

## **2007 Project Abstract**

For the Period Ending June 30, 2009

**PROJECT TITLE: Intra-Lake Zoning to Protect Sensitive Lakeshore Areas**

**PROJECT MANAGER: Paul Radomski**

**AFFILIATION: Minnesota DNR**

**MAILING ADDRESS: 1601 Minnesota Drive**

**CITY/STATE/ZIP: Brainerd, MN 56401**

**PHONE: 218-833-8643**

**FAX: 218-828-6043**

**E-MAIL: paul.radomski@state.mn.us**

**WEBSITE: <http://www.dnr.state.mn.us/eco/sli>**

**FUNDING SOURCE: Environment and Natural Resources Trust Fund**

**LEGAL CITATION: ML 2007, Chap. 30, Sec. 2, Subd. 5(h).**

**Appropriation Language:** \$110,000 is from the trust fund to the commissioner of natural resources in cooperation with Cass County to identify sensitive shorelines of the highest priority lakes to protect water quality and near-shore habitat through improved shoreland zoning by Cass County.

**APPROPRIATION AMOUNT: \$110,000**

### **Overall Project Outcome and Results**

Minnesota's lakes are one of its most valuable resources. In particular, naturally vegetated shorelines provide feeding, nesting, and breeding habitat for many species. These areas, defined by natural and biological features that provide unique or critical ecological habitat, are known as sensitive lakeshores. Increasing development pressure within shorelands may have negative impacts on these sensitive areas – and Minnesota's shorelands are being developed at a rapid rate.

With this in mind, the Minnesota Department of Natural Resources developed a protocol for identifying sensitive lakeshores. The project focused on seventeen high priority lakes, identified by Cass County. These lakes represent some of the county's most valuable waters – large lakes with significant undeveloped shorelands. Protocol to identify sensitive lakeshores consists of several components.

- Field surveys evaluate the distribution of high priority plant and animal species.
- An ecological spatial model, based on scientific data, ranks lakeshore areas for sensitive area designation. The model provides objective, repeatable results that can be used as the basis for regulatory action.

Field surveys were conducted on all seventeen high priority lakes as well as three connecting lakes. Sensitive lakeshore area assessments were completed on nine high priority lakes. Reports summarizing these assessments were delivered to Cass County and interested organizations that could use the information to maintain high quality environmental conditions. To date, 48 miles of shoreline (approximately 36 percent of total surveyed shoreline miles) have been identified as sensitive lakeshore. Cass County is working to develop provisions in their land use ordinance that will require conservation-oriented development standards for sensitive areas. They will then propose and implement resource protection zoning districts. These resource protection districts will help promote healthy near-shore communities and protect critical fish and wildlife habitat.

### **Project Results Use and Dissemination**

Nine Sensitive Lakeshore Reports were produced, and these reports are posted on the project's website. Public presentations were made explaining the project and the details of the sensitive lakeshore reports to the Cass County Board of Commissioners, the Cass County Planning Commission, the Association of Cass County Lake Associations, U.S. Forest Service, seven lake associations, and several interested groups and organizations. Cass County will hold public hearings on shoreland ordinance revisions and reclassifications in an effort to protect identified sensitive lakeshores, and all required processes for public input, review, and comment will be adhered to, including the rights afforded to challenge such ordinance and zoning district changes.

## Trust Fund 2007 Work Program Final Report

**Date of Report:** August 17, 2009 (final report)  
**Date of Work program Approval:** 2007 5(h) 6/5/07  
**Project Completion Date:** June 30, 2009

### I. PROJECT TITLE: Intra-Lake Zoning to Protect Sensitive Lakeshore Areas

**Project Manager:** Paul Radomski  
**Affiliation:** Minnesota DNR  
**Mailing Address:** 1601 Minnesota Drive  
**City / State / Zip :** Brainerd, MN 56401  
**Telephone Number:** 218-833-8643  
**E-mail Address:** paul.radomski@dnr.state.mn.us  
**Fax Number:** 218-828-6043  
**Web Page address:** <http://www.dnr.state.mn.us/eco/sli>  
**Location:** Cass County

