

IWMM – A Complete Package for Waterbird Monitoring and Management



February 2020



What is IWMM?

- Is it a program or protocol?
 - ❑ Both; national protocol plus program support through I&M
- Is it local or regional?
 - ❑ Designed for both; more participation needed for regional analyses/inference
- Is it breeding or non-breeding?
 - ❑ Target is non-breeding but can also be used year-round
- Is it waterfowl or waterbirds?
 - ❑ Designed for migratory waterbirds, which includes waterfowl, waders, and shorebirds
- Is it bird counts or habitat conditions?
 - ❑ Both, plus management actions; collecting full protocol is important

IWMM Goals

- Standardize data collection
- Inform non-breeding habitat needs
- Facilitate adaptive management
- Provide helpful tools





Where does IWMM fit?

- Housed within the I&M branch of the NWRS
- Contributes to overall I&M effort
- Provides “package” for efficient data collection
 - Currently utilized by 64 participants in 6 regions
- I&M has major IMP initiative underway
 - All stations develop IMP for (at least) priority ROC by 2022
- Opportunity for IWMM to assist IMP implementation
 - Particularly for stations with waterbirds as priority ROC

What does IWMM offer?

U.S. Fish and Wildlife Service

INTEGRATED WATERBIRD Management & Monitoring

Home About Our Science Reports & Publications

Alaska
11

Columbia-Pacific Northwest
9

California-Great-Basin
10

Upper Colorado-Basin
7

Lower Colorado-Basin
8

Missouri-Basin
5

Arkansas-Rio Grande-Texas
6

Pacific Islands
- Hawaii 12
- Guam
- Commonwealth of the Northern Mariana Islands
- American Samoa

U.S. Department of the Interior, U.S. Geological Survey
Map date: July 20, 2018

Version 2.0

Seen in Past 7 Days

- NONE - Surveyed No Birds (0)
- GWFG - Greater White-fronted Goose (135)
- CANG - Canada Goose (407)
- TRUS - Trumpeter Swan (4)

U.S. DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service

NATIONAL WILDLIFE REFUGE SYSTEM



National Protocol

U.S. Fish and Wildlife Service
U.S. Department of the Interior



National Wildlife Refuge System

National Protocol Framework for the Inventory and Monitoring of Nonbreeding Waterbirds and their Habitats

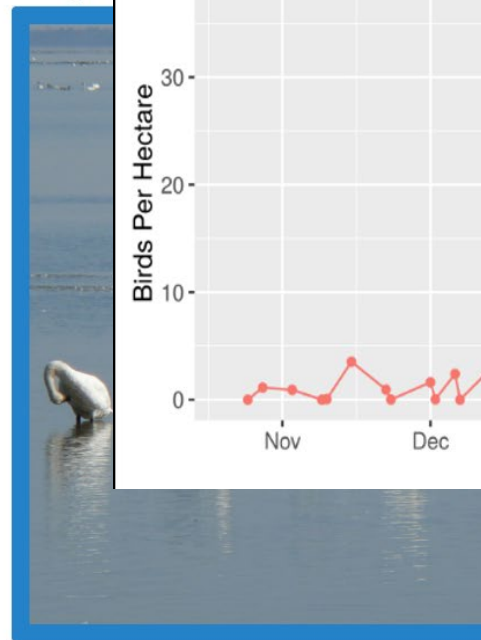
An Integrated Waterbird Management and Monitoring Initiative (IWMM) Approach



Online Database

Migration Curve for Mattamuskeet NWR and Starting Year 2011 for Waterfowl

Proje



Seen in Past 7 Days

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- CANG - Canada Goose (407)
- TRUS - Trumpeter Swan (4)

Data Sharing Level

RAW

Set Unset Save

Begin Date 2011-02-22 **End Date** 2020-02-12

Show 100 entries

Search:

| Date | Name | Protocol | Visit | Count | Sharing Level | Note | Batch | Details |
|------------|-----------|-------------------|-------|--------|-------------------|------------|-------|------------------------------------|
| 2020-02-07 | MO-010-EP | IWMM_GroundSurvey | | 686 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-07 | MO-010-CP | IWMM_GroundSurvey | | 70305 | AVAILABLE Level 5 | 2 coyotes. | | open in Biologists |
| 2020-02-07 | MO-010-LS | IWMM_GroundSurvey | | 0 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-07 | MO-010-5W | IWMM_GroundSurvey | | 0 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-07 | MO-010-5E | IWMM_GroundSurvey | | 0 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-07 | MO-010-RP | IWMM_GroundSurvey | | 0 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-07 | MO-010-4M | IWMM_GroundSurvey | | 0 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-07 | MO-010-3M | IWMM_GroundSurvey | | 0 | AVAILABLE Level 5 | None | | open in Biologists |
| 2020-02-11 | MO-010-EP | IWMM_GroundSurvey | | 340687 | RAW | None | | open in Biologists |
| 2020-02-11 | MO-010-CP | IWMM_GroundSurvey | | 586 | RAW | 1 coyote | | open in Biologists |
| 2020-02-11 | MO-010-LS | IWMM_GroundSurvey | | 24 | RAW | None | | open in Biologists |

