

Integrated Waterbird Management and Monitoring Initiative

2013 Annual Report

Background

The U.S. Fish and Wildlife Service (USFWS), the migratory bird Joint Ventures, the Flyway Councils, and the states strive to ensure that adequate resting and feeding habitat is available for waterbirds (waterfowl, shorebirds, and waders) as they migrate and winter through the Atlantic and Mississippi Flyways. These entities often make decisions at multiple spatial scales, ranging from land acquisitions across flyways to annual management decisions at local refuges or impoundments.

During the past year, the Integrated Waterbird Management and Monitoring (IWMM) initiative has achieved important milestones in the development of standardized monitoring protocols and decision support models for waterbird managers across the Atlantic and Mississippi flyways. Past and ongoing monitoring efforts by IWMM participants provide the foundation for the initiative's current and future success. This report briefly recaps monitoring efforts and observations by participants and provides an overview of contributions from monitoring data to IWMM achievements over the past year.

Monitoring Effort and Observations, Summer 2012 to Spring 2013

From 1 July 2012 to 30 June 2013, 115 participants collected monitoring data at 729 wetlands in the Atlantic and Mississippi Flyways. Of those 729 wetlands, 292 were in USFWS Region 3, 107 in Region 4, and 330 in Region 5. Approximately half of those wetlands are located on National Wildlife Refuges. This marks the second consecutive year in which participants conducted waterbird counts at > 700 wetlands and at the state level, the top three participants were Missouri (157 wetlands), Maryland (101), and New Jersey (85).

Participants conducted 13,702 waterbird counts and observed 11,952,338 individuals of 111 waterbird species. The most common waterfowl, wader, and shorebird species were snow goose, great blue heron, and semipalmated sandpiper, respectively (Table 1). The vast majority of individuals consisted of waterfowl (95%) with shorebirds (5%) and long-legged waders (<1%) rounding out the total. Table 2 reports average numbers of individuals detected per survey by guild, region, and season.



Jim Fenton

Sanderling

Monitoring and IWMM's Achievements

Over the past year, the IWMM staff used monitoring data collected by participants to improve and validate monitoring protocols, to develop reporting tools to aid manager decision making, and to inform a prototype local-scale decision support model. At the end of March 2013, the IWMM staff reconvened the Population and Habitat Monitoring Protocol Teams to consider protocol revisions to address logistical concerns

and to target critical information needs. Ongoing team discussions rely on feedback and pilot validation data provided by IWMM participants, and these data have led to important and significant changes being proposed. For example, validation data suggest that sub-dominant plants may be over-emphasized in current assessments, and the Habitat Monitoring Protocol Team has proposed a procedure to filter

Table 1. Three most abundant non-breeding species for each guild.

Waterfowl		Waders		Shorebirds	
Species	Count	Species	Count	Species	Count
Snow Goose	4,331,300	Great Blue Heron	19,419	Semipalmated Sandpiper	138,163
Mallard	2,789,112	Great Egret	18,909	Dunlin	127,836
Northern Pintail	841,303	White Ibis	11,006	Sanderling	64,622

Table 2. Average number of non-breeding individuals observed per ground count from 1 July 2012 to 30 June 2013. Counts are stratified by guild, region, and period. Two periods were distinguished: summer-fall (SF) and winter-spring (WS). Averages are rounded to the nearest whole number.

USFWS Region	Waterfowl		Waders		Shorebirds	
	SF	WS	SF	WS	SF	WS
3	3409	2425	11	6	51	29
4	624	2200	63	74	58	84
5	598	510	17	12	245	289

