

2011 Project Abstract

For the Period Ending June 30, 2014

PROJECT TITLE: HCP VII - Wild Rice/Waterfowl Habitat: Enhancement & Long-term Monitoring (2e)

PROJECT MANAGER: Steve Mortensen

AFFILIATION: Leech Lake Band of Ojibwe

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CITY/STATE/ZIP: Cass Lake, MN 56633

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FUNDING SOURCE: Environment and Natural Resources Trust Fund

LEGAL CITATION: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 04j2e

APPROPRIATION AMOUNT: \$ 50,000

Overall Project Outcome and Results

The purpose of this project was to collect data on selected wild rice beds located on the Leech Lake Reservation and, using GIS, develop a method of quantifying the abundance from aerial photographs. Data collected from this work was then compared to fall waterfowl abundance data collected by the MN DNR to determine if a correlation existed. We were able to develop the methodology for quantifying rice abundance from high resolution photographs into some broad categories, but were unable to statistically correlate this with fall duck abundance. Either the rice quantification methods or waterfowl counts are not refined enough to make a statistically valid determination or, more likely, waterfowl will still make use of rice even if it is not abundant, provided it contains sufficient cover. Even though we were unable to make a correlation between rice abundance and fall waterfowl numbers the methodology developed for quantifying rice from aerial photographs will be valuable to us and other managers in the future.

This project also had two smaller components. The first was to manage, maintain, and enhance some of the waterfowl impoundments and other waters that are located on the Leech Lake Reservation. Over the period of this grant we focused on five impoundments and other waterways to enhance these areas for waterfowl and other species that utilize these habitats. On impoundments water levels were managed and dike and control structures were repaired and maintained. Beaver plugging is an ongoing problem on many of these waterways so dam material was removed as needed, Clemson Levelers were installed, and in some cases beaver removal was utilized to reduce the problem.

A second aspect of this project was to enhance waterfowl food supply by planting wild rice. Wild rice has been degraded in some locations due to inappropriate water levels, damage from wind storms, and human activities. Two hundred acres of Natures Lake was reseeded with rice under this grant in an effort to reestablish rice in areas where it had historically occurred.

Project Results Use and Dissemination

The methodology and techniques used to quantify wild rice beds from aerial photographs will be available to other resource managers if they would like to use them to evaluate their rice beds.



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan Final Report

Date of Report:	July 15, 2014	
Date of Next Status Update:	Final Report	
Date of Work Plan Approval:	6/23/2011	
Project Completion Date:	6/30/2014	Is this an amendment request? _____

Project Title: HCP VII - Wild Rice/Waterfowl Habitat: Enhancement & Long-term Monitoring (2e)

Project Manager: SteveMortenson

Affiliation: Leech Lake Band of Ojibwe

Address: 115 - 6th Street NW

City: Cass Lake**State:** MN**Zipcode:** 56633

Telephone Number: (218) 335-7421

Email Address: smortensen@lldrm.org

Web Address: <http://www.lldrm.org>

Location:

Counties Impacted: Beltrami, Cass, Hubbard, Itasca

Ecological Section Impacted: Northern Minnesota Drift and lake Plains (212N)

Total ENRTF Project Budget:	ENRTF Appropriation \$:	50,000
	Amount Spent \$:	49,984
	Balance \$:	16

Legal Citation: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 04j2e

Appropriation Language:

