

Not Your Typical Riparian Restoration Project !!

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Thompson Basin Fisheries Council



Background

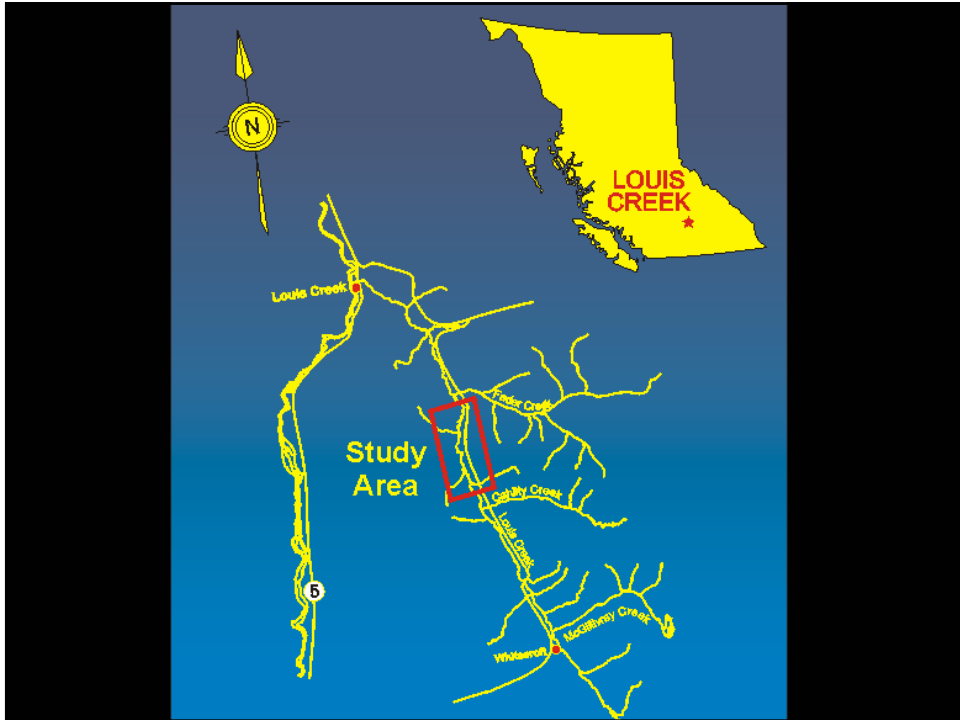
- TBFC – Non-profit, stewardship organization with representation from :
 - 3 tribal groups (Shuswap, Okanagan & Nicola)
 - Community watershed roundtables
 - Local ranching community
- Funding for position supplied by Fisheries & Oceans Canada – Habitat Conservation & Stewardship Program

Building Stewardship Today for the Watersheds of Tomorrow

- Establish partnerships to enhance habitat protection and expand community capacity to steward fish habitat resources
- Liaise with community & government
- Provide technical services to communities

Louis Creek Watershed

- Located northeast of Kamloops, BC
- ~400 km (249 mi) from mouth of Fraser River to mouth of Louis Cr.
- Watershed area ~ 520 sq. km (200 sq. mi)
- Stream channel elev. 375m – 1220m (1,220 ft – 4003 ft)
- Annual precipitation 392 mm (15 in) – 36% as snow



Louis Creek Watershed

- International Importance – Fisheries
 - “Index” stream
 - coho, chinook, bulltrout & rainbow trout
- Regional Importance – Agriculture
 - Ranching since late 1800's
 - Currently 1,000 head cattle = \$2 M into local economy

Louis Creek Watershed

- Forestry
 - Tolko Forest Industries Ltd. is major license holder
 - 67 person years employment / year from Louis Cr.
 - Significant mountain pine beetle harvesting over past few years (100,000 m³ / 131,000 yd³)
- Tourism
 - Sun Peaks Resort, international destination (36%)
 - 260,000 Visitors, in excess of 1250 person years employment / year

