

FINAL REPORT

Statewide Wildlife Research

State: FloridaStudy No. 7573Federal No. E-1 II-E-8Project Title: Florida Panther ResearchStudy Title: Florida Panther Technical BulletinPeriod Covered: 1 July 1990 - 30 June 1992Prepared by: David S. Maehr, Biological Administrator I

Abstract--The first draft of the Florida Panther Technical Bulletin was submitted to Tallahassee on 1 July 1992. This draft included 7 sections and 17 chapters: Introduction; The Florida Panther Past and Present; Hunting Florida Panthers With Dogs; Panther Sign Surveys; Getting Panthers Safely on the Ground; Home range and Habitat Use; Panther Social Ecology; Food Habits; Biomedical Considerations; Habitat Features and Florida Panthers; White-tailed Deer Health and Reproduction; Deer Movements, Habitat Use, and Mortality; Prey Management in South Florida; Florida Panther Reintroduction; Captive Breeding of Florida Panthers; Summary and Synthesis. Funding sources should be determined in order to maintain high printing quality and to ensure a reasonable cover price.

A tremendous amount of information has been collected during the last 20 years about the Florida panther (Felis concolor coryi), primarily the result of efforts initiated by the Florida Game and Fresh Water Fish Commission. Some of this work has found its way to journals in the form of refereed publications. Other efforts are represented by annual reports and other unpublished sources. In light of the vast management and conservation needs of this endangered species and the changing nature of research and management efforts in Florida, a peer reviewed and published documentation, of past and present work on Florida panther recovery is needed. It would be valuable to summarize the Commission's Florida panther research and recovery efforts and such documentation would be useful to others involved in future panther

recovery activities.

The Florida Game and Fresh Water Fish Commission currently has about 10 panther research documents in effect, ranging from deer studies to biomedical investigations. These projects have uncovered a wealth of information unparalleled by studies of other subspecies of Felis concolor and many other large cats. The Commission has a tradition of producing fine ecological bulletins documenting research findings for many years efforts. Examples include Harlow and Jones (1965, The white-tailed deer in Florida. Tech. Bull. No. 9. 240pp.), and Williams and Austin (1988, Studies of the wild turkey in Florida. Tech. Bull. No. 10. 232pp.). With possible imminent changes in panther research direction and emphasis, this represents a logical point for compiling current findings as one comprehensive scientific publication.

Methods

We convened meetings of all GFC research staff to develop a chapter outline and designate chapter authors. Subject coverage included all panther studies that are ongoing or have been completed. Manuscript style followed the Journal of Wildlife Management, but written in a manner to keep technical jargon to a minimum. Deadlines for first chapter drafts was 30 May, 1991.

Results

At a 1991 meeting in Gainesville, the editors (Maehr and Gruver) met with Dr. W. Metcalf of the University Presses of Florida to discuss practical aspects of completing the bulletin. There appeared to be considerable interest in this project, which should be a popular volume for professionals and lay people. The first draft of the completed bulletin was submitted to Tallahassee on 1 July 1992. Comments of 12 reviewers were incorporated into

this draft. These reviewers included B. Ackerman (Florida Dept. of Natural Resources), Scott Citino (National Zoo), D. Forrester (Univ. of Florida), D. Jessup (California Fish and Game Commission), R. Labisky (Univ. of Florida), K. Logan (Wildlife Research Institute), K. Murphy (Wildlife Research Institute), J. Snyder (Big Cypress National Preserve), M. Sunquist (Univ. of Florida), L. Sweanor (Wildlife Research Institute), R. Vanderhoof (Florida Game and Fresh Water Fish Commission), and L. Williams (Clemson Univ.). Their comments helped improve the quality of all reviewed chapters.

Discussion

It is not too early to consider funding sources for covering publication costs of the bulletin. While the Univ. Presses could cover all the costs, this would delay the eventual printing date and make each copy more expensive. The Florida Panther Trust Fund or private donations may be possible sources of funding.

The bulletin was organized into 7 sections containing from 1 to 5 chapters each. Several of these sections deserved introductory discussion to make clear the linkages among them or to provide some background that was not mentioned in the following chapters:

SECTION 3

FIELD METHODS

Our ability to understand the biology of the panther was in no small part dependent upon the skills and contributions of field workers. The rarity of this animal, coupled with the value of each individual to the population, demanded that the most be made of our time and that the utmost care be exercised at each capture. These needs brought together a diverse group of

researchers who have set new standards in the study of big cats. Roy McBride brought to our project 3 decades of experience with mountain lions and other wild felines and, arguably, the best cat hounds this side of Patagonia. The biologists who work with and track panthers year-round have developed well-honed field skills that are unparalleled in the East, and, through innovation unique to our project, raised the extraction of panthers from trees to a fine art. Finally, the inclusion of veterinarians to all panther-handling procedures has provided an element of safety and a level of individual panther management that is unique among studies of large carnivores. The following chapters illustrate the diversity of activities that are the cornerstones for panther research and management.

