Survey of Bird Species Diversity of the lower Hyland River, June 2001

D.H. Mossop and E. Murphy-Kelly

Funded by: Canadian Parks and Wilderness Soc(Yukon)

1.0 General: We visited the lower Hyland River drainage for five days during the last days of May and the first few days of June, 2001. Part of a team of surveyors carrying out a broad reconnaissance inventory, we surveyed wetland and forest birds from approximately the lower end of the main canyon (at the Green River mouth) to the Alaska Highway crossing, a distance of about 80 km. Generally the river valley immediately along the river was the area covered. Systematic bird surveys involved standardized early morning point counts of singing birds and standardized total counts of waterbirds at ponds accessible by reasonably easy hikes. We also kept a running list of all birds recorded from the river route, and during reconnaissance hikes.

The bird habitat in the portion of the river basin visited varies from a relatively incised steep wooded valley in its upstream portion, to a much broader flat, well-treed rolling plateau downstream. The main features providing bird habits in the area a) are the river shore beaches, bars and associated riparian communities, b) several small waterbodies near the river channel, and c) the mature and in places, regenerating, boreal forest habitats of river floodplain and valley.

Breeding birds were not well established on territories at the time of our survey. We had the impression of birds first arriving in the area, probably reflecting the cool and generally wet spring of 2001. Our survey should be augmented with further visits to the valley.

2.0 Waterbirds and wetlands: The waterbirds are some of the most obvious birds providing a good group to use in characterizing biodiversity. The relatively flat topography of the lower valley has created several wetlands in old cut off river channels and other natural depressions. We visited three representative wetland areas with a total of 6 waterbodies.

2.1 The waterbodies: The ponds visited were typically in elongate complexes suggesting old drainage channels. The ponds were relatively large, averaging

over 15 hectares and showed a relatively high degree of emergent vegetation community development, a sign of age and good productivity. (All had 100% of their shorelines with emergent vegetation and 2 of the 6 had emergent vegetation mats completely covering parts of them.) Other signs of healthy species diversity were fresh beaver sign (4 of 6 waterbodies), fresh moose sign at all, and frogs (wood frogs were seen at 2 of 6 waterbodies). A Black bear was seen at one pond. By far the greatest diversity of song bird species was also found associated with the wetlands (see below).

2.2 Waterbird populations: Only eight species of waterbirds were found to occupy the ponds; no estimate of breeding density was possible. 32 waterbirds were counted in total. Of the waterbird species recorded, Ring-necked duck (41% of observations) were the most commonly encountered. Based on waterbird diversity alone, these do not appear to be high-productivity wetlands relative to others in the Yukon that have been studied. (About 20 species is average on other Yukon wetlands.) The high proportion of Ring-necked ducks is noteworthy as are two relatively rarely seen species for the Yukon: Cinnamon teal and Gadwall. Very few shorebirds were found on the ponds, 1 Lesser Yellowlegs, 1 killdeer, 2 Pectoral sandpipers and one Common snipe. (We obviously have no way of knowing if the 2001 spring was normal for the area.)

Table 1. The relative abundance of waterbirds recorded from standardized ground counts on ponds in the Hyland valley, 2001

Species	Percent In count
Ring-necked duck	42 %
Red-necked grebe	12
Canada goose	12
Pacific loon	9
Bufflehead	6
Gadwall	6
Mallard	6
Cinnamon teal	6

2.3 Waterbirds using the river surface:

The surface of the larger river was being used by an assortment of waterbirds. We recorded all of these encountered as a measure the importance of the riparian system. (2 Pacific loon, 1 Red-throated loon, 7 Common merganser, 7 Canada goose, and 2 Herring gull.) Along the entire route, 87 spotted sandpipers were recorded. This diversity and level of use is medium to low compared to other Yukon waterways. The use of river surfaces by staging and moulting waterbirds usually increases over the summer months and it will be important to re-survey the river at a later date.

3.0 Song birds and others: The ecological variety offered in the region is reflected in bird species richness. Three days of field work logged 61 species. Most recorded were singing, apparently on breeding territories, however many birds were encountered which were clearly not displaying breeding behavior. This very likely causes our results to underestimate the breeding density of species. Our overall inventory however, should reflect the general species richness of the valley. The impression we had was of a moderately rich habitat for birds that breed in stream-side riparian boreal forest, and northern wetland riparian communities.

