

Appendix E

Panther Review Team Analysis: In 2016 the Panther Review Team (PRT), composed of six scientists with expertise in Florida panther ecology and landscape level natural resource planning, was commissioned by the Florida Panther Protection Program, a partnership of landowners/ITP-Applicants and non-governmental environmental organizations. The PRT Analysis benefits our understanding of the threat of habitat loss in the Plan Area by analyzing several scenarios of development within the Rural Lands Stewardship Area (RLSA) the HCP proposes development in. Specifically, the Florida Panther Protection Program requested the PRT assess the following with respect to landowner proposals for development in the RLSA:

- Landowners' provision of 25% more mitigation for impacts to the panther Primary Zone of the RLSA, increasing the mitigation ratio of Panther Habitat Units (PHUs) to 3.125:1 (i.e., $2.5 \times 1.25 = 3.125$) from 2.5 for projects located or proposed within those areas (Additional discussion of Service recommended methodology for assessing impacts and mitigation requirements using PHUs are in Appendix A)
 - Generation and use of panther credits on lands set aside as Stewardship Sending Areas
 - Protection of agricultural lands through establishment of Agricultural Preservation areas
 - Establishment of a core transportation network to serve 45,000 acres of development
 - Proposal by the landowners for two corridors intended to enhance landscape connectivity
- Creation of the Paul J. Marinelli Florida Panther Protection Fund

However, the PRT found there were several estimates of the total acreage of possible development at build-out under the existing program. Therefore, the PRT performed 3 analyses:

1. The PRT assessed the relative value of the current and proposed mitigation ratios to panther habitat conservation a GIS analysis of three estimates of allowable development under the existing RLSA program in comparison to benefits associated with capping development at 45,000 acres;
2. The PRT assessed the relative values of five scenarios of development of 45,000 acres based on various percentages of future impact in the panther Primary and Secondary Zones. Finally, the PRT analyzed the benefits of the increased mitigation ratio based on a recommendation that all Secondary Zone Open lands be developed before developing in the Primary Zone' and;
3. The PRT assessed their recommendation that development should occur within the Secondary Zone before development occurs in the Primary Zone. The analyses were based on available data layers for land cover, RLSA land use categories, and panther Primary and Secondary Zones. Increased financial contributions to the Marinelli (Panther) Fund also were estimated.

The three estimates of allowable development analyzed by the PRT under the existing RLSA program, in comparison to a development cap of 45,000 acres, were:

1. Collier County Full Utilization Scenario: Collier County estimated that dedication of all lands designated as HSAs, FSAs, and WRAs to SSAs would generate a quantity of

Stewardship Credits sufficient to accommodate development of 41,040 acres of SRAs. An additional 46,738 acres of RLSA Open Lands would remain available for development at baseline conditions of 1 unit/5 acres with no clustering. Development of the remaining 46,738 acres of Open Land at 1 unit/5 acres would effectively render these areas unsuitable as panther habitat. Therefore, the total development footprint at build-out would include 82,751 acres after subtracting the 5,027 acres within the boundary of Ave Maria (Table 3.2-1 of FPPTRT 2016).

2. WilsonMiller Full Utilization Scenario: This scenario is very similar to the Collier County full utilization scenario. WilsonMiller estimated that dedication of all lands designated as HSAs, FSAs, and WRAs to SSAs would generate a quantity of Stewardship Credits sufficient to accommodate development of 43,300 acres of SRAs. An additional 43,700 acres of RLSA Open Lands would remain available for development at baseline conditions of 1 unit/5 acres with no clustering. Development of the remaining 43,700 acres of Open Land at a density of 1 unit/5 acres would effectively render these areas unsuitable as panther habitat. Therefore, the total development footprint at build-out would include 81,973 acres after accounting for the 5,027 acres within the boundary of Ave Maria (Table 3.2-1 of FPPTRT 2016).

3. WilsonMiller Partial Baseline Scenario: WilsonMiller estimated that dedication of all lands designated as HSAs, FSAs, and WRAs to SSAs would generate a quantity of Stewardship Credits sufficient to accommodate development of 43,300 acres of SRAs. However, WilsonMiller noted that market incentives favor well planned, compact, mixed use communities served by high quality infrastructure and services, and that it is unrealistic to expect development of the remaining 43,700 acres at a density of 1 unit/5 acres. The partial baseline scenario assumed 10% conversion of ACSC Open Lands and 25 percent conversion of non-ACSC Open Land. This scenario would result in a build-out estimate of 51,975 acres of development, but only 46,948 acres remain available for future development after accounting for Ave Maria (Table 3.2-1 of FPPTRT 2016), and 35,025 acres of Open Land would remain in agriculture.

