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www.nrc-inc.net

October 24, 2005

Mr. Michael Halsted  
Wisconsin Dept. of Natural Resources  
3911 Fish Hatchery Road  
Fitchburg WI 53711

***RE: Thiebeau Marsh Restoration – Lake Grant Reimbursement Request***

Dear Mr. Halsted:

On behalf of the Thiebeau Hunt Club, NRC is requesting a \$10,000 reimbursement through the WDNR Lake Protection Grant program on Lake Koshkonong for restoration efforts conducted on the Thiebeau Marsh. The project area is located in Lautz Bay, northeast of Charlie Bluff Road in Lake Koshkonong. It lies in the northeast ¼ and the southeast ¼ of Section 33, Township 5 North, Range 13 East, Jefferson County, Wisconsin (Attachment I - Figure 1).

The Thiebeau marsh has experienced a substantial decrease in the density of emergent vegetation as a result of prolonged ponding and carp infestation. As a result, the wetland community has shifted from a shallow marsh to a deep marsh, open water community. The Thiebeau Hunt Club has worked extensively towards restoring the marsh over the last 2 to 3 years in order to reestablish emergent vegetation by reducing water levels, eradicating and excluding carp, and application of native wetland seeds.

Specifically, Thiebeau's restoration efforts have included the following over the last 3 years.

- 1) Utilized a water pump to pump water out of the marsh to reduce water levels and allow germination of the seedbank
- 2) Applied native wetland seed and plugs comprised of the following:
  - a. Giant wild rice - 16 bushels (seed)
  - b. Soft-stem bulrush – 5.75 lbs (seed)
  - c. Sago pond weed – 2,000 plants (tubers)
  - d. Wild celery – 1,000 plants (roots)
  - e. Broad-leaved arrowhead – 200 plants (tubers)
- 3) Installed rip rap to protect the marsh from infiltration of carp and improve shoreline protection.

NRC inspected the marsh in June 2003 and again in July 2005 in order to document the success of the restoration efforts. The results of the restoration efforts have been very successful as illustrated in the photographs taken in 2003 and 2005 in similar locations (Attachment II – Site Photographs). During the 2005 field inspection there was a significant increase in emergent vegetation observed and a significant decrease in the amount of open water. Most of the exposed mudflat areas were covered with new growth,

primarily annual tickseeds and smartweeds. However, many perennial shallow marsh species had colonized and expanded substantially waterward of the shoreline such as common bur reed, cattails, bulrushes, and wild rice (Attachment III – Plant Species List).

The Thiebeau Hunt Club has spent considerably more than \$10,000 on their restoration efforts. The following table is a breakdown of the expenses associated with each restoration task. Detailed invoices are attached (Attachment IV – Invoices).

**Table 1. Total Expenses for Restoration Efforts.**

<b>Restoration Task</b>	<b>Total Expense</b>
Seed/Plant Material	\$3,417.23
Water Pumping	\$349.83
Carp Exclusion/Shoreline Protection	\$8,694.06
<b>Total Expenses</b>	<b>\$12,461.12</b>

Please let me know if you have any questions or require any additional information.

