CONSERVANCY of Southwest Florida
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April 25, 2016

Comments–Eastern Collier HCP EIS
Attn: Kenneth McDonald, Project Manager
US Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, Florida 32960-3559

RE: Eastern Collier Multiple Species Habitat Conservation Plan - Environmental Impact Statement Scoping and Input on Draft Plan

Dear Kenneth McDonald:

The Conservancy of Southwest Florida writes on behalf of over 6,000 supporting families in regards to scoping for the Environmental Impact Statement (EIS) being prepared for the draft Eastern Collier Multiple Species Habitat Conservation Plan (HCP).

As a long-standing active stakeholder in Florida panther conservation and recovery, we have deep concerns regarding the draft HCP. The current proposal does not meet issuance criteria[1] and runs contrary to recovery goals and best available science. The HCP does not adequately avoid, minimize, and mitigate impacts, nor does it provide a no net loss to the species for which applicants seeks incidental take coverage.

We offer the following comments regarding the draft HCP and the related National Environmental Policy Act (NEPA) EIS for your consideration and review.

I. Alternatives To Adequately Minimize Impacts to Florida Panther Must Be Considered

The HCP proposes to authorize 45,000 acres of development and mining within the plan area. The plan repeats in several sections that the HCP would direct development "toward areas of less valuable habitat."[2] However, that is inaccurate as this proposal does not avoid and minimize impacts to primary panther habitat, areas deemed to be of the highest importance and essential to the endangered Florida panther.

[1] 16 U.S.C. § 1539(a)(2)(B). 50 CFR 17.22(b)(1), 17.32(b)(1).
[2] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. i, ii.

The United States Fish and Wildlife Service (FWS) has established that Kautz et al. 2006[3] is current best available science. It guides the Florida Panther Recovery Plan[4] and FWS regulatory framework in the prioritization of panther conservation. Kautz et al. and the Recovery Plan both delineate these areas as crucial for Florida panther continued survival and recovery, and recovery goals state that these lands be maintained in order to "contribute to a viable population."[5]

In Kautz et al., the area defined as the Primary Zone is the minimum "space to support a population that is barely viable demographically as long as the habitat base remains stable."[6] The study advocates for a "no net loss of landscape function or carrying capacity."[7] Kautz et al. establishes that the carrying capacity and function of the Primary Zone is linked to not just loss and fragmentation of habitat, but also by areal reduction and configuration[8]. The Recovery Plan echoes this in setting a recovery goal to maintain the full spatial extent of Primary Zone habitat.[9]

As emphasized above, the Primary Zone is considered to be "essential to the long-term viability and persistence of the panther in the wild,"[10] yet the HCP proposes to directly destroy 22,000-24,500 acres of these critical lands (see Exhibit A).[11]

In order to support even a critically-endangered population, Kautz et al states that "*no* habitat loss or catastrophes can be tolerated[12]." Root, et al., 2004, also stipulated that "unless the current condition, amount, and configuration of the currently occupied panther habitat are safeguarded, the long-term viability of the panther is not secure."[13]

The applicants claim that the lands they are proposing to impact are less valuable since they are not necessarily forested or native land covers.[14] However, it was well understood and intentional on the part of the panther scientists to include such agricultural lands in the priority Primary Zone. Specifically, they stated the Primary Zone includes "other natural and non-urban disturbed land cover types between forest patches that serve[] as landscape connections that accommodate

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[3] Kautz, et al, 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*: Vol. 130, p. 118-133.
[4] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision.
[5] *Ibid.*, p. 101.
[6] Kautz, et al, 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*: Vol. 130, p. 118-133. p. 129.
[7] *Ibid.*, p. 118.
[8] Kautz, et al , 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*: Vol. 130, p. 118-133. p. 131.
[9] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 104.
[10] *Ibid*, p. 27.
[11] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 68, 72.
[12] Kautz, et al, 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*: Vol. 130, p. 118-133. p. 129. Emphasis added.
[13] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 96.
[14] *Ibid*, at p.14 "The Covered Activities will occur primarily within the previously-cleared agricultural areas that currently possess low proportions of native habitats, and exhibit little native habitat connectivity."

panther home range and dispersal movements[15]." The Primary Zone includes agricultural habitats utilized to meet daily needs and support the prey on which the panther depends. Other available literature has documented an increased use of these types of habitats during nocturnal hours.[16] Therefore, the first tier factor of importance over land cover type is whether land is within the Primary Zone.

Additional best scientific information supports the concept of moving the proposed Covered Activities out of the Primary Zone habitat. The Florida Panther Protection Program Technical Review Team (PRT), a group of six well-known panther biologists[17] who were assembled specifically to review the concepts behind the HCP, also recommended that the applicants direct development away from the Primary Zone:

> *"The PRT acknowledges and supports the Parties' intent as stated in the MOU to avoid, minimize, and mitigate impacts to areas within the Primary Zone as described by Kautz et al. (2006). Therefore, the PRT recommends that future development occurs first in Open Lands that are within the Secondary Zone before lands within the Primary Zone are considered for conversion to urban uses."*[18]

Unfortunately, the draft HCP does not reflect this or other critical input provided by the PRT, which included the former and current FWS Panther Recovery lead staff.[19] All PRT recommendations should be considered under the EIS.

Frakes et al., 2015, also underscores the importance of avoiding prime panther habitat.[20] While the study still considers the Secondary Zone as panther habitat (particularly for juveniles), it was found to have less value for the panther than previously believed.[21] The Frakes et al. study re-emphasizes the critical nature of the Kautz et al. Primary Zone, as the two areas overlap closely.[22] The Covered Activities would impact approximately 14,491 acres of Adult Breeding Habitat as modeled in Frakes et al. (see Exhibit B).[23] Frakes et al. is an addition to a suite of best available science that, again, reinforces the need to move the proposed Covered Activities out of these prime habitat lands that are occupied with the last and only adult breeding population of this critically endangered species.

As indicated by Frakes et al.:

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[15] Kautz, et al, (2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*: Vol. 130, p. 122.
[16] Land, et al , 2008. Florida panther habitat selection analysis of concurrent GPS and VHF telemetry data. *Journal of Wildlife Management* 72(3): 633-639. p. 637.
[17] Chris Belden, Randy Kautz, Darrell Land, Tom Logan, David Shindle, Dan Smith.
[18] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 29-31. Emphasis added.
[19] Chris Belden and David Shindle.
[20] Frakes, et al., 2015. Landscape Analysis of Adult Florida Panther Habitat. PLoS ONE 10(7): e0133044. 18 pages.
[21] *Ibid*. P. 15.
[22] Particularly when a 1000m buffer is applied, as utilized by the Florida Fish and Wildlife Conservation Commission.
[23] Covered Activities here, includes the already-permitted Town of Ave Maria.

> *"this [panther] population may already be at or close to carrying capacity, yet the panther population is below what is required for long-term genetic viability. Therefore, protection of the remaining breeding habitat in south Florida is essential to the survival and recovery of the subspecies and should receive the highest priority by regulatory agencies. Further loss of adult panther habitat is likely to reduce the prospects for survival of the existing population, and decrease the probability of natural expansion of the population...."*[24]

The Recovery Plan recognizes that "habitat loss, fragmentation, and degradation, and associated human disturbance are the greatest threats to panther survival and among the greatest threats to its recovery."[25] It is the responsibility of the FWS to ensure that proposed actions are consistent with recovery plan goals: "If recovery plans identify specific habitats as essential for species' survival and recovery, close attention should be given to actions that may affect that habitat."[26]

As the Kautz et al. Primary Zone and the Frakes et al. Adult Breeding Habitat support the only known breeding population unit of the Florida panther, "any loss of reproductive capability... can represent jeopardy because the survival of the entire species is significantly impaired[27]." Therefore, the FWS must require that impacts avoid these habitat areas to the maximum extent, but also must consider such an alternative in the EIS process.

The Primary Zone designated lands within the HCP plan area largely capture all of the lands also indicated as essential for the panther in the newest Frakes et al. habitat model. The Conservancy offers our vision map as another alternative that must be reviewed in the EIS (see Exhibit C). The Conservancy's vision map is closely reflects to the recommendations made by the PRT, Kautz et al., and Frakes et al., in that all urban development and mining were directed to the Secondary Zone.

Reliance simply on the local land use program, the Rural Land Stewardship Area (RLSA) program designations to direct development, does not satisfy the Endangered Species Act (ESA) requirements of minimizing to the maximum extent practicable. This is in part because the program has not incorporated best available science regarding panther habitat (including Kautz et al.) into its map designations of where land use intensification is or is not appropriate.

The Conservancy's vision map demonstrates an alternative that would allow significant development to occur through the RLSA program while maintaining the ecological value of critical lands identified in the Florida Panther Recovery Plan, Kautz et al., and Frakes et al. in the proposed HCP plan area. With the Town of Ave Maria[28] included in the proposed HCP 45,000 acre cap, there are 39,973 acres being sought for future intensification as HCP Covered Activities.

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[24] Frakes, et al., 2015. Landscape Analysis of Adult Florida Panther Habitat. PLoS ONE 10(7): e0133044. P. 15-16. Emphasis added.
[25] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 36.
[26] US Fish and Wildlife Service, 1998. Endangered Species Act Section 7 Consultation Handbook. P. 2-2.
[27] US Fish and Wildlife Service, 1998. Endangered Species Act Section 7 Consultation Handbook. P. 4-37. Guidance provided in the handbook establishes this policy.
[28] Town of Ave Maria was 5,027 acres.

The Conservancy's vision map outlines what "Open" lands are outside the Primary Zone, as well as outside the 1,128 acres of additional non-Primary Zone lands that the Frakes et al. study identified as also important to conserve. This leaves 38,200 acres available for potential additional development, which would in combination of Ave Maria total 43,227 if completely built out.

This demonstrates that if properly avoiding and minimizing as required by law, further development could be sited without directly impacting one additional acre of Primary Zone habitat; therefore, appropriately avoiding impacts to highest value panther habitat. The Collier County RLSA program is available to facilitate credit trading under this scenario and thus refutes the applicant's claims that the PRT alternative is not viable, as the applicants state in the HCP.[29]

Please note that on the Conservancy Vision Map, the Immokalee Sand Mine and the Hogan Island Quarry were also excluded from the Potential Covered Activities area and calculations due to pending permit review and litigation, respectively. These two projects were also excluded by the applicants in their proposed HCP as projects that had initiated federal permitting.

As detailed in the section below, future development under the county's RLSA program was to generate approximately 43,300 acres of intensification in total, so the Conservancy objects to any development beyond that. If future development were allowed on either the Hogan Island Quarry or Immokalee Sand Mine sites, those acreages should be subtracted from the 43,300 acre cap.

The EIS must consider an alternative that moves the Covered Activities completely out of these important areas, such as demonstrated on our vision map.

II. The Role of Existing Local and State Regulations For Consideration in the Draft HCP Review and EIS, as well as Input on the No Action Alternative

The draft HCP is purportedly offering, in exchange for 45,000 acres of intensification within the Covered Activities designation, inclusion of 107,000 acres into Preservation/Plan-Wide Activities, Very Low Density and Base Zoning designations. The stated benefit is that these lands "could otherwise be developed"[30]. This is inaccurate. Approximately 92,185 acres of the 107,000 acres referenced has significant protection and land use limitations already in effect through the Collier County Growth Management Plan's RLSA Overlay and State regulations applicable to the Big Cypress Area of Critical State Concern (ACSC).

While the RLSA is briefly mentioned in the draft HCP (Section 1.7 County-Level Planning and Zoning), a more comprehensive discussion of the relationship between the RLSA policies, ACSC regulations and the draft HCP is necessary to determine the actual vulnerability of the 107,000 acres proposed for "preservation" within the draft HCP. As the draft HCP is the federal companion

[29] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 229.
[30] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. i.

to the local RLSA, such discussion is appropriate during the HCP scoping and review. The following information in this section provides critical information on how the HCP intersects with other existing programs and highlights that the level of benefit outlined to result from the HCP, needed to offset the proposed 45,000 acres of impact, is greatly exaggerated because those protections are already in place without the HCP.

Creation of the RLSA

The RLSA was adopted by the Collier County Board of County Commissioners in 2002 as a voluntary planning Overlay. The implementing policies for the RLSA are contained within the Growth Management Plan's Future Land Use Element. The RLSA covers approximately 195,000 acres and includes the 152,124 acres within the draft HCP. The program was the result of Collier County's requirement to meet the mandate of a State Final Order to:

1. Protect prime agricultural lands;
2. Direct incompatible uses away from wetland and upland habitat, in order to protect water resources and listed species; and
3. Create mechanisms to allow for appropriate conversion of agricultural lands to other uses, while avoiding sprawl.[31]

The resulting planning effort focused on:

- Protection of key flowways;
- Preservation of listed species habitat;
- Prevention of premature conversion of agricultural lands;
- Disincentivizing ranchette development (1 unit per 5 acre homes on well and septic systems); and
- Clustering the existing baseline density into compact, mixed-use developments.

Data, such as land use/land cover, wetlands, listed species habitat, panther telemetry and hydrology were collected and served as the basis for creating a plan to incentivize voluntary elimination of certain uses within key identified flowway, habitat and wetland areas, in exchange for the ability to construct residential and non-residential development in areas identified as less environmentally sensitive. The key flowway areas identified for protection within this planning exercise were the Camp Keais Strand and the Okaloacoochee Slough, and were designated as Flowway Stewardship Areas (FSAs).[32]

Habitat Stewardship Areas (HSAs) were identified as agricultural land that either had value due to the presence of native vegetation or were important because of contiguity to areas with natural characteristics.[33] Note that Kautz et al., the PRT report, and the Frakes et al. study were not assessed or utilized in constructing the HSAs; therefore, not all of the high value habitat areas those panther scientists identified for preservation are not captured in the RLSA HSAs.

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[31] Florida Administrative Commission Final Order 99-002.
[32] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Policy 3.1.
[33] *Ibid.* Policy 3.2.

Wetlands (outside the main flowways) and other permitted water management systems were given a separate classification, reflecting their ability to be used either for agriculture/preservation or to be incorporated into water management systems for future clustered, mixed-use development. These areas were designated as Water Retention Areas (WRAs).[34]

The remaining lands were classified as available for clustered, mixed-use development, and were designated as Open Lands[35]. These areas form the foundation of the RLSA.

See Exhibit D for the Overlay Map. The general breakdown of acreages for FSA, HSAs, WRAs and Open Lands is:

FSAs	31,100 acres
HSAs	40,000 acres
WRAs	18,200 acres
Open Lands	92,800 acres
	*74,500 outside ACSC**
	*18,300 inside ACSC**

**ACSC is the Big Cypress Area of Critical State Concern*

How Does Clustered Development Occur in the RLSA?

Based on a compilation of the above-referenced data layers, each acre of land within the RLSA was given a Natural Resource Index (NRI) Value,[36] with higher numerical values placed on native vegetation and lesser values attached to active agricultural lands (See Exhibit E). Higher numerical values serve to incentivize landowners who own land within FSAs, HSAs and WRAs to participate in the program through voluntarily reducing land uses from their property.

