indicator stocks. Oftentimes, when a stock within a complex is assessed, it is taken out of the complex and managed separately, rather than serving as the indicator for the complex. The current NS1 guidelines, while endorsing indicator stocks, may be inadvertently contributing to the removal of assessed stocks from complexes by stating that MSY should be estimated on a stock-by-stock basis, whenever possible (see § 600.310 (e)(1)(iii)).

**Preferred Alternative 2:** Revise the guidance to improve flexibility in developing stock complexes, and encourage the use of indicator stocks in stock complexes. When NMFS revised the NS1 guidelines in 2009, stock complexes were defined to mean a group of stocks that are sufficiently similar in geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar. However, by defining stock complex in such a way, the definition does not align well with other purposes for developing a stock complex. For example, the current guidelines note that stock complexes may be formed for various reasons, including where stocks in a multispecies fishery cannot be targeted independent of one another, or when it is not feasible for fishermen to distinguish individual stocks among their catch (see § 600.310(d)(8)). Under these circumstances, stock complexes are unlikely to have similar life histories and vulnerabilities. As a result, NMFS is proposing to more generally define stock complex as a "tool to manage a group of stocks within a FMP" (see § 600.310(d)(2) of the proposed rule) while retaining existing portions of 600.310(d)(8) by stating: "Where practicable, the group of stocks should have a similar geographic distribution, life history characteristics, and vulnerabilities to fishing pressure such that the impact of management actions on the stocks is similar." These revisions should improve the flexibility of developing stock complexes.

To encourage the use of indicator stocks in stocks complexes, NMFS is proposing to delete the language within 50 CFR 600.310 (d)(8) and (e)(1)(iii) that whenever possible, MSY should be estimated on a stock-by-stock basis. NMFS is also proposing to modify guidance on how stock complexes are comprised so that where practicable, stock complexes should be comprised of one or more indicator stocks, each of which has SDC and ACLs. Otherwise, stock complexes may be comprised in other ways (see § 600.310(d)(2)(ii) of the proposed rule). These revisions will reduce the practice of removing a stock from a complex once it has been assessed, so that the assessed stock can be used as an indicator for the complex, if it is practicable to do so. The revisions also help resolve discontinuities in how data-limited stock complexes are managed compared to data-rich multi-stock fisheries. In mixed-stock fisheries, biological reference points are often specified for several of the stocks within the fishery and management measures are developed to prevent overfishing of each stock. Management measures for stocks that have lower productivities will restrict fishing effort for the overall mixed-stock fishery to some extent. However, as noted above in the no action alternative, the status of stocks within a complex is generally unknown and complexes often lack indicator species. Therefore, it is possible that stocks that have lower productivities in the complex may experience occasional overfishing, since the status of these stocks is unknown. Encouraging the use of indicators species will likely reduce the probability that stocks within the complex could experience overfishing or become overfished. This is because the use of an indicator enhances the ability to discern the status of the complex, especially if the stocks in the complex are of similar geographic distribution, life history, and vulnerabilities to the fishery such that the impact of management actions on the stocks is similar (see 50 CFR 600.310(d)(8) or 600.310(d)(2)(i) of the proposed rule).

**1.5.5 Action 5.** Revise the guidelines to describe how aggregate MSY estimates can be used.

**Alternative 1 – No Action.** Do not revise the current NS guidelines to describe how aggregate MSY estimates can be used. The MSA requires that each FMP include an estimate of MSY and OY for the fishery (MSA section 303(a)(3)). The current NS1 guidelines do not describe MSY at the fishery level, but encourage specifying MSY at the stock level, while allowing it to be set for stock complexes. The current NS1 guidelines describe that OY can be specified for a stock, stock complex, or fishery. In practice, Council's typically set MSY and other reference points for individual stocks when the data is available to do so. In data limited situations, when it is not possible to specify single species reference points, stocks are grouped into complexes. Some stock complexes are assessed and have reference points based on the assessment. In more data limited situations, the stock complexes are not assessed and ACLs are based on recent average catch.

**Preferred Alternative 2:** Revise the guidelines to describe how aggregate MSY estimates can be used. A growing body of literature on ecosystem-based fisheries management has emphasized the importance of accounting for species interactions and environmental variability within fisheries management. These considerations can be

incorporated through single species stock assessments and models that estimate MSY for an aggregate group of stocks. To further encourage an ecosystem approach to management, NMFS is proposing revising section 600.310(e)(1) to: state that MSY may be specified for a fishery as a whole; add a description of methods that could be used for estimating an aggregate MSY for a group of stocks; and describe that environmental information, in addition to ecological information may be taken into account when specifying MSY. In addition, NMFS proposes adding to paragraph (e)(3) of the NS1 guidelines an example of how aggregate MSY can be used as a basis for specifying OY for a fishery.

**1.5.6 Action 6.** Revise the guidelines by adding a definition for a depleted stock.

**Alternative 1 – No Action.** Do not revise the current NS1 guidelines. Currently the guidelines do not use the term depleted. Instead, the MSA defines the terms overfished and overfishing together as "a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the MSY on a continuing basis" (MSA section 3(34)). The NS1 guidelines provide separate definitions for overfishing and overfished, where the term "overfishing" refers to the fishing mortality rate or total catch being too high, and the term "overfished" refers to a condition in with the biomass of a stock is too low. The NS1 overfished definition, unlike the statutory definition, gives no consideration to the "rate or level of fishing mortality" when determining if a stock is overfished. Rather the status determination criteria to determine an overfished status, called the minimum stock size threshold (MSST), is defined as the level of biomass below which the stock or stock complex is considered to be overfished. Therefore, a stock may be determined to be overfished when overfishing has not occurred.

**Preferred Alternative 2:** Revise the guidelines by adding a definition for a depleted stock. Stakeholders have noted that the term "overfished" implies that fishing is the sole cause for a decline in stock biomass, when other factors such as environmental conditions may be the leading cause for the stocks biomass decline. However, separating out the impacts of environmental change from the impacts of fishing on a stock is a difficult task. To resolve this issue with the current definition of overfished; NMFS proposes adding the term "depleted" to the NS1 guidelines to describe those stocks whose biomass has declined as a result of environmental conditions, as opposed to fishing pressure. The proposed definition of depleted is: **"**An overfished stock or stock complex is considered depleted when it has not experienced overfishing at any point over a period of two generation times of the stock and its biomass has declined below MSST, or when a rebuilding stock or stock complex has reached its targeted time to rebuild and the stock's biomass has shown no signs of growth despite being fished at or below catch levels that are consistent with the rebuilding plan throughout that period" (see §600.310(e)(2)(i) of this proposed action). Rebuilding plans would still be required for depleted stocks and Councils could consider additional measures for these stocks such as a re-evaluation of their SDCs to determine if they are representative of the current environmental conditions, restoration of habitat, identification of research priorities, or partnerships with other agencies to address non-fishing related impacts (see § 600.310(j)(7) of this proposed action).

