

BSAI Other Flatfish

by

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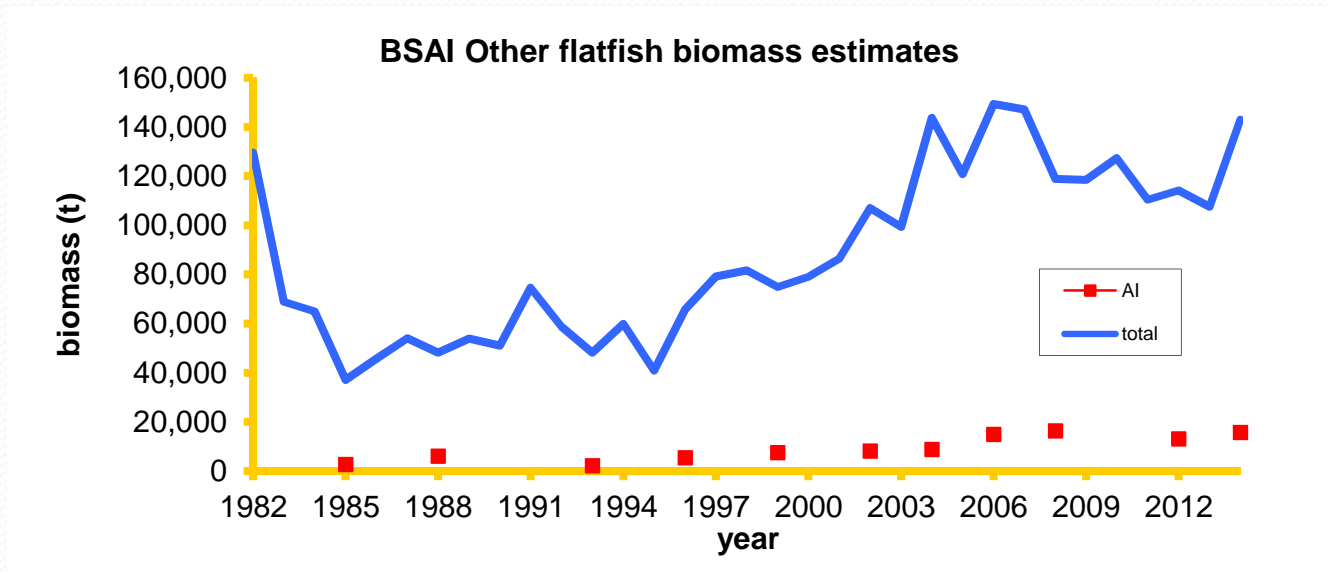
Quantity	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2014	2015	2015	2016
M (natural mortality rate) for rex sole	0.17	0.17	0.17	0.17
M (natural mortality rate) for Dover sole	0.085	0.085	0.085	0.085
M (natural mortality rate) for all others	0.15	0.15	0.15	0.15
Tier	5	5	5	5
Survey Biomass (t)	107,500	107,500	143,000	143,000
F_{OFL} (F=M) for rex sole	0.17	0.17	0.17	0.17
F_{OFL} (F=M) for Dover sole	0.085	0.085	0.085	0.085
F_{OFL} (F=M) for all other species	0.15	0.15	0.15	0.15
$maxF_{ABC}$ for rex sole	0.13	0.13	0.13	0.13
$maxF_{ABC}$ for Dover sole	0.064	0.064	0.064	0.064
$maxF_{ABC}$ for all other species	0.113	0.113	0.113	0.113
F_{ABC} for rex sole	0.13	0.13	0.13	0.13
F_{ABC} for Dover sole	0.064	0.064	0.064	0.064
F_{ABC} for all other species	0.113	0.113	0.113	0.113
OFL (t)	16,700	16,700	17,700	17,700
maxABC (t)	12,400	12,400	13,250	13,250
ABC (t)	12,400	12,400	13,250	13,250
	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
Status	2012	2013	2013	2014
Overfishing	n/a	n/a	n/a	n/a

