2019 CONFERENCE PLANNING COMMITTEE

Amy Ewing*
Andrew Treble
Becca Scully
Beth Stys
Chelsea Krause
Dyan Pursell
Jeanette Jones
Jessica Perkins*
Jim Husband*
Joe Kirby
Karen Horodysky*
Keith Hurley
Lynn Barrett
MaryEllen Wickett
Sabra Tonn
Susan Watson*
Michael Barbour

*Local Arrangements Sub-Committee
2019 SPONSORS

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## SCHEDULE AT A GLANCE

### Sunday, October 6
- **5:00 PM** | ExCom and Conference Planning Committee Meeting (151 Instructional West)
- **6:30 PM** | Dinner (Dining Hall)
- **8:00 PM** | Social Gathering (Social Lounge)

### Monday, October 7
- **7:30 AM** | Registration (151 Instructional West)
- **8:00 AM** | Welcome Session
- **9:35 AM** | Break
- **9:55 AM** | Session 1
- **11:35 AM** | Group Photo
- **11:45 AM** | Lunch
- **1:05 PM** | Session 2
- **2:45 PM** | Break
- **3:05 PM** | Student Session
- **5:00 PM** | Hacker's Ball set up (The Gallery)
- **5:30 PM** | Dinner
- **6:30 PM** | Hacker's Ball (The Gallery)

### Tuesday, October 8
- **7:45 AM** | Carpool meets in Commons Circle
- **8:00 AM** | Depart for Smithsonian Conservation Biology Institute
- **3:00 PM** | Return to NCTC
- **5:30 PM** | Dinner

### Wednesday, October 9
- **8:00 AM** | Session 4 (151 Instructional West)
- **9:40 AM** | Break
- **9:55 AM** | Session 5
- **11:45 AM** | Business Lunch & Committee Breakouts (Treehouse area of Dining Hall)
- **1:30 PM** | Session 6
- **3:10 PM** | Break
- **3:25 PM** | Session 7
- **6:00 PM** | Banquet (Treehouse area of Dining Hall) and NCTC archives tour
- **7:30 PM** | Fire pit, s'mores & live music (Fire pit located outside Instructional West)

### Thursday, October 10
- **7:45 AM** | Herp Tracking & Technology carpool meets in Commons Circle
- **8:00 AM** | Communicating Science Workshop (The Gallery)
- **12:00 PM** | Lunch at NCTC
## Welcome

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Moderator</th>
<th>AV:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM</td>
<td>Registration Opens</td>
<td></td>
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</tr>
<tr>
<td>8:00 AM</td>
<td>Welcome to OFWIM 2019</td>
<td>Karen Horodysky, OFWIM President-Elect</td>
<td>Michael Barbour</td>
</tr>
<tr>
<td>8:10 AM</td>
<td>Wild and Wonderful West Virginia</td>
<td>Mack Frantz, West Virginia Division of Natural Resources</td>
<td></td>
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<tr>
<td>8:35 AM</td>
<td>NCTC 101</td>
<td>Christy Coghlan, NCTC Course Coordinator</td>
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<tr>
<td>8:50 AM</td>
<td>Keynote Speaker</td>
<td>Arlyn Burgess, University of Virginia, Data Science Institute</td>
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<tr>
<td>9:35 AM</td>
<td>Break</td>
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</table>

### Session 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Moderator</th>
<th>AV:</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:50 AM</td>
<td>Raffle</td>
<td>Beth Stys, Florida Fish &amp; Wildlife Conservation Commission</td>
<td>Sabra Tonn</td>
</tr>
<tr>
<td>9:55 AM</td>
<td>The Florida <em>Climate Adaptation Explorer</em></td>
<td></td>
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</tr>
<tr>
<td>10:45 AM</td>
<td>Wildlife licensing system data dashboards: alleviating data requests and empowering data driven decision making</td>
<td>Stephen Slotter, Brandt Information Services</td>
<td></td>
</tr>
<tr>
<td>11:10 AM</td>
<td>ArcGIS solutions for R3: leverage ArcGIS maps and apps to increase participation</td>
<td>Mike Bialousz, Esri</td>
<td></td>
</tr>
<tr>
<td>11:35 AM</td>
<td>Group Photo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:45 PM</td>
<td>Lunch</td>
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### NCTC Dining Hall Hours

- **Breakfast:** 6:30 - 9:00 AM  
  Hot food until 8:30 AM
- **Lunch:** 11:30 - 1:30 PM  
  Hot food until 1:00 PM
- **Dinner:** 5:30 - 7:30 PM  
  Hot food until 7:30 PM
<table>
<thead>
<tr>
<th>Session 2</th>
<th>Moderator: Amy Ewing</th>
<th>AV: Craig Scroggins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 PM</td>
<td>Raffle</td>
<td></td>
</tr>
<tr>
<td>1:05 PM</td>
<td>Field Guide to the Freshwater Fishes of Virginia</td>
<td>Paul Bugas, Virginia Department of Game and Inland Fisheries</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>Database management of the VIMS Nunnally Ichthyology Collection</td>
<td>Sarah Huber, Virginia Institute of Marine Science</td>
</tr>
<tr>
<td>1:55 PM</td>
<td>The lies we tell ourselves</td>
<td>Keith Hurley, Nebraska Game and Parks Commission</td>
</tr>
<tr>
<td>2:20 PM</td>
<td>Look at me – I have something I want to share with you</td>
<td>Daniel McGarvey, Virginia Commonwealth University</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td><strong>Student Session</strong></td>
<td><strong>Moderator: Beth Stys</strong></td>
<td><strong>AV: Dyan Pursell</strong></td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Raffle</td>
<td></td>
</tr>
<tr>
<td>3:05 PM</td>
<td>Assessing the transferability of a freshwater mussel fundamental niche model within the Ozark Ecoregion, Missouri</td>
<td>Jordan Holtswarth, University of Illinois Urbana-Champaign</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Partitioning the effects of changing land use and introduced species on spatiotemporal abundance trends and biotic homogenization in native fish communities of New River tributary streams</td>
<td>Logan Sleezer, Virginia Tech</td>
</tr>
<tr>
<td>3:55 PM</td>
<td>Modeling fundamentally suitable freshwater mussel habitat in the Duck River Drainage, Tennessee</td>
<td>Brittany Bajo, Tennessee Tech</td>
</tr>
<tr>
<td>4:20 PM</td>
<td>Announcements</td>
<td></td>
</tr>
<tr>
<td>5:00 PM</td>
<td>Room open for Hacker's Ball set up</td>
<td></td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Dinner</td>
<td></td>
</tr>
<tr>
<td>6:30 PM</td>
<td>Hacker's Ball (The Gallery in the Commons)</td>
<td></td>
</tr>
<tr>
<td>9:00 PM</td>
<td>Optional socializing in Social Lounge</td>
<td></td>
</tr>
</tbody>
</table>
## Hacker’s Ball

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
<th>Presenter/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 - 8:30 PM</td>
<td>iMapInvasives 3.0: modernization of the iMapInvasives platform</td>
<td>Michael Barbour, Arizona Game and Fish Department</td>
</tr>
<tr>
<td></td>
<td>Update on the Virginia Fish and Wildlife Information Service (VAFWIS) rebuild</td>
<td>Amy Ewing, Virginia Department of Game &amp; Inland Fisheries</td>
</tr>
<tr>
<td></td>
<td>DGIF Law Enforcement Automatic Vehicle Locator</td>
<td>Jay Kapalczynski, Virginia Department of Game &amp; Inland Fisheries</td>
</tr>
<tr>
<td></td>
<td>Mapping the distribution of Timber Rattlesnakes <em>(Crotalus horridus)</em> in West Virginia using a citizen science approach</td>
<td>Kevin Oxenrider, West Virginia Division of Natural Resources</td>
</tr>
<tr>
<td></td>
<td>U.S. Fish and Wildlife Service Northeast Regional Bog Turtle database</td>
<td>Leslie Pitt, USFWS</td>
</tr>
<tr>
<td></td>
<td>Test drive NatureServe conservation solutions for state fish and wildlife agencies</td>
<td>Rick Schneider, NatureServe</td>
</tr>
<tr>
<td></td>
<td>Enterprise tools to help discover who is doing what, where, when and how?</td>
<td>Becca Scully, USGS</td>
</tr>
<tr>
<td></td>
<td>Species occurrence data for the nation</td>
<td>Liz Sellers, USGS</td>
</tr>
<tr>
<td></td>
<td>A comprehensive list of non-native species established in three major regions of the United States: first update</td>
<td>Annie Simpson, USGS</td>
</tr>
<tr>
<td></td>
<td>Habitat utilization and impacts of flooding on James spiny mussel <em>(Parvaspina collina)</em> populations in Virginia streams</td>
<td>Christine Verdream, James Madison University</td>
</tr>
</tbody>
</table>

**TIP:** The Hacker’s Ball will be in **The Gallery**, which used to be the old NCTC library. It is located on the bottom floor of the Commons, under the Dining Hall and across from the gift shop.
**TUESDAY, OCTOBER 8**  
*Conservation in Action* Education Day

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:45 AM</td>
<td>Meet at Commons Circle - Drivers bring vehicles</td>
<td></td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Depart for Smithsonian Conservation Biology Institute (SCBI)</td>
<td></td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Welcome to SCBI</td>
<td>Bill McShea, SCBI</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>SCBI campus and endangered species driving tour</td>
<td>Nick Davis, FONZ</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>1:00 PM</td>
<td>Tour Veterinary Hospital and Reproductive Physiology Lab</td>
<td></td>
</tr>
<tr>
<td>1:45 PM</td>
<td>Overview of spatial ecology research at SCBI</td>
<td>Qiongyu Huang, SCBI</td>
</tr>
<tr>
<td>2:10 PM</td>
<td><em>Movement of Life</em> program</td>
<td>Jared Stabach, SCBI</td>
</tr>
<tr>
<td>2:35 PM</td>
<td>Mapping mammals and fruit production in Borneo</td>
<td>Bill McShea, SCBI</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>Depart for NCTC (optional Harper’s Ferry stop)</td>
<td></td>
</tr>
<tr>
<td>5:30 PM</td>
<td>Dinner</td>
<td></td>
</tr>
<tr>
<td>8:00 PM</td>
<td>Optional socializing in Social Lounge</td>
<td></td>
</tr>
</tbody>
</table>

Please see the included *Supplemental Materials* for more information and Education Day logistics

Preregistered Participants:

- Brittany Bajo
- Michael Barbour
- Lynn Barrett
- Michael Bialousz
- Chris Bonzek
- Liz Clark
- Amy Ewing
- Mack Frantz
- Jordan Holtzwarth
- Karen Horodysky
- Keith Hurley
- Jim Husband
- Jay Kapalczynski
- Kyle Kaskie
- Heather Konell
- Marcia McNiff
- Jessica Perkins
- Leslie Pitt
- Dyan Pursell
- Don Schrupp
- Ross Scott
- Craig Scroggins
- Becca Scully
- Liz Sellers

- Annie Simpson
- Beth Stys
- Sabra Tonn
- Susan Watson
- Joe Weber
- MaryEllen Wickett
- Lindsey Wise
### WEDNESDAY, OCTOBER 9
151 Instructional West Building

<table>
<thead>
<tr>
<th>Session 4</th>
<th>Time</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raffle</td>
<td>7:55 AM</td>
<td></td>
</tr>
<tr>
<td>FEED</td>
<td>8:00 AM</td>
<td>data acquisition software: ensuring data quality and enforcing data collection protocols in the field and laboratory</td>
</tr>
<tr>
<td>eMammal</td>
<td>8:25 AM</td>
<td>as a data pipeline, repository, and outreach for wildlife images and their metadata</td>
</tr>
<tr>
<td>Tracking chronic wasting disease in Missouri</td>
<td>8:50 AM</td>
<td></td>
</tr>
<tr>
<td>Making in-stream tributary data findable, accessible, interoperable, and reusable (FAIR)</td>
<td>9:15 AM</td>
<td></td>
</tr>
<tr>
<td>Break</td>
<td>9:40 AM</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session 5</th>
<th>Time</th>
<th>Session Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raffle</td>
<td>9:50 AM</td>
<td></td>
</tr>
<tr>
<td>ArcGIS field mobility tools – what’s new?</td>
<td>9:55 AM</td>
<td>Mike Bialousz, Esri</td>
</tr>
<tr>
<td>Mapping fires across Florida: development of a fire spatial database</td>
<td>10:20 AM</td>
<td>Beth Stys, Florida Fish &amp; Wildlife Conservation Commission</td>
</tr>
<tr>
<td>Priority Amphibian and Reptile Conservation Areas (PARCAs): for West Virginia and beyond</td>
<td>10:45 AM</td>
<td>Jessica Perkins, West Virginia Division of Natural Resources</td>
</tr>
<tr>
<td>iMapInvasives 3.0: updating a collaborative invasive species data management tool</td>
<td>11:05 AM</td>
<td>Michael Barbour, Arizona Game and Fish Department</td>
</tr>
<tr>
<td>Announcements</td>
<td>11:35 AM</td>
<td></td>
</tr>
<tr>
<td>Business Lunch (Treehouse in Dining Hall)</td>
<td>11:45 AM</td>
<td></td>
</tr>
<tr>
<td>Committee Breakout</td>
<td>12:45 PM</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Speaker/Institution</td>
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</tr>
<tr>
<td>1:25 AM</td>
<td>Raffle</td>
<td></td>
</tr>
<tr>
<td>1:30 PM</td>
<td>New frontiers for &quot;big data&quot; in fish biology and climate change research</td>
<td>Than Hitt, U.S. Geological Survey</td>
</tr>
<tr>
<td>1:55 PM</td>
<td>Use of Predicted Suitable Habitats of rare species in an environmental review tool</td>
<td>Joseph Weber, Virginia Department of Conservation and Recreation</td>
</tr>
<tr>
<td>2:20 PM</td>
<td>Georeferencing a Map in QGIS: A Brief Tutorial</td>
<td>Don Schrupp, Colorado Division of Wildlife (retired)</td>
</tr>
<tr>
<td>2:45 PM</td>
<td>Telling your agency’s story - measuring and visualizing an agency’s accomplishments</td>
<td>Chris Gereke, Timmons Group</td>
</tr>
<tr>
<td>3:10 PM</td>
<td>Break</td>
<td></td>
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</table>