**1.5.7 Action 7.** Revise the guidelines by allowing multi-year overfishing determinations.

**Alternative 1 – No Action.** Do not revise the current NS guidelines to allow multi-year overfishing definitions. The MSA defines "overfishing" as a "rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the MSY on a continuing basis" (MSA section 3(34)). The MSA does not specify a timeframe for determining overfishing, but the current NS1 guidelines state that overfishing should be determined by comparing annual rates of fishing mortality (F) to the maximum fishing mortality threshold (MFMT) or annual catch to the overfishing limit (OFL). In either case, under the current guidelines, overfishing determinations are made for the most recent year for which there is information. For example, if the F based approach is used, the last available year of data in a stock assessment will be used to determine whether a stock will be declared subject to overfishing.

**Preferred Alternative 2.** Revise the guidelines to allow multi-year overfishing determinations. Current methods for determining overfishing do not consider the extent to which F exceeded the MFMT or catch exceeded the OFL. For many stocks, a small amount of fishing effort above MFMT or catch in excess of OFL in a single year may not jeopardize the stocks' ability to produce MSY over the long term. Additionally, the terminal year's estimate of F in a stock assessment is often more uncertain than prior years' estimates of F, therefore using a multi-year approach may provide a more robust metric for evaluating overfishing status. Therefore, NMFS proposes adding in paragraph (e)(2)(ii)(A) of the NS1 guidelines the option that the overfishing status of a stock may be determined based on a multi-year approach that examines whether the stock's ability to produce MSY over the long term has been jeopardized. The length of the multi-year approach may not exceed three years.

**1.5.8 Action 8.** Revise guidance on OY to improve clarity and describe the role of OY under the ACL framework.

**Alternative 1 – No Action.** Do not revise the guidance on OY in the NS1 guidelines. The current OY section of the NS1 guidelines provides: guidance on values that should be weighed when determining the greatest benefit to the Nation; examples of social, economic, and ecological factors to consider when specifying OY; guidance on the specification of OY; and guidance on the relationship between OY and foreign fishing.

**Preferred Alternative 2.** Revise guidance on OY to improve clarity and describe the role of OY under the ACL framework.

> **Preferred Option A:** Propose minor revisions to reorganize the guidance regarding OY within paragraph (e)(3) of the NS1 guidelines**.** This revision is being proposed because there was a significant amount of repetition within the OY section of the NS1 guidelines and NMFS believes it can be revised to improve clarity.
>
> **Preferred Option B:** Allow for OY to be described qualitatively when it is not possible to specify OY quantitatively. NMFS recognizes that it may be difficult to express economic, ecological, and social factors in quantitative terms, therefore it could be difficult to specify a quantitative OY. A qualitative description of OY that explains the economic, ecological, and social factors that are important to the fishery can still be useful to fishery managers.
>
> **Preferred Option C:** Explain the relationship between OY and the ACL framework within paragraph (f) of the NS1 guidelines. The current NS1 guidelines do not describe how OY relates to the ACL framework. NMFS proposes to explain that the dual goals of NS1 are to prevent overfishing and achieve OY. The ABC is an upper limit on catch and is designed to prevent overfishing. Important considerations in specifying OY include ecological, economic, and social factors, as well as values associated with determining the greatest benefit to the Nation. These OY considerations can be considered in the ACL framework. For example, an ACL (or ACT) could be set lower than the ABC to account for OY considerations (e.g., needs of forage fish, to promote stability, to address market conditions, etc.). Additionally, economic, social, or ecological trade-offs could also be evaluated when determining the risk policy for the ABC control rule. While OY is a long-term average amount of desired yield, there is, for each year, an amount of fish that is consistent with achieving the long-term OY. Councils can choose to express OY on an annual basis, in which case it should be clear that the OY is an "annual OY" and it cannot exceed the ACL.

**1.5.9 Action 9.** Revise acceptable biological catch (ABC) guidance.

**Alternative 1 – No Action.** Do not revise the current NS1 guidelines. The current NS1 guidelines section 600.310(f)(1)-(4) provides guidance on ABC. Section 600.310(f)(1) introduces the concept of control rules as 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, and that control rules can be used to account for scientific uncertainty and/or management uncertainty.

Section 600.310(f)(2) contains a list of definitions for the following terms: catch, ABC, ABC control rule, ACL, annual catch target (ACT), and ACT control rule. ABC is defined as a level of a stock or stock complex's annual catch that accounts for scientific uncertainty in the estimate of OFL and any other scientific uncertainty, and should be specified based on the ABC control rule. Similarly, the definition of 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 other scientific uncertainty.

Section 600.310(f)(3) describes the specification process of ABC, which among other things notes that ABC may not exceed OFL, and the Councils Scientific & Statistical Committee (SSC) must recommend the ABC to the Council. ABC can be expressed in terms of catch, but may be expressed in terms of landings if other sources of mortality are incorporated into the determination of ABC. This section also notes that 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 (i.e., $F_{rebuild}$).

Lastly, section 600.310(f)(4) describes the ABC control rule, noting that 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 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. There are also several descriptions of the types of scientific uncertainty and how the control rule could account for these uncertainties in various ways.

**Preferred Alternative 2.** Revise acceptable biological catch (ABC) guidance.

**Preferred Option A** – Modify the list of definitions in section 600.310(f)(2). NMFS proposes to revise the definition of the annual catch limit (ACL) to improve clarity. The current definition of an ACL is: "the level of annual catch of a stock or stock complex that serves as a basis for invoking AMs. ACL cannot exceed the ABC, but may be divided into sector-ACLs" (50 CFR 600.310(f)(2)(iv)). This definition, while accurate, failed to include reference to the fact that an ACL is a limit on the total annual catch for a stock or stock complex. NMFS proposes defining an ACL as "a limit on the total annual catch for a stock or stock complex, which cannot exceed the ABC, that serves as the basis for invoking AMs. An ACL may be divided into sector-ACLs" (see §600.310(f)(1)(iii) of this proposed action).

NMFS also proposes adding three new definitions for the following terms: control rule, management uncertainty, and scientific uncertainty (see §600.310(f)(1)(iv)-(vi) and (f)(2)(ii) of this proposed action). These terms are currently used throughout the guidelines, but were never separately defined. To reduce redundancy in definitions, NMFS also proposes deleting the ABC control rule and ACT control rule definitions, since these definitions were very similar to the definitions of ABC and ACT, and there is a more general definition of control rule being provided. Lastly, NMFS is proposing to move the definition of ACT to section 600.310(g)(4) of the proposed rule, because ACTs are considered a type of AM, and thus better suited in the AMs section of the guidelines (rather than the ABC and ACL section of the guidelines).

**Preferred Option B** – Clarify that ABC control rules are informed by the Council's risk policy, and that methodologies used to account for scientific uncertainty are not restricted to simple probabilistic based approaches. Section 302(g)(1)(B) of the MSA states that a Scientific and Statistical Committee (SSC) for each Regional Fishery Management Council shall provide its Council ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catch (ABC). As noted above, the current NS1 guidelines describe ABC as level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of the overfishing limit and any other scientific uncertainty, and should be specified based on the ABC control rule. When these provisions began to be implemented in 2009, Councils were uncertain as to whether or not the SSC could specify the ABC without input from the Council on its risk preferences. At that time, NMFS referred Council members and their SSC to the "response to comments" section of the 2009 final rule, which noted that the "SSC must recommend an ABC to the Council after the Council advises the SSC what would be the acceptable probability that a catch equal to the ABC would result in overfishing. This risk policy is part of the required ABC control rule" (response to comment 42, 74 FR at 3191-92). NMFS also addressed this issue within their NS1 guidelines frequently asked questions document, which was published online (http://www.nmfs.noaa.gov/sfa/laws_policies/national_standards/ns1_resources.html).

