FINAL REPORT

AUG - 8 2002

1999 Project Abstract
For the Period Ending June 30, 2002

Title:	Native Wild Rice Management Planning
Project Manager:	Chris Holm
Organization:	Bois Forte Band of Chippewa
Address:	5344 Lakeshore Drive, P.O. Box 16, Nett Lake, MN 55772
Web Site Address:	www.minnesotawildrice.org
Fund:	Future Resources Fund
Legal Citation:	ML 1999, Ch. 231, Sec.16, Subd. 7, Agricultural and Natural Resourced Based Ind.

Appropriation Amount: $200,000.00

Overall Project Outcome and Results

Wild rice distribution, wildlife habitat, presence of water flow obstructions, and land use was evaluated in 43 lakes across northern Minnesota. Physical and chemical data were digitally mapped using the Arc-View Geographic Information System. Pigment-filtered photography was used on one rice-bearing system (Crow-Wing River) to test efficacy of defining wild rice beds using air survey. Videotape of the river system showing plant production through visible, thermal, carotene-filtered and chlorophyll-a filtered camera lenses was collected. Air surveys indicate that on-ground verification of wild rice beds is still necessary. Chemical data including pH, alkalinity, TDS, water temperature, and dissolved oxygen were transcribed to computer data spreadsheets. Digital data layers are superimposed to direct attention to physical characteristics that potentially support or deter wild rice production. Ten priority lakes were chosen to serve as management priority basins. A management plan utilizing habitat index data and physical and chemical condition of these lakes is being prepared and will be available in fall, 2002. Data translated to paper maps shows native and paddy lakes, as well as altered and drained lakes across political boundaries. CD-Rom versions of the wild rice database have been prepared and are available upon request. A historical inventory database of wild rice lakes was compiled. Data, including historical inventory, appears on the website www.minnesotawildrice.org.

Project Results Use and Dissemination

Project results have direct application to wild rice management in Minnesota. Results indicate that over-arching applications applied to all rice lakes as management strategies are not appropriate. Individual or geographically clustered-lakes approaches and tailored management, dependent on specific physical characteristics and land use, is a more appropriate approach to successful wild rice management. Management philosophy and strategies are outlined in greater detail in the forthcoming wild rice management plan, to be completed and distributed in September 2002.

Date of Report: July 1, 2002
LCMR Final Work Program Report

Date of Next Status Report:

Date of Work program Approval:

Project Completion Date: June 30, 2002

LCMR Work Program 1999

PROJECT TITLE: Wild Rice Management Planning

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Total Biennial Project Budget:

$LCMR	200,000.00	$Match:	20,000.00
-$LCMR Amount Spent:	194,366.22	-$ Match Amount Spent:	20,000.00
=LCMR Balance:	5,633.80	=$Match Balance:	0.00

A. **Legal Citation:** ML 99, Chap. 231, Sec.16, Subd. 7, Agricultural and Natural Resource Based Ind.

CARRYFORWARD LANGUAGE: ML 2001, 1st Special Session, Chp 2. Sec.14, Subd. 18, paragraph (a): The availability of the appropriation for the following project is extended to June 30, 2002: ML 1999, Ch.2, Sec.16, Subd. 18, paragraph (a), Wild Rice Management Planning. $200,000.00 is from the future resources fund to the Commissioner of Natural Resources for an agreement with the Bois Forte Band of Chippewa to develop databases and management plans for northern wild rice lakes. This appropriation must be matched by at least $20,000.00 of non-state money.

B. **Status of Match Requirement:** Formal commitment of $20,000.00 to the project was made by the Bureau of Indian Affairs for rice lake management objectives. Match was expended on equipment and supplies dedicated to this project, that were not specifically designated for purchase with LCMR funds at time of proposal submission.

II. and III. Final Project Summary.

The project entitled "**Wild Rice Management Planning**" is a systematic, comprehensive approach to initial evaluations of Minnesota's wild rice resource. This program has, as its basis, the following goals:

(1) **Design and implement programs for compilation of field survey and monitoring data from wild rice lakes in northern Minnesota;**

(2) **Use collected information to evaluate current ecological status of and pollution impact to selected wild rice lakes, and;**

(3) **Revise and expand an existing GIS database for Minnesota rice lakes.**

Objectives associated with these goals will be administered by a wild rice program task-force. The task-force will be comprised of wild rice managers from six Minnesota Chippewa Bands, the 1854 Authority, the Minnesota State DNR, the U.S. Forest Service, Ducks Unlimited, the Bureau of Indian Affairs, and the Minnesota Waterfowl Association.

