

Attachment 1. Information Quality Act Challenge Response

Background:

The following definitions are provided for the documents and groups referenced in your request for correction:

Multi-Species Recovery Plan (MSRP):

The MSRP for the threatened and endangered species of South Florida was completed in May 1999. The MSRP contains information on the biology, ecology, status, trends, management, and recovery actions for 68 federally-listed species that occur in south Florida, including the Florida panther as well as the ecology and restoration needs of 23 natural communities in this region. More than 300 representatives from agencies, academia, and private organizations formed the Recovery Team which assisted the Service in completing this plan. Over 100 data layers of scientific information were used. Public review and comment of the technical / agency draft (2 separate volumes) occurred over 8 months before the MSRP was approved.

Florida Panther Subteam:

In February 2000, the Service appointed a Florida Panther Subteam of the Multi-Species/Ecosystem Recovery Implementation Team to develop a landscape conservation strategy for panthers in south Florida using an open and collaborative venue. The Panther Subteam was comprised of 11 highly qualified individuals knowledgeable in panther biology and landscape ecology representing academia, government agencies, and other interests. The primary goal of the Panther Subteam was to identify a strategically located set of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the panther. The Panther Subteam focused its efforts on the area south of the Caloosahatchee River, where the only reproducing Florida panther population currently exists.

Draft Landscape Conservation Strategy for the Florida Panther (Conservation Strategy):

The Panther Subteam submitted a draft Landscape Conservation Strategy for the Florida Panther (Conservation Strategy) to the Service in December 2002. The methodology and results of this draft document were scientifically peer reviewed, and comments from two of three peer reviewers were incorporated. Work to incorporate the comments of the third reviewer as well as public comments is continuing. The Conservation Strategy identifies lands important for the continued conservation of panthers in south Florida, as well as a landscape linkage to provide for population expansion north of the Caloosahatchee River to aid in the recovery of the species.

Science Review Team (SRT): In June 2002, in partnership with the Florida Fish and Wildlife Conservation Commission (FWC), the Service assembled a scientific review team (SRT) to critically evaluate the existing Florida panther literature and data analyses.

The SRT consisted of Paul Beier of the School of Forestry, Northern Arizona University; Michael R. Vaughan of the USGS Virginia Cooperative Fish and Wildlife Research Unit; Michael Conroy of the USGS Georgia Cooperative Fish and Wildlife Research Unit; and Howard Quigley of the Global Carnivore Program. The team completed its review and final report in December 2003. This report identifies weaknesses in the panther data and analyses with recommendations for future work. This report is critical of several aspects of the panther literature, especially topics related to the analysis of telemetry and habitat use data. The draft report was peer reviewed by six independent scientists and distributed to the Florida Panther Recovery Team for comments. Concurrently, the draft was reviewed by the FWC. Reviewer and Recovery Team comments were incorporated into the final document prior to its release by the FWC. The Service plans to use the SRT report in its recovery planning and implementation efforts and in its decisions regarding panther conservation and management. The Service will use the SRT report in its revision of the Florida Panther Recovery Plan (third revision), in its update of the MSRP, in its biological opinions, and in other Service documents.

Biological Opinions: Section 7 of the Endangered Species Act requires Federal agencies to consult with the Fish and Wildlife Service when their actions may affect Federally listed endangered or threatened species. Consultation with the Service is initiated by the action agency. The Service is required to render a “biological opinion” about whether the proposed action will jeopardize the continued existence of the listed species. If so, the Service provides “reasonable and prudent alternatives” to avoid jeopardy to the species. Your request for correction references eight separate biological opinions regarding the Florida panther. The titles and dates of these biological opinions are as follows:

Daniel's Parkway, Nov. 8, 1998
Cypress Creek, Dec. 8, 1999
Miromar, April 17, 2000
Winding Cypress, Oct. 8, 2002
SW Florida International Airport, Dec. 14, 2001
Florida Rock Industries, Jan. 30, 2002
Southern Marsh, March 7, 2002
Hawk's Haven, April 24, 2002

Request for correction 1 – Errors Associated with the Definition of Panther “Habitat”

A. Day Counted as Night

1. Statement of Error:

The inter-related habitat studies of Maehr et al. (1991) and Maehr (1992) have defined "occupied and potential habitat" as "those areas preferred or tolerated by panthers" based on daytime-use habitat rankings. This definition underlies the key habitat selection study Maehr and Cox (1995) that extrapolates daytime use to 24-hour use (DQA Challenge on 5).

You complain that these errors are contained in the Multi-Species Recovery Plan for South Florida (MSRP), the Florida Conservation Strategy (Conservation Strategy), and biological opinions for Daniel's Parkway Extension, Cypress Creek, Miromar, and Winding Cypress. We provide the following responses for each of these documents:

MSRP Response: As described under "Background," the MSRP incorporated and represented the most current and scientifically sound data available at the time (1999). The weaknesses in the scientific information identified by the SRT in 2003 were unknown at the time the MSRP was prepared; therefore the Service could not have addressed them when developing the document.

We acknowledge that the habitat section within the panther chapter of the MSRP does not clearly or definitively describe panther habitat. The MSRP was developed over a period of years; specifically from 1996 through 1998. At that time, the best available scientific data regarding preferred panther habitat was the FWC's telemetry data and Dr. Maehr's early work (MSRP on 4-120). However, the MSRP does recognize that panthers travel through agricultural and other disturbed habitats at night (Id. on 4-120). As a result of the Scientific Review Team's 2003 report, the Service plans to further refine the definition of panther habitat when the MSRP is updated in 2006.

Conservation Strategy Response: In February 2000, the Service appointed a Florida Panther Subteam to develop a landscape conservation strategy for panthers in south Florida using an open and collaborative process. The Panther Subteam was comprised of 11 highly qualified individuals knowledgeable in panther biology and landscape ecology representing academia, government agencies, and other interests. The primary goal of the Panther Subteam was to identify a strategically located set of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the panther. The Panther Subteam focused its efforts on the area south of the Caloosahatchee River, where the only reproducing Florida panther population currently exists. The Panther Subteam submitted a Conservation Strategy to the Service in December 2002. The methodology and results of this document were scientifically peer reviewed, and comments from two of three peer reviewers were incorporated. The Conservation Strategy identifies lands important for the continued conservation of panthers in south Florida, as well as a landscape linkage to provide for population expansion north of the Caloosahatchee River to aid in the recovery of the species. Since the Conservation Strategy is a product of a highly qualified team of panther biologists and landscape ecologists, the Service believes that it is based upon the best available scientific information. However, we are interested in obtaining comments from the broad scientific community and general public to ensure the highest level of quality possible. Therefore, we plan on noticing the Conservation Strategy in the Federal Register to obtain the widest array of review possible.

