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Best Available Science and Imperiled Species Conservation: Challenges, Opportunities, and Partnerships

A Business, Government, and NGO Dialogue

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RESOURCES
FOR THE FUTURE

Best Available Science and Imperiled Species Conservation: Challenges, Opportunities, and Partnerships

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Abstract

This document reports on a July 2014 dialogue at Resources for the Future between the US Fish and Wildlife Service (FWS) and representatives of the business, NGO, and academic communities convened to address science challenges associated with Endangered Species Act (ESA) listing and recovery decisions. The dialogue described the volume and timing of near-term listing and recovery decisions; identified science gaps pertinent to candidate species protection, listing, and recovery; explored the role of multiple-species protections and landscape-scale conservation science and its role in ESA implementation; and assessed the possibility and virtues of science collaboration within the private sector and between the private sector and FWS.

Key Words: Endangered Species Act, endangered species, listing, species recovery, landscape-scale conservation

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James Boyd*

1. Introduction

This document reports on a dialogue convened to address science challenges associated with Endangered Species Act listing and recovery decisions and to explore scientific collaboration between government agencies and the private sector. The meeting explored new species conservation insights associated with multi-species and landscape-scale conservation approaches and more immediate science challenges posed by ESA litigation.*

1.1 The Dialogue's Motivation and Urgency

As a primary agency charged with implementing the Endangered Species Act (ESA), the Fish and Wildlife Service (FWS) is confronting workload challenges resulting from court-imposed deadlines and strict statutory requirements for the processing of petitioned listing actions. In particular, under the 2011 multi-district litigation settlement (MDLS), the FWS agreed that by the end of fiscal year 2016 it would make final listing determinations for 251 species—and achieve critical habitat designations for those proposals to the extent practicable. Beyond 2016, FWS will face hundreds of additional listing and recovery determinations. In fact, more than 600 post-2016 listing determinations are already identified. Those timetables present a significant scientific—and practical—challenge for the FWS given its limited staff and financial resources. They also present challenges and opportunities for the regulated community, including

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The Electric Power Research Institute (EPRI) and the National Council for Air and Stream Improvement (NCASI) provided financial support for the dialogue.

land and natural resource owners and managers whose own science assessments can and should be brought to bear on conservation, listing, and recovery plans.

These challenges and opportunities were also raised at an RFF-hosted event in 2013 that featured FWS, landowners, environmental NGOs, and business sector participants discussing the ESA's next decade in policy, legal, economic, and scientific terms. Out of that meeting came a mutual interest in the attention given to the science that underpins ESA decision-making, the realities of impending deadlines, and the desire to integrate modern conservation principles into ESA implementation.

In response, Resources for the Future (RFF), the Electric Power Research Institute (EPRI), the National Council for Air and Stream Improvement (NCASI), and the US Fish and Wildlife Service (USFWS) designed and hosted the dialogue described here. The meeting's objectives were to:

1. Describe the volume and timing of near-term listing and recovery decisions;
2. Identify science gaps pertinent to candidate species protection, listing, and recovery;
3. Explore the role of multiple-species protections and landscape-scale conservation science and its role in ESA implementation;
4. Identify ways to maximize the decision-relevance and benefits of science investment given limited financial resources and tight time frames; and
5. Assess the possibility and virtues of science collaboration within the private sector and between the private sector and FWS.

A subsidiary goal was to broaden awareness—in both the science and policy communities—of recurring science challenges worthy of exploration by the academic, NGO, and business communities.

1.2 Participants

The dialogue included 40 participants identified and recruited by the organizers, with presentation weighted toward FWS and business sector practitioners (See Appendix A, participants).

1.3 Format and Content

Participants were reminded that the meeting's purpose was not policy, legal, or political discussion of ESA or its implementation, but rather the deployment of science to inform ESA

decisions. The agenda (see Appendix B, agenda) featured several presentations from the FWS designed to inform participants of court-ordered deadlines, existing case workloads, and associated FWS science priorities and plans, including the FWS listing work plan. The agenda also featured presentations from the business community on their approach to ESA-related science and on examples of successful science-based species conservation.

2. Consensus Around Current Practice

The meeting revealed a great deal of consensus both in terms of the current status of ESA science practice and institutional factors that in some cases inhibit the development and application of ESA-relevant science. In what follows we use the term "ESA science" to refer to studies and data brought to bear by FWS, petitioners, or the regulated community in any formal ESA determination.

