

COOPERATIVE FISH AND WILDLIFE RESEARCH UNITS



YEAR IN REVIEW
2014

Chief's Welcome

The Cooperative Fish and Wildlife Research Unit (CRU) Program is on the verge of its 80th anniversary. From its inception in Iowa by Ding Darling and the original 10 Units, the Program has grown to encompass 40 Units in 38 states with a global presence. Throughout our history, staffing and funding levels have fluctuated in somewhat of a cyclic fashion, much like many of the animal populations our scientists and cooperators study and manage. If we were to equate the status of the Units in 2014 in terms we use to describe the long-term population fluctuations of caribou, or the classic 10-year snowshoe hare/Canada lynx cycle, we might say we are in a “low,” but we would not say we have crashed. Despite the fact our funding and staffing levels have significantly declined, the productivity of the Units is impressive. This is due principally to the caliber of the scientists and students they recruit, and the tremendous support from our cooperators. The President’s budget request for fiscal year 2016 has great promise for the Units. Proposed increases would allow us to shore up our capacity to meet cooperator needs, and bring to fruition initiatives we are piloting. These initiatives are designed to foster a pathway for cooperators to have a highly skilled workforce in the future that mirrors the diversity of the American people and addresses emerging conservation challenges. We intend to expand our trans-boundary initiatives where two or more Units in collaboration will be the catalyst that binds agencies and organizations together on landscape-scale conservation science. We are working to ensure we have the science capacity to meet what likely will be future conservation challenges, so we can assist our cooperators in proactive management decision making. We are in the initial planning stages with cooperators to develop a long term conservation science initiative that will have a national footprint, and a global reach. We are also beginning to develop “Networks of Expertise” from within the Units, so that we have Units without borders, so to speak, that can be pulled together to deliver expertise on questions involving a wide range of disciplines such as spatial ecology, landscape ecology, conservation genomics, population biology, and others. There is much to be excited about. The legacy of the Unit Program and the foundation it is built upon

are not only durable, they are adaptive and position us well to meet emerging and future conservation science needs. In this Year In Review report, you will find details on staffing, vacancies, research funding, and other pertinent information. You will also see snapshots of Unit projects with information on how results have or are being applied by cooperators. That is the essence of what we do: science that matters; research that fuels decision-making. None of this could be accomplished without the truly outstanding headquarters support staff. I am so proud to work with people whose dedication to the Unit mission is palpable, and who take pride in their administrative work because it allows our scientists to do more science.

I am hopeful that when I prepare this report a year from now, I will be able to tell you how we have turned the corner thanks to budget increases approved by Congress. I hope to be able to state our footing is firmer than it is now, and lapses in our ability to meet cooperator needs were temporary. I hope to be able to describe progress on the exciting initiatives currently in the conceptual stages. Much hinges on events that will occur over the next several months, and as always, the support of our cooperators will be instrumental. Thanks from all of us in the CRU Program!



Budget and Staffing

The FY 2014 budget remained at \$17.37 M which continued the sequestration reduction of \$2M implemented in FY 2013. The decreased program budget coupled with the loss of scientists (retirement, resignation, death) currently has the program with 26 vacancies spread across 19 Units.

CRU leadership is using the attrition-based salary savings to backfill positions as aggressively as possible without over committing the program in out years given future budget uncertainties.

From 2005 to 2014:

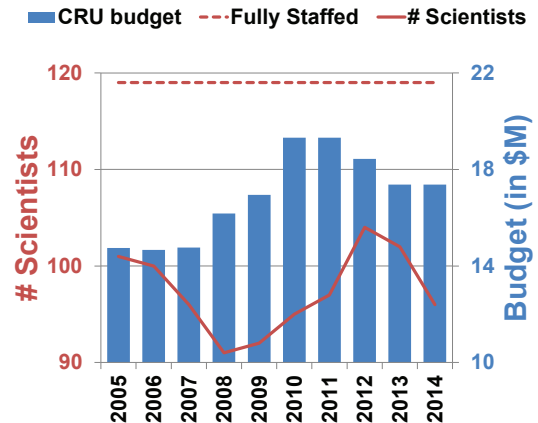
- 41 scientists left the CRU program
- 34 new (to CRU) scientists were hired
- 18 additional unit vacancies were filled from within CRU to meet cooperator needs (net gain of zero since they vacated a position).



