PONDERING PONDS: A Process for Assessing Community Attitudes Toward In-Stream Impoundments on Prince Edward Island

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EXECUTIVE SUMMARY

As a result of an extensive history of dam construction, there are over 800 ponds, or constructed impoundments, in existence on Prince Edward Island. Many ponds today require upkeep, maintenance, and management decisions. Several agencies, with varying responsibilities, are involved with Island ponds: the Provincial Department of Technology and Environment, Provincial Department of Fisheries and Tourism, Federal Department of Fisheries and Oceans, Ducks Unlimited Canada, and the Canadian Wildlife Service.

Like all environmental resources, these ponds and their wetland environments have a variety of different uses and meanings. The purpose of this study was to suggest a process to assess community attitudes and values with respect to ponds and their watersheds, as part of a broader effort to establish a clear rationale for management decisions.

Used in conjunction with existing methods for measuring wetland and fish habitat values, this assessment of the social and cultural values of ponds forms the basis for the development of an integrated plan for the long-term management of impoundments on Prince Edward Island.

The key outcome of this study was the production of a concrete method of assessing community values and attitudes in the form of a questionnaire, and the establishment of guidelines as to its effective implementation across Prince Edward Island, employing a blend of methodologies: historical and archival research, public consultation through information-gathering meetings, and the application of targeted and wider random questionnaire samples.

Three ponds representing different backgrounds and uses were selected by the steering committee to serve as test sites for this project. Each is located in a different geographical area and county: Barlow's Pond in Wellington, Prince County; Miller's Pond at Frenchfort, Queens County; and Larkin's Pond at Selkirk, Kings County. Users of these ponds, as well as the wider community, were surveyed about the values they associate with the ponds, the use they make of the ponds, and their opinion as to their condition and needs.

The major conclusions of this study showed that:

· The predominance of responses from close proximity to the ponds in both dedicated and random community surveys indicates that ponds are a local issue.

· Values placed on the ponds varied from more "passive" environmental values, often associated with community history and aesthetic experience, to an appreciation for more active recreational uses and roles as wildlife resource habitat.

· Responses also indicate concern as to the impact of ponds on water flow and fish habitat.

· An appreciation of the changing conditions of the ponds is consistently articulated in all three cases. The majority of respondents have noticed changes in the respective ponds and their fish and wildlife, and link this to changes in water level, stagnation, heat levels, etc.

· To get the best use of the pond in question, respondents almost universally suggested aspects that need to be "fixed," whether the dam, fish ladders, water levels, silt build-up, and other such matters.

The importance of this study lies in application of the questionnaires and methodology of community consultation to other ponds across Prince Edward Island. It also responds to the growing acknowledgement of the need to address social and cultural elements throughout resource management. Environmental issues may be deeply infused with, and integrated into, broader social, historical and cultural values. As this study has shown, communities of users of environmental resources want to be consulted as to their management, and their experience and opinion is a valuable tool for management-planning and conflict resolution in environmental decision-making.

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I. Introduction

A. Ponds on Prince Edward Island

Prince Edward Island has an extensive history of dam construction, and there are currently over 800 ponds, or constructed impoundments, on the Island. Some are more than a century old, created when streams were impounded in order to operate saw, grist, woolen, and starch mills, some associated with the establishment of entire communities. Mills continued to be established on Prince Edward Island rivers and streams into the mid-1900s. Later ponds developed through agricultural practices and for creating recreational opportunities, such as hunting or fishing, or for enhancing aesthetics in local communities. The 1970s and 1980s were also a period of wetlands creation and enhancement, and initiatives during this period encouraged the development of numerous impoundments to provide habitat for waterfowl and other wildlife species.

Many impoundments today require upkeep, management, maintenance, and decision-making. Like all environmental resources, these ponds and their wetland environments have a variety of different uses and meanings. Each impoundment has a unique history and a parallel, distinctive,

and complex range of purposes, and each is valued for its historical significance, recreational, economic, or aesthetic value.

The purpose of this project was to devise a process to assess community attitudes and values with respect to ponds, or in-stream impoundments, on Prince Edward Island. An understanding of how people use the ponds, and the public values and attitudes that are attached to the impoundments, will be used to inform management plans and priorities. This process is intended to assist the contracting agencies in establishing a clear rationale as to the future management of these impoundments.

Figure 1: Distribution of Constructed Impondments on PEI

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B. Project Background

This project was undertaken by the Institute of Island Studies, on behalf of several contracting agencies, who today have varying responsibilities in the management and maintenance of impoundments on Prince Edward Island:

Provincial Department of Technology and Environment

Provincial Department of Fisheries and Tourism

Federal Department of Fisheries and Oceans

Ducks Unlimited Canada

Canadian Wildlife Service

The project consultant and coordinator was Shauna McCabe, a researcher in landscape values completing a doctoral program in cultural geography at the University of British Columbia. Ian MacDonald, the former director of the Department of Extension at the University of Prince Edward Island with extensive experience in community development and as a facilitator, served as the community liaison and chair for steering committee and public information meetings. Overall direction of the project was provided by Director of the Institute of Island Studies, Harry Baglole and Dr. Edward MacDonald, Director of Research. Patricia Manuel of AERDE Consultants, a specialist in qualitative research with respect to wetlands, Halifax, was involved as a consultant in the design of the questionnaire and its distribution. This project team worked in regular consultation with the contracting agencies throughout the project, by means of a steering committee consisting of designated representatives of the clients.

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C. Pond Management Issues

Many scientific methods exist to evaluate the fish and wetland values of ponds. The wetland wildlife-habitat values of ponds on PEI have been quantified by the PEI Fish and Wildlife branch based on the Golet system. The fish habitat quality of ponds was assessed using a system developed by UPEI and ASE Consulting; it focussed on the water temperature within the ponds. The stakeholder agencies also wanted to develop a way to capture the opinions and values of the people who use and have an interest in the ponds in order to understand why the ponds are considered important, how they might be better managed, or if their presence is felt to create any negative consequences.

Ponds have a range of different uses and impacts. For some users, for example, the fish habitat offered by a pond may be a priority; for others, a pond's wildlife value or its value for community history may be most important. Some users may view impoundments as a possible impediment to the passage of commercial species for the purpose of spawning. For others, ponds may be seen as obstructing a stream's natural flow. A pond's management must take into consideration this range of contradictory uses and concerns. The purpose of the project was to develop a qualitative method of assessing community values and attitudes regarding ponds. These public opinions would complement the data on the wildlife and fish habitat value of these ponds.

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D. Community Involvement in Environmental Decision-making

Building on its extensive record of projects involving public consultation, the Institute of Island Studies proposed a process that would start from, and emphasise throughout, careful consultation with communities and user groups associated with the ponds. The intent of this Prince Edward Island community value assessment project, following the lead of effective public participation models, was to involve the public from the outset, and to consult with affected communities in the development of research tool. The community of each pond and its users were identified, using historical knowledge of the area and consultation in order to get a sense of the range of stakeholders, issues, and concerns as they related to the decision-making process.

A sense of the historical background of each specific pond was a necessary first step. Accordingly, an historical profile was drafted for each pond, based on archival research, to give a sense of its location historically and in the context of water systems, its origins and meanings, whether it is considered an asset and why, pertinent prior issues and uses, and which users may have an interest in the pond today and should be involved in the consultation.

In order to assess community values and attitudes in a way relevant to management decisions, it is necessary to develop and test the assessment *tools* in conjunction with these communities, as

part of a coordinated framework for public consultation involvement (Roberts 1995). Based on this model, public consultation with individuals in these areas was a key part of the process of developing a community value assessment method. It was especially useful in refining the sense of the general roles that ponds play for the public. An information and education process was put in place, and links to communities forged and maintained throughout the development of the research approach, the questions asked, and the range of management options considered (Connor 1997).

As stated, the intended outcome of the process was a concrete method of assessing community attitudes to ponds in the form of a questionnaire, and, based on three pilot studies or test cases, the establishment of guidelines as to its effective implementation across Prince Edward Island. Drawing on both the historical research and public consultation, two versions of a questionnaire were developed -- one directed at "dedicated users," as well as a random questionnaire to assess the intensity and range of sentiment among the general public. The whole process, consultation and questionnaire, was then tested on the three candidate ponds. As a result, we now propose a process for the future implementation of the questionnaire. Both the tested questionnaire and process may be revised and adjusted based on the results of this project and the recommendations that follow from it.

Used in conjunction with an analysis of fish and wildlife values, this assessment of the social and cultural values of specific wetlands may form the basis for the development of an integrated plan for evaluating the necessity and viability of management initiatives. While applied to ponds on Prince Edward Island, the study and its results potentially may apply to a wide range of environmental resources, and serve as a process of conflict resolution in environmental decision-making.

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E. Study site profiles

Three pilot studies were carried out as part of the project. On February 5, 1999, three ponds representing various backgrounds and uses were selected by the steering committee to serve as test sites. Each represented a different geographical area and county. The ponds were:

Barlow's Pond, Wellington, Prince County

Miller's Pond, Frenchfort, Queens County

Larkin's Pond, Selkirk, Kings County

i. Barlow's Pond

Location:

Grand (or Ellis) River System, Wellington, Lot 16

Figure 2: Barlow's Pond, Wellington

The site is a mill pond, established in 1859 when John Barlow purchased a farm as well as grist and saw mills in Wellington, then known as Quagmire. Barlow and his sons upgraded the mills over the years. Water power was produced by building a dam.

"John Barlow built Wellington so to speak. He brought businesses there and settlers. He employed people at the mills. He was instrumental in getting the railroad to go through Wellington. It, too, is now gone. He owned most of the land and sold it to business people or settlers. He was really the founder of Wellington." (Carol Hattaway, genealogical information.) The road from Tyne Valley to Freeland also bears his name.

The mill was passed on to several generations of sons into the 1900s. The carding and grist mills were dismantled after 1937. The sawmill was the last of the Barlow enterprises to remain in operation. It was run by John (Jack) Barlow until 1965. The lot where the mills had stood was sold to the town and the site is now used for a park.

Clearly, the pond is perceived as a community asset, with historical, and cultural ties.