Regarding the Conservation Strategy, the Service requested scientific review from three qualified reviewers. Comments from two of the reviewers were received within the time frame requested and their comments were incorporated into the most recent (December

2002) version of the Conservation Strategy. Comments from the third peer reviewer (Beier) were received in February 2003, after the date requested. Dr. Beier's comments contained several suggestions that were very constructive and beneficial to the scientific integrity of the document. We incorporated many of Dr. Beier's suggestions and comments as appropriate. However, some of Dr. Beier's comments and suggestions are substantial and would require reanalysis of telemetry data. After discussing the situation with several members of the Florida Panther Subteam, the Service decided in 2003 that it was most appropriate to proceed with issuing the Conservation Strategy for public review and comment in the Federal Register (planned for September 2004) and address Dr. Beier's 2003 comments concurrently with comments received during the public comment period for the Conservation Strategy. In addition, the Service will update the Conservation Strategy once the data analysis recommended by Beier is complete and will revise as appropriate.

Biological Opinion General Response: Because of our understanding of panther biology and needs, the Service was in general aware of the limitations of the information in the cited studies and used our best professional judgment to balance these limitations with other available scientific information. However it is important to note that at the time these documents were prepared, the information you have challenged was among the best scientific information available concerning panthers. Recognizing the limitations, we believed these studies still had value and provided useful information. For example, telemetry data can help delineate the extent and boundaries of individual panther home ranges and document panther distribution through the landscape. Telemetry data record dispersal events, pinpoint denning sites, and allow researchers to locate panthers when management intervention is needed. The Service did not base its conclusions solely on the cited studies. We used other available information and over time, as the limitations of the scientific information were further illuminated, the Service continually adjusted our analyses accordingly as the new and more refined information became available. In the preparation of these documents, the Service considered all available data and used the best scientific and commercial information available, as required under the Endangered Species Act.

Daniel's Parkway Extension Response: The Daniel's Parkway Extension project is complete, and is not subject to section 7 reinitiation processes. The Service's biological opinion does reference Maehr et al. (1991) and Maehr's (1992) discussion of occupied, potential, preferred, or tolerated habitats and does reference Maehr and Cox's (1995) extrapolations of daytime use to 24-hour use, which is the underlying premise in their habitat selection study, also known as the panther habitat evaluation model (PHEM). However, the Service also relied on additional habitat information to evaluate the project's impact to the Florida panther. For example, as stated in the biological opinion for the Daniel's Parkway project: "analysis initially eliminated consideration of farmlands (improved pasture, old farm fields), disturbed lands, existing paved roads, transmission line easements, and existing open water lakes and ditches, providing a conservative estimate of the habitat value of the site as some of these habitats, particularly farmlands, support panther prey. The analysis also initially eliminated a 1,000-foot strip of land adjacent to S.R. 82 that may be indirectly affected by that existing

roadway.” However, the Service recognized that the PHEM was forest-centric and that other habitat types also were important to panthers. Therefore we subsequently required the applicant to re-evaluate their proposed development using the habitat types initially excluded from the analysis. The text in this biological opinion also notes that the Service completed an independent habitat assessment using information generated from a GIS analysis developed by the FWC. The text in the Daniel’s Parkway biological opinion states that “A qualitative GIS analysis of panther habitat in Lee County (GFC 1998) used Landsat satellite imagery to score the value of the habitat on a 1 to 9 scale. Using this analysis, the FWS identified the habitat in the project area as scoring from 7 to 9, with a few areas scoring 4 and 5.” (A value of “9” equates to optimal Florida panther habitat). This information in addition to the PHEM evaluation was considered by the Service in our evaluation of the project’s effects to the Florida panther. The Service considered the PHEM evaluation in its analysis of the project, and we believe to do any less would be in conflict with our mandate under the ESA “to use the best scientific and commercial information available.”

Cypress Creek Response: The Cypress Creek biological opinion does reference Maehr et al.(1991) and Maehr’s (1992) discussion of occupied, potential, preferred, or tolerated habitats and does reference Maehr and Cox’s (1995) extrapolations of daytime use to 24-hour use, which is the underlying premise in their habitat selection study (PHEM). However, the Service also relied on additional habitat data to evaluate the project’s impact to the Florida panther. For example, as stated in the biological opinion for the Cypress Creek development, “habitat types were characterized as suitable or unsuitable panther habitat based upon a comparison with prior panther habitat preference studies (Maehr 1990a, Maehr *et al.* 1991a, Maehr and Cox 1995).” The biological opinion also notes that the analysis initially eliminated consideration of almost 99 acres of drained and extremely disturbed hardwood-cypress-cabbage palm forest, which provided a conservative estimate of the habitat value of the site, although disturbed habitats continue to support panther prey. The Service subsequently required the applicant to re-evaluate their proposed development using the habitat types initially excluded from the analysis. The text in the Cypress Creek biological opinion states that “A qualitative GIS analysis of panther habitat in Collier County (GFC 1998) used Landsat satellite imagery to score the value of the habitat on a 1 to 9 scale. This analysis identified the habitat in the project area as scoring an 8, consistent with surrounding forested uplands in north Golden Gate Estates.” This information in addition to the PHEM evaluation was considered by the Service in our evaluation of the project’s effects to the Florida panther. The Service considered the PHEM evaluation in its analysis of the project, and we believe to do any less would be in conflict with our mandate under the ESA “to use the best scientific and commercial information available.”

Miromar Response: The Miromar biological opinion does reference Maehr et al. (1991) and Maehr’s (1992) discussion of occupied, potential, preferred, or tolerated habitats and does reference Maehr and Cox’s (1995) extrapolations of daytime use to 24-hour use, which is the underlying premise in their habitat selection study (PHEM). However, the Service also relied on additional habitat data to evaluate the project’s impact to the Florida panther. For example, as stated in the biological opinion for the Miromar

development, “Habitat types were characterized as suitable or unsuitable panther habitat based upon a comparison with prior panther habitat preference studies (Maehr 1990a, Maehr *et al.* 1991a, Maehr and Cox 1995).” The biological opinion also notes that the analysis initially eliminated consideration of forested habitat that was 75 to 100 percent invaded by melaleuca, farm fields, freshwater marshes, and disturbed habitat. The Service subsequently required the applicant to re-evaluate their proposed development using the habitat types initially excluded from our analysis. The text in the Miromar biological opinion also notes that the analysis included an assessment of panther habitat effects based on the habitat quality of the site, the location of the site in a developing area, and the benefits of minimizing adverse effect to the panther by providing secure off-site habitat in a contiguous forested area managed for panthers. This information in addition to the PHEM evaluation was considered by the Service in our evaluation of the project’s effects to the Florida panther. The Service considered the PHEM evaluation in its analysis of the project, and we believe to do any less would be in conflict with our mandate under the ESA “to use the best scientific and commercial information available.”