Showing 7,001 to 7,058 of 7,058 entries

IWMM Mobile App (IMA)





IMA purpose and need

- Staff time is increasingly limited, efficiency is needed
 - ❑ IMA delivers by reducing the steps required to collect and upload data.
- Sources of error can undermine data quality and use
 - ❑ IMA delivers by standardizing data collection,
 - ❑ checking that required fields are complete,
 - ❑ restricting values to valid options.
- Apps and mobile devices are powerful tools for conservation
 - ❑ IMA delivers by leveraging available technology to gather data and inform decisions.

IWMMprogram.org

INTEGRATED WATERBIRD Management & Monitoring

*A continental landscape where non-breeding waterbirds
have the right habitat, in the right place, at the right time.*

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History & Timeline

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INTEGRATED WATERBIRD Management & Monitoring

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From Idea to Implementation

The idea for an integrated waterbird management and monitoring program was developed by scientists who recognized several needs for the effective conservation of waterbirds. These needs included a structured process for decision-making useful to multiple stakeholders across the landscape, and management of wetland habitats coordinated and optimized given multiple objectives. To explicitly address these needs, management for waterbird populations at multiple spatial scales, several workshops were held between 2007 and 2009. These workshops brought together federal and state agencies and NGOs, and gave rise to an integrated approach to the management and monitoring of non-breeding waterbirds in the Mississippi and Atlantic Flyways.

IWMM Development Timeline

Idea for IWMM originates through a series of workshops focused on waterbird management, allocating regional resources and ensuring strategic habitat protection.

2009

- A Science Team is formed to prioritize information needs, facilitate decision-making, and coordinate management approaches.
- Sub-teams are formed to develop modeling approaches, monitor progress, and address communications needs.
- View the full report.

Reports & Publications

Newsletters

- 2019 Fall News
- 2019 Summer News
- 2017 Fall News
- 2017 Spring News
- 2016 Winter News
- 2016 Fall News
- 2016 Spring News
- 2015 Fall News
- 2015 Summer News

IWMM Publications

Migration Model: A generalizable energetics-based model of avian migration. *Ecological Applications*, 2016

By: Eric V. Londorf, Wayne E. Thogmartin, Sarah Jacobi, Jorge Coppen Heglund, Rex Johnson, Tim Jones, Kevin P. Kenow, James E. Lyons, Kirs

» Publication summary

Local Abundance Modeling: Evaluating predictors of local dabbling duck abundance. *Wildfowl*, 2015

By: Kevin Aagaard, Shawn M. Crimmins, Wayne E. Thogmartin, Brian Ta

» Publication summary

Support

Overview

For the past two years, the IWMM program has emphasized the development of documentation and tools to help participants achieve success in applying the IWMM protocol. Our goal has been to provide a "complete package" that offers users a suite of information and processes to:

- 1) quickly collect field data that adheres to the IWMM protocol.
- 2) efficiently transfer IWMM data for storage and sharing in the AKN data management system, and
- 3) provide adequate supporting documentation and training resources.

In addition, we have developed a framework of IWMM representatives that have agreed to provide instruction and support for participants at the regional level.

Training Resources

Fully captioned training videos are provided for new and potential participants to learn more about the vision and organization of IWMM, to understand the structure and operation of the online database, and to gain experience with our newly developed Survey123 mobile app. Recorded demonstrations of basic user flow are included for both the app and database in the video files below:

- IWMM Overview and Mobile App Set-up
- Mobile App 1.0 Live Demonstration
- Mobile App 2.0 Live Demonstration (no captions)
- Online Database Overview and Sharing Levels
- Reviewing and Promoting Data
- Live Demonstration including Veg Survey and Mgmt Actions

Search ...

