

**IDENTIFICATION AND EVALUATION OF CANDIDATE
FLORIDA PANTHER POPULATION REESTABLISHMENT SITES**
**DENNIS B. JORDAN - U.S. Fish and Wildlife Service, 117 Newins-Ziegler Hall,
University of Florida, PO Box 110450, Gainesville, Florida 32611-0450.**

TABLE OF CONTENTS

EXECUTIVE SUMMARY	106
WHY IS POPULATION REESTABLISHMENT IMPORTANT TO THE PANTHER?	107
INTRODUCTION	107
REASONS FOR ENDANGERMENT	107
RECOVERY EMPHASIS	107
RECOVERY OBJECTIVE	108
POPULATION REESTABLISHMENT PROCESS	108
POPULATION REESTABLISHMENT - Where Are We?	108
INITIAL SITE IDENTIFICATION ACTION	108
REINTRODUCTION FEASIBILITY STUDY	108
EXPANDED RANGE-WIDE ANALYSIS	109
INITIAL SITE IDENTIFICATION	109
SITE REANALYSIS	109
EVALUATION CRITERIA UTILIZED IN REANALYSIS	109
ESTABLISHING SITE BOUNDARIES	110
CANDIDATE SITES	110
CONNECTIVITY	111
SITE LOCATIONS	111
SITE ANALYSIS	111
DISCUSSION	111
CANDIDATE SITES vs EXTANT POPULATION AREA	111
RECOMMENDATIONS	112
LITERATURE CITED	112
ENCLOSURE 1 (Evaluation Data and Site Maps for 14 Candidate Reintroduction Sites)	120

EXECUTIVE SUMMARY

Population reestablishment is essential to achieve recovery of the Florida panther. With only one wild population remaining, at least two additional populations will have to be reestablished to achieve the Recovery Plan's objective of a minimum of three

viable, self-sustaining populations within the panther's historic range. Actions have been initiated to identify and evaluate potential reintroduction sites throughout the panther's historic range. Fourteen tentative sites have been initially

identified and undergone preliminary evaluation. Site evaluation factors for this initial analysis were: proportion of site in forest cover, human population density, and road density. Each site was considered to be of sufficient size and be comprised of a prey density sufficient to support a self-sustaining panther population. Six candidate sites achieved a higher ranking (total score on evaluation criteria) than did the panther-occupied area in south Florida. Additional evaluation and analysis is planned. The goal is to develop weighted, scientifically definitive evaluation factors.

WHY IS POPULATION REESTABLISHMENT IMPORTANT TO THE PANTHER?

The fundamental reason that population reestablishment is so important to the Florida panther is that prevailing demographic and genetic conditions within the single remaining wild population provides virtually no security against extinction of the taxon. Successfully reestablishing panthers elsewhere would not only provide security against extinction, but would also enhance opportunities to move the taxon from its endangered status.

INTRODUCTION

The Florida panther, *Felis concolor coryi*, is one of the most endangered taxa in the United States. Historically ranging throughout most of the southeastern United States (Young and Goodman 1946)(Figure 1), the panther has been reduced to a single population centered in southwest Florida and

estimated to number only 30 to 50 adults.

Based solely on reported population estimates, which have remained near the 30-50 figure over the last decade or so, one might conclude that the panther population has stabilized, and that prospects for the its future are not too bad. Such a conclusion might be valid if the only parameter important to the health of a population was simply the number of individuals making up that population. However, this is not the case with the panther or any other species for that matter. Various demographic, genetic, and health factors, as well as habitat and environmental conditions and other factors are important in determining the health/viability of a population. For the panther, numerous physical and biological indicators within the population strongly suggests that genetic diversity, and population health and viability have been progressively deteriorating over recent generations. Multiple physiological parameters including maladaptive reproductive and medical abnormalities and possible immune deficiencies are of major concern. Computer modeled population viability data project panther extinction within

25 to 40 years under existing demographic and genetic conditions (Seal et al. 1989, Seal et al. 1992). A catastrophic event, such as a disease outbreak, could move quickly through the population resulting in an accelerated extinction process.

