Sustaining Lakelse Lake

Ian Maxwell, April 2006

Lakelse Watershed Society

Outline

- The importance of the lake
- Eight identified changes
- Support for Kalum LRMP
- Questions

Lakelse Freshwater Mussels

Recreation value- parks

- 25% of shoreline
- 200,000 visitors annually

Fisheries

- strong part of cultural & community values
- major producer of sockeye, coho & pinks
- premier sports fishery for steelhead & trout

Property Values

- 304 Recreational/residential
- Hotsprings resort
- Marina & cabins
- Float plane base

The Overall Value

$101 million <u>annual</u> benefit

W. Sinclair 1974 (in year 2000 dollars)

Previous Studies

- 1950 Brett: Physical Limnology of Lakelse
- 1965 Coburn: Scully & Williams sockeye
- 1968 Foerster: The Sockeye Salmon
- 1974 Sinclair: Socio-Economics of Lakelse
- 1976 Abelson: Lakelse Lake Water Quality
- 1978 Cleugh: Chem/Bio/Physics of Lakelse
- 1984 Greater Terrace Settlement Plan
- 1986 Warrington: Lakelse Aquatic Vegetation
- 1986 McKean: Lakelse Water Quality
- 1994 Shortreed: Study of Skeena sockeye lakes
- 2003 Gottesfeld: Conserving Lakelse Fish.
- 2003 Kokelj: Lakelse Management Plan

Concern 1
Elodea

Key growth factors

- Fine sediments
- Iron
- Phosphorus

Windblown Elodea

Elodea mapping with GPS & grapple

Concern 2 - Sockeye

- Lake fry down by 78% since 1994
- Adult returns down by 92%

Recovery Plan Stakeholders

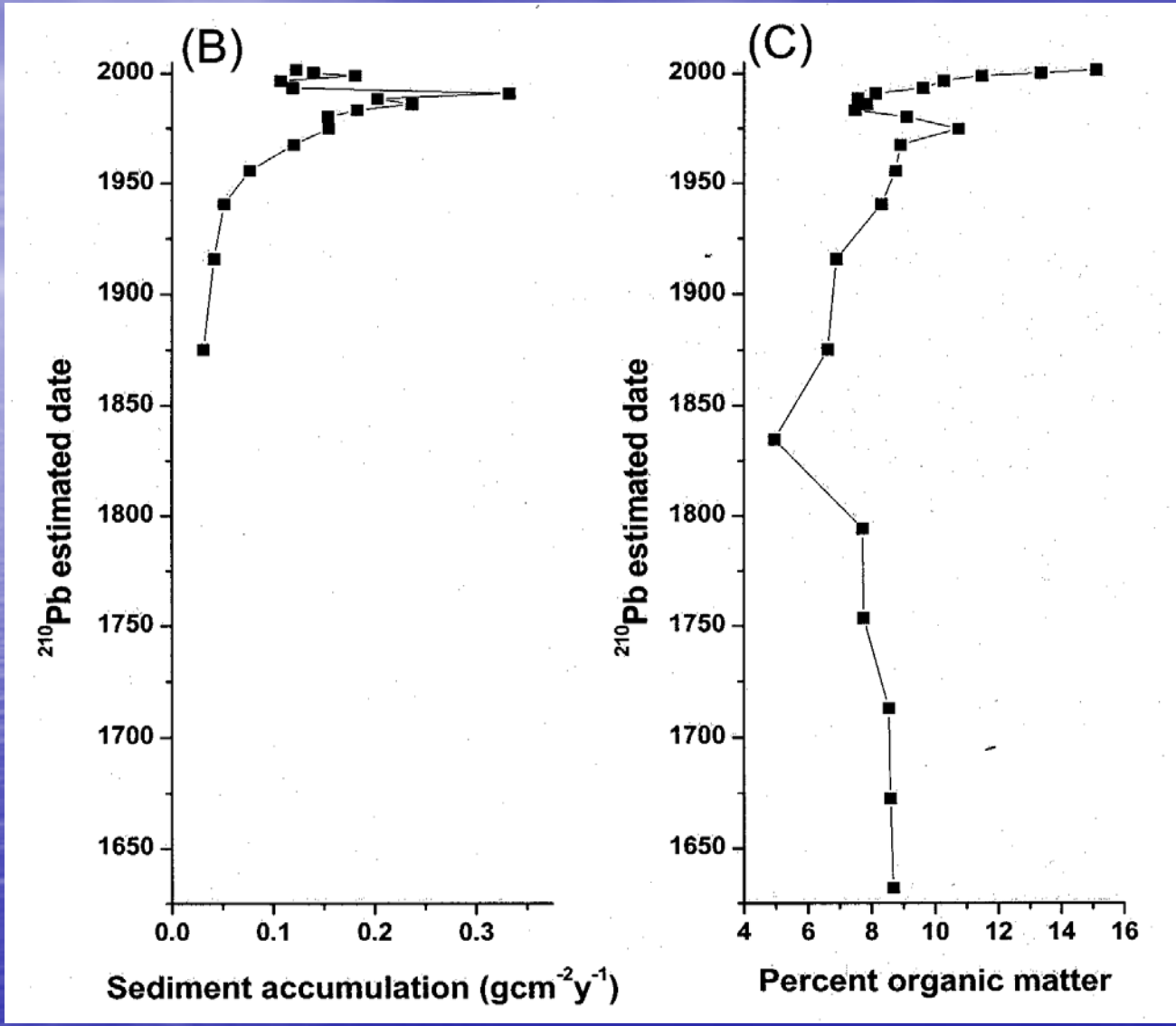
- Kitselas First nations
- Terrace Salmon Enhancement Society
- Lakelse Watershed Society
- Ministry of Environment
- DFO
- Ministry of Forests/BC Timber Sales

