THE UPLAND SANDPIPER IN VERMONT, 1998-1999 - A DECLINING SPECIES

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INTRODUCTION:

The upland sandpiper (Bartramia longicauda) moved into eastern North America as the land was cleared for agriculture, reaching a peak population in the late 1800's as the growing of hay and pasturing of animals provided the kind of habitat prefered by this species in its native midwestern grassland. At the turn of the century populations started a decline in the east that is still underway, coinciding with the gradual intensification of land use from pasture and fallow land to cropland, woodland and residential and commercial development (Carter 1989, Rimmer and Fichtel 1989).

Today the distribution of eastern breeding populations of the upland sandpiper is spotty. In all the New England States it is classified as Endangered, Threatened or Species of Special Concern and is generally confined to airports and in Maine to blueberry barrens as well. Up until the early 1990's the Memphremagog area and Champlain Valley of Vermont contained large enough areas of pasture and hayfield to provide adequate grassland habitat to sustain a viable breeding population of the species. Nesting pairs and small colonies (3-7 birds) were found sparsely but widely distributed over this artificial but acceptable habitat. Monitoring of this species was undertaken yearly from 1988 to 1992 with the conclusion that Vermont was supporting an apparently stable population of 80-100 breeding pairs (Peterson 1993). No monitoring was done during the period 1993 to 1997.

The field project in 1998 was designed to provide a status update for the upland sandpiper in Vermont with no expectation of finding a substantial change from the 1992 survey. It was reasonably assumed that changes in land use over the 6-year hiatus would have caused some relocation of nesting areas although individual reports received during this period indicated that many of the traditional sites continued to be used (Records of Vt. Birds 1993-1997). The survey done in 1999 was intended to validate the results of 1998 by duplicating the earlier census in every respect as closely as possible.

METHODS:

Surveys were conducted in 28 towns in the Champlain Valley and Memphremagog area and two regional airports in Berlin and Coventry. Most surveyed towns had prior reports of upland sandpiper. Marginal towns with little habitat where no birds were found on the 1991 census were not included on the 1998 and 1999 list. The roadside survey method was selected as being least obtrusive to landowners, within the time constraints of our volunteers, and as effective as any other method (Peterson, Fichtel and Rimmer 1990). Surveyors were provided with a tape of upland sandpiper "wolf whistle" and "chatter"

calls, a map of their assigned town or area showing the locations of any previous sandpiper sightings, and data sheets on which to record the details of all encounters with the species. Instructions were to drive all roads within the area, stopping at areas of suitable habitat (i.e. pasture or hayfield) and playing the taped calls to try to elicit a response, scanning the area carefully with binoculars to locate any birds on the ground. In general each volunteer was assigned one town to cover, but some of the larger towns with substantial habitat were divided in two and the parts assigned to different surveyors. In a few cases one volunteer was assigned to cover two of the smaller towns.

The surveys in both 1998 and 1999 were conducted from 20 to 30 June. The late June period had been found to be preferable to one in early June because haying was not in progress later in the month and in general the second growth grass was about 4-6" high, a good height for feeding and brood-rearing, and some young birds could be observed, giving an indication of nesting success.

Most of the volunteers selected for these surveys were experienced biologists or birders with a strong commitment to this project and to the health of the upland sandpiper population in Vermont. Many of them had participated in the earlier surveys and almost all were able to repeat their 1998 routes again in 1999. Some appeared to have made a special effort in 1999.

For each upland sandpiper sighting surveyors filled out and returned a data sheet indicating date, time, location, number and age of birds, bird behavior, habitat, land uses and ownership if known. If no birds were located on the route one data sheet was returned indicating that.

RESULTS:

In the 1998 survey of 30 towns including the two airports, 50 upland sandpipers were located at 22 sites in 11 towns. The 1999 survey of the same towns found only 28 uplands at 15 sites in 10 towns. These figures can be compared to the 1991 results of 126 sandpipers at 47 sites in the same exact geographical area, showing a decline by 1998 of 60.3% and by 1999 of 77.8%. (Table 1)

Most of the larger colonies had either disappeared since 1991 or been greatly reduced in size, and this had happened in all parts of the Champlain Valley. Only Ferrisburgh appeared to have retained a good percentage of its former population. Land use changes at specific sites were determining factors in some cases. The small colony near Taft's Corners in Williston finally gave up its horse farm site to encroaching commercial and residential development. In other instances birds appeared to have deserted sites which still looked the same as before. Surveyors reported that large areas of habitat suitable for upland sandpiper use still remained even though certain traditional sites had been affected by an observable shift in land use from pasture to corn. Sandpipers were found at the

state airports in Coventry and Berlin and one bird was located in Newport in 1998. Otherwise all uplands sighted were in the Champlain Valley.

DISCUSSION AND RECOMMENDATIONS:

In looking at the results of 1998 and 1999 one is immediately struck by the drastic decline in numbers over a short period of time of a species already listed as Threatened. To try to explain these results is difficult. There were no alarming reports to indicate that the North American population of upland sandpipers as a whole had suffered a crash either in migration or on its wintering territories in South America. Yet Vermont's Champlain Valley lost 78% of its upland sandpipers in 7 years and apparently nobody saw it coming.

Censusing of upland sandpipers in Vermont was conducted yearly from 1988 to 1992, then again in 1998 and 1999. Although not always identical in scope these surveys were generally similar in dates and techniques and employed many of the same volunteers from year to year. Each year added to the accumulated knowledge about a site or a town so that a volunteer surveyor would know in advance the details of previous site usage by upland sandpipers, and given the strong site fidelity of the species (Carter 1989), have a substantial advantage over the 1988 and 1989 surveyors who started from scratch. This accumulated site knowledge was doubtless partially responsible for the increase in individual birds detected each year from 1989 to 1992. Based on survey findings from 1988 to 1992 we concluded that the upland sandpiper population in the Champlain Valley was stable and that there was enough suitable agricultural habitat to maintain the population as long as existing agricultural land uses and practices prevailed (Peterson 1993).

