

Hake status and ABC options

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ABC recommendations for Amendment 19;
2012-2014 specifications



Red Hake Status

0011 0010 1010 1101 0001 0100 1011

- Uses spring index
- 1980-2010 defines thresholds
 - Updated through spring 2011; catch through 2010
 - **Exploitation**
 - Increased in north, just below threshold (0.154 vs. 0.163)
 - Well below threshold in South
 - Biomass
 - Between target and threshold in North
 - Above target in South
 - No overfishing occurring

Red Hake	North	South
Reference Points		
Fmsy (kt/kg)	0.163	3.038
Bmsy (kg/tow)	2.53	1.016
MSY (mt)	412	3087
Biomass threshold (kg/tow)	1.265	0.508
Exploitation threshold (kt/kg)	0.163	3.038
OFL (kt) 2011	0.3231	3.5293
Biomass (3-yr MA kg/tow)		
2011	1.982	1.162
Exploitation Index (annual)		
2010	0.154	1.294

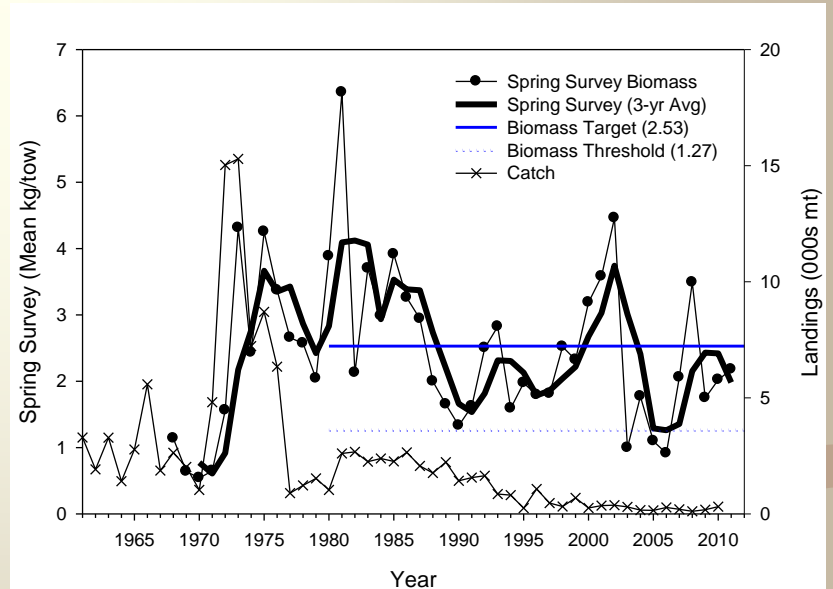
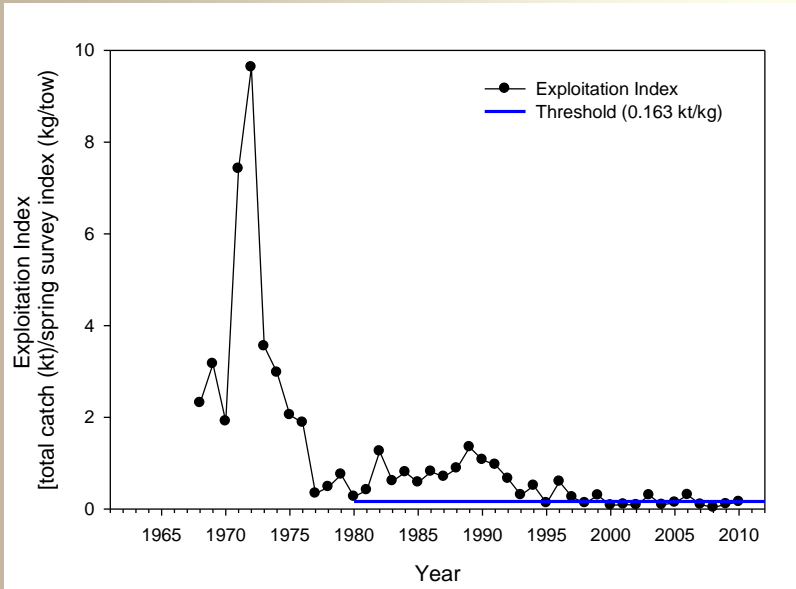
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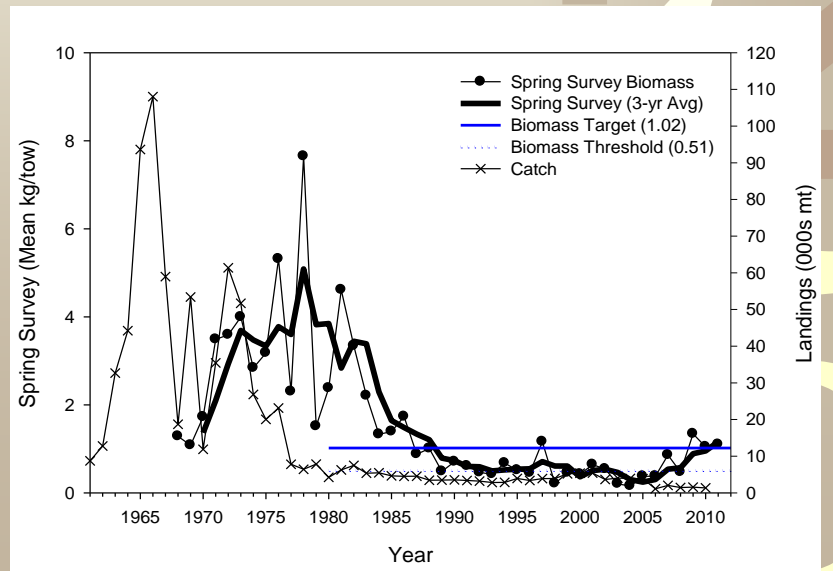
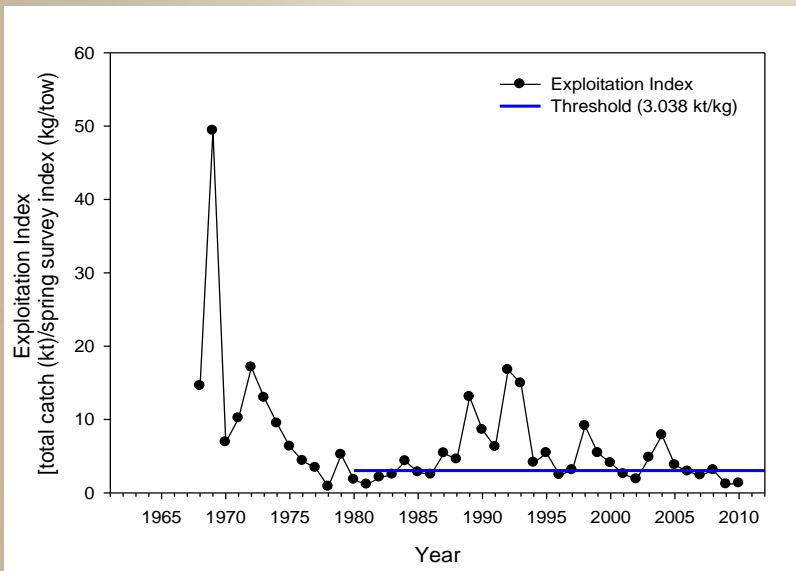
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 - Updated through spring 2011; catch through 2010
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 - Well below threshold in South
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Northern red hake



Southern red hake



Red hake ABC alternatives

Red Hake North		P > 50%F _{msy}	Percent of OFL	ABC- percentage of current catch			
Percentile OFL	ABC (mt)			2010	3yr Avg	5 yr Avg	10y Avg
2	2.7	0%	1%	1%	1%	1%	1%
5	75.3	0%	23%	24%	37%	35%	31%
10	133.6	0%	41%	43%	66%	62%	55%
25	222.6	0%	69%	72%	111%	103%	92%
30	243.7	0%	75%	78%	121%	113%	100%
40	280.1	40%	87%	90%	139%	130%	115%
OFL median	323.1	50%	100%	104%	161%	150%	133%

Red Hake South		P > 50%F _{msy}	Percent of OFL	ABC- percentage of current catch			
Percentile OFL	ABC (mt)			2010	3yr Avg	5 yr Avg	10y Avg
1	1746	0%	49%	129%	120%	116%	127%
5	2263	0%	64%	167%	156%	151%	165%
10	2524	0%	72%	187%	174%	168%	184%
25	2954	10%	84%	218%	203%	197%	215%
30	3063	16%	87%	226%	211%	204%	223%
40	3259	27%	92%	241%	224%	217%	237%
OFL median	3529	49%	100%	261%	243%	235%	257%

Silver Hake Status

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- Uses fall index and total catch
- 1973-1982 average defines thresholds
 - Updated for 2010 catch
 - **Exploitation** well below threshold in north and south
 - Biomass above target in north and south
 - No overfishing occurring

Silver hake	North	South
Reference Points		
Biomass Threshold (kg/tow)	3.21	0.83
Exploitation Threshold (kt/kg) - SARC 51 Arithmetic	2.77	34.18
Exploitation Threshold (kt/kg) - Lognormal Distribution	2.89	35.12
3 yr Moving average 2008-2010		
Biomass Index (kg/tow)	8.50	1.76
Exploitation Index (kg/kt)	0.17	4.73
2010 OFL (kt)_SARC 51 Arithmetic	23.60	60.14
2010 OFL (kt)_Lognormal_Distribution	24.84	62.30

