NWRS Region 4 Inventory & Monitoring FY2012 Annual Work Plan

1. Introduction

1.1. Present the vision, goals, and objectives for the regional inventory and monitoring initiative.

In the Southeast Region, we have established an Inventory and Monitoring network to address the National Wildlife Refuge System's critical information needs and to help plan and evaluate the effectiveness of conservation strategies in close cooperation with Landscape Conservation Cooperatives. The Southeast I&M network is committed to be a full partner in the national effort with biologists and a database manager in priority geographic areas to help provide long-term data to document the status, assess condition, and detect changes in fish and wildlife communities, physical resources, and ecological processes on National Wildlife Refuges. The vision is to establish an inventory and monitoring network for refuges that provides information to guide future management decisions. The intent is to determine and fulfill the priority information needs and contributions of refuges to decisions that are made at the local, regional and national scales.

1.2. Describe how the regional I&M initiative is organized and planned focus areas.

Region 4 Inventory and Monitoring Network is organized around the Landscape Conservation Cooperatives the Region leads, e.g., South Atlantic, Gulf Coastal Plains and Ozarks, Peninsular Florida, and the Caribbean. The regional coordinator and database manager serve the entire region while field staff focuses their efforts within specific LCC geographies but cross boundaries as expertise is needed. Currently, field staff are co-located at refuges within the South Atlantic and will be in the Gulf Coastal Plains and Ozarks LCC geography, but work as a team to identify local, regional, and national monitoring needs; develop standardized data and data management protocols; and bring together existing and on-going monitoring efforts for the purpose of informing management decisions made at the NWR, LCC, and NWRS scales.

1.3. Explain how the regional I&M initiative integrates with the refuge biological program in the region.

The Southeast Region I&M Network is within the Refuges, Division of Planning and Resource Management. Guidance is provided by the Division Chief as well as the Regional Refuge Management Leadership Team. At the station level, Comprehensive Conservation Plans and Habitat Management Plans serve as the basis to define refuge inventory and monitoring needs. Refuge I&M staff will work very closely with individual refuges' staff to identify inventory and monitoring needs, design consistent surveys for multiple refuges, implement monitoring protocols, and provide timely data analysis. Regional and field staff will work together to identify and prioritize monitoring needs at the refuge and regional scales, i.e., what projects are necessary to inform adaptive management decisions. In addition, regional refuge biologists and I&M staff will work with the respective landscape conservation cooperatives, other Service programs and partner initiatives to identify the roles refuges can play in contributing to larger projects (e.g., collection of data to inform regional climate change models).

1.4. Explain how the regional I&M initiative coordinates with partners via the Landscape Conservation Cooperatives (LCCs). Which LCC's are included in the regional I&M initiative? What role does the regional I&M initiative serve within the LCC?

Within the Southeast Region, there is a strong connection between Refuge I&M and the LCCs. For example, the Regional Refuge Chief David Viker serves on Steering Committee for the South Atlantic LCC (SALCC) and the Refuge I&M Branch Chief Laurel Barnhill serves on the consulting team for the SALCC. The Science Coordinators of the SALCC and Gulf Coastal Plains and Ozarks LCC are working closely with I&M staff to accomplish the following:

- Continue to develop, refine, or adopt inventory and monitoring protocols to capture data on priority species addressed in LCC work plans and refuge CCPs that are expected to be vulnerable to climate change.
- Work to identify refuge's contribution to the information/data needs of LCC questions and priorities (i.e., where can refuges contribute to larger objectives both in formation of questions and data gathering).
- Share technical expertise and technologies to build capacity without redundancy (i.e., new I&M ecologists complement and add to LCC skill sets, share existing technological infrastructure, servers)
- I&M biologists serve on LCC technical committees are they are developed.
- Continue to identify mechanisms to communicate information to increase understanding of climate change effects and data needed to efficiently make decisions at various levels. Working towards an information exchange with outcomes directed at action we need to take to (solve) effects of changes, e.g., rates of accretion and building siting.

It is anticipated that opportunities to work together will continue to strengthen and evolve as LCC and I&M priorities are defined but at a minimum staff will communicate refuge inventory and monitoring needs as linked to biological plans and step down monitoring needs defined by the LCC partnership. I&M staff will provide a monitoring voice for refuges while working with multiple partners to target evaluation of management activities, track changes, etc. across the geography to insure monitoring information can be meaningfully rolled up across the LCC. Also, within the Southeast Region I&M will continue working with Migratory Birds, Fisheries and Ecological Services Divisions on a variety of issues.