Result 1: Design and Conduct wild rice habitat surveys. "Ground truth" wild rice habitat surveys were conducted on 41 of the 43 targeted wild rice lakes originally defined in the project proposal. The Crow Wing River, identified in this project as a priority water body, is an extensive river system in Crow Wing County. A segment of this river system is typically referred to as "Waterstreet Lake", one of the identified priority rice water systems. Crow Wing River and Waterstreet Lake did not receive "on the ground" survey due to their extensive area, but were captured with high resolution, pigment-filtered aerial photography. Lakes thus surveyed included the following: Big Rice Lake; Little Rice Lake; Vermilion River; Cabin Lake; Camper Lake; Cramer Lake; Stone Lake; Breda Lake; Island Lake; Twenty Lake; Mallard Lake; Minnewawa Lake; White Elk Lake; Dean Lake; Hesitation Lake; Kettle Lake; Crooked Lake; Hay Creek Flowage; Round Island Lake; Sandy Lake Flowage; Buffalo Lake; Rice Lake; Rice Lake; Frazee Lake; Shell Lake; Schultz Lake; Hubble Pond; Height of Land Lake; Little Round Lake; Perham Lake; Battle Lake; Star Lake; Head Lake; Long Lake; Seven Beavers Lake; Hay Lake; Prairie Lake; Deerwood Lake; Mud Lake; Ottertail River; Crow Wing River/Waterstreet Lake; and Moose Horn River.

Result 2: Compile and statistically evaluate habitat survey data. Data collected in 1999-2002 has been compiled and is being evaluated. Rice plant and rice kernel samples collected for wet and dry weight biomass have been archived for future use if necessary. Water level data, rice bed areas soils condition and other collected information has been transcribed from field journals into a MS Excel spreadsheet and transferred to GIS Technicians for incorporation into the project website. GPS coordinates for rice density and distribution, land use activity, sediment type, and beaver and muskrat dam construction have been transcribed into digital format and appear on the project internet website. GIS digital cover maps for lakes where analyses have been completed have been transcribed to CD-ROM disk. A CD containing cover maps is provided as a supplement to this report. Data layers may be accessed using ARC-VIEW 3.0 (or newer version).

Result 3: Provide a report defining options, cost estimates and time frames for management projects on high priority lakes. Based upon data findings and monitoring data, a report defining options, costs and time frames for management of a subset of surveyed rice basins has been prepared. Lakes were chosen for future management potential based upon specific criteria. Those criteria include: (1) current wild rice bed distribution; (2) habitat quality (presence of wetlands, absence or minimal impact from beaver and muskrat communities; (3) phenotypic condition of extant rice; (4) hydrological considerations; (5) condition of access for harvesting or recreational purposes. Based upon these considerations, a total of ten lakes chosen from the 43 target lakes surveyed represent potential future management sites for wild rice. These lakes include: Vermilion River; Big Rice Lake; Breda Lake; Cabin Lake; Little Rice Lake; Minnewawa Lake; Stone Lake; Cramer Lake; Campers Lake; and Island Lake. Management plans for these priority basins is being prepared and will be provided under separate cover from this report.

Result 4: Design and implement rice lake monitoring plans. Monitoring plan development occurred through a series of meeting held in conjunction with project partners, beginning in 1997. Formal monitoring plans were prepared and provided to field technicians in August 2000. Field Technicians have carried out water monitoring procedures on target wild rice lakes between August-

June 2002. Data collected is filed in hardcopy journals, and on MS Excel computer spreadsheets. Parameters including dissolved oxygen, water temperature, conductivity, turbidity, and alkalinity were incorporated in to existing work plans for selected lakes during the 2001 and 2002 field season.

Result 5: Project partners will develop and implement a comprehensive quality assurance plan to insure validity of collected chemical and biological data. This result is complete and incorporates standard operating and handling procedures as described in Standard Methods, 19th Edition, and an EPA-approved Bois Forte surface water collection and analysis Quality Assurance Plan (QAP). Review and revision of the QAP must be made by the tribal task force and will occur by September 2001. The QA/QC Plan will be placed on the project website and will be accessible for public review by September 2002.

Result 6: Task-force staff will evaluate results of the monitoring program and will prepare and submit at least one article manuscript for publication in an appropriate peer-reviewed journal. One technical manuscript regarding computer mapping of wild rice beds has been prepared and submitted to a technical journal (NAME?) for publication. An abstract of this article appears on the project website. An additional technical manuscript relating ecological aspects of wild rice is also being prepared. This manuscript will be submitted to perspective technical journals by September, 2002.

Result 7: Revise and expand existing GIS DATA BASES of rice lake information through incorporation of new field survey and monitoring data. Existing GIS data bases have been identified and collected from various state and federal agencies (MN DNR, Wetlands Inventory, USGS, tribal GIS databases) and are presently being incorporated into a single, comprehensive data base that can be viewed from the project's internet website. Field data collected in 2000, 2001, and 2002 will be incorporated as additional data layers within existing wild rice coverage maps. The internet website address where information may be viewed is http\\: www.minnesotawildrice.org. Data collected during the FY 1999-2000 field season is also incorporated in this data base.

