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Initiation and Facilitation of Community Based Lentic Riparian Conservation at Moose Lake, Alberta

Alberta Conservation Association

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EXECUTIVE SUMMARY

Most lentic riparian and littoral habitats in Alberta and the fish and wildlife populations they support are under increasing pressure from anthropogenic disturbances including physical changes to or removal of riparian and littoral vegetation and soils, point-source discharges (e.g., sewage inputs) and development of in-lake structures (e.g., docks). Dramatic expansions in the number of lake-front cottages in Alberta since the 1970s have raised serious concerns about the effect of human activities in these lentic riparian zones on water quality and fish communities. Changes in riparian and littoral habitats, especially those leading to the loss of emergent macrophytes, have often led to degradations in spawning, nursery and foraging habitats, as well as reductions in thermal and predator cover that ultimately result in general reductions in fish production.

In spite of efforts by various government departments (e.g., Alberta Sustainable Resource Development – Fish and Wildlife and Public Lands, Alberta Environment) and several non-government groups (e.g., ACA, Ducks Unlimited) over the last 30 years to address these issues, primarily through public awareness activities, the overall health of Alberta's riparian habitats continues to decline because of anthropogenic disturbances. Three obstacles currently hamper the conservation of lentic riparian habitats in Alberta: 1) the lack of current, comprehensive, well-communicated information describing the negative effects of riparian development on fish and wildlife populations and their habitat, 2) the lack of public awareness and concern, and 3) inadequate affirmative engagement and action by resource management and conservation agencies. Jurisdictional overlap between resource management agencies is also problematic.

To address these issues, the Northeast Business Unit (NEBU) of The Alberta Conservation Association (ACA) initiated a Lentic Riparian Recovery Project (LeRRP) in 2004 to assess the status and quantify riparian habitat at select lakes, and to develop an approach for engaging community-based groups in riparian conservation strategies at local lakes. The ACA developed a novel approach that uses aerial videography and a scorecard assessment to rank habitat quality (hereinafter called riparian health and

integrity) into three categories as: healthy, moderately impaired, and highly impaired (see details in Mills and Scrimgeour 2003).

This report summarizes results to date from an ongoing study initiated at Moose Lake in 2004 as part of the LeRRP program. Videography data collected on 13 July 2004 indicated that overall shoreline of Moose Lake was 63% healthy, 13% moderately impaired, and 24% highly impaired. In contrast, shoreline associated with the Summer Village of Pelican Narrows on the lake was classified as 11% healthy, 19% moderately impaired and 70% highly impaired. To increase awareness of the deteriorating status of the shoreline as well as ACA's activities in their area, videography information was presented to residents of the Summer Village of Pelican Narrows at their July, 2004 Annual General Meeting. This information initiated considerable interest in conservation of the lake shoreline that culminated in the formation of a community action group, the *Pelican Narrows Health Shoreline Committee* (PNHSC). The committee's ongoing shoreline conservation activities will be guided and facilitated by ACA, but delivered by the committee.

ACKNOWLEDGEMENTS

The author acknowledges the contributions of Kevin Billay (Mayor of the Summer Village of Pelican Narrows, Moose Lake, Alberta) and the members of Pelican Narrows Healthy Shoreline Committee: George and Mary Binette; Ray and Doreen Hamel and Marek Janowicz (Canadian Department of Fisheries and Oceans, Edmonton, Alberta). Report review and editing was provided by Stephanie Grossman, Doug Manzer and Garry Scrimgeour (ACA, Edmonton) and Peter Aku (PAKU consulting). The author also acknowledges the considerable assistance provided by Mr. George Walker (Alberta Sustainable Resource Development – Fish and Wildlife Division, Cold Lake) with aerial videography collection and riparian health and integrity analysis and mapping.

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1.0 STUDY RATIONALE AND OBJECTIVES

1.1 Study rationale

As is common in most of North America, lentic riparian and littoral habitats in Alberta and the fish and wildlife populations they support are under increasing pressure from human-induced disturbances. These disturbances include physical changes to, or removal of riparian and littoral vegetation and soils, point-source discharges (e.g., sewage inputs) and development of in-lake structures (e.g., docks) (Scrimgeour and Chambers 2000, Radomske and Goeman 2001). Dramatic expansions in the number of lake-front cottages in Alberta since the 1970s have raised serious concerns about the effect of human activities in these lentic riparian zones on water quality and fish communities. Changes in riparian and littoral habitats, especially those leading to the loss of emergent macrophytes, have often led to degradations in spawning, nursery and foraging habitats, as well as reductions in thermal and predator cover that ultimately result in general reductions in fish production (Robinson and Tonn 1989, Schindler and Scheuerell 2002, Pratt and Smokorowsk 2003).