Research Funding

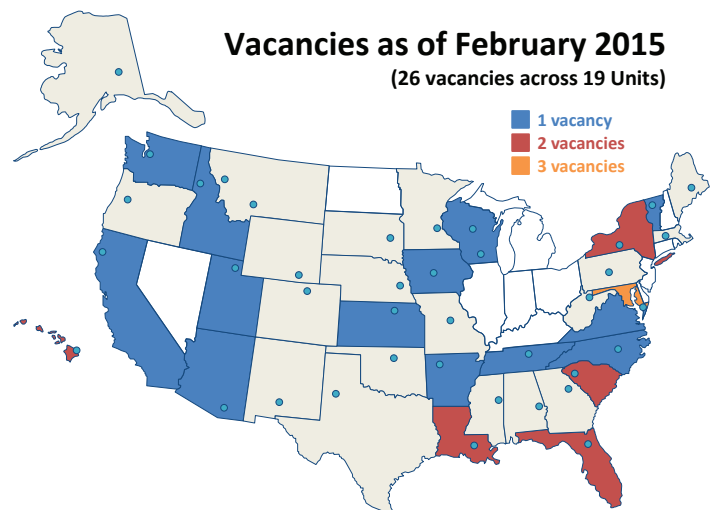
Research funding from federal agencies has declined in recent years while funding from state agencies has remained stable. Currently, research funding from state agencies and federal agencies is roughly equal. The majority of federal funding is from the Department of the Interior agencies.

CRU Budget and Staffing

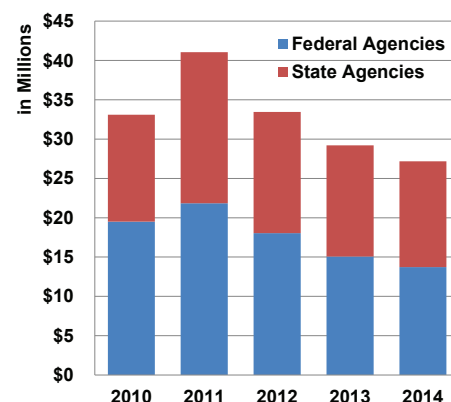


Vacancies as of February 2015

(26 vacancies across 19 Units)



Federal and State Agency Funding



Leveraging Cooperator Resources

One of the greatest strengths of the Unit program is the business model and the way the contributions of each cooperator are leveraged to achieve results far beyond just the sum of the contributions. For example, host universities receive far more than just two to five federal research scientists that serve on the graduate faculty because those scientists conservatively bring in \$25M in research funding to their host universities annually (state and federal). Those research funds also support a large number of university-based positions including >600 graduate and postgraduate positions (MS and PhD students and postdocs) and >300 university staff (administrative, lab and field technicians) annually.

Cooperators can access a non-federal faculty through the Unit Cooperative Agreement. Research Work Order funding of non-federal, host university investigators averages \$6M per year and supports an additional estimated 150 positions (staff and students) per year.

Base funding from the state agencies is leveraged by the other cooperators to ensure state agencies have “local” access to state of the art research capabilities and facilities to help meet their contemporary research needs and have a continuous output of highly qualified graduate students for subsequent employment. A huge benefit of the CRU graduate research model is it often puts the graduate students in the field side-by-side with state and/or federal agency personnel. Consequently, by the time a student graduates, he or she will have greater preparation for an agency career than the average student, and agency personnel will know the students extremely well and have first-hand knowledge of their work ethic and ability to perform and communicate. As a result, agencies have a high degree of confidence in hiring tried-and-true Unit students – this is the “Unit Brand.”

Lastly, the CRU scientists themselves benefit immensely by being located on some of the finest land grant colleges and universities in the country. Having access to world class research and library facilities and serving on the graduate faculty at their host university, while receiving base operating funds from the state cooperators, collectively provide our scientists with a unique and stimulating environment that has produced many innovative leaders in natural resources management and education.

“I hope to work in a capacity that positively impacts wildlife conservation in North America. This goal is purposefully broad because I don’t want to have narrow expectations for how I may be satisfied in my future career. A diversity of positions associated with wildlife resources agencies, non-governmental conservation organizations, or universities appeal to me and my career goals. I have enjoyed my time conducting wildlife research in graduate school and would be interested in continuing a career with research. However, I also find conservation policy and administration to be an appealing career path.” Adam Janke, South Dakota State University

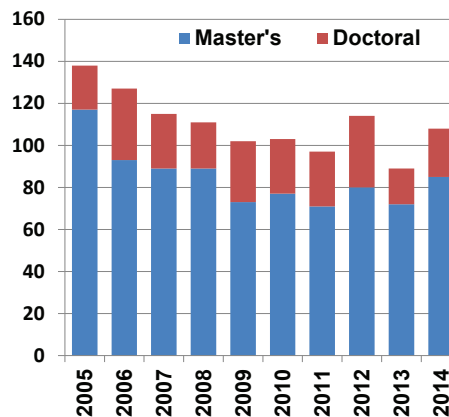




Unit Students

The CRU program provides a unique platform for training the next generation of natural resource managers, policy makers and scientists. By conducting research on timely issues of key importance to state and federal partners, students gain skill sets relative to the application of science to the needs of the natural resource management community and society. Further, due to the unique model of cooperative partnership inherent in the CRU program, students gain familiarity with the needs, policies, personnel, and structure of state and federal management and science agencies not normally acquired at the same level by students trained outside of the Unit structure. This makes them uniquely prepared to be the workforce of the future for natural resource conservation.

