



Reply to 2670 Endangered Species

Date March 13, 1985

Subject Kirtland's Warbler Critical Habitat - Oak Control

To District Rangers - Mio, Tawas, and Harrisville

Currently, over 2,000 acres of recently cut and/or regenerated KW habitat have excessive oak stocking. The current thinking of KW habitat managers is that oak stocking of 25-50% can cause a significant reduction in KW carrying capacity and at levels greater than 50%, virtually deter KW's from selecting that habitat for nesting. Originally, when adopting the KW Habitat Management Plan, we anticipated the ability to combat this problem through the use of well-timed (summer) prescribed burns. However, this has not been totally effective. Also significant was the Mack Lake Fire and subsequent changes in management direction which have resulted in a substantial narrowing of our "burning window." The Regional Office recognized the problem and was able to get FY 85 funding for oak control measures.

As you recall from earlier conversations, this project was originally intended to incorporate the use of herbicide(s). For various reasons, the three districts expressed reservations about this approach, at least for FY 85, and agreed upon mechanical treatment (hand held tools) as the preferred technique. This method of control, to be most effective, should be carried out shortly after leaf flush and before the period of carbohydrate deposition (root reserves) - approximately from June 15 to July 15 or August 1 at the latest.

Available funding for this project totals \$24,000. Judging from previous costs for this type of work (Tawas R.D.), contracting costs are anticipated to be approximately \$20 per acre. Accordingly, we should be able to treat approximately 1,100 acres (cost \$22,000), leaving \$2,000 for district contract administration (6 days/district @ \$100/day = \$1,800). We are planning to advertise one contract with three bid items - one for each district. Quite possibly the low bid(s) will be less than \$20/acre. This will allow us to negotiate the treatment of additional acres and/or provide additional administration funding.

Although we will be unable to contractually treat all areas in need of treatment with the funds available, it now appears likely we can also utilize Michigan Youth Corps (MYC) and Youth Conservation Corps (YCC) enrollees in this effort. We now have a tentative commitment of 10 to 20 MYC enrollees from the Iosco County Soil and Water Conservation District and the possibility of others in Alcona and Oscoda County. The number of acres and location of areas to be treated by these program enrollees should be determined after the contracted work has been finalized (contract awarded, etc.)

Selection of treatment areas was guided by oak stocking levels and height, planted vs. unplanted areas, age of plantation, potential quality of habitat (size, location, configuration, JP density), etc. The higher priority areas tentatively selected for contractual treatment are as listed below:



Harrisville Ranger District

C. 185 - St. 17	206 acres	Cut '82, Pile/Burn '83, Plant '84
C. 192 - St. 9	170 acres	Cut '78, Burn '79, Plant '80
St. 13	84 acres	Cut '81, Burn '83, Plant '84
C. 195 - St. 1	<u>245 acres</u>	Cut '76, Burn '77, Plant '81
	705 acres	

Tawas Ranger District

C. 5 - St. 2,3,4	60 acres	Cut '80, Scalp '83, Plant '85
C. 33 - St. 24	120 acres	Cut '78, Scalp '82, Plant '83
C. 80 - St. 1	80 acres	Cut '81, Scalp '82, Plant '84
C. 145 - St. 8	<u>45 acres</u>	Cut '83, Scalp '83, Plant '84
	305 acres	

Mio Ranger District

C. 80 - St. 2,3	60 acres	Cut '78, Burn '78, Plant '80
(part)		
C. 152 - St. 9,12	<u>30 acres</u>	Cut '78, Plant '81
(parts)		
	90 acres	

Other lower priority areas were also identified as needing treatment. If possible, these areas should be treated using manpower program personnel (MYC, YCC) and/or contractually if bids are less than \$20/acre (renegotiate with selected bidder). The additional second priority areas are itemized below:

Harrisville Ranger District

C. 42 - St. 2	50 acres	Cut '79, Pile/Burn '82, Plant '83
(part)		
C. 196 - St. 9	<u>229 acres</u>	Cut '78, Burn '79, Plant '80
	279 acres	

Tawas Ranger District

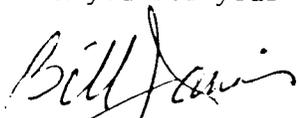
C. 1 - St. 12	96 acres	Cut '77, (needs RSR, site prep, and plant)
C. 3 - St. 6	32 acres	Cut '78, Scalp '80, Plant '81
St. 20	87 acres	Cut '78, Scalp '83, Plant '84
C. 33 - St. 5	150 acres	Cut '77, Burn '78, Scalp '81, Plant '82
C. 145 - St. 25	26 acres	Cut '84 (needs site prep and plant)
C. 31 - St. 2	<u>65 acres</u>	Cut '84 (needs site prep and plant)
	456 acres	

Mio Ranger District

C. 53 - St.	5	45 acres	Cut '83 (needs site prep and plant)
(Hsyle)			
C. 56 - St.	3	40 acres	Cut '82, Plant '84
(part)			
C. 128 - St.	1	<u>100 acres</u>	Cut '82 (needs site prep and plant)
(part)			
		185 acres	

I intend to prepare a contract request for the first (high priority) group of treatment areas. Please review both groups and give me your comments. I will also appreciate suggestions regarding other areas not listed above. Please send me your comments and a compartment map for each area listed above no later than March 22.

Thank you for your cooperation.



WILLIAM L. JARVIS
Wildlife Biologist, Huron Zone

cc: Irvine



Wes Jones

ROUTE 1, BOX 37
SHELL LAKE, WI 54871
715-468-2038

July 21, 1985

Regional Director
Fish and Wildlife Service
Federal Building, Fort Snelling
Twin Cities, MN 55111

Dear Harvey,

In reference to your letter of July 19 transmitting a proposal to initiate long-term research on Kirtland's warbler habitat resulting from the Mack Lake Burn, thank you for the opportunity to comment.

I'm sure I am only echoing the feeling of other Kirtland's Warbler Recovery team members when I stress that this wildfire has created an opportunity for learning more about Kirtland's warbler habitat than will ever be equalled in the future. This fire was tragic in the loss of life and extensive property damage that occurred, but it brought about some significant improvements in management attitudes, and in fire prevention and control practices. This short-term opportunity must not be wasted: it is heartening that the FWS and FS will be cooperators in the project.

I have reviewed the research proposal and find that it is a broad-based outline of future guidelines. A lack of detail makes it very difficult for me to make much specific comment beyond endorsement -- a problem which you appeared to have also in your transmittal when you concentrated on some details of warbler banding and the use of sonograms. I do have some input to offer in this regard.

I have no disagreement with your position on the low risk to Kirtland's warbler caused by color banding. I cannot, however, see a need for identifying individuals by multiple color banding: in fact, I can visualize that multiple color bands may create more confusion in identification under field conditions that may be less than ideal. In actuality, in this study the designation of an individual really is significant only in respect to the colony in which it is a cohort. I feel that more reliable and more voluminous observation reports can be obtained by the use of single anodized bands applied in the nesting range. Each nesting colony to be studied can be assigned a specific color. Time separation (i.e. 1985 and 1986 bandings) can also be gained simply by the assignment of a specific leg to be banded during the time period.

I am assuming a continuation of winter habitat searches for Kirtland's warbler. If so, a corollary of the above would be the application of one plain numbered band on a specific leg plus one colored band on the opposite leg -- a color specific to each of the wintering sites surveyed.

I have not had contact with Recovery Team members since the last meeting: nothing which would indicate to me the reason for the proposal naming "fledglings and immatures" for banding. One valid reason, however, would be the fact that earlier research has clearly established that colonies in new habitat are derived from this age group, and that the veteran breeders remain within their colony until death. Possibly the thought was to save a limited multiple-band color coding assignment for those birds more likely to yield valuable data. If my suggestion above is utilized, I can see no reason for not banding these incidentally-captured Kirtland's warbler in an identical manner.