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ii. Larkin's Pond

Location:

Naufrage River System, near Selkirk, Lot 42

Figure 3: Larkin's Pond, Selkirk

Larkin's Pond is located on the Naufrage River, which drains northward into the Gulf of St. Lawrence. This large impoundment was formerly a mill pond, run in the 1940s by Eugene and Raymond Larkin. The mill was closed in the mid-1950s when Raymond died. Now it is managed jointly by Ducks Unlimited and the provincial Fish and Wildlife Division.

Historically, the Larkins are long established in the area of Selkirk and Five Houses. Historical information regarding the family is available in Lawrence Doyle's 19th-century folksongs: "The Merchants of the Bay" and "When Johnny Went Plowing for Kearon."

The pond today is a site for recreation, waterfowl, trapping, and fishing, though fishing is said to have suffered since the 1970s.

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iii. Miller's Pond

Location:

Miller's Creek River System, near Frenchfort, Lot 35

Figure 4: Miller's Pond, Tenmile House

Miller's Pond or Marsh, is located in the Miller's Creek estuary, a tributary to the Hillsborough River, at Ten Mile House, near Frenchfort.

It is associated with the Miller family, who reside in Frenchfort. The area is thought to be near the site of an early French fortification. The location has other historical associations as well, as it was the location of a tavern in the early 1800s. The stream entrance to the pond itself has shifted over the years. The site features waterfowl, furbearers, and other wetland species.

In 1982, Ducks Unlimited in conjunction with the provincial Fish and Wildlife Division, constructed the impoundment, transforming salt marsh into a freshwater marsh.

Shellfish harvesters have expressed concerns about environmental changes they have witnessed in the shellfish bed in the Hillsborough River estuary, downstream from the impoundment.

Because of recent press coverage of the nearby controversy in Tracadie Cross with regards to the waste disposal site, there is already a sensitivity to resource management issues among the community there.

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II. Community Consultation Process

A. Steering Committee

The project began in February of 1999 with the establishment of the steering committee, which facilitated close contact between Institute researchers and representatives of each funding agency. The steering committee served as a consultative and consensus-building process for agencies that have different opinions and philosophies about how best to manage ponds and watersheds. Steering committee meetings took place periodically, allowing regular and consistent consultation with stakeholder representatives as the project developed, and enabling their input into the selection of test sites, the decision-making process, and the monitoring of the project's progress. This practice also allowed researchers to obtain information from the agencies and from knowledgeable individuals familiar with the ponds.

The Steering Committee members included:

Ian MacDonald: Chair; Former Director, Department of Extension, UPEI

Edward MacDonald: Director of Research, Institute of Island Studies

Harry Baglole: Director, Institute of Island Studies

Shauna McCabe: Project Coordinator/Researcher

Art Smith: Provincial Department of Fisheries, Aquaculture, and Environment

Randy Dibblee: Provincial Department of Fisheries, Aquaculture, and Environment

Dave Younker: Provincial Department of Fisheries and Tourism

Dave MacEwen: Provincial Department of Fisheries and Tourism

Leaming Murphy: Federal Department of Fisheries and Oceans

Mark Gloutney: Ducks Unlimited Canada

Al Hanson: Canadian Wildlife Service

Loman Hill: Community representative, Frenchfort

Lewis MacPhee: Community representative, Selkirk

Kevin Arsenault: Community representative, Wellington

Carole Gallant: Community representative, Wellington

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B. Community representatives

Public consultation was solicited throughout the process. After the selection of pond locations, community representatives for the steering committee were chosen by Ian MacDonald through a process that began by consulting the MLAs for the three areas. Initially these community representatives were Kevin Arsenault of Summerside (Wellington), Loman Hill (Frenchfort), and Lewis MacPhee (Selkirk). Due to other commitments, Kevin Arsenault had to withdraw; Carole Gallant of Wellington subsequently served as the contact person for Barlow's Pond. These individuals were invited to attend steering committee meetings and served as liaisons with the

communities, providing the committee with information as to appropriate locations for meetings, posting notices, etc., as well as publicizing the meetings in their local communities.

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C. Public information meetings

Public involvement was also sought through public information meetings that were held in the vicinity of each pond in order to introduce the project and its goals. The meetings were held in early June (see Appendix):

Miller's Pond: Tuesday June 1, 7:30 pm - Tracadie Recreation Centre.

Larkin's Pond: Thursday June 3, 7:30 pm - St. Margaret Hall.

Barlow's Pond: Wednesday June 9, 7:30 pm - Vanier Community Centre

A press release (see Appendix) was distributed to news media, provincial, county, and Acadian community publications, publicizing information about the project, and the locations of public information meetings. This was also faxed directly to MLAs in each of the three areas, as well as to groups that might have a specific interest in the ponds. These included the Island Nature Trust, Parks Canada, the Charlottetown Historical Society, Prince Edward Island Wildlife Federation, Fishermen's Association, PEI Trappers Association, and members of the Environmental Coalition.

The information meetings were chaired by Ian MacDonald. He began each gathering by presenting historical background on ponds on Prince Edward Island and the development of this project. Presentations were then made by Leaming Murphy of the Department of Fisheries and Ocean, as to regulatory aspects of impoundments, and by Randy Dibblee of the Department of Technology and Environment, who spoke to the wetland value assessments currently in place. Shauna McCabe described the development of the questionnaire and its distribution.

The floor was then opened for questions and comments. In all three cases, the people in attendance preferred to receive mail-out distribution of the questionnaire rather than telephone delivery. People desiring a questionnaire were then asked to leave their names and addresses, as well as the names of others who they felt might like to be contacted with respect to the project.

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D. Questionnaire development: Dedicated User and Random Survey

After the initial period of consultation, the formulation of a draft questionnaire began. Ms. Patricia Manuel, of AERDE Consultants, Halifax, assisted in its development. When devising any qualitative research approach, the potential subject groups have to be defined. In this situation, the Steering Committee took the cue from the stakeholder clients. Each pond site is being managed to provide resources; the stakeholders are concerned with managing the biology of the system for species habitat. As a result, each pond's community has two different elements: users of these resources, as well as the wider, general community, both within geographical proximity of the impoundment and beyond.

We combined two methodological approaches to assess the attitudes of these two "communities" towards in-stream impoundments: a targeted user survey, which would gauge the opinion and uses of dedicated users, and a random survey. The two approaches try to get the opinion of two potentially different sets of people. On the one hand are the community of dedicated, committed users and those who live in proximity to the pond. These groups, which often overlap, have unique knowledge of the pond and distinctive interests. For this community, the pond has value culturally, historically, recreationally, and environmentally, and they have opinions that need to be appreciated and dealt with separately in a smaller targeted survey.

But we are also interested in the level of awareness about the pond, the wider intensity of interest in it, its general uses and broader significance, culturally, historically, recreationally, and environmentally, and in general opinion as to the pond's best uses. To get this type of general information, we need to reach a cross-section of Islanders. A random survey was felt to be the best approach for that purpose. It was hoped that blending the targeted user and random samples would allow a balance between intense user interest and the wider perspectives of the general public.

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E. Questionnaire distribution

The revised final draft questionnaire and its distribution method were decided upon in July 1999. Two versions were distributed. The first, directed at dedicated users, was mailed out by the Institute of Island Studies to names left at public information meetings. They were also sent out on request and left at publicized locations in the target communities (see Appendix C):

For Miller's Pond, Frenchfort:
Jim's Convenience Center, Highway 2, Bedford

For Larkin's Pond, Selkirk:
St. Charles Corner Store, St. Charles

For Barlow's Pond, Wellington:
Café Plus, Place du Village Mall, Wellington

The random version that would determine extent and intensity of response was sent to a list of landowners within 0-10, 10-25, 25-50 km radii of the pond. Maps defining these radii were generated for the project by the Department of Technology and Environment. The mail-out was also distributed by the Department.

Questionnaires were distributed on August 1, 1999, and were due back before August 14. A reminder mail-out subsequently took place, and the deadline for returns was extended to September 25. Meanwhile, Shauna McCabe and Randy Dibblee created the computer database necessary to receive the responses. Staff support from the provincial Department of Technology and the Environment was dedicated to inputting the results.

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F. Questionnaire Data

The questionnaire featured a combination of category sections, yes/no questions, open-ended questions, and Likert-scale (1 to 5) responses. In this manner, we were able to collect information as to the demographics of users, their knowledge and observations of the pond, and how the pond is used, as well as attitudes and impressions about the effects of the impoundments Encoding was straightforward for responses to category selections, yes/no questions, and Likert-scale selections. Open-ended responses required text analysis and organization. Categories and organization were developed by Randy Dibblee, and Shauna McCabe. As with the other responses, the inputting of the data was undertaken by Department of Technology and Environment staff. Data was analyzed separately for each pond, and, in the case of the random questionnaire, was analyzed according to the successive radii used for distributing the surveys.

Figure 5: Barlow's Pond, Miller's Pond, and Larkin's Pond with 10, 25, and 50 km Buffers

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III. Dedicated User Survey

A. Approach

In the case of targeted users, where familiarity with the pond is a given, the questionnaire that was developed concerned itself specifically with use patterns, values, and opinions. These were distributed to those who left their names at public information meetings to be contacted, and to "referrals." People attending information meetings tend to be committed, vested, regular users of the site, and, by identifying their use of the pond and by targetting others who might be interested in being questioned, one can begin to create an ethnography of users of the site.

The dedicated user survey was based on specific interest in, and commitment to, each pond. The sample size for this self-selecting group was to be based on the number of people who requested or picked up the questionnaire, and, of course, filled them out. For each pond we ended up with a small sample, between ten and twenty, of these dedicated users.

Dedicated questionnaire responses:

17 Barlow's Pond

10 Larkin's Pond

18 Miller's Pond

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B. Data Results

i. Barlow's Pond

Figure 6: Barlow's Pond with 10, 25, and 50 km Buffers

17 dedicated user responses

What is your age?

under 18 --

18-29 --

30-49 5/17 29%

50-64 6/17 35%

65 + 6/17 35%

Gender:

male 11/17 65%

female 6/17 35%

To what category does your main profession belong?

Social science 3/17 18%

Construction, transportation 2/17 12%

Business, finance . . . 2/17 12%

Agricultural 1/17 6%

Logging and forestry 1/17 6%

Other resource based 1/17 6%

Art, culture, recreation, sport 1/17 6%

Management 1/17 6%

Sales and service 1/17 6%

other 1/17 6%

no response 3/17 18%

Do you belong to any environmental, outdoor, or sports organisations?

yes 2/17 12%

no 15/17 88%

If yes, which?