Result 8: New rice lake monitoring information collected by field survey/monitoring technicians will be transferred to GIS technicians for integration in to the existing, but incomplete GIS rice lakes data base for the state of Minnesota. Data collected by Technicians in FY 1999-2002 has been transferred to GIS Technicians for digitizing and incorporation into the GIS wild rice lakes data base. Field data has also been transferred in to existing data sets and the project website.

Result 9: Habitat data collected by field survey technicians will be transferred to GIS technicians for integration in to existing data bases. Habitat data is being collected concurrently with chemical data by technicians assigned to the project. Data presently includes measures of water depth, presence or absence of dams or obstructions, man-made or natural; presence of impacting land use (land development near shoreline; wild rice bed production and abundance data. This data is being incorporated into the current GIS wild rice lakes database by GIS technicians. Collection and incorporation of data will continue through June 2002.

IV. OUTLINE OF PROJECT RESULTS

Result 1: Design and conduct wild rice habitat SURVEYS.
Project partners assembled a tribally - based task force that designed and supervised habitat surveys on 43 native wild rice stands during a three year time period. Lakes included in the survey have previously been identified by the wild rice task-force members. Surveys were carried out by a team comprised of two qualified field technicians. Survey program components include high-resolution air photography and on-site data collection procedures. On-site survey data collected by technical staff will included: water level

measurement; water temperature; estimates of rice area coverage and production; classification of sediments; rice stand density measures; estimates of waterfowl use; descriptive evaluations of proximity to potential sites of pollutant impact, ease of access, adjacent land-use activity, and morphological characteristics of rice plants in specific basins. An expense reimbursement totaling $15,939.88 was submitted in June 2002. A total of $36,364.95 (including all reimbursement requests) will have been expended on this result as of June 2002.

Completion date: June 2002

LCMR Budget: $39,797.69 Match:$ 10,000.00
Balance: $3,433.01 Match Balance: $ 0.00

Result 2: Compile and statistically evaluate habitat survey data.
Program staff consulted with local Universities and define appropriate habitat index ranking factors for wild rice; staff then used collected data to develop a rice lake habitat quality index to define priority basins for management purposes. A funding reallocation was submitted and approved. The new funding level for this result is $5,718.49. A total of $5,718.49 (including all reimbursement requests) will have been expended on this result as of June 2002.

Completion Date: January 2002.

LCMR Budget: $ $5,718.49 Match: $ 0.00
Balance: $ $0.00 Match Balance $ 0.00

Result 3: Provide a report defining options, cost estimates and time frames for management projects on high priority lakes.
A funding reallocation request for this result was submitted and approved. A management plan is being prepared and will be provided in a separate mailing from this report. The new funding level for this result is $6,113.31. A total of $6,113.31 (including all reimbursement requests) will have been expended on this result as of June 2002.

Completion Date: April 2002.
LCMR Budget: $6,113.31 Match: $ 0.00
Balance: $ $0.00 Match Balance $ 0.00

Result 4: Design and implement rice lake MONITORING plans.
Project partners prepared a wild rice lake monitoring plan to be followed by two (2) technical staff persons during over a three year time period. Monitoring data indicates that a total of ten lakes from the 43 lakes priority list should receive more intensive monitoring. A complete list of basins to be monitored intensively has been defined. These selections display a cross section of rice coverage ranging from complete to sparse, a variety of surrounding land and aquatic resource use activities, and also represent influences imparted from river and lake type rice-producing systems. Factors to be evaluated during survey visits include: access availability; rice abundance; substrate classification; and water level. On-site monitoring procedures will at least include sample collection and analysis for pH, turbidity, water temperature, color, and alkalinity. Chemical analyses on collected samples will be performed both by tribal laboratory facilities and by contracted laboratory agents. A reallocation request for funding of this result was requested and approved. The new funding level for this result is $32,083.42. A total of $29,766.49 (including all reimbursement requests) will have been expended on this result as of June 2002.

Completion Date: June 2002

LCMR Budget: $32,083.42 Match: $ 5,000.00
Balance: $ $2,316.93 Match Balance $ 0.00

Result 5: Project partners will develop and implement a comprehensive quality assurance plan to insure validity of collected chemical and biological data.

The plan will define procedures, processes and timelines to be followed and completed in the project. The plan will be placed on the project website for public review by September 2001. Funding reallocation for this result was requested and approved. New funding level for this result is $9,049.29. A total of $8,874.92 in requested reimbursement expenses will have been expended on this result as of June 2002.

Completion Date: April 2001.

LCMR Budget: $9,049.29 Match: $ 0.00
Balance: $ $174.37 Match Balance $ 0.00

Result 6: Task-force staff will evaluate results of the monitoring program and will prepare and submit at least one article manuscript for publication in an appropriate peer-reviewed journal.

