

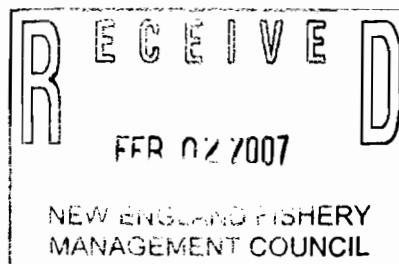


UNITED STATES DEPARTMENT OF COMMERCE
 National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 Northeast Fisheries Science Center
 166 Water Street
 Woods Hole, MA 02543-1026

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January 29, 2007

Captain Paul J. Howard
 Executive Director
 New England Fishery Management Council
 50 Water Street, Mill 2
 Newburyport, MA 01950



Dear Captain Howard:

Subject: Update on Skate Stock Status using 2006 Fall NEFSC Survey Data

In response to your memo dated 9 January 2007, Center staff updated the status of the species of skates in the Northeast using data from the Fall 2006 NEFSC bottom trawl survey. Fall survey data are used for determining stock status for six of the seven species in the skate complex (barndoor, clearnose, rosette, smooth, thorny, and winter). Spring survey data are used for determining the status of little skate.

Based on the updated analyses, overfishing is not occurring in any of the stocks. However, thorny and winter skate are now in an "overfished" condition. With this update, the status of winter skate changes from "not overfished" to "overfished," and from "overfishing is occurring" to "overfishing is not occurring." The status of the other species did not change with this update. Details are provided in the enclosures to this letter.

If you have any questions concerning these changes, please contact me.

Sincerely,

Nancy B. Thompson, Ph.D.
 Science and Research Director

Enclosure

cc: F. Serchuk
 J. Weinberg
 P. Rago
 K. Sosebee
 P. Kurkul (NERO)



cc: Council, USBK, AA (2/2)

Stock Status Update for Seven Skate Species based on NEFSC Survey Data through 2006

There are seven species of skates occurring along the North Atlantic coast of the United States: winter skate (*Leucoraja ocellata*), little skate (*L. erinacea*), barndoor skate (*Dipturus laevis*), thorny skate (*Amblyraja radiata*), smooth skate (*Malacoraja senta*), clearnose skate (*Raja eglanteria*), and rosette skate (*L. garmani*). Skates are currently managed under the New England Fishery Management Council's Skate Fishery Management Plan implemented in 2003. This FMP includes mandatory reporting by species, possession prohibitions on barndoor, thorny, and smooth skates, trip limits for winter skate, and a suite of measures in other fisheries management plans to aid in the recovery of the overfished skate species.

Indices of relative abundance (stratified mean weight per tow) have been developed from NEFSC bottom trawl surveys for the seven species in the skate complex, and these indices form the basis for determining stock status. All statistically significant NEFSC gear, door, and vessel conversion factors were applied to little, winter, and smooth skate indices when applicable. The strata sets used for each species are given in Table 1.

Biomass reference points are based on NEFSC survey data because reliable landings and discard information are not available by species. For all species except barndoor, the Bmsy proxy is defined as the 75th percentile of the appropriate survey biomass index time series for that species (Table 1). For barndoor skate, the Bmsy proxy is the average of 1963-1966 autumn survey biomass indices because the survey did not catch barndoor for a protracted period.

The fishing mortality reference points are based on changes in survey biomass indices. If the three-year moving average of the survey biomass index for a skate species declines by more than a critical percentage, then fishing mortality is assumed to be greater than Fmsy and overfishing is assumed to be occurring for that species. Table 1 lists the critical percentages by species.

For winter skate, the 2004-2006 NEFSC autumn average biomass index of 3.04 kg/tow is below biomass threshold reference point (3.23 kg/tow), and thus the species is overfished. The 2004-2006 index is 9% less than the 2003-2005 index; overfishing is not occurring as this decline is less than the 20% reference decline level.

For little skate, the 2004-2006 NEFSC spring average biomass index of 4.59 kg/tow is above the biomass threshold reference point (3.27 kg/tow), and thus the species is not overfished. The 2004-2006 index is lower than the 2003-2005 index of 5.65 by 19%; overfishing is not occurring as this decline is slightly less than 20%.