To codify this guidance, NMFS is adding a reference regarding the Council's risk policy to the definition of ABC (§ 600.310(f)(1)(ii) of this proposed action). NMFS is also providing additional guidance within the ABC control section (§600.310(f)(2) of this proposed action) to further clarify what a Council could consider when developing a risk policy, which among other things include the economic, social, and ecological trade-offs between being more or less risk averse (see §600.310(f)(2)(i) of this proposed action).

Similarly, when the NS1 provisions began to be implemented in 2009, Councils were interested in using alternative methods to specify ABC, which were not based on "the probability that an actual catch equal to the stock's ABC would result in overfishing" even though such an approach could be calculated. In particular, the North Pacific Council commented during the ANPR comment period that it was interested in using a decision theoretic approach, which is similar in concept but is not the same as the probabilistic approach (Thompson 2011). Thompson (2011) suggests that the use of a decision theoretic approach may actually be more effective at accounting for scientific uncertainty than the recommended probabilistic approach. As a result, NMFS is proposing to revise this section of the guidelines (see §600.310(f)(2)(i) of this proposed action) to read as: "The Council's risk policy could be based, on an acceptable probability (at

least 50 percent) that catch equal to the stock's ABC would result in overfishing, but other methods can be used. When determining the risk policy, Councils may consider the economic, social, and ecological trade-offs between being more or less risk averse. The Council's choice of a risk policy cannot result in an ABC that exceeds the OFL." This revision should allow alternative approaches to be used to account for scientific uncertainty.

**Preferred Option C** – Allow Councils to use phase-in ABC control rules to stabilize landings. In practice, the management system described in the NS1 guidelines has led managers to adjust ABCs and ACLs in lock-step with assessment results through the use of control rules. A manager's understanding about the status of a stock may change from one assessment to another, but some of that change could be due to scientific uncertainty. Scientific uncertainty, particularly regarding the data from the most recent years within the assessment, can produce perceived fluctuations in stock abundance that do not match the actual, but unknown, status of the stock (NRC 1998). In the time between stock assessments, Councils often hold ACLs constant because, absent stock forecasts, their information is lacking on which to justify changes to the ACL. The result is that an ACL could be left unchanged for several years when there is no assessment update, but upon completion of a new assessment, reference points could change dramatically (Methot 2014). This type of dramatic change could be the result of a changed understanding of the stock or due to a change in the level of scientific uncertainty; it may be extremely difficult to parse the cause of such changes. Patrick et al. (2013) has shown that management uncertainty (i.e., the inability of managers to control catch) increases when quotas vary substantially (i.e., > 20%) from year to year. The ability to make ACL adjustments that provide more stability to fishing participants, yet do not jeopardize the capacity of the stock or stock complex to produce MSY on a continuing basis, could be useful to Councils.

NMFS proposes revising the NS1 guidelines to allow Councils to develop an ABC control rule that phases in changes to the ABC over a period of time not to exceed three years, so long as overfishing is prevented. Phase-in approaches to management are currently being used elsewhere in the world. For example, the International Pacific Halibut Commission (IPHC) currently adjusts its quotas according to a "slow up/full down" policy. Under IPHC policy, 1/3 of the indicated annual increases are taken and 100% of decreases are taken. Similarly, multi-annual plans for some European Union marine fisheries limit annual change in catch quota to 15 percent (Marchal et al. 2009). To ensure that Phase-in ABC control rules do not lead to overfishing, NMFS also proposes that Councils must provide a comprehensive analysis and articulate within their FMP when a phase-in ABC control rule can and cannot be used and how the control rule prevents overfishing (see § 600.310 (f)(2)(ii) of this action).

**Preferred Option D** – Provide guidance on carry-over control rules. The term carry-over is often used in the context of catch share programs, where unused allocation from one year can be carried over to the next. Historically, carry-over provisions have allowed fishermen to carry-over a portion of the quota they had available at the end of the year. Carry-over provisions can reduce the likelihood that quotas are exceeded by minimizing incentives to catch every last pound. Similarly, carry-over provisions can relieve pressure on fishermen to fish in potentially unsafe conditions to ensure full utilization of quota. The amount of carry-over historically allowed has been relatively small compared to the total ACL, and could well be offset, in a typical year, with under-harvest by other fishermen.

Some Councils have expressed interest in carrying over significant levels of catch that could result in the previously specified ACL and in some cases the ABC being exceeded. The NS1 guidelines do not prevent Councils from developing carry-over provisions, but they also do not provide any guidance regarding carry-over. In Conservation Law Foundation v. Pritzker, the U.S. District court for the District of Columbia found that Framework 50 of the Northeast Multispecies FMP violated the MSA by allowing sectors to carry-over unused catch in an amount that would exceed the SSC's recommendation of ABC for several stocks. The court held that MSA section 302(h)(6) requires that carry-over plus ACLs cannot exceed a stock's specified ABC. NMFS proposes revising the NS1 guidelines to state that the ABC control rule may include provisions for carry-over of some of the unused portion of the ACL from one year to increase the ABC for the next year, based on increased stock abundance resulting from the fishery harvesting less than the full ACL (see §600.310(f)(2)(ii)(B) of this proposed action). To ensure that such control rules do not lead to overfishing, NMFS proposes that Councils must provide a comprehensive analysis and articulate within their FMP when a carry-over ABC control rule can and cannot be used and how the control rule prevents overfishing (see § 600.310(f)(2)(ii) of this proposed action).

**1.5.10 Action 10.** Revise guidance on AMs.

**Alternative 1 – No Action.** Do not revise the guidance on AMs within the NS1 guidelines. 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. The current guidance on AMs within paragraph (g) of the current NS1 guidelines describes: the purpose of AMs, inseason AMs, AMs for when the ACL is exceeded, AMs based on multi-year average data, and AMs for State-Federal fisheries. Paragraph (h) of the current NS1 guidelines explains that FMPs should describe what sources of data will be used to implement AMs and that the FMP should include sector-AMs if there are sector-ACLs. Paragraph (f) of the current NS1 guidelines provides guidance on annual catch targets (ACTs) and ACT control rules. ACTs are an optional type of AM. ACTs are an amount of catch of a stock that is the management target of the fishery; they are set below the ACL to account for management uncertainty.