A request for reallocation of funding for this result was made in November 2000 and approved. The new funding level for this result is $9,612.60. A total of $9,319.56 in requested reimbursement expenses will have been expended on this result as of June 2002.

Completion Date: June 2002

LCMR Budget: $9,612.00 Match: $ 0.00
Balance: $ $293.04 Match Balance $ 0.00

Result 7: Revise and expand existing GIS DATA BASES of rice lake information through incorporation of new field survey and monitoring data.
Two (2) GIS technicians conducted research and inquiry regarding current and historical rice lake information presently available. Data not in GIS format was digitized and integrated with other information already available in existing wild rice GIS data bases. A historical data base of wild rice lakes has been defined and appears within the project website. A reallocation of expenses for this result was made and approved. The new funding level of this result is $35,986.44. Total reimbursement expenses requested for this result as of June 2002 total $35,636.66.

Completion Date: June 2002

LCMR Budget: $35,986.44 Match: $ 2,500.00
Balance: $ 349.78 Match Balance $ 0.00

Result 8: New rice lake monitoring information collected by field survey/monitoring technicians will be transferred to GIS technicians for integration in to the existing, but incomplete GIS rice lakes data base for the state of Minnesota.
GIS technicians performed appropriate field and laboratory work to digitize rice lake areas and stand coverage maps. A request to reallocate funding for this result was made and approved. New funding level for this result is $30,088.55. Total reimbursement expenses requested for this result as of June 2002 total $29,745.51.

Completion Date: June 2002

LCMR Budget: $30,088.55	Match: $ 0.00
Balance: $ 343.04	Match Balance $ 0.00

Result 9: Habitat data collected by field survey technicians will be transferred to GIS technicians for integration in to existing databases. GIS technicians prepared and inserted new GIS rice habitat data layers into existing GIS rice lake coverage maps. A request for reallocation of funding for this result was made and approved. New funding level set for this result is $31,550.81. Total reimbursement expenses requested through June 2002 total $31,550.81.

Completion Date: June 2002

LCMR Budget: $31,550.81	Match: $ 2,500.00
Balance: $ 0.00	Match Balance $ 0.00

V. **DISSEMINATION: Information collected for public waters of Minnesota shall be treated in accordance with public use policies. Digital maps and information compiled as a result of this study will be made public information. A web site dedicated to description of the project and collected information shall be created, maintained and updated as new information becomes available. LCMR funding for the project will be recognized.**

VI: **CONTEXT:**

A. Significance: Chippewa Band partners currently act within the framework of an *ad hoc* wild rice work group. Since 1997, they have pursued management objectives stated in this proposal, largely at their respective Tribal Councils' expense. The goal of the rice work group is restoration, enhancement and protection of wild rice and its habitat in Minnesota. Within its core range, wild rice is the single most important native grain for the Chippewa people, both as a cultural and a food resource. The plant and its seed are also heavily consumed by waterfowl and the plant provides beneficial habitat for breeding and brood-rearing waterfowl and other species, Rice is also annually harvested by persons in the state. As such, it is clear that wild rice has substantial cultural and economic benefits. The Chippewa Bands believe that comprehensive management of wild rice should be initiated first as a means to enhance its quality and production. Effective management for this purpose will, in turn, enhance waterfowl populations and will foster increases in outdoor recreation revenue.

Objectives of the project are direct: compile new rice lake information and incorporate it into existing, but revised data bases; identify and present information related to wild rice production trends on specific lakes; identify impacted rice lake ecosystems for priority restoration management; and define alternatives for restoration and management of those priority systems.

B. Time: An extension request for this project was formally approved in June 2001. The time period for the granted extension is one year. The new ending date for he project is June 30 2002.

C. Budget Context: Funds in the amount of $194,366.22 are expended to date on the project. A total of $5,633.80 in funding for this project remains unencumbered. The time for project period end was extended to June 30, 2002.

1. **BUDGET:**

Personnel: **$168,479.22** includes two (2) Field Technicians @ $9.00/hour, 100% time, seasonal (3 months) for two years; one (1) GIS Technician, $ 12.00/hour, 100% time, two years); one (1) Project Coordinator, $15.00/hour, 100% time, two years.

Equipment: **$8,559.13** includes two (2) pentium-speed computers, monitors, printers ($3,364.00); two (2) canoes/paddles ($ 1,200.00); two (2) analog DO/temperature monitoring meters ($ 1,066.73); one Horiba-brand multi-parameter water quality testing meter ($2,928.40).

NOTE: All equipment purchased for this project shall continue to be used for continued wild rice lake field data collection, digital mapping and data base development after the formal end of the project.

Acquisition: **$ -0-**
Development: **$ -0-**

Contractual: **$6,645.80** includes costs to be incurred for GSA vehicle lease to transport equipment and personnel to study sites throughout the region for two years of the project period ($3,524.00). Funds requested for lease will not be applied in year one of the project, but will be applied toward mileage or other accrued travel expenses; GSA vehicles appropriate for this project were not available for use at the required time. If an acceptable GSA vehicle is available during spring-summer 2001, contract funds available for this item will be utilized. Other contractual use funds include: laboratory analyses ($2,000.00); contracted flight time for survey work estimated at $4,645.80 over two years.

