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Monthly Abundance Indices

Fall Midwater Trawl indices for age-0 striped bass (*Morone saxatilis*), delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), American shad (*Alosa sapidissima*), splittail (*Pogonichthys macrolepidotus*), and threadfin shad (*Dorosoma petenense*) from 1967-2017; please note that no surveys were done in 1974, 1979, and September and December 1976.

The September 1976 index was calculated by taking a quotient of the respective September and October indices (September/October) for pre-*Corbula amurensis* years 1967-1973, 1975, 1977-1978, 1980-1987 then averaging the quotients.

This mean quotient was then multiplied by the respective 1976 October index to generate the September index. The 1976 December index was calculated for each species by averaging the 1976 November and 1977 January indices.

In addition, due to the low number of stations sampled in Nov. 1969, the 1969 Nov. index is the average of the October and December 1969 index.

[Multiple Table View](#)

Age-0 Striped Bass

Year	Sept	Oct	Nov	Dec	Total
1967	11941	3681	1789	2266	19677
1968	1633	1160	602	324	3719
1969	3894	1548	1393	1237	8072
1970	2277	1817	2750	1432	8276
1971	3992	1837	1351	2295	9475
1972	3160	974	1377	605	6116
1973	1516	441	1005	1324	4286
1974					
1975	1772	681	1284	811	4548
1976	239	117	243	821	1420
1977	307	204	180	192	883
1978	1115	561	336	586	2598
1979					
1980	739	384	102	268	1493

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1981	583	916	1037	1995	4531
1982	1476	938	939	1113	4466
1983	1934	1994	5272	3273	12473
1984	1287	2666	1374	1254	6581
1985	125	825	58	752	1760
1986	2706	532	508	197	3943
1987	603	169	206	372	1350
1988	106	98	129	144	477
1989	154	152	76	60	442
1990	234	235	397	454	1320
1991	262	128	115	439	944
1992	620	246	544	632	2042
1993	508	513	281	254	1556
1994	206	188	206	659	1259
1995	116	131	141	90	478
1996	71	46	32	243	392
1997	287	143	69	69	568
1998	234	290	126	574	1224
1999	154	68	134	185	541
2000	93	154	90	51	388
2001	181	217	114	219	731
2002	18	20	15	20	73
2003	34	34	25	18	111
2004	16	17	6	15	54
2005	40	29	26	26	121
2006	236	18	39	70	363
2007	32	34	14	2	82
2008	57	39	85	39	220
2009	9	23	14	24	70
2010	16	5	11	11	43
2011	112	62	30	68	272
2012	20	16	14	75	125
2013	18	5	13	34	70

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2014	8	2	4	45	59
2015	4	8	11	29	52
2016	43	4	5	72	124
2017	43	118			

Delta Smelt (all ages)

Year	Sept	Oct	Nov	Dec	Total
1967	94	157	31	126	408
1968	235	252	123	86	696
1969	148	78	55	32	313
1970	742	342	82	507	1673
1971	197	471	428	207	1303
1972	572	470	81	142	1265
1973	308	312	198	327	1145
1974					
1975	290	214	102	91	697
1976	69	42	121	127	359
1977	98	242	52	88	480
1978	167	65	31	309	572
1979					
1980	370	274	587	423	1654
1981	132	27	54	161	374
1982	45	47	79	162	333
1983	2	28	78	24	132
1984	47	44	67	24	182
1985	41	24	28	17	110
1986	92	15	34	71	212
1987	71	40	69	100	280
1988	58	67	19	30	174
1989	88	75	158	45	366
1990	109	50	188	17	364
1991	126	249	279	35	689
1992	72	3	57	24	156

