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SPECIES AND RELATIVE ABUNDANCE OF AN OPEN SPACE MARSH

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Abstract: For the five weeks that data was collected, there was a total of twenty-one bird species and one mammal species were identified. The most abundant species were the red-winged blackbird (*Agelaius phoeniceus*) and the western meadowlark (*Sturnella neglecta*). Recommendations for increasing the diversity of the marsh ranged from level ditching to rotenoning the small pond. Also, it is not recommended that cattle be allowed to graze the area again. This would only decrease the quality of the habitat.

The land in Open Space, is home to a variety of flora and faunal communities. One of these, a marsh, has drawn the attention of Ducks Unlimited, for a cost share management program with the Colorado Division of Wildlife and the Real Estate/Open Space Department. Before any new management program begins, data needs to be collected so that management efforts can be assessed. This is the purpose of this project; to develop a species list and percent relative abundance for the marsh, prior to any perturbations.

STUDY AREA AND METHODS

The study area is a marsh located on Open Space land in Boulder County Colorado. It is in section 5, range 70W, township 1N. Species expected to be observed in the area were primarily shorebirds, with the possibility of seeing black-billed magpies (*Pica pica*), western kingbird (*Tyrannus verticalis*), and house finches (*Carpodacus cassinii*) (Holt and James 1987).

A point count method, with unlimited distance relative to the study area, was used. Stations were randomly picked the first field day, then remained constant for the rest of the project. A total of twenty minutes was spent at each station.

Species were observed weekly for a period of five weeks. They were identified by visual characteristics with the aide of binoculars and by auditory characteristics. A guide to field identification was also used to help identify species.

Data was recorded for all species observed on the marsh for each station. At the end of the observations for the day, the data from all stations was totaled for each species. Percent relative abundance was calculated by dividing the total number of individual species by the sum of the totals of all the species, and multiplied by 100.

The project began on 6 April 1989, and ended on 4 May 1989. A total of five mornings, one per week, were spent observing species of the marsh.

Bird activity, reaches a peak for many species at sunrise, and a low point around midday. Shore birds have been characterized as reaching their peak activity during the first three hours after sunrise (Robbins, 1981). To encompass the periods of greatest activity, Robbins (1981) suggested that observations be made one-half hour before sunrise and continue for three and one-half hours to four and one-half hours after sunrise. The period of one-half hour before sunrise to three and one-half hours after sunrise was used for this project.

RESULTS

Although not many shore birds were identified as was expected, there were still twenty-one species of birds and one species of mammals identified. For complete results, see Table 1.

TABLE 1: SPECIES LIST AND PERCENT RELATIVE ABUNDANCE

Common Name	Scientific Name	% Relative Abundance
American Crow	*Corvus brachyrhynchos*	1.2
American Kestrel	*Falco sparverius*	0.1
Black-billed Magpie	*Pica pica*	1.0
Blue-winged Teal	*Anas discors*	0.3
Canada Goose	*Branta canadensis*	3.5
Canvasback	*Aythya valisineria*	0.3
Cinnamon Teal	*Anas cyanoptera*	0.1
Common Snipe	*Gallinago gallinago*	8.6
Great Blue Heron	*Ardea herodias*	0.1
Green-winged Teal	*Anas crecca*	0.3
Killdeer	*Charadrius vociferus*	1.1
Loggerhead Shrike	*Lanius ludovicianus*	0.1
Mallard	*Anas platyrhynchos*	3.3
Mountain Bluebird	*Sialia currucoides*	2.3
Mourning Dove	*Zenaida macroura*	0.5
Red-tailed Hawk	*Buteo jamaicensis*	0.7
Red-winged blackbird	*Agelaius phoeniceus*	49.1
Spotted Sandpiper	*Actitis macularia*	0.1
Virginia Rail	*Rallus limicola*	0.8
Western Meadowlark	*Sturnella neglecta*	26.0
Willet	*Catoptrophorus semipalmatus*	0.1
Raccoon	*Procyon lotor*	0.3

DISCUSSION

In the past, Open Space leased this land for grazing by cattle (Janet George, pers. comm.). The cattle had degraded the vegetative story so that the marsh was undesirable for species to

inhabit. Today, without cattle grazing, the marsh is beginning to recover and species are beginning to move back in. Now, once again Open Space is considering grazing cattle on this land (Janet George, pers. comm.). This is not recommended, because the cattle grazing will concentrate in the riparian areas and the habitat will again be degraded to an undesirable condition. Dr. Ryder (pers. comm.) commented that if the vegetation were allowed to grow, it would provide good nesting cover in the future.

Other recommendations suggested by Dr. Ryder, were made when he visited the area. One of these was level ditching. This would create more edge in the area. Others were; creating shallow dikes for flooding, providing an island in the pond to provide nest protection from predators, and rotenone the pond to remove carp (if present) and allow the aquatic vegetation to grow, thus attracting more species such as coots (*Fulica americana*) to the area.

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