Sincerely,  
*Natural Resources Consulting Inc.*

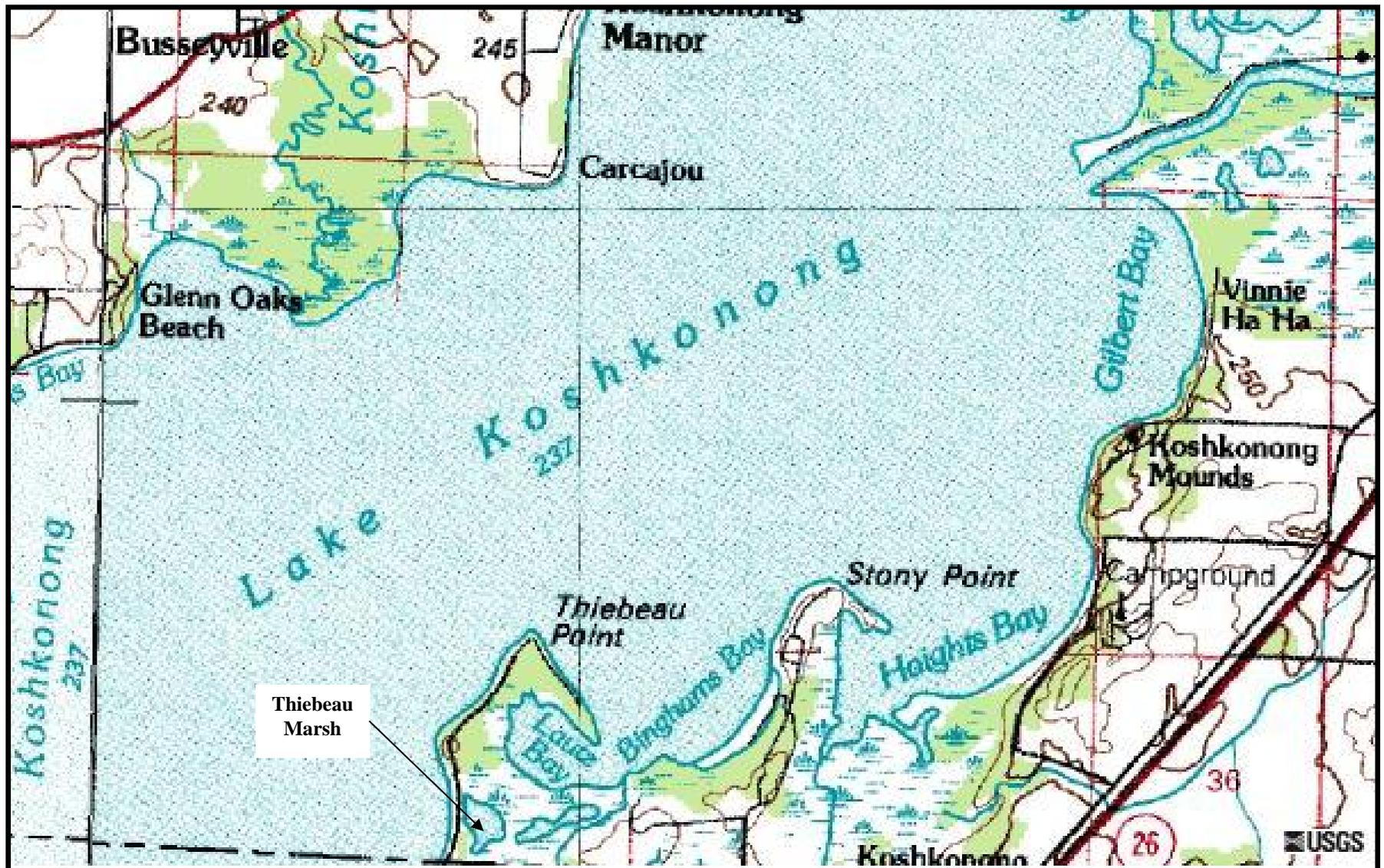
Jeff Kraemer  
Associate Principal Scientist

Attachments  
I. Figures  
II. Photographs  
III. Plant Species  
IV. Invoices

Mr. Mike Halsted  
WDNR  
NRC Project #: 05-233

Thiebeau Marsh Grant Reimbursement  
Thiebeau Hunt Club  
October 24, 2005

**ATTACHMENT I  
FIGURES**



**Figure 1. Site Locations and Topography.**

**NRC**

119 South Main Street, Suite D  
 P.O. Box 128  
 Cottage Grove, WI 53527-0128  
 phone: 608-839-1998  
 fax: 608-839-1995