Winding Cypress Response: The Winding Cypress biological opinion does reference Maehr *et al.* (1991) and Maehr’s (1992) discussion of occupied, potential, preferred, or tolerated habitats and does reference Maehr and Cox’s (1995) extrapolations of daytime use to 24-hour use, which is the underlying premise in their habitat selection study (PHEM). However, the Service also relied on additional habitat data to evaluate the project’s impact to the Florida panther, such as other qualitative factors including patch size, spatial distribution, landscape context, surrounding land use, prey density, road density, human population density, which are not considered in PHEM. The Service further states in the opinion that the proposed methodology (Maehr) provides one method of evaluating a habitat’s suitability for panther use. The Service’s evaluation not only included this information but also the importance of the habitat preserved onsite (840 acres) and offsite (1,030 acres) for project impacts (1,088 acres). The Service considered the PHEM evaluation in its analysis of the project, and we believe to do any less would be in conflict with our mandate under the ESA “to use the best scientific and commercial information available.”

2. Statement of Error:

The USFWS (2002a) is circulating a Conservation Strategy that fails to incorporate a meaningful definition of habitat that encompasses the life cycle requirements of the panther, in effect defaulting to Maehr’s narrow and inaccurate definition.

As stated above, the Service is supplying copies of the 2002 Conservation Strategy upon request to interested parties. We feel this is a pro-active step toward publishing a Notice of Availability in the Federal Register of the Conservation Strategy, when we will be seeking public comments on this document. We believe this is a positive step toward “agency transparency” regarding the Department of the Interior acceptance of this document as information related to Florida panther recovery.

You allege that we are defaulting to “Maehr's narrow and inaccurate definition” of panther habitat. In fact, the habitat model created by the Panther Subteam uses a much broader definition of habitat than used previously in any agency documents. For example, Dr. Maehr’s definition of panther habitat was highly dependent upon forested cover. The Panther Subteam’s potential habitat model set forth in the Conservation Strategy employed the following criteria: (1) all upland and wetland forest patches greater than 2 ha in size were included; (2) all non-urban cover types within 200 m of forest patches greater than 2 ha were included; but (3) any cover types within 300 m of urban land uses of any size were excluded (Conservation Strategy on 38). Potential habitat was reviewed in relation to telemetry, satellite imagery, and home range polygons to produce maps showing Primary, Secondary, and Dispersal Zones (Florida Panther Subteam, 2002). Similarly, it was one of the key charges of the Panther Subteam to determine what constitutes panther habitat, using the best and most current science available.

In summary, the Service is not defaulting to “Maehr's narrow and inaccurate definition” of panther habitat. In fact, we are currently using the habitat model created by the Florida Panther Subteam that defines a broader definition of panther habitat than that defined by Dr. Maehr.

3. Statement of Error:

Despite acknowledging the limitations of daytime telemetry, the Conservation Strategy makes numerous references to “habitat” and “habitat use” to imply that land covers not associated with daytime telemetry are not occupied or potential panther habitat.

The Strategy describes a model that uses land covers associated with daytime telemetry to identify “habitat,” implying that land covers not associated with daytime telemetry are not habitat (Subsection “ Potential Habitat Model” in Chapter 3: “Potential Habitat and Landscape Connection Model” USFWS 2002a:38).

The Conservation Strategy acknowledges that “... telemetry locations present an incomplete picture of panther daily activity patterns and habitat use” (Conservation Strategy on 5). As stated in this report, “Although resting site telemetry observations do not document all components of habitat use, they provide much useful information. Over time, telemetry data delineate the extent and boundaries of individual panther home ranges and document panther distribution throughout the landscape. They record dispersal events, pinpoint denning sites, and allow researchers to locate panthers when management intervention is needed. Over twenty years of field observations supplement telemetry data. Measurements and observations are made and biological samples collected when research biologists handle panthers during captures. In addition, dens and kill sites are visited, scats are analyzed, tracks and urine markers are noted, trail cameras are used to record use of underpasses, and thousands of hours of professional panther tracking provide information about activities and habitat use.” (Id. on 5).

In summary, the Conservation Strategy does not imply that land covers not associated with daytime telemetry are not habitat. In fact, this document takes a much broader landscape approach by delineating the extent and boundaries of individual panther home ranges; by documenting panther distribution throughout the landscape; by recording individual panther dispersal events; by pinpointing denning sites; and by using biological information related to panther activities and habitat use.

The Conservation Strategy also acknowledges the variety of panther habitats and the reliability of telemetry:

(1) “Telemetry monitoring and ground tracking indicate that panthers use the mosaic of habitats available to them as resting and denning sites, hunting grounds, and travel routes, including cypress swamps, hardwood hammocks, pine flatwoods, seasonally flooded prairies, freshwater marshes, and a variety of agricultural lands. Panther reproduction in south Florida occurs in relatively intact landscapes that are large enough to support individuals with extensive overlapping home ranges. Current panther distribution patterns demonstrate that panthers are able to use a broader spectrum of south Florida habitats than was previously thought possible.” (Id. on 8).

(2) “Cover for panther denning and resting sites is typically dense vegetation close to the ground, such as saw palmetto (Maehr 1997, 1990a), cocoplum thickets, fern beds, sawgrass, oak scrub, or exotic vegetation (McBride 2001). A mosaic of upland and wetland habitats support prey species such as white-tailed deer and feral hogs.” (Id. on 8).

(3) “A further limitation to the usefulness of panther telemetry data for habitat selection analysis lies in the disjuncture between the time of data collection (mid- to late-morning) and the times of peak panther activity (dawn and dusk), when habitat selection is likely to be considerably broader (Rettie and McLoughlin 1999, Beyer and Haufler 1994).” (Id. on 32-33).

(4) “Despite the clear evidence that the forests of southwest Florida comprise a key component of panther habitat, it is equally clear from these analyses that Florida panther also utilize other land cover types, including freshwater marsh, prairie and scrub lands, agricultural lands, and even urban and barren lands.” (Id. on 36).