Through an application process, credits are generated by inputting the NRI value into a RLSA worksheet. Next, an applicant determines the land use layers to be removed (Residential,

[34] *Ibid.* Policy 3.3.
[35] *Ibid.* Group 1 Policies.
[36] Immokalee Study Area Stage 1 Report. Created by WilsonMiller. 2000. Appendix J & K and Report and Recommendations of the Collier County Rural Lands Assessment Area Oversight Committee for the Immokalee Area Study. Created by WilsonMiller. 2002.

Conditional Use, Earth Mining and Processing, Recreational, Ag Group 1, Ag Support and Ag Group 2). A landowner is allowed to remove one or more of these land uses, but must remove them sequentially, in the order listed (i.e. you could not remove Earth Mining and Processing until you first removed Residential and Conditional Uses).[37] Finally the NRI values are combined with the land use layers removed and multiplied by the total amount of acreage included within the worksheet to generate credits available to transfer for development in Open Lands.

Once the landowner's application is approved by the County Commission, the land's designation as FSA, HSA or WRA is changed to reflect voluntary participation in the program. The new designation is called a Stewardship Sending Area (SSA), and through approval of the SSA, the agreed-upon land uses for voluntarily removal are no longer allowed on the SSA property.[38]

To use the credits generated within a SSA, a landowner must have property within the Open Lands designation, or attempt to sell their credits to another party who owns Open Lands. Once Open Lands have been identified for intensification, the credits generated from SSAs will allow development, in the form of a town, village, hamlet or compact rural development (CRD).[39]

How Much Intensification Was Expected Within the RLSA?

The intent of this RLSA Overlay, as explained by WilsonMiller (now Stantec), who created the program, was to consolidate the existing density allowed under the baseline zoning of one unit per five acres. According to the *Report and Recommendations of the Collier County Rural Lands Assessment Area Oversight Committee for the Immokalee Area Study*, authored by WilsonMiller in 2002:

> *Using the current zoning entitlement of 1 dwelling per 5-acres on A-Agriculture zoned land as a control total, the maximum number of dwelling units that could be constructed on the 182,331 acres of privately held land would be 36,466 dwelling units. Using an average gross density for compact rural development of 2.17 dwelling units per gross acre, consistent with the Rural Development Characteristics guidelines discussed previously, only 16,805 acres would need to be set aside for the buildout density in compact rural development as opposed to accommodating that same number of units on 182,331 acres of 5-acre home sites.*[40]

At 100% participation, the breakdown of acreage was described by WilsonMiller as:

> *Approximately 85,000 acres of the 182,300 acres of privately held lands are delineated as Flow Way, Habitat and Water Retention Stewardship Areas.*

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[37] Collier County Rural Lands Stewardship Overlay. Stewardship Credit Worksheet. Retrieved from <http://www.colliergov.net/home/showdocument?id=23083>.
[38] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Policy 1.7
[39] *Ibid.* Group 4 Policies.
[40] Report and Recommendations of the Collier County Rural Lands Assessment Area Oversight Committee for the Immokalee Area Study page 40. Created by WilsonMiller. 2002. Emphasis added.

> *Approximately 21,000 acres of ACSC [Big Cypress Area of Critical State Concern] land are able to generate credits as SSAs and retain current agriculture activities, and approximately 60,000 acres of non-ACSC land can also retain its agriculture designation. Approximately 16,800 acres are required for compact rural development.*[41]

Thus, it is clear the RLSA was designed to not only do a better job of protecting natural resources than the baseline ranchette-style development, but to also consolidate the potential build-out density to a footprint of 16,800 acres total, not increase it exponentially to 45,000 acres as proposed in the current HCP.

Collier County's Expectations for the RLSA

The Executive Summary, prepared by Collier County planning staff for the Adoption Hearing of the RLSA Overlay, clearly stated the County understanding of the program's capacity:

> *Although there are 93,000+/- acres of potential SRAs (private lands less FSAs and HSAs), it is estimated that the "8 credit requirement" will set aside approximately 16,800 acres, or 9% of the Study Area, for clustered Development.*[42]

Staff concluded by stating:

> *It is believed that the adoption and implementation of the Rural Lands Stewardship Area Overlay will not result in an increase to the total number of allowable dwelling units or population in the Eastern Lands area, but rather result in a re-allocation of the density and population allowed under the pre-Final Order conditions from a land-consuming checkerboard pattern into compact, mixes-use developments.*[43]

What About Those Landowner Not Participating in the RLSA?

While the RLSA is a voluntary, incentive-based program, in order to fully meet the mandate of the Final Order, the County included a number of policies applicable to non-participating lands. These policies are contained in the RLSA Overlay under Group 3 and Group 5 Policies. The goal of the Group 5 Policies is to:

> *Protect water quality and quantity and the maintaining of the natural water regime and protect listed animal and plant species and their habitats on land that is not voluntarily included in the Rural Lands Stewardship Area program.*[44]

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[41] *Ibid.* Page 41. Emphasis added.
[42] Collier County Board of County Commission Adoption Hearing Executive Summary. October 22, 2002. Page 3.
[43] *Ibid.* Page 5.
[44] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Group 5 Policies.

There are several of these policies that are germane to our discussion of the draft HCP. The first is Policy 5.1, stating its intent:

> *To protect water quality and quantity and maintenance of the natural water regime in areas mapped as FSAs on the Overlay Map prior to the time that they are designated as SSAs under the Stewardship Credit Program. Residential Uses, General Conditional Uses, Earth Mining and Processing Uses, and Recreational Uses (layers 1-4) as listed in the Matrix shall be eliminated in FSAs.*[45]

This prohibition is also contained in Policy 3.5. Therefore, regardless of participation in the voluntary RLSA program, these intensified land uses are eliminated from the approximately 31,100 acres of FSAs within the Camp Keais Strand and Okaloacoochee Slough, leaving only agriculture, agricultural support uses and conservation available on this acreage.

In addition, the voluntary nature of the RLSA was not intended to supersede State Statutes protecting the Big Cypress Area of Critical State Concern. RLSA Policy 5.2 reiterates this by stating:

> *To protect water quality and quantity and maintenance of the natural water regime and to protect listed animal and plant species and their habitat in areas mapped as FSAs, HSAs, and WRAs on the Overlay Map that are within the ACSC, all ACSC regulatory standards shall apply, including those that strictly limit non-agricultural clearing.*[46]

Florida Administrative Code Chapter 28-25.006 details the site alteration regulations for the Big Cypress ACSC, and includes the requirement that for non-agricultural purposes, "Site alteration shall be limited to 10% of the total site size."[47]

For FSAs, HSAs and WRAs not participating in the RLSA and located outside the ACSC, limitations as to non-agricultural use include, "Site clearing and alteration shall be limited to 20% of the property."[48] In addition, Policy 3.6 states "Residential Land Uses listed in the Matrix shall be eliminated in Habitat Stewardship Areas".[49] Moreover, HSAs that have a high NRI value also have Conditional Uses, Earth Mining/Processing and Recreational Uses removed, regardless of whether they voluntarily participate in the RLSA program.[50]

Thus, within the approximately 31,100 acres of FSAs, most intensification is already eliminated through Policies 5.1 and 3.5, and remaining non-agricultural uses are further regulated through the limitations on site alteration found in Policy 5.3 and the ACSC standards. For the approximately 40,000 acres of HSAs, Residential Uses are already removed, and other non-

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[45] *Ibid.* Policy 5.1.
[46] *Ibid.* Policy 5.2.
[47] Florida Administrative Code Chapter 28-25.006(1).
[48] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Policy 5.3.
[49] *Ibid.* Policy 3.6.
[50] *Ibid.* Policy 3.7.

agricultural intensification is removed for a portion of those lands. For the uses remaining within the HSAs and the approximately 18,200 acres of WRAs, there is additional protection in the form of restrictions on site alteration limited to no more than 20% of the property. Combined, these policies already provide significant assurances that little intensification can occur, and where it does occur, it will be extremely limited.

SSA Acreage To Date

Compensation to landowners for the uses that have been eliminated or limited within FSAs, HSAs, and WRAs is through participation in the RLSA, and to date, there have already been significant SSAs put under stewardship easement. While the approximately 5,000-acre Ave Maria development is the only approved town within the RLSA at this time, several landowners have been removing land use layers and placing their FSA, HSA and WRA lands into SSAs. According to Collier County records, approximately 50,500 acres have been voluntarily agreed to remove land uses in exchange for generating credits that can be used to develop in the Open Lands.[51] The remaining uses on these lands are Agriculture Group 1, Agriculture Support and/or Agriculture Group 2 (See Exhibit F). In addition, these SSA agreements also address land management activities to be undertaken.

For example, the Agreement for SSA 5 states that land management will involve "those customarily utilized in ranching operations in Southwest Florida."[52] These management tools:

> *Include prescribed burning, mechanical brush control ("chopping") and other exotic and nuisance species control, fence construction and maintenance, selective thinning of trees, and ditch and ranch road maintenance.*[53]

Therefore, it is a logical assumption that the approximately 50,500 acres currently participating in the RLSA as SSAs not only benefit from the removal of land use intensification, but are also benefitting from a variety of land management activities.

In addition, the RLSA incentivizes restoration within SSAs through the granting of additional credits. The Conservancy is aware of approximately 3,345 acres of SSAs that have been identified for various types of restoration activities.[54]

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[51] Collier County Stewardship Sending Areas Table. Prepared by Marcia Kendall, Comprehensive Planning Dept. 2/27/2014. http://www.colliergov.net/home/showdocument?id=52574. *Note: The acreage as identified in this list is incorrect for SSA #6. The numbers have been transposed. Instead of the Active Acres being 9,119.1, a review of the actual SSA Agreement shows the acreage as 9,911.1. This SSA Agreement can be found at* http://www.colliergov.net/home/showdocument?id=41146

[52] Stewardship Easement Agreement Tract BCI SSA 5. Prepared by George L. Varnadoe, Esq., Young, van Assenderp, Varnadoe & Anderson, P.A., 801 laurel Oak Drive, Suite 300, Naples FL 34108-2771. Page 3 of 7.

[53] *Ibid.*

[54] Rural Lands Stewardship Area Five-Year Review Phase I – Technical Review. Collier County. Table 7-A. P. 13.

The RLSA Only Allowed 16,800 Acres of Intensification: Why Is the HCP Requesting 45,000 Acres?

In the 2007-2008 timeframe, as the County conducted the mandatory 5-year review of the RLSA, County staff attempted to calculate the number of credits contained within the program. After several failed attempts, WilsonMiller (now Stantec) provided the County with their data on how much development the RLSA could allow. The numbers were startling. Instead of the potential for approximately 16,800 acres of intensification, they calculated the capacity for approximately 43,300 acres of intensification, and another 43,700 acres of one unit per five acre development.[55] This combined total of 87,000 acres of impact would be located in those lands designated as Open Lands.

The admission that this amount of intensification was possible within the RLSA was contrary to the original explanation provided to the County and the public about the Overlay. It was inconsistent with County staff's understanding of the program in 2002 during the transmittal and adoption hearings, as reflected in their Executive Summary documents. Despite this, the Conservancy remained willing to work with all stakeholders to explore a compromise that would accommodate the bulk of this exponentially increased amount of intensification within the RLSA boundaries.

The RLSA Does Not Reflect Current Best Available Panther Science

When the RLSA Overlay was created, WilsonMiller (now Stantec) included the most up-to-date data available at that time, in the year 2000. However, it was acknowledged that science was continuing to evolve, especially regarding the understanding of habitat use and needs for the endangered Florida panther. Thus, the WilsonMiller 2000 report stated:

> *The analyses involving panther habitat for the Study will be complemented by ongoing computer modeling of potential habitat and development of an updated panther recovery plan by interagency committees led by the US Fish and Wildlife Service.*[56]

The analyses referenced in this report subsequently later culminated in the Kautz et al., 2006 study, which found that active agricultural fields and open areas were in some cases highly valuable to panthers. This resulted in the designation of Primary and Secondary panther zone habitat, with an emphasis on maintaining the full spatial extent of the Primary Zone.[57]

During the RLSA 5-Year review in the late 2000s, the Conservancy recommended the County overlay the Primary and Secondary panther zones on the RLSA maps and modify these maps to reflect the new panther science by removing all Primary Zone habitat from the Open Lands

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[55] Rural Lands Stewardship Area "Maturity" [Proposed Rural Lands Stewardship Area Overlay]. To: Tom Greenwood; From: WilsonMiller; Date: September 18, 2008; Subject: Estimates of Stewardship Credits under the current and revised RLSA Program and recommendation for Credit calibration.

[56] Collier County Rural and Agricultural Area Assessment. "Immokalee Study Area" Stage 1 Report. 2000. WilsonMiller. P. 14.

[57] Kautz, et al, 2006. How much is enough? Landscape-scale conservation for the Florida panther. *Biological Conservation*: Vol. 130, p. 118-133.

classification. Because Open Lands are identified as appropriate for intensification per the RLSA, in the form of new towns, mining and other development, allowing such uses on Primary Zone habitat was inconsistent with best available science.

As an alternative, we had suggested that the Open Lands within the Primary Zone would be appropriate for continued agricultural use. Unfortunately, to date, such modification has not occurred, making the Primary Zone habitat within the Open Lands designation the most vulnerable lands within the RLSA.

How Much is Already "Preserved" Without the HCP

Our discussion of the draft HCP as it relates to the RLSA began by asserting that the statement in the HCP that 107,000 acres, which could otherwise be developed, would instead be preserved is not accurate.[58] In the previous sections, we explained the existing local and State policies and regulations that already provide such protection on a majority of these 107,000 acres. Now we will calculate the approximate acreages already protected and how they correspond with the areas proposed for HCP Preservation/Plan-Wide Activities, Very Low Density and Baseline Zoning designations.

- Approximately 80,500 acres of the total 89,300 acres of FSAs, HSAs and WRAs are included in the HCP's Preservation/Plan-Wide Activities designation (See Exhibit G).
- Approximately 50,500 acres of FSAs, HSAs, WRAs, and a small amount of Open Lands, are actively participating in the RLSA through designation as SSAs, which not only removes land uses, but also includes some form of land management.[59]
- Approximately 13,100 acres[60] of FSAs are not yet included in a SSA but still have Residential, Conditional, Earth Mining/Processing and Recreational Uses eliminated[61], and are subject to ACSC[62] and RLSA regulations, including strict site alteration standards for non-agricultural uses[63].

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[58] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. i.

[59] Collier County Stewardship Sending Areas Table. Prepared by Marcia Kendall, Comprehensive Planning Dept. 2/27/2014. http://www.colliergov.net/home/showdocument?id=52574. Note: The acreage as identified in this list is incorrect for SSA #6. The numbers have been transposed. Instead of the Active Acres being 9,119.1, a review of the actual SSA Agreement shows the acreage as 9,911.1. This SSA Agreement can be found at http://www.colliergov.net/home/showdocument?id=41146

[60] Rural Lands Stewardship Area Five-Year Review Phase I – Technical Review. Collier County. Map 1E *(Note: Acreages on this map include SSA 8, which has been rescinded – calculations within the Conservancy's letter have corrected the acreage to remove these rescinded acreages from our calculations.)*

[61] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Policy 5.1

[62] Florida Administrative Code Chapter 28-25.006(1).