REASONS FOR ENDANGERMENT

Relentless persecution, beginning with early European colonization of this country and continuing through the nineteenth century, was the primary factor responsible for the endangered status of the panther. Habitat loss/fragmentation, and demographic and genetic variables associated with isolation, population reductions and inbreeding represent additional major points of concern today.

RECOVERY EMPHASIS

Early emphasis for improving conditions affecting the panther was directed toward developing baseline biological, medical, genetic, and demographic data, and protecting and enhancing the extant population and associated habitats. Recent recovery emphasis has included actions to improve genetic health and to develop reintroduction techniques and technologies and the identification of sites needed to implement successful population reestablishment programs.

As indicated, because of prevailing demographic and genetic conditions, the sole remaining wild population provides virtually no security against extinction of the taxon. Security can only be provided through either a significant increase in the existing population, or through the reestablishment of additional populations elsewhere. A lack of suitable,

unoccupied habitat for recruitment (Maehr et al. 1991) and inherent population density limiting factors restrict opportunities for significant population expansion in south Florida. Reestablishing the Florida panther elsewhere represents perhaps the only viable means to provide real security against extinction and provide future opportunities for recovery of the taxon.

RECOVERY OBJECTIVE

The objective of the approved Florida panther recovery plan is to achieve a minimum of three viable, self-sustaining populations within the panther's historic range (U.S. Fish and Wildlife Service 1987). Consequently, in addition to maintaining and enhancing the self-sustaining capabilities of the remaining extant population, a minimum of two additional populations will have to be reestablished elsewhere within the panther's historic range.

POPULATION REESTABLISHMENT PROCESS

The process to reestablish panthers within presently unoccupied historic range areas is expected to follow a general course of action that includes the following basic steps: identify potential reintroduction sites, evaluate/rank sites, test site suitability using surrogate cougars, and reintroduce/monitor panthers.

POPULATION REESTABLISHMENT - Where Are We?

The first step in the panther reestablishment effort is to determine if suitable unoccupied sites to support panthers still remain within the panther's historic range. An evaluation system that allows candidate sites to be analyzed independently and also be compared to other candidate sites is being used.

To make these analyses and comparisons, specific criteria/factors that accurately characterize habitat that can sustain panthers must be identified. That is, what key factors acting independently or in combination, or what conditions must be present, to sustain panthers;

and conversely, what key factors/conditions would limit panther occupation.

Once panther habitat has been characterized, the next step is to locate specific sites that potentially meet these habitat requirements.

Initial actions are underway to identify and evaluate potential Florida panther population reestablishment sites. The goal of the process is to develop reliable, site-specific data upon which future decisions regarding panther reintroductions can be based. It is important to note that actions to date represent only preliminary steps in a process that is expected to be long and involved. Efforts to identify and quantify the various factors that may be either essential or limiting to successful panther reintroductions are underway, and will need to continue and be expanded. Data from all available sources including ongoing panther studies in south Florida, experimental reintroduction studies involving western cougars as surrogate panthers, and possibly similar activities in other parts of the country will need to be utilized in order to proceed with the reintroduction site identification, evaluation and selection process.

INITIAL SITE IDENTIFICATION ACTION

The Florida Game and Fresh Water Fish Commission (GFC) initially developed factors for evaluating candidate reintroduction sites in 1985. Based on information obtained from literature and data gathered through their field investigations on the panther in south Florida, eight (8) factors considered significantly important for panther habitation were identified by GFC. A standardized questionnaire was

developed for use in identifying/evaluating potential sites within Florida. Evaluation factors were: site size, prey density, human population density, paved highway density, land use, human attitudes toward panther reintroduction, human population growth, and land ownership.

Applying these evaluation factors, the GFC identified and ranked 11 potential reintroduction sites within the state of Florida (Belden 1987).

