Part 1: A Weather Severity Index for estimating influences of climatic variability on waterfowl populations, waterfowl habitat, and hunter opportunity and demographics.

Presenter
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WEBINAR FOCUS – In 2010, we developed a Weather Severity Index (WSI; i.e., climate envelopes) to predict autumn-winter migration by mallards for use in annual and longer-term conservation and management strategies for waterfowl in North America (e.g., timing of wetland flooding and setting hunting season dates, respectively). Survey data used in our analysis identified mallards, but combined all other dabbling ducks, reducing the utility of our results to determine potential changes in waterfowl community structure and differences in latitudinal distributions of dabbling ducks during the non-breeding season. During this webinar, we will be providing an update on development of Weather Severity Indices for additional species of dabbling ducks (American black duck, American wigeon, gadwall, blue-winged teal, green-winged teal, northern shoveler and northern pintail). We also will be debuting our open-access web-based tool for querying and visualizing WSI data. The open-access web-based tool contains daily WSI data from 1979 – 2012, September – March, which can be downloaded as Excel files or viewed on a scrolling map. The WSI tool also includes various basemaps for visualizing when dabbling ducks were either expected to be increasing or decreasing in abundance at particular locations (e.g., wetlands and lakes), jurisdiction boundaries that can be selected (JVs, LCCs, flyways, states, and duck hunting zones within states), and capacity to download raw data in NETcdf format. Drop-down menus allow users to select specific dates, ducks species, and jurisdiction for data download (e.g., 1 Nov – 30 Dec 2000, Mallard, south-central Illinois). The open-access web-based tool is meant to enable a diversity of stakeholders to develop climate envelope models for estimating influences of climate change on waterfowl populations, waterfowl habitat, and hunter opportunity and demographics. We are developing 21st century projections of winter severity through dynamical downscaling, using a high-resolution regional climate model interactively coupled to a lake model for the Great Lakes. These WSI projections will be incorporated into the waterfowl migration tool for assessing potential impacts on duck abundance, distribution, and migration.
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About the presenters

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A graduate of Paul Smith’s College, SUNY-College of Environmental Science and Forestry, Southeast Missouri State University, and the University of Western Ontario and previously employed by the Maine Department of Inland Fisheries and Wildlife and Mississippi State University, Dr. Schummer has broad interests in wildlife science and natural resources conservation. His specialization is the study and conservation of ducks, geese, and swans with a current research focus on effects of conservation and management practices on wetland habitats and waterfowl, influences of climatic variability on annual distributions of waterfowl during the non-breeding season, cross-over effects of non-breeding season weather and habitat conditions on breeding performance in waterfowl, impacts of environmental contaminants on Great Lakes waterbirds, behavioral response of waterfowl to disturbance, and human dimensions of waterfowl hunting.

Michael Notaro
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Dr. Michael Notaro is a Senior Scientist and Associate Director of the Nelson Institute Center for Climatic Research at the University of Wisconsin-Madison. He received his PhD in Atmospheric Sciences at the State University of New York at Albany in 2002. His expertise includes regional and global climate modeling, land-atmosphere interactions, lake-effect snow, dust storms, Great Lakes hydrology, and climate change impacts on ecosystems.