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1993	375	470	94	139	1078
1994	65	12	7	18	102
1995	120	349	352	78	899
1996	19	23	13	72	127
1997	15	109	71	108	303
1998	238	97	15	70	420
1999	198	380	114	172	864
2000	430	128	56	142	756
2001	75	481	17	30	603
2002	20	46	29	44	139
2003	15	136	17	42	210
2004	26	18	23	7	74
2005	3	9	7	7	26
2006	33	3	4	1	41
2007	9	4	5	10	28
2008	2	5	12	4	23
2009	1	3	3	10	17
2010	6	12	0	11	29
2011	50	54	23	216	343
2012	0	23	12	7	42
2013	4	3	2	9	18
2014	4	4	0	1	9
2015	5	0	0	2	7
2016	0	0	8	0	8
2017	0	2			

Longfin Smelt (all ages)

Year	Sept	Oct	Nov	Dec	Total
1967	15484	49992	7480	8781	81737
1968	1408	771	446	654	3279
1969	35797	9845	7851	5857	59350
1970	889	410	1056	4160	6515
1971	2388	5722	5019	2774	15903

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1972	138	118	106	398	760
1973	2794	1237	808	1057	5896
1974					
1975	318	598	1198	705	2819
1976	15	12	90	541	658
1977	29	17	83	81	210
1978	1744	1173	1450	2252	6619
1979					
1980	15233	6071	3526	6354	31184
1981	222	398	179	1403	2202
1982	7898	13961	28171	12875	62905
1983	152	3106	5407	3199	11864
1984	328	2612	2551	1917	7408
1985	20	31	219	722	992
1986	972	1543	1857	1788	6160
1987	134	70	384	932	1520
1988	16	17	207	551	791
1989	11	32	37	376	456
1990	10	1	81	151	243
1991	8	7	27	92	134
1992	3	0	12	61	76
1993	99	112	128	459	798
1994	4	10	79	452	545
1995	5430	931	1516	328	8205
1996	2	27	14	1303	1346
1997	106	51	194	339	690
1998	149	1578	2032	2895	6654
1999	1953	2736	331	223	5243
2000	1635	48	938	816	3437
2001	74	46	27	100	247
2002	127	144	182	254	707
2003	10	62	77	318	467
2004	44	9	9	129	191

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2005	1	22	13	93	129
2006	1563	169	184	33	1949
2007	2	0	2	9	13
2008	0	19	43	77	139
2009	0	8	10	47	65
2010	2	7	4	178	191
2011	68	16	92	301	477
2012	6	2	17	36	61
2013	8	28	21	107	164
2014	6	3	5	2	16
2015	0	0	0	4	4
2016	3	0	2	2	7
2017	6	23			

American Shad (all ages)

Year	Sept	Oct	Nov	Dec	Total
1967	1519	1091	607	205	3422
1968	274	277	137	70	758
1969	1320	1177	789	402	3688
1970	366	254	170	66	856
1971	351	473	380	255	1459
1972	140	56	109	30	335
1973	599	193	211	82	1085
1974					
1975	1240	587	486	178	2491
1976	95	69	102	80	346
1977	126	147	233	130	636
1978	762	1060	321	221	2364
1979					
1980	1295	1697	523	401	3916
1981	286	522	349	277	1434
1982	2245	1609	1325	210	5389

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1983	962	852	958	159	2931
1984	292	172	267	86	817
1985	316	332	564	386	1598
1986	694	567	313	286	1860
1987	261	292	222	124	899
1988	805	310	300	135	1550
1989	569	339	592	378	1878
1990	1493	947	1369	507	4316
1991	1076	779	872	260	2987
1992	755	530	463	266	2014
1993	1972	1567	908	710	5157
1994	439	387	391	117	1334
1995	3246	2220	791	555	6812
1996	1756	1072	935	523	4286
1997	265	565	639	1125	2594
1998	1318	2093	515	214	4140
1999	346	155	145	69	715
2000	253	326	126	59	764
2001	338	239	110	78	765
2002	372	832	334	382	1920
2003	3345	2947	1279	1789	9360
2004	680	83	78	106	947
2005	826	552	177	189	1744
2006	1119	142	646	406	2313
2007	123	257	116	57	553
2008	14	25	19	213	271
2009	81	75	252	216	624
2010	130	54	114	385	683
2011	413	204	142	135	894
2012	135	141	34	105	415
2013	74	61	86	88	309
2014	46	17	72	143	278
2015	6	12	22	39	79

