

The National Stream Internet Project – Workshop Participants

1. Chris Jordan (<u>chris.jordan@noaa.gov</u>) is the Program Manager of the Mathematical Biology and Systems Monitoring Program in the Conservation Division Biology group at NOAA's Northwest Fisheries Science Center. He run several regional fish and stream habitat monitoring programs in the Columbia River basin for NOAA and the Bonneville Power Administration - CHaMP (Columbia River Habitat Monitoring Program) and ISEMP (Integrated Status and Effectiveness Monitoring Program.

Additional details are at these websites:

Northwest Fisheries Science Center: <u>http://www.nwfsc.noaa.gov/index.cfm</u> ISEMP: <u>http://www.isemp.org/</u> CHaMP: <u>https://www.champmonitoring.org/</u>

2. Jeff Kershner (jkershner@usgs.gov) is the Director for the USGS Northern Rocky Mountains Science Center and an affiliate faculty at Montana State University where he oversees a research group of biologists and ecologists that address natural resource issues including global climate change, fire ecology, fish and wildlife ecology, plant ecology, and the conservation of endangered species. For most of his career, he's worked on a variety of issues that are related to the effects of land management practices on aquatic and riparian resources. His past research includes work on native salmonids in Idaho, Utah and Wyoming, explores various aspects of aquatic and riparian resource monitoring, and looks at fire effects on streams and riparian areas.

Additional details are at these websites:

Scientist website: <u>http://www.nrmsc.usgs.gov/staff/jkershner</u> Northern Rocky Mountain Science Center: <u>http://www.nrmsc.usgs.gov/</u>

3. Al Rea (ahrea@usgs.gov) currently is the co-manager of the National Hydrography Dataset (NHD) for the U.S. Geological Survey (USGS). Prior to this assignment, he spent 25 years in the USGS Water Resources Mission Area, working in the Oklahoma City, Oklahoma and Boise, Idaho offices. He was a member of the development teams for the USGS StreamStats web application, and the joint USGS-EPA NHDPlus (1:100,000-scale). He currently is leading the effort to develop NHDPlus for the High-Resolution NHD. He also is a co-chair of the Subcommittee on Spatial Water Data (SSWD), a subcommittee under both the Federal Geographic Data Committee (FGDC) and Advisory Committee on Water Information (ACWI). The SSWD has been tasked to develop an Open Water Data Infrastructure (OWDI) for the nation.

Additional details are at these websites:

National Hydrology Dataset: <u>http://nhd.usgs.gov/</u> National Hydrology Dataset-Plus: <u>http://nhdplus.com/</u> The StreamStats Program: <u>http://streamstats.usgs.gov/</u>

4. Richard Mitchell (<u>Mitchell.Richard@epa.gov</u>) is a Biologist with the USEPA and Project Lead for National Rivers and Stream Survey (NRSA), which is part of USEPA's National Aquatic Resource Surveys (NARS). His background in aquatic ecosystems has ranged from studying the population genetics of an endemic fish species to assessing the stream restoration efforts in small headwater streams. Much of this past experience has focused on understanding the influence of

anthropogenic disturbance on aquatic organisms, primarily aquatic macroinvertebrates and fish. His current work with the NARS program has focused on developing biological multimetric indices for both stream and lake ecosystems, at both the national and regional scale of the United States.

Additional details are at this website:

National Aquatic Resource Surveys: http://water.epa.gov/type/watersheds/monitoring/aquaticsurvey_index.cfm

5. Gary Whelan (whelang@michigan.gov) is a Program Manager for the Michigan Department of Natural Resources and oversees the Division's Research Program and a Habitat Management Unit. Additionally, he is the National Fish Habitat Partnership Science and Data Committee Cochair and has been involved with NFHP since its inception in 2004. His work has ranged from working on fish parasites and other pathogens to stream fish ecology to evaluating and developing mitigative measures for large-scale hydropower projects to managing complex state fish hatchery and fisheries research portfolios. He is particularly interested in the fisheries management implications of landscape fish habitat analysis and how managers can put this information to work to improve our Nation's aquatic habitat.