Ducks Unlimited

Wildlife Federation

Island Nature Trust

In what community do you live?

15/17 88% in Wellington

1/17 6% in Abrams Village

1/17 6% in Miscouche

For how long have you lived here?

Average residence time: 34 years

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How far do you live from Barlow's Pond?

0-10 km 17/17 100%

10-25 km

25-50 km

50+

How long have you been utilizing Barlow's Pond?

0-5 years 2/17 12%

5-10 years --

10-25 years 4/17 24%

25-50 years 5/17 29%

50 + 6/17 35%

Over the course of a year, how often do you go there?

0-5 times 3/17 18%

5-10 6/17 35%

10-25 2/17 12%

25-50 3/17 18%

50+ 3/17 18%

Do you consider yourself a frequent, occasional, or rare user?

3/17 18% consider themselves frequent users

9/17 53% consider themselves occasional users

4/17 24% consider themselves rare users

1/17 6% no response

Has your use of the pond changed?

yes 14/17 82%

no 2/17 12%

no response 1/17 6%

Comments:

· Dam not used, activities restricted

· Would use condition back to 20 yrs ago

· It has dried out

· No water

· Would like pond raised to natural height

· Not enough water

· No water

· Water level too low, eye-sore

· No more fishing, swimming or canoeing

· No fish

· Poor management and low flow, turning into a swamp

· No water

Does this pond contribute to your livelihood?

yes 2/17 12%

no 15/17 88%

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What fish and wildlife do you observe/use there? Please list:

Used to be trout, eels and muskrats

None

Trout

When pond full saw beavers and muskrats

trout, smelts, ducks and birds

trout, birds

Hope it's restored

beaver, birds, muskrats

Fish and birds

trout and smelts

speckled trout, raccoons, rabbits, ducks

trout

Nothing now

Trout & smelts

Have you noticed any changes in the pond and/or its fish/wildlife since you started using the pond?

yes 15/17 88%

no 2/17 12%

Comments

Dry pond

wildlife and fish have declined

no water or fish

What do you know about other' uses of the pond?

skating

hockey

beauty

fishing,

birdwatching

sightseeing

skidooing

Barlow's working

To your knowledge, is this pond part of any type of nature study or environmental projects?

yes 4/17 24%

no 7/17 41%

no response 6/17 35%

If yes, which?

none listed

To your knowledge, has this pond been recorded in folksongs, in stories, or in art?

yes 12/17 71%

no 5/17 29%

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Comments:

stories, paintings,

photos

historic site,

The Phantom Train

The Old Mill Stream

Please rank from 1-5, the value for you of this pond (where 1 means none, or a low value, and 5 means yes, a high value).

	Low Value		Average		High Value	
	1	2	3	4	5	no response
for community history	2/17		1/17		13/17	1/17
	12%		6%		76%	6%
for wildlife habitat	2/17	1/17	2/17	2/17	9/17	
	12%	6%	12%	12%	53%	
for recreation				2/17	5/17	10/17
				12%	29%	59%
fishing	1/17	1/17	3/17	2/17	7/17	2/17
	6%	6%	28%	12%	41%	12%
hunting	5/17	2/17	4/17	2/17	1/17	4/17
	29%	12%	24%	12%	6%	24%
for aesthetics and beauty	2/17			3/17	10/17	2/17
	12%			18%	59%	12%
for commercial use	7/17	4/17	3/17			3/17
	41%	24%	18%			18%

What do you consider the best use of the pond? Comment:

Community history, aesthetics

Let water go through

Fishing and walking trail

Beauty and Recreation

Beauty, walk, tours, fishing

Boating

Fishing

wildlife, nature trails

Try to restore

Fishing and Winter Recreation

Fishing

No use, no fish, no hunt

Fishing, skating

Fill with water like before

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From a fish and management perspective, for what group of animals should the pond be managed (salmon, trout, waterfowl, songbirds, etc.)?

fish

trout, birds

trout, waterfowl, songbirds

wildlife

trout, waterfowl, songbirds

trout, songbirds, frogs??

salmon, trout, waterfowl, birds

trout, songbirds

trout, songbirds

Trout, songbirds

Trout

fishing, songbirds, etc.

Trout

Trout

Whom do you think should be responsible for the management of the site? (community/public, government, or private sector)

government 6/17 35%

community 5/17 29%

community and government 4/17 24%

no response 2/17 12%

Are you aware of any regulatory constraints pertaining to this pond?

no 9/ 17 53%

yes 4 /17 24%

no response 4/17 24%

Do you think there are any problems with the pond?

yes 14/17 82%

no ---

no response 3/17 18%

Comments:

headwaters

dam unsightly

needs cleanup, and restoration

water level too low

not enough water

What do you like best about the pond?

beauty

natural beauty

history

recreation

landmark

walking distance

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Do you visit other ponds?

no 5/17 29%

yes 10/17 59%

no response 2/17 17%

If you visit other ponds, would you say that overall this pond, Barlow's Pond, ranks above average or poorly? (where 1 is poor, 5 is above average)

poor average above average no response

7/41% 1/6% 3/18% 2/12% -- 4/24%

There is a lot of talk about management of this site. What do you think needs to be done, if anything, to get the best use of the pond?

clean-up

landscape

proper water level

restore water level

remove dam

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ii. Larkin's Pond

Figure 7: Larkin's Pond with 10, 25, and 50 km Buffers

10 dedicated user responses

What is your age?

under 18 --

18-29 1/10 10%

30-49 5/10 50%

50-64 3/10 30%

65+ 1/10 10%

Gender

male 8/10 80%

female 2/10 20%

To what category does your main profession belong?

other 4/10 40%

fishing 2/10 20%

social sciences 1/10 10%

construction/engineering 1/10 10%

sales 1/10 10%

Do you belong to any environmental, outdoor , or sports organizations?

yes 3/10 30%

no 7/10 70%

If yes, which?

Ducks Unlimited

Environmental Coalition

Wildlife Federation

In what community do you live?

2/10 20% in Monticello

2/10 20% in Fortune Bridge

5/10 50% in St. Charles

1/10 10% in Stratford

How long have you lived here?

average residence time: 31 years

How far do you live from Larkin's Pond?

0-10km 7/10 70%

10-25 2/10 20%

25-50 --

50 + 1/10 10%

How long have you been utilizing Larkin's Pond?

0-5 years 1/10 10%

5-10 years 2/10 20%

10-25 years 4/10 40%

25-50 years 2/10 20%

50 + 1/10 10%

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Over the course of a year, how often do you go there?

<5 1/10 10%

5-10 1/10 10%

10-25 2/10 20%

25-50 6/10 60%

50 + --

Do you consider yourself a frequent, occasional, or rare user?

rare --

occasional 3/10 30%

frequent 7/10 70%

Has your use of the pond changed?

yes 5/10 50%

no 5/10 50%

no response

comments:

Water level dropped, fewer ducks to hunt

Don't go as much, no fish, too many black flies

Decline in fish

No fish

No fish

Does this pond contribute to your livelihood?

no 10/10 100%

yes 0/10 0%

What fish and wildlife do you observe/use there? Please list:

trout, hawks, other birds, squirrels, otters, beaver

Trout, perch, wood ducks, geese, songbirds, muskrat

trout, salmon, beaver, muskrat

Trout, raccoons, fox, rabbit, birds, eels, perch

Fox, duck, raccoon, trout, perch, eels, birds

trout, perch, muskrat, beaver, mink, fox, raccoon, coyote

trout, perch, beaver, mink, muskrat, coon, fox, coyote

Ducks, muskrat, beaver, eagles

Rabbit, raccoons, trout, fox, birds, eels

Trout, eels, perch, fox, birds, raccoons, rabbits

>>>top

Have you noticed any changes in the pond and/or its fish/wildlife since you started using the pond?

yes 10/10 100%

no 0/10 0%

Comments:

Upper part more difficult to canoe

Water level dropped, less ducks/geese

More fish

Too hot, no fish, black flies, water too high

Too much water, no fish due to DU

Silt, block of feeder streams, increase vegetation

Silt buildup, blockages, increased growth cattails

Pond too high, water higher than normal for pond

No fish, pond is dirty, slimy

No fish, water too high & hot

What do you know of others' uses of the pond?

fishing, bird-watching, nature

Hunting, fishing, recreation include canoeing/kayaking

Fishing, trapping

No

spawning salmon/gaspereaux, birdwatching & sightseeing

Spawning salmon & gaspereaux, and sightseeing

None

To your knowledge, is this pond part of any type of nature study or environmental projects?

yes 4/10 40%

no 6/10 60%

If yes, which?

IIS project

DU

Wood duck survey

Wood duck survey

To your knowledge, has this pond been recorded in folksongs, in stories, or in art?

yes 0/10 0%

no 9/10 90%

no response 1/10 10%

>>>top

Please rank from 1-5, the value for you of this pond (where 1 means none, or a low value, and 5 means yes, a high value).

	Low Value		Average		High Value	
	1	2	3	4	5	no response
for community history			2/10	1/10	7/10	
			20%	10%	70%	
for wildlife habitat				1/10	9/10	
				10%	90%	
for recreation			1/10		6/10	3/10
			10%		60%	30%
fishing					10/10	
					100%	
hunting	1/10				9/10	
	10%				90%	
for aesthetics and beauty				2/10	8/10	
				20%	80%	
for commercial use	6/10	3/10				1/10
	60%	30%				10%

What do you consider the best use of the pond? Comment:

Walk, birdwatching, kayaking

Fish & Waterfowl habitat

Fishing

Fishing, trapping and hunting

Fishing, trapping & hunting

wildlife related activity

Fish and Wildlife Activity

Fish, hunt, trap, camp

Fishing and hunting

Trapping, hunting, fishing

>>>top

From a fish and wildlife management perspective, for what group of animals should the pond be managed (salmon, trout, waterfowl, songbirds, etc.)?

salmon, trout, songbirds

Salmon, trout, waterfowl

Trout, salmon

Trout, salmon, wildlife

salmon, trout, wildlife

All pertinent species

Plan-no specific species

Trout, waterfowl, salmon

Trout, salmon, wildlife

Wildlife, trout, salmon

Whom do you think should be responsible for the management of the site? (community/public, government, or private sector)

government 1/10 10%

community 3/10 30%

community/government 6/10 60%

Comments:

combination Community/Government

The people

No DU

Not DU

management plan, community/public/federal

Finance - Fed Government

Community more familiar

Keep DU out

Are you aware of any regulatory constraints pertaining to this pond?

yes 3/10 30%

no 6/10 60%

no response 1/10 10%

Do you think there are any problems with the pond?

yes 9/10 90%

no 1/10 10%

Comments:

water too high

temperature too high

blockage

>>>top

What do you like best about the pond?

