

# COOPERATIVE PARK STUDIES UNIT

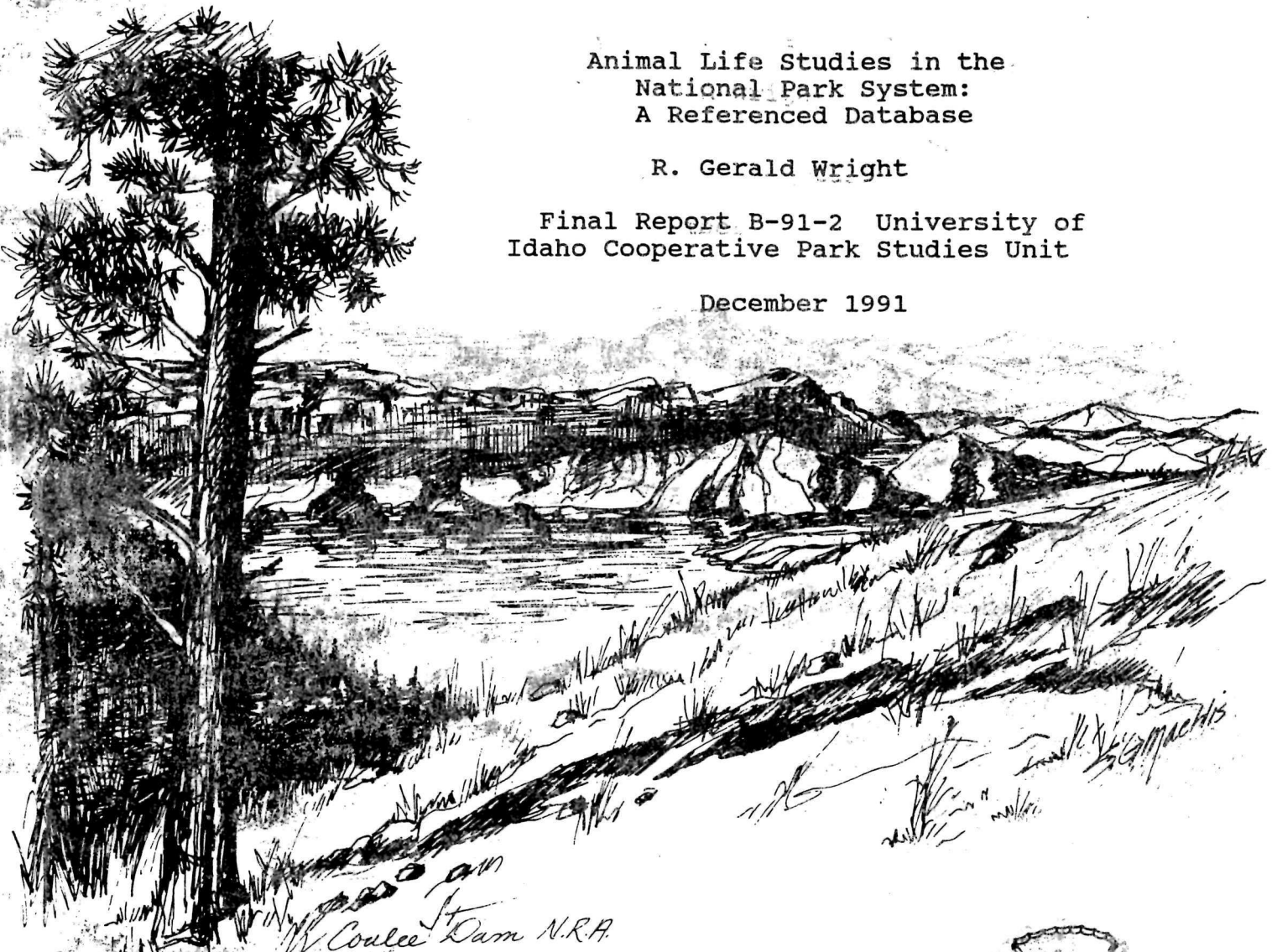
## UNIVERSITY OF IDAHO

Animal Life Studies in the  
National Park System:  
A Referenced Database

R. Gerald Wright

Final Report B-91-2 University of  
Idaho Cooperative Park Studies Unit

December 1991



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SUBAGREEMENT NO. 11

to

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A Synthesis of Activities and Issues Related to Wildlife