**Total Trust Fund Project Budget:** 2007  
**Trust Fund Appropriation:** \$110,000  
**Minus Amount Spent:** \$110,000  
**Equal Balance:** \$0

#### Legal Citation:

**ML 2007, Chap. 30, Sec. 2, Subd. 5(h).**

**Appropriation Language:** \$110,000 is from the trust fund to the commissioner of natural resources in cooperation with Cass County to identify sensitive shorelines of the highest priority lakes to protect water quality and near-shore habitat through improved shoreland zoning by Cass County.

### II. and III. FINAL PROJECT SUMMARY:

Minnesota's lakes are one of its most valuable resources. In particular, naturally vegetated shorelines provide feeding, nesting, and breeding habitat for many species. These areas, defined by natural and biological features that provide unique or critical ecological habitat, are known as sensitive lakeshores. Increasing development pressure within shorelands may have negative impacts on these sensitive areas – and Minnesota's shorelands are being developed at a rapid rate.

With this in mind, the Minnesota Department of Natural Resources developed a protocol for identifying sensitive lakeshores. The project focused on seventeen high priority lakes, identified by Cass County. These lakes represent some of the county's most valuable waters – large lakes with significant undeveloped shorelands. Protocol to identify sensitive lakeshores consists of several components.

- Field surveys evaluate the distribution of high priority plant and animal species.
- An ecological spatial model, based on scientific data, ranks lakeshore areas for sensitive area designation. The model provides objective, repeatable results that can be used as the basis for regulatory action.

Field surveys were conducted on all seventeen high priority lakes as well as three connecting lakes. Sensitive lakeshore area assessments were completed on nine high priority lakes. Reports summarizing these assessments were delivered to Cass County and interested organizations that could use the information to maintain high quality environmental conditions. To date, 48 miles of shoreline (approximately 36 percent of total surveyed shoreline miles) have been identified as sensitive lakeshore. Cass County is working to develop provisions in their land use ordinance that will require conservation-oriented development standards for sensitive areas. They will then propose and implement resource protection zoning districts. These resource protection districts will help promote healthy near-shore communities and protect critical fish and wildlife habitat.

**IV. OUTLINE OF PROJECT RESULTS:**

**Result 1: Identify and Map Sensitive Shorelands**

**Description:** Conduct comprehensive field surveys of aquatic and near-shore habitat and animal presence using Minnesota’s Lakeshore Sensitive Area Survey Protocol. Surveys will be completed for 17 of the highest priority lakes in Cass County. Ecological models will be used to assist in the determination of sensitive areas. Criteria in a spatial ecological model will come from the science-based surveys, and the value of the shoreland with regard to aquatic habitat and vulnerability to water quality degradation will be objectively assessed. Lake-specific reports and digital GIS files will be produced and delivered to Cass County.

**Summary Budget Information for Result 1:**

|                           |                  |
|---------------------------|------------------|
|                           | <b>2007</b>      |
| <b>Trust Fund Budget:</b> | <b>\$110,000</b> |
| <b>Amount Spent:</b>      | <b>\$110,000</b> |
| <b>Balance:</b>           | <b>\$0</b>       |

| <b>Deliverable</b>                    | <b>Completion Date</b> | <b>Budget</b> | <b>Status</b> |
|---------------------------------------|------------------------|---------------|---------------|
| 1. 4 lakes surveyed & mapped          | Jun 2008               | \$58,000      | complete      |
| 2. 5 lakes surveyed & mapped          | Jun 2009               | \$60,000      | complete      |
| 3. map critical habitat on Leech Lake | Jun 2010               | \$37,000      |               |
| 4. 7 lakes surveyed & mapped          | Jun 2010               | \$70,000      |               |

**Final Report Summary:** Nine lake survey surveys were completed (Ada, Birch, Little Boy, Long, Pine Mountain, Pleasant, Ten Mile, Woman, and Wabedo lakes). Sensitive lakeshore maps were made for all lake surveyed. Summaries for each lake follow.