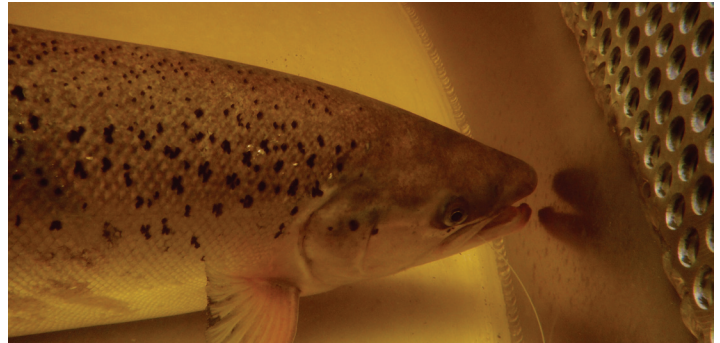
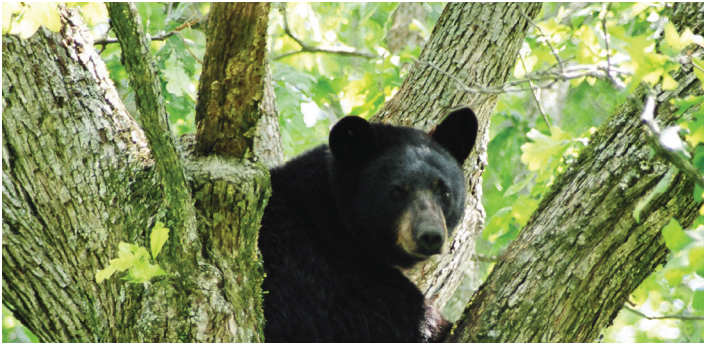
Degrees Earned



Degrees Earned

Degrees earned annually over the past 10 years within the Unit Program have fluctuated around the 100 mark, with a rough average of four M.S. degrees for every Ph.D. degree. Recently, we've seen a slight increase in the proportion of Ph.D. degrees and Post Doctoral researchers as Unit scientists and cooperators tackle more complex, landscape-scale science.

“With developments and innovation in science, and the changing face and scale of threats to fish and wildlife resources and management needs, research, training and technical assistance is more important than ever. I want to ensure that agencies and organizations hiring fish and wildlife professionals recognize that Unit students are special - they have training and exposure that gives them a leg up on other candidates. That is the Unit brand.” --John Organ, Chief



Science that Matters: Research for Decisions

One of the three pillars of the CRU mission is to conduct research to provide science solutions to the management needs of cooperators – research that fuels decision making. Featured in this section are a few examples that display the diversity of management-oriented research conducted for state and federal cooperators, focused on both harvested and rare species, covering all regions of the Nation. We have many more examples from every Unit in the program, and we will be featuring these in a variety of outlets. This is just a taste of what this cooperative effort yields:

Pallid Sturgeon

Scientists at the USGS Montana Cooperative Fishery Research Unit identified a direct link among dam-induced changes in riverine sediment transport, the subsequent effects of those changes on reduced oxygen levels and the survival of an endangered species, the pallid sturgeon. Pallid sturgeon, native to the Missouri and Mississippi rivers, were listed as an endangered species in 1990. The species has a lifespan of more than a century. According to the U.S. Fish and Wildlife Service (USFWS), fewer than 175 wild-spawned pallid sturgeon – all adults – live in the free-flowing Missouri River above Lake Sakakawea. Since 1990, not a single wild-spawned pallid sturgeon is known to have survived to a juvenile, despite intensive searching. In the past five years, researchers identified the most important reason for pallid sturgeon population declines in the Upper Missouri River: the lack of survival of naturally produced sturgeon embryos. Before dams, pallid sturgeon embryos would drift for hundreds of miles, eventually settling out in areas with low flow where they matured enough to negotiate the river's flow. Given what the new research shows about how no oxygen is available to pallid sturgeon embryos, the researchers propose that officials will need to consider innovative approaches to managing Missouri River reservoirs for pallid sturgeon conservation to have a chance. It also could provide some guiding principles for the construction of new dams around the world.



Atlantic Salmon

Since 2004, acoustic, radio and passive integrated transponder (PIT) telemetry have been used by the USGS Maine Cooperative Fish and Wildlife Research Unit to characterize the path choice and passage success of adult Atlantic salmon entering into the Penobscot River, Maine, during their spawning migration. The life history of this federally endangered fish requires access to inland stream habitat. Tracking studies demonstrated that only a small fraction of Atlantic salmon successfully passed all three dams between the head of tide and presumed spawning habitat. Unsuccessful migrants frequently “fell back” into the estuary, and few successfully re-ascended. These passage data were compared with results from previous telemetry studies during 1987-1990 and PIT tag studies during 2002-2004 to estimate passage success for the three dams closest to the estuary. This synthesis of information allowed managers to reassess their practice of releasing trapped adults below the lowermost dams in favor of active trucking as a short term mitigation strategy. The recent removal of two main-stem dams and the increased power generation at other dams as part of the “Penobscot River Restoration Project” has improved river passage for these fish. Continued telemetry work is monitoring the impact of dam removal and assessing the efficacy of the newly installed fish lift at Milford Dam. These data have been used to inform changes in operation and have been the major impetus for specific modifications to fishways.