**Session 7**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker/Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:20 PM</td>
<td>Raffle</td>
<td></td>
</tr>
<tr>
<td>3:25 PM</td>
<td>The Biodiversity and Ecosystems A-16 Theme: responding to new guidance</td>
<td>Marcia McNiff, USGS</td>
</tr>
<tr>
<td>3:50 PM</td>
<td>Practical uses of iNaturalist, eBird, and other online observations for fish and wildlife data managers</td>
<td>Lindsey Wise, Portland State University</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>What you probably didn’t know about Biodiversity Information Serving Our Nation (BISON) and the Integrated Taxonomic Information System (ITIS)</td>
<td>Stinger Guala, USGS</td>
</tr>
<tr>
<td>4:40 PM</td>
<td>Announcements</td>
<td></td>
</tr>
<tr>
<td>6:00 PM</td>
<td>Banquet Dinner (Treehouse in Dining Hall)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NCTC archives tour</td>
<td>Mark Madison, USFWS</td>
</tr>
<tr>
<td>7:30 PM</td>
<td>Fire pit, s’mores &amp; live music</td>
<td></td>
</tr>
<tr>
<td>9:30 PM</td>
<td>Optional socializing in Social Lounge</td>
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## Workshop Day

### Workshop 1: Communicating Science

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Communicating Science Workshop (The Gallery)</td>
<td>Center for Communicating Science</td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Communicating Science Workshop</td>
<td>Center for Communicating Science</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Lunch</td>
<td></td>
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</table>

### Workshop 2: Herp Tracking and Technology

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>7:45 AM</td>
<td>Meet at Commons Circle - drivers bring vehicles</td>
<td></td>
</tr>
<tr>
<td>8:00 AM</td>
<td>Depart for Leetown Science Center</td>
<td></td>
</tr>
<tr>
<td>8:30 AM</td>
<td>Field demonstrations</td>
<td>Kevin Oxenrider, WV DNR</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>9:45 AM</td>
<td>Classroom demonstrations</td>
<td>Kevin Oxenrider, WV DNR</td>
</tr>
<tr>
<td>10:45 AM</td>
<td>Tour of LSC</td>
<td></td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Return to NCTC</td>
<td></td>
</tr>
<tr>
<td>12:30 PM</td>
<td>Lunch at NCTC</td>
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</tbody>
</table>

Please see the included *Supplemental Materials* for more information and workshop logistics.
Meet Our Guest Speakers

**Arlyn Burgess (Keynote Speaker)** is the Associate Director for Operations and Strategic Initiatives at the Data Science Institute (DSI) at the University of Virginia, which enables data science work throughout the University and coordinates educational and data-driven research programs. She oversees operational stability of the Institute, directs new initiatives driven by interdisciplinary interest in data, and develops new programming to engage the data science community.

Pending final approval by the State Council for Higher Education in Virginia, the University of Virginia will formally transform the DSI into a new School of Data Science. The School of Data Science – UVA’s 12th school and the first established since 2007 – will position the University as a global leader in efforts to improve society through teaching and research based on the powerful, emerging field of data science. The school’s establishment comes at a time when the amount of available data in the world is more than doubling every two years. There is a shortage of qualified data scientists to analyze and interpret the data and to help make data-informed decisions for the betterment of society. UVA’s School of Data Science promises to be a new model for how a school functions within a higher education institution. Envisioned as a “school without walls,” it will be designed as an open ecosystem that fosters interdisciplinary research, teaching and partnerships across the University, with the private sector and with governmental entities.

Ms. Burgess serves on the leadership team making the transition from the DSI to the new School and sets strategic initiatives for engagement within and outside of the University on this exciting new endeavor. She serves on the Governor’s Data Sharing and Analytics Advisory Committee for the Commonwealth of Virginia and was a finalist for the Young Leader of the Year award for the Information Age Women in IT Awards in 2018. Ms. Burgess holds degrees from Northwestern University and the University of Virginia.

**Dr. Mark Madison (Banquet Speaker)** is the National Historian for the U.S. Fish and Wildlife Service. In that role he helped create a Conservation Archive, Museum, and national Fish and Wildlife Service history program at the National Conservation Training Center in Shepherdstown, WV. Prior to this position Dr. Madison taught history of science, conservation biology, and environmental history at the University of Melbourne (Australia) and Harvard University. He has degrees in biology and history from Macalester College and a Ph.D. in the History of Science from Harvard University. He also spent 3 years doing tropical reforestation as a Peace Corps volunteer in the Philippines. He has forthcoming books on wolf restoration and the California condor program.
Conservation in Action Education Day – October 8

The Smithsonian Conservation Biology Institute (SCBI) plays a leading role in the Smithsonian’s global efforts to save wildlife species from extinction and train future generations of conservationists. SCBI spearheads research programs at its center of operations in Front Royal, Virginia, the Smithsonian’s National Zoo in Washington, D.C., and at 26 field research stations and training sites worldwide. Located on 3,200 acres in the foothills of the Blue Ridge Mountains, SCBI scientists study and breed more than 20 species, including those that were once extinct in the wild, like black-footed ferrets and scimitar-horned oryx. SCBI scientists tackle some of today’s most complex conservation challenges by applying and sharing what they learn about animal behavior and reproduction, ecology, genetics, migration, and conservation sustainability.

SCBI campus and endangered species driving tour: The tour consists of a driving excursion of the property in SCBI vans, which lasts approximately two hours and is led by knowledgeable Friends of the National Zoo (FONZ) guides. It includes information about the history of the facilities and ongoing research programs. We may have the opportunity to see some of the endangered species in their natural settings. SCBI is a research facility devoted to the care and conservation of critically endangered species. Therefore, they do not guarantee access or up close interactions with any specific species during the tour.

Technical presentations by SCBI GIS and wildlife staff:

- Overview of spatial ecology research at SCBI  
  Dr. Qiongyu Huang
- Movement of Life program  
  Dr. Jared Stabach
- Mapping mammals and fruit production in Borneo  
  Dr. Bill McShea

Note: The SCBI is a controlled access campus. Attendance is restricted to those who signed up during registration by selecting a bagged lunch option. All preregistered attendees must bring a government issued ID.
Technical Presentation Speakers:

**Dr. Bill McShea** is a wildlife ecologist for the Smithsonian's Conservation Biology Institute. He received his education at Bucknell University (B.S.), University of New Hampshire (M.S.), and State University of New York at Binghamton (PhD). He has worked at the Front Royal facility since 1986. He is past co-chair and current member of the IUCN Deer Specialist Group, and a member of both the Bear Specialist and Bovid Specialist Groups. He has edited five volumes on wildlife management (deer, oak forests, Asian wildlife, and giant pandas), co-authored a book on deer ecology, and co-authored over 150 scientific publications. He runs several forest-related projects in Virginia and a grassland ecology project in Montana. When not in the USA, Bill currently works in Southeast Asia, Borneo, and China. Bill's research focuses on the management and diversity of wildlife populations and much of this work involves mammal surveys using camera traps. He is a founding member of *eMammal* ([www.emammal.org](http://www.emammal.org)), which facilitates citizen science projects using camera traps and displays wildlife data and images through the website.

**Dr. Jared Stabach** is an ecologist at the Smithsonian Conservation Biology Institute’s Conservation Ecology Center (CEC) and the Program Coordinator for the Smithsonian’s Movement of Life Initiative. His research focuses on the factors that affect the abundance, distribution, and movement patterns of large terrestrial mammals, incorporating emerging technologies, such as unmanned aerial systems, GPS tracking collars, and high resolution imagery, to better understand and monitor changes occurring across our planet. Since joining the CEC as a post-doctoral research fellow in 2015, he has worked on large collaborative teams to reintroduce scimitar-horned oryx, evaluated the factors influencing the occurrence of critically endangered addax, and co-authored scientific research focused on developing solutions to conservation challenges. He is currently developing a scientific partnership with the Giraffe Conservation Foundation to provide an increased understanding of the factors leading to the rapid decline of giraffe populations across Africa and continues to focus on the migration of white-bearded wildebeest, one of earth’s greatest natural phenomena. He serves as a scientific advisor on IUCN's Antelope Specialist Group, the Sahara-Sahel Interest Group, and is a current member of the Smithsonian Animal Care and Use (ACUC) Research Subcommittee.

**Dr. Qiongyu Huang** is a wildlife biologist at the Smithsonian Conservation Biology Institute and he manages the Conservation Geographical Information System Lab. Qiongyu’s research mainly focuses on wildlife conservation and ecology, and global environmental changes and consequences on biodiversity. He is particularly interested using geospatial and data-rich methodologies to answer macro- and landscape level questions regarding spatial patterns of species range, abundance, and movement. He is specialized in utilizing GIS, remote sensing and spatial analysis to analyze various types of wildlife survey data, GPS tracking data, satellite remote sensing data. He is also keen on examining the relationship between social and humanistic factors and biodiverse natural systems. A particular species focus of Qiongyu is giant panda, he is heavily involved in National Zoological Park's giant panda conservation programs and travels regularly to China for research and providing capacity building trainings.
Conservation in Action Education Day (continued)

NCTC to SCBI Driving Directions ~ 1 hr 20 minutes
SCBI Address: 1500 Remount Rd, Front Royal, VA 22630

As you leave the NCTC, turn right onto Shepherd Grade Rd and stay on this road until you turn right on Scrabble Rd, which turns into Berkeley Station Rd. Turn left on US-11 S, then right on Mid Atlantic Parkway. Turn right onto WV-9W and use the right lane to take the ramp onto I-81 S.

Get on to I-81 S and continue for about 40 miles. Use the left lane to take Exit 300 for I-66 E toward Front Royal/Washington. Stay on I-66 E for about 6 miles until Exit 6. Take Exit 6 to merge onto US 340 S/US-522 S toward Front Royal. Use the left two lanes to turn left onto W 14th St, and continue onto N Royal Ave. Turn left onto N Commerce Ave, then continue onto Remount Rd/US-522 S. Turn left onto Conservation Dr (SCBI Main Gate 2). Drive to the security booth and check in. A government issued ID is required to gain access.

From the security both, follow Conservation Dr to the top of the hill. Turn left onto Conservation Dr (SMSC Academic Centre is on the right). Turn left onto Slate Hill Rd. The visitor parking lot is on your left.
Workshops – October 10

Workshop 1: Communicating Science
Instructors: Patty Raun & Dr. Carrie Kroehler, The Center for Communicating Science (VT)
Location: The Gallery, NCTC
Time: 8:00 AM - 12:00 PM

Description: The Center for Communicating Science creates and supports opportunities for scientists, scholars, health professionals, and others to develop their abilities to communicate and connect. This hands-on workshop will get participants out of their seats as they use techniques from theater and improvisation to communicate.

Meet the Instructors:

Patty Raun is a professional actor and voice coach, a theatre professor, and Director of the Center for Communicating Science at Virginia Tech. She served as department head of Theatre and as director of the School of Performing Arts at Virginia Tech from 2002-2016. Ms. Raun recently shifted the focus of her research and teaching to sharing the powerful tools of the theatre in the development of communication skills for scientists, technology professionals, and scholars – helping them to discover ways to become more direct, personal, spontaneous, and responsive.

Dr. Carrie Kroehler is a biologist, writer, editor, instructor, and Associate Director of the Center for Communicating Science at Virginia Tech. Most of her work has focused on translating research for non-scientists. She hopes that we can bridge the gaps between us so that we can listen to and learn from one another as we transform our global society into one that sustains all of us and our beautiful, threatened, life-supporting earth.

Preregistered Participants:

Lynn Barrett          Karen Horodysky         Becca Scully          Susan Watson
Amy Ewing                Jim Husband         Beth Stys            MaryEllen Wickett
Jordan Holtsworth        Marcia McNiff       Sabra Tonn           Lindsey Wise
Workshops (continued)

Workshop 2: Herp Tracking & Technology
Instructor: Kevin Oxenrider, West Virginia Division of Natural Resources
Location: Leetown Science Center
Departure Time: 7:45 am at the Commons Circle
Return Time: 12:00 PM

Description: Participants will travel to a nearby wetland study site where WV DNR biologists are actively studying turtles by radio telemetry using VHF transmitters to learn how spatial data are collected in the field and gain a better understanding of additional data that accompanies location information. The classroom portion of this workshop will explain how spatial data are analyzed and used to develop conservation strategies. Participants should wear field appropriate clothing and waterproof footwear (knee boots are preferred).

Meet the Instructor: Kevin Oxenrider is the West Virginia State Amphibian and Reptile Conservation Leader with the West Virginia Division of Natural Resources. He leads and oversees conservation initiatives and research for WV’s amphibian and reptiles, as well as serves on regional and national working groups and committees to promote amphibian and reptile conservation at broader spatial scales. He has been with the WVDNR since 2016, but has spent time previously working with a number of wildlife species across the US, including bats, shorebirds, and prairie chickens. Kevin holds a M.S. in Ecology from Frostburg State University in Frostburg, MD, and completed doctoral work, also in ecology, at The Ohio State University, in Columbus, OH.

Directions to Leetown Science Center (13 miles, ~ 20 minutes from NCTC):
Address: 11649 Leetown Rd, Kearneysville, WV 25430
Turn left onto Shepherd Grade Rd as you leave the NCTC. After 3.3 miles, turn right onto WV-480 S. This road turns into Leetown Rd. The destination will be on your right in about 10 miles.

Preregistered Participants:
Brittany Bajo          Kyle Kaskie        Dyan Pursell        Annie Simpson
Liz Clark             Heather Konell     Don Schrupp         Joe Weber
Mack Frantz           Jessica Perkins     Ross Scott          
Keith Hurley          Leslie Pitt          Liz Sellers        

Supplemental Materials
Modeling fundamentally suitable freshwater mussel habitat in the Duck River Drainage, Tennessee

Brittany Bajo, Tennessee Tech

Abstract:
While conservation efforts have dramatically grown over the last few years, freshwater mussels remain one of the most imperiled groups of aquatic organisms. The Duck River is one of the most ecologically diverse rivers in North America and houses over 60 species of mussels, which has led to targeted, assemblage-level mussel conservation efforts. A mussel’s unique lifecycle, sessile tendencies, benthic habitat preference and sensitivity to temporal and spatial disturbances have made it difficult to predict whether a stream reach is habitable for mussel assemblages. This lack of understanding and shortage of historical population documentation inhibits optimal conservation of some mussel populations. I hope to create a model using hydrogeomorphic variables similar to previous models developed and successfully validated for several Missouri streams, including the Meramec River. I will derive environmental layers using elevation data and aerial imagery, to analyze the geomorphology of the Duck River. Geomorphological variables will include presence of drought refugia, proximity to gravel bars, lateral stream movement, shear stress, proximity to channel controls, the mean annual groundwater recharge of the stream at the mussel occurrence location, and the proximity to springs. I will also be comparing variation between the tributaries and the main channel. This model will inform conservation efforts by identifying the strongest areas for reestablishment, growth, and reintroduction of native mussel species.