2.1 The Status of ESA Science Input

The dialogue revealed broad consensus regarding the current state of species science applied to ESA determinations.

- A large proportion of determinations rely upon science relating to specific, individual species rather than assemblages, or portfolios, of species.
- Population viability analysis, while desirable, is rare and limited to a small proportion of species.
- The regulated (private sector) community often invests in its own science analyses, but the science is usually reactive to immediate regulatory issues rather than designed to proactively avoid listing.
- Relatively little ESA science collaboration occurs among the business sector, NGOs, and government, though some occurs within specific business sectors (e.g.. forestry and energy).
- Overall, science contributions—whether from business, NGO, or government sources—are more often ad hoc rather than strategic.

2.2 Institutional Factors that Thwart Priority Setting and Science Collaboration

There was also broad consensus on a set of institutional factors that make long term priority setting a challenge.

- Workloads are driven primarily by strict statutory deadlines.
- These deadlines and requirements are associated with species-specific science determinations.
- Due to budget and workforce constraints, the FWS relies heavily on external science, rather than in-house science that could, in principle, be more responsive to and coordinated with its administrative deadlines.
- Much, if not most, "academic" species science—while a rich area of potentially relevant scholarship—takes years to develop and is not always developed with ESA decision relevance in mind.
- Species occurrence, habitat, and threat data are limited. Even when it is available it can be difficult for researchers and decision-makers to access, share, and synthesize.
- Private sector firms that conduct ESA science, often relying on consulting expertise, often find it difficult to share data and collaborate on analysis due to their differing priorities and institutional cultures. In some cases data are proprietary or not shared out of legal concerns.
- Mechanisms for pro-active, longer-term science collaboration (e.g. around pre-listing conservation plans) between FWS and the private sector are not common though a variety of new opportunities for collaboration are under development.

Overall, there was broad agreement regarding the features and limitations of existing science and the institutional hurdles to more comprehensive, strategic, and responsive science. Both NCASI and EPRI noted their existing role as hubs for collaborative species research conducted by the forest products and electric power sectors, respectively. The oil and gas sector lacks a corresponding research consortium, a point made with some frustration by several oil and gas participants. There was general acknowledgement that collaborative research efforts carry greater weight within the business sector and outside it due to the perception that the analysis is not geared toward any specific business' advantage.

3. Opportunities and Recommendations

With this overall consensus the group explored specific opportunities for partnership, coordination, and collaboration. All FWS and business sector participants expressed a strong conviction that better coordination would improve regulatory outcomes, serve the public interest, and advance understanding of species conservation and recovery. Business participants described

an eagerness to assist the FWS by sharing research, providing technical assistance, and exploring creative solutions to both proactive conservation and ongoing recovery of listed species. The FWS described a corresponding eagerness to engage scientifically with the business sector in order to generate the best possible conservation, listing, and recovery plans.

3.1 Focus on Science Pertinent to Post-2016, Post-MDLS Determinations

One consensus recommendation was to develop collaborative, proactive science plans and investments on the FWS' post-2016 listing workload. Of course, the MDLS-driven listing workload (which covers 251 listing determinations up to and through FY 2016) generates its own significant science demands. In practice, however, the settlement's near-term impending deadlines limit the value and practicality of more proactive, collaborative science contributions likely to require longer-term data collection and analysis.

Moreover, the scale of the post-2016 listing workload is even greater, as is the corresponding need for proactive science engagement. Post-2016 more than 600 listing determinations are already in the queue (see Table 1).[1]

Table 1. Domestic Post-MDL Actions FY17 and Beyond (as of June 2014)

Action Type	R1	R2	R3	R4	R5	R6	R7	R8	Grand Total
90-day finding	11	9	3	28	4	8	0	16	79
12-month find.	2	76	1	362	4	14	1	48	508
PL / PCH	0	5	1	5	0	5	0	8	24
rpCH	0	0	0	0	0	0	0	2	2
Grand Total	**13**	**90**	**5**	**395**	**8**	**27**	**1**	**74**	**613**

[1] PL, PCH, and rpCH refer respectively to "proposed listing," "proposed critical habitat," and "revised proposed critical habitat."