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Silver Hake Status

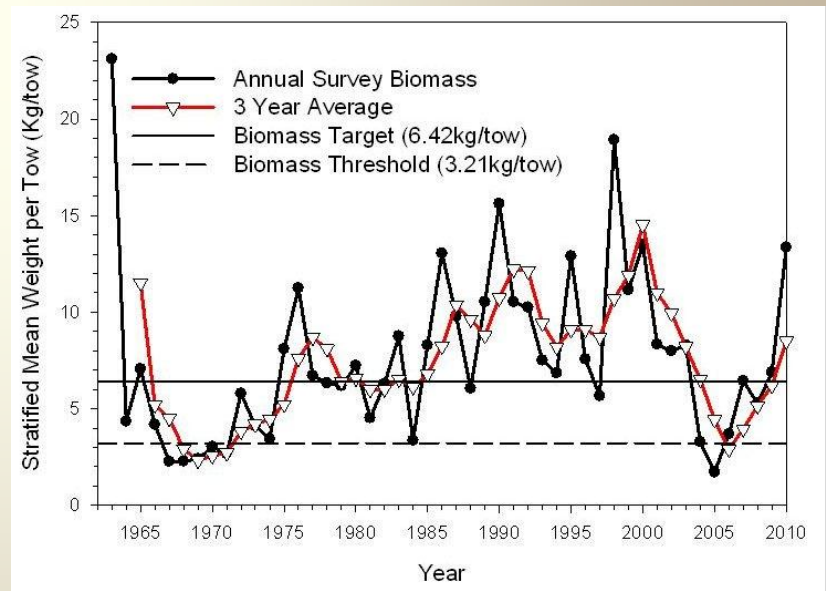
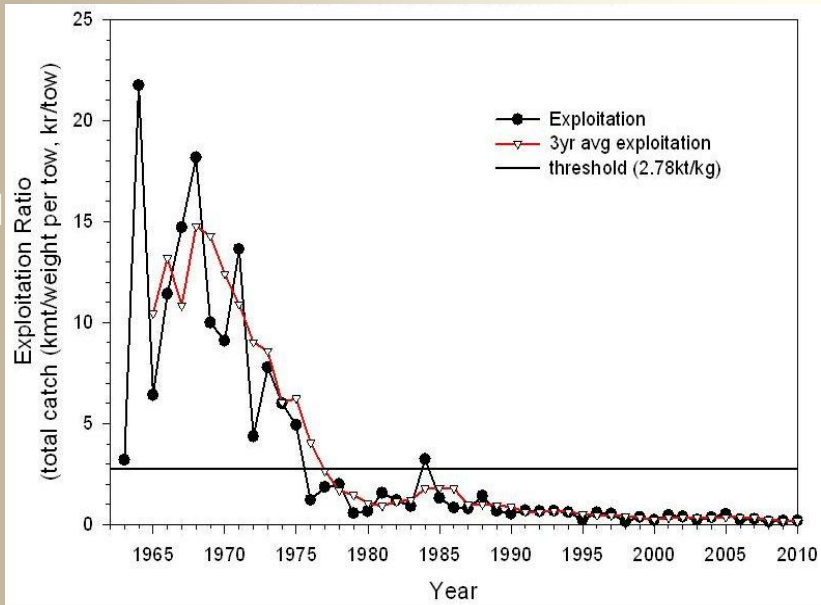
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- Uses fall index
- 1973-1982 average defines biomass targets
 - Updated for 2010 catch
 - Exploitation well below threshold in north and south
 - **Biomass** above target in north and south
 - Not overfished

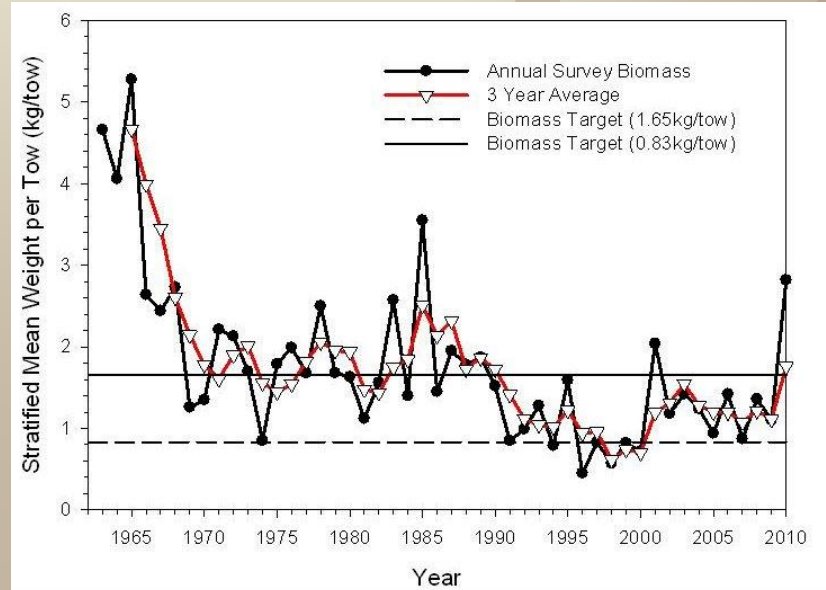
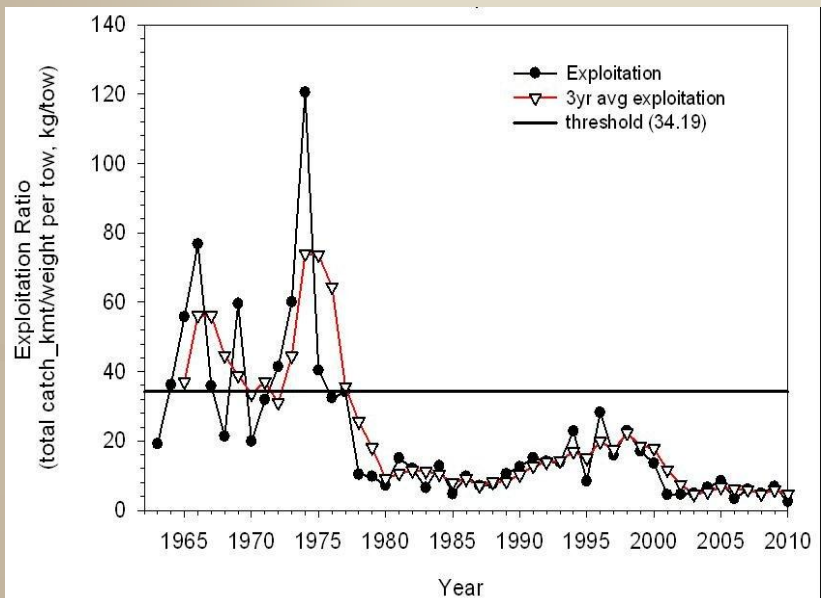
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Northern silver hake



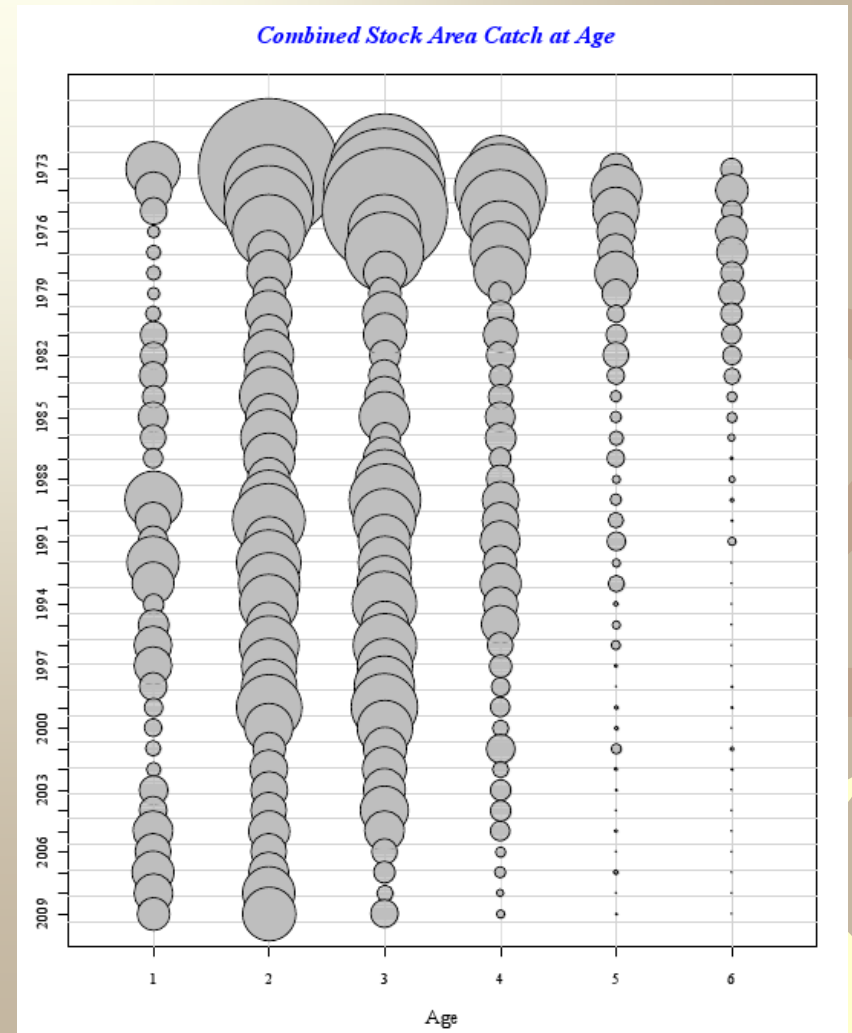
Southern silver hake



Silver Hake ABC

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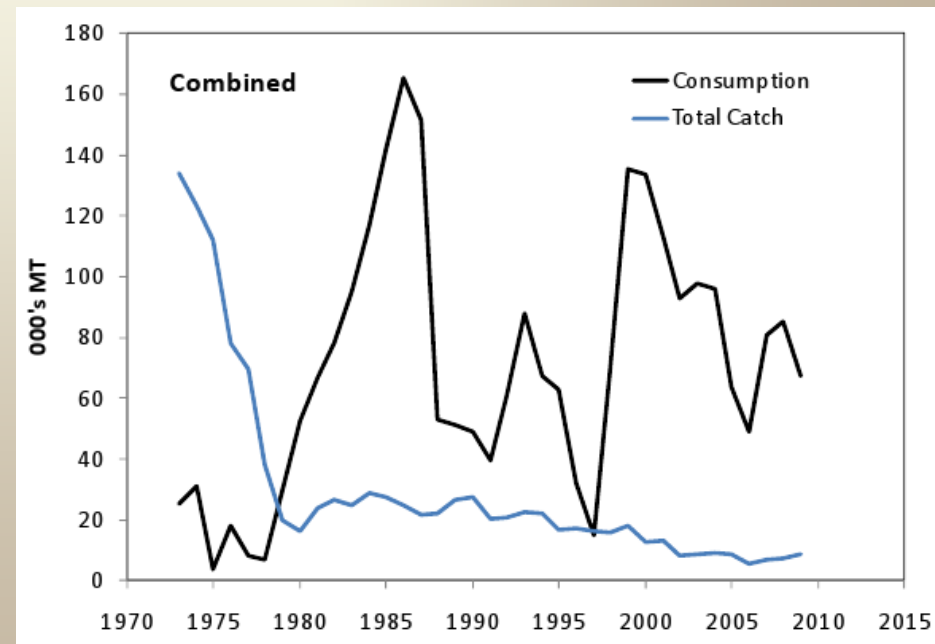
- Additional sources of unquantified uncertainty:
 - Change in productivity since the 1973-1982 status determination period
 - Age truncation in survey and commercial catches



Silver Hake ABC

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- Additional sources of unquantified uncertainty :
 - Catch/biomass ratio (exploitation) does not account for changes in selectivity
 - Predator consumption is high (relative to catch) and variable
 - Possible large increases in catch (at 25th percentile for OFL) carries additional risk



Silver hake ABC alternatives

Silver Hake North		P > 50%F _{msy}	Percent of OFL	ABC- percentage of current catch			
Percentile OFL	ABC (mt)			2010	3yr Avg	5 yr Avg	10y Avg
1	3,180	0%	13%	128%	212%	221%	175%
5	5,363	0%	22%	216%	358%	372%	295%
10	7,434	0%	30%	300%	496%	516%	408%
25	13,177	0%	53%	532%	878%	915%	724%
35	17,300	0%	70%	698%	1153%	1201%	951%
40	19,600	4%	79%	791%	1307%	1361%	1077%
45	22,040	18%	89%	889%	1469%	1530%	1210%
OFL median	25,840	52%	100%	1004%	1659%	1728%	1367%