River Otter

The USGS Nebraska Cooperative Fish and Wildlife Research Unit in collaboration with the Nebraska Game and Parks Commission has conducted a series of studies on river otters, an animal formerly extirpated from the Great Plains and Nebraska, but reintroduced to Nebraska in the 1980s. The research documented habitat use, movements, use of non-native vegetation, and used genetic techniques with scat to estimate population density; the team found some of the highest river otter densities ever recorded. These studies are being used by the state to support official delisting of the species, which, when complete, will be the first delisting of a mammal from Nebraska's threatened and endangered list.



Horseshoe Crab

The USGS Alabama Cooperative Fish and Wildlife Research Unit has worked with USFWS, the Atlantic States Marine Fisheries Commission and the States of Delaware and New Jersey to help implement an adaptive management plan for horseshoe crab harvests in the Delaware Bay region. Horseshoe crabs support a commercial harvest industry, and are key to the life history of the recently listed red knot. Red knots feed on horseshoe crab eggs during their hemispheric migration, and biologists consider the energy resources derived from these eggs essential to migration and reproduction.



Species of Greatest Conservation Need

A model developed by the USGS New York Cooperative Fish and Wildlife Research Unit at Cornell University was used to analyze assessment data compiled by experts on Species of Greatest Conservation Need (SGCN) and categorize SGCN based on available data concerning their status. SGCN are species that have experienced or are likely to experience population decline in the next 10 years and require conservation actions to stabilize their populations in New York. High Priority SGCN are species that are experiencing declines and must receive timely management intervention or their populations are likely to decrease to unsustainable levels. Revising the SGCN list is the first step in updating New York's State Wildlife Action Plan (SWAP). The draft final list contains



372 species, half of which are considered high priority for conservation action in the near term. In addition, 111 species were categorized as Species of Potential Conservation Need (SPCN). SPCN are species that have poorly-known population status and trends, and will need further research or surveys to determine their conservation status. Of the initial candidate species, the New York State Department of Environmental Conservation (DEC) determined 111 do not necessitate a focused conservation effort at this time because they are extinct from the state, stable at this time, or have never been observed in the state. DEC and species experts also identified the conservation threats to each species, with the most common problems being habitat loss, invasive species, pollution and climate change. DEC and conservation partners will now identify conservation actions to address these threats as the next step in updating the SWAP. Updating the SWAP enables New York to be eligible for federal funding through the State Wildlife Grants (SWG) Program which is administered by the USFWS. Since 2010, New York has received an average of \$2 million per year in SWG funds which has

helped implement programs to conserve declining species and keep common species common.

King Rail

The king rail is a focal species for the USFWS. King rail populations have declined dramatically and the species is listed as threatened or endangered in 13 states and Canada. Research in the rice fields, crawfish aquaculture ponds, and coastal marshes of southwestern Louisiana and southeastern Texas by the USGS Louisiana Cooperative Fish and Wildlife Research Unit identified the importance of this region for the long-term conservation of this species.



The research also identified that rice fields surrounded by canals with emergent vegetation that had < 10 percent tree coverage around the perimeter of the field were important predictors of king rail nest occurrence. As a result of these findings, the National Resources Conservation Service provides benefits to landowners to reduce woody coverage to < 10 percent around field perimeters and Anahuac National Wildlife Refuge canceled a planned project to install an irrigation pipe and backfill a perimeter canal around rice fields on the refuge.

Paddlefish

In 2001 the USFWS Division of Scientific Authority (DSA) asked scientists at the USGS Tennessee Cooperative Fishery Research Unit to submit a proposal to perform a stock assessment of paddlefish in Tennessee waters. A lucrative trade in the overseas export of paddlefish caviar was developing and the DSA, tasked with ensuring that species listed under international conventions are fished in a sustainable manner, was concerned over the dramatic increase in the amount of Tennessee paddlefish caviar being exported.

With funding provided by the USGS Science Support Program, paddlefish in Tennessee's largest caviar fishery were studied by Tennessee Unit scientists and students and reports were provided in 2005 and 2007 to the DSA and Tennessee Wildlife Resources Agency (TWRA). Initial efforts to enact more restrictive regulations to prevent overfishing met with stiff resistance from the industry and a lawsuit was filed. Over the next seven years, Tennessee Unit scientists presented research findings, and TWRA biologists presented management recommendations, to a state commission, the fishing industry, regional management associations, and the Tennessee legislature. These efforts finally led to the enactment in November 2014 of regulations to protect paddlefish from overfishing in Tennessee, including raising the minimum harvest size limit, shortening the fishing season, enacting the state's first-ever limited entry system for a commercial fishery, and changing fish processing rules to aid enforcement activities.