**Ada Lake:** Plant surveys documented 48 native aquatic plant taxa within Ada Lake, including eight unique species of high conservation importance. Aquatic plants occurred around the entire shoreline of Ada Lake, and included 29 submerged, two free-floating, four floating-leaved, and 13 emergent taxa. Within the shore to 20 feet depth zone, 93 percent of the sample sites contained vegetation. Surveyors mapped over 40 acres of waterlily beds and 10 acres of emergent bulrush.

Twenty-seven fish species were identified during the nongame fish surveys, including four species not previously documented within Ada Lake. No fish species of greatest conservation need were detected. Both green and mink frogs were documented, with the majority found in North Bay and Little Ada Bay.

Bird surveyors documented 61 species of birds, 12 of which were species of greatest conservation need. Red-eyed vireos were the most commonly documented species, whereas the veery was the most commonly found species of greatest conservation need. The bays, in particular, provided good habitat for the bird species of greatest conservation need.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified one primary sensitive lakeshore area to be considered for potential resource protection districting by Cass County. The inlet of Ada Lake was also identified as an important ecological connection.

***Birch Lake:*** Aquatic plants occurred around the entire perimeter of Birch Lake, with the greatest concentrations in shallow areas, such as the southeast basin and small bays. A total of 48 native aquatic plant taxa were recorded in Birch Lake and included 11 emergent, six floating-leaved and 31 submerged and free-floating plant taxa. Submerged plants occurred to a depth of 29 feet but were most common in the shore to 15 feet depth zone, where 87 percent of the sample sites contained vegetation. Floating-leaf plants occupied about 50 acres and were mostly located in protected bays of the northwest basin. Emergent plants occupied about 47 acres and were located mainly along shallow sandy shorelines. Seven unique plant species were documented during the surveys.

One fish species of greatest conservation need (pugnose shiner) was identified at Birch Lake. Seven fish species previously undocumented in this lake were identified during this study, bringing the total historical observed fish community to 30 species. Bluegills were the most abundant fish species found. Both mink and green frogs were detected; they were closely associated with the presence of waterlily beds.

Surveyors documented 72 species of birds, including 13 species of greatest conservation need. Song sparrows were the most abundant bird species overall, whereas the veery was the most commonly detected species of greatest conservation need. Although distribution of several species was restricted to the bays, others were found along the shoreline of the main basin as well.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified two primary sensitive lakeshore areas to be considered for potential resource protection districts by Cass County. The Boy River between Birch Lake and Ten Mile Lake was identified as an important ecological connection.

***Little Boy, Wabedo, and Louise Lakes:*** Plant surveyors recorded a total of 39 aquatic plant taxa in Little Boy, Wabedo, and Louise Lakes. Plants occurred to a maximum

depth of 19 feet (in Louise Lake), but were most common in the shore to 10 feet depth zone, where 90 percent of the sample sites contained vegetation. Common submerged aquatic plants included large algae and several pondweed species. Surveyors also mapped approximately 308 acres of emergent and floating-leaf plants and common plants were bulrush, wild rice and waterlilies. Unique plant species included both submerged and emergent aquatic plants.

Two fish species of greatest conservation need, the pugnose shiner and greater redhorse, were identified on this group of lakes. A number of previously undocumented fish species were identified at each of the lakes; surveyors documented 11 new species at Little Boy Lake and 8 new species at Wabedo Lake. The nongame fish surveys conducted on Louise Lake were the first fish surveys on that lake, and surveyors documented 11 species. In total, 35 fish species were documented during the nongame fish surveys. Green frogs were identified at numerous locations on both Little Boy and Wabedo Lakes.