\$1,737,000 the first year and \$1,738,000 the second year are from the trust fund to the commissioner of natural resources for the acceleration of agency programs and cooperative agreements. Of this appropriation, \$125,000 the first year and \$125,000 the second year are to the commissioner of natural resources for agency programs and \$3,225,000 is for agreements as follows: \$637,000 the first year and \$638,000 the second year with Ducks Unlimited, Inc.; \$38,000 the first year and \$37,000 the second year with Friends of Detroit Lakes Wetland Management District; \$25,000 the first year and \$25,000 the second year with Leech Lake Band of Ojibwe; \$225,000 the first year and \$225,000 the second year with Minnesota Land Trust; \$200,000 the first year and \$200,000 the second year with Minnesota Valley National Wildlife Refuge Trust, Inc.; \$242,000 the first year and \$243,000 the second year with Pheasants Forever, Inc.; and \$245,000 the first year and \$245,000 the second year with The Trust for Public Land to plan, restore, and acquire fragmented landscape corridors that connect areas of quality habitat to sustain fish, wildlife, and plants. The United States Department of Agriculture, Natural Resources Conservation Service, is an authorized cooperating partner in the appropriation. Expenditures are limited to the project corridor areas as defined in the work program. Land acquired with this appropriation must be sufficiently improved to meet at least minimum habitat and facility management standards, as determined by the commissioner of natural resources. This appropriation may not be used for the purchase of habitable residential structures, unless expressly approved in the work program. All conservation easements must be perpetual and have a natural resource management plan. Any land acquired in fee title by the commissioner of natural resources with money from this appropriation must be designated as an outdoor recreation unit under Minnesota Statutes, section 86A.07. The commissioner may similarly designate any lands acquired in less than fee title. A list of proposed restorations and fee title and easement acquisitions must be provided as part of the required work program. An entity who acquires a conservation easement with appropriations from the trust fund must have a long-term stewardship plan for the easement and a fund established for monitoring and enforcing the agreement. Money appropriated from the trust fund for easement acquisition may be used to establish a monitoring, management, and enforcement fund as approved in the work program. An annual financial report is required for any monitoring, management, and enforcement fund established, including expenditures from the fund. This appropriation is available until June 30, 2014, by which time the project must be completed and final products delivered.

Final Report

I. PROJECT TITLE:HCP7-2E Wild Rice/Waterfowl Habitat: Enhancement and Long-term Monitoring

II. FINALPROJECT STATEMENT:

Overall Project Outcome and Results

The purpose of this project was to collect data on selected wild rice beds located on the Leech Lake Reservation and, using GIS, develop a method of quantifying the abundance from aerial photographs. Data collected from this work was then compared to fall waterfowl abundance data collected by the MN DNR to determine if a correlation existed. We were able to develop the methodology for quantifying rice abundance from high resolution photographs into some broad categories, but were unable to statistically correlate this with fall duck abundance. Either the rice quantification methods or waterfowl counts are not refined enough to make a statistically valid determination or, more likely, waterfowl will still make use of rice even if it is not abundant, provided it contains sufficient cover. Even though we were unable to make a correlation between rice abundance and fall waterfowl numbers the methodology developed for quantifying rice from aerial photographs will be valuable to us and other managers in the future.

This project also had two smaller components. The first was to manage, maintain, and enhance some of the waterfowl impoundments and other waters that are located on the Leech Lake Reservation. Over the period of this grant we focused on five impoundments and other waterways to enhance these areas for waterfowl and other species that utilize these habitats. On impoundments water levels were managed and dike and control structures were repaired and maintained. Beaver plugging is an ongoing problem on many of these waterways so dam material was removed as needed, Clemson Levelers were installed, and in some cases beaver removal was utilized to reduce the problem.

A second aspect of this project was to enhance waterfowl food supply by planting wild rice. Wild rice has been degraded in some locations due to inappropriate water levels, damage from wind storms, and human activities. Two hundred acres of Natures Lake was reseeded with rice under this grant in an effort to reestablish rice in areas where it had historically occurred.

Project Results Use and Dissemination

The methodology and techniques used to quantify wild rice beds from aerial photographs will be available to other resource managers if they would like to use them to evaluate their rice beds.

III. PROJECTSTATUS UPDATES:

Project Status as of (May 1, 2012):Project not activated

Project Status as of (Nov. 1, 2012):

During this period we activated this project after finishing up our Phase VI work. Waterfowl habitat enhancement and management work was undertaken on some impoundments, but due to the low amount of precipitation less work than usual was needed this summer. We also completed the wild rice seeding into Nature's Lake to try to restore the rice acreage in the lake that has declined in the past decade or so. Work continued on the analysis of wild rice abundance on selected lakes using high resolution aerial photography and GIS software. A new set of images were shot this past fall to add to the data set we already have.

Project Status as of (May. 1, 2013):

The only work conducted during this period was some planning efforts for work that will be conducted during the summer of 2013.

