



2013 CONFERENCE AGENDA
“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”

Sunday—September 29, 2013

Travel Day

- 3:00 PM First van will transport morning/afternoon arrivals from Bangor to the SERC Conference Center (departure time may be adjusted as additional arrival/departure info becomes available)
- 9:00 PM Second van will transport late afternoon/evening arrivals from Bangor to the SERC Conference Center (departure time may be adjusted as additional arrival/departure info becomes available)

Monday Morning—September 30, 2013

Training Session & Registration

- 6:30 AM **Breakfast**
- 7:00 AM **OFWIM Executive Committee Meeting**
- 7:30 AM **Conference Registration - all day**
- 8:00 AM **Synoptic Modeling Workshop/Training**
Synoptic Modeling of Animal Location Data Combining Animal Movements, Home Range and Resource Selection to Ask Important Questions About Space Use by Wildlife and Fish
Dr. Edward O. (Oz) Garton, College of Natural Resources, University of Idaho
- 11:55 AM **Raffle**
- 12:00 PM **Lunch**

Monday Afternoon—September 30, 2013

Conference Session I

- 1:00 PM **OFWIM Welcome**
Danny Lewis, President, Texas Parks and Wildlife Department
- 1:15 PM **Conference Introduction & Logistics**
James Husband, President-Elect, Virginia Department of Game & Inland Fisheries & Don Katnik, Maine Department of Inland Fisheries & Wildlife



2013 CONFERENCE AGENDA
“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”

Monday Afternoon—September 30, 2013, cont.

Moderator: Jim Husband, Virginia Department of Game and Inland Fisheries

- 1:30 PM **Applications of Python Programming to Information Management**
Don Katnik, Maine Department of Inland Fisheries & Wildlife
- 2:00 PM **LiDAR Processing and Terrain Analysis in Global Mapper**
David McKittrick, Blue Marble Geographics
- 2:30 PM **Griffin Groups: A Free Online Tool for Building a Community of
Conservation Communities**
Ed Laurent, Connecting Conservation - Remote Presentation
- 3:00 PM **Raffle / Break** (15 min)
- 3:15 PM **Developing the Florida Shorebird Database**
*Kristin Rogers, Florida Fish and Wildlife Conservation Commission’s Center for
Biostatistics and Modeling*
- 3:45 PM **Scholarship Award Presentation**
Danny Lewis, Texas Parks and Wildlife Department
**Assessing the Effects of Landscape Patterns and Arrangements on Native
Bee Abundance in Maine’s Wild Blueberries**
Shannon Chapin, University of Maine
- 4:15 PM **Welcome to Maine**
Al Harrington, Bangor High School Teacher (Recently Retired!)
- 4:30 PM **Optional Field Trip Briefing and Sign Up**
Don Katnik, Maine Department of Inland Fisheries & Wildlife
- 4:45 PM **Raffle**



2013 CONFERENCE AGENDA
“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”

Monday Evening—September 30, 2013

Hacker’s Ball

6:00 PM **Dinner**
7:00 PM **Desert, Poster Session, & Technical Demonstrations (Bonfire to follow)**

- **Florida Shorebird Alliance and Florida Shorebird Database**
Kristin Rogers, Florida Fish and Wildlife Conservation Commission’s Center for Biostatistics and Modeling
- **Using GIS to Track Fall Mallard Migration**
Philip Marley, Missouri Department of Conservation
- **Spatial Modeling to Predict Swamp Rabbit Habitat in Missouri**
Philip Marley, Missouri Department of Conservation
- **Landscape Level In-Stream Habitat Mapping Using Side Scan Sonar**
Beth Stys, Florida Fish and Wildlife Conservation Commission
- **Use of LIDAR for Mapping Wildlife Habitat**
Don Katnik, Maine Department of Inland Fisheries & Wildlife
- **How to Manage Your Agency’s Fish Web Pages Without the Webmaster Lifting a Finger**
Jeff Kopaska, Iowa Department of Natural Resources
- **Fishing Tournaments, Coon Dogs, and Weddings: Using Technology to Manage Events on Public Land and Water**
Jeff Kopaska, Iowa Department. of Natural Resources
- **A GIS Greenprint Tool for Quality Growth**
Jeanette Jones, Tennessee Wildlife Resources Agency
- **Beginning *with* Habitat: Conservation Planning Assistant Tools**
Bethany Atkins, Maine Department of Inland Fisheries & Wildlife
- **National Survey of Data Capture Device Effectiveness**
Bruce Schmidt, Pacific States Marine Fisheries Commission



2013 CONFERENCE AGENDA
“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”

Tuesday Morning—October 1, 2013

- 6:30 AM **Breakfast**
- 7:30 AM **Conference Registration**

Optional Field Session

- 7:30 AM **Field Visit to College of the Atlantic’s Natural History Museum & Acadia National Park’s Cadillac Mountain**
- 11:30 PM **Lunch at Geddy’s in Bar Harbor**

