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Banding Data Analysis Service (BDAS) Proposed Establishment Report

David F. DeSante

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POINT REYES BIRD OBSERVATORY 4990 Shoreline Highway, Stinson Beach, CA 94970 Telephone (415) 868-1221

Dear Bander:

This is a report on the proposed establishment of the Banding Data Analysis Service (BDAS), a centralized storage, retrieval and analysis service for banding data. This report will provide 1) a detailed description of the purpose, operation, estimated cost, and current status of the project, and 2) a questionnaire designed to determine the amount of interest in the project and the quantity of data with which we may be dealing.

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banders (and the major bird observatories as well) because

The idea of a centralized repository for banding data is certainly not new. The most recent impetus for the establishment of such a repository was initiated by Dr. Stephen Russell, who led a special session on "Increasing the usefulness of data gathered during banding" at the March 1980 meeting of the Western Bird Banding Association in Corpus Christi, Texas. The proposed Banding Data Analysis Service is an outgrowth of that meeting.

Ι. PURPOSE: We hope to establish a centralized repository and analysis service for North and Middle American bird banding data that is not collected by the Bird Banding Laboratory (BBL), an office of the U.S. Fish and Wildlife Service, or the Canadian Wildlife Service. The BBL, for example is primarily concerned with recoveries of banded birds and collects only the following basic data: band number, species, sex and age, date, and location of banding and recovery. Many individual banders and most major bird observatories customarily collect many additional data including recapture (repeat and return) information, detailed data on weight, fat, molt, reproductive condition, wing length, ectoparasites, etc., and data on netting and/or trapping effort and success. Most banders presently have no facilities or access to facilities to store, sort, index, retrieve, and analyze these data. As a result, these data often accumulate without analysis, presumably until the death of the bander, and then are usually destroyed. What a waste!

The proposed Banding Data Analysis Service (BDAS) could play an extremely important role in achieving a much better utilization of these data. Specifically, it could:

- store banding data (in computer retrievable form) that is not collected by the BBL or the Canadian Wildlife Service,
 - provide contributing banders with completed USF&WS banding schedules and with an analysis and annual summary of their banding operations including a sorted and indexed listing of their data and some minimal basic statistics, and
- retrieve banding data and provide it to banders and other researchers upon request.

\$990 Shoreline Highway, Stinson Beach, CA 94970 Telephone (415) 868--2-1

It is hoped that the BDAS will be of great benefit to the individual banders (and the major bird observatories as well) because it will provide them with a readily accessible means for obtaining an analysis and summary of their banding data. This will not only provide them with a good feel for the population dynamics of the species that they are handling, it will also provide them with much-needed help and encouragement to publish their data. It cannot be overemphasized that return and repeat information is often of greater interest than recoveries of foreign birds.

Furthermore, if the individual bander chooses not to work with his own data, they can then be made available to others for analysis. Indeed, many problems may only be solved by the utilization of data collected over large geographical areas or over long time periods. It is hoped that the BDAS will encourage cooperative projects and analyses among many individual banders and bird observatories. In addition, the BDAS will provide for the permanent storage of the wealth of banding data that is collected annually. In this respect it will provide a major archive for data that will increase in value for generations to come.

II. OPERATION: The Banding Data Analysis Service (BDAS) will:

A. Input and store banding data.

1. Banders will submit a copy of their proofed raw banding data, including all recaptures (repeats and returns) and recoveries. These data will be submitted in either computer-readable form (e.g. magnetic tapes, floppy disks or punched cards) or handwritten form on standardized banding data sheets (see example enclosed). Banders will also submit a copy of their daily banding effort data (net hours, trap hours, and timing) on another standardized data sheet. This latter information is extremely important for the proper analysis of banding data. Both of these data sheets and instructions for their use will be provided by the BDAS.

 a. The BDAS will acknowledge receipt of the raw data and enter (keypunch) handwritten data into the computer.

b. The BDAS will run these raw data through an update program which will update (or initially create) that bander's archival data file and reject erroneous or inconsistent records.

c. Any rejected records will be run through an error analysis program which will provide corrections and editing instructions (if possible) or questions for the bander to answer.

d. The BDAS will return the raw data to the bander with corrections or questions about any rejected records.

3. The bander will provide the BDAS with answers (if possible) to any such questions.

The BDAS will run the corrected records through the update pro-4. gram to correct that bander's archival data file. This file will then be duplicated and stored in two locations.

B. Provide banders with analyses and reports of their banding operations.

The BDAS will provide the banders with two copies of completed 1. USF&WS banding schedules for all raw data submitted (one to send to the BBL and one for the bander's own records). These schedules will be provided as soon as the raw banding data are processed.

2. The BDAS will provide banders with an annual report of their banding operations which will include:

a. A computer listing of all of that bander's data, sorted and indexed by species, band number, and date of capture (see enclosed sample).

b. A summary based on his analyzed banding data which will include: tape, floppy disks or punched cards) or as a compute

ut(researchers His total annual banding effort in terms of total net hours and/or trap hours.

(2) not be pro-His total annual banding success characterized for each species handled as well as for total birds by:

a) The number of birds newly banded during the year and this number per 100 net and/or trap hours.

