

(419) 385-5365

October 15, 1991

Dr. Burton V. Barnes
School of Natural Resources
The University of Michigan
Dana Building, 430 E. University
Ann Arbor, MI 48109-1115

Dear Dr. Barnes:

Dear Burt:

The American Ornithologists' Union has embarked on a project to publish "Birds". This is just a note to thank you for your letter of October 3 and the packet of materials pertaining to the habitat of the Kirtland's Warbler.

In my presentation at the Kirtland symposium in Lansing on February 9-11, 1989, I concluded by saying that we need ideas more than we need trees. Your approach is such an idea. Ideas have been scarce in this field, I am sorry to say. I am reluctant to give references to material that may not be accessible to an interested reader. Therefore, I wonder if your work (with Xiaoming Lou)

Do not be surprised that you were not asked to make a presentation at the Kirtland's Warbler Population Viability Analysis meeting in Minneapolis, Jan. 7-9, 1992. It is my impression that the presentations will be made only by the meeting leaders, who will be offering their own method of weighing all the known factors bearing on the survival of the warbler. They have sent me a long questionnaire seeking a large number of facts about the bird to put into the machine.

These modeling approaches leave me cool, because I feel if the user leaves out one significant item in his array of facts (and in biology some facts are always missing) the results inevitably go awry. I think I will attend the meeting, but I am lukewarm. I believe the meeting is also a trial of the method, which may be useful with other endangered species.

I hope your interest in this subject continues. Sincerely,
If the warblers are there, the habitat is suitable. If the warblers are not there, the habitat is not suitable. Yet every field worker since the discovery of the first nest in 1903 has remarked that the Warblers obviously do not fill up the available habitat or they see something we do not see. Your notion of an unsuitable microclimate is an interesting new thought. It may help explain a circumstance that has intrigued us for a long time, namely, that the warbler utilizes only the shoarthmost extensive stands of jack pine in the vast range of that tree. The microclimate may be the key.

Years ago I recall walking through miles and miles of burned-over land in the Upper Peninsula of Michigan among small jack pines, and I was struck with the stunted and sparse ground cover, almost a boreal quality to my eyes. Of course, there were no Kirtland's Warblers there. Yet it was dry, sandy soil.

I am worried that you have something in print on this subject that I have not seen.

Sincerely,

(419) 385-5365

September 20, 1991

Dr. Burton V. Barnes
School of Natural Resources
The University of Michigan
Ann Arbor, MI 48109-1115

Dear Dr. Barnes:

The American Ornithologists' Union has embarked on a project to publish "Birds of North America" to be issued in fascicles as the portions are completed. I have consented to prepare the account on Kirtland's Warbler.

I would like to cite your work on the soil and climate of the habitat, but I am not sure about the best way to do it. I have your "Patterns of" December, 1989, but not your "Final report: Ecosystem structure and vegetation..." 1989. I am reluctant to give references to material that may not be accessible to an interested reader. Therefore, I wonder if your work (with Xiaoming Zou) has been published elsewhere in an accessible place, and if you have any suggestions on this matter.

Much of the other published material on "suitable habitat", including my own, seems to me superficial and simplistic. Your material is pertinent not only to my brief treatment mentioned above but also to a meeting sponsored by the U. S. Fish and Wildlife Service in Minneapolis on January 7-9, 1992. The focus of that meeting is a Population Viability Analysis intended to bring a statistical approach to the problems of survival in the Kirtland's Warbler. How much of the attention will be directed to habitat is a question. Perhaps you are invited. In any case, I would like to prepare myself.

For a long time I have been concerned about statements by field workers (ornithologists or game management people) about the amount of suitable habitat available to the warbler. I suspect these estimates represent a tautology. "If the warblers are there, the habitat is suitable. If the warblers are not there, the habitat is not suitable." Yet every field worker since the discovery of the first nest in 1903 has remarked that he saw hundreds of acres of land that looked similar but had no warblers. I have always said that the warblers obviously do not fill up the available habitat or they see something we do not see. Your notion of an unsuitable microclimate is an interesting new thought. It may help explain a circumstance that has intrigued me for a long time, namely, that the warbler utilizes only the shothernmost extensive stands of jack pine in the vast range of that tree. The microclimate may be the key.

