

Recommendation 9: Develop and clearly articulate a research agenda for the Refuge System that is management-oriented and grounded in the testing of assumptions, with the explicit purpose of reducing uncertainty in our planning and management decisions.

Overview: The goal is for the National Wildlife Refuge System (NWRS) to be positioned to articulate research needs and priorities that are connected to our conservation delivery mechanisms at any spatial scale (e.g., refuge, LCC, region), taxa, or taxa groups (e.g., waterfowl, herps, pollinators). We clearly articulate and define this agenda in anticipation of data calls and requests for proposals, regardless of species, geography, funding, or principal investigator. We ensure that the NWRS is focusing time and energy on the most pressing natural resource needs.

Deliverable 1: Centralized information needs clearinghouse.

- *Description:* A centralized clearinghouse will communicate and coordinate research needs of the NWRS. This will encompass an information needs management system (clearinghouse) that is searchable by multiple terms (e.g., geospatial, species, and management action). The clearinghouse will include rankings of the uncertainty and potential impacts created by the assumptions of the models.
- *Approach:* Convene a subteam of biologist, modelers, and managers to work with the overarching Information Technology (IT) subteam. This subteam will investigate using the Fish and Wildlife Service Information Needs System (FWINS) as the platform for the clearinghouse and create a list of current decision support tools (models, plans, standard operating procedures, etc.). Modelers will provide the assumptions of current models to the subteam. The impact and uncertainty of the assumptions will be categorically ranked. The subteam will develop a process of coordinating research needs at the regional level. LEAD: IT subteam.
- *Major Milestones:* Subteam convened by 4/2012; clearinghouse platform and decision support tools identified by 6/2012; assumptions of models identified and the subsequent ranking of impacts and uncertainties determined by 8/2012; process for coordinating regional research needs developed by 10/2012.

Deliverable 2: Catalog of research and inventory and monitoring projects.

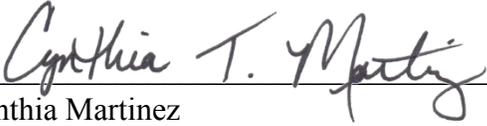
- *Description:* A Service Catalog (aka ServCat) that enumerates completed and ongoing research in the NWRS that is linked to the clearinghouse in Deliverable #1. ServCat will also track inventory and monitoring delivery by the national and regional offices.
- *Approach:* In cooperation with the overarching IT subteam, convene a subteam of biologists and overlap with subteam for the centralized clearinghouse (Deliverable #1). The subteam will determine how inventory and monitoring interacts with ServCat, determine IT issues with the integration, and coordinate with agencies involved with other information catalogs. The subteam will develop and deliver training for the catalogs to interested parties. LEAD: IT subteam.

- *Major Milestones:* Subteam convened by 4/2012; how inventory and monitoring corresponds with catalogs determined by 5/2012; agencies involved with catalogs contacted by 6/2012; IT issues addressed by 12/2012; catalog training designed and delivered by Spring 2013.

For Deliverables 1 and 2:

- *Coordination Need:* Subteams for Recommendations 6 (Adaptive Management) and 7 (Inventory and Monitoring), the Office of the Science Advisor, and external partner agencies/organizations that use the catalogs.
- *Communications:* Internal communication between the subteam, Inventory and Monitoring program, and IT specialists will be conducted informally via email and teleconferences. Other outlets will include fact sheets, web-based training in the use of the catalogs, and potentially workshops. External communication will be via email lists, websites, and key informational meetings with partners.
- *Success and Evaluation:*
 - a) Evaluate research actions through meta-analyses as detailed in Recommendation 7, Deliverable 1 (synthesis of inventory and monitoring data), to ensure NWRS research
 - b) The NWRS and partners use the centralized clearinghouse to manage information needs. Evaluate usage by quantifying research needs entered into the system.
 - c) Assumptions from models used nationally and regionally are clearly articulated. Evaluate the number of assumptions addressed over time.
 - d) Management purposes are explicit before research design. Evaluate through a checklist of what a research plan must include.
 - e) The NWRS articulates requests for proposals that catalyze proactive management-oriented research that does not create negative impacts on the resource. Evaluate by tracking the proportion of models used in refuge decision-making that have been empirically tested and the proportion of research projects conducted on refuges whose results are applied to refuge management (positive externalities).
 - f) A successful database will increase internal and external awareness of location, purpose, timeframe, funding sources, and quality of projects.
 - g) The catalog will increase information sharing, work efficiency, and collaboratively funded/conducted research. The catalog will provide the capacity to quantify completed projects, ongoing research, and collaborations.

Executive Implementation Council Approval:



Cynthia Martinez
Deputy Assistant Director – National Wildlife Refuge System
U.S. Fish and Wildlife Service

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Date