

Memo

To: Harold J. O'Connor, Director, Patuxent Wildlife Research Center
Through: H. Randolph Perry, Chief, Endangered Species Research Branch
From: Cameron B. Kepler, Leader, Kirtland's Warbler Research Project
Date: 1 March 1989

Subject: Past and Future Kirtland's Warbler Research: cuts (2), deferrals (2), data (3), extensions (4-5-6), redirections (6-7), and obligations (8-9).

1. Two study plans under 964.04 are scheduled for completion at the end of FY 90.
2. One plan (964.04.02) has been deferred for two years, while the second has suffered budget reduction (TABLE 1). In total, our project has been forced to give up \$108,070 (plus one new vehicle) in FY 88 and FY 89. Expected shortfalls of \$26,580 (our entire budget) are predicted for FY 90.

TABLE 1. LOSS OF FUNDS FOR KIRTLAND'S WARBLER RESEARCH, FY '88-'90.

		FY '88	FY '89	FY '90
Approved Budget:	964.04.01	\$33,560	\$36,480	\$14,780
	964.04.02	56,590	37,440	11,800
	Total	\$90,150	\$73,920	\$26,580
Actual Budget:	964.04.01	\$30,000	\$26,000	0?
	964.04.02	0	0	0?
	Total	\$30,000	\$26,000	0?
Shortfall (Total)		\$60,150	\$47,920	\$26,580?

3. Intensive banding in Michigan (964.04.01) was begun in FY 87 to discover if Kirtland's Warblers were surviving over winter in numbers adequate to sustain or augment the breeding population. In 1988, the first year we could evaluate this program, we had a return rate of 46% for birds banded as hatching year birds (HY), and a 61% return rate for birds banded as adults (TABLE 2). The return rates for HY birds were five times those found for immature Kirtland's Warblers by Walkinshaw! This is the first hard data in 40 years of research that indicates that the factors limiting Kirtland's Warblers do not occur on migration or on the wintering grounds.

TABLE 2. 1987-1988 KIRTLAND'S WARBLER RECAPTURES

1986-87 Kirtland's Warblers	No. Banded	1987-1988 Recaptures	
		No.	%
AHY Males	26	18	62
AHY Females	17	10	59
AHY ? Sex	6	2	33
HY	50	23	46!
Total	99	53	54

- One year's data could be an artifact of an unseasonably good winter. At least three additional years of comparable information are needed to state unequivocally that the major stresses to the species do not lie outside the breeding grounds. This would culminate four decades of guessing about "what might be happening" in the Bahamas or on migration, and point directly to habitat management in Michigan as the major bottleneck for the species. This fact alone would add additional incentive to land-owning agencies in Michigan to effectively manage their land for the protection of the Kirtland's Warbler.
- At present, FY 90 is approved as a write-up year. We propose that FY 90 be a field year (this would require \$22,420 of additional funding, possibly obtained as matching funds from the Forest Service), and that FY 91 be primarily, but not exclusively, a write-up year. A limited netting effort (6 weeks) in Michigan in FY 91 is required to determine if birds returned that we missed in FY 90: this would provide complete coverage of 1990 for a quantitative evaluation of banding returns that year. The required budget is given in TABLE 3.

TABLE 3. PROPOSED KIRTLAND'S WARBLER BUDGET, FY 90-91, FOR SP964.04.01 AND REDIRECTED SP964.04.02.

	FY 90	FY 91
Temp. Salaries	\$ 5,000	\$ 3,000
Expenses	26,000	22,000
Res. Support	10,000	10,000
Travel	12,000	6,000

Total \$53,000 \$41,000

6. Our second study plan (964.04.02) suffered two serious blows in FY 87 and FY 88. One was financial (TABLE 1): no money was allocated,

and the research was deferred. The second was biological: we found that radio-tagged birds suffered significantly lower return rates in 1987 and 1988 (3 of 23 radio-tagged birds, 13%) than birds only banded (54% return, TABLE 2). These differences are significant at the .001 level (chi-squared = 12.32, df = 1). In order to get at the habitat question in Michigan, which now looms as the single most significant limiting factor for Kirtland's Warbler, we have utilized our banded male population to map territories on 1:6000 aerial photos obtained for the radio tracking work (964.04.02). By determining actual territorial configurations on aerial photos, we can learn exactly what major features of the available landscape are being used. We can digitize these maps at U.G.A and quantify the resulting vegetation features by territory in Jack Pines of various age and configuration. We request that we redirect SP964.04.02 to this end and conduct this mapping in FY 89 and FY 90. Projected budget estimates for the combined study plans (964.04.01 and 964.04.02) are given in TABLE 3.