Other: **$16,315.85** includes $3,310.00 for telephone, fax, internet time and field and office supplies for Field Technicians, Coordinator and GIS Technician; office space rental costs for duration of the project in the amount of $4372.85; travel (per diem and mileage) and training funds for GIS Technician, Coordinator, Field Technicians and Rice Workgroup collaborators in the amount of $8,633.00.

TOTAL: **LCMR: $200,000.00** **Match: $20,000.00**

VII. **COOPERATION:** This project is a cooperative effort, sponsored by the Minnesota Chippewa Bands including Bois Forte; Leech Lake; Mille Lacs; Grand Portage; Fond du Lac; Red Lake; and White Earth; the Bureau of Indian Affairs; the 1854 Authority; the Minnesota Department of Natural Resources; the Minnesota Waterfowl Association; Ducks Unlimited; the U.S. Forest Service.

VIII: **LOCATION:** Forested watersheds of northern Minnesota.

IX: Reporting Requirements: Work program progress reports for this project were submitted on January 30, 2000, and January 30, 2001. This report and associated products constitute the final report for this project.

X. Research Projects:

A Minnesota Lakes data base maintained by the Minnesota State Department of Natural Resources is the main public link to knowledge about Minnesota's existing wild rice resource. While this developing data base does portray game fish and recreational lakes information accurately, it does not provide current and/or complete information for the state's rice lake resources.

The Bois Forte Band, as representative for the Minnesota Chippewa Band-sponsored wild rice task-force, has submitted a project proposal to the LCMR entitled "**Native Wild Rice Initiative**". The work plan for that project identifies the process by which the task-force will build upon and further develop the Minnesota Lakes data base, so that comprehensive information about wild rice lakes in the northern Minnesota regions is available to the public. Information for the data base will be collected by technical teams using on-site lake surveys, high-resolution air photography, and intensive monitoring programs spanning a two year time period.

Quantitative methods to be employed through lake survey and monitoring programs are defined under the following subheadings: (1) Rice lake survey methods, and (2) Monitoring program sample collection and analysis methods.

1. Rice lake survey methods

Principle: The purpose of a wild rice lakes survey component is to (1). Identify information gaps in our current wild rice data base; (2) collect information on new and undocumented wild rice lakes; (3) define the status of known lakes in terms of rice production, and (4) update and correct information that exists in the current wild rice lakes data base.

i. rice coverage production estimates, plot density estimates: Wild rice production may be estimated on an annual basis in a manner similar to that used for land-based crops. Production of some physical characteristic within a standard area or "plot" (*i.e.,* number of stems, number of rice kernels, weight of kernels), may be determined and an average value(s), collected from repetitive plot samplings. Average values may be multiplied by the total water area bearing wild rice cover. Since stem density will vary between rice beds and between lakes, it is important to assess this variability factor (as a standard deviation or standard error statistic) in order to assure that unbiased estimates are being derived from plot samples collected. Initial surveys will indicate if the rice plant assemblage is organized in identifiable strata. If so, sampling may also be stratified according to sediment type, water level, or some other physical factor. Samples will be chosen randomly within each stratum. Number of samples taken will be proportional to the area of the stratum.

ii. water fowl access and use potential: Lake potential to support waterfowl will be assessed. Habitat availability will be ranked according to criteria established by the task force. Criteria will include but are not limited to: food type and diversity, food production levels; cover type(s) extent; predation potential; ease of hunting or recreation access; and brooding habitat extent. Waterfowl counts will be made on a routine basis by visiting technicians, and fly-over census data will be collected during peak waterfowl movement times in the fall of each study year.

iii. water level and temperature measurement: Water temperature will be measured with a NIST-certified thermometer by technicians on site. Water levels will be measured from established water level gauges to be placed in each rice study basin. Gauges will be calibrated to appropriate elevation levels by surveyor staff of participating reservations.

iv. descriptive evaluation of sites: Descriptive evaluations of environmental conditions for each rice lake are important to allow preliminary evaluation of the long term use potential and impacts for each basin. Surveys will include a description of land ownership and use adjacent to the rice stand, if any; type and intensity of use; location and ease of access to the rice lake; type and extent of aquatic vegetation present

(with taxonomic identifications verified by plant specialists at the University of Minnesota); assessment of high water level potentials; identification of activity by beaver and/or muskrat and potential or apparent impacts caused to rice production by such activity; condition and rate of flow of inflow/outflow channels; extent and character of bog and wetland surrounding the basin, if any (based on U.S. Army Corps of Engineers wetlands classification system).