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2016	61	67	117	68	313
2017	434	451			

Splittail (all ages)

Year	Sept	Oct	Nov	Dec	Total
1967	43	10	3	9	65
1968	6	7	3	2	18
1969	7	11	7	3	28
1970	13	0	2	2	17
1971	4	5	8	1	18
1972	3	0	1	9	13
1973	2	0	2	0	4
1974					
1975	2	1	0	1	4
1976	0	0	1	1	2
1977	0	0	0	0	0
1978	14	16	4	3	37
1979					
1980	11	4	1	0	16
1981	9	3	3	3	18
1982	76	20	12	11	119
1983	54	26	63	11	154
1984	10	1	4	1	16
1985	3	4	0	8	15
1986	14	25	8	11	58
1987	10	3	4	12	29
1988	3	4	2	0	9
1989	3	1	0	0	4
1990	5	2	1	0	8
1991	10	2	6	0	18
1992	2	0	1	0	3
1993	4	3	1	2	10
1994	0	1	0	2	3

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1995	43	27	5	1	76
1996	13	0	0	9	22
1997	1	0	0	0	1
1998	127	92	45	17	281
1999	24	3	12	0	39
2000	0	4	3	1	8
2001	10	2	0	15	27
2002	0	0	1	0	1
2003	4	5	0	0	9
2004	1	2	1	0	4
2005	5	0	0	0	5
2006	1	0	3	0	4
2007	1	0	0	0	1
2008	0	0	0	0	0
2009	0	0	0	1	1
2010	0	0	0	0	0
2011	15	0	0	0	15
2012	0	0	0	1	1
2013	0	0	0	1	1
2014	0	0	0	1	1
2015	0	0	0	0	0
2016	0	0	0	0	0
2017	0	0			

Threadfin Shad (all ages)

Year	Sept	Oct	Nov	Dec	Total
1967	6810	3640	928	1357	12735
1968	1631	1570	1618	614	5433
1969	5915	1146	828	509	8398
1970	1596	820	786	861	4063
1971	1064	3473	1759	610	6906
1972	1527	1858	1106	622	5113
1973	1043	46	113	30	1232

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1974					
1975	292	24	267	135	718
1976	1585	421	323	628	2957
1977	2703	2847	2897	569	9016
1978	984	481	149	485	2099
1979					
1980	1243	4023	1472	541	7279
1981	1164	3428	1823	259	6674
1982	304	375	1197	225	2101
1983	583	587	653	265	2088
1984	346	113	278	20	757
1985	278	258	60	225	821
1986	742	342	1657	88	2829
1987	891	72	1984	528	3475
1988	409	287	1555	158	2409
1989	1808	564	4209	316	6897
1990	405	898	1710	2846	5859
1991	631	420	1399	866	3316
1992	742	1054	371	791	2958
1993	1521	2537	1927	693	6678
1994	331	819	836	319	2305
1995	1631	592	730	384	3337
1996	146	1150	934	2528	4758
1997	797	3543	6140	4787	15267
1998	1922	2070	959	797	5748
1999	2670	772	2392	1693	7527
2000	68	1879	1218	9812	12977
2001	4382	1616	1407	6996	14401
2002	137	1024	253	317	1731
2003	748	339	380	497	1964
2004	610	179	330	182	1301
2005	287	1141	1009	428	2865
2006	1852	140	121	112	2225

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2007	80	130	44	2923	3177
2008	59	293	66	32	450
2009	2	8	13	20	43
2010	37	36	3	44	120
2011	67	20	52	89	228
2012	5	3	11	22	41
2013	9	61	39	168	277
2014	18	1	175	88	282
2015	194	82	277	253	806
2016	114	50	252	244	660
2017	12	72			

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