[63] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Group 5 Policies.

- Approximately 11,000 acres[64] of HSAs are not yet included in a SSA but still have at least Residential Uses eliminated,[65] and are still subject to ACSC[66] and RLSA[67] regulations, including strict site alteration standards for non-agricultural uses.
- Approximately 15,200 acres[68] of WRAs are not yet included in a SSA but are still subject to ACSC[69] and RLSA[70] regulations, including strict site alteration standards for non-agricultural uses.
- Approximately 8,000 acres of non-SSA, FSA, HSA and WRA are proposed for inclusion in the Preservation/Plan-Wide Activity designation (See Exhibit H). However, these lands are currently restricted to the State ACSC standards, including a maximum 10% site alteration limit.
- Of the 1,961 acres identified as Very Low Density, 1,206 acres are already protected as HSAs and have at least the residential land use removed per the RLSA policies. The remaining 755 acres, while still allowed development at the baseline zoning of one unit per five acres, will be restricted to the State ACSC standards, including site alteration limitations of a maximum 10% (See Exhibit H).
- While we appreciate that the 2,431 acres identified as Base Zoning may eventually be reclassified into either the Preservation/Plan-Wide Activity or the Covered Activities category, it is currently designated at the existing one unit per five acre base zoning and must be reviewed as such. Since this zoning is already in place, and since the ASCS regulations already apply, the HCP does not provide additional meaningful protection for this acreage.

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[64] Rural Lands Stewardship Area Five-Year Review Phase I – Technical Review. Collier County. Map 1E (Note: Acreages on this map include SSA 8, which has been rescinded – calculations within the Conservancy's letter have corrected the acreage to remove these rescinded acreages from our calculations.)
[65] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Policies 3.6 and 3.7.
[66] Florida Administrative Code Chapter 28-25.006(1).
[67] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Group 5 Policies.
[68] Rural Lands Stewardship Area Five-Year Review Phase I – Technical Review. Collier County. Map 1E (*Note: Acreages on this map include SSA 8, which has been rescinded – calculations within the Conservancy's letter have corrected the acreage to remove these rescinded acreages from our calculations.*)
[69] Florida Administrative Code Chapter 28-25.006(1).
[70] Collier County Growth Management Plan. Future Land Use Element. RLSA Overlay. Group 5 Policies.

Category	Acreage
SSAs	Approx. 50,500 acres
FSAs	Approx. 13,100 acres
HSAs	Approx. 11,000 acres
WRAs	Approx. 15,200 acres
Non-SSAs, FSAs, HSAs or WRAs Protected by ACSC Regulations	Approx. 8,000 acres
Very Low Density acreage outside HSA designation already protected by ACSC Regulations	Approx. 755 acres
Base Zoning acreage already protected by ACSC Regulations	Approx. 2,430 acres
Total Existing Acreage Protected by RLSA and ACSC Regulations	Approx. 100,985 acres
Adjustment for SSAs, FSAs, HSAs and WRAs outside of HCP*	Approx. -8,800 acres
Total Adjusted Existing HCP Acreage Protected by RLSA and ASCS Regulations	Approx. 92,185 acres

**There are approximately 89,300 acres of FSAs, HSAs and WRAs, of which the draft HCP includes approximately 80,500 acres. Thus, we have subtracted out the approximately 8,800 acres of FSAs, HSAs and WRAs outside the boundaries of the draft HCP.*

The draft HCP is offering 107,000 acres for retention as rural/ag/preservation/low density development in exchange for allowing 45,000 acres of intensification within the Covered Activities designation. However, approximately 92,195 acres of these lands are already protected from almost all forms of intensification through the existing RLSA Overlay and State ACSC regulations.

The Most Vulnerable Areas Within the Draft HCP

There is no question that the lands identified within the draft HCP as Preservation/Plan-Wide Activities, Very Low Density Use and Base Zoning contain valuable natural resources and are extremely important to protect. However, protection of almost all of these lands from non-agricultural intensification was already mandated by the Final Order, and exists through the RLSA Overlay. Moreover, their continued protection as part of the RLSA is secure, since intensification in the Open Lands cannot happen without credits generated by FSAs, HSAs and WRAs, memorialized as SSAs. It is not the natural resource value of these areas that should be questioned, but rather, their vulnerability as expressed in the draft HCP. This goes to the heart of

whether the benefits proposed truly offset or provide any net benefit for the 45,000 acres of impacts, tens of thousands of which can occur in the Primary Zone according to this HCP.

There is over 20,000 acres of development allowed within lands identified as Primary Zone panther habitat that are included in the RLSA Open Lands category, which is where intensification, such as new towns, is being focused in this HCP (See Exhibit I). Given the low existing vulnerability of the "Preserve" lands (which will mostly consist of actively farmed and ranched areas) and the high amount of priority Primary Zone habitat that will be certainly lost, this proposal overall would clearly be very detrimental to panther protection and recovery.

HCP No Action Alternative

Chapter 10 of the draft HCP discusses alternatives, including the No Action Alternative, stating:

> *Residential development could occur under baseline conditions of one dwelling unit per five gross acres, similar to the Golden Gate Estates development, located just west of the area. Property owners could also enter the RLSP to engage in residential and commercial development at higher densities, in exchange for setting aside environmentally sensitive lands as "Stewardship Sending Areas" ("SSAs"), or by purchasing stewardship credits from a property owner who has designated his land as an SSA.*[71]

Baseline Conditions of One Unit Per Five Acres

The RLSA was designed to incentivize participation in the Overlay, one unit per five acre development can occur in the Open Lands designation. While the draft HCP anticipates intensification within 45,000 acres of Covered Activities, this does not preclude one per five as part of those Covered Activities, nor does it address the 17,800 acres of RLSA land, a majority of which is in the Open Lands category, under the control of non-HCP owners, along with the Hogan Island Quarry (approx. 970 acres) and the Immokalee Sand Mine (approx. 900 acres). The acres outlined above are outside the HCP Covered Activities boundaries and available for one per five development regardless of the HCP. Therefore, the HCP is not a build-out plan demonstrating the total impacts that will not occur, nor will the HCP eliminate one unit per five acre development. If the FWS conducts a No Action Alternative analysis assuming one per five, we ask that the regulatory policies of the RLSA be applied, which would not allow for ranchettes to be located in SSAs, FSAs or HSAs.

Additionally, it should be noted that panthers do utilize the Golden Gate Estates, North Belle Meade, and other rural ranchette communities in the area. So comparing low-density development to still vast amounts of dispersed high-density development, such as is being proposed under the HCP, might indicate that the type of development and location are equally important to just the sheer number of acres when trying to evaluate impacts and benefits. Obviously a home on a five to ten acre lot still provides a lot of green space for panthers and their

[71] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 222.

prey while urbanized areas do not and in either instance, people will be living in closer proximity to panthers.

True Likely Baseline Conditions of RLSA

The most likely development pattern in the RLSA, even if the HCP were not approved, would still be participation in the RLSA Overlay and the development of new towns, villages and hamlets. While there certainly may be some development at one unit per five acres, the idea that without the HCP landowners would forego the opportunity to build new towns is unrealistic. The fact that Golden Gate Estates, which offers ranchettes closer to the beaches and amenities of Naples, is only half built out over the course of several decades show that there is very little market for such development.

Additionally, the infrastructure costs to the developer are much greater than that of a higher-density development; therefore, these proposed cities are much more profitable and appealing. Thus, we ask the FWS to evaluate an Alternative that would represent the true likely "No Action" scenario of assuming that development, in the form of new towns, villages, hamlets and mines, will occur and be permitted through the Section 7 process on project-by-project basis if the HCP is not approved. Not approving the HCP does not preclude the continuation of the RLSA program as Ave Maria and the proposed Town of Big Cypress (AKA Rural Lands West) illustrate. Therefore, the "benefits" of the RLSA can be gleaned regardless of the approval of this HCP. The more likely No Action Alternative, as described above including permitting future RLSA projects via Section 7, needs to be evaluated.

III. Additional Issues and Factors To Be Considered Under the HCP/EIS

Transportation and Infrastructure

Effects to Panther and Other Wildlife due to HCP Covered Activities

The draft HCP states that the applicants do not seek incidental take permit coverage for panther-vehicle collisions, "except to the extent such vehicle strikes occur in the course of a Covered Activity," meaning only those impacts related to construction and maintenance of internal roads.[72] The applicants do not seek coverage for panther roadkills on the internal roadways or beyond the mines and development under the 45,000 acre Covered Activities.[73] This approach ignores the full impact of the proposed activity and segments ESA consultation.

- Under ESA Section 10, the applicants need to provide an assessment of the full impact and take anticipated.[74] Take of Covered Species, notably panthers, caracara, indigo snakes, and wood storks, would likely result from traffic generated by the Covered Activities both on internal roads, as well as roads outside of the development (and outside of the Plan Area as well).

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[72] *Ibid.* P. 24.
[73] *Ibid.*
[74] 16 U.S.C. § 1539(a)(2)(A)(i)–(iv).

- The effect from increased traffic could have far reaching effects, as identified by the FWS in establishing a 25-mile action area to assess indirect effects of projects contributing traffic onto roadways where panther mortalities have occurred.[75]
- Mines within and adjacent to the HCP plan area project daily one way trips of 1,200 to 3,400 per project. Likewise, large residential developments in the region can generate 10,000-30,000 new daily trips once built.[76]
- Increases in traffic volume "may limit the panther's ability to cross highways and may ultimately isolate some areas of panther habitat."[77] Traffic is also linked to increased roadway mortalities.
- According to the PRT, the traffic generated from the Covered Activities would result in nearly half a million daily trips on existing rural roadways in the HCP plan area. New roadways that would be built to accommodate the Covered Activities would receive nearly the same amount of daily trips.[78]
- This is a stark difference between the current level of traffic and what would be generated from approval of the HCP. Many of the rural, two-lane road ways in the HCP area only experience between 300 to 15,000 daily trips.[79] With the traffic from the development authorized by the HCP, seven of the existing roadways would experience more than 40,000 trips per day, four others would have over 20,000 trips per day.[80]
- Corkscrew Road (CR850) and SR82 (west of SR29), both of which route through adjacent Lee county, would be some of the most effected roads from HCP-generated traffic. Corkscrew Road would see the magnitude of daily trips increase by 23.5 times the current rate.[81] SR82 would see projected 61,000 daily trips by 2050 on a roadway where level of service may already be in question.[82]

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[75] FWS sets the 25 mile distance around project footprint based on the mean dispersal distance for subadult male panthers. That action area has been consistently used in biological opinions for the panther, and is means to encompass the wide ranging movements and large home ranges of panthers. E.g., see US Fish and Wildlife Service, 2015. Letter from FWS to Army Corps of Engineers, State Road 80 from Dalton Lane to Indian Hills Drive, Biological Opinion. June 29, 2015.

[76] E.g, According the FWS Biological Opinions, Wildblue generates estimated 10,220 daily trips by 2022, Ave Maria generates between 29,300 trips per day by 2016.

[77] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 39.

[78] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 68-69. Total of Landowner Projected Daily Trips for 2050 would be 453,133 for existing roadways, and 425,473 daily trips for new roadways.

[79] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 54.

[80] *Ibid.*

[81] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 52. Report utilized 2006 as baseline figures.

[82] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 52

The EIS should review the full effect of roadkill and habitat fragmentation on the Covered Species from internal roadways and from traffic generated from the Covered Activities.

Interrelated and Interdependent to HCP Covered Activities

The FWS must identify activities proposed in the plan area that are likely to result in incidental direct, indirect, and cumulative take for all species covered under the plan, including any activities that could result in significant change in behavior, breeding, feeding or sheltering.[83]

There are a number of other uses and projects that would result in additional impacts as a direct result of the requested 45,000 acres of urban development and mining. Additional schools, emergency and fire districts, and other public services, will be prompted by increased development and human population in this currently rural area. These projects, and the habitat lost to accommodate them, should be considered interrelated/interdependent to the Covered Activities sought under the HCP.

The amount of road infrastructure necessary to support the proposed Covered Activities will be tremendous. In 2008, WilsonMiller (now Stantec) submitted a Conceptual Build-Out Roadway Network map to Collier County, demonstrating one scenario of what they believed could be the major road improvements necessary to support 45,000 acres of intensification within the RLSA (See Exhibit J).[84]

- While WilsonMiller did not provide an estimate of what such a road network could cost, the Conservancy, using 2010 construction costs, calculated that the road improvements within the RLSA boundaries could cost over $2.1 billion (Enclosed). This did not include the cost for improvements to roads outside the RLSA, or the cost for upgrades to roads in adjacent Lee and Hendry Counties.

At the local level, planning the necessary future road network and the costs associated with those improvements, is the function of the Collier Metropolitan Planning Organization (MPO). The MPO has a 25-year horizon for their Long-Range Transportation Plan (LRTP), determining what the transportation needs will be and how to prioritize projects, since needs always exceed available funding. The LRTP is updated every five years and the most recent plan, the 2040 LRTP, was adopted December 2015.

- The WilsonMiller (Stantec) conceptual road network, and its potential costs, should be compared to the MPO's 2040 LRTP Needs and Cost Feasible Maps, which depict roads that are necessary and financially feasible through the year 2040[85]. Such a review shows the MPO is not focused on building a massive road network in eastern Collier County, and has instead

[83] US Fish and Wildlife Service, National Marine Fisheries Service, 1996. "Habitat Conservation Planning and Incidental Take Permit Processing Handbook." P. 3-12 – 3-15.
[84] Conceptual Build-Out Roadway Network. Retrieved from http://www.colliergov.net/home/showdocument?id=21624

[85] Collier Metropolitan Planning Organization. Collier 2040 Long Range Transportation Plan Final Report. Prepared for Collier Metropolitan Planning Organization. Prepared by Stantec. Adopted December 2015. Chapter 4, Figure 4-7, pages 4-21 and 4-22; and Chapter 6, Figure 6-1, page 6-4; Figure 6-2, page 6-9; Figure 6-3, page 6-13.

prioritized road improvements closer to the existing coastal urban area. In addition, the projects deemed cost-feasible over the next 25 years clearly demonstrate that funding is simply not available for accommodating the infrastructure necessary to support massive intensification in the RLSA during the MPO's 2040 planning horizon.