2. monitoring program sample collection and analysis

Principle: The wild rice lake monitoring program will be an intensive study of wild rice and physical characteristics of rice lakes across a wide regional scale. Lakes located in different watersheds will be subject to different environmental pressures; these in turn will differentially affect wild rice production, morphology, and also perhaps genetic constitution. To date, no studies in the United States have addressed the potential effects that differing environmental pressures may have on lake wild rice (*Zizania palustris*). Monitoring and collection of baseline data for standard physical parameters is an initial step that will help us begin to understand the causative effects of environmental impact on this culturally important resource.

i. monitoring program time frame: The monitoring program will intensively assess at least ten (10) priority importance wild rice lakes in northern Minnesota. Priority lakes will be chosen from lakes surveyed by task-force staff in the past and through this study. Criteria for assigning a lake to priority monitoring status are not fully defined, but will at the very least include: ease of access; current estimated production level of rice; water depth; temperature; and pH level. Monitoring will be carried out on a routine basis by four (4) field technicians comprising two work teams. Technicians will begin work in spring with ice-out, and will monitor lakes through rice seed germination, growth, production and senescence periods. Water and sediment chemistry monitoring will also be carried out over winter. Monitoring and sample collection will cease for a short time between October and December; Work will resume on the ice as soon as ice of a sufficient depth forms to support weight of staff, equipment and vehicles.

ii. quality assurance (QA) plan and procedures: A quality assurance plan incorporating all aspects of sample collection and evaluation is important to insure that all routinely generated data are scientifically valid and defensible, and are of known precision and accuracy. A plan describing quality assurance activities for this project will be prepared by task-force biologists prior to site visits and collections. Plan format will generally follow criteria and procedures as defined by the United States Environmental Protection Agency (EPA-814B-92-002, September 1992). The QA plan will address major topics and related sub-topics including but not limited to the following: sampling procedures; sample handling procedures; sample tracking and integrity; chain-of-custody procedures; analytical procedures; instrument calibration procedures; frequency of instrument use; data reduction, validation, and reporting procedures; types of quality control checks and frequency of use; preventative maintenance procedures; data precision procedures; corrective action contingencies in the event of unacceptable results from internal quality control checks; participating laboratory organization and responsibility flow-charts or diagrams. The plan will also be specific to the project in that it will identify total numbers of samples to be collected for each parameter; time lines for collections of samples; special conditions for handling and transportation of samples if necessary; preservation and holding times for each sample parameters of interest; and chain-of-custody procedures for transmittal of samples from field technicians to laboratory personnel as relevant to this particular program.

iii. sample collection procedures: Care in handling and transport is essential to maintain the integrity of the data it contains. All samples will be collected in containers specified as appropriate by *Standard Methods* (19th Ed.), Samples collected will be maintained on ice and transported to testing facilities as soon as possible after collection. Testing for specific parameters will occur within times specified

appropriate by *Standard Methods.* All procedures related to this topic will be defined in a QA plan to be prepared as described in paragraph 2 (ii).

iv. physical water chemistry data: Technical staff will monitor pH, color, turbidity, alkalinity, dissolved oxygen, and temperature on a routine basis for each specified rice lake. *True color* will be reported in Pt-Co units, identified through visual comparison method (2120 B., *Standard Methods*) after appropriate filtration to remove interfering suspensoids. *Alkalinity* will be assessed using the titration method (2320 B., *Standard Methods*). Values for *pH* and *dissolved oxygen* will be assessed in the field using portable meters. *Temperature* will be measured the field using NIST-certified thermometers. Temperature and pH values will also be measured by the receiving laboratory.

v. data and records management: Samples processed by tribal laboratory facilities will be documented in data information log books specific for that purpose. Data collected at tribal testing facilities will be maintained in data bases at the testing facility. Copies of the data will be forwarded to one or two designated tribal program management center(s). Data recovered by contracting facilities and tribal technicians will also be forwarded to program management center(s). The center(s) will prepare and maintain paper copies of all data records.

vi. data reporting: Data will be presented in report form to the LCMR and participating agencies on dates specified in the work plan(s). A summary report that summarizes all activities, findings and recommendations of the wild rice task-force will be provided to the LCMR at the end of the project period.