Biography:
Brittany Bajo is a master’s student in the biology department at Tennessee Tech under Amanda Rosenberger. Her current research is investigating factor’s limiting the distribution of mussel assemblages in the Duck River in Tennessee. She will be transferring methodological and analytical techniques developed by two previous researchers, Kayla Key and Jordan Holtswarth while also investigating new approaches for describing the geomorphological characteristics of the Duck River. Brittany studied aquatic biology at Grand Valley State University in Allendale, Michigan. After graduating with her bachelor’s degree, she worked as an aquatic technician with Colorado Parks and Wildlife out of Fort Collins, Colorado, and as an associate technician with the University of Tennessee where she worked in a disease lab.
iMapInvasives 3.0: updating a collaborative invasive species data management tool

Michael Barbour, Arizona Game and Fish Department

Abstract:
iMapInvasives is an online data management tool that stores invasive species information and facilitates data sharing and utilization by land managers, the public and other organizations. The iMapInvasives project is founded on collaboration with NatureServe and is directed by a network of participating states known as the Lead Partner Organizations (LPOs). Within the past decade, iMapInvasives has become a vital tool for several states, organizations and agencies in the battle against some of the most threatening invasive species infestations. iMapInvasives 3.0, the next generation of iMapInvasives redesigned to provide a more responsive user interface, was launched on 19 April 2019. Additional functionality will be released as it is completed in the ongoing development. At its most basic level, this database supports data management of simple species location information. In addition, it supports advanced information management including the capability to input treatment records, survey records, track infestations over time, and create collaborative projects. This tool has provided a standardized, central location in which to store invasive species information and has aided in data sharing across local and state boundaries on both regional and national scales. Its applicability to on-the-ground management of invasive species is proving to be invaluable as evidenced by the work conducted by organizations using the tool.

Biography:
Michael Barbour is a Data Specialist for the Arizona Heritage Data Management System in the Arizona Game and Fish Department, Wildlife Management Habitat Branch. In his role as Arizona’s iMapInvasives Administrator, he is responsible for managing the database that documents invasive species locations in Arizona. Prior to joining AZGFD in June 2018, he served as the GIS/Database Manager for the Alabama Natural Heritage Program for 16 years. He received B.S. degrees in Biology and Wildlife Management from Virginia Tech, and an M.S. in Wildlife Ecology from the University of New Hampshire. He completed a Ph.D. research project in Zoology (Wildlife Management) with the Cooperative Wildlife Research Laboratory at Southern Illinois University.
ArcGIS solutions for R3: leverage ArcGIS maps and apps to increase participation

Mike Bialousz, Esri

Abstract:
Recruitment, Retention, and Reactivation (R3) efforts continue to be a major challenge for state fish and wildlife agencies. Recently, Esri responded in support of this challenge releasing new Solutions which are configurable maps and apps to support R3 efforts. In particular, the Solutions are focused on: managing, aggregating and generating useful statistics from foundational license data; visualizing license trends spatially in support of outreach strategies; and authoring applications for the public to locate a variety of recreational opportunities. This talk will highlight how these tools were developed and include live demonstrations of the deployment process and their use. In addition, a sneak peek will be provided on upcoming related Solutions.

Biography:
Mike Bialousz is a National Account Manager on the Esri state government team focused on environment and natural resource agencies across the U.S. This role has Mike evaluating the critical business workflows of these agencies focusing on approaches to GIS implementation and solutions to meet their needs. Mike has 25+ years of GIS experience, including 13 years with the PA Department of Conservation of Natural Resources and the PA Fish and Boat Commission as a department-wide GIS Manager. Mike also worked in the private sector for 8 years designing GIS solutions for clients in all levels of government. Mike has a Master of Science in Geoenvironmental Studies from Shippensburg University and undergraduate degrees in Geography and Forestry.
ArcGIS field mobility tools – what’s new?

Mike Bialousz, Esri

Abstract:
ArcGIS field mobility applications continue to be deeply ingrained in fish and wildlife workflows. Esri continues to devote a great deal of effort towards enhancing existing applications, like Collector and Survey123, and developing new ones, like Tracker and QuickCapture, to offer solutions to support a complete field operations workflow. This talk will describe the current availability of field mobility applications including recent enhancements and newly released applications. Key use cases of the tools will also be highlighted.

Biography:
Mike Bialousz is a National Account Manager on the Esri state government team focused on environment and natural resource agencies across the U.S. This role has Mike evaluating the critical business workflows of these agencies focusing on approaches to GIS implementation and solutions to meet their needs. Mike has 25+ years of GIS experience, including 13 years with the PA Department of Conservation of Natural Resources and the PA Fish and Boat Commission as a department-wide GIS Manager. Mike also worked in the private sector for 8 years designing GIS solutions for clients in all levels of government. Mike has a Master of Science in Geoenvironmental Studies from Shippensburg University and undergraduate degrees in Geography and Forestry.
FEED data acquisition software: ensuring data quality and enforcing data collection protocols in the field and laboratory

Chris Bonzek, Virginia Institute of Marine Science

Abstract:
FEED was developed by fisheries scientists at the Virginia Institute of Marine Science in response to a need for electronic data acquisition for several monitoring programs with differing processing protocols. This Windows© software offers front-end interfaces to a back-end relational data base. Both the front-end and back-end are customized for each program’s set of protocols. Connections to external devices (e.g. all known brands of electronic measuring boards, balances, tag readers, barcode readers, GPS, cameras) eliminate manual entry for many data fields. Data from NMEA data streams can be captured and/or continuously recorded. Quotas (stratified by size, location, sex, etc.) can be enforced for recording parameters or for saving tissues. Labels can be printed for saved-sample ID. Many accuracy-enforcing features are included such as drop-down boxes, range checks, parameter cross-checks (e.g., length-weight), and missing-value checks, among others. Webcam images can be captured, linked, and viewed. Pop-up data summaries can be presented. Data backups, using a choice of several methods and formats, insure against data loss. The software is appropriate at scales ranging from a single-user on a beach, stream or field to multiple networked users operating for weeks at-sea, or over years in the laboratory. FEED is available to outside organizations and has been adopted by federal, state, university, and private organizations.

Biography:
Chris Bonzek is a Fishery Data Analyst and serves as a member of the Professional Faculty in the Department of Fisheries Science at the Virginia Institute of Marine Science. As a member of the Multispecies Research Group he is co-PI for four large scale fishery independent monitoring programs. He is responsible for safeguarding the quality and security of data from those surveys as well as several others conducted in his department.
Field Guide to the Freshwater Fishes of Virginia

Paul Bugas, Virginia Department of Game and Inland Fisheries
Co-authors: Michael Pinder, Val Kells, Corbin Hilling, Derek Wheaton, Don Orth

Abstract:
A Field Guide to the Freshwater Fishes of Virginia is needed to fulfill a longstanding need in nature education. Central and Southern Appalachians are unrivaled in the U.S. for aquatic species diversity, which makes this regional field guide extremely important. Most authoritative information is contained in extensive 1,000 page, 6.6 pound references or online databases that are not useful for the beginning naturalist nor a field biologist. Furthermore, biologists worldwide are clamoring for more natural history skills to prepare young biologists for future challenges. We created a 5x7.5-inch, 195-page field guide on water-resistant paper. The book teaches the beginner how to identify the families and reliably identify Virginia fish species with field characteristics. The taxonomy of family and common names will follow recent authoritative references. The field guide includes introductory chapters on fishes, river drainages, and freshwater habitats of Virginia, how to use the field guide, how to observe fish in the wild and captivity, and essential messages of fish conservation. Distribution maps are based on recent distributional databases. Color illustrations are incorporated to provide easy identification. Select black-and-white illustrations provide most reliable diagnostic characteristics (e.g., snout shape, pigment patterns, mouth morphology) for field identifications. The field guide was published by Johns Hopkins University Press.

Biography:
Paul has been the Region 4 Aquatics Manager with the Virginia Department of Game and Inland Fisheries since 2011 and works out of the Verona Regional Office. He graduated from Virginia Tech in 1975 with a Bachelor of Science Degree in Forestry and Wildlife and immediately went to work with DGIF. His first project out of college was to identify and inventory the Commonwealth’s wild trout resources. His current work area now includes 29 counties in the Shenandoah Valley, NOVA and the Northern Piedmont. Besides overseeing fish population, habitat, fish stocking, environmental assessment and water quality projects, he is keenly interested in educating the public on aquatic resource issues in Virginia.
Telling your agency's story - measuring and visualizing an agency's accomplishments

Chris Gereke, Timmons Group

Abstract:
The Missouri Department of Conservation (MDC) is a complex organization that includes multiple divisions covering fisheries, wildlife, forestry, resource science, private land services and protection. Over the past year, MDC has continued to evolve their strategic planning process. As part of this effort, MDC has been working diligently on defining key agency goals, outcomes and actionable measures. An important component of this effort is to ensure that MDC is well-positioned to “Tell their story” in a compelling way to all stakeholders and that they have actionable data to support their measures. This includes the use of various data reporting and aggregation tools and reporting dashboards. This presentation will focus on select elements of this journey, what it means to measure accomplishments, and MDC’s efforts to treat data like an Agency Asset.

Biography:
Chris’s focus on any given workday is creatively solving technology and geospatial challenges. His comprehensive knowledge of Esri, open source, and best-of-breed solutions, enables Timmons Group to provide application development, geospatial consulting, and implementation for a growing list of clients. Chris directs the enterprise solutions group at Timmons Group which prides itself on developing intuitive technology solutions to generate significant Return on Investment (ROI) for their clients.
What you probably didn't know about Biodiversity Information Serving Our Nation (BISON) and the Integrated Taxonomic Information System (ITIS)

Stinger Guala, U.S. Geological Service

Abstract:
Biodiversity Information Serving Our Nation (BISON - bison.usgs.gov) is the US Node application for the Global Biodiversity Information Facility (GBIF) and the most comprehensive source of species occurrence data for the United States of America. It currently contains more than 460 million records and provides significant augmentation and integration of US occurrence data in terrestrial, marine and freshwater systems. Publicly released in 2013, BISON has generated a large community of stakeholders and they have passed on a lot of questions over the years through the email (bison@usgs.gov), presentations and other means. In this presentation, some of the most common questions will be addressed in detail. For example: how BISON is different from GBIF, the exact role of the Integrated Taxonomic Information System (ITIS - www.itis.gov) is in BISON, and how to use more web services than you knew about before.

Biography:
Dr. Gerald "Stinger" Guala is the Branch Chief for Eco-Science Synthesis in the Science Analytics and Synthesis Program at USGS. He directs the Integrated Taxonomic Information System (ITIS - www.itis.gov), the Federal standard for the names of biological organisms, and Biodiversity Information Serving Our Nation (BISON - bison.usgs.gov), the Federal clearinghouse for species occurrence data with more than 460 million records currently. He also participates in many other biodiversity information activities nationally and internationally. He has a long history in biodiversity informatics at USDA PLANTS, NSF, and Fairchild Tropical Garden where he built the first modern Virtual Herbarium.
New frontiers for "big data" in fish biology and climate change research

Than Hitt, U.S. Geological Survey

Abstract:
Technological innovations provide new opportunities to generate large datasets and to engage stakeholders in ecological research and conservation. In this presentation, I review the necessity of “big data” for many questions in freshwater fish biology and climate change research. I then provide two case studies to illustrate how citizen science and crowdsourcing can achieve data needs for research while outreach and educational objectives. I describe the utility of new low-cost sensors and camera technologies to enable crowdsourced data generation, and I conclude with a discussion of data management needs to move forward in this regard.

Biography:
Dr. Nathaniel (Than) P. Hitt is a Research Fish Biologist at the U.S. Geological Survey’s (USGS) Leetown Science Center in Kearneysville, West Virginia. He holds a B.A. in Biology from the College of Wooster, an M.S. in Organismal Biology and Ecology from the University of Montana, and a Ph.D. in Fisheries and Wildlife Sciences from Virginia Tech. Dr. Hitt’s research investigates freshwater fish ecology and community ecotoxicology from a landscape perspective, focusing on stream ecosystems in the Appalachian highlands.
Assessing the transferability of a freshwater mussel fundamental niche model within the Ozark Ecoregion, Missouri

Jordan Holtswarth, University of Illinois Urbana-Champaign

Abstract:
The freshwater mussel fauna of the United States, while extraordinarily rich, has the highest imperilment rate of any group of organisms. It is important to understand what factors allow riverine freshwater mussels to persist yet, challenging because of their unique life cycle, benthic habitat preferences, and sensitivity to disturbance across spatial and temporal scales. Habitat suitability modeling using hydrogeomorphic variables as correlates to instream features deemed important to freshwater mussel establishment and persistence, has been successful in the Meramec River of Missouri. However, while the creation of habitat suitability models is helpful in well-sampled areas like the Meramec River, model transferability is desirable to make predictions in areas with little survey information. The existing model from the Meramec River Basin was applied to two other Ozark drainages- the Gasconade and Little Black rivers. Five GIS layers representing lateral channel stability, stream power, proximity to persistent gravel bars, the presence of channel controls, and areas of low water were created and their relationship with species-rich beds accurately determined suitable habitat in both the Gasconade and Little Black drainage systems. Models specific to individual drainages better predicted suitable habitat while highlighting the importance of specific hydrogeomorphic variables.

