# 8.0 SUMMARY OF OTHER ENVIRONMENTAL MANAGEMENT ISSUES

Federal regulations at 40 CFR 1502.16 require an EIS to compare the environmental impact of the alternatives considered in the analysis. Based on the environmental impacts of Amendment 16-4 and the 2007-08 groundfish harvest specifications and management measures disclosed in Chapters 3 through 7, this chapter summarizes these consequences to address the particular concerns of 40 CFR 1502.16. These concerns are an implicit part of the analyses in Chapters 3–7; thus, further detail on impacts can be found in those chapters.

Short-term uses versus long-term productivity. This relationship is central to the management framework, which is intended to allow harvests in 2007–08 (short-term use) at a level that maintains stocks at or returns them to their maximum level of surplus production, MSY (long-term productivity). For the proposed actions evaluated in this EIS, the Council's preferred alternative is intended to allow harvest levels that prevent short-term socio-economic disaster in fishing communities, while rebuilding depleted stocks to the $B_{MSY}$ level as quickly as possible.

Irreversible resource commitments. An irreversible commitment represents some permanent loss of an environmental attribute or service. The use of non-renewable resources is irreversible; unsustainable renewable resource use may be irreversible if future production is permanently reduced or, at the extreme, is extinguished. For all species, ABCs are set at the MSY level, meaning that ABC harvest levels are estimated to be sustainable over time. This action sets OY levels for most species that are below their ABC levels, although some of the healthier stocks may have ABC equal to OY. These healthy stocks, however, are likely to be harvested well below their MSY levels, since the Council's preferred alternative curtails fishing on healthy stocks to protect co-occurring depleted stocks. Therefore, the alternatives do not represent an irreversible commitment, because harvest levels and management measures are periodically adjusted in response to new information in order to sustain fishery resources.

Irretrievable resource commitments. A resource is irretrievably committed if its use is lost for time, but is not actually or practically lost permanently. The fish that are harvested represent an irretrievable resource commitment but, the OY and management measure alternatives in this EIS are intended to rebuild and sustain the fishery resources.

Energy requirements and conservation potential of the alternatives. The principal effect of the alternatives on energy use is indirect and related to the level of fishing and surveillance activity. Fishing vessels and surveillance assets (ships and airplanes) consume fossil fuels. Fuel consumption is likely to correlate with levels of harvest ultimately permitted under the management regulations. However, there are a variety of other factors that could affect overall energy use and efficient utilization. Changes in fuel prices, for example, could affect the level of fishing vessel operations independent of the constraining effect of management measures under the alternatives.

Urban quality, historic resources, and the design of the built environment. The alternatives have no direct effect on these resources. However, reductions in personal income as a consequence of more restrictive harvest policies could cumulatively affect private and public investment in coastal communities, including marine-related businesses and port-related infrastructure. These changes could also affect cultural and historic resources as fishing and fishing-dependent activities are supplanted or simply disappear, changing the character of a coastal community. This concern is particularly true for those communities identified as vulnerable in Section 7.1.5.2.

Possible conflicts between the proposed action and other plans and policies for the affected area. Overfished groundfish species are caught incidentally in fisheries managed under other Council FMPs (salmon, CPS, and HMS). More restrictive measures are likely to affect these fisheries and thus conflict with some of the objectives of these FMPs. (FMPs try to strike a balance between conservation and utilization, so they include objectives related to resource use.)

The following three sections describe unavoidable adverse impacts (as required by 40 CFR 1502.16), mitigation measures (as required by 40 CFR 1502.16(h)), a discussion of the environmentally preferable alternative (as required by 40 CFR 1505.2(b)) and the rationale for the preferred alternative.