Other Flatfish

Biomass is primarily starry flounder, longhead dab and rex sole

2014 survey biomass = 129,025 t

2014 Aleutian Islands biomass = 13,936 t



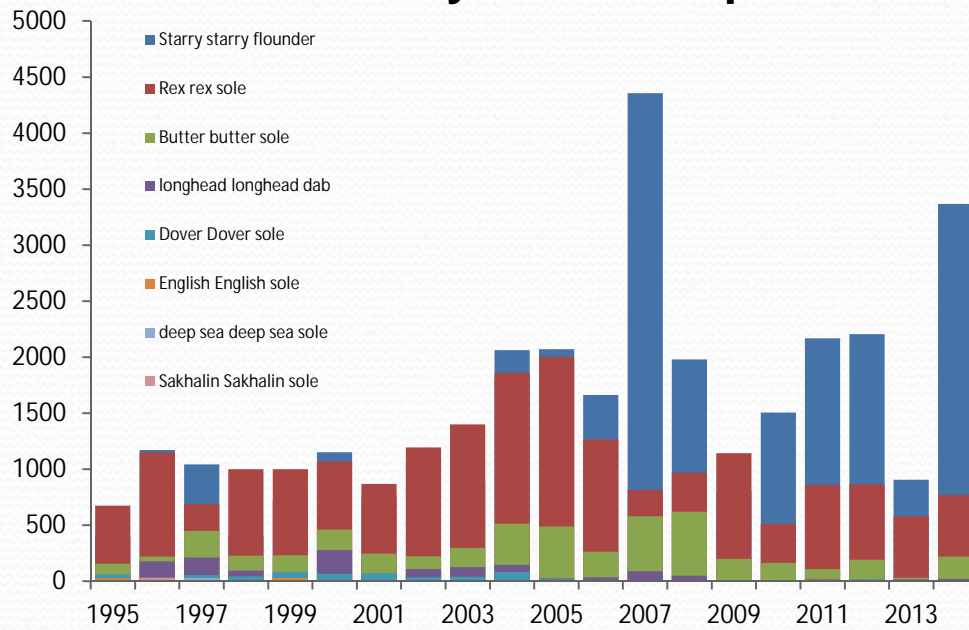
2014 total survey biomass estimated at 142,961 t

Catch by species and ABC, TAC

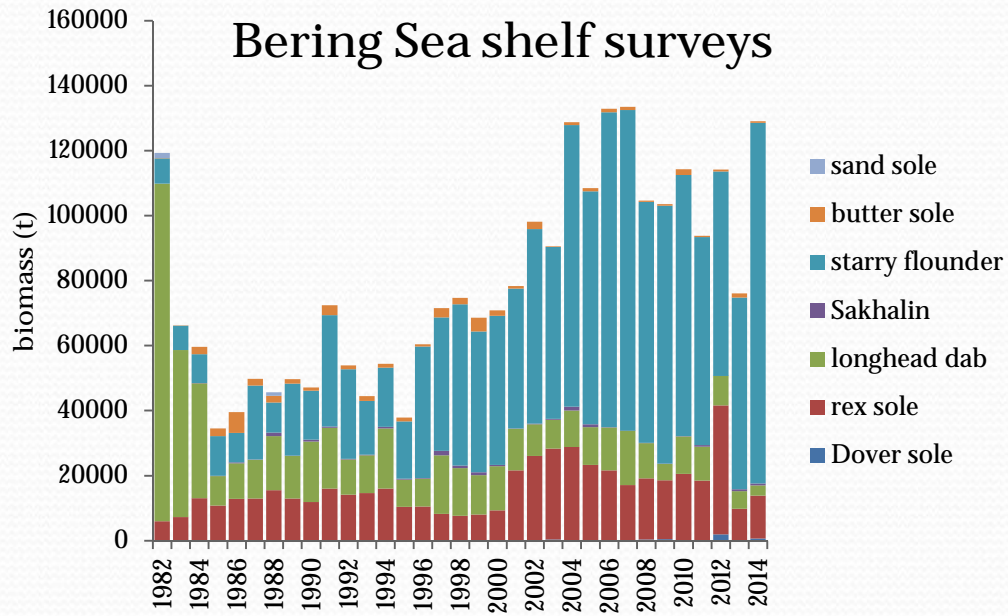
Year	Starry Flounder	Rex Sole	Butter Sole	longhead dab	Dover sole	English sole	deep sea sole	Sakhalin sole	Total	ABC	TAC
1995	398	673	157	7	59	26	4	0	1,324	117,000	19,540
1996	1,171	1,148	218	175	6	0	0	30	2,748	102,000	35,000
1997	1,043	687	448	211	53	0	29	6	2,490	97,500	50,750
1998	402	998	229	93	41	0	0	0	1,765	164,000	89,434
1999	725	998	230	56	81	27	0	0	2,117	154,000	154,000
2000	1,151	1,069	458	277	66	4	0	0	3,027	117,000	83,813
2001	755	869	244	62	70	4	6	0	2,028	122,000	28,000
2002	1,075	1,192	222	107	34	0	1	0	2,631	18,100	3,000
2003	887	1,399	296	125	39	2	0	0	2,749	16,000	3,000
2004	2,062	1,858	514	146	82	6	0	0	4,669	13,500	3,000
2005	2,069	2,001	487	25	16	1	0	0	4,599	21,400	3,500
2006	1,663	1,266	261	33	10	0	0	0	3,233	18,100	3,500
2007	4,356	812	579	87	4	2	<1	<1	5,840	21,400	10,000
2008	1,978	968	618	47	10	2	<1	<1	3,623	21,600	21,600
2009	806	1,143	198	7	7	2	0	<1	2,163	17,400	17,400
2010	1,506	510	162	9	5	<1	<1	<1	2,194	17,300	17,300
2011	2,168	860	107	18	10	13	0	<1	3,176	14,500	3,000
2012	2,205	866	191	9	15	5	0	0	3,292	12,700	3,200
2013	906	579	30	15	6	0	0	<1	1,536	13,300	3,500
2014	3,336	769	219	20	10	0	0	0	4,385	13,300	3,500