- In the Efficient Transportation Decision Making (EDTM) consideration of widening SR29 (south of Oil Well Road), purpose and need were identified as major issues.[86] Approval of the HCP may prompt this project that would not be needed *but for* the Covered Activities.
- 87.5 centerline miles of additional roads, were identified as new roadways needed to support the 45,000 acres of development. All but two segments were projected to be 4 or 6 lane highways.[87]
- Of 24 segments of new roads that would be necessitated by the HCP, 9 of them were recommended by the PRT as "no build" alternative (including a possible new interchange at I-75), and 17 others were recommended to be relocated, due to the impacts to panthers and other wildlife.[88]
- The PRT review of these roadways stressed that these projects could "detrimentally affect wildlife through increased risk of wildlife-vehicle collisions and increased aversion to roads resulting in altered movement patterns, habitat use and behavioral changes" and that avoidance, minimization, and mitigation should be pursued in that priority order.[89]
- The Florida Panther Recovery Plan states that "highways in wildlife habitat are known to result in loss and fragmentation of habitat, traffic related mortality, and avoidance of associated human development. As a result, small populations may become isolated, subjecting them to demographic and stochastic factors that reduce their chances for survival and recovery."[90]
- The Recovery Plan also notes that female panthers' home ranges are severely diminished when bisected by highways[91], and the new Frakes et al, 2015 study shows that road density (as well as human population density) had some of the strongest negative effects on panther presence.[92]
- Roadways will also result in a direct loss of habitat through construction. As recommended by the PRT, these habitat losses should be included in the 45,000 acre cap.[93]
- Highways can also stimulate land development as far away as 2 miles on either side of the road.[94] Thus, not only would the roads themselves account for lost habitat, segmented habitat

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[86] Panther Recovery Implementation Team, Transportation Subteam, 2016. Meeting Summary, January 28, 2016.
[87] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 54.
[88] *Ibid.*, P. 51.
[89] *Ibid.* P. 61.
[90] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 39.
[91] *Ibid.*
[92] Frakes, et al., 2015. Landscape Analysis of Adult Florida Panther Habitat. PLoS ONE 10(7): e0133044. E.g. "… road density was another strong negative predictor of panther presence. In medium quality habitat, a cell with no roads was predicted to be about twice as likely to support adult panthers than a cell with 5km of roads." P. 11.
[93] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 31.

and reduced connectivity, but could also prompt additional development within or outside of the HCP Covered Activities. The Florida Panther Recovery Plan states that for each mile of highway, about 2,500 acres are potentially opened to new development.[95]

- Roadways also produce negative edge effects that can extend "thousands of meters beyond" the road.[96]
- Mortalities due to collisions would increase as a result of these interrelated/interdependent projects. A study of East Collier County Wildlife Movements shows that 33% of vehicular mortalities for the Florida panther are occurring on SR29[97], the main artery for new development in the HCP plan area.
- 2015 was a record year for panther mortalities, with 30 roadkills. Since 1981, 275 panthers have been killed as a result of vehicle collisions. While road density and traffic varied in that time, this represents 35 years of mortalities. About 66, or 25%, of those deaths occurred within the HCP plan area. With additional traffic and new/expanded roadways, and with a term of 50 years, the FWS needs to assess the impact of the HCP on road mortalities.[98]

The Conservancy believes both the environmental and the economic impact of the massive amount of roads infrastructure, as identified on the WilsonMiller (Stantec) 2008 Conceptual Build-Out Roadway Network map, must be considered as the FWS analyzes intensification and related impacts that would result from the proposed Covered Activities in this HCP.

Habitat Loss Cumulative Impacts

The HCP proposes direct loss of 45,000 acres due to urban development and mining. However, there are other additional impacts that must be considered in the EIS review. A cumulative review of impacts should include both past, present, and future activities.

These impacts should be considered in a cumulative impact analysis both under the ESA and EIS, as the law provides.

Within the HCP Plan Area

- Total development (residential, commercial, and mining) envelope has actually identified 49,848 acres of lands that would be authorized for intensification under the HCP, thus indicating that it is reasonably foreseeable the remaining 4,848 acres would also likely be developed outside of the HCP.

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[94] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 39.
[95] *Ibid.*
[96] Smith, 2003. Ecological Effects of Roads: Theory, Analysis, Management, and Planning Considerations: A Dissertation Presented to the Graduate School of the University of Florida in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy, University of Florida. Citing Forman, 1995.
[97] Smith, et al., 2006. East Collier County Wildlife Movement Study: SR29, CR846, and CR858 Wildlife Crossing Project. Unpublished Report. University of Central Florida, Orlando, FL.
[98] Florida Fish and Wildlife Conservation Commission. Raw mortality data.

- The HCP also depicts Half Circle L Ranch at 2,431 acres as an unknown, given its current status as a for-sale property, as well as Hogan Island Quarry and Immokalee Sand Mine (both projects by applicant Barrow Collier) totaling 1,574 acres being pursued outside of the HCP.
- Non-applicant lands total 17,800 acres. These lands are largely "Open" for development under the RLSA and are more likely to be developed in the future if the HCP is approved.

The areas mentioned above depict a potential of over 26,600 acres of additional lands that may be potentially be intensified in the Plan Area.

Outside of the HCP Plan Area

Hendry County has approved large-scale Sector Plans that would allow tens of thousands of acres of development just north of the HCP. Sector Plans, similar to Rural Land Stewardship Programs, identify lands for preservation or agricultural use as well as lands for development. The Sector Plan is a local planning mechanism that is governed by state statutes.

- Southwest Hendry (King's Ranch) Sector Plan was approved in 2014 by Hendry County. It would allow 23,600 acres of urban development on the other side of the Collier-Hendry line.
- Rodina Sector Plan was approved in 2012 by Hendry County. It provided local authorization of 10,089 acres of development north of the Southwest Hendry Sector Plan.

Likewise, in Lee County, there are large existing and proposed development in panther habitat. Due to the area being identified as a Florida Department of Transportation (FDOT) strategic aggregate area, large-scale limerock mining has already occurred in southwest Florida, particularly the Density Reduction/Groundwater Resource area adjacent to the HCP Plan Area in Lee County.[99]

- Over 13,000 acres of panther habitat has been impacted by Lee County mining[100], which is projected to double with additional mining proposals in the same area[101], which is adjacent to the HCP. The area that could be converted to mining in these two counties could be over 70,000 acres, all in panther habitat.

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[99] Dover, Kohl & Partners, 2008. Prospects for Southeast Lee County: Planning for the Density Reduction/Groundwater Resource Area (DR/GR). July 2008. Prepared for Lee County, FL.

[100] Dover, Kohl & Partners, 2008. Prospects for Southeast Lee County: Planning for the Density Reduction/Groundwater Resource Area (DR/GR). July 2008. Prepared for Lee County, FL; Conservancy of Southwest Florida, 2012. Mining in Southwest Florida presentation to USFWS, January 25, 2012.

[101] I.e., FFD Land Co., Inc. - FFD MEPD Mine App #293270-001EI, issued 8/23/11; Old Corkscrew Plantation LLC - Old Corkscrew Mine App #284086-001EI, issued 6/17/11; Troyer Brothers Florida Troyer Mine App # 292013-001EI, issued 4/5/11; Stewart Mining Industries - Immokalee Sand Mine App #228414-001EI, issued 11/10/04.

Mitigation

This section discusses issues related to mitigation as proposed in the April 2015 draft of the HCP.

Avoidance and Minimization over Mitigation

Impacts to all federally-protected species should be first avoided, then minimized, and finally, *if unavoidable*, be mitigated appropriately. Avoidance is the cardinal principle: "preservation does not warrant an ill-conceived project...in unsuitable locations."[102]

The HCP applicants aim to offer additional mitigation than required by the FWS for panther impacts that are avoidable.[103] Since the scale of development being proposed as Covered Activities in this HCP can be entirely accommodated outside the Primary Zone, that should be required and then mitigation only accepted for unavoidable impacts. For unavoidable impacts, the Conservancy believes that the base ratio for the FWS panther regulatory framework needs to be updated and may result in additional mitigation from projects in panther habitat regardless, somewhat negating these additional Panther Habitat Units (PHUs) provided in the HCP.

In this skewed HCP proposal, mitigation is being offered for avoidable impacts; increased mitigation is received for increased impacts to the Primary Zone, incentivizing development of Primary habitat instead of focusing development away from the Primary Zone.

The HCP also proposes a funding mechanism as part of their mitigation called the Paul J. Marinelli Fund.[104] The applicants state that this is to fund necessary mitigation measures to offset impacts from the Covered Activities for wildlife corridors, crossings, and land acquisition/management.[105] The monetary fund in no way compensates for the lack of avoidance, and is not even likely to produce added resources beyond what will be necessitated to address all of the impacts stemming from this proposal. This exemplifies the flawed approach being proposed in this HCP and is described below in the PRT report:

> *"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 contribution to the Panther Fund.... However, the unsettling and perhaps counterproductive aspect of this conclusion is that greater benefit 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*[106] *....The PRT concludes that preserving existing panther habitat is far more valuable than generating funds or providing more*

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[102] Secretary Pelham of the Florida Department of Community Affairs.
[103] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. ii, 15, 26.
[104] *Ibid.* P. i, ii.
[105] *Ibid.*, P. i, 16.
[106] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 37. Emphasis added.

mitigation for impacts to the Primary Zone[107]*.... Payments into the Panther Fund should not be considered an alternative to habitat preservation.*[108]*"*

Further, the FWS current regulatory framework for panthers does not reflect habitat loss that has occurred since it was developed. Thus, the 'additional' PHUs that the applicant is offering as mitigation through the HCP may actually be already necessary through the current regulatory framework to properly offset habitat function impacts.

The FWS should review the Marinelli Fund and propose a revised formula to this mechanism to restore emphasis on avoidance and disincentivizing impacts to the Primary Zone. Additionally, the EIS should review this mechanism to ensure the dollars generated will be adequate to fund the types of mitigation measures the applicants are promising. It should also review the anticipated timing of those activities in conjunction with the intensification allowed under the Covered Activities, if permitted.

Corridors

The draft HCP outlines the general area of corridors, while also depicting areas of Covered Activities that would squeeze these corridors into a configuration and width that would not be functional for the panther.

- The northern corridor does not incorporate the input of the PRT, who stated that "the creation of a north corridor would be a panther conservation enhancement, but *only if its design is robust enough to ensure use by panthers* as future land use changes occur."[109]
- The restoration of these lands to a land cover type that would improve use of the northern corridor by panthers is completely dependent on Paul J. Marinelli Funds to be directed to that use. Prior plans indicated that restoration may only be planting a one-acre patch of short vegetation every thousand feet while continuing intense agricultural operations, which may not support the necessary improvements needed for these corridors.
- Corridor concepts, as found in the draft HCP, uses arrows to show the proposed corridor concepts[110], but does not provide enough detail to ensure that the corridors will be of functional width.
- As per the Florida Panther Recovery Plan, the best available scientific information supports that corridors with a width of 0.6 miles to 4 miles in length be at least 1,312 feet in width, while Noss, 1992 shows that regional corridors be at least 1 mile wide.[111] The slivers of area depicted as Preserve within the corridors show that the northern corridor is approximately 600

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[107] *Ibid.* P. 75. Emphasis added.
[108] *Ibid.*, P. 71.
[109] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 75. Emphasis added.
[110] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 66.
[111] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 30-31.

feet wide, and the southern corridor 975 feet wide at its narrowest, yet these corridors are intended to allow lengthy movements across the landscape.

- As discussed in the sections above, there are projects currently moving forward that may pinch or completely sever the planned corridors. For example, the Immokalee Sand Mine in Collier County, and future development in the Hendry County sector plan areas.
- The southern corridor, currently a natural and heavily utilized landscape linkage through the Summerland Swamp and Horse Trails area, would be unacceptably impacted by the proposed HCP. In fact, the PRT reviewed a similar design and found that "the landowners' proposed [corridor] does not protect the Horse Trail area, and only a single location is proposed for panthers to cross SR29. The PRT recommends that additional areas consisting of native land cover and agriculture be protected... to allow this area to continue to function as occupied panther habitat into the future."[112]
- Existing natural corridors, such as the Summerland Swamp, Camp Keais Strand, and Okaloacoochee Slough, will be directly and indirectly affected by the proposal. The Covered Activities, without the proper buffers, will degrade these existing and critical corridors. Any loss in corridor function could exacerbate the confinement of panthers in South Florida, leading to an increase in road mortality and intra-specific aggression.

  The 2006 East Collier County Wildlife Movement Study ascertains that, while the County's RLSA program "protects wetlands... [it] omits [to] sufficiently protect [ ] uplands in some areas adjacent to these wetland corridors"[113] and recommends restoration of adjacent upland buffers to retain the functionality of the Camp Keais Strand corridor as it is the "only landscape linkage connecting the Florida Panther NWR to the CREW lands."[114] The study advises a 1000 meter buffer to protect these areas (see Exhibit K).[115] Likewise, the PRT also recommended buffers and areas of preservation within the corridors (see Exhibit L).[116]

- Existing least-cost pathways, identified in Swanson et al 2006[117], should be reviewed as potential locations for corridors based on science, not land ownership.

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[112] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. 65.

[113] Smith et al, 2006. East Collier County Wildlife Movement Study: SR29, CR846, and CR858 Wildlife Crossing Project. Unpublished Report. University of Central Florida, Orlando, FL. P. 64.

[114] *Ibid.*, P. 58.

[115] *Ibid.*, P. 65.

[116] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. Figure 13.

[117] Swanson et al., 2008. Use of Least-Cost Pathways to Identify Key Road Segments for Florida Panther Conservation. Fish and Wildlife Research Institute Technical Report TR-13.

Growth Patterns

The EIS should explore the likelihood that ranchette-style development may be prompted by approval of the HCP.

- Due to the added commercial services and amenities being available once the Covered Activities are built, additional ranchette estates development may occur between larger Towns or on non-ECPO lands within the HCP area.

Loss of Agricultural Lands

Impact on Agricultural Economy

The EIS review should cover the loss of agricultural jobs that will result from nearly half of those lands that support the County's agricultural economy.

- Currently, southwest Florida agricultural lands produce over $1.3 billion dollars of crops (mostly vegetables and citrus) a year.[118]
- Within the proposed HCP boundary, there exists today, according to the draft HCP's FLUCCS mapping, 75,083 acres of land used for agricultural purposes.[119] This includes 19,332 acres utilized for Pastures (Improved/Unimproved) and Fallow crop lands, and 55,751 acres of Row Crops, Citrus and Other Groves, and Other Agriculture.[120]
- Of the 49,858 acres proposed for the Covered Activities designation, 43,515 acres are in an agriculture land use classification, as identified by FLUCCS mapping.[121]
- Of these 43,515 acres, the vast majority, 37,677 acres, are classified as being used for more intensive farm activities, such as row crops, citrus and other groves, and other agricultural activities.[122] The balance, 5,838 acres, is classified as Pastures (Improved/Unimproved) and Fallow crop lands.[123]
- Within the 107,000 acres of Preservation/Plan-Wide Activities, Very Low Density Use and Base Zoning, where agriculture will be retained, there currently exists 31,568 acres of agricultural use. This includes 13,494 acres of Pastures (Improved/Unimproved) and Fallow crop lands, along with 18,074 acres of Row Crops, Citrus and Other Groves and Other Agriculture.[124]

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[118] University of Florida, IFAS, 2015. Economic Importance of Agricultural to Southwest Florida. Brochure by Fritz Roka. Agricultural lands totaled 1.3 million acres, forestry acreage and products were not included. Vegetable farm-gate sales totaled $706 million, citrus $326 million, while sugarcane, ornamental and cattle were the remainder, totaling $1.381 billion. Southwest Florida counties included lands outside of the HCP plan area.
[119] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 19 and 39
[120] *Ibid.*
[121] *Ibid.*
[122] *Ibid.*
[123] *Ibid.*
[124] *Ibid.*

- Almost half of the remaining agricultural uses within the Preservation/Plan-Wide Activities, Very Low Density Use and Base Zoning designations are currently comprised of less intensive agricultural uses. If the intensities of agriculture remain the same as today, Collier County's crop output, such as row crops and citrus, will be vastly diminished. If the agricultural uses on the less intensive agricultural lands is converted to more intensive uses, the habitat value will be diminished, and such an analysis must be included in the FWS review.
- Almost half of the currently existing agricultural lands within the HCP boundary - 43,515 acres - could be eliminated for conversion to intensification over the next 50 years with approval of the Covered Activities designation.