Tuesday Afternoon—October 1, 2013

- 1:00 PM **Additional Site Visits in Acadia National Park**

Tuesday Evening—October 1, 2013

Business Meeting

- 6:00 PM **Dinner/Business Meeting/Bonfire**



2013 CONFERENCE AGENDA
“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”

Wednesday Morning—October 2, 2013

- 6:30 AM **Breakfast**
- 7:30 AM **Conference Registration**

Keynote Presentation

- 8:30 AM **Long-Term Climate Dynamics Provide a Surprising Key to the Contemporary World**
George L Jacobson, University of Maine
- 9:15 AM **Raffle/Break** (15 min)

Conference Session II

Moderator: Jeff Kopaska, Iowa Department of Natural Resources

- 9:30 AM **Maintaining Data Security while Promoting Data Sharing**
Bruce Schmidt, Pacific States Marine Fisheries Commission
- 10:00 AM **Landscape Level In-Stream Habitat Mapping Using Side Scan Sonar**
Beth Stys, Florida Fish and Wildlife Conservation Commission
- 10:30 AM **Use of Trail Cameras for Estimating White-tailed Deer Populations**
Julie Fleming, Missouri Department of Conservation
- 11:00 AM **Determinants of Stream Fish Distribution: Effects of Environmental Factors and Spatial Components in Presence-Only Models**
Jian Huang, Virginia Tech
- 11:30 AM **Integrating SAS Business Intelligence and ESRI for Customer Relationship Management**
John Taylor, Texas Parks and Wildlife Department - Remote Presentation
- 11:55 AM **Raffle**
- 12:00 PM **Lunch**



2013 CONFERENCE AGENDA
**“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”**

Wednesday Afternoon—October 2, 2013

Conference Session III

Moderator: Beth Stys, Florida Fish and Wildlife Commission

- 1:00 PM **GeoUI Off the Hook! – Improving the User Experience in our Geo-Mobil Apps**
Chris Gerecke, Timmons Group
- 1:30 PM **Interactive Browser Map in Support of “Bald Eagle Nests, Bald Eagle Concentration Areas and Communal Roosts in Virginia: A Guide for Landowners”**
Blair Jones, Virginia Department of Game & Inland Fisheries
- 2:00 PM **SAFIS Goes App: Development of a hand-held application for fisheries trip reporting**
Julie Defilippi, Atlantic Coastal Cooperative Statistics Program (ACCSP)
- 2:30 PM **US Fish & Wildlife Service’s TRACS System (Update: Implementation and Use from a State Perspective)**
Jim Husband, Virginia Department of Game & Inland Fisheries
- 3:00 PM **Raffle/Break** (15 min)
- 3:15 PM **The Ongoing Battle Between Dinosaurs and Puppies**
Keith Hurley, Nebraska Game and Parks Commission
- 3:45 PM **OFWIM Committee Presentation to Members/Subcommittee Meetings**
- 4:15 PM **Raffle**
- 4:20 PM **Geocaching Event**

Wednesday Evening—October 2, 2013

6:00-8:00 PM OFWIM Banquet (Bonfire to Follow)



2013 CONFERENCE AGENDA
“Leveraging Technology and Information to Better
Manage Fish and Wildlife Resources”

Thursday Morning—October 3, 2013

6:30 AM **Breakfast**

Conference Session IV

Moderator: Don Schrupp, Retired Wildlife Ecologist (CDOW)

- 8:00 AM **WILDSpace: Wildlife Data Integration in a Government Context**
Eric Woodsworth, Canadian Wildlife Service
- 8:30 AM **Geo-enabling the Wildlife Management Workforce**
Julie Mikolajczyk, Arizona Game and Fish Department – Remote Presentation
- 9:00 AM **Producing Dynamic PDFS from Databases**
Danny Lewis, Texas Parks and Wildlife Inland Fisheries Division
- 9:30 AM **Raffle / Break** (15 min)

Moderator: Danny Lewis, President, Texas Parks and Wildlife Department

- 9:45 AM **A Tale of Three CMSs (Content Management Systems)**
Don Schrupp, Colorado Division of Wildlife
- 10:15 AM **Introduction to SAS DataFlux Software and Its Use at Texas Parks and Wildlife**
Jimmy White, Texas Parks and Wildlife Inland Fisheries Division
- 10:45 AM **Survey Results: How are AFS members using social media?**
Julie Defilippi, Atlantic Coastal Cooperative Statistics Program (ACCSP)
- 11:15 AM **Texas Youth Hunting Program - Participant Characterization and Retention**
Jon Purvis, Texas Parks and Wildlife Department
- 11:45 AM **Final Raffle**
- 12:00 PM **Adjourn/Lunch**

Thursday Afternoon—October 3, 2013

- 1:00 PM **Optional Field Session:** Kayak Tour of Winter Harbor or Hike on Schoodic Mountain
- 1:00 PM Van will transport those not participating in the optional field session back to Bangor Airport
- 4:00 PM Van will transport optional field session participants back to Bangor

Presentation Abstracts

OFWIM Welcome

Danny Lewis, President

BIOGRAPHY:

Danny has provided programming and computer support to the Inland Fisheries Division of the Texas Parks and Wildlife for over 21 years. He has been involved in OFWIM since 2009, serving on every committee at one time or another, as well as filling in the offices of Member-At-Large, Secretary, and now President of OFWIM. He also currently serves as co-chair of the Internet Committee for the Texas Chapter of the American Fisheries Society. Danny has been happily married for 26 years, and has 3 children – ages 20, 12, and 7.