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Fishery catch composition

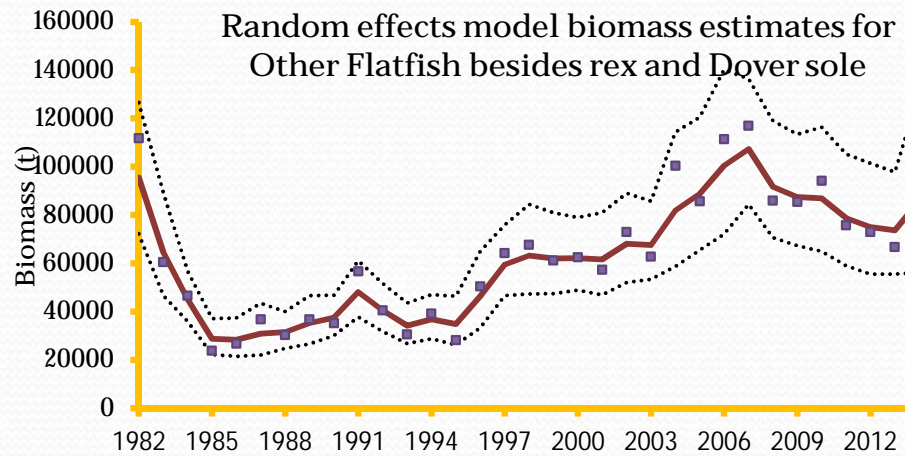
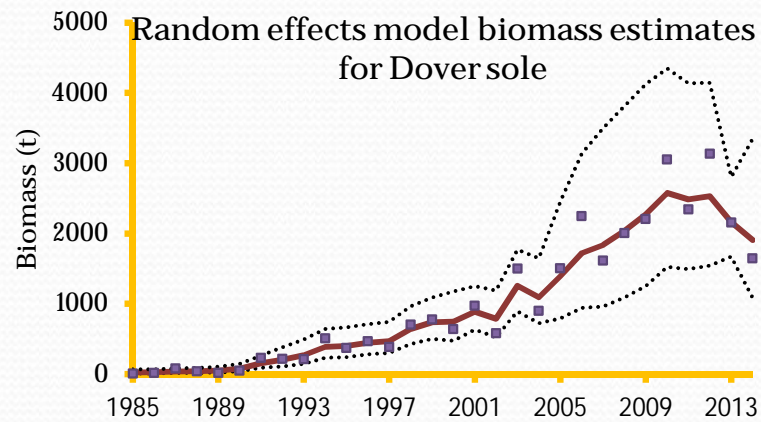
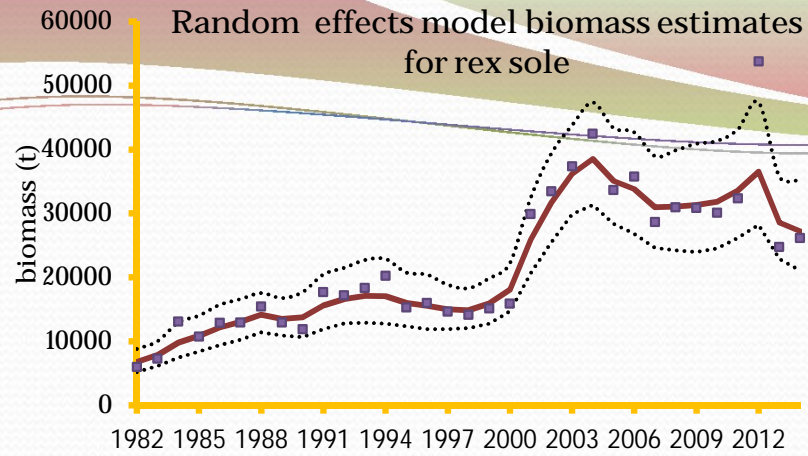