Recovery Activities

- Sockeye counts
- Disease sampling
- Egg survival tests
- Hatchery Creek restoration
- Scully Creek flow

Concern 3 - Sediment

- Disturbed east-side Creeks
- Shoreline changes
- Wave action



Deep-site Sediment Core

Sediment Gauge

Concern 4 - Water Quality

- Metals
- Nutrients
- Bacteria

Phosphorus inputs to Lake

	Max.	Av.
Eel Creek	34	25
Prov. Park Creek	28	23
Mountain Creek	18	12
Williams Creek	17	11
Whalen Creek	14	6

(Micrograms/L; BC Guideline is 10)

Concern 5
Scully Creek

Scully main flow

- Lower Hotsprings section

Scully Main-flow - Upper Hotsprings section

Scully - impacts

- Sockeye loss in original creek due to:-
  - Low water in August
  - More beaver dams
  - More bear predation
- Poor egg survival in main flow
- Less flushing action in original creek
- Heavy lake silting from bank failures

Concern 6 – Further Logging

- Unstable fans on Williams & Scully
- Additional sediment, iron or phosphorus to lake
- Increasingly difficult terrain
- Adverse hydrological impacts
- Cumulative impacts

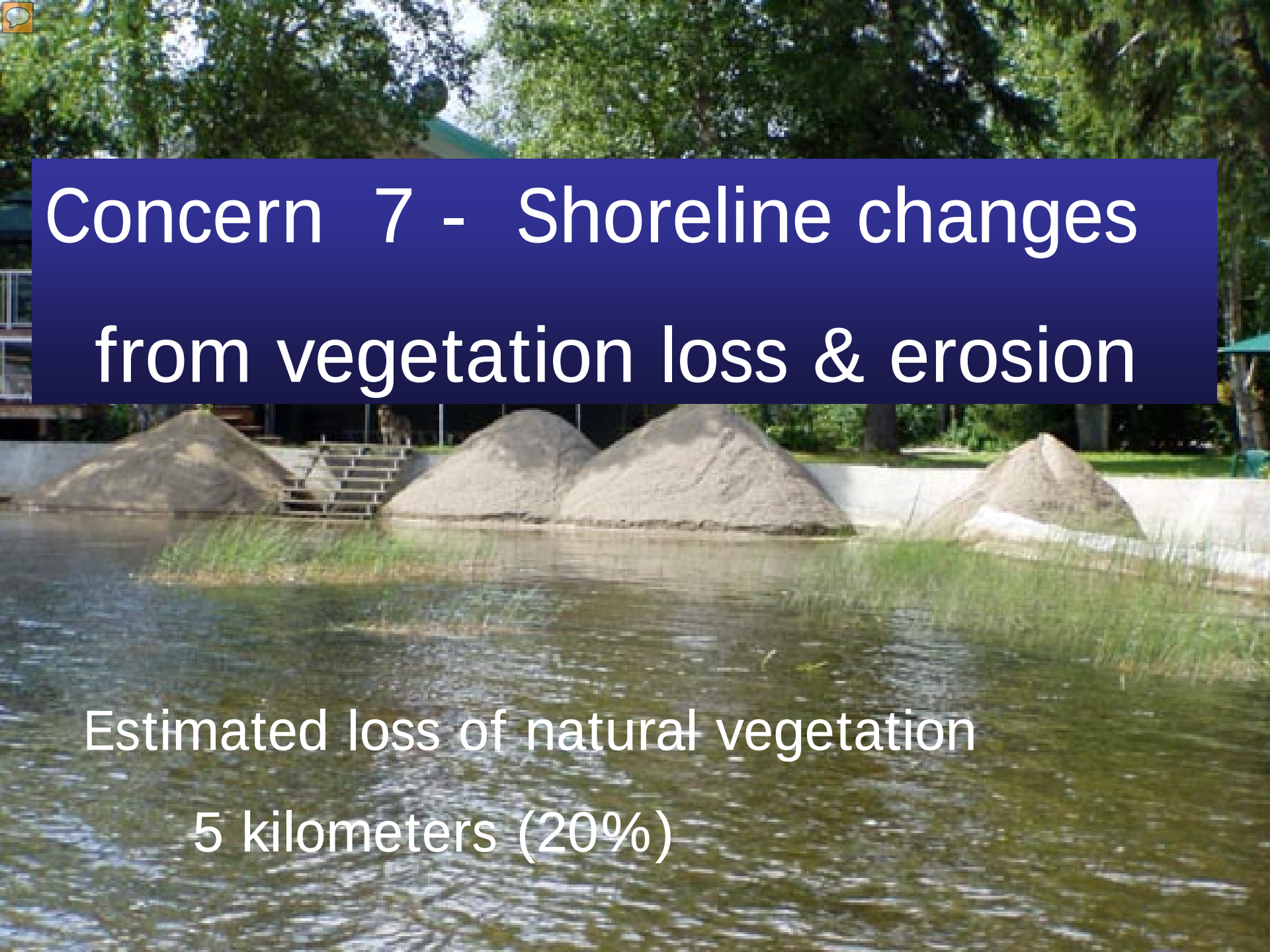
Tough Terrain in Williams

Tough Terrain in Scully

Inter-agency cooperation

- MOF part of Sockeye recovery plan
- Detailed further sediment studies on Williams completed
- MOE sediment transport study on major creeks planned

Concern 7 - Shoreline changes from vegetation loss & erosion



Estimated loss of natural vegetation

5 kilometers (20%)

Shoreline erosion

Concern 8 - Climate changes?

Winter Temps: +1.4 oC in 100years
Summer Temps: No trend
Precipitation: +2% in 100 years
Snow depth: -6% per decade

What has been achieved?

- Good understanding of Elodea
- Comprehensive Water Quality data
- Lake Management Plan (2003)
- Sockeye Recovery Plan (2005)
- RDKS Sewage Studies (2004-2006)
- Sediment studies on Williams (2005/06)
- Input to KLRMP (May, 2006)

If we always do what we always did,
we'll always get what we always got!