Silver Hake South		P > 50%F _{msy}	Percent of OFL	ABC- percentage of current catch			
Percentile OFL	ABC (mt)			2010	3yr Avg	5 yr Avg	10y Avg
1	7,570	0%	30%	106%	107%	122%	111%
5	13,072	0%	53%	184%	185%	210%	191%
10	18,290	0%	74%	257%	259%	294%	267%
25	33,635	0%	131%	459%	463%	525%	476%
35	43,090	0%	173%	606%	611%	693%	629%
40	48,860	4%	196%	687%	693%	786%	713%
45	55,260	19%	222%	777%	784%	888%	807%
OFL median	62,301	51%	250%	876%	884%	1002%	910%

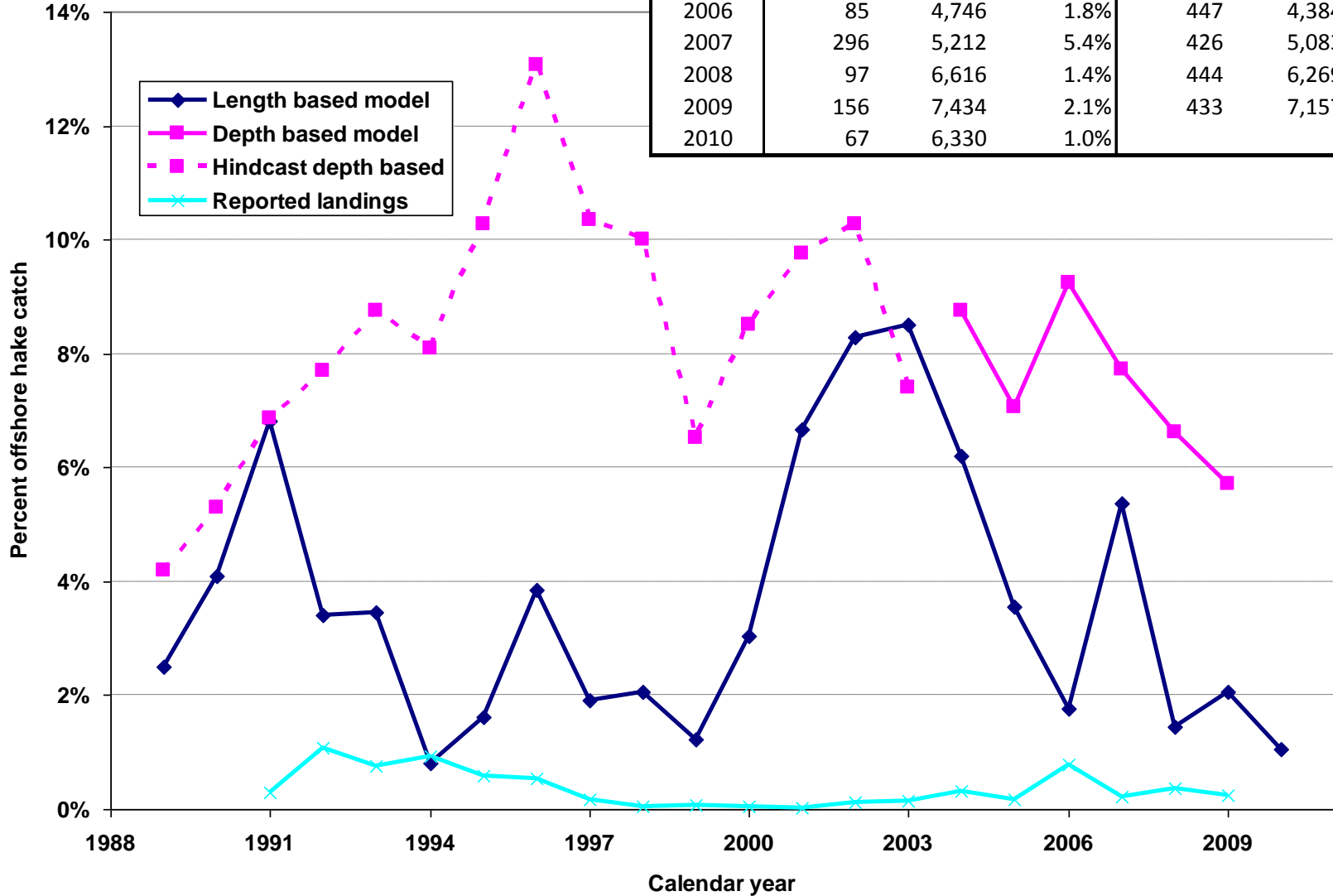
Status

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- Offshore hake, index not reliable for status determination (or setting ABCs)



Year	Length based model allocation			Depth based model allocation		
	Offshore hake	Silver hake	Percent offshore	Offshore hake	Silver hake	Percent offshore
2006	85	4,746	1.8%	447	4,384	9.3%
2007	296	5,212	5.4%	426	5,083	7.7%
2008	97	6,616	1.4%	444	6,269	6.6%
2009	156	7,434	2.1%	433	7,157	5.7%
2010	67	6,330	1.0%			



ACL framework (example)

25th percentile OFL; 5% management buffer

	Red hake		Silver and offshore hake	
	Northern	Southern	Northern	Southern
ABC (mt)	222.6	2,954	13,177	35,036
ACL (mt)	211.5	2,806	12,518	33,285
2010 catch (mt)	311.0	1,352	2,478	7,110
Difference	-32%	108%	405%	368%
2008-2010 Discard rate	66%	55%	26%	13%
Assumed discards (mt)	139.6	1,543	3,255	4,327
State landings	22%	24%	37%	12%
Federal TAL (mt)	56.1	961	5,873	25,628
2009 landings (mt)	69	534	681	5,708
TAL Difference	4%	136%	1260%	407%
2010 landings (mt)	50	439	1,154	5,900
TAL Difference	45%	188%	703%	391%

Dealers, vessels, and trips landing whiting

Northern stock

Calendar year	1995	1996	2004	2005	2006	2007	2008	2009	2010
A Dealers	67	67	36	30	31	30	33	42	41
B Vessels	378	385	186	136	121	162	170	204	169
C Trips	5,785	5,993	1,500	646	726	1,716	2,562	3,486	2,554
D Red hake, whole lbs.	307,445	821,088	116,180	106,619	138,041	95,575	15,726	113,293	105,083
E Silver hake, whole lbs.	4,389,738	6,787,554	1,817,968	1,622,418	1,619,569	2,509,068	1,136,964	2,470,245	3,604,281
F Offshore hake, whole lbs.	-	-	346	2,306	240	110	2	7,620	959
G Hake revenue	\$ 1,564,955	\$ 2,614,143	\$ 779,865	\$ 741,884	\$ 1,021,684	\$ 1,374,918	\$ 694,667	\$ 1,286,433	\$ 2,544,459
H Hake price/whole lb	\$ 0.33	\$ 0.34	\$ 0.40	\$ 0.43	\$ 0.58	\$ 0.53	\$ 0.60	\$ 0.50	\$ 0.69
I Average hake revenue/dealer	\$ 23,358	\$ 39,017	\$ 21,663	\$ 24,729	\$ 32,958	\$ 45,831	\$ 21,051	\$ 30,629	\$ 62,060
J Maximum hake revenue/dealer	\$ 988,204	\$ 255,609	\$ 194,926	\$ 357,272	\$ 400,138	\$ 158,758	\$ 458,518	\$ 453,366	\$ -
K Average hake revenue/vessel	\$ 4,140	\$ 6,790	\$ 4,193	\$ 5,455	\$ 8,444	\$ 8,487	\$ 4,086	\$ 6,306	\$ 15,056
L Maximum hake revenue/vessel	\$ 176,771	\$ 176,863	\$ 275,163	\$ 236,204	\$ 179,543	\$ 536,300	\$ 106,999	\$ 458,872	\$ 593,811
M Average hake revenue/trip	\$ 271	\$ 436	\$ 520	\$ 1,148	\$ 1,407	\$ 801	\$ 271	\$ 369	\$ 996
N Maximum average hake revenue/trip	\$ 3,801	\$ 4,950	\$ 2,808	\$ 4,374	\$ 11,587	\$ 10,880	\$ 8,542	\$ 6,116	\$ 17,004
O Total revenue on trips landing whiting	\$ 10,753,276	\$ 11,345,714	\$ 4,161,604	\$ 2,171,210	\$ 2,572,814	\$ 4,322,371	\$ 6,579,678	\$ 8,068,753	\$ 7,857,555
P Percent revenue from hake	15%	23%	19%	34%	40%	32%	11%	16%	32%

Southern stock

Calendar year	1995	1996	2004	2005	2006	2007	2008	2009	2010
A Dealers	110	115	84	73	75	70	74	76	69
B Vessels	414	394	298	217	235	260	268	288	247
C Trips	9,505	9,234	5,567	4,219	4,960	5,490	5,950	6,583	6,444
D Red hake, whole lbs.	2,123,942	1,250,251	896,109	440,940	583,730	797,336	1,141,977	1,181,890	1,236,550
E Silver hake, whole lbs.	21,502,838	21,443,763	12,921,342	10,784,035	7,428,857	9,802,267	11,121,173	13,791,115	14,555,209
F Offshore hake, whole lbs.	101,045	147,376	40,535	19,044	81,311	25,084	44,838	32,519	21,767
G Hake revenue	\$ 10,325,230	\$ 8,792,902	\$ 6,704,400	\$ 5,043,783	\$ 3,924,966	\$ 5,547,679	\$ 6,640,985	\$ 7,242,586	\$ 9,222,683
H Hake price/whole lb	\$ 0.44	\$ 0.38	\$ 0.48	\$ 0.45	\$ 0.48	\$ 0.52	\$ 0.54	\$ 0.48	\$ 0.58
I Average hake revenue/dealer	\$ 93,866	\$ 76,460	\$ 79,814	\$ 69,093	\$ 52,333	\$ 79,253	\$ 89,743	\$ 95,297	\$ 133,662
J Maximum hake revenue/dealer	\$ 1,281,730	\$ 1,333,661	\$ 1,225,621	\$ 802,877	\$ 1,202,426	\$ 1,248,593	\$ 1,114,200	\$ 1,508,082	\$ -
K Average hake revenue/vessel	\$ 24,940	\$ 22,317	\$ 22,498	\$ 23,243	\$ 16,702	\$ 21,337	\$ 24,780	\$ 25,148	\$ 37,339
L Maximum hake revenue/vessel	\$ 843,580	\$ 626,484	\$ 793,354	\$ 437,562	\$ 280,200	\$ 409,696	\$ 568,212	\$ 859,852	\$ 1,166,105
M Average hake revenue/trip	\$ 1,086	\$ 952	\$ 1,204	\$ 1,195	\$ 791	\$ 1,011	\$ 1,116	\$ 1,100	\$ 1,431
N Maximum average hake revenue/trip	\$ 3,333	\$ 2,940	\$ 2,109	\$ 5,311	\$ 4,082	\$ 3,639	\$ 5,589	\$ 5,961	\$ 7,929
O Total revenue on trips landing whiting	\$ 32,544,072	\$ 29,244,651	#####	#####	\$ 24,556,366	\$ 23,374,594	\$ 25,422,728	#####	\$ 26,452,620
P Percent revenue from hake	32%	30%	27%	22%	16%	24%	26%	28%	35%