**Preferred Alternative 2.** Revise guidance on AMs to improve clarity.

**Preferred Option A:** Propose minor revisions to consolidate and clarify the guidance on AMs, including:

- Move guidance on ACTs and ACT control rules into paragraph (g) of the NS1 guidelines. *See supra* Action 9, Preferred Option 2.A.
- Provide a definition of management uncertainty in paragraph (f) of the NS1 guidelines.
- Add a sentence within paragraph (f) to clarify that management uncertainty should be taken into account when setting the ACL.
- Move the guidance on sector-AMs within paragraph (h) into paragraph (f) to clarify that if sector-ACLs are used, sector AMs should also be specified.
- Consolidate guidance on the ACL performance standard from current paragraphs (g)(3) and (g)(4) into one paragraph.
- Move the guidance on identifying data sources for AMs within paragraph (h) into paragraph (g).
- Clarify in the guidance for AMs that, when ACL is exceeded, the type of AM chosen by a Council will likely vary depending on the sector of the fishery, the status of the stock, the degree of the overage, recruitment patterns of the stock, or other pertinent information.

**Preferred Option B:** Propose to explain within paragraph (g) of the NS1 guidelines that, if an ACL is set equal to zero and the AM for the fishery is a closure that prohibits fishing for a stock, additional AMs are not required if: 1) only small amounts of catch or bycatch occur, and 2) that catch or bycatch is unlikely to result in overfishing.

**1.5.11 Action 11.** Revise guidance on establishing ACL and AM mechanisms.

**Alternative 1 – No Action.** Do not revise the guidance on establishing ACL and AM mechanisms within paragraph (h) of the NS1 guidelines. Paragraph (h) of the NS1 guidelines provides: guidance on the use of indicator stocks; a general summary of the ACL and AM requirements; guidance on the two exceptions to the ACL and AM requirements; and flexibility in applying the NS1 guidelines.

**Preferred Alternative 2.** Revise guidance on establishing ACL and AM mechanisms within paragraph (h) of the NS1 guidelines.

**Preferred Option A:** Propose relatively minor revisions to reduce redundancy and improve clarity within current paragraph (h) and (h)(1) of the NS1 guidelines.

**Preferred Option B:** Propose revisions to the guidance on the exception from the ACL requirements for stocks that have a life cycle of approximately 1 year. The MSA provides two statutory exceptions to the requirements for ACLs and AMs. One of them is that MSA section 303(a)(15) "shall not apply to a fishery for species that have a life cycle of approximately 1 year unless the Secretary has determined the fishery is subject to overfishing of that species" (see MSA section 303 note). Paragraph (h)(2) of the current NS1 guidelines further explains that the life cycle 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 individual has only one breeding season in its lifetime." NMFS believes that the current guidance is

confusing and that the requirement to only have one breeding season in a lifetime is overly restrictive. NMFS proposes to revise this exception to apply to a stock for which the average age of spawners in the population is approximately 1 year, or less.

**1.5.12 Action 12.** Provide flexibility in rebuilding stocks.

**Alternative 1 – No Action.** Do not revise the current NS1 guidelines. When the biomass of a stock has declined below a level that jeopardizes the capacity of the stock to produce MSY on a continuing basis, the stock is considered overfished. The current guidelines note that when a stock or stock complex is overfished, a Council must specify a time period ($T_{target}$) for rebuilding the stock or stock complex to a biomass level that supports MSY ($B_{msy}$) in as short a time as possible, while taking into account the status and biology of the stock, the needs of fishing communities, recommendations by international organizations in with the United States participates, and the interaction of the overfished stock of fish within the marine ecosystem; and the time period should not exceed 10 years, except in cases were the biology of the stock of fish, other environmental conditions, or management measures under an international agreement in which the United States participates dictate otherwise (see § 600.310(j)(3) and MSA 304(e)(4)).

To operationalize these requirements, the NS1 guidelines provide Councils with a framework to determine $T_{target}$ by specifying a minimum (or quickest) time for rebuilding a stock ($T_{min}$) and a maximum time allowable for rebuilding a stock ($T_{max}$). $T_{target}$ is then set somewhere between $T_{min}$ and $T_{max}$ based on an analysis of factors listed previously. $T_{min}$ is defined as the expected amount of time a stock needs to rebuild to Bmsy in the absence of fishing mortality. For stocks that have a $T_{min}$ of 10 years or less, the $T_{max}$ cannot exceed 10 years. If $T_{min}$ exceeds 10 years, then $T_{max}$ is calculated as $T_{min}$ plus one generation time for that stock, where "generation time" is defined as the average length of time between when an individual is born and the birth of its offspring. Once $T_{target}$ has been chosen by the Council, a rebuilding plan is developed which often specifies a constant rebuilding fishing mortality rate ($F_{rebuild}$).

The NS1 guidelines also recommend that, when a stock or stock complex has not rebuilt by $T_{max}$, the fishing mortality rate for the rebuilding stock should be maintained at its current $F_{rebuild}$ or 75% of $F_{msy}$ or its proxy, whichever is less until the stock or stock complex is rebuilt (see § 600.310 (j)(3)(E)(ii). Lastly, the NS1 guidelines on rebuilding includes a summary of the emergency actions and interim measures described in the MSA under 304(e)(6) and 305(c), which notes that a Secretary on his/her own initiative or in response to a Councils request, may implement interim measures to reduce overfishing or promulgate regulations to address an emergency (see § 600.310 (j)(4)).

**Preferred Alternative 2.** Provide flexibility in rebuilding stocks.

**Preferred Option A** – Allow alternative methods for calculating $T_{max}$. Since 1998, when this NS1 rebuilding guidance was implemented, and modified slightly in 2009, stakeholders have both praised and criticized these requirements (NRC 2013). A common theme in comments in response to the NS1 ANPR was to a desire for more flexibility in meeting the statutory rebuilding requirements, while other commenters supported the use of the 10 year rebuilding requirement (http://www.nmfs.noaa.gov/sfa/laws_policies/national_standards/ns1_revisions.html).

In the past, Councils have had difficulties calculating $T_{max}$, because the approach prescribed by the current guidelines (i.e., $T_{min}$ + 1 generation time) requires life history information on the natural mortality, age at maturity, fecundity, and maximum age of the stock. As a result, several Councils have had to rely on proxies of generation time, which can sometimes lead to overly conservative or exaggerated estimates of $T_{max}$. To address the data requirement issues of calculating generation time, NMFS is proposing to add two additional methods for calculating $T_{max}$ (see § 600.310(j)(3)(i)(B) of the proposed rule). Thus, Councils will have three options for calculating $T_{max}$ that they can select from based on the best scientific information available: 1) $T_{min}$ plus one generation time; 2) the amount of time the stock is expected to take to rebuild to its MSY biomass level if fished at 75 percent of MFMT; and 3) $T_{min}$ multiplied by two. These alternative methods of calculating $T_{max}$ rely on different life history parameters and provide similar timelines for rebuilding when compared to $T_{min}$ plus one generation time. The proposed revisions also note that a Council must provide a rationale for choosing one method over the other.

Given that the three methods provide similar timelines for rebuilding, NMFS does not expect a Councils' preferences for one method over another will result in drastically different estimates of $T_{max}$. Rather, NMFS expects the preferred method will largely depend on the life history information available for calculating $T_{max.}$ It is also important to note, that an overfished stock is expected to have a $T_{target}$ that is less than $T_{max}$ (see § 600.310(j)(3)(i)(C) of this proposed rule).