Surveyors documented 87 species of birds on the three lakes, including 19 species of greatest conservation need. Wabedo Lake had the highest species count (80 species), followed by Little Boy Lake (64 species) and Louise Lake (34 species). Ovenbirds were the most commonly detected species of greatest conservation need, whereas red-eyed vireos were most abundant overall.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified four primary sensitive lakeshore areas to be considered for potential resource protection districts by Cass County. The major inlets and outlets, as well as Louise Lake and the channel connecting the three lakes, were identified as important ecological connections.

**Long Lake:** Aquatic plants occurred around the entire shoreline. A total of 45 native aquatic plant taxa were recorded in Long Lake, including 29 submerged, five floating-leaved and 11 emergent taxa. Submerged plants occurred to a depth of 30 feet but were most common in the shore to 15 feet depth zone where 96 percent of the sample sites contained vegetation. Rooted submerged plants were most common in water depths of 15 feet and less, while large algae and moss were frequent in the 16 to 25 feet depth zone. Emergent and floating-leaf plants were abundant in most bays and covered approximately 34 acres. Several unique plants and a rare (Special Concern) submerged plant were documented during the surveys, and indicate a relatively undisturbed native plant community in Long Lake.

Twenty-two different fish species were identified during the survey, including nine species not previously documented in the lake. No fish species of greatest conservation need were observed, but surveyors did find three proxy species (blackchin shiner, blacknose shiner, and banded killifish). Both mink and green frogs were detected, with the majority located within or near protected bays.

Surveyors documented 66 species of birds, including 13 species of greatest conservation need. Song sparrows were the most frequently detected species overall, whereas ovenbirds were the most commonly detected species of greatest conservation

need. Bird species were distributed both within the bays and along the shoreline of the main basins.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified three primary sensitive lakeshore areas to be considered for potential resource protection districts by Cass County.

***Pine Mountain Lake:*** Forty native aquatic plant species were recorded in Pine Mountain Lake, including 13 emergent, five floating-leaved, two free-floating and 20 submerged plants. Submerged plants were found to a depth of 20 feet but were most common from shore to the 10 feet depth where 95 percent of the sample sites contained vegetation. Emergent and floating-leaf plant beds ringed the lake and covered about 303 acres, or about 20 percent of the lake. Approximately 153 acres of bulrush (*Schoenoplectus* spp.), 105 acres of wild rice (*Zizania palustris*) and 45 acres of white and yellow waterlilies (*Nymphaea odorata* and *Nuphar variegata*) were mapped. Two unique aquatic plants, water arum (*Calla palustris*) and wiregrass sedge (*Carex lasiocarpa*), were documented during the surveys.

Eleven fish species previously not documented on Pine Mountain Lake were identified during the nongame fish surveys. These species were blackchin shiner, brook stickleback, central mudminnow, emerald shiner, golden shiner, Iowa darter, mimic shiner, mottled sculpin, spottfin shiner, spottail shiner, and tadpole madtom. Twenty-eight fish species were identified during the surveys, bringing the total historical observed fish community to 33 species. Mink frogs and green frogs were both documented on Pine Mountain Lake.

Seventeen bird species of greatest conservation need were identified at Pine Mountain Lake. Sixty additional species were documented, for a total of 77 bird species. Swamp sparrows and common loons were the most commonly documented species of greatest conservation need. Yellow warblers, red-winged blackbirds, and song sparrows were the most commonly identified species overall; surveyors documented each of these species at over 75 percent of the sample sites.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified one primary sensitive lakeshore area to be considered for potential resource protection districts by Cass County. Several rivers and streams near Pine Mountain Lake were identified as important ecological connections.

***Pleasant Lake:*** Plant surveyors documented 46 native aquatic plant taxa within Pleasant Lake. These aquatic plants occurred around the entire shoreline of Pleasant Lake and included 11 emergent, five floating-leaved, and 30 submerged and free-floating taxa. Plants were found to a water depth of 20 feet. This vegetated zone includes about two-thirds of the lake and within this area 88 percent of the survey sites contained vegetation. Surveyors mapped over 25 acres of waterlilies and seven acres of emergent plants such as wild rice and bulrush. Six unique plant species were documented during the surveys.