## 8.1 Unavoidable Adverse Impacts

Impacts of the alternatives on the human environment are identified and evaluated in Chapters 3–7 of this EIS. The 2005–06 groundfish harvest specifications EIS screened for potentially significant impacts of the alternatives using factors described at 40 CFR 1508.27 and in Section 6.02 of National Oceanic and Atmospheric Administration (NOAA) Administrative Order (NAO) 216-6. The EISs for groundfish FMP amendments 16-2 and 16-3, which address rebuilding plans for overfished groundfish, contain similar sections. None of those EISs identified significant adverse effects to biological components of the environment; instead, they described the potential risk for such impacts if the proposed actions failed to meet their objectives. The main risk is that, because of scientific uncertainty, stocks may not be managed at or to target biomasses (stock sizes) and fishing mortality rates identified in the management framework. This risk is mitigated by the regular reassessment of depleted species and the periodic re-specification of OYs in accordance with the management framework. Regular stock assessments, which for depleted species are planned as part of each biennial management cycle, reduce uncertainty about the status of the stock while providing new information needed to establish OYs consistent with rebuilding plans. As noted above, this EIS evaluates two related proposed actions. The first is the revision of rebuilding plans, or specifically, the targets under which these species will be managed. Table 8–1 compares the current targets for these species and those proposed under Amendment 16-4. Targets for other alternatives are discussed in Chapter 4. For the preferred alternative, for all the species except yelloweye rockfish, the year by which the stock is estimated to rebuild to target biomass is earlier than the previous estimate. $P_{MAX}$, an indicator of the likelihood of achieving the target, is estimated to remain the same or be more favorable under the proposed changes, with the exception of canary rockfish, which shows a modest increase in risk.[32] Furthermore, depleted species OYs in 2007–08 are consistent with adopted rebuilding strategies, and, with the exception of darkblotched rockfish, are lower than the 2006 values. Thus, the rebuilding strategies associated with the Council-preferred OY alternative are less likely to result in significant impacts to biological environment in comparison to the no action alternative. The second proposed action is adopting harvest limits (OYs) and associated management measures for the 2007–08 biennium. This EIS considers a choice of OYs as a basis for considering alternative rebuilding strategies, providing a link between the two proposed actions. In general the proposed OYs are consistent with projected catches of depleted species in 2006 (cf. tables 2–2a and 2–5) with adjustments to account for increasing CPUE as stocks recover.

[32]The EA for Amendment 16-1 (PFMC 2003a) includes a discussion of how the $P_{MAX}$ statistic is derived.

**Table 8–1. Comparison of current and proposed OYs and rebuilding targets for depleted species.**

| Species | OY | | $P_{MAX}$ | | $T_{TARGET}$ | |
|---|---|---|---|---|---|---|
| | 2006 | Proposed (2007) | Current | Proposed | Current | Proposed |
| Bocaccio | 309 | 218 | 70% | 78% | 2027[a/] | 2026 |
| Canary | 47 | 44 | 60 | 55 | 2074 | 2063 |
| Cowcod | 4.2 | 4 | 60 | 91 | 2090 | 2039 |
| Darkblotched | 200 | 330[b/] | 80 | 100 | 2030 | 2011 |
| POP | 447 | 150 | 70 | 93 | 2026 | 2017 |
| Widow | 368 | 289 | 60 | 95 | 2038 | 2015 |
| Yelloweye | 27 | 23[c/] | 80 | 80 | 2058 | 2084 |

[a/] Corrected value for target adopted by the Council, see footnote a to Table 2–3.
[b/] 2008 OY; 2007 OY is 290 mt.
[c/] The yelloweye OY is based on a strategy to ramp down the harvest rate from the 2006 (status quo) harvest rate to a new constant harvest rate strategy in 2011. Under this strategy the 2007–10 OYs are 23 mt, 20 mt, 17 mt, and 14 mt, respectively.

There is a potential risk that management measures will fail to constrain total catch of depleted species below their rebuilding-target-associated OYs. Stock characteristics are a factor in the likelihood that such overages would result in significant adverse biological impacts as illustrated by Figure 2-2. For cowcod and yelloweye rockfish in particular, and to a lesser extent canary rockfish, the relationship between short-term (2007–08) OYs and estimated target year is flat. Thus, a small incremental increase in total catch (represented by the OY) results in a relatively large delay in the target rebuilding year. To address the potential risk, the Council-preferred management measure alternative includes a variety of measures to constrain harvests to OYs. These include non-retention of these species in almost all fisheries, implementation of additional YRCAs for recreational fisheries, region-specific recreational harvest guidelines for yelloweye rockfish, bycatch caps for canary rockfish in the whiting fishery, and the requirement of selective flatfish trawl gear north of 40° 10' N. latitude and small footrope gear south of this management line to reduce bycatch of canary rockfish in the bottom trawl sector. Furthermore, additional measures could be applied inseason if available information indicates a likelihood of catches exceeding the OY for these species. Additional steps, although not evaluated as part of the preferred alternative, will be taken. In particular, WDFW will implement an education program to encourage recreational anglers to take steps to avoid catching yelloweye rockfish. ODFW has been developing techniques to reduce barotrauma-related post-release mortality common in rockfish such as yelloweye. These techniques also could be disseminated to recreational fishers to help reduce recreational bycatch mortality.