Attachment A Deliverables
and Related Budget
LCMR Project Biennial Budget

	Budget Item BF = Bois Forte GP = Grand Portage	**Result 1** Design and conduct wild rice habitat SURVEYS. original allocation: $38,332.20 revised allocation: $39,797.69	**Result 1A** Expenses 1999 to June 01 **Total:** $20,424.80	**Result 1B** Revised Allocation Detail	**Result 1C** rem bal 6/01 $19,372.89	**Result 1D** Expenses **July 01-June 02** **Total:** $13,555.07	**Result 1E** rem bal 6/02 3,433.01
1	Wages, salaries & benefits -	$24,086.40		$24,086.40	$7,756.13		$163.69
2	Be specific on who is paid $	BF	$16,330.27		GP	$7,592.44	
3	Space rental, maintenance & utilities	$0.00	$710.29	$546.60	($163.69)	$0.00	($163.69)
4	Printing & Advertisements	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
5	Communications, telephone, mail, etc.	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
6	Contracts						
7	Professional/Technical	$6,645.80	$1,088.29	$6,645.80	$5,557.51	$5,557.51	$0.00
8	Other contracts	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
9	Local automobiles mileage paid	$2,500.00	$38.00	$1,390.69	$1,352.69	$140.00	$1,212.69
10	Other travel expenses in Minnesota	$2,500.00	$962.31	$2,000.00	$1,037.69	$1,037.69	$0.00
	Travel Outside Minnesota	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
11	Office Supplies	$0.00	$442.23	$500.00	$57.77	$57.77	($0.00)
12	Other Supplies	$0.00	$77.41	$500.00	$422.59	$208.52	$214.07
13	Tools and equipment	$2,600.00	$776.00	$4,128.20	$3,352.20	$1,345.95	$2,006.25
14	Office equipment & computers	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
15	Other Capital equipment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
16	Other direct operating costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
17	Land acquisition	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
18	Land rights acquisition	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
19	Buildings or other land improvement	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
20	Legal fees	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	LCMR Result Allocation	$38,332.20	$20,424.80	$39,797.69	$19,372.89	$15,939.88	$3,433.01

Result Expenses, as of July 2001

Result 2	**Result 2A**	**Result 2B**	**Result 2C**	**Result 2D**	**Result 2E**	**Result 3**	**Result 3A**	**Result 3B**
Compile and statistically evaluate habitat survey data. original allocation: $8,993.20 revised allocation: $5,718.67	Expenses 1999 to June 01 **Total:** $4,580.85	Revised Allocation Detail	rem. bal 6/01 $1,137.82	Expenses **July 01-June 02** **Total:** $1,137.64	rem. bal 6/02 $0.00	Provide a report defining options, cost estimates and time frames for management projects on high priority lakes. original allocation: $5,180.20 revised allocation: $6,113.13	Expenses 1999 to June 01 **Total:** $4,093.38	Revised Allocation Detail
$5,181.20		$5,181.20	$1,310.64		$272.82	$5,180.20		$5,180.02
BF	$3,870.56	$0.00	GP	$1,037.82		BF	$3,870.56	
$648.00	$710.29	$437.47	($272.82)	$0.00	($272.82)	$0.00	$222.82	$933.11
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$3,028.20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$100.00	$0.00	$100.00	$100.00	$100.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$8,993.20	$4,580.85	$5,718.67	$1,137.82	$1,137.82	$0.00	$5,180.20	$4,093.38	$6,113.13

Result 3C	Result 3D	Result 3E	Result 4	Result 4A	Result 4B	Result 4C	Result 4D	Result 4E
	Expenses		Design and implement rice lake	Expenses	Revised		Expenses	
	July 01-June 02		MONITORING plans.	1999 to June 01	Allocation		July 01-June 02	
	Total:			Total:	Detail		Total:	
	$2,019.75			$17,703.49			$12,063.00	
rem. bal 6/01		rem. bal 6/02				rem. bal 6/01		rem. bal 6/02
$2,019.75		$0.00	original allocation: $31,642.13			$14,379.93		$2,316.93
			revised allocation: $32,083.42					
$1,309.46		$0.00	$28,579.20		$28,579.20	$12,248.93		$273.00
GP	$1,309.46		BF	$16,330.27		GP	$11,975.93	
$710.29	$710.29	$0.00	$0.00	$710.29	$437.29	($273.00)	$0.00	($273.00)
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$496.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$750.00	$0.00	$1,250.00	$1,250.00	$0.00	$1,250.00
$0.00	$0.00	$0.00	$750.00	$662.93	$750.00	$87.07	$87.07	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$1,066.93	$0.00	$1,066.93	$1,066.93	$0.00	$1,066.93
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$2,019.75	$2,019.75	$0.00	$31,642.13	$17,703.49	$32,083.42	$14,379.93	$12,063.00	$2,316.93

Result 5	Result 5A	Result 5B	Result 5C	Result 5D	Result 5E	Result 6	Result 6A	Result 6B
Project partners will develop and implement a comprehensive quality assurance plan to insure validity of collected chemical and biological data. originakl allocation $9,112.00 revised allocation: 9049.29	Expenses 1999 to June 01 **Total:** $813.12	Revised Allocation Detail	rem. bal 6/01 $8,236.17	Expenses **July 01-June 02** **Total:** $8,061.80	rem. bal., 6/02 $174.37	Task-force staff will evaluate result of the monitoring program and will prepare and submit at least one article manuscript in an appropriate peer-reviewed journal. original allocation: $10,000.00 revised allocation: 9,612.00	Expenses 1999 to June 01 **Total:** $720.02	Revised Allocation Detail
$8,112.00		$8,112.00	$8,112.00		$273.00	$8,112.00		$8,112.00
BF	$0.00	$0.00	GP	$7,839.00		BF	$0.00	$0.00
$500.00	$710.29	$437.29	($273.00)	$0.00	($273.00)	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$500.00	$102.83	$500.00	$397.17	$222.80	$174.37	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$720.02	$1,000.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$500.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1,888.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$9,112.00	$813.12	$9,049.29	$8,236.17	$8,061.80	$174.37	$10,000.00	$720.02	$9,612.00

