**South Atlantic-Gulf and Mississippi Basin Unified Region**

**Social Network Analysis: Functional Overlap and Partnerships**

**Scoping Document**

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**Prepared for:**

Science Applications and Migratory Birds

South Atlantic-Gulf and Mississippi Basin Unified Region

US Fish and Wildlife Service

**Project Scope**: The Migratory Bird and Science Applications program areas within the South Atlantic-Gulf and Mississippi Basin Unified Regions seeks a social network analysis to better understand the connections within the new combined Science Applications and Migratory Birds (SAMB) program, with other US Fish and Wildlife Service (FWS) programs, and with external organizations and individuals. We propose the following activities to accomplish this:

(1) Conduct a project kick-off meeting with Innovation Team (FWS) and Shawn Johnson (University of Montana). This will help clarify the goals and scope of the project.

(2) Design and pilot a survey using Qualtrics software. This survey will have multiple aims, one of which will be to collect network-relationship data so that a social network analysis of SAMB partners can be conducted. We will also collect information on the function of the partnership. The survey will be designed and have completed a pilot phase approximately 3 weeks after project kick-off.

(3) Launch online survey. The survey will be sent to staff of the newly combined SAMB program. We will leave the survey open for two weeks and include multiple follow-up emails. The survey will close approximately 6 weeks after the kick-off meeting.

(4) Conduct analysis. We will analyze the network and other survey data using data analysis software R. This will be completed approximately 8 weeks after kick-off meeting. For more information on social network analysis see Appendix A.

(5) Written report with summary of results and recommendations. This will be completed approximately 10 weeks after kick-off.

(6) Presentation of results with opportunity for questions and answer with FWS staff from combined program. We will schedule and plan for this approximately 10 to 11 weeks after project kick-off, which would be sometime the first week or two of early August.

**Appendix A**

Social Network Analysis (SNA) yields two forms of data—a visual representation of the network and an ordered list of the organizations based on the centrality or importance of the organization to the overall network. These forms of data can assist an organization in demonstrating how extensively they are working with other organizations, both currently and across time, where networking opportunities exist, the networks of neighboring organizations, as well as resource sharing and information flow. The methodology can also be used in conjunction with other standard statistical measures to assess whether the organization’s collaboration efforts are translating into increased capacity and/or service provisions. Increasingly, the data generated from network analysis is used in stochastic probability models that offer insights into what drives tie formation and the predicting the characteristics of important organizations.

Different analytical perspectives of SNA

Social network analysis as a method and analytical toolkit can produce results that are descriptive, diagnostic, evaluative, and predictive. Each is described below.

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| *Table 1. Different Analytical Perspectives of SNA* |
| Descriptive |
| * Provides a means to depict activity relevant to network questions of interest. * Can summarize the structure and function of networks – e.g., whether it is centralized or decentralized or whether there are disparate subgroups or a cohesive whole – which can then be compared to output and outcome measures to understand what types of networks are more effective. * Can be used to understand what parts of the network are working well, and this can be used to target qualitative research to understand the contextual conditions and mechanisms that are enabling effective network operation. * Data can be used to develop tools that allow evaluators/program managers to engage directly with the network structure, search for and click on organizations, and explore the underlying structure of the organizational relationships and glean information about specific organizations. |
| Diagnostic |
| * Assist in identifying opinion leaders, influencers, and potential change agents. * Find clusters in the network, and those individuals serving as bridgers across clusters. * Highlight intervention points by pinpointing weaknesses or gaps in the network. * Identify areas of overcrowding in the network. |
| Evaluative |
| * Measure network change over time relative to specific goals, i.e., building social capital among grant partners. * Assess whether the organization’s collaboration efforts are translating into increased capacity and/or service provisions. * Understand the diffusion of innovation or policy guidelines. |
| Predictive/Inferential |
| * Draws inferences about what gives rise to specific ties, types of ties or tie arrangements. * Determine how likely two organizations are to share information with one another as the number of mutual collaborators they share increases. * Determine how likely sharing an attribute (such as a funder or policy preference) make certain ties more or less likely. |
| *Table 2. Key Network Terms, Concepts, and Issues* |
| Data Collection and Measurement |
| * Network bounding: Which organizations should be included in the network when collecting data? * Link content: What types of links or relationships should be assessed (such as shared resources, clients, shared information, funding and contracts, or joint programs)? * Frequency of links: Do the links measured occur with regularity or only occasionally? * Level of interaction: Administrative (top management, board) versus operational (service-delivery level). * Trust: What is the quality of the relationship among partners (that is, based solely on formal agreements, rules, and procedures, or on trust and informal norms of reciprocity)? * Data collection: Primary data from structured questionnaires and interviews and secondary data from agency records, where available (such as contracts). * Respondents: Executive director, program heads, or operational personnel. * Confirmation: Are the relationships reported by an organization confirmed by its link partner? * Cross-sectional vs. longitudinal: Are network data collected once or at several points in time, thereby allowing examination of network evolution? |
| Frequently used network analysis measures (descriptive and diagnostic) |
| * Density: What is the overall level of connectedness among organizations in the network (can be calculated using data for specific types of links or for all links of any type)? Centrality: Which organizations are most central or most involved in the network (the number of direct and indirect links maintained by each agency)? * Multiplexity: What is the strength of the relationship between individual network partners, based on the number of types of different links (joint programs, funding, etc.) they maintain? * Strong versus weak ties: Are relationships confirmed or multiplex (strong) or are they unconfirmed or based only on one type of link (weak)? * Fragmentation: Are all or most network members connected, either directly or indirectly (that is, through another organization), or is the network broken up into fragments of unconnected organizations? * Dyads: Links or relationships between two organizations. Dyads are the building blocks of networks. * Cliques: The existence of subgroups of three or more fully interconnected organizations. * Network plots: A visual representation of all organizations in the network and the links / relationships among them |