Landings and revenue on trips landing whiting

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		Data												
STOCK	YEAR	Sum of RED_HAKE		Sum of OFFSHORE_H	Sum of SILVER_HAKE		Sum of REGULATED_G		Sum of SCALLOPS	Sum of MONKFISH	Sum of DOGFISH	Sum of SKATES	Sum of TOTAL_LANDINGS	Sum of TOTAL_REVENU
		Sum of RED_HAKE	MIX_HAKE	AKE	SILVER_HAKE	ROUNDFINH	SCALLOPS	MONKFISH	DOGFISH	SKATES	LBS_LIVE_WT	E		
Northern Stock	1994	1,571,781	-	-	8,554,147	10,716,018	1,541	2,476,425	2,072,564	395,459		27,643,405	15,966,545	
	1995	322,963	-	-	4,928,684	7,309,402	434	2,035,472	2,238,586	125,176		18,180,203	10,950,006	
	1996	831,653	-	-	7,489,348	7,457,388	225	1,969,076	2,757,604	161,263		22,349,451	11,529,088	
	1997	700,860	-	-	6,151,235	5,648,153	3,866	1,465,993	3,045,875	104,073		19,083,966	9,628,315	
	1998	380,824	-	40	4,501,918	5,593,986	3,396	1,098,160	5,950,136	206,649		18,842,677	9,439,258	
	1999	451,749	-	11,589	7,583,766	6,414,489	6,014	2,120,957	2,812,767	270,142		20,538,306	13,511,155	
	2000	378,741	-	-	5,737,982	8,398,311	4,381	3,124,665	1,961,066	211,958		20,240,359	15,205,945	
	2001	446,806	-	745	7,472,807	8,236,819	11,324	3,421,873	341,184	213,848		20,724,421	14,280,326	
	2002	560,745	-	327	6,000,375	7,038,006	5,490	2,705,504	211,117	262,828		18,118,450	12,562,440	
	2003	434,216	-	350	4,110,366	4,949,556	5,943	1,778,343	38,349	257,293		11,818,203	7,930,240	
	2004	162,640	65	346	2,179,748	2,389,040	2,074	1,265,396	29,707	90,813		6,477,498	4,483,533	
	2005	142,219	-	2,306	1,740,818	877,893	767	340,849	47,627	54,791		3,268,926	2,279,099	
	2006	163,541	-	240	1,908,569	826,375	177,945	210,441	185,759	63,745		3,806,322	2,862,561	
	2007	95,575	-	110	2,509,068	2,040,391	86,117	279,664	176,128	151,833		5,460,923	4,322,371	
	2008	15,726	-	2	1,137,193	4,390,388	3,282	294,841	368,154	203,801		6,625,845	6,579,887	
	2009	113,293	-	7,620	2,470,245	5,414,251	3,000	487,522	1,035,960	401,992		10,318,190	8,068,753	
	2010	105,083	15,980	959	3,604,281	3,202,792	242	285,070	1,040,638	441,591		8,956,597	7,857,555	
Northern Stock Total		6,878,415	16,045	24,634	78,080,550	90,903,258	316,041	25,360,251	#####	3,617,255		242,453,742	157,457,077	
Southern Stock	1994	2,161,090	-	256,241	26,725,115	2,485,506	1,313,117	5,287,143	267,830	892,569		180,211,108	88,869,625	
	1995	3,198,780	-	146,236	27,498,537	1,318,989	785,183	2,999,468	264,463	286,153		73,906,839	38,045,783	
	1996	1,576,691	15	147,376	28,235,581	1,073,724	45,724	4,676,094	380,430	255,964		69,982,093	33,801,081	
	1997	2,198,917	-	49,186	28,169,002	1,460,060	55,484	4,610,858	648,480	469,109		74,574,151	48,193,238	
	1998	2,540,837	-	11,614	28,265,494	1,314,071	21,734	3,480,663	870,206	426,957		66,416,832	38,371,820	
	1999	2,975,203	-	14,429	23,409,282	2,012,879	66,797	3,129,241	1,441,175	440,582		57,405,823	35,837,545	
	2000	3,144,389	-	11,536	21,609,514	2,805,820	53,693	1,791,899	2,063,978	672,350		50,165,442	29,628,009	
	2001	3,228,434	-	3,926	20,922,107	1,863,565	81,904	1,792,660	278,543	558,495		49,190,588	28,871,461	
	2002	1,385,830	-	975	11,197,752	1,273,768	61,727	845,714	307,387	684,841		33,522,015	19,655,204	
	2003	1,426,101	-	22,491	15,353,733	1,246,933	26,222	1,574,563	66,326	417,493		41,516,489	27,497,792	
	2004	1,316,977	14,480	51,257	16,574,111	1,201,109	58,264	797,960	85,594	568,054		42,812,105	29,721,273	
	2005	805,892	1,717	27,510	14,872,372	956,810	44,749	891,481	108,624	329,043		40,088,235	28,918,681	
	2006	836,009	2,201	81,627	10,320,847	1,398,243	354,808	1,118,342	264,866	581,489		36,323,461	29,027,894	
	2007	1,084,142	151	25,535	12,038,061	1,372,014	132,339	1,077,808	197,827	521,726		31,079,029	25,656,310	
	2008	1,278,120	233	46,044	12,641,131	1,034,663	357,476	1,107,639	118,794	807,063		31,827,824	27,028,473	
	2009	1,286,621	43	37,080	15,078,729	982,234	540,445	1,041,824	809,245	605,930		37,179,124	27,252,539	
	2010	1,259,423	4,305	21,857	14,930,309	964,897	133,596	916,836	639,889	763,672		33,534,019	27,305,247	
Southern Stock Total		31,703,456	23,145	954,920	327,841,677	24,765,285	4,133,262	37,140,193	8,813,657	9,281,490		949,735,177	583,681,975	

Hake landings by month, management area, and gear 2008-2010

STOCK Northern Stock

Sum of Hake landings			QTR MONTH															Grand Total	
LOA	MGMT_AREA	GEAR_TYPE	1			2			3			4			4 Total				
			01	02	03	04	05	06	07	08	09	10	11	12					
CULTIVATOR SHOALS	Cultivator Shoals	Trawls	0	0	0	0	0	61,650	61,650	580,184	1,536,750	847,252	2,964,186	297,720	0	0	297,720	3,323,556	
	Cultivator Shoals Total		0	0	0	0	0	61,650	61,650	580,184	1,536,750	847,252	2,964,186	297,720	0	0	297,720	3,323,556	
	GOM Mesh Area	Trawls	0	0	0	0	15	9	220	244	75,317	1	26,340	101,658	0	0	0	101,902	
	GOM Mesh Area Total		0	0	0	0	15	9	220	244	75,317	1	26,340	101,658	0	0	0	101,902	
	GOM Raised Footrop	Trawls	0	0	0	0	0	0	0	0	0	110,241	39,950	150,191	0	0	0	150,191	
	GOM Raised Footrope Total		0	0	0	0	0	0	0	0	0	110,241	39,950	150,191	0	0	0	150,191	
	MA Raised Footrop	Trawls	0	0	0	0	0	0	0	0	0	0	191,656	191,656	150,058	127,031	82	277,171	468,827
	MA Raised Footrope Total		0	0	0	0	0	0	0	0	0	0	191,656	191,656	150,058	127,031	82	277,171	468,827
	SMA I	Trawls	0	0	0	0	0	0	0	180,009	146,211	44,445	370,665	0	0	0	0	370,665	
	SMA I Total		0	0	0	0	0	0	0	180,009	146,211	44,445	370,665	0	0	0	0	370,665	
CULTIVATOR SHOALS WHITING Total			0	0	0	0	15	9	61,870	61,894	835,510	1,793,203	1,149,643	3,778,356	447,778	127,031	82	574,891	4,415,141
(blank)	Cultivator Shoals	Trawls	0	0	0	0	0	0	1,007	1,007	0	31,035	30,600	61,635	45,115	0	0	45,115	107,757
	Cultivator Shoals Total		0	0	0	0	0	0	1,007	1,007	0	31,035	30,600	61,635	45,115	0	0	45,115	107,757
	GOM Mesh Area	Trawls	818	6,928	8,781	16,527	1,595	150	12,506	14,251	120,118	151,108	44,316	315,542	6,725	7,649	4,066	18,440	364,760
		Gill nets	663	548	1,836	3,047	2,352	2,593	20,602	25,547	19,113	4,308	7,355	30,776	8,272	9,298	4,797	22,367	81,737
		Dredges	0	0	0	0	0	0	20	20	297	0	0	297	2,347	0	0	2,347	2,664
		Longlines	1	0	576	577	0	0	0	0	0	0	0	0	0	0	50	50	627
		Hook	0	0	0	0	0	0	2	2	14	0	0	14	0	0	0	0	16
		Traps	0	0	0	0	1	0	0	1	0	10	0	10	0	0	0	0	11
	GOM Mesh Area Total		1,482	7,476	11,193	20,151	3,948	2,743	33,130	39,821	139,542	155,426	51,671	346,639	17,344	16,947	8,913	43,204	449,815
	GOM Raised Footrop	Trawls	0	0	0	0	0	0	0	0	186,267	297,690	65,452	549,409	17,497	2,859	0	20,356	569,765
		Gill nets	0	0	0	0	0	0	0	0	814	352	291	1,457	485	148	0	633	2,090
		Hook	0	0	0	0	0	0	0	0	362	0	0	362	27	0	0	27	389
		Traps	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
	GOM Raised Footrope Total		0	0	0	0	0	0	0	0	187,443	298,042	65,743	551,228	18,010	3,007	0	21,017	572,245
	MA Raised Footrop	Trawls	0	0	0	0	0	0	0	0	0	0	299,845	299,845	603,150	395,279	72,537	1,070,966	1,370,811
		Gill nets	0	0	0	0	0	0	0	0	0	0	4,661	4,661	642	1,119	463	2,224	6,885
		Traps	0	0	0	0	0	0	0	0	0	0	0	0	4,192	0	0	4,192	4,192
		Dredges	0	0	0	0	0	0	0	0	0	0	57	57	3,807	0	0	3,807	3,864
		Longlines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	120	120
	MA Raised Footrope Total		0	0	0	0	0	0	0	0	0	0	304,563	304,563	611,791	396,398	73,120	1,081,309	1,385,872
	SMA I	Trawls	0	0	0	0	0	0	0	0	246,429	177,029	70,945	494,403	6,332	0	0	6,332	500,735
		Gill nets	0	0	0	0	0	0	0	0	8,808	9,182	0	17,990	0	0	0	0	17,990
		Dredges	0	0	0	0	0	0	0	0	122	8	0	130	0	0	0	0	130
		Longlines	0	0	0	0	0	0	0	0	3	0	0	3	7	0	0	7	10
		Hook	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	6
	SMA I Total		0	0	0	0	0	0	0	0	255,368	186,219	70,945	512,532	6,339	0	0	6,339	518,871
	SMA II	Trawls	14,524	3	94	14,621	59	14	1,594	1,667	0	0	0	0	0	0	0	0	16,288
		Gill nets	3	1	2	6	78	25	3,010	3,113	0	0	0	0	0	0	0	0	3,119
		Hook	0	0	0	0	0	0	123	123	0	0	0	0	0	0	0	0	123
		Longlines	0	3	36	39	0	0	0	0	0	0	0	0	0	0	0	0	39
	SMA II Total		14,527	7	132	14,666	137	39	4,727	4,903	0	0	0	0	0	0	0	0	19,569
	Unknown	Trawls	0	0	0	0	0	165	0	165	0	0	0	0	0	475	90	565	730
		Gill nets	0	0	0	0	0	0	55	55	98	0	152	250	77	0	0	77	382
	Unknown Total		0	0	0	0	0	165	55	220	98	0	152	250	77	475	90	642	1,112
(blank) Total			16,009	7,483	11,325	34,817	4,085	2,947	38,919	45,951	582,451	670,722	523,674	1,776,847	698,676	416,827	82,123	1,197,626	3,055,241
Grand Total			16,009	7,483	11,325	34,817	4,100	2,956	100,789	107,845	1,417,961	2,463,925	1,673,317	5,555,203	1,146,454	543,858	82,205	1,772,517	7,470,382