Conference Introduction & Logistics

Jim Husband, President-Elect

BIOGRAPHY:

James Husband is the Fish and Wildlife Information Section Manager at the VA Dept. of Game & Inland Fisheries in Richmond, VA. He has over 20 years of experience with information technology, education, criminal justice, and government agencies and institutions. In his current position he directs a multidisciplinary team of biologists, GIS, database, and application programmers within the Bureau Statewide Services Section of the Dept. Mr. Husband has held previous management positions in the private sector in several IT firms and with higher education, working with distance learning technologies. Additionally, Mr. Husband has worked as a college professor and had a distinguished career in law enforcement and criminal justice planning.

Don Katnik, Maine Department of Inland Fisheries & Wildlife

BIOGRAPHY:

Don Katnik has been writing custom programs since 1989 (ironically when Python was invented). He began with BASIC, then QuickBasic, and finally Visual Basic for Applications (or VBA). He also worked with ESRI's proprietary languages, AML and Avenue. Since ESRI shifted from VBA to Python, he has had to as well. He currently works as the Habitat Group Leader for the Main Department of Inland Fisheries & Wildlife and has been an active OFWIM member since 2007.

Applications of Python Programming to Information Management

Don Katnik, Maine Department of Inland Fisheries & Wildlife

ABSTRACT:

Out-of-the-box stuff can get you pretty far these days, but customization allows improvements in efficiency and extending functionality to where you really need it to go. There are lots of programming languages out there for creating custom tools – all have pros and cons. Python has been around since 1989. It's free and works across platforms including Microsoft Office and ESRI's ArcGIS. This presentation will introduce some different ways that Python programming can be used for information management and may serve as a springboard for a series of OFWIM webinars to teach members how to write Python code for specific data tasks.

BIOGRAPHY:

Don Katnik has been writing custom programs since 1989 (ironically when Python was invented). He began with BASIC, then QuickBasic, and finally Visual Basic for Applications (or VBA). He also worked with ESRI's proprietary languages, AML and Avenue. Since ESRI shifted from VBA to Python, he has had to as well. He currently works as the Habitat Group Leader for the Main Department of Inland Fisheries & Wildlife and has been an active OFWIM member since 2007.

LiDAR Processing and Terrain Analysis in Global Mapper

David McKittrick, Blue Marble Geographics

ABSTRACT:

Adding the third dimension to a mapping project can take the power of desktop GIS analysis to the next level. In recent years, high-resolution elevation data has become increasingly available, resulting in more precise analytical tools. Much of this trend can be attributed to the expanded availability of LiDAR data and the development of inexpensive software tools that can process and utilize this data. In this presentation we will consider one application that has gained a worldwide reputation for its ease of use, low cost, and powerful data processing capability. Maine-based Blue Marble Geographics' Global Mapper software can work with over 200 spatial file formats, including LiDAR (.las and .laz), and offers an array of tools for generating terrain surfaces, 3D modeling, and terrain analysis. This presentation will include a demonstration of the latest LiDAR processing capability in Global Mapper.

BIOGRAPHY:

David McKittrick is employed as a Senior Application Specialist at Blue Marble Geographics in Hallowell, Maine. A graduate of the University of Ulster in Northern Ireland, McKittrick has spent over 20 years in the field of GIS and mapping, focusing on the application and implementation of spatial technology within a wide variety of industries and vertical markets.

Conference Session I

McKittrick has designed and delivered hundreds of GIS training classes, seminars, and presentations and has authored dozens of articles and papers for numerous business and trade publications.

Griffin Groups: A Free Online Tool for Building a Community of Conservation Communities

Ed Laurent, Connecting Conservation

ABSTRACT:

Griffin Groups (<https://griffingroups.com>) is an online conservation collaborative, developed and administered by Connection Conservation and site members. Each community is a public or private group focused on conservation topics, partnerships, and projects that contain public and/or private content (e.g., files, wikis, maps, bookmarks) and associated conversations. Members of Griffin Groups can start or join multiple groups of interest using a single log in, receive email notifications when others participate in those groups, and add site and group members as contacts for additional forms of communication. Many staff of state and federal agencies and NGOs are using Griffin Groups to collaborate and improve access to fish and wildlife information. This remote presentation will introduce some of the features of Griffin Groups and showcase examples of how the site is being used to improve efficiencies and effectiveness.

BIOGRAPHY:

Ed received a PhD from the Department of Fisheries and Wildlife at Michigan State University. His dissertation focused on incorporating satellite imagery into analysis of bird species distribution patterns across forested landscapes, which was supported in part by a NASA Earth System Science Fellowship. Over the past 15+ years Ed has focused on expanding the role of GIS, remote sensing, systems modeling, database technologies, semantic web, social networking, and objective-based monitoring in natural resource management.

