



Status and Trends of Prey Fish Populations in Lake Michigan, 2010¹

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NOTE: The Lake Michigan Committee indicated that annual forage fish survey reports were not needed in 2011, given the effort spent towards State of the Lake. Nonetheless, we offered to still develop short summaries of our surveys given the historical interest in this report.

The Great Lakes Science Center has conducted lake-wide surveys of the fish community in Lake Michigan each fall since 1973 using standard 12-m bottom trawls towed along contour at depths of 9 to 110 m at each of seven index transects. All seven established index transects were completed in 2010. Below, we created Table 1 to summarize the 2010 lake-wide biomass results, and place them in context with the more recent (2005-2010) and long-term (1973-2004) averages.

Table 1. For the key prey species in Lake Michigan, summary of biomass [kilotonnes (kt), where 1 kt = 1000 metric tons], estimated by the bottom trawl between the 5- and 114-m depth contours. Columns indicate averages from 2010 only, 2005-2010, and 1973-2004. Standard error estimates for the 2010 estimates are provided in parentheses.

Common name	Genus species	2010	2005-2010	1973-2004
Alewife	<i>Alosa pseudoharengus</i>	6.41 (1.65)	8.77	37.96
Bloater	<i>Coregonus hoyi</i>	7.79 (2.85)	8.39	92.35
Rainbow smelt	<i>Osmerus mordax</i>	0.85 (0.32)	1.91	10.01
Deepwater sculpin	<i>Myoxocephalus thompsonii</i>	2.60 (0.68)	9.56	30.11
Slimy sculpin	<i>Cottus cognatus</i>	2.74 (0.59)	3.44	1.37
Ninespine stickleback	<i>Pungitius pungitius</i>	0.17 (0.04)	2.20	1.43
Round goby	<i>Neogobius melanostomus</i>	8.55 (4.91)	2.29	n/a

Overall summary

- ✓ Alewife biomass was the 2nd lowest biomass of the time series.
- ✓ Total prey fish biomass was the 3rd lowest biomass (29.1 kt) of the time series.
- ✓ Round goby biomass was the highest among the prey species, although it also had the highest variability.
- ✓ Slimy sculpin was the only species whose 2010 biomass exceeded that of its 1973-2004 average.
- ✓ Average bloater biomass has been increasing since 2008, although it remains <10% of its 1973-2004 average.
- ✓ Dreissenid biomass in 2010 (12.18 kt, SE=1.50) was intermediate to 2008 and 2009 estimates, but only 7% of the peak biomass that occurred in 2006, 2007 (164.9 kt, 179.8 kt, respectively).

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