

ACES 2016 Pre-Conference Workshop

Monday, December 5, 2016 | 8:30am - 12:00pm

Title: *National Biodiversity Metrics & Mapping Workshop*

Description: The U.S. Environmental Protection Agency (EPA) has created a partnership with other Federal agencies, academic institutions, and Non-Governmental Organizations (NGO) to develop the *EnviroAtlas* (<https://www.epa.gov/enviroatlas>), an online national Decision Support Tool that allows users to view and analyze the geographical description of the supply and demand for ecosystem services, as well as the drivers of change. As part of the *EnviroAtlas*, an approach has been developed to quantify and map various habitat metrics within an ecosystem services framework that are representative of vital functions and support services such as A) Biodiversity Conservation; B) Food, Fiber, and Materials; and C) Recreation, Culture, and Aesthetics (<http://case.nmsu.edu/CASE/ES/Biodiversity%20Metrics%20Fact%20Sheet.pdf>). Once complete, the project is anticipated to include 1699 terrestrial vertebrate species for the conterminous U.S. (684 bird spp., 434 mammal spp., 322 reptile spp., and 259 amphibian spp.).

Goals: The purpose of the workshop was to get direct feedback from wildlife professionals, natural resource planners, and environmental decision makers regarding the selection and deployment of a core set of National Biodiversity Metrics. We issued an open invitation to our peer scientists to gather input regarding proposed terrestrial vertebrate biodiversity metrics that can measure and map biodiversity conservation at the national, regional, and local scales.

Summary: The workshop organizers reviewed a series of multi-scale national metrics that can be clustered into ecosystem service-relevant categories that reflect elements of A) Biodiversity Conservation; B) Food, Fiber, and Materials; and C) Recreation, Culture, and Aesthetics which represent 3-of-the-7 broad societal benefit categories covered by the *EnviroAtlas*. Each of about 2 dozen national biodiversity metrics were publically displayed for the first time and discussed among the workshop attendees which included a number of professionals affiliated with the U.S. federal government, U.S. and Canadian universities, NGOs, and private citizens. The workshop was opened for debate to solicit comments to edit, delete, or to include other metrics. Overall, the group agreed that the draft list was satisfactorily adequate to address biodiversity for the nation at multiple scales relative to the ecosystem service benefit categories included within the *EnviroAtlas*. Additionally, the workshop attendees suggested that application to a real world problem solving situation, i.e. a case study, would be useful in the future evolution of the metrics to demonstrate the utility of the approach for environmental decision-making.

Presentations:

- **Welcome and Introductions/Objectives of the Workshop**
(William Kepner, USEPA/ORD & Ken Boykin, NMSU)
- **Overview to the EnviroAtlas**
(<https://www.epa.gov/enviroatlas>) as a national ecosystem services decision tool.
(Anne Neale, USEPA/ORD)
- **Background on Deductive Habitat Models (terrestrial vertebrates) and Metric Construction**
(Ken Boykin, NMSU & Alexa McKerrrow, USGS)
- **Preliminary National Metrics**
(William Kepner, USEPA/ORD & Ken Boykin, NMSU)
- **Open Discussion and User Feedback**
(William Kepner, USEPA/ORD; Ken Boykin, NMSU; Anne Neale, USEPA/ORD; & Alexa McKerrrow, USGS)

Workshop Organizers

William G. Kepner¹, Kenneth G. Boykin², Anne C. Neale³, and Kevin J. Gergely⁴

¹ U.S. Environmental Protection Agency, Office of Research and Development, 944 E. Harmon Avenue, Las Vegas, Nevada, USA 89119 (kepner.william@epa.gov or 702/798-2193).

² New Mexico Cooperative Fish and Wildlife Research Unit, Department of Fish, Wildlife, and Conservation Ecology, New Mexico State University, 2980 S. Espina St., 124 Knox Hall, PO Box 30003, MSC 4909, Las Cruces, New Mexico, USA 88003 (kboykin@ad.nmsu.edu or 575/646-6303).

³ U.S. Environmental Protection Agency, Office of Research and Development, 109 TW Alexander Dr., Mail Stop D321B, Research Triangle Park, North Carolina, USA 27709 (neale.anne@epa.gov or 919/541-3832).

⁴ U.S. Geological Survey, Gap Analysis Program, 970 Lusk Avenue, Boise, Idaho, USA 83706 (gergely@usgs.gov or 208/426-5219).