

92-I-3

WETLAND NAME Minnie Lake

REGION CODE 9013



Open Grassland

Minnie Lake

Open Grassland

Legend

- Major Access Rd

- Farm Rd

- F. Time Emission Line

V - Marsh Area

- Irrigated Land

- Contour Line

- per Water

- Hay Fields

per Grassland

Grassland CR

Scale 1:10,000

INCLUDE THE FOLLOWING

- NORTH ARROW
- SCALE
- ROADS TRAILS FENCES GATES BUILDINGS
- PHOTO STATIONS
- INLETS OUTLETS WATER SOURCES & DESTINATION
- EXISTING HIGH & PROPOSED WATER LEVEL CONTOURS
- WATER LEVEL REFERENCE LOCATION

- BASIN PROFILE (SOUNDINGS), IF TAKEN
- MAJOR VEGETATION TYPES & DISTRIBUTION
- SITES OF EXISTING CONTROLS OR MODIFICATIONS
- SITES OF PROPOSED CONTROLS OR MODIFICATIONS
- LOCATION OF SOIL SAMPLES, IF TAKEN
- LOCATION OF ANY BENCHMARKS FOUND
- LEGEND

WETLAND CHARACTERISTICS

I EMERGENT AQUATIC VEGETATION

- a) ROBUSTNESS: fair
b) DISTRIBUTION: poor (very patchy)
c) DIVERSITY: good - 5 species
d) COVER/WATER: 5% C 95% W

COMMENTS: Fair escape cover, poor overwater nesting.

COMMON PLANT SPECIES SHALLOW MARSH

Typha latifolia
Scripus acutus
Juncus sp.
Carex sp. Eleocharis sp.

DEEP MARSH

II SUBMERGENT AQUATIC VEGETATION

COMMENTS: Very good submergent growth which provides adequate waterfowl food.

COMMON PLANT SPECIES SHALLOW MARSH

Polygonum amphibium
Ceratophyllum demersum
Lemna sp.
Algae (grass clippings - blue green)

DEEP MARSH

Potamogeton perfoliatus
Myriophyllum exalbescent
Potamogeton pectinatus
Ruppia maritima

OPEN WATER

III WATER (QUALITY, TRANSPARENCY, REGIME, ETC)

COMMENTS: pH = 8.0 Hardness = 102.6 Mg/L CaCO₃ Transparency - 20-30 cm ± dly

Water is supplied by local run-off as well as water from Stony LK. Both lakes can be topped with water from Quilchena CK through diversions and flumes. Water quality in the late summer is poor due to extensive algae growth.

IV BASIN DESCRIPTION

- a) BASIN PROFILE: shallow saucer shape
b) SUBSTRATE: mainly mineral (some marl, some organic deposits)
c) SHORELINE DEVELOPMENT INDEX: _____
d) REGIONAL PHYSIOGRAPHY: rolling grassland hills.
e) PERCENT IN 1m ZONE: _____

COMMENTS: _____

V NESTING SITES

- a) UPLAND VEGETATION (1.0 KM RADIUS)

TOTAL AREA 520 HA

COMPOSITION: CULTIVATION _____%, PASTURE 55%, HAYLAND 20%
IDLED _____%, SHRUB 10%, FOREST 15%, OTHER _____%

COMMENTS: Cover ranges from fair to excellent - overall very good.
Giant wild rye, sage, bunchgrass, aspen, yarrow, crested wheat
grass, drone grass, daisy, foxtail barley, caryfoil, beggars
tick some of the upland species found.

- b) OTHER (OVERWATER, CAVITY AND INSULAR)

COMMENTS: Overwater - poor due to lack of emergent cover
Cavity - poor, no trees near wetland
Insular - fair, erosion of bank creating some insular sites.

VI PAIR SITES

COMMENTS: Good - relatively complex shoreline would provide
adequate pair sites.

VII FAUNA

- a) WATERFOWL: ISC - 10 Buf - 13 Rud - 14 Bwt - 14 Cay - 3
Mal - 2 Can - 1 Gad - 2 * Don by Chatter

b) OTHER VERTEBRATES: Horned Grebe, Northern Harrier, Numerous passerines, mule deer, coyote

c) INVERTEBRATES: snails, dragonflies, damselflies

COMMENTS: Very productive marsh. Improvements to water regime may reduce the algae build-up that is experienced every summer.

VIII LIMITING FACTORS: (Y)

EMERGENTS — ABUNDANCE Y

DIVERSITY _____

DISTRIBUTION Y

SUBMERGENTS — ABUNDANCE _____

DIVERSITY _____

DISTRIBUTION _____

WATER — SUPPLY _____

TOO MUCH/LITTLE _____

FLUCTUATION _____

CHEMISTRY _____

BASIN PROFILE _____

(proportion of wetland
as littoral zone)

SUBSTRATE _____

(vegetation rooting medium)

NESTING SITES: LACK UPLAND _____

LACK OVERWATER Y

LACK CAVITY Y

LACK INSULAR Y

PAIR SITES LACKING _____

OTHER loafing - Y

EXPLANATION: Emergents - lack of emergents (look at transplants)
Overwater - limiting due to lack of emergents
Cavity - limiting, no trees ∴ no cavity sites
Insular - somewhat limiting, few insular sites
loafing - no on-water loafing sites

IX MANAGEMENT RECOMMENDATIONS. (Y)

