

encountered four instances of Red-necked Grebes (*Podiceps grisegena*) successfully rearing chicks of the Western Grebe (*Aechmophorus occidentalis*).

Duck Lake is a large, shallow water body that was dyked in 1950 (Butler et al. 1986). Water levels fluctuate annually due to the amount of spring and early summer runoff but most of the lake is choked with submerged aquatic plants that include water-milfoils (*Myriophyllum* spp.), common bladderwort (*Utricularia* spp.), pondweeds (*Potamogeton* spp.), coontail (*Ceratophyllum demersum*), and Canada waterweed (*Elodea canadensis*) to name a few. Thick beds of cattails (*Typha latifolia*) surround the lake. Wind and rainstorms are a common occurrence each year during June and July. Wind and wave action is often intense and frequently results in the loss of nests and/or eggs.

Both the Red-necked and Western grebe arrive on their breeding grounds at Duck Lake in late April to early May and begin nest-building in late May and early June. Both species construct a raised nest mound of aquatic vegetation that is anchored among submerged plants in open water. The Red-necked Grebe is usually a solitary nesting species, but at Duck Lake it often nests semi-colonially (Campbell et al. 1990). The Western Grebe is a colonial nesting species.

During the 2003 breeding season I documented what appeared to be successful incubation and chick rearing of Western Grebe eggs and young by Red-necked Grebes. Table 1 summarizes all observations of Western Grebe chicks observed on the backs of adults or being fed by or swimming with adult Red-necked Grebes away from nest sites. Because the grebe families moved freely about the lake it was difficult to estimate how many actual families were involved in the surrogate parenting. From age class designations I believe that at least four families were involved as they were watched developing from newly hatched chicks to about $\frac{3}{4}$ grown.

The only confirmed evidence of incubation of Western Grebe eggs by a Red-necked Grebe involved a nest that was blown within 6 m of shore and remained close for observation. On 6 July the nest contained 3 grebe eggs. On 11 July it contained two grebe eggs and a single Western Grebe chick (Figure 1). The following day two downy gray Western Grebe chicks were resting on the back of the adult Red-necked Grebe along with one egg still in the nest. On 15 July the nest was empty and I assumed that the family moved to open water.

A Red-necked Grebe adult sitting on a mound, identified as nest No. 4, was also observed with a Western Grebe chick. On 15 July the chick climbed down from the adult Red-necked Grebe's back to the edge of the water, drank and returned to be brooded. It was a similar situation at Red-necked Grebe nest No. 6 where a single Western Grebe chick

WEATHER INFLUENCES PARENTING BEHAVIOUR AMONG RED-NECKED GREBES AND WESTERN GREBES ON DUCK LAKE, CRESTON VALLEY

Linda M. Van Damme

619 – 20th Avenue South, Creston, BC. V0B 1G5

The extensive marshes of the Creston Valley, in southeastern British Columbia, support a very diverse and large population of breeding waterbirds. All six species of grebes that occur in the province breed in the valley (Van Damme 2002). While monitoring colonial-nesting waterbirds in the Creston Valley over the past 10 years I

Table 1. Observations of Western Grebe chicks associated with adult Red-necked Grebes (RNGR) on Duck Lake, Creston Valley, BC., 15 July to 24 August 2003.

Date	Activity	Remarks
15 Jul	2 on back of 1 RNGR	in open water
18 Jul	5 on backs of 3 RNGR	ad feeding 1 chick
20 Jul	5 on backs of 3 RNGR	ad feeding 2 chicks
22 Jul	5 on backs of 3 RNGR	in nesting area
24 Jul	3 on backs of 2 RNGR	1 chick in water
26 Jul	3 with 2 RNGR	nest building
27 Jul	2 with 1 RNGR	¼ grown
29 Jul	1 with 1 RNGR	resting on water
1 Aug	5 with 6 RNGR	4 family groups
3 Aug	3 with 3 RNGR	2 family groups
4 Aug	2 with 1 RNGR	½ grown
7 Aug	3 with 3 RNGR	2 family groups
9 Aug	1 with RNGR	¾ grown
11 Aug	3 with 2 RNGR	2 family groups
13 Aug	1 with RNGR	swimming
19 Aug	3 with 3 RNGR	2 groups resting
24 Aug	2 with 1 RNGR	adult fed 1 chick