Natural beauty

Secluded/fish/waterfowl

Private, fishing

Close to home, Beauty

Beauty, picnic area

wildlife/scenery

Hunting, trapping, fishing

Fishing

Fishing in my boat

Close, fishing, boat

Do you visit other ponds?

yes 10/10 100%

If you use other ponds, would you say that overall this pond, Larkin's Pond, ranks above average or poorly? (where 1 is poor, 5 is above average)

poor average above average no response

4/40% 1/10% 1/10% 2/20% 2/20%

There is a lot of talk about management of this site. What do you think needs to be done, if anything, to get the best use of the pond?

People to restore it

Water level restored

Cleanup, parking, moor

Community involvement

Lower water level, no DU

New fish ladder

Dredge, fix ladder, lower

Cleanup, water lowered

Lower water, DU out

>>>top

iii. Miller's Pond

Figure 8: Miller's Pond, Tenmile House, with 10, 25, and 50 km Buffers

18 dedicated user responses

What is your age?

under 18 1/18 6%

18-29 4/18 22%

30-49 5/18 28%

50-64 5/18 28%

65 + 2/18 11%

no response 1/18 6%

Gender:

male 16/18 89%

female 2/18 11%

To what category does your main profession belong? (please check one)

agricultural 6/18 33%

sales and service 6/18 33%

fishing 3/18 17%

construction/transportation/engineering 1/18 6%

management occupations 1/18 6%

Do you belong to any environmental, outdoor, or sports organisations?

no 7/18 39%

yes 8/18 44%

no response 3/18 17%

If yes, which ones?

DU

Trappers Association (3)

TARRP (2)

Island Nature Trust

4H

PEIWF

YEP

In what community do you live?

2/18 11% in Dunstaffnage

2/18 11% in Tracadie

1/18 6% in Blooming Point

7/18 39% in Frenchfort

1/18 6% in East Royalty

1/18 6% in Orwell Cove

1/18 6% in Ten Mile House

1/18 6% in Charlottetown

1/18 6% in Marshfield

1/18 6% no response

>>>top

For how long have you lived here?

average time of residence 26 years

How far do you live from Miller's Pond?

0-10 km 15/18 83%

10-25km 1/18 6%

no response 2/18 11%

How long have you been utilizing Miller's Pond?

<1 year 1/18 6%

1-5 year 2/18 11%

5-10 year 1/18 6%

10-25 years 9/18 50%

25-50 years 4/18 22%

50+ --

no response 1/18 6%

Over the course of a year, how often do you go there?

<5 2/18 11%

5-10 4/18 22%

10-25 5/18 28%

25-50 2/18 11%

50+ 4/18 22%

no response 1/18 6%

Do you consider yourself a frequent user, occasional user, or rare user?

rare user 1/18 6%

occasional 6/18 33%

frequent 10/18 56%

no response 1/18 6%

Has your use of the pond changed?

yes 11/18 61%

no 5/18 28%

no response 2/18 11%

Comments:

no hunting

pond is going dead, filling in

it has gone to hell

pond is going dead

can't fish because water is stagnant

pond is scummy, foul odour in summer

less fish

noticeable decrease in amount of fish in pond

was full of fish, now none. high silt hot water

it is getting to be less animals, fish and birds

it is not a public pond, it is private property

>>>top

Does this pond contribute to your livelihood?

yes 8/18 44%

no 9/18 50%

no response 1/18 6%

What fish and wildlife do you observe/use there? Please list:

presently none

perch, trout, ducks, geese, muskrat, ruffed grouse, great blue heron

blue heron, ducks

ducks, geese, gulls, eagle, plover, tern, songbirds

trout and ducks

there are no fish and wildlife in the pond

trout and ducks

duck, geese, hawks, mink, muskrat, raccoon, plover

any waterfowl you can hunt, trout if you find them

ducks, snipe, gulls, heron, hawks, trout, smelt, gaspereaux

ducks, muskrats have decreased, very few fish

ducks, geese, fish

ducks, geese, eagle, songbirds, osprey, trout, smelt

trout, perch, ducks, geese, owls, eagles, songbirds

a variety of birds

trout, geese, beaver, muskrat

Have you noticed any changes in the pond and/or its fish/wildlife since you started using the pond?

yes 11/18 61%

no 4/18 22%

Comments:

water warmer, less fish, black mud smell

life of pond is dead, water is not moving

it is filling up with silt, more fish in the past

water in pond is dead, water is not running

less trout, muskrat, silt filling in pond

decrease in trout over last 10 yrs, growing in

pond growing in, fewer smelts every year

ducks, muskrats, trout, smelts have decreased

no species there, water has no oxygen

silt in pond, salt water on bottom, less fish

few fish and muskrats, bottom has 1-2 feet of silt

>>>top

What do you know of others' uses of the pond?

fishing and hunting

skating

skating

dog training, canoeing, observe nature

bird banding

waterfowl management area

hiking and walking

used by boaters, good bird watching area

hunting, skating, canoeing, and birdwatching

not much

To your knowledge, is this pond part of any type of nature study or environmental projects?

yes 11/18 61%

no 5/18 28%

no response 2/18 11%

If yes, which?

nature study

bird banding

present research

UPEI biology class

Ducks Unlimited

Environmental study

Ducks Unlimited

bird banding

management study

eagle watching

school study

To your knowledge, has this pond been recorded in folksongs, in stories, or in art?

no 12/18 67%

yes 3/18 17%

no response 3/18 17%

If yes, which?

mill on creek

cannons on marsh

>>>top

Please rank from 1-5, the value for you of this pond (where 1 means none, or a low value, and 5 means yes, a high value).

	Low Value		Average		High Value	
	1	2	3	4	5	no response
for community history	1/18	4/18	4/18	1/18	4/18	4/18
	6%	22%	22%	6%	22%	22%
for wildlife habitat	1/18			1/18	11/18	5/18
	6%			6%	61%	28%
for recreation	2/18			2/18	8/18	6/18
	11%			11%	44%	33%
fishing	2/18		2/18	2/18	9/18	2/18
	11%		11%	11%	50%	11%
hunting	1/18		1/18	2/18	10/18	2/18
	6%		6%	11%	56%	11%
for aesthetics and beauty	3/18	1/18	6/18	6/18	2/18	
	17%	6%	33%	33%	11%	
for commercial use	9/18	3/18	3/18		3/18	
	50%	17%	17%		17%	

What do you consider the best use of the pond? Comment:

presently none

hunting

natural habitat

I fix pond for fish & wildlife

Fishing, hunting and canoeing

take the dam out

look at part C of study

wildlife for breeding

hunting and relaxing

great for ducks, fish

there should be no pond

fishing and hunting

fish, hunt, and canoeing

canoe, hunt, fish, skate

leisure, recreation, wildlife

fish is good for most

>>>top

From a fish and wildlife management perspective, for what group of animals should the pond be managed (salmon, trout, waterfowl, songbirds, etc.)?

trout, waterfowl, songbirds

trout waterfowl

salmon, trout, waterfowl

who chooses to live there

more natural the better

trout, waterfowl, etc.

trout and waterfowl

trout, waterfowl, songbirds

trout, waterfowl, songbirds

trout, waterfowl, songbirds

manage for all species

salmon, trout, waterfowl

trout and waterfowl

trout, waterfowl, beaver

trout, waterfowl, songbirds

waterfowl, salmon, trout

Whom do you think should be responsible for the management of the site (community/public, government, or private sector)?

community 5/18 28%

government 1/18 6%

community and gov't 2/18 11%

private 1/18 6%

DU 1/18 6%

all 3/18 17%

no response 3/18 17%

Are you aware of any regulatory constraints pertaining to this pond?

no 11/18 61%

yes 6/18 33%

no response 1/18 6%

>>>top

Do you think there are any problems with the pond?

yes 15/18 83%

no 1/18 6%

no response 2/18 11%

comments:

water is stagnant

water/fish kill

salt water trapped

no flow, pond is dead

take dam out

no launch, outlet moved

draindown, silt

needs some changes

no flow of water

no water flow

high silt in pond

pond should be flushed

enhance nature

What do you like best about the pond?

it was great fishing

the time spent best

scenic view, young

bird, heron, iris

great pond but dead

dam soon be gone

pond in bad shape for wildlife

quietness, nature

haven for waterfowl

get access for boats

the way it was before

variety of animals

fun to canoe, hunt, fish

home to wildlife & place that is

quiet, good to relax

Do you visit other ponds?

yes 13/18 72%

no 4/18 22%

no response 1/18 6%

If you use other ponds, would you say that overall this pond, Miller's Pond, ranks above average or poorly (where 1 is poor, 5 is above average)?

poor 1 average above average no response

6/33% 3/33% 2/11% 1/6% 2/11%

>>>top

There is a lot of talk about management of this site. What do you think needs to be done, if anything, to get the best use of the pond?

remove water gate/dam

clear silt, feeder streams

refix pond/fish regrowth

all the above

put in fish ladder

take out dam forever

fish ladder, move channel

better access, walk trail

move fish ladder, no salt

make smaller pond

stop study, do something

flush pond, fix baffles

flush pond, new gates

control use of pond

publicize hunting and fishing

>>>top

C. Dedicated survey interpretation

i. Demographic profile

Taken as a whole, the majority of the respondents live in close proximity to the ponds, and are over 30 years of age; most are male, and range in occupation. Clearly the ponds have different histories and different communities of users, but, throughout the dedicated questionnaires, proximity to the ponds and lengthy ties to the area are a clear index of familiarity and interest. Most respondents live within 10 km of the ponds. The average length of residence is 34 years for Barlow's Pond, 31 years for Larkin's Pond, 26 years for Miller's Pond.

