

## **Region 3 FY 2011 Annual Report**

### **Submitted 10/31/2011**

## **1. Introduction**

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

The vision, goals, and objectives for the regional inventory and monitoring initiative step down from the Region 3 Division of Biological Resources (DBR) Strategic Plan; support for refuge inventory and monitoring in Region 3 is provided by the Inventory and Monitoring (I&M) Branch and Water Resources Branch. The FY2011 Work Plan includes a full description of the goals and objectives from the DBR Strategic Plan. We list the goals and objectives relevant to the I&M Branch below.

#### Vision for the Region 3 DBR

*The DBR will provide leadership and support for the field, region and national offices. We will create an environment where every station understands their role in sustaining species, populations, communities, assemblages, and systems as part of our continental conservation reserve. Working with our staffs and partners we will develop an adaptation strategy for our natural resources as we face unprecedented climate and other types of environmental change. In doing so, we will promote scientific rigor, excellence in practice, effectiveness, and efficiency of action while clearly communicating among ourselves, our partners, and with the American public.*

Goal 1: Staff and stations understand where they fit into the continental conservation reserve system, what their priorities are and how they can best function to ensure net conservation gains.

Objective 1: Support the development and implementation of a National Climate Change Adaptation Strategy by working within and across our LCC's to promote resistance, resilience, response, and realignment as needed to maintain the biological health, diversity, and environmental health of the NWRS.

Objective 2: Work in conjunction with stations and LCCs to conduct landscape scale assessments regarding the status and trends of important ecological stressors in relation to NWRS land holdings and in relation to the greater conservation estate.

Goal 2: Sustain diverse, distributed, and abundant populations of fish, wildlife, and plants by conserving and managing for healthy habitats in a network of interconnected and ecologically functioning landscapes for current and future generations of the American public.

Objective 1: Region 3, in partnership with private land owners and other conservation entities, will conserve breeding, wintering, and migration habitat sufficient to meet the migratory bird population objectives and other high priority resource management objectives of Region 3, while contributing to the conservation of the ecosystems of the United States.

A. Advance the practice of adaptive management by implementing projects focused on high priority management problems identified by refuge managers. Current examples include: The Integrated Waterbird Management and Monitoring, the Preserving Native Sod, and the Reed Canary Grass Projects. Projects nearing completion include: the Impoundment Study and the Fire/Cattail Project.

Goal 4: Emphasize the science linking work at project sites to achievement at broader scales, including landscapes, major ecoregions, and entire species ranges.

Objective 1:

A. Provide expertise and participate in adaptation planning for focal species and habitats in Region 3 within the LCCs and for supporting changes in laws, regulations and policies that are barriers to successful implementation of a National Climate Adaptation Strategy within the NWRS.

B. Working in collaboration with Conservation Planning staff, develop a stepped down vision and plan for adaptation within the NWRS in Region 3.

- C. Participate in and support Landscape Conservation Cooperatives by providing expertise in modeling, decision-making, planning, design, delivery, inventory, monitoring, and research.

Objective 2: Plan and deliver landscape conservation actions that support climate change adaptation by fish and wildlife of ecological and societal significance.

Goal 6: Promote the use of models to characterize systems and to tie populations to landscapes.

Objective 1: Practice the use of models and decision analysis to evaluate the decisions managers at all levels will need to make in regard to our fish, wildlife and plant resources in context with the current and future conservation estate within Region 3.

Goal 8: Develop, maintain and foster a highly trained, experienced workforce who enjoy their work and believe their efforts result in demonstrable conservation successes and personal satisfaction.

Objective 1: Provide professional development opportunities, Technical Training, Continuing Education, Workshops, and Adaptive Management Consultancies to NWRS staff and their partners.

Objective 2: Provide support to NWRS staff, State and Tribal managers and other partners through the timely provision of research results and best management practices, decision tools, training, protocols and databases.

Goal 9: Participate in the development of a national strategy for monitoring abiotic and biotic resources that are most vulnerable to climate change.

Objective 1: Develop monitoring and research partnerships that make available complete and objective information to plan, deliver, evaluate, and improve actions that facilitate fish and wildlife adaptation to accelerating climate and other types of environmental change.

- A. Develop biological inventory, monitoring and research partnerships at the Regional and National level that will provide the information needed to develop successful adaptation strategies for fish, wildlife and plants.
- B. Provide inventory and monitoring capability to the NWRS and in support of the LCCs.
- C. Work within LCCs, regionally and nationally to develop collaborative research partnerships in the pursuit of research that address fish and wildlife adaptation to climate and other types of environmental change.
- D. Inventory and monitoring activities are coordinated and follow approved protocols and rigorous statistical designs.

Objective 2: Develop a regional plan and inform local scale monitoring by providing coordinated monitoring opportunities, common protocols, and guidance on sampling design.

- A. Work with the DBR staff to develop guidance for stations on what an exemplary inventory and monitoring program entails.
- B. Conduct Biological Program and Wildlife and Habitat Reviews.
- C. Support the evaluation and improvement of the condition, quantity, quality and timing of water resources and other abiotic factors affecting our NWRS.
- D. Monitor and reduce susceptibility to disease, pathogens, and pests.

Goal 10: Promote monitoring and data management systems that provide a strong foundation of accountability for our actions.

Objective 1: Develop user-friendly data management systems and protocols that will support our actions and allow us to account for our actions at all levels, field, region, and nationally.

- A. Promote and support data management, data archival and summarization.
- B. Provide guidance on metadata and data stewardship.

Goal 11: Data are managed, archived, summarized and served promptly, easily and made available to the public.

Objective 1: Working with others, provide up-to-date information to staff and to the public.

Goal 12: Develop new and innovative science techniques and applications.

Objective 1. Conduct management oriented research and assumption driven research in support of modeling efforts and in support of conservation assessments.

- A. Conduct or foster research that addresses our most important information gaps.
- B. Facilitate research to address primary uncertainties in fish and wildlife management.

Objective 2. Support Land Management and Research Demonstration sites, Adaptive Management Projects, and other research as appropriate.

Goal 13: Our staff, our partners and the American public understand and support the conservation efforts of the national wildlife refuge system in Region 3.

Objective 1: Working with others, provide up-to-date information to staff and to the public.

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

The Region 3 I&M branch steps down from the national program and the Region 3 DBR Strategic Plan and is managed by the R3 DBR (Appendix). In Region 3, the Chief, DBR provides overall guidance and support for the I&M activities in the region, and all staff in the DBR work together to meet the needs. The Regional Inventory and Monitoring Coordinator leads the Branch of Inventory and Monitoring (Appendix) and coordinates with the national Inventory and Monitoring office in Fort Collins, CO and the other Regional I&M Coordinators.

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

In FY11, the Region laid the groundwork for guidance regarding the attributes of an exemplary station-level biological program, including identifying monitoring priorities and designing appropriate inventories and monitoring. A report was drafted and is in review by the Region 3 Refuge Leadership Team. This guidance will be integrated into the station Wildlife and Habitat Reviews, which are ongoing.