Biography:
Jordan Holtswarth started at the University of Missouri-Columbia in August 2013 and graduated Magna Cum Laude with a BS degree in Fisheries and Wildlife in May 2017. She then attended Tennessee Technological University in August 2017 and received her MS degree in Biology in August 2019. This summer she worked as a project manager for the Illinois Natural History Survey and then started her PhD in Natural Resources and Environmental Science at the University of Illinois Urbana-Champaign. Her first experience with OFWIM was at the 2018 annual meeting where she received a Student Research Scholarship Award. Since then, she has taken on the Newsletter Editor position and serves on the Communications, Membership, and Outreach Committee.
Database management of the VIMS Nunnally Ichthyology Collection

Sarah Huber, Virginia Institute of Marine Science

Abstract:
The Nunnally Ichthyology Collection at the Virginia Institute of Marine Science comprises over 40,000 cataloged lots of fishes (~350,000 individuals), with an emphasis on freshwater fishes of VA, estuarine and marine fishes of the mid-Atlantic Bight, deep-sea fishes, and larval fishes. All collection data associated with specimens is digitized and uploaded onto a web-based platform. Collection records are managed using Specify database software. This software program allows media files to be uploaded directly to specimen records (e.g., journal articles, field notes, image files). Specify also contains plugins for GEOLocate and Google Maps that support georeferencing records directly in the database. Specify will also format our database, using Darwin Core Archive, for exportation to and ingestion by global database aggregators (e.g., GBIF, iDigBio, VertNet). Static URLs of records can also be integrated into global databases such as Genbank and Morphosorce, an on-line repository for CT-scan data. By exporting our data to global databases and hosting it locally on VIMS servers, external users are able to download metadata associated with specimens. We are also collaborating with several other US Museums in the NSF-funded project oVert, which produces CT-scan data for over 30,000 vertebrate species. By having specimen records available to global data aggregators, the visibility and use of specimens by researchers around the world has increased.

Biography:
Sarah Huber is the Curatorial Associate and Collections Manager for the Virginia Institute of Marine Science Nunnally Ichthyology Collection. Sarah oversees the care and curation of the collections, data and records management, documentation of outgoing and incoming loans, and processing and preparation of new and existing collections. In addition, she works with visitors, students, interns, and volunteers, and participates in public service programs and educational activities, including tours of the Fish Collection. Sarah also serves as the co-chair of the Collection Committee for the American Society of Ichthyology and Herpetology. She received her Ph.D. from the University of Massachusetts, with an emphasis in behavioral ecology and evolutionary biology.
The lies we tell ourselves

Keith Hurley, Nebraska Game and Parks Commission

Abstract:
Through the history of natural resource management, many of the basic assumptions, foundations, and guiding principles that have been developed by management organizations have been derived from little more than gut feelings, intuition, and common-sense thinking. As we move further and further into the age of data-driven natural resource management, some of these assumptions, foundations, and principles aren’t holding up to the data that’s being gathered. As natural resource managers, often times we have institutionalized these fallacies into institutional-lies. Join me as I look at data from a variety of sources that exposes one such institutional-lie, the paradigm-shift that could result in resource management strategies, and the role of information managers in making it happen.

Biography:
Keith Hurley is a Fish and Wildlife Specialist – Database Manager with the Nebraska Game and Parks Commission. He holds a B.S. from South Dakota State University in Fish and Wildlife Science and a M.S. in Zoology (Fisheries Ecology) from Southern Illinois University in Carbondale. Current job duties include creation, maintenance, and operation of fisheries division databases; data-mining of divisional data stores; coordination of the statewide creel project; statewide fisheries research; fisheries human dimensions research; divisional oversight of IT budget and purchasing, and whatever other odd jobs that can be assigned that might possibly involve the use of electrons and a keyboard.
Look at me – I have something I want to share with you

Daniel McGarvey, Virginia Commonwealth University

Abstract:
Scientists are in a bind. Heightened standards of transparency and accountability are pushing us to articulate the importance of our work to general audiences, while misinformation and anti-intellectual noise threaten to drown our collective voice. We need new communication tools. Five years ago, the Center for Environmental Studies and the Department of Communication Arts at Virginia Commonwealth University teamed up to launch a novel STEM graduate training program in digital media and broad science communication. This program is built around three core objectives: (1) teach STEM grad students basic principles of graphic design (e.g., lessons in typography and color theory); (2) enhance their ‘visual literacy’ skills (e.g., training them to anticipate the perceptions and biases of target audiences); and (3) provide them with the necessary technical skills to create high-quality digital content, using industry-standard tools (i.e., Adobe Creative Suites software). In this presentation, I will use student projects to demonstrate the level of skill that can realistically be achieved in a single semester (relative to students with no prior design/arts training). I will then reflect on some of the key trail-and-error lessons that have been acquired in the past several years and discuss the next steps in a larger effort to make this training process transferable.

Biography:
Dan McGarvey is an associate professor and the graduate program director in the Center for Environmental Studies, Virginia Commonwealth University. He holds a BA in Biology and Geology from Wittenberg University, an MS in Fisheries Science from Pennsylvania State University, and a PhD in Biology from the University of Alabama. His research program includes stream ecology, fisheries science, community and ecosystem ecology, biogeography, macroecology and ecological modelling. But he is most concerned about the (widening?) gap between science and the general public.
The Biodiversity and Ecosystems A-16 theme: responding to new guidance

Marcia McNiff, U.S. Geological Survey

Abstract:
The Office of Management and Budget (OMB) Circular A-16 “Coordination of Geographic Information and Related Spatial Data Activities” provides guidance and direction for federal agencies regarding the coordination and management of spatial data. National Geospatial Data Assets (NGDAs) are organized into a single portfolio of geospatial assets and managed collaboratively across agencies. The portfolio consists of seventeen themes, categorized by subject, each of which are made up of one or more datasets. The Biodiversity and Ecosystems theme is one of these. It is comprised of datasets that pertain to, or describe, the dynamic processes, interactions, distributions, and relationships between and among organisms and their environment. There are currently seven datasets managed by 5 separate organizations in the theme, and an eighth dataset is currently under consideration for inclusion. Within the last year, three new congressional acts, which affect the way we manage the NGDA portfolio, have passed into law. These are: the Geospatial Data Act, the Evidence-Based Policymaking Act, and the Open Government Data Act. We will briefly describe the A-16 process, the datasets within the Biodiversity and Ecosystems theme, and current procedures for accessing them, and will share our near-future plans for addressing the requirements of these newly passed laws.

Biography:
Marcia McNiff is a Technical Information Specialist who serves as the Senior Liaison for the Science Analytics and Synthesis (SAS) program in U.S. Geological Survey's (USGS) Core Science Systems (CSS) Mission Area. Her work with the Science Data Management Branch includes 4 major roles, all of which have communication and coordination as a common thread. Marcia is the lead for the Biodiversity and Ecosystems Theme in the A-16 portfolio management process for National Geospatial Data Assets, the liaison to the John Wesley Powell Center for Analysis and Synthesis, chair of the CSS Communication Team, and a Diversity Change Agent, working to foster a diverse, inclusive and welcoming USGS.
eMammal as a data pipeline, repository, and outreach for wildlife images and their metadata

William McShea, Smithsonian Conservation Biology Institute

Abstract:
We have created a data pipeline that has processed over 10 million wildlife images from over 40 projects distributed over the world. Each image has associated metadata to serve as a voucher sample for detecting species of mammals at specific locations and times. The data and images are then available to the general public following appropriate embargo periods. The system is designed for a distributed network of staff or volunteers within each project to be directed through a single protocol and expert review process. The pipeline consists of a desktop application, a cloud-based expert review system, a curated data repository, and a drupal-based website. The advantage of the system is being able to collect and utilize data across projects because they share a metadata structure and enough detail in specific protocols. We will provide details on the structure, discuss impending IT advances, and the feasibility of states creating similar data pipelines or joining national efforts.

Biography:
Bill McShea has been a wildlife ecologist for the Smithsonian Institution since 1986, based at its Conservation Biology Institute in Front Royal, VA. He primarily focuses on the conservation and management of large mammals but has also worked on migratory birds, native grassland restoration, oak forest ecology and invasive exotic plants. He has research projects both in US and in Asia, with much emphasis in the last decade on wildlife surveys using camera traps. He is a founding member of a wildlife image repository called eMammal and part of a new consortium around camera trap images called Wildlife Insights.
Priority Amphibian and Reptile Conservation Areas (PARCAs): for West Virginia and beyond

Jessica Perkins, West Virginia Division of Natural Resources
Coauthors: Kevin Oxenrider and JJ Apodaca

Abstract:
PARCAs are a nationwide effort spearheaded by Partners in Amphibian and Reptile Conservation (PARC) and refined and validated by state PARCA task teams. PARCAs designate areas of high conservation value for critical amphibian and reptile populations and habitat. Habitat loss, fragmentation, and disease are all major threats to amphibians and reptiles, causing population declines and serious concern for their integral role in ecosystems. West Virginia in particular has 35 amphibians and 28 reptiles listed as Species of Greatest Conservation Need. The West Virginia (WV) PARCA process began with PARC personnel modeling spatial data, emphasizing landscape integrity with unfragmented habitat. One of these four criteria must be met to designate a PARCA: 1) presence of globally or nationally vulnerable species; 2) presence of state imperiled species; 3) presence of state rare species or species of high regional responsibility; and/or 4) presence of an exceptional diversity of amphibian and/or reptile species. In November 2018, the WV PARCA task team, composed of scientists from across conservation agencies and academia met to finalize WV PARCAs. Using the model to guide our process, we designated areas using expert knowledge, modeled and known populations, existing WV Conservation Focus Areas, and watersheds in an ArcGIS Online environment. Basic polygons were further refined in ArcGIS Professional to precisely match boundaries with existing spatial data.

Biography:
Jessica Perkins is a Certified GIS Professional with twenty plus years of geospatial experience working with several state and federal agencies across the country and abroad. She has worked for the West Virginia Division of Natural Resources for four years. Jessica leads the GIS and Technical Support Program team and performs geospatial data management and analysis for the Wildlife Resources Section, supporting Game Management, Fish Management, Environmental Coordination, Wildlife Diversity and Natural Heritage. Jessica holds a Master of Forestry with a Certificate in Geospatial Information Technology (2007) and a Bachelor of Science in Wildlife Science (2000) from Virginia Tech.
Pennsylvania Wildlife Action Plan Conservation Opportunity Area Tool

Rick Schneider, NatureServe
*Coauthors: Lori Scott, Catherine D. Haffner, Diana M. Day, and Christopher Tracey*

**Abstract:**
The Conservation Opportunity Area Tool (COA Tool), a web-based map application, was developed to facilitate implementation of the 2015-25 Pennsylvania Wildlife Action Plan. The vision of the Plan is to achieve “healthy, sustainable native wildlife populations, natural communities and habitats in Pennsylvania.” Conservation opportunities for Species of Greatest Conservation Need (SGCN) exist nearly everywhere across Pennsylvania, yet for effective conservation to be realized, conservation actions should be implemented where the species occur. The COA Tool facilitates this by allowing the user to generate a report identifying SGCN, habitats, and conservation actions, within a user-defined area of interest (up to 5,500 acres). It also facilitates a statewide view to explore SGCN at a landscape scale. The COA Tool was developed by the Pennsylvania Game Commission and Pennsylvania Fish and Boat Commission, in conjunction with the Pennsylvania Natural Heritage Program and NatureServe. This presentation will discuss COA Tool web-enabling and provide a demonstration of this publicly-accessible web application.

**Biography:**
Rick Schneider is a product manager with NatureServe, a non-profit conservation science and technology organization. From 1996 to 2019, Rick served as the Coordinator of the Nebraska Natural Heritage Program, part of the Nebraska Game and Parks Commission. In this role Rick served as co-chair for the Nebraska State Wildlife Action Plan (2004-2019), member of the Midwest Association of Fish and Wildlife Agencies’ Climate Change Technical Committee (2014-2019, chair 2016), co-representative for Nebraska on the Crucial Habitat Assessment Tool Technical Committee (2010 – 2019). Rick holds a PhD from Duke University Department of Botany and a BS in Biology from University of Idaho.
Georeferencing a map in QGIS: a brief tutorial

Don Schrupp, Colorado Division of Wildlife (retired)

Abstract:
Locational information is often collected on paper maps while in the field, or sometimes gleaned from other hardcopy map sources (such as printed maps in historical reports). This information can be captured and used in geographic information systems by scanning the maps, mosaicing multiple scans if necessary, and then 'geo-referencing' the digital images for use with other existing GIS layers. This brief tutorial outlines the steps to be performed when doing this procedure in Quantum GIS.

Biography:
Don is a wildlife ecologist, retired from the Colorado Division of Wildlife (CDOW) in 2006, after a 32+ year career. He has a Bachelor’s (’72) and a Master’s (’89) in Wildlife Biology from Colorado State University. He was a founding member of the OFWIM, and has served in a number of its positions. As Wildlife Inventory Coordinator at CDOW he developed their Wildlife Resource Information System and applications of GIS to land use planning and environmental assessment. He was PI for the Colorado GAP Analysis Project and a Co-PI in SWReGAP. His interests include hiking, motorcycle touring, camping, and bluegrass music. He is an avid supporter of open source programs and maintains an aging arsenal of Linux laptops running GRASS and QGIS.
Tracking chronic wasting disease in Missouri

Craig Scroggins, Missouri Department of Conservation

Abstract:
Chronic Wasting Disease (CWD) is a deadly illness in white-tailed deer and other members of the deer family, called cervids. The Missouri Department of Conservation has been testing for CWD since 2001. The first captive breeding facility with CWD was found in 2010 and the first free-ranging positive was found in 2012. Over time the geographic extent and number of samples taken has grown exponentially. I will discuss how our data management, data collections and data delivery to the citizens of Missouri has evolved to handle this growing project.

Biography:
Craig Scroggins is a GIS Specialist in the Resource Science division of the Missouri Department of Conservation (MDC). Craig began his career with MDC in 1996 and has been in 3 different divisions under 5 different supervisors all within MDC.
Making in-stream tributary data findable, accessible, interoperable, and reusable (FAIR).