4. 45,000-Acre Development Cap Scenario: Proposed revisions to the existing RLSA program would impose a 45,000-acre cap on future development. The existing Stewardship Credit system would be recalibrated to yield the protection of the following areas at build-out: 1) 92,000 acres of NRI-based SSAs, 2) 40,000 acres of agriculture SSAs, 3) 2,300 acres of panther corridors, and 4) 16,546 acres of public and miscellaneous lands. This scenario assumed that approximately 39,973 acres of future development would remain after subtracting the 5,027 acres of Ave Maria from the 45,000-acre cap.

The 5 scenarios of development identified by the PRT that could occur with a 45,000 acre cap (4, above) were:

1. Scenario 1: Assumes that 100% of future impacts occur within the panther Secondary Zone.
2. Scenario 2: Assumes that 75% of future impacts occur within the Secondary Zone and 25% of future impacts occur within the Primary Zone.

3. Scenario 3: Assumes that 50% of future impacts occur within the Secondary Zone and 50% of future impacts occur within the Primary Zone.
4. Scenario 4: Assumes that 25% of future impacts occur within the Secondary Zone and 75% of future impacts occur within the Primary Zone. 36
5. Scenario 5: Assumes that 100% of future impacts occur within the Primary Zone.

To analyze the effects of these proposed modifications to voluntary landowner participation in the RLSA, the PRT utilized Collier County Rural Lands Stewardship Area Overlay. The RLSA program was established in Section 4.08.00 of Collier County's Land Development Code for the purpose of encouraging smart growth patterns within a rural landscape covering 195,846 acres generally in the vicinity of Immokalee, Florida. Collier County's objective was to create an incentive-based land use overlay system referred to as the Collier County RLSA Overlay. The Overlay is intended to protect natural resources and retains viable agriculture by promoting compact rural mixed-use development as an alternative to low-density single use development. The PRT recognized that new development is the driving force for achieving natural resources conservation within the RLSA program. The RLSA program provides a system of compensation to private property owners for the removal of certain land uses in order to protect natural resources and viable agriculture in exchange for transferable credits that can be used to entitle compact development (Policy 1.2). The system is based upon the principles of rural land stewardship as defined in Chapter 163.3177(11), Florida Statutes.

The RLSA program allows for any land within the RLSA to be designated as a Stewardship Sending Area (SSA). Stewardship Credits are generated from SSAs in return for maintaining the areas in permanent agriculture, open space or conservation uses. Stewardship Credits may be used to entitle a Stewardship Receiving Area (SRA) which can be in the form of self-contained planned urban developments within the RLSA. The SSA Program within the RLSA establishes a method for protecting and conserving the most valuable environmental land, including large connected wetland systems and significant areas of habitat for listed species, while directing compact developments to the least environmentally sensitive areas of the RLSA. A Natural Resource Index (NRI) was developed to rank lands within the RLSA according to value for wetlands protection, water resource protection and management, and wildlife habitat conservation. Results from the NRI analysis were used to map all areas of the RLSA according to five major categories of land use (WilsonMiller 2002):

Flowway Stewardship Area (FSA): FSAs are privately owned lands that primarily include wetlands located within the CKS and Okaloacoochee Slough ecosystems.

Habitat Stewardship Area (HSA): HSAs are privately owned lands that include areas with natural characteristics that make them suitable for listed species as well as areas without these 5 characteristics. The latter areas are included because they are contiguous to habitat with natural characteristics, thus forming a landscape continuum that can augment habitat values.

Water Retention Area (WRA): WRAs are privately owned lands that have been permitted by the South Florida Water Management District (SFWMD) to function as agricultural WRAs and that provide surface water quality and other natural resource value. Many of these areas are large natural wetlands that, in some cases, connect to and support FSAs.

Open Land: Open Lands are privately owned lands not otherwise classified as FSAs, HSAs, or WRAs and are generally of lower natural resource quality.

Lake Trafford: The RLSA also includes the open waters of Lake Trafford, which cover approximately 1,460 acres.