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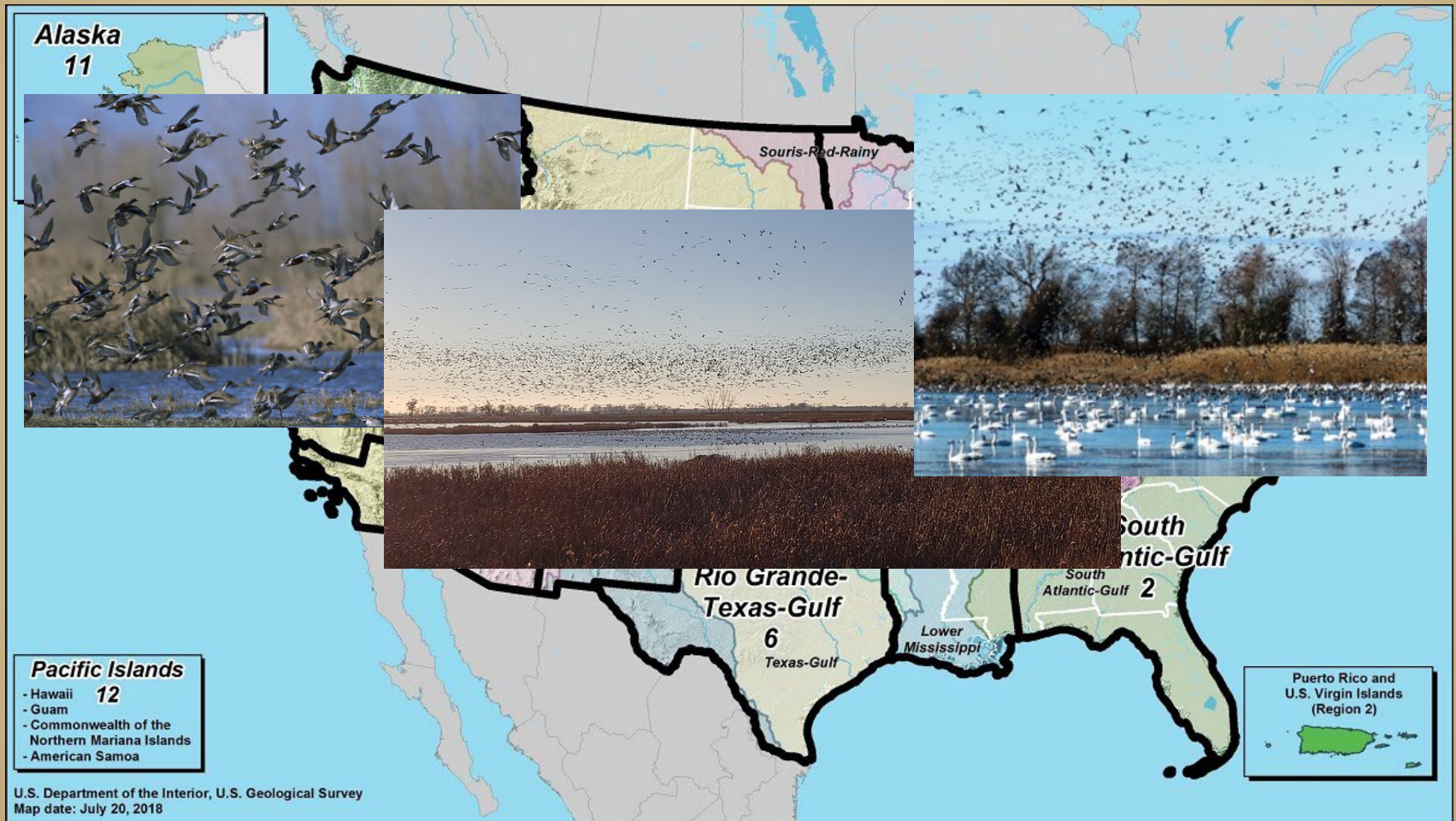
Sign up for our Newsletter!

Your email address

Submit A Question

If you have a technical question please send us a message and it will be posted. Once posted, use the