Watershed Issues

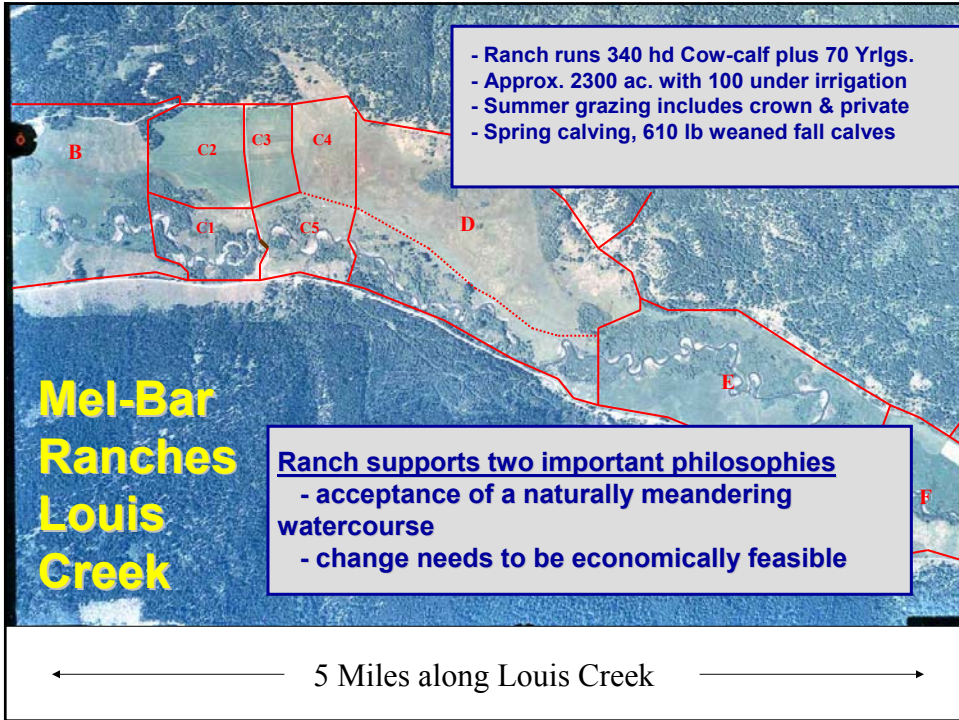
- Loss of Fish Habitat
 - Decline in salmon returns
- Loss of Riparian Cover
 - Reduction of bank stability
 - Increase in erosion & land loss
- Concerned local community
 - Ranchers want to look to alternatives for “environmentally friendly” management

Solutions

- Typical fisheries approach
 - 15 m set back fencing with total cattle exclusion, riparian planting, fish habitat enhancement structures
- Louis Creek approach
 - Initiate partnership between 13 parties who have interest in recovery of the watershed

Restoration Team

- TBFC – Project Mngt
- DFO - \$'s & Technical
- Barry Brady - \$'s, project delivery
- Mel Bar Ranch - \$'s
- Tolko - \$'s & materials
- NTIB – Project Delivery, Assessment
- SFC - Technical
- BCCA – Technical
- MWLAP – Technical
- MAFF – Technical
- UCC – Research
- Ag. Can – Research
- MoF – Research



Pre-Treatment Monitoring

- Juvenile fish utilization
- Adult coho & chinook enumeration



- Assess Aquatic Invertebrates
- Calculate biotic indices, use to infer improvement in aquatic habitat