REINTRODUCTION FEASIBILITY STUDY

Additionally, GFC initiated an experimental reintroduction feasibility study in 1988. Phase I of this study was completed in 1989 (Belden and Hagedorn 1993). Phase II was initiated in February 1993. This study is being carried out in a north Florida/south Georgia candidate reintroduction site (Site 10, Figure 3). The study involves the use of western cougars (both wild translocated animals and captive raised stock) as surrogate panthers and is basically designed to accomplish two objectives: (1) provide the foundation for development of reintroduction techniques and technologies for application in possible future Florida panther reintroductions, and (2) test the suitability of a specific candidate site as a Florida panther reintroduction site. At the present, the Commission plans to maintain a population of approximately 10 study animals during the duration of the Phase II project (scheduled for 3 years).

EXPANDED RANGE-WIDE ANALYSIS

In May 1991, actions to expand the effort to identify/evaluate candidate sites

to include the entire historic range of the panther were initiated (Figure 1). State wildlife agency Directors were requested by the Florida Panther Interagency Committee (Committee) to assist in this effort by having site identification and evaluation forms completed by appropriate agency personnel. Directors were also asked to distribute the forms to appropriate entities outside their respective agencies for input (Form 1). Similarly, many U.S. Fish and Wildlife Service offices within the study area were also requested to provide input on potential sites.

Site evaluation forms used in this initial analysis incorporated data on 10 evaluation criteria for each candidate site identified. Evaluation criteria represented those factors believed to reflect site suitability. Evaluation criteria were: site size, prey density, human population density, paved highway density, land use, attitudes toward reestablishment, human population growth, land ownership (private/public), density of small livestock operations, and hunting activity.

INITIAL SITE IDENTIFICATION

Input received in response to this range-wide effort provided the foundation for the initial identification and evaluation of 24 candidate panther reintroduction sites (Figure 2)(Jordan 1993).

However, the precise role/value of many criteria used in this initial evaluation in terms of representing true indicators/ingredients for panther habitation is not known. Some criteria may prove to be absolutely essential for panther habitation, while others may be a reflection of things that could limit success.

Additionally, data needed to provide accurate responses to each of the 10 evaluation criteria was not uniformly available to all individuals submitting completed evaluation forms. The level of effort expended by each individual to obtain/develop reliable data was judged to have likely varied considerably between responders. Many evaluation factors necessitated extreme subjectivity on the part of individuals completing evaluation questionnaires. All of these factors brought into question the true usefulness of some of the data utilized in the initial range-wide identification, evaluation and ranking process.

Because of these factors, it was felt that a more restricted, more objective site reanalysis might provide more meaningful results. Thus, a reanalysis was conducted utilizing only those evaluation criteria that: (1) based on present knowledge are considered of significant importance in reflecting site suitability and (2) represent factors for which standardized data would be more uniformly available throughout the study area.

SITE REANALYSIS

The site reanalysis was intended to significantly reduce the level of ambiguity and subjectivity associated with the initial range-wide analysis. It focused on four key evaluation elements which are expected to be among the most important in depicting potential suitability of a particular site for population reestablishment purposes.

EVALUATION CRITERIA UTILIZED IN THE REANALYSIS

The reanalysis focused on four key evaluation criteria generally accepted as

likely representing important elements in evaluating site suitability and for which fairly uniform information is presently available on a range-wide basis. These are: site size, extent of forest cover, human population density, and road density.

Size - size data reflect total rural land area in square miles (mi^2) within candidate site boundary. "Rural", as referenced herein, represents areas void of human population centers of 1,000 or greater as reported in the 1990 census (U.S. Department of Commerce 1991).

Forest Area - forest area figures reflect the proportion of a site in forest cover (i.e. 0-20%, 21-40%, 41-60%, 61-80%, 81-100%)(Rudis and Tansey 1991).

Human Population Density - human population density figures reflect the number of housing units per square mile in the above referenced rural areas as reported in the 1990 census (U.S. Department of Commerce 1991).