(5) “... results of these analyses and literature reviews indicate the following concerning Florida panther habitat use and habitat preferences in southwest Florida: (1) Florida panther telemetry locations (*i.e.*, daytime resting sites) are strongly associated with forest cover types, both wetlands and uplands; (2) telemetry locations are also associated with other natural and disturbed cover types, including freshwater marsh, prairie and shrub lands, agricultural lands (*i.e.*, improved pasture, citrus groves, row crops, sod farms), and even urban and barren lands to a minor extent; (3) approximately 99 percent of all telemetry locations occurring in forest cover types are found in patches greater than 2 ha in size; (4) approximately 95 percent of all telemetry locations are found within 200 m of a forest patch; and (5) while some telemetry locations are found in land

use classes coded as urban, a high percentage (*i.e.*, 93.7-98.5 percent) of all locations occur at distances greater than 300 m from urban lands.” (*Id.* on 38).

We do not agree that the model used within the Conservation Strategy “imply that land covers not associated with daytime telemetry are not occupied or potential panther habitat,” as alleged. Further, we do not agree that the Conservation Strategy implies that “land covers not associated with daytime telemetry are not habitat.” Rather, we believe that the Conservation Strategy takes a landscape approach by acknowledging that panthers use the mosaic of habitats available to them as resting and denning sites, hunting grounds, and travel routes. It is clear from the Panther Subteam’s analyses that Florida panthers also use other land cover types, including freshwater marsh, prairie and scrub lands, agricultural lands, and even urban and barren lands.

4. Statement of Error:

USFWS (2002b) acknowledge in the Florida Rock Biological Opinion (Opinion) that Maehr’s concept of “preferred” and “avoided” habitats is flawed because daytime telemetry does not describe habitat use. However, the Opinion continued to use the terms “preferred” and “avoided” habitat uncritically elsewhere in the document.

Furthermore, USFWS accepted the applicant’s impact assessment for “forest only,” although this assessment is based solely on daytime preference.

The Florida Rock biological opinion refers to “preferred” and “avoided” habitat in various context in the document and acknowledges its reference in panther research literature by Maehr et al (1991) and Maehr (1992) in discussions of occupied, potential, preferred, or tolerated habitats and in discussions of habitat usage referenced by Maehr and Cox (1995) in their extrapolations of daytime use to 24-hour use, which is the underlying premise in their habitat selection study (PHEM). However, the document states that “the value of habitats characterized as “not preferred” or “avoided” is understated,” and that “telemetry research is biased toward heavily forested public lands” and “primarily reflect a panther’s choice of day rest sites, or maternal den sites.” The document goes on to further state that “Habitats characterized as “not preferred” and “avoided” provide food and cover for panther prey, provide a buffer against more intensive land uses such as urban development, have a capacity to be restored to a native condition more conducive to panther use, and are part of the rural landscape matrix that has allowed the panther to persist in south Florida.” The document also discusses that panthers also utilize low cover to approach within striking distance of prey and “have recently been documented denning in sawgrass (*cladium jamaicense*) (Land et. al. 2001). This discussion is a clear indication that the Service did not accept the “forest only” habitat assessment as suggested in the IQA request for correction.

B. Fatal Data Limitations

5. Statement of Error:

Unacknowledged data omissions, inappropriate methods, failure to compensate for spatial error, and conclusions that fail to acknowledge data limitations contribute to a biased view of panther/habitat associations in Maehr and Cox (1995) and papers that rely on its findings.

Errors in Maehr and Cox (1995) and Maehr and Deason (2002) are reflected in the conclusions of biological opinions in which day-use habitat rankings are used to assess impacts.

MSRP: The MSRP for the threatened and endangered species of South Florida was completed in May 1999. In 2003, the SRT (Beier et al. 2003) revealed errors with Maehr and Cox (1995). The MSRP only cites Maehr and Cox (1995) once (in the panther chapter, on page 4-126). Because of the SRT review, we believe that Maehr and Cox (1995) should be cited more carefully in the future, in both the scientific literature and Service documents, including the update of the MSRP. Further, we believe that we have been fundamental in helping to assess this paper and the scientific literature surrounding the panther, since the Service and the FWC worked together to commission, contract, and fund the SRT report. Through this joint effort, a much-needed analysis of the scientific literature relating to the Florida panther was made possible. The SRT (Beier et al. 2003) revealed and confirmed the errors in Maehr and Cox (1995) and other papers, which ideally should have been discovered and corrected during the peer review process of individual journals.

Conservation Strategy Response:

The Conservation Strategy cited Maehr and Cox (1995) in numerous places, but it does not rely on its findings and clearly indicates limitations with the information. The Conservation Strategy states: “The results of Maehr and Cox (1995) have been questioned, however, because they used a point-to-pixel approach to overlay point locations with an accuracy of 200-230 m (Belden *et al.* 1988, Dees *et al.* 2001) onto a land cover grid with a resolution of 30 m pixels and because of the unstated assumption that habitats associated with daytime telemetry locations are representative of 24-hour habitat use by an animal that is most active at dawn and dusk (Comiskey *et al.* 2002)” (Conservation Strategy at 34). Further evidence that the Conservation Strategy did not take a “biased view of panther/habitat associations” as alleged, is found in the following passage: “Despite the clear evidence that the forests of southwest Florida comprise a key component of panther habitat, it is equally clear from these analyses that Florida panthers also utilize other land cover types, including freshwater marsh, prairie and shrub lands, agricultural lands, and even urban and barren lands (Tables 1, 2, and 3). Various authors (*e.g.*, Belden *et al.* 1988, Maehr *et al.* 1991, Maehr and Cox 1995, Comiskey *et al.* 2002) also make the point that panthers often utilize non-forest cover types interspersed in landscapes dominated by forests.” (Id. on 36).

Biological Opinion Response: In general, the Service was aware of the limitations of the information in the cited studies and we took these into consideration in our analyses and used other available scientific information to balance the limitations. We did not rely solely on the challenged information but rather relied on the whole body of scientific information available at the time each of these opinions was completed. However, we believed that the studies still had value and provided useful information, as we described in more detail earlier. We realized that there were problems with Maehr and Cox (1995) (i.e. PHEM) and so we required applicants to reanalyze their proposal using habitat types initially excluded from analysis. For specific examples of how we approached this issue for each biological opinion, please see our response under Error 1 (Daniels Parkway, Cypress Creek, Miromar, and Winding Cypress) and Error 4 (Florida Rock). We could not have used Comiskey et al (2002) in our decisionmaking because it had not been published prior to issuance of the biological opinions.

6. Statement of Error:

The Conservation Strategy cites Maehr and Cox uncritically in many places, and uses similar techniques of pooling data over the population, treating location points rather than the individual panther as the sampling unit (Beier et al. 2003).