**Preferred Option B** – Provide guidance on determining adequate progress and revising rebuilding timelines. MSA section 304(e)(7) requires the Secretary to review rebuilding plans to ensure that adequate progress toward ending overfishing and rebuilding affected fish stocks is being made. The current NS1 guidelines do not provide any guidance on this provision and NMFS received several comments in response to the NS1 ANPR requesting additional guidance on this provision. NMFS proposes adding guidance to clarify that the review of rebuilding progress could include the review of recent stock assessments, comparisons of catches to the ACL, or other appropriate performance measures. NMFS also proposes that the Secretary may find that adequate progress in rebuilding is not being made if: $F_{rebuild}$ or the ACL associated with $F_{rebuild}$ are being exceeded and AMs are not effective at correcting for the overages; or when the rebuilding expectations of the stock or stock complex have significantly changed due to new and unexpected information about the status of the stock (see § 600.310(f)(4) of this proposed action).

NMFS also proposes clarifying that while a stock or stock complex is rebuilding, revising rebuilding timeframes (i.e., $T_{target}$ and $T_{max}$) is not necessary, unless the Secretary finds that adequate progress is not being made (see § 600.310(f)(4)(i) of this proposed action). As highlighted in the National Research Council report on rebuilding (NRC 2013), the primary objective of a rebuilding plan should be to maintain fishing mortality at or below $F_{rebuild}$. By doing so, managers can avoid issues with updating timelines that are based on biomass milestones, which are subject to uncertainty (see § 600.310(j)(3)(i)(A)) and changing environmental conditions that are outside the control of fishery managers.

**Preferred Option C** – Clarify guidance on use of emergency actions and interim measures. As noted above, the NS1 guidelines currently provide guidance on emergency actions and interim measures that can be taken under sections 304(e)(6) and 305(c) of the MSA. NMFS is proposing to delete sections 50 CFR 600.310(j)(4)(i) and (ii) because: (1) these sections simply repeat the language in the MSA; (2) NMFS has a separate published policy on implementing the provisions of MSA 305(c) (NMFS policy directive 01-101-07, Policy guidelines on the use of Emergency Rules, 62 Fed. Reg. 44421 (Aug. 21, 1997)); and (3) NS1 guidance should only provide guidance on the 304(e)(6) provisions of the MSA, because it pertains to rebuilding stocks. NMFS proposes to clarify in §600.310(j)(5) of this proposed action that the Secretary's ability to implement interim measures to reduce, but not necessarily end, overfishing should rarely be used and require that the following three criteria be met before the interim measure can be used to discourage its use: 1) the interim measure is needed to address an unanticipated and significantly changed understanding of the stock's status; 2) ending overfishing immediately is expected to result in severe social and/or economic impacts to a fishery; and 3) the interim measures will at least ensure that the stock will increase its current biomass through the duration of the interim measure.

**Preferred Option D** – Allow discontinuance of rebuilding plans. Due to scientific uncertainty in the biomass estimate of fish stocks, occasionally a stock is identified as overfished, and is later determined to have never been overfished. The recent National Research Council study on rebuilding estimated that approximately 30 percent of rebuilding stocks are later discovered to have never been overfished (NRC 2013). In the past, it has been NMFS' policy that once a rebuilding plan has been implemented, the rebuilding plan cannot be discontinued until the stock has rebuilt to $B_{msy}$, regardless of new information about the status of the stock when it was originally declared overfished. This policy was in place because a future stock assessment could find that the stock actually had been overfished, and rebuilding to $B_{msy}$ is consistent with the MSA's objective that fisheries produce MSY on a continuing basis.

However, NMFS recognizes that rebuilding stocks are sometimes restricted to relatively low $F_{rebuilds}$, which can have negative impacts on fishery participants due to the reduced landings of the overfished stock, as well as reduced catch of other stocks in mixed-stock fisheries. Therefore, NMFS is proposing to allow a Council to discontinue a rebuilding plan before it reaches $B_{msy}$, if the stock meets the following criteria: (1) the Secretary determines that the stock was not overfished in the year that the MSA section 304(e)(3) overfished determination was based on; and (2) the biomass of the stock is not currently below the MSST (see § 600.310(j)(6) of this proposed action). This proposed revision is based on the rationale that the terminal year of a stock assessments is often the most uncertain, while subsequent reviews of that same

year by stock assessments conducted several years later are often more accurate (NRC 1998). Thus, if a subsequent assessment shows that the stock was not overfished in the year that the overfished determination was based on, it is more likely that the stock was never overfished.

## 1.6 Expected Economic Effects of Management Measures

The Councils and the Secretary use the guidelines for NS1, NS3, and NS7 when developing or amending FMPs. NMFS thinks that revisions to these guidelines will assist the Councils and the Secretary in addressing requirements of the MSA to end and prevent overfishing, rebuild overfished stocks, and achieve OY.

Because these guidelines are general guidance and there is considerable diversity in the different federally-managed fisheries, the potential economic effects resulting from changes to the guidelines are highly speculative. Moreover, the proposed changes to the guidelines do not establish any new requirements and thus are technical in nature. As such, the changes will allow but do not require the Councils or the Secretary to make changes to their FMPs. Because changes to the guidelines will not directly alter the behavior of any entities that operate in federally managed fisheries, no direct economic effects are expected to result from this action. Further, because the proposed changes are technical in nature and do not require the Councils or the Secretary to take action, indirect economic effects may not occur. Indirect economic effects will only occur if the Councils or Secretary amend their FMPs as a result of these technical changes to the guidelines. At the present time, it is unknown whether the Councils or Secretary will make such changes and what the nature of those changes may be, though this action (i.e., proposed changes to the NS guidelines) is expected to increase the probability that they will take certain actions in the future. Thus, any resulting indirect economic effects would be expected to occur in the long-term rather than the short-term.

As the Councils or the Secretary apply the revised guidelines to specific fisheries, they will develop FMPs, FMP amendments, or other regulatory actions that will be accompanied by environmental, economic, and social analyses prepared pursuant to E.O. 12866, the Regulatory Flexibility Act, National Environmental Policy Act, and other statutes. These analyses will indicate the expected effects of any actions the Councils or Secretary take as a result of the changes to the guidelines and thus will only be known at such time. However, the following discussion analyzes what the potential long-term, indirect economic effects of the proposed changes are likely to be, if any, for each alternative. Some proposed actions may not result in any indirect economic effects, even in the long-term.

**1.6.1 Action 1.** Revise the general section of the NS guidelines regarding the importance of identifying fishery management objectives within an FMP.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise the general section of the NS guidelines regarding the importance of identifying fishery management objectives within an FMP.