Becca Scully, U.S. Geological Survey

Abstract:
To accelerate research and decision-making, data needs to be findable, accessible, interoperable, and reusable (FAIR). Four federal programs collect in-stream habitat data for project-specific objectives: BLM’s Assessment, Inventory, and Monitoring (AIM), EPA’s National Rivers and Streams Assessment (NARS), and US Forest Service’s Pac-fish/In-fish Biological Opinion (PIBO) Effectiveness Monitoring and Aquatic Riparian Effectiveness Monitoring Program (AREMP). These programs have long-term spatially overlapping data and calculate a sub-set of metrics with comparable field and analysis methodology, yet there is no easy process to find, access, and integrate the data from all four programs, making data reuse difficult. Producing FAIR in-stream habitat data from these four programs would allow managers and monitoring professionals to reuse over 15 years of data and design new data collection efforts to integrate with the existing data collection efforts. We kicked off a working group to tackle the factors confounding data integration: differences in response design and survey design. And we documented the initial technical steps to the exploration and analytical process of combining information. We are in the early stages of this effort, but we have found that a key component of making data FAIR is strong metadata documentation and a data dictionary to crosswalk information between programs. We will continue our two-pronged approach.

Biography:
Becca Scully is the President of OFWIM (or if her presentation is after the business meeting she is the Past-President). Becca Scully works a biologist with the USGS with the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), in Cook, WA. She works on coordination and collaboration of aquatic monitoring program, documentation of monitoring program information and data sharing. Before PNAMP she spent three years with the USFS PACFISH/INFISH Biological Opinion Effectiveness Monitoring Program in Logan, Utah. Becca has a Masters in Watershed Science from Utah State University and a Bachelor’s of Science in Applied Mathematics from William Smith College. When not at work you can find her in the mountains or on a river.
Partitioning the effects of changing land use and introduced species on spatiotemporal abundance trends and biotic homogenization in native fish communities of New River tributary streams

Logan Sleezer, Virginia Tech

Abstract:
Non-native species and habitat change are considered two of the most deleterious factors contributing to native species declines across the globe. Freshwater fishes are particularly sensitive to these stressors as past research suggests that one or both of these factors contributed to over 95% of recent North American freshwater fish extinctions. As humans continue to alter the mosaic of land use and distribution of exotic taxa across Earth’s surface, native species have to continually adapt to environments with new combinations of biotic invaders and habitat properties. Because of this complex reshuffling of ecosystems, it is often difficult to identify root causes of native species declines and to prioritize appropriate conservation solutions based on these causes. In recognition of these conservation challenges, we utilize a novel species abundance metric to establish spatiotemporal trends in fish species distributions across the New River Basin, using records from repeatedly sampled stream segments during a 40+ year time period (1977-2019). We then use geospatial analysis to link native species abundance trends to corresponding land-use data and partition the effects of changing land use and abundance of non-native species on native species abundance trends using a multivariate statistical approach (RDA). Finally, we use a diversity partitioning approach to track potential biotic homogenization within fish sampling sites across time and space within our study dataset.

Biography:
Logan Sleezer earned his Bachelor of Science degree with majors in Earth Science and Biology (Ecology & Biodiversity Concentration) and minors in Geospatial Analysis and Paleontology from Emporia State University in Emporia, Kansas in 2016. Logan is a current graduate student in the Department of Fish and Wildlife Conservation at Virginia Tech, where his research focuses on fish invasions, land-use changes, and the effects of these disturbances on spatiotemporal trends in native fish species abundances within tributary streams of the New River Basin. Through his studies, Logan hopes to use his diverse academic background and geospatial skillset to help prioritize conservation strategies for underappreciated non-game aquatic wildlife.
Wildlife licensing system data dashboards: alleviating data requests and empowering data driven decision making

Stephen Slotter, Brandt Information Services

Abstract:
With modern wildlife licensing system platforms, state agencies have more licensing data than ever before. Data such as customer demographics, sales transactions, lottery draws, and harvest reporting. But how can you leverage this data to find trends that may impact your agency decision making? This presentation will demonstrate an interactive licensing system data dashboard that provides at-a-glance information to empower state agency personnel and alleviate your data request workloads.

Biography:
Stephen Slotter is a Business Intelligence Engineer at Brandt Information Services, a parks and wildlife licensing system provider. Leveraging tools such as SQL, Power BI, and Tableau, Stephen is an expert in providing data visualization and analysis for State agencies. He implements data dashboards for Brandt's state agency partners to better disseminate system information in a format that is quick to digest and analyze trends. An outdoors enthusiast since childhood, today he enjoys nothing more than spending time with his wife and 2 dogs, hunting, fishing, hiking and camping the many hidden gems of the Southeast.
The Florida Climate Adaptation Explorer

Beth Stys, Florida Fish and Wildlife Conservation Commission

Abstract:
Florida is expected to be severely impacted by climate change over the next century. Many species of fish and wildlife in Florida have limited ranges that are determined in part by climatic conditions and their survival could be threatened by future climatic shifts. The Climate Adaptation Explorer (CAE) provides a starting point from which to address the predicted impacts of climate change on Florida’s fish, wildlife, and ecosystems. The CAE is intended to provide the tools for better integration of adaptation actions and tasks into broader policies and programs, serving as a toolkit to help natural resource managers and others understand and address current and future impacts of climate change on Florida’s ecosystems and facilitate the implementation of adaptation strategies. The CAE provides an easy to navigate format for users to access a broad array of climate change information. Content includes an overview of climate change, impacts of climate change in Florida, impacts on Florida’s species, impacts on Florida’s ecosystems and habitats, interactions with existing stressors, and vulnerability to climate change. The CAE is hosted on the Florida Conservation Planning Atlas (CPA), a data discovery, visualization, and analytical platform for stakeholders throughout Florida.

Biography:
Beth Stys is an Associate Research Scientist with the Florida Fish and Wildlife Conservation Commission (FWC), Fish and Wildlife Research Institute. She has worked for the FWC for over 27 years. Her work with the FWC has focused on landscape level, statewide conservation planning, imperiled species protection, terrestrial and freshwater aquatic conservation area identification and prioritization, species habitat modeling, land cover mapping, and climate change. Beth served as the co-science coordinator for the Peninsular Florida Landscape Conservation Cooperative from 2014-2017. She is currently leading an FWC agency wide landscape conservation initiative.
Mapping fires across Florida: development of a fire spatial database

Beth Stys, Florida Fish and Wildlife Conservation Commission

Abstract:
Development of a comprehensive spatially explicit map of fire occurrence remains one of the most critical needs for conservation in the Southeastern US. Many of Florida's endangered species and ecosystems are reliant on frequent fire. Tracking “actual burned” areas is critical in analyses and models evaluating conservation success. Knowing which areas are/are not within appropriate fire return interval allows managers to focus resources on areas most in need of management actions, as well as metric of success. In response to this need, the Florida Fish and Wildlife Conservation Commission (FWC) in partnership with the US Fish and Wildlife Service and Tall Timbers Research Station developed the Florida fire spatial database. The database was developed using the Burned Area Essential Climate Variable (BAECV) derived products from US Geological Survey (USGS) and a combination of change detection algorithms, spectral indices, and reference areas with LANDSAT Imagery. The resulting product delineates burned areas at a 30 m pixel resolution for fires occurring between 2006 – 2018. A web map application was developed to give users basic access and functions to explore the Florida Fire database. The web map allows users to view and explore the foot prints of fires occurring across the state of Florida. These fire foot prints can be queried against multiple datasets, including land cover, species habitat, and management ownership.

Biography:
Beth Stys is an Associate Research Scientist with the Florida Fish and Wildlife Conservation Commission (FWC), Fish and Wildlife Research Institute. She has worked for the FWC for over 27 years. Her work with the FWC has focused on landscape level, statewide conservation planning, imperiled species protection, terrestrial and freshwater aquatic conservation area identification and prioritization, species habitat modeling, land cover mapping, and climate change. Beth served as the co-science coordinator for the Peninsular Florida Landscape Conservation Cooperative from 2014-2017. She is currently leading an FWC agency wide landscape conservation initiative.
Use of predicted suitable habitats of rare species in an environmental review tool

Joseph Weber, Virginia Department of Conservation and Recreation

Abstract:
The mission of the Virginia DCR Natural Heritage Program is to conserve biodiversity through the inventory, protection, and stewardship of rare plants, animals, and natural communities, known as Natural Heritage Resources (NHR). Known locations of NHR are cataloged as Element Occurrences (EO) and used to develop tools for conservation planning and environmental review. The primary tool for these purposes is the Conservation Sites layer, which contains boundaries encompassing EO as well as ancillary habitat and buffer necessary to ensure viability of NHR. Additional tools include ConservationVision and the Predicted Suitable Habitat Summary (PSHS). ConservationVision is a digital atlas of green infrastructure priorities with a suite of maps and spatial data for strategically planning conservation efforts. The PSHS represents potential suitable habitat of over 160 NHR, including all federal and state threatened and endangered species in Virginia, and it can be used consistently for projects from early planning to environmental review stages. This presentation will provide an overview of how this consistent information is benefiting clients using both federal and state review tools by allowing swifter decisions while avoiding obstacles due to uncertainties about conflicts with rare species. Also discussed will be modeling collaborations with other natural heritage programs and NatureServe to develop regional products and the Map of Biodiversity Importance (MoBI).

Biography:
Joe Weber has been with the Virginia Natural Heritage Program in the Department of Conservation and Recreation since 1998, where he now leads a staff of spatial ecologists, GIS specialists, and conservation planners in the Information Management section. Joe and his staff catalog rare species and natural community locations, and conduct geospatial analyses to develop products for conservation planning and environmental review. He holds a Master of Science degree in Wildlife Science from Cornell University. Joe enjoys almost anything outdoors, especially backpacking in wild and majestic places.
Practical uses of iNaturalist, eBird, and other online observations for fish and wildlife data managers

Lindsey Wise, Portland State University

Abstract:
The realm of online species observation platforms continues to grow, with popular platforms such as eBird and iNaturalist collecting billions of observations from millions of observers. Within these platforms are a wealth of data and networking opportunities that can be greatly beneficial to us as managers of fish and wildlife data. The Oregon Biodiversity Information Center has made use of these platforms in our rare species and invasive species databases, in an ecosystem report card project, and in species status assessments. Benefits of using these online platforms as well as tips and tricks will be discussed. Experiences from colleagues in the Natural Heritage Network will also be shared, referring to the recently published article “Using citizen science data to support conservation in environmental regulatory contexts” by Young et al. (2019).

Biography:
Lindsey Wise is Biodiversity Data Manager at the Oregon Biodiversity Information Center, which is part of the Institute for Natural Resources at Portland State University in Portland, Oregon. She manages rare species, invasive species, and protected areas data, administers the Oregon iMapInvasives program, and coordinates data delivery and data sharing. She has worked as a field botanist for the National Park Service at Mount Rainier and for ORBIC on the coast and in central Oregon. She received a B.S. in Biology at the University of Puget Sound and an M.S. in Ecology for the University of Aberdeen.
iMapInvasives 3.0: modernization of the iMapInvasives platform

Michael Barbour, Arizona Game and Fish Department

Co-presenter: Lindsey Wise

Abstract:
iMapInvasives is an online, GIS-based invasive species reporting and data management system that provides a flexible platform for aggregating invasive species data from a wide variety of sources. This database supports data management of species location, survey, and treatment information. In addition, it supports advanced information management including the ability to track management actions, create collaborative projects, track hours and volunteer efforts spent on projects, and assist with early detection and rapid response. On a broader scale, iMapInvasives is a growing, collaborative partnership of participating states and provinces, with a collaborative network of professionals and shared resources to help combat the threat of invasive species. Since its launch in 2010, iMapInvasives has been providing users with a powerful data management tool for invasive species work.

Recognizing the need to update the platform, the iMapInvasives platform was redesigned to provide a more responsive user interface tapping into the power of cloud-based and mobile mapping technologies. iMapInvasives 3.0, the next generation of iMapInvasives, was launched on 19 April 2019. New features in iMapInvasives 3 include map coverage of all USA and Canada, increased use of web map services to serve real-time data to and from iMapInvasives, and improvements in user experience and workflow. Development is ongoing, and additional functionality will be released as it is completed.

Biography:
Michael Barbour is a Data Specialist for the Arizona Heritage Data Management System in the Arizona Game and Fish Department. In his role as Arizona’s iMapInvasives Administrator, he is responsible for managing the database that documents invasive species locations throughout Arizona. His responsibilities also include curation of data on special status and sensitive species from multiple sources for inclusion in the HDMS Biotics biodiversity database. He received B.S. degrees in Biology and Wildlife Management from Virginia Tech, and an M.S. in Wildlife Ecology from the University of New Hampshire. He completed a Ph.D. research project in Zoology with the Cooperative Wildlife Research Laboratory at Southern Illinois University.
Update on the Virginia Fish and Wildlife Information Service (VAFWIS) rebuild

Amy Ewing, Virginia Department of Game and Inland Fisheries

Abstract:
I will give a live demo update of the Virginia Fish and Wildlife Information Service (VAFWIS) during the Hacker's Ball. VAFWIS is an online application that serves wildlife information and data to a varied audience. We began rebuilding VAFWIS, originally developed during the 1990's, in earnest about two years ago. To date we have completed most of the Initial Project Assessment (IPA) tool used to perform project reviews in Virginia. I want to demo the new tool for OFWIM and hopefully get some feedback on the tool's capabilities and its user environment.

Biography:
Amy M. Ewing is an Environmental Services Biologist and FWIS Program Manager at the Virginia Department of Game and Inland Fisheries. Amy reviews projects, policies, and permits for impacts upon wildlife, wildlife habitats, and programs for which DGIF is responsible, including T&E species protection. Amy received her B.S. in Wildlife Management from Virginia Tech in 1996 and her M.S. in Environmental Science from VCU in 2002.
DGIF Law Enforcement Automatic Vehicle Locator

Jay Kapalczynski, Virginia Department of Game and Inland Fisheries

Abstract:
The DGIF Law Enforcement Automatic Vehicle Locator (LEAVL) is an application that supports agency communications between Law Dispatch and officers in the field. Utilizing ArcGIS Server and JS APIs, this tool provides law enforcement with real-time information on vehicle locations, traffic and directions, navigation, and additional feature data sets. Working to promote a safe work environment to assist law enforcement this application fosters a connection to traditional law enforcement tactics and the utilization of spatial information. DGIF law enforcement now has various datasets and information at their fingertips that help officers and dispatch oversee responding officers. Data that was otherwise locked down to GIS machines at headquarters is now available in real time. Such data includes, but are not limited to, Flood Zones, Weather maps, Parcels, Contact info for Districts and Biologists, Fed & State lands, Wildlife Management areas, Mile Markers, VDOT cameras, traffic status and address info. These data layers provide additional data and information that can be accessed via the LEAVL application in an attempt to increase spatial awareness and provide critical information to aid in Law Enforcement current activities. Leveraging the LEAVL application law enforcement staff gained critical tools to track officer locations, retrieve contact data, ability to alert additional resources, provide detailed location information and overlay various spatial datasets.