Amendment Request(May 28, 2013)

We are requesting an amendment to this work plan that will give us another field season to work on Activity 2 that was somewhat delayed last field season due to the State Government Shutdown and to

do a better job of determining what the issues surrounding declines in wild rice are before attempting to take steps to correct it. This will include another year of aerial photographs of rice beds and interpretation of this data in addition to assessing the relationship between rice and waterfowl usage of these waters. We also would like to do more ground truthing of aerial photography using on the water surveys of rice beds. These changes are outlined in Activity 3 and in the attachment A Budget.

Activity 1 will be completed as planned with the exception of changing the ending date to June 30, 2014, and moving \$549 out of the Equipment/Tools/Supplies and into Service Contracts to cover anticipated needs in this line item.

Activity 2 is completed and no changes are requested except to change the final date to June 30, 2014 to match the rest of the Work Plan.

Activity 3- We would like to move \$3965 from the personnel wage line of this activity to cover this year's aerial photography. We are also requesting that additional funds under this activity be shifted from the Ecologist Position to the GIS Position as more funding will be needed to cover this portion of the project. Total dollar amount for Activity III and the overall project remain the same.

Amendment Approved (June 13, 2013)

Project Status as of (Nov. 1, 2013):

Work on Result 1 has been completed for this year. Low precipitation during part of this last summer reduced the amount of work that was needed to keep impoundments operating. Result 2 was completed last year so no further work was planned during this period. Project status of Result 3 includes the completion of georeferencing wild rice images from 2012 and 2013 using ArcGIS Software. This concludes all georectification of all aerial imagery data sets that the Leech Lake Division of Resource Management has. A subset was utilized this year, 2013, much like last year, in order to ground truth the GIS work being done on the imagery. Final assessment and calculation of wild rice acreage on the Leech Lake Reservation will continue this winter.

Amendment Request, Feb. 24, 2014

Our GIS Technician has moved with his partner to Wisconsin where she was offered an excellent job opportunity. He has set up his own GIS consulting business and we have a contracted with him to continue doing GIS work for us. For this reason our GIS Technician is no longer a regular employee, but would now be considered a contractor so we would like to transfer funds from our Personnel (Wages and Benefits) to Professional/Technical Contracts. It also appears that we will need a little extra funds to cover GIS work and there looks like there will be some extra in the Ecologist and Field Technician budgets so we would like to reduce these and put the additional funds into GIS. There is also \$35 remaining in the Result II that is completed so we are also requesting to move this money so this result can be zeroed out.

Amendment Approved (March 4, 2014)

Project Status as of (May. 1, 2014):

Work conducted during this period consisted mostly of planning for summer field work as well as a continuation of the GIS analysis for the wild rice portion of the project. We also applied for and received an amendment to accommodate changes in the status of our GIS Technician from a regular employee to a contractor. We also shifted some funds around to zero out some activity lines and get funds into other places where it was needed. We anticipate being completed with the project by the June 30 end date.

Final Report Summary: June 30, 2014

The purpose of this project was to collect data on selected wild rice beds located on the Leech Lake Reservation and using GIS develop a method of quantifying the abundance from aerial photographs. Data collected from this work was then compared to fall waterfowl abundance data collected by the MN DNR to determine if a correlation existed. We were able to develop the methodology for quantifying rice

abundance from high resolution photographs into some broad categories, but were unable to statistically correlate this with fall duck abundance. Either the rice quantification methods or waterfowl counts are not refined enough to make a statistically valid determination or, more likely waterfowl will still make use of rice even if it is not abundant, provided it contains sufficient cover. Even though we were unable to make a correlation between rice abundance and fall waterfowl numbers the methodology developed for quantifying rice from aerial photographs will be valuable to us and other managers in the future.

This project also had two smaller components. The first was to manage, maintain, and enhance some of the waterfowl impoundments and other waters that are located on the Leech Lake Reservation. Over the period of this grant we focused on five impoundments and other waterways to enhance these areas for waterfowl and other species that utilize these habitats. On impoundments water levels were managed, and dike and control structures were repaired and maintained. Beaver plugging is an ongoing problem on many of these waterways so dam material was removed as needed, Clemson Levelers were installed, and in some cases beaver removal was utilized to reduce the problem.