> b) The number of different individuals handled during the year and this number per 100 net and/or trap hours (includes all newly banded birds, all returns, and all recoveries).

c) The total number of captures during the year and this number per 100 net and/or trap hours (includes all newly banded birds and all repeats, returns, and recoveries).

d) The age and sex breakdown (% of AHY-M, AHY-F, AHY-U, HY-M, HY-F, HY-U, etc.) based on a), b), and c) above.

e) The total number of species banded and the total number of species handled.

This summary may also be obtained based on monthly, ten-day and/or five-day periods (for any or all parts of the year). In addition, such special short-period reports could include, for each species, means, ranges, and standard deviations of weight, fat class, body molt class, and wing length. Short-period reports could be provided to the bander on a quarterly basis. An additional report that could be obtained is a daily matrix (in

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one-month blocks) of effort (in terms of number of nets and/or trap hours) and success, <u>for each species</u> and <u>for total birds</u> (in terms of number newly banded, number recaptured, and total number handled). This daily matrix could also be provided quarterly.

3. The BDAS will provide banders with an annual report of its total activities. This could include a listing of contributing banders, the total number of records submitted, and a monthly matrix (for all banders combined) of effort (in terms of total net and/or trap hours) and success, for each species and for total birds (in terms of number newly banded, number of different individuals handled, and total number captured). This report may be broken down into geographical regions if there is a sufficient number of contributing banders in any one region.

C. Provide researchers with banding data in response to their requests.

These data will be supplied either in computer-readable form (magnetic tape, floppy disks or punched cards) or as a computer listing. Requests may pertain to single species or to groups of species, but researchers must specify the exact information they require. For example, if one requests information of the weights of <u>Catharus</u> thrushes as a function of time of day, time of year, and geographical location, he will not be provided associated information concerning age, sex, fat content, or wing length unless he specifically requests it. The BDAS will also supply a minimal amount of basic statistics (means, ranges, and standard deviations) in response to specific requests for data.

Banders who are analyzing their own data may "flag" any of their records, or any part of any records, and so prevent these flagged data from being provided to other researchers. Flags will automatically expire after five years but will be renewable. Researchers publishing banding data provided by BDAS must agree to 1) acknowledge in print both the use of the data and the bander that provided the data and 2) provide the bander with a reprint or copy of the publication.

III. COST: Three costs need to be considered. The first is the cost of initial development of the BDAS project which will include both overall logistics establishment and software development (computer programming). We hope to obtain funding for this initial development from a combination of grants from the Federal Government and private foundations and from a consortium consisting of the major ornithological societies, banding associations, and bird observatories.

The second is the cost of operating the service, that is, the cost of entering the handwritten data (key punching), of updating and storing the banders' archival data files, of analyzing and summarizing the data, and of issuing the completed USF&WS schedules and the annual reports. We estimate that these costs will amount to about $10 \notin$ /record for data received in handwritten form and about $5 \notin$ /record for data received in already computer-readable form (magnetic tapes, floppy disks or punched cards). A record consists of all data

The BDAS will run the corrected records through the update pro-

taken from a single capture, that is, a single line of variable length but always including the first fifty (50) or so characters of the standardized banding data sheet. While we hope that funding from outside sources will become available to cover part of these operating costs, we feel that the banders themselves will probably have to bear the majority of the operating costs.

The third cost is the cost of retrieving data and of answering requests from researchers. We anticipate that these costs will be borne primarily or entirely by the researchers. The costs will be scaled according to the complexity of the request, the number of records searched, the number of records retrieved, and the type of output requested (computer-readable form or listing).

IV. LOGISTICS: On 27 May 1980 the Board of Directors of the Point Reyes Bird Observatory (PRBO) voted to sponsor the BDAS project. A special account has been established at PRBO, a tax-exempt, non-profit research and educational institution, to handle the finances of the BDAS. Any contribution sent to this account will be fully tax-deductible. A computer capable of handling the entire BDAS is now available and software development is currently underway. We hope the BDAS could begin to process data, on a trial basis, by the fall of 1981 and, on a regular basis, by the fall of 1982.

In closing, it should be noted that the proposed BDAS has the enthusiastic support and endorsement of the Bird Banding Laboratory. When it becomes operable, the BDAS will provide a service to both the bander and the BBL by facilitating the submission of more accurate and timely banding schedules.

We would appreciate it if you would carefully examine this entire proposal, jot down any questions and comments that you may have, complete the enclosed questionnaire, and return it by 1 September 1981 to:

> Dr. David F. DeSante Point Reyes Bird Observatory 4990 Shoreline Highway Stinson Beach, CA 94970

Thank you very much for your time, interest, and effort.

Sincerely yours,

George Rouhd

for David F. DeSante Landbird Biologist

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BANDING DATA ANALYSIS SERVICE (BDAS) QUESTIONNAIRE

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Professional affiliation (if any):	
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2. About what % of your current (1981) record	
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In what form?	
b. Handwritten on standardized banding data (See example enclosed.)	e. Using standardized ba
c. Handwritten on a different computer-comp (Please send an example of these data.	
d. In any other form? (Please send an example of these data.	
3. About how many banding records do you have	e from previous (prior to 1981)
years (include both new and recapture records))?
4. About what % of your old (prior to 1981) w	records are:
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In what form:	
b. Handwritten on standardized banding data (See example enclosed.)	a sheets?%

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	c.	Handwritten on a different computer-compatible data (Please send an example of these data. Thank you.)		*	
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