Four fish species not previously recorded in Pleasant Lake were identified during the fish surveys. These newly documented species were central mudminnow, mottled sculpin, pugnose shiner, and tadpole madtom. Twenty-nine species were identified during the nongame fish surveys, bringing the total observed historical fish community to 35 species. Both mink frogs and green frogs were documented on Pleasant Lake.

Surveyors documented 73 species of birds, including 13 species of greatest conservation need. Song sparrows were the most abundant bird species overall, whereas common loons were the most commonly detected species of greatest conservation need. Bird species were distributed both within the bays and along the shoreline of the main basin.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified two primary sensitive lakeshore areas to be considered for potential resource protection districts by Cass County. The Boy River as it enters and exits Pleasant Lake was identified as an important ecological connection.

**Ten Mile Lake:** Plant surveys revealed a rich, diverse plant community. A total of 48 native aquatic plant taxa were recorded, making Ten Mile Lake among the richest lake plant communities in the state. Eleven plant species previously undocumented in this lake were collected for this survey. Plants occurred around the entire perimeter of Ten Mile Lake but were more concentrated within the bays where 84 percent of the survey sites contained vegetation compared to 54 percent of the sites in the main basin. Submerged plants occurred to a depth of 29 feet and included rooted flowering plants and large algae. Approximately 90 acres of bulrush and 50 acres of waterlilies occurred within the bays and along protected shorelines. Unique plant species included both emergent and submerged plants. Seven of these species were documented for the first time in Ten Mile Lake.

Five fish species previously undocumented in the lake were collected for this survey, bringing the total historical observed fish community to 38 species. The new species recorded included blackchin shiner, pugnose shiner, brook stickleback, least darter, and longear sunfish. Both mink and green frogs were observed, with the vast majority found in the sheltered bays.

Surveyors documented 82 species of birds, including 17 species of greatest conservation need. Red-eyed vireos were the most abundant bird species overall, whereas the veery was the most commonly detected species of greatest conservation need. Although distribution of several species was restricted to the bays, others were found along the shoreline of the main basin as well.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified five primary sensitive lakeshore areas to be considered for potential resource protection districts by Cass County.

**Woman Lake:** Plant surveys revealed a rich, diverse plant community. A total of 41 native aquatic plant taxa were recorded, making Woman Lake among the richest lake

plant communities in the state. Plant growth was sparse in the main lake but within Broadwater Bay, Lantern Bay and Bungey Bay, 70% of the sites were vegetated. Common submerged plants included muskgrass, narrow-leaf and broad-leaf pondweeds, wild celery, Canada waterweed, and coontail. Approximately 180 acres of wild rice, 17 acres of bulrush and 16 acres of mixed waterlily beds occurred within Lantern Bay and Broadwater Bay. Unique aquatic plants were identified at 18 sampling stations. Plants included small bladderwort species (*Utricularia intermedia*, *U. gibba*, and *U. minor*), water arum (*Calla palustris*), and wiregrass sedges (*Carex oligosperma* and *C. lasiocarpa*). Five of these species were documented for the first time in Woman Lake.

Two fish species of greatest conservation need (pugnose shiner and longear sunfish) were documented in Woman Lake. A total of 30 fish species were found during the 2006 surveys, bringing the total documented fish community at Woman Lake to 39 species. Surveyors identified four species (blacknose shiner, pugnose shiner, spottfin shiner, and central mudminnow) not previously documented at Woman Lake. Both mink and green frogs were observed, with the vast majority found in the sheltered bays. Surveyors documented 62 species of birds, including 11 species of greatest conservation need. Red-eyed vireos were the most abundant bird species overall, whereas the veery was the most commonly detected species of greatest conservation need. Although distribution of several species was restricted to the bays, others were found along the shoreline of the main basin as well.