These new regulations subsequently prompted the DSA to once again allow the overseas export of Tennessee caviar. The Tennessee Unit's research findings, and the actions of the TWRA, also prompted fish management agencies in adjoining states to revisit their paddlefish regulations and make changes to more closely align their regulations with Tennessee's.



White-tailed deer

Scientists at the USGS Pennsylvania (PA) Cooperative Fish and Wildlife Research Unit conducted workshops for the PA Dept. of Conservation and Natural Resources, Bureau of Forestry to identify goals and objectives for managing white-tailed deer on 2.2 million acres of state forest in Pennsylvania. These workshops, and further collaboration with the agency have led to development of a management program that integrates quantifiable objectives with monitoring data, along with a decision tool, that provides foresters with a transparent method for making deer management decisions. Specifically, the Bureau of Forestry enrolls, if necessary, state forest lands in the PA Game Commission's Deer Management Assistance Program (DMAP). The DMAP provides landowners with additional harvest permits for antlerless deer. The program has received inquiries from management agencies in other states.

Elk

The USGS Montana and Wyoming Cooperative Research Units began working with Elk Biologists in seven western states to pool elk data in order to answer large scale questions concerning elk management in the west. Scientifically, the group is accomplishing far more than any one elk research project ever could.

Given changes in habitat and predator communities over the course of the huge data set they are working with, inferences on elk ecology and management that were previously impossible are being realized. Importantly, the temporal span of the data set actually lets them ask meaningful questions about many ecological aspects, including climate change. To date, Rocky Mountain elk data from Colorado, Idaho, Montana, Oregon, Utah, Washington, Wyoming, and Yellowstone National Park have been collected. The group has developed a set of shared objectives, data-sharing agreements, and decision-making protocols to facilitate large-scale, multi-region analyses of the factors affecting dynamics of the populations they manage. Additional projects by the Wyoming Unit are investigating depressed elk pregnancy rates, monitoring population dynamics and migration patterns of elk in northwest Wyoming, and investigating how hunters and elk change their use of the forest as trees die and begin to fall due to bark beetle infestations. Studies



Credit: Mark Hebblewhite

by the Montana Unit are designed to provide better understanding of elk and wolf predator/prey interactions, the effects of climate change and elk browsing on population trajectories and trophic interactions in riparian systems, and the effects of elk on small mammals and nutrient cycling.

The next step is synthesis of elk demography, life history, habitat, and survival. The key to the success of Western Elk Research Collaborative (WERC) was state leadership. The states told the Coop Unit scientists and other university academics what they needed and envisioned, and they all worked together to get the job done – this is the essence of Coop Unit work, bringing managers and researchers together.



Cerulean Warbler

The Appalachian Region is known for its extensive tracts of mature hardwood forest and high biodiversity, including that of songbirds. The region is a stronghold for the cerulean warbler, a species of high conservation concern due in part to an estimated 70 percent population decline over the last 40 years.

Several factors contribute to its decline, including loss and degradation of forested habitat; the amount of forest in the landscape is important as is the quality of the forest.



Cerulean warblers breed in mature deciduous forests throughout the eastern US, but are particularly abundant in oak-dominated forests that contain canopy gaps and a complex canopy structure. Anecdotal evidence that creating some canopy breaks in a closed canopy forest improves the habitat quality for ceruleans suggested that harvesting timber might be a useful tool for managing forests to benefit this species.

The USGS West Virginia Unit, in collaboration with the Cerulean Warbler Technical Group, National Council for Air and Stream Improvement, National Fish and Wildlife Foundation, Appalachian Mountains Joint Venture (AMJV), and researchers and managers from universities, state agencies, USFWS and private landowners in West Virginia, Ohio, Kentucky, and Tennessee, recently completed a six-year study with the objective of identifying forest management approaches that are compatible with cerulean warbler conservation.

Techniques that wildlife managers can use in forest management to improve breeding habitat for the cerulean warbler and other avian species were identi-

fied. Bird community response to forest management was quantified so that associated species could be considered in habitat management decisions. Habitat management guidelines that several state agencies are now implementing in the Appalachian Region were developed.

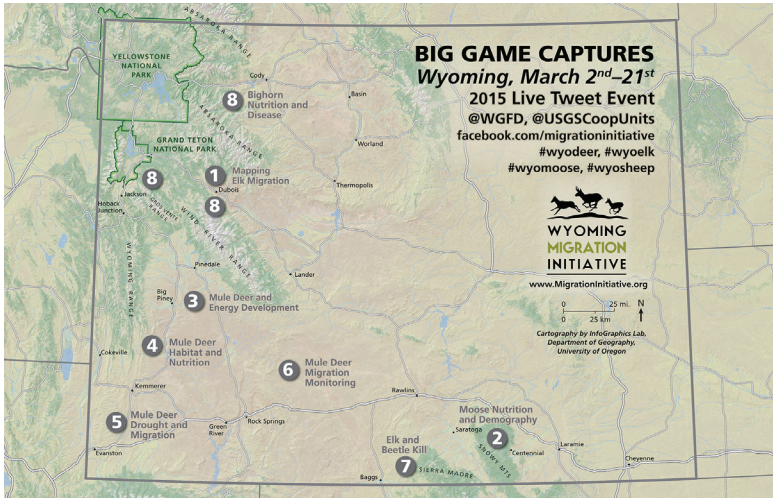
The West Virginia (WV) and Virginia (VA) Cooperative Research Units then initiated a follow-up study to evaluate the implementation phase of forest habitat management for ceruleans. The study was initiated with funding from USGS Ecosystems Mission Area and supplemented with funds from state agencies.