Lands designated as FSA, HSA, or WRA are areas of high quality natural resource value based on the NRI analysis. Lands delineated as FSAs, HSAs, or WRAs are the most likely candidates for designation as SSAs because of the greater number of Stewardship Credits available from these lands. Open Lands may be designated as either SSAs or SRAs, but Open Lands are the most likely candidates for SRAs because of the lower Stewardship Credit values applied to these lands. A portion of the RLSA is included within the Big Cypress Area of Critical State Concern (ACSC). Although Big Cypress ACSC lands may be designated as SSAs, additional RLSA standards apply and all Big Cypress ACSC regulations remain in force regardless of SSA designation. In addition, the RLSA contains approximately 15,200 acres of publicly owned lands, which are eligible for designation as FSAs, HSAs, or WRAs, but public lands are not eligible for designation as SSAs or SRAs or for generating or receiving Stewardship Credits.

Results of the PRT analyses were as follows:

Analysis 1 (Baseline Conditions vs. 45,000 Acre Development Cap): The combination of the existing RLSA program and baseline development densities applicable in areas that would not be designated as SRAs had the potential to result in $46,948 \pm 82,751$ acres of future development (Table 3.2-1 of FPPTRT 2016). The full utilization scenarios would require approximately 913,000 PHUs of mitigation, which would be sufficient to protect approximately 112,000 acres of Primary Zone habitat (Table 3.2-1 of FPPTRT 2016). However, the cost for protecting 112,000 acres of panther habitat would be the development of approximately 87,000 acres of Open Lands, some areas of which are important panther habitats. The partial utilization scenario would require approximately 520,000 PHUs of mitigation, which would be sufficient to protect approximately 63,800 acres of Primary Zone habitat (Table 3.2-1 of FPPTRT 2016). However, the partial utilization scenario would leave approximately 35,000 acres in agricultural uses without protection from future development. These acres could be developed at baseline densities of 1 unit/5 acres if future market conditions increased the demand for this type of development. The proposal for 25 percent more PHUs of mitigation for impacts to the Primary Zone does not apply to the full utilization or partial utilization scenarios.

The proposed 45,000-acre cap on development would result in a requirement for approximately 443,000 PHUs of mitigation under the 2.5:1 ratio and 517,000 PHUs of mitigation under the 3.125:1 ratio, for a net benefit of approximately 74,000 additional PHUs (Table 3.2-1 of FPPTRT 2016). These PHUs would result in the protection of approximately 54,300 and 63,400 acres, respectively, of panther Primary Zone under the existing and proposed mitigation ratios for a net benefit of approximately 9,000 acres of added protection. The PHUs of mitigation needed under the proposed 3.125:1 mitigation ratio would protect approximately the same number of acres as the partial utilization scenario. However, there is a significant difference between these two scenarios in terms of protection of panther habitats. The partial utilization scenario would leave approximately 35,000 acres of agricultural land at risk of future development at baseline densities of 1 unit/5 acres. Conversely, the 45,000-acre development cap

scenario is achieved by a recalibration of the Stewardship Credit system such that all lands that are not developed at build-out will be protected as NRI-based or agriculture SSAs because all of these areas are needed to generate enough Stewardship Credits to enable development of 45,000 acres. Most of the NRI-based SSAs and many of the agriculture SSAs provide habitats valuable to the conservation of Florida panthers. Protection of these areas would be achieved by the Stewardship Credit system without involving PHUs. Implementation of the proposed 3:125 mitigation ratio would result in a total financial benefit to the Panther Fund of approximately \$38.8 million compared to no financial benefit under the three baseline scenarios.

Analysis 2 (Five Scenarios of 45,000 Acre Development Cap): A greater acreage of impact in the Primary Zone results in a greater number of PHUs of additional mitigation credit, a greater number of acres of panther habitat protected, and a higher financial contribution to the Panther Fund (Table 3.3-1 of FPPTRT 2016). The additional 25 percent of PHUs for impacts to the Primary Zone results in $0 \pm 139,241$ PHUs of additional mitigation with a net result of $0 \pm 17,073$ acres of additional panther habitat protection assuming the average value of 8.1557 PHU/acre applies to all areas of Primary Zone habitat likely to be protected. Total financial benefits to the Marinelli Fund ranged from \$0 to approximately \$52.2 million.