Developing the Florida Shorebird Database

Kristin Rogers, Florida Fish and Wildlife Conservation Commission's Center for Biostatistics and Modeling

ABSTRACT:

In the fall of 2009 a team of research and management staff from the Florida Fish and Wildlife Conservation Commission (FWC) came together with members of the Florida Shorebird Alliance to develop a standardized Statewide Breeding Bird Survey Protocol (BBP) for Florida Seabirds and Shorebirds. The intention was to design a survey protocol that could be used by researchers, managers, agency partners, and citizen scientists to monitor breeding bird activity statewide on an annual basis. The Florida Shorebird Database (FSD) is a web-based data application tool that was created in tandem with the BBP to accommodate the training, storage, data entry, editing, quality control, and data analysis needs associated with the

statewide surveys. Developing a survey protocol, relational database, and data application capable of meeting research, management, and partner needs has been a major undertaking requiring an enormous amount of communication and buy in from agency partners. Statewide surveys under the new BBP began in 2011. Since that time, over 200 partners have contributed monitoring data to the FSD. In the first 2.5 years partners have monitored over 1,000 miles of unique coastline tracking the nesting activity of over 3,500 unique nest sites. The FWC development team continues to work with FSA partners to refine and enhance the BBP and FSD tool based on data analysis finding and user feedback obtained throughout this collaborative effort.

BIOGRAPHY:

Kristin Rogers is a Scientific Data Manager for the Florida Fish and Wildlife Conservation Commission's Center for Biostatistics and Modeling. She has an M.S. in Fisheries and Aquatic Sciences from the University of Florida with a Minor in Statistics and has worked with the Marine Fisheries, Freshwater Fisheries, and Information Science & Management sections of FWC's Fish and Wildlife Research Institute throughout her career with FWC.

Assessing the Effects of Landscape Patterns and Arrangements on Native Bee Abundance in Maine's Wild Blueberries

Shannon Chapin, University of Maine

ABSTRACT:

Non-native honeybees historically have been used to pollinate many crops throughout the United States, however, recent population declines have brought to light the need for a more sustainable pollination plan. Native bees are an available resource that can play an important role in pollination. We are investigating the landscape factors that influence native bee richness and abundance, with a focus on the native bees that pollinate Maine's wild blueberries. By coupling the InVEST Crop Pollination modeling tool, which predicts pollinator abundance based on available floral resources and nesting habitat, with generated neutral landscape models, we seek to understand relationships between native bee abundance and landscape pattern and arrangement. Field collected data on bee abundance is being used to validate the model's assumptions, and a sensitivity analysis will be conducted to determine how uncertainty in parameter choice influences model output. Our research is one component of an interdisciplinary multi-state, multi-institution project that is exploring the ecology, sociology, and economics of native bee conservation in the Northeast.

BIOGRAPHY:

Shannon is currently a graduate research assistant working towards an MS in Ecology & Environmental Science at the University of Maine. Her research focuses on using spatial modeling tools to assess the effects of landscape characteristics on Maine's native bees. Shannon received a BS in Geography, with minors in Wildlife and Fisheries Science, and Climatology from the Pennsylvania State University, and a post-baccalaureate certificate in GIS and Remote Sensing from Humboldt State University. Prior to graduate school, Shannon

Conference Session I

worked for 5 years as a field ecologist and GIS Specialist for various federal agencies located across the country. When Shannon is not tending to graduate school duties, she can be found gardening, canning, canoeing, backpacking, and working on home improvement projects.

Originally from central Pennsylvania, Shannon currently resides in Old Town, Maine, with her husband Luke, their dog and cat, and one remaining hive of honeybees. They hope to soon expand their family by adding a flock of hens.

The Florida Shorebird Alliance and Florida Shorebird Database

Kristin Rogers, Florida Fish and Wildlife Conservation Commission

ABSTRACT:

The Florida Shorebird Alliance (FSA) is a statewide partnership of government and non-government organizations whose mission is to advance shorebird and seabird conservation in Florida through coordinated and collaborative efforts that help identify and address important needs with regard to research, management, education, outreach, and public policy. The Florida Shorebird Database (FSD) is a web-based tool that was created in conjunction with the Florida Breeding Bird Protocol for Seabirds and Shorebirds (BBP) to store, track, manage, and report monitoring data collected through statewide partnership efforts. The BBP and FSD are products that were created through collaborative effort between the Florida Fish and Wildlife Conservation Commission and its partners within the FSA. The goals of the BBP and FSD are to provide a standardized statewide monitoring protocol for FSA partners to follow and a single standardized data application to consolidate all of the seabird and shorebird monitoring data collected statewide. By standardizing monitoring it is possible to analyze data on a statewide scale to investigate research and management questions important to the conservation of Florida's seabirds and shorebirds, which has direct benefit to the mission of FSA. Since the BBP and FSD were released in 2011, over 200 FSA partners have contributed data to the FSD under the BBP, and over 500 partners have accessed the standardized monitoring data collected via the FSD.