**Preferred Alternative 2** may indirectly result in positive net economic benefits in the long-term if Councils and the Secretary change their management goals and objectives to better reflect the current economic status of commercial harvesting businesses, for-hire businesses, recreational anglers, seafood dealers/wholesalers, and seafood processors. These entities' economic status changes over time as economic and other conditions change. In order for the adaptive management process to work as intended, the goals and objectives of management should be updated to reflect such changes. For example, given various requirements in the MSA, EO 12866, and the RFA, management goals and objectives are likely to differ depending on whether a fishery is prospering economically or in economic decline. In general, a fishery in economic decline is more likely to need the attention of management than a fishery that is prospering economically. Management measures whose purpose is to address poor economic conditions would be expected to generate positive net economic benefits for the fishery. Further, management measures that account for poor economic conditions would be expected to result in effects that are less economically adverse than measures that did not account for such conditions.

However, addressing management goals and objectives on a more regular basis would be expected to increase the administrative costs associated with management. Councils and the Secretary may need additional funds to cover costs associated with visioning and similar processes. Even if additional funds are not needed, time and resources would possibly need to be diverted from other management tasks, and thus opportunity costs associated with such exercises would still be positive.

**1.6.2 Action 2.** Consolidate guidance on identifying whether stocks require conservation and management within 50 CFR 600.305.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Consolidate guidance on identifying whether stocks require conservation and management within 50 CFR 600.305.

The components of **Preferred Alternative 2** that only reorganize the existing guidance for clarification purposes are not expected to result in any indirect economic effects. If other changes increase the probability that Councils and the Secretary will re-classify stocks from requiring conservation and management to EC species, unnecessarily restrictive measures, such as ACLs and AMs, could be eliminated for certain species. If the removal of such restrictive measures allows for additional harvests to take place, such changes could indirectly lead to positive net economic benefits in the long-term. However, given that any stocks classified as EC species are not likely to be economically important, such benefits would likely be minor.

Some reductions in administrative costs may result if the changes reduce uncertainty as to which stocks require conservation and management. Moreover, administrative costs associated with management, such as costs resulting from monitoring ACLs and implementing AMs, could be reduced if more stocks are classified as EC species rather than stocks requiring conservation and management.

**1.6.3 Action 3.** Revise the guidelines to provide flexibility in managing data limited stocks.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2:** Revise the guidelines to provide flexibility in managing data limited stocks.

**Preferred Option A** under **Preferred Alternative 2** could result in long-term, indirect economic effects if the ability to use alternative types of SDCs rather than SDCs based on MSY or MSY proxies leads to changes in ACLs. For example, if the use of alternative types of SDCs led to less restrictive ACLs, then the change would indirectly lead to positive net economic benefits in the future. However, it is unknown what effect the use of alternative types of SDCs will in fact have on ACLs. Thus, it is not possible to determine with any certainty whether any indirect economic effects will occur or whether they will be positive or negative in the long-term. **Preferred Option B** merely provides clarification by providing examples of circumstances where standard approaches to specify or manage to MSY based reference points may not be appropriate and thus would not lead to any indirect economic effects.

**1.6.4 Action 4.** Revise the guidance on stock complexes to encourage the use of complexes and indicator stocks.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2:** Revise the guidance on stock complexes to encourage the use of complexes and indicator stocks.

**Preferred Alternative 2** may result in adverse indirect economic effects and reduce net economic benefits in the long-term. Although the use of indicator stocks may improve management's ability to monitor stock status, and thus discern whether overfishing is taking place within a complex, that would also lead to an increased probability of an overfishing determination being made. An overfishing determination can lead to significant, adverse economic effects on a fishery by creating a need to implement restrictive management measures to immediately end the overfishing. An overfishing determination can also generate adverse reputation effects on seafood products coming from that fishery. Such determinations are used by various organizations to make seafood recommendations (e.g., Monterrey Bay Aquarium's Seafood Watch). An overfishing determination will lead to a significantly lower rank, grade, or score. In turn, consumers that follow those recommendations will reduce their demand for products with an overfishing determination, which will lead to lower product prices and profits.

However, some reductions in administrative costs may result if the changes reduce uncertainty as to how to manage stock complexes and use indicator stocks appropriately. Moreover, administrative costs associated with

management, such as costs resulting from monitoring ACLs and implementing AMs, could be reduced if more stocks are managed at the complex rather than the stock level as the number of ACLs and AMs would be reduced.

**1.6.5 Action 5.** Revise the guidelines to describe how aggregate MSY estimates can be used.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2:** Revise the guidelines to describe how aggregate MSY estimates can be used.

**Preferred Alternative 2** may have adverse, indirect economic effects in the long-term. For example, if an aggregate level MSY is lower than the sum of the MSYs for the individual species, then the ACLs for one or more species in that aggregate would have to decrease. Though the ACLs for other species in the aggregate may stay the same or even increase, it would be expected that harvests under the aggregate MSY would decrease. However, without knowing the prices and profits associated with each species, it is not possible to predict with certainty whether net economic benefits would necessarily decrease. It is possible, though somewhat unlikely, that the ACLs and harvests of the lesser valued species would decrease while those of the more highly valued species might increase. In such a case, the economic value associated with that aggregate could remain the same or even increase. In general, given the reduction in aggregate harvests, it is more likely that the economic value of the aggregate will decrease under an aggregate MSY relative to an individual species MSY.

**1.6.6 Action 6.** Revise the guidelines by adding a definition for a depleted stock.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise the guidelines by adding a definition for a depleted stock.

**Preferred Alternative 2** is not expected to result in any indirect economic effects as it is purely technical in nature and does not eliminate the requirement to implement a rebuilding plan for species meeting the proposed definition. However, administrative costs may increase if Councils and the Secretary devote time and resources to additional research and management of such species.

**1.6.7 Action 7.** Revise the guidelines by allowing multi-year overfishing determinations.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise the guidelines by allowing multi-year overfishing determinations.

**Preferred Alternative 2** may indirectly result in positive net economic benefits in the long-term. If Councils or the Secretary use the multi-year approach to make an overfishing determination, the probability of making an incorrect determination based on a single year of potentially anomalous data (e.g., due to a natural or non-fishing related man-made disaster) would be reduced (i.e., type II error). As discussed under **Preferred Alternative 2** for **Action 5**, an overfishing determination can lead to significant, adverse economic effects on a fishery. Fishery participants and related businesses will benefit to the extent unnecessary restrictive regulations and adverse reputation effects are avoided.

**1.6.8 Action 8.** Revise guidance on OY to improve clarity and describe the role of OY under the ACL framework.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise guidance on OY to improve clarity and describe the role of OY under the ACL framework.

**Preferred Option A** and **Preferred Option C** under **Preferred Alternative 2** would generally serve to clarify existing guidance and thus would not be expected to generate any indirect economic effects. The potential effects on ACLs from allowing Councils and the Secretary to specify OY qualitatively rather than quantitatively under **Preferred Option B** are unknown, and thus it is unknown whether this change will result in any indirect economic effects.

**1.6.9 Action 9.** Revise acceptable biological catch (ABC) guidance.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise acceptable biological catch (ABC) guidance.