3.1 Species richness: The mix of species recorded during point counts and pond counts was not uniform over the area surveyed. Diversity and density clearly increased as we descended the river and peaked near the wetlands of the lower flatlands. In total we carried out 42 stream-side riparian forest point counts and 5 pond-side counts. An average of 4.2 species were recorded at each count, 6.9 individual birds. Ten species accounted for 70% of birds heard (Table 2). Five species typified the area (consistently heard at over 20% of sites):Yellow-rumped warbler, Ruby-crowned kinglet, Swainson't thrush, Varied thrush and Dark-eyed junco.

Breeding density should not be inferred from these observations. We felt they were giving a falsely low impression of density most likely as a result of the very late spring conditions at the time of our survey. The diversity and density of species we recorded in the Hyland was just about half that found in similar counts in the upper Nisutlin valley (Mossop, 2000). And Eckert et al (in prep) found there were over 1,000 birds per sq. km. in the LaBiche drainage, about 10 times the density we found in the Hyland. Our results are perhaps best used to indicate the overall diversity of bird species in the area, and not breeding density and site specific species diversity.

Table 2. The relative abundance of bird species from point counts, Hyland Valley 2001.

Species	Pct of Points Where species Recorded	% of all bird observations
Yellow-rumped warbler	55.3	17.9
Ruby-crowned kinglet	53.2	12.8
Spotted sandpiper	25.5	13.5
Swainson's thrush	25.5	6.6
Varied thrush	23.4	5.5
Dark-eyed junco	21.3	3.6
Gray jay	14.9	2.6
American robin	12.8	2.2
Y-bellied sapsucker	10.6	3.6
Bohemian waxwing	10.6	12.4
Orange-crowned warbler	8.5	1.5
Boreal chickadee	8.5	1.5
Ruffed grouse	6.4	1.5
Common nighthawk	6.4	1.1
Western wood-peewee	4.3	0.7
Blackpoll warbler	4.3	0.7
Common yellowthroat	4.3	0.7
Northern waterthrush	4.3	0.7
Wilson's warbler	4.3	0.7
Yellow warbler	2.1	0.4
Tennessee warbler	2.1	0.4
Violet-green swallow	2.1	1.8
Cliff swallow	2.1	0.4
Lincoln's sparrow	2.1	0.4
Chipping sparrow	2.1	0.4
Am tree sparrow	2.1	0.4
White-winged crossbill	2.1	0.4
Pine grosbeak	2.1	0.4
Rusty blackbird	2.1	0.4
Red-winged blackbird	2.1	0.4
Common raven	2.1	0.4
Unid. Empidonax	2.1	0.4
Say's phoebe	2.1	0.4
Olive-sided flycatcher	2.1	0.4

Red-breasted nuthatch	2.1	0.4
Northern flicker (YS)	2.1	0.4
Hairy woodpecker	2.1	0.7
Common snipe	2.1	0.4

4.0 Birds of Prey

The top-of-the-foodchain species often offer a good indication of the richness of species throughout the community. We recorded 6 species of raptor (including two owl species) in the three days of field work. A breeding pair of Osprey, another adult Osprey hunting and a yearling Bald eagle in this relatively short stretch of river would suggest a moderately healthy aquatic prey base. Three Red-tailed hawks in the same stretch does not represent a high population of these birds compared to other Yukon river valleys but again suggests a moderately good small mammal prey base.

The birds of prey are often the birds visitors to an area find most obvious and attractive. In that sense the river reach we travelled offers good potential for the casual observer. The Red-tailed hawks of the area in particular are a very dark color phase not usually seen in other parts of the continent and Ospreys are always charasmatic species.

5.0 Special Places

We found from a bird perspective, three obvious features of the valley that will require protection in the future are:

1) Of particular interest are the few river bars and islands in the main channel. These bars and the few vegetated islands were clearly of extreme value to an inordinate density of birds and other wildlife (moose are apparently using the islands as critical cow-calf habitat). Even casual disturbance to these habitats should be avoided. The Canada goose population evident in the drainage will likely be totally dependant on the river bars and islands for nesting habitat. As well, the few riverside bluffs usually associated with these islands normally support some of the more obvious and interesting nesting birds for visiting naturalists (colonies of swallows and cliff nesting raptors etc.)

2) The riparian forest immediately along the main channel supports bird life that is always more diverse than further removed from the channel. The large riparian trees are critical as nest trees by the larger birds of prey. In most of the valley, this habitat occurred in an inordinately narrow strip. It will be important to recognize the value of these highly productive, very narrow bands of habitat in future land use planning for the valley.

3) The wetlands. The vegetation in association with the wetlands hosted by far the greatest density and diversity of bird life. Their complete protection will have to be an integral part of any land use planning for the area in general.