Additional details are at this website:

National Fish Habitat Partnership: www.fishhabitat.org

6. Professor Dave Cowley (dcowley@nmsu.edu; 575- 646-1346) is an aquatic ecologist and population geneticist in the Department of Fish, Wildlife & Conservation Ecology at New Mexico State University and in the interdisciplinary Program in Molecular Biology. Dave has broad interests in fisheries, population genetics, and conservation ecology. His research has investigated population genetic structure in Rio Grande cutthroat trout and more recently in tadpole shrimp in desert ponds. In collaboration with doctoral student Sabela Lois, he recently co-authored work in the Journal of Biogeography that used the geostatistical mixed model for spatial stream networks (SSN) to analyze abundance of the freshwater pearl mussel in rivers of Galicia in northwest Spain. He has additional work in progress to apply SSN analyses in a population genetics context.

Additional details are at these websites:

ResearchGate: <u>https://www.researchgate.net/profile/David_Cowley3/info?ev=prf_info</u> Google Scholar: <u>http://scholar.google.com/citations?hl=en&user=T_RMvtYAAAAJ</u> Website: <u>http://web.nmsu.edu/~dcowley/index.html</u>

7. Dana Infante (<u>infanted@anr.msu.edu</u>) is an Associate Professor in the Department of Fisheries and Wildlife at Michigan State University. Her research expertise is in the area of aquatic landscape ecology, and she has served as PI on multiple large-scale projects to understand landscape influences on river habitats and fishes. Examples include a national assessment of river habitats for the National Fish Habitat Partnership (<u>www.fishhabitat.org</u>), a national Aquatic GAP Analysis to broadly characterize conservation needs of stream fishes, and a regional effort to assess current and future threats to streams in the eastern US (<u>https://necsc.umass.edu/projects/decisions-support-mapper-conserving-stream-fish-habitats-neccsc-region</u>). Through these projects, she has also been involved in efforts compiling and managing large datasets to understand influences on river systems, and accomplishments include development of a national characterization of stream network fragmentation metrics by large dams developed from the National Anthropogenic Barrier Dataset

(https://www.sciencebase.gov/catalog/item/512cf142e4b0855fde669828) and a project to

assemble information on stream temperature data from 22 states (<u>http://necsc.umass.edu/projects/stream-temperature-inventory-network-and-decision-support-metadata-mapper-evaluating-resour</u>).

8. Dan Magoulick (danmag@uark.edu; 479-575-5449) is the Assistant Unit Leader of the Arkansas Cooperative Fish and Wildlife Research Unit and Professor in the Department of Biological Sciences at the University of Arkansas where he does research, mentors graduate and undergraduate students, teaches courses in Biometry, Conservation Biology and Fish Ecology, and provides service to the university and cooperators. His research focuses on factors affecting population and community dynamics of freshwater fish and invertebrates, especially the role of disturbance in community dynamics, impacts of introduced species in aquatic ecosystems, and aquatic ecosystem conservation. He and his students have recently been studying, 1) classification of Arkansas flow regimes and developing flow-ecology relationships and environmental flows assessment for the Ozark-Ouachita Interior Highlands region, 2) quantification of hydrologic alteration and relationships to biota in Arkansas streams, 3) hindcasting and forecasting effects of land use, climate change and angler harvest on smallmouth bass growth and survival at the southern edge of their range, 4) effects of drought, land use, and predation on Ozark stream food web dynamics, 5) trait composition of fish assemblages along hydrologic gradients, 6) factors affecting distribution and abundance of the endangered yellowcheek darter, 7) distribution, population genetics and factors affecting imperiled coldwater crayfish, 8) effects of drought and episodic drying on stream fish and invertebrate population and community dynamics, 9) models to forecast effects of potential climate change scenarios on fish refuge use and species persistence, and 10) the potential spread of invasive species and mechanisms of displacement on native species.

Additional details are at these websites:

U of A homepage: <u>http://biology.uark.edu/1397.php</u> Research Gate profile: <u>https://www.researchgate.net/profile/Daniel_Magoulick</u>

9. Seth Wenger (<u>sethwenger@fastmail.fm</u>) is the Director of Science for the University of Georgia River Basin Center and an assistant professor with the Odum School of Ecology. He works in the areas of landscape ecology, conservation biology, climate impacts, urban ecology and quantitative ecology with a focus on freshwater organisms, particularly fish. He is a member of the NorWeST team and frequently collaborates with researchers at Trout Unlimited and the FS Rocky Mountain Research Station. He is currently developing new methods for broad-scale population viability analysis for various western trout species and other organisms.

