

**ENVIRONMENTAL ASSESSMENT PROPOSAL  
(EAP) REPORT**

Channel - Beaconia, Manitoba

(SE 16-17-7E)

Submitted by:

Bob Rettie  
September 16, 2010

# ENVIRONMENTAL ASSESSMENT PROPOSAL (EAP) REPORT

Channel - Lake Winnipeg  
Robert Rettie – Beaconia, Manitoba  
(SE 16-17-7E)

## Executive Summary

We are proposing a boat access channel on our 110 acre property at Beaconia, Manitoba, in the East Beaches Region of Lake Winnipeg, which is zoned “seasonal recreational”. This channel will allow access to the lake (at the north end of our property), from our cabin (located at the south end of the property), and safely moor personal watercraft in a sheltered area.

The north end of the property has a deeper and more direct access to the lake, accessing the lake from the south would require digging a channel along the tree line on the west side of our property. The proposed route would have the least impact on the surrounding area and the excavating would also be located almost entirely on our land, with approximately 5% on Crown land, for access off the lake into the channel.

Previously approved channel developments exist on Lake Winnipeg, namely Siglavik and Miklavik, in Gimli, which are significantly larger than the scope of this proposal.

## Introduction and Background

We made our application and received approval from the Department of Fisheries and Oceans for the boat access in April 2008 (Appendix 1). Other departments receiving copies of the DFO’s approval letter were as follows:

- Manitoba Conservation, Winnipeg
- Manitoba Water Stewardship, Gimli
- Manitoba Inter-Governmental Affairs, Selkirk
- Selkirk & District Planning District, Selkirk
- R.M. St. Clements, East Selkirk

## Description of Proposed Development, Including, Construction, Operation and Maintenance

- Project will consist of a boat launch and dock at the south end of the channel (Appendix 2).
  - The channel will be approximately 1,600 feet long, approximately 25 feet wide and approximately 6 feet deep.
  - Equipment used for the excavation and spreading of material will be a trackhoe, bulldozer and skid steer.
  - The channel will include an excavated launch that will be fixed and supported by rock on each side, approximately 1’ to 6’ high (Appendix 3).
  - This rock retaining wall will allow natural vegetation to grow between the rock to provide a more natural appearance and support the structure.
-

- Geo-textile cloth will be placed on the bottom of the launch, with 100 mm of 25-40 mm stone placed on top.
- The channel will run north to south, on the higher ground of the tree line on the west side of the property.
- The excavating will be done entirely on our property except for the 80' access to the lake.
- The excavated material will be spread along the tree side of the channel. This material will be levelled to an approximately 40' berm, slightly sloping to the channel.
- Revegetation of this berm area will be done by means of conventional seeding, sod taken from other open areas on our property, and the transplanting of 4-5' foot Spruce and maple trees from other areas of our property.
- As recommended by Shumski's Landscaping from Selkirk, Manitoba, grass seeding with "Enviro-Green (Eco Turf Blend) will be done, which is comprised of 35% Aberdeen Creeping Red Fescue, 20% sheep fescue, 25% Ambassador chewing fescue and 20% Oxford hard fescue. This seed mixture is currently used to revegetate along the Red River.
- Since June, abundant natural revegetation has already taken place.

#### Timeline

- December 2009 began work on the channel. Work was undertaken in the winter months as instructed by the DFO in order to minimize disruption to fish habitat.
- February 2010 channel work was completed.
- On February 24, 2010 we were given instruction from the Fisheries and Oceans Department to place a plug at the mouth of the boat access, install and maintain the sediment fencing and initiate re-vegetation (including plants, trees and grass) along the east side of the boat access.
- Other than placing the new plug at the mouth, and removing the old plug, no additional excavation has been done since receipt of this letter.
- Equipment on the property, such as skid steer, will be used on an ongoing basis to continue with the re-vegetation of the area.
- Plug and fencing are complete. We are presently completing the leveling of earth in order to re-vegetate the east side of the channel.
- We also brought in additional rock from off-site to maintain the integrity of the plug.
- Work that is outstanding on the project, which will be completed once permission is received, is the boat launch and dock.

#### Description of Existing Environment in the Project Area

- The area excavated consists of grasses, bushes and small maple trees (Appendix 4 – Green Spaces environment report).
- Topography of the area is slopes east to west (towards the lake), with approximately 5 meter decline.
- The installed berm will decrease water flow onto the west side of our property during high water levels. Water from spring run-off and heavy rainfall will collect behind the berm, and will eventually drain towards the lake through a natural ditch on the south end of the property.

- This land has experienced flooding in certain years and we hope to lessen the flooding effect with the berm.

#### Description of Environmental Effects of the Proposed Development

- Less than 1% of our 110 acre property will be used for the proposed channel area.
- Although there will be grass and trees removed, we believe the overall impact to wildlife relative to our land will be minimal.
- The excavating to isolate the channel from the lake will result in soil being distributed into the channel, which will settle to the bottom of the channel.
- The channel will create an increase of new fish habitat, which will be more than 16x the area which will be disturbed due to access to the lake.

#### Mitigation Measures and Residual Environmental Effects

- The boat access will be isolated from the lake by a “plug” which will prevent any sediment from entering the lake.
- This plug will remain in place until the excavated area has revegetated (as least one growing season).
- This plug will also keep the lake water from entering the property during high water. It will, however, block the water that would normally drain from our property.
- Sediment fencing has been installed the entire length of the east and north perimeters of the channel to reduce sediment from seeping into the channel and prevent erosion.
- Spruce trees, which have been planted in groupings around the channel and berm, will provide shelter for a variety of bird species from windstorms, and protect them from predators.
- Blocks of sod from the meadow have been placed onto the edge of the berm to assist in preventing erosion into the trench.
- There are some young Sandbar willows growing in this sod which can grow to be as much as four meters high.
- A large Peach-leaved Willow is growing naturally on the fringe of the channel, which is the only native willow in Manitoba. They are a fast-growing willow with an extensive root system that will help to stabilize the soil.

#### Follow-Up Plans, Including Monitoring and Reporting

- Plug will be removed once project area has sufficiently revegetated and the DFO has given permission to do so.
  - At the present time, approval does not indicate approval and/or requirements for additional work on the project once the plug is removed.
  - Any maintenance required will be undertaken in the winter months to avoid fish habitat impacts.
  - Once it is determined how resilient the channel is to environmental factors, some beyond our control, maintenance approved will be sought.
  - Reporting will be done, as required.
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Conclusion

- According to the letter we received on April 23, 2008 from Fisheries and Oceans Canada (Appendix 1), the building of this boat access indicated that "Proposal not likely result in impacts to fish and fish habitat provided that additional mitigation measures are applied". Subsequently, we have undertaken these measures as outlined in the letter. In our opinion (based on the significant number of birds and waterfowl that have already frequented our channel area), we believe that the results of the completed channel will be beneficial, and not detrimental, to local birds and waterfowl, as this is the calmest water in the area.

## **Appendices**

Appendix 1	Letter from Department of Fisheries and Oceans, along with Application
Appendix 2	Dock Construction
Appendix 3	Channel Construction
Appendix 4	Green Spaces Environmental Report
Appendix 5	Certificate(s) of Title
Appendix 6	Land Use Designation for Site and Adjoining Land Plan
Appendix 7	Aerial Survey of Canal Location
Appendix 8	Photographs
Appendix 9	Selkirk & District Planning Area Board – Land Development Permit



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

## Appendix 1

Freshwater Institute  
Prairies Area, Manitoba District  
501 University Crescent  
Winnipeg, Manitoba  
R3T 2N6  
(204) 983-5163

Institut des eaux douces  
Secteur des Prairies, District du Manitoba  
501 University Crescent  
Winnipeg, (Manitoba)  
R3T 2N6  
(204) 983-5163

23 April 2008

Your file      Votre référence

Our file      Notre référence  
08-HCAA-CA1-00083

Mr. Bob and Mrs. Maggie Rettie  
Box 11, Site 6, RR1  
Okotoks AB T1S 1A1

Dear Mr. & Mrs. Rettie:

**Subject:** Proposal not likely to result in impacts to fish and fish habitat provided that additional mitigation measures are applied.

Fisheries and Oceans Canada - Fish Habitat Management Program (DFO) received your proposal on 16 January 2008. Please refer to the file number and title below:

DFO File No.:            08-HCAA-CA1-00083  
Title:                      Proposed Channel for Boat Access to Cabin - Beaconia  
                                 Beach, Lake Winnipeg, Manitoba

Your proposal has been reviewed to determine whether it is likely to result in impacts to fish and fish habitat which are prohibited by the habitat protection provisions of the *Fisheries Act* or those prohibitions of the *Species at Risk Act* that apply to aquatic species.\*

Our review consisted of:

- DFO Request for Project Review form, project description and map, dated 16 January 2008.

We understand that you propose to:

- Construct a boat access channel at the mouth of the lagoon, located west of Beaconia Island (SE 16-17-7 EPM), R.M. of St. Clements, Manitoba.
- The boat access channel will be excavated on land owned by Mr. and Mrs. Rettie, along the existing tree line and will be above the high water mark (as per the map submitted, 16 January 2008).
- The proposed channel will be approximately 213 m (700 ft) long, 5 m (15 ft) wide, and 1.5 m (5 ft) deep.

\*Those sections most relevant to the review of development proposals include 20, 22, 32 and 35 of the *Fisheries Act* and sections 32, 33 and 58 of the *Species at Risk Act*. For more information please visit [www.dfo-mpo.gc.ca](http://www.dfo-mpo.gc.ca).

Canada

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- At the mouth of the bay, a 3 m (10 ft) by 1.5 m (5 ft) area will be excavated at the shoreline to connect the proposed channel to Lake Winnipeg.
- Excavated material will be removed and placed on the tree side of the proposed channel. The soil will be seeded and allowed to re-vegetate.
- No excavation/dredging will be required in the existing bay.
- A track hoe will be used to excavate the channel.

To reduce potential impacts to fish and fish habitat we are recommending the following mitigation measures be included into your plans:

- No in-water construction should occur between **April 1 and June 15** of any given year.
- **During the excavation of the channel, a 'plug' of untouched soil should be left in place so that the newly constructed channel does not connect to the existing bay in Lake Winnipeg until there is re-vegetation within the new channel, unless suitable erosion and sediment control measures are applied.** When the 'plug' is opened and water enters the bays, the vegetation will help prevent sediment from being stirred up. **The 'plug' should be left in place for at least one growing season so that the vegetation can establish.** Consult a riparian specialist, such as Native Plant Solutions to help you determine the type of plants best suited for your area. Also, note that the 'plug' should be of sufficient size so that it does not blow out during a high wind set-up or rainfall events.
- If rocks, stumps or logs need to be moved on the shoreline to excavate the access area, they are relocated to an area of similar depth adjacent to the access area and not removed altogether from the shoreline.
- Shoreline vegetation is retained to the greatest extent possible to maximize the stability of the bank. Aquatic vegetation should not be removed.
- Isolate the shoreline around the access area before excavation, using appropriate measures (e.g. turbidity barriers, silt curtains, etc.) to prevent re-suspended sediment from spreading to adjacent areas. Inspect isolation measures regularly and make all necessary repairs. Once excavation is completed, allow sufficient time to permit sediment to settle out and the water to be as clear inside the isolated area as outside the isolated area before removing sediment control measures. Should excavation occur during winter, then ice dams can be constructed by freezing the ice to the bottom to isolate the access area.
- Excavated material will be disposed on land above the high water level and suitably contained/stabilized to prevent the excavated material from entering the water.
- Machinery will work from above the high water mark and will not work within the lake.



- The deposit of deleterious substances into water frequented by fish is prohibited under the *Fisheries Act*. Appropriate precautions must therefore be taken to ensure that potentially deleterious substances (such as fuel, hydraulic fluids, oil, sediment etc.) do not enter any water body.
- Equipment will be refuelled and serviced in a manner which ensures that deleterious substances do not enter any watercourse. Equipment operating near any watercourse will be free of external grease, oil, mud, or fluid leaks and an emergency spill response kit will be kept on-site during construction.
- Install effective short-term and long-term erosion and sediment control measures (e.g. erosion control blankets, sediment barriers) prior to construction on areas to be disturbed; minimizing soil laden runoff from entering any watercourse, and they remain in place until vegetation is re-established to stabilize the effected area.
- Disturbance of riparian vegetation will be kept to a minimum. Disturbed areas will be stabilized, vegetated and/or seeded as soon as possible after construction, and effective, long-term erosion control measures will be implemented.
- Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch or biodegradable erosion control blankets to prevent soil erosion and to help seeds germinate. If there is insufficient time in the growing season remaining for the seeds to germinate, stabilize the site (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and then vegetate the following spring.

Provided that the additional mitigation measures described above are incorporated into your plans, DFO has concluded that your proposal is not likely to result in impacts to fish and fish habitat.

You will not need to obtain a formal approval from DFO in order to proceed with your proposal.

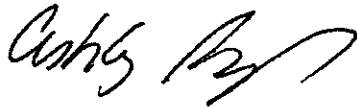
Please notify this office at least 10 days before starting the work. A copy of this letter should be kept on site while the work is in progress.

