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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910

THE DIRECTOR

DEC 2 3 2010

Mr. John F. Whiteside, Jr.
Mickelson Barnet, PC
30 Cornell Street
New Bedford, MA 02740

Dear Mr. Whiteside:

Thank you for your letter requesting results from our bottom trawl survey for skate species managed by the New England Fishery Management Council (NEFMC). Your letter does not mention skate species specifically, but an accompanying e-mail from Garth Patterson of Representative Barney Frank's office identified skates as the primary concern.

In response to your first request, at the end of this letter is a table summarizing the annual bottom trawl survey indices for seven skate species through the spring 2010 survey. The fall survey was completed on December 3, 2010. Data from that survey have not been fully audited but we have expedited the normal auditing process to ensure that data for these species are available in time for the meeting of the NEFMC Plan Development Team on January 13, 2011.

As you know, since spring 2009 our bottom trawl survey has been conducted with the FSV *Henry B. Bigelow*. The *Bigelow* uses a new trawl design that is much more efficient in capturing many species, and especially skates. Before we conducted our bottom trawl survey with this new vessel and net, we conducted experiments to calibrate the net with respect to the capture efficiency of the previous survey vessel, R/V *Albatross IV*. The results of these calibration experiments were peer-reviewed in August 2009 and results of those experiments are summarized in Miller et al. (2010). In order to properly interpret the trends since spring 2009 it is necessary to apply calibration coefficients to the *Bigelow* estimate to convert them to equivalent the *Albatross* units. This conversion is necessary in order to distinguish changes in abundance from changes in capture efficiency.

The calibration coefficients below represent changes in overall catch rates expressed in terms of average weight per tow. For example, a calibration coefficient of 3.0 means the *Bigelow* is expected to capture 3 times as much weight of skates as were caught on the *Albatross*. For some species the capture efficiency differences between survey vessels vary with fish length. The identification of such differences and their importance for stock assessments is an area of ongoing research. For skate species there is some evidence that length-specific differences occur, with higher calibration coefficients for smaller skates. We are presently investigating the importance of these differences for the determination of stock status under the current fishery management plan.

THE ASSISTANT ADMINISTRATOR
FOR FISHERIES

Calibration coefficients for seven skate species captured during NEFSC bottom trawl surveys.

Species	Calibration Coefficient (Std Err)	Comment
Little *Leucoraja erinacea*	2.785519 (0.32)	Spring Survey
Winter *Leucoraja ocellata*	2.174334 (0.31)	Fall Survey
Barndoor *Dipturus laevis*	3.661128 (0.51)	Fall Survey
Thorny *Amblyraja radiate*	3.626359 (0.58)	Fall Survey
Smooth *Malacoraja senta*	4.449518 (0.67)	Fall Survey
Clearnose *Raja eglanteria*	6.189401 (0.81)	Fall Survey
Rosette *Leucoraja garmani*	8.813973 (0.98)	Based on the calibration coefficient for little skate in the fall survey comparisons

The following table provides the results of the application of the calibration coefficients to the survey data you requested.

Species	Year	Bigelow Estimate	Calibration Coefficient	Albatross Equivalent
Little Leucoraja erinacea	2009 Spring	18.254	2.785519 (0.32)	6.5532
Little Leucoraja erinacea	2010 Spring	29.428	2.785519 (0.32)	10.5646
Winter Leucoraja ocellata	2009 Fall	24.644	2.174334 (0.31)	11.334
Barndoor Dipturus laevis	2009 Fall	4.130	3.661128 (0.51)	1.128
Thorny Amblyraja radiate	2009 Fall	0.919	3.626359 (0.58)	0.2534
Smooth Malacoraja senta	2009 Fall	0.914	4.449518 (0.67)	0.2054
Clearnose Raja eglanteria	2009 Fall	5.535	6.189401 (0.81)	0.8943
Rosette Leucoraja garmani	2009 Fall	0.563	8.813973 (0.98)	0.0639

Your second request asked for data by station. Rather than simply list all of the data in a table, I believe it would be more appropriate to have my staff at the Northeast Fisheries Science Center work with the analysts for whom you have requested this data so that it can be delivered in the most useful manner. Please contact Dr. Russell Brown at (508) 495-2380, or Russell.Brown@noaa.gov, chief of the Ecosystems Surveys Branch in Woods Hole.

Please let us know if we can be of further assistance in the interpretation of these data.