Respondents pursue a wide range of recreational activities on and around the ponds. Participation in environmental, outdoor or sports organizations, however, is notably lower in the cases of Barlow's and Larkin's Ponds, and higher in the case of Miller's Pond. More respondents from Miller's Pond note membership in community-based associations, perhaps due to the fact that Miller's Pond is located in an area of higher population than Barlow's or Larkin's Ponds. It is also in the area of Tracadie, recently politicized around dump development. Miller's Pond also has higher recreational and job uses, whereas in the case of Barlow's Pond, there is a higher community value, and, in Larkin's Pond, a blend of recreational and aesthetic.

>>>top

ii. Pond Use Value

Length of time of use is consistently high; over 50% of users in all three cases have been using the pond for at least 10-25 years. Frequency of use is higher for both Larkin's and Miller's Ponds than Barlow's, most respondents considering themselves frequent users of Larkin's and Miller's ponds, as opposed to occasional users in the case of Barlow's, where pond use is more historically and culturally based. Since Barlow's Pond is located in the centre of Wellington, respondents can more readily observe or visit it casually; observation does not require a planned visit.

Changing use of the pond is consistently articulated in all three cases. Anecdotal comments link this changing use to dams and changes in water levels and temperatures, and their effect on species. For most respondents, ponds have relatively low personal economic relevance; interest in them is described as environmentally, recreationally and culturally based. Species of wildlife observed range for each pond. The majority of respondents have noticed changes in each respective pond and its fish and wildlife since they started using it. They tie them to changes in water level, stagnation, heat levels, etc.

In the case of projects and cultural practices related to the ponds, the awareness of nature study/environmental projects is very high in the case of Miller's Pond, and practically non-existent for the other ponds. Because Miller's Pond is closer to an urban area, there may be a higher emphasis on environmental, ecological and research uses. Job use is also rated higher here than in the other ponds, possibly because of the connection between the pond and the nearby shellfishery. The cultural and historical significance of the ponds was of lesser import. In the case of Larkin's Pond, there was a lower sense of both cultural and historic importance, and less awareness of some environmental projects. Awareness of the cultural expression of the pond is most significant for Barlow's Pond, where recognition of the different forms in which the pond has been depicted is quite high.

Overall, it appears a continuum exists in the relationship of the ponds. Barlow's Pond is located in a population centre (an "urban" pond), where uses are more general. Miller's Pond is in a rural area, but an area of relatively high population, and has general community and aesthetic, as well as recreational, uses. Larkin's Pond lies in a sparsely populated, more isolated area, where interaction with the pond tends to be much more specialized.

>>>top

iii. Pond opinion value

Consistent with earlier sections, in questions using the Likert scale responses, Barlow's Pond ranks quite high for its community history and aesthetic values. Respondents gave it a medium to high value as wildlife habitat and a lower recreation value, but it is more important for fishing than other recreational uses. Its ranking for personal economic gain and job use is very low.

The articulated values of Larkin's Pond are quite evenly spread out, across community history, wildlife habitat, recreational fishing and hunting, and aesthetic value. Its highest value is for wildlife habitat and recreational fishing, though community history and aesthetics are important as well. The pond also ranks low in terms of economic importance.

Miller's Pond rates quite high as wildlife habitat, and for recreational hunting and fishing. Its value for community history fluctuates between respondents, perhaps because of a claim to private ownership. The pond's ranking for aesthetics and beauty also varies from response to response. Its job-use relevance is ranked higher than in the other ponds.

Generalizing now about all three test ponds, fish and wildlife habitat is important in all cases. The ponds' recreational values are also very high, particularly for fishing and hunting. In some cases, such as Barlow's Pond, community history, as well as aesthetics and beauty, predominate. These sentiments are reflected in the suggested best uses of the pond. Recreational fishing and wildlife uses are emphasized, but in the case of Barlow's Pond, the anecdotal comments as to best uses also stress nature, beauty, and aesthetics.

Suggested species for management range in the case of the three ponds. In the case of Barlow's Pond, 11/14 respondents specifically mention trout, and 2 others mention fish. Larkin's Pond respondents predominantly list salmon, trout, waterfowl, and wildlife. In the case of Miller's Pond, trout and waterfowl are mentioned in 13/16 responses.

Opinions vary as to who manages and owns the sites, as do opinions as to who *should*, whether government, community, or a blend of community and government. Barlow's respondents are balanced with respect to these three options, though slightly higher weight is given to government management. With respect to Larkin's Pond, where Ducks Unlimited involvement in the pond is an issue, the majority of those surveyed list a blend of government and community for their preferred management of the pond. Miller's Pond respondents place the community first, although there is also some mention of Ducks Unlimited and private ownership options. Miller's Pond responses indicate a clear issue around ownership of the pond. Awareness of regulatory constraints is consistently low.

Problems are articulated for all three ponds. These are often described as a decline and are linked to the effect of the dam and the need for correction. And in each case, those responding to the questionnaire tended to rank their pond poorly in relation to others. This is, perhaps, inevitable, since all three ponds require management decisions and the user communities are aware of this. To get the best use from the respective ponds, respondents almost universally suggest elements that need to be "fixed," for example, the dam, fish ladders, water levels, and silt build-up.

Figure 9: Comparative ranking of dedicated questionnaire respondents

>>>top

IV. Random Survey of Citizens

A. Approach

The random community questionnaire began with a more general approach, questions that assess how aware of, and familiar with, the pond a person is, and whether or not he or she identifies it as a resource in their community (pond awareness value). It then went on to ask if and how the respondent uses the pond (pond use value); and canvassed their opinion as to its state and needs (pond opinion value). Both random and dedicated questionnaires addressed the individual's personal affiliation to the pond and opinions about the site. Different user groups, however, also mean differing levels of awareness and concern and different levels of intensity with respect to attachments.

The random community survey was sent to groups within three different radii. In order to get a sense of the intensity and range of interest and opinion, 50 questionnaires were sent randomly to property owners within areas of 0-10 km, 10-25 km, and 25-50 km from the pond (a total of 150 questionnaires for each pond). Through this means of distribution, the Committee wanted to address the probability that users from other locations visit the ponds. Assessing the rate of response from within each radius would provide a gauge as to how best to reach these users, and to see if this random element contributed any worthwhile information to the matrix. Based on the results, it was expected that recommendations could be made as to how to direct a random sampling in future.

Random questionnaire responses (150 sent out per pond -- 50 per radius):

37/150 Barlow's Pond = 22% response rate

30/150 Larkin's Pond = 20% response rate

36/150 Miller's Pond = 24% response rate

>>>top

B. Data Results

i. Barlow's Pond

37 responses -- 25% response rate

breakdown

0-10 radius 10/37 27% 10/50 20% overall return

10-25 radius 16/37 43% 16/50 32% overall return

25-50 radius 11/37 30% 11/50 22% overall return

Are you aware of any ponds in the area? If yes, please name them.

Mention pond without prompt: 4/37 11%

If you have mentioned Barlow's Pond in Wellington, please proceed with questionnaire. If you have not, do you know of the pond located in Wellington called Barlow's Pond?

Familiar with pond, with prompt 10/37 27%

out of 10 responses

within 10 km radius 8/10 80%

within 25 km radius 2/10 20%

within 50 km radius --

Continue with questionnaire: 9/37

Are you familiar with the history of Barlow's Pond?

yes 5/9 56%

no 4/9 44%

How long have you been familiar with/utilizing Barlow's Pond? (years)

<5 2/9 22%

5-10 --

10-25 1/9 11%

25-50 4/9 44%

50< --

no response 2/9 22%

Have you noticed any changes in the pond over the years?

yes 5/9 56%

no --

no response 4/9 44%

If you have, can you describe them?

I remember the concrete spillway built, work done

old dam replaced with new one, water level lower

lower water level

new cement work was done

they put a park around the dam

>>>top

Please rank from 1-5, the value for you of this pond (where 1 means none, or a low value, and 5 means yes, a high value).

	Low Value		Average		High Value	
	1	2	3	4	5	no response
for community history			1/9 11%	2/9 22%	4/9 44%	2/9 22%
for wildlife habitat			2/9 22%		5/9 56%	2/9 22%
for recreation		1/9 11%	1/9 11%	1/9 11%	3/9 33%	3/9 33%
for aesthetics and beauty			1/9 11%		6/9 67%	2/9 22%
for commercial use	3/9 33%	2/9 22%	1/9 11%			2/9 22%

Is the pond an important asset?

yes 6/9 67%

no --

no response 3/9 33%

What, in your opinion, is the best use of this pond?

fishing, beauty

natural dam of water

keep it good-looking

looks and fishing

recreational purpose

Is there anything you think needs to be done to this pond to make that happen?

needs to be cleaned

petting zoo

Is this the second time you have filled out a questionnaire for this study related to Barlow's Pond?

(dedicated users)

yes 1/9 11%

no 8/9 89%

>>>top

ii. Larkin's Pond

33/150 - 22% response rate

radius

0-10 km 14/33 42% 14/50 28% rate of return

10-25 km 11/33 33% 11/50 22% rate of return

25-50 km 8/33 24% 8/50 16% rate of return

Are you aware of any ponds in the area? If yes, please name them.

Name pond without prompt 6/33 18%

If you have mentioned Larkin's Pond at Selkirk, please proceed with questionnaire. If you have not, do you know of the pond located at Selkirk called Larkin's Pond?

Familiar with pond when prompted 15/33 45% response

continue with questionnaire 15/33 45%

out of 15 responses

within 10 km radius 11/15 73%

within 25 km radius 3/15 20%

within 50 km radius 1/15 7%

Are you familiar with the history of Larkin's Pond?

yes 8/15 53%

no 7/15 47%

How long have you been familiar with/utilizing Larkin's Pond? (years)

<1 2/15 13%

1-5 -

5-10 -

10-25 3/15 20%

25-50 5/15 33%

50+ 2/15 13%

Have you noticed any changes in the pond over the years?

yes 6/15 40%

no 3/15 20%

no response 6/15 40%

If you have, can you describe them?

work was done at bridge

a lot of scum on water, trout were poisoned

stumps and trees make it hard to fish trout

never visited the pond

never visited the pond, only know about it

block feeder streams, increase vegetation

there are no fish left, I don't fish there anymore

less quality of water, poor fish ladder

less water flow, fewer people fishing

>>>top

Please rank from 1-5, the value for you of this pond (where 1 means none, or a low value, and 5 means yes, a high value).

