

BIRD POPULATIONS IN A NARROWLEAF COTTONWOOD COMMUNITY,  
GRAND TETON NATIONAL PARK, WYOMING

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An Avian Atlas for the State of Wyoming is being developed by the Wyoming Game and Fish Department. Baseline information on the avifauna of the riparian communities is especially sparse. Consequently, the objective of this project is to collect information on the composition, density, distribution and habitat of the bird species inhabiting a portion of the narrowleaf cottonwood, Populus angustifolia, community in Grand Teton National Park. The study was initiated in June 1980 on a portion of the western floodplain of Pilgrim Creek. The metal, southeast corner stake of this 300 m x 400m (12 ha) plot is located on a bearing line 4° E of N. 77 mm from the fiducial center of the infrared aerial photo N31 (U.S. Bur. of Reclamation Series B/R17, 7-16-79).

This floodplain community is predominantly narrowleaf cottonwood with scattered trees of quaking aspen, Populus tremuloides, engelmann spruce, Picea engelmannii, and lodgepole pine, Pinus contorta. In the moister areas several small patches of alder, Alnus incana occur under the larger trees and a few patches of willow (Salix, sp.) are located in moist openings of the woodland.

### Methods

The mapping census plot was subdivided into 12 square 1 ha plots, with a 30 in. metal post at each hectare corner. Painted wooden stakes were used to mark the 50 m intervals between each corner stake.

All censuses were begun at 7:30 am and ended between 9:30 and 10 am following procedures set forth by the International Bird Census Committee (Svensson, 1970). Each bird observation on the plot was recorded as to species, number, sex and age and activity of the individuals and location. Movements of the census taker through each plot were such that at no time was the width of the area being censused greater than 33 m. This was accomplished by the census taker using a census pattern which moved through nine square subunits approximately 33 m on a side.

### Results

Study plot censuses were taken on June 14 & 17 and on June 27. Census data are summarized in Table 1. The disparity in numbers between the

Table 1. Species, number and frequency of birds on a 12 ha riparian mapping census plot, Pilgrim Creek, Grand Teton National Park, Wyoming, June 14 & 17 and 27, 1980.

Species	No. of Birds		Frequency (%)		Birds/km <sup>2</sup>		Abundance Category
	June 14 & 17	June 27	June 14 & 17	June 27	June 14 & 17	June 27	
Common Goldeneye		2		17		17	Abundant
Common Merganser	1		8		8		Abundant
Cooper's Hawk	1		8		8		Abundant
American Kestrel	1		8		8		Abundant
Unknown Hummingbird	1		8		8		Abundant
Common Flicker	2	3	17	25	17	25	Abundant
Yellow-bellied Sapsucker	5	7	30	50	42	58	Abundant to very abundant
Hairy Woodpecker	2	5	8	17	17	42	Abundant
Dusky Flycatcher	8	11	58	58	67	97	Very abundant
Western Wood Pewee	7	3	30	25	58	25	Very abundant to abundant
Tree Swallow	9	3	50	25	75	25	Very abundant to abundant
Black-capped Chickadee	3	1	25	8	25	8	Very abundant to abundant
Mountain Chickadee	2	4	8	25	17	33	Abundant
Unknown Chickadee		3		25		25	Abundant
Red-breasted Nuthatch	2		17		17		Abundant
House Wren	2		17		17		Abundant
American Robin	17	9	75	42	142	75	Very abundant
Ruby-crowned Kinglet	6		30		50		Very abundant
Warbling Vireo	12	8	58	58	100	67	Very abundant
Unknown Vireo	2		17		17		Abundant
Yellow Warbler	6	3	30	25	50	25	Very abundant to abundant
Yellow-rumped Warbler	5		30		42		Very abundant
McGillivray's Warbler	1	1	8	8	8	8	Abundant
Wilson's Warbler	2		17		17		Abundant
Unknown Warbler	1		8		8		Abundant
Rosebreasted Grosbeak	3		17		25		Abundant

Pine Siskin	3	17	25	Abundant
Dark-eyed Junco	22	83	183	Very abundant
White-crowned Sparrow	2	17	17	Abundant
Song Sparrow	4	17	33	Abundant
Unknown Species	6	17	50	Very abundant
TOTAL	38	150	766	

two censuses is thought to be related to several factors. A number of birds were already nesting prior to the first census. Some of these birds fledged their young and probably left the study plot area prior to the second census. Also, a number of species and individuals likely were transients enroute to other breeding sites during the first census and were absent in the second census.

The Dark-eyed Junco and the American Robin were essentially present over the entire study plot. The Warbling Vireo and the Dusky Flycatcher were mostly in the large cottonwood trees. While the Warbling Vireo was generally most active at tree top levels, the Dusky Flycatcher was observed from the ground level in the understory shrubs to the very top of the tallest trees. The sapsuckers and the Tree Swallows were quite motile during foraging periods. The Tree Swallows used the openings in the woodland for foraging and the sapsuckers used the woodlands proper.

Several species were narrowly confined to restricted habitat. McGillivray's Warbler, Wilson's Warbler, White-crowned Sparrows and the Song Sparrows only occurred in the limited willow patches. The Yellow Warbler used both the willows and the alders.

Using a modification of Skaar's (1969) abundance categories, the numbers of birds/km<sup>2</sup> were in the abundant to very abundant range.

Monitoring of the avian population will be continued on a long term basis. Data on the plot's habitat characteristics will be collected in 1981.

#### References

- Skaar, P. 1969. Birds of the Bozeman latilong. 501 S. Third, Bozeman, Montana. 131 pp.
- Svensson, S. (Editor) 1970. Bird census work and environmental monitoring. Swedish Natural Science Research Council, Redaktionstjansten, Stockholm. 52 pp.