In spite of efforts by government agencies (e.g., Alberta Sustainable Resource Development – Fish and Wildlife (ASRD-FW), Alberta Lands and Forests - Public Lands (ALF-PL), Alberta Environment (AE) and several non-government groups (e.g., Alberta Conservation Association (ACA), Ducks Unlimited (DU)) over the last 30 years to address these issues, primarily through public awareness activities, the overall health of Alberta's riparian habitats continues to decline because of anthropogenic disturbances. Three obstacles currently hamper the conservation of lentic riparian habitats in Alberta: 1) the lack of current, comprehensive, well-communicated information describing the negative effects of riparian development on fish and wildlife populations and their habitat, 2) the lack of public awareness, concern and action, and 3) inadequate affirmative engagement and action by resource management and conservation agencies.

To address these issues, the Northeast Business Unit (NEBU) of the ACA initiated a Lentic Riparian Recovery Project (LeRRP) in 2004, to assess the status and quantify riparian habitat at select lakes. The overall goal of the LeRRP project was to develop an approach for engaging community-based groups in riparian conservation strategies at

local lakes. This approach will seek to, 1) increase stakeholder and agency buy-in and engagement, and 2) create and use collaborative processes to improve riparian health at specified local lakes. A key component to achieving the goals of the LeRRP is participation of local communities. However, previous attempts to involve local participation in riparian conservation efforts have had limited success due, in part, to the lack convincing quantitative data. Consequently, generating quantitative data on the health of lentic riparian zones is vital to the successful implementation of the program. The NEBU uses a novel approach developed by ACA that uses aerial videography and a scorecard assessment to rank riparian habitat health and integrity into three categories as: healthy, moderately impaired, and highly impaired (see details in Mills and Scrimgeour 2003). The information generated will serve as a baseline to assist community groups to set targets for riparian conservation. Repeating the aerial survey will also allow the community to measure and monitor its progress.

In this report, I present results to date from an ongoing study initiated on Moose Lake in June, 2004 as part of the LeRRP program. Specifically, the report describes: 1) the process used in selecting a location for a pilot project to develop a community-based approach to riparian conservation, and 2) the approach used to stimulate the creation of a community-based conservation group, and 3) activities undertaken by the conservation group since initiation to 31 March 2005.

2.0 STUDY AREA

The study was conducted at the Summer Village of Pelican Narrows on Moose Lake, Alberta. Moose Lake is located near the town of Bonnyville in northeastern Alberta (Figure 1) and is situated in the Low Boreal Mixedwood Ecoregion of Alberta (Strong and Leggat 1992). It has a drainage area of 755 km^2, a surface area of 40.8 km^2, shoreline length of 64.1 km, maximum depth of 19.8 m and a mean depth of 5.6 m (Mitchell and Prepas 1990). The lake supports a number of sport fish populations including walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), northern pike (*Esox lucius*), lake whitefish (*Coregonus clupeaformis*) and burbot (*Lota lota*) (Mitchell and Prepas 1990).