It is unfortunate that the sonogram technique has not developed to a point of practical application: it is my impression that the data already collected could be most of the foundation required for summary and conclusion by an aggressive researcher. If there are manpower and funding limitations, I concur that this would be a low-priority task. I feel also that a matedness study is in the same category. Emphasis on other aspects of the proposal would appear to me to have a more favorable cost/benefit ratio under the conditions of this unique post-wildfire situation.

Again, I appreciate the chance to comment. I am not sending this to Committee members, principally because proper addresses are not at hand. Would you please distribute copies of this as appropriate, including also one to Kirtland's Warbler Team Leader Eichel.

Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Wes Jones". The signature is written in dark ink and is positioned below the typed name "Wes Jones".

*Bill - Your comments with
copy to me - send direct
to Ron Reardon
12/20/85*



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

IN REPLY REFER TO:
AF/SE

November 20, 1985

Mr. John Byelich, Leader
Kirtland's Warbler Recovery Team
Box 306
Mio, Michigan 48647

Dear Mr. Byelich:

The attached letter from Mark Bergland has sent me back into the Kirtland's warbler literature to get a better understanding of the issue it raises. While studying the literature (and I certainly haven't gone through all of it in detail) a few more issues seemed to pop up. I'd like to run them by you to see if they seem like unresolved issues only to a KW novice like myself, or if they really are questions that need to be answered.

The conventional wisdom seems to be that since cowbird control has been initiated Kirtland's warblers are reproducing at rates sufficiently high so that the population should be expanding. Since the population is not increasing, it is believed that factors operating during postfledging, migration, or on the wintering grounds are removing 63% of the late-summer population (Walkinshaw 1983). Therefore, research efforts are being focused on identifying the population limiting factors operating on the wintering grounds. *and...*

The literature suggests that a number of other hypotheses are possible, among them:

1. Spring dispersal is extensive. - More than 37% of the birds are returning, but most yearling birds are dispersing some distance from their natal areas. These "pioneers" are only very rarely noticed due to the paucity of surveys in the more marginal jack pine habitats away from the traditional breeding areas. Theoretically, a species which has evolved to exploit a relatively short-lived habitat such as five to twenty year old jack pine would be expected to evolve a fairly strong tendency for the dispersal of yearling birds. This behavior would provide them with the ability to locate newly developed prime habitat, rather than attempting to nest in declining habitat that may already be saturated by older males and/or pairs. If the number of these pioneering yearlings is small, the probability of finding a mate may be too small for colonies to be established, except in rare instances. Colonies that are successfully initiated by these birds are almost certainly doomed to failure because of uncontrolled cowbird parasitism at these sites.

2. Pairing success is limiting recruitment. - Pairing success may be lower than the 100% of the singing males that is apparently assumed when calculating the number of Kirtland's warblers available for fall migration. Probst believes fewer than 60% of the singing males in marginal (young or poorly stocked) habitats are actually mated, and that overall only about 85% of the singing males are paired. (However, Probst recognizes that polygynous matings and double broods would increase fledgling production, but the extent of this effect is unknown. Walkinshaw (1983) pointed out that the return rate for birds banded as nestlings from second broods is much lower than that for birds from first broods.)