Management in the National Parks

University of Idaho CPSU and NPS Pacific Northwest Region

## Abstract

This report describes the accompanying resource database (contained on disk) which compiles almost all studies, surveys, and related investigations of animal life that have taken place in the national parks, monuments, historic sites, and other areas administered by the U. S. National Park Service. The database contains eight fields of information and uses dBASE III+. It contains almost 3,000 records, each representing a specific published account. The report also contains a copy of a set of the menu-driven computer search programs, called "Find" which are specifically designed to be used with the enclosed database. Searches for a specific component of interest in the database can also be done using the dBASE command language. The database has been compressed and decompression software is contained on the disk. The search programs have been compiled to create an executable file.

The report provides a brief description of the tasks undertaken to compile the database, describes the structure of the database, and provides a guide for installing it and the accompanying search programs on a personal computer.

Keywords: wildlife, management, ungulates database,  
national parks, computer, natural resources,

## Introduction

Throughout their history, national parks have played an extremely important role in protecting and managing wild animals. Between one-third and one-half of the rare and endangered species in the United States occur within units of the National Park System. Animal life is protected in parks, and animals are not pursued by hunters and are less likely to be harassed by environmental alterations. They are easier to see in parks than on other lands. The result is that national parks have become renowned for the opportunities they offer to view animals in a natural setting and observing animal life is a major reason people visit parks.

Because of these factors, national parks have also been an important place to study animal life. Early in the history of parks, much of this study was conducted independently of the National Park Service (NPS), primarily by academic researchers. However, because of growing needs to better understand park resources, the agency slowly developed its own research and resource management program. This program has been responsible for a much of the animal study that has taken place in recent years in the national parks. Over the years, more study has been devoted to animal life in parks than to any other resource category.

Through the years, animal studies have greatly increased in number and have come more sophisticated in scope and methodology. Because of this, a tendency exists among contemporary researchers to neglect earlier studies. This is particularly true with

respect to the current emphasis to develop new inventory and monitoring programs. It is a mistake to neglect earlier studies. Although many of the early works contained in this database sometimes consisted of little more than cursory surveys and personal observations, they were often conducted by discerning naturalists whose insights are invaluable and provide an important view of past conditions in the national parks.

The purpose of compiling this database is to provide current park wildlife managers and researchers access to the tremendous legacy of knowledge that already exists, often in obscure and, unfortunately, difficult to locate papers. The simple premise underlying this concept is that understanding the past will help provide the foundation for current and future long-term monitoring programs and synthesis efforts. This database, therefore, catalogs in a logical manner all wildlife studies that the author has identified which have taken place in national parks.

Almost 3,000 separate reports are documented in this database. It is however, certainly not complete. It was not possible to identify, locate, and therefore document all reports in park libraries and archival files. The database however, provides a convenient medium into which both omitted older studies and newly produced studies can be added, thus producing a dynamic system.

The database uses Ashton-Tate dBASE III+ as the manager. Specific information in the database can be found by using standard dBASE commands or by using the computer program written

specifically for such queries called "Find". The program consists of a set of "pop-up" menus which identify search parameters. A copy of the program is supplied with each copy of the park database. The program is compiled using Clipper software, and is thus in an executable form and does not require any specific software to use it.

This report describes the structure of the resource database. It lists the keywords used for the entries and describes the methods used to construct the database. Disks containing the database are available from the University of Idaho CPSU.

#### **Methods Used to Construct the Database**

Information for the database was gathered from several sources over a period of years. Initially, information was compiled by the author in the process of completing a book on National Park Service wildlife research and management (Wright 1992). This effort involved visiting most of the major national parks and monuments and compiling and interpreting the studies undertaken in them. Much of the information collected in the course of writing the book was recognized to be of value but could not all be contained in the book. These references were therefore subsequently used as the basis for a published annotated bibliography of wildlife study in the U. S. national parks (Wright 1990). Information for this volume was supplemented by the holdings of the NPS's Technical Information Center library in Denver, several regional office libraries, as well as computer searches of various databases conducted through the University of

Idaho Library. Since that volume was published, over 600 studies have been added to the list contained in that report.