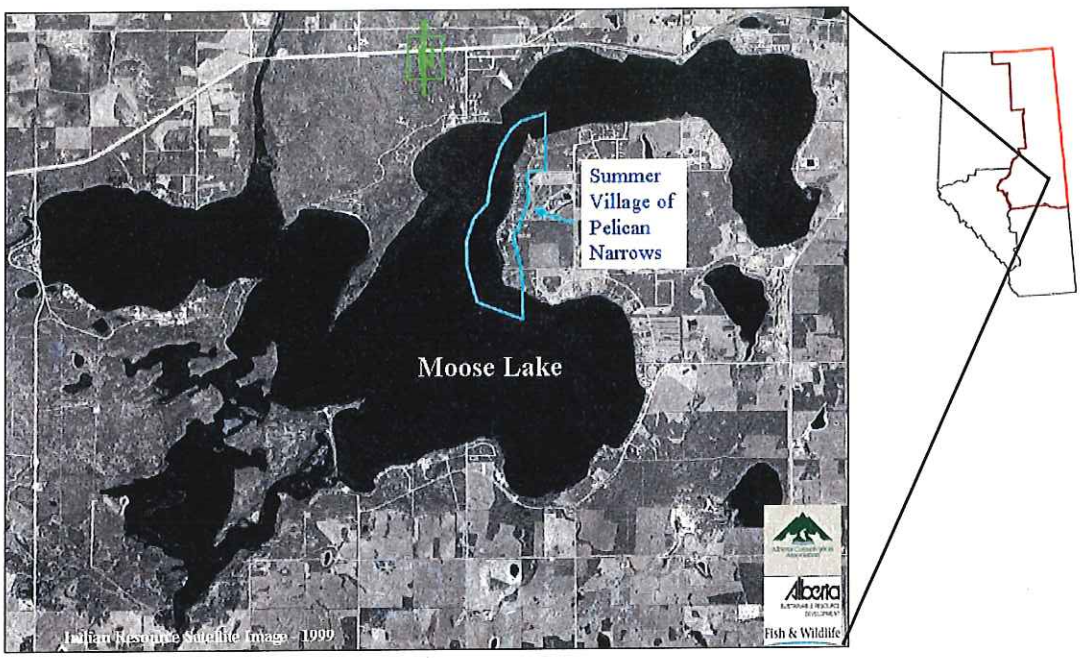

Figure 1. Indian Resource Satellite image (1999) of Moose Lake, Alberta.

3.0 METHODS

3.1 Selecting pilot location for community based riparian conservation

Target lake/group selection

A collaborative project between ACA and ASRD-FW staff was conducted in 2002 to identify a set of priority lakes for videography based on perceived riparian conservation needs (Table 1). At the initiation of the current project, 21 shoreline aerial video surveys have been conducted on 17 waterbodies (Table 2). I used the following five steps in sequence to select a target lake and group of people (i.e., community group) to initiate riparian conservation activities:

1. From the lakes in Table 1, I selected lakes where video was collected between 2002 and 2004. Data collected in 2000 and 2001 was used in perfecting the filming methodology and is therefore considered to be of lower quality.
2. From the subset of lakes in step 1, I selected lakes for which at the initiation of the project entire shorelines have been quantified using the riparian health and integrity status output (Mills and Scrimgeour 2003 – Table 3).
3. From the list in step 2, I selected lakes known to be receiving or targeted for lentic riparian conservation program delivery (i.e., a targeted program that seeks to improve riparian health and integrity) in 2004 by a government agency or other conservation organization.
4. The lakes identified in step 3 were reduced to those known to have existing lake conservation group(s) or have high potential for community group development (Table 4).
5. Finally, I selected one lake with the best-perceived opportunity for successful implementation of the riparian health and integrity results and optimal use of ACA riparian conservation expertise to establish or guide lentic riparian conservation activities. Factors affecting final selection included my perception of local interest and support, as well as the current political, social and biological conditions at the lake.

Table 1. Priority lakes identified in 2002 for aerial videography. Priorities were determined from consultation between the Alberta Conservation Association and Alberta Sustainable Resource Development.

Priority	Cold Lake	Edmonton	Stony Plain	Red Deer	Athabasca / Lac La Biche	St. Paul	Ft. McMurray
1	Moose	Sandy	Isle	Buck	Lac La Biche	Vincent	Gregoire
2	Cold	Hastings	Wabamun	Sylvan	Fork	Bonnie	
3	Crane	Big	Lac. Ste Anne	Pigeon	Island	Lac Sante	
4	Ethel	Cooking	Jackfish	Gull	Baptiste	Garner	
5	Hilda	Antler	Lac La Nonne	Buffalo	Skeleton	Floatingstone	
6	Muriel		Thunder	Pine	Missawawi	Laurier	
7	Charlotte		Nakumun	Red Deer	North Buck	Lower Mann	
8	Jessie		Lessard	Battle	Calling	Upper Mann	
9					Long	Chickenhill	
10					Amisk	Stony	
11					Flat	Mons	
12					Rock Island	Smoky	
13					Orloff		

Table 2. Lakes with aerial videography data collected between 2000 and 2004.

Lake	ASRD-FW Jurisdiction	Date Sampled	Lake	ASRD-FW Jurisdiction	Date Sampled
Bonnie	St. Paul	09 Jul 2002	Moose	Cold Lake	20 Jul 2001*
Buck	Red Deer	15 Jul 2002	Moose	Cold Lake	13 Jul 2004
Charlotte	Cold Lake	07 Aug 2002	Muriel	Cold Lake	07 Aug 2002
Ethel	Cold Lake	08 Aug 2002	Pigeon	Red Deer	23 Jul 2002
Fork	Lac La Biche	10 Jul 2002	Sylvan	Red Deer	24 Jul 2002
Gull	Red Deer	25 Jul 2002	Vincent	St. Paul	25 Sep 2000*
Hilda	Cold Lake	08 Aug 2002	Vincent	St. Paul	27 Sep 2000*
Isle	Stony Plain	09 Sep 2002	Vincent	St. Paul	12 Oct 2000*
Jessie	Cold Lake	20 Jul 2002	Vincent	St. Paul	17 Aug 2001*
Lac La Biche	Lac La Biche	16 Aug 2004	Wabamun	Stony Plain	10 Sep 2002
Lac Ste. Anne	Stony Plain	07 Aug 2002			

* Sample outside of study criteria

Table 3. Summary of the status of shoreline health and integrity of seven lakes in north-central Alberta. Assessments were completed using the health and integrity classification systems developed by Mills and Scrimgeour 2003.