**Preferred Option A** – Modify and add definitions

**Preferred Option B** – Revise risk policy guidance

**Preferred Option C** – Allow phase-in control rules

**Preferred Option D** – Provide guidance on carry-over control rules

**Preferred Option A** is purely technical in nature and for clarification purposes only. Thus, it is not expected to result in any indirect economic effects. By explicitly allowing Councils to consider economic factors in its ABC risk policy, **Preferred Option B** may indirectly lead to positive net economic benefits in the long-term. For example, if a fishery is in economic decline and the Council chooses to account for that by adjusting the amount of risk it wants to take when setting ABC, then this change could lead to higher ACLs when a fishery's economic needs are greatest. The opposite would be true for a fishery that is prospering economically. In general, **Preferred Option B** could lead to more economically stable fisheries in the future. The economic value of fisheries and fisheries related markets is enhanced by economic stability.

Similarly, **Preferred Option C** would also be expected to generate more economically stable fisheries and thereby lead to positive net economic benefits in the long-term. For example, by allowing reductions in ABCs and ACLs to occur over three years rather than one, particularly when those reductions are relatively large, fishermen and fishing businesses would have more time to adjust their harvesting behavior (e.g., by increasing harvests of alternative species) and thereby mitigate the adverse economic effects of such reductions in the short-term. Also, in fisheries that are not managed by catch share programs, large increases in catch limits due to favorable assessment results may have negative short-term impacts by flooding markets, reducing prices, and reducing profitability. In turn, greater economic stability in the harvesting sector should result in greater economic stability for onshore fishing related businesses (e.g., seafood dealers/wholesalers, processors, marinas, etc.) and associated markets.

**Preferred Option D** would not be expected to generate any indirect economic effects in the long-term and thus would not change net economic benefits. The current Guidelines do not explicitly address the carry-over of unused ACLs, and thus do not explicitly include any restrictions on the use of carry-over provisions. However, such provisions are already being used by the Councils and have been approved by the Secretary. Further, as a result of the decision in Conservation Law Foundation v. Pritzker, the Councils and Secretary have or are in the process of implementing measures to ensure the ACL plus carry-over for each stock does not exceed its ABC, consistent with the proposed changes to the Guidelines. The economic effects of those measures are analyzed in the associated RIRs for those actions.

The status quo is what is expected to occur without the proposed changes. In this instance, the proposed changes under **Preferred Option D** are simply codifying the status quo in the regulations, and thus are effectively equivalent to the no action alternative with respect to the expected economic effects. Therefore, these proposed changes are not expected to result in any behavioral changes or indirect economic effects, even in the long-term.

**1.6.10 Action 10.** Revise guidance on AMs to provide clarity.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise guidance on AMs.

**Preferred Option A:** Propose minor revisions to consolidate and clarify the guidance on AMs.

**Preferred Option B:** AMs when ACL equals zero.

**Preferred Option A** under **Preferred Alternative 2** may indirectly lead to a decrease in net economic benefits in the long-term if it increases the probability that the Councils or Secretary will incorporate management uncertainty into the setting of more ACLs than at present. In general, accounting for management uncertainty leads to lower ACLs and lower ACLs are generally expected to reduce harvests and thus consumer surplus and economic profits. All other changes to the guidance on AMs under **Preferred Option A** and **Preferred Option B** would only clarify existing guidance and thus no indirect economic effects are expected from those changes.

**1.6.11 Action 11.** Revise guidance on establishing ACL and AM mechanisms.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Revise guidance on establishing ACL and AM mechanisms.

> **Preferred Option A:** Propose relatively minor revisions to reduce redundancy and improve clarity within paragraph (h) and (h)(1) of the NS1 guidelines.
>
> **Preferred Option B:** Propose revisions to the guidance on the exception from the ACL requirements for stocks that have a life cycle of approximately 1 year.

**Preferred Option B** under **Preferred Alternative 2** may indirectly generate positive net economic benefits in the long-term. If additional species are found to meet the life cycle exception to the ACL/AM requirement, then Councils or the Secretary may choose to eliminate ACLs and AMs that are unnecessarily restricting harvests and thereby reducing consumer surplus and economic profits from what they would be otherwise. All other changes to the guidance on ACL and AM mechanisms under **Preferred Option A** would only clarify existing guidance and thus no indirect economic effects are expected from those changes.

**1.6.12 Action 12.** Provide flexibility in rebuilding stocks.

**Alternative 1 – No Action.** Do not revise the current NS guidelines.

**Preferred Alternative 2.** Provide flexibility in rebuilding stocks.

> **Preferred Option A** – Allow alternative methods for calculating Tmax
>
> **Preferred Option B** – Provide guidance on determining adequate progress and revising rebuilding timelines
>
> **Preferred Option C** – Clarify guidance on use of emergency actions and interim measures
>
> **Preferred Option D** – Allow discontinuance of rebuilding plans

The magnitude of any indirect economic effects generated by **Preferred Option A** is uncertain, but most likely trivial or zero, in the aggregate. For most species, no effects are expected because $T_{max}$ would be relatively the same under any of the three approaches. Thus, in turn, $T_{target}$ would not be expected to change regardless of the approach used and thus neither would the length of the rebuilding period.

However, for slow growing species, the proposed alternative method for calculating $T_{max}$ based on fishing at 75% of MFMT is expected to lead to slightly longer rebuilding timelines relative to the current method ($T_{max}=T_{min}$ + one generation time). Longer rebuilding periods generally lead to greater economic net benefits over time. On the other hand, the opposite is true for fast growing species (i.e., the proposed alternative method would lead to shorter rebuilding timelines and thus lower net economic benefits over time). It is not possible to predict whether the potential gain in net economic benefits for slowing growing species will be greater, the same, or lesser than the potential reduction in net economic benefits for fast growing species and thus whether the effects overall will be positive, negative, or neutral overall.

To the extent that **Preferred Option B** reduces the probability that the Secretary would find adequate progress is not being made, and in turn the probability that additional and likely economically adverse management actions need to be taken is also reduced, this option may indirectly lead to positive net economic benefits in the long-term. In

addition, by not forcing Councils and the Secretary to revisit rebuilding timelines unless a determination of inadequate progress has been made, additional administrative costs associated with such actions would be avoided.

The purpose of **Preferred Option C** is to set a very high standard for Councils and the Secretary to use interim measures to reduce but not end overfishing immediately. Interim measures have so far been used rarely for such purposes. When they have been used, the primary purpose of doing so was to reduce the short-term, adverse economic effects and impacts associated with the management measures intended to address overfishing. The standards described in the proposed rule are consistent with the approach the Secretary has taken to date in applying the interim measures provision. This proposed rule will codify that high standard.

The status quo is what is expected to occur without the proposed changes. Because the proposed changes under **Preferred Option C** are simply codifying the status quo in the regulations, they are effectively equivalent to the no action alternative with respect to the expected economic effects. As such, these proposed changes are not expected to result in any behavioral changes and thus indirect economic effects, even in the long-term.

To the extent **Preferred Option D** increases the probability that a rebuilding plan is discontinued, it may indirectly lead to positive net economic benefits in the long-term. Rebuilding plans generally lead to additional management measures that directly reduce harvests in the fishery, which in turn generally reduce consumer surplus and economic profits. Assuming the removal of a rebuilding plan would eliminate some or all of the related restrictive management measures, the economic costs associated with those measures would also be lessened or eliminated.