Biography:
Jay Kapalczynski is current employed by the Virginia Department of Game and Inland Fisheries as their GIS Coordinator. He earned a Master’s Degree in Quantitative Methods in GIS with a minor in Natural Resource Management from Syracuse University. Utilizing his education, he has moved on to work at ESRI and various State and Private Organizations. His current role at DGIF focuses on developing and maintaining DGIF’s Enterprise GIS environment while integrating geospatial data and services to share them across the organization, desktop and mobile application development and agency GIS support.
Vyond Video overview: “Why Join OFWIM?” & “What is OFWIM?”

Heather Konell, Atlantic Coastal Cooperative Statistics Program

**Abstract:**
Does your organization need publicity? Do you know how to combine graphic design with informative, easy to use software? Vyond Video might be just what you need. With their easy to use templates, informative “getting started” videos and great customer service, you can create outreach materials for your organization without ever taking a graphic design course. I have created two videos titled “Why Join OFWIM” and “What Is OFWIM” to increase awareness and outreach while using the Vyond Video software. These videos can be used internally to educate new members or externally to increase awareness and recruit new members. Without ever taking formal training, I was able to create two very interactive and informative videos using this software that can be downloaded onto a desktop or uploaded onto a webpage or YouTube.

**Biography:**
Heather Konell is a Senior Fisheries Data Coordinator at the Atlantic Coastal Cooperative Statistics Program (ACCSP) with the Atlantic States Marine Fisheries Commission (ASMFC). Her primary role is to provide guidance for all data coordination and load processes with all program partners. This includes responsibility for the biannual commercial data loads and warehousing. She also is responsible for handling custom data requests and managing partner data feeds. Heather is the staff person for the ACCSP Biological Review Panel and Bycatch Prioritization Committee. She is currently the Vice Chair of the OFWIM Data Standards and Technology Trends Committee and an active member of the OFWIM Communications, Membership and Outreach Committee. Heather also takes part in AFS Fundraising Committees.
Mapping the distribution of Timber Rattlesnakes (*Crotalus horridus*) in West Virginia using a citizen science approach

Kevin Oxenrider, West Virginia Division of Natural Resources  
*Coauthors: Alissa Gulette and Jessica Perkins*

**Abstract:**  
Continued declines in timber rattlesnakes (*Crotalus horridus*) across the species’ range, due to direct persecution, habitat loss, and disease, has elevated the species to be a high conservation priority. In West Virginia, the timber rattlesnake has been named the State Reptile, and is currently listed as a priority 1 Species of Greatest Conservation Need in the West Virginia State Wildlife Action Plan. West Virginia is 78% forested, and still maintains much of the intact, forested habitat required by healthy timber rattlesnake populations, making the state a key player in conservation efforts. Unfortunately, little is currently known about the exact distribution of timber rattlesnakes in West Virginia, specifically how the animals are distributed within their expected range. Using a citizen science approach to increase public participation in timber rattlesnake conservation and allow for increased outreach opportunities, the West Virginia Division of Natural Resources has initiated a project to map the Extent of Occurrence and Area of Occupancy of timber rattlesnakes in West Virginia. Data collected during this study will allow the agency to better develop a conservation action plan for timber rattlesnakes in the state, including highlighting areas in need of increased outreach due to higher than normal human-rattlesnake interactions, as well as locate potential “hot spots” to focus conservation efforts.

**Biography:**  
Kevin Oxenrider is the West Virginia State Amphibian and Reptile Conservation Leader with the West Virginia Division of Natural Resources. He leads and oversees conservation initiatives and research for WV’s amphibian and reptiles, as well as serves on regional and national working groups and committees to promote amphibian and reptile conservation at larger scales. He has been with the WVDNR since 2016, but has spent time previously working with a number of wildlife species across the US, including bats, shorebirds, and prairie chickens. Kevin holds a M.S. in Ecology from Frostburg State University in Frostburg, MD, and completed doctoral work, also in ecology, at The Ohio State University, in Columbus, OH.
U.S. Fish and Wildlife Service Northeast regional Bog Turtle database

Leslie Pitt, U.S. Fish and Wildlife Service

Abstract:
The USFWS Northeast Bog Turtle Partnership began in 2013 to improve coordination and organization of data collected among states in the northern range of the federally endangered bog turtle (Glyptemys muhlenbergii). This collaborative effort developed a database schema and software platform to enable consistency and quality assurance for data entry, uniform data types across states, and instantaneous synchronization between state biologists and species leads, for this highly sensitive endangered species.

Biography:
Leslie has worked for the USFWS Chesapeake Bay Field Office for 26 years. Currently she works as a biologist in the Coastal Program to promote the Service’s mission and priorities, deliver landscape-scale conservation, and implement strategic habitat conservation. She uses GIS to accomplish these initiatives. Leslie has a Bachelor of Science degree in Biology from George Mason University and a Master of Science in Geography and Environmental Planning from Towson University.
Test drive NatureServe conservation solutions for state fish and wildlife agencies

Rick Schneider, NatureServe

Abstract:
The USFWS Northeast Bog Turtle Partnership began in 2013 to improve coordination and organization of data collected among states in the northern range of the federally endangered bog turtle (*Glyptemys muhlenbergii*). This collaborative effort developed a database schema and software platform to enable consistency and quality assurance for data entry, uniform data types across states, and instantaneous synchronization between state biologists and species leads, for this highly sensitive endangered species.

Biography:
Rick Schneider is a product manager with NatureServe, a non-profit conservation science and technology organization. From 1996 to 2019 Rick served as the Coordinator of the Nebraska Natural Heritage Program, part of the Nebraska Game and Parks Commission. In this role Rick served as co-chair for the Nebraska State Wildlife Action Plan (2004-2019), member of the Midwest Association of Fish and Wildlife Agencies’ Climate Change Technical Committee (2014-2019, chair 2016), and co-representative for Nebraska on the Crucial Habitat Assessment Tool Technical Committee (2010 – 2019). Rick holds a PhD from Duke University Department of Botany and a BS in Biology from University of Idaho.
Enterprise tools to help discover who is doing what, where, when and how?

Becca Scully, U.S. Geological Survey

Abstract:
The Pacific Northwest Aquatic Monitoring Partnership (PNAMP) facilitates collaboration and coordination of diverse ecological monitoring programs within the region. To aid partners, PNAMP developed a suite of integrated web tools and resources, MonitoringResources.org, that supports practitioners to document how, when, where, and why data are collected. With standardized documentation of metadata, practitioners can document details once, easily update annually, and share their work many times. MonitoringResources.org uses standardized documentation for data collection and analysis methods, for protocols, and for spatial and temporal study designs. Information is integrated so that users can plan more efficiently. Long term storage of information preserves annual documentation, facilitating discovery of past data collection procedures, and assisting analysts how to best synthesize and analyze data in the future. MonitoringResources.org supports information sharing among monitoring programs, allowing us to leverage funding for data collection and sharing. PNAMP is working with partners and subject matter experts to expand MonitoringResources.org to support continental scale monitoring.

Biography:
Becca Scully is the President of OFWIM (or if her presentation is after the business meeting she is the Past-President). Becca Scully works a biologist with the USGS with the Pacific Northwest Aquatic Monitoring Partnership (PNAMP), in Cook, WA. She works on coordination and collaboration of aquatic monitoring program, documentation of monitoring program information and data sharing. Before PNAMP she spent three years with the USFS PACFISH/INFISH Biological Opinion Effectiveness Monitoring Program in Logan, Utah. Becca has a Masters in Watershed Science from Utah State University and a Bachelor’s of Science in Applied Mathematics from William Smith College. When not at work you can find her in the mountains or on a river.
Species occurrence data for the nation

Elizabeth Sellers, U.S. Geological Survey

Abstract:
USGS' Biodiversity Information Serving Our Nation (BISON) is a unique, web-based Federal mapping resource for finding species in North America. BISON's size is unprecedented, including records for most living species found in the United States and including data from more than a million professional and citizen scientists. Most of BISON's species occurrence records are specific locations, not just county or state records. Users query BISON by scientific or common name and refine their search results by choosing one or more criteria, including basis of record (such as observation or specimen), provider or resource name, location, higher taxa, year range, and centroid Y/N. A refined search option queries the database by selecting a county or state, or by drawing an exact boundary around an area of interest. Species occurrence data are interactively mapped in BISON (with heat map or points layer options), or in checklist format. Search results may be displayed on any of 50 available map layers, downloadable in zipped .csv, .kml, or .shp formats. Web services are also available. Become a BISON data provider and make your data more broadly available: email bison@usgs.gov. Developed and supported by the USGS Science Analytics & Synthesis Program, BISON prioritizes acquisition and processing of datasets from USGS Science Centers, other agencies of the Department of the Interior, and other U.S. Federal and State agencies. BISON also seeks pollinator or invasive species datasets.

Biography:
Elizabeth Sellers is a Technical Information Specialist in Biology with USGS Core Science Systems Mission Area. She completed her B.Sc. in Tropical Botany and Geomorphology at James Cook University, Townsville campus, Australia in 1995; and completed postgraduate research in 1996 on the compensatory growth habits and ecophysiology of the non-native invasive 'woody weed' Chinee apple (Zizyphus mauritiana) for a BSc. Honors degree. Elizabeth manages the software development issues tracking system for the USGS BISON species mapping application. In her free time, she co-organizes a bird banding station in northern Virginia at the Banshee Reeks Nature Preserve.
A comprehensive list of non-native species established in three major regions of the United States: first update

Annie Simpson, U.S. Geological Survey

Abstract:
This species list consists of all known unique non-native taxa established in Alaska, Hawaii, the conterminous United States, or a combination of these regions. More than 1,200 authoritative sources were consulted to generate the list. Our findings reinforce three common ideas: that tropical island systems (in this case, Hawaii) are particularly vulnerable to biological invasions; that higher latitudes (in this case, Alaska) host fewer non-native species but are not invulnerable to future invasions; and that species diversity in general decreases with increasing latitude. Uses for the list include contributing to the measurement of Essential Biodiversity Variables for invasive species monitoring, measuring gaps in coverage within species occurrence databases, providing species references for early detection and rapid response, and assisting with prioritizing species incursions. The non-native species list was also used to expose non-native occurrence records in Biodiversity Information Serving Our Nation (BISON, https://bison.usgs.gov), an all-species mapping application that has more than 464 million native and non-native species occurrence records (as of May 2019). By tagging BISON’s non-native occurrences, it was found that BISON contains more than 18 million occurrence records for non-native taxa, many of which were not labeled as non-native by the data providers of the records.

Biography:
Annie Simpson is a data coordinator for the Eco-Science Synthesis group in the USGS Science Analytics & Synthesis Program. Her research interests include invasive species information management, data standards, taxonomy and identification tool development, and plant/insect interactions. She recruits species occurrence datasets for the Biodiversity Information Serving Our Nation (BISON) species mapping project. She has also compiled and continues to update authoritative lists of non-native species established in Alaska, Hawaii, and the contiguous lower 48 states.
Habitat utilization and impacts of flooding on James spinymussel (*Parvaspina collina*) populations in Virginia streams

Christine Verdream, James Madison University  
*Coauthors: Brett Otsby, Christine May*

**Abstract:**
Considering the ecosystem services that mussels provide and their high percentage of threatened species, specifically over half the freshwater mussels in Virginia, one avenue for future research could prioritize upstream mussels in downstream conservation plans. This project will provide information that could be applied to recovery plans for mussels in the James River watershed and beyond. The objectives of the proposed research are determining the relationship between flood disturbance and mussel population dynamics (abundance and variation through time) by comparing a stream with flood disturbance to a dammed stream without flood disturbance and identify habitat preferences for *Parvaspina collina*. Our observations suggest that many mussels are temporarily occupying unstable habitats. Understanding where mussels are most likely to survive and reproduce is crucial to identifying potential habitat and determining where propagated mussels should be released. Understanding the effect flooding has on *P. collina* populations can be vital in restoring the diminishing population in the stream that is prone to flooding and to other endangered mussels in flood prone streams. Analysis will use a five-year mark-recapture data set for sites in the James River watershed. The aim of properly using and managing this PIT tagging data is to provide a model for management that can be applied across a broader range of population monitoring and conservation. Because PIT tagging has not been extensively used for freshwater mussels, this project has the potential to provide representative protocol for file content, naming and organization of PIT tag data, analysis and ReadMe files. In addition, this work will provide suggestions for file formats to effectively preserve PIT tagging data for future use by agency officials or future scientists.

**Biography:**
Christine is a second year master’s student at James Madison University. Prior to pursuing a master’s degree, she earned a B.S. in Biology – Ecology, Evolution and Environmental Studies from Appalachian State University. Her primary interests lie in aquatic ecology, specifically freshwater mussels. Her master’s work focuses on the population dynamics and influence of flooding on two populations of the critically endangered James spinymussel (*Parvaspina collina*). In addition to research, Christine is a lab instructor for a biology course at JMU and is passionate about teaching. Upon graduation in May, she hopes to find a job that can combine her passion for fieldwork and research with her passion for teaching.
The Organization of Fish and Wildlife Information Managers conducts its annual business meeting each year at the OFWIM conference. It is important to the future of the organization to maximize participation by current and future members. The business meeting has been combined with lunch to encourage more involvement.

Besides eating together, what happens at the business meeting? Each of the OFWIM officers and committee chairs makes a report on what has been accomplished over the past year. This also is when we openly discuss our goals for the next year, which is why contribution by as many members as possible is so important. Next we have elections to fill officer vacancies.