	Low Value		Average		High Value	
	1	2	3	4	5	no response
for community history	1/15 7%		3/15 20%	1/15 7%	7/15 40%	4/15 27%
for wildlife habitat				3/15 20%	8/15 53%	4/15 27%
for recreation		1/15 7%	5/15 33%	2/15 13%	3/15 20%	4/15 27%
for aesthetics and beauty				3/15 20%	8/15 53%	4/15 27%
for commercial use	7/15 47%	2/15 13%		1/15 7%		5/15 33%

Is the pond an important asset?

yes 9/15 60%

no --

no response 6/15 40%

What, in your opinion, is the best use of this pond?

fish and sightseeing

put in campground

fishing

wildlife and aquatic

recreational

fish and sightseeing

sport fishing

breeding area for wildlife

hunting and fishing

fish, canoe, Wildlife

sanctuary, wildlife

Is there anything you think needs to be done to this pond to make that happen?

spray for bugs

refilled and restock

open feeder streams

accessible to fish

improve water level

don't know

Is this the second time you have filled out a questionnaire for this study related to Larkin's Pond?

(dedicated users):

yes: 3/15 20%

no: 12/15 80%

>>>top

iii. Miller's Pond

43/150 -- 29% response rate

radius 0-10 13/43 30% 13/50 26% rate of return

radius 10-25 13/43 30% 13/50 26% rate of return

radius 25-50 17/43 40% 17/43 34% rate of return

Are you aware of any ponds in the area? If yes, please name them.

Name pond without prompt: 0/43

If you have mentioned Miller's Pond at Frenchfort, please proceed with questionnaire. If you have not, do you know of the pond located at Selkirk called Larkin's Pond?

Familiar with pond, with prompt: 6/43

Continue with questionnaire: 5/43

out of 5 responses

radius 0-10 2/5 40%

radius 10-25 2/5 40%

radius 25-50 1/5 20%

Are you familiar with the history of Miller's Pond?

How long have you been familiar with/utilizing Miller's Pond? (years)

<1 --

1-5 1/5 20%

5-10 --

10-25 --

25-50 3/5 60%

50 + --

no response 1/5 20%

Have you noticed any changes in the pond over the years?

yes 3/5 60%

no 1/5 20%

no response 1/5 20%

If you have, can you describe them?

low water level, very stagnant

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Please rank from 1-5, the value for you of this pond (where 1 means none, or a low value, and 5 means yes, a high value).

	Low Value		Average		High Value	
	1	2	3	4	5	no response
for community history			1/5 20%	2/5 40%	1/5 20%	1/5 20%
for wildlife habitat					5/5 100%	
for recreation			1/5 20%	2/5 40%	1/5 20%	1/5 20%

for aesthetics and beauty		2/5 40%	2/5 40%	1/5 20%
for commercial use	4/5 80%			1/5 20%

Is the pond an important asset?

yes 4/5 80%

no -

no response 1/5 20%

What, in your opinion, is the best use of this pond?

hunting

wildlife

fish

natural area

Is there anything you think needs to be done to this pond to make that happen?

patrol, hunting prohibited

open pond

a little tender care

Is this the second time you have filled out a questionnaire for this study related to Miller's Pond?

(dedicated users)

yes 0/5 0%

no 5/5 100%

>>>top

C. Random survey interpretation

The intent of the random questionnaire was to gain some sense of the intensity of sentiment in a random population sample *vis a vis* the respective ponds, to gauge how widely shared expressed values might be, to capture pond users who may live outside the immediate vicinity of the ponds, and to procure information about the level of recognition of the test ponds among those who do not live near them. In short, the response rate from the random questionnaire provides an index of how widespread awareness and concern is with regard to management of the pond.

The random surveys indicate a very low familiarity with the test ponds. While in all cases, the overall response rates are quite high compared to the dedicated users, the actual pond recognition is much lower. The low awareness of the targetted ponds among respondents living outside the immediate vicinity is a common thread. In the case of Barlow's Pond, there were 37 responses returned, out of the 150 mailed out. Of these 37, only 9 were familiar with the pond, and the majority of these lived within a 10-km radius of it. Larkin's Pond received 33 responses out of 150 mailings; 15/33 were familiar with the pond, and, again, the majority of these resided within a 10-km radius. The 150 questionnaires for Miller's Pond elicited 43 responses. Only 5 of 43 were familiar with the pond, and these 5 were evenly spread out across the different radii (2/2/1). As in the case of the dedicated questionnaires, proximity to the ponds is a clear index of familiarity and interest.

The geographical breakdown of responses suggests that the radius range in the pilot study was too large. People are willing to fill out the questionnaire, but often have no knowledge of the pond. Furthermore, those who are aware of the pond, with or without prompting, expressed similar values and concerns as those captured in the dedicated survey. Barlow's Pond ranks highly for beauty and aesthetics, fishing, and recreation. The pond was designated an asset by the majority, and most respondents had perceived changes in it, linking them to the dam and a need for repair. In the case of Larkin's Pond, wildlife habitat was seen as important. Aesthetic value and community history also ranked fairly high, perhaps higher than for dedicated users, but the number of respondents constitutes a smaller sample. The majority had noticed changes, particularly with respect to fishing. All five respondents ranked Miller's Pond highly in terms of wildlife habitat. The pond was seen as an asset to four of them, specifically as a hunting, fishing, and wildlife natural area.

Figure 10: Comparative ranking of proportion of random questionnaire respondents

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V. Evaluation of Community Consultation Process

A. Assessment of Questionnaire Results

In assessing the questionnaire, it is necessary to judge whether or not the surveys brought out the desired information, to compare the value of information derived, and to assess whether these

questionnaires and the process employed are the best way of getting this information. In comparing information derived in both dedicated and random samplings, it appears that geographical proximity is a clear marker of familiarity with, and concern about, the pond. It is also clear that the dedicated questionnaire gets at the range of uses and opinions of people who are interested in issues related to the site. Though the process produces a small sample, it reaches a specific group of respondents with interest, observations, and opinions; and their belief that their observations and opinions are of value to decision-making, and will affect management of the pond, is implicit in their participation in the process.

The questionnaire seems adequately thorough, producing demographic data, information as to pond uses and values, as well as opinions. Some data, such as those relating to profession of respondents and recreational activities, may not be immediately relevant to pond management decisions, but it produces an overall profile of users, which may be useful in future. Category and yes/no questions provided basic information as to activities and awareness levels. Open-ended, general questions resulted in a range of information and opinion. Whether or not respondents are active users of their pond or primarily observers of it, or whether they possess general historical awareness, answers tended to be consistent.

While it does not produce a single numeric score, the questionnaire produces a sense of the relative category and weight of values attached to the pond, as well as anecdotal information and opinions that should be taken into consideration in making decisions about the ponds' management. It is clear that attachments to these environmental resources have multiple layers, depending on history, location, and uses. Using a combination of approaches, it seems possible to collect information as to knowledge and use of the pond; to measure attitudes toward, and values associated with, the wetland area; and to be sensitive to the range and nuances of associations with the pond.

Responses suggest that there is low awareness of regulatory constraints, as well as some confusion with respect to the management arrangements for the ponds. This could be remedied through public education. In proposing ideal management directions for species and activities, respondents also seem unaware that fish and wildlife may entail different management strategies. Again, communication and education may clarify such issues for the public, and expand interest in each pond and its management.

In the case of the random questionnaire, the intent was to get a sense of the range and intensity of opinion beyond the group of dedicated users. The questionnaire was quite detailed, in order to get a sense of the significance of the pond within the broader environmental awareness of respondents. Here, however, recognition or interest in the pond was very low, even with prompting. The few respondents who did continue with the random questionnaire appear to have been people with a high rate of long-term use, often because they are part of the same physical community as the dedicated users who live in proximity to the pond. In the case of Miller's Pond, we must also consider that the low familiarity with the pond might be a result of name confusion.

In all of the random questionnaires, the majority of respondents faltered as they went on with the questions. As a result, it becomes increasingly difficult to rank the rate of response, as many of the later questions were not answered at all. Responses were often superficial as well, which may

reflect a low level of knowledge, and/or of low interest. Where there *was* a familiarity with the pond, the same issues and values as for dedicated users often recurred.

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The sampling raises several issues, then. While the dedicated survey and the general methodology appear appropriate, the pilot study indicates that little new information was obtained from the broad random sampling. The random questionnaire does not appear to have captured the opinion of either the silent majority or dedicated users who do not live in proximity to the site. People who responded to the random surveys invariably live in the immediate vicinity of the targetted ponds. Moreover, the feelings and opinions of those who did respond simply fall in line with those of dedicated users.

This negative response, however, does provide useful information. The random survey has been important because it determines the spatial extent to which the management of a particular pond is an issue. It suggests that the management of ponds and their watersheds is a local issue on Prince Edward Island. Our surveys indicate that there *is* a silent majority on the issue, but they are silent of their own accord, rather than because they haven't been asked their opinions. Again, the relatively low number of dedicated-user responses indicates that pond management is a very localized issue.

Random sampling may not add much information as to values attached to the ponds that historical research and qualitative anecdotal information does not supply. Nor does it capture the opinions of users missed in the targetted effort. It appears that people who reside far away from a pond may not have an opinion about it; and those who do not live in proximity, but do know of the pond and care about its management, will identify themselves and participate through the dedicated users survey. Effort might be better spent on developing the body of interested participants, and publicizing the process to dedicated users. In future, the random survey may be omitted if it is concluded at the beginning of the process that those people who have an opinion will participate in the survey of dedicated users. Another possible alternative is to compromise, reducing the detail of the random questionnaire and sending it only to a sample that live within a 10-km radius of the pond.

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B. Recommended template for process

i. Historical research

There are many sources of historical information and potential document/archival sources that can aid in the identification of historical uses, current stakeholders, and issues in each impoundment case. Research into the three test sites, Barlow's Pond, Larkin's Pond, and Miller's Pond, suggests the following process.