Sincerely,

Eric C. Schwaab
Assistant Administrator
for Fisheries

Reference: Miller TJ, Das C, Politis PJ, Miller AS, Lucey SM, Legault CM, Brown RW, Rago PJ. 2010. Estimation of Albatross IV to Henry B. Bigelow calibration factors. Northeast Fish Sci Cent Ref Doc. 10-05; 233 p. Available from: National Marine Fisheries Service, 166 Water Street, Woods Hole, MA 02543-1026, or online at: http://www.nefsc.noaa.gov/nefsc/publications/crd/crd1005/.

Table 1. Summary of bottom trawl survey indices (kg/tow) used in stock assessment of skates. All estimates are expressed in R/V Albatross equivalents.

	Skate Species						
Year	Barndoor (Fall)	Cleamose (Fall)	Little (Spring)	Rosette (Fall)	Smooth (Fall)	Thorny (Fall)	Winter (Fall)
1960							
1961							
1962							
1963	2.6335				0.4979	5.371	
1964	1.2117				0.3263	4.403	
1965	1.8215				0.4753	4.474	
1966	0.8111				0.323	7.971	
1967	0.4376			0.0195	0.152	2.712	2.159
1968	0.2847			0.0032	0.385	4.421	1.865
1969	0.0539			0.0019	0.29	5.715	1.315
1970	0.0662			0.009	0.232	7.347	2.996
1971	0.1702			0.0014	0.157	5.357	1.078
1972	0.0956			0.0165	0.332	4.119	2.958
1973	0.0038			0.0119	0.311	4.564	4.686
1974	0			0.0123	0.123	3.038	2.097
1975	0.0166	0.237		0.0042	0.076	2.474	1.315
1976	0.0468	0.302		0.0243	0.039	1.72	2.655
1977	0	0.768		0.0202	0.376	3.221	4.095
1978	0	0.156		0.0073	0.45	4.291	4.989
1979	0.0088	0.419		0.0103	0.182	3.612	5.121
1980	0	0.685		0.0895	0.343	4.601	6.233
1981	0	0.171		0.0792	0.119	3.339	5.668
1982	0	0.213	3.627	0.006	0.039	0.646	8.306
1983	0	0.141	5.718	0.001	0.146	2.409	12.852
1984	0.01	0.178	4.094	0.0294	0.199	2.887	13.323
1985	0.004	0.306	6.265	0.0053	0.21	2.877	9.182
1986	0.0295	0.545	2.753	0.0026	0.209	1.629	15.8
1987	0.0139	0.32	4.625	0.0284	0.095	0.944	11.063
1988	0.0075	0.335	5.083	0.0212	0.284	1.488	7.564
1989	0.0049	0.273	6.634	0.0176	0.128	1.883	5.081
1990	0.0283	0.402	4.993	0.0227	0.194	1.704	7.145
1991	0.0313	0.922	5.99	0.0051	0.167	1.632	4.724
1992	0.0024	0.345	5.297	0.0346	0.126	0.962	3.582
1993	0.1405	0.495	7.524	0.0214	0.227	1.658	1.905
1994	0.0348	0.938	3.622	0.0728	0.099	1.509	2.12
1995	0.1113	0.331	2.872	0.0395	0.189	0.783	1.985
1996	0.0421	0.43	7.574	0.0433	0.176	0.814	2.276
1997	0.1049	0.614	2.708	0.013	0.232	0.849	2.455
1998	0.089	1.121	7.471	0.0501	0.028	0.648	3.753
1999	0.2999	1.0529	9.978	0.0673	0.07	0.4791	5.089
2000	0.288	1.032	8.596	0.033	0.154	0.832	4.378
2001	0.543	1.614	6.835	0.121	0.287	0.332	3.887
2002	0.778	0.891	6.444	0.052	0.1112	0.436	5.6
2003	0.553	0.6611	6.4861	0.0335	0.19	0.742	3.3865
2004	1.295	0.709	7.219	0.048	0.214	0.71	4.031
2005	1.036	0.524	3.241	0.065	0.131	0.224	2.615
2006	1.168	0.5332	3.3235	0.058	0.2111	0.7256	2.4843
2007	0.798	0.8527	4.4588	0.0697	0.0893	0.3161	3.7053
2008	1.092	1.725	7.3391	0.029	0.098	0.209	9.5
2009	1.128	0.8943	6.5532	0.0639	0.2054	0.2534	11.334
2010	NA	NA	10.5646	NA	NA	NA	NA