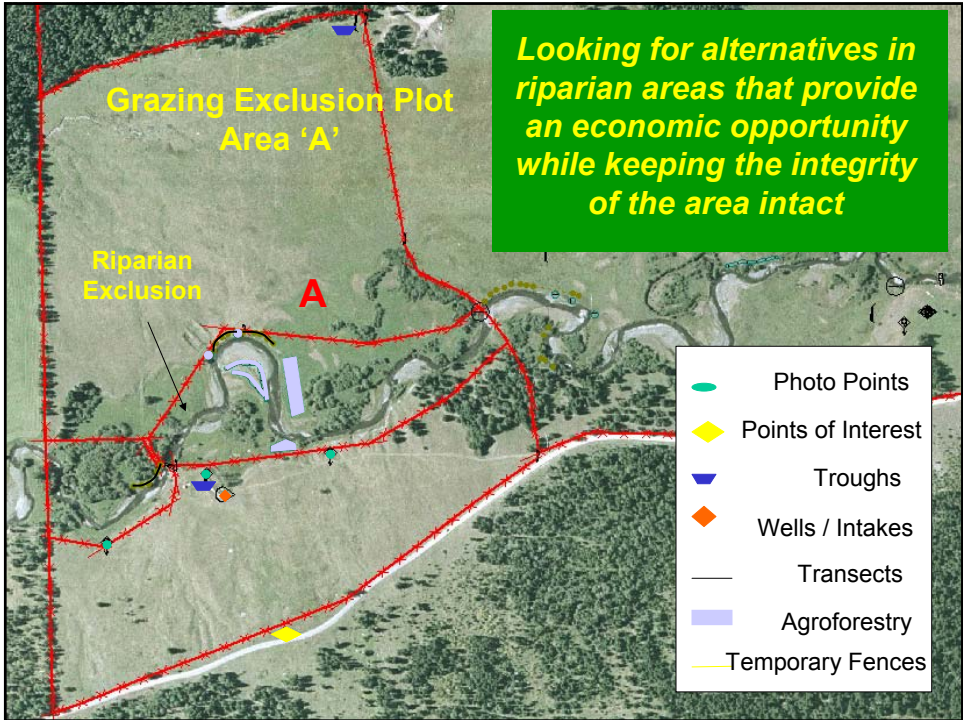


- Detailed vegetation monitoring (transects & photo-points)
- Baseline to measure change over time



Agricultural Innovation

- 3 separate treatment units
- 9 ha (23 ac) grazing exclusion plot – Area “A”
- 83 ha (206 ac) continued cattle access – Area “B”
- 15 ha (39 ac) rotational grazing – Area “C-1”
- 13 ha (32 ac) rotational grazing – Area “C-4”
- 8 ha (19 ac) rotational grazing – Area “C-5”



Agroforestry Opportunities

Birch Syrup & Lumber

Silver Birch Planting May 2002

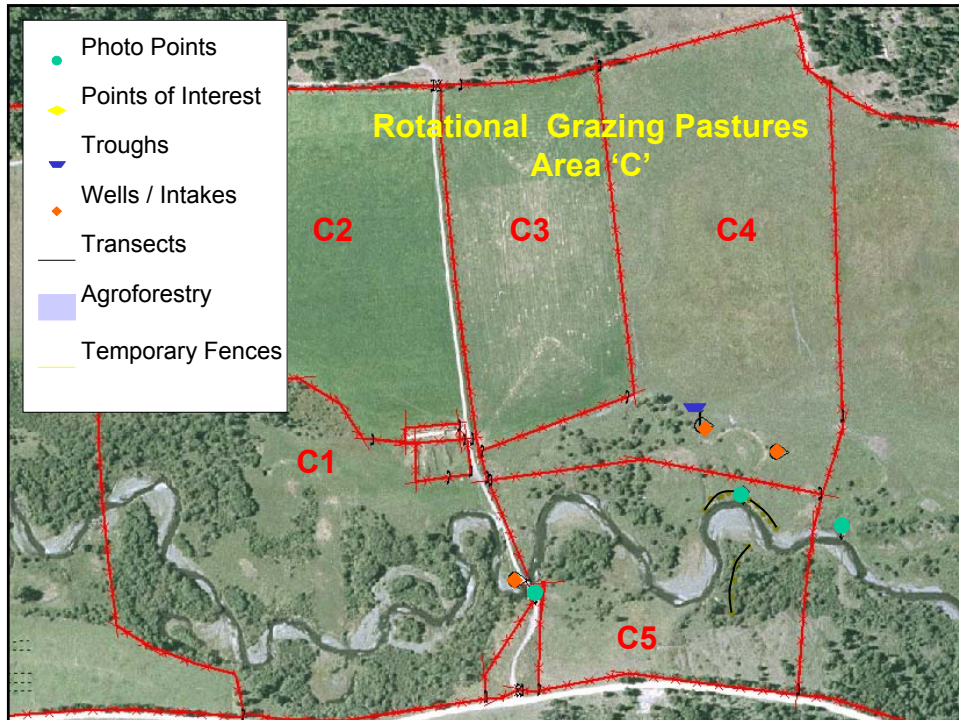
Structural Riparian Planting

- Beaked sedge planting
 - 4 plots

- Native willow planting
 - 6 sites in Area “A”
 - 4 sites in Area “B”
 - 2 sites in Area “C”
- 52 m (170 ft) live bank protection