Lake	Survey year	Percent healthy	Percent moderately impaired	Percent highly impaired	Total percent
Bonnie	2002	78	13	9	100
Gull	2002	14	24	62	100
Lac La Biche	2004	70	10	20	100
Lac Ste Anne	2002	60	15	25	100
Moose	2004	61	13	26	100
Pigeon	2002	27	7	66	100
Sylvan	2002	51	6	43	100

Table 4 Active community groups or identified potential for community group development at targeted lakes in north-central Alberta.

Lake	Group Name
Bonnie	Bonnie Lake Sustainability Association
Gull	Gull Lake Water Quality Management Society
Lac La Biche	Lac La Biche Watershed Steering Committee
Lac Ste Anne	Lac St Anne Water Quality Society
Moose	Interest for group at Summer Village of Pelican Narrows
Sylvan	Sylvan Lake and Watershed Stewardship Association

3.2 Initiating a conservation strategy with a Community Group

Riparian health and integrity information was collected 13 July 2004 on Moose Lake using aerial videography as described in Mills and Scrimgeour 2003.

I made oral presentations to representatives of the Moose Lake Watershed Committee, Summer Village of Pelican Narrows Municipal Government (Moose Lake), AE, ASRD-FW, ALF-PL and Department of Fisheries and Oceans (DFO) to inform them of the implications of the riparian health and integrity results and how the ACA can assist interested parties in addressing some of the issues raised. As a result of these information sessions, I facilitated the formation of a group consisting of members of the Summer Village of Pelican Narrows community interested in developing and implementing a riparian recovery and management plan at their summer village. My role as ACA representative was primarily as a facilitator, providing leadership and technical expertise. With my guidance, the group has recorded some significant accomplishments, mostly revolving around the identification of:

1. Stakeholders: identification and attraction of all stakeholders and participants necessary to deliver an effective recovery and management plan.

2. Terms of reference: outlining of roles and responsibilities, development of goals and objectives of community group, use of riparian health and integrity information, community involvement.
3. Tool building: acquisition and/or development of tools and processes required to deliver recovery and management plan (e.g., resident surveys, brochures, signage strategies).
4. Community action: use of tools and processes by community group and members to deliver recovery and management plan activities (e.g., resident surveys, community meetings, shoreline restoration workshops).
5. Enforcement: development of strategies and initiatives to: 1) deliver passive enforcement to address any ignorance of laws designed to protect shorelines, and 2) support active enforcement to address activities that contravene these laws. "Passive enforcement" involves educating people so they understand how riparian areas function; the importance of these riparian areas; and the rationale behind the laws, regulations, and policies so that they will modify their behavior. "Active enforcement" involves the use of laws, regulations, and policies to cause people to modify their behavior. In protecting riparian areas, this might involve financial penalties, jail, or other punishment, official warnings, and/or orders to restore a damaged riparian area. Active enforcement is typically used after all methods of stimulating voluntary compliance and change are exhausted (Vincent Lake Working Model 2001a).

   For meaningful and long-term riparian conservation to occur, both passive and active enforcement must be implemented. Change achieved through passive enforcement is generally preferred, both socially and politically. Community groups are restricted to delivering only passive enforcement but can support active enforcement delivered by enforcement agencies.
6. Monitoring and evaluation: development of a monitoring plan to evaluate the effectiveness of group activities on riparian health and integrity of Moose Lake, including community involvement, attitudes, and perceptions.

These steps were adapted from processes used by the Vincent Lake Working Model (Vincent Lake Working Model 2001b) and Alberta Cows and Fish Program (Cows and Fish 2004). The steps, and the timelines to achieve them, will overlap each other (i.e.,

are not sequential). They will also be adapted and tailored to serve the needs to the community group.