If the plans have changed or if the description of your proposal is incomplete you should contact this office to determine if the advice in this letter still applies

Please be advised that any impacts to fish and fish habitat which result from a failure to implement this proposal as described or incorporate the additional mitigation measures included in this letter could lead to corrective action such as enforcement.

If you have any questions please contact Ashley Presenger at our Winnipeg office at 204 984-0405 by fax at 204 984-2402 or by email at [Ashley.Presenger@dfo-mpo.gc.ca](mailto:Ashley.Presenger@dfo-mpo.gc.ca)

Yours sincerely,



Ashley Presenger  
Fish Habitat Biologist  
Prairies Area, Winnipeg Office

Cc: DFO Distribution  
B. Webb (MB Conservation, Winnipeg)  
L. Campbell (MB Water Stewardship, Gimli)  
D. Boles (MB Intergovernmental Affairs, Selkirk)  
E. Arnold (Selkirk & District Planning District, Selkirk)  
R. Poirier (R.M. St. Clements, East Selkirk)

Request for Project Review

Name of Owner: Bob and Margaret Rettie

Description of Project: Boat Access

I would like to create a boat access to get closer to my cabin. **I have included** a diagram (attached) illustrating what I would like to do. The entire **access would** be done through my land along the treeline and above the high water mark.

I would require a 10' access through 20' of weeds to the **lagoon** at the north end of my property, which would be done with a track hoe. The earth **removed** would be placed, levelled and reseeded on the tree side of the access.

I have read a number of publications regarding fish habitat (e.g. "Fish Habitat Conservation and Protection", "Guidelines for Attaining No Net Loss"). I don't know if this 10' access to the lagoon would be considered altering fish **habitat**. If it is, I'm sure it would be minimal and would be compensated for in the **addition of the habitat** on my land.

I would like to commence this work in May 2009

# Request for Project Review

Is this the first time you are requesting a review for this project?

Yes

No

(proposed works in or around water that may affect fish habitat)

<b>Section A</b>	<b>Proponent / Owner / Other Contact Information</b>	
	Name of Proponent/Owner: <u>Bob &amp; Maggie Rettie.</u>	
	Mailing Address: <u>Box 11, site 6, RR1, Okotoks, AB.</u>	
	Street Address (if different than above):	
	City/Town: <u>Okotoks.</u>	Province/Territory: <u>Albarta.</u> Postal Code: <u>T1S1A1</u>
	Tel. No. (Residence): <u>403 9381041</u>	Tel. No. (Work): <u>403 5196773</u> Tel. No.: (Other)
	Fax No: <u>938-1501 (403)</u>	E-mail Address: <u>brettie@platinum.ca.</u>
	Name of Contractor/Agency/Consultant (if applicable):	
	Mailing Address:	
	Street Address (if different than above):	
<b>Section B</b>	<b>Project Location Information</b>	
	Name of Nearest Community to the Project (City, Town, Village): <u>Beaconia, Manitoba.</u>	Name of Rural Municipality, District, and/or Provincial Park <u>RM of St. Clements.</u>
	Legal Land Description (Quarter-Section-Township-Range Meridian, Lot #, Block #) <u>SE 16 - T17 - R47</u>	Name of Water Body (River, Lake, Bay etc.) <u>Lake Winnipeg.</u>
	Access to Proposed Work Site (e.g., highway or street name and number, from the water/ice, etc.) <u> Hwy 500</u>	Location of Project (coordinates in Degrees, Minutes, Seconds <sup>1</sup> (if possible) Latitude: Longitude:
	Other Agencies Contacted (including name and phone #)	General Geographical Location
	<b>Description of Project (Please attach additional information – see Section D)</b>	
	What is the proposed project? (e.g. dock, boathouse, shoreline protection, etc.) <u>Note: A detailed description of the work must be attached with the request.</u> <u>attached</u>	
	Proposed Start Date: <u>May 2008.</u>	Proposed Completion Date: <u>May 2008</u>
	Status of the Project (circle): <u>New</u> Existing Addition Repair	Is the work permanent or temporary? <u>Permanent.</u>
	Description of shoreline, if applicable (i.e., ground type (rock, sand etc), vegetation, slope, other) <u>Note: Enclose photographs:</u> <u>- grass on sandy soil.</u>	Description of bottom substrate (i.e., sand, bedrock, mud, gravel, weed, other) <u>Note: Enclose photographs:</u> <u>- sandy soil.</u>
Average width (for watercourses) and depth of the water body at the work site:		

<b>Section D</b>	<b>What to send to Fisheries and Oceans with the Request for Project Review</b>	
	<p><b>Attach a copy of the following documents/information: (see DFO publications The Dock Primer, The Shore Primer, The Fish Habitat Primer and the Working Around Water fact sheet series for additional information)</b></p> <ul style="list-style-type: none"> <li>- A detailed project description and rationale including mitigation measures to prevent potential impacts</li> <li>- A map or chart with the location of project clearly marked (e.g. with an arrow, circle, or highlighter)</li> <li>- A sketch or drawing of your project, including side and top view and showing dimensions of the work</li> <li>- A survey plan or sketch with dimensions indicating the location of existing buildings, shoreline structures, property lines, high and low water marks, and adjacent properties</li> <li>- Who owns the property (e.g. private, crown land, Hydro etc.)?</li> <li>- Current photographs of the proposed site, displaying shoreline, shoreline vegetation and bottom substrate (if possible)</li> <li>- A list of any materials that will be used in the proposed work (e.g. steel beams, concrete, treated wood, rocks etc.)</li> <li>- A list of any heavy equipment that will be used (e.g. backhoe, dump truck, bobcat etc.)</li> <li>- Information you have regarding fish habitat (migratory route, spawning, rearing areas, etc.) and/or fish species present at the proposed site</li> </ul>	
	<p><b>SEND the Request for Project Review to:</b> Referrals Co-ordinator - Winnipeg Office          Fisheries and Oceans Canada, Prairies Area          501 University Crescent          Winnipeg, MB R3T 2N6          Tel: (204) 983-5163, FAX: (204) 984-2402</p>	
	<p>Date: <i>Jan 16 108</i></p>	<p>Signature: <i>[Handwritten Signature]</i></p>
<p>For DFO Use only:</p>		
<p>Received Date:</p>	<p>Habitat #:</p>	

**Tips for project submissions**

Keep a copy of your submission. This way if DFO has questions about your project you can work with the same information. Also other Federal, Provincial or Municipal agencies may require the same information for their reviews. Sign and date the submission so you know the date it was sent.

Good labelled photographs provide some of the best habitat information. Wide angle views that show much of the project area and areas immediately adjacent are preferred over tight close ups in most cases. Photos must be taken during open water periods so ice and snow do not obstruct habitat features. For most projects 4-6 photographs are sufficient. If necessary, draw your project or indicate the construction locations on the photograph.

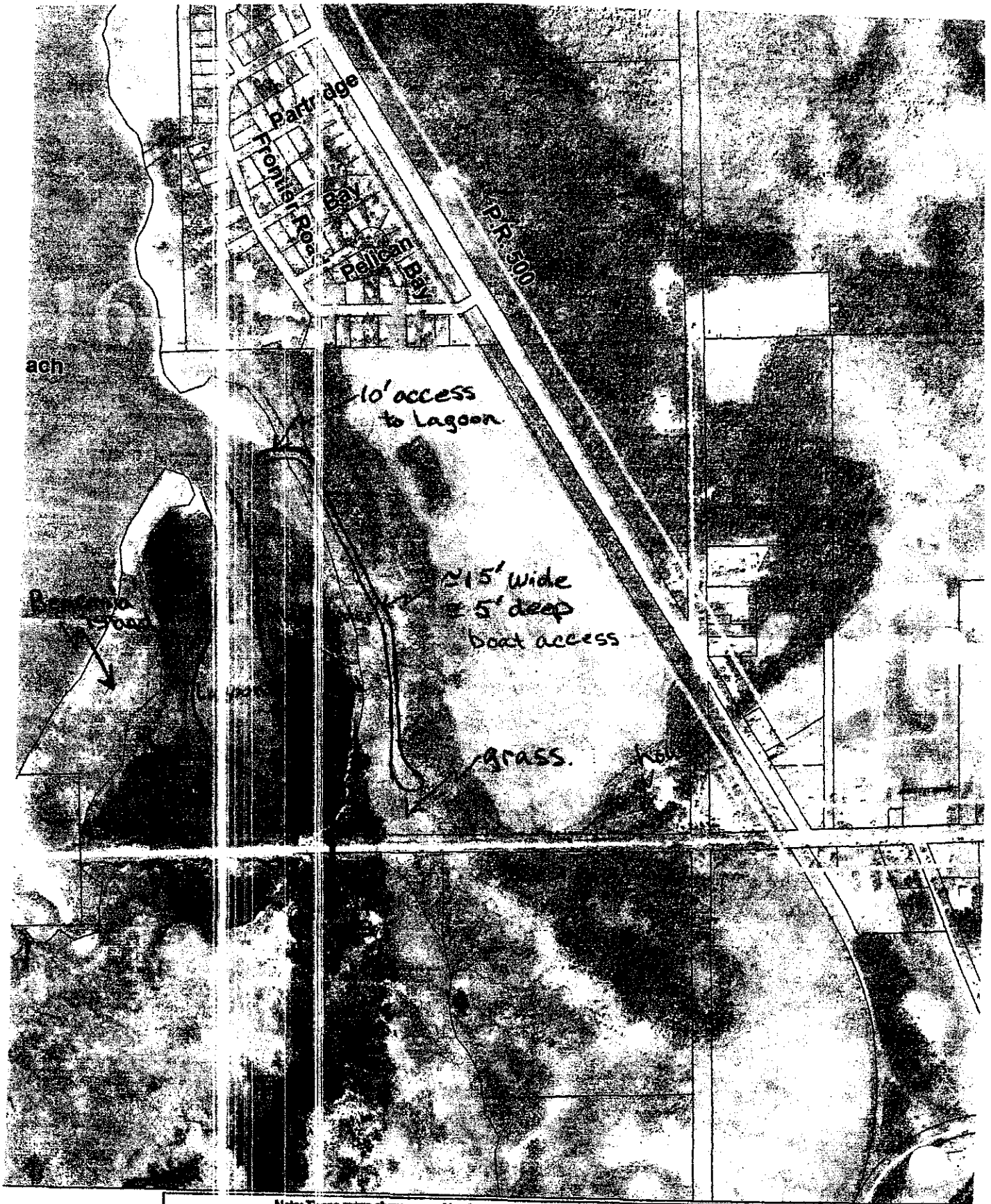
Provide ample time for DFO to review your project before your scheduled construction date. Smaller projects normally require about 2-3 months to process, while large projects often require 6 months to 1 year.

Ensure your project proposal includes contingencies for possible design changes or construction schedule changes.

Where available follow DFO approved guidelines or Operational Statements and avoid lengthy reviews (e.g. DFO routinely approves pipe docks or floating docks using an Operational Statement but will not approve sheet-pile crib docks without an Authorisation, so if you plan to build a pipe dock instead of a crib dock and to follow the guidelines in the Operational Statement then the review time and costs associated with habitat compensation will be avoided).

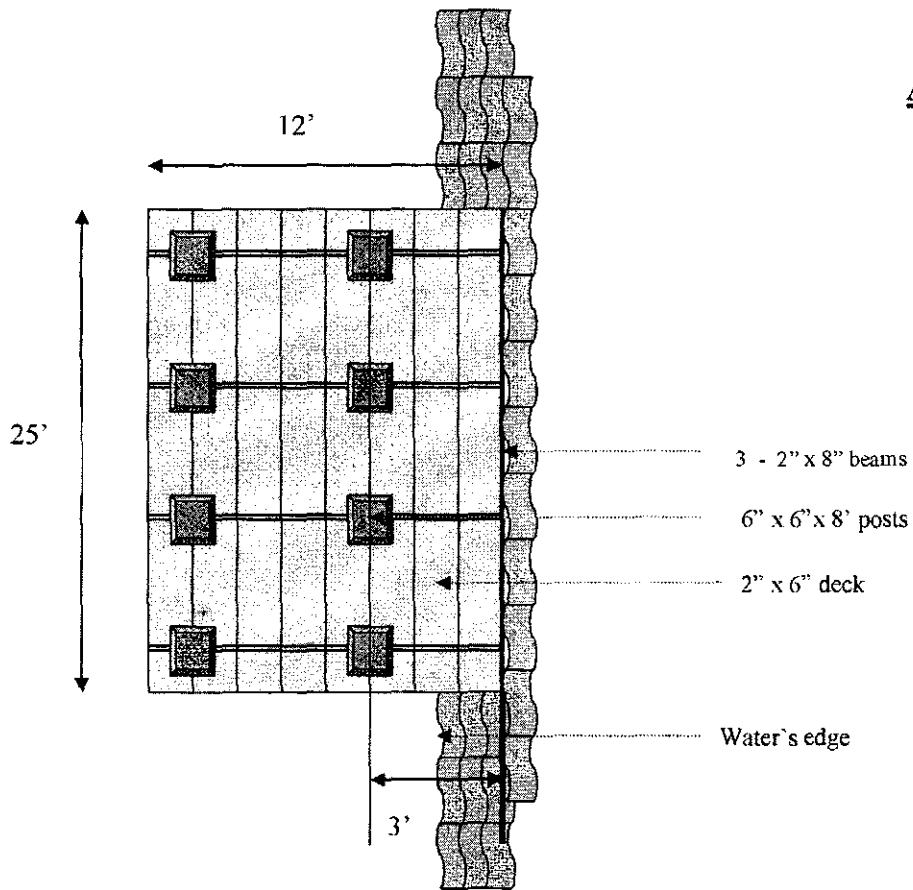
For more information visit the DFO Website below