For barndoor skate, the 2004-2006 NEFSC autumn average survey biomass index of 1.17 kg/tow is above 50% of the Bmsy proxy ($1/2 \text{ Bmsy} = 0.81 \text{ kg/tow}$), which is the biomass threshold reference point. Thus, barndoor skate is not overfished, but is not yet rebuilt to Bmsy. The 2004-2006 average index is higher than the previous 3-year average index (2003-2005) of 0.96; therefore, overfishing is not occurring.

For thorny skate, the 2004-2006 NEFSC autumn average biomass index of 0.55 kg/tow is well below the biomass threshold reference point (2.20 kg/tow), indicating that the species is in an overfished condition. The 2004-2006 index is slightly lower than the 2003-2005 index by 1%; overfishing is not occurring as this is less than the reference decline of 20%.

For smooth skate, the 2004-2006 NEFSC autumn average biomass index of 0.19 kg/tow is above the biomass threshold reference point (0.16 kg/tow) and thus the species is not overfished. The 2004-2006 index is above the 2003-2005 index of 0.18; therefore, overfishing is not occurring.

For clearnose skate, the 2004-2006 NEFSC autumn average biomass index of 0.59 kg/tow is above both the biomass threshold reference point (0.28 kg/tow) and the Bmsy proxy (0.56 kg/tow), and hence the species is not overfished. The 2004-2006 index is 7% lower than the 2003-2005 index of 0.63. The change is less than 30% (the average CV), so overfishing is not occurring.

For rosette skate, the 2004-2006 NEFSC autumn average biomass index of 0.06 kg/tow is above both the biomass threshold reference point (0.015 kg/tow) and the Bmsy proxy (0.029 kg/tow). Thus, the species is not overfished. The 2004-2006 index is above the 2003-2005 index of 0.05, and therefore overfishing is not occurring.

	BARDOOR	CLEARNOSE	LITTLE	ROSETTE	SMOOTH	THORNY	WINTER
Survey (kg/tow)	Autumn 1963-1966 Offshore 1-30, 33-40	Autumn 1975-1998 Offshore 61-76, Inshore 15-44	Spring 1982-1999 Offshore 1-30, 33-40, 61-76, Inshore 1-66	Autumn 1967-1998 Offshore 61-76	Autumn 1963-1998 Offshore 1-30, 33-40	Autumn 1963-1998 Offshore 1-30, 33-40	Autumn 1967-1998 Offshore 1-30, 33-40, 61-76
1997	0.11	0.61	2.71	0.01	0.23	0.85	2.46
1998	0.09	1.12	7.47	0.05	0.03	0.65	3.75
1999	0.30	1.05	9.98	0.07	0.07	0.48	5.09
2000	0.29	1.03	8.60	0.03	0.15	0.83	4.38
2001	0.54	1.61	6.84	0.12	0.29	0.33	3.89
2002	0.78	0.89	6.44	0.05	0.11	0.44	5.60
2003	0.55	0.66	6.49	0.03	0.19	0.74	3.39
2004	1.30	0.71	7.22	0.05	0.21	0.71	4.03
2005	1.04	0.52	3.24	0.07	0.13	0.22	2.62
2006	1.17	0.53	3.32	0.06	0.21	0.73	2.48
2002-2004 3-year average	0.88	0.75	6.72	0.04	0.17	0.63	4.34
2003-2005 3-year average	0.96	0.63	5.65	0.05	0.18	0.56	3.34
2004-2006 3-year average	1.17	0.59	4.59	0.06	0.19	0.55	3.04
Percent change 2004-2006 compared to 2003-2005	+21.3	-6.8	-18.7	+16.8	+3.9	-1.0	-9.0
Percent change for overfishing status determination in FMP	-30	-30	-20	-60	-30	-20	-20
Biomass Target	1.62	0.56	6.54	0.029	0.31	4.41	6.46
Biomass Threshold	0.81	0.28	3.27	0.015	0.16	2.20	3.23
CURRENT STATUS	<u>Not Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>	<u>Not Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>	<u>Not Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>	<u>Not Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>	<u>Not Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>	<u>Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>	<u>Overfished</u> <u>Overfishing is</u> <u>Not Occurring</u>

Table 1.