The draft Service Inventory and Monitoring Policy calls for each station to develop a ranked list of inventories and monitoring surveys (Inventory and Monitoring Plan, Part 1). Inventories and monitoring need to support decision making, therefore the station Habitat Management Plan (HMP), stepped down from the Comprehensive Conservation Plan (CCP), should precede the Inventory and Monitoring Plan (IMP). The RRB, DRRB, LMRD, Regional Hydrologist, and Zone Biologists provide technical assistance to stations for the development of their CCPs and HMPs.

Regional I&M staff, in collaboration with the RRB, assisted refuge stations with the development of their IMP, Part 1. Once a refuge station's IMP, Part 1 is approved, the I&M staff will work with individual stations to help them implement their IMP, including Part 2 of the I&M Policy. This will involve identifying, revising or developing a peer-reviewed protocol, an appropriate database, sampling design, training, and finding the necessary resources to carry out a high quality survey.

Past and current inventory and monitoring priorities are embodied in existing monitoring programs and projects on refuges and in a few multi-station, multi-agency adaptive management projects. It will be a high priority for I&M staff to support these existing projects to their logical conclusion.

A Biological Needs assessment will identify resource management issues and inventory and monitoring priorities that are shared among stations. The highest priority resource management issues may evolve into new adaptive management projects. One issue that the Migratory Birds Management Program has elevated as a priority is the alarming continental decline in grassland bird populations; refuges have a major role to play in providing habitat for grassland birds, especially in the Prairie Pothole Region. This issue was the focus of several workshops in FY11, facilitated by the I&M Coordinator in cooperation with Migratory Bird Management Program staff. We look forward to addressing recommendations arising from a multi-region SDM workshop held in September 2011 and focused on this issue.

### **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?**

The three major LCC's in Region 3 are the Plains and Prairie Pothole (PPP LCC), Great Lakes (GL LCC), and Eastern Tallgrass Prairie and Big Rivers (ETP/BR LCC). Region 3 also contains small portions of the Gulf Coastal Plains and Ozarks LCC and the Appalachian LCC.

The Region 3 I&M Branch will focus efforts where there are overlaps among national, regional, and refuge-level FWS priorities. Regional priorities are identified by the Refuge Leadership Team (Regional Refuge Chief, advised by the Refuge Supervisors, and the Regional Chiefs of Biological Resources, Private Lands, Planning, and Fire), taking into consideration the needs of other Service programs (e.g., Migratory Birds, Fisheries, Ecological Services) and the LCC's. The Regional Refuge Biologist, advised by the Leadership Team, integrates the needs of these different entities, and identifies priorities for the I&M Branch. The R3 I&M staff collaborate with personnel from other Service divisions to avoid duplication and ensure I&M activities will have multiple benefits in the region.

The Leadership Team identifies and approves emerging priority issues that warrant significant staff time. All DBR staff work together to address these needs. The process we have tested and refined for addressing management problems is to assemble a small team of key people for a structured decision making workshop, led by a facilitator and a modeler. The RRB or DRRB will identify key staff for the workshop; key staff will likely include LCC partners, or staff from other FWS programs. Difficult management problems on refuges are often shared by other LCC partners, especially states and NGO's. The decisions and recommendations arising from this workshop are evaluated and prioritized along with existing priorities by the Leadership Team. If adaptive management, inventory or monitoring needs are identified as a priority, the I&M Branch is called upon to help address them. We strive to collaborate on I&M activities with other FWS Programs and the LCC partners, where priorities and needs overlap.

A number of monitoring activities on refuges are requested / required by other USFWS Programs, especially Migratory Birds. For example, many refuges conduct waterfowl banding, four-square mile surveys, mid-winter waterfowl surveys, woodcock surveys, mourning dove surveys, butterfly surveys, Breeding Bird Surveys, etc. that are designed and managed by other programs or agencies. At the regional level, we need a process for identifying which monitoring efforts a given station should participate in and which ones they should phase out to accommodate higher priorities. This will be necessary before Inventory and Monitoring plans can be completed at the station level. The I&M Coordinator will work with the RRB or DRRB and Refuge Supervisors to develop the above process.

## **2. Public Interest Highlights**

**Provide examples of how I&M results are being used to better support refuge and region goals and objectives. We are especially interested in "bullets" and that contain examples of how I&M results have been used to enhance or streamline management, planning, or assessment of refuge resources.**

- Region 3 Zone Biologists visited Big Oaks, Cypress Creek, Mingo, Muscatatuck, Patoka, Shiawasee, and Port Louisa NWRs during February and March 2011 to introduce themselves, discuss the station's biological program needs, and begin to identify ways that the Region 3 Division of Biological Resources and the National Inventory and Monitoring Program can address those needs.
- A landbird banding training program, led by staff Klamath Bird Observatory and the Region 3 Division of Biological Resources, was held the week of 25 April at Pere Marquette State Park, IL. The training was organized and sponsored by the Region 3 Division of Biological Resources and the North American Banding Council. One refuge biologist was certified as a

trainer and 10 regional staff received training as banders based on North American Banding Council Certification (NABC) criteria. Two staff received additional training as they pursue trainer certification. We recommend that for stations with a master banding permit and an active landbird banding program (either for monitoring, disease surveillance, or public education) they should have at least one person (the lead sub-permittee) with NABC certification as a bander prior to participating in these monitoring activities. Region 3 is developing a process in conjunction with the North American Banding Council, the Bird Banding Laboratory, and the Klamath Bird Observatory for training and certification that can be shared with other regions. The Region 3 Division of Biological Resources Chief and the Bird Banding Laboratory Chief are members of the North American Banding Council.

- We successfully completed our first full year of the pilot season for the Integrated Waterbird Management and Monitoring Program (IWMM) on 11 stations. Three stations and a private lands program office joined the effort following the 2010 pilot season. We have learned some valuable lessons from the pilot season and are moving in the right direction to make the survey an important monitoring tool for waterbird migration stopovers, from the refuge level to the flyway models.
- As part of the upcoming Hydrogeomorphic (HGM) analysis for Shiawassee National Wildlife Refuge, Wildlife Biologist Eric Dunton worked with our Water Resources Branch staff (Brian Newman and Vince Capeder) to locate and obtain a LiDAR data set from Saginaw County, Michigan. Shiawassee NWR staff and Water Resources Branch staff are currently working with the U.S. Geological Survey staff at the Upper Midwest Environmental Sciences Center to process the data at a higher resolution. This high resolution digital elevation data will be a great planning tool for restoring habitat at Shiawassee NWR and the adjoining land.
- Several Region 3 Inventory and Monitoring Branch staff (Knutson, Hanan, Blomquist, Loges) and Land Management and Research Demonstration Ecologist (Drobney) participated in Structured Decision Making courses offered at the FWS National Conservation Training Center in late May and early June 2011. The skills developed during the course will be used in assisting refuge stations to clarify their habitat management objectives and work through complex management problems. The structured decision making tools will also be used to develop useful inventory and monitoring efforts at the refuge and regional levels.
- Completing Habitat Management Plans that step down the goals and objectives set forth in Comprehensive Conservation Plans are a major focus for Region 3 in FY11. To date, draft Habitat Management Plans have been completed and submitted for review for Two Rivers, Clarence Cannon, Great Rivers, and Muscatatuck NWRs and Litchfield and Morris Wetland Management Districts. This brings the number of Habitat Management Plans in draft or completed within Region 3 to 17 or 23% of all stations.
- Another major goal of our program for FY11 is to complete information gathering visits to all stations in the region. Information from these visits will help guide our work plan for FY12, assist in priority setting within our Landscape Conservation Cooperatives and in

identifying how we can best support field stations, the regional office, and our LCCs. All station visits were completed by 30 September 2011.