Hake landings by month, management area, and gear 2008-2010

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STOCK			Southern Stock																
Sum of Hake landings			QTR MONTH																
LOA	MGMT_AREA	GEAR_TYPE	1			2			3			4			4 Total	Grand Total			
			01	02	03	1 Total	04	05	06	2 Total	07	08	09	3 Total			10	11	12
CULTIVATOR SHOALS	GOM Mesh Area	Trawls	105,296	212,223	179,641	497,160	366,364	668,387	772,016	1,806,767	652,165	158,935	228,368	1,039,468	356,842	823,880	725,465	1,906,187	5,249,582
	GOM Mesh Area Total		105,296	212,223	179,641	497,160	366,364	668,387	772,016	1,806,767	652,165	158,935	228,368	1,039,468	356,842	823,880	725,465	1,906,187	5,249,582
	MA Exempted Area	Trawls	362,353	206,787	281,683	850,823	160,876	49,468	23,012	233,356	39,361	35	33,664	73,060	175,030	285,945	271,859	732,834	1,890,073
	MA Exempted Area Total		362,353	206,787	281,683	850,823	160,876	49,468	23,012	233,356	39,361	35	33,664	73,060	175,030	285,945	271,859	732,834	1,890,073
	SNE Exempted Area	Trawls	476,153	636,194	1,043,919	2,156,266	921,177	933,295	950,331	2,804,803	861,413	703,532	685,624	2,250,569	602,724	226,964	480,123	1,309,811	8,521,449
		Gill nets	39,325	0	0	39,325	0	0	0	0	0	0	0	0	0	0	0	0	39,325
		Dredges	0	0	0	0	0	0	0	0	0	0	37,849	37,849	0	0	0	0	37,849
	SNE Exempted Area Total		515,478	636,194	1,043,919	2,195,591	921,177	933,295	950,331	2,804,803	861,413	703,532	723,473	2,288,418	602,724	226,964	480,123	1,309,811	8,598,623
	Unknown	Trawls	8,805	0	0	8,805	17,903	55,146	6,000	79,049	29,640	0	5,493	35,133	0	0	0	0	122,987
	Unknown Total		8,805	0	0	8,805	17,903	55,146	6,000	79,049	29,640	0	5,493	35,133	0	0	0	0	122,987
CULTIVATOR SHOALS WHITING Total		991,932	1,055,204	1,505,243	3,552,379	1,466,320	1,706,296	1,751,359	4,923,975	1,582,579	862,502	990,998	3,436,079	1,134,596	1,336,789	1,477,447	3,948,832	15,861,265	
(blank)	GOM Mesh Area	Trawls	143,114	161,116	1,910	306,140	72,718	0	64,765	137,483	20,460	0	60,220	80,680	60,755	240,325	318,135	619,215	1,143,518
	Gill nets		0	0	0	0	0	0	0	0	10	27	37	0	0	0	0	0	
GOM Mesh Area Total		143,114	161,116	1,910	306,140	72,718	0	64,765	137,483	20,460	10	60,247	80,717	60,755	240,325	318,135	619,215	1,143,555	
MA Exempted Area	Trawls	880,552	1,099,129	1,388,010	3,367,691	1,035,256	1,562,834	972,587	3,570,677	188,815	168,546	111,916	469,277	635,359	703,923	563,057	1,902,339	9,309,984	
	Traps	1,147	981	21	2,149	778	5,357	10,410	16,545	7,338	7,480	4,179	18,997	7,807	5,817	2,012	15,636	53,327	
	Longlines	11,010	15,648	487	27,145	1,159	42	86	1,287	0	0	0	0	0	0	9	9	28,441	
	Dredges	105	165	71	341	0	14,701	0	14,701	0	0	12	12	2	1,493	0	1,495	16,549	
	Hook	515	744	1,460	2,719	1,108	3,010	16	4,134	860	0	252	1,112	343	285	403	1,031	8,996	
	Gill nets	24	60	5	89	49	99	149	297	33	28	13	74	148	4	25	177	637	
	Other nets	0	0	0	0	0	0	0	0	0	0	0	0	0	0	337	337	337	
MA Exempted Area Total		893,353	1,116,727	1,390,054	3,400,134	1,038,350	1,586,043	983,248	3,607,641	197,046	176,054	116,372	489,472	643,659	711,522	565,843	1,921,024	9,418,271	
SNE Exempted Area	Trawls	1,085,360	1,055,617	1,748,368	3,889,345	1,507,838	941,873	1,429,197	3,878,908	1,417,838	1,691,835	1,908,098	5,017,771	980,370	669,160	906,309	2,555,839	15,341,863	
	Hook	699	9,122	1,481	11,302	1,604	110	298	2,012	348	16,647	101	17,096	163	1,612	364	2,139	32,549	
	Traps	1,414	1,983	1,639	5,036	390	305	395	1,090	8,445	1,489	1,085	11,019	2,090	1,624	238	3,952	21,097	
	Longlines	883	1,471	10,950	13,304	60	0	152	212	0	272	0	272	0	0	0	0	13,788	
	Gill nets	372	0	0	372	47	82	26	155	1,832	1,070	5	2,907	4	6	2,520	2,530	5,964	
	Dredges	0	0	0	0	33	171	315	519	5	0	10	15	1,202	242	0	1,444	1,978	
SNE Exempted Area Total		1,088,728	1,068,193	1,762,438	3,919,359	1,509,972	942,541	1,430,383	3,882,896	1,428,468	1,711,313	1,909,299	5,049,080	983,829	672,644	909,431	2,565,904	15,417,239	
Unknown	Trawls	0	145	2,500	2,645	33	44,229	26,284	70,546	75,073	96,902	19,450	191,425	13,287	5,722	4,912	23,921	288,537	
	Gill nets	0	0	9	9	6	10	8,106	8,122	6,149	1,769	757	8,675	33	315	70	418	17,224	
	Hook	0	26	0	26	84	140	1,484	1,708	1,357	6,921	7	8,285	2,122	3	0	2,125	12,144	
	Dredges	0	1,459	100	1,559	0	41	94	135	0	0	0	0	0	109	705	814	2,508	
	Traps	60	0	113	173	0	18	216	234	8	231	143	382	43	178	0	221	1,010	
	Hand	0	0	96	96	0	0	0	0	0	0	0	0	0	0	0	0	96	
	Other nets	0	0	0	0	3	1	0	4	0	3	1	4	0	0	0	0	8	
Unknown Total		60	1,630	2,818	4,508	126	44,439	36,184	80,749	82,587	105,826	20,358	208,771	15,485	6,327	5,687	27,499	321,527	
(blank) Total		2,125,255	2,347,666	3,157,220	7,630,141	2,621,166	2,573,023	2,514,580	7,708,769	1,728,561	1,993,203	2,106,276	5,828,040	1,703,728	1,630,818	1,799,096	5,133,642	26,300,592	
Grand Total		3,117,187	3,402,870	4,662,463	11,182,520	4,087,486	4,279,319	4,265,939	12,632,744	3,311,140	2,855,705	3,097,274	9,264,119	2,838,324	2,967,607	3,276,543	9,082,474	42,161,857	