2. Staffing

2.1. Provide a list of regional I&M staff and their job type or role, grouped by LCC. Also include a list of key cooperators (with their affiliation and role) who will be actively involved with the region's activities on at least a monthly basis during the coming year. Indicate vacancies and plans for refilling.

In the Southeast Region, we have hired staff in the South Atlantic geography, collocated on refuges, and plan to hire additional positions to be mostly stationed on Gulf Coastal Plains/Ozarks geography refuges. Long-desired staffing capacity -- dating back to several Fulfilling the Promises recommendations and ratified by the recent Conserving the Future vision -- will be realized to support clear monitoring objectives, standardized protocols, centralized data storage, timely data analysis and report generation across all refuges.

Position **Staff Name** Location LCC **Geographic Area** Laurel Barnhill Region-wide Regional/National **Regional Chief**, Athens. GA **Inventory and Monitoring Branch Regional I&M Data** Steve Holzman Athens, GA Region-wide Regional/National Administrator Alligator River NWR, **Terrestrial Ecologist** Rebecca Bartel South Atlantic LCC Regional Manteo, NC **Coastal Ecologist** Nicole Rankin Cape Romain NWR, South Atlantic LCC Regional Awendaw, SC Okefenokee NWR, South Atlantic LCC M. Forbes Boyle Regional **Botanist** Folkston, GA Theresa Thom Savannah NWR, South Atlantic LCC **Freshwater Aquatic** Regional Ecologist Hardeeville, SC

Positions, locations and geographic area of responsibility of regional I&M staff within USFWS Southeast Region, NWRS.

Template Updated Feb 2011

Report Date: 13 February 2012

Deputy I&M Branch Chief	Vacant	TBD	Gulf Coastal Plains- Ozarks LCC	Regional/National
Assistant I&M Data Manager	Vacant	TBD	Gulf Coastal Plains- Ozarks LCC	Regional
Terrestrial Ecologist	Vacant	TBD	Gulf Coastal Plains- Ozarks LCC	Regional
Coastal Ecologist	Vacant	TBD	Gulf Coastal Plains- Ozarks LCC	Regional
Botanist	Vacant	TBD	Gulf Coastal Plains- Ozarks LCC	Regional
Freshwater Aquatic Ecologist	Vacant	TBD	Gulf Coastal Plains- Ozarks LCC	Regional
Senior Wildlife Biologist	Mike Chouinard	TWRA, Jackson, TN	Region-wide	Regional/National

Roles and Responsibilities

Laurel Barnhill, Regional and South Atlantic LCC I&M Coordinator (co-located with National Park Service stationed at Athens, GA)

- Regional Refuge I&M Network Coordination
- Includes lead for implementing I&M Policy (e.g., refuge inventory and monitoring plan development)
- Focuses I&M efforts, to define questions and monitoring of pressing needs to ensure appropriate study designs, valid methods, cost effectiveness, and results provide reliable information to assist making refuge decisions. Work with refuges, FWS Divisions and partners to ensure cohesive and strategic approaches to regional and national wildlife monitoring initiatives.
- Coordinates Refuge I&M activities in accordance with LCC (South Atlantic and Gulf Coastal Plains and Ozarks) priorities
- Representation on LCC teams and working groups
- Representation on national I&M teams

Steve Holzman, Regional and South Atlantic Data Manager (to be co-located with National Park Service stationed at Athens, GA)

- Regional Refuge I&M data management
- Includes identification of database application needs to store refuge data and allow exchange of data at regional and national scales
- GIS coordination within Refuges and other programs, agencies, organizations
- Representation on National I&M teams
- Representation on Regional GIS teams and LCC teams and working groups
- Provides IT support to I&M and Athens Field Office