Because of the choice of OYs, management measures for 2007–08 are similar to those applied in the 2005–06 biennium with one important exception. The Council-preferred management measure alternative reduces the extent of the western CCA by opening areas deeper than 175 fm to commercial fishing with fixed gear. As discussed in Section 4.3.1.1, current monitoring, combined with the difficulty of estimating actual future fishing mortality, make it difficult to forecast the effects of this change. However, reducing the area of the western CCA increases the risk that harvests could exceed the Council-preferred OY of 4 mt, although catch projections included in this EIS indicate that harvests will remain below this level. To mitigate this risk, all vessels fishing in the area will be subject to elevated VMS monitoring and, to facilitate enforcement, transiting through the remaining closed areas within 175 fm will be prohibited.

The previously-prepared EISs referenced above also identify potentially significant cumulative socioeconomic impacts because exvessel revenue and related personal income declined dramatically in the period from the mid-1990s to the early 2000s. Although fishing opportunity has stabilized at a more

modest level in the past few years, there continues to be the potential for significant adverse impacts. This is illustrated by Figure 2-13, which shows exvessel revenue trends since 1981. Total groundfish exvessel revenue has fallen from about $130 million in 1995 to around $70 million today. Going forward, the rebuilding of depleted stocks may, perhaps counter-intuitively, impose additional constraints. Increased abundance could boost CPUEs, requiring a management response of shortening seasons or imposing other measures to limit total fishing effort. For firms currently at or near the break-even point, the loss of cash flow due to a seasonal closure or overall reduced opportunity could put them out of business. Although these effects cannot be predicted, cumulatively significant socioeconomic impacts could result.

In addition, the ramp down strategy adopted for phasing a lower harvest rate for yelloweye rockfish is likely to require additional constraints across a range of fisheries, which may reduce fishing opportunity and/or lower participation across affected sectors. For the 2007–08 biennium, a combination of new measures, such as expanded YRCAs, along with adaptive management strategies are expected to keep total yelloweye rockfish catch below the 2008 OY of 20 mt. Additional measures will likely be required to further reduce catches to the 2009–10 OYs. Although the socioeconomic effects of the required management response in the foreseeable future cannot be predicted, there is a likelihood of at least localized significantly adverse socioeconomic impacts, particularly to communities most dependent on groundfish resources and most economically vulnerable to a change in groundfish resource availability.

## 8.2 Mitigation

An EIS must discuss "means to mitigate the adverse environmental impacts" stemming from the proposed action (40 CFR 1502.16(h)), even if the adverse impacts are not by themselves significant. Alternatives are mitigative to the degree that management measures constrain fishing mortality to levels below the harvest specifications. In addition, the management framework itself mitigates impacts because it is adaptive through the application of inseason management measures, which may be automatic actions for regulatory purposes. Most broadly, during the management cycle, the Council responds to new information on actual catch. The GMT uses this information to project total catch for the year for depleted species and, if necessary, propose adjustments to management measures to reduce fishing mortality. As evidenced by past years, there is little risk of exceeding OYs for non-depleted species because management measures to protect depleted species constrain fishing effort below non-depleted species' OYs. As indicated in the previous section, inseason management will be used to make necessary adjustments to adapt to ramped down yelloweye rockfish OYs and to develop strategies to achieve further catch reductions consistent with 2009–10 OYs.

As discussed in Section 5.3, a similar mitigation measure—inseason action—is proposed to address bycatch of listed Chinook salmon. Automatic action authority would allow NMFS to require the fishery to operate offshore of a boundary line approximating the 100 fm depth contour (Ocean Salmon Conservation Zone) if the 11,000 Chinook limit is expected to be reached in season.