- a) WATER CONTROL/MGMT (includes pumping): Y
- b) MECHANICAL VEG. CONTROL (over ice mowing, cookie cutter)
- c) PRESCRIBED BURNING
- d) PLANTINGS Y
- e) WATER DIVERSION
- f) FERTILIZATION
- g) UPLAND COVER MGMT (rest-rotation, stubble mulch, cover plot)
- h) ARTIFICIAL NESTING STRUCTURES (boxes, baskets, bales, rafts) Y
- i) INSULAR HABITAT (peninsula cutoff, earth islands, rock)
- j) LEVEL DITCHING/POTHOLE BLASTING (increase pair space)
- k) ADDITION OF LOAFING SITES (bars, logs) Y
- l) PREDATOR MGMT
- m) DISEASE MGMT (botulism clean-up)
- n) WATERFOWL DEPREDATION PROGRAM
- o) FISHERIES ENHANCEMENT (fishway, screen, rearing pond) Y
- p) OTHER

EXPLANATION:

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- X CONCEPTUAL DESIGN: a) Upgrade the existing water control structure to hold ~ 30-60 cm more water. This may provide the means to reduce algae build up by flushing with water from Stoney lake and increase waterfowl habitat.
- d) Planting of emergent veg. to increase the abundance and distribution.
- h) 10 nest boxes and 2 rafts will provide nesting sites for Bge / Buf and Cag.
- k) 10 loafing logs will provide adequate on water loafing sites
- o) fish screens to prevent movement of coarse fish into the lake from Quilchena CK.

XI WATERFOWL BENEFITS:

a) PRELIMINARY PRODUCTION ESTIMATE:

ESTIMATED

BROOD HABITAT (HA)	X	PRODUCTION	=	ANNUAL TOTAL
IN 1M ZONE $\approx$ N.O.L.		RATE		DUCKS
70		19.6		1,372

COMMENTS: A Chatter had no depth measurements, so the estimate here in the 1m zone is an educated estimate only. This wetland produces numerous diving ducks with limiting overwinter nesting cover.

XII NON-PRODUCTION BENEFITS TO WATERFOWL: local spring/fall staging, some use by molting waterfowl.

XIII WETLAND STATUS:

a) LANDOWNER CONTACT: Douglas Lake Cattle Co. 350-3344 gate 149

b) DEGREE OF THREAT: low-moderate - upgrading of dam for sport fishing may affect water levels to a point where waterfowl habitat values may be reduced.

XIV FOLLOW-UP:

a) SURVEY: Required

b) ACCESS: From Hwy 5A north of Quilchena Hotel turn south onto Pennusk LK Rd. Follow to main gate/sign for Minnie LK.

c) ENGINEERING REQMTS: Eng recen (see file)

d) OTHER:

SUPPLEMENTAL INFORMATION B.C.

GENERAL LOCATION: 27 km SE of Merr H, B.C.

NUMBER OF BASINS IN SYSTEM (ABOVE/BELOW) numerous ELEVATION: 1080 m

ADJACENT WETLANDS: 3 major - Stoney Lk, Tommy's Meadow, Flume Marsh, numerous small ponds in area.

INSPECTION METHOD:

AERIAL PHOTO INTERPRETATION ☒ AERIAL INSPECTION ☐
PARTIAL SHORELINE ☒ COMPLETE SHORELINE ☐ BOAT ☒

WATER HARDNESS: _____ MG/L. AREA OF WETLAND BETWEEN DEPTHS OF 1 M AND 2 M: _____ HA.

WATER LICENSES: Irrigation - DLCC; Quilchena Cattle Co.

PRODUCTION ESTIMATE WITH PROPOSED DEVELOPMENT:

DUCKS

Shoreline/upland/overwater:	7	broods/km x 10.5 km = 441	ducks/yr x 30	yr = 13,230	ducks
Natural Islands	:	_____ broods/_____ x _____ = _____	ducks/yr x _____	yr = _____	ducks
Proposed Islands	:	_____ broods/is x _____ is = _____	ducks/yr x _____	yr = _____	ducks
Internal Ditching	:	_____ broods/km x _____ km = _____	ducks/yr x _____	yr = _____	ducks
Nest Boxes	:	34 ducks/box x 10 boxes = 34	ducks/yr x 30	yr = 1020	ducks
Other _____	:	_____ broods/_____ x _____ = _____	ducks/yr x _____	yr = _____	ducks
TOTAL DUCK PRODUCTION:			475 ducks/yr	14,250	ducks

GEESE

Natural Islands	:	0.2 broods/is x 1 is = .8	geese/yr x 30	yr = 24	geese
Proposed Islands	:	_____ broods/is x _____ is = _____	geese/yr x _____	yr = _____	geese
Internal Ditching	:	_____ broods/km x _____ km = _____	geese/yr x _____	yr = _____	geese
Nesting Structures	:	0.2 broods/str x 2 str = 1.6	geese/yr x 30	yr = 48	geese
TOTAL GOOSE PRODUCTION:			2.4 geese/yr	72	geese
TOTAL, DUCK AND GESE PRODUCED:			478 birds/yr	14,322	birds

SIGNIFICANT STAGING, MIGRATION, OR WINTERING VALUES (Y/N) Y

COMMENTS: The area has very good use by migrating waterfowl, particularly in the fall.

At present guidelines \$12/duck x 14,322 = \$171,864
\$120/ha x 120 ha = \$144,000
∴ \$144,000 available for construction, any more cost estimate was only \$80,000 (440's included)