- Five refuges in Indiana, Illinois, and Missouri (Big Oaks, Cypress Creek, Mingo, Muscatatuck, and Patoka River NWRs) are coordinating their management and monitoring efforts for invasive plants in refuge forests. After setting objectives for the project at a structured decision making workshop in March, the biologists and managers at each station are developing field protocols to inventory invasive plant species to help prioritize management on each refuge and monitor the results of management efforts in 1 ha grids on each refuge. The refuges will pilot these protocols and an online data management system this summer.
- On May 12, the entire Glacial Ridge NWR staff, 5 staff members from Agassiz NWR, 2 MN DNR, and 4 TNC staff members congregated at Glacial Ridge NWR to conduct the 6th annual shorebird blitz. This survey was initiated in 2006 by the Fergus Falls HAPET office to monitor the response of shorebirds, specifically marbled godwits, upland sandpipers, and Wilson's phalaropes, as the prairie-wetland system becomes established and natural ecological functions are restored at Glacial Ridge NWR.
- Shiawassee NWR partnered with Michigan Department of Natural Resources (DNR) staff from the adjacent Shiawassee River State Game Area (SGA) to design and implement a white-tailed deer spotlight survey. The survey will provide a summer population index for the NWR, SGA, and the combined Shiawassee "flats" region. The index will provide valuable information in evaluating deer population trends in this area and will be used in setting harvest management goals. In addition, data from this survey will contribute information to a larger research study evaluating impacts of white-tailed deer herbivory impacts to moist soil, emergent marsh, and bottomland hardwood habitats at Shiawassee NWR.
- The Integrated Waterbird Management and Monitoring Project (R3, R4, R5) science team met in La Crosse, WI from July 5 – 7. Project status reports were given for the following subteams: Habitat Quality, Population Monitoring, Database Development, Technical Assessment and Management Actions. We discussed challenges and insights from the pilot year. Lastly, the team worked out tasks and a timeline for the next two years. The Science Team agreed to partner with Migratory Bird Management's Avian Health and Disease Program to pilot concurrent surveys for sick or injured birds. This fall field technicians will count waterbirds on federal and state lands and report all observations of sick, injured or dead birds. Information from this pilot season will be used in the development of a national disease monitoring program.
- The Integrated Waterbird Management and Monitoring Project (IWMM) was well represented at a full day workshop on Monitoring Midwest Waterfowl during the non-breeding season. In addition to the IWMM, eight other waterfowl surveys were presented at the workshop. Following the presentations, participants explored options for further coordinating migration and wintering surveys to meet information needs, specifically the abundance and distribution of waterfowl in the late winter and early spring migrations. It

was noted that the IWMM, due to its coordinated effort in the spring, offered a timely option for filling an existing data gap relating to the timing of spring migrations. Spring migration data are needed to accurately complete annual cycle migration curves for multiple waterfowl species. This a tool is needed to refine flyway habitat objectives. Eric Dunton, field biologist at Shiawassee NWR, presented a summary of the mid-winter waterfowl survey; Mick Hanan, field biologist at Great River NWR, provided a field application perspective on the IWMM protocol while Brian Loges, zone biologist, provided an overview of the IWMM program.

- Summer field season has entailed a great deal of water monitoring activities across Region 3. In August, a stream gage was installed at Sherburne NWR equipped with real-time satellite telemetry capabilities. Through cooperative efforts with the National Weather Service, Refuge staff will be able to monitor water levels via a web-based hydrograph display that is updated on an hourly basis. These data support Refuge management, threat mitigation (such as flooding), cooperative water quality monitoring (state TMDL related monitoring), and long-term trend analysis of changes to stream flow.
- A draft copy of the Shiawassee NWR Water Resource Inventory and Assessment (WRIA) Summary Report was completed in August. The completion of the draft document coincides with the kick off meeting of a Hydrogeomorphic (HGM) assessment. Shiawassee NWR has partnered with The Nature Conservancy and the Michigan Department of Natural Resources to conduct a large scale HGM assessment for an area known locally as the Shiawassee Flats which encompasses the Refuge, as well as conservation lands managed by each of the partners. It is anticipated that information contained within the WRIA will be key to informing and supporting the HGM assessment. Also, the initial site visit and data gathering associated with the Port Louisa WRIA were made in August. The Port Louisa WRIA will be a joint effort with Ecological Services environmental contaminants biologists who are simultaneously conducting a Contaminant Assessment Process (CAP) for the Refuge.
- Division of Biological Resources staff are continuing with station visits to better understand regional science needs. Visits in July included: Necedah NWR, Leopold WMD, Glacial Ridge NWR, Agassiz NWR, Minnesota Private Lands Office, Fergus Falls WMD, Detroit Lakes WMD, Sherburne NWR, Minnesota Valley NWR, Litchfield WMD, Upper Mississippi NWFR, Port Louisa NWR, IL River NWR, and IL Private lands office. Visits in late-July and August included: Swan Lake NWR, Squaw Creek NWR, Great River NWR, Clarence Canon NWR, Two Rivers NWR, Seney NWR, and the Upper Mississippi River - Savanna District NWR, Rice Lake NWR, Sherburne NWR, Tamarac NWR, Mingo NWR, Cypress Creek NWR, Crab Orchard NWR, Middle Mississippi River NWR, Patoka NWR, Big Oaks NWR, and Muscatatuck NWR.
- Glacial Ridge NWR has been conducting vegetation surveys to monitor the effects of patch burn grazing on restored prairie. This is part of a 6-year monitoring effort using a modified belt transect method to detect changes in plant community and structure. Last year, pre-treatment data were collected and this is the first year cattle have been released in the survey area. The area will be surveyed for the next 3 summers of patch burn grazing and 1 summer post-treatment. We are working with NRCS, University of MN - Crookston, North Dakota State University and others to conduct this monitoring.