In-stream Habitat Enhancement and Bank Stability Works



Area C – Rotational Riparian Pastures

- Installed a solar pumps and troughs to existing wells
- Increased crop production in C2 & C3 partially due to pasture rotation in C1, C4 & C5
- Used controlled grazing techniques – short duration / high intensity
- Result was producer realized sufficient forage in very dry year

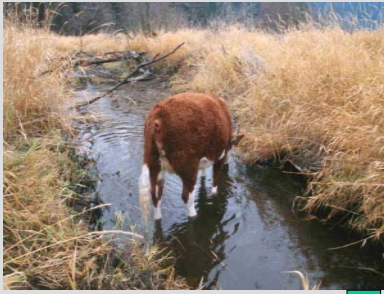
Area B – Continued Access

- Area B use similar to historic practices
- Undertaking cattle use studies to identify riparian use trends
- Initiate pasture management systems and introduce tools to minimize cattle impacts on riparian area

Area B - Research Activities

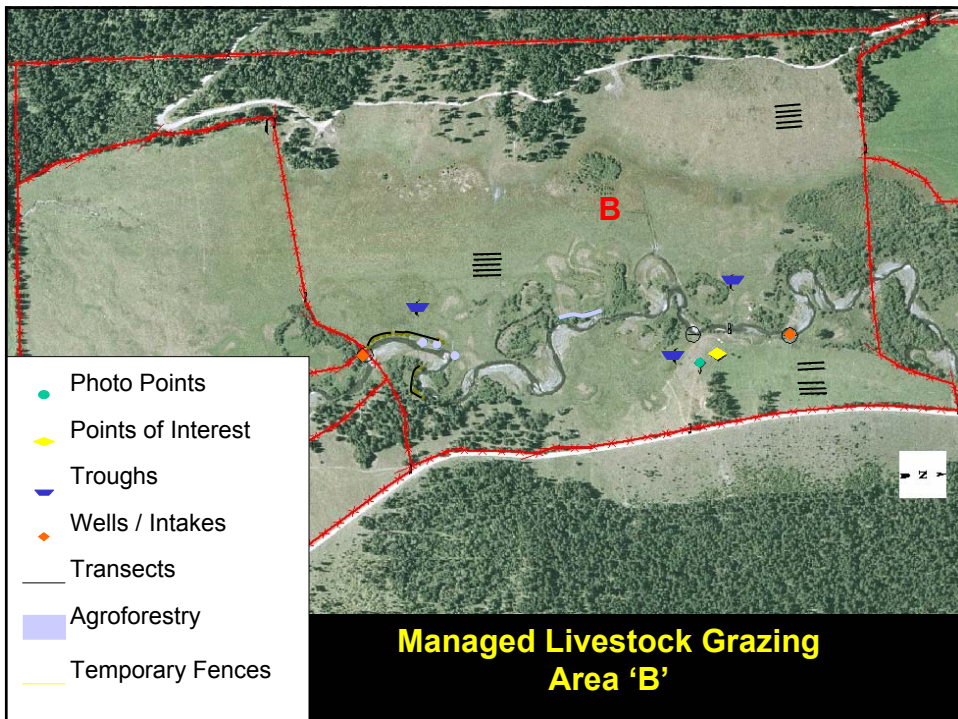
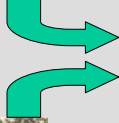
- Dr. Reg Newman (MoF) & Dr. Doug Veira (Ag Can)
- Nine cows GPS collared in 2001
- Fifteen cows GPS collared for a total of 49 days in 2002