An ecological model based on major conservation principles was used to assess lakeshore sensitivity. The ecological model identified several primary sensitive shoreland areas to be considered for a potential resource protection district by Cass County. Two rivers were also identified as important ecological connections.

## **V. TOTAL TRUST FUND PROJECT BUDGET:**

**Staff or Contract Services:** \$79,000; one unclassified Natural Resource Specialist (Nongame Wildlife Biologist)

**Equipment:** \$31,000

**Development:** \$ 0

**Restoration:** \$ 0

**Acquisition, including easements:** \$ 0

**TOTAL TRUST FUND PROJECT BUDGET: \$110,000**

**Explanation of Capital Expenditures Greater Than \$3,500:** From the 2007 appropriation, \$16,000 for one watercraft suitable for electrofishing, seining and trap deployment -- This equipment will continue to be used for its useful life within the DNR for comprehensive field surveys of aquatic and near-shore habitat and animal presence.

## **VI. OTHER FUNDS & PARTNERS:**



**A. Project Partners:** Cass County, Environmental Services Department, John Sumption, Director. Leech Lake Reservation, Division of Resources Management (LLRDRM), John Ringle

**B. Other Funds Proposed to be Spent during the Project Period:** Four other funds will likely be spent to complete the project. Federal funding via a State Wildlife Grant (SWG) for FY09 in the amount of about \$150,000 was used. State funding to the Minnesota Department of Natural Resources, Division of Ecological Resources for FY09 and FY10 was also used. Cass County funded their activities related to this project (\$25,000 to \$35,000 per year in inkind value), and LLRDRM funded their activities (\$5,000 to \$10,000 in inkind value for field surveys).

**C. Past Spending:** SWG: \$115,000 in FY09 state match; SWG: \$150,000 in FY08; State: \$150,000 in FY08. SWG: \$135,000 in FY07; State: \$150,000 in FY07 used to develop survey protocol. DNR staff provided additional technical advice to Cass County in FY06.

**D. Time:** This is a multi-year project ending on June 30, 2011 (includes appropriation from ML 2008, Chap. 367, Sec. 2, Subd. 4(e)). Several openwater seasons are needed to complete field surveys. Implementation of revised zoning ordinances in Cass County extends through FY11.

**VII. DISSEMINATION:** Nine Sensitive Lakeshore Reports were produced (Ada, Birch, Little Boy, Long, Pine Mountain, Pleasant, Ten Mile, Woman, and Wabedo lakes), and these reports are posted on the project's website. Public presentations were made explaining the details of these reports. Cass County will hold public hearings on shoreland reclassifications, and all required processes for public input, review and comment will be adhered to, including the rights afforded to challenge such ordinance and zoning district changes.



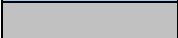
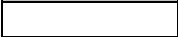



**VIII. REPORTING REQUIREMENTS:**

Periodic work program progress reports will be submitted not later than January 2008, November 2008, March 2009, November 2009, March 2010, and November 2010. A final work program report and associated products will be submitted by August 2011.

Exhibit A. Intra-lake Zoning to Protect Sensitive Lakeshore Areas. List of lakes and completed survey work using Minnesota's Lakeshore Sensitive Area Survey Protocol.