Rebecca Bartel, Terrestrial Ecologist

Forbes (Maxwell) Boyle, Botanist

Nicole Rankin, Coastal Ecologist

Theresa Thom, Freshwater Aquatic Ecologist

- Terrestrial, Coastal, Freshwater Aquatic Ecologists and Botanist responsible for identification and implementation of activities to support I&M Network focused on respective ecological components with the South Atlantic LCC geography
- Develop and evaluate inventory and monitoring protocols and assemble, analyze, and evaluate data, and prepare reports and publications related to terrestrial objectives
- Assist refuges with inventory and monitoring needs
- Coordinate and implement various surveys undertaken as part of the Network respective location

Report Date: 13 February 2012

- Representation on regional and national I&M and other related teams
- Representation on SALCC technical teams

Vacant, Deputy Branch Chief (overseeing Gulf Coastal Plain-Ozarks)

- GCPO LCC Refuge I&M Network Monitoring Coordination
- Representation on national and regional I&M teams
- Coordinates Refuge I&M activities in accordance with GCPO LCC priorities
- Representation on LCC teams and working groups

Vacant, Assistant Data Administrator

- GCPO LCC Refuge I&M data management
- GIS coordination within Refuges and other programs, agencies, organizations
- Representation on national and regional I&M teams
- Provides IT support to I&M

Vacant, Terrestrial Ecologist, Coastal Ecologist, Aquatic Ecologist and Botanist

- GCPO LCC I&M Ecologists responsible for identification and implementation of activities to support I&M Network focused on respective ecological components
- Develop and evaluate inventory and monitoring protocols and assemble, analyze, and evaluate data, and prepare reports and publications related to terrestrial objectives
- Assist refuges with inventory and monitoring needs
- Coordinate and implement various surveys undertaken with the Network respective location
- Representation on regional and national I&M teams
- Representation on GCPO LCC technical teams

Mike Chouinard, Senior Wildlife Biologist (co-located with TWRA, Jackson, TN)

- Lead for capturing, collating, and characterizing historical I&M data from Refuges (i.e., Legacy Data).
- Serves as Regional lead and member of national team working on the Geo-referenced
- Archive Service to store data and allow exchange of data with other entities.
- Design and implement field and modeling studies with landscape planning and adaptive management including development of species habitat decision support tools.
- Actively seek out and secure funding for projects that emphasize a landscape approach to strategic habitat conservation. Assist in project design and supervises the budgeting and financial tracking of Service funded projects.

Key Cooperators

Chuck Hunter, Division Chief, Division of Planning and Resource Management Susan Cielinski, Division Deputy Chief, Resource Management Branch, Regional Refuge Biologist Janet Ertel, Assistant Regional Refuge Biologist, Resource Management Branch Jane Griess, Project Leader, Savannah Coastal Refuges Complex Mike Bryant, Project Leader, North Carolina Coastal Plain Refuges Complex Raye Nilius, Project Leader, South Carolina Lowcountry Refuges Complex Curtis McCasland, Refuge Manager, Okefenokee National Wildlife Refuge James Burnett, Project Leader, North Florida Refuges Complex John Stanton, Supervisory Wildlife Biologist, South Atlantic Migratory Bird Coordination Office Randy Wilson, Station Leader, Migratory Bird Field Office (western portion of region) Tom Edwards, Wildlife Biologist, Migratory Bird Field Office (western portion of region) Ken McDermond, Coordinator, South Atlantic Landscape Conservation Cooperative Rua Mordecai, Science Coordinator, South Atlantic Landscape Conservation Cooperative Greg Wathen, Coordinator, Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative John Tirpak, Science Coordinator, Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative Pete Benjamin, Field Supervisor, Raleigh Ecological Services Field Office Wilson Laney, South Atlantic, Fish and Wildlife Conservation Office Joe DeVivo, Program Coordinator, National Park Service, Southeast Coast Inventory and Monitoring Network

3. Planned Activities and Anticipated Products

Summarize the major planned activities and anticipated products of the initiative for the coming year in the categories below. If no activity is planned in a certain category, do not include it. Use a table format similar to the examples (Tables 1 and 2) below. Table 1 captures planned activities by Blueprint Objective; Table 2 captures planned events such as symposia, program reviews, training, and workshops. Some activities may fit into multiple categories; please report each activity only once under the most appropriate heading.