The table depicts the type of listing determination (rows) by US Fish & Wildlife Service region (columns). Note that nearly 400 of the 613 known determinations will arise in Region 4, covering the US Southeast.

3.2 Pre-listing Collaborative Science Needs and Opportunities

There was general agreement that numerous mechanisms exist for engagement between the FWS and regulated community once a species is listed. Opportunities for engagement pre-listing are newer, less common, and less well known. However, opportunities do exist, a point of great interest to participants.

There are several visions for pre-listing actions and associated science assessments:

1. Analysis of conservation actions designed to avoid listings;
2. Analysis of conservation actions to avoid listing as endangered (though still threatened);
3. Analysis and documentation of credited conservation actions in anticipation of listing;
4. Analysis of special regulatory approaches under section 4(d) of the ESA;
5. Joint recovery planning, critical habitat assessment, and listing analysis.

Each of these visions has a clear upside for both FWS and the regulated community (and the nation).

Clearly, conservation actions protective of species to the point where they need not be listed, or if listed do not rise to endangered status, are desirable, provided that they can be shown to be both biologically sound and cost effective—hence the need for proactive science assessment.

> **Collaborative science opportunity**: Early identification by the regulated community (from the post-2016 work plan) of species whose listing would (1) be most economically significant and (2) affect groups of regulated businesses (due to similar kinds of operations, land holdings, or geographic location), and subsequent analysis of conservation actions' effectiveness and costs, including ability of conservation to avoid listing or avoid endangerment status determination.

Existing examples of this kind of collaboration were noted. The US Department of Defense has proactively identified species on candidate lists most likely to affect, for example,

base operations and has been collaborating with FWS to implement targeted conservation of those species.

Of particular relevance is the Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE). PECE provides guidance on whether a conservation action "makes listing a species unnecessary or contributes to forming a basis for listing a species as threatened rather than endangered." It outlines 15 criteria for determining that new conservation measures will be implemented and effective at reducing species threats. Pre-listing conservation plans should carefully refer to these criteria for guidance. While it sets a high bar for pre-listing conservation actions, it does allow for experimentation with new approaches.

Finally, the FWS has in place a variety of conservation partnerships and funding (the Cooperative Endangered Species Conservation Fund) for states to explore pre-listing conservation on non-federal lands.

> **Collaborative need**: A persistent source of questions stem from how "threatened" and "endangered" are defined, as well as what constitutes "recovery." Clarifying these definitions through early and regular communication can address the issue.

Even when a listing or listing status cannot be affected by early conservation, engaging in early conservation is likely to be biologically and economically desirable. It is important in that case, however, to appropriately credit and incentivize early conservation action, which again requires proactive science assessment of baselines and biological improvements brought about by pre-listing conservation.

Pertinent to this is the FWS' draft policy on crediting voluntary conservation actions (the "Prelisting Conservation Policy"). The policy is currently in a public comment period, but in general is geared toward creating incentives—via generation of conservation credits—for landowners and government agencies to voluntarily conserve species prior to a future listing. Any such credit scheme raises a variety of science-based questions related to the definition of baseline biological conditions and demonstration of conservation improvements relative to a baseline.

Another opportunity for science collaborations and innovative conservation approaches arises under the so-called "4(d) rule." Section 4(d) analysis relates to a provision of the ESA that allows FWS to establish special regulation for threatened species. It is not applicable to endangered species. The rule allows for substantial regulatory flexibility (e.g., definition of prohibitions on species "take"). If warranted, the rule can be invoked to tailor ESA protections.

Finally, joint, contemporaneous analysis of listing status and recovery planning (which is currently not the norm) has clear virtues. Administratively, joint analysis is likely to be efficient because it allows coordinated analysis and early identification of data pertinent to status, biological condition, threats, and habitat needs. An earlier focus on recovery analysis also creates an opportunity for earlier engagement by states and the regulated community.

A model for such collaborations is the *Species Status Assessment Framework*. Under a species status assessment, the FWS, relevant state agencies, and stakeholders develop at least preliminary analysis of a species' threats, population trajectories, and potential conservation actions. The concept, for example, is to have threat and recovery analysis present throughout the listing process and be ready for recovery planning and consultations post-listing. A corollary advantage is that the process reveals data needs earlier in the administrative process.