4.0 RESULTS

4.1 Selection of Moose Lake as location of pilot study

The Summer Village of Pelican Narrows on Moose Lake was selected as a suitable target as a result of the five step pilot location selection process and discussions with Kevin Billay, Mayor of the summer village and member of the Moose Lake Watershed Management Committee – Aquatic Resources Sub-committee. ACA began participating on that committee in February, 2004 at which time it learned of the summer village's interest in developing a shoreline conservation group. This opportunity provided a mutually beneficial situation whereby formation of a shoreline conservation group at the summer village would help address a local need as well as the riparian conservation objectives of the Moose Lake Watershed Management Plan and those of LeRRP.

4.2 Initiating a conservation strategy with a Community Group

4.2.1 Shoreline health and integrity

Analyses of videography data collected along the entire Moose Lake shoreline on 13 July 2004 according to the ACA Mills and Scrimgeour (2003) model indicated that the shoreline was 63% healthy, 13% moderately impaired, and 24% highly impaired (Figure 2). Riparian health and integrity of shoreline associated with the Summer Village of Pelican Narrows was classified as 11% healthy, 19% moderately impaired and 70% highly impaired (Figure 3).

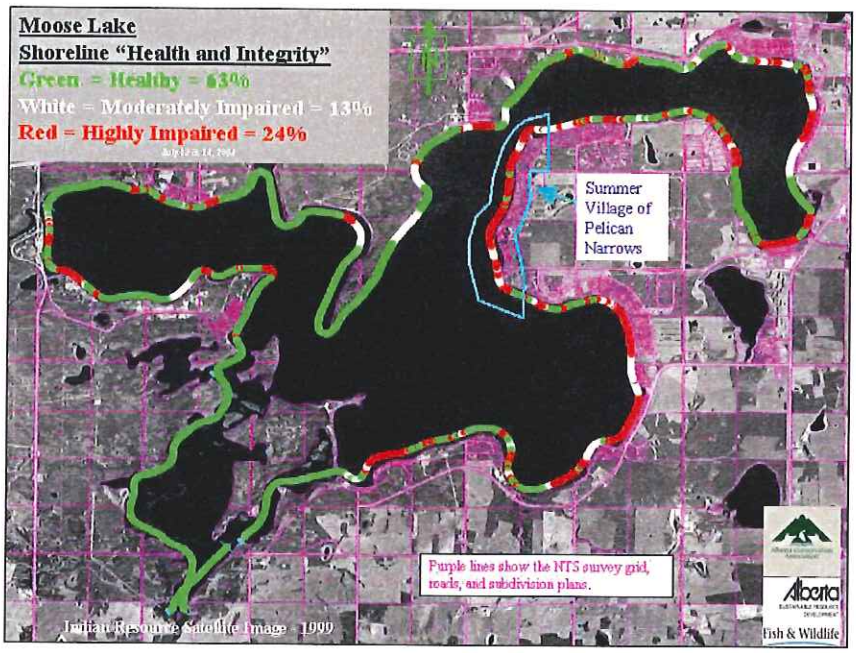

Figure 2. Representation of shoreline health and integrity at Moose Lake, Alberta, in July 2004 according to the ACA model described by Mills and Scrimgeour (2003).

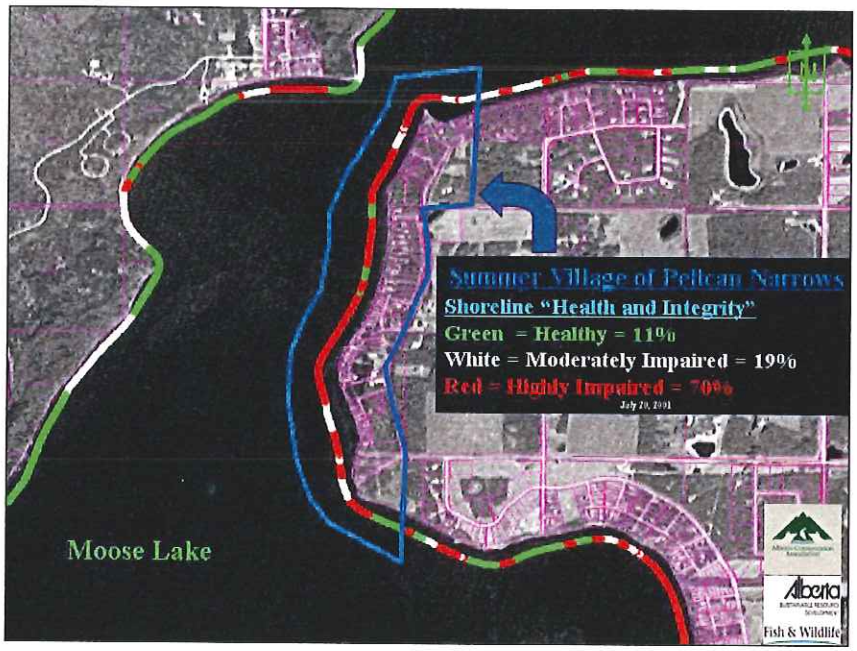

Figure 3. Representation of shoreline health and integrity at the Summer Village of Pelican Narrows, Moose Lake, Alberta in July 2004 according to the ACA model described by Mills and Scrimgeour (2003).