The wildlife database contains eight fields of information described in Table 1.

Table 1. Structure of the Data Base

Field	Field Name	Field Type	Width	Description
1	STUD_NO	character	4	Sequential reference number
2	AUTHOR	character	67	Author(s) of the report
3	DATE	character	4	Date report was published
4	TITLE	character	65	Title of the report
5	TITLE2	character	67	Title of report (continued)
6	SOURCE	character	203	How report was published
7	PARKS	character	67	Parks involved (4-letter code)
8	KEYWORDS	character	67	Standard keywords (see list)

#### **Database Structure**

This database like most is designed to be dynamic. Users can supplement it with information that was inadvertently omitted or has been released subsequent to publication. To maintain consistency, the following conventions should be followed.

#### **Author, Date, Title, and Source Fields**

Entries in these fields follow the format standard scientific bibliographic citations. The title is divided into two separate fields to facilitate its display on the screen following a search.

## Parks

This field uses the standard four letter abbreviation appropriate for the park(s) in question. As many parks as applicable up to the length of the field can be entered.

## Keywords

A list of keywords used in the database is included in Table 2. Individuals who make substantial additions to the database with new keywords should up-date this list for their convenience. The program also searches the title field for keywords so it is not necessary to duplicate entries in the title in the keyword field.

Table 2. Keywords used in the NPS Wildlife Database

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archaeology, behavior, birds, carnivores, carrying capacity, census, checklist, competition, condition, control, computer database, damage, disease, ecology, endangered species, exotic, extinction, evolution, food habits, habitat condition, habitat evaluation, habitat use, harvest, history, fire, immobilization, impacts (from human influences), lagomorphs, laws, legislation, management, migrations, models, monitoring, mortality, movements, numbers, overuse (of vegetation), parasites, physiology, poaching, policy, population dynamics, population regulation, predation, radio tracking, range condition, reintroduction, reproduction, rodents, sampling, social activity, subsistence, surveys, taxonomy, translocation, ungulates, visitor interaction

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## Using the Database

The wildlife database is contained on one standard 3.5 inch disk. The disk has the dBASE III+ database file compressed using the software "PKZIP". This software compresses the dBASE files from a size of about 1.6 megabytes to .2 megabytes and is licensed to the NPS. A file "PKUNZIP.EXE" is contained on the disk which converts the compressed file to a standard dBASE file. The most efficient way to use the database is to follow the installation procedure listed below.

1. Establish a subdirectory (e.g., \wrefdb) on one drive of your harddisk using the 'make directory' command from DOS.

2. Copy all (four) files from the disk into this subdirectory.

3. Decompress the database. At the prompt enter:

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pkunzip wr.zip wref.dbf
```

This will create the original dBASE file (wref.dbf) of about 1.6 mb containing almost 3,000 records.

4. The database can now be used, e.g., queried, edited, and appended directly in this form using dBASE III+ commands.

5. Using the search program "Find.exe"

An automated menu-driven search program is also provided on the disk and along with the "author.ndx" associated with the program. This program called "Find" consists of a series of linked dBASE programs designed to easily search several fields in the database, and to obtain printed or on screen listings of those references meeting the search criteria. The program has

been compiled using the Clipper software resulting in an executable file. It will therefore run independently of any software, and will run much faster than it would run, for example in the dBASE environment. Bear in mind, that even with this compilation, the program will take time to scan through 3,000 records. To run the program, simply type the word find at the prompt followed by an "enter".

The program makes a duplicate of the database and does the searches on the copy, eliminating all records not meeting the search criteria. It is therefore possible to do a filtered search, i.e., searching first on a broad criteria to obtain a sub-set of records and then using that sub-set with narrower search parameters.

#### Literature Cited

- Wright, R. G. 1990. An index bibliography of wildlife research in the U. S. National Parks. Tech. Rep. NPS/NRUI/NRTR-90/05.
- Wright, R. G. 1992. Wildlife research and management in the National Parks. University of Illinois Press. 248 p.

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural and cultural resources. This includes fostering wise use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people. The department also promotes the goals of the Take Pride in America campaign by encouraging stewardship and citizen responsibility for the public lands and promoting citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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