1. Identify current location and historical township number

2. Check *Geographical Names of Prince Edward Island* (Rayburn 1973) for a brief summary of history of most sites.

3. Key Sources:

• Map collection at Public Archives and Records Office

• "Lake Map" of 1863

• "Meacham's Atlas" of 1880

• "Cummins Atlas" of 1927

• Family and community histories

• Genealogical information

• Oral history sources

Many impoundments evolved as mill ponds that are today still associated with communities and play central roles in their histories. The Lake map and the maps in Meacham's Atlas are the most helpful, as most mill ponds were established by 1880. The maps show the location of mills and ponds on river systems, as well as the lot in which they were located, and families that are historically identified with the area (and are often still identified with the area). These maps also give a visual representation of the social importance of the pond: the number of mills on it, whether it is a community pond, or in a less populated area (and thus used more for wildlife or fish habitat).

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Community histories are available for many localities and will provide more detail as to the role of the pond. As most community histories cover the last century, they record businesses and industries associated with the establishment of the town, as well as transitions over time. In *By the Old Mill Stream*, for example, which presents the history of Wellington, the establishment of Barlow's Pond in association with Barlow's Mills is recorded, as well as current recreational uses -- the site of the old mills on the pond became a park after 1965, when the land was sold to the town by the Barlow family.

The best source for maps (printed and manuscript) is the Public Archives and Records Office in Charlottetown. It has an extensive collection of community histories as well, as do the Robertson Library at the University of PEI, and the Confederation Centre Public Library. The Lake Map is best accessed through the Public Archives.

If the pond was a mill pond associated with a certain family, genealogical information readily available through the finding aids at Public Archives or through their website will often provide some history of the mill as well.

4. Department files/institutional knowledge.

Employees at the Department of Technology and Environment have extensive knowledge about the history of each site under their jurisdiction and the issues associated with them. Their own files should be checked for information. The database stemming from the Golet values suggests relevant management bodies. This can be useful as well, as it may reveal past uses.

5. Commercial directories for Charlottetown and/or the province, published by private companies sporadically since 1864. (An index to pre-1920 directories can be found in *The Island Magazine*, No. 35.) These were "directories" of counties, and, sometimes, Island communities. Among their listings, they often recorded businesses according to type of endeavour (e.g. tanneries, saw mills, grist mills, and flour mills) These were not exhaustive, however, and may not give any additional information, unless one is trying to locate the name or existence of a specific mill. Telephone books and census data (available at both the Public Archives and the Robertson Library) also provide such information.

6. Folk songs may also give clues as to the history of specific impoundments sites are located. These may have to be researched through contact with individuals such as Randy Dibblee, John Cousins, Shane Bryanton, or through books such as Edward (Sandy) Ives' *Larry Gorman: The Man Who Made the Songs, Lawrence Doyle -- The Farmer Poet of Prince Edward Island* , or *Drive Dull Care Away: Folksongs from Prince Edward Island*. There are a number of other anthologies of Island folk songs as well, including one compiled by Randy and Dorothy Dibblee and a second by Christopher Gledhill.

7. Where a dam was associated with electrical generation, the researcher should consult Kenneth Bell's *Getting the Lights* (1989), which chronicles those impoundments associated with hydro-electric power (Alberton, Breadalbane, Cardigan, Crapaud, Dunk River, Hunter River, Kensington, Kinkora, Montague, North Tryon, O'Leary, Souris, St. Eleanor's).

8. PEI Dam Inventory 1969 Engineering Services Atlantic Regional Office, Department of Regional Economic Expansion, Amherst Nova Scotia, Study Project 961-2-1-69 gives a sense of the dams in existence at that time.

9. There are also texts and newspaper articles related to specific sites, which can provide certain types of information. Check card catalogue for sites and subjects in the UPEI library's PEI Collection.

ii. Publicity; public information meeting

Developing an historical profile will provide a sense of the community group involved from the outset, and identify potential or actual conflicts arising over pond uses and historical attachments. Public information is necessary to publicize the process of integrating this community-value assessment tool into management plans. Local individuals and groups can be involved in this initial planning process. Through contact with community residents, a location for the public information meeting is selected. The information meeting to deal with the pond and the integration of the questionnaire into the management process should be well publicized.

Publicity and effective word of mouth is critical in identifying the dedicated user group, which has specific and valuable knowledge about the pond and its uses. The intent of the information meeting is to educate and inform, communicating to affected community groups that their opinion is to be incorporated from the outset -- that is, to begin a conflict management process. The information meeting is a place to dispense and receive information, but it is not meant to deal with the issues surrounding pond management. Nor is it meant to medite opinions or conflicts, but rather, to begin the process of consultation.

After the meeting presenting information about aspects of pond management and the process of decision-making, people should be asked to leave their names, if they interested in receiving the questionnaire, and the names of other contact people. Local residents can be consulted as to a location in the community to leave questionnaires.

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iii. Questionnaire Administration

The dedicated questionnaire can be distributed to the names left at the information meetings, through subsequent pick-up by interested parties from selected locations within the community, and, possibly, through the stakeholder agencies. We recommend that the random questionnaire be administered within a smaller geographical radius, sampling within a 10-km zone.

The random questionnaire provides certain information as it stands, but as is clear in the test cases, there are limits as to its usefulness. While it appears that in such a small geographical setting, random sampling will not succeed at getting at the "silent majority" opinion about each pond, there is something to be gained from information about how the average person feels about the natural environment as well as their activities and interaction with natural resources. It is arguably important to retain this element of the assessment process in order to offer such a profile, as well as to provide a control to which dedicated user profiles can be related. Whether or not to use random sampling may depend in the end on the resources of the administering agencies. There is both a fiscal cost and a commitment of human resources involved in distributing the questionnaires and in sorting, inputting, and interpreting the data. Commitment to developing such information may depend on the human resources available for the distribution and the labour-intensive job of inputting and interpreting the data.

Since the clarity of the process and of the relationship of community-value assessment to longer-term management plans is key, confusion should be avoided between the ongoing management of ponds and the role of the questionnaire. Public perception of a fair, clear process is paramount. The investigation of pond cultural values and community attachments is taken seriously by the stakeholders, and it is central that the public also perceive the importance of the project. Wherever possible, management decisions with respect to individual ponds should not be taken while an assessment of community attitudes is in progress. Such actions may undermine community confidence in the validity of the whole exercise.

Overall, it is necessary to convey that ponds warrant study. This research explores the extent, nature and source of appreciation for Island ponds. The public should understand that the

managing agencies see them as functional, well-used, with a depth of personal and community attachments. They are locations for natural and recreation-centred experiences, and an understanding of patterns of use as well as anecdotal reports of observations, opinions, and values are key to the future management of these natural places and wetland resources.

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VI. Summary: Community Opinion & Future Pond Management

Community involvement in this project has indicated that, on Prince Edward Island, ponds are an important part of environmental, recreational, and cultural landscapes. It has also shown that public interest in the management of ponds on Prince Edward Island is high in local contexts. Often the values and attitudes attached to these ponds and their watersheds are connected to their secondary impacts, beyond primary use value. Whether the value attached is tied to wildlife or fish habitat, their role in community history, aesthetic qualities, or commercial potential, the members of each community of pond users clearly have an interest in management decisions and the effects of these decisions. As individuals who elect to participate in this community-value assessment process, respondents are aware of the relevance of their own personal knowledge of the ponds and are interested in being consulted as to their future management.

These three test sites have shown that the nature of the cultural significance, social roles, and impacts of a pond are closely tied to the site and community-specific circumstances of a given project. Across the sites, however, a sense of the changing use and condition of the ponds is a consistent theme. Anecdotal comments link these changes to deteriorating dam conditions and the effects of changes in water levels, water temperatures, and siltation. The overall response suggests that pond users want watersheds to be managed for a balance of species and uses, and desire that community opinion and observations be used to guide concrete action in maintaining and repairing the ponds, and directing their long-term management.

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Appendices [not available on-line; contact the Institute of Island Studies for more information]

A. News release announcing project

B. News release announcing public information meetings [*not available on-line*]

C. Advertisements [*not available on-line*]

i. Public information meeting times and locations

ii. Questionnaire locations

iii. Public notices posted announcing public information meetings

D. Press coverage

i. "Meetings seek input on Island ponds"

The Guardian May 28, 1999, C3.

ii. "Hold public info meeting to talk about Larkin Pond"

The Eastern Graphic June 2, 1999, 3.

E. Sample Questionnaire for Dedicated Users

F. Sample Random Questionnaire

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References

Baxter, R.M. and Glade, P. 1980 Environmental effects of dams and impoundments in Canada: experience and prospects *Can. Bull. Fish Aqua. Science* No. 205.

Bell, Kenneth 1989 *Getting the Lights* PEI Museum and Heritage Foundation

Berries, Firkin 1988. The intrinsic difficulty of predicting impacts: Lessons from the James Bay Project. *Environmental Impact Assessment Review* 8: 201-220

Connor, Despond 1997 *Public Participation: A Manual* Victoria, BC: Development Press.

Ives, Edward, 1971 *Lawrence Doyle: The Farmer-Poet of Prince Edward Island, a study in local songmaking*. Orono, Maine: University of Maine Press.

Ives, Edward, 1964 *Larry Gorman: The man who made the songs.* Bloomington: Indiana University Press, 1964.

Manuel, Patricia, 1999 "Exploring Cultural Perceptions of Small Urban Wetlands: cases from the Halifax Regional Municipality". Paper presented to the Canadian Water Resource Association 1999 Conference, Wolfville, Nova Scotia.

PEI Dam Inventory. 1969 Engineering Services Atlantic Regional Office. Department of Regional Economic Expansion. Amherst, Nova Scotia Study Project 961-2-1-69

Rayburn, Alan. 1973 *Geographical Names of Prince Edward Island.* Energy, Mines and Resources Canada.

River Alliance of Wisconsin. 1999 Small Dam Program. Madison, Wisconsin.

Roberts, Richard 1995 Public Involvement: From consultation to participation *Environmental and Social Impact Assessment* Eds. Frank Vanclay and Daniel Bronstein NY: Wiley and Sons.

Sadar, M.H. and Dirschl, H.J. 1996 *Generic Environmental Impacts identified from Water Impoundment Projects in the Western Canadian Plains Region.*

Stolte, W.J. and M.H. Sadar 1998 The Rafferty-Alameda Project: Monitoring and Mitigation after the Environmental Impact Assessment *Canadian Water Resources Journal* 23.2. 1998

Wellington Senior Citizens Historical Committee. 1983 *By the Old Mill Stream History of Wellington 1833-1983.* Summerside: Williams and Crue.