| LAKE          | DOWLKNUM | ACRES  | % Shoreline that is Private and is in Large Parcels | Grid Aquatic Plant Survey | Emergent & Floating-leaf Beds Delineated from aerial photos | Bulrush Beds Mapped | Shoreline Habitat Plots | Frog Survey | Fish Survey | Bird Survey | Potential Sensitive Areas forwarded to County | Sensitive Area District established County |
|---------------|----------|--------|---|---------------------------|---|---------------------|-------------------------|-------------|-------------|-------------|---|--|
| Leech         | 11020300 | 109415 |   | 2002-2005                 | yes   | 2008-10             |                         | 2007-09     |             |             | 2011  |  |
| Woman         | 11020100 | 5360   | 16  | 2006                      | yes   | AF                  | 2006-07                 | 2006        | 2006        | 2007        | 2008  |  |
| Ten Mile      | 11041300 | 4640   | 26  | 2006                      | yes   | AF                  | 2006-07                 | 2006        | 2006        | 2007        | 2008  |  |
| Birch         | 11041200 | 1262   |   | 2006                      | yes   | 2006                | 2006-07                 | 2007        | 2007        | 2008        | 2009  |  |
| Long          | 11014200 | 926    |   | 2007                      | yes   | 2007                | 2007                    | 2007        | 2007        | 2008        | 2009  |  |
| Little Boy    | 11016700 | 1396   | 32  | 2007                      | yes   | 2007                | 2007                    | 2007        | 2007        | 2008        | 2009  |  |
| Louise*       | 11057300 | 22     |   | 2007                      | yes   |                     |                         |             | 2007        | 2008        | 2009  |  |
| Wabedo        | 11017100 | 1272   | 32  | 2007                      | yes   | 2007                | 2007                    | 2007        | 2007        | 2008        | 2009  |  |
| Ada           | 11025000 | 1044   | 7   | 2007                      | yes   | 2007                | 2007                    | 2007        | 2007        | 2008        | 2009  |  |
| Pine Mountain | 11041100 | 1657   | 41  | 2007                      | yes   | 2007                | 2008                    | 2008        | 2007        | 2008        | 2009  |  |
| Pleasant      | 11038300 | 1038   | 38  | 2007                      | yes   | 2008                | 2008                    | 2008        | 2007        | 2008        | 2009  |  |
| Washburn      | 11005900 | 1768   |   | 2006                      | yes   | AF - 2008           | 2007                    | 2007        | 2007        | 2009        | 2010  |  |
| Thunder       | 11006200 | 1316   | 42  | 2008                      | yes   | 2008                | 2008                    | 2008        | 2008        | 2009        | 2010  |  |
| Boy           | 11014300 | 3404   |   | 2008                      | yes   | 2008                |                         | 2008        | 2008        | 2009        | 2010  |  |
| Roosevelt     | 11004300 | 1561   | 9   | 2008                      | yes   | 2008                | 2008                    | 2009        | 2008        | 2009        | 2010  |  |
| Lawrence*     | 11005300 | 224    |   | 2008                      | yes   | 2008                |                         | 2009        | 2008        | 2009        | 2010  |  |
| Deep Portage* | 11023700 | 129    |   | 2008                      | yes   | 2008                | 2008                    | 2009        | 2008        | 2009        | 2010  |  |
| Sylvan        | 11030400 | 882    |   | 2008                      | yes   | 2008                |                         | 2009        | 2008        | 2009        | 2010  |  |
| Big Portage   | 11030800 | 956    |   | 2008                      | yes   | 2008                |                         | 2009        | 2008        | 2009        | 2010  |  |
| Steamboat     | 11050400 | 1761   | 38  | 2008                      | yes   | 2008                | 2008                    | 2009        | 2008        | 2009        | 2010  |  |

**KEY (with  
year  
completed, in  
progress, or  
planned  
noted):**

|   |                                      |
|---|--------------------------------------|
|  | completed                            |
|  | sampled this year                    |
|  | future survey work                   |
|  | not completed or planned             |
|  | DNR Fisheries data                   |
|  | non-field work that was<br>completed |
|  | Added<br>lakes                       |