> **Collaborative science opportunity**: Engagement around species status assessments will allow partners to provide—when available—existing data and analysis early in the listing and recovery processes. Engagement will also provide stakeholders with early understanding of data needs regarding species' occurrence, habitats, existing conservation actions, threats, and potential partners for data collection and analysis.

3.3 Post-Listing Collaborative Science Needs and Opportunities

Post listing, collaborative science engagement revolves around species recovery. Two collaborative models are pertinent here: *Species Recovery Partnerships* and *analysis of mitigation criteria.*

Species recovery partnerships are focused on the stabilization, down-listing, and de-listing of species and involve joint conservation planning by the FWS, states, and the private sector. Practical barriers to these partnerships include regulatory agencies' budget and staff constraints.

The determination of adequate and eligible mitigation requires science assessment, often at the landscape or species range scale. The possibility of greater mitigation flexibility—and improved biological outcomes associated with that flexibility—is currently under consideration by FWS.

> **Collaborative science opportunity**: Recovery-based planning and regulatory practice post-listing presents another opportunity for collaborative science engagements. Whether associated with a recovery partnership or mitigation criteria, planning and regulation require significant amounts of species

occurrence, habitat, threat, and conservation data and analysis that is rarely available to FWS or the states alone.

3.4 Specific Science Needs

Meeting participants identified several types of data and analysis pertinent to all of the decision contexts and collaborative opportunities noted above.

Analysis of Threats

There was broad agreement that better analysis of species threats, particularly analysis of longer-term threat trajectories, is a priority. FWS noted that species rarity by itself is rarely the rationale for listing. Rather, rarity combined with analysis of habitat loss, over-utilization of species for commercial, recreational purposes, disease and predation factors, and inadequacy of non-ESA regulatory protections—all of which relate to threat—are often determinative of both listing and recovery decisions.

Climate change raises important science questions for threat analysis, via its potential impact on species ranges, populations, and habitat. Similarly, major changes in land use associated with energy development and other infrastructure may alter habitat.

Forest sector participants noted that identification of forestry as a threat to the Northern Long-eared Bat, a wide-ranging species affecting 39 states with significant expected regulatory impacts, took industry by surprise. Earlier collaboration and interaction between the sector and the FWS service could have, in principle, triggered informative forest sector-led research on threats

Landscape-Scale Ecological Analysis

In general, conservation science increasingly focuses on landscape-scale analysis of conservation needs and natural resource management effectiveness. Better ecosystem-level, or landscape-level, analysis could also improve the effectiveness and efficiency of ESA decisions by better identification of habitats crucial to conservation and recovery. This is particularly true for species with wide ranges. In some cases, species analysis requires almost continental-scale data collection and assessment of biological condition and threats (e.g., the Northern Long-eared Bat).

By their nature, landscape-scale analysis demands collaboration across a wide range of stakeholders. A point of contact for such analyses is the Department of Interior's Landscape Conservation Cooperatives (LCCs). The LCCs, which cover the United States, identify shared

priorities for species and habitat protections and invest in science to achieve shared conservation goals.

Also worthy of note are potential revisions to habitat loss mitigation guidelines (likely to be submitted for public comment in late 2015). Mitigation criteria are being revisited to possibly allow for mitigation investments across broader geographies (as opposed to the current regulatory preference for on-site mitigation) in order to protect more biologically important areas.

Surrogate Species and Batching Analysis

Efforts are underway to identify key species whose persistence contributes to and is reflective of overall ecosystem health—efforts referred to as the surrogate species approach. Surrogate species analysis, which goes well beyond ESA implementation, is an approach to analytical prioritization. If surrogate species can be identified, it could be desirable to focus threat, conservation, and recovery analysis on them in the expectation that resulting decisions would be protective of a wider portfolio of species, habitats, and ecological processes.

A related but distinct concept more directly pertinent to ESA decisions is the concept of "batching." Batching organizes species into portfolios based on similarity in habitat needs, biological traits, geography, and threats. The rationale is that certain kinds of analysis (e.g., analysis of threats in a given geography) could be simultaneously applied to a portfolio (batch) of species in order to streamline assessment. Certain FWS regions are currently experimenting with the approach (e.g., Regions 1 and 4).

As a hypothetical example, can analysis of aquatic amphibians in a given watershed be batched in order to make multiple species listing, conservation, and recovery decisions in a single pass? There is a need for collaborative science to determine when species can be organized into such portfolios and to identify applicable data and methods.