3. Nest destruction/abandonment is limiting recruitment. - Nest success is lower than the generally accepted figures of 2.71 to 3.72 fledglings per nest or per pair. Walkinshaw (1983, page 119) uses 3.01 per pair; Walkinshaw and Faust, (1974) use 2.71 per nest; Orr (1974) uses 3.19 per nest and 3.72 per nesting pair. These figures generally come from studies of nests discovered during the nestling period and do not consider any nests destroyed or deserted earlier in the nesting cycle. Therefore, the studies are biased by studying only the more successful nests. (Bergland (in Walkinshaw 1983) calculates only a 0.473 probability that a nest survives the incubation period and a 0.974 probability of daily nest survival during the nestling period. No estimates are given for nest survival during the nest building and egg laying periods.) As subsequent production from pairs which have lost or abandoned nests is unknown, it is probable that the generally accepted fledgling production figures cannot be applied to all pairs, as is commonly done.

If one or more of these hypotheses is true, it means that the number of fall migrants has been overestimated, and/or migration and wintering losses are not as significant as currently believed, with the result that our research efforts may need redirection.

I realize that some or all of these questions may already have been debated at past recovery team meetings, but as a newcomer, I have to ask if we really have enough solid data to dismiss these hypotheses. If not, in light of Faanes' impression that coppice-like habitats are not limiting warbler numbers on the wintering grounds (factors operating during the post-fledging and migration periods have yet to be extensively studied) we should be considering pushing for research in these areas:

1. Extent of yearling dispersal - More intensive and extensive surveys of jack pine in Minnesota, Wisconsin, Ontario, and other Michigan locations are needed. Followup with cowbird traps if a "colony" is located.
2. Investigate the extent of unpaired males and polygynous males. - Possibly this could be incorporated into the Mack Lake Burn Area study proposal.

3. Investigate the extent and causes of nest destruction and nest desertion, and the frequency of subsequent successful renesting. - A detailed study of the effects of predators, disturbance, poor habitat, and renesting success could all be part of the Mack Lake effort, especially if the birds are individually color banded.

I'm very interested in hearing your views, and those of other team members, on these issues. However, I don't want to force you into a lengthy discussion of hypotheses which may have been dismissed years ago. So, if this is the case, just give me the citation to the data, and I'll increase my knowledge of the KW literature without unduly burdening you and the team.

Thanks for your assistance.

Sincerely yours,



Ron Reitsnider

Attachment

UNIVERSITY OF WISCONSIN-RIVER FALLS



DEPARTMENT OF BIOLOGY
715/425-3362/3591

May 17, 1985

Robert Jantzen, Director
U.S. Fish and Wildlife Service
Department of the Interior
18th and C Streets NW
Washington, D.C. 20240

Dear Dr. Jantzen,

Several years ago I was hired by the Michigan Department of Natural Resources to analyze seven years worth of data collected on the nesting success of Kirtland's warbler. In 1983 the results of this analysis were published (Ch. 14 in Walkinshaw, L. H., Kirtland's Warbler: the life history of an endangered species, Cranbrook Institute of Science). My analysis showed that the probability that a Kirtland's Warbler egg will give rise to a nestling that successfully fledges is only 0.33.

This information was presented to the Kirtland's Warbler Recovery Team in 1978, but it apparently has had no impact in their planning for the recovery of this species. Instead, they have apparently decided upon a policy of complete protection of the species from any kind of habitat disturbance other than the removal of Cowbirds. In the meantime, the Warbler population has remained at a dangerously low level.

I am writing to urge in the strongest possible terms that research be initiated as to the exact cause of egg and nestling mortality of this species before it is too late to take action. Such research does not necessarily entail the physical disturbance of nesting birds during the breeding season. Surrogate species of small ground-nesting passerines in the area could be monitored to see the effects of such potential nest predators as Thirteen-lined Ground Squirrels, Red Squirrels, Blue Jays, and Common Crows. If such research shows that these or other species are major predators, they could be selectively removed from the area before the breeding season begins with minimal disturbance to Kirtland's Warblers.

RIVER FALLS, WISCONSIN 54022

Robert Jantzen, Director
May 17, 1985
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Results of my analysis agree closely with similar analyses published by Harold Mayfield in 1960 (Ch. 15 in *The Kirtland's Warbler*, Cranbrook Institute of Science). It is indeed unfortunate that the Recovery Team has not investigated such an obviously severe source of mortality for a critically endangered species.