A second aspect of this project was to enhance waterfowl food supply by planting wild rice. Wild rice has been degraded in some locations due to inappropriate water levels, damage from wind storms, and human activities. Two hundred acres of Natures Lake was reseeded with rice under this grant in an effort to reestablish rice in areas where it had historically occurred.

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1:Waterfowl Habitat Enhancement and Management

Description:Controlling and managing water levels on a subset of existing forested impoundments and waterways of the LLR to improve habitat for reproducing waterfowl. Tasks include beaver management, beaver dam removal, and periodic drawdown of water. Work for this grant period is planned for the impoundments listed below, but dependent on need, work may be shifted around to other impoundments (see map). Need is often determined by precipitation, beaver activity, and integrity of control structures and dikes. Current impoundments where work is planned include Cuba (44 acres); Brush Lake (13 acres); Bear Brook (18 acres); Lucille (26 acres); Upper Third River (28 acres), Cub (9), Ketchum(38).Continued habitat maintenance will be provided through a cooperative agreement between the LLBO and the USFS. Existing structures will be cleared, maintained, and parts replaced as needed.

Summary Budget Information for Activity 1:

ENRTF Budget: \$7092
Amount Spent: \$7708
Balance: \$(616)

Activity Completion Date:

Outcome	Completion Date	Budget
1. <i>Water level control and management on existing forested impoundments and waterways. Includes control of beaver activity, and periodic drawdown's.</i>	June 30, 2014	\$7092

Activity Status as of (May 1, 2012): Project not activated

Activity Status as of (Nov. 1, 2012):

Waterfowl habitat and enhancement and management work was undertaken on impoundments, but due to the low amount of precipitation less work than usual was needed this past summer. Work that was completed included water control cleaning and repair plus mowing of the grass and brush on the dikes

Activity Status as of (May 1, 2013):

The only work conducted during this period was some planning efforts for work that will be conducted during the summer of 2013.

Activity Status as of (Nov. 1, 2013):

Waterfowl habitat and enhancement and management work was undertaken on impoundments, but due to the low amount of precipitation less work than usual was needed this past summer. Work that was completed included water control cleaning and repair plus mowing of the grass and brush on the dikes. Work this year focused on Cub, Ketchum, Lucille, Cuba, and Brush Lake Impoundments.

Activity Status as of (May. 1, 2014):

The only work conducted during this period was some planning efforts for work that will be conducted during the summer of 2014.

Final Report Summary: June 30, 2014

Over the course of this project we have worked on about a half dozen impoundment in addition to some other water bodies in an effort to protect and enhance habitat for waterfowl and other species that utilize these habitats. To a large degree this consisted of managing and maintaining impoundments that included things like control structure maintenance and clearing, beaver control, beaver baffle installation and maintenance, along with dike maintenance and repairs.

ACTIVITY 2: Wild Rice Habitat Enhancement and Management

Description: Reseeding 200 additional acres of habitat with local ecotypes of native wild rice (*Zizania* species) to improve wild rice production and to enhance cover and foraging opportunities for waterfowl on the LLR. Once established, and with continued management of water levels by LLBO and USFS, the wild rice should naturally reseed.

Summary Budget Information for Activity 2:

ENRTF Budget: \$ 2966
Amount Spent: \$ 2966
Balance: \$ 0

Activity Completion Date:

Outcome	Completion Date	Budget
1. Native wild rice reseeding on restored habitat (200 additional acres).	June 30, 2014	<u>\$2966</u>

Activity Status as of (May 1, 2012): Project not activated

Activity Status as of (Nov. 1, 2012): During this period we purchased and seeded 1977lbs of wild rice into Natures Lake in three locations. This lake historically had good stands of wild rice but production has significantly declined in the past decade. It is hoped that this effort will result in the reestablishment of dense rice stands on the lake again.

Activity Status as of (May 1, 2013):

This portion of the project has been completed so no work was planned or conducted during this period.

Activity Status as of (Nov. 1, 2013):

This activity was completed in 2012 so no work was planned for this period.

Activity Status as of May. 1, 2014):

This portion of the project has been completed so no work was planned or conducted during this period.