4.2.2 *Education and awareness*

To increase awareness of riparian health and integrity at Moose Lake, the 2001 data for Moose Lake was presented to residents of the Summer Village of Pelican Narrows at their July, 2004 Annual General Meeting. The 2004 data analysis was not available for this meeting. The lower quality of this information compared to later surveys was acknowledged. The results still initiated considerable interest and discussions about the need for shoreline conservation at Pelican Narrows, and Moose Lake as a whole. A subsequent request for assistance to develop a local working group to focus this interest towards addressing shoreline health concerns resulted in recruitment of five volunteers. Follow-up discussions with the volunteers revealed that they all had concerns about the state of their riparian area, and the possible involvement of the ACA to help guide their work was pivotal in their decision to volunteer.

4.2.3 *Community group activities.*

1. Stakeholders: In mid-July, 2004 ACA I held discussions with ASRD-F&W, AE, ALF-PL and DFO to inform them of the Moose Lake riparian health and integrity results and the ongoing community group development at Pelican Narrows. These agencies have a role in riparian management in Alberta. They were contacted by me on behalf of the Pelican Narrows shoreline committee to invite them to join the committee and to help develop and deliver riparian conservation at the summer village. A representative from DFO agreed to participate, while ASRD-F&W, AE and ALF-PL declined.
2. Terms of reference: The first formal meeting of a group of the volunteers interested in riparian conservation at Pelican Narrows and Moose Lake was held on 22 August 2004. The objective of the meeting was to identify committee structure and roles. The roles of Chair and Secretary were assigned. As the ACA representative, I took on the responsibilities of facilitation and providing technical expertise. Previous similar work with the Vincent Lake Working Model (2001) illustrated the importance of government staff not taking over the process, thereby creating less incentive for community involvement. In light of this, it was agreed that the role of the ACA would be related to the development of process and content (i.e., provision of ideas about what should be done, what can be done, how and why).

The committee members and community will be responsible for the delivery of agreed-to actions.

3. Tool building: At the 22 August 2004 committee meeting I suggested the development and implementation of a "recovery plan" to guide the committee's future riparian conservation planning and delivery activities. The group found this concept too complex and requested simplification. In response, I proposed using a simple systems thinking approach (Figure 4). The group endorsed the use of this approach. This interaction demonstrates that individual groups must be comfortable with the tools used to guide their work and will only progress at a speed that they can accept and support. Facilitators must understand this and be prepared to provide a variety of tool and process options linked to the groups' desired rate of progress.