The Conservation Strategy cites Maehr and Cox (1995) in numerous places, but does not do so uncritically. For example, the Conservation Strategy states “The results of Maehr and Cox (1995) have been questioned because they used a point-to-pixel approach to overlay point locations with an accuracy of 200-230 meters (Belden et al. 1988, Dees et al. 2001) onto a land cover grid with a resolution of 30 meters pixels and because of the unstated assumption that habitats associated with daytime telemetry locations are representative of 24-hour habitat use by an animal that is most active at dawn and dusk (Comiskey *et al.* 2002).” (Conservation Strategy on 34). Accordingly, to refine previous estimates of Florida panther habitat types associated with telemetry data, five separate methods were used to overcome the problems associated with the spatial inaccuracy of the telemetry data and outdated land cover data (*Id.* on 35). We agree that the Conservation Strategy uses a similar technique of pooling data as alleged. We plan to reanalyze the data as recommend by the SRT (2003), concurrent with the upcoming public notice and comment period.

7. Statement of Error:

The PHEM 90 meter rule is referenced in the Conservation Strategy in a section that proposes to determine the distance panthers are found from forest by computing the proximity of daytime telemetry to forest (USFWS 2002a:37).

In brief, while the Conservation Strategy does reference Maehr and Cox (1995), the 90-meter rule of PHEM is not included. Citing the Conservation Strategy, “For the purpose of developing a model of potential panther habitat, an analysis was performed to determine the distances panthers are likely to be found away from forest patches. To accomplish this, all 55,542 radio-telemetry locations were overlaid on the maps of forest patches derived from both the WMD land use/land cover data set and the updated FWC

satellite-based land cover data. The cumulative percentages of points found in increments of 100 meters from all patches of forest regardless of size were then tabulated. This analysis revealed that 95 percent of all telemetry locations were within 150-200 meters of forest patches, and 99 percent of all locations were within 800 meters (Table 11). These telemetry data reflect daytime use of panthers, and although night-time use could be substantially different, these data reflect the best information on panther habitat usage available at this time.” (Conservation Strategy on 37).

The Service plans to reanalyze telemetry data based upon Beier’s recommendations (2003) and Beier et al. (2003). We believe that the more rigorous analysis suggested by Beier, once incorporated into the final Conservation Strategy, will produce a definition of panther habitat that recognizes the importance of forest with more emphasis on non-forest. As confirmed by the Conservation Strategy, the Service has long recognized and fully acknowledges that panthers use a wide array of forested and non-forested habitat types and move about extensively throughout their large home ranges.

Request for correction 2 - Errors in Estimates of Demographic Parameters Used in Viability Analyses

A. Demographic Parameters for the Pre-introgression Panther Population

8. Statement of Error:

Estimates for pre-introgression population size (N=60) and rated of reproduction (100%) and kitten survival (80%), presented in the Maehr et al (1999) population viability analysis and published in Maehr et al (2002), are much higher than estimates used in earlier simulations (Ellis et al 1999). These higher estimates are not supported by monitoring data and misrepresent the status of panther population before genetic restoration (Beier et al 2003, Comiskey 2001; Comiskey et al 2004; McBride 2001a, 2002).

You complain that these errors are contained in the MSRP, Conservation Strategy, and biological opinions for S.W. Florida International Airport, Florida Rock, Southern Marsh and Hawk’s Haven. We provide the following responses for each of these documents:

MSRP: The MSRP was completed in 1999 and, as such, does not include any information after this time, including the studies cited in this request for correction. The MSRP does not include any specific estimates of pre-introgression population size, but does include an estimate for kitten survival. In a section on reproduction and demography, the MSRP states: “Infant mortality is thought to be relatively high with fewer than half of all pregnancies resulting in offspring that survive beyond 6 months of age (Roelke *et al.* 1993). The kitten survival rate between age 6 months and 1 year has been estimated at 0.895 (Land 1994). This is based on a sample of 15 radio-collared kittens monitored from 6 months to 1 year in age.” (MSRP at 4-121). Information on kitten survival within the MSRP was based upon the best scientific information at the time the MSRP was written (i.e., Land 1994).

The MSRP states that “Population viability projections have concluded that, under current demographic and genetic conditions, the panther would probably become extinct within two to four decades.” (MSRP at 4-117 Discussion of population viability within the MSRP (1999) is general and was based upon the best scientific information available at the time the MSRP was written (i.e., Seal et al. 1992).

The MSRP states that “Population viability analysis projections indicate that under existing demographic conditions the panther will likely be extinct in 24 to 63 years (Seal *et al.* 1992)” (Id. on 4-125). At the time of the MSRP, six of the eight female Texas cougars remained alive (Id. on 4-132), and results of introgression were preliminary. Today, all of the eight introduced Texas cougars have been removed or have died, and results of the genetic restoration are becoming better understood. When the MSRP is updated in 2006, the Service will use the best available scientific information from the panther population regarding population size, reproduction rate, kitten survival, and population viability.

Conservation Strategy:

We believe the Panther Subteam carefully considered all available scientific information in its assessment of demographic parameters of the panther population. Clearly, the Conservation Strategy acknowledges that population parameters differed prior to and following genetic restoration. As stated within this document, “Prior to the genetic restoration project, kitten survival was relatively low (Maehr 1997). Fewer than half of all pregnancies produced offspring that survived beyond 6 months of age (Roelke *et al.* 1993). Kitten survival rates since genetic restoration efforts have been estimated at 62 percent (Land *et al.* 2001).” (Conservation Strategy at 6). In addition, the section of this document concerning previous Florida panther population viability analysis (PVA) research provides a lengthy description of previous models and parameters used. For instance, as stated in the Conservation Strategy “Ellis *et al.* (1999) reviewed the results of Ballou *et al.* (1989), Seal and Lacy (1992), and Maehr *et al.* (2002b) and performed additional VORTEX-based PVAs to refine the results of previous modeling efforts. They simulated population sizes and estimated probability of extinction under varying scenarios of juvenile mortality rate, future releases of non-Florida animals, increased carrying capacity, expansion of panthers into newly connected habitat, and habitat loss. Ellis *et al.* (1999) found that the panther population was self-sustaining only if the first year mortality rate remained below about 40 percent, a value very close to the current estimate of kitten (0 to 6 months of age) mortality rate provided by Land *et al.* (2001). The model was, in general, very sensitive to reductions in juvenile survival.” (Id. on 59).

Finally, the Panther Subteam did not use Maehr’s estimate of 0.80 kitten survival in building its PVA models. Rather, the Panther Subteam used 0.62 for kitten survival in building its Conservative, Moderate, and Optimistic models (Conservation Strategy id. on 137, Table 22). We believe that the Panther Subteam used the best available scientific

information and selected the most reliable estimates for population parameters in its population viability analyses for the Conservation Strategy.