Additional details can be found at these websites:

River Basin Center: <u>www.rivercenter.uga.edu</u> Google Scholar profile: <u>http://scholar.google.com/citations?user=GhojBFIAAAAJ&hl=en</u> NorWeST: <u>http://www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html</u> Western US Stream Flow Metrics: <u>http://www.fs.fed.us/rm/boise/AWAE/projects/modeled</u> stream flow metrics.shtml

10. Joel H. Reynolds (joel_reynolds@fws.gov, 907-786-3914) is Science Coordinator for the Western Alaska Landscape Conservation Cooperative (westernalaskalcc.org), where he works with partner entities, field and research scientists, local stakeholders, and the region's land and resource managers to address shared, priority science and information needs related to climate change and other landscape-scale stressors in western Alaska. For the last two years the LCC has focused much of its activities on the development and promotion of a voluntary participation freshwater temperature monitoring program across Alaska and Northwest Canada (link below).

Joel has 20+ years experience as an applied statistician in environmental & ecological sciences and natural resource management, working on topics ranging from tropospheric ozone, seabirds, and salmon ecology to oil spill impacts and water quality monitoring.

Additional details can be found at these websites:

WA LCC Stream & Lake Temperature Monitoring Workshop (Nov 2012): https://westernalaskalcc.org/science/SitePages/streamlakewkshp.aspx

WA LCC freshwater temperature projects:

https://westernalaskalcc.org/projects/Project%20Documents1/2014%20WALCC%20Project %20Summary.pdf

Google Scholar: <u>http://scholar.google.com/citations?user=BGiFJRQAAAAJ&hl=en</u> Research Gate: <u>https://www.researchgate.net/profile/Joel_Reynolds</u>

11. David Nagel (dnagel@fs.fed.us; 208.373.4397) is a GIS Analyst with the U.S. Forest Service, Rocky Mountain Research Station, Aquatic Sciences Lab in Boise, Idaho. He develops and oversees technical workflows for large geospatial endeavors to support fish, stream and watershed research across the western U.S. He also focuses on creating algorithms that link physical spatial phenomenon with aquatic biological systems.

Additional details can be found at these websites:

Valley confinement algorithm:

http://www.fs.fed.us/rm/boise/AWAE/projects/valley_confinement.shtml

Stream Temperature Modeling and Monitoring

http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temperature.shtml NorWeST: http://www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html

12. Sean Finn (sean_finn@fws.gov; 208-426-2697) is Science Coordinator for the Great Northern Landscape Conservation Cooperative (GNLCC; greatnorthernlcc.org). His primary duties are to understand, align, and expand conservation science and science-delivery among the 30+ organizations actively participating in the Cooperative. Finn and colleagues are implementing GNLCC Strategic Conservation Framework and the GNLCC Science Plan which describe the process for prioritizing and acquiring needed science for landscape-scale stressor (climate change, land-use change, and invasive species) effects on 31 conservation targets (ranging from grizzly bear to sage-grouse and including key ecosystem processes like aquatic connectivity and shifting fire regimes). He also develops and manages collaborative data management and analysis platforms, notable LC MAP.

Additional details can be found at these websites:

Great Northern Landscape Conservation Cooperative: <u>http://greatnorthernlcc.org</u> GNLCC Strategic Conservation Framework:

<u>http://greatnorthernlcc.org/sites/default/files/documents/gnlcc_framework_final_small.pdf</u> GNLCC Science Plan: <u>http://greatnorthernlcc.org/node/528</u>

LC MAP: <u>https://www.sciencebase.gov/catalog/?community=LC+MAP+-</u> +Landscape+Conservation+Management+and+Analysis+Portal

13. Lucinda Johnson (<u>ljohnson@d.umn.edu</u>; 218 720-4251) is the Director of the Center for Water and the Environment at the University of Minnesota Duluth's Natural Resources Research Institute. Dr. Johnson is an aquatic and landscape ecologist whose research focuses on the effects of multiple stressors on aquatic ecosystems with emphasis on human activities (e.g., land use) and climate change. Much of her work has involved quantifying interactions between terrestrial and aquatic ecosystems, with particular emphasis on effects on biotic communities and habitats. Dr.

Johnson's current research activities involve: validating indicators of condition for Great Lakes coastal ecosystems; predicting climate change impacts on cold water fish communities in northern lakes and streams; assessing the influence of wetland connectivity on population persistence under changing climate and land use.