SECTION 4

PANTHERS IN THE SOUTHWEST FLORIDA LANDSCAPE

This section presented an organizational dilemma because any 1 aspect of the panther's natural history was inextricably linked to every other. For example, during 8 years of monitoring female panther #09, we observed the influence of soils on prey abundance, the influence of prey abundance on her denning behavior, the effects of a neighboring female's death on her activity center, the influence of I-75 on her home range shape, the effect of male panther mortality on her social interactions, and the interaction of all these factors on her health and productivity. To suggest that food habits are independent of biomedical status, or that home range dynamics are not related to social ecology would be misleading. These chapters reflect the highly complex ecological and social framework in which panthers live. The chapter divisions are the by-product of human nature and our tendency to sort and

categorize information. The common thread among them is that landscape qualities, whether they are habitat type, drainage patterns, prey distribution, or environmental contaminants, strongly influence all aspects of panther health and behavior.

SECTION 5

CHARACTERISTICS OF PANTHER PREY

Early in our ecological research we recognized the importance of nutrition in allowing the Florida panther to overcome and take advantage of a harsh environment. In many instances, the health and distribution of panthers appeared to be related to the amount of prey available to them. Because it is impossible or highly impractical to physically alter soils or drainage patterns which, in turn, influence the land's productivity, we turned our attention to a more responsive component of panther habitat; namely, white-tailed deer. This is not to suggest that learning the basics of deer ecology in south Florida was a simple matter. On the contrary, the process of handling deer required endless hours of all-night buggy travel, or the use of helicopters and specially designed capture equipment to apply techniques originally developed on and for dry ground. Further, the application of deer population management became a process of adapting traditional wildlife theory where it would work, and creating new protocols where south Florida's wetness and tropical climate dictated a different approach.

SECTION 6

REESTABLISHING THE FLORIDA PANTHER IN VACANT RANGE

Even before the first Florida Panther Recovery Plan was written (U.S.

Fish & Wildlife Service 1981), captive breeding and reintroductions of panthers into vacant portions of their historic range were topics of serious discussion among Florida scientists (Layne and McCauley 1976). Florida panther research and management have come a long way since these early speculations. The field studies initiated in 1981 have evolved into more intensive research, and the beginning of hands-on management of the Florida panther. The removal of panther kittens from the wild in 1991 signaled the beginning of a process that will eventually focus expanding field activities on landscapes outside of south Florida. As the captive population grows, and panthers in south Florida continue to occupy available habitat, large forests in the southeastern coastal plain, including tracts outside of Florida, will be considered as potential release sites for captive-raised panthers. Although we are still years away from the actual release of Florida panthers into vacant range, progress has been made in laying the groundwork for reestablishing populations outside of south Florida. Chris Belden monitored released Texas cougars in north Florida to determine the capability of this area to support panthers, and developing reproductive technology will increase the productivity of captive panthers. Recommendations have been made to expand and continue these investigations.

Many parts of the rural, forested Southeast outside of Florida continue to generate numerous reports of panthers and perpetuate the hope that they may still exist in some remote areas. The U.S. Fish and Wildlife Service initiated activities modelled after recovery efforts in Florida to qualify sighting reports and begin evaluating the potential of other reintroduction sites in other states.

With the information gained from 2 decades of research in Florida, the Arkansas studies were based on a solid foundation of empirical data and standard methodologies. What the authors bring to the ever-expanding information base are not only the first steps in local panther recovery, but also deep personal ties to the species, rural southeastern Florida and its people. We are reminded in these chapters of the huge land area necessary for panther recovery, but also the importance of the panther to local folklore. This enigmatic creature is important to the lives of a large segment of the southeastern U.S., whether the panther exists there today or not. The ultimate success of panther recovery would not only recreate additional self-sustaining populations, but would also replace, in flesh and blood, the substance of many backwoods legends. The following chapters document the foundation of this process.

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SECTION SIX

REESTABLISHING THE FLORIDA PANTHER IN VACANT RANGE

FLORIDA PANTHER REINTRODUCTION

R. Chris Belden

CAPTIVE BREEDING OF FLORIDA PANTHERS

R. Chris Belden

SECTION SEVEN

SUMMARY AND SYNTHESIS

Bradley J. Gruver

and David S. Macher