We hope that you will join us for the 2019 OFWIM business meeting. More importantly, we hope that you will provide input into the future of this organization as well as consider serving on an OFWIM committee or even running for an officer position.
Agenda

1. Call to Order – Becca Scully

2. Determination of Quorum (10% of registered members)

3. Old Business
   a. Approval of 2018 Business Meeting Minutes (posted on website)
   b. Officer Reports
      i. President – Becca Scully
      ii. Secretary – MaryEllen Wickett
      iii. Treasurer – Michael Barbour
      iv. Member-at-Large – Chelsea Krauss
   c. Committee Chair Reports
      i. Communications, Membership & Outreach – MaryEllen Wickett
      ii. Conference Planning – Karen Horodysky
      iii. Elections, Nominations & Awards – Jim Husband
      iv. Training & Education – Michael Barbour

4. Awards
   a. Student Scholarship Award – Beth Stys
   b. Special Recognition Award – Jim Husband
   c. 2019 Best Poster Award – Jim Husband
   d. 2018 Best Presentation Award – Announced at the banquet
   e. Service Awards – Becca Scully
      i. MaryEllen Wickett, Secretary
      ii. Chelsea Krauss, Member-at-Large

5. Elections – Jim Husband
   a. President Elect Nominees
      i. Chelsea Krauss
      ii. Don Schrupp
   b. Secretary
      i. Dyan Pursell
      ii. Susan Watson
   c. Member-at-Large
      i. Andrew Treble
   d. Onsite voting
   e. Election results and installation of new officers

6. President’s Service Award for Becca Scully – Karen Horodysky

7. New Business – Karen Horodysky
   a. New President’s Message
   b. 2020 OFWIM – Ft. Collins, CO (4-8 October 2020)
   c. 2021 Conference Ideas

8. Comments and Discussion

9. Adjourn
2019 was another great year for OFWIM. The ExCom and our committees are the glue that hold OFWIM together. I am continually amazed at the commitment, enthusiasm, and energy our team bring to OFWIM throughout the year. At the heart of any organization are the members who are willing to serve to help OFWIM thrive. We are fortunate to have many people willing to put the effort in to grow our community.

I would like to extend a special thanks to the OFWIM Executive Committee for all the help this year; it is a joy to work with such a positive pro-active group of people. I was out of work and out of touch for two months this winter and their support was so valuable for OFWIM and for me. The Past President, Joe Kirby, has been a great source of stability and knowledge to help keep us on track. Karen Horodyisky, President Elect, and soon to be President, you have done an amazing job on the 2019 conference and I am excited for you to take over as president. MaryEllen Wickett, this is your fourth and last year as Secretary, and your organization has been valuable to OFWIM. To Michael Barbour, Treasurer, thank you for all your hard work transitioning and maintaining the OFWIM financial accounts. You take care of so many things behind the scenes to keep OFWIM running. Chelsea Krause you have done a great job working to line out the 2020 conference and we are all excited to move that forward.

I want to acknowledge two key members of OFWIM who are retiring this year, Jeanette Jones and Dyanne Cortez. Jeanette and Dyanne have been critical in keeping OFWIM running. Dyanne is OFWIM’s webmaster and Jeanette has served in a variety of different positions on the Executive Committee and other committees. Jeanette was my go-to when I was planning the 2018 conference. In addition to all the work they have done, I can remember both Dyanne and Jeanette from my first OFWIM meeting, they were both so welcoming and warm. They made me want to keep coming back. I thank you and we want to hear about all your retirement adventures. Karen will be taking over as the webmaster after the 2019 conference, thank you.

The soul of OFWIM is our committees. Karen Horodyisky has done a wonderful job heading the conference planning committee. We have several great sponsors, and the abstracts and hackers ball submissions insure that the time spent in Shepherdstown, WV will be extremely educational. I love having the opportunity to see what other states are doing as well as sharing the work we have going on. Every year, I have valuable information to take back to make my work better.

Our other committees have also been busy. I would like to thank our committee chairs for their hard work. The Data Standards & Technology Trends has been led by Kristin Rogers for many years but because of work demands she has stepped down. Due to a void in leadership and low participation and based on Kristen’s recommendations, ExCom had merged some of the Data Standards and Technology Trends tasks into the Training and Education and some into the Communication, Membership, and Outreach. The Training and Education committee headed by Michael Barbour continues to offer great learning opportunities. The Communication, Membership, and Outreach Chair – Julie Defilippi Simpson, Newsletter Editor – Jordan Holtswarth, and Webmaster – Dyanne Cortez do an amazing job. The Elections, Nominations, and Awards committee under the direction of Jeanette Jones continue effectively manage those critical functions.

Thank you for all your leadership and thanks to all the committee members. I did my best to acknowledge everyone, but there are so many OFWIM members working to make this the best group. If I forgot you, I am sorry and thank you!! I encourage all members to become involved. Be a part of something great. I am thankful for my time as President and I look forward to continuing with ExCom and being a part of the OFWIM community.
Officer Reports
Secretary – MaryEllen Wickett

1. Recorded the minutes of monthly Executive Committee (ExCom) meetings
   a. Distributed minutes to ExCom members
   b. Posted archival copies to the OFWIM ExCom Groupsite folder

2. Maintained the OFWIM membership database
   a. Entered new 2019 members (7 as of 9/7/19)
   b. Recorded 2019 membership renewals (51 as of 9/7/19)
   c. 2018 memberships will expire after 2019 Conference (27 as of 9/7/19)
   d. Created updated email distribution lists as needed
   e. Supplied member information to President for welcome and renewal letters; invited new members to join Groupsite
   f. Maintained electronic copies of all 2019 membership renewals processed by the Treasurer

3. Served as Vice Chair of the Communications, Membership, and Outreach Committee
   a. Maintained current member email distribution list
   b. Sent email notices (newsletters and announcements) to members via the email distribution list (14 mailings as of 9/7/19)
   c. Recorded minutes of monthly committee meetings; posted archival copies to the OFWIM Communications, Membership & Outreach Groupsite folder

4. Business Meeting Minutes
   a. Submitted 2018 Business Meeting Minutes (posted to the OFWIM website as Minutes of Business Meeting under 2018 Conference Archives)
   b. Will compile 2019 Business Meeting Minutes
## Summary Account Activity for September 2018 – August 2019

### Checking Account

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**Total Credits** = $32,181.92

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**Total Debits** = $18,078.09

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**Total Credits** = $3,369.00

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**Total Debits** = $4,012.50

### Current account balances (as of 1 September 2019)

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Filed IRS 990-N e-Postcard March 2019
Officer Reports
Treasurer – Michael Barbour (continued)

2018 Annual Meeting Final Accounting

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<td>Sponsorships</td>
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<td>ESRI</td>
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<td>Reel Sonar</td>
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<td>Sitka Technology</td>
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<td>AFS</td>
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<td><strong>Total Revenue</strong></td>
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**Student Scholarship Fund**

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<table>
<thead>
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<th>Income</th>
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<tr>
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<td><strong>Balance</strong></td>
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Officer Reports  
Member-at-Large – Chelsea Krauss

First off, I want to thank you all for electing me to the role of Member-at-Large at our 2018 OFWIM meeting at Hood River, OR. I was extremely excited to get more involved with the conference planning and contribute to the meeting.

My work as Member-at-Large mainly focused on the following:

1. 2020 OFWIM Conference Planning – After deciding on Fort Collins on the venue, I reached out to a couple OFWIM members in the area and received suggestions on the venue. The dates have been finalized and we are going to secure the location soon. Let the planning begin for next year!

2. Participate in monthly Executive Committee calls – Provided input and suggestions as the opportunities arose. I also learned a great deal about how the OFWIM ExCom works.

3. Participation in ENA Committee calls - I participated in the ENA Committee and helped select the student scholarship winner for the 2019 conference.

I won’t be able to attend OFWIM in person this year, but I wish you all a fantastic conference. Enjoy!!
Committee Reports
Communications, Membership & Outreach

Chair: Julie Defilippi Simpson
Vice-Chair: MaryEllen Wickett (OFWIM Secretary, Membership Manager)
Members: Website Manager: Dyanne Cortez, Karen Horodysky; Newsletter Editor: Jordan Holtsworth; Social Media Manager: Kayla Key, Isabel Papraniku; Travel Grants Manager: Julie Prior-Magee; Historian: Donald Schrupp; Additional Members: Chris Gerecke, Mike Bialousz, Heather Konell

2019 Accomplishments
In Accordance with the OFWIM CMO 2018 “Goals and Objectives”:

1. Manage and communicate information to OFWIM members
   a. Newsletters – newsletters were published and distributed to OFWIM members by direct email and posted on the OFWIM website and Groupsite in February, June, and September 2019. Highlights include:
      i. February issue - an in-depth review of the annual conference including a photo spread and award winners. This issue featured a letter from the new editor. There was also a call for candidates, an announcement on “how to” videos from TREC, an announcement of an upcoming webinar on fighting fake science, and an early announcement of the 2019 conference.
      ii. June – First call for abstracts, call for travel grant applications, Continuing Adventures of Captain Jack, call for Innovation Award Nominations and Student Research Scholarship Award, an article by OFWIM 2018 Travel Grant Award Recipient Gabriel Kamener, an article by OFWIM 2018 Research Scholarship Award Recipient Jordan Holtsworth, and a preview of our 2019 conference in Shepherdstown, WV.
      iii. September – 2019 Election candidates, second call for abstracts, preliminary agenda, guide to expenses and conference information, and a sneak peek at presentations/posters.
      iv. Ongoing features of the newsletters include Captain Jack adventures and committee and membership lists. We are very pleased with the 2019 features and would like to heartily thank all contributors. On a continuing note of some frustration, despite encouraging members to submit technical articles, we rarely receive such submissions from non-award winners. For an organization that is so technical in nature, this is disappointing. We think the newsletter would be an easy way to share a lot of information about data management and we believe members would enjoy that yet there seems to be little interest in doing so.
   b. Online Communications – made information available to members via email list, OFWIM public website, and OFWIM Groupsite.
   c. Email Lists – maintained an email list of current members plus members from the previous two years.
Committee Reports
Communications, Membership & Outreach (continued)

2. Develop, maintain, and enhance effective communication tools to facilitate the exchange of information with members and non-members
   a. Public Website – Dyanne continues to do an excellent job developing the website to improve navigability and accessibility. We have received much positive feedback on the new membership functionality and additional resources added last year. In an effort to centralize and better share our media, CMO has been working on improving the photo gallery and photo/video submission portal to be more useable. Additionally, we are working on creating an online form for newsletter submissions. Dyanne has retired and is currently working with Karen Horodysky, who will be taking over as the webmaster in the coming year. Julie DS will be helping out Karen as needed.
   b. Website History - PSMFC has provided the ‘home’ for ‘www.ofwim.org’ for a number of years (since its move from VPISU; where it was maintained by the Conservation Management Institute staff). Greg Wilke sent a file with documents transferred from the previous websites for the years from 1998 through 2004. By years, these containers provide titles slides, Power-Point presentations and PDFs of past presentations, and for some years, actual Proceedings from those years. Don is working through those folders to inventory their contents and will be comparing those documents to content on the current website, to determine if there is additional ‘historic’ content to be recovered.
   c. Story map – Mike has put together the first story map for OFWIM with feedback, input, and support from the CMO. This effort was supported by the efforts of Don, CMO Historian, who is compiling a very nice collection of OFWIM history. The story map will be available to all through the OFWIM website and we are currently considering options for long-term maintenance.
   d. VYOND video – Heather has created two Vyond videos titled “What is OFWIM” and “Why Join OFWIM.” The video describing why individuals should join OFWIM has been reviewed and edited by the committee and Heather is currently making those updates. Heather will be presenting these videos and how to use the Vyond tool at the annual meeting Hacker’s Ball.
   e. Award nomination forms – The fillable forms for the student scholarship and Innovation Award nominations continue to be very useful.
   f. Groupsite – Groupsite, our social media tool for OFWIM members only, is used for discussion forums, posting announcements, sharing calendar events, and file storage. This year CMO continued work on organization and cleanup of Groupsite files, with these efforts being led by Dyanne and MaryEllen. We have 83 Groupsite members, a decrease of 1 since last year.
   g. LinkedIn – we have 139 members on our public LinkedIn Group, an increase of 9 members since last year. CMO will be investigating our use of social media more in the coming year and will review the continued use of this platform as part of those larger scale efforts.
   h. Facebook – Since taking on the shared role of Social Media Managers, Kayla and Isabel have brightened up our “wall” with news and announcements from FITS and other organizations. The page currently has 95 likes, an increase of 25 since last year. The daily total reach maximum is 223, an increase of 202 over last year.
Committee Reports
Communications, Membership & Outreach (continued)

i. OFWIM Publications – Updated versions of the individual and organization membership forms, poster, brochure, and introductory flyer were created and posted to Groupsite, www.ofwim.org, and/or shared in the newsletter.

j. AFS-FITS – Throughout the year there were cross postings via newsletter and social media between AFS FITS and OFWIM communications officers on general announcements, symposia, and meetings. This was especially prevalent when FITS posted a travel grant for one of their members to attend the OFWIM 2019 meeting. Efforts will be made next year to investigate why there were no applicants for that award.