Impact of Loss of Agricultural Lands on Covered Species and other Natural Resources

As vital as agriculture is to Florida's economy, the agricultural lands themselves also provide key habitat and ecological functions to the surrounding areas. They provide an important function to Florida's hydrology by acting as water retention areas in addition to providing nesting and foraging habitat, habitat for base prey populations, and necessary components of the life cycle for various wildlife species.

- Agricultural lands support many of the Covered Species, particularly the crested caracara southeastern American kestrel, burrowing owl, wood stork, gopher tortoise, eastern indigo snake, and the Florida panther.
- Morrison and Humphrey, 2001, conducted a study on the distribution and reproductive activity of caracara breeding pairs. They found that cattle ranches were an important habitat for caracara.[125] Another study, Dwyer, 2010, found that citrus groves were also important for juveniles and non-breeding caracaras.[126]
- There is a documented caracara gathering area in northern Collier County where Covered Activities are proposed (see Exhibit M).

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[125] Morrison, Joan, and Stephen Humphrey. "Conservation Value of Private Lands for Crested." *Conservation Biology*. 15.3 (2001): 675–684. "Eighty-two percent of 73 active nest sites found were on privately owned cattle ranches"; "46 breeding areas with 4 years of known histories of occupancy and reproduction, pairs nesting on lands where the major land use was cattle ranching exhibited higher rates of breeding-area occupancy, attempted breeding during more years, initiated egg laying earlier, exhibited higher nesting success, and attempted a second brood after successfully fledging a first brood more often than pairs nesting on lands managed as natural areas."

[126] Dwyer, J, F. (2010) Ecology of Non-breeding and Breeding Crested Caracaras (*Caracara Cheriway*) in Florida. Retrieved from http://scholar.lib.vt.edu/theses/available/etd-05092010-132909/unrestricted/Dwyer_JF_D_2010.pdf. "Specifically, citrus groves were occupied extensively, and row crops were used particularly during breeding seasons". Non-breeding caracaras seem to prefer citrus groves because it serves as a refuge from high temperatures and breeding caracaras as they defend their territory.

- In South Florida, eastern indigo snakes have been documented to utilize agricultural lands, canals and ditches, as well as artificial man-made refugia.[127] Thus, the HCP area contains a notable amount of indigo snake habitat (see Exhibit N).
- Wood storks use man-made wetlands such as agricultural ditches and wet pastures or fallow fields.[128] Other protected wading bird species, such as egrets, herons, ibises, and roseate spoonbills also make use of the shallow waters that collect on agriculture fields and nearby ditches for feeding.
- Due to rapid conversion of short hydro-period wetlands into development in recent years, water retention on agricultural lands are playing a larger role as foraging habitat for these species. In fact, preliminary findings in a recent study suggest that wood storks are relying on manmade canals and ditches in the absence of these more ephemeral wetlands.[129]
- A study conducted by Main and Vavrina, 2009 demonstrated the usage by wading bird species on such agricultural lands.[130] The results from these surveys documented over 1,619 individuals representing 11 species of wading birds.
- Agricultural lands within the Covered Activities at the proposed Rural Lands West (Gargiulo Farms) site are heavily utilized by many bird species, including those protected by the ESA and Migratory Bird Treaty Act. Over 113 species have been documented on these lands.[131]
- Many state listed species also utilize and depend on agricultural habitats in addition to wading birds, as these areas mimic lost native prairies. The Southern American kestrel depends on agricultural fields for hunting.[132] The Florida burrowing owl and the gopher tortoise rely on open pastures or prairies.[133] In areas with no dominant tree cover such as improved pasture, abandoned pasture, cropland (row and field), abandoned citrus groves, fallow crop land, and disturbed habitat like farmland there is a high potential for gopher tortoises.[134]

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[127] Jackson, S., 2013. Home Range Size and Habitat Use of the Eastern Indigo Snake at a Disturbed Agricultural Site in South Florida: A Thesis Presented to Florida Gulf Coast University.

[128] Wood stork (*Mycteria americana*) Five Year Review: Summary and Evaluation, U.S. Fish and Wildlife Service. Accessed by http://www.fws.gov/northflorida/WoodStorks/2007-Review/2007-Wood-stork-5-yr-Review.pdf

[129] Betsy Evans, 2015. Dietary Shifts of Wood Storks in Response to Human-Induced Landscape Changes. Presented at Corkscrew Watershed Science Forum, January 29, 2016.

[130] Main, Martin, and Vavrina, Charles. "Wading birds and agriculture in Southwest Florida." *University of Florida IFAS Extension*. 2009. Web. 16 Aug 2010. <http://edis.ifas.ufl.edu/pdffiles/UW/UW13900.pdf>. Surveys were taken in and around 12 miles of canals serving agricultural operations on a 1,000 acre potato farm for 18 weeks starting in October until March, coinciding with the nesting season of many wading birds in southwest Florida.

[131] eBird, Hotspot Map. Retrieved from < http://ebird.org/ebird/hotspot/L3869562?m=&yr=all&changeDate=Set>.

[132] Field Guide to Rare Animals of Florida, Florida National Areas Inventory (2001). Retrieved from http://www.fnai.org/FieldGuide/pdf/Falco_sparverius_paulus.pdf.

[133] Florida Fish and Wildlife Conservation Commission, 2013. A Species Action Plan for the Florida Burrowing Owl, Final Draft, November 1, 2013.

[134] Ashton, Ray, and Patricia Ashton. *The Natural History and Management of the Gopher Tortoise*. 1st edition. Malabar, FL: Krieger Publishing Company, 2008. 65-93. Print.

Impact of Plan-Wide Activities in the Preserves

The draft HCP states that certain uses will be continued in the Preservation Lands, including a suite of activities ranging from crop cultivation, ranching, forestry, and recreation to oil and gas exploration and production.

WRA Wetlands

These lands, while important to some of the Covered Species, may have restricted access by terrestrial animals, such as the panther, particularly if they are surrounded by or disturbed by adjacent Covered Activities. These patches of habitat would not warrant full credit as panther habitat if panthers were restricted access or activities within the adjacent development are creating a disturbance that would minimize their value.

Intensified Agricultural Uses

If major areas of citrus/row crops are converted to Covered Activities, the FWS should review the potential for pasture or other more valuable habitat to be intensified. Any shift from pasture to row crop would result in a reduction in the actual PHU value of those lands for the panther.

Existing Uses within the Preserve Area

While most of the area indicated as Preserves are agricultural uses, there are approximately 300 acres of existing mine that falls into that category. It would not be appropriate to utilize these lands as Preserve for the purposes of the HCP.

Oil Drilling and Exploration

Although conventional oil drilling has occurred historically in the HCP plan area, in 2013, an unauthorized fracking operation occurred on lands depicted as Covered Activities.

- Oil drilling, including use of hydraulic fracturing, acidizing, and other chemical treatments, present a risk to water supply and environmentally-sensitive lands. These techniques require large quantities –millions of gallons- of freshwater, and there has been no study to understand how these practices would impact Florida's unique geology and hydrology. Lands and water resources can be contaminated at the surface, if wells are poorly constructed, if abandoned wells are not properly plugged, and if wastewater is not properly disposed.
- These types of activities are likely to increase in the future, as there are large seismic exploration projects currently being pursued. The Burnett Oil Company is currently proposing over 70,000 acres for vibroseis exploration within the Big Cypress National Preserve, and using lands within the HCP as a staging area for large, 61,700 pound trucks.[135] Directly adjacent to the Burnett project, is the Tocala seismic survey, which proposes to use tens of thousands of shot holes that are between 50-200 feet deep, over the 100,000 acre project, to explore for oil

[135] National Park Service, 2016. Revised Environmental Assessment for a Proposed Oil and Gas Plan of Operations: Nobles Grade 3-D Seismic Survey within Big Cypress National Preserve Proposed by Burnett Oil Co., Inc. March 2016.

and gas resources.[136] The Tocala project also includes lands that are shown as Preserve/Plan-Wide Activities in the HCP.

Missing Information and Data

The draft HCP does not provide adequate information needed to assess the proposal's effect and impact on the Covered Species or on a number of other requirements under the ESA.

Failure to Provide Adequate Biological Goals and Conservation Measures for All Species
"Good HCPs must be driven by sound biological goals[137]," and while the applicant provides a set of goals, they fail to provide appropriate avoidance, minimization and mitigation assurances to *achieve* the stated goals. Based on the information provided, the conservation measures are inappropriate or are severely lacking, and will not result in the required "no net loss" to the covered species or meet issuance criteria. Additional species-specific conservation actions are needed. The Services' HCP Handbook stipulates that "acquisition of high-quality existing habitat [is] the best approach" for properly minimizing and mitigating HCP-covered impacts[138]. Not only does the proposed HCP fail to properly avoid impacts to the priority Primary Zone for panthers, but it does not even identify prime existing habitat for other covered species. Where nests or other occupied areas are known, as seen in Figures 5-1 and 5-4[139], they are not avoided.

Failure to Provide Adequate Assessment of Effect and Take
A study of HCPs nationwide found that "two-thirds [of HCPs]... [are] insufficient [in] predicting... species' viability[140]" with the plan in place. For the Eastern Collier HCP, insufficient detail has been provided as to how many acres of species-specific habitat would be impacted (using panther habitat as a surrogate), and estimation of how many individuals would be subject to take by the proposed activities.

Failure to Provide Adequate Monitoring Regimen and Funding for Unforeseen Circumstances
The FWS should require that the applicants provide an adequate and appropriate monitoring regimen as a part of this HCP. The applicants need a well-described monitoring plan with a timeline to allow for evaluation of the HCP's success, if permitted, and quantifiable benchmarks to ensure that the minimization and mitigation are implemented as anticipated.

In the Services' HCP Handbook, the agencies recommend setting specific objectives for monitoring, such as information 1) variables to be measured and how the data will be collected, 2) ensuring that variables are consistent with the objectives of the monitoring program, 3) details of the

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[136] Tocala, 2013. Application to Army Corps of Engineers. Letter dated August 22, 2013 to Florida Department of Environmental Protection.
[137] Hopkins and Vasey, 1997. Can We Make Conservation Planning Work in California? Six Steps for Effective Conservation Planning. Linkages, Periodical of the Institute for Ecological Health, Issue No. 5, Fall 1997.
[138] US Fish and Wildlife Service, National Marine Fisheries Service (1996). "Habitat Conservation Planning and Incidental Take Permit Processing Handbook." P. 3-22.
[139] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 101, 125.
[140] Mann and Plummer, 1997. Qualified Thumbs Up for Habitat Plan Science. Science, Vol. 278, No. 5346. P. 2052-4.

frequency, timing, and duration of sampling for the variables, and 4) how the data will be analyzed and who will conduct the analysis.[141]

The Handbook also suggests that HCPs include a plan for addressing unforeseen circumstances. The Services recognize Congressional foresight in dealing with this issue: "...circumstances and information may change over time and that the original plan might need to be revised. To address this situation the Committee expects that any plan approved for a long-term permit will contain a procedure by which the parties will deal with unforeseen circumstances[142]." Although the No Surprises Rule "fundamentally constrains the ability to improve HCPs and avoid species declines,"[143] the plan can be improved through periodic plan review and amended to some degree when biologically necessary. There should also be an earmarked source of additional funds as well for if the plan fails.

Detailed Wildlife Surveying Needed During HCP Review and at Construction

In order to minimize appropriately and meet issuance criteria, additional species surveying is necessary. While wildlife surveying would also be required in the future, closer to the time of actual construction, it is impossible for the plan to adequately avoid and minimize impacts to the Covered Species without better understanding their use of the lands within the HCP.

Wildlife and Covered Species General Issues

Critical habitat Designation for the Florida Panther and Florida Bonneted Bat

Critical habitat designation can inform the HCP process for a more scientifically robust result. As stated in the Congressional Research Service Report for Congress, "adequate knowledge of the habitat needs of the species in question is crucial to and underlies the process of HCP development and approval and is critical to achieving adequate HCPs."[144]

- The Conservancy, and others, have previously petitioned for critical habitat designation for the panther. Although best available science supports our request for critical habitat designation, this was not discretionarily pursued by FWS. In response to the Conservancy's petition, the FWS noted that its priority was implementing the "full suite of actions needed to conserve and recover the Florida panther" including the Florida Panther Recovery Plan.[145] The HCP is the opportunity to secure many actions needed to conserve and recover the panther, namely maintaining the full spatial extent of the Primary Zone as the Florida Panther Recovery Plan and other best available science explicitly states is needed.

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[141] US Fish and Wildlife Service, National Marine Fisheries Service, 1996. "Habitat Conservation Planning and Incidental Take Permit Processing Handbook." P. 3-26 – 3-27.
[142] HR Rep No. 97-385, 97th Congress, Second Session. 50 CFR §17.22(b)(1)(iii)(B).
[143] Defenders of Wildlife. Habitat Conservation Plans. Retrieved from <http://www.defenders.org/programs_and_policy/habitat_conservation/private_lands/habitat_conservation_plans>
[144] Baldwin, 2005. CRS Report for Congress: Designation of Critical Habitat Under the Endangered Species Act (ESA). Order code RS20263.
[145] US Fish and Wildlife Service, 2009. Letter to Gary A. Davis. June 26, 2009.

- Critical habitat is likely to be proposed for the bonneted bat.[146] Recently, natural bonneted bat roosts have been documented close to the HCP area in the Florida Panther National Wildlife Refuge and other conservation lands (see Exhibit O).[147] Satellite transmitters on bonneted bats have found that individuals can forage up to six miles from the roost.[148] Although the proposed designated habitat has not been announced, it may include public and private features in and around the HCP area.

Compensation/Mitigation Banks for the Florida panther

The concept of applicants banking "trapped PHUs" does not appear to be a component of the proposal. That is one significant positive improvement from the 2010 submittal.[149] The PRT found that use of those 'surplus' PHUs, created from the acreage difference between conserved SSAs under the RLSA program and those lands needed for federal mitigation, would be "detrimental to panther conservation."[150]

There are other implications to mitigation banking efforts from the draft HCP. The applicants have stated that the PRT alternative, which aims to move development and mining away from the Primary Zone and other important lands, is not desired due to land ownership.[151] However, the local land use program exists to allow trading of RLSA credits, allowing the footprint of the Covered Activities to be modified into the PRT configuration that would more adequately avoid and minimize impacts.