- Eric Lonsdorf, Kathy Huffman, Ron Huffman, and Sean Blomquist began development of a database to facilitate coordination of invasive plant management among stations. The database will incorporate an adaptive framework that will allow learning about the effectiveness of management actions in different climates and regions to aid in planning for range extensions due to climate changes.
- On September 27, 2011, fourteen resource specialists from field stations in Illinois and Iowa, the Region 3 Regional Office, an R3 Zone Biologist and the Washington Office participated in a workshop to train refuge staff and coordinate Refuge water resource assessments. The R3 Water Resources Branch and the Environmental Contaminants Program co-hosted the workshop. The workshop included training on the Water Resources Inventory and Assessment (WRIA), Hydrogeomorphic Modeling (HGM), and the Contaminants Assessment Process Online Tool and Database (CAP), as well as a discussion on coordination of these efforts between programs and at the refuge-level. Each of the field stations represented at the workshop has active or pending water resource assessment.

### 3. Staffing

**3.1. 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.**

Please refer to the organizational chart in the Appendix. The Inventory and Monitoring Branch staff are listed below.

Melinda Knutson (Regional Inventory and Monitoring Coordinator, Regional Office)

The three major LCC's (PPP LCC, GL LCC, and ETP/GR LCC) in Region 3 are staffed with a Zone Biologist and a field I&M biologist. Stations in the other, smaller LCCs are also served by one of these Zone Biologists.

#### Plains and Prairie Pothole LCC

Vacant (Zone Biologist, Fergus Falls WMD, Minnesota) (On due to uncertainty about the FY2012 budget)

Jessica Dowler (Refuge Biologist – Inventory and Monitoring Specialist, Glacial Ridge NWR, Minnesota)

#### Eastern Tallgrass Prairie, Big Rivers LCC

Brian Loges (Zone Biologist, Two Rivers NWR, Illinois)

Mick Hanan (Refuge Biologist – Inventory and Monitoring Specialist, Great River NWR, Missouri)

#### Great Lakes LCC

Sean Blomquist (Zone Biologist, Ottawa NWR, Ohio)

Eric Dunton (Refuge Biologist – Inventory and Monitoring Specialist, Shiawasee NWR, Michigan)



Several DBR staff positions are vacant, including the Regional Data Manager, Deputy Regional Refuge Biologist (DRRB), Data Analyst/Modeler, another Hydrologist, and the remaining Zone Biologist. Future funding uncertainties have prompted the Regional Chief of Refugees to defer filling all of these positions. Regional staffing focused on providing support for inventories and monitoring has not increased under the new I&M funding initiative (we lost two staff and gained two staff). However, we filled three new Refuge Biologist – I&M Specialist positions, these biologists are supervised by the station Project Leaders, and are available to test regional and national protocols and assist other stations in a consulting role.

We summarize below the roles of the I&M Branch staff. (Please refer to the draft DBR Strategic Plan for a description of the roles of the Chief, Division of Biological Resources, the I&M Regional Coordinator, the Regional Hydrologist, and other DBR staff.)

#### Refuge Biologist – Inventory and Monitoring Specialists (GS 9/11):

- Model biological program excellence at the field station while contributing to the promotion, development, and implementation of a regionally and nationally coordinated biological inventory and monitoring program.
  - Complete HMPs and the IMP, Part 1 for their home station. Assist refuge biologists at other stations to do the same.
  - Once the IMP, Part 1 is completed, begin to develop IMP, Part 2 (protocols).
  - Maintain high priority, ongoing I&M activities, as directed by the station manager, until a new station IMP is in place.
- Work with the Refuge Biology Network and the Zone Biologist associated with their home station to identify and fulfill common inventory and monitoring needs across the Network.
- Work with others in the region and nationally to develop processes for cataloging and extracting useful information from legacy data sets at refuge stations.
- Test and evaluate protocols, databases, and processes developed by I&M work groups, either nationally or regionally.
- Assume the role of Project Coordinator, or Station Coordinator, for one multi-station adaptive management project, if needed.
- Along with the Zone Biologist, other DBR staff, and other refuge biologists, represent R3 Refuges and participate as appropriate in technical or work teams associated with their home LCC.

#### Zone Biologists (GS 11/12):

- Along with the RRB and DRRB, serves as a resource for field stations in need of scientific technical assistance for resource management problems.
- Work with the Refuge Biology Network and the associated field I&M Specialist to and fulfill common inventory and monitoring needs across the Network and the LCC.
- Assist stations, as requested by the RRB or ARRB, regarding identifying high priority resource management problems, and completing HMPs and IMPs.
- Assist Regional Inventory and Monitoring Coordinator with detailed planning, organization, and implementation of activities within the Inventory and Monitoring Branch.
- Represent R3 Refuges and participate in or lead, as appropriate, work teams associated with the national or regional I&M Branch or associated with I&M needs of the LCC. This includes the development of inventory and monitoring protocols, databases, and reporting systems.
- Provide leadership and technical assistance, as needed, to station biologists and the LCC partnership. Technical assistance may involve leading or serving on work teams, reviewing monitoring protocols and sampling designs, and reports, facilitating structured decision making workshops, and identifying management questions and needs.

- Assume the role of Project Coordinator, or assume some other appropriate leadership role for one or more multi-station adaptive management projects, as needed. This includes maintaining the Project Record, developing and reviewing survey protocols and sampling designs; planning and delivering training, and overseeing monitoring data collection and management, analysis, interpretation, and reporting. Strive for efficiency, high technical quality, accurate documentation, and strong data management. Strive to publish the results of refuge research and adaptive management projects promptly.
- Work with others in the region and nationally to develop processes for cataloging and extracting useful information from legacy data sets at refuge stations.
- Test and evaluate protocols, databases, and processes developed by I&M work groups, either nationally or regionally.
- Participate in teaching courses at the USFWS National Conservation Training Center, as needed and as appropriate for their expertise.

#### **4. Accomplishments - Activities and Products**

**Summarize the overall success of the regional program based upon progress made for major work activities and anticipated products identified in the work plan for the reporting FY. The outline below provides an example to consider for your regional summary that should describe tasks and products completed, progress made on others, and reasons any tasks or projects were not completed as planned. Use tabular format to report on status of individually planned tasks and anticipated products from the work plan. The summary should describe the overall progress made on tasks and products included in the table. Utilize the same sequence of activities as detailed in the corresponding work plan.**

##### **4.1. Identify I&M priorities for the region.**

A major focus in FY2011 was conducting a station needs assessment; we visited each refuge field station in Region 3, including wetland management districts and Private Lands offices. We identified priority management issues at each station and assessed needs for inventories and monitoring as well as discussed what information managers need to plan for climate change.

##### **4.1.1. Status of station Habitat Management Plans**

A primary focus for FY2011 was to encourage refuge field stations to complete their Habitat Management Plans (HMP) before completing Part 1 of their Inventory and Monitoring Plan (IMP). An I&M plan must support priority habitat management goals. The Chief, DBR has worked with the Region 3 Refuge Leadership Team (Leadership Team) to elevate these actions to a priority status for field stations, as well as seeking contracted services to assist some field stations in completing these plans. HMPs and IMPs are vital for assessing multi-station and regional priority needs. In FY2011 draft Habitat Management Plans were completed and submitted for review for Two Rivers, Clarence Cannon, Great Rivers, Mingo, Cypress Creek, and Muscatatuck NWRs and Litchfield and Morris Wetland Management Districts.