Biological Opinion Response (SW Florida International Airport, Florida Rock, Southern Marsh, and Hawk's Haven):

These biological opinions reference Maehr et al.'s (1999) population viability analysis which incorporates estimates of pre-introgression population size and kitten survival, which was published in 2002. Specifically the text of the opinions state "A recent population viability analysis using a non-spatially explicit model known as VORTEX indicates a high probability of persistence for 100 years (Maehr *et al.* 1999), but concerns about model assumptions and data limitations make application of these results problematic. As a result, the Service has convened a panel of scientists tasked with completing a population viability analysis using a spatially explicit model known as RAMAS and updated demographic parameters. The results will then be used to better guide recovery and regulatory decisions." Although these biological opinions do reference the publication containing the statement of error, we acknowledged in the text of the opinions that the information was questionable and stated that the Service has appointed a Florida panther Subteam to evaluate Maehr's PVA analysis and develop a new updated PVA model using the most current data. Accordingly, we do not believe this information as used in the biological opinions provides a misrepresentation of the status of the panther population.

9. Statement of Error:

The Conservation Strategy references Maehr et al (2002) PVA uncritically in a number of places.

The Conservation Strategy cites the Maehr et al. (2002) PVA in numerous places, but does not do so uncritically. The Service is aware that PVA models are highly dependent upon the parameter estimates used and assumptions made. Therefore, while reviewing Maehr et al.'s (2002) PVA model, the Panther Subteam also reviewed other available PVA models and revisited assumptions accordingly. Among the assumptions reviewed and revisited was Maehr et al.'s (2002) estimate of 0.80 for kitten survival. The Panther Subteam, through team deliberations and the use of all scientific information available to them used 0.62 for kitten survival in building its PVA models (Conservation Strategy on 137, Table 22).

The Conservation Strategy also states "Three general single-sex models were constructed, shown in Table 22. One, labeled Conservative, is based on the Seal and Lacy (1989) model except that juvenile mortality was 38 percent instead of 50 percent (based on the latest data, Land *et al.* 2001). Note this scenario assumes a later age at first reproduction but a larger litter size than the other models. The second model, labeled Moderate, is based on the 1992 Optimistic model (Maehr *et al.* 2002b; see Table 22) parameters except that kitten mortality was 38 percent instead of 20 percent. A third model, labeled Optimistic, is based on the 1999 Consensus model (Maehr *et al.* 2002b; see Table 22) parameters except that kitten mortality was 38 percent instead of 20

percent. All models assumed a 50:50 sex ratio and 50 percent of females breeding in any year.” (Id. on 61).

B. Breeding Adults versus Known Population Size

10. Statement of Error:

It is erroneous and misleading to compare the known population of panthers, which includes non-breeding adult and sub-adult panthers, with target population sizes that stipulate breeding adult panthers (effective population status).

Recent USFWS biological opinions compare an MVP of 50 to McBride’s Current Verified Population (CVP) of 78 and compute a surplus of 28 panthers, although the MVP refers to breeding adults (specifically 25 breeding females) while McBride’s CVP refers to individuals (USFWS 2002b:17)

MSRP: The Service is revising the MSRP to update all of the information for all of the species, including the Florida panther. We expect this revision to be completed in 2006. This will allow us time to review and incorporate all substantive comments received during the Federal Register public comment period for the Conservation Strategy.

Regarding population size, the MSRP states: “A small population in South Florida, estimated to number between 30 and 50 adults (30 to 80 total individuals), represents the only known remaining wild population of an animal that once ranged throughout most of the southeastern United States from Arkansas and Louisiana eastward across Mississippi, Alabama, Georgia, Florida and parts of South Carolina and Tennessee.” (MSRP at 4-117).

The MSRP differentiates between total population size and breeding population size, although admittedly it does so in a confusing manner. The MSRP (at 4-128) states “If private land habitats are lost the existing public lands in South Florida are judged capable of supporting only 9 to 22 (Maehr 1990b) of the minimum 50 adult panthers needed to sustain a genetically viable population.” The MSRP (at 4-129) states “A Habitat Preservation Plan (HPP), prepared in 1993 for the FPIC, identified 374,868 ha of occupied and potential habitat considered essential to maintaining a minimum viable population of 50 breeding adult panthers in South Florida.” The MSRP (at 4-132) states “The level of introgression required to reverse the deleterious effects of inbreeding is estimated at 20 percent, or 6 to 10 Texas cougars (*F. c. stanleyana*), based on the current population estimate of 30 to 50 breeding adult panthers.” The Service will clarify any discrepancies between total population size and breeding population size when the MSRP is revised and updated.

Conservation Strategy Response:

While we appreciate your issue as it relates to the total panther population versus the viable breeding population, we do not agree with your allegation that the Conservation Strategy imprecisely or misleadingly uses these terms when discussing panther

populations. We feel the Conservation Strategy clearly defines what the difference is between the total panther population and the breeding population of panthers.

For example, regarding the current verified population (CVP), the Conservation Strategy states “The CVP represents the number of panthers whose existence has been confirmed by (1) treeing with hounds and radiocollaring, (2) treeing with hounds but not radiocollaring, (3) physical evidence (*e.g.*, tracks in areas where collared panthers are absent), (4) documentation by trail camera photos, or (5) sighting of an uncollared panther accompanying a radiocollared panther by a biologist conducting aerial relocations (McBride 2002).” (Conservation Strategy on 4). In summary, this equates to the total census population: subadults, adults, and panthers beyond breeding age.

The Conservation Strategy goes on to say “... the Minimum Viable Population [MVP] provides an estimate of the number of individuals needed to preserve a species (Menges 1991)” (*Id.* on 53). We did not compare the MVP to the CVP; instead, we specifically looked at the numbers of adult breeding panthers. Therefore, we feel the Conservation Strategy clearly defines what the difference is between the total panther population and the breeding population of panthers. However, if public comments received during the Federal Register public comment period for the Conservation Strategy reveal confusion surrounding this issue, the Service will further define the difference between the total panther population and the breeding population of panthers.

Biological Opinion Responses (S.W. Florida International Airport, Florida Rock, Southern Marsh, Hawk’s Haven)

At the time these biological opinions were finalized, the CVP (current verified population) of Florida panthers was 78, as referenced by a personal communication with Roy T. McBride.

We acknowledge that a discrepancy arose between the total panther population and the breeding population of panthers. As shown in the text, the Service did equate the number of total panthers in the current population, at the time the biological opinion was written, as meeting the minimum number of 50 breeding adults needed to ensure demographic and genetic health in the current population. The Service biologist became aware of this discrepancy in the data interpretation in mid-2002 and removed the text in the succeeding biological opinions as this specific information was incorrect.

