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Catch Report for Rebuilding Species Not Being Assessed in the 2015-16 Biennium

This catch report summarizes recent estimates of fishing mortality for three rebuilding species: yelloweye rockfish (*Sebastes ruberrimus*), Pacific ocean perch (POP; *Sebastes alutus*), and cowcod (*Sebastes levis*), in waters off the coast of the United States from Southern California to the U.S.-Canada border (or the species spatial extent if not coastwide). These estimates are compared with annual catch limits (ACLs) adopted to promote rebuilding through 2014.

Fishing mortalities for 2010-13 are summarized from the groundfish discard and catch reports for 2010-13 developed by West Coast Groundfish Observer Program (WCGOP), and published on the NW Fisheries Science Center website (NWFSC 2011-13). Observed discard rates for each species were directly expanded to a fleet-wide level of discard mortality through a deterministic approach. These discard mortalities were then added to landings data to produce overall estimates of annual species mortalities from fishing.

The Groundfish Management Team's (GMT) end-of-year scorecard for 2014 was used for the fishing mortality in 2014 (GMT, 2014). The GMT's scorecard aggregates research, state, and tribal inseason catch estimates to track overfished species totals against current harvest specifications. The scorecard was updated with NOAA's Individual Fishing Quota tallies for 2014 (NOAA Pacific Coast Groundfish Individual Fishing Quota, 2014)

The fishing mortalities for 2010-2014 (Tables 1-3) of these rebuilding species that are not being assessed in the 2015-16 biennium are all estimated to be under the ACLs as specified in species rebuilding plans (PFMC, 2010; PFMC, 2011; PFMC, 2012) and implemented in Federal regulations (NOAA, 2008; NOAA, 2011a; NOAA, 2011b; NOAA, 2013)

Yelloweye

The last full assessment of yelloweye was conducted in 2009 (Stewart, 2009), and an update for yelloweye rockfish was done in 2011 (Taylor and Wetzel, 2011). The resource is modeled as a single stock, but with three explicit spatial areas: Washington, Oregon, and California. The modeling was done with the most up-to-date version of Stock Synthesis available at the time. Note that the most current yelloweye rockfish assessment only had the Groundfish Management Team's (GMT's) scorecard available for an estimate of 2010 fishing mortality, and the 2013 Catch Report similarly relied upon the GMT scorecard for 2012 mortality.

Yelloweye ACLs for 2012-14 were 17, 18, and 18 mt, while fishing mortalities are estimated to have been 12, 11, and 16 mt, respectively, representing 51% of the aggregate allowable catch over that period. The ACLs for 2015 and 2016 are 18 and 19 mt, respectively, and the probability of rebuilding the yelloweye rockfish stock by the current T_{TARGET} year of 2067 is 62.1% (PFMC, 2014; NOAA, 2015).

Table 1. Estimated fishing mortality and management reference points for harvest of yelloweye rockfish in 2010-14.

Year	Estimated fishing mortality (mt)	Management reference points (harvest specifications)					
		ACL (2010 OY) (mt)	Estimated mortality (% of ACL)	ABC (mt)	Estimated mortality (% of ABC)	OFL (2010 ABC) (mt)	Estimated mortality (% of OFL)
2010	8	17	47%	-	-	32	25%
2011	9	17	52%	46	19%	48	18%
2012	12	17	71%	46	26%	48	25%
2013	11	18	61%	43	26%	51	22%
2014	16	18	89%	43	37%	51	31%

Pacific Ocean Perch

The northern U.S. West Coast represents the southern end of the POP range in the Northeastern Pacific Ocean. Composition data indicate that good recruitment years for Pacific ocean perch coincide in Oregon and Washington and no significant genetic differences have been found off the U.S. West Coast. The last full assessment was performed in 2011 (Hamel and Ono, 2011). The resource was modeled as a single stock using the most up-to-date version of Stock Synthesis available at the time.

As with yelloweye, the 2013 catch report relied upon the GMT scorecard for its estimate of 2012 fishing mortality. POP ACLs for 2012-14 were 183, 150, and 153 mt, while fishing mortalities are estimated to have been 56, 58, and 71 mt, respectively, representing 38% of the aggregate allowable catch over that period. The ACLs for 2015 and 2016 are 158 and 164 mt, respectively, and the probability of rebuilding the POP stock by the current T_{TARGET} year of 2051 is 50.0% (PFMC, 2014; NOAA, 2015).

Table 2. Estimated annual fishing mortality and management reference points for harvest of Pacific ocean perch in 2010-14.

Year	Estimated fishing mortality (mt)	Management reference points (harvest specifications)					
		ACL (2010 OY) (mt)	Estimated mortality (% of ACL)	ABC (mt)	Estimated mortality (% of ABC)	OFL (2010 ABC) (mt)	Estimated mortality (% of OFL)
2010	159	200	80%	-	-	1,173	14%
2011	62	180	34%	981	6%	1,026	6%
2012	56	183	31%	962	6%	1,007	6%
2013	58	150	39%	807	7%	844	7%
2014	71	153	48%	801	9%	838	8%

Cowcod

The last full assessment of cowcod in the Southern California Bight was done in 2014 (Dick and MacCall, 2014) using a Bayesian extension of the Depletion-Based Stock Reduction Analysis (XDB-SRA) and is fit to five fishery-independent data sources: four time series of relative abundance (CalCOFI larval abundance survey, Sanitation District trawl surveys, NWFSC trawl survey, and NWFSC hook-and-line survey), and a 2002 visual survey estimate of absolute abundance using a Human Occupied submersible Vehicle (HOV).

Cowcod ACLs for 2012-14 were 3 mt in each year, while fishing mortalities are estimated to have been 1.15, 1.89, and 1.3 mt, respectively, representing 48% of the aggregate allowable catch over that period. The ACL for 2015 and 2016 is 10 mt and the probability of rebuilding the cowcod stock by the current T_{TARGET} year of 2020 is 90.9% (PFMC, 2014; NOAA, 2015). The 2015 and 2016 annual catch target (ACT) for cowcod is 4 mt.

Table 3. Estimated annual fishing mortality and management reference points in 2010-14 for harvest of cowcod south of 40°10' N latitude.

Year	Estimated fishing mortality (mt)	Management reference points (harvest specifications)					
		ACL (2010 OY) (mt)	Estimated mortality (% of ACL)	ABC (mt)	Estimated mortality (% of ABC)	OFL (2010 ABC) (mt)	Estimated mortality (% of OFL)
2010	1.20	4.0	30.0%	-	-	14.0	8.6%
2011	0.99	3.0	33.0%	10.0	9.9%	13.0	7.6%
2012	1.15	3.0	38.3%	10.0	11.5%	13.0	8.8%
2013	1.89	3.0	63.0%	9.0	21.0%	11.0	17.2%
2014	1.3	3.0	43.3%	9.0	14.4%	12.0	10.8%

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