For Operational Statements visit: [http://www.dfo-mpo.gc.ca/canwaters-eauxcan/ocmpo-dmpo/operational\\_e.asp](http://www.dfo-mpo.gc.ca/canwaters-eauxcan/ocmpo-dmpo/operational_e.asp)



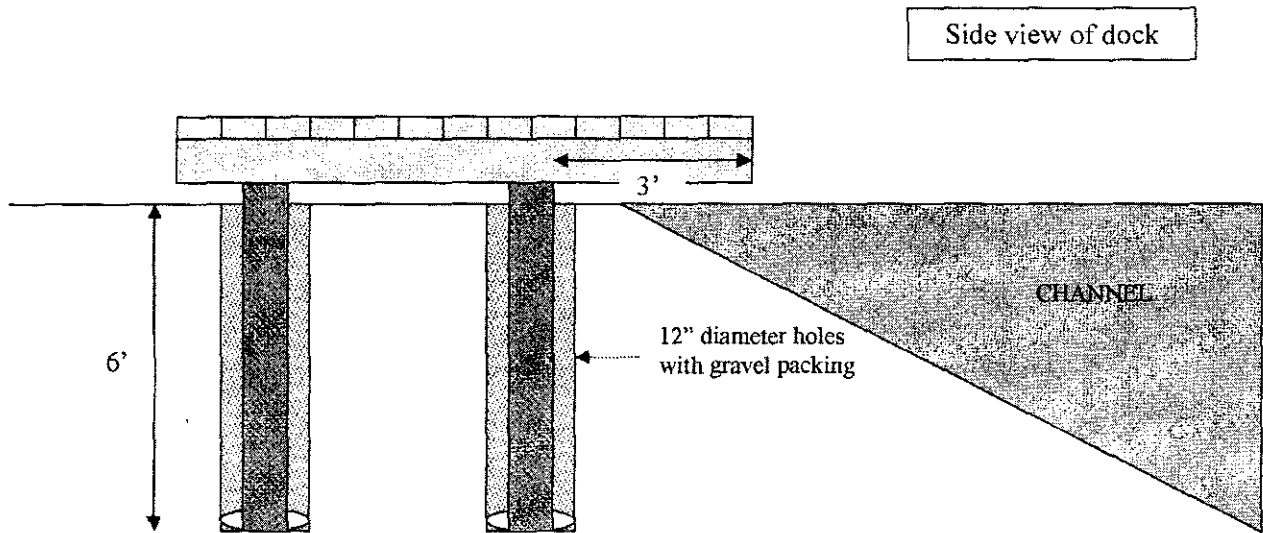
Note: This map shows general land use patterns, and should NOT be used to obtain specific survey and legal information (lot dimensions, legal description, zoning...)  
Photo courtesy of [unreadable]

## Appendix 2 – Dock



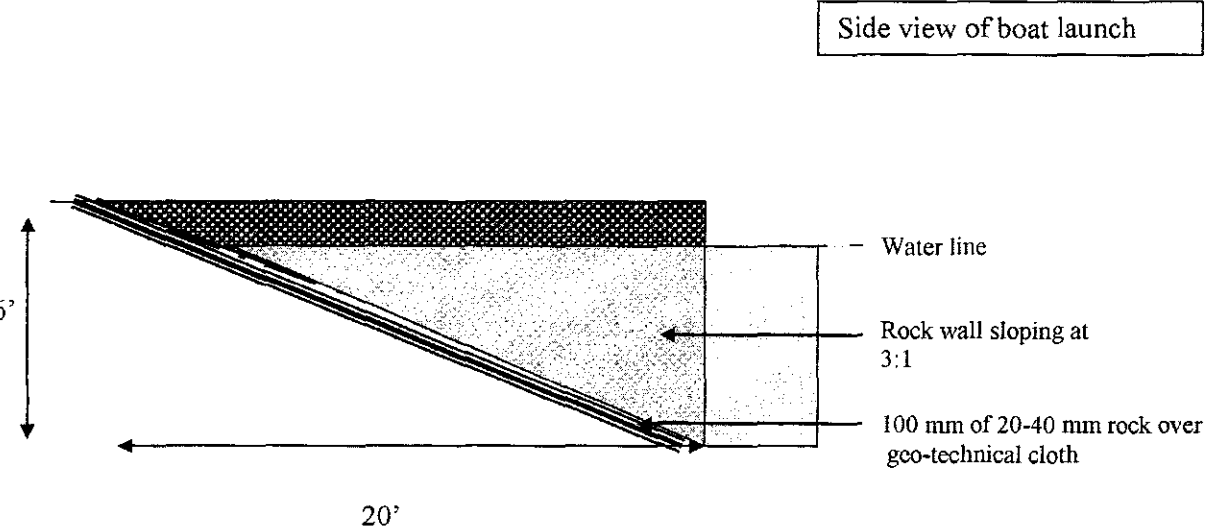
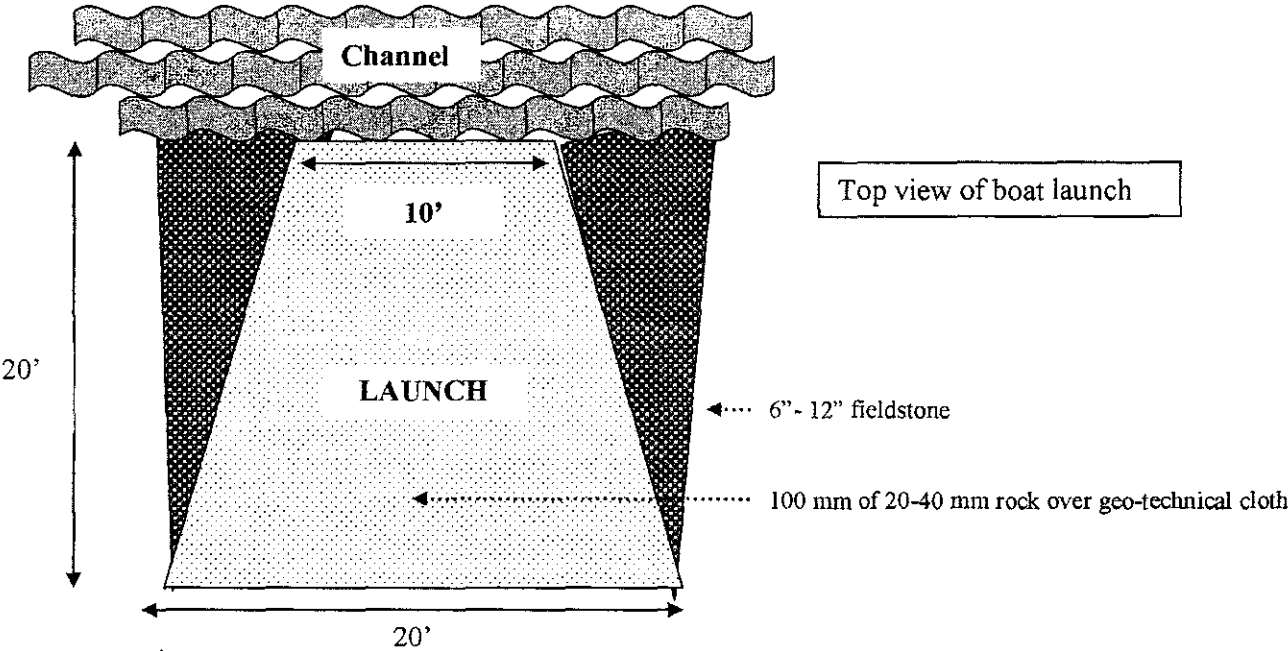
Top view of dock

**Note:** supporting dock posts are situated on the land, supported by gravel. The dock extends approx. 2' over the water.



Side view of dock

**Appendix 3 – Boat Launch**





**Biological Inventory**  
of the  
**Flora and Fauna**  
of the  
**Beaconia Lagoon**

prepared for

**Bob Rettie**  
**Box 11, Site 6, RR 1,**  
**Okotoks, AB T1S 1A1**

by

**David R. M. Hatch**  
**Green Spaces Environmental Consulting**  
**Box 355, RPO South St. Vital**  
**Winnipeg, MB R2N 3X9**

**August 26, 2010**

# **Biological Inventory of the Flora and Fauna of the Beaconia Lagoon**

## **Project Area**

The Beaconia Lagoon Project Area is located in the East Beaches Region of Lake Winnipeg, which is on the east shore of Lake Winnipeg, south of the Winnipeg River and north of the Brokenhead River and the Brokenhead Ojibway Nation. The project area is due west of the junction of Manitoba Hwy #59 and #304.

The centre of the project area is the trench and associated berm constructed in the winter of 2009–2010 and skirting the north and northeast periphery of the Beaconia Lagoon.

The south boundary of the project area is the east-west road on the road allowance, which extends westward from the junction of Hwy #59 and Hwy #304. The west boundary is the east beach of Lake Winnipeg. The north and east boundaries extend north and eastward from the berm, for a distance of 250 meters but do not include any cottages. Consequently, any plant species planted by cottagers are not included in the plant list for the project area. The project area encloses a wide enough band around the berm to give an excellent perspective of the flora and fauna existing in the immediate locale.

## **Objective**

To document all the species of plants, mammals, birds, amphibians and reptiles found in the project area and record their status provincially. The data from this survey can then be utilized in making recommendations to mitigate environmental impacts related to the man-made trench and berm.

## **Methodology**

Between June 19 and August 19, 2010, the study team visited the area on twenty-four days thereby ensuring diligent coverage. Most trips occurred during the day but some trips focussed on the daybreak and/or the sunset periods primarily and were thus shorter. A few of the sunset trips extended well into the night with the team still present at midnight. Much of the best data on frogs, toads and turtles was obtained between sunset and midnight. This is the time that the turtles were making their nests and the frogs and toads were most vocal.

By covering a variety of time periods it was possible to also get all the best calling periods for bird species and thus obtain the best coverage possible.

All of the habitats were walked extensively on several occasions. During the time of the study this portion of Lake Winnipeg received far above normal rainfall and consequently the studies were undertaken at a time when there was considerable temporary flooding and unusual weather conditions for the project area.

## **Lagoons**

Generally speaking, lagoons are critically important habitats for a wide variety of species, not only terrestrial ones that were covered in this study, but also aquatic ones which were not included in this study. Lagoons can be extremely important places for aquatic species such as fish to come to lay their eggs. It is worth noting that many Carp were trapped in the lagoon this year when the entrance was plugged. A great many Carp perished during the highest temperatures of July and their carcasses were fed upon by numerous species including Ring-billed Gull, Common Raven and Turkey Vulture.

Because lagoons are often relatively sheltered from strong winds they can be great places for aquatic birds to nest without having their nests swept away by big waves. Consequently species like Black Terns, Redheads and Canvasbacks can build their floating nests anchored in the vegetation and be relatively safe from wave action.

Lagoons are very important places for ducks to bring their broods and raise them in sheltered waters. In the fall, Lake Winnipeg is often struck with strong northwest winds which cause huge waves. Normally the Beaconia Lagoon is a perfect place for any waterfowl or other species trying to avoid turbulent weather to seek shelter and consequently it is not unusual to find concentrations of hundreds, and sometimes even thousands, of ducks and geese in lagoons. The Beaconia Lagoon traditionally has been a good place for birders to visit during late August, September and October because on stormy days it can also have significant numbers of herons, eagles and numerous small passerine species.

## **The August 14–16, 2010 Storm**

The Beaconia Lagoon was dramatically impacted by a three-day windstorm on Lake Winnipeg. Lake Winnipeg is famous (notorious) for its terrible windstorms which have resulted in many tragic boating accidents and can have phenomenal impact on the shoreline. One of the worst storms to hit the lake in the past decade struck on August 14–16. This resulted in the east shore of Lake Winnipeg being pounded and shoreline spectacularly rearranged. Prior to the storm one could walk through the small breach (about thirty meters) between the south and north portions of the east shore of Lake Winnipeg, that marked the entrance point of water flowing between Lake Winnipeg and the Beaconia Lagoon. The water was just about knee-depth, slightly lower if there was no wind. Immediately after the storm the breach was about two hundred meters wide and more than two meters deep at its deepest point. During the storm, the road along the south side of the lagoon was covered by more than a meter of water and large fallen trees were being swept across the road. The composition of the beach on the north side of the breach was dramatically altered and, in places, the sand and cobble stones combined to raise the elevation of the beach by almost a meter.

As a result of the storm the lagoon was filled with a thick coating of blue-green algae and, in places, the shore and the vegetation were covered with a five millimetre thick layer. Prior to the storm the lagoon was filled with Lesser Duckweed, which is fed upon greatly in this lagoon by Western Painted Turtles and dabbling ducks, plus the turbidity in the water was becoming less. With the tremendous infusion of algae off Lake Winnipeg after the storm, one could not see anything but algae when looking into the water.

