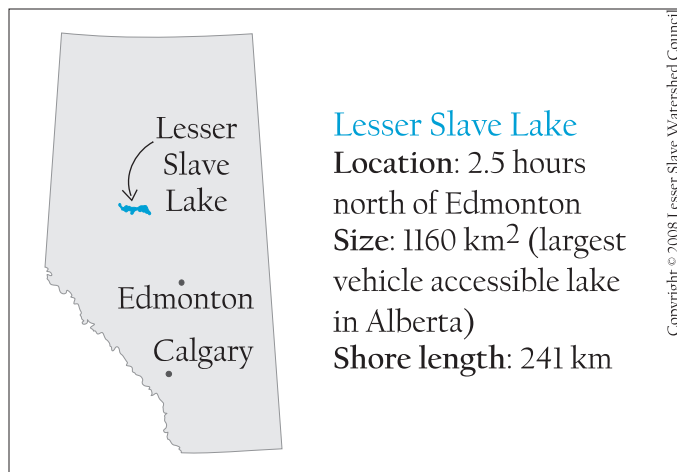# Lesser Slave Watershed Council

LSWC Fact Sheet:
LSWC Project: Shoreland Assessment

💧 Introduction

In July 2006, the Alberta Conservation Association (ACA) looked at the entire shoreline of Lesser Slave Lake and classified it into three different categories: healthy, moderately impaired or highly impaired. Healthy means it is still in a very natural state, impaired means there are obvious human changes. They did an aerial assessment using a helicopter and a video camera to thoroughly look at the whole length of the shoreline. This fact sheet explains more about the project and what it discovered about the shores of Lesser Slave Lake.

the shore. If development isn't carefully planned, it can end up destroying the pristine nature that originally attracted people to the lake. The aerial survey done by the ACA looked at the shores of the lake to see how healthy and natural they are. Hopefully, this information will help communities on Lesser Slave Lake make informed decisions about future development on the lake.

Lesser
Slave
Lake

Edmonton

Calgary

Lesser Slave Lake
Location: 2.5 hours north of Edmonton
Size: 1160 km^2 (largest vehicle accessible lake in Alberta)
Shore length: 241 km

💧 Why It Is Important

Lesser Slave Lake has a successful and still growing tourism industry. Most people agree this is a good thing but it does have a big impact on the shores of the lake. Over the last 20 years, there has been a lot of development: cottages, resorts, marinas, boat launches and campgrounds have been built along the lake shores changing the natural state of

💧 Who Did It

The assessment was done by the Alberta Conservation Association, a non-profit group that studies and protects the environment in Alberta. The Lesser Slave Watershed Council, Alberta Environment and the M.D. of Lesser Slave River all helped with funding.

Data Collection

The Alberta Conservation Association (ACA) researchers flew a helicopter slowly around the whole lake and used a video camera to record the entire shoreline. In areas that were especially interesting, they would slow down even more to capture all the detail. The video camera was connected to a Global Positioning System (GPS) unit. Afterwards, they were able to use Geographic Information Systems (GIS) computer software to link the video to the GPS data. This let them create useful maps to clearly show their results (Figure 1).

> ### Flight info
> **Dates**: July 18th, 19th, and 20th, 2006
> **Time**: one 2 ½ to 3 hour flight per day
> **Speed**: 55-65 km/h
> **Height**: 45-60 m
> **Equipment**: Digital Video Camera, GPS unit

Analysis

After they finished recording the video, they brought it back to a computer and downloaded the images. Then they looked at the recording while answering an 8 question multiple choice survey about the shoreline quality. The questionnaire assigned points for each question and they added up the points to classify each section of the shore.

Classification (total points: 13)
  Healthy: 9.5 or better
  Moderately Impaired: 7.0 to 9.0
  Highly Impaired: less than 7.0

The Questionnaire

The questionnaire asked 8 questions to find out how natural the shore looked in the video. The questions were about both the shore and the water just off shore.