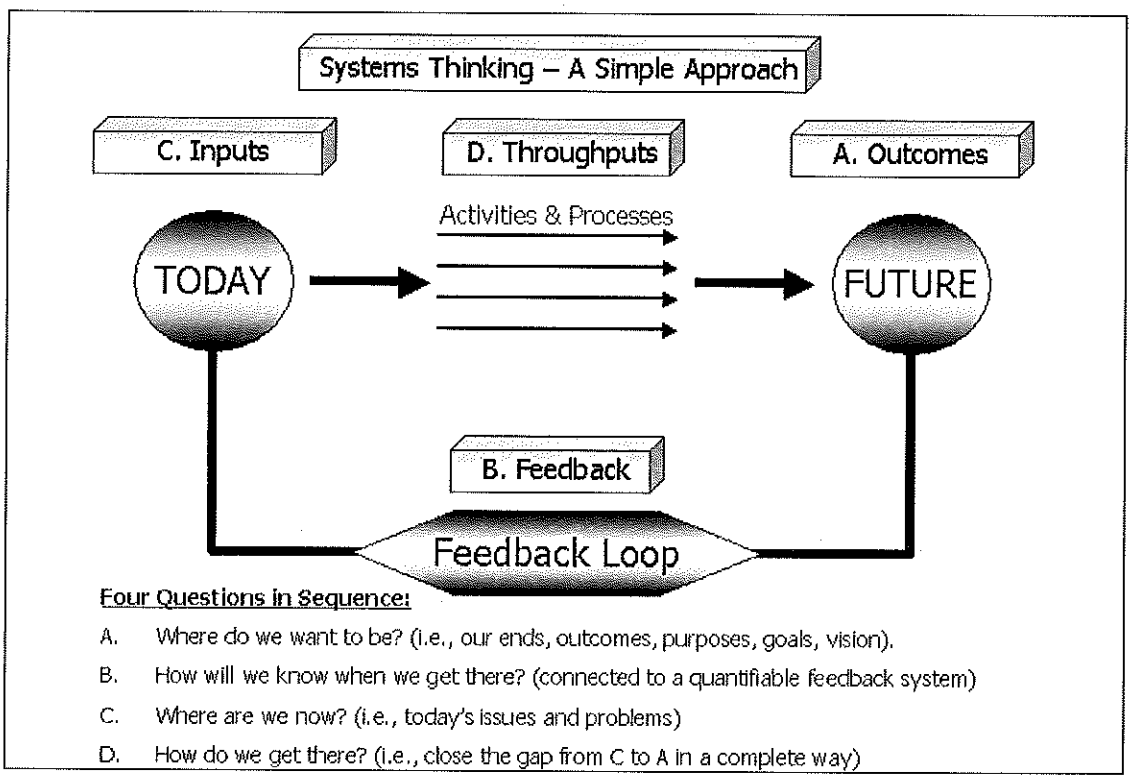

Figure 4. A systems thinking model used to guide community group shoreline conservation and recovery planning. Adapted from Stephen Haines (1998), Center for Strategic Management, San Diego, CA, USA.

At the 31 August 2004 meeting the group discussed Question A - Outcomes (i.e., Where do you want to be?) of the systems model. They concluded that their desired future state would be *"through the knowledgeable participation of Pelican Narrows residents, 75% of the Pelican Narrows shoreline is healthy by 2010."* Currently only 11% of the riparian area associated with the Summer Village of Pelican Narrows is healthy. Building on this theme, the group adopted *"Pelican Narrows Healthy Shoreline Committee"* (PNHSC) as their official name. With these two milestones achieved, Question B – Feedback (i.e., how will we know when we get there?) and Question C – Inputs (i.e., where are we know?) were discussed and answers generated to the group's satisfaction by meeting's end. The group also appreciated the flexibility of the dynamic nature of the systems approach in which content can change at any time as new inputs or modifications become available. Question D – Throughputs (i.e., how do we get there?) was discussed at the 14 September 2004 meeting where initial activities and processes were determined. Timelines for activities identified under Question D were not established but likely represent a one to two-year time frame. The committee's initial strategic planning information is summarized in Table 5.

Table 5. Pelican Narrows Healthy Shoreline Committee Shoreline Conservation (Systems Thinking) Strategic Plan 22 September 2004.

Question A - Where do we want to be?

- Through the knowledgeable participation of Pelican Narrows residents, 75% of the Pelican Narrows shoreline is healthy by 2010.

Question B - How will we know when we get there?

- ACA repeats videography and assessment in 2009. Results confirm trend towards and achievement of goal described in Question A.
- Recognizable growth of resident awareness and attitudes towards shoreline health.
- Voluntary efforts by residents to restore and maintain healthy shorelines.

Question C - Where are we now?

- Loss or alteration of vegetation and soils (e.g., resulting from harrowing, roto-tilling, and mowing).
- Inputs of pollutants (e.g., weed killer, fertilizers).
- Disturbance of plants, wildlife and people, (e.g., Off Highway Vehicles, shoreline activities, dogs.).
- Lack of awareness of defined property boundaries (e.g., Environmental Reserve, Crown Bed and Shore, riparian area).
- Resident attitudes leading to shoreline health of less than 75%.

Question D - How do we get there?

- Gain commitment from the Pelican Narrows Summer Village Council and Moose Lake Watershed Committee to recognize and support the Pelican Narrows Healthy Shoreline committee and its strategy.
- Acquire sources of funding.
- Encourage Pelican Narrows Summer Village Council to develop and deliver Environmental Reserve by-laws.
- Survey Summer Village residents (door-to-door or mail-out) to gauge their shoreline knowledge, perceptions, attitudes, values, and to learn their information needs.
- Hold a community meeting/workshop to communicate committee progress and products.
- Target new cottage owners and real estate agents with riparian area information.
- Acquire or develop printed information regarding shoreline conservation.
- Develop a Pelican Narrows newsletter.
- Install Environmental Reserve boundary signs.
- Install Environmental Reserve signs describing the by-law.
- Develop and install information displays (e.g., web site, village location, Bonnyville library).