## SPECIES NAMES

Wherever possible, the study team has used names that are compatible with those utilized by the Manitoba Conservation Data Centre. In all cases these names are listed in the tables in alphabetical order by the scientific name.

In the tables the first column is the family name to which the species belongs; the second column is the provincial scientific name; the third column is the provincial common name. The final column gives the status of the species in the province. It must be stressed that the provincial scientific and common names are the ones that the Manitoba Conservation Data Centre has chosen for consistency sake. If one reviews plant texts, in the vast majority of cases there will be a great deal of name variety and confusion because both the scientific and common names are not standardized and many authors follow different taxonomic systems.

For the names of mammals, birds, amphibians and reptiles there is much more consistency in use of scientific and common names than there is for plants. Consequently it is relatively easy to have the text harmonized with the standards set out by the Manitoba Conservation Data Centre and be easily followed in books that one might use as reference.

The scientific naming system is clarified beautifully in the following extract from Wikipedia:

The formal system of naming species is called binomial nomenclature (especially in botany, but also used by zoologists), binominal nomenclature (since 1953, the technically correct form in zoology), or binary nomenclature.

The essence of this system of naming is this: each species name is formed out of (modern scientific) Latin (or is a Latinized version of other words), and has two parts, the genus name and the species name (also known as the specific epithet), for example, *Homo sapiens*, the name of the human species. The two-part name of a species is popularly known as the Latin name. However, biologists and philologists prefer to use the term scientific name rather than "Latin name", because the words used to create these names are not always from the Latin language, even though the words have been Latinized in order to make them suitable. Instead names are often derived from ancient Greek word roots, or words from numerous other languages. Frequently species names are based on the surname of a person, such as a well-regarded scientist, or are a Latinized version of a relevant place name.

Carl von Linné (also known as Linnaeus) chose to use a two-word naming system, and did not use what over time came to be a full seven-category system (kingdom-phylum-class-order-family-genus-species.) Linnaeus chose a binomial nomenclature scheme, using only the genus name and the specific name or epithet which together form the whole name of the species. For example, humans belong to genus *Homo* and their specific name is *sapiens*. Humans as a species are thus classified as *Homo sapiens*. The first letter of the first name, the genus, is always capitalized, while that of the second is not, even when derived from a proper noun such as the name of a person or place. Conventionally, all names of genera and lower taxa are always italicised, while family names and higher taxa are printed in plain text. Species can be divided into a further rank, giving rise to a *trinomial name* for a subspecies (*trinomen* for animals, *ternary name* for plants).

Extracted from Wikipedia "Binomial nomenclature."

## PLANTS

Table 1 lists the species of plants occurring in the project area which is a total of one hundred and eighty. An examination of this list shows the great diversity of vegetation and many very interesting species.

The lagoon itself is dominated by cattail and the woods are dominated by ash. The woods are primarily deciduous with a small amount of Balsam Fir. American Elm is still present in the project area but there are many cases of trees impacted by Dutch Elm Disease.

Only plants growing in natural habitat were included in the plant table so species such as Petunias, Peonies and Lilacs growing in private yards were not included because the study team excluded cottages from the study area. One species however, which has spread and become natural in the area, is the Silver Maple. This is an eastern Canadian tree that normally has great difficulty surviving Manitoba winters however, some have spread from the cottage areas, and at least twenty were found scattered through the major woods along the north and northeast side of the lagoon. Some of these Silver Maple were as high as five meters, possibly because they were growing in a dense wood and consequently were somewhat protected in winter months. Mature Silver Maple can grow much taller, especially in eastern Canada, but in rural Manitoba it is unusual to see them growing naturally and doing so well.

The woods have a great diversity of shrubs associated with them. Both species of hazelnut were present as was Mountain Maple, Saskatoon, Choke Cherry, Red-osier Dogwood, High-bush Cranberry, Mooseberry and Downy Arrowwood.

It is important at this point to stress that botanical names, both scientific and common, are going through a period of great flux. This creates considerable confusion. For example, virtually every plant enthusiast in Manitoba refers to Low-bush Cranberry by that name. However, the Manitoba Conservation Data Centre is utilizing a broader North American use of names and refers to the species as Mooseberry. This report was written to follow the Manitoba Conservation Data Centre format as much as possible, as the provincial government decision-makers follow the Conservation Data Centre format. Consequently, this species is referred to as "Mooseberry" in this document rather than as the Low-bush Cranberry.

There are many species in the project area which must be very close to the northern fringe of their range in Manitoba. Two good examples of this are the Hog-peanut and the Nodding Trillium. Both are locally quite common in more open glades in the woods but in Manitoba as a whole their habitat has been ravaged by bush clearing and now there are only remnant pockets scattered across much of its former range.

The Beech-pea is well established along portions of the Lake Winnipeg beach in the project area, but it also is a highly localized species.

There are some beautiful stands of Basket Willow, a scarce willow, in a few places along the sandy Lake Winnipeg beaches with some Snapping Turtle nests dug within two or three meters of these willows.

The fact that three species of Solomon's-seal were found in the area helped to show that this is a pocket of vibrant natural wood.

North and east of Beaconia Lagoon are extensive areas of conifers within a few kilometres but in the actual project area the only conifers that occurred were a limited number of Balsam Fir in the actual

woods and some White Spruce that had been planted in the meadows in the northeast portion of the project and were now seeding the immediate locale.

The relative scarcity of conifers significantly reduces the number of warbler species breeding locally as several are closely tied to conifers during the nesting season.

One of the real highlights was that the carex zone, which is the narrow band of land between the periphery of the lagoon and the woods, had a large, healthy population with nine carex species. Some of these water-loving species were growing in the lagoon and others were growing in the land that is periodically under water particularly at the time of spring runoff and is always referred to as "damp meadows".

An examination of this list will show that there is an abundance of native species here and, because it has been largely undisturbed native habitat, there are not a lot of weeds and other invasive species.

Plants play an enormous role in determining the number and abundance of animal life occurring in an area. The study team was particularly struck by the variety of species and abundance of butterflies, dragonflies and beetles in the local area.

**TABLE 1**  
**Beaconia Vascular Plants**

FAMILY	PROVINCIAL SCIENTIFIC NAME	PROVINCIAL COMMON NAME	MANITOBA RANK
Pinaceae	<i>Abies balsamea</i>	Balsam Fir	S5
Aceraceae	<i>Acer negundo</i>	Manitoba Maple	S5
Aceraceae	<i>Acer saccharium</i>	Silver Maple	
Aceraceae	<i>Acer spicatum</i>	Mountain Maple	S5
Asteraceae	<i>Achillea millefolium</i>	Common Yarrow	S5
Ranunculaceae	<i>Actaea rubra</i>	Red Baneberry	S5
Lamiaceae	<i>Agastache foeniculum</i>	Blue Giant Hyssop	S5
Asteraceae	<i>Agoseris glauca</i>	False Dandelion	S5
Alismataceae	<i>Alisma triviale</i>	Common Water-plantain	S5
Poaceae	<i>Alopecurus aequalis</i>	Short-awned Foxtail	S5
Rosaceae	<i>Amelanchier alnifolia</i>	Saskatoon	S5
Fabaceae	<i>Amphicarpaea bracteata</i>	Hog-peanut	S4
Primulaceae	<i>Androsace septentrionalis</i>	Pygmyflower	S5
Ranunculaceae	<i>Anemone canadensis</i>	Canada Anemone	S5
Ranunculaceae	<i>Anemone quinquefolia</i>	Wood Anemone	S5
Apocynaceae	<i>Apocynum androsaemifolium</i>	Spreading Dogbane	S5
Ranunculaceae	<i>Aquilegia canadensis</i>	Wild Columbine	S5

Araliaceae	<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5
Asteraceae	<i>Arctium tomentosum</i>	Wooly Burdock	SNA
Rosaceae	<i>Argentina anserina</i>	Silverweed	S5
Brassicaceae	<i>Armoracia rusticana</i>	Horse Radish	SNA
Asteraceae	<i>Artemisia biennis</i>	Biennial Wormwood	S5
Asclepiadaceae	<i>Asclepias speciosa</i>	Showy Milkweed	S4
Liliaceae	<i>Asparagus officinalis</i>	Garden Asparagus	SNA
Asteraceae	<i>Bidens cernua</i>	Stick-tight	S5
Poaceae	<i>Bromus inermis</i>	Smooth Brome	SNA
Ranunculaceae	<i>Caltha palustris</i>	Marsh Marigold	S5
Brassicaceae	<i>Capsella bursa-pastoris</i>	Shepherd's Purse	SNA
Cyperaceae	<i>Carex aquatilis</i>	Water Sedge	S5
Cyperaceae	<i>Carex atherodes</i>	Awned Sedge	S5
Cyperaceae	<i>Carex aurea</i>	Golden Sedge	S5
Cyperaceae	<i>Carex bebbii</i>	Bebb's Sedge	S5
Cyperaceae	<i>Carex lacustris</i>	Lakeshore Sedge	S5
Cyperaceae	<i>Carex languginosa</i>	Woolly Sedge	
Cyperaceae	<i>Carex pseudocyperus</i>	Cyperus-like Sedge	S4
Cyperaceae	<i>Carex retrorsa</i>	Turned Sedge	S5
Cyperaceae	<i>Carex rostrata</i>	Beaked Sedge	S4
Onagraceae	<i>Chamerion angustifolium</i>	Fireweed	S5?
Apiaceae	<i>Cicuta maculata</i>	Water-hemlock	S5
Asteraceae	<i>Cirsium arvense</i>	Canada Thistle	SNA
Rosaceae	<i>Comarum palustre</i>	Marsh Five-finger	S5
Asteraceae	<i>Conyza canadensis</i>	Horse-weed	S5
Orchidaceae	<i>Corallorhiza striata</i>	Striped Coralroot	S3S4
Orchidaceae	<i>Corallorhiza trifida</i>	Early Coralroot	S5
Cornaceae	<i>Cornus canadensis</i>	Bunchberry	S5
Cornaceae	<i>Cornus sericea</i>	Red Osier Dogwood	S5
Betulaceae	<i>Corylus americana</i>	American Hazelnut	S4
Betulaceae	<i>Corylus cornuta</i>	Beaked Hazelnut	S5
Orchidaceae	<i>Cypripedium parviflorum var. pubescens</i>	Large Yellow Lady's-slipper	S5?
Rosaceae	<i>Dasiphora fruticosa</i>	Shrubby Cinquefoil	S5
Ranunculaceae	<i>Delphinium glaucum</i>	Tall Larkspur	SNA
Cucurbitaceae	<i>Echinocystis lobata</i>	Wild Cucumber	S5

Cyperaceae	<i>Eleocharis acicularis</i>	Needle Spike-rush	S5
Cyperaceae	<i>Eleocharis palustris</i>	Creeping Spike-rush	S5
Poaceae	<i>Elymus canadensis</i>	Canada Wild-rye	S5?
Poaceae	<i>Elymus repens</i>	Quack-grass	SNA
Onagraceae	<i>Epilobium ciliatum</i>	Hairy Willow-herb	S5
Onagraceae	<i>Epilobium palustre</i>	Marsh Willowherb	S5
Equisetaceae	<i>Equisetum arvense</i>	Common Horsetail	S5
Equisetaceae	<i>Equisetum fluviatile</i>	Swamp Horsetail	S5
Equisetaceae	<i>Equisetum palustre</i>	Marsh Horsetail	S4S5
Asteraceae	<i>Erigeron philadelphicus</i>	Philadelphia Fleabane	S5
Cyperaceae	<i>Eriophorum angustifolium</i>	Tall Cotton-grass	S5
Asteraceae	<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	S5
Asteraceae	<i>Euthamia graminifolia</i>	Flat-topped Goldenrod	S5
Rosaceae	<i>Fragaria virginiana</i>	Smooth Wild Strawberry	S5
Oleaceae	<i>Fraxinus nigra</i>	Black Ash	S3
Oleaceae	<i>Fraxinus pennsylvanica</i>	Green Ash	S5
Rubiaceae	<i>Galium boreale</i>	Northern Bedstraw	S5
Rubiaceae	<i>Galium triflorum</i>	Sweet-scented Bedstraw	S5
Rosaceae	<i>Geum aleppicum</i>	Yellow Avens	S5
Poaceae	<i>Glyceria grandis</i>	Tall Manna Grass	S5
Fabaceae	<i>Glycyrrhiza lepidota</i>	Wild Licorice	S5
Apiaceae	<i>Heracleum maximum</i>	Cow-parsnip	S5
Poaceae	<i>Hordeum jubatum</i>	Wild Barley	S5
Iridaceae	<i>Iris versicolor</i>	Blue Flag	S4
Juncaceae	<i>Juncus arcticus</i> var. <i>balticus</i>	Baltic Rush	S5
Juncaceae	<i>Juncus nodosus</i>	Knotted Rush	S5
Fabaceae	<i>Lathyrus japonicus</i>	Beach-pea	S4
Fabaceae	<i>Lathyrus ochroleucus</i>	Pale Vetchling	S4S5
Fabaceae	<i>Lathyrus venosus</i>	Wild Peavine	S5
Lemnaceae	<i>Lemna minor</i>	Lesser Duckweed	SNA
Lemnaceae	<i>Lemna trisulca</i>	Star Duckweed	S5
Asteraceae	<i>Leucanthemum vulgare</i>	Ox-eye Daisy	SNA
Liliaceae	<i>Lilium philadelphicum</i>	Wood Lily	S4
Campanulaceae	<i>Lobelia kalmii</i>	Kalm's Lobelia	S5
Primulaceae	<i>Lysimachia ciliata</i>	Fringed Loosestrife	S5