Road Density - road density figures reflect the miles of non-municipal public roads (paved & non-paved) per square mile. Road data was obtained from the various state highway departments within the study area.

It should be emphasized that the four evaluation elements utilized in the reanalysis would not be expected to represent the only factors important to panther occupation or in evaluating site suitability. The basis for their use was explained earlier. The long-range goal, however, will be to develop site evaluation criteria that are appropriately weighted to reflect relative importance

and have a more definitive, scientific basis for use as evaluation criteria.

ESTABLISHING SITE BOUNDARIES

For the most part, site boundaries in the initial range-wide analysis were aligned with major highway systems (i.e. interstate, U.S. designated highways, and other 4-lane highways). At the time the initial range-wide analysis was undertaken such systems were thought to likely represent significant physical barriers to panther movement, possibly to the extent of impeding the population reestablishment process. However, based on

more recent data from panther studies in south Florida and the experimental reintroduction study in north Florida, this does not appear to be the case (personal communication R.C. Belden and D.S. Maehr 1994). This is not to imply that under some specific circumstances major road systems would not represent potential movement barriers to individual animals or possibly specific components of a population (some data suggest that major roadways may restrict movement of females more than males), or that roads do not represent a hazard/threat to individuals that attempt to cross them. However, existing data suggests that from a population reestablishment standpoint, road systems in and of themselves would not be expected to represent a barrier to success.

To facilitate the use of standardized data available throughout the entire study area, county lines (parishes in Louisiana) were used as site boundaries in the reanalysis. It should be noted that such "political" boundaries will have little if any relationship to actual "on the ground" boundaries expected to surface as the site identification/evaluation process evolves. However, for the purpose of preliminary steps in the evaluation process, county boundaries function very well.

CANDIDATE SITES

As indicated, the initial range-wide analysis conducted in 1993 resulted in the identification/evaluation of 24 potential sites. Many of these sites were separated only by a highway or water system (Figure 2). In many instances, input provided for the 1993 analysis actually resulted in the identification of a "core" area around which a larger, more realistic candidate site might be

developed. Utilizing the information provided for the initial analysis, along with comments and information received in response to the initial analysis, many of the original 24 sites were combined, realigned, expanded or deleted during the reanalysis process. The reanalysis resulted in the identification and evaluation of 14 candidate sites (Figure 3).

CONNECTIVITY

Existing landscape and human demographic conditions appear to offer reasonable connectivity potential among many of the candidate sites. These possibilities have been noted on the individual site maps contained in Enclosure 1. Connectivity serves a key function in terms of providing opportunities for gene flow via natural dispersal. Gene flow is crucial to maintaining population health.

SITE LOCATIONS

The 14 candidate sites identified in the reanalysis are depicted in Figure 3. All states within the accepted historic range of the Florida panther contained areas encompassed by at least one candidate site.

SITE ANALYSIS

Individual site evaluation data are contained in Enclosure 1. A comparison of evaluation criteria data between the 14 candidate sites is presented in Table 1.

As indicated, site size ranged from 3,716 to 13,450 square miles, road density ranged from 0.92 to 1.73 miles per square mile, human population density ranged from 4.65 to 19.35 housing units per square mile and forest rating ranged from 7.00 to 8.67. Criteria scoring by site and overall site rankings are presented in Table 2. Site size was not used in ranking sites because all sites were considered of sufficient size to support, with minimal human intervention, a self-sustaining panther population. This is based on the fact that the telemetry-monitored segment of the panther population in south Florida has occupied an area of approximately 2.2

million acres (3,438 mi²)(Maehr 1990) and all candidate sites exceeded that size.