Regional Representatives



Dedicated Project Support

Staff resources available through NRPC

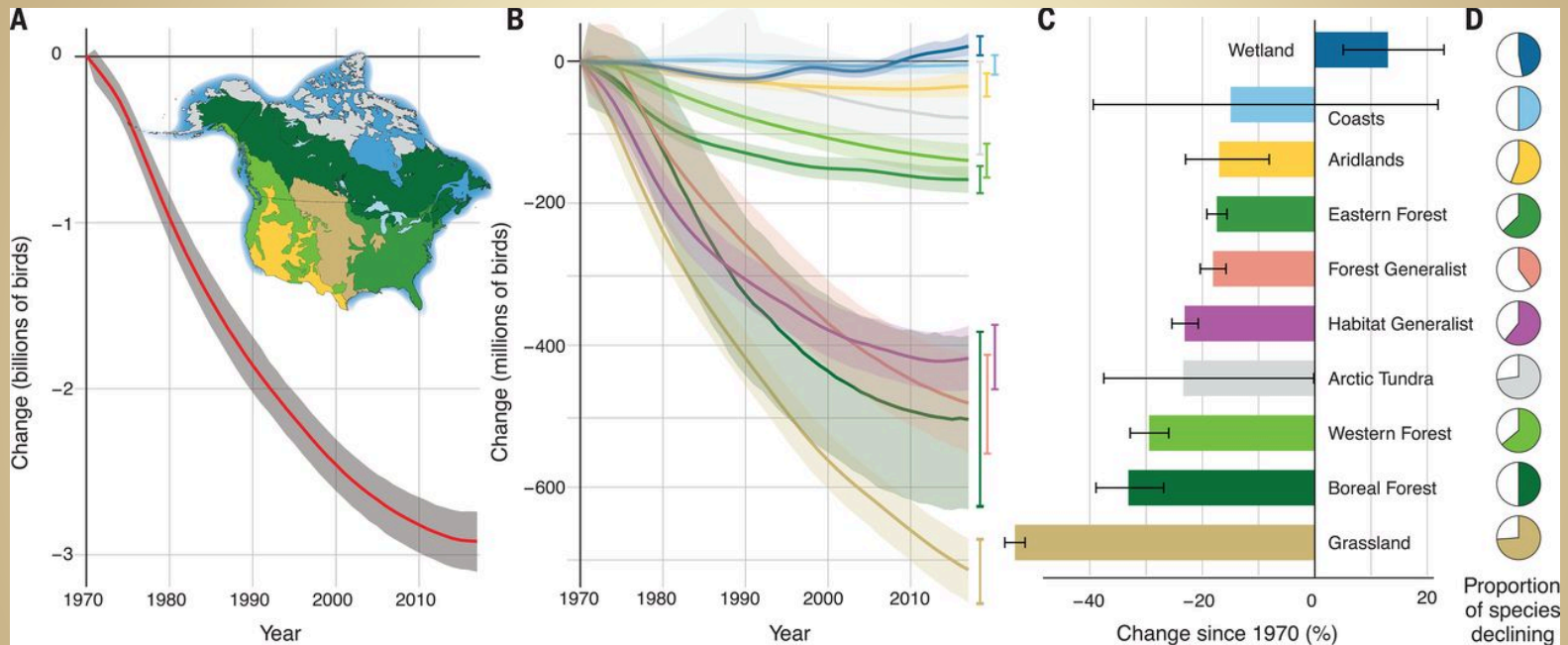
- Project creation and permissions
- Data maintenance and reporting
- Technical resources and support for mobile app and database
- Protocol guidance and updates



NATIONAL
WILDLIFE
REFUGE SYSTEM



Why should I care?



Source: K. V. Rosenberg, et al. Decline of the North American Avifauna. *Science* **366**, 120-124 (2019)



Data Utility

Layer 1: Bird Community

Layer 2: Bird Community and Habitat Composition

Layer 3: Bird Community, Habitat Composition, and Management Actions



Data Utility

Layer 1: Bird Community

Shows the value of habitat for conservation purposes

- Quantitative measure of natural resource value for surveyed areas
- Conservation and use implications (including TRACT program)



Data Utility

Layer 2: Bird Community and Habitat Composition

Documents changes in habitat and impact on bird numbers

- Water levels, cover types, vegetation density
- Informs reactive management decisions both on- and off-site



Data Utility

Layer 3: Bird Community, Habitat Composition, and Management Actions

Informs adaptive management in a variety of scenarios

- Flooding, mowing, spraying, burning, etc.
- Bird and habitat data used to understand proactive management effects



How do I start?

- Protocol review is encouraged

<https://iwmmprogram.org/protocols-data-forms/>

- Create project and sampling units – online form is available
- Sign up with ArcGIS Online (AGOL) if you want to use the app
- View the IWMM database and mobile app (optional) training webinars
- Start collecting data!



Resources/Help

Supporting documents – IMA User's Guide & FAQ, Quick Help for database, training videos, and much more!

<https://iwmmprogram.org/support/>

IWMM Project Support

Inventory and Monitoring Data Manager

IM_DataManager@fws.gov

IWMM contacts by FWS Region

<https://iwmmprogram.org/contacts/>