Analysis 3 (Development of Secondary Zone Before Primary Zone): The existing 2.5:1 mitigation ratio would require approximately 301,045 PHUs of mitigation compared to 310,000 PHUs resulting from the proposed 3.125:1 ratio, for a net benefit of 8,956 PHUs (Table 3.3-2 of FPPTRT 2016). The proposed mitigation ratio would yield net benefits of approximately 1,098 acres of additional protection and \$671,682 of revenue to the Marinelli Fund.

Based on their analysis the PRT concluded a cap development of 45,000 acres and provision of an additional 25 percent of PHUs of mitigation for impacts to the Primary Zone would result in greater benefit to Florida panther habitat conservation than the three baseline scenarios of the existing RLSA program. The PRT also determined a 45,000-acre development cap would provide certainty that the future extent of development would be limited to a specific number of acres (although not tied to known locations), and all remaining areas of the RLSA, including important panther habitats, would be protected as SSAs. Moreover, the PRT found the financial benefits to the Marinelli Fund would range from \$23.6 million to \$52.2 million depending on the acreage of Primary Zone impacted by future development (Table 3.3-1 of FPPTRT 2016).

However, the PRT were uncomfortable with certain aspects of the 45,000 acre cap proposal with 25 percent greater PHU mitigation in that greater benefit in certainty and mitigation would accrue as a consequence of greater impacts to the Primary Zone, an area that has been described as essential to the survival of the Florida panther (Kautz et al. 2006). This concern was addressed by the PRT recommendation the landowners protect an additional 38,746 acres for panther conservation because the 45,000 acre cap respected by the landowners would still leave approximately 39,330 acres in which future developments could be located with certainty. The PRT also recommended landowners develop all 33,224 acres of Secondary Zone in the RLSA and only 2,084 acres of Primary Zone remaining under the development cap to further minimize future development impacts on panther habitats. The scenario recommended by the PRT would result in approximately \$23.25 million to the Panther Fund using the 3.125:1 mitigation ratio, for a net benefit of approximately \$672,000 over the existing 2.5:1 mitigation ratio. The value of the proposed 45,000-acre cap and additional PHUs of mitigation were compared with the baseline scenarios in terms of total number of acres eventually protected. The PRT found a 45,000-acre

cap scenario would result in the protection of virtually all RLSA lands not developed, which amounts to approximately 150,878 acres, because every acre of undeveloped land would be protected as natural resource or agriculture SSAs to generate the Stewardship Credits needed to develop 45,000 acres. Protected lands and waters would include approximately 15,236 acres currently in public ownership, 84,251 acres of HSAs, FSAs, and WRAs that are outside of public ownership, 1,461 acres of Lake Trafford, and 49,930 acres of agricultural lands designated as agricultural SSAs (Table 2.4-3).

Based on its analysis the PRT further recommended additional areas within the RLSA that receive consideration for some form of additional protection. Specifically, the PRT recommended:

1. Revisions to the south corridor proposed by the landowners (referred to by the PRT as Summerland Swamp Habitat Linkage);
2. Revisions to the north corridor proposed by the landowners (at the time of the PRT study);
3. Buffers along Camp Keais Strand (CKS) in the vicinities of Ave Maria, Town of Big Cypress, and Hogan Island mine;
4. Open Lands of predominantly agricultural uses interspersed with patches of natural habitat within the Big Cypress ACSC;
5. Buffers and natural habitats along the western edge of SSA 16;
6. Agricultural fields south of CR 858 and north of RLSA lands designated as HSAs and WRAs;
7. Natural habitat areas between Immokalee and the Big Cypress ACSC; and
8. Patches of natural habitat and relatively low intensity land use adjacent to Pepper Ranch.

On October 22, 2019 the Collier County Board of Commissioners adopted a recommendation to direct staff to initiate the Growth Management Plan amendment process for proposed changes to the Rural Lands Stewardship Area Overlay (RLSA), develop a regional water partnership, and draft Land Development Code amendments. Among the Amendments to the Land Development Code adopted was a restriction of total number of Stewardship Credits to a cap of 430,000, that would entitle no more than 45,000 acres of Stewardship Receiving Areas. The establishment of a 45,000 acre cap on development under the Rural Lands Stewardship Area Overlay does not prohibit development at baseline zoning standards of 1 dwelling per 5 acres. This means, the remaining balance of 140,935 acres of the 185,935 acres in the RLSA will either be preserved to generate Stewardship Credits for SRAs, used for the construction of institutions such as schools and fire stations, or potentially developed at a ratio of 1 dwelling per 5 acres.