Additional details can be found at this website:

Science website: http://www.nrri.umn.edu/staff/ljohnson.asp

14. Erin Peterson is a Senior Research Scientist at CSIRO in Brisbane, Australia (Erin.Peterson@csiro.au), where she works on a variety of projects relating to freshwater monitoring and modeling. Her research sits at the interface of aquatic and landscape ecology, geographic information science, and environmental statistics. This research area provides a rich set of modelling and analysis challenges to work on, related to capturing and quantifying spatiotemporal heterogeneity at multiple scales within a statistical modelling framework. Erin is also committed to software tool development, which helps to ensure that the methodologies she develops are made accessible to ecologists and natural resource managers. This allows users to implement, modify, and improve on her methods to derive additional information about pattern and process in aquatic systems.

Additional details can be found at these websites:

Google Scholar: <u>http://scholar.google.com.au/citations?user=lmmfDrcAAAAJ&hl=en</u> ResearchGate: <u>http://www.researchgate.net/profile/Erin_Peterson2</u> SSN/STARS: Tools for Spatial Statistical Modeling on Stream Networks <u>http://www.fs.fed.us/rm/boise/AWAE/projects/SpatialStreamNetworks.shtml</u> CSIRO website: <u>http://www.csiro.au/Organisation-Structure/Divisions/Computational-</u> Informatics/CCI-People/ErinPeterson.aspx

15. Scott Miller (scott.miller@usu.edu) is an aquatic ecologist with the Bureau of Land Management and Director of the National Aquatic Monitoring Center (a.k.a. The BugLab) at Utah State University (USU); a joint partnership between the Bureau of Land Management and USU. Scott also leads the aquatic component of the BLM's Assessment, Inventory and Monitoring (AIM) strategy; a national effort to standardize aquatic resource surveys across the National System of Public Lands. His current research focuses on bioassessment using aquatic macroinvertebrates and understanding aquatic ecosystem responses to hydrologic alterations, grazing, invasive species and piscicide treatments.

Additional details can be found at these websites: USU/BLM NAMC: <u>http://www.usu.edu/buglab/</u> BLM's Landscape Approach: <u>http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach.html</u> BLM AIM Introductory video: <u>http://youtu.be/LciTBPG2-Ss</u> BLM AIM Strategy: <u>http://www.blm.gov/wo/st/en/prog/more/Landscape_Approach/aim_documents.html</u>

16. Jay Ver Hoef (jay.verhoef@noaa.gov) a statistician for the National Marine Mammal Lab of the National Oceanic and Atmospheric Association (NOAA), U.S. Dept. of Commerce. He obtained a Ph.D. at Iowa State University in Statistics in 1991. Jay develops statistical methods and consults on a wide variety of topics related to marine mammals and stream networks. The Marine Mammal Lab is located in Seattle, Washington, although Jay lives in Fairbanks, Alaska. His main statistical interests are in spatial statistics and Bayesian statistics, especially applied to ecological and environmental data.

Additional details can be found at these websites:

Scientist website: <u>https://sites.google.com/site/jayverhoef/</u> NOAA website:

<u>http://www.afsc.noaa.gov/nmml/personnel/nmmlprofile.php?name=Jay.Verhoef</u> Google Scholar: <u>http://scholar.google.com/citations?user=I9q4usgAAAAJ&hl=en</u> Research Gate: <u>https://www.researchgate.net/profile/Jay_Hoef</u>

17. Dale L. Zimmerman (dale-zimmerman@uiowa.edu) is the Robert V. Hogg Professor of Statistics at the University of Iowa. He received his Ph.D. in Statistics from Iowa State University in 1986. He is a Fellow of the American Statistical Association and was awarded the Distinguished Achievement Award from the Section on Statistics and the Environment of the American Statistical Association. His research interests include spatial statistics, longitudinal data analysis, multivariate analysis, mixed linear models, experimental design, and environmental statistics. Recently he has been developing statistical methods and diagnostics for characterizing spatial dependence on stream networks.

Additional details can be found at this website:

http://www.stat.uiowa.edu/people/dale-zimmerman

18. Helen Neville (<u>hneville@tu.org</u>; 208.345.9800) is a Research Scientist with Trout Unlimited, a national non-profit organization focused on cold-water fisheries whose science team is based in Boise, Idaho. Helen's research focuses on various aspects of conservation genetics of native salmonids (trout + salmon), including population structure and dynamics, hybridization, adaptive variation, and using pedigree analyses to ask ecological questions. She also oversees a large program working to conserve Lahontan cutthroat trout, collaborates on research evaluating population viability and climate change impacts in trout, and provides scientific guidance for TU nationally.