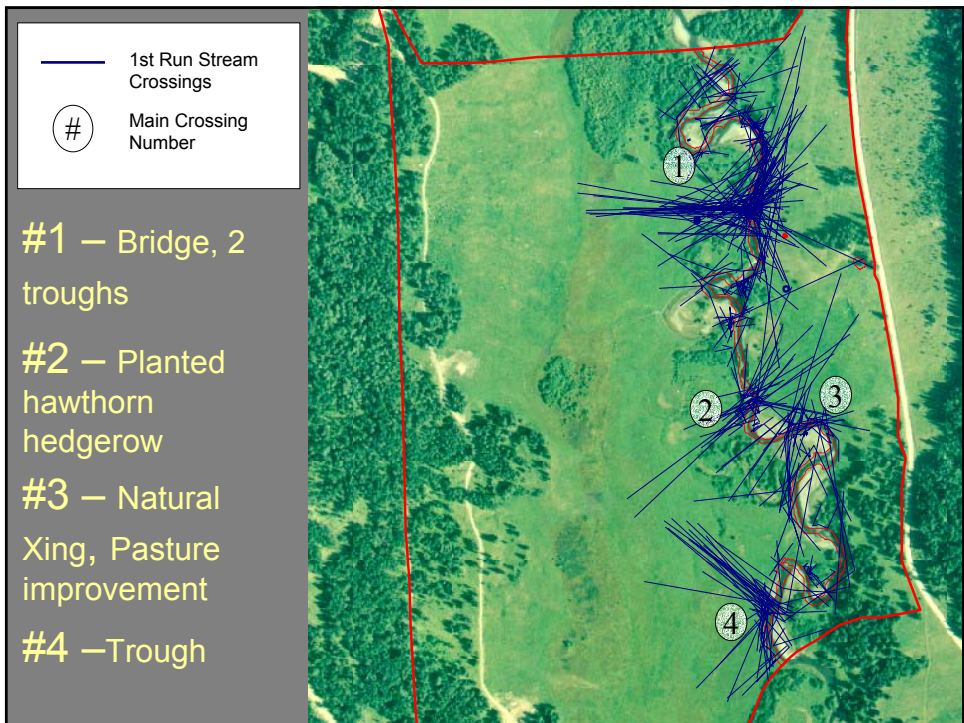
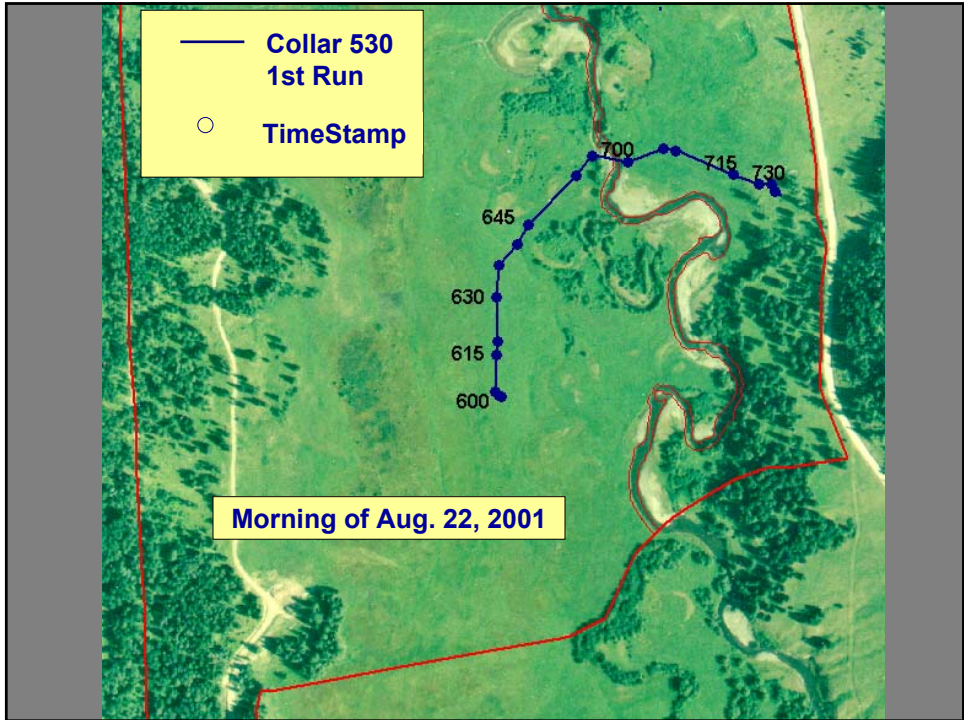




Question:

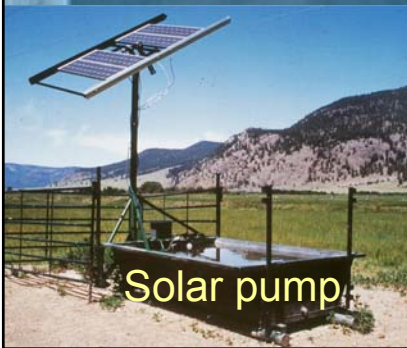
Can we change their drinking behaviour
.....without fencing
the stream ?