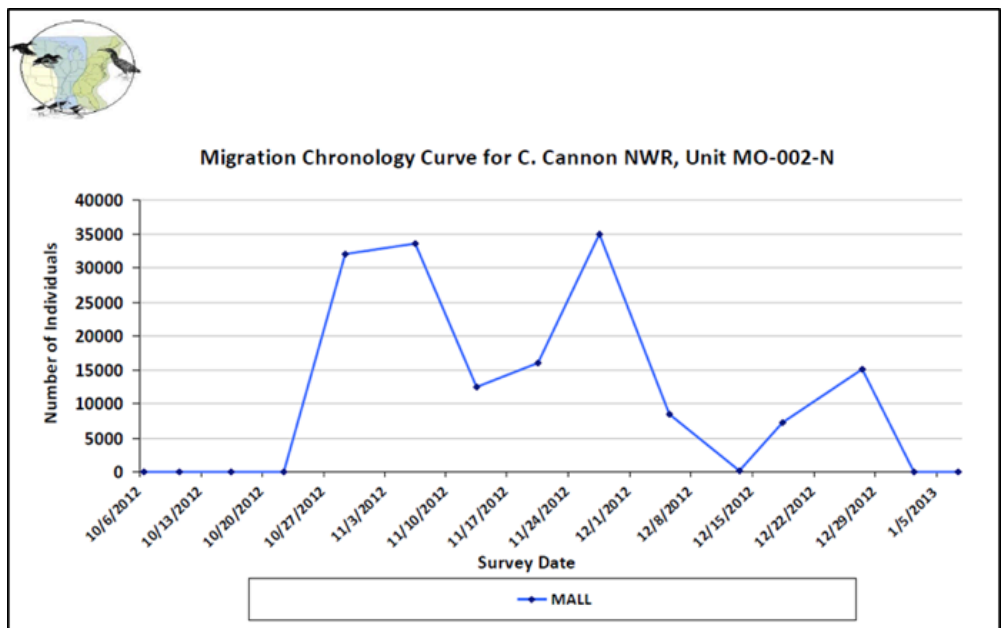
these sub-dominants from assessments. This improvement will enable better characterization of wetland importance for waterfowl.

Since the inception of the initiative, IWMM staff have continued to improve the data summary and reporting features of the Microsoft Access database. Based on requests from participants, IWMM staff recently developed and released two new reporting tools, migration curve and bird-use days (BUDS) tools, for the Access database (Figure 1). Staff relied on pilot data collected by participants to build and test these tools prior to their release in May 2013. Feedback from participants indicates that these tools are already being used to create output for refuge reports summarizing waterbird use patterns. Going forward, the IWMM will improve these tools by adding new features (e.g., reporting BUDS per unit area for wetlands).

Discussions with waterbird biologists revealed a desire for a decision support model that can identify annual decisions that lead to the greatest benefit for waterbirds over 10- to 15-year planning horizons. During April 2013, the IWMM Technical Team completed a prototype for a local model that addresses this request for support. This model uses data collected by participants to link annual management actions to waterbird responses to changing habitat conditions within wetlands. This model can identify annual decisions that will create the greatest long-term benefit for waterbirds even if they do not offer the greatest short-term payoff. The continued development and eventual release of this model is dependent on continued data collection by IWMM participants. These additional data will help to refine modeled relationships among management actions, habitat conditions, and waterbird use, allowing optimal long-term decisions to be identified.

Value of Ongoing Monitoring

The future success and evolution of the IWMM depends on continued monitoring efforts by its participants. IWMM Science Team members are grateful for past monitoring efforts that have helped the IWMM initiative evolve to its current stage. As the past year has shown, our participants already benefit from the initiative's end products (e.g., reporting tools), and over the coming year, IWMM looks forward to releasing improved protocols, extending our reporting tools, and providing overviews of in-progress decision support models.



Start Date	End Date	Bird Use-Days
10/1/2010	1/15/2011	143,837.50
10/1/2011	1/15/2012	2,281,713.50
10/1/2012	1/15/2013	1,186,188.50

Figure 1. New reporting tools added to the IWMM's Access database within the last year. A migration curve tool allows users to visualize the distribution of counts across time for species, places, and periods of their choosing (top). A bird use-days tool allows users to calculate use-days for species (or guilds), places, and periods of their choosing (bottom).

The IWMM Science Team will meet in November to review the project accomplishments and prioritize future tasks. The following are topics that have been identified as important next steps by IWMM staff and will be discussed: (1) continued development and validation of the flyway model and proposed timelines, (2) continued development and testing of the local model and proposed timelines, (3) revision of the protocols to meet the proposed NWRS Inventory and Monitoring Policy, (4) development of a central database for housing data collected under the IWMM protocols, (5) submission of several manuscripts to peer reviewed journals, (6) development of a communications strategy, and (7) short- and long-term administration, coordination, and staffing needs.

For additional information or questions contact:

More information
Project Website:
iwmmprogram.ning.com

Federal Relay Service
for the deaf and
hard-of-hearing
1 800/877 8339

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