4. Community action: As of 31 March 2005, the Pelican Narrows Healthy Shoreline Committee has acted upon the first five bullets described under Question D on Table 5.
    - Support for the committee and its goal was requested and received from both the Summer Village of Pelican Narrows Council and the Moose Lake Watershed Committee.
    - The summer village council contributed $1,000 to assist the committee with initial operating expenses. A grant application for $30,000 in matching funding was made to the DFO "Stewardship in Action" program by ACA on behalf of the committee. The LeRRP 2004-05 allocation of $30,000 provided the matching funds. Unfortunately the DFO application was rejected. The committee also discussed application to the 2005 Unilever-Evergreen Aquatic Stewardship Program (www.evergreen.ca). However, in consideration of the result from the Stewardship in Action proposal, the committee felt they needed to better clarify their target activities (e.g., community meeting, signage, etc.) prior to pursuing further grant applications.
    - A request from the committee was made to the Summer Village council to develop and enact Environmental Reserve by-laws. The council's lack of understanding about Environmental Reserves resulted in its decision to decline this request; the council was concerned about making an uninformed decision that could result in negative feedback from village residents. Environmental Reserve information will be added to the PNHSCs future education and awareness activities.
    - The committee used the professional survey developed under the Vincent Lake Working Model (McMillan, 2000) as a guide to develop its "Perceptions and Beliefs of Lakeshore Cottage Owners Survey." This survey was undertaken to learn more about the preferences and expectations of cottage owners regarding their riparian area and lake. This information will allow the committee to tailor its community education and riparian conservation programming in response to the cottagers needs expressed in the survey. Of 100 questionnaires mailed-out to residents of the summer village in December 2004, 50 were returned by 31 January 2005. A 50% return rate on a mail-out survey is generally considered an excellent result (Dillman, 2000). This high return rate suggests re-affirmation of the villager's interest in shoreline conservation expressed at the July 2004

Pelican Narrows Annual General Meeting; additional volunteers were identified through the survey process to assist the committee. Survey data analysis was completed on 27 February 2005 and a committee meeting was held 28 February 2005 to discuss implications and a format for reporting the information generated to Pelican Narrows residents.

- The concept of holding a community meeting to provide shoreline education and awareness, displaying and discussing riparian health and integrity and resident survey results, as well as soliciting input on where the committee should focus its work was adopted at the 22 September 2004 PNHSC meeting. Planning discussions and activities will follow completion of the resident survey.

5. Enforcement: a list of the most common legislation relevant to waterbodies in Alberta is available in Haekel (2002). Legislation most relevant to the shoreline conservation goal of the PNHSC is in the Environmental Reserve section of the Municipal Government Act administered by Municipal Governments (i.e., Summer Village of Pelican Narrows Council), Public Lands Act, administered by ALF-PL and Federal Fisheries Act administered by DFO. Representatives from these three groups were approached to assist the PNHSC with both passive and active enforcement. The Summer Village of Pelican Narrows, although supportive of the PNHSC and its goal, did not currently have the understanding or capacity necessary to assist with either type of enforcement activity. ALF-PL and DFO were willing to assist the group with passive enforcement on an as need basis, but were unwilling to provide active enforcement as part of the groups work. The issue of how to get resource management agencies to engage in active enforcement in support of community based RMA conservation remains unresolved.
6. Monitoring and evaluation: Repeat aerial video capture of riparian areas and helath and integrity assessment is recommended in 2009 to monitor riparian health and integrity change. The cottage owner's survey should also be repeated in 2009 to measure changes in resident knowledge, perceptions and values regarding their riparian area. These data will provide a metric to assess the effectiveness of conservation programming. It is anticipated that as LeRRP progresses over the next few years, additional monitoring and evaluation activities will be identified.

4.3 Future considerations

To achieve long term, effective, and community-delivered riparian conservation in Alberta, conservation and management agencies should support local stakeholder groups by providing technical and facilitation support to guide and assist them to define clear and achievable objectives, and to implement and evaluate conservation efforts.

I estimate it will take until 2007-2008 for the Pelican Narrows Healthy Shoreline Committee to no longer require direct ACA input to guide its activities. It is hoped after this the community group will be able to guide itself and continue to build on its early successes with committee formation, goal setting, and conservation oriented actions to achieve that goal. This includes securing sufficient funding to operate and researching methods to overcome roadblocks (e.g., active enforcement). It is anticipated that regular inputs will still be required from ACA and other resource people, but at a reduced rate from initial project inception.

The goals of LeRRP support the ACA's provincial riparian program objectives described under the ACA's 2005 Strategic Business Plan (Alberta Conservation Association 2005a), 2005 Annual Operating Plan (Alberta Conservation Association 2005b) and Conservation Program (Alberta Conservation Association 2005c). The LeRRP process should be considered for province-wide use.

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