3.1. Identify I&M Priorities for stations and the region.

- 3.1.1. Status of station Habitat Management Plans
- 3.1.2. Status of station Inventory and Monitoring Plans
- 3.1.3. Summary of inventory and monitoring priorities for the region
- **3.2. Abiotic Resources**
 - 3.2.1. Inventories
 - 3.2.2. Monitoring
- 3.3. Biotic Resources
 - 3.3.1. Inventories
 - 3.3.2. Monitoring
- 3.4. Stressors (examples: fire, invasive species, climate change)
- **3.5. Adaptive Management Projects**
- 3.6. Data Management (example: legacy data)
- 3.7. Communication (examples: symposia, program reviews, training, workshops, partnerships)

Table 1. Region 4 Inventory and Monitoring Activities, by Project or Theme.

Blueprint Objectives and Tasks	Project or Theme; Status	Planned Products	Staff
	IDENTIFY I&M PRIORITIES		
3.1.1	Status of station Habitat Management Plans The development of HMPs for all refuges is in progress, with anticipated region-wide completion by EOY 2015. Refer to updated S:\RW\RW-RM\Step-down Plans\HMP_Coordination\HMP_RefugeTargetandStatus.xlsx		Sue Cielinski and Janet Ertel I&M Ecologists assist if needed.
3.1.2	Status of station inventory and monitoring plans We are waiting for completion of station HMPs and finalization of I&M policy	Part I of IMP as HMPs are completed and national policy is approved.	I&M and Refuge staff

Blueprint Objectives and Tasks	Project or Theme; Status	Planned Products	Staff
3.1.3	Summary of inventory and monitoring priorities		
	for the region Hire I&M biological staff.	Complete hiring as proposed	Chuck Hunter and Laurel Barnhill
	Input current Refuge surveys into PRIMR database (survey of surveys), and preform cross walk to identify needs.	Enter information from SALCC Refuges.	R4 I&M staff with refuges
	ABIOTIC RESOURCES - INVENTORIES		
1B	Complete baseline hydrogeomorphic (HGM) analysis at selected stations. HGMs are planned for the following stations: White River NWR - work begin in April 2011 Cape Romain NWR - we plan to begin work on Project in FY 2012. Work will be completed by contractor with the assistance of Sue Cielinski and John Faustini, Regional Hydrologist	Analysis initiated on two stations	Sue Cielinski and Theresa Thom
2A	 Water Resource Inventory and Assessment (WRIA) Water inventories are planned for the following stations: LOWER SUWANNEE NWR - planned for 2012-13 OKEFENOKEE NWR - planned for 2012-13 CACHE RIVER NWR - planned for 2012-13 WHITE RIVER NWR - field work will be conducted in conjunction with the HGM in April 2011 CAHABA RIVER NWR - field work conducted in 2010, data entry and analysis in process (contingent on WRIA database completion) ERWIN NFH - planned for 2012-13 CAPE ROMAIN – planned for 2012-13 in conjunction with HGM Sue Cielinski will continue to represent R4 on the national water quality team, led by Mike Higgins, and work with John Faustini to refine the WRIA process and advise the team on the development of a database. Assistance will be provided by the Fresh Water Ecologist as appropriate.	Assessment completed and/or initiated on 6 stations	Sue Cielinski and Theresa Thom
	ABIOTIC RESOURCES - MONITORING		
5B	<i>Complete initial sea-level rise modeling for coastal refuges.</i> We plan to organize information on existing refuge SLAMM projects (e.g., objectives, protocols, data storage, etc.). The purpose of this project will be to organize and understand existing SLAMM projects, and identify if data can be scaled to regional efforts.	Table and report	Nicole Rankin