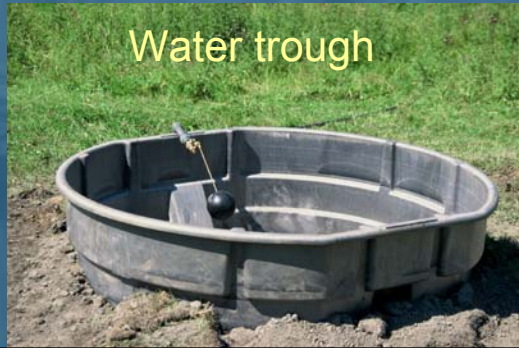




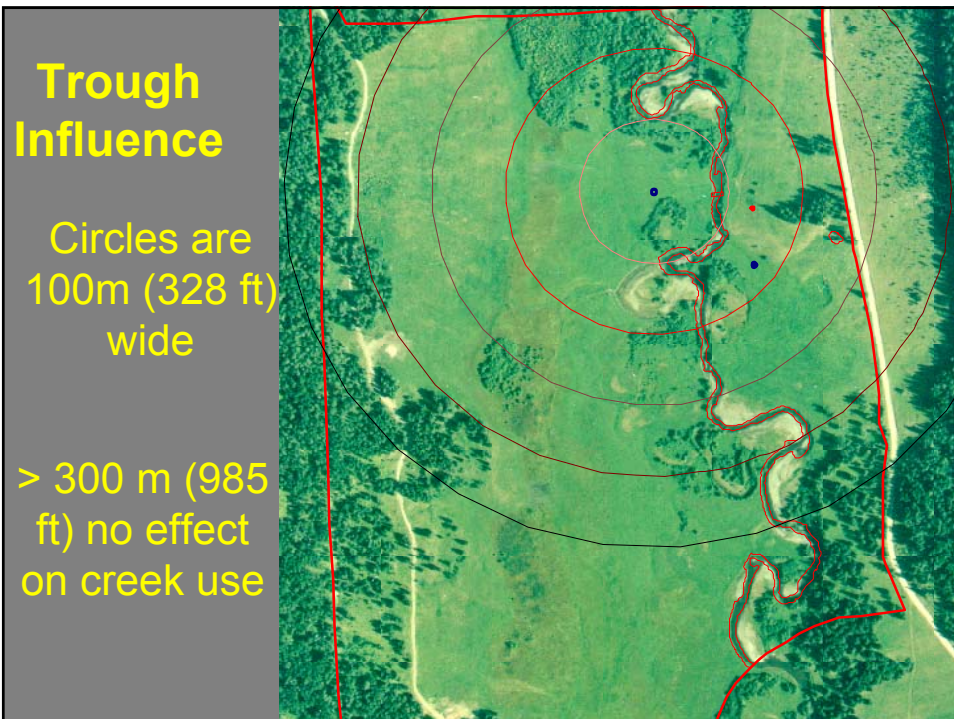
Sling pump



Solar pump



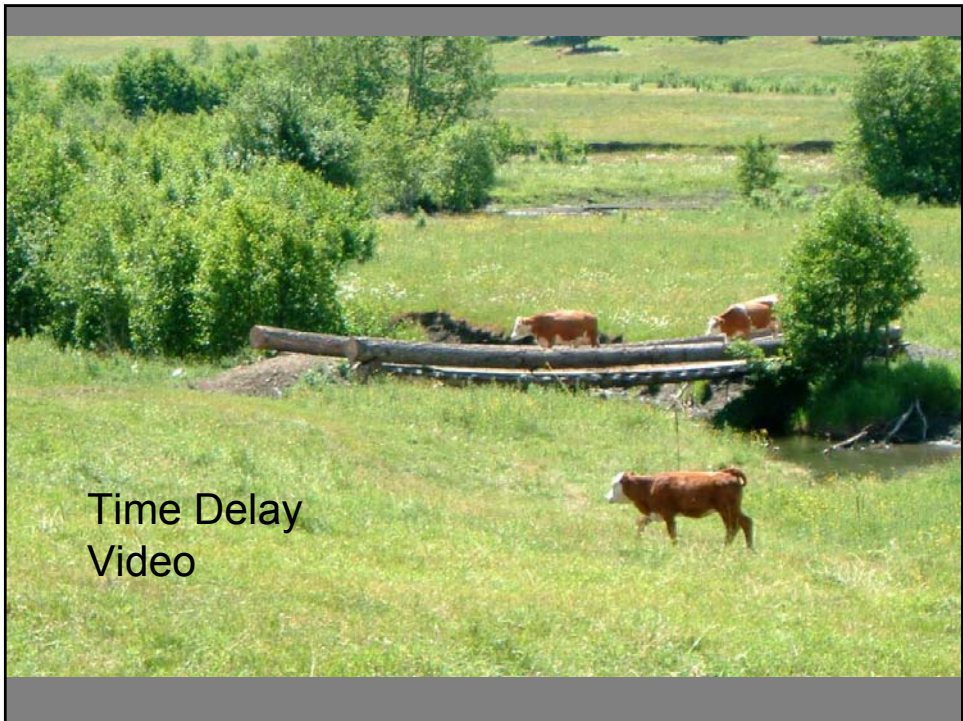
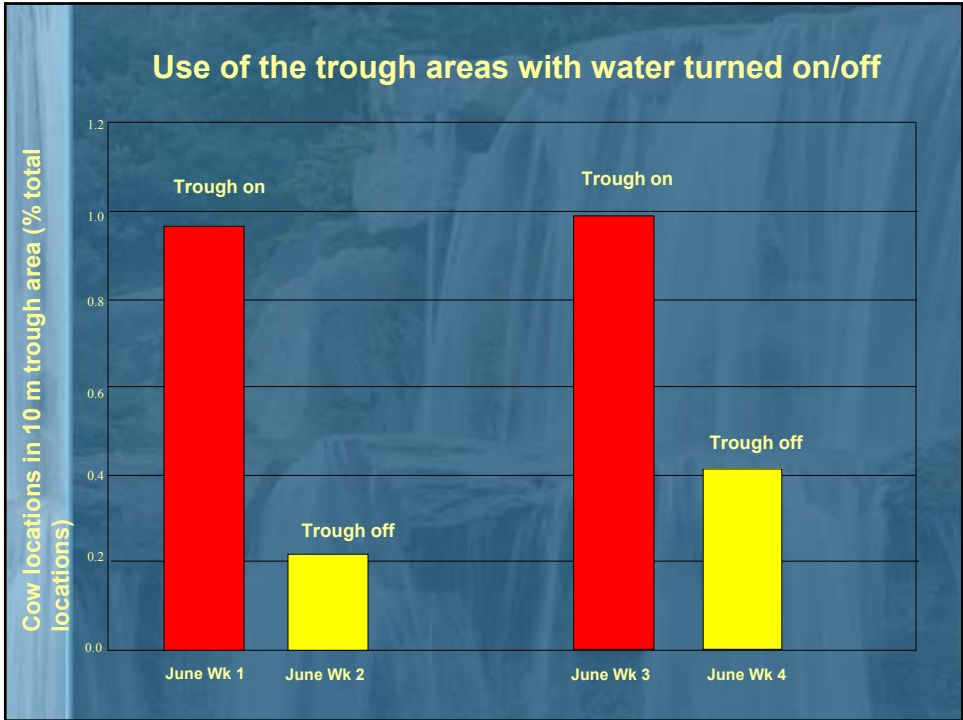
Water trough



Trough Influence

Circles are 100m (328 ft) wide

> 300 m (985 ft) no effect on creek use



Summary of crossings at bridge

% of crossings

<u>Date</u>	<u>Bridge</u>	<u>Creek</u>
Sept. '01	29	71
June '02	98	2
Aug/Sept '02	60	40

Direction of crossings at the bridge

% of crossings

<u>Direction</u>	<u>Bridge</u>	<u>Creek</u>	<u>No. of crossings</u>
E --> W	53	47	205
W --> E	72	28	117

Aug/Sept 2002



“Hold up, Niles. It says here, ‘These little fish have been known to skeletonize a cow in less than two minutes.’ ... Now *there’s* a vivid thought.”

If all else fails...a little genetic manipulation with Coho should solve the problem !

Apologies to the Far Side