Estimated shelf survey biomass

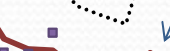


Exploitation rate

Year	Rex sole			Starry Flounder			Butter sole		
	Biomass (t)	Harvest (t)	Exp. Rate	Biomass (t)	Harvest (t)	Exp. Rate	Biomass (t)	Harvest (t)	Exp. Rate
1997	14,611	401	0.03	41,477	814	0.02	3,230	336	0.10
1998	14,250	569	0.04	49,950	242	0.00	2,210	157	0.07
1999	15,415	516	0.03	43,750	597	0.01	4,416	167	0.04
2000	15,874	569	0.04	46,400	770	0.02	2,023	266	0.13
2001	30,524	507	0.02	43,829	479	0.01	1,059	147	0.14
2002	33,411	1,227	0.04	60,633	1,023	0.02	2,382	187	0.08
2003	38,349	1,399	0.04	53,353	887	0.02	429	296	0.69
2004	42,479	1,858	0.04	86,821	2,062	0.02	1,076	514	0.48
2005	34,963	1,830	0.05	72,176	1,892	0.03	1,201	445	0.37
2006	35,745	1,266	0.04	96,917	1,663	0.02	1,104	261	0.24
2007	31,052	812	0.03	98,941	4,356	0.04	1,153	579	0.50
2008	33,613	961	0.03	74,397	1,964	0.03	541	614	1.14
2009	33,766	1,132	0.03	79,688	797	0.01	642	196	0.31
2010	30,082	491	0.02	80,478	1,148	0.02	1,926	156	0.08
2011	32,544	826	0.03	64,218	2,082	0.03	562	103	0.18
2012	39,695	866	0.02	62,837	2,205	0.04	619	191	0.31
2013	9,767	569	0.015	58,942	889	0.015	1,306	29	0.02
2014	26,129	769	0.03	111,116	3,366	0.03	510	219	0.43



ABC biomass



Tier 5 ABC calculations

ABC = biomass * (0.75*M)



ABC using 2014 surveys point estimate

species	Fabc	Fofl	ABC	OFL
rex sole	0.13	0.17	3331.4	4442
Dover sole	0.06	0.085	105	140
All others	0.11	0.15	12959	17278
Total			16395	21860

total exploitable biomass 142961

RE model results

species	Fabc	Fofl	ABC	OFL
rex sole	0.13	0.17	3469.4	4626
Dover sole	0.06	0.085	121	162
All others	0.11	0.15	9656	12875
Total			13247	17663



2015 ABC and OFL