Vermont's Champlain Valley is an area unique in New England, having evolved as an extensive contiguous agricultural grassland made up of large areas of pasture, fields of legumes, alfalfa, planted grasses cut for hay, corn and other row crops, isolated woodlots, and some fallow land and grasses on poor soil. A typical family dairy farm was a mosaic of these use types with pasture one of the major components. Upland sandpipers were attracted to the pasture and grass in fallow or poor soil areas.

Some changes took place in the Champlain Valley during the 1990's which were not immediately apparent. The amount of agricultural land remained the same and the number of dairy animals remained the same, but there was substantial consolidation of ownership, fewer but larger farms, each with more cows, and with this change over time came an intensification of land use.

Taking advantage of new technologies and milking equipment a farm could support many more animals and produce more milk if the cows were kept inside the barn and the entire farm acreage ploughed and planted to corn for feed. Gone from this picture was any habitat for upland sandpipers. A good example of such land use conversion was a large farm on Peet Road in Cornwall which for many years supported at least two breeding

pairs of upland sandpipers on light to moderately grazed pasture, late cut hayfield and a small private air strip. A small dairying operation was modestly successful but was forced to cease operation in 1994 for economic reasons. The landowner leased the entire farm to another Vermont farm family that increased the size of the herd and put all the land into corn. As of this writing the conversion of this farm is still going on with the proposed addition of more cows and the planting of more corn on land leased from neighboring landowners. There were no upland sandpipers on this site in 1998 or 1999.

We cannot point to this farm as being typical of Champlain Valley dairy farms, but doubtless there are others like it, perhaps enough to make a difference to a population already in trouble.. Obviously many farmers still pasture all or some of their dairy cattle, but the general trend is toward more intensive use of the agricultural land. The USDA's 1997 Census of Agriculture documents this change for Vermont between 1987 and 1997. (Table 2). Driving around the valley in the summer of 1999 I was impressed with the extent of the planted corn. Commercial and residential encroachment still did not seem to be a problem.

Not all lost upland sandpiper sites are as obvious as the Cornwall example. A large farm on Basin Harbor Road in Bridport supported a colony of upland sandpipers until 1996, then only 1 pair in 1997 and none in 1998 and 1999. During that time there was no apparent change in land use or agricultural practices, and there seemed to be plenty of suitable habitat available (pers. obs.)

The 1998 survey results were alarming but were met with a certain amount of cautious disbelief. The 1999 census was undertaken to either validate or mitigate the 1998 findings, but the 1999 results showed another unexpected big drop in numbers, indicating that the decline was not only real but also sharp and continuing. If we apply the same 78% decline to the estimated number of breeding pairs of upland sandpipers we arrive at 20-30, a conservative figure given a number of non-breeding adults and the probability that perhaps 30% of the birds escaped detection in spite of the knowledge we now have of traditional nesting sites and the amount of effort put in by our experienced surveyors.

It seems doubtful that a population this small and dispersed would be able to stabilize at this low level given the semi-colonial nature of the species, but in other New England states uplands have sustained sizeable colonies in little used sections of airports where land use management maintains suitable habitat. A current project focused on Vermont's state airports is attempting to similarly manage habitat in Berlin and Coventry. At this point the upland sandpiper should be given a state listing of Endangered and the remaining pairs afforded as much protection as possible in agricultural areas. A management plan could emphasize maintaining suitable habitat in areas still being used and setting aside state land for appropriate management for this species.

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TABLE 1

UPLAND SANDPIPER SURVEY RESULTS

Town	1991		1998		1999	
	Birds	Sites	Birds	Sites	Birds	Sites
Newport	4	1	1	1	0	0
Coventry	3	1	2	1	0	0
Berlin	3	1	4	1	3	1
Alburg	14	4	8	3	2	1
St. Albans	3	1	0	0	0	0
Fairfield	6	1	6	1	0	0
Georgia	1	1	0	0	2	1
Milton	0	0	0	0	0	0
Grand Isle	0	0	0	0	0	0
Shelburne	0	0	0	0	0	0
South Hero	0	0	0	0	0	0
Isle La Motte	0	0	0	0	0	0
North Hero	0	0	0	0	0	0
Williston	7	3	0	0	0	0
Charlotte	7	3	4	1	3	1
Ferrisburgh	15	9	9	5	9	6
New Haven	8	3	1	1	1	1
Waltham	0	0	0	0	0	0
Weybridge	6	1	8	5	0	0
Panton	0	0	1	1	0	0
Addison	2	2	0	0	1	1
Bridport	5	3	0	0	0	0
Cornwall	15	3	0	0	0	0
Salisbury	8	2	0	0	0	0
Shoreham	5	2	0	0	2	1
Whiting	0	0	0	0	0	0
Orwell	6	2	0	0	2	1
Sudbury	3	1	0	0	0	0
Benson	2	1	5	3	0	0
West Haven	3	2	0	0	3	1
Totals	126	47	50	22	28	15

100

150

TABLE 2

AGRICULTURAL LAND USE IN VERMONT

	1987	1992	1997
Pasture in acres	188,468	157,950	131,686
Silage corn in acres	na	86,024	95,713
Harvested cropland, acres	488,253	477,020	465,489
Number of farms	na	1,419	1,168

Numbers from the United States Department of Agriculture, 1997 Census of Agriculture
For Vermont as a whole.