Final Report Summary: June. 30, 2014

This portion of the project was completed in 2012 when we seeded wildrice into some portions of Nature's Lake in an effort to reestablish it in areas where it had occurred in the past.

ACTIVITY 3: Long-term Monitoring and Analysis of Wild Rice Productivity

Description: Digitizing and interpreting 2012 and 2013 aerial imagery of wild rice on LLR (approx. 13,000 acres/yr); then analyzing against our 18-year-long dataset of wild rice and waterfowl abundance (being interpreted and analyzed with 2010 ENRTF funding). Tasks include implementing methodology for interpreting wild rice on aerial imagery (being refined with 2010 ENRTF funding) and conduct more on the water ground truthing of aerial interpretation. This will include sampling of rice abundance, density, and seed production as well as some basic morphological characteristics of the locations where rice grows. This will enable us to better interoperate what we are seeing in aerial photographs of the same rice beds. We will also explore opportunities to implementing adaptive management based on trend analyses (being conducted with 2010 ENRTF funding); and working with the MNDNR-led Wild Rice Working Groups to standardize region-wide monitoring and enhancement of wild rice/waterfowl habitat. We will also continue partnering with the USFWS, BIA, USFS, and other stakeholders to implement adaptive management of wild rice/waterfowl habitat based on long-term trends. Additional funding will likely need to be identified and secured for this work.

Summary Budget Information for Activity 3:

ENRTF Budget: **\$39943**
Amount Spent: **\$ 39311**
Balance: **\$632**

Activity Completion Date:

Outcome	Completion Date	Budget
<i>1. Unique 20-yr-long dataset of natural wild rice acreage interpreted and analyzed (1993-2012; approx. 13,000 acres on the LLR). Adaptive management implemented based on wild rice and waterfowl abundance trends on and near LLR between 1993 and 2012.</i>	June 30, 2014	\$ 39943

Amendment Request:

The aerial photography work will need to begin before we have completed our Phase VI Supplemental Program as wild rice photos need to be taken when rice stands are at the peak of density. This usually occurs in late August. For this reason, we are requesting the use of the \$3965 budgeted for this work in August of 2011 prior to the completion of the appropriation to Leech Lake Band of Ojibwe M. L. 2010, Chap. 362, Sec. 2, Subd. 4f2f which is already programmed for habitat restoration work in the fall of 2011. This fits within the existing work plans and budgets.

Amendment request approved by LCCMR staff August 25, 2011.

Activity Status as of (May 1, 2012): Inactive except for shooting of aerial photographs as indicated in amendment.

Activity Status as of (Nov. 1, 2012):

During this period we implemented this project and completed the aerial photography and ground truthing work needed to analysis this past summer's wild rice crop. The aerial images for this work were delivered by ProWestto the DRM office along with a sample of color infrared imagery with the goal to improve the ability of identify wild rice with the introduction of the color infrared band.

Upon receiving the aerial images, processing was done on two wild rice beds in order to use ground truthing to determine if the GIS analysis was actually working as it should. The photos were rectified and the two additional bands were created for these photos. Once the red/green band and principal component band were calculated, they were combined with the original three bands and the resulting five band image had a maximum likelihood classification analysis run on the image. These processes are all similar to what had been outlined by previous work, except that the red/green band was calculated and added to the mix. This will be done for previous years as well as the other wild rice beds that the Leech Lake DRM has photos for.

Once the classification was finished, a random point generator was used to generate points in the areas designated rice as well as the areas designated as none rice. A total of 25 points for each class were generated. A probability analysis was run for the five band image and four classes were developed from this analysis, 0-25%, 25-50%, 50-75%, and 75-100%. Within these classes random points were generated so that in the field, stem counts could be performed. This entailed laying a floating one meter square on the rice bed at the assigned point and counting stalks.

Statistical analysis is currently being run on these results to see how well the GIS software is actually performing. Preliminary basic statistical analysis shows that for the rice/no rice classification, the software correctly identified no rice for 76% of the sample points, and correctly identified rice for 92% of the sample points. The four classes yielded average stem densities as follows; for the class of 75-100% the sampling resulted in an average of 34.8 stalks/meter², 50-75% showed a sampling result of 11.7 stalks/meter², 25-50% showed a sampling result of 12.6 stalks/meter², and 0-25% showed a sampling result of 0.9 stalks/meter².