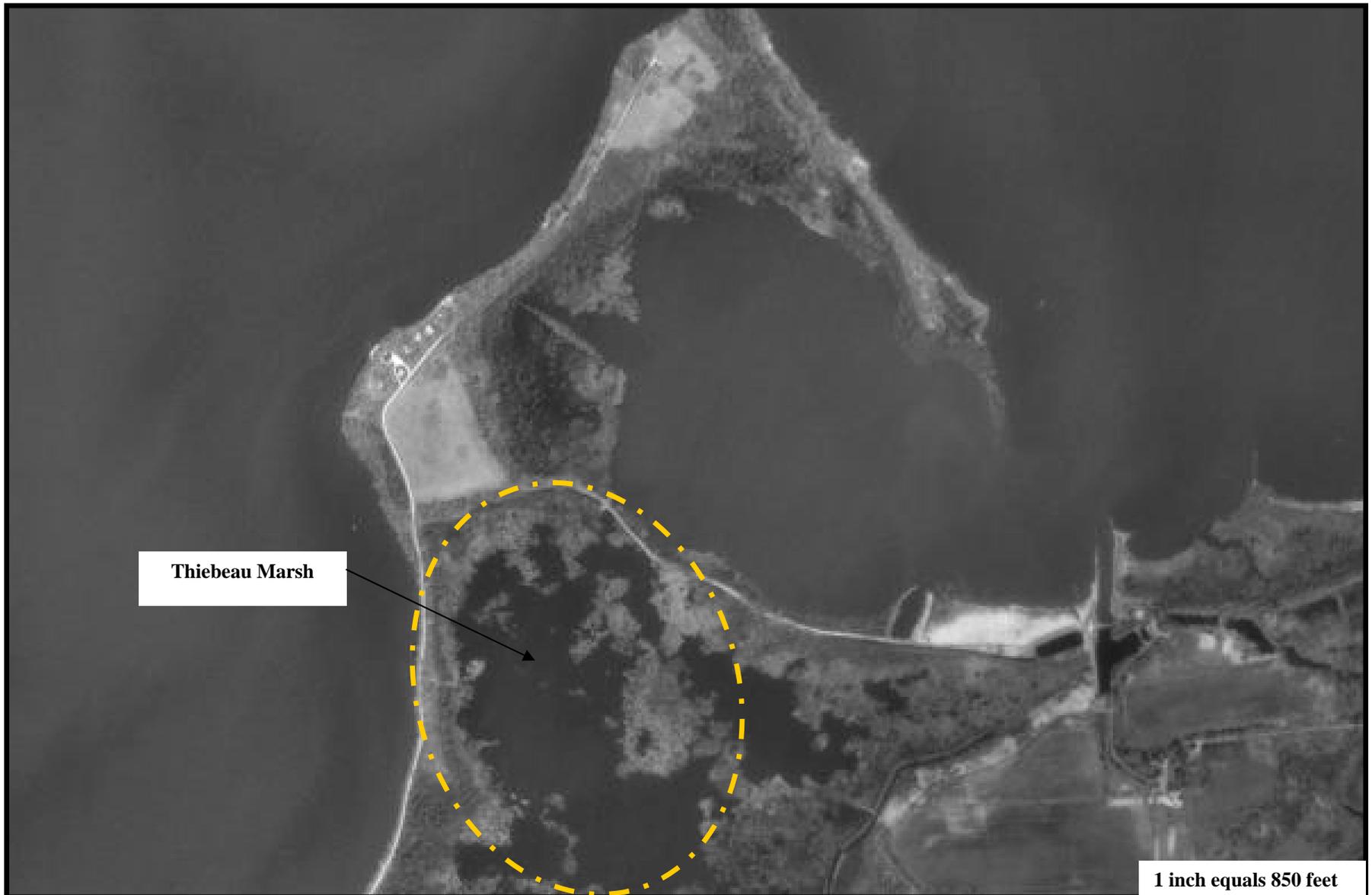
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**Thiebeau Hunting Club  
 Wetland Restoration**

**Section 33, Township 5 North, Range 13 East  
 Jefferson County, Wisconsin**

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**Thiebeau Marsh**

1 inch equals 850 feet

**Figure 2. 1992 USGS Aerial Photograph**

**NRC**

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**ATTACHMENT II  
SITE PHOTOGRAPHS**



**June 2003**



**July 2005**



**June 2003**



**July 2005**



**July 2005**



**July 2005**



**July 2005**

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**ATTACHMENT III  
PLANT SPECIES LIST**

**Table 1. Plant species observed in Thiebeau Marsh, July 2005.**

Acorus calamus  
Alisma subcordatum  
Asclepias incarnata  
Bidens cernuus  
Bidens connata  
Bidens coronatus  
Boehmeria cylindrica  
Carex hystericina  
Carex lacustris  
Carex utriculata  
Cicuta bulbifera  
Cyperus strigosus  
Decodon verticillatus  
Elymus virginicus  
Fraxinus pennsylvanica  
Galium asprellum  
Impatiens capensis  
Iris versicolor  
Leersia oryzyoides  
Lythrum salicaria  
Phalaris arundinacea  
Phragmites australis  
Pilea pumila  
Polygonum amphibium  
Polygonum pennsylvanica  
Rorippa palustris  
Rumex orbiculatus  
Rumex verticillatus  
Sagittaria latifolia  
Salix exigua  
Salix nigra  
Scirpus acutus  
Scirpus validus  
Sparganium eurycarpum  
Spartina pectinata  
Typha angustifolia  
Typha latifolia  
Typha X glauca  
Verbena hastata  
Zizania aquatica