Primulaceae	<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife	S5
Liliaceae	<i>Maianthemum canadense</i>	Two-leaved Solomon's-seal	S5
Liliaceae	<i>Maianthemum stellatum</i>	Star-flowered Solomon's-seal	S5
Liliaceae	<i>Maianthemum trifolium</i>	Three-leaved Solomon's-seal	S5
Fabaceae	<i>Medicago sativa</i>	Alfalfa	SNA
Fabaceae	<i>Melilotus albus</i>	White Sweet Clover	SNA
Fabaceae	<i>Melilotus officinalis</i>	Yellow Sweet Clover	SNA
Lamiaceae	<i>Mentha arvensis</i>	Common Mint	S5
Boraginaceae	<i>Mertensia paniculata</i>	Tall Lungwort	S5
Boraginaceae	<i>Mitella nuda</i>	Mitrewort	S5
Poaceae	<i>Muhlenbergia asperifolia</i>	Scratch Grass	S4
Nymphaeaceae	<i>Nuphar variegata</i>	Yellow Pond-lily	S5
Onagraceae	<i>Oenothera biennis</i>	Evening-primrose	S5
Umbelliferae	<i>Osmorhiza longistylis</i>	Smooth Sweet Cicely	
Umbelliferae	<i>Pastinaca sativa</i>	Parsnip	
Polygonaceae	<i>Persicaria amphibia</i>	Water Smartweed	S5
Asteraceae	<i>Petasites frigidus</i> var. <i>sagittatus</i>	Arrow-leaved Colt's-foot	S5
Poaceae	<i>Phalaris arundinacea</i>	Reed Canary Grass	S5
Poaceae	<i>Phleum pratense</i>	Common Timothy	SNA
Poaceae	<i>Phragmites australis</i>	Common Reed	S5
Pinaceae	<i>Picea glauca</i>	White Spruce	
Plantaginaceae	<i>Plantago major</i>	Common Plantain	SNA
Orchidaceae	<i>Platanthera hyperborea</i>	Northern Green Orchid	SNA
Poaceae	<i>Poa pratensis</i>	Kentucky Blue Grass	S5
Salicaceae	<i>Populus balsamifera</i>	Balsam Poplar	S5
Salicaceae	<i>Populus tremuloides</i>	Trembling Aspen	S5
Potamogetonaceae	<i>Potamogeton richardsonii</i>	Clasping-leaved Pondweed	S5
Rosaceae	<i>Potentilla norvegica</i>	Rough Cinquefoil	S5
Rosaceae	<i>Prunus virginiana</i>	Choke Cherry	S5
Pyrolaceae	<i>Pyrola asarifolia</i>	Pink Pyrola	S5
Fagaceae	<i>Quercus macrocarpa</i>	Bur Oak	S5
Ranunculaceae	<i>Ranunculus aquatilis</i>	White Water Crowfoot	S5
Ranunculaceae	<i>Ranunculus gmelinii</i>	Small Yellow Water Buttercup	S5
Grossulariaceae	<i>Ribes oxycanthoides</i>	Bristly Wild Gooseberry	S5
Grossulariaceae	<i>Ribes triste</i>	Wild Red Currant	S5

Rosaceae	<i>Rosa acicularis</i>	Prickly Rose	S5
Rosaceae	<i>Rosa arkansana</i>	Low Prairie Rose	S4
Rosaceae	<i>Rosa woodsii</i>	Wood's Rose	S4
Rosaceae	<i>Rubus idaeus</i>	Wild Red Raspberry	S5
Rosaceae	<i>Rubus pubescens</i>	Dewberry	S5
Polygonaceae	<i>Rumex acetosa</i>	Garden-sorrel	SNA
Polygonaceae	<i>Rumex arcticus</i>	Arctic Sorrel	S1
Polygonaceae	<i>Rumex britannica</i>	Water Dock	S4
Polygonaceae	<i>Rumex fueginus</i>	Golden Dock	S5
Polygonaceae	<i>Rumex occidentalis</i>	Western Dock	S5
Polygonaceae	<i>Rumex venosus</i>	Winged Dock	S3
Alismataceae	<i>Sagittaria cuneata</i>	Arum-leaved Arrowhead	S5
Salicaceae	<i>Salix amygdaloides</i>	Peach-leaved Willow	S4
Salicaceae	<i>Salix bebbiana</i>	Bebb's or Beaked Willow	S5
Salicaceae	<i>Salix discolor</i>	Pussy Willow	S5
Salicaceae	<i>Salix exigua</i>	Sandbar Willow	S5
Salicaceae	<i>Salix petiolaris</i>	Basket Willow	S4
Apiaceae	<i>Sanicula marilandica</i>	Snakeroot	S5
Cyperaceae	<i>Schoenoplectus acutus</i>	Hard-stemmed Bulrush	S4
Cyperaceae	<i>Scirpus microcarpus</i>	Small-fruited Bulrush	S5
Asteraceae	<i>Senecio congestus</i>	Marsh-fleabane	S5
Asteraceae	<i>Senecio vulgaris</i>	Common Groundsel	SNA
Asteraceae	<i>Setaria viridis</i>	Green Foxtail	SNA
Caryophyllaceae	<i>Silene csereii</i>	Smooth Catchfly	SNA
Apiaceae	<i>Sium suave</i>	Water-parsnip	S5
Smilacaceae	<i>Smilax lasioneura</i>	Carrion Flower	S4
Asteraceae	<i>Solidago canadensis</i>	Canada Goldenrod	S5
Asteraceae	<i>Sonchus arvensis</i>	Field Sow-thistle	SNA
Asteraceae	<i>Sonchus oleraceus</i>	Common Sow-thistle	SNA
Poaceae	<i>Spartina pectinata</i>	Slough Grass	S5
Rosaceae	<i>Spiraea alba</i>	Meadowsweet	S5
Orchidaceae	<i>Spiranthes romanzoffiana</i>	Hooded Ladies'-tresses	S5
Lamiaceae	<i>Stachys palustris</i>	Marsh Hedge-nettle	S5
Potamogetonaceae	<i>Stuckenia pectinata</i>	Sago Pondweed	S5
Asteraceae	<i>Symphotrichum boreale</i>	Northern Borealis	S5

Asteraceae	<i>Symphyotrichum ciliolatum</i>	Lindley's Aster	S5
Asteraceae	<i>Symphyotrichum ericoides</i>	Heath or Many-flowered Aster	S4
Asteraceae	<i>Symphyotrichum laeve</i>	Smooth Aster	S5
Asteraceae	<i>Tanacetum vulgare</i>	Common Tansy	SNA
Asteraceae	<i>Taraxacum officinale</i>	Common Dandelion	S5
Ranunculaceae	<i>Thalictrum venulosum</i>	Veiny Meadow-rue	S5
Brassicaceae	<i>Thlaspi arvense</i>	Field Pennycress	SNA
Anacardiaceae	<i>Toxicodendron rydbergii</i>	Poison-ivy	S5
Asteraceae	<i>Tragopogon dubius</i>	Goat's-beard	SNA
Primulaceae	<i>Trientalis borealis</i>	Northern Starflower	S5
Fabaceae	<i>Trifolium hybridum</i>	Alsike Clover	SNA
Juncaginaceae	<i>Triglochin maritima</i>	Seaside Arrow-grass	S5
Liliaceae	<i>Trillium cernuum</i>	Nodding Trillium	S4
Typhaceae	<i>Typha latifolia</i>	Common Cat-tail	S5
Ulmaceae	<i>Ulmus americana</i>	American or White Elm	S4
Lentibulariaceae	<i>Utricularia macrorhiza</i>	Greater Bladderwort	S5
Caprifoliaceae	<i>Viburnum edule</i>	Mooseberry	S5
Caprifoliaceae	<i>Viburnum opulus</i>	Highbush-cranberry	S5
Caprifoliaceae	<i>Viburnum rafinesquianum</i>	Downy Arrow-wood	S4
Fabaceae	<i>Vicia americana</i>	Common Vetch	S5
Violaceae	<i>Viola adunca</i>	Early Blue Violet	S5
Violaceae	<i>Viola nephrophylla</i>	Northern Bog Violet	S5
Asteraceae	<i>Xanthium strumarium</i>	Cocklebur	S4

## MAMMALS

A total of nineteen mammalian species was seen in the actual project area during the tenure of the study (Table 2). Undoubtedly, a number of other species could be easily added if a small mammal trapping survey had been conducted, because the east side of Lake Winnipeg in this general area has a good variety of shrews and other small rodents. Other species, such as White-tailed Jackrabbit were seen in the near vicinity but not in the actual project area.

The following section gives a brief description of the status of the various mammalian species that were recorded in the project area.

### Snowshoe Hare

This species was regularly encountered in the woodlands on the north side of the lagoon.

**Eastern Chipmunk**

This species was commonly found in the tree-shrub community and specifically was most common where hazelnut was growing.

**Least Chipmunk**

This little mammal is hard to spot in the dense shrubbery but occurs regularly in the tree-shrub community and was also encountered in some of the grasslands bordering the woods.

**Red Squirrel**

This species occurred on a daily basis, but was not nearly as common as one would normally expect in such a natural woods that has an excellent variety of deciduous trees and shrubs. Possibly the relative scarcity of conifers in the project area was a limiting factor on the squirrel population.

**Northern Pocket Gopher**

This species is relatively common in the grasslands and bordering some of the wetlands in the project area.

**American Beaver**

The omnipresent beaver was regularly recorded in the project area and built a dam during June within 20 meters of the southeast edge of the berm.

**Deer Mouse**

This is a common species in the project area and was seen frequently.

**Northern Red-backed Vole**

This species is far more common than most people realize, because on warm summer days it is much more active at dusk and during the night hours than it is in the day time.

**Muskrat**

This species is common in the lagoon with many muskrat platforms built in the cattail beds. They feed heavily on cattail and one can often observe them sitting on little platforms of cattail, feeding and/or grooming themselves.

**Meadow Jumping Mouse**

This is not an easy species to find but the study team did encounter it on a few occasions at Beaconia. They were invariably inhabiting the grasslands skirting the edge of the tree and shrub community.

**Meadow Vole**

The most conspicuous and probably abundant mammal in the study area was this species, which occurs in all habitats but was particularly common around the lagoon.

**Coyote**

Coyotes were walking on the berm on the east periphery of the man-made trench and found it an easy route to traverse the project area.

**Red Fox**

Like the Coyote, the Red Fox were also utilizing the berm to travel through the area but they were also observed catching small rodents off of the berm. They would walk slowly along the margin of the berm and when they heard a mouse or vole they would stop, get their bearings, and then pounce into the grass in an attempt to catch their prey. The Red Fox were also seen with some regularity feeding in the meadows on the north and east side of the tree-shrub community.

**Black Bear**

On at least two occasions a Black Bear walked through the project area while travelling along the berm.

**Raccoon**

Surprisingly, Raccoons are not commonly encountered in this area and their tracks are seldom seen. This is very fortunate for the turtles which dig burrows and deposit their eggs along the beach. In some parts of Manitoba, Raccoons can be major predators of turtle eggs immediately after they have been deposited.

**Mink**

Mink were seen swimming in the lagoon, but more commonly skirting along its edge. They criss-crossed the berm on many occasions.

**Short-tailed Weasel**

Only encountered once, this species was observed along the edge of the lagoon in an area where Meadow Vole runs were in abundance. Meadow Voles are a favourite prey of the Short-tailed Weasel.

**Striped Skunk**

This species is a regular visitor along the lagoon's periphery and in the grass associated with the lagoon. One duck nest was found that had been predated by a skunk.

**White-tailed Deer**

This is a very common species in the project area. It probably spends most of its time in the tree-shrub area, but when mosquitoes were abundant, the deer were often flushed from meadows. In these meadows deer are more apt to be less harassed by mosquitoes on windy days, because mosquitoes are not nearly the problem for deer in an exposed windy area, that they can be in a calm treed or shrubby area, where mosquitoes can be very abundant.