1. Is more than 85% covered by vegetation?
2. Are there cattails or bulrushes growing in the water just off-shore?
3. Does more than 15% of the land have woody plants growing (willow, poplar, birch)?
4. How thick is the forest?
5. Are there signs of human removal or changes to the vegetation (ie. cleared away or mowed)?
6. Are there signs of human changes to the land itself (patios, dykes, trails, cattle activity, harrowed beaches etc.)?
7. How is the overall appearance? (The questionnaire showed the two images in Figure 2 on the next page and asked does it look more like A or more like B?)
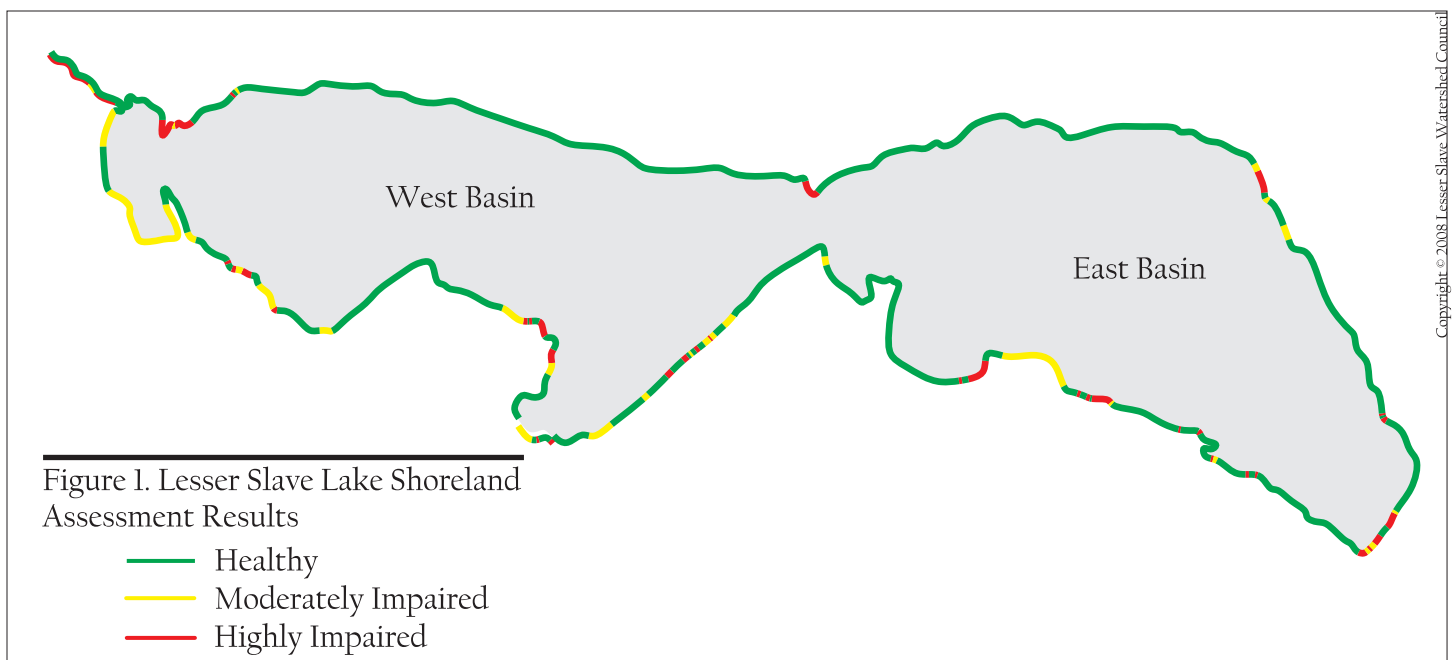8. Does the lake have human built water intakes?

Figure 1. Lesser Slave Lake Shoreland Assessment Results

— Healthy
— Moderately Impaired
— Highly Impaired

West Basin

East Basin

A

B

Figure 2. Shoreline Overall Appearance

⬥ What Can We Do?

The shores of Lesser Slave Lake are incredibly important in maintaining the health and beauty of the lake. Healthy shores give us many benefits. Keeping the lake water pure, reducing soil loss, providing fish and animal habitat and being visually appealing are just a few of the benefits. We can do a lot to support healthy shorelines by how we plan development along the shore. We can:

- ⬥ limit development along vulnerable areas
- ⬥ reduce the amount of development
- ⬥ keep cottages and other structures farther back from the water's edge
- ⬥ encourage and maintain natural vegetation
- ⬥ minimize human changes to the shore
- ⬥ perform regular checkups or evaluations of the shore's health
- ⬥ work together with neighbours to promote healthy shorelines

Cows and Fish is one organization that promotes healthy shorelines and you can use their shoreline assessment checklist on their website to examine the health of your shore. For more information about the health of the shores of the Lesser Slave Lake, contact the Lesser Slave Watershed Council.

⬥ What Were the Results?

The final results were pretty good. The majority of the shoreline was classified as healthy especially along the north side of the lake where there are long stretches of natural, completely undisturbed shore. The areas that were highly impaired were sections with lots of housing, cottage, recreation or agricultural development. The map in Figure 1 shows the overall results.

Healthy	78.7 %	189.7 km
Moderately Impaired	12.5 %	30.1 km
Highly Impaired	8.8 %	21.2 km

References

Cows and Fish Alberta Riparian Habitat Management Society. (2006). Retrieved June 16, 2008: http://cowsandfish.org

Osokin, Leanna and Hallett, John. (2006). Aerial Video Asssessment of Lesser Slave Lake, Alberta. Alberta Conservation Association, Slave Lake, Alberta, Canada.