BIOGRAPHY:

Kristin Rogers is a Scientific Data Manager for the Florida Fish and Wildlife Conservation Commission's Center for Biostatistics and Modeling. She has an M.S. in Fisheries and Aquatic Sciences from the University of Florida with a Minor in Statistics and has worked with the Marine Fisheries, Freshwater Fisheries, and Information Science & Management sections of the FWC's Fish and Wildlife Research Institute throughout her career with FWC.

Using GIS to Track Fall Mallard Migration

Philip Marley, Missouri Department of Conservation

ABSTRACT:

The Mallard Migration Observation Network (MMON) was established as part of a broader project to use GPS satellite telemetry to better understand mallard movements, distribution,

and habitat use. The MMON participants, which include 150 wetland managers located throughout the Central and Mississippi Flyways, provide weekly fall migration reports for the areas they manage. These reports and rankings, which are submitted through a web site by the participants and are stored in an oracle database, are interpolated into a raster using ArcGIS and transferred into a weekly migration overview map that is placed into a widget and made available through a public website. The raster that was created from the information provided by the participants is compared with the locations of mallards marked with GPS satellite telemetry units to help determine if mallards carrying the additional weight of a transmitter display normal migration behavior.

BIOGRAPHY:

Philip Marley is a GIS Specialist with the Missouri Department of Conservation in Columbia Missouri. He received his B.S. in Biology from Georgia Southern University and is currently finishing his M.S. in GIScience at Northwest Missouri State University. Philip's research interests include herpetology, wildlife tracking, and UAVs. Philip also enjoys spending time outdoors, especially hunting and fishing.

Spatial Modeling to Predict Swamp Rabbit Habitat in Missouri

Philip Marley, Missouri Department of Conservation

ABSTRACT:

Swamp Rabbits are a Missouri species of conservation concern (SRANK – S2 imperiled) and a game mammal. Their status is a concern across their range, especially Missouri due to habitat loss and fragmentation. This fragmentation has resulted in small, isolated habitats. These small tracks may not be able to support viable population, but they may function to increase connectivity of larger sites. Determining the current distribution of swamp rabbits are essential for conservation purposes, but locating new habitat and populations have proven difficult. The ability to use computer processing to determine animal location based on a predetermined set of criteria is very beneficial with swamp rabbits. With the use of predictive modeling, we are able to leverage geospatial data in a GIS and known location data from the Missouri Natural Heritage database to identify suitable swamp rabbit habitat. These sites can then be surveyed to determine if any previously unknown populations exists.

BIOGRAPHY:

Philip Marley is a GIS Specialist with the Missouri Department of Conservation in Columbia Missouri. He received his B.S. in Biology from Georgia Southern University and is currently

finishing his M.S. in GIScience at Northwest Missouri State University. Philip's research interests include herpetology, wildlife tracking, and UAVs. Philip also enjoys spending time outdoors, especially hunting and fishing.

Landscape Level In-Stream Habitat Mapping Using Side Scan Sonar

Beth Stys, Florida Fish and Wildlife Conservation Commission

ABSTRACT:

Landscape level habitat data are extremely valuable in research and management of aquatic systems. In the past, the characterization of in-stream habitat at the landscape scale has been both difficult and costly. Side scan sonar for benthic mapping is an efficient, low-cost approach for mapping habitat features in navigable rivers and streams. It provides a means to create high resolution, spatially detailed maps of continuous, in-stream habitat across broad aquatic landscapes. Florida Fish and Wildlife Conservation Commission (FWC) personnel collected images representing the substrate of approximately 45 km of the Chipola River during a high water period using a Hummingbird 1197c Side Scan Sonar imaging unit. The waypoints and track points were checked for correct positioning, divided into processing segments, cropped to remove areas of overlap and transformed into a geo-referenced raster layer. A substrate classification schema was developed to identify areas of value to spawning Shoal Bass, including: sand/pea gravel, rocky fine, boulder, and bedrock. Field visits were conducted in order to establish reference points for visual classification of substrate. Substrate polygons were digitized based on a visual interpretation of the sonar imagery and classified according to the classification schema. The accuracy of the substrate map was assessed during a low water event on a stretch of the river that contained known locations of Shoal Bass spawning sites.

BIOGRAPHY:

Beth received her B.S. in Wildlife Management from Texas A&M University and an M.S. degree in Wildlife and Fisheries Ecology at Mississippi State University. Beth is currently a Research Administrator within the Center for Spatial Analysis of the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute. She has worked for the FWC for over 21 years. Most of her work with the FWC has focused on landscape level, statewide conservation planning, including imperiled species protection, terrestrial and freshwater aquatic conservation area identification and prioritization, species habitat modeling and land cover mapping. She has been a member of OFWIM since 2003.