	Project or Theme; Status	Planned Products	Staff
Objectives and Tasks			
5A	Coordinate with science partners to understand the relevance of models and predictions of changes for refuge management, gather information needed to plan and evaluate adaptation strategies. We plan to work with the SALCC and partners to identify the best protocol to use to identify sea-level rise modeling. The purpose of this project will be to determine the best model to invest in and use for coastal refuges to make better management decisions.	Sea-level rise model identified	Nicole Rankin
5A	<i>Determine need for surface evaluation table (SET) stations</i> Set up stations within the South Atlantic LCC geography by determining station objectives, etc. Implementing project funded in FY 11 rfp process.	Stations Implemented in SALCC geography	Nicole Rankin with stations and various cooperators
2B	Update Regional Fire Effects Monitoring Guide Work with Fire Management Division to update existing monitoring guide	Protocol	Forbes Boyle with Fire Management Division
2B	Overlay fire history maps with plant community information Assess fire effects across spatially distinct vegetation units and construct fire history maps for each refuge that are based on vegetation/environment condition. The objective is to provide fire managers ecologically meaningful tools that characterize landscape-scale fire regime shifts, that can be used to approximate future conditions of both prescribed and wildland fire. <i>Improve fuels models</i> Refine models by including vegetation composition and structure information by community type.	Report and tool	Forbes Boyle with Fire Management Division
	BIOTIC RESOURCES - INVENTORIES		
1E	Design, fund and implement a strategic process for completing vegetative inventories and cover mapping, using the National Vegetation Classification Standard Lead Chuck Hunter, and Chiefs to identify regional representatives. This project was identified as a national priority in December 2011.	3	Chuck Hunter with Forbes Boyle
1F	Assist with refinement of forest inventory data collection. Work with Assistant Regional Forester to update forest inventory protocol.		Haven Barnhill and Forbes Boyle

Blueprint Objectives and Tasks	Project or Theme; Status	Planned Products	Staff
	BIOTIC RESOURCES - MONITORING		
4	Collect, synthesize and manage information needed to detect shifts in biomes, species ranges, etc to support and evaluate adaptation strategies at multiple spatial scales. Participate in the phenology task identified by the National Office and step tasks to regional level as developed.	Report	Becky Bartel
1F	Coordinate bat monitoring within refuges and with other partners. Assist with implementation of FY11 I&M rfp project and participate in regional bat working group.	Report	Becky Bartel represent Refuges I&M
4C	Coordinate bird monitoring with migratory birds and other partners The National I&M Bird Monitoring Team is initially charged with identifying national bird monitoring needs.	Report	Laurel Barnhill represent Refuges I&M
4C	Coordinate grassland bird monitoring Identify needs and develop a strategy for management and monitoring of grassland birds based on needs assessment	Plan and protocols	Laurel Barnhill and others from R5 and 6.
4C	<i>Coordinate marshbird monitoring</i> Develop a national marsh bird monitoring effort and implement on refuges	Plan and protocols	Laurel Barnhill represent Refuges I&M with many others
	STRESSORS		
	We plan to work with the Regional Climate Change Center to determine methodologies needed to identify and monitor stressors/threats to fish and wildlife species. As necessary, work with the Regional Climate Team and National Water Team (Sue Cielinski) to address stressors/threats to aquatic species.	Stressors identified	Laurel Barnhill with Sue Cielinski
	ADAPTIVE MANAGEMENT PROJECTS		
1F	Adaptive Resource Management of Florida Scrub Jay Merritt Island NWR	Model developed	Layne Hamilton
1F, 4C	Integrated Waterbird Management and Monitoring Program (IWMM) Multi-region, multi-agency project to manage and monitor migrating and wintering waterbirds, including waterfowl and shorebirds	Project record, fact sheet central database, and protocols. Partnership with Refuges, Migratory birds, states, and NGOs	Laurel Barnhill represent R4 Refuges I&M
1F	Multiple biotic and abiotic inventory and monitoring projects funded with FY11 I&M rfp Completion of the 25 projects selected in FY11	Report	Refuges and partners
	DATA MANAGEMENT		

Blueprint Objectives and Tasks	Project or Theme; Status	Planned Products	Staff
1A	Assemble existing abiotic data sets needed by NWRs managers to set management objectives through the CCP process Participate in the GAC. The purpose is to ensure that NWR managers have the necessary databases at hand to work efficiently.	Abiotic data sets identified an made available	ndSteve Holzman represent R4 on Geospatial Advisory Committee
General	Reconciling the inventory of refuge inventories and monitoring review database. Participate on National I&M working groups charged with moving this task forward. The purpose of this project is to ensure all Regions are using the same database to assemble a list of existing inventory and monitoring efforts.	A fully functional database	Steve Holzman and others as needed
General	Populate inventories and monitoring review database (PRIMR, survey of surveys) We plan to work with refuge biologists to enter data to populate the database (e.g., survey name, objective, justification, etc.) and cross walk findings to determine refuge monitoring and inventory similarities and needs. This will serve as a basis to move towards use of consistent protocols across refuges. This effort will also serve to familiarize us with existing monitoring efforts, issues and concerns.	Data entered into the database for LCC target I&M refuges.	I&M Staff
General	Determine the current status and trend of each population of endangered, threatened, candidate, and delisted/monitored species on NWR lands Participate in the T&E task identified by the National Office and step tasks to regional level as developed.	Species lists and online database	Steve Holzman and others as needed
1C	Capture, collate, and characterize historical I&M data from refuges. Work with National I&M office and team to develop and implement the Geo-referenced Archive Service to store data and allow exchange of data with other entities.	Report and database	Mike Chouinard
1F	<i>Compile Carolina Vegetation Survey Metadata</i> Develop a resource organizing information from 4000 plots within the SALCC geography	Organized database	Forbes Boyle

