

**TABLE 6.3 NORTHWEST REGION MARINE MAMMAL BYCATCH BY FISHERY** Bycatch estimates include incidental mortality and serious injury. Where multiple years of data are indicated, the estimate is an annual average.

COMMON NAME	SCIENTIFIC NAME	YEAR	BYCATCH	UNIT	CV	FOOTNOTE(S)
<b>California Halibut Trawl</b>						
California sea lion - U.S.	Zalophus californianus	2004-2008	27.41	INDIVIDUAL		
Steller sea lion - Eastern U.S.	Eumetopias jubatus	2005-2009	0.74	INDIVIDUAL	0.63	j
<b>Fishery Total</b>			28.15			
<b>California/Oregon Nearshore Rockfish</b>						
Harbor seal - California	Phoca vitulina richardii	2004-2008	5.37	INDIVIDUAL		
<b>Fishery Total</b>			5.37			
<b>West Coast Groundfish Non-Trawl Gear: Limited Entry Sablefish-Endorsed Fixed Gear</b>						
California sea lion - U.S.	Zalophus californianus	2004-2008	2.52	INDIVIDUAL		
<b>Fishery Total</b>			2.52			
<b>West Coast Limited Entry Bottom Trawl; Groundfish Bottom Trawl</b>						
California sea lion - U.S.	Zalophus californianus	2004-2008	4.30	INDIVIDUAL		
Steller sea lion - Eastern U.S.	Eumetopias jubatus	2005-2009	2.51	INDIVIDUAL	0.47	j
<b>Fishery Total</b>			6.81			
<b>West Coast Mid-Water Trawl for Whiting, At-Sea Processing</b>						
California sea lion - U.S.	Zalophus californianus	2004-2008	0.95	INDIVIDUAL		
Harbor seal - California	Phoca vitulina richardii	2004-2008	1.12	INDIVIDUAL		
Harbor seal - Oregon-Washington Coastal	Phoca vitulina richardii	2002-2006	0.40	INDIVIDUAL	0.30	j
Steller sea lion - Eastern U.S.	Eumetopias jubatus	2005-2009	2.46	INDIVIDUAL	0.17	j
<b>Fishery Total</b>			4.93			
<b>Grand Total</b>			47.78			
<b>NORTHWEST REGION MARINE MAMMAL BYCATCH BY STOCKS AND SPECIES</b>						
COMMON NAME	SCIENTIFIC NAME	YEAR	BYCATCH	UNIT		FOOTNOTE(S)
California sea lion - U.S.	Zalophus californianus	2004-2008	35.18	INDIVIDUAL		
Harbor seal - California	Phoca vitulina richardii	2004-2008	6.49	INDIVIDUAL		
Harbor seal - Oregon-Washington Coastal	Phoca vitulina richardii	2002-2006	0.40	INDIVIDUAL		j
Steller sea lion - Eastern U.S.	Eumetopias jubatus	2005-2009	5.71	INDIVIDUAL		j
<b>GRAND TOTAL</b>			<b>47.78</b>	<b>INDIVIDUAL</b>		

**FOOTNOTE:**

j To calculate confidence intervals, first, variance was approximated using Cochran's (1977) method for variance of ratio estimators. Second, this variance was then used to calculate a coefficient of variation (CV).CVs were often quite large (>10%). Finally, CVs were applied to Burnham et al.'s (1987) log-normal approximation equation to calculate the confidence intervals.