Use of LiDAR for Mapping Wildlife Habitat

Don Katnik, Maine Department of Inland Fisheries and Wildlife

ABSTRACT:

Wildlife habitat is mapped for landscape conservation, regulatory protection, and to assess and manage wildlife species. Mapping accuracy is critical but funding for field verification often is limited, which is especially problematic for habitats with broad geographic distributions. Remote sensing, therefore, has been used extensively to map wildlife habitat. The availability of high resolution (<2 ft), color aerial photos within Maine has increased substantially over the last 10 years. Unfortunately, digital elevation data that would be helpful for differentiating a variety of habitat characteristics has only been available at 10- to 30-meter resolution, which is insufficient for most habitat-mapping needs. Light Detection And Ranging (LiDAR) elevation data is of much greater spatial resolution and is now becoming available for parts of Maine. My goal was to assess the usefulness of high-resolution LiDAR elevation data for the following types of wildlife habitat mapping: delineating wetland footprints, determining tidal exposure differences on coastal mudflats for feeding shorebirds, and identifying early successional shrub habitats for New England cottontail.

BIOGRAPHY:

Don Katnik is a wildlife biologist and GIS specialist with the Maine Department of Inland Fisheries and Wildlife. As leader of the Department's Habitat Group, his primary responsibility is creating and management wildlife habitat data. Before moving to Maine in 2002, he worked with the U S Forest Service in Oregon and the U S Fish and Wildlife Service in Alaska. He has been an active member of OFWIM since 2007.

How to Manage Your Agency's Fish Web Pages Without the Webmaster Lifting a Finger

Jeff Kopaska, Iowa Department of Natural Resources

ABSTRACT:

Web page and technology management is a continual challenge for natural resources agencies. Staff familiar with technology are often ill-informed of natural resources issues and concepts, whereas natural resources experts are regularly disconnected from technological advances. Staff with an understanding of both realms are uncommon, and as such are usually stretched thin because of the demands placed on their time and skill sets. Beginning in 2004, agency

fisheries personnel in Iowa began to record management activities regarding waterbodies in an online data system. This effort was initiated as a mechanism to catalog historical, relevant data in advance of retirements that would cause a loss of institutional knowledge. Subsequently, weekly fishing reports, fish survey data, and water quality data have also been integrated into online data systems. Recent developments in web page management (content management systems) have allowed static web pages to be replaced with templates that dynamically create individual web pages from data warehoused in the aforementioned data systems. These developments have moved the responsibility for maintaining current contents on web pages to natural resources staff, without adding to field staff workloads. Planning and implementation of these data systems will be discussed in this presentation.

BIOGRAPHY:

I am a graduate of Iowa State University, and I am currently a biometrician in fisheries research for the Iowa Department of Natural Resources. I am very involved in the American Fisheries Society (AFS); I am the immediate Past-President of AFS-Fisheries Information and Technology Section, and am currently the Chair of AFS-Electronic Services Advisory Board. I serve as the Iowa representative to MARIS (Multi-state Aquatic Resources Information System), and on the Science and Data Committee of the National Fish Habitat Partnership. As an employee of Iowa DNR Fisheries, my areas of responsibility include overseeing most technology-related efforts we undertake.

Fishing Tournaments, Coon Dogs, and Weddings: Using Technology to Manage Events on Public Land and Water

Jeff Kopaska, Iowa Department of Natural Resources

ABSTRACT:

The Iowa DNR is responsible for maintaining state parks and forests, protecting the environment, and managing fish, wildlife, land, and water resources in Iowa. Public use of Iowa's natural resources includes over 2,000 special events, such as fishing tournaments and dog trials, that are hosted on state managed lands annually. Clubs, organizations or the general public utilize the new, online Special Events system (<http://programs.iowadnr.gov/specialevents/>) to apply for events. The Special Events site also allows users to simply browse through the listing of special events, or perform detailed searches by event type, location, or date/time. Map-based search options are also available. To create this system, the DNR leveraged web-enabled, geospatial technology to efficiently and effectively provide accountable governmental services. The focus: submit forms, data, and

information electronically; eliminate manual processes; incorporate geographical location technology; ensure database interoperability; application reuse; and creation of data repositories accessible to a variety of users. The result: event applications are collected, acted upon, and displayed to the public quickly and coherently.

BIOGRAPHY:

I am a graduate of Iowa State University, and I am currently a biometrician in fisheries research for the Iowa Department of Natural Resources. I am very involved in the American Fisheries Society (AFS); I am the immediate Past-President of AFS-Fisheries Information and Technology Section, and am currently the Chair of AFS-Electronic Services Advisory Board. I serve as the Iowa representative to MARIS (Multi-state Aquatic Resources Information System), and on the Science and Data Committee of the National Fish Habitat Partnership. As an employee of Iowa DNR Fisheries, my areas of responsibility include overseeing most technology-related efforts we undertake.

A GIS Greenprint Tool for Quality Growth

Jeanette Jones, Tennessee Wildlife Resources Agency

ABSTRACT:

Tennessee Wildlife Resources Agency (TWRA) and Cumberland Region Tomorrow (CRT) teamed together to create GIS Greenprint Tools. The tools are a web-based publication created for key regional strategies in the conserving of the region's land, water, natural, and cultural resources. This resource fulfills the need for a regional GIS based decision making tool that can be used by local and state government planners to insure access to and knowledge of critical lands for conservation. The information is intended to provide a better basis for decision making as projected impacts and costs of land use and transportation decisions are being made and land resource conservation priorities are included in local and regional plans. Consolidated GIS information can also assist other lead agencies identify and establish land, water, natural and cultural resource priorities and use existing resources for strategic land conservation within the scope of their activities and missions. This will be a live demonstration of the Greenprint Toolbox.