##### **4.1.2. Status of station Inventory and Monitoring Plans**

See above. In Region 3 we are strongly encouraging the completion of Habitat Management Plans prior to completing Inventory and Monitoring Plans. Monitoring priorities should be focused on the resources of management concern at each station, which are defined in the HMP. Only one station in R3 has completed an Inventory and Monitoring Plan and that plan preceded the current guidance.

##### **4.1.3. Summary of inventory and monitoring priorities for the region**

Inventory and monitoring priorities currently include maintaining the ongoing adaptive management projects (see table below), especially those projects that are cross-Regional (Integrated Waterbirds

Management and Monitoring Project, Native Prairie Adaptive Management, and Reed Canary Grass Control Projects).

#### **4.2. Abiotic Resources**

Our primary abiotic activities are water inventories and monitoring. Regional Hydrologist, Josh Eash, and the Water Resources Branch have visited many stations in the Region, consulting on hydrologic issues. Many stations face resource management difficulties due to altered hydrology, water quality degradation and flooding. Water control structures designed to allow managers to alter water levels in impoundments are aging or under-sized for recent high precipitation events. Flooding and/or levee impairment was a major issue on many stations this year due to high snowfall in the northern regions and excess precipitation during spring and summer. Region 3 has many field stations that are located on or near major river systems (Mississippi, Missouri, Illinois Rivers). Climate change may bring increased precipitation, especially during winter, so flooding is likely to continue to be a major management issue across the Region.

##### **4.2.1. Inventories**

The Region 3 WRB completed two Water Resource Inventory and Assessments (WRIA) in 2011 and the third is on-going. Six additional stations have been selected for future WRIA.

##### **4.2.2. Monitoring**

The Water Resources Branch conducts active water quality and quantity monitoring activities at 11 refuges totaling over 100 individual surface and ground water sites. Data is analyzed, stored and reported from a central, standardized time-series water resources database. In addition, the Water Resources Branch provides training, support and coordination for water monitoring efforts conducted by refuge staff or other agencies. Water monitoring activities currently conducted on Region 3 refuges relate to the following objectives: baseline data, climate change, water management, threat mitigation, and restoration. These efforts encompass water quality and quantity of both surface and ground waters. Although monitoring may be initiated to target a specific issue, the data gathered can typically be used to address a wide variety of other issues or information needs.

#### **4.3. Biotic Resources**

Bird monitoring is a major focus of biotic resources in Region 3. Region 3 staff were key participants in the development of standardized protocols and databases for monitoring landbirds, marshbirds. Region 3 has an ongoing responsibility to maintain these protocols and databases. Region 3 staff (Heglund, Knutson, and Loges) have key positions on the Science Team for the Integrated Waterbirds Management and Monitoring (IWMM) Program. We engaged in several activities to support bird monitoring this FY, some of which are reported under workshops, training and other categories. Melinda Knutson co-lead the National Bird Monitoring Team with Laurel Barnhill (R4), coordinating several conference calls to help this team share information and begin to identify priorities. Pat Heglund organized a workshop to certify refuge staff that conduct landbird mist netting. Several workshops were held to plan Regional activities to support grassland birds and waterbirds. Habitat management on refuges is the other major activity conducted for biotic resources; many of these activities are reported under Adaptive Management.

##### **4.3.1. Inventories**

The Great Lake Biology Network is in the second year of a forest inventory project that involves refuge stations in northern Minnesota, Wisconsin and Michigan. See Table 1 for more details.

#### **4.3.2. Monitoring**

Monitoring priorities currently include maintaining the ongoing adaptive management projects (see table below), especially those projects that are cross-Regional (Integrated Waterbirds Management and Monitoring Project, Native Prairie Adaptive Management, and Reed Canary Grass Control Projects).

#### **4.4.Stressors (examples: fire, invasive species, climate change)**

Several research projects, led by Pat Heglund, are underway to assess land use and climate change effects on habitats and species and help the NWRS plan and address this threat.

#### **4.5.Adaptive Management Projects**

Region 3 has been working on establishing and maintaining several adaptive management projects, primarily focused on addressing specific invasive species issues. Some of these projects are inter-regional (shared with Regions 5 and 6). Ongoing support for these projects is a major focus of effort and the zone biologists as well as the refuge I&M specialists will begin to take on coordination duties. Over the last 6 years, working with USGS and Eric Lonsdorf (Chicago Botanical Society), we have learned a lot about how to do adaptive management on the ground. This information will be useful to other Regions and the LCC's as they begin to identify priority resources, set objectives, and identify ways to monitor progress towards meeting these objectives.

#### **4.6.Data Management (example: legacy data)**

Data management is a challenge because the Regional Data Manager position remains vacant. To partially fill this gap, we have contracted for data management services from USGS and Eric Lonsdorf. Unfortunately, contractors outside FWS cannot access to the Sharepoint sites where the national databases reside (security firewalls), making it difficult for them to support our data management activities.

The Water Resources Branch manages and maintains a time-series water resources data base for the analysis, storage and reporting of continuous water quality and quantity monitoring data. The database is operated in conjunction with the R3 water monitoring network and other Regional Water Resource Programs that utilize the same type of database.

#### **4.7.Communication (examples: reports, peer-reviewed publications, presentations, program reviews, training, workshops, partnerships)**

Training of new staff has been a priority in FY11, especially content related to structured decision making and monitoring. We anticipate that our Division staff will become proficient in the SDM tools and be able to facilitate future workshops and assist others in addressing complex management issues, including those that warrant new adaptive management partnerships. Pat Heglund and Melinda Knutson organized a half-day symposium for The Wildlife Society Annual Meeting in 2011 focused on helping managers address climate change and other stressors.

Publications:

Blomquist, S. M., and M. L. Hunter. 2010. A multi-scale assessment of amphibian habitat selection: Wood frog response to timber harvesting. *Ecoscience* 17:251-264.