The scoring system used in this analysis establishes a score for each evaluation criteria for each site. The scoring system adopts a premise that each evaluation criteria is of equal value in terms of evaluating site suitability. In reality, this would not likely be the case. However, until sufficient data is available to develop definitive, weighted evaluation criteria, this approach will prevail. The scoring system evaluates how each site compares to the other 13 sites for each evaluation criteria. That is, the site scoring the best for a particular criteria receives a score of 14 for that element. The site scoring second best for that criteria receives a score of 13 and so on, with the site scoring the worst receiving a score of 1. For example; for the road density evaluation element, Site 9 receives a score of 14 because it has the lowest road density, Site 6 a score of 13 because it has the second lowest road density, and Site 13 a score of 1 because it has the highest density. Total site scores (cumulative scores of all evaluation criteria) are used to establish site rankings. The site with the highest total score is ranked 1 (i.e. Site 6) and the site with the lowest total score is ranked last (in this case Sites 11 and 13 tied).

DISCUSSION

As previously indicated, site identification, evaluation and analyses contained herein must be looked at as only one in a series of actions that will need to be taken to effectively identify and select sites for future Florida panther reintroduction actions.

By design, this particular analysis was kept "basic", i.e. involving a minimal

number of evaluation criteria. This was done for two reasons; first, to reduce the extent of subjective scoring associated with the initial range-wide analysis, and second, to concentrate on key evaluation criteria, accepted as among the more important in terms of site suitability components, for which uniform data can fairly easily be developed throughout the study area. It is believed that analyses contained herein provide a good foundation upon which to build and expand the process as definitive data on determining essential/limiting factors to successful reintroductions become available.

CANDIDATE SITES vs EXTANT POPULATION AREA

To obtain a basic feel for how the various candidate reintroduction sites might compare to known panther habitats, a portion of the south Florida panther range was analyzed using the same criteria used to evaluate the candidate sites. The counties of Collier, Glades and Hendry were selected because they contain what is considered the best remaining panther habitats in south Florida. These counties are comprised of a total rural area of 3,865 square miles. They have a rural road density of 0.58 miles per square mile, a rural human population density of 6.88 housing units per square mile and a forest rating of 2.33.

For comparative purposes, these scores would result in this site ranking the best overall in road density, seventh in human population density and last (15th) in forest rating, for a overall site ranking of seventh (of the 15 sites evaluated). It is not clear what these results might mean in terms of how suited candidate sites might actually be

in supporting a panther population. It does, however, provide a reason to be somewhat optimistic in this regard, particularly as it relates to evaluation criteria utilized in this reanalysis.

RECOMMENDATIONS

1. The U.S. Fish and Wildlife Service, as the responsible Federal Agency under the Endangered Species Act, should coordinate reintroduction activities with involved states outside Florida. The Florida Game and Fresh Water Fish Commission (GFC) should be actively involved in all facets of the reintroduction program.

2. Information obtained through the GFC's experimental reintroduction study should be utilized to refine and weight site evaluation criteria. Site evaluations should be updated as needed.

NOTE: The following recommendations apply to the sites ranked 1 through 5 (see Table 2).

3. Meetings with appropriate State wildlife agencies should be held to provide a general overview and update of the panther recovery program, and a detailed accounting of activities associated with population reestablishment. This would provide an opportunity to ascertain each State's interest, willingness and ability to support and participate in further evaluation activities within their respective states. Additional elements for consideration would be to review state statutory provisions, long-range management goals, habitat preservation policies, etc.

4. Personnel knowledgeable of panther habitat should work closely with

designated State personnel in developing detailed criteria for, and participate in, on-site field reviews and evaluations of sites within those states responding favorably to recommendation number 3.

5. For sites achieving favorable results under recommendation number 4, reintroduction experiments involving surrogates should be pursued.