Wiles, Anne, McEwen, John and Sadar, Husain. The Use of Traditional Ecological Knowledge in Environmental Assessment of Uranium Mining Projects in the Athabaska Region, Northern Saskatchewan.

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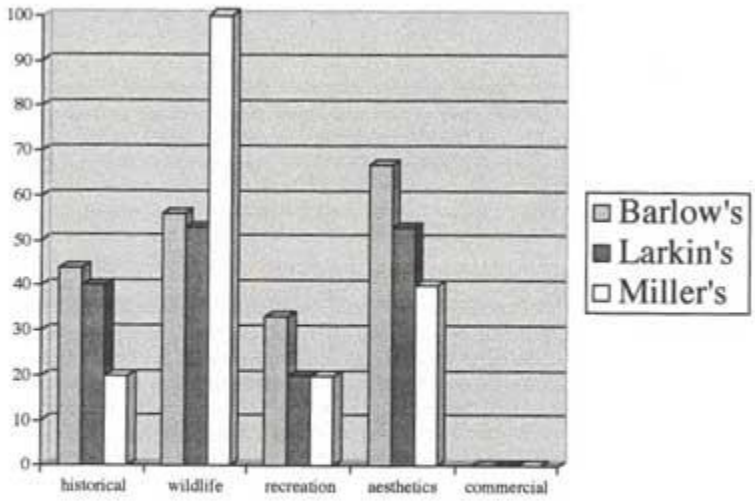

Fig. 10 Comparative ranking of proportion of random questionnaire respondents who placed a high value (5 on a scale of 1 to 5) for the ponds' historical value for the community, wildlife habitat value, recreational value, value for aesthetics and beauty, and commercial value.

Figure 2

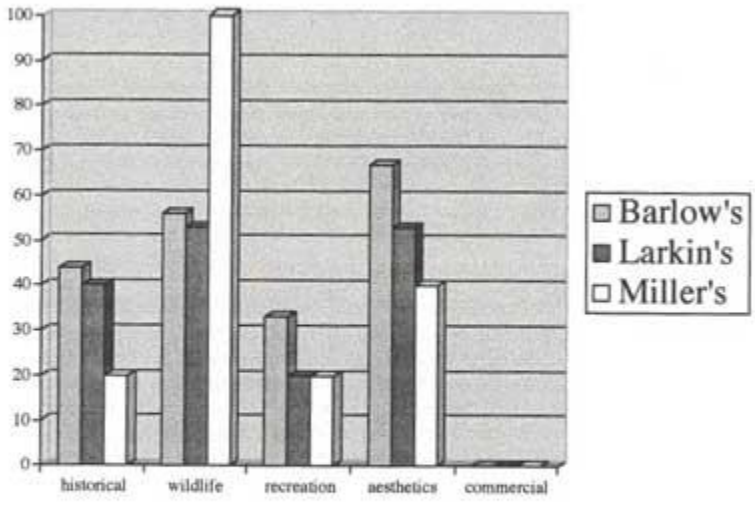

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Figure 3

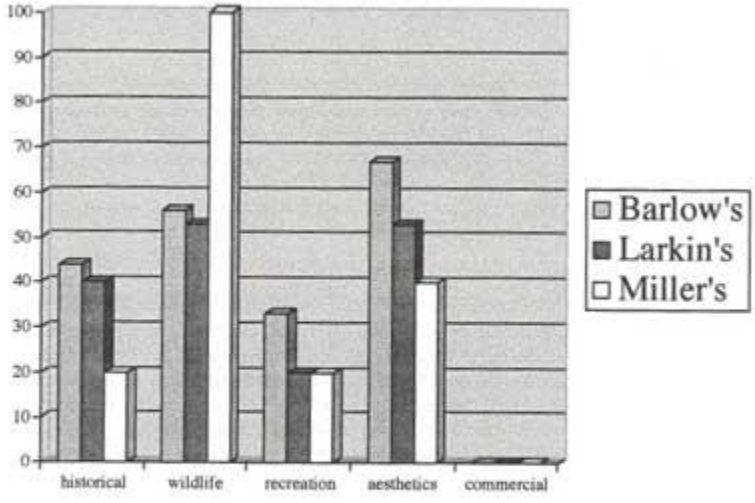

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Figure 4 not found

Figure 5

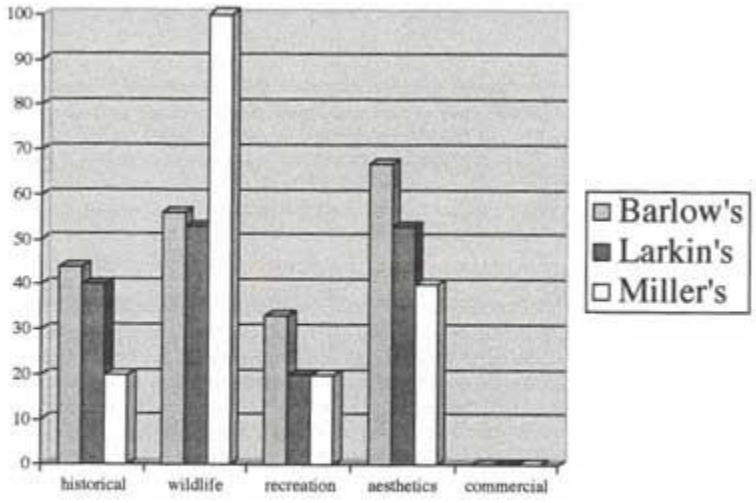

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Figure 6 not found

Figure 7

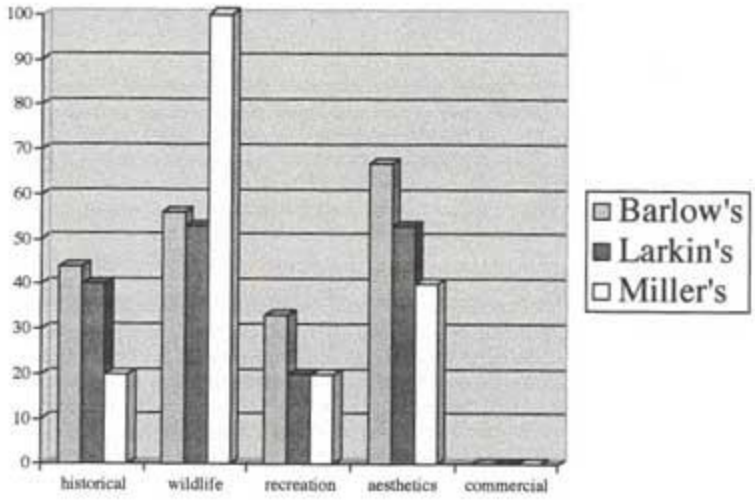

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Figure 8

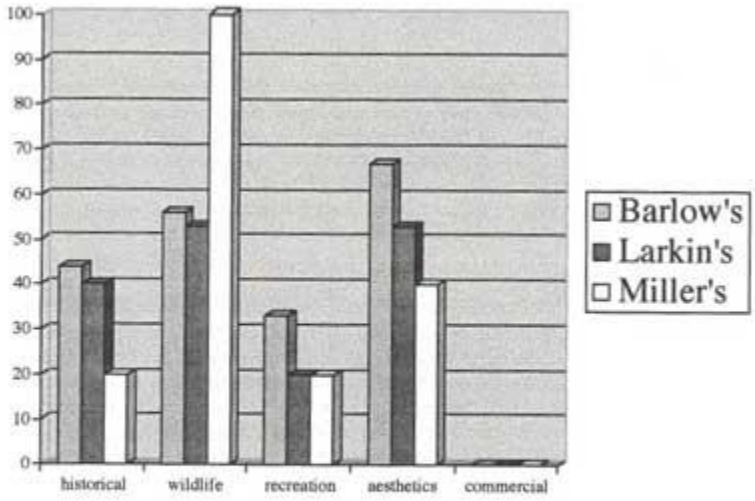

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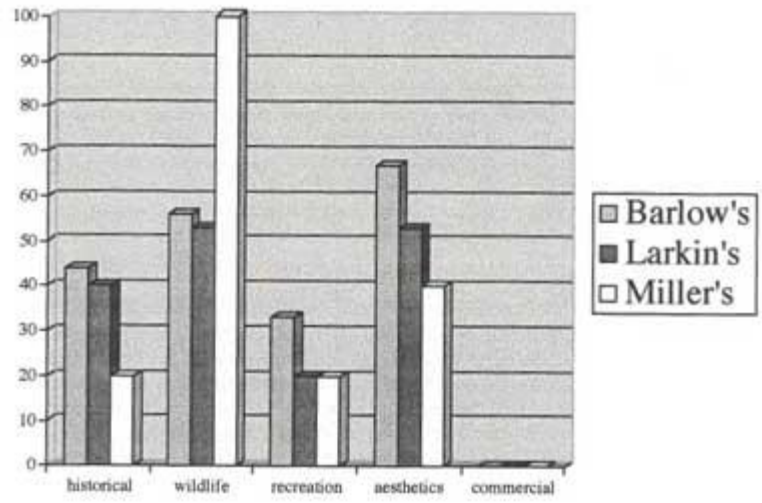
Figure 9



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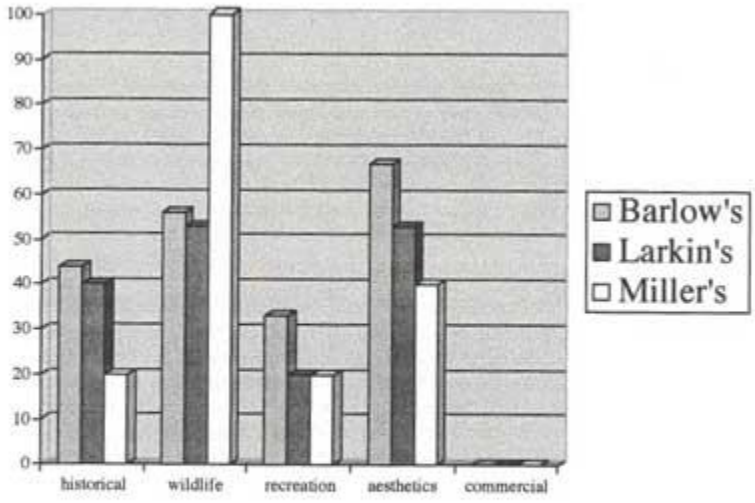

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