Further statistical analysis will be performed in order to possibly identify outliers and thus obtain a better average for each class. The Leech Lake DRM will continue to work on assessing wild rice beds beyond what has already been performed as well as the inclusion of a fifth band into the analysis.

Activity Status as of (May 1, 2013):

The only work conducted during this period was some planning efforts for work that will be conducted during the summer of 2013.

Amendment Request:

We would like to extend this Activity until June 30 of 2014 due to delays in field work last year because of to the State Government Shutdown and to give us more time to conduct another year of aerial rice bed imagery as well as the interoperation of these images and additional ground truthing of the results.

Activity Status as of (Nov. 1, 2013):

Georectification was completed on all remaining imagery up to through 2012, with 2013's imagery completed the last week of October. The Leech Lake Division of Resource Management contract ProWest& Associates to fly 2013 wild rice photos. The images were taken in the first week of September, as a late spring pushed back the flying date. Images were received from ProWest by the end of September. Upon receiving the images, they were georeferenced using ArcGIS software and Bing aerial imagery as a reference source. Once the photos were georeferenced, three lakes were used a subset for ground truthing. The ground truthing was used for a two part purpose, one to determine if interpretation was correct and two, to determine the density of the wild rice in each bed.

The lakes used for ground truthing within the 2013 data set were Leech Lake (Boy Bay), Natures Lake, and Bowstring Lake. These lakes had their wild rice beds digitized at a 1:2000 scale using air photo interpretation. Once the wild rice beds were digitized, ArcGIS software was used to generate fifty random points within the rice beds. Leech Lake Division of Resource Management Technicians sampled all points using a GPS, and determined if the points correctly identified rice density for all three sample areas.

For two of the three sampled lakes, nine more random points were generate to get a density measurement from the field, the first year that this method will be utilized. Three points were generated within either a high, medium, or low density area based upon coverage of the lake interpreted from aerial imagery. A collection of the seeds was taken from each generated sample point and placed in a cooler to ensure not moisture would be lost, as the weights of these seeds would be calculated to determine a total poundage for a given wild rice bed. These samples were collected from Natures Lake and Bowstring Lake. Once the entire acreage is calculated for a wild rice bed, the poundage can be calculated using field sample data.

Once all acreages have been calculated for 2013, there exist several rice beds from past years that will have their acreages calculated. Once all calculations are completed, this data set will be compared against Minnesota Department of Natural Resources Waterfowl Data to identify possible correlations. The waterfowl data had been compiled last year for comparison will a smaller subset from the entire data set. A detailed outline of the procedures used can be found in the write up from last summer.

Amendment Request, Feb. 24, 2014

Our GIS Technician has moved with his partner to Wisconsin where she was offered an excellent job opportunity. He has set up his own GIS consulting business and we have a contracted with him to continue doing GIS work for us. For this reason our GIS Technician is no longer a regular employee, but would now be considered a contractor so we would like to transfer funds from our Personnel (Wages and Benefits) to Professional/Technical Contracts. It also appears that we will need a little extra funds to cover GIS work and there looks like there will be some extra in the Ecologist and Field Technician budgets so we would like to reduce these and put the additional funds into GIS. There is also \$35 remaining in the Result II that is completed so we are also requesting to move this money so this result can be zeroed out.

Amendment Approved (March 4, 2014)

Activity Status as of (May. 1, 2014):

During this period we applied for and received an amendment to change the method of paying for the GIS work on this portion of the project. Our GIS Tech. is now working as a contractor instead of a regular employee, but agreed to finish up this project for us. We also obtained the duck data from the MN DNR Waterfowl Unit and has started to assess this information.

Final Report Summary: June 30, 2014

Work was completed on the rice bed photos and an analysis made that compared rice abundance to waters for which the MN DNR also had fall waterfowl counts. The main purpose of this project was to develop methodology for quantifying rice abundance from aerial photographs. Details of this portion of the project can be found in a separate report. This study found that there was little correlation between rice abundance and duck abundance. Although it is reasonable to assume that with more rice you would have more ducks, it was not detectable using the methods outlined in this project. There are likely other factors that affect duck abundance in any particular area from year to year that confound the analysis undertaken in this project.