LITERATURE CITED

- Belden, R.C. 1987. Florida panther captive breeding/reintroduction feasibility. Annual Performance Report, Study # 7507, Fla. Game and Fresh Water Fish Comm., Tallahassee, FL. 14pp.
- _____, and B.W. Hagedorn. 1993. Feasibility of translocating panthers into northern Florida. *J. Wildl. Manage.* 57:388-397.
- Jordan, D.B. 1993. Preliminary analysis of potential Florida panther reintroduction sites. Unpublished report. U.S. Fish and Wildlife Service, Gainesville, FL. 15pp.
- Maehr, D.S. 1990. The Florida panther and private lands. *Conservation Biology.* 4(2):167-170.
- _____, E.D. Land, and J.C. Roof. 1991. Social ecology of Florida panthers. *National Geographic Research and Exploration.* 7(4):414-431.
- Rudis, V.A. and J.B. Tansey. 1991. Placing "man" in regional landscape classification: use of forest survey data to assess human influences for southern U.S. forested ecosystems. In: Mengel, D.L.; Tew, D.T., eds. *Ecological land classification: applications to identify the productive potential of Southern forests:*

- Proceedings of a symposium; 1991 January 7-9; Charlotte, NC. Gen. Tech. Rep. SE-68. Asheville, NC: U.S. Dept. of Agriculture, Forest Service, Southeastern Forest Experiment Station. 135-136.
- Seal, U.S. and Workshop Participants. 1989. Florida panther viability analysis and species survival plan. Report to the U.S. Fish and Wildlife Service by the Captive Breeding Specialist Group (SSC/IUCN), Apple Valley, MN. 255pp.
- _____. 1992. Genetic management strategies and population viability of the Florida panther. Report to the U.S. Fish and Wildlife Service by the Captive Breeding Specialist Group (SSC/IUCN), Apple Valley, MN. 27pp.
- U.S. Department of Commerce. 1991. Summary population and housing characteristics - 1990 CPH-1. Bureau of Census, Washington, D.C.
- U.S. Fish and Wildlife Service. 1987. Florida panther (*Felis concolor coryi*) recovery plan. Prepared by the Florida Panther Interagency Committee for the U.S. Fish and Wildlife Service, Atlanta, GA 75pp.
- Young, S.P. and E.A. Goodman. 1946. The puma - Mysterious American cat. Dover Publications, Inc., New York, NY. 358pp.

Form 1. POTENTIAL PANTHER REINTRODUCTION SITE EVALUATION

Location _____

Characteristics

Possible Score

Actual Score*

- I. Size of Area
I. _____
 - A) greater than 2500 mi².....8-10
 - B) 1500 - 2500 mi².....4-7
 - C) 500 - 1500 mi².....1-3

- II. Prey Density
II. _____
 - A) abundant (< 100 acres/deer).....8-10
 - B) moderately abundant (100 - 250 acres/deer).....4-7
 - C) sparse (> 250 acres/deer).....1-3

- III. Human Population Density
III. _____
 - A) sparse (< 10/mi²).....8-10
 - B) moderately abundant (10-20/mi²).....4-7
 - C) abundant (> 20/mi²).....1-3

- IV. Density of Paved Highways
IV. _____
 - A) sparse (< 0.10 mi/mi²).....8-10
 - B) moderately abundant (0.10-0.20 mi/mi²).....4-7
 - C) abundant (> 0.20 mi/mi²).....1-3

- V. Land Use (extent)
V. _____
 - A) wilderness.....8-10
 - B) semi-wilderness.....4-7
 - C) non-wilderness.....1-3

- VI. Human Attitudes Toward Re-establishment
VI. _____
 - A) good.....8-10
 - B) fair.....4-7
 - C) poor.....1-3

- VII. Human Population Growth
VII. _____

- A) slow (< 10%).....8-10
- B) moderate (10-20%).....4-7
- C) fast (> 20%).....1-3

VIII. Land Ownership

VIII. _____

- A) public.....8-10
- B) mixed.....4-7
- C) private.....1-3

IX. Landowners with Small Livestock

IX. _____

- A) none.....8-10
- B) few (1-3/100 mi²).....4-7
- C) abundant (4+/100 mi²).....1-3

X. Hunting Activity

X. _____

- A) light.....8-10
- B) moderate.....4-7
- C) heavy.....1-3

*IF CHARACTERISTIC IS NOT APPLICABLE, ENTER NA

Name: _____

Date: _____

Phone: _____

Other Notes and Comments on back if necessary:

Table 1. Evaluation criteria data by candidate site.