For those landowners who do not have enough land in Preserve where PHUs can be drawn for applicant-owned mitigation, established and future compensation banks can provide the necessary mitigation credits. In the current configuration found in the draft HCP, there may be little incentive for new lands to be conserved through compensation/mitigation banks, as applicants are ignoring required avoidance and minimization efforts in an attempt to have both developable and preserve lands in their own ownership. The EIS review should include the effect on compensation/mitigation banks, particularly those generating PHUs.

Human-Wildlife Conflict

With the addition of over 300,000 additional people to the HCP area, human-wildlife conflicts, which can take many forms, will increase.

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[146] Personal communication, Tori Foster and Connie Cassler. US Fish and Wildlife Service meeting with the Conservancy of Southwest Florida, October 8, 2015.
[147] US Fish and Wildlife Service, 2015. Research Collaborations Former After Rare Bat Roost Found on Florida Panther Refuge, October 15, 2015. Retrieved from < http://www.fws.gov/news/ShowNews.cfm?ref=research-collaboration-forms-after-rare-bat-roost-found-on-florida-p&_ID=35274>.
[148] Holly Ober, Presentation to Southwest Florida Association of Environmental Professionals, July 17, 2015.
[149] ECPO, 2010. Eastern Collier Multi-Species Habitat Conservation Plan summary. June 2010; Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report.
[150] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. P. xii, 46.
[151] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 229.

- In 2015, there were over 30 depredations of livestock, pets, and hobby animals, mostly in Collier County. About 20 of those depredations were confirmed to be by panthers.[152] Whereas in 2005-2006, there were 5 depredations confirmed by panthers.[153]
- The Florida Panther Recovery Plan states that both conflicts with livestock and public fear of panthers is a very high threat affecting the panther's continued existence.[154]
- Domestic cats (feral and outdoor) would increase panther exposure to the feline leukemia virus (FeLV). While rare, the Recovery Plan states that "recent outbreak of the disease... shows the potential of this disease to be of population significance."[155]
- The Florida black bear, while not a Covered Species, is another factor to consider. Bears were delisted from the Florida imperiled species list in 2012, and are currently being petitioned for listing under the ESA. Bears have been killed by the state due to being considered a safety hazard or being food conditioned. Conflicts with people have occurred within the Town of Ave Maria, as well as in adjacent Golden Gate Estates.

Directing development away from the most important habitats can help minimize human-wildlife conflicts.

Loss of Prey Species

As a component of habitat loss, prey species –such as deer for the Florida panther- will be impacted by the HCP and should be reviewed by the EIS.

- Agricultural lands can have a high value for supporting panther prey. Within the Rural Lands West development (a portion of the proposed Covered Activities), a deer population index (DPI) of 129.1 acres per deer was calculated. The applicant's study concluded that "this census estimate is proximate to census estimates for Big Cypress National Preserve," and provides for even more deer than Corkscrew Marsh, which has a DPI of 249 acres per deer[156].

Duration of Term for HCP/ITP

Considering that this HCP is proposed to cover take for the next half century, species status may change dramatically during the duration of the plan if it extends the entire proposed duration. Fifty years ago, we could not predict the magnitude of threats to the panther or the current management strategies necessary to recover the species. A term of 50 years based on today's understanding is exceedingly risky.

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[152] Florida Fish and Wildlife Conservation Commission. Panther Pulse, Florida Panther Net. Retrieved from < http://www.floridapanthernet.org/index.php/pulse/#.Vxfm6k3rt9A>.

[153] Florida Fish and Wildlife Conservation Commission, 2006. Annual Report on the Research and Management of Florida Panthers: 2005-2006. Fish and Wildlife Research Institute and Division of Habitat and Species Conservation, Naples, Florida.

[154] US Fish and Wildlife Service, 2008. Florida Panther Recovery Plan, 3rd Revision. P. 197.

[155] *Ibid.*, P. 43.

156 Passarella & Associates, 2009. Town of Big Cypress Biological Assessment, June 2009. Prepared by Passarella & Associates for Collier Enterprises Management, Inc. P. 9.

- The timeframe of the HCP is a concern for all of the species within the plan, but especially unlisted species of which little biologically is known, such as the Florida bonneted bat. If scientific knowledge of its population, scope and importance in the ecosystem is poorly understood or unavailable, the "trade-offs" inherent in an HCP design are "impossible to model" and managers will be unable to understand the impacts of the HCP to that imperiled species.
- For the bonneted bat, while there are several studies underway, "relatively little is known of ecology" for this species and "long-term habitat requirements are poorly understood."[157] Since the FWS cannot effectively determine at this time the conservation measures needed to conserve the bat and protect it from no net loss based on such limited data, the FWS should not issue a take permit for this species for which little is known.
- Although adaptive management is an option, the "No Surprises" policy limits the FWS ability to manage species occurring within the plan area. Therefore, the timeframe of an HCP should be greatly reduced to a period of no more than 25 years.

Impacts to Water Resources

Wetlands

While the central focus of the HCP is wildlife, there are additional considerations to water resources that need to be considered.

- The HCP Covered Activities appear to avoid RLSA FSAs and WRAs, there are several hundred acres of additional wetlands that are not included in those designations that may be impacted (see Exhibit P).
- Surface water management is supposed to be a part of the total cap of Covered Activities.[158] However, some WRAs have been used as part of stormwater management systems or for stormwater attenuation. If WRAs are in natural conditions, how will their water quality and hydroperiod be altered by use as part of the stormwater system?

Water Quality

Most all of the watersheds within the HCP plan area are already considered impaired under state standards, meaning they do not meet water quality criteria (see Exhibit Q).

- The existing water quality impairments indicate that many of the waters in the HCP plan area are polluted for dissolved oxygen and nutrients. Current stormwater regulations are ineffective to capture the amount of nutrients from urban development sources. Development will need to implement additional means to capture and treat stormwater to ensure that the Covered Activities will not contribute to further impairment.

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[157] Florida Fish and Wildlife Conservation Commission, 2013. A Species Action Plan for the Florida Bonneted Bat, Final Draft, November 1, 2013.

[158] Eastern Collier Property Owners, 2015. Eastern Collier Multiple Species Habitat Conservation Plan. First Draft, April 2015. Prepared by Stantec Consulting Services. P. 24.

Water Supply and Hydrology

Likewise, the EIS review will need to consider effects of change from natural lands to impervious cover.

- Due to the loss of pervious cover, floodplain storage is likely to be reduced within the HCP area. Currently, this area of the County provides benefits as water storage and aquifer recharge.[159]
- Without the existing lands to store water, the EIS review should incorporate how the regional hydrology may be affected.
- Given the HCP plan area proximity to Picayune Strand, the EIS review needs to include the impact of the HCP on Everglades Restoration.

Hurricane Evacuation

With the projected addition of over a quarter million people to this area, the EIS review must include the effect of the HCP on hurricane and other emergency evacuation.

Climate Change

As one of the most vulnerable states to face challenges from climate change impacts, it is necessary to tactically plan new areas of development in Florida. The draft HCP does not take proper account of several risk factors due to climate change.

- Predicted climate change impacts on species and habitat in Florida includes sea level rise, increased severe weather (including hurricanes events), and new precipitation patterns. Based on current climate change projections Florida's sea level is predicted to rise between 3-4 feet,[160] impacting the Covered Species.
- Lands within the HCP area are vital to adaptation as coastal species move landward.
- For example, the panther's only breeding population is south of the Caloosahatchee River and three feet of projected sea level rise will engulf 30% of current panther habitat.[161]
- Climate change is predicted to increase the amount and severity of hurricane events as well. Hurricanes bring destruction to habitats including loss of trees. This habitat loss leaves many species like the red-cockaded woodpecker (RCW) and bonneted bat vulnerable. Past hurricanes have destroyed RCW habitat and additional severe hurricane events will create more stress for the species.[162]

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[159] Collier County, 2011. Watershed Management Plan.
[160] Defenders of Wildlife. Climate Change and Florida's Wildlife. Retrieved from <http://www.defenders.org/sites/default/files/publications/climate_change_and_floridas_wildlife.pdf>
[161] *Ibid.*
[162] *Ibid.*

- Altered precipitation patterns result in salt- water intrusion and scarcity of water resources.[163] Threats such as sea level rise, storm surges, and salt-water intrusion threatens Florida's biodiversity due to its proximity to coastal areas.[164]

Climate change projections introduce uncertainty for Florida's future and EIS planning should accommodate for these changes.

Public and Protected Lands

Prescribed Fire

One of the most concerning, yet missing aspects of the HCP is diminished use of prescribed fire on regional public lands. Adjacent development will restrict the use of this land management technique that is necessary to keep Florida's preserved lands in good ecological health.

- Florida Panther National Wildlife Refuge managers expressed concerns that the HCP project Rural Lands West (FKA Town of Big Cypress) would substantially impede prescribed burning which is needed to maintain panther prey and habitat.[165] A hospital is currently being proposed within this development and would restrict the ability to conduct prescribed burns over a large area.
- The HCP plan area is framed by major public lands at each of its four corners: Florida Panther National Wildlife Refuge, Big Cypress National Preserve, Corkscrew Regional Ecosystem Watershed, and Okaloacoochee Slough State Forest. Any altered land management as a result of the HCP will have long-lasting effects on the ecology of the entire plan area and beyond. Impacts of the proposed development on public lands outside the HCP plan area must also be fully evaluated and considered.

Conclusion

An HCP should not be in conflict with recovery plans established for the species and must utilize the best available science. Underscoring this point, Congress directed the Services to "consider the extent to which [a] conservation plan is likely to *enhance* the habitat of the listed species or increase the long-term survivability of the species or its ecosystem."[166] An HCP must not "appreciably reduce the likelihood of the survival and recovery of the species in the wild" or "jeopardize the continued existence"[167] of a species, "contribution to recovery is often an integral

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[163] Climate Change, Wildlife, and Wetlands Case Study: Everglades and South Florida. Retrieved from <http://everglades.fiu.edu/Everpres/FI07011001.pdf>.
[164] Reece, et al., 2013. A Vulnerability Assessment of 300 Species in Florida: Threats from Sea Level Rise, Land Use, and Climate Change. PLOS One. Retrieved from <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0080658#B42>.
[165] US Fish and Wildlife Service, Florida Panther National Wildlife Refuge, 2006. Notes and Correspondence.
[166] US Fish and Wildlife Service, National Marine Fisheries Service (1996). "Habitat Conservation Planning and Incidental Take Permit Processing Handbook." P. 7-4.; H.R. Report No. 97-835, 97th Congress, Second Session. Emphasis added.
[167] *Ibid.*, P. 3-20.

product of an HCP[168]." Contribution to recovery should be the goal of this HCP with its fully supporting all Recovery Plans goal and objectives. For the panther, that means protecting the quality, quantity, and full spatial extent of the Primary Zone.

The welfare of all of the species listed on the HCP, especially the Florida panther, is dependent on a quality HCP. The Conservancy hopes the FWS will utilize our comments and other public comments generated by the EIS process to not only understand the effects to the human environment, but also improve the HCP.

Thank you for considering our comments. Feel free to contact us if you have any questions or would like to discuss further.

Sincerely,

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Cc:
Dan Ashe, FWS
Cindy Dohner, FWS
Larry Williams, FWS
Roxanna Hinzman, FWS
Victoria Foster, FWS
Connie Cassler, FWS
Kevin Godsea, FWS

[168] *Ibid.*

Exhibit A

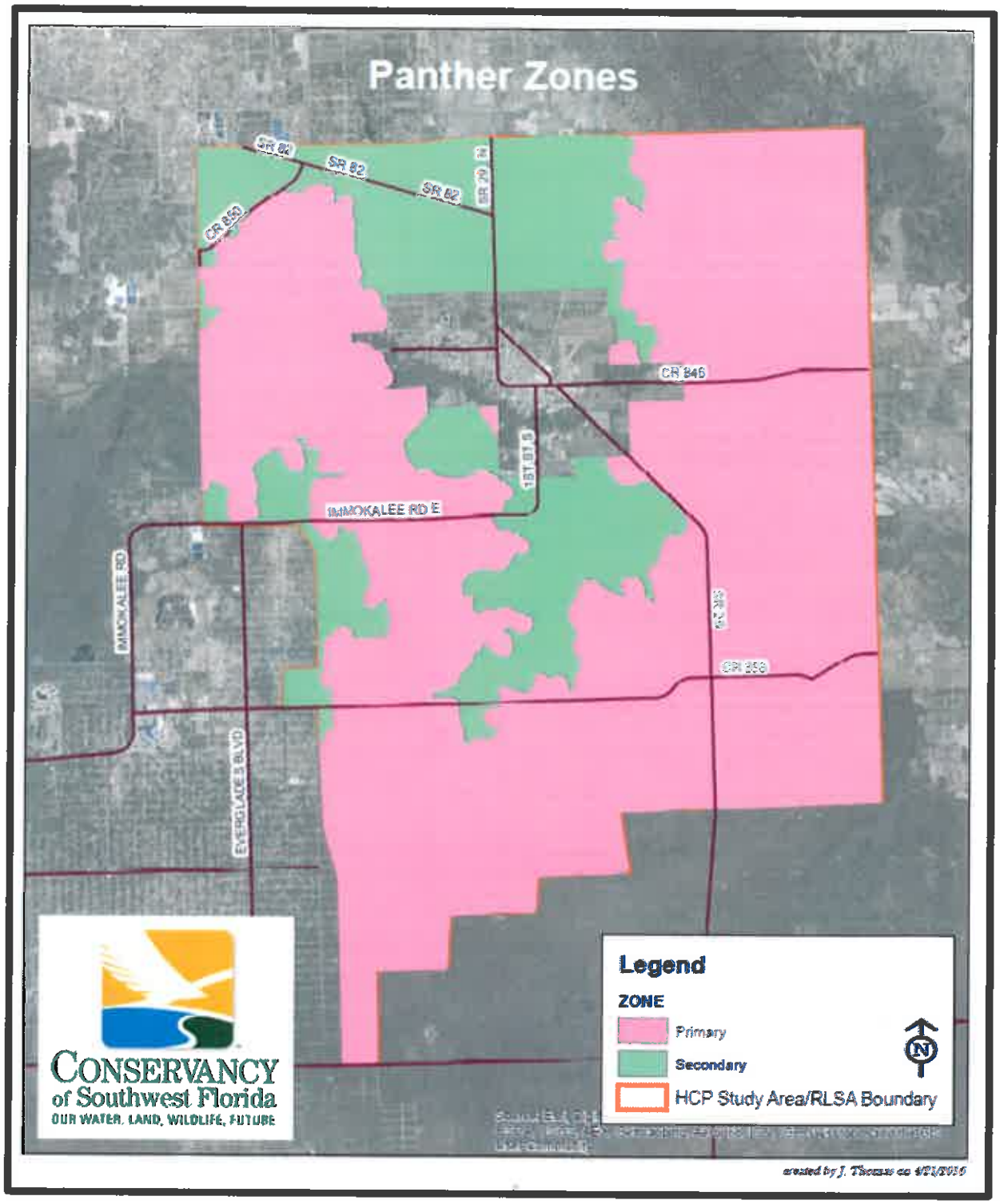

Panther Zones
SR 82
SR 82
SR 82
CR 846
IMMOKALEE RD E
IMMOKALEE RD
EVERGLADES BLVD
CR 858
CONSERVANCY
of Southwest Florida
OUR WATER, LAND, WILDLIFE, FUTURE
Legend
ZONE
Primary
Secondary
HCP Study Area/RLSA Boundary
N

