

*Biological  
Birds.  
Western Grebe*

Princeton University

DEPARTMENT OF BIOLOGY  
PRINCETON, NEW JERSEY 08540

5 December 1972

Mr. James Frates  
Refuge Manager  
Des Lacs National Wildlife Refuge  
Kenmare, North Dakota

Dear Jim,

Using the old adage "better late than never" I have enclosed two copies of my research proposal for last summer. I must confess that my desire to work on interesting things overwhelmed my desire to fill out forms for the bureaucracy, hence the delay. But I realize that for the system to work there must be forms and file cabinets to fill, so I hope this form will be a good record of what my plans would have been had I know the situation with the grebes before I arrived.

As I did no actual data gathering on Des Lacs, I have sent you no data summary. I did send a form to Wayne Weir at Lostwood for the study area I had over there. In general, my data came out nicely and I have completed the first copy of a manuscript. Unfortunately (for the manuscript at least) I will be going south next month (Venezuela and Puerto Rico) for at least six weeks, so it will be awhile until the final copy is ready.

I hope all is going well for you at Des Lacs. I imagine winter has set in and all the ducks are gone. I rather miss the prairies and potholes—we certainly don't have anything like them in New Jersey—and look forward to returning. That may be some time, though, as my research plans call for my spending the next two summers in the West Indies.

I wish you and your family, and also Don, the best of the Christmas season.

Sincerely,

*John Faaborg*  
John Faaborg

## WILDLIFE MANAGEMENT STUDY OUTLINE

Division of Wildlife Refuges, Region III

Project: Lostwood #\_\_\_

### 1. Title of Study:

An examination of ecological isolating mechanisms of temperate North American grebes in their zone of sympatry.

### 2. Objectives:

- a. To record habitat preferences exhibited by the five species of grebes of northwestern North Dakota.
- b. To observe behavioral traits such as aggression and territoriality that may affect or be affected by the habitats used.
- c. To observe foods and feeding methods of the grebes.
- d. To attempt to pool the above observations with known species characteristics (e.g. size and range) to determine the amount of competition between the species and (assuming interspecific competition) the mechanisms by which the species are ecologically isolated and thus able to coexist on the glaciated prairies.

### 3. Justification:

The five temperate North American species of grebe are sympatric only in a region of glaciated prairie extending from northwestern North Dakota through much of Alberta. To the north of this two species are found, while to the south the other three species are found. Birds are generally felt to be ecologically isolated by three methods: 1. Range 2. Habitat 3. Foods and feeding techniques (including size differences in bird groups feeding on similar foods (such as grebes)). The five species fall within two distinct size groups, but the foods and feeding techniques seem to be identical within the groups. As I will be studying the birds in their zone of sympatry, habitat usage is left as the primary isolating factor on the prairies (within each size group). A closer look at the expected habitat differences, along with the various behavioral adaptations adopted, might give further insight into bird speciation, community structure, niche dimensions, and mating system adaptations (two species are colonial, three are solitary nesters), all of which figure into ecological isolation.

4. Procedures:

- a. Literature Review: A constant review for relevant literature will be maintained.
- b. Data Collecting: Study area of several square miles in size will be selected and surveyed for grebes. Each pond with breeding grebes will be examined, classified (by the method of Stewart and Kantrud, 1971), and measured, and the number of grebes and their breeding status will be recorded. Qualitative behavioral observations will be made wherever grebes may be found.
- c. Data Analysis: Data will be compiled for all study areas and summarized for each species. Mean values for pond size, classification, and cover type will be computed, along with other more specific values such as area of pond per breeding pair.

5. Cooperators:

All field work will be done alone, but assistance in data analysis and manuscript production will be provided by the staff of the Department of Biology, Princeton University.

6. Responsibility:

Refuge Manager: Provide access to study areas on refuge lands.

7. Cost:

There will be no direct cost to the refuges.

8. Schedule:

Work will be done during the months of May, June, and July of 1972.

9. Reports:

Data Summary: Available by December 15, 1972.

Completion Report: Available by mid-summer, 1973.

Distribution: Copies of manuscripts will be provided to the Regional Offices, Regional Biologist, and Refuges involved. Data summaries will be provided only to the refuges.

10. Publication:

A finished manuscript for publication in an ornithological journal should be completed by mid-summer, 1973.

11. Submitted by:

John Faaborg, graduate student, Department of Biology,  
Princeton University, Princeton, New Jersey 08540

SUBMITTED BY: Signed

  
John R. Faaborg

APPROVED BY: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

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