7. We propose that FY 92 be a transition year phasing in new studies while completing Kirtland's Warbler data analyses. The U.S. Forest Service research team, directed by Dr. John Probst, would search for Kirtland's Warblers in Michigan in 1992 and provide us with survival information pertinent to the 1991 season. This would provide us with four years of survival data for HY birds. Although this is not optimal, it would be adequate to state, finally, whether the Bahamas, and migration, hold serious problems for the species.
8. Although this may appear as a request for extra funding, it is not, for if funded the total expenses for Kirtland's Warbler research would still be \$85,612 less than originally budgeted for this project! We may be able to achieve some of these budgeting goals by requesting matching funds for our work at Mack Lake from the Huron-Manistee National Forest [contact Mr. Robert Radke, USFS, Clark Bldg., 633 Wisconsin Ave., Milwaukee, WI 53203. I understand that they will match dollar for dollar any funds expended for research on approved projects on Forest Service lands, and our research would apply. We have a strong possibility of attaining 50% of these budget figures from the Forest Service.
9. In summary, this is not a request for extra funds or time. It is an attempt to continue a program beset by serious budget problems in the past. The most compelling reason to continue is that we are just now collecting the data that will tell us, once and for all,

where in their life cycle the Kirtland's Warblers are most stressed. Additionally, we have strong support from, and commitments to, the Forest Service, Michigan Department of Natural Resources, and Fish and Wildlife Service - Reg. 3, to continue this research. The Kirtland's Warbler recovery team is strongly behind our efforts. Our study is closely intertwined with Forest Service research, and with the Ph.D. program of Carol Bocetti, of the Ohio State University Cooperative Unit. We owe it to these agencies, as well as to ourselves, to ensure that all the effort up to this time has not been in vain and to demonstrate our capabilities to meet our obligations in times of fiscal constraint.

From: Cameron E. Kaplan, Leader, Kirtland's Warbler Research Project

Date: 1 March 1989

Subject: Past and Future Kirtland's Warbler Research - items (1) - (10) (1) - (2), data (3), extensions (4-5), redirections (6-7), and obligations (8-9)

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The study plan under #64-04-01 was scheduled for completion by the end of FY 88. However, the plan (#64-04-01) has been deferred for two years because the assigned base fiscal budget reduction (FABR 1) in fiscal year 1988 has forced us to give up \$104,000 (plus one year worth in FY 88 and FY 89. Expected shortfalls of \$47,420 (four-year budget) are predicted for FY 90.

		FY 88	FY 89	FY 90
Approved Budget	#64-04-01	\$13,500	\$36,500	\$14,780
	#64-04-02	\$6,580	37,400	11,800
	Total	\$20,080	\$73,900	\$26,580
Actual Budget	#64-04-01	\$30,000	\$26,000	0
	#64-04-02	0	0	0
	Total	\$30,000	\$26,000	0
Shortfall (Total)		\$9,920	\$47,920	\$26,580

3. Intensive banding in Michigan (1984-1987) was begun in FY 87 to discover if Kirtland's Warblers were surviving over winter in numbers adequate to sustain or augment the breeding population. In 1988, the first year we could evaluate this program, we had a return rate of 46% for birds banded as hatchling year birds (0Y), and a 6% return rate for birds banded as adults (1Y+). The return rates for 4Y birds were five times those found for immature Kirtland's Warblers by Williamson et al. in the first year class in 60 years of research (1928) indicating that the current banding Kirtland's Warblers do not occur as migration or on the wintering grounds.