Monitoring Disturbance To Waterfowl in an Upper Mississippi River National Wildlife and Fish Refuge Closed Area

Lisa A. Reid
US Fish and Wildlife Service, Upper Mississippi River National Wildlife and Fish Refuge, Winona, MN 55987

Introduction

In fall 2009, the Upper Mississippi River National Wildlife and Fish Refuge closed 897 hectares of Pool 4’s Big Lake to waterfowl hunting to provide minimal disturbance areas for migrating birds to rest and feed. Other users, including anglers and kayakers, were requested to voluntarily refrain from using the area after October 15. Refuge management identified a threshold of one major disturbance to waterfowl per day above which additional measures (such as allowing only electric motors) may be implemented. A major disturbance is defined as 1000 or more birds swimming or flying from watercraft. Monitoring was conducted for two years prior to the closure (2006 and 2008) and three years with the closure in place (2009 – 2011).

Objective

Determine if disturbance of waterfowl at the Big Lake Closed Area exceeds the threshold of one major disturbance per day.

Methods

- Observations made from a fixed point.
- Observation period each year started opening weekend of duck hunting season and ended at freeze-up.
- Hours of observation per season ranged from 114 to 251.
- Routes of all watercraft entering the Closed Area during observation periods were recorded on a map.
- Number of waterfowl disturbed (swimming or flying away) on approach of watercraft were recorded.
- Major disturbance defined as ≥1000 waterbirds affected by intrusion.
- Minor disturbance defined as 1-999 waterbirds affected by intrusion.
- See Kenow et al. (2003. Waterbirds. 26: 77-87) for full description.

Conclusion

- Following implementation of closed area and voluntary avoidance, restrictions at Big Lake in 2009, disturbance to waterfowl never exceeded the threshold of one major disturbance per day.
- Waterfowl use of the Big Lake Closed Area increased relative to pre-implementation levels.
- Continued monitoring may be necessary to ensure disturbance levels do not exceed the threshold.

Acknowledgements

Data collection, entry, and study coordination was conducted by numerous Refuge staff and volunteers. Aerial Waterfowl Surveys conducted by US Fish and Wildlife Service, MN Department of Natural Resources, and National Park Service. FWS Biologist B. Stemper calculated waterfowl use days from 2009 – 2011 based on FWS Aerial Waterfowl Surveys.

http://www.fws.gov/midwest/UpperMississippiRiver/