Exhibit B

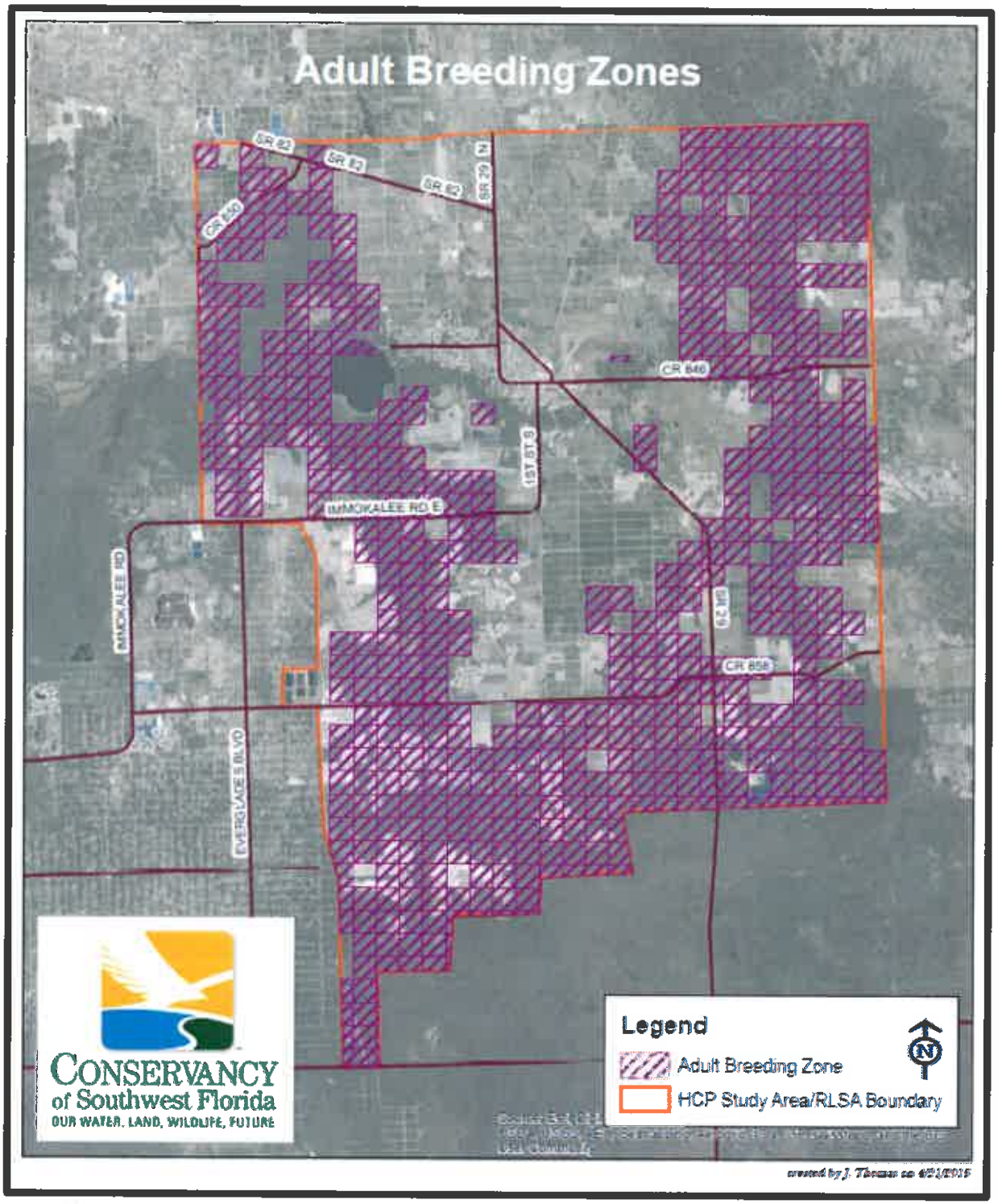
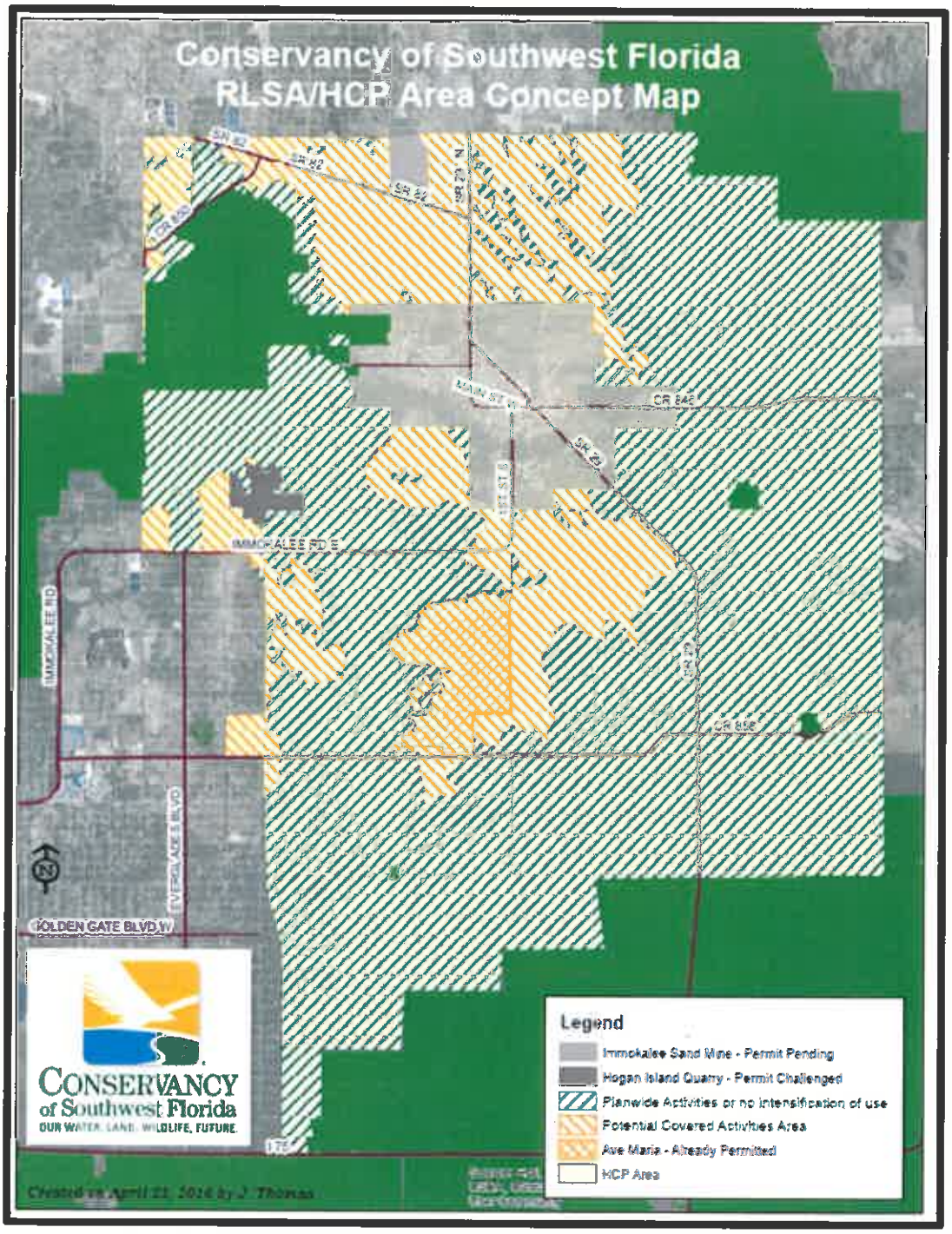

Adult Breeding Zones
SR 82
SR 82
SR 82
SR 29 N
CR 846
CR 846
1ST ST S
IMMOKALEE RD E
IMMOKALEE RD
CR 858
CR 858
EVERGLADES BLVD
CONSERVANCY
of Southwest Florida
OUR WATER. LAND. WILDLIFE. FUTURE
Legend
Adult Breeding Zone
HCP Study Area/RLSA Boundary
N
created by J. Thomas on 4/21/2015

Exhibit C[169]



[169] Prior versions of the Conservancy Vision Map included a northern corridor along a Swanson et al. Least Cost Pathway (LCP) which would be functionally eliminated by the proposed Immokalee Sand Mine. The prior depicted southern corridor, which was also modeled along a LCP, remains –although not depicted on the map- through protection of designated Kautz et al. Primary Zone lands. New information may warrant further refinement of our map.

Exhibit D

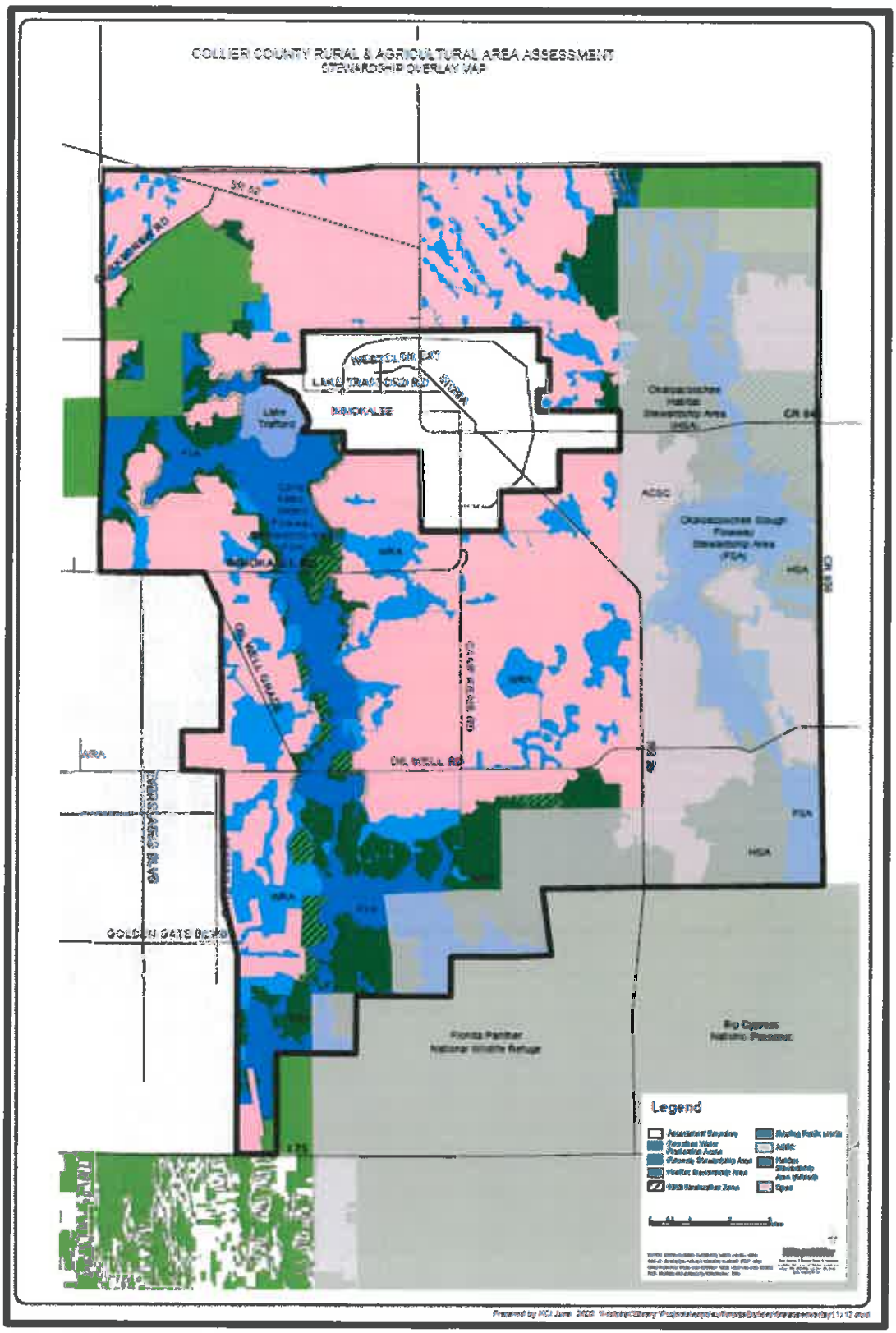

COLLIER COUNTY RURAL & AGRICULTURAL AREA ASSESSMENT
STEWARDSHIP OVERLAY MAP
IMMOKALEE
Lake Trafford
Okaloacoochee Slough Forestry Stewardship Area (FSA)
ACSC
ARA
FSA
HSA
GOLDEN GATE BLVD
Florida Panther National Wildlife Refuge
Big Cypress National Preserve
Legend