| Attachment A: Budget Detail for 2007 Projects - Summary and a Budget page for each partner (if applicable) |  |  |                                       |  |  |                                       |   |  |                                       |                     |                      |
|--|--|--|---------------------------------------|--|--|---------------------------------------|---|--|---------------------------------------|---------------------|----------------------|
| Project Title: <i>Intra-Lake Zoning to Protect Sensitive Lakeshore Areas, [2007: Subd. 5(h)]</i>           |  |  |                                       |  |  |                                       |   |  |                                       |                     |                      |
| Project Manager Name: <i>Paul Radomski</i>   |  |  |                                       |  |  |                                       |   |  |                                       |                     |                      |
| Trust Fund Appropriation: \$ 110,000   |  |  |                                       |  |  |                                       |   |  |                                       |                     |                      |
| 1) See list of non-eligible expenses, do not include any of these items in your budget sheet               |  |  |                                       |  |  |                                       |   |  |                                       |                     |                      |
| 2) Remove any budget item lines not applicable   |  |  |                                       |  |  |                                       |   |  |                                       |                     |                      |
| 2007 Trust Fund Budget   | <u>Result 1 Budget:</u>                      | <u>Amount Spent</u><br><i>(06/30/2009)</i> | <u>Balance</u><br><i>(06/30/2009)</i> | <u>Result 2 Budget:</u>  | <u>Amount Spent</u><br><i>(06/30/2009)</i> | <u>Balance</u><br><i>(06/30/2009)</i> | <u>Result 3 Budget:</u>   | <u>Amount Spent</u><br><i>(06/30/2009)</i> | <u>Balance</u><br><i>(06/30/2009)</i> | <b>TOTAL BUDGET</b> | <b>TOTAL BALANCE</b> |
|  | <i>Identify and Map Sensitive Shorelands</i> |  |                                       | <i>Cass County Ordinance Development and Adoption for Sensitive Shorelands</i> |  |                                       | <i>Propose and Implement Zoning Districts for Sensitive Areas</i> |  |                                       |                     |                      |
| BUDGET ITEM  |  |  | 0                                     |  |  | 0                                     |   |  | 0                                     | 0                   | 0                    |
| PERSONNEL: wages and benefits  | 84,000                                       | 91,989                                     | -7,989                                |  |  | 0                                     | 0   |  | 0                                     | 84,000              | -7,989               |
| Other direct operating costs <i>(fleet expenses)</i>   | 4,000  | 3,403                                      | 597                                   |  |  | 0                                     |   |  | 0                                     | 4,000               | 597                  |
| Capital Equipment <i>(watercraft suitable for electrofishing, seining and trap deployment)</i>             | 16,000                                       | 12,571                                     | 3,429                                 |  |  | 0                                     |   |  | 0                                     | 16,000              | 3,429                |
| Equipment / Tools <i>(sampling equipment and biological supplies)</i>                                      | 6,000  | 2,037                                      | 3,963                                 |  |  | 0                                     |   |  | 0                                     | 6,000               | 3,963                |
| Office equipment & computers - NOT ALLOWED unless unique to the project                                    |  |  | 0                                     |  |  | 0                                     |   |  | 0                                     | 0                   | 0                    |
| Printing   |  |  | 0                                     | 0  |  | 0                                     | 0   |  | 0                                     | 0                   | 0                    |
| Other Supplies <i>(education material and mailing)</i>   |  |  | 0                                     |  |  | 0                                     |   |  | 0                                     | 0                   | 0                    |
| Travel expenses in Minnesota   |  |  | 0                                     |  |  | 0                                     |   |  | 0                                     | 0                   | 0                    |
| Travel outside Minnesota <i>(where?)</i>   |  |  | 0                                     |  |  | 0                                     |   |  | 0                                     | 0                   | 0                    |
| Other <i>(Describe the activity and cost)</i>  |  |  | 0                                     |  |  | 0                                     |   |  | 0                                     | 0                   | 0                    |
| <b>COLUMN TOTAL</b>  | <b>\$110,000</b>                             | <b>\$110,000</b>                           | <b>\$0</b>                            | <b>\$0</b>   | <b>\$0</b>                                 | <b>\$0</b>                            | <b>\$0</b>  | <b>\$0</b>                                 | <b>\$0</b>                            | <b>\$110,000</b>    | <b>\$0</b>           |