Analysis of Forest, Water, and Other Resource Management Practices

Participants noted that there is a tremendous amount of research on natural resource management practices (e.g., best management practices) that does not seem to be routinely applied to ESA determinations. Examples include analysis of the effects of required forest certification practices on habitats and species abundance and analysis of land use practices' (riparian buffers, fencing, no-till crop production) effects on water quality.

While analysis of resource management practices' effects on species is better developed and coordinated in certain regions, there is a need for more coordination and communication across regions. Science analysis of BMP effectiveness and prevalence could be useful to listing and recovery decisions. FWS participants noted that if existing practices are being implemented on the ground, they would count as assurances pertinent to, for example, evaluation of threats under the PECE policy (described above).

> **Summary of collaborative science needs and opportunities:** Science investments organized around analysis of threats, landscape-scale ecological analysis, species batching, and BMP efficacy would be helpful and require collaboration.

3.5 Data Sharing Mechanisms

In order to accomplish the goal of strategic, early, and efficient science investment, a variety of approaches to coordination and sharing of data collection and analyses were discussed. Consistent, transparent, and centralized data was a desire expressed by most participants.

FWS is legally required to consider the best available scientific data and affirmed that industry-provided data can be considered scientific (as opposed to purely commercial) data. The FWS noted that it often lacks the capacity to conduct primary research and that the "best available science" standard in practice means data that is analyzed and made publicly available (e.g., in the peer-reviewed literature) and data presented to or collected by the Service. The easier it is for the FWS to acquire and collect data, the more likely it will be brought to bear on decisions.

It was noted that centralized, publically available species occurrence data, often available at the county level, is often not comprehensive. NatureServe collects more detailed and comprehensive species occurrence data, but that data is proprietary and typically require special agreements to access. Many field offices have their own information management systems. The current lack of a centralized information repository creates administrative and analytical challenges for stakeholders and the FWS.

For these reasons, FWS is working to centralize data and documents via the Environmental Conservation Online System (ECOS). The current priority is to centralize basic information such as listing documents and recovery plans. In the future, the goal is to centralize information on species ranges, populations, projects, status, and threats.

A private sector (but proprietary) model is Croplife America's development of a database that compiles NatureServe and other species occurrence data to look at potential overlap between pesticide use and listed species. Others noted company-specific data collection efforts on species distributions affecting management, operations, and facility siting.

This generated a discussion of how industry collaborations fostered by groups such as EPRI and NCASI could promote sharing of data on locations, ranges, and threats. Industry participants noted that, despite obvious virtues in terms of cost-effectiveness and relevance to planning, many companies can be reluctant to share data with others. The viability of an industry-led data sharing initiative was left unresolved.

In general, there was agreement that greater attention should be paid to developing data quality and aggregation criteria, particularly given the uncertainties associated with occurrence data.

4. Conclusion

This dialogue between the FWS, regulated businesses, and conservation experts from academia and the NGO sector was motivated by a mutual belief that better, more coordinated science analysis in support of those decisions can improve outcomes for species, for the private sector, and for the American people.

The discussion generated a great deal of consensus regarding the kinds of ESA determinations requiring improved science input, opportunities for collaboration between the FWS and private sector stakeholders within the ESA's administrative framework, key analytical frameworks in need of further development, and the desirability of transparent, consistent, shared data on species status, threats, habitat needs, and conservation practice efficacy.

Workshop participants uniformly expressed a desire to continue to build on the meeting's dialogue, and collaborate both with FWS headquarters and regional staff.

There are real and significant opportunities for the FWS, states, businesses, and NGOs to improve the cost effectiveness and public benefit of scarce research dollars. Seizing these opportunities will require new commitments to collaboration within and across affected sectors. The meeting's core hypothesis was strongly affirmed: Collaboration lies at the core a new, more effective era of species protection.