V. DISSEMINATION:

The Leech Lake Band is part of the Wild Rice Working Group in Minnesota. We will continue to coordinate with this state-wide wild rice monitoring, enhancement, and research effort to assure that wild rice continues to be a component of Minnesota lakes and streams. The methodology and techniques used to quantify wild rice beds from aerial photographs will be available to other resource managers if they would like to use them to evaluate their rice beds. Impoundment management focuses on providing habitat for waterfowl and other wildlife species that utilize this type of habitat, but there is no organized effort to provide the locations of these activities.

Description:

Status as of (May 1, 2012) Project not activated

Status as of (Nov. 1, 2012): There has been very little dissemination of information related to these projects outside of coordinating with other partners we are working with.

Status as of (May 1, 2013):

The only work conducted during this period was some planning efforts for work that will be conducted during the summer of 2013.

Status as of (Nov. 1, 2013): There has been very little dissemination of information related to these projects outside of coordinating with other partners we are working with.

Status as of (May. 1, 2014):

The only work conducted during this period was some planning efforts for work that will be conducted during the summer of 2014.

Final Report Summary: (June 30, 2014)

Information from the work performed under this project is available to anyone who has an interest in receiving it. The Methodology used to analyze rice abundance from aerial photographs will be of most interest to other researchers or managers.

VI. PROJECT BUDGET SUMMARY:**A. ENRTF Budget:**

Budget Category	\$ Amount	Explanation
Personnel: All (for 3 years)		
Plant Ecologist (8% FTE)	\$ 12,660	Rice monitoring portion of project.
GIS Specialist (9% FTE)	\$ 12,660	GIS work that relates to rice monitoring
2-Field Tech. Rice (3.8% FTE)	\$ 6,158	Field Techs. for rice monitoring, data collection
2-Field Tech. Imp. Etc. (2% FTE)	\$ 4,004	Field Techs. For imp. and waterway management
Professional/Technical		

Contracts:		
High Res. Rice Bed Photos.	\$7930	Contract for high resolution photos of rice beds.
Service Contracts	\$1,239	Heavy Equipment work on impoundments
Equipment/Tools/Supplies:	\$4,349	Clemson levelers, water control parts, wild rice seed, etc
Other: Gas and Mileage	\$1,000	Fuel to cover project work and any mileage for meetings.
TOTAL ENRTF BUDGET:	\$ 50,000	

Explanation of Use of Classified Staff:NA

Explanation of Capital Expenditures Greater Than \$3,500:NA

Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation:0.31 FTE

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
Non-state BIA Circle of Flight	\$ 25,000	\$19,622	<i>Imp. Work, project administration</i>
US Forest Service	\$ 10,000	\$20,000	Other impoundment-waterfowl, rice work
In-Kind LL Res. DRM	\$ 12,998	\$12,000	Office space, indirect, support staff, etc.
State	\$	\$	
TOTAL OTHER FUNDS:	\$47,998	\$51,622	

VII. PROJECT STRATEGY:

A. Project Partners:

- B. We will be working with the Wild rice working group, MN , DNR, US Forest Service, and the BIA on there projects.

B. Project Impact and Long-term Strategy:

With ENRTF support, this project will provide continuation of previous and current management activities aimed at enhancing natural wild rice productivity and waterfowl nesting and brood habitat on LLR. The LLDRM has a strong record of grant awards from tribal, federal, state, and non-profit entities. We also have a strong record of active participation in technical committees, regional and nation-wide strategic planning teams, and academic research. Our efforts to obtain funding to conserve the natural resources of the LLR are continuous and ongoing.

