

Project Report for the year 2009

A Work in progress: continuation of the
**Yaqan Nuki Wetlands Friendship Society's Rehabilitation
of the Lower Kootenay Band Wetlands
Creston, B.C.**



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**Yaqan Nuki Wetlands Rehabilitation Projects
Creston B.C.**

This summary addresses the rehabilitation upgrades realized this year, inclusive to October 30, 2009

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Black Tern chasing a Great Blue Heron from his nest – Tanal Marsh

Declaration

This summary does not pretend to be a scientific report. Our society does not have that expertise at its disposal and would not consider utilizing hard won funds allocated for the rehabilitation of these wetlands, to pay for one. This is, instead, a succinct inventory of the society's accomplishments in 2009.

1. Background

YNWFS was created in 2003, in response to the drying up of the LKB wetlands for approximately 5 years, due to aging infrastructure and failing pumps. The society's first two years were mostly involved in finding and patching trouble spots that would begin to re-instate a water habitat into these thirsty marsh beds. This included such activities as mending or replacing leaking culverts, mechanically resurrecting the 3 non-functional pumps that supplied water to the marshes, clearing foliage encroachment and fallen trees from the maintenance trails, and cleaning out water intake and output canals. Our goal has been the rehabilitation and long term maintenance of these Lower Kootenay Band marshes and the promotion of a healthy wetland ecosystem. Besides marsh and other wildlife integrity, our endeavor creates a teaching /learning wetland habitat for the LKB band as a whole and its school system in particular.

2009:

The society's imperatives for this year were the following:-

- **Cattail Encroachment:** Tanal marsh became a concern at least four years ago. The disappearance of open water areas, so necessary to the safe access and egress of water birds, along with the subsequent absence of these birds in the choked marshes needed to be addressed. Our decision to raise the water level of the marsh as high as the dykes would allow in the fall of 2007 and maintain this till the present, has prompted progressive cattail die-off.
- **Leopard Frog Program:** The results of last year's feasibility study has arrived. The results were positive.
- **Band pump/Skincus canal :** This original but unused canal was built to enable diversion of land drainage water from the Band pump before it outlets into the Kootenay River. It is presently unusable as it overflows the bank and floods the croplands.. Raising by 2 feet, for approximately 1000 meters of the east bank would deem it a viable canal for water flow into Skincus marsh. Ability to have this free water resource will reduce the Society's pumping costs by at least one-fifth yearly.
- **North pump outlet canal :** When water is being transported to the system's marsh areas, the east bank saturates the land on the down side. This creates boggy conditions and renders maintenance access impossible without first shutting off the water supply and allowing a drying time of about 2 weeks. This compromises the marshes, especially Hidden Lake, which has actually lost all water once while repairs were being accomplished. We need to widen approximately 1000 feet of the east bank to allow maintenance machinery to access and work without having to interrupt the water supply.
- **South (Tanal) marsh pump :** The pump was problematic in 2008, needing frequent restarting. Close monitoring in 2009 to assess the pumps working capacity and water output.

CATTAIL ENCROACHMENT



Tanal Marsh summer 2008



Tanal Marsh May 2009

2. Tanal Marsh Cattail Encroachment update

The plan to keep consistent high water levels (3 feet +) in Tanal marsh for a five year period to drown out cattails and interfere with production of new plants is, so far successful. (see photos above).

3. North pump canal repair

Repairs, this year, were begun by establishing an onsite borrow pit and utilising the materials thereof for the bottom build-up layer of the desired east bank dry maintenance access lane. Its length is approximately 1200 meters, and completed project height is approximate to that of the canal's existing east bank. Following the first layer described above, barrier cloth was applied, and the whole over-laid with crush.

North pump canal repair



2009 finished repair - looking south

2009 finished repair-looking north

4. Skincus marsh/Band pump secondary canal repair:

Repairs this year were begun by establishing an onsite borrow pit and utilising the materials thereof to build-up, by approximately 2 vertical feet, the east bank of the Band pump secondary canal to Skincus marsh. The existing canal was cleaned out of debris and fallen trees from winter storms. Build-up length was approximately 1200 meters, starting at the Band pump outlet culvert. Geotech fabric was applied over the new elevation height and down the inside canal bank and floor. This step was followed by aggregate as topcoat, to prevent erosion and establish better compaction and stability. Degradation was almost immediately evident when cattle trails were seen leading west to east across the canal two days latter. To prevent further damage, a pole and barbed wire fence was installed around both sides and ends of the project.

Clearing out canal



East side canal berm



Berm completed



Geotech cloth application

5. Installing culvert in outlet ditch for short cut to the pump and around Skincus marsh

An outlet ditch from the north-east end of the marsh was spanned using a culvert. Debris clearing of an old trail leading directly to Skincus marsh pump created a short cut when monitoring only as far north

as Skincus marsh. It also traverses the distal end of the Band pump canal just before it flows into the marsh, enabling us to monitor the culvert installed with a back-flow check flap, without having to make an extra side trip.