**Table 2**  
**Mammals of the Beaconia Lagoon**

Family	Provincial Scientific Name	Provincial Common Name	Manitoba Rank
Canidae	<i>Canis latrans</i>	Coyote	S5
Castoridae	<i>Castor canadensis</i>	American Beaver	S5
Muridae	<i>Clethrionomys rutilus</i>	Northern Red-backed Vole	S3
Leporidae	<i>Lepus americanus</i>	Snowshoe Hare	S5
Mephitidae	<i>Mephitis mephitis</i>	Striped Skunk	S5
Muridae	<i>Microtus pennsylvanicus</i>	Meadow Vole	S5
Mustelidae	<i>Mustela vison</i>	Mink	S5
Mustelidae	<i>Mustella erminea</i>	Short-tailed Weasel or Ermine	S5
Cervidae	<i>Odocoileus virginianus</i>	White-tailed Deer	S5
Muridae	<i>Ondatra zibethicus</i>	Common Muskrat	S5
Muridae	<i>Peromyscus maniculatus</i>	Deer Mouse	S5
Procyonidae	<i>Procyon lotor</i>	Common Raccoon	S5
Sciuridae	<i>Tamias minimus</i>	Least Chipmunk	S5
Sciuridae	<i>Tamias striatus</i>	Eastern Chipmunk	S5
Sciuridae	<i>Tamiasciurus hudsonicus</i>	Red Squirrel	S5
Geomyidae	<i>Thomomys talpoides</i>	Northern Pocket Gopher	S5
Ursidae	<i>Ursus americanus</i>	Black Bear	S5
Canidae	<i>Vulpes vulpes</i>	Red Fox	S5
Dipodidae	<i>Zapus hudsonius</i>	Meadow Jumping Mouse	S5

## BIRDS

Table 3 gives the species recorded during the study team's surveys. A total of eighty-three is impressive considering that the spring and most of the fall migrations were not covered. All species were initially recorded in June and July, however, those with an asterisk (\*) were seen after July 31<sup>st</sup> and never nested in the immediate project area.

The Beaconia Lagoon, and its surrounding environs, comprises a very rich area for breeding birds. It is made up of a number of habitats that include the east beach of Lake Winnipeg, the Beaconia Lagoon, a highly diverse tree and shrub community, a transition zone of grasses and herbs that stretches along the north and east sides of the lagoon and separated the lagoon habitat from the tree and shrub habitat and finally to the east is a meadow dotted with White Spruce and willows.

Much discussion could be made about the birds but only a few of the highlights are presented here.

There were no Piping Plover nests located in the project area at the time the study team worked in the area however, on a daily basis through June and the first half of July, Piping Plover were regularly encountered along the beach of Lake Winnipeg both immediately north and south of the breach that

forms the entrance to the Beaconia Lagoon. The Piping Plover preferred the portion of the beach north of this breach with two, and more frequently one, regularly feeding there. This northern area was often traversed by all-terrain vehicles and the drivers of the ATVs acted oblivious to the presence of any bird life in the areas in which they were travelling. In fact, during mid-August, they delighted in flushing gulls off the beach. The woodlands are very rich with bird life and contained a great diversity of nesting species. A pair of Pileated Woodpeckers nested there and both Hairy and Downy Woodpeckers utilized the woods but for these latter two species no nests were actually found.

The most common nesting species of warbler was the American Redstart with as many as three singing males heard in a two-minute period at some locations. Other warbler species that were regularly encountered were Yellow Warbler, Chestnut-sided Warbler and Ovenbird. Another warbler species, the Common Yellowthroat, nested in the lagoon.

As an example of the diversity, other woodland species that were also breeding there included American Robin, Veery, Black-capped Chickadee, Blue Jay and American Crow.

One of the highlights of the evening observations was that on June 29<sup>th</sup> eight broods of ducklings were seen in the Beaconia Lagoon including five Wood Ducks, one Mallard, one Canvasback, and one Blue-winged Teal. At least two broods of Ring-necked Ducks and one brood of Redheads were also raised in the lagoon. All five broods of Wood Ducks were in view at one time and when one considers the amount of emergent vegetation that grows in the lagoon and how hard it is to observe more than a small area at any one time, it showed that a significant number of duck broods utilized the place. On the July 22<sup>nd</sup> evening when the two Ring-necked Duck broods and the one Redhead brood were observed they were all swimming in the trench at the same time.

Cattail is the dominant vegetation in the lagoon and Yellow-headed Blackbirds, Red-winged Blackbirds and Marsh Wrens all nested in them in goodly numbers. There were also a small number of pairs of Common Grackles nesting in the Cattail beds. Toward the southeast corner of the lagoon there was shallower water and much dead floating emergent vegetation. The Black Terns were nesting on the floating vegetation. Sora pairs and at least one pair of Virginia Rails were using this immediate area and nesting in the broad band of sedges growing under flooded conditions. Sora is quite a common nesting species along this portion of Lake Winnipeg but the Virginia Rail is not and it is highly selective in its habitat selection.

Song Sparrows utilize quite a wide variety of habitats and this is certainly true around the Beaconia Lagoon. In most locales in Manitoba, Song Sparrows far outnumber Swamp Sparrows but this was not true at the Beaconia Lagoon where in 2010 there was a strong population of Swamp Sparrows which called intermittently and particularly in the evening, at dawn and throughout the night.

A pair of Red-tailed Hawks and a pair of Northern Harriers daily visited the Beaconia Lagoon area but neither species was actually nesting in the project area although by their frequency of appearance, both pairs must have been nesting in close proximity.

A number of subadult Bald Eagles utilized the project area on a daily basis. It was not unusual to see as many as three perched in the trees close to the lagoon in the early morning or evening through June and July. Judging by their appearance, which varies considerably in subadults, there was obviously more than three utilizing the general area. By mid-August new Bald Eagles, including adults, were arriving and utilizing the lagoon.

Every week brought changes in the use of the lagoon and no species illustrates that better than the Common Nighthawk. They were not recorded in the project area during the last half of June and July, but by August 3<sup>rd</sup> they were feeding over the lagoon in their pursuit of insects. On August 18<sup>th</sup> the study team arrived at the project area at 3:30 p.m. The temperature was 20° Celsius and there was no wind. The nighthawks were darting back and forth over the lagoon. They continued this all afternoon and through the twilight hours until it was too dark to see them. By watching them for extended periods of time, it could be seen that they were feeding exclusively over the lagoon and the marshland extending to the south. There was very little nighthawk activity over Lake Winnipeg and the wooded areas. Obviously, whatever they were feeding upon was closely associated to the marshy areas. At times as many as thirty-two nighthawks could be counted over the lagoon.

During July the shores of Lake Winnipeg were almost void of any shorebird activity and, with the exception of a few Piping Plovers and the occasional Lesser Yellowlegs, had limited use by the plover/shorebird group. By mid-August there was much more shorebird activity and Pectoral and Least Sandpipers were almost always present. These two species, which nest in tundra habitat far to the north, had already returned and made the shoreline of Lake Winnipeg a temporary home.

During June and July and, to a lesser extent, the first half of August, one could hardly walk the beaches of Lake Winnipeg and not look out on the lake without seeing Western Grebes. They definitely were not utilizing the marshes immediately adjacent to the lake as far as the study team could determine, but were always busy feeding and/or resting on Lake Winnipeg. Judging by the significant number present, they either represented a large group of non-breeders or birds that had been unsuccessful in their 2010 nesting attempt. No Western Grebe was ever seen on the lagoon even though one pair of Red-necked Grebe and several Pied-billed Grebes utilized the lagoon throughout the summer. By mid-August Pied-billed Grebes were particularly obvious within the lagoon.

**TABLE 3**  
**Birds of the Beaconia Lagoon**

<b>Family</b>	<b>Scientific Name</b>	<b>Common Name</b>	<b>Manitoba Rank</b>
Podicipedidae	<i>Aechmophorus occidentalis</i>	Western Grebe	S4B
Icteridae	<i>Agelaius phoeniceus</i>	Red-winged Blackbird	S5B
Anatidae	<i>Anas crecca</i>	Green-winged Teal *	S5B
Anatidae	<i>Anas discors</i>	Blue-winged Teal	S5B
Anatidae	<i>Anas platyrhynchos</i>	Mallard	S5B
Motacillidae	<i>Anthus rubescens</i>	American Pipit *	S3B
Trochilidae	<i>Archilochus colubris</i>	Ruby-throated Hummingbird	S5B
Ardeidae	<i>Ardea herodias</i>	Great Blue Heron	S4S5B
Anatidae	<i>Aythya americana</i>	Redhead	S4S5B
Anatidae	<i>Aythya collaris</i>	Ring-necked Duck	S5B



Anatidae	<i>Aythya valisineria</i>	Canvasback	S4B
Bombycillidae	<i>Bombycilla cedrorum</i>	Cedar Waxwing	S5B
Anatidae	<i>Branta canadensis</i>	Canada Goose	S5B
Strigidae	<i>Bubo virginianus</i>	Great Horned Owl	S5
Accipitridae	<i>Buteo jamaicensis</i>	Red-tailed Hawk	S5B
Scolopacidae	<i>Calidris bairdii</i>	Baird's Sandpiper *	SNA
Scolopacidae	<i>Calidris melanotos</i>	Pectoral Sandpiper *	SNA
Scolopacidae	<i>Calidris minutilla</i>	Least Sandpiper *	S4S5B
Fringillidae	<i>Carduelis tristis</i>	American Goldfinch	S5B
Turdidae	<i>Catharus fuscescens</i>	Veery	S4S5B
Alcedinidae	<i>Ceryle alcyon</i>	Belted Kingfisher	S4S5B
Charadriidae	<i>Charadrius vociferus</i>	Killdeer	S5B
Laridae	<i>Chlidonias niger</i>	Black Tern	S4B
Caprimulgidae	<i>Chordeiles minor</i>	Common Nighthawk *	S4B
Accipitridae	<i>Circus cyaneus</i>	Northern Harrier	S4B
Troglodytidae	<i>Cistothorus palustris</i>	Marsh Wren	S5B
Corvidae	<i>Corvus brachyrhynchos</i>	American Crow	S5B
Corvidae	<i>Corvus corax</i>	Common Raven	S5
Corvidae	<i>Cyanocitta cristata</i>	Blue Jay	S5
Parulidae	<i>Dendroica coronata</i>	Yellow-rumped Warbler *	S5B
Parulidae	<i>Dendroica magnolia</i>	Magnolia Warbler	S5B
Parulidae	<i>Dendroica pensylvanica</i>	Chestnut-sided Warbler	S5B
Parulidae	<i>Dendroica petechia</i>	Yellow Warbler	S5B
Picidae	<i>Dryocopus pileatus</i>	Pileated Woodpecker	S5
Mimidae	<i>Dumetella carolinensis</i>	Gray Catbird	S5B
Tyrannidae	<i>Empidonax alnorum</i>	Alder Flycatcher	S5B
Tyrannidae	<i>Empidonax minimus</i>	Least Flycatcher	S5B
Falconidae	<i>Falco columbarius</i>	Mertlin *	S4S5
Falconidae	<i>Falco sparverius</i>	American Kestrel	S4S5B
Parulidae	<i>Geothlypis trichas</i>	Common Yellowthroat	S5B
Accipitridae	<i>Haliaeetus leucocephalus</i>	Bald Eagle	S4S5B
Hirundinidae	<i>Hirundo rustica</i>	Barn Swallow	S5B
Icteridae	<i>Icterus galbula</i>	Baltimore Oriole	S5B
Laridae	<i>Larus argentatus</i>	Herring Gull	S5B
Laridae	<i>Larus delawarensis</i>	Ring-billed Gull	S5B
Emberizidae	<i>Melospiza georgiana</i>	Swamp Sparrow	S5B
Emberizidae	<i>Melospiza melodia</i>	Song Sparrow	S5B
Parulidae	<i>Mniotilta varia</i>	Black-and-white Warbler *	S5B
Icteridae	<i>Molothrus ater</i>	Brown-headed Cowbird	S5B
Strigidae	<i>Otus asio</i>	Eastern Screech-owl *	S4

Emberizidae	<i>Passerculus sandwichensis</i>	Savannah Sparrow	S5B
Pelecanidae	<i>Pelecanus erythrorhynchos</i>	American White Pelican	S3S4B
Phalacrocoracidae	<i>Phalacrocorax auritus</i>	Double-crested Cormorant	S5B
Cardinalidae	<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	S4S5B
Corvidae	<i>Pica hudsonia</i>	Black-billed Magpie	S5
Picidae	<i>Picoides pubescens</i>	Downy Woodpecker	S5
Picidae	<i>Picoides villosus</i>	Hairy Woodpecker	S5
Podicipedidae	<i>Podiceps grisegena</i>	Red-necked Grebe	S4S5B
Podicipedidae	<i>Podilymbus podiceps</i>	Pied-billed Grebe	S4S5B
Paridae	<i>Poecile atricapilla</i>	Black-capped Chickadee	S5
Rallidae	<i>Porzana carolina</i>	Sora	S5B
Hirundinidae	<i>Progne subis</i>	Purple Martin	S4S5B
Icteridae	<i>Quiscalus quiscula</i>	Common Grackle	S5B
Rallidae	<i>Rallus limicola</i>	Virginia Rail *	S4B
Tyrannidae	<i>Sayornis phoebe</i>	Eastern Phoebe	S5B
Parulidae	<i>Seiurus aurocapillus</i>	Ovenbird	S5B
Parulidae	<i>Setophaga ruticilla</i>	American Redstart	S5B
Sittidae	<i>Sitta canadensis</i>	Red-breasted Nuthatch *	S5
Emberizidae	<i>Spizella pallida</i>	Clay-colored Sparrow	S4S5B
Emberizidae	<i>Spizella passerina</i>	Chipping Sparrow	S5B
Laridae	<i>Sterna caspia</i>	Caspian Tern *	S3S4B
Laridae	<i>Sterna hirundo</i>	Common Tern	S4S5B
Hirundinidae	<i>Tachycineta bicolor</i>	Tree Swallow	S5B
Mimidae	<i>Toxostoma rufum</i>	Brown Thrasher	S4S5B
Scolopacidae	<i>Tringa flavipes</i>	Lesser Yellowlegs	S5B
Scolopacidae	<i>Tringa melanoleuca</i>	Greater Yellowlegs *	S5B
Troglodytidae	<i>Troglodytes aedon</i>	House Wren	S5B
Turdidae	<i>Turdus migratorius</i>	American Robin	S5B
Tyrannidae	<i>Tyrannus tyrannus</i>	Eastern Kingbird	S5B
Vireonidae	<i>Vireo gilvus</i>	Warbling Vireo *	S5B
Vireonidae	<i>Vireo olivaceus</i>	Red-eyed Vireo	S5B
Icteridae	<i>Xanthocephalus xanthocephalus</i>	Yellow-headed Blackbird	S5B
Emberizidae	<i>Zonotrichia albicollis</i>	White-throated Sparrow	S5B

## **AMPHIBIANS**

The seven species found in the small parcel, comprising the project area, are listed in Table 4. It shows how rich the locale is biologically.