Working with the AMJV, USFWS, and land managers in WV, VA, and PA, researchers are studying cerulean warbler and associated species responses within the context of applied forest management.

Additionally, the AMJV Partnership recently was awarded an \$8 million Regional Conservation Partnership Program grant to enhance cerulean warbler and associated species habitat on private lands in the Appalachian region by implementing the habitat management guidelines.



Social Media and the CRU Program



CRU Leadership is aggressively pursuing and embracing the use of social media to more effectively communicate the work our scientists do to a much broader constituency than we've ever targeted before. Recently, CRU has set up its own Twitter account @USGSCoopUnits to reach out to over 288 million users worldwide. The twitter account is just the first step in a robust social media strategy being developed, so expect to hear from us through many channels! Our scientists use social media and are developing a cadre of followers who often receive real-time updates on research activities from the field. Matt Kauffman, Unit Leader at the Wyoming Unit and Director of

the Wyoming Migration Initiative, provides a great example of how wise use of social media can generate interest in, understanding of, and support for applied research across a variety of groups with diverse interests. Matt is effectively using Twitter to provide real-time updates from the field to “educate the public about the plight of Wyoming’s mule deer, their incredible migrations, and the role of research and current management efforts.” The team has followers on various social media who observe the science from field efforts such as capture of large ungulates to data products such as spatial analyses of animal movements. You too can follow the research and activities of the Wyoming Migration Initiative: facebook.com/migrationinitiative and migrationinitiative.org.

In an era where the role of science and scientists in informing public policy is increasingly questioned, efforts to openly share our research with the public, other scientists, politicians, and decision-makers will hopefully engender greater ownership of the science, and ultimately more durable, lasting decisions over the future of our natural resources.

Youth Initiative

Currently, 37.4 percent of Americans are non-white, Hispanic, or Latino according to U.S. Census data, but account for only 11.7 percent of hires over the last three years in government natural resources agencies. The CRU youth initiative will create pathways for training, recruitment, and mentoring of youth from under-represented segments of society so that our future fish and wildlife managers and scientists will be more representative of the public they serve. CRU involvement in youth programs has traditionally been focused on graduate education. CRU is implementing two approaches to provide undergraduate students from groups under-represented in the conservation workforce with mentoring and hands-on experience to build a pathway to recruitment as natural resource professionals. The first approach is in collaboration with the Doris Duke Foundation’s Conservation Scholars Program. Undergraduate students at five CRU host universities are mentored by CRU supported graduate students and research scientists. Students attend leadership training programs, work with scientists and graduate students on selected research projects, and complete paid internships with local, state, federal, and tribal agencies or NGO’s. The second approach is in collaboration with the USFWS. Graduate and undergraduate students will conduct research on National Wildlife Refuges as a means to develop and recruit federal scientists and natural resource managers. Students will address research topics of importance to the National Wildlife Refuge System including landscape connectivity, fish and wildlife health, human uses, and wildlife population management. This approach will be piloted in the Northeast Region, USFWS.

Professional Service

AMERICAN FISHERIES SOCIETY

Scott Bonar, President, Introduced Fish Section
Shannon Brewer, President, Oklahoma Chapter
Brian Irwin, Southern Division Representative for Education Section
James Long, President, Oklahoma Chapter
Joe Margraff, First Vice President
Donna Parrish, President
Craig Paukert, Education Section President
Michael Quist, Past-President, Education Section
Amanda Rosenberger, President-elect, Missouri Chapter
Stuart Welsh, President, West Virginia Chapter

AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES

David Leslie, Board Member

AMERICAN SOCIETY OF MAMMALOGISTS

David Leslie, Vice President

COOPER ORNITHOLOGICAL SOCIETY

Katie Dugger, Board of Directors, Treasurer
Joseph Fontaine, Assistant Secretary
Abby Powell, Secretary