Additional details can be found at these websites: <u>http://www.tu.org/science</u> <u>https://www.researchgate.net/profile/Helen_Neville2</u>

19. Mevin Hooten (<u>mevin.hooten@colostate.edu</u>; 970-491-1415) is Associate Professor in the Departments of Fish, Wildlife, and Conservation Biology and Statistics at Colorado State University as well as Assistant Unit Leader of the Colorado Cooperative Fish and Wildlife Research Unit in the U.S. Geological Survey. His main research is on spatio-temporal statistical modeling of ecological processes, focusing on applications in animal movement, disease ecology, landscape genetics, optimal monitoring, and ecosystem/environmental dynamics.

Additional details can be found on this website: http://warnercnr.colostate.edu/~hooten/

20. Dave Lawrence (David.Lawrence@nfwf.org) is the Director of Freshwater Fish Conservation at the National Fish and Wildlife Foundation. In this role, Dave designs and manages initiatives aimed at restoring native trout, Pacific salmon, and fishes of the southeastern U.S. Dave completed his Ph.D. at the University of Washington in 2014, where he was a Northwest Climate Science Center fellow. His doctoral research investigated the interactive effects of climate change, land-use alteration, and invasive species on Pacific salmon in rivers of the Northwest. Dave also worked as a staff scientist at the University of Washington and the Louisiana Universities Marine Consortium, and as a fisheries consultant at Marine Research, Inc., based in Woods Hole, Massachusetts. His fieldwork has taken him to the high seas in Alaska, coastal rivers in the Northeast, the marshes of the Gulf coast, and high desert rivers in the Pacific Northwest.

Additional details are at these websites:

NFWF website:

<u>http://www.nfwf.org/whatwedo/themes/Pages/freshwater.aspx#.VIiGojHF-Jc</u> Research website: <u>http://davelawrence.weebly.com/</u> Google Scholar: <u>http://scholar.google.com/citations?user=oju-X7EAAAAJ</u>

21. Daren Carlisle (dcarlisle@usgs.gov: 703-648-6890) is the chief ecologist for the US Geological Survey's National Water-Quality Assessment (NAWQA) Program in Reston, Virginia. His research has focused on understanding the effects of anthropogenic stressors on stream ecosystems. His current emphasis is on assessments of ecological condition across regional spatial scales, with the goal of estimating the effects of stressors such as streamflow and thermal alteration on invertebrate and fish communities. One goal that the NAWQA Program is pursuing is making a variety of large, geospatially-referenced datasets available to the public via the internet.

Additional details at these websites:

Recent national synthesis for NAWQA: <u>http://water.usgs.gov/nawqa/ecology/pubs/cir-1391/index.html</u> Recent report on national assessment of streamflow alteration: <u>http://www.usgs.gov/newsroom/article.asp?ID=2631#.VIiqqr54OMM</u> Example of NAWQA's web-based information sharing: <u>http://water.usgs.gov/nawqa/modeling/</u>

22. Tony Olsen (Olsen.Tony@epa.gov) is Freshwater Ecology Branch Chief USEPA

Additional details are at these websites:

ARM Web Page: <u>http://www.epa.gov/nheerl/arm</u> NARS Web Page: http://water.epa.gov/type/watersheds/monitoring/aquaticsurvey_index.cfm

23. Andrew Loftus (aloftus@andrewloftus.com) is a natural resources consultant specializing in natural resources policy, communication and information exchange. Since the1990's, Loftus has worked toward the development of the Multi-State Aquatic Resources Information System with state and federal agencies in the Midwest/Northeast, serving as project coordinator and facilitator (www.marisdata.org). He has extensive experience providing technical facilitation between state and federal agencies and working with diverse user groups. He was instrumental in the 1998 *Freshwater Fisheries Database Summit* which brought together representatives of 46 state natural resources agencies; was the principal facilitator for the 2002 *National Fish and Wildlife Database Summit*; and was a key member of the steering committee for the 2006 National Fisheries Data Summit to address data sharing needs of the National Fish Habitat Initiative (see www.fishdata.org/reports for conference summaries). Loftus currently serves as the Secretary/Treasurer of the Fisheries Information and Technology Section and member of the Electronic Services Advisory Board of the American Fisheries Society and is a founding member of the Data and Science Committee of the National Fish Habitat Action Plan. He has a strong working relationship with many the state and federal agencies and academic institutions.