Site Number-Name	Size (Mi ²) ¹	Rural Road Density ²	Rural Population Density ³	Forest Rating ⁴
1-Ozark Mountains	6,079	1.26	6.41	7.44
2-Ouachita Mountains	5,681	1.15	4.65	7.25
3-Southcentral AR/Northcentral LA	12,775	1.09	5.57	8.22
4-Westcentral LA	7,981	1.08	8.51	7.50
5-Southwest MS & Adjacent LA	6,417	1.12	7.85	7.00
6-Lower Gulf Coast Plain	8,748	0.99	5.94	8.45
7-Westcentral AL/Eastcentral MS	8,499	1.33	6.43	7.31
8-Lower Apalachicola River	3,716	1.03	6.46	8.67
9-Gulf Coast Big Bend	4,992	0.92	6.33	7.86
10-Northeast FL/Southeast GA	10,486	1.14	7.12	7.86
11-Coastal SC & Adjacent GA	4,905	1.30	11.14	7.00
12-AL & GA Piedmont	10,876	1.24	8.19	7.88
13-GA & SC Piedmont	13,450	1.73	13.54	7.33
14-Southern Appalachian Mountains	7,621	1.11	19.35	7.90

- 1 Size figures represent total area within site void of human population centers of 1,000 or greater (U.S. Dept. of Commerce 1990).
- 2 Measured in miles per square mile (mi/mi²)
- 3 Reported in housing units per square mile.
- 4 Represents a forest rating system reflecting the "average percent forest area" for each candidate site. Ratings were derived as follows; counties containing 81-100 percent forest area received a rating of 9, counties with 61-80 percent forest area received a rating of 7, counties with 41-60 percent received a rating of 5, counties with 21-40 percent a 3, and 0-20 percent a 1.

Table 2. Comparative scores and site ranking for candidate sites.

Site Number-Name	Point Score				Site Rank
	Rural Road Density	Rural Population Density	Forest Rating	Total	
1-Ozark Mountains	4	10	6	20	9
2-Ouachita Mountains	6	14	3	23	5
3-AR/LA	10	13	12	35	2
4-Westcentral LA	11	4	7	22	7
5-Southwest MS & adjacent LA	8	6	2	16	11
6-Lower Gulf Coast Plain	13	12	13	38	1
7-Westcentral AL/Eastcentral MS	2	9	4	15	12
8-Lower Apalachicola River	12	8	14	34	3
9-Gulf Coast Big Bend	14	11	9	34	3
10-Northeast FL/Southeast GA	7	7	9	23	5
11-Coastal SC & adjacent GA	3	3	2	8	13
12-AL & GA Piedmont	5	5	10	20	9
13-GA & SC Piedmont	1	2	5	8	13
14-Southern Appalachian Mts.	9	1	11	21	8

ENCLOSURE 1

EVALUATION DATA AND MAPS OF 14 CANDIDATE REINTRODUCTION SITES

QUESTIONS:

UNIDENTIFIED PERSON: I'm assuming that Site 14 is the Smokey Mountain National Park area?

MR. JORDAN: Yes

UNIDENTIFIED PERSON: Are there any implications for the reintroduction of a small group of red wolves in the Smokey Mountains?

MR. JORDAN: Certainly. That is something that would come into play and would have to be evaluated.

For you folks who do not know what

the situation is, the Great Smokey Mountains National Park is currently serving as an experimental reintroduction site for the endangered red wolf. We would not use such a site for panthers reintroduction, if there was a chance that there would be conflict between the two.

UNIDENTIFIED PERSON: (Inaudible.)

MR. JORDAN: It is part of the same area. It includes the Great Smokey Mountains National Park, parts of Cherokee, Nantahala, Pisgah and Sumter National Forests, and other mountain areas of Georgia, North Carolina and Tennessee.