Result 6C	Result 6D	Result 6E	Result 7	Result 7A	Result 7B	Result 7C	Result 7D	Result 7E
rem. bal 6/01 $8,892.00	Expenses **July 01-June 02** **Total:** $8,598.96	rem. bal., 6/02 $293.04	Revise and expand existing GIS DATA BASES of rice lake information through incorporation of new field survey & monitoring data. original allocation $33,173.06 revised allocation: 35,986.44	Expenses 1999 to June 01 **Total:** $32,068.20	Revised Allocation Detail	rem. bal., 6/01 $3,931.29	Expenses **July 01-June 02** **Total:** $8,594.92	rem. bal., 6/02 $349.78
$8,112.00		$0.00	$30,825.60		$30,825.60	$8,632.29		$453.00
GP	$8,112.00		GP	$22,193.31		GP	$8,179.29	
$0.00	$0.00	$0.00	$500.00	$1,001.00	$618.53	($382.47)	$71.93	($454.40)
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$280.00	$0.00	$280.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$500.00	$486.96	$13.04	$0.00	$217.00	$568.03	$351.03	$0.00	$351.03
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$500.00	$169.20	$500.00	$343.85	$343.70	$0.15
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$1,347.46	$3,474.28	$3,474.28	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$8,892.00	$8,598.96	$293.04	$33,173.06	$27,054.79	$35,986.44	$8,944.70	$8,594.92	$349.78

Result 8	Result 8A	Result 8B	Result 8C	Result 8D	Result 8E	Result 9	Result 9A
New rice lake monitoring info. collecting by field/monitoring Techs/GIS Techs integrated into existing ,incomplete databases for MN rice lakes original allocation: $31,267.21 revised allocation: $30,088.55	Expenses 1999 to June 01 **Total:** $28,633.14	Revised Allocation Detail	rem. bal., 6/01 $1,455.41	Expenses **July 01-June 02** **Total:** $6,125.78	rem. bal., 6/02 $343.04	Habitat data collected by field survey technicians will be transferred to GIS technicians for integration into existing data bases. original allocation: $32,300.00 revised allocation: 31,550.81	Expenses 1999 to June 01 **Total:** $28,205.72
$27,580.80		$27,580.80	$5,389.49		$272.19	$30,822.00	
GP	$22,191.31		GP	$5,117.30		GP	$22,191.31
$1,210.90	$1,001.00	$728.81	($272.19)	$0.00	($272.19)	$1,478.00	$1,001.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$312.05	$568.04	$255.99	$255.99	($0.00)	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$1,210.90	$115.37	$1,210.90	$1,095.53	$752.49	$343.04	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$1,264.61	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
$31,267.21	$23,619.73	$30,088.55	$6,468.82	$6,125.78	$343.04	$32,300.00	$23,192.31

Result 9B	Result 9C	Result 9D	Result 9E
Revised Allocation Detail		Expenses **Total:** $8,358.50	
	rem. bal., 6/01 $3,345.09		rem. bal., 6/02 0.00
$30,822.00	$8,630.69		$272.19
	GP	$8,358.50	
$728.81	($272.19)	$0.00	($272.19)
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$0.00	$0.00	$0.00	$0.00
$31,550.81	$8,358.50	$8,358.50	($0.00)

rem bal= $6,910.00

totals

allocation	spent	residual amount	line
168,479.22	166,499.33	1979.89	salary
		0	
4,372.85	6,849.20	-2476.35	rent
0	0	0	
500	325.63	174.37	phone
		0	
$6,645.80	6,645.80	0	contracts
0	0	0	other contracts
3,640.96	898	2742.96	mileage
4,881.76	4,022.00	859.76	travel
0	0	0	trav. out MN
2,310.0	1,696.19	613.81	off. supplies
500	208.52	291.48	other supplies
5,195.13	2,121.95	3073.18	equipment
3,474.28	$3,474.28	0	computers
0	0	0	cap equip
0	0	0	direct ops
0	0	0	land
0	0	0	land rights
0	0	0	building
0	0	0	legal
$200,000.00	$194,366.22	$5,633.80	

initial allocation $200,000.00

expense to date 194,366.22

reimbursed $123,465.81

total reimburs.

due July 02: **$70,900.41**

70,900.41 expended this reimbursement period

7259.1