Additional details are at these websites:

MARIS (Multi-State Aquatic Resources Information System): <u>www.marisdata.org</u> Andrew Loftus: <u>http://www.andrewloftus.com/solutions.html</u>

24. Chuck Hawkins (chuck.hawkins@usu.edu, 435-797-2280) is Professor in the Department of Watershed Sciences at Utah State University and Director of the Western Center for Monitoring and Assessment of Freshwater Ecosystems. His recent research addresses the effects of climate and climate change on local and regional freshwater biodiversity and the indices used in ecological assessments; modeling and assessment of stream water temperature; modeling the effects of bedrock geology and climate on water chemistry to improve water quality assessments; modeling links between land use, in-stream stressors, and ecological condition, and assessing the effects of regional landscape alteration on patterns of beta diversity. He has worked extensively with state and federal agencies in the United States to develop scientifically defensible assessments of ecological condition for freshwater ecosystems and ways to simply and directly communicate the results of these technical analyses to the public. He has contributed to the technical analyses supporting the USEPA's national assessments of ecological condition of streams, rivers, lakes, and wetlands. Chuck co-developed and co-manages with Scott Miller (BLM's National Aquatic Monitoring Center) a spatially explicit database containing about 1.5 million records of freshwater invertebrate taxa.

Additional details are at these websites:

Departmental web site: <u>http://qcnr.usu.edu/htm/facstaff/memberID=792</u>

- Western Center for Monitoring and Assessment of Freshwater Ecosystems web site: <u>http://www.cnr.usu.edu/wmc/</u>
- MAPIT freshwater invertebrate data portal:

<u>http://wmc6.bluezone.usu.edu:8080/dbsight/search.do?indexName=bugsdbsearch&templ</u> <u>ateName=MapResults&length=2000&facetLimit=50&q=&mapChoice=pins</u> Google Scholar profile: <u>http://scholar.google.com/citations?hl=en&user=mnzmXpUAAAAJ</u> Research Gate profile: <u>https://www.researchgate.net/profile/Charles_Hawkins</u>

25. Dan Isaak (disaak@fs.fed.us; 208.373.4385) is a Research Scientist with the U.S. Forest Service Aquatic Science Lab in Boise, Idaho where he works on native fish conservation research in the western U.S. His current research focuses on understanding the effects of climate change, environmental gradients, and natural disturbance on stream habitats and fish communities; stream temperature, water quality, and species distribution monitoring and modeling; development and application of spatial statistical models for stream networks; and use of digital and social media to connect people, information and landscapes.

Additional details are at these websites:

Google Scholar profile: <u>http://scholar.google.com/citations?hl=en&user=mnzmXpUAAAAJ</u> Research Gate profile: <u>https://www.researchgate.net/profile/Daniel_Isaak</u> Climate-Aquatics Blog

http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temp/stream_temperature_climate __aquatics_blog.html

Stream Temperature Modeling and Monitoring

<u>http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temperature.shtml</u> NorWeST: <u>http://www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html</u>

Attending remotely: Tommy Dewald (EPA); Luke Winslow (USGS); Ryan Toohey (USGS)

Email list: Mevin.Hooten@colostate.edu; dale-zimmerman@uiowa.edu; Olsen.Tony@epa.gov; ljohnson@d.umn.edu; sethwenger@fastmail.fm; dcowley@nmsu.edu; danmag@uark.edu; chris.jordan@noaa.gov; chuck.hawkins@usu.edu; aloftus@andrewloftus.com; david.lawrence@nfwf.org; scott.miller@usu.edu; whelang@michigan.gov; dcarlisle@usgs.gov; ben_thatcher@fws.gov; joel_reynolds@fws.gov; yvette_converse@fws.gov; Sean_finn@fws.gov; hneville@tu.org; ahrea@usgs.gov; Mitchell.Richard@epa.gov; infanted@anr.msu.edu; Dewald.Tommy@epa.gov; lwinslow@usgs.gov; rtoohey@usgs.gov

Erin, jay, dave, jeff, dan