Trawl landings by month, management area, and mesh

2008-2010

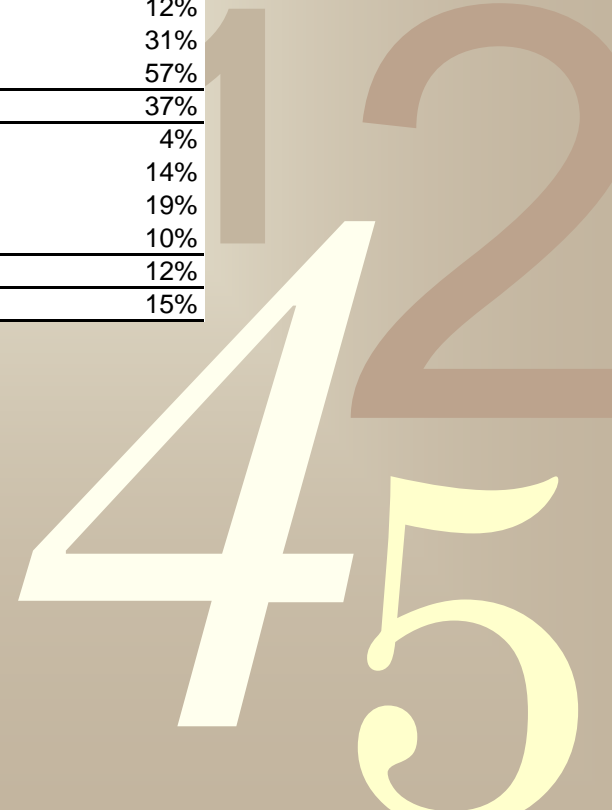
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Sum of Hake landings		QTR MONTH												4 Total	Grand Total			
		1			2			3			4							
MGMT_AREA	MESH_CAT	01	02	03	1 Total	04	05	06	2 Total	07	08	09	3 Total	10	11	12	4 Total	Grand Total
Cultivator Shoals	2.5-4.5	0	0	0	0	0	0	0	0	388,974	1,233,422	680,594	2,302,990	154,793	0	0	154,793	2,457,783
	Unreported	0	0	0	0	0	0	62,657	62,657	191,210	334,363	197,258	722,831	188,042	0	0	188,042	973,530
Cultivator Shoals Total		0	0	0	0	0	0	62,657	62,657	580,184	1,567,785	877,852	3,025,821	342,835	0	0	342,835	3,431,313
GOM Mesh Area	2.5-4.5	146,141	231,441	71,259	448,841	111,416	581,579	594,402	1,287,397	652,244	256,176	275,304	1,183,724	333,438	575,087	611,501	1,520,026	4,439,988
	Unreported	89,410	114,923	55,828	260,161	321,880	86,908	244,557	653,345	180,494	13,876	47,470	241,840	88,777	494,672	407,633	991,082	2,146,428
	>= 4.5	2,631	33,757	1,505	37,893	1,696	59	10,548	12,303	35,322	19,867	36,470	91,659	2,107	1,359	1,010	4,476	146,331
	<= 2.5	11,046	146	61,740	72,932	5,700	0	0	5,700	0	25	0	25	0	736	27,522	28,258	106,915
	Other	0	0	0	0	0	0	0	0	0	20,100	0	20,100	0	0	0	0	20,100
GOM Mesh Area Total		249,228	380,267	190,332	819,827	440,692	668,546	849,507	1,958,745	868,060	310,044	359,244	1,537,348	424,322	1,071,854	1,047,666	2,543,842	6,859,762
GOM Raised Footrope	<= 2.5	0	0	0	0	0	0	0	0	161,602	279,690	61,581	502,873	15,592	2,797	0	18,389	521,262
	Unreported	0	0	0	0	0	0	0	0	22,569	126,384	43,821	192,774	1,905	62	0	1,967	194,741
	2.5-4.5	0	0	0	0	0	0	0	0	2,096	1,857	0	3,953	0	0	0	0	3,953
GOM Raised Footrope Total		0	0	0	0	0	0	0	0	186,267	407,931	105,402	699,600	17,497	2,859	0	20,356	719,956
MA Exempted Area	2.5-4.5	377,929	501,825	529,493	1,409,247	498,584	716,890	356,141	1,571,615	10,745	66,259	30,357	107,361	157,891	257,236	261,932	677,059	3,765,282
	Unreported	543,160	443,376	730,521	1,717,057	308,948	173,294	173,518	655,760	80,334	59,900	35,925	176,159	284,451	464,365	410,077	1,158,893	3,707,869
	<= 2.5	212,359	223,873	251,467	687,699	207,642	634,370	461,476	1,303,488	132,821	33,482	66,250	232,553	333,574	214,400	125,885	673,859	2,897,599
	>= 4.5	109,068	124,805	156,913	390,786	178,067	83,448	4,464	265,979	4,276	8,940	13,048	26,264	32,206	53,695	36,960	122,861	805,890
	Other	389	12,037	1,299	13,725	2,891	4,300	0	7,191	0	0	0	0	2,267	172	62	2,501	23,417
MA Exempted Area Total		1,242,905	1,305,916	1,669,693	4,218,514	1,196,132	1,612,302	995,599	3,804,033	228,176	168,581	145,580	542,337	810,389	989,868	834,916	2,635,173	11,200,057
MA Raised Footrope	2.5-4.5	0	0	0	0	0	0	0	0	0	0	149,947	149,947	296,543	237,787	9,167	543,497	693,444
	Unreported	0	0	0	0	0	0	0	0	0	0	0	162,461	166,662	200,073	60,473	427,208	589,669
	<= 2.5	0	0	0	0	0	0	0	0	0	0	179,093	179,093	290,003	84,450	2,979	377,432	556,525
MA Raised Footrope Total		0	0	0	0	0	0	0	0	0	0	491,501	491,501	753,208	522,310	72,619	1,348,137	1,839,638
SMA I	<= 2.5	0	0	0	0	0	0	0	0	204,734	142,309	69,879	416,922	6,332	0	0	6,332	423,254
	Unreported	0	0	0	0	0	0	0	0	197,144	180,599	916	378,659	0	0	0	0	378,659
	2.5-4.5	0	0	0	0	0	0	0	0	24,560	332	44,595	69,487	0	0	0	0	69,487
SMA I Total		0	0	0	0	0	0	0	0	426,438	323,240	115,390	865,068	6,332	0	0	6,332	871,400
SMA II	Unreported	14,522	0	5	14,527	59	14	1,594	1,667	0	0	0	0	0	0	0	0	16,194
	<= 2.5	2	3	89	94	0	0	0	0	0	0	0	0	0	0	0	0	94
SMA II Total		14,524	3	94	14,621	59	14	1,594	1,667	0	0	0	0	0	0	0	0	16,288
SNE Exempted Area	2.5-4.5	740,776	859,393	1,434,871	3,035,040	1,167,954	1,127,674	1,354,528	3,650,156	1,408,733	1,663,637	1,588,933	4,661,303	894,395	380,212	648,220	1,922,827	13,269,326
	Unreported	431,815	568,126	918,509	1,918,450	784,907	576,826	733,366	2,095,099	601,952	488,694	685,845	1,776,491	406,769	186,965	454,457	1,048,191	6,838,231
	<= 2.5	258,164	198,838	337,227	794,229	292,004	97,061	267,499	656,564	263,749	212,877	238,201	714,827	195,346	102,921	151,191	449,458	2,615,078
	>= 4.5	126,858	64,662	101,680	293,200	184,150	72,302	24,095	280,547	4,817	30,159	80,743	115,719	86,388	223,960	132,456	442,804	1,132,270
	Other	3,900	792	0	4,692	0	1,305	40	1,345	0	0	0	0	196	2,066	108	2,370	8,407
SNE Exempted Area Total		1,561,513	1,691,811	2,792,287	6,045,611	2,429,015	1,875,168	2,379,528	6,683,711	2,279,251	2,395,367	2,593,722	7,268,340	1,583,094	896,124	1,386,432	3,865,650	23,863,312
Unknown	Unreported	8,805	145	2,500	11,450	17,936	99,375	32,284	149,595	104,713	96,902	24,943	226,558	13,287	6,197	4,912	24,396	411,999
	>= 4.5	0	0	0	0	0	165	0	165	0	0	0	0	0	0	90	90	255
Unknown Total		8,805	145	2,500	11,450	17,936	99,540	32,284	149,760	104,713	96,902	24,943	226,558	13,287	6,197	5,002	24,486	412,254
Grand Total		3,076,975	3,378,142	4,654,906	11,110,023	4,083,834	4,255,570	4,321,169	12,660,573	4,673,089	5,269,850	4,713,634	14,656,573	3,950,964	3,489,212	3,346,635	10,786,811	49,213,980

