

exceed their allowable annual harvests. This new approach better accounted for the total mortality of the overfished stocks taken as bycatch than the previous method of applying estimated discard rates to the annual OY to calculate landed catch harvest guidelines. NMFS believes that setting cumulative landing limits for both target and bycatch species based on their co-occurrence in the catch will help ensure that annual OYs for bycatch species are not exceeded. Additional information on the bycatch analysis used in setting the 2002 specifications and management measures is available in the preambles to the proposed and final rules implementing that regulatory package, at 67 FR 1555 (January 11, 2002) and 67 FR 10490 (March 7, 2002,) respectively.

Discard rates for individual groundfish species or species groups are provided in the species-specific footnotes to Table 1 of this document. Although no longer the first line of defense, calculating landed catch OYs based on estimated discard rates is still a strong second line of defense. NMFS new modeling approach for 2002 provided insight into the expected level of discards that are associated with total amounts of catch. Results from the modeling were drawn upon to estimate landed catch OYs for overfished species taken incidentally in the commercial fishery. Landings were monitored so that inseason action could be taken to reduce fishing effort for one or more of the target species. During 2002, notable closures and restrictive regulations were implemented to prevent overharvest of overfished species.

The third line of defense is the revision of the procedures used for evaluating inseason progress of the fishery and for making management adjustments for the target species, and will also help ensure that annual OYs for overfished species are not exceeded. In previous years, when inseason monitoring had revealed that landings of a target species or complex were progressing at a rate that was too fast or too slow, adjustments were made to the cumulative landings limits based primarily on achieving the annual OY for the target species with little consideration of the bycatch implications of changing those limits. For 2002 inseason actions, the bycatch model was used to evaluate the bycatch consequences of any deviations from the projected target fishery landings, and of any changes in target species limits during the remainder of the year. Target species landings limits were not adjusted upwards when an adjustment meant that an associated bycatch species total catch OY would be

exceeded, even if the annual OY for the target species would not be achieved.

For setting its 2003 specifications and management measures, the Council again relied on the 2002 bycatch analysis described earlier in this document, adjusted as described below. However, NMFS anticipates revising the co-occurrence rates in the bycatch analysis in early 2003, based on the agency's evaluation of how those rates compare with rates recorded in the first year of the Federal at-sea observer program (August 2001 through August 2002). These revised co-occurrence rates will be used to guide decisions on inseason actions in 2003, just as the original bycatch analysis guided those decisions in 2002.

As discussed in more detail following this section, the Council has introduced new closed areas for 2003, intended to prevent vessels from fishing in waters where overfished species commonly occur. The Council and its advisory bodies expected that introducing new depth based management measures would require adjusting the bycatch analysis to better recognize fishing patterns in the areas remaining open to fishing. Additionally, 2003 depth-related revisions to the bycatch analysis would have to account for expected effort shift by vessels that had historically operated in the formerly open areas.

To account for varying fishing patterns by depth, the Groundfish Management Team (GMT) estimated the percentage of effort shift from closed areas to the remaining open fishing areas, then estimated the percentage of target species OYs that would be taken in the nearshore and offshore open areas. Some deepwater species, such as sablefish, will likely only be taken offshore of the closed areas; similarly, vessels will be targeting nearshore species shoreward of the closed areas. Other species, such as Dover sole, are distributed more broadly and will likely be taken in both the nearshore and offshore open areas. Once the GMT had set formulas to account for effort shift and target species availability in open fishing areas, the GMT addressed expected bycatch rates within those open areas.

Using the bycatch rates approved by the Council for the 2002 groundfish fisheries, the GMT analyzed bycatch rates for the same combinations of targeted and overfished stocks by depth and by two-month fishing period in trawl logbooks. Because the bycatch rates from trawl logbooks for the total fishing area were lower than those chosen by the Council for 2002 management, the GMT assumed that

depth-specific bycatch rates shown in the trawl logbooks were not adequately conservative. Thus, the GMT adjusted depth-specific trawl logbook bycatch rates by the ratio between the Council's 2001/2002 selected rates for all areas and the logbook rates for all areas. From these adjustments, the GMT set new depth- and fishing period-specific bycatch rates that were compatible with the more conservative all areas bycatch rates the Council set in 2002. The SSC evaluated the GMT's methodology for setting depth based bycatch rates for 2003 and noted that the methods chosen were reasonable, yet would benefit from the expected 2003 analysis of the bycatch model against data gathered in the at-sea observer program.

In designing trip limits, season closures, and other management measures, the GMT crafted trip limit scenarios for targeted and bycatch species taken in the open areas that were calculated to keep the total catch (landed + discard) of targeted species and overfished species below their respective OYs. The Council's ultimate trip limit, season, and area closure recommendations were shaped largely by the depth-adapted 2001/2002 bycatch and discard analysis and are proposed in section IV of this proposed rule.

Depth-based Management

Since 1998, groundfish management measures have been shaped by the need to rebuild overfished groundfish stocks. The over 80 species in the West Coast groundfish complex mix with each other to varying degrees throughout the year and in different portions of the water column. Some species, like Pacific whiting, are strongly aggregated, making them easier to target with relatively little bycatch of other species. Conversely, other species like canary rockfish may occur in species specific clusters, but are also found co-occurring with a wide variety of other groundfish species. Over the past several years, groundfish management measures have been more carefully crafted to recognize the tendencies of overfished species to co-occur with healthy stocks in certain times and areas.

With the 2002 specifications and management measures, the Council introduced a new bycatch analysis model, discussed earlier, that allowed managers to set trip limits so that more abundant stocks were more strongly targeted in times when they were less likely to co-occur with overfished stocks. The 2002 management measures primarily varied by time (two-month period) and by north-south management area (north of Cape Mendocino, between Cape Mendocino and Point Conception,