BIOGRAPHY:

Jeanette Jones is the GIS Manager for the Tennessee Wildlife Resources Agency. Jeannette has been doing GIS for over 25 years and has been with the TWRA since 1994. She began as the GIS/Image Processing specialist on the Tennessee Gap Analysis Project. Her major duties at

TWRA involve managing the GIS Lab and conducting GIS analysis of forest communities, wildlife habitat, and natural resource data. Jeanette has a BS in Wildlife Biology and an MS in Geography from Murray State University.

Beginning with Habitat: Conservation Planning Assistant Tools

Bethany Atkins, Maine Department of Inland Fisheries and Wildlife

ABSTRACT:

Maine's natural resources are abundant and unique. Clean free flowing waterways offer world class boating and fishing opportunities; large forested areas provide productive timber stands and miles of recreational trails; abundant wildlife draw hunters and bird watchers; and spectacular landscapes offer scenic views. Natural assets are highly valued by Mainers, the driver of the state's cherished quality of life, and the backbone of Maine's economy. The quality and quantity of Maine's natural resources are changing, however, as Maine's landscape is affected by widespread urban and rural development, as well as shifting climate conditions.

To sustain the state's valued natural heritage, Mainers need to plan ahead and implement approaches for maintaining the health of their woods, waters, and wildlife. Most land use decisions in Maine are made locally. By knowing where natural assets occur, towns, land trusts, and landowners can make more informed choices about where to encourage development and where land conservation efforts can have lasting ecological benefits.

Beginning with habitat, a partnership of public agencies and private conservation organizations, provides natural resource data, maps, tools, and assistance to help local decision-makers do just that. Beginning with Habitat helps local decision-makers create a vision for their community, design a landscape, and develop a land use plan that provides habitat for all species and balances future development with conservation.

BIOGRAPHY:

Bethany Atkins is a biologist for the Maine Department of Inland Fisheries and Wildlife's Beginning with Habitat Program. Bethany compiles and translates ecological data and collaborates closely with state, local, and regional land use planners to develop conservation plans and approaches to maintaining wildlife habitat. Prior to working for MDIFW, Bethany was the Lands Programs Director for the Sheepscot Valley Conservation Association, working with landowners on land protection and stewardship projects in Maine's Sheepscot River Watershed.

Bethany has a B.A. in Biology from Brown University and a Masters in Landscape Design and Environmental Planning from Conway School.

National Survey of Data Capture Device Effectiveness

Bruce Schmidt, Pacific States Marine Fisheries Commission

ABSTRACT:

At last year's meeting it was proposed that we conduct a survey of users of hand-held data capture devices to determine strengths and weaknesses for various types of sampling conditions. The results of the survey would serve as a resource for those considering purchasing field sampling devices. Over the past year a questionnaire was developed for such a survey. The questionnaire has now been turned into an online survey and is nearly ready to implement. The concept is to have OFWIM promote the survey through its relationship with the Association of Fish and Wildlife Agencies as well as through our own agencies. The questionnaire will be demonstrated at the Hacker's Ball, and final input and suggestions for the questionnaire will be solicited. Next steps for implementing the survey will be discussed during this meeting.

BIOGRAPHY:

Bruce Schmidt is a fisheries biologist currently working in the information technology field as program manager for the StreamNet Project, a four-state fisheries database in the Pacific Northwest. Bruce holds a BS and MS degrees in fisheries science, including programming in Fortran IV to analyze his thesis data. In addition to leading the StreamNet Project, he has experience in a wide range of fisheries jobs from field research to program administration in four states. After 43 years he is moving from fisheries management to simply fishing, and is applying to move up to a more fulfilling job as a ski instructor starting this winter!

Long-Term Climate Dynamics Provide a Surprising Key to the Contemporary World

George L Jacobson, University of Maine

ABSTRACT:

The climate of New England (and elsewhere) has changed continuously in the past, and that variability will continue. The dynamics of atmospheric and oceanic circulation are driving by forces acting at many different frequencies, all of which function in concert. Today we observe the consequences of human activities that are now perturbing some of the natural systems on a massive scale. The critical question of whether these Earth systems respond at unprecedented rates or in novel ways can be answered only by understanding the long-term climate record.