The difference in the data interpretation is related to the Service’s misunderstanding of the differences in Seal’s 50 breeding adults, Logan’s 50 adults, McBride’s total population of 78, and the Service’s total population of panthers, which was estimated at a population of 30 to 50 adults at that time.

The DQA challenges that by comparing the known population size to a target number of breeding adults gives the misleading impression that the panther is less endangered than it actually is, and hence less in need of recovery efforts mandated under the ESA, including determinations of jeopardy.

Whether or not the CVP of panthers was accepted by everyone within the scientific community or not is not as critical in our judgment as whether or not there is sufficient habitat for the panther and its long term survival. The analysis conducted for the opinion determined that this project would not directly take (i.e. kill) a panther. However, the habitat was impacted. The critical issue for this biological opinion is whether the loss of habitat impacted is by itself enough to result in jeopardy to the species. After evaluating the status of the species, the quality of the habitats the project affected, and the compensation proposed by the applicant, we determined that the loss of the habitat associated with the project would not result in jeopardy for the panther but did result in take (habitat impact). Therefore, the Service did not believe that it was necessary to correct the information in the biological opinion since the corrected information would not change the outcome of the analysis or result in new or additional “Terms and Conditions.”

11. Statement of Error:

The Conservation Strategy uses imprecise and misleading terms “panthers” or “individuals” rather than the required “breeding adults” when discussing minimum viable populations (MVP) and population viability analyses (PVA).

While we appreciate your issue as it relates to the total panther population versus the viable breeding population, we do not agree with your allegation that the Conservation Strategy imprecisely or misleadingly uses these terms when discussing panther populations. We feel the Conservation Strategy clearly defines what the difference is between the total panther population and the breeding population of panthers.

For example, regarding the current verified population (CVP), the Conservation Strategy states “The CVP represents the number of panthers whose existence has been confirmed by (1) treeing with hounds and radiocollaring, (2) treeing with hounds but not radiocollaring, (3) physical evidence (*e.g.*, tracks in areas where collared panthers are absent), (4) documentation by trail camera photos, or (5) sighting of an uncollared panther accompanying a radiocollared panther by a biologist conducting aerial relocations (McBride 2002).” (Conservation Strategy on 4). In summary, this equates to the total census population: subadults, adults, and panthers beyond breeding age.

The Conservation Strategy goes on to state “... the Minimum Viable Population [MVP] provides an estimate of the number of individuals needed to preserve a species (Menges 1991).” (*Id.* on 53).

Therefore, we feel the Conservation Strategy clearly defines what the difference is between the total panther population and the breeding population of panthers. However, if public comments received during the Federal Register public comment period for the draft Conservation Strategy reveal confusion surrounding this issue, the Service will further define the difference between the total panther population and the breeding population of panthers.

Regarding your allegation that the Conservation Strategy imprecisely or misleadingly uses these terms when discussing population viability analyses, we again cite the Conservation Strategy which says,

“(3) As in any model of metapopulation dynamics, the model of the Florida panther makes a number of assumptions. These assumptions were necessary largely because of data limitations, and also to keep the model simple enough to be reasonably functional. Below is a list of the major assumptions of the model:

(1) Either two (existing panther populations only) or, hypothetically, ten (existing plus potential populations) populations functioned as discrete populations loosely connected through migration, forming a metapopulation (Figure 58).

(2) The vital rates of the past (as measured through telemetry data) reflect the values in the future. This assumes that monitoring the population has had no effect on the survival or fecundity rates.

(3) The initial abundance was based on an estimate of 41 females (D. Land, FWC, pers. comm., 2001).

(4) The density within a population was assumed uniform throughout the entire area encompassed, and only suitable habitat (based on the GIS analysis) for the panther was included in estimations of population area, density, and carrying capacity.

(5) The model assumes (except in the scenarios where carrying capacity was changed) that the habitat remains in exactly the same shape and condition that it was at the time of the habitat suitability analysis, *i.e.*, there was no change in the amount or quality or configuration of the habitat over the 100 years of the simulation unless explicitly specified in the scenario.

(6) Habitat within a population was assumed to be contiguous and readily accessible.

(7) Reproduction began at age 2, and, on average, 50 percent of the adult females were breeding in a given year.

(8) Fecundities were the product of the probability of breeding (*i.e.*, 50 percent), number of daughters per female, and the survival of offspring to one year.

(9) Dispersal was considered as permanent movement of a proportion of individuals from one population to another in a single year. This was dependent on the distance among the populations, although travel across the Caloosahatchee River was very infrequent.

(10) A 50:50 sex ratio was assumed in the model; only females were included in the model.

(11) For the purposes of reproduction, mates were assumed readily available and non-limiting.

(12) The density ceiling only applies to adults to simulate territoriality.”
(*Id.* on 62-64, Table 22).

We believe that the Conservation Strategy clearly defines what is meant by population in its discussion of population viability.

12. Statement of Error:

McBride's information is cited in the biological opinions as a personal communication, although his communication with the USFWS was in the form of a written report (McBride 2001) that provides other relevant information. If McBride's written report had been properly cited and referenced, the reader could have determined that his information was misrepresented in biological opinions to make the panther appear less endangered.

The McBride personal communication reference was in relation to the extant population and was a personal verification by the biologist that the number 78 was correct. The Service contacted McBride to verify the number because the exact population of panthers changes with some regularity as animals die and kittens are born. In retrospect the Service should have also cited this written report.

13. Statement of Error:

Despite unanimous agreement among reviewers regarding the serious errors in panther literature described herein, the USFWS has failed to acknowledge these errors or take steps to correct misinformation and reevaluate policies based on misinformation, as required under the Data Quality Guidelines.

Despite peer-review comments provided in November 2002 and February 2003 that identified serious errors in the Conservation Strategy, the USFWS has failed to address review comments and continues to use and disseminate the uncorrected draft, perpetuating misinformation about panthers.

Refusing to address peer-review comments to the Conservation Strategy before it is disseminated contributes to the mistaken view of panther science held by those who have relied on literature by Maehr and colleagues for information about panthers.

