

Estimates of Pacific Halibut Bycatch in IPHC Area 2A in 1998 & 1999

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A series of analyses have been conducted with the objective of estimating halibut bycatch in the bottom trawl fishery for groundfish and shrimp off the west coast. Halibut bycatch was estimated for 1987, 1992 and 1995. New estimates are calculated for 1998 and an estimate for halibut bycatch for Oregon trawl fisheries in 1999.

Bottom Trawl Fishery for Groundfish

EDCP Method

A new method was utilized to estimate the 1998 halibut bycatch in the bottom trawl fisheries for groundfish. This method, termed "EDCP Method", utilizes new data on encounter rates and halibut size (weight and % legal size) collected during the voluntary observer program (Enhanced Data Collection Program) off Oregon and Washington in 1995-1998. The EDCP data contain observations for 1,744 tows. The EDCP encounter rates were stratified by season, depth, latitude, and catch of arrowtooth flounder. The average weight of halibut and the percentage of legal-sized fish were also estimated for each of these strata in the EDCP data.

Table 1. Estimated 1998 halibut bycatch in the bottom trawl fishery for groundfish in IPHC Area 2A, and estimated 1999 halibut bycatch in the bottom trawl fishery for Oregon.

Year/ Area	Bottom Trawl Effort (Hours)	Estimated Halibut Bycatch (Number)	Estimated Halibut Bycatch (Round, Kilograms)	Bycatch Mortality of Legal Size (Number)	Bycatch Mortality of Legal Size (Round, Kilograms)
98 OR	76,870	83,025	683,272	11,696	107,328
98 WA	51,672	204,588	1,474,913	19,358	151,973
98 TOT	128,542	287,612	2,158,185	31,053	259,301
99 OR	69,276	88,383	726,841	11,754	107,152

Shrimp Trawl Fishery

Three estimates of halibut bycatch in 1998 for PSMFC areas 2B-3C were produced by ODFW staff.

Methods

The three bycatch estimates were based on three different data sources: 1) bycatch rates observed during 128 tows by Pikitch, et al., during 1985-87; 2) control net catch rates from 166 tows observed by Hannah, et al. (1996); and 3) data compiled from shrimp fishing trips observed during 1996-99 by the EDCP, combined with control net catches from ODFW research charters during the same time period (for a total of 203 observed tows).

The approximate number of tows in the 1998 Oregon shrimp fishery was over 10,000. The halibut bycatch estimates for this fishery are based on expanding the encounter rates (pounds of halibut per single-rig equivalent hour) by the effort expended by vessels landing shrimp in Oregon ports only. Bycatch from vessels landing shrimp into Washington ports is not included.

The estimates are not stratified by depth because the depth range of the shrimp fishery is very restricted and the amount of data is very limited.

Table 2. Estimated 1998 halibut bycatch in the shrimp trawl fishery in areas 2B-3C.

Data Source	Single-rig Equivalent Hours (sreh) Observed	Bycatch Rate (lbs/sreh)	Fishing Effort (sreh) in Oregon Landings	Bycatch Estimate (Round, kg)	Bycatch Mortality (Round, kg)
Pikitch (1)	---	1.22	34,543	19,155	9,578
Hannah (2)	236.5	2.60	34,543	40,824	20,412
EDCP (3)	551.1	2.12	34,543	33,287	16,644