### **Blue-spotted Salamander**

If one lifts enough logs and peers under enough boards and other debris, ultimately in the project area one can find this species. It is a very small salamander and it spends its days resting under a wide variety of objects to avoid the heat and the bright sun. On cloudy, rainy days, or at night if one is lucky they can be spotted crossing roads or moving about. In the cottage area immediately to the north of the project area one can easily find them under flower pots. It is a far more common species in Manitoba than most people realize but it is incredibly localized in its distribution. The Beaconia and Gull Lake areas are two locales where it can be found with some regularity, but only a short distance to the north, at Victoria Beach, it is not encountered. The study team has spent much time in the Victoria Beach area and never found the species. Conversations with many local gardeners revealed that they have not seen them there either. At Beaconia the majority of cottagers that have flower pots are familiar with this fascinating little salamander.

### **American Toad**

Through much of the summer this species was very hard to actually see but could be heard on a regular basis. Their call is distinctive but in the thick vegetation of the project area they were not easy to actually see.

### **Northern Spring Peeper**

This species has a very loud call and was heard regularly early in the season but again was seen far less often.

### **Gray Tree Frog**

Everything that was stated about the previous two species is true for this one—it is much more frequently heard than seen. This species utilizes a wide variety of habitats but it was found most easily in the narrow band of tall grasses and herbs occurring between the lagoon and the tree-shrub community to the north. The berm has destroyed a good portion of this band of grasses and herbs but by walking the north edge of the berm the study team was able to actually observe a few. When they are in dense tree and shrub vegetation one has to be extremely lucky to actually see them even when they are calling within a few meters.

### **Boreal Chorus Frog**

This is an abundant frog that can be seen and heard easily particularly in the spring and early summer.

### **Wood Frog**

This is a common species in the project area. It not only calls for a relatively long period of time in the spring but in the latter part of the summer and early fall its calls can still be heard periodically. The

young tadpoles of this species and Leopard Frogs were leaving the ponds and morphing into the adult stage at the end of July.

### Northern Leopard Frog

This species is very common in the Beaconia Lagoon and this was particularly true during August. There were many exceptionally large Leopard Frogs at this location and this was true of both the green and the brown varieties. Leopard Frog numbers in some parts of Canada have declined significantly but the Beaconia area still supports a large healthy population. In June and July, when the waters of the lagoon were particularly turbid, Wood Frogs and Leopard Frogs were almost non-existent around the lagoon's actual shoreline, but by mid-August there were segments of lagoon shoreline closest to Lake Winnipeg where Leopard Frogs were averaging more than one per meter over twenty to thirty meter portions of the shoreline.

**TABLE 4**  
**Amphibians of the Beaconia Lagoon**

Family	Provincial Scientific Name	Provincial Common Name	Manitoba Rank
Ambystomatidae	<i>Ambystoma laterale</i>	Blue-spotted Salamander	S3S4
Bufo	<i>Bufo americanus</i>	American Toad	S5
Hylidae	<i>Hyla versicolor</i>	Gray Tree Frog	S4
Hylidae	<i>Pseudacris crucifer</i>	Northern Spring Peeper	S4
Hylidae	<i>Pseudacris triseriata maculata</i>	Boreal Chorus Frog	S5
Ranidae	<i>Rana pipiens</i>	Northern Leopard Frog	S4
Ranidae	<i>Rana sylvatica</i>	Wood Frog	S5

## REPTILES

Three reptilian species were detected in the project area and their status is illustrated in Table 5.

### Common Snapping Turtle

Nesting sites on Lake Winnipeg of this species are not well documented, but the study team was incredibly lucky to begin work in the project area, when this species was laying eggs. The narrow band of beach between Lake Winnipeg and the lagoon is utilized nightly to deposit eggs during June. The first day that the study team searched the beach (June 19) six new nests were found and subsequently, on a daily basis, new nests were located with the last new nest being recorded on June 26th. To get an idea about the number of eggs being deposited, a researcher accompanying the study team examined one nest and it contained 56 eggs, which is a very large number. The eggs were again carefully buried and were not found by predators. Astonishingly, not one of the turtle nests encountered at Beaconia Beach was disturbed by predators. This is remarkable considering that many Snapping Turtles in the previous ten days prior to the commencement of this study had been laying eggs on the Winnipeg River and Red Foxes had been predated the vast majority of them. In fact, the study team witnessed foxes

standing near turtles waiting for them to lay the last egg and then the foxes would dig up the eggs and either eat them right there or carry them to their den. Judging by the study team's experiences in 2010, the turtle population depositing eggs along the east beaches of Lake Winnipeg at the location of the Beaconia Lagoon have a tremendous advantage over the turtles that deposit their eggs along the Winnipeg River, because the Beaconia turtle eggs are not being predated by foxes and raccoons.

The Snapping Turtles at this location are coming to shore at dusk and depositing their eggs throughout the night. A few have not finished by dawn and stay longer. On one occasion, a particularly late turtle was still on the beach and did not cover her eggs and leave until 10:40 a.m. Central Daylight Time on June 23.

Some of the Snapping Turtles' nests were within a meter or two of the edge of the water in the Beaconia Lagoon. Huge waves off of Lake Winnipeg pound the shoreline and the study team observed that the turtles were selecting sites in the sand as far as possible away from where the big waves would reach. **This is a very important location for breeding Snapping Turtles.**

### **Western Painted Turtle**

This species, like the Common Snapping Turtle, is using the beach between Lake Winnipeg and the Beaconia Lagoon to burrow and deposit their eggs. The Western Painted Turtle commenced laying eggs later than the Snapping Turtles did and continued laying eggs for a longer time. The eastern shoreline of Lake Winnipeg is naturally breached at the northwest corner of the Beaconia Lagoon and the Western Painted Turtles were all laying their eggs on the north side of the breach. They burrowed in an area that stretched no more than seventy meters and was on a higher elevation of beach than that used by the Snapping Turtles south of the breach. The Western Painted Turtle utilized a variety of habitat from the sandy top of the beach which had a fair amount of small cobblestones, stretching down to the really sandy areas within a meter of the trench that was dug in producing the berm.

No nests of either species were made on the berm. It was clear that the turtles of both species made a great attempt to have their eggs deposited back of the high water mark of waves coming off Lake Winnipeg.

All-terrain vehicles (ATV) frequently traverse the portion of the Winnipeg Beach that is north of the natural breach and consequently there were often marks made by ATVs turning around at high speed and running over the actual sites where turtles had been during the night depositing their eggs. There is an incredible amount of ATV activity in this area particularly on weekends.

Ironically the turtles that deposit eggs south of this breach did not experience disturbance by ATVs during 2010. This is because ATVs coming from the north do not cross the breach. ATVs do regularly travel the road on the south side of the lagoon and do go back and forth along the beaches of Lake Winnipeg but, for some fortunate reason, when the ATVs travelling the road reach the beach, they invariably go south where there is an abundance of sandy beaches and play in those areas. By not turning north they do not disturb the Snapping Turtles that are nesting in that area. Moreover, the Snapping Turtles coming out of Lake Winnipeg south of the breach frequently pass through bands of willows to get as far inland toward the lagoon to lay their eggs. This means that some of the sites where the turtles were laying their eggs south of the breach would be somewhat difficult for ATVs to get access to. In other words, the willows partially protect the turtle nesting areas south of the breach.

### Red-sided Garter Snake

Garter snakes were encountered relatively frequently. They were seen sunning themselves on the beaches and on the berm. They were in the lagoon and also most regularly encountered in the grassy area between the tree-shrub community and the actual berm.

Table 5  
Reptiles of the Beaconia Lagoon

Family	Provincial Scientific Name	Provincial Common Name	Manitoba Rank
Chelydridae	<i>Chelydra serpentina serpentina</i>	Common Snapping Turtle	S3
Emydidae	<i>Chrysemys picta bellii</i>	Western Painted Turtle	S4
Colubridae	<i>Thamnophis sirtalis</i>	Red-sided Garter Snake	S3S4

### Conclusion

The Beaconia Lagoon, its bordering band of grasses and herbs and, back of that, the woods and shrubs community plus the beaches of Lake Winnipeg and, off to the east, the old farmland reverting to native grasses, combine to create a relatively pristine natural area. This area, with its varied habitats, provided a window on the great diversity of flora and fauna occurring in the East Beaches portion of southern Lake Winnipeg.

The tranquility of the setting, aptly described as "nature's paradise", was transformed by the construction of the long trench and berm.

The challenge now is to try to harmonize this intrusion with its surroundings and attempt to mitigate for the environmental changes. This report provides a basis to build on so that over time, and with ingenuity, much can be accomplished which will benefit plants and wildlife and help counter the damage done to the natural environment.

The federal fisheries authorities state that the trench will enhance fish-spawning habitat locally and the planned terrestrial habitat enhancements for the berm and immediate surroundings have the potential of also being beneficial to a broad group of plant and animal species. The large number of spruce already planted on the berm is a prime example of beautifying the landscape with the result that new bird species will ultimately nest in the project area that do not now breed there.

DATE: 2006/01/06  
TIME: 12:22  
POST

**MANITOBA**  
**STATUS OF TITLE**

TITLE NO: 2126059  
PAGE: 1

STATUS OF TITLE..... ACCEPTED  
ORIGINATING OFFICE..... WINNIPEG  
REGISTERING OFFICE..... WINNIPEG  
REGISTRATION DATE..... 2005/10/24  
COMPLETION DATE..... 2005/11/21

PRODUCED FOR.. GEORGE, J. DAVID, & ASSOC.  
ADDRESS..... 108 REGENT AVE. E.  
WPG., MAN. R2COC  
  
PRODUCED BY... M.DERKSEN  
LTO BOX NO.... 222

LEGAL DESCRIPTION:

ROBERT JAMES RETTIE AND MARGARET MARILYN RETTIE  
BOTH OF OKOTOKS IN ALBERTA

ARE REGISTERED OWNERS AS JOINT TENANTS SUBJECT TO SUCH ENTRIES  
RECORDED HEREON IN THE FOLLOWING DESCRIBED LAND:

ALL THAT PORTION OF SE 1/4 16-17-7 EPM  
WHICH LIES TO THE SW OF THE SOUTH-WESTERN LIMIT OF THE LAND  
TAKEN FOR CANADIAN NORTHERN RLY RIGHT-OF-WAY PLAN 2045 WLTO

ACTIVE TITLE CHARGES:

3207153 WPG ACCEPTED MORTGAGE	REG'D: 2005/10/24
FROM/BY: ROBERT JAMES RETTIE & MARGARET MARILYN RETTIE	
TO: FARM CREDIT CANADA	
CONSIDERATION: 225000.00	NOTES:

ACCEPTED THIS 24TH DAY OF OCTOBER, 2005  
BY G.PHILLIPS FOR THE DISTRICT REGISTRAR OF  
THE LAND TITLES DISTRICT OF WINNIPEG.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA  
STORAGE SYSTEM ON 2006/01/06 OF TITLE NUMBER 2126059 .  
THIS IS NOT A DUPLICATE TITLE.