3. Encourage new OFWIM membership and support continuing OFWIM membership renewals

a. Online payment and membership – Continue to use PayPal as the best option to allow the convenience of paying for a membership via credit card. These features were available to the membership in summer 2017 and continue to be very well received by the membership.

b. Annual Conference – encouraged both members and non-members to attend the annual conference. There was a concerted effort to share conference announcements with external groups such as member agencies, Atlantic Coast Fisheries News, FITS, etc.

c. Renewals – maintained individual membership renewals from previous year to current year. Sent out renewal reminders to past OFWIM members according to the Membership Rules and Renewal Protocol.

d. Summary of OFWIM membership from this year (as of 9/07/2019) plus the past 7 years:

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<td>65</td>
<td>81</td>
<td>57</td>
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</tbody>
</table>

e. Administer travel grants. The ExCom approved two awards of reimbursement of travel related expenses up to $500 plus waiving of conference registration fees. Two applications were received and awards were granted to both applicants.
4. Professionally complete the duties of the committee
   a. Conference calls – the committee met monthly via conference call to discuss ongoing committee business. Notes were taken during each meeting, circulated among members for comment, and posted to the OFWIM Groupsite.
   b. Procedures Manual – the Committee reviewed the CMO Section of the draft Procedures Manual.
   c. ExCom Committee Chair calls – the Committee Chair attended all of the quarterly “Committee Chair Updates” Executive Committee conference calls to update the ExCom on the CMO’s activities.
   d. Annual report – prepared this annual report of the CMO’s 2019 activities for presentation during the annual conference business meeting, inclusion in the annual conference proceedings, and posting on OFWIM Groupsite.
Committee Reports
Conference Planning

Chair: Karen Horodysky
Members: Michael Barbour, Lynn Barrett, Amy Ewing, Keith Hurley, Jim Husband, Jeanette Jones, Joe Kirby, Chelsea Krause, Jessica Perkins, Dyan Pursell, Becca Scully, Beth Stys, Sabra Tonn, Andrew Treble, Susan Watson, MaryEllen Wickett

The Conference Planning Committee met once a month via conference call from December 2018 to September 2019. The conference venue and lodging were reserved in the summer of 2018 and this group was able to jump right in by deciding on a 2019 meeting theme and session types. The group focused on planning each major element of the meeting between February and May: Education Day excursion, workshops, guest speakers, banquet, call for abstracts, registration, preliminary agenda, and guide to expenses. OFWIM members were surveyed to determine which of the four possible types of workshop offerings were of the most interest to attendees. The months leading up to the conference were used to solicit sponsors, plan the geocache, and select swag. We have a great program lined up for this meeting, with a diversity of topics, day trips, and workshops that I think we will all find relevant and refreshing. Please take some time to soak up the beautiful campus environment and all that it has to offer.

The local arrangements sub-committee was comprised of West Virginia and Virginia members with connections in the area and access to the venue (Jessica Perkins, Amy Ewing, Jim Husband, Susan Watson, Karen Horodysky). They put in the tremendous amount of “on the ground” work needed to turn ideas into reality.

The Committee employed a “partnership” strategy in an effort to draw potentially interested attendees near the meeting location area (primarily West Virginia, Virginia, and Maryland). Committee members reached out to personal or researched contacts at local agencies, universities, and organizations who could circulate meeting announcements to their colleagues and/or students. The ExCom approved sponsoring the Joint Meeting of the Virginia, Virginia Tech and West Virginia American Fisheries Society Chapter meeting in February 2019 as a way to partner with related organizations in the area and generate interest in OFWIM. A good number of local attendees or speakers at our meeting were notified about the OFWIM meeting through all of these efforts.

Another strategy employed this year was to reconsider the presentation of OFWIM meeting materials. We modified the “look and feel” of several documents, including the Guide to Sponsors, Guide to Expenses, Preliminary Agenda, and the Meeting Proceedings. We also increased the number of posts about the meeting on OFWIM’s Facebook page. Registration and abstract submission notices were posted along with short blurbs advertising workshop offerings and the keynote speaker.

We had another outstanding year of sponsorships: Timmons Group, ESRI, Brandt Information Services, and the Virginia Department of Game and Inland Fisheries were Platinum Level sponsors; Big Fin Scientific was a Silver Level sponsor; and the West Virginia Division of Natural Resources was an Advertising Level sponsor. Sponsorship support is a huge contributor to the success of our meetings – thank you to our sponsors and to those who helped solicit their support!
Committee Reports
Conference Planning (continued)

The OFWIM geocaching contest reached a whole new level this year thanks to Beth Stys’ collaboration with NCTC staff. OFWIM is heading up efforts to establish a permanent geocaching trail within the NCTC. Beth created a geocache flyer for the NCTC, and the inclusion of our logo and website address will help advertise our society to many future NCTC guests.

I would like to thank the 2019 members of the Conference Planning Committee and the ExCom for all of their input and hard work over the past year, and for helping to make sure this meeting runs smoothly. Your dedication and enthusiasm make chairing this committee a pleasure.

Recommendations for 2020 Conference Planning:

- Delegation of tasks by skill and interest – This does occur now but can definitely increase. Suggested ideas are to designate leaders by skill/interest. For example, someone who likes or is good at building registration or abstract submission websites can be in charge of these tasks. The same is true for the geocache component, generating promotional materials, seeking out sponsors, developing post ideas for Facebook, recruiting local partners, etc.
- Continue to expand and polish the presentation of documents produced by this committee.
- Consider advertising platforms for materials generated by this committee – perhaps work more closely with the Communications, Membership, and Outreach Committee.
- Continue to brainstorm and personally reach out to local “partners” who may never otherwise hear of an OFWIM meeting, making sure to include people you actually know.
- Continue to reach out to related organizations that are relatively local to the location of the annual meeting (e.g., sponsor a related organization’s annual meeting).
- Continue to increase sponsorship recruitment and consider finding a local co-sponsor to improve outreach.
Committee Reports
Elections, Nominations & Awards

Chair: Jeanette Jones
Vice-Chair: Beth Stys
Members: Jim Husband, Sabra Tonn, Austin Smith, John Taylor, and Chelsea Krause

The Elections, Nominations, and Awards Committee is responsible for developing and implementing various awards and recognition programs for OFWIM, and for developing a slate of candidates for the annual elections. Included in this work is implementation of the student scholarship application, in which university students studying in wildlife biology fields can attend an OFWIM conference to gain experience in the professional world.

Accomplishments:

**Student Research Scholarship:** This year, ExCom offered to finance a 2nd Student Scholarship award. The committee also opened it to both Graduate and Undergraduate students. The ENA Committee developed a comprehensive and current list of contacts for distribution of the student scholarship announcement. A list of 35 university contacts in the Shepherdstown, WV region was created. An initial email announcement for the 2019 student scholarship was sent on April 17th, with reminders sent on July 2nd and August 15th. The deadline for applications was August 16th and extended to September 6th. Announcements were made on the OFWIM website, in the June newsletter, on the OFWIM Facebook page, and the VA Chapter AFS listserv. Seven applications were received. The committee reviewed all applications and selected Logan Sleezer from Virginia Polytech Institute and State University and Brittany Bajo from Tennessee Technological University as this year’s award winners. Mr. Sleezer and Ms. Bajo will be awarded $1000 ($500 each for 2019 and 2020) and conference fee waivers for the 2019 and 2020 conferences. Additionally, the committee offered the other scholarship applicants the opportunity to present their presentations as a poster or demo at the Hacker’s Ball. Christine Verdream, a Master’s student from James Madison University, accepted this offer.

**Innovation Award:** The Innovation Award provides recognition for the outstanding use of technology and/or collaboration to advance fish and wildlife information management. Announcements were made on the OFWIM website, in the June newsletter, as well as an email reminder to the membership. No applications were received this year.

**New Officers:** The committee worked hard recruiting new officers and had success in forming a slate of nominees for 3 positions that will be open on the Executive Committee in the upcoming year. The committee was able to locate 2 candidates for President-Elect (Chelsea Krause and Don Schrupp), 1 for Member-At-Large (Andrew Treble) and 2 for Secretary (Dyan Pursell and Susan Watson). Candidate profiles were announced in the September newsletter and posted to the OFWIM website. Online voting was made available to the membership August 16th through October 8th. New officers will be named at the Conference Business Meeting.
Committee Reports
Elections, Nominations & Awards (continued)

Best Poster and Best Presentation Awards: The ENA Committee will provide score sheets for conference attendees to judge presentations and posters during the conference. All score sheets will be collected and tallied and the winners will be announced at the end of the Conference.

Service Awards: Service awards were prepared and presented by the Committee. Service Awards were presented to:
- Rebecca Scully: President 2019
- MaryEllen Wickett: Secretary 2018-2019
- Chelsea Krause: Member-At-Large 2019

Certificates of Appreciation: A Certificate of Appreciation was given to Greg Wilke, Pacific States Marine Fisheries Commission, for his dedication and support of hosting the OFWIM website for the past several years. Certificates of Appreciation for the 2019 conference sponsors were presented to the sponsors at the Hacker’s Ball.
Committee Reports
Training & Education

Chair: Michael Barbour
Members: Amy Ewing, Susan Steffen

The Training and Education Committee held 9 conference calls since the OFWIM 2018 Meeting in Hood River.

The TEC hosted the webinar *Introduction to QGIS - A Virtual Tour of the National Conservation Training Center* on July 25, 2019. OFWIM member Don Schrupp was the presenter for the webinar. The webinar was recorded, archived on Groupsite, and will be made available to OFWIM members.

We are also working with Keith Hurley on developing Bite-Size R, a series of short videos aimed to provide beginners training into R, a free software environment for statistical computing and graphics. Several introductory videos have been completed, and will be made available to OFWIM members when the first grouping is completed.

We created an OFWIM channel on YouTube to house the videos and other OFWIM video content. The Python webinars hosted by Don Katnik in preparation for the 2014 Conference workshop will be posted to this YouTube channel, with links added to the python page in the training section of the OFWIM website.

TEC or other OFWIM members have posted 24 notices of external webinars in the Groupsite discussion topic for external webinars since the 2018 meeting.
Officer Candidates

Vote at: [https://www.surveymonkey.com/r/OFWIM2019](https://www.surveymonkey.com/r/OFWIM2019)

President-Elect

**Don Schrupp**  
_Retired, Colorado Division of Wildlife_

A wildlife ecologist, Don retired from the Colorado Division of Wildlife (CDOW) in 2006 after a 32+ year career. He has a bachelor’s (’72) and a master’s (’89) in Wildlife Biology from Colorado State University. A founding member of OFWIM, he has held positions as Member-at-Large, President-Elect (1999), President (2000), and Past President (2001). He has also been Chair of, or a member in, OFWIM’s Communications, Membership & Outreach, Data Standards & Technology Trends, and Training and Education committees. In the early years of the organization he assisted with regional training provided by OFWIM’s Training and Education Committee in Virginia, Nebraska, Colorado, California, and Alaska with regards to geographic information systems, remote sensing, and database management. He hosted the OFWIM 2000 conference in Silver Creek, Colorado. As Wildlife Inventory Coordinator at CDOW, Don developed their Wildlife Resource Information System to include the Colorado Wildlife Species Database, Scientific Collections Permit Database, WILDATA (Latilong Distributions Database), Stream and Lake Data Banks (co-developed with Dave Weber), and applied applications of GIS to land use planning and environmental assessment. Early applications of remote sensing evolved into his roles as Principal Investigator for the Colorado GAP Analysis Project and Co-Principal Investigator for the Colorado Component of the Southwestern Regional GAP Analysis. Don’s interests range from the expected hunting, fishing, hiking (and previously, skiing) to motorcycle touring, camping, and bluegrass music. He is an avid supporter of open source programs and maintains an aging arsenal of Linux laptops running GRASS, QGIS, PostgreSQL and PostGIS, MySQL, GRAMPS, WordPress and R. He presents regularly at OFWIM Annual Conferences, even though retired. He looks forward to the opportunity of serving its membership further.

**Chelsea Krause**  
_City of Sioux Falls, South Dakota_

Chelsea Krause is a GIS Analyst with the City of Sioux Falls in South Dakota. Prior to her current position, she spent almost 8 years as the GIS Coordinator for the South Dakota Game, Fish and Parks. Her primary project is implementing an Enterprise Asset Management system for the city over the next few years. With the many applications of GIS, she is fortunate enough to help the entire city with data collection, management, and mapping needs. Chelsea received her master’s at the University of Nebraska Lincoln from the School of Natural Resources in Human Dimensions. She is currently the OFWIM Member-at-Large, serves on the Conference Planning and the Elections, Nominations and Awards committees. She is an avid lover of the outdoors and finds any chance she can get to go hiking and camping.
Officer Candidates (continued)

Vote at: https://www.surveymonkey.com/r/OFWIM2019

Secretary

Susan Watson

*Virginia Department of Game & Inland Fisheries*

Susan Watson is the FWIS (Fish & Wildlife Information Service) Biologist at the Virginia Department of Game and Inland Fisheries (VDGIF). Although she has technically been an OFWIM member since starting at VDGIF in 2001, she has been truly active in OFWIM since 2015, when Virginia hosted the Annual Conference. Since then, Susan has served on the Conference Planning Committee. Her wildlife background provides her with the knowledge and skills to review and analyze wildlife data and work with other biologists and GIS staff at VDGIF. Most recent efforts have included assistance in rebuilding the VAFWIS data and mapping system and updating various wildlife resource data. Susan has a passion for sharing information to help educate the public about wildlife resources. She works often with Virginia Master Naturalists to educate them to enhance citizen science efforts. Susan is also highly involved in the Virginia Herpetological Society. For many years, she has assisted this organization’s efforts to provide and enhance herpetofaunal (and at times other wildlife) data. In addition, Susan is on the Board of the Friends of the Lower Appomattox River, where she has served as Secretary for several years. She earned a bachelor’s degree in Wildlife Science from Virginia Tech. She loves hiking, wildlife viewing (especially herping), and creating artwork, when possible.

Dyan Pursell

*Missouri Department of Conservation*

Dyan has been a GIS Specialist for Missouri Department of Conservation since 2015, providing GIS expertise for Resource Science Division staff and projects. In this capacity she gets to work with a diverse and constantly changing cadre of scientists, including fisheries biologists, wildlife biologists, foresters, stream ecologists, biometricians, data managers and programmers. Prior to 2015, Dyan spent 16 years working for the University of Missouri in various roles. She has been a member of the OFWIM Training and Education Committee for three years, and the Conference Planning Committee for two years. When not making maps, Dyan can be found knitting, weaving, reading, or traveling.
Officer Candidates (continued)

Vote at: https://www.surveymonkey.com/r/OFWIM2019

Member-at-Large

Andrew Treble

**Colorado Parks and Wildlife**

Andrew Treble is an aquatic research scientist and the aquatic data analyst for Colorado Parks and Wildlife. He has been a fisheries biologist in Canada and the United States for more than 20 years, working in various roles for local, state/provincial, and federal agencies. Since 2013 he has been at Colorado Parks and Wildlife, where he administers several large aquatic databases, handles all requests for data, assists researchers and biologists with data analyses and data mining, develops a wide array of data summarization and visualization products for staff, and leads the hydroacoustic survey program on Colorado's large reservoirs. He has an associate degree in Fish and Wildlife Management from Sir Sanford Flemming School of Natural Resources, a Bachelor of Science degree in Biology and Environmental Science from the University of Western Ontario, and a Master of Science in Fisheries Management from Michigan State University.
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SEE YOU NEXT YEAR IN FORT COLLINS, CO!

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