FLORIDA WILDLIFE FEDERATION

Raymond Carthy, Board of Directors

INTERNATIONAL ASSOCIATION FOR LANDSCAPE ECOLOGY

Thomas Edwards, General-Secretary

INTERNATIONAL SEA TURTLE SOCIETY

Raymond Carthy, President, Board of Directors

NORTH AMERICAN CRANE WORKING GROUP

Sammy King, Board Member

RAPTOR RESEARCH FOUNDATION

Clint Boal, President

SOCIETY FOR ENVIRONMENTAL TOXICOLOGY AND CHEMISTRY

Dana Winkelman, Vice President, Rocky Mountain Chapter

THE RESILIENCE ALLIANCE

Craig Allen, Board of Directors

THE WATERBIRD SOCIETY

Theodore Simons, Elected Member of Executive Council

THE WILDLIFE SOCIETY

David Andersen, North Central Section Representative to Council

James Cain, President, New Mexico Chapter

W. David Walter, Newsletter Editor, Pennsylvania Chapter

WORLD SEABIRD UNION

Patrick Jodice, Elected Board Member

Accolades

Unit scientists and their students received 113 awards in 2014 from universities, agencies and societies and included recognition at the local, national and international levels. Below are some highlights:

Duane Diefenbach, Caesar Kleberg Award for Excellence in Applied Wildlife Research, The Wildlife Society

Alan Afton, 2014 Wetland Conservation Achievement Award - Research/Technical Category, Ducks Unlimited Inc.

Angela Fuller, Outstanding Wildlife Professional Award, New York Chapter of The Wildlife Society

Harold Schramm, Fisheries Management Hall of Excellence, American Fisheries Society

Clint Boal and David Haukos, Outstanding Scientific Publication, Texas Chapter of The Wildlife Society

Bruce Vondracek, Award of Excellence, Minnesota Chapter of the American Fisheries Society

Theodore Simons, Elected AOU Fellow, American Ornithologists Union

Scott Bonar, AZ/NM Fisheries Professional of the Year, Arizona/New Mexico Chapter American Fisheries Society

Reynaldo Patiño, Education Award, Texas Chapter of American Fisheries Society

Cecil Jennings, Outstanding Alumnus 2014 (University of Florida), Fisheries and Aquatic Sciences Program, University of Florida

Clay Pierce, Most-Read Article, The American Midland Naturalist

James Peterson, Honorable mention for the American Publishers Awards for Professional and Scholarly Excellence (The PROSE Awards, 2013) for *Decision Making in Natural Resource Management: A Structured, Adaptive Approach*

Michael Quist, Outstanding Mentor Award, Idaho Chapter of the American Fisheries Society

Mevin Hooten - Young Investigator Award, Section on Statistics and the Environment, American Statistical Association

Abby Powell - Honorary Member, Cooper Ornithological Society

Petra Wood - Presidents Award, Raptor Research Foundation

Meet the New Chief

Dr. John F. Organ is the Chief of the CRU. He was Chief of Wildlife and Sport Fish Restoration for the Northeast Region of the USFWS from 2005 to 2014, and worked in the USFWS's Ecological Services and National Wildlife Refuge programs during his 35 year career. He is also an Adjunct Associate Professor of Wildlife Conservation at the University of Massachusetts, Amherst, Michigan State University, and Andres Bello University in Santiago, Chile. He is a Certified Wildlife Biologist and Past President and Fellow of The Wildlife Society. He is also a Professional Member of the Boone and Crockett Club and a Senior Specialist in the Fulbright Scholar Program. He is a member of the International Union for Conservation of Nature (IUCN) Otter Specialist and Sustainable Use and Livelihoods Groups, and an instructor and Advisory Board member of the Conservation Leaders for Tomorrow Program. He is also a consultant to the Peru Forest Sector Initiative where he is assisting the Peruvian government in training biologists and developing wildlife regulations. He advises M.S. and Ph.D. students studying carnivores and human dimensions in Africa, Canada, Chile, and the U.S. and teaches graduate courses in Wildlife Management and Conservation and Human Dimensions of Wildlife Conservation.



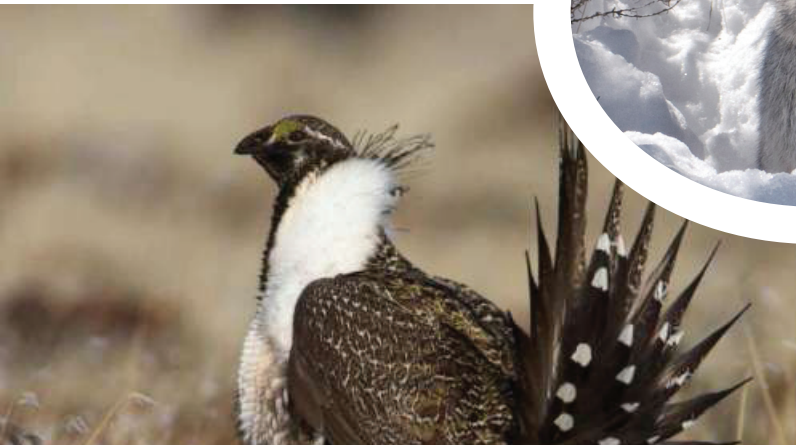
Meet the Deputy Chief

Dr. John D. Thompson (aka JT) is no stranger to Unit Scientists. Since 2003 JT has served as Coordinator for National Research Grade Evaluation in the USGS Office of Science Quality and Integrity. In that capacity he arguably knows more about the people and the science of USGS than anyone alive. JT served a number of detail assignments at Coop Unit headquarters acting as Deputy Chief, before coming on board permanently in September. JT was Director of Research for the Max McGraw Wildlife Foundation where he directed the Research and Conservation Education Departments.