Appendix A. Participants

John Magalski	American Electric Power Company
Jeff Bradley	American Forest & Paper Association
Stephen Cain	Arkansas Electric Coop Corporation
Timothy Male	Mission: Wildlife
Christopher Jensen	Chesapeake Energy
Kari Smith Gibson	Conoco Phillips
Michael Leggett	CropLife America
Jim Meiers	Duke Energy
Scott Fletcher	Duke Energy
Becca Madsen	Electric Power Research Institute
Robert Goldstein	Electric Power Research Institute
Robert Nolan	Exxon Mobil
Jeanne Lennon	First Energy
Paul Souza	US Fish and Wildlife Service
Douglas Krofta	US Fish and Wildlife Service
Caitlin Snyder	US Fish and Wildlife Service
Bobby Maddrey	Georgia Pacific
Brian Kernohan	Hancock Natural Resources Group
Samantha McDonald	Independent Petroleum Association of America
Julia Bell	Independent Petroleum Association of America
Barrett McCall	Larson & McGowin, Inc.
Chip Murray	National Alliance of Forest Owners
Dustin Van Liew	National Cattleman's Association
Steve Manning	National Resources Solutions
Ben Wigley	National Council for Air and Stream Improvement
Therese Conant	National Marine Fisheries Service
Ron Schindler	Pioneer Natural Resources
Rob Olszewski	Plum Creek Timber Company
Jimmy Bullock	Resource Management Service LLC
Jim Boyd	Resources for the Future
Rebecca Epanchin-Niell	Resources for the Future
Molly Macauley	Resources for the Future
Ruth Valencia	Salt River Project
Judy Che-Castaldo	National Socio-Environmental Synthesis Center
Danielle Watson	Society of American Foresters
Daniel Warren	Southern Company
Kristin Brodeur	Southern Company
Peter Cain	Southwestern Energy
Scott Ferson	Stony Brook University
Travis Hill Henry	Tennessee Valley Authority
Maile Neel	University of Maryland
Bob Emory	Weyerhaeuser Company

Appendix B. Agenda

Best Available Science and Imperiled Species Conservation: *Challenges, Opportunities, and Partnerships*

July 9–10, 2014

Resources for the Future
– Center for the Management of Ecological Wealth –
1616 P St NW, Washington, DC
1st Floor Conference Center

July 9

12:30 **Meeting Purpose and Goals**

- James Boyd, Resources for the Future

Welcome and Introductions

- Paul Souza, US Fish and Wildlife Service
- Robert Goldstein, Electric Power Research Institute
- Ben Wigley, National Council for Air and Stream Improvement

1:00 **The US Fish and Wildlife Service's Priorities and Science Needs**

Fish and Wildlife Service

- Paul Souza, Deputy Assistant Director for Ecological Services, will offer an overview of priorities related to imperiled species conservation over the next few years
- Caitlin Snyder, Acting Branch Chief of Litigation Support, will provide an overview of the agency's listing work plan through 2016

2:15 **Current Science Investments by the Business Community**

Industry panel discussion

- Michael Leggett, CropLife America
- Dan Warren, Southern Company
- Brian Kernohan, Hancock Natural Resources Group

3:30 **Best Available Science and the Thresholds for Listing and Recovery**

Fish and Wildlife Service

- Douglas Krofta, Branch Chief of Endangered Species Listing, will provide an overview of the standards used to determine whether a species should be listed or has reached recovery, with a focus on the science needed to inform the decisions

4:15 **Success Story #1—Habitat Conservation Planning in Arizona**
Ruth Valencia, Salt River Project

July 10

9:00 **Looking to the Future—Imperiled Species Conservation in the Years Ahead**
Fish and Wildlife Service

- Douglas Krofta will provide an overview of the preliminary listing workload after 2016, with a focus on hot spots for imperiled species conservation and pre-listing partnerships
- Paul Souza will describe a refined species status assessment effort to inform conservation from pre-listing through recovery

10:00 **Science Discussion Panel**

- Therese Conant, NOAA NMFS, Endangered Species Conservation Division
- Scott Ferson, Senior Scientist Applied Biomathematics, Adjunct Professor Stony Brook University
- Tim Male, Mission:Wildlife, and former VP Conservation Policy, Defenders of Wildlife

11:15 **Success Story #2—Cerulean Warbler Conservation Initiative**
Ben Wigley, NCASI

1:00 **Collaborations and Gaps Open Discussion**

- Are there opportunities for science collaboration across businesses and business sectors?
- Are there opportunities for closer collaboration between FWS and business sector science activities?
- What are the key science gaps and what is the role of collaborations in addressing them?

2:00 **Wrap-up**

- Should this working group continue to exist? Be expanded?
- Ideas for specific follow-on activities