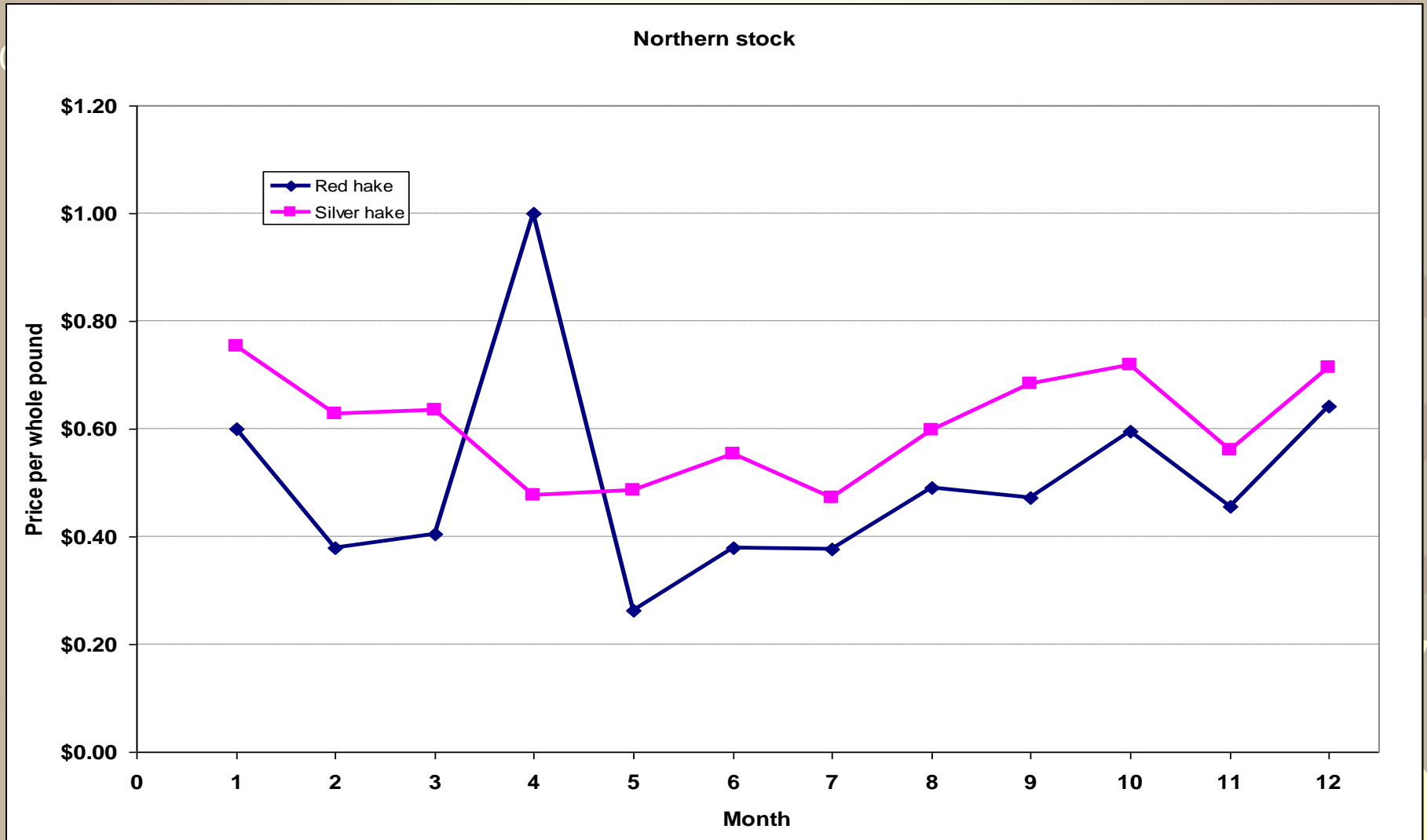
Percent of landings from state waters

0011 0010 1010 1101 0001 0100 1011

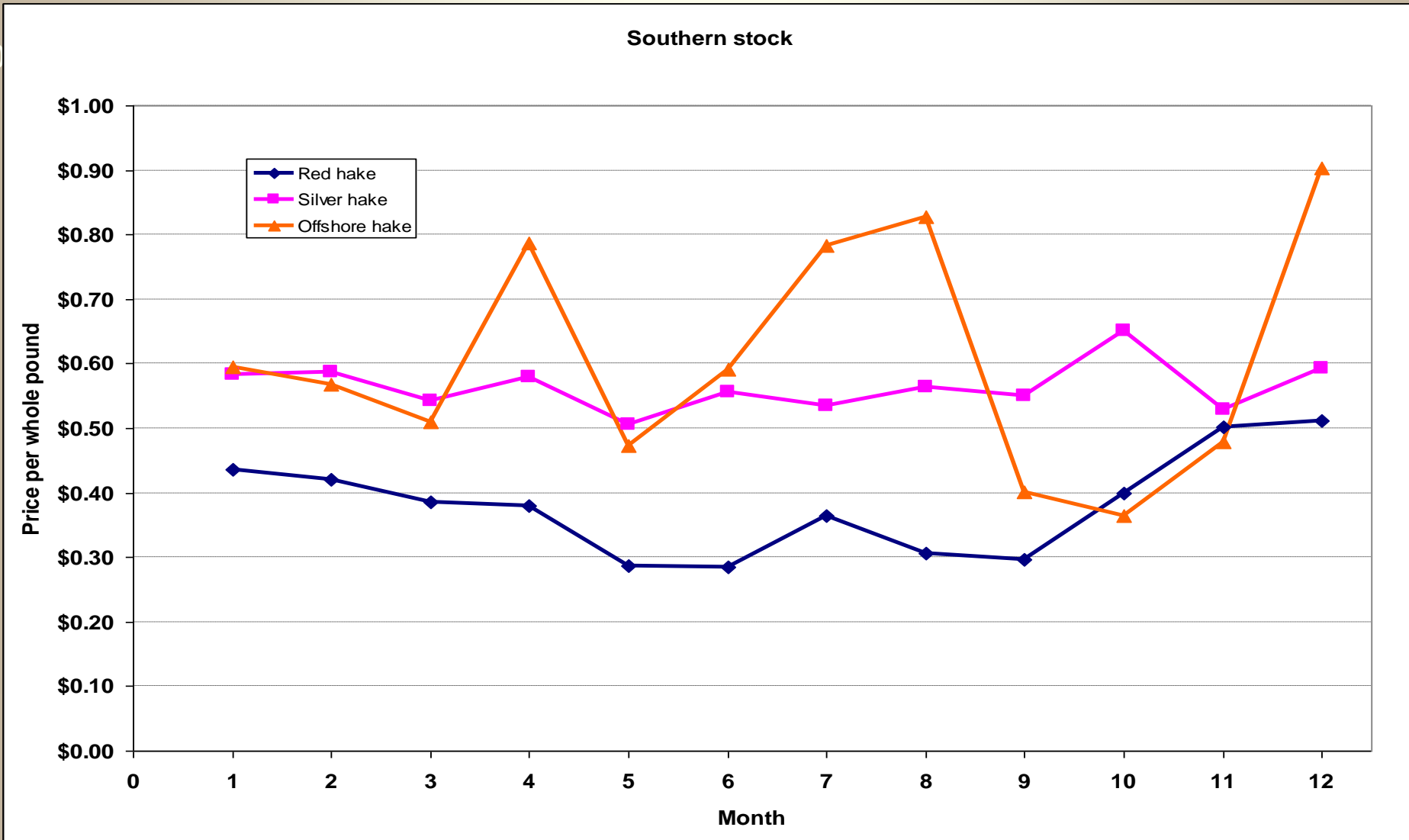
		State waters	
STOCK	QTR	Red hake, lbs. whole	Silver hake, lbs. whole
Northern Stock	1	7%	8%
	2	1%	12%
	3	22%	31%
	4	32%	57%
Northern Stock Total		22%	37%
Southern Stock	1	11%	4%
	2	33%	14%
	3	26%	19%
	4	20%	10%
Southern Stock Total		24%	12%
Grand Total		24%	15%



Price by month, 2008-2010 average



Price by month, 2008-2010 average

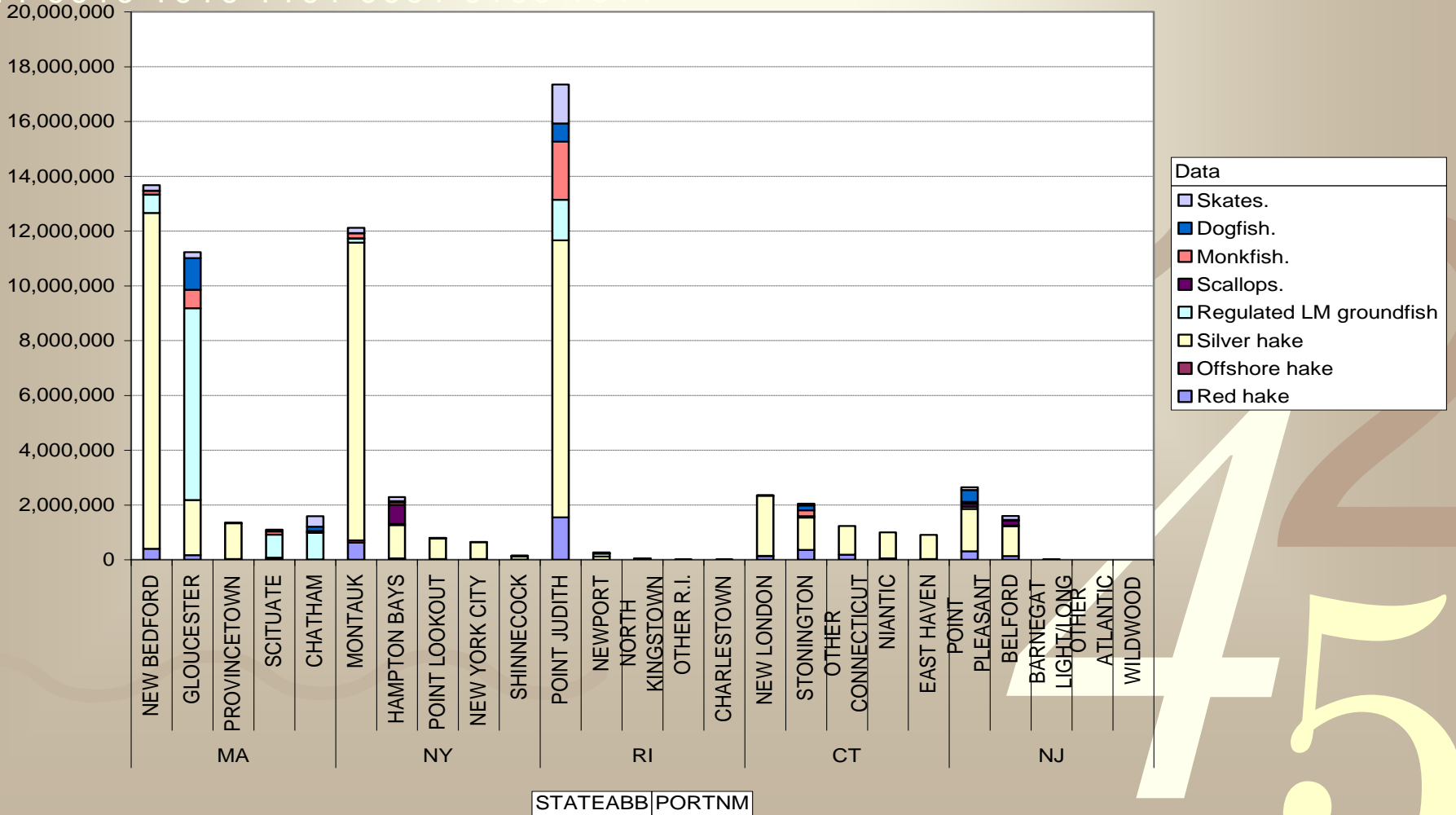


Top 5 ports by state 2008-2010

YEAR		(Multiple Items)									
		STOCK Data									
		Northern Stock			Southern Stock			Total Sum of Hake landings	Total Sum of Hake value	Total Percent hake value.	
STATEABB	PORTNM	Sum of Hake landings	Sum of Hake value	Percent hake value.	Sum of Hake landings	Sum of Hake value	Percent hake value.				
NY	MONTAUK	299,317	\$225,709	94.6%	11,283,848	\$7,211,000	52.4%	11,583,165	\$7,436,709	53.1%	
	HAMPTON BAYS	1,885	\$827	18.3%	1,260,313	\$702,071	20.0%	1,262,198	\$702,898	20.0%	
	POINT LOOKOUT	0	\$0		780,489	\$429,109	39.9%	780,489	\$429,109	39.9%	
	NEW YORK CITY	0	\$0		643,918	\$346,303	77.6%	643,918	\$346,303	77.6%	
	SHINNECOCK	0	\$0		116,116	\$47,926	19.0%	116,116	\$47,926	19.0%	
NY Total		301,202	\$226,536	93.2%	14,084,684	\$8,736,409	45.9%	14,385,886	\$8,962,945	46.5%	
MA	NEW BEDFORD	2,487,424	\$1,486,881	76.6%	10,168,927	\$5,060,365	70.4%	12,656,351	\$6,547,246	71.7%	
	GLOUCESTER	1,999,076	\$1,021,287	10.6%	180,600	\$102,147	11.1%	2,179,676	\$1,123,434	10.7%	
	PROVINCETOWN	1,053,948	\$794,225	91.9%	272,462	\$217,418	95.1%	1,326,410	\$1,011,643	92.6%	
	BOSTON	279,635	\$189,215	20.3%	4,354	\$1,271	1.6%	283,989	\$190,486	18.9%	
	SCITUATE	72,332	\$49,028	7.0%	6,643	\$4,378	1.1%	78,975	\$53,406	4.8%	
MA Total		5,892,415	\$3,540,636	25.2%	10,632,986	\$5,385,579	61.0%	16,525,401	\$8,926,215	39.0%	
RI	POINT JUDITH	250,503	\$152,183	22.5%	11,406,471	\$5,492,578	16.3%	11,656,974	\$5,644,761	16.5%	
	NEWPORT	250	\$380	0.7%	119,470	\$59,871	5.2%	119,720	\$60,251	5.0%	
	NORTH KINGSTOWN	0	\$0		40,721	\$17,507	3.2%	40,721	\$17,507	3.2%	
	OTHER R.I.	5,330	\$5,833	98.5%	2,805	\$1,693	30.3%	8,135	\$7,526	65.4%	
	PROVIDENCE	8,640	\$4,026	98.1%	0	\$0		8,640	\$4,026	98.1%	
RI Total		264,723	\$162,422	22.0%	11,569,467	\$5,571,649	15.8%	11,834,190	\$5,734,071	15.9%	
CT	NEW LONDON	34,320	\$40,878	96.6%	2,299,234	\$1,200,571	71.1%	2,333,554	\$1,241,449	71.7%	
	STONINGTON	1,340	\$410	23.7%	1,534,322	\$951,186	30.9%	1,535,662	\$951,596	30.9%	
	OTHER CONNECTICUT	0	\$0		1,232,074	\$925,206	100.0%	1,232,074	\$925,206	100.0%	
	NIANTIC	11,100	\$3,480	85.3%	989,863	\$579,448	85.4%	1,000,963	\$582,928	85.4%	
	EAST HAVEN	84,406	\$65,701	94.4%	819,681	\$495,102	80.3%	904,087	\$560,803	81.8%	
CT Total		131,166	\$110,469	93.8%	6,875,174	\$4,151,513	59.4%	7,006,340	\$4,261,982	60.0%	
NJ	POINT PLEASANT	0	\$0		1,852,361	\$763,530	16.8%	1,852,361	\$763,530	16.8%	
	BELFORD	33	\$44	0.8%	1,221,859	\$651,707	28.9%	1,221,892	\$651,751	28.8%	
	CAPE MAY	0	\$0		83,077	\$21,593	1.2%	83,077	\$21,593	1.2%	
	BARNEGAT LIGHT/LONG BEACH	0	\$0		660	\$423	0.1%	660	\$423	0.1%	
	OTHER ATLANTIC	10	\$5	1.6%	279	\$202	4.8%	289	\$207	4.6%	
NJ Total		43	\$49	0.8%	3,158,236	\$1,437,455	16.1%	3,158,279	\$1,437,504	16.1%	
NH	SEABROOK	623,293	\$334,502	13.7%	1,731	\$588	5.5%	625,024	\$335,090	13.7%	
	RYE	71,369	\$24,118	1.5%	142	\$74	0.3%	71,511	\$24,192	1.4%	
	NEW HAMPSHIRE(STATE OF)	1,526	\$906	1.1%	178	\$55	0.5%	1,704	\$961	1.1%	
	DOVER	2,132	\$666	12.5%	0	\$0		2,132	\$666	12.5%	
	PORTSMOUTH	1,091	\$600	0.5%	10	\$12	0.6%	1,101	\$612	0.5%	
NH Total		699,411	\$360,792	8.4%	2,061	\$729	1.5%	701,472	\$361,521	8.3%	
VA	OTHER YORK	96,230	\$67,209	99.9%	151,619	\$95,385	87.6%	247,849	\$162,594	92.3%	
	OTHER KING GEORGE	2,516	\$2,604	97.8%	0	\$0		2,516	\$2,604	97.8%	
	CHINCOTEAGUE	0	\$0		4,647	\$2,420	0.8%	4,647	\$2,420	0.8%	
	HAMPTON	0	\$0		1,093	\$371	1.0%	1,093	\$371	1.0%	
	WACHAPREAGUE	0	\$0		10	\$5	0.6%	10	\$5	0.6%	
VA Total		98,746	\$69,813	99.8%	157,369	\$98,181	21.2%	256,115	\$167,994	31.5%	
ME	PORT CLYDE	6,845	\$3,248	72.7%	0	\$0		6,845	\$3,248	72.7%	
	PORTLAND	2,062	\$1,473	0.1%	721	\$515	16.9%	2,783	\$1,988	0.2%	
	SACO	219	\$70	0.2%	0	\$0		219	\$70	0.2%	
	HARPSWELL CENTER	38	\$34	0.8%	0	\$0		38	\$34	0.8%	
	KENNEBUNKPORT	39	\$32	0.3%	0	\$0		39	\$32	0.3%	
	CAPE PORPOISE	38	\$14	1.0%	0	\$0		38	\$14	1.0%	
ME Total		9,241	\$4,871	0.4%	721	\$515	16.9%	9,962	\$5,386	0.4%	
MD	OTHER SOMERSET	0	\$0		4,140	\$2,709	90.7%	4,140	\$2,709	90.7%	
	OCEAN CITY	0	\$0		4,679	\$1,995	0.3%	4,679	\$1,995	0.3%	
MD Total		0	\$0		8,819	\$4,704	0.7%	8,819	\$4,704	0.7%	
DE	INDIAN RIVER	1	\$1	1.0%	1,153	\$576	0.3%	1,154	\$577	0.3%	
DE Total		1	\$1	1.0%	1,153	\$576	0.3%	1,154	\$577	0.3%	
Grand Total		7,396,948	\$4,475,589	21.5%	46,490,670	\$25,387,310	31.5%	53,887,618	\$29,862,899	29.5%	