He administered the Foundation's grant program and designed and conducted original research on wildlife ecology. JT's thesis and dissertation research focused on post-breeding and wintering waterfowl in the United States and Mexico. Although a dyed-in-the-wool bird guy, JT's research experience has included mammals, including wolf ecology.

"Many challenges are facing the Unit program. Those challenges include the continued ebbing of federal funding and its impact on Unit vacancies, and the relationship of applied research to thematic science. I believe addressing the latter will be key to gaining relief from the former. I need your help in these and many other challenges we face." John Organ, CRU Chief



The Cooperative Fish and Wildlife Research Units Program is proud to serve its cooperators.

ALABAMA

Auburn University
Alabama Department of Conservation and Natural Resources

ALASKA

University of Alaska
Fairbanks
Alaska Department of Fish and Game

ARIZONA

University of Arizona
Arizona Game and Fish Commission

ARKANSAS

University of Arkansas
Arkansas Game and Fish

Commission

CALIFORNIA

Humboldt State University
California Department of Fish and Game

COLORADO

Colorado State University
Colorado Division of Wildlife

FLORIDA

University of Florida
Florida Game and Fish Commission

GEORGIA

University of Georgia
Georgia Department of Natural Resources

HAWAII-FISH

University of Hawaii
Hawaii Department of Land and Natural Resources

IDAHO

University of Idaho
Idaho Department of Fish and Game

IOWA

Iowa State University
Iowa Department of Natural Resources

KANSAS

Kansas State University
Kansas Department of Wildlife and Parks

LOUISIANA

Louisiana State University
Louisiana Department of Wildlife and Fisheries

MAINE

University of Maine
Maine Department of Inland Fisheries and Wildlife

MARYLAND

University of Maryland, Eastern Shore
Maryland Department of Natural Resources

MASSACHUSETTS

University of Massachusetts
Massachusetts Division

of Fisheries and Wildlife
Massachusetts Division of Marine Fisheries

MINNESOTA

University of Minnesota
Minnesota Department of Natural Resources

MISSISSIPPI

Mississippi State University
Mississippi Department of Wildlife, Fisheries, and Parks

MISSOURI

University of Missouri
Columbia
Missouri Department of Conservation

MONTANA-FISH

Montana State University
Montana Department of Fish, Wildlife, and Parks

MONTANA-WILDLIFE

University of Montana
Montana Department of Fish, Wildlife, and Parks

NEBRASKA

University of Nebraska
Lincoln
Nebraska Game and Parks
Commission

NEW MEXICO

New Mexico State
University
New Mexico Department
of Game and Fish

NEW YORK

Cornell University
New York Department of
Environmental Conserva-
tion

NORTH CAROLINA

North Carolina State
University
North Carolina Wildlife
Resources Commission

OKLAHOMA

Oklahoma State Univer-
sity
Oklahoma Department of
Wildlife Conservation

OREGON

Oregon State University
Oregon Department of
Fish and Wildlife

PENNSYLVANIA

Pennsylvania State Uni-
versity
Pennsylvania Fish and
Boat Commission
Pennsylvania Game Com-
mission

SOUTH CAROLINA

Clemson University
South Carolina Depart-
ment of Natural Resourc-
es

SOUTH DAKOTA

South Dakota State
University
South Dakota Depart-
ment of Game, Fish, and
Parks

TENNESSEE-FISH

Tennessee Tech Univer-
sity

Tennessee Wildlife Re-
sources Agency

TEXAS

Texas Tech University
Texas Parks and Wildlife
Department

UTAH

Utah State University
Utah Division of Wildlife
Resources

VERMONT

University of Vermont
Vermont Department of
Fish and Wildlife

VIRGINIA

Virginia Polytechnic
Institute and State Uni-
versity
Virginia Department of
Game and Inland Fisher-
ies

WASHINGTON

University of Washington
Washington Department
of Ecology
Washington Department
of Fish and Wildlife
Washington Department
of Natural Resources

WEST VIRGINIA

West Virginia University
West Virginia Division of
Natural Resources

WISCONSIN-FISH

University of Wisconsin-
Stevens Point
Wisconsin Department of
Natural Resources

WISCONSIN-WILDLIFE

University of Wisconsin
Madison
Wisconsin Department of
Natural Resources

WYOMING

University of Wyoming
Wyoming Game and Fish
Commission

The CRU Partnership

Land Grant Universities

State Natural Resource Agencies

Wildlife Management Institute

U.S. Fish and Wildlife Service

U.S. Geological Survey

Cooperative Fish and Wildlife Research Units Program

U.S. Geological Survey
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