You may hear the argument that if certain predators are removed from the nesting grounds, others will take their place. Such assertions have no basis in fact, since the Recovery Team has not allowed the kind of research necessary to justify such statements. I am no advocate of blanket predator control, but when a species is on the brink of extinction it makes no sense to use "compensatory mortality" arguments to lobby against selective predator control in the vicinity of nesting colonies. This is especially true when the prey is critically endangered and the predator(s) are extremely common, as is the case here.

I would greatly appreciate any impetus that you can give to raising this issue before the Recovery Team. Thank you very much for your consideration of this request.

Sincerely,

Mark Berglund

Mark Berglund, Ph.D.
Associate Professor of Biology

ACTIONS RELATIVE TO THE RECOMMENDATIONS
OF THE
1985 GENERAL MANAGEMENT REVIEW OF THE HURON-MANISTEE NATIONAL FORESTS

D. Kirtland's Warbler Management

1. Establish Task Committee to explore options of accelerating basic research on KW habitat.

There has been a research committee of the Kirtland's Warbler Recovery Team (KWRT) that was appointed several years ago, but had not been active prior to this GMR. Several members of this committee were present at the summer 1985 KWRT meeting and met with the head of research for the U.S. Fish and Wildlife Service (FWS) to discuss the status of the current winter studies in the Bahamas and the research needs and opportunities in the breeding range. Special emphasis was put on the opportunities that the Mack Lake burn offers. Our comments appeared to be well received and there was progress made in directing the use of Section 6 Funds (E & T Federal Aid to States for E & T programs) for some impending studies. There was also some promise that funding for long term studies would be built into FY 1988 FWS Budget. Members of the committee began working on initiating habitat studies on the Mack Lake burn and a study was begun in spring 1986.

This study was contracted between the MI DNR and the University of Michigan School of Natural Resources. Principal Investigator is Dr. Burton Barnes. The study is entitled: Analyses of Ecological Structure and Vegetation of the Mack Lake Burn. First plot measurements were made during the summer of 1986. An interim report on this study has been prepared by Dr. Barnes and his students.

FWS initiated winter habitat studies in the Bahamas during the winter of 1984-85 and continued them in the winter of 1985-86. The first winter was very dry in the Bahamas and the KW's appeared to be concentrated in what was described as "islands of vegetation" that provided suitable habitat. The second winter was wet with the vegetation being much more lush. Only a couple of birds could be located in the "islands of vegetation" where they had been the previous winter. The conclusion was that the more lush condition of the vegetation made much more suitable habitat and the KW's were quite dispersed. With all the problems connected with this study, the cost and no apparent problems of survival on this end of the life cycle of this species, it was decided to discontinue the winter habitat study and redirect the effort and funds to the breeding studies. A researcher from the Hawaii office is being transferred to Athens, GA and will head up this program. He will be meeting with the KWRT at their February, 1987 meeting and will discuss the direction of studies that will be initiated or expanded upon in the breeding range. There was some radio-tracking experiments and color banding to study movements of KW's in connection with habitat studies done during the late summer of 1986.

The North Central Forest Experiment Station has been conducting various studies related to the KW and its habitat for several years on the Huron-Manistee NF and adjacent areas. Over the past year or so the Principal Investigator, Dr. John Probst has been concentrating on writing papers that have stemmed from these studies. We have been getting confusing signals from NCFES as to where their activities in KW research will be going. There has been some indication that their part in KW research has been, for the most part, completed and they will not be carrying on any further major studies on this species. This may be open to further discussion at the upcoming KWRT meeting in February.

2. Sponsor a National workshop for participating agencies to determine research needs of land management agencies.

The responsibility for this was assigned to the Regional Forester with a completion date of 1/1/87. We have no knowledge of any plans for such a workshop.