Table 2. Region 4 Inventory and Monitoring Symposia, Program Reviews, Training, and Workshops Planned

Blueprint Objectives and Tasks	Symposium, Program Review, Training, or Workshop	Planned Date	Staff
	COMMUNICATION		
1B	Organize a regional HGM webinar. The objective is to inform refuge biologists on HGM goals, protocols and data usage. First in a series of Science Applications/I&M/others sponsored webinars.	Winter	Laurel Barnhill, John Tirpak, and Sue Cielinski
General	Update regional I&M fact sheet. The purpose of this project is to develop a fact sheet that outlines the purpose and current status of the I&M program that can be distributed to refuges and partners.	Throughout year as needed	Laurel Barnhill

Blueprint Objectives and Tasks	Symposium, Program Review, Training, or Workshop	Planned Date	Staff
General	Complete the MOU/interagency agreement with NPS to integrate operations between FWS Region 4 I&M and the Southeast Coast Network This document is necessary to outline the relationship between FWS and NPS (e.g., sharing office space).	Winter	Chuck Hunter, Joe DeVivo and Laurel Barnhill
General	Keep the regional inventory and monitoring SharePoint Site updated. The purpose of this site is to provide central storage and collaboration space for Region 4 I&M documents, information and ideas.	Throughout year as needed	Steve Holzman with I&M ecologists
General	Meet with RRB on a regular basis (e.g., every 2 months) to coordinate on Refuge biological program issues.	Bimonthly	Sue Cielinski and Laurel Barnhill
General	Work closely with all LCCs serving on committees and working groups as priorities and processes are defined.	Throughout year as needed	All I&M staff
General	Complete a Project Record for current monitoring efforts conducted by refuges where protocols are not clearly documented.	Throughout year as needed	All I&M staff

4. Budget Narrative and Budget

4.1. Provide a brief description of how current and projected I&M funding is anticipated to be spent during the upcoming FY, including the major work activities presented in Section II. List the major planned expenditures of I&M funds, including staff salaries and operations, contracts and agreements. Do not include contributions from outside the I&M funded initiative in the work plan. (Matching, in-kind, and leveraged funding from outside the I&M initiative will be included in the annual I&M administrative report.)

At the time this plan was prepared we do not have a final FY2012 allocation and are operating under a Continuing Resolution. I&M funding is as follows until we have an appropriation for 2012:

\$1,943,540	Final 2011 I&M Allocation
\$5,325	CR authorization per day for I&M
-1.5030%	ATB rescission for 2012 CR
-\$80	Reduction from 2011 level
\$5,245	New authorized per day level in 2012
\$48	#days under CR Oct 1- Nov 18
\$251,747	Total funding authorized under CR for 2012

The Southeast Region received final FY 2011 allocations of \$1,943,540 for I&M (\$1,113,410 in FY2010). If we get the same level of funding as in 2011 and the 2012 levels are not decreased further than the CR reduction of 1.503% the following is planned:

Budget Item	Amount	
Salaries and Benefits—SALCC 6 FTE's	\$588,430	
Equipment, supplies and travel (25% mc)	\$196,143	
Subtotal SALCC	\$784,573	
Salaries and benefits—GCPO 7 FTEs	\$697,335	
Equipment, supplies and travel (25% mc)	\$232,445	
Subtotal GCPO	\$929,780	
Support I&M projects	\$204,199	
Total allocation	\$1,918,552	

5. Appendix

5.1. Map of NWRS stations in the region, by state and LCC.