BIOGRAPHY:

Professor Emeritus of Biology, Ecology, and Climate Change at the University of Maine. Since his arrival in Maine in 1979, Dr. Jacobson has been a member of the Climate Change Institute, and he was Director of the Institute of nearly a decade. During the past 30 years, he has served the university and the State of Maine in many ways, including leading a successful campaign to expand greatly the support for research and development activities. His scientific research has focused on long-term climate variability and specifically on forest responses to climate changes during the past 60,000 years. His projects have included sites in North America, South America, and Europe. Among other things, he has served as an outside advisor on climate to the European Science Foundation, and to the Finnish Academy of Sciences. For the past five years, he has had the honorary designation of Maine State Climatologist. Professor Jacobson joined the faculty of the University of Maine in 1979 after three years of working in the United States Senate in Washington, DC, first as a Congressional Science Fellow of the American Association for the Advancement of Science, and then as a staff scientist for the U S Senate Committee on Environmental and Public Works. He was born and raised in Rapid City, South Dakota, and earned a B.A. in 1968 from Carleton College, and a Ph.D. in 1975 from the University of Minnesota. From 1968-1970 he served as a medical specialist in the United States Army.

Maintaining Data Security while Promoting Data Sharing

Bruce Schmidt, Pacific States Marine Fisheries Commission

ABSTRACT:

Advances in data sharing technology, along with legal and professional requirements that promote or require disclosure of data, are leading to increasing pressure on scientists to make their data publicly available. At the same time, scientists are concerned over keeping data secure and avoiding misinterpretations or misuse of the data they create. One potential means of lessening concerns over data security and appropriate use while allowing for greater sharing of data is to develop formal Data Sharing Agreements that allow the data creator to specify limitations on the availability and use of data and assure that the person acquiring the data is informed and agrees with those limitations. We are in the process of developing a template that data creators can use to describe the appropriate and inappropriate uses of their data, specify how the data can be obtained and how it can be and cannot be subsequently shared, and establish protections for the originator against errors and potential misuse. Data users would be required to acknowledge and accept the conditions for using the data prior to being granted access to the data. Progress toward developing such a Data Sharing Agreement template will be described.

BIOGRAPHY:

Bruce Schmidt is a fisheries biologist currently working in the information technology field as program manager for the StreamNet Project, a four-state fisheries database in the Pacific Northwest. Bruce holds a BS and MS degrees in fisheries science, including programming in Fortran IV to analyze his thesis data. In addition to leading the StreamNet Project, he has experience in a wide range of fisheries jobs from field research to program administration in four states. After 43 years he is moving from fisheries management to simply fishing, and is applying to move up to a more fulfilling job as a ski instructor starting this winter!

Landscape Level In-Stream Habitat Mapping Using Side Scan Sonar

Beth Stys, Florida Fish and Wildlife Conservation Commission

ABSTRACT:

Landscape level habitat data are extremely valuable in research and management of aquatic systems. In the past, the characterization of in-stream habitat at the landscape scale has been both difficult and costly. Side scan sonar for benthic mapping is an efficient, low-cost approach for mapping habitat features in navigable rivers and streams. It provides a means to create high resolution, spatially detailed maps of continuous, in-stream habitat across broad aquatic landscapes. Florida Fish and Wildlife Conservation Commission (FWC) personnel collected

images representing the substrate of approximately 45 km of the Chipola River during a high water period using a Hummingbird 1197c Side Scan Sonar imaging unit. The waypoints and track points were checked for correct positioning, divided into processing segments, cropped to remove areas of overlap and transformed into a geo-referenced raster layer. A substrate classification schema was developed to identify areas of value to spawning Shoal Bass, including: sand/pea gravel, rocky fine, boulder, and bedrock. Field visits were conducted in order to establish reference points for visual classification of substrate. Substrate polygons were digitized based on a visual interpretation of the sonar imagery and classified according to the classification schema. The accuracy of the substrate map was assessed during a low water event on a stretch of the river that contained known locations of Shoal Bass spawning sites.

BIOGRAPHY:

Beth received her B.S. in Wildlife Management from Texas A&M University and an M.S. degree in Wildlife and Fisheries Ecology at Mississippi State University. Beth is currently a Research Administrator within the Center for Spatial Analysis of the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute. She has worked for the FWC for over 21 years. Most of her work with the FWC has focused on landscape level, statewide conservation planning, including imperiled species protection, terrestrial and freshwater aquatic conservation area identification and prioritization, species habitat modeling and land cover mapping. She has been a member of OFWIM since 2003.

Use of Trail Cameras for Estimating White-Tailed Deer Population

Julie Fleming, Missouri Department of Conservation

ABSTRACT:

Management of white-tailed deer populations is challenging, and being able to estimate population characteristics is an important management tool. Historically, the only accurate method available to census deer populations in Missouri has been by helicopter survey. However, accurate counts from helicopters require uniform snow cover, and snowfall in Missouri is unpredictable. Trail cameras offer an attractive alternative. Population estimates using trail cameras do require a large investment in time and labor; however, this type of census is less costly than helicopter surveys, and it can be conducted regardless of snow conditions. In 2006 the Missouri Department of Conservation initiated a study to evaluate the effectiveness of using trail cameras to census deer populations on conservation areas. Subsequent camera surveys in 2007, 2009, and 2011 have provided invaluable information about both the positive and negative aspects of this method. This type of census generates a

remaining 75%. When not at work, he runs a small hobby farm, raising goats, sheep, cattle, and chickens.