6. Expenditures for 2009

A. cash expenditures for North pump canal repair

- \$5320.00 --- excavator (56h @ 95h)– create borrow pit, place materials on east side of canal - Tremlock Properties
- \$5200.00 --- unloader, transport/load material onto buttress – Tremlock Properties
- \$ 500.00 --- Dump truck rental – WH Excavating
- \$2200.13 --- Aggregate – Hedlunds
- \$ 475.63 --- Geotech cloth
- **\$13,695.76** Total dollars spent on project

B. cash expenditures for Skincus/Band secondary canal

- \$11,250.00 --- machine time – create borrow pits, sub-excavate the canal, super-elevate east side canal, place geotech cloth, place aggregate
- \$ 2200.00 --- aggregate – Hedlunds
- \$ 951.26 --- Geotech cloth
- **\$14,401.26** Total dollars spent on project

C. other cash expenditures

- \$ 140.70 – troubleshooting south pump, adjusting impeller height – Mayday Electric
- \$3744.21 – power – Fortis BC
- \$ 47.95 – official tax receipt stamp
- **\$3932.86** – Total other dollars spent
- **\$32,029.87** – Total dollars spent this year for all activities

7. Financial Contributions (in dollars)

- \$10,000.00 —Columbia Basin Fish and Wildlife Compensation Pprogram
- \$20,000.00—Columbia Basin Trust
- \$ 5,000.00 ___ Ducks Unlimited
- \$5,955.53 --- Tremlock Properties (In Kind - see description below)
- **\$40,955.53** —Total Cash Contributions

In Kind cash contributions detailed

- \$3121.73 - Metal cattle gates (5) - Tremlock Properties
- \$630.00 – Culvert – Tremlock Properties
- \$200.00 – Grease gun – Tremlock Properties
- \$2003.80 – Posts & barbed wire fencing for Skincus canal project to keep out cows – Tremlock
- **\$5,955.53** – Total In Kind cash contributions

8. a. Volunteer Contributions (@ \$10/hr)

- \$100.00 - overseeing fencing around Skincus pump canal repair to keep out cows
- \$480.00 - Raising approximately 1200 meters of Band pump to Skincus canal east side by two feet
- \$570.00 - north pump canal repair
- \$140.00 - Making short cut to Skincus marsh pump and installing culvert to span ditch
- \$1195.00 – Pump maintenance & restarting, water level monitoring, trail debris clearing/brushing
- \$330.00 – Bird nest monitoring

- \$1280.00 – machine time for grass cutting on dykes
- \$200.00 – grease, fuses & other pump supplies
- **\$4,295.00 -Total in kind time in dollars**

b. Volunteer Contributions (gas consumption private vehicles—@ \$0.32 /kilometer)

- \$201.28 — Tanal marsh (629km)
- \$330.56 ---- North pump and other areas (1033km)
- **\$531.84 —Total gas consumption (1662km)**
- **\$4,826.84 – Total volunteer contributions (a & b)**

9. Future Projects

- Solve Tanal marsh pump random self shut-off problem and inability to run full volume and fix it. Failing that, find replacement for pump
- Repair or replace north pump. It has been unreliable this year and has not been able to be started longer than a few minutes since the end of August.
- Construct jetty to gate linkage of the intake culvert, north end of Kupa marsh. This will enable gate - opening access for gravity flow into Kupa marsh during times of Goat river/Indian creek spring floods, thus alleviating pumping costs. Also cut out and replace 3 feet of culvert behind the gate, as that section has several small leakage spurts, The rest of the culvert is intact.
- Resurface Short Dyke. It is dangerous to navigate when at all wet as it becomes very “greasy” and slippery mud.
- Resurface Long dyke, which is eroded and potholed entire length. The east end is also slippery and difficult to traverse, even with 4-wheel drive, when wet.
- Construct highway pullout. Enables safe vehicular observation of marsh inhabitants (ie. waterfowl), alleviating random unauthorized trespassing onto Band lands. Plans and site accepted by the Ministry of Transportation and Highways.
- Fill two areas of the maintenance trail around Hidden Lake. One is below water level when lake water level is at its optimum. The other is a safety hazard, as it has caved in. Four loads of road material would be needed
- Repair holes in surface of T-dyke between north and south, western compartments of Tanal marsh. It’s becoming hazardous to maintenance traffic.

10. Acknowledgements:

- **The Lower Kootenay Band**
- **Columbia BasinTrust**
- **Columbia Basin Fish and Wildlife Compensation Program**
- **Ducks Unlimited Canada**
- **Tremlock Properties**



Indian Creek close to North Pump

Appendix 1: Map of Rehabilitated Wetlands