C. Spending History:

Funding Source	M.L. 2005 or FY 2006-07	M.L. 2007 or FY 2008	M.L. 2008 or FY 2009	M.L. 2009 or FY 2010	M.L. 2010 or FY 2011
LCCMR	28000	30000	30000	00	50000

VIII. ACQUISITION/RESTORATION LIST:

IX. MAP(S):

See attachment

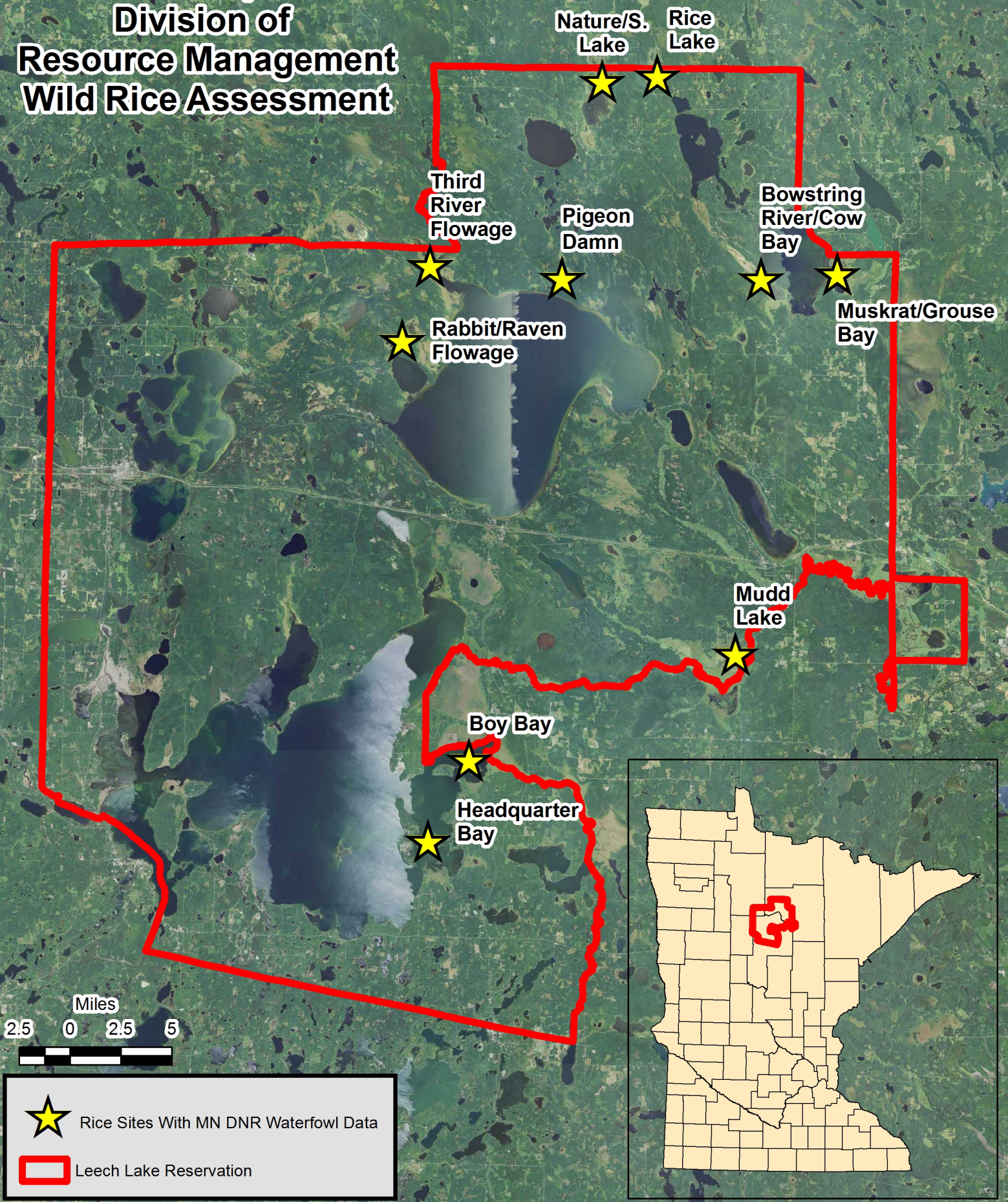
X. RESEARCH ADDENDUM:

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted not later than 10 days after reporting periods May 1 and Nov. 1 of each year. A final report and associated products will be submitted between June 30 and August 1, 2014 as requested by the LCCMR.

05042011

Leech Lake Band of Ojibwe Division of Resource Management Wild Rice Assessment



Leech Lake Band of Ojibwe Long Term Rice Monitoring Locations