6.0 Species list: (B=breeding records exist; C=common-seen most days in appropriate habitat; AB= abundant, seen virtually every observation session, many times daily) species . Hyland valley, May 28-June 1, 2001

	Comments
Loons	
Pacific loon	-Apparently on breeding territory, 3 of 6 ponds
Red-throated loon	-1 observation, on main channel of river
Grebes	
Red-necked grebe	- one pair, apparently on breeding territory
Waterfowl	
Canada goose	- several 'broody' adults on main channel, one small flock near one wetland pond
Mallard	- uncommon, on one of 6 ponds
Gadwall	- one observation, a pair
Blue-winged teal	- one observation, adult male
Cinnamon teal	- one observation, a pair
Ring-necked duck	- common, 40% of waterbird observations,
Bufflehead	- uncommon, 2 observations
Surf scoter	- uncommon, 1 observation, 4 adults on river
Common merganser	- common on the main river channel
Birds of Prey	
Osprey	- a nesting pair, one additional adult
Bald eagle	- one observation, a yearling
American kestrel	- two observations
Red-tailed hawk	- three observations
	- one adult heard calling at night
Boreal owl	- one adult heard calling at night
Great horned owl	
Grouse	

Ruffed grouse	- fairly common, adults heard drumming

Shorebirds

Lesser yellowlegs	- uncommon, two observations
Spotted sandpiper	- common breeder along river channel
Common snipe	- uncommon, one observation
Pectoral sandpiper	- one small flock

Gulls, terns

Herring gull	- one breeding pair on main river channel

Goatsuckers

Common nighthawk	- uncommon, two observations

Kingfishers/Woodpeckers

Belted kingfisher	- uncommon, 2 observations
Northern flicker	- uncommon, 1 observation
Hairy woodpecker	- uncommon, 2 observations
Yellow-bellied sapsucker	- fairly common, 5 records
Three-toed woodpecker	- uncommon, 1 record
Red-breasted nuthatch	- uncommon, 2 records

Flycatchers

Olive-sided flycatcher	- one record
Western woodpeewee	- two records
Alder flycatcher	- probably this species (unidentified empidonax)

Swallows

Violet-green swallow	- uncommon, 1 observation
Cliff swallow	- uncommon, one observation

Jays

Gray jay	- common, recorded daily
Common raven	- uncommon, 1 observation

Titmice

Boreal chickadee	- fairly common, 4 observations

Thrushes

Swainson’s thrush	- common, recorded daily, 25% of sites
American robin	- uncommon, 6 records
Varied thrush	- common, recorded daily

Kinglets

Ruby-crowned kinglet	- common, recorded daily, over 50% of sites

Waxwings

Bohemian waxwing	- fairly common, 10% of observations

Wood warblers

Orange-crowned warbler	- uncommon, recorded at 8% of sites
Tennessee warbler	- uncommon, one reccord
Townsend's warbler	- uncommon, recorded at one site sev. Indiv.
Yellow warbler	- uncommon, one record
Yellow-rumped warbler	- common, recorded daily, at 55% of sites
Blackpoll warbler	- uncommon, two records
Northern waterthrush	- uncommon, two records
Common yellowthroat	- uncommon, two records
Wilson's warbler	- uncommon, two recores

Blackbirds

Red-winged blackbird	- uncommon, one record
Rusty blackbird	- uncommon, one record

Grosbeaks/finches

Pine grosbeak	- uncommon, one record
White-winged crossbill	- uncommon, one record, flock

Sparrows

American tree sparrow	- uncommon, one observation
Lincoln's sparrow	- one record
Dark-eyed junco	- common, recorded daily at 21% of sites
Chipping sparrow	- uncommon, one record
White-throated sparrow	- uncommon, one record

Literature:

Eckert, C., W. Nixon, P. Sinclair, M. Gill, and J. Meikle. Forest bird communities of the La Biche and Beaver River Valleys, Yukon. Canadian Wildlife Service, Whitehorse, Yukon. In prep.

Mossop, D.H. 1999. Survey of bird species diversity in the Nisutlin Lake basin, June

1999. CPAWS(Yukon) ms, Whitehorse.

---------- 2000. Survey of bird species diversity in the Red River Lake basin, June 2000. CPAWS(Yukon) ms, Whitehorse

Thompson, Jill. 1996. The diversity and abundance of Passiformes in the Sekulman Wetland, Yukon Territory. June 1996. BSc thesis, University of Waterloo, Environement and Resource Studies.

Willson, M.G. and T. A Comet, 1996a. Bird communities of northern forests: patterns of diversity and abundance. The Condor 98:337-349.

---------- 1996b. Bird communities of northern forests: ecological correlates of diversity and abundance in the understory. The Condor 98:350-362.