X   
FOR THE DISTRICT REGISTRAR

\*\*\*\*\* END OF STATUS OF TITLE FOR TITLE 2126059 WPG \*\*\*\*\*

DATE: 2006/01/06  
TIME: 12:22  
POST

MANITOBA  
STATUS OF TITLE

TITLE NO: 2126054  
PAGE: 1

STATUS OF TITLE..... ACCEPTED  
ORIGINATING OFFICE..... WINNIPEG  
REGISTERING OFFICE..... WINNIPEG  
REGISTRATION DATE..... 2005/10/24  
COMPLETION DATE..... 2005/11/21

PRODUCED FOR.. GEORGE, J. DAVID, & ASSOC.  
ADDRESS..... 108 REGENT AVE. E.  
WPG., MAN. R20  
PRODUCED BY... M.DERKSEN  
LTO BOX NO.... 222

LEGAL DESCRIPTION:

ROBERT JAMES RETTIE AND MARGARET MARILYN RETTIE  
BOTH OF OKOTOKS IN ALBERTA

ARE REGISTERED OWNERS AS JOINT TENANTS SUBJECT TO SUCH ENTRIES  
RECORDED HEREON IN THE FOLLOWING DESCRIBED LAND:

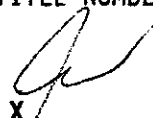
ALL THAT PORTION OF SW 1/4 15-17-7 EPM  
TAKEN FOR RLY RIGHT-OF-WAY PLAN 2045 WLTO

ACTIVE TITLE CHARGES:

3207153 WPG ACCEPTED MORTGAGE	REG'D: 2005/10/24
FROM/BY: ROBERT JAMES RETTIE & MARGARET MARILYN RETTIE	
TO: FARM CREDIT CANADA	
CONSIDERATION: 225000.00	NOTES:

ACCEPTED THIS 24TH DAY OF OCTOBER, 2005  
BY G.PHILLIPS FOR THE DISTRICT REGISTRAR OF  
THE LAND TITLES DISTRICT OF WINNIPEG.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA  
STORAGE SYSTEM ON 2006/01/06 OF TITLE NUMBER 2126054 .  
THIS IS NOT A DUPLICATE TITLE.

  
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FOR THE DISTRICT REGISTRAR

\*\*\*\*\* END OF STATUS OF TITLE FOR TITLE 2126054 WPG \*\*\*\*\*



DATE: 2006/01/06  
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STATUS OF TITLE

TITLE NO: 2126058  
PAGE: 1

STATUS OF TITLE..... ACCEPTED  
ORIGINATING OFFICE..... WINNIPEG  
REGISTERING OFFICE..... WINNIPEG  
REGISTRATION DATE..... 2005/10/24  
COMPLETION DATE..... 2005/11/21

PRODUCED FOR.. GEORGE, J. DAVID, & ASSOC.  
ADDRESS..... 108 REGENT AVE. E.  
WPG., MAN. R2COC1  
PRODUCED BY... M.DERKSEN  
LTO BOX NO.... 222

LEGAL DESCRIPTION:

ROBERT JAMES RETTIE AND MARGARET MARILYN RETTIE  
BOTH OF OKOTOKS IN ALBERTA

ARE REGISTERED OWNERS AS JOINT TENANTS SUBJECT TO SUCH ENTRIES  
RECORDED HEREON IN THE FOLLOWING DESCRIBED LAND:

ALL THAT PORTION OF SE 1/4 16-17-7 EPM  
TAKEN FOR RLY RIGHT-OF-WAY PLAN 2045 WLTO

ACTIVE TITLE CHARGES:

3207153 WPG ACCEPTED MORTGAGE	REG'D: 2005/10/24
FROM/BY: ROBERT JAMES RETTIE & MARGARET MARILYN RETTIE	
TO: FARM CREDIT CANADA	
CONSIDERATION: 225000.00	NOTES:

ACCEPTED THIS 24TH DAY OF OCTOBER, 2005  
BY G.PHILLIPS FOR THE DISTRICT REGISTRAR OF  
THE LAND TITLES DISTRICT OF WINNIPEG.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA  
STORAGE SYSTEM ON 2006/01/06 OF TITLE NUMBER 2126058 .  
THIS IS NOT A DUPLICATE TITLE.

X   
\_\_\_\_\_  
FOR THE DISTRICT REGISTRAR

\*\*\*\*\* END OF STATUS OF TITLE FOR TITLE 2126058 WPG \*\*\*\*\*

DATE: 2006/01/06  
TIME: 12:22  
POST

MANITOBA  
STATUS OF TITLE

TITLE NO: 2126052  
PAGE: 1

STATUS OF TITLE..... ACCEPTED  
ORIGINATING OFFICE..... WINNIPEG  
REGISTERING OFFICE..... WINNIPEG  
REGISTRATION DATE..... 2005/10/24  
COMPLETION DATE..... 2005/11/21

PRODUCED FOR.. GEORGE, J. DAVID, & ASSOC.  
ADDRESS..... 108 REGENT AVE. E.  
WPG., MAN. R2CO  
PRODUCED BY... M.DERKSEN  
LTO BOX NO.... 222

LEGAL DESCRIPTION:

ROBERT JAMES RETTIE AND MARGARET MARILYN RETTIE  
BOTH OF OKOTOKS IN ALBERTA

ARE REGISTERED OWNERS AS JOINT TENANTS SUBJECT TO SUCH ENTRIES  
RECORDED HEREON IN THE FOLLOWING DESCRIBED LAND:

SP LOT 14 PLAN 15531 WLTO  
EXC: ALL MINES AND MINERALS  
IN SW 1/4 15-17-7 EPM

ACTIVE TITLE CHARGES:

3207153 WPG ACCEPTED MORTGAGE	REG'D: 2005/10/24
FROM/BY: ROBERT JAMES RETTIE & MARGARET MARILYN RETTIE	
TO: FARM CREDIT CANADA	
CONSIDERATION: 225000.00	NOTES:

ACCEPTED THIS 24TH DAY OF OCTOBER, 2005  
BY G.PHILLIPS FOR THE DISTRICT REGISTRAR OF  
THE LAND TITLES DISTRICT OF WINNIPEG.

CERTIFIED TRUE EXTRACT PRODUCED FROM THE LAND TITLES DATA  
STORAGE SYSTEM ON 2006/01/06 OF TITLE NUMBER 2126052 .  
THIS IS NOT A DUPLICATE TITLE.

X  
\_\_\_\_\_  
FOR THE DISTRICT REGISTRAR

\*\*\*\*\* END OF STATUS OF TITLE FOR TITLE 2126052 WPG \*\*\*\*\*

Appendix 7



SP 16-17-7 E

PT SE 14 Sec 16 JTwp 17, Rge 7 E.P.M.

ge 7 E.P.M.

Westerly edge of canal

# PHOTOS

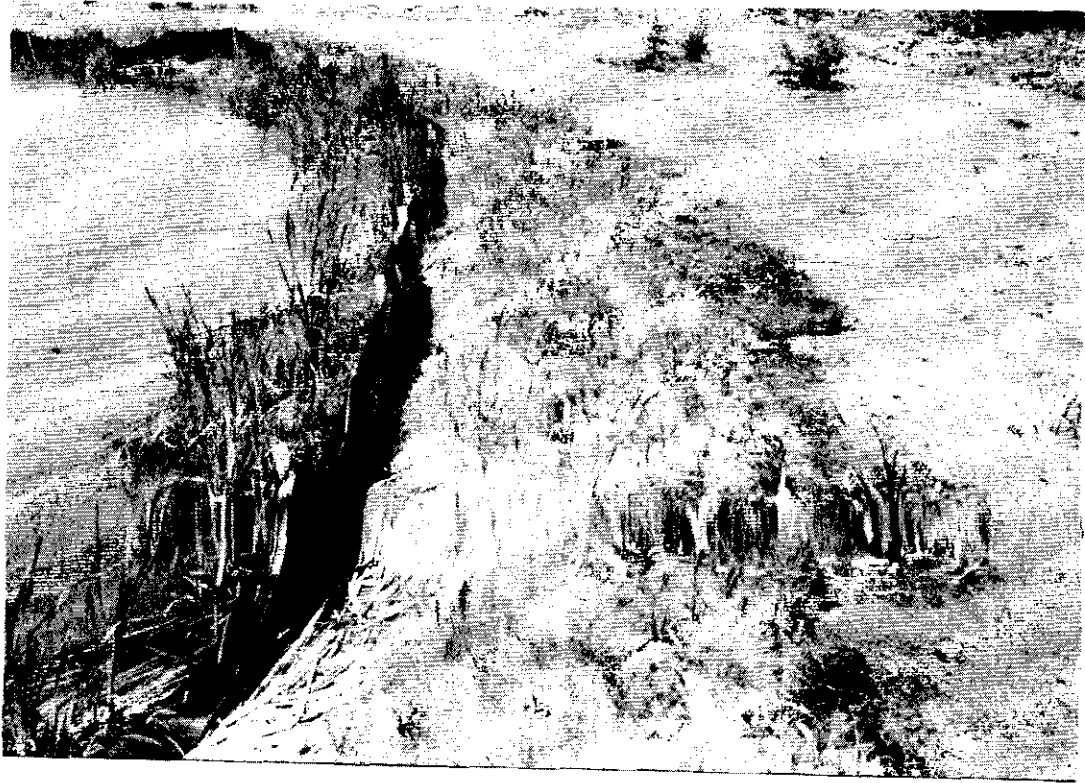
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VIEW OF THE CANAL IN THE BACKGROUND,  
LOOKING FROM SOUTH TO NORTH. SEDIMENT  
FENCING IS SITUATED ALONG EAST SIDE.



VIEW OF THE EAST SIDE OF THE CANAL, HALF  
WAY DOWN THE CANAL. TRANSPLANTED SOD  
ON THE RIGHT SIDE OF SEDIMENT FENCING.

NATURAL VEGETATION ON THE  
LEFT SIDE OF SEDIMENT FENCING.



<b>SELKIRK &amp; DISTRICT PLANNING AREA BOARD</b> 200 Eaton Ave. - Selkirk, Manitoba R1A 0W6 - Ph: 482-3717 - Toll Free: 1-800-876-5831 - Fax: 482-3799		Building Permit No. <i>1057910</i>
— <i>Permit Application</i> —		Plumbing Permit No. <i>1</i>
<input checked="" type="checkbox"/> Development <input type="checkbox"/> Building <input type="checkbox"/> Plumbing		Roll No. <i>687400</i>
R.M. of St. Andrews <input type="checkbox"/> R.M. of St. Clements <input checked="" type="checkbox"/> R.M. of West St. Paul <input type="checkbox"/> City of Selkirk <input type="checkbox"/>		
Owner <i>Little, Robert</i>	Address <i>Box 11 Site 6 RR1 D. Totora, AB. T1S 1A1</i>	Phone
Contractor	Address	Phone
Legal Description: <i>R. 16-17-7E</i> Street Address: <i>3815'9 RD 98W</i>		
DESCRIPTION OF WORK(S) <i>land development</i>		
INTENDED USE (statement of intent by Applicant)		
WATER/SEWER Water Source: existing <input type="checkbox"/> new <input type="checkbox"/> Type: _____ Sewage Disposal System (SDP) existing <input type="checkbox"/> new <input type="checkbox"/> Type: _____		
PLANS SUBMITTED Structural <input type="checkbox"/> Site <input type="checkbox"/> Certified <input type="checkbox"/>		
Engineer of Record: _____ Phone: _____		
ZONING By-Law #: <i>5-2002</i> Designation: <i>R2 - Seasonal Residential</i> Requirements: (required) (proposed) (required) (proposed)		
front _____ side _____ rear _____ <i>N/A</i> corner side _____ max. mean height _____ max. % site coverage _____ unit area _____ Other: _____ building sep. from main _____ (clear of all projections) building sep. from accessory _____ (clear of all projections)		
<input type="checkbox"/> Highways Approval <input type="checkbox"/> Grade Elevation Req'd Approved: _____ <input type="checkbox"/> Geotech Report <input type="checkbox"/> Dev. Agreement		
Conditions <i>NV: 1013/09</i> <i>Development as per Fisheries &amp; Ocean direction</i>		
PLANNER: <i>L. Elliot</i>		
<b>PLANS REVIEW (by Development Officer)</b> Plumbing (fixtures/trains) _____ Building By-law: <i>2022</i> Occupancy Certificate: _____ Office Use: <i>charnaga plan required</i>		
In accordance with Plan, Review letter: <input type="checkbox"/> <b>DEVELOPMENT OFFICER:</b> _____		
<b>VALUATION &amp; FEES</b> Estimated value of work: _____ Building permit fee: <i>\$150.00</i> Plumbing permit fee: _____ Occupancy permit fee: _____ Total: <i>\$150.00</i>		
<b>DECLARATION</b> I, the undersigned _____ (please print) am the authorized agent/owner named in this application for a permit. I acknowledge that: 1.) All statements and representations contained in the application for permits and the plans and specifications are correct, accurate and adhere to any applicable legislation, by-laws, codes and standards. 2.) The issuance of a permit by the Selkirk and District Planning Area Board does not waive, amend or change any applicable by-laws or requirements contained in any other applicable legislation. 3.) Any unauthorized changes from the plans and specifications or building location as specified in this application shall void the permit. 4.) Owner/applicant responsible for searching any caveats registered on title. 5.) I waive all rights of action against Selkirk and District Planning Area Board arising from this application and any permit issued. The Selkirk and District Planning Area Board does not accept any responsibility for errors or omissions contained in the submitted plans and specifications and the issuance of this permit does not warrant that the plans and specifications are in accordance with any applicable codes, act and standards. In consideration of issuing the permit the applicant waives all rights of action against the Selkirk and District Planning Area Board. Note: Other permits may be required to achieve full development approval. The applicant assumes responsibility to make application to other agencies requiring permits/approvals.		
Signature of authorized agent: _____		Date: <i>Jan. 16/10</i>
<b>WHEN PROPERLY VALIDATED BELOW THIS IS YOUR DEVELOPMENT PERMIT</b>		
Validated by: <i>J. Yatchewsky</i>		Date: <i>Jan. 16/10</i> Rec. # <i>6442</i>