

2005 Fishing Mortality

(Agenda Item E.2.b, Attachment 1)

- Table 15 summarizes total mortality estimates, by sector, for 31 groundfish species/groups and 2 crab species
- Table 16 compares total mortality estimates with the corresponding ABCs and OYs

2005 Fishing Mortality

- Only 1 ABC (Petrale sole) was exceeded
 - 4 mt (0.14%) above the 2,762 mt OY
- 4 OYs were exceeded
 - Canary was 1.9 mt (4%) above its OY
- For all rebuilding species other than canary:
 - Fishing mortality did not exceed 70% of OY
 - Average fishing mortality was 43% of OY

Distribution of 2005 Canary Bycatch

(Agenda Item E.2.b, Attachment 2)

The amount of canary bycatch in the northern trawl fishery was substantially higher than expected

	North of 40°10'	South of 40°10'	Total
Non-whiting trawl fishery			
Landed catch (mt)	3.7	0.7	4.4
Estimated discard (mt)	21.5	0.1	21.6
Estimated total catch (mt)	25.2	0.7	26.0
Groundfish Management Team Scorecard			
Initial mortality estimate (mt)			8.0
Revised mortality estimate (mt, April 2006)			9.5

Northern Canary Bycatch Rates rose dramatically after 2004

	Canary lbs per 1,000 lb of retained target species		Ratio of new-to-old rates	
	depths <=75 fm	depths <=100 fm	depths <=75 fm	depths <=100 fm
	Rates used in late-2005 and 2006 Bycatch Models			
Winter	0.836	3.056		
Summer	0.986	1.437		
New rates, using only data from January 2005 through April 2006				
Winter	3.942	4.598	4.7	1.5
Summer	3.571	4.585	3.6	3.2

Northern sub-areas used to examine patterns in canary bycatch

17 available sub-areas	8 combined sub-areas
N. of Cape Alava	> N. of Cape Alava
Cape Alava - Queets River	> Cape Alava - Queets River
Queets River - Pt. Chehalis Pt. Chehalis - Leadbetter Pt.	> Queets River - Leadbetter Point
Leadbetter Point - WA/OR border	> Leadbetter Point - WA/OR border
WA/OR border - Cape Falcon Cape Falcon - Cape Lookout	> WA/OR border - Cape Lookout
Cape Lookout - Cascade Head Cascade Head - Heceta Head Heceta Head - Cape Arago	> Cape Lookout - Cape Arago
Cape Arago - Col.-Eureka area border Col.-Eureka area border - Cape Blanco Cape Blanco - Humbug Mountain	> Cape Arago - Humbug Mountain
Humbug Mountain - Marck Arch Marck Arch - OR/CA Border OR/CA Border - Cape Mendocino Cape Mendocino - 40°10'	> Humbug Mountain - 40°10' N. Lat.

Bycatch rates by sub-area / season from observer data collected 01/05-04/06

Northern sub-area	Season	All hauls less than 75 fm			All hauls less than 100 fm		
		Observer data		Logbooks	Observer data		Logbooks
		Total canary catch lbs	Canary lb per 100 lb of retained target sp.	Target species retained mts	Total canary catch lbs	Canary lb per 100 lb of retained target sp.	Target species retained mts
N. of Cape Alava	Winter	852	1.003	119	1,421	0.971	199
	Summer	1,786	0.939	543	6,090	0.916	1,264
Cape Alava - Queets River	Winter	59	0.525	2	458	0.697	53
	Summer	925	0.270	714	2,198	0.420	1,019
Queets River - Leadbetter Point	Winter	89	0.095	143	89	0.090	153
	Summer	499	0.104	660	612	0.120	700
Leadbetter Point - WA/OR border	Winter	15	0.033	39	19	0.035	73
	Summer	1,521	0.722	423	1,597	0.588	562
WA/OR border - Cape Lookout	Winter	5	0.029	10	5	0.029	10
	Summer	505	0.143	861	610	0.133	1,146
Cape Lookout - Cape Arago	Winter	10	0.111	25	85	0.125	62
	Summer	61	0.058	300	582	0.188	780
Arago - Humbug Mtn.	Summer	1,083	8.178	97	1,579	2.375	175
Humbug Mtn - 40°10'	Summer	138	0.108	454	410	0.230	613
All North of 40°10'	Winter	1,030	0.394	340	2,077	0.460	549
	Summer	6,519	0.357	4,052	13,678	0.459	6,259
	Total	7,549	0.362	4,392	15,755	0.459	6,808

Possible factors contributing to higher canary bycatch rates in 2005

- Prior rates were based primarily on data from the Oregon EFP, which had few observations from northern Washington
- Gear was deployed differently in the general fishery than it had been during EFP
- Changes in regulations or fishery targets

Canary - Yellowtail Relationship

- Total yellowtail caught vs. retained yellowtail
- Only 14 of 1,913 observed tows had more than 300 lb of retained yellowtail (max=600 lb)
 - 6,342 lb of retained yellowtail; 336 lb of canary
- Little indication that significant yellowtail targeting was occurring
- Those 14 tows had a combined canary bycatch rate that was above average, but most tows were in northern WA where the general canary bycatch rate was higher

Relationship to Pacific Cod Catch

- 54 observed hauls with 2,000 lb or more of P. cod catch:
 - Only 2 had more than 100 lb of canary catch (< 160 lb)
 - 36 (67%) had no canary catch
- 14 hauls with more than 200 lb of canary catch:
 - only 1 had more than 300 lb of P. cod catch

Relationship between canary and yellowtail catch in northern, observed hauls <100 fm, 1/05-4/06

	# of hauls	Canary lbs	Canary as % of target	Yellowtail rockfish			Correlation between canary catch and yellowtail:	
				catch lbs	ret. lbs	% ret.	catch	retained
N. of Cape Alava	379	7,511	0.93%	12,615	8,080	64%	0.040	0.080
Alava - Queets R	246	2,656	0.45%	7,140	1,826	26%	0.096	0.101
Queets R - Leadbetter	401	701	0.12%	8,554	5,499	64%	0.069	0.166 *
Leadbetter - Col R	172	1,616	0.49%	3,345	945	28%	0.819 **	-0.041
Col R - Lookout	325	615	0.13%	5,162	1,992	39%	0.563 **	-0.024
Lookout - Arago	262	667	0.18%	215	203	94%	-0.102	-0.098
Arago - Humbug	45	1,579	2.38%	358	191	53%	0.609 **	-0.145
Humbug - 40°10'	83	410	0.23%	77	76	98%	0.454 *	0.450 *
North of 40°10'	1,913	15,755	0.46%	37,467	18,811	50%	0.155 **	0.062
% of all northern observations								

** significant @ 0.01 level

* significant @ 0.05 level