- Blomquist, S. M., T. D. Johnson, D. R. Smith, G. P. Call, B. N. Miller, W. M. Thurman, J. E. McFadden, M. J. Parkin, and G. S. Boomer. 2010. Structured decision-making and rapid prototyping to plan a management response to an invasive species. *Journal of Fish and Wildlife Management* 1:19-32.
- Faaborg, J., R.T. Holmes, A.D. Anders, K.L. Bildstein, K.M.Dugger, S.A. Gauthreaux, P. Heglund, K.A. Hobson, A.E. Jahn, D.H. Johnson, S.C. Latta, D.J. Levy, P.P. Marra, C.L. Merkord, E. Nol, S.I. Rothstein, T.W. Sherry, T.S.Sillett, F.R. Thompson, N. Warnock. 2010. Managing Migratory Landbirds in the New World: Do We Know Enough? *Ecological Applications* 20: 398-418.
- Faaborg, J., R.T. Holmes, A.D. Anders, K.L. Bildstein, K.M.Dugger, S.A. Gauthreaux, P. Heglund, K.A. Hobson, A.E. Jahn, D.H. Johnson, S.C. Latta, D.J. Levy, P.P. Marra, C.L. Merkord, E. Nol, S.I. Rothstein, T.W. Sherry, T.S.Sillett, F.R. Thompson, N. Warnock. 2010. Recent Advances in Understanding Migration Systems of New World Landbirds. *Ecological Monographs* 80: 3-48.
- Knutson, M. G., and P. J. Heglund. 2011. Resource managers rise to the challenge of climate change. Pages 261-281 *in* *Ecological consequences of climate change: mechanisms, conservation, and management* (J. L. Belant and E. Beever, Eds.). Taylor and Francis.
- Knutson, M. G., H. Laskowski, C. T. Moore, E. Lonsdorf, S. Lor, and L. Stevenson. 2010. Defensible decision making: harnessing the power of adaptive management. *The Wildlife Professional* 4:58-62.
- Moore, C. T., E. V. Lonsdorf, M. G. Knutson, H. P. Laskowski, and S. K. Lor. 2011. Adaptive management in the U.S. National Wildlife Refuge System: Science-management partnerships for conservation delivery. *Journal of Environmental Management* 92:1395-1402.
- Nichols, J. D., M. D. Koneff, P. J. Heglund, M. G. Knutson, M. E. Seamans, J. E. Lyons, J. M. Morton, M. T. Jones, G. S. Boomer, and B. K. Williams. 2011. Climate change, uncertainty and natural resources management. *Journal of Wildlife Management* 75:6-18.
- Nielson, R.M., B.R. Gray, L.L. McDonald, and P.J. Heglund. 2011. Estimating site occupancy rates for aquatic plants using sub-sampling designs when detection probabilities are less than one. *Aquatic Botany* 95: 221-225.

## 5. Budget Narrative and Budget

- 5.1. Provide a brief description of how the I&M funding was spent during the previous FY, including the major work activities presented in Section 4. List the major planned expenditures of I&M funds, including staff salaries and operations, contracts and agreements.

The majority of funds were spent on salaries and operating funds for I&M Division staff and refuge stations I&M activities. Refuge contributions to the HAPET office staff in Fergus Falls, MN were made with I&M dollars.

<b>FY 11 R3 Inventory &amp; Monitoring Expenditures</b> (summary of R3 I&M fund report submitted to WO on Oct 26 <sup>th</sup> , 2011)	
<b>CATEGORY</b>	<b>TOTAL</b>
<b>Salaries &amp; Benefits</b> (includes partial HAPET, Fergus Falls)	\$1,455,057
<b>Travel/Transport</b>	\$73,997
<b>Other Services</b>	\$218,961
<b>Fuel/Supplies/Materials</b>	\$99,646
<b>Equipment</b>	\$ 42,780
<b>Land/Structures</b>	\$10,964
<b>Grants</b>	\$5,791
<b>Communication</b>	4,622
<b>TOTAL ALLOCATION</b>	<b>\$1,911,818</b>

**Table 1. Region 3 Inventory and Monitoring Activities, Staff, Funding and Status by Project or Theme**

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
<b>IDENTIFY I&amp;M PRIORITIES</b>					
General A	<i>Status of station Habitat Management Plans (HMP)</i>	7 Final HMPs 20 In-progress 6 Initiating process	Refuge Biologists, Project Leaders, Zone Biologists RRB	R, I	IP
General A	<i>Status of station Inventory and Monitoring Plans</i>	42 stations with at least 50% of Part 1 of the IMP drafted (via conversion from old Survey database). Two completed Inventory and Monitoring Plans (completed prior to new Policy guidance).	Refuge Biologists, Project Leaders, Zone Biologists RRB	R, I	IP
General A	<i>Biological Needs Assessment, including inventory and monitoring priorities</i> Station visits completed in FY11, information will be summarized in FY12	Draft Biological Needs Assessment Report, including a summary of priorities for inventories and monitoring.	All DBR staff	R, I	IP
<b>ABIOTIC RESOURCES – INVENTORIES</b>					
1A	<i>Water Resource Inventory and Assessment (WRIA)</i> 2 completed, 1 in progress, 6 planned	3 new WRIAs initiated. Final reports for 2 stations.	Josh Eash, Brian Newman	R, I	IP
1B	<i>Hydrogeomorphic Analysis</i> 7 completed, 4 in progress, 3-5 proposed	4 new HGMs initiated. Final reports for 7 stations.	Josh Eash,	R, I	IP
<b>ABIOTIC RESOURCES – MONITORING</b>					
2A	<i>Water Monitoring – Refuge Stations</i> 12 stations have some form of water monitoring coordinated by the regional hydrology staff or the station. These 12 stations conduct their own monitoring or rely on monitoring by other agencies (USGS, ACE, States).	Training and consultation to individual stations to address specific needs. Review of reports.	Josh Eash, Jennifer Gruetzman	O	IP
2A	<i>Regional Water Monitoring Network</i>	Draft Surface Water Monitoring Protocols	Josh Eash, Jennifer Gruetzman	R, I	IP
<b>BIOTIC RESOURCES – INVENTORIES</b>					

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
1D	<i>Forest Inventory</i> The Great Lakes Biology Network (all refuge biologists) are conducting forest inventories on refuge lands within the Network.	Project Record, Fact Sheet, and protocols	Greg Corace	R	IP
1D, 3C	<i>Grassland Bird Inventory of Refuge Stations</i> (See Workshops below.)	Refine proposal, seek funding	Sara Vacek	R, O	IP
<b>BIOTIC RESOURCES - MONITORING</b>					
3C	<i>Bird Monitoring</i> National Bird Monitoring Team Provide leadership to National Bird Monitoring Team to address pressing bird monitoring issues shared by multiple Regions.	Schedule monthly conference calls, plan WebEx Seminars as needed.	Melinda Knutson	I	IP
3C	<i>Rank Regional Bird Monitoring Efforts in R3</i> Prioritize regional and national bird monitoring efforts in cooperation with FWS Migratory Bird Management. This info will be used to develop station IMPs.	Regional and national bird surveys ranked, by Region 3 station.	Melinda Knutson	I	P
3C	<i>Marsh bird Data Review</i> Review R3 marsh bird data in the USGS Patuxent WRC database and revise as needed.	10 'clean' data sets in the USGS Patuxent database ready for transfer to the Avian Knowledge Network	Kathy Bibby	R	IP
	<i>Savanna management and monitoring</i> Develop handbook for management of savanna ecosystems	Handbook	Pauline Drobney, Lizzy Berkley	I, R	IP
<b>STRESSORS</b>					
	<i>Climate Change</i> See Biological Needs Assessment (above) and symposium (below)				
4A	<i>SSP (R9 and R3): SHC in the face of climate change: Bridging the research-implementation gap and accounting for interactions among conservation threats</i> Project in Year 2	Examining stressors (like projected changes in climate and housing density over the next 100 years) and their affects on different organisms with different mobility among protected areas. FY11: Housing density and NWRS National-wide assessment completed.	Chris Hamilton, Pat Heglund	R, O	IP
1D	<i>National Pollinator Working Group</i>	Increase refuge awareness of management effects on pollinators	Wedge Watkins	R	IP



Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
4A	<i>SSP (R9 and R3, above) and Federal Highways Funding: Refuge Vulnerability Assessment Handbook</i> Final draft in review	Draft handbook completed	Granholm, Collins, Harris, Adamcik, NatureServe	R, O	IP
<b>ADAPTIVE MANAGEMENT PROJECTS</b>					
1F, 3C	<i>Integrated Waterbirds Management and Monitoring Program (IWMM)</i> Multi-region, multi-agency project to manage and monitor migrating and wintering waterbirds, including waterfowl, shorebirds, and marsh birds. Partnership with Migratory Birds, states, NGO's (Agassiz, Clarence Cannon /Great River, Cypress Creek, Mingo, Port Louisa, Rice Lake, Seney, Squaw Creek, Trempealeau, Two Rivers NWR, Morris WMD, Upper Miss NWFR-La Crosse, Savanna, Winona Districts)	Formal Administrative Structure and Team Responsibilities. Project Record. Fact Sheets. Central database. Protocol. Upper Mississippi Regional Waterbird Team (Reg 3). Supplemental moist-soil veg assessment protocol (Reg. 3). 8 biotechs hired through DU contract Regions 3, 4, and 5 (primary funding from migratory birds). Partnership with EPA's national wetland condition to validate habitat assessments. 2 IWMM presentations at Midwest Coordinated Bird Monitoring Conference.	R3 lead - Brian Loges	R, I, O	IP
1F, 3A	<i>Native Prairie Adaptive Management (NPAM)</i> Multi-region project to sustain native plant communities on unplowed prairie. (R3 stations: Windom WMD, Big Stone NWR, Morris WMD, and Detroit Lakes WMD)	Poster presented at <i>Conserving the Future</i> Conference and at the Oct 2010 TWS Annual Conference.	R3 lead - Sara Vacek	R, I, O	IP
1F, 3C	<i>Impoundment management to support migratory waterbird use (RCRP)</i> Multi-region project to maximize waterfowl and shorebird use of refuge impoundments.	Final Report Recommendations to managers	Pat Heglund	R, O	IP
1F, 3A	<i>Cattail control through prescribed fire (RCRP)</i> Multi-region project to test the efficacy of controlled fires to minimize cattail dominance of wetlands.	Final Report Recommendations to managers	Pat Heglund	R, O	IP

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
1F, 3A	<i>Reed canary grass control and transition to wetland forests and meadows (RCRP)</i> Multi-region project to minimize reed canary grass dominance of forests and meadows. (Upper Mississippi River NWR, Winona, La Crosse, and McGregor Districts, Port Louisa NWR, Minnesota Valley NWR, Squaw Creek NWR, Swan Lake NWR)	Project Record, Fact Sheet, database, Sharepoint Decision Tool, and long-term protocols, Final Report, transition to FWS leadership	R3 - lead Kathy Bibby	R, I, O	IP
1F, 3A	<i>Restoring native plant diversity in native grasslands (AM Consultancy)</i> Multi-agency project to restore and maintain high quality native grasslands in Minnesota and the Dakotas. Partnership with The Nature Conservancy and MN DNR. R3 stations collecting data include Morris WMD and Glacial Ridge NWR. Big Stone NWR participated in project design.	Project Record, Fact Sheet, database, and protocols	Sara Vacek, coordinator, Jessica Dowler	R, I, O	IP
1F, 3A	<i>Use of sediment removal in wetland restorations (AM Consultancy)</i> Multi-station project to evaluate alternative strategies for restoring small wetland basins (Minnesota Private Lands Office, Morris WMD, Fergus Falls WMD, Detroit Lakes WMD, Windom WMD, Rydell NWR, Glacial Ridge NWR) Partnering with NRCS and MNDNR	Project Record, Fact Sheet, database, and protocols	Lori Stevenson	R, I, O	IP
1F, 3A	<i>Invasives in Forests (AM Consultancy)</i> Multi-station project to inventory invasive plants in forested stands, prioritize management, and conduct follow-up monitoring. (Big Oaks, Cypress Creek, Mingo, Muscatatuck, Patoka River)	Project Record, draft protocols	Sean Blomquist	R, I, O	IP
1F, 3A	<i>Lakeplain prairie restoration (AM consultancy)</i> Multi-station project to restore and maintain diverse prairie. (Shiawassee, Detroit River, Ottawa NWR)	Project Record, draft protocol	Eric Dunton, Sean Blomquist	R, I, O	IP
<b>DATA MANAGEMENT</b>					
General A	Fill regional database manager/IT position	Position filled	Pat Heglund	I	P
General A	Regional database of surveys revised	Revised database (completed)	Heglund	R	IP

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
General A	Individual databases are maintained for each AM Project (see above)	Data are verified, summarized, and archived.	Database manager	I	IP
General A	Region 3 Time-Series Water Resources Database (WISKI)	Water monitoring data analysis, storage and reporting.	Jennifer Gruetzman	R, I	IP
General A	Data sharing: R3 refuge landbird and marshbird data will be shared from USGS Patuxent Wildlife Research Center to the Avian Knowledge Network. R3 did extensive marshbird database management in FY11 to prepare for this data sharing.	Avian Knowledge Network (AKN) will be updated with landbird and marshbird data	Mark Wimer (USGS) and Katie Koch (Migratory Birds)		IP
<b>COMMUNICATION - TRAINING</b>					
General	<i>Designing and Implementing a Biological Monitoring Program</i> , training at the National Conservation Training Center (NCTC)	Skilled Staff	Melinda Knutson (instructor) Sean Blomquist Jessica Dowler Eric Dunton Mick Hanan	I, R	C
1F	<i>Introduction to Structured Decision Making</i> , training at the National Conservation Training Center (NCTC)	Skilled Staff	Melinda Knutson (instructor) Sean Blomquist Brian Loges Pauline Drobney Mick Hanan	I, R	C
3C	<i>Landbird Banding Certification</i> Klamath Bird Observatory-led course offered at Pere Marquette State Park, IL. North American Banding Council Certification (NABC) to band land birds. One biologist was certified as a trainer.	Skilled Staff	Pat Heglund Brian Loges Mick Hanan	R,I	C
General	<i>Refuge Management Academy</i> , training at the National Conservation Training Center (NCTC)	Skilled Staff	Jessica Dowler	R	C
General	<i>The Leadership Institute</i> , leadership course through The Wildlife Society	Skilled Staff	Jessica Dowler	I,R	IP
General	<i>Specialty Tracked Training</i> , FWS training at Sherburne NWR	Skilled Staff	Jessica Dowler	I,R	C
1F	<i>Prairie Reconstruction Training</i> , FWS training at Madison WMD	Skilled Staff	Jessica Dowler	I,R	C
General	<i>USFWS/USGS Structured Decision Making Workshop-observer</i>	Skilled Staff	Pauline Drobney	I,R	C