## 1.7 Economic Impacts of the Preferred Alternatives

As none of the preferred alternatives are expected to result in any changes to commercial fishing revenues or recreational fishing expenditures, no economic impacts are expected at the national, regional, state, or community level. Any such impacts would only occur if and when a Council or the Secretary takes action as a result of the proposed guideline revisions and therefore are currently unknown.

## 1.8 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any federal action involves the expenditure of public and private resources that can be expressed as costs associated with the regulations. Costs associated with this specific action would include: costs of document preparation, meetings, review, and information dissemination. Federal costs of document preparation are based on staff time, travel, printing, and any other relevant items where funds were expended directly for this specific action. The estimated labor costs associated with staff time are $1,484,404 and the estimated travel costs are $65,000. Costs associated with document preparation and printings are trivial. Thus, total costs of this action are estimated to be $1,549,404.

## 1.9 Net Economic Benefits of the Proposed Action

As previously stated, because changes to the guidelines will not directly alter the behavior of any entities that operate in federally managed fisheries, no direct economic effects are expected to result from this action. Further, because the proposed changes are technical in nature and do not require the Councils or the Secretary to take action, indirect economic effects may not occur. Indirect economic effects will only occur if the Councils or Secretary amend their FMPs as a result of these technical changes to the guidelines. At the present time, it is unknown whether the Councils or Secretary will make such changes and what the nature of those changes may be. However, these changes are expected to increase the probability that they will take certain actions in the future. The following summarizes the analysis of what the potential long-term, indirect economic effects of the proposed changes are likely to be, if any, for each alternative.

With respect to net economic benefits to fishery participants and fishery related businesses in the long-term, the following actions are expected to result in positive, net economic benefits: **Action 1 (**Revise the general section of the NS guidelines regarding the importance of identifying fishery management objectives within an FMP), **Action 2 (**Consolidate guidance on identifying whether stocks require conservation and management within 50 CFR 600.305), **Action 7 (**Revise the guidelines by allowing multi-year overfishing determinations), **Action 9 (**Revise ABC guidance), **Action 11 (**Revise guidance on establishing ACL and AM mechanisms), and potentially **Action 12 (**Provide flexibility in rebuilding stocks).

More specifically, under **Action 9**, **Preferred Options B (**Revise risk policy guidance) and **C (**Allow phase-in control rules) would be expected to generate positive net economic benefits in the long-term, while **Preferred Options A (**Modify and add definitions) and **D (**Provide guidance on carry-over control rules) would not be expected to change net economic benefits in the long-term. Under **Action 11**, **Preferred Option A** (Revise paragraph (h) and (h)(1) of the NS1 guidelines) would not be expected to change net economic benefits in the long-term while **Preferred Option B** (Revise guidance on the exception from the ACL requirements for stocks that have a life cycle of approximately 1 year) would be expected to generate positive net economic benefits in the long-term. Under **Action 12**, **Preferred Option B** and **Preferred Option D** would be expected to generate positive net economic benefits in the long-term. **Preferred Option C** would not be expected to change net economic benefits in the long-term, while it is unknown whether **Preferred Option A** (Allow alternative methods for calculating $T_{max}$) would change net economic benefits in the long-term.

The following actions are expected to reduce net economic benefits to fishery participants and fishery related businesses in the long-term: **Action 4** (Revise the guidance on stock complexes to encourage the use of complexes and indicator stocks), **Action 5** (Revise the guidelines to describe how aggregate MSY estimates can be used), and **Action 10** (Revise guidance on AMs to provide clarity).

Finally, the long-term change in net economic benefits under **Action 3** (Revise the guidelines to provide flexibility in managing data limited stocks) is unknown. No change in long-term net economic benefits is expected under **Action 6** (Revise the guidelines by adding a definition for a depleted stock).

With respect to administrative costs associated with management, **Action 2**, **Action 4**, and **Preferred Option B** under **Action 12** are expected to reduce such costs in the long-term. However, long-term administrative costs are expected to increase under **Action 1** and **Action 6**. Further, the short-term costs of preparing and implementing this action are approximately $1.55 million, which is not insignificant and could easily outweigh any potential reductions under the proposed action. Thus, the change in administrative costs resulting from this action is unknown but likely neutral (i.e., no change).

Given the above, and keeping in mind the previously noted qualifications, it is likely that the proposed action will result in positive net economic benefits to fishery participants and fishery related businesses in the long-term while a change in long-term administrative costs is unlikely. Thus, net economic benefits to the Nation are expected to increase in the long-term as a result of the proposed action.

## 1.10 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, as amended by E.O. 13258 and E.O., 13422, a regulation is considered a "significant regulatory action" if it is likely to result in: 1) An annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; 2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; 3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or 4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order.

According to section (g), a "guidance document" means an agency statement of general applicability and future effect, other than a regulatory action, that sets forth a policy on a statutory, regulatory or technical issue or an interpretation of a statutory or regulatory issue. Further, section 3(h) defines a "significant guidance document" means a guidance document disseminated to regulated entities or the general public that, for purpose of this order, may reasonably be anticipated to: (A) lead to an annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (B) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (C) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs of the rights or obligations of recipients thereof; or (D) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order; and (2) does not include: (A) Guidance documents on regulations issued in accordance with the formal rulemaking provisions of 5 U.S.C. 556, 557;(B) Guidance documents that pertain to a military or foreign affairs function of the United States, other than procurement regulations and regulations involving the import or export of non-defense articles and services; (C) Guidance documents on regulations that are limited to agency organization, management, or personnel matters; or (D) Any other category of guidance documents exempted by the Administrator of OIRA.

Based on the information provided above, this action has been determined not to be economically significant for purposes of E.O. 12866. However, because it does make revisions to a guidance document that raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866, this action has been determined by OMB to be significant for purposes of E.O. 12866.

## 1.11 References

Marchal P., P. Lallemand, K. Stokes, and O. Thébaud. 2009. A comparative review of the fisheries resource management systems in New Zealand and in the European Union. Aquatic Living Resources 22: 463-481.

Morris, J. and S. Deal. 2014. A Vision for Managing America's Saltwater Recreational Fisheries. 14 p. http://asafishing.org/uploads/Marine_Visioning_Report_January_2014.pdf.

NRC (National Research Council). 1998. Improving Fish Stock Assessments. National Academy Press, Washington, D.C. 177 p.

National Research Council (NRC) (2013) Evaluating the effectiveness of Fish Stock Rebuilding Plans in the United States. The National Academies Press, Washington, D.C. 292 p.

Patrick, W.S., W. Morrison, M. Nelson, and R.L. González Marrero. 2013. Factors affecting management uncertainty in U.S. fisheries and methodological solutions. Ocean & Coastal Management 71: 64-72.

Thompson, G. 2011. Three issues pertaining to a possible amendment to the BSAI and GOA Groundfish FMPs addressing additional ACL-related aspects of the National Standard Guidelines. Discussion paper for the Scientific & Statistical Committee of the North Pacific Regional Fishery Management Council. NOAA Fisheries, Alaska Fisheries Science Center, Seattle, Washington. 51 p.