In February 2000, the Service appointed a Florida Panther Subteam to develop a landscape conservation strategy for panthers in south Florida using an open and collaborative venue. The Panther Subteam was comprised of 11 highly qualified individuals knowledgeable in panther biology and landscape ecology representing academia, government agencies, and other interests. The primary goal of the Panther Subteam was to identify a strategically located set of lands containing sufficient area and appropriate land cover types to ensure the long-term survival of the panther. The Panther Subteam focused its efforts on the area south of the Caloosahatchee River, where the only reproducing Florida panther population currently exists. The Panther Subteam submitted the Conservation Strategy to the Service in December 2002. The methodology and results of this draft document were scientifically peer reviewed, and comments from two of three peer reviewers were incorporated. The Conservation Strategy identifies lands important for the continued conservation of panthers in south Florida, as well as a landscape linkage to provide for population expansion north of the Caloosahatchee River to aid in the recovery of the species. Since the Conservation Strategy is a product of a highly qualified team of panther biologists and landscape ecologists, the Service believes

that it is based upon the best available scientific information. However, we are interested in obtaining comments from the broad scientific community and general public to ensure the highest level of quality possible. Therefore, we plan on noticing the Conservation Strategy in the Federal Register to obtain the widest array of review possible.

Regarding the Conservation Strategy, the Service requested scientific review from three qualified reviewers. Comments from two of the reviewers were received within the time frame requested and their comments were incorporated into the most recent (December 2002) version of the Conservation Strategy. Comments from the third peer reviewer (Beier) were received in February 2003, after the date requested. Dr. Beier's comments contained several suggestions that were very constructive and beneficial to the scientific integrity of the document. We incorporated many of Dr. Beier's suggestions and comments as appropriate. However, some of Dr. Beier's comments and suggestions are substantial and would require reanalysis of telemetry data. After discussing the situation with several members of the Florida Panther Subteam, the Service decided in 2003 that it was most appropriate to proceed with issuing the Conservation Strategy for public review and comment in the Federal Register and address Dr. Beier's 2003 comments concurrently with comments received during the public comment period for the draft Conservation Strategy. Comments from the scientific community and general public, along with information from the Science Review Team's report (Beier et al. 2003), may result in changes to the Conservation Strategy. In summary, we will address substantive comments on the draft Conservation Strategy.

Service Conclusions

Your request for correction falls into two broad categories: those associated with panther/habitat use and those associated with estimates of demographic parameters used in viability analyses. Within the panther/habitat category, you identify two errors -- use of daytime telemetry data which resulted in mischaracterization of panther habitat, and fatal data limitations involving data omissions, inappropriate methods and data use. Within the category of errors associated with estimates of demographic parameters used in viability analysis, you also identify two errors, one involving demographic parameters for the pre-introgression panther population and one involving breeding adults versus known population size. The main focus of your request for correction seems to be the use of information produced by Dr. Maehr and associates.

Because of the use of this science by the Service, you are requesting the following corrective actions:

1. Retraction of the MSRP, draft Florida Panther Conservation Strategy and eight biological opinions,
2. Notify other Federal and state agencies of the errors, and
3. Notify selected editors of journals and books of the errors.

While the Service agrees that some of the information being challenged has been updated and supplanted with new science, the Service disagrees with the effect the use of this

information has had on its conservation policies for the Florida panther. You seem to imply that by merely referencing a published article in an analysis equates to our sole reliance on that information in formulating a conclusion. This is not the case as we have articulated in the detailed text of this response, and therefore we do not believe that it is warranted to withdraw the biological opinions you identified in your request for correction. In fact, to do less than to use the scientific and commercial information available when rendering our decisions would violate mandates required of our agency.

With respect to the MSRP, the Service intends to revise this document to update all of the information for all of the species, including the Florida panther. We expect this revision to be completed in 2006. This timeframe will allow us time to review and incorporate all substantive comments received during the Federal Register public comment period for the draft Conservation Strategy, as well as complete and include any additional data reanalysis, as recommended by Dr. Beier.

Regarding your request that we retract 8 biological opinions, we offer the following information. The Daniels' Parkway project is completed and as such, is not eligible for retraction or reinitiation of consultation. Regarding Cypress Creek, Miromar, and Winding Cypress, you request we retract these documents because of allegations that we solely relied on PHEM habitat assessment method. As stated previously, we considered PHEM in our development of these biological opinions, but the Service's decision (jeopardy versus no jeopardy) was not solely based on PHEM, but also used habitat assessment data generated by FWC's GIS analysis. We also included the importance of habitat preserved onsite, offsite, and its relation to project impacts. Therefore, we feel that these four biological opinions do not need to be retracted nor should consultation be reinitiated because we did consider other habitat assessment methods and variables in our analysis, such as FWC's GIS data.

Regarding the S.W. Florida International Airport, Florida Rock Industries, Southern Marsh, and Hawk's Haven biological opinions, you request retraction of these documents because you allege we incorrectly compared effective (breeding) population size and total population, giving the misleading impression that the panther is less endangered than it actually is. Although we did misquote the population data (breeders versus total population), the Service's decision (jeopardy versus no jeopardy) was based on many other factors besides the size of the breeding Florida panther population. Other factors that have not been questioned, such as quality and location of habitat impacted, preserved, or restored onsite and offsite, and the benefit these habitats provide to the overall stability and recovery of the Florida panther population, were also considered. Therefore, we feel that these four biological opinions do not need to be retracted nor should consultation be reinitiated because the Florida panther population data was not the only information relied upon to evaluate the project's effects on the panther.

Regarding your request to notify other Federal and state agencies of the new information relating to Florida panther habitat requirements, the U.S. Army Corps of Engineers receives copies of our biological opinions. Additionally, the state agency, the FWC, is

aware of this new data, because they, along with the Service, contracted and funded the SRT and the resulting report.

Regarding your request to have the Service notify selected editors of journals and books of the errors, we feel it is not our responsibility to perform this task since the errors were not generated by the Service.

Scientific information is ever changing and the Service is accustomed to dealing with this change through many of its policies and procedures. We also do not believe that it is appropriate to modify the Conservation Strategy at this time. However, the Service will be inviting public comment on the draft Conservation Strategy when it publishes a Notice of Availability in the Federal Register later this year. At that time, we will address all substantive comments received, including those already provided by Dr. Beier in his review, and make revisions as appropriate.

Finally, the Service was aware of many of the problems with the state of available panther science and initiated strong corrective actions over four years ago when it appointed members to the Panther Subteam and charged them to identify a strategically located set of lands containing sufficient area and appropriate land cover types to ensure the long term survival of the panther. In addition, as mentioned previously, we jointly contracted for the SRT review to evaluate the existing Florida panther literature and data analyses. We believe that we were the very catalyst that brought your concerns to light in the scientific community and we made changes to our use of this data as was appropriate at that time. In addition, we are continuing to seek the best science by publishing a Notice of Availability in the Federal Register of the draft Conservation Strategy and draft Tool, and supporting the finding and recommendations of the SRT's analysis of the scientific literature related to the panther.

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