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
General	<i>NWRS Biological Program Fundamentals</i> , training at the National Conservation Training Center (NCTC)	Skilled Staff	Pat Heglund Pauline Drobney Rich King (instructors) Sean Blomquist Brian Loges	I,R	C
1E	<i>Ecological Forestry Workshop</i> , training at the Joseph W. Jones Ecological Research Center	Skilled Staff	Sean Blomquist	I, R, O	C
1A	<i>Habitat Management Planning</i> , online training through the National Conservation Training Center (NCTC)	Skilled Staff	Pauline Drobney Pat Heglund (Instructors) Sean Blomquist Brian Loges Eric Dunton	I, R	C
General	<i>Multivariate Statistics</i> , training through The Ohio State University at Seney NWR	Skilled Staff	Sean Blomquist	I, R, O	C
1F	<i>Principles of Modeling</i> , training through the National Conservation Training Center (NCTC) held in Lacey, WA	Skilled Staff	Sean Blomquist	I, R	C
3A	<i>Field Techniques for Invasive Plant Management</i> , training through the National Conservation Training Center (NCTC) held at Ding Darling NWR	Skilled Staff	Sean Blomquist	I, R	P
General	<i>Applied Supervision</i> , training at the National Conservation Training Center (NCTC)	Skilled Staff	Josh Eash	R	C
2A	<i>ATV Safety Course</i> , training at the ATV Safety Institute. ATV certification will allow for the collect of topographic survey data on refuges.	Skilled Staff	Vince Capeder	R	C
General	<i>MOCC</i> , Ensure all agency boat operators are knowledgeable in agency policies & updates; ensure understanding of basic mechanics of boats & engines by participating in a practical hands on field test with a license operator; ensure student's understanding of the specific components and importance of float plans.	Skilled Staff	Mick Hanan	I, R	C
General	<i>Agricultural Tractor</i> , completion of the web-based Agricultural Tractor Pre-Class Study course SAF2000-OL and the SAF2000 Agricultural Tractor Safety Training Course.	Skilled Staff	Mick Hanan	I, R	C

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
General	<i>Skid Steer PRE-CLASS-UDT</i> , Web-based Skid Steer Pre-Class Study course SAF2004-OL is required prior to attending the SAF2004 Skid Steer Safety Training Course.	Skilled Staff	Mick Hanan	I, R	C
1F	<i>Moist Soil Management for Managers and Biologists</i> , Provide information for techniques and strategies for wetland management by manipulating water levels and soil disturbance to provide optimal habitat for waterbirds and other wildlife.	Skilled Staff	Mick Hanan Eric Dunton	I, R	C
General	<i>Environmental compliance</i> , training at Neal Smith NWR	Skilled Staff	Brian Newman	R	C
1B	<i>Basic wetland management</i> , training at Bosque del Apache NWR near Socorro, NM by Wetland management and educational services. HGM approach to wetland assessments.	Skilled Staff	Brian Newman	I, R	C
2A	<i>Real Time Kinematic GPS Training</i> – Training through Frontier Precision. Bloomington, MN.	Skilled Staff	Jennifer Gruetzman	I,R	C
2A	<i>Advanced WISKI Training (Time Series Water Resources database)</i> – Training through Kisters North America Inc. Sacramento, CA	Skilled Staff	Jennifer Gruetzman	I,R	C
<b>COMMUNICATION - PROGRAM REVIEWS</b>					
1F	<i>Refuge Cooperative Research Program (RCRP) Review</i> Workshop held to review the first five years of the program and recommend revisions. RCRP is a joint NWRS/USGS Program that employs adaptive management to address difficult resource management problems. Product will be a draft white paper summarizing the recommendations.	13-15 Oct. 2010	Pat Heglund Melinda Knutson	R, I, O	IP
<b>COMMUNICATION - WORKSHOPS</b>					
1F, 3A	<i>Invasive Species Management in Forested Habitats</i> Structured Decision Making workshop to continue to develop a multi-station adaptive management problem focused on reducing invasive species.	1-3 March 2011	Sean Blomquist	I, R	C
1D, 3C	<i>Grassland Bird Inventory of Refuge Stations</i> Planning meeting to revise proposal by The Nature Conservancy to conduct grassland bird inventories on TNC lands and Refuge stations.	7 Feb 2011	Marissa Ahlering, Sara Vacek	O	C
General C	<i>USDA NRCS National Easement Assessment Project</i> Knutson invited to participate in planning meeting for a new monitoring program for NRCS Easements.	14-15 March 2011	Melinda Knutson	I	C

Blueprint Objectives and Tasks	Project or Theme; Status and Accomplishments	Product	I&M Staff	Funding I=I&M R=Refuges O=Other	Status P=Planned F=Funded IP=In progress C=Completed
3C	<i>Plains and Prairie Pothole LCC workshop on Setting Direction</i> Heglund facilitated a decision workshop for the PPP LCC to help them develop a working plan for the LCC.	7-9 Feb 2011	Pat Heglund	O	C
1A,B 2A	<i>Midwest Refuges WRIA, HGM, CAP Integration Workshop</i> Joint workshop with R3 Division of Biological Resources and Environmental Contaminants staff. Attendees include representatives from Refuge, Private Lands, DBR and Ecological Services staff from R3, R6 and National office.	27 September 2011	Josh Eash (facilitator) Brian Newman (facilitator)	I, R, O	C
2A	<i>Nutrient Initiative Workshop</i> Joint workshop with R3 Division of Biological Resources and Environmental Contaminants staff.	28 September 2011	Josh Eash (facilitator) Brian Newman (facilitator)	I, R, O	C
3C	<i>Midwinter and Spring Waterfowl</i> Workshop organized by Migratory Birds to address waterfowl monitoring during migration and wintering.	3 August 2011	Brian Loges, Eric Dunton, Mick Hanan	I, R, O	C
3C	<i>Grassland Bird Declines in the Midwest</i> Workshop organized by Migratory Birds to address continued population declines for many species of grassland birds. What can conservation partners do?	3 August 2011	Melinda Knutson (facilitator) Tom Will (Migratory Birds)	I, R, O	C
<b>COMMUNICATION - SYMPOSIA</b>					
General	<i>The Wildlife Society Annual Meeting – Symposium ‘Helping Resources Managers Cope With Threats and Change’</i> Plan symposium	6-10 Nov 2011	Melinda Knutson, Pat Heglund	I, R	P

## 6. Appendix. Organization of the Region 3 Division of Biological Resources