Years ago I recall walking through miles and miles of burned-over land in the Upper Peninsula of Michigan among small jack pines, and I was struck with the stunted and sparse ground cover, almost a boreal quality to my eyes. Of course, there were no Kirtland's Warblers there. Yet it was dry, sandy soil.

I am worried that you have something in print on this subject that I have not seen. I get caught up with various administration duties ("institutional maintenance") besides heavy teaching. However, I want to continue this research on landscape ecosystems in relation to the entire 4- to 7-county area where the warblers are concentrated.

Sincerely,

October 3, 1991

Dr. Harold Mayfield
1162 Nannette Drive
Toledo, OH 43614

Dear Harold:

Thanks very much for your letter of September 20. I was really pleased to hear from you. I think your idea to include some of our ideas and work on landscape ecosystems concerning the Kirtland's warbler is excellent. I think the ecosystem approach, emphasizing the interrelatedness of physical environment and the biota, provides an important framework for studying the life history of the warbler, and of course, other plant and animal species. Our study just scratched the surface of what we need to know about the "habitat" for the warblers.

I am sending you materials. First, there is the abstract of my presentation at the 1989 Warbler Symposium. I don't have my copy here or the reference citation, but I have enclosed the abstract. You must have your copy of the proceedings of the conference. This provides a brief, but good, overview.

Item 2 is our final report of our research up through 1987. We provided a initial report, and then this final report dated February 1, 1989. This work provides the most detailed summary of the work, and the excellent work of Corinna Theiss who was the team leader in that critical year. She trained Xiaoming so that he was able to carry on in 1988. The temperature information is presented on p. 39-40. And there is information on the pattern of jack pine occurrence and the vegetation of different ecosystems.

Item 3 is the report I wrote based on our research in the 1988 field season. Based on the 1988 research, Xiaoming went ahead, a bit prematurely, and with my help wrote an article about the research which will be published in the journal, Landscape Ecology. This paper is in press, and I will send you a copy when I get the reprints. However, this may be another 6 months because I don't know when the paper is slated to be published. It summarizes some of the material in the reports, and primarily the 1988 data. I am working on a major publication about the entire research and approach in more detail. But it won't be out for a year or two -- my sabbatical leave and book revisions are higher priorities right now. I have been tracking each year the numbers of males in the low- and high-level areas and more birds are now colonizing in the low-elevation areas, as we expected.

I think the physical factors, especially physiography (which includes form of the land and parent material) which control the temperature is extremely important for the warbler. The same two-level landscape is found at Bald Hill, and birds have followed the same pattern of colonizing the higher (warmer) area first and the lower (colder) area later. Of course, the pines are taller on the higher area initially than on the lower area and this could be a function of both microclimate and soil conditions. Also, the physical factors affect the patchiness of jack pine which in turn probably affects warbler occupancy. So one needs to consider the entire suite of ecosystem factors.

I have been disappointed not to be able to continue the research we started, because I got saddled with various administration duties ("institutional maintenance!") besides heavy teaching. However, I want to continue this research on landscape ecosystems in relation to the entire 4- to 7-county area where the warblers are concentrated.

Dr. Harold Mayfield
October 3, 1991
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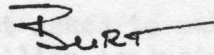
I am really pleased that you wish to mention our work. I think you are entirely right in your observations that warblers are not in certain areas of jack pine and dry soil for very good reasons. Thus, studying entire ecosystems -- not just plant biology or bird biology -- is, I think, very important in understanding of life histories and habitat relations.

I got an announcement of the January 1992 meeting, but not an invitation to make a presentation. I will be continuing my sabbatical in New Zealand in January so I won't be able to attend. I try to attend the winter meeting of the Recovery Team each year.

Our work follows the thinking and concepts of J. Stan Rowe, an emeritus Professor in Plant Ecology, formerly of the University of Saskatchewan. I'm also enclosing for your interest several of his publications.

Thanks again for your letter, great to hear from you! I'll send the paper along when I get copies.

Sincerely yours,



Burton V. Barnes
Stephen H. Spurr Professor
of Forest Ecology

BVB:cms
Enclosures