## 8.3 Rationale for Preferred Alternative

The key decision evaluated in this EIS is the adoption of rebuilding plans for depleted species and adoption of associated OYs and management measures for the 2007–08 management period. For depleted stocks, the basic approach that guides the adoption of a rebuilding strategy comes from the MSA as reiterated by *Natural Resources Defense Council, Inc., and Oceana, Inc. vs. National Marine Fisheries Service, et al.*, 421 F.3d 872 (9th Cir. 2005): "…a time period for … rebuilding … as short as possible, taking into account… the needs of fishing communities…. (MSA §304(e)(4)(A)). Thus, the evaluation of

the alternatives considered rebuilding in as short a time as possible, while also taking into account the needs of fishing communities. From a strictly biological perspective, rebuilding in a time period as short as possible equates to rebuilding in the absence of fishing. Considering the OY alternatives, Alternative 1 lists OYs of 0 mt for all depleted species, which equates to the as-short-as-possible/absence-of-fishing standard. This is the alternative that causes the least adverse impacts to the biological and physical environment. However, it would have disastrous economic consequences, because it would result in complete closure of a range of groundfish and nongroundfish fisheries. As a result, it would have significant adverse impacts to fisheries and fishing-dependent communities. In contrast, the Council-preferred alternative was developed to address fully the requirements of MSA §304(e)(4)(A). The strategies and measures adopted under this alternative seek the appropriate balance between stock rebuilding and the needs of fishing communities, based on the Ninth Circuit District Court's direction and the requirements of National Standard 8 of the MSA. This puts conservation and rebuilding overfished stocks before the needs of fishing communities, but avoids disastrous short-term consequences to those communities:

> Conservation and management measures shall, consistent with the conservation requirements of [the MSA] (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to: (A) Provide for the sustained participation of such communities; and (B) To the extent practicable, minimize adverse economic impacts on such communities.

As indicated in Table 8–1, as compared to the status quo, the preferred alternative results in further reductions in harvest limits to hasten rebuilding. Table 2–30 (based on information in Table 7–68) shows estimated income impacts under the different management measure alternatives by region. The Council-preferred alternative with an assumption of a high whiting OY most closely reflects whiting opportunity in the current year. This shows personal income impacts very close to No Action.[33] Thus, the Council-preferred alternative, in comparison to No Action, adopts more aggressive rebuilding strategies for most depleted species with modest short-term socioeconomic impacts (assuming that the whiting fishery is prosecuted at levels similar to past years). Although, as discussed above, lower OYs and associated management measures bring about less adverse impacts, the Council also considered the needs of fishing communities in selecting its preferred alternative. The cumulative decline in revenue and income over the past decade (see Figure 2–13) has been significant. Additional substantial reductions in revenue due to management restrictions would likely have additional significant short-term socioeconomic impacts. The preferred alternative is likely to result in personal income impacts (socioeconomic benefits) similar to or somewhat lower than No Action while adopting more aggressive rebuilding schedules for depleted species. The rationale for adopting the preferred alternative is therefore consistent with the requirements of the MSA at §304(e)(4)(A).

The Council-preferred management measure alternative is designed to allow access to target stocks while managing to the comparatively low, and thus constraining, OYs for depleted species. Table 8–2 compares the projected total catch of depleted species under each alternative to the Council-preferred OYs for 2007. It can be seen that all of the management measure alternatives are projected to constrain catches below the preferred OYs. The Council-preferred management measure alternative is intended to

[33] These whiting OY scenarios are based on likely constraints due to depleted species bycatch. However, in terms of management, the whiting OY is usually set based on whiting stock status and then bycatch caps (total catch limits) for selected depleted species are imposed on the whiting sectors. Under this management strategy vessels have the opportunity to lower their bycatch rates in order to achieve higher whiting catches. This would allow them to realize higher income levels than reflected in the scenarios in Table 2–20.

maximize fishing opportunity for non-depleted target stocks within the constraints imposed by the need to rebuild overfished species.

**Table 8–2. Comparison of projected catch mortality of depleted species under the alternatives and the Council-preferred OYs for 2007. (Projected catch values have been rounded to the nearest whole number with the exception of cowcod.)**

| | Bocaccio | Canary | Cowcod | Dkbl | POP | Widow | Yelloweye |
|---|---|---|---|---|---|---|---|
| Preferred 2007 OY | **218** | **44** | **4.0** | **290** | **150** | **368** | **23** |
| No Action[a] | 135 | 44 | 3.4 | 182 | 74 | 257 | 20 |
| Alt. 1 | 39 | 25 | 0.5 | 81 | 44 | 116 | 11 |
| Alt. 2 | 111 | 33 | 3.3 | 197 | 99 | 144 | 14 |
| Alt. 3 | 186 | 41 | 3.5 | 203 | 100 | 191 | 18 |
| Preferred Alternative | 150 | 43 | 3.5 | 264 | 115 | 264 | 20 |

[a] No Action is projected total catch in 2006 (from Table 2–5).