Landings by species at top 5 ports on trips landing whiting

YEAR (All) STOCK (All)

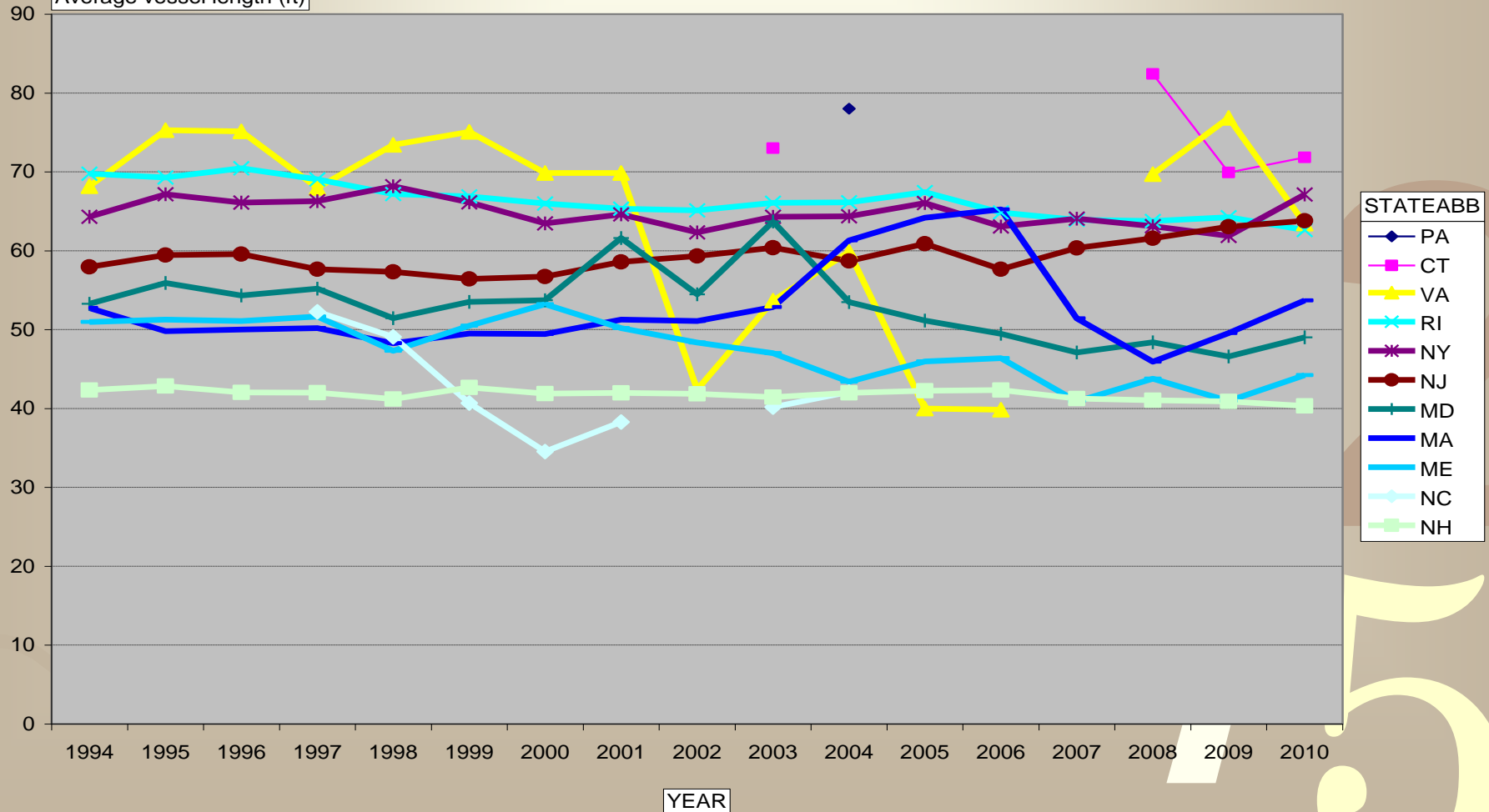


Trends in whiting landings-weighted vessel length

STOCK(All)

0011 0010 1010 1101 0001 0100 1011

Average vessel length (ft)

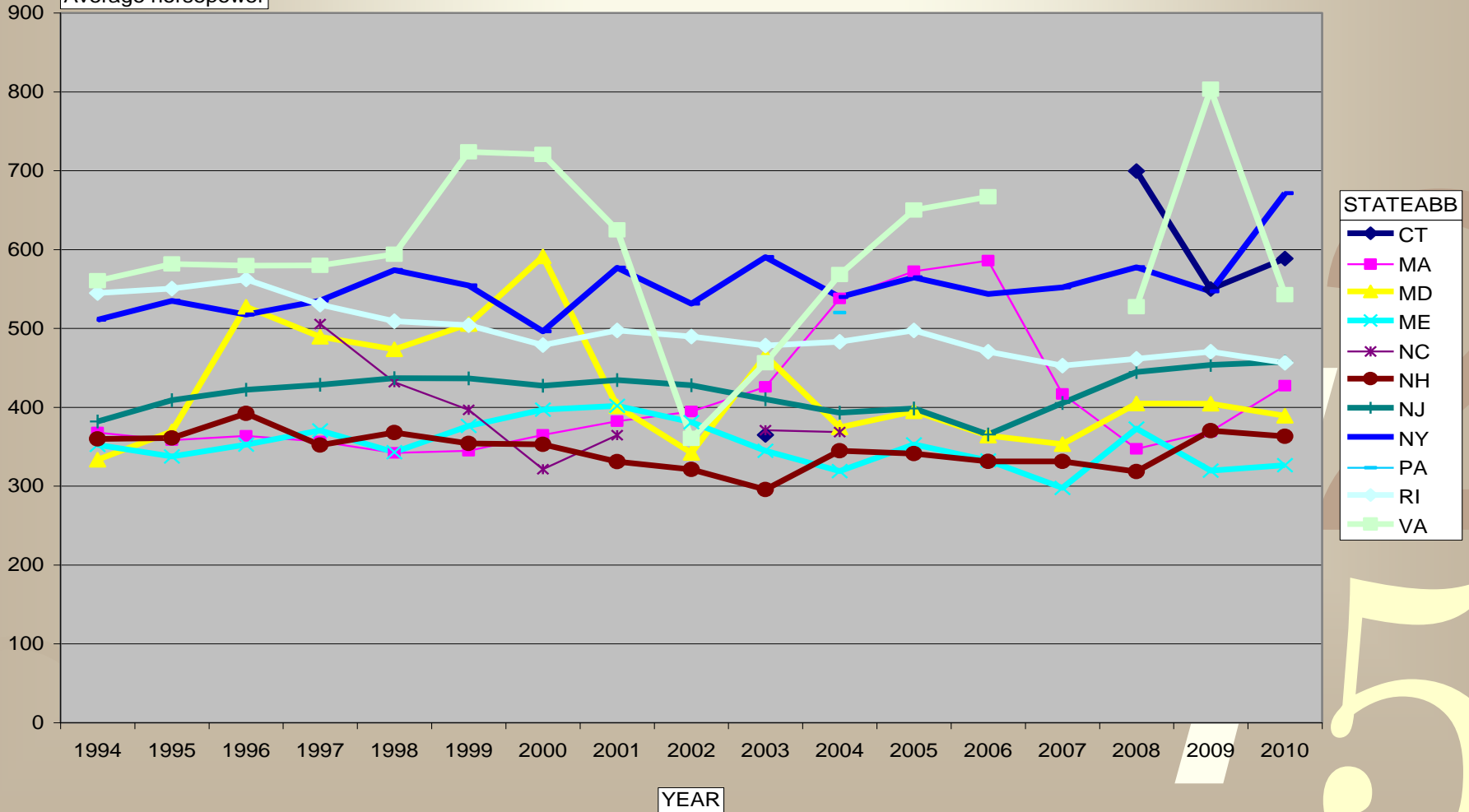


Trends in whiting landings-weighted vessel horsepower

STOCK (All)

0011 0010 1010 1101 0001 0100 1011

Average horsepower



Trends in whiting landings-weighted vessel age

STOCK (All)

0011 0010 1010 1101 0001 0100 1011

Average year built