popped its head through the back feathers of the incubating adult as its mate approached with a small “silver” fish that was eagerly swallowed by the chick. Both nest sites were vacant on 18 July.

After a storm on 8 June destroyed all Western Grebe nests a second major windstorm hit Duck Lake on 5 July when Western and Red-necked grebes had been incubating for about 21-25 days. The storm created chaos displacing birds on nests, swamping some nests, and blowing poorly anchored nests close to shore resulting in predation of eggs. Soon afterward, some grebes were observed rebuilding damaged nests.

It seems likely, in an effort to reclaim a nest following the 5 July storm, that Red-necked Grebes settled on Western Grebe nests with advanced egg incubation. It also seems likely that in an effort to have a successful but shortened breeding season, adult Western Grebes prior to the storm had laid additional egg(s) in available nests of Red-necked Grebes who continued with incubation and rearing responsibilities.

While studying the reproductive behaviour of Red-necked Grebes at Duck Lake in the mid-1980s, Ohanjanian



Figure 1. This Red-necked Grebe successfully incubated and hatched a Western Grebe egg. Duck Lake, BC. 11 July 2003 (Linda M. Van Damme). B C Photo 2036.

(1986) did not observe surrogate behaviour between Western and Red-necked grebes, however, at Lake Osakis, Minnesota, one adult Red-necked Grebe was observed feeding a Western Grebe chick (Storer and Nuechterlein 1992; Stout and Nuechterlein 1999; Campbell et al. 1990). The eggs of other waterbirds have been found in the nests of Red-necked Grebes (e.g., Horned Grebe – *Podiceps auritis*, Eared Grebe – *Podiceps nigricollis*, Pied-billed Grebe – *Podilymbus podiceps*, Redhead – *Aythya americana*, and American Coot – *Fulica americana*), but none have been hatched successfully.

Literature Cited

Butler, R.W., B.G. Stushnoff, and E. McMackin. 1986. The birds of the Creston Valley and southeastern British Columbia. Canadian Wildlife Service Occasional Paper 58, Ottawa, ON. 37 pp.

Campbell, R.W., N.K. Dawe, I. McT.-Cowan, J.M. Cooper, G.W. Kaiser, and M.C.E. McNall. 1990. The Birds of British Columbia. Volume 1 (introduction, loons through waterfowl). Royal British Columbia Museum. Victoria, BC. 514 pp.

Ohanjanian, I.A. 1986. Effects of man-made dyke on the reproductive behavior and nesting success of Red-necked Grebes. M.Sc. Thesis, Simon Fraser University, Burnaby, BC. 83 pp.

Storer, R.W., and G.L. Nuechterlein. 1992. Western Grebe (*Aechmophorus occidentalis*) and Clark's Grebe (*A. clarkii*). In A. Poole and F. Gill, eds. The birds of North America, No. 26. The Birds of North America, Inc., Philadelphia, PA. 22 pp.

Stout, B.E., and G.L. Nuechterlein. 1999. Red-necked Grebe (*Podiceps grisegna*). A. Poole and F. Gill, eds. In The birds of North America, No. 465. The Birds of North America, Inc., Philadelphia, PA. 32 pp.

Van Damme, L.M. 2002. Creston Valley – checklist of birds. Published by the author, Creston, BC. Leaflet.

About the Author

Linda is an avid field naturalist and photographer living in the Creston Valley. She initiates her own field research projects and is currently conducting wintering raptor surveys in the valley.