Exhibit E

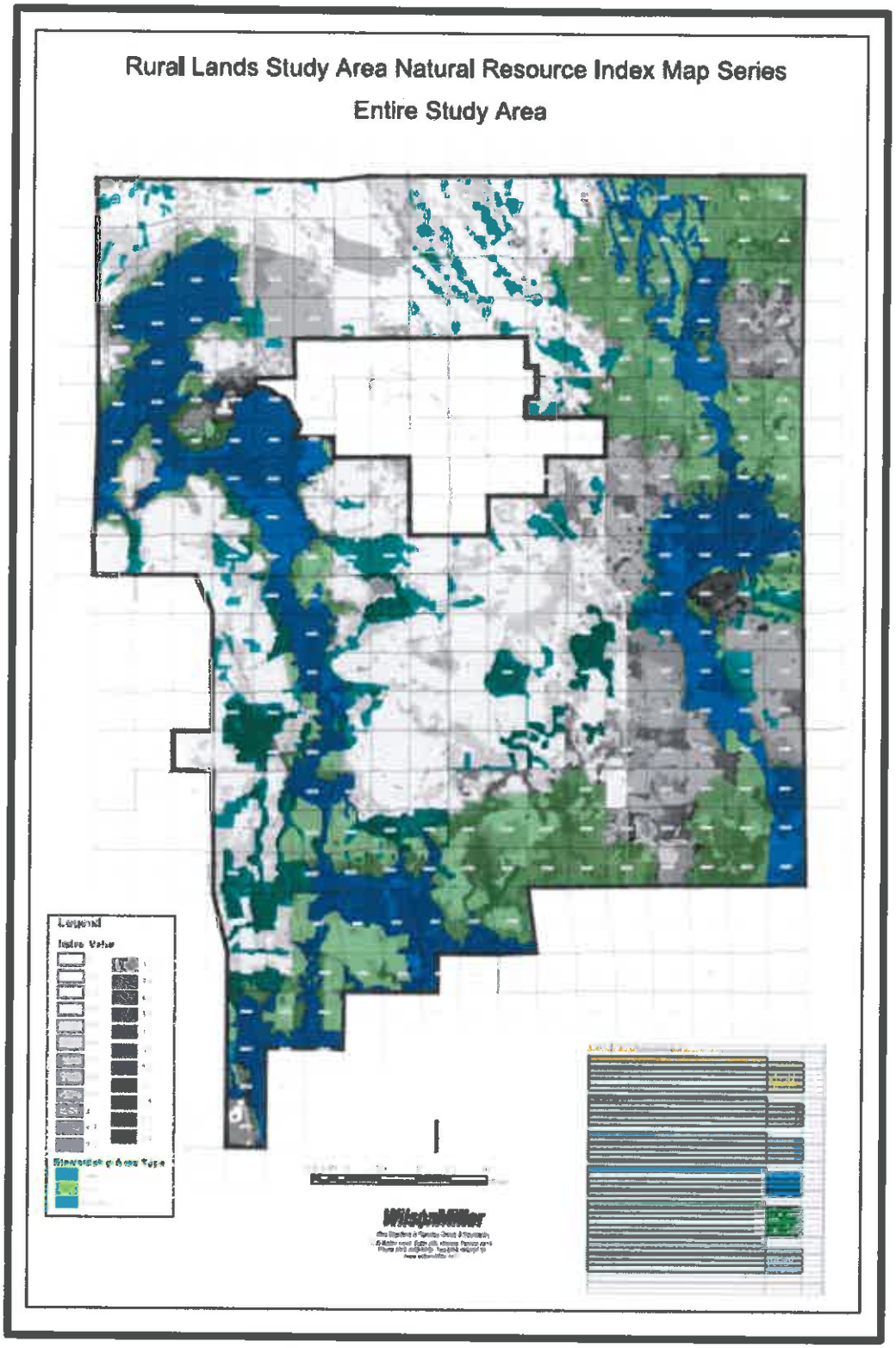

Rural Lands Study Area Natural Resource Index Map Series
Entire Study Area
Legend
Index Value

Exhibit F

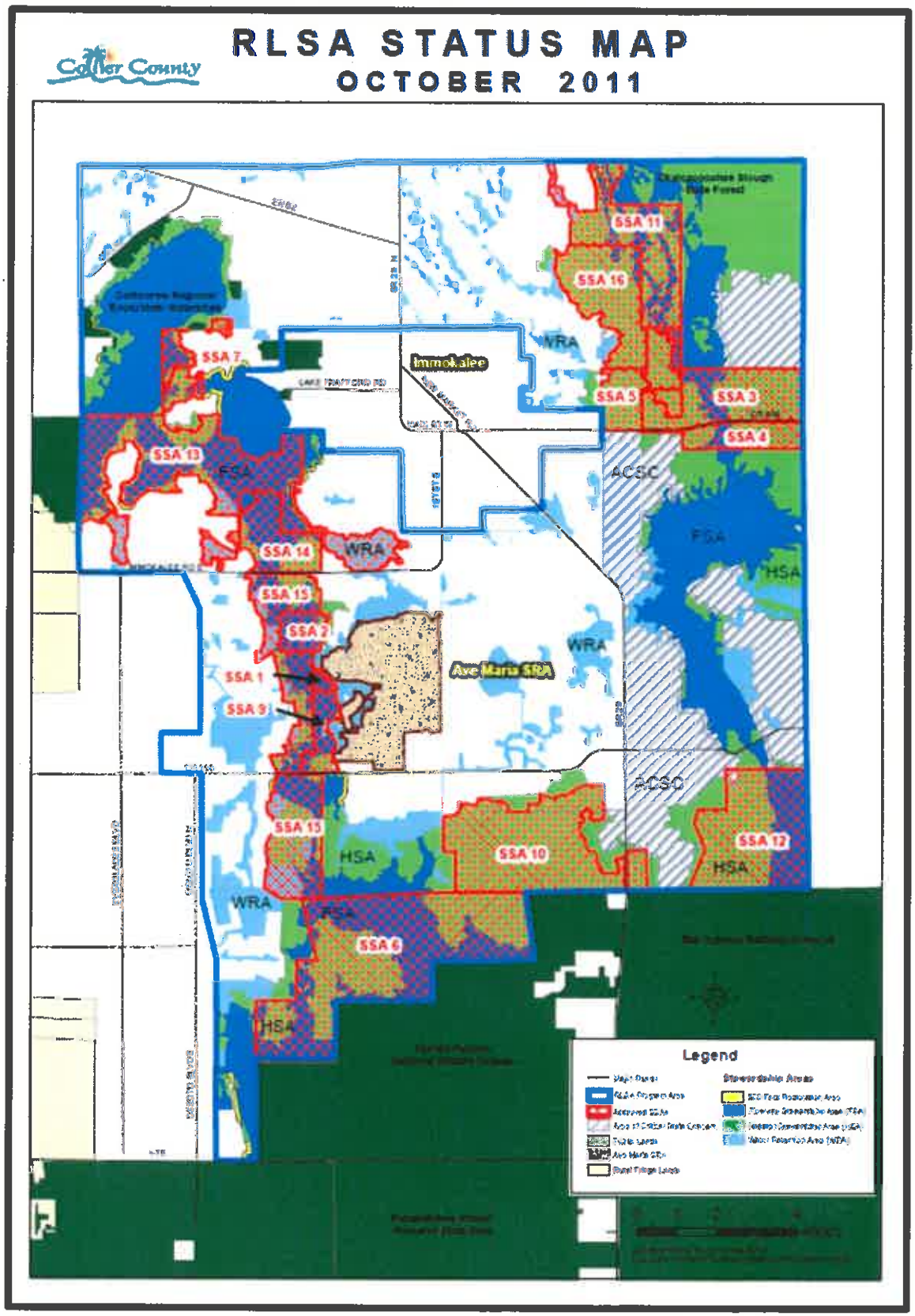

RLSA STATUS MAP
OCTOBER 2011
Collier County
SSA 11
SSA 16
SSA 7
SSA 5
SSA 3
SSA 4
SSA 13
SSA 14
SSA 15
SSA 2
SSA 1
SSA 9
SSA 10
SSA 12
SSA 6
WRA
FSA
HSA
ACSC
Immokalee
Ave Maria SRA
Legend

Exhibit G

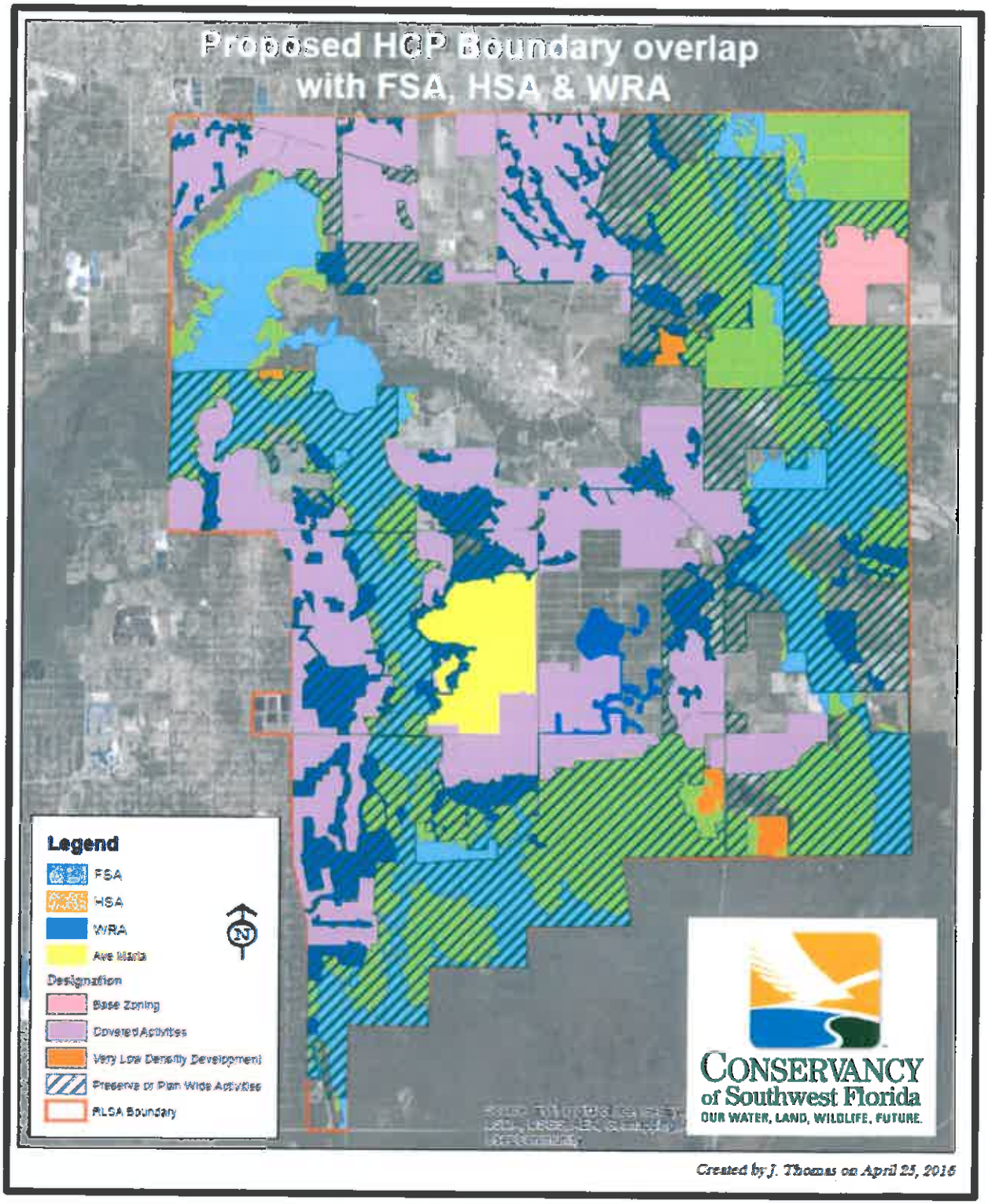

Proposed HCP Boundary overlap
with FSA, HSA & WRA
Legend
FSA
HSA
WRA
Ave Maria
Designation
Base Zoning
Covered Activities
Very Low Density Development
Preserve or Plan Wide Activities
RLSA Boundary
N
CONSERVANCY
of Southwest Florida
OUR WATER, LAND, WILDLIFE, FUTURE.
Created by J. Thomas on April 25, 2016

Exhibit H

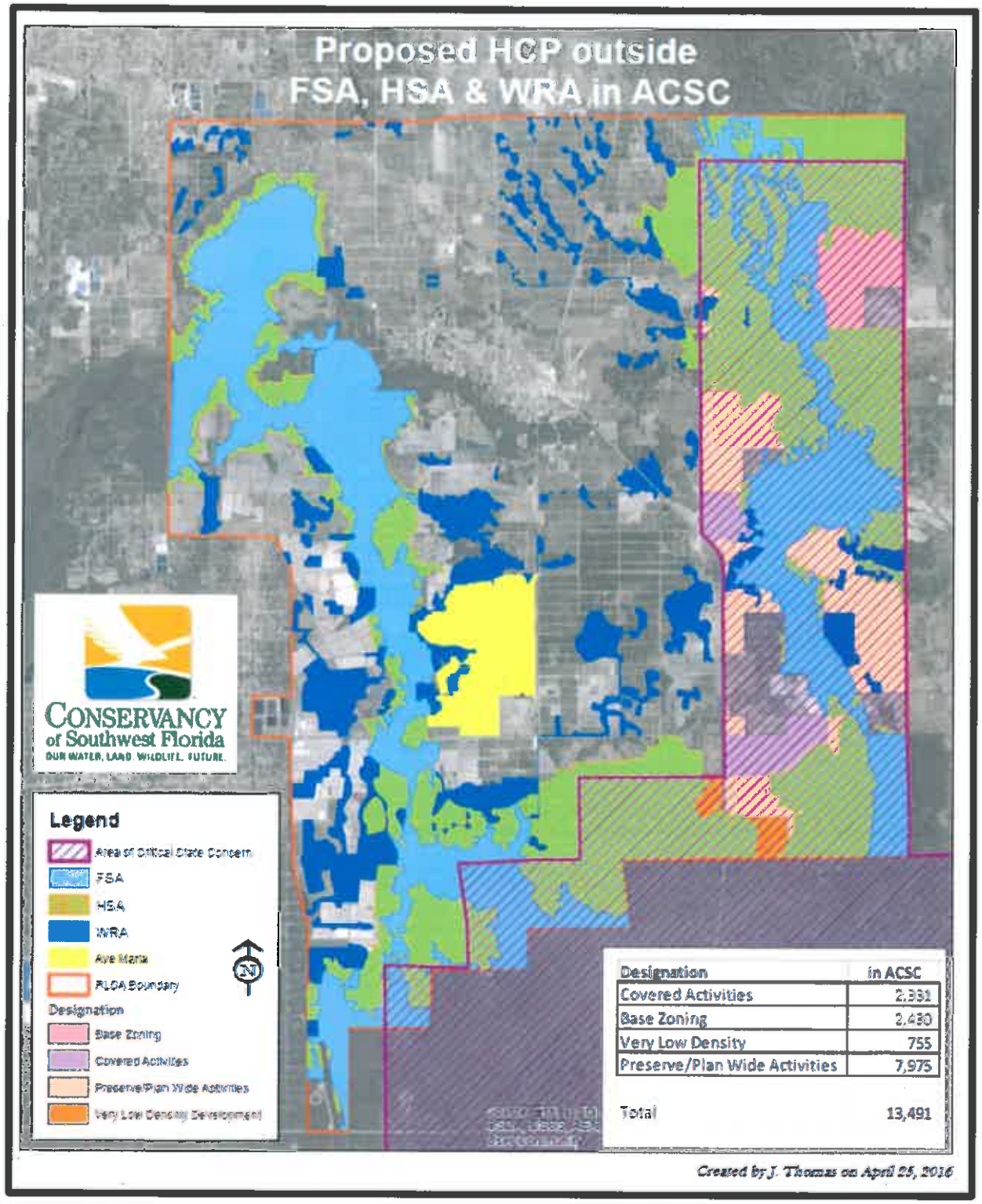

Proposed HCP outside
FSA, HSA & WRA in ACSC
CONSERVANCY
of Southwest Florida
OUR WATER. LAND. WILDLIFE. FUTURE.
Legend
Area of Critical State Concern
FSA
HSA
WRA
Ave Maria
FLOA Boundary
Designation
Base Zoning
Covered Activities
Preserve/Plan Wide Activities
Very Low Density Development
N
Designation
in ACSC
Covered Activities
2,331
Base Zoning
2,430
Very Low Density
755
Preserve/Plan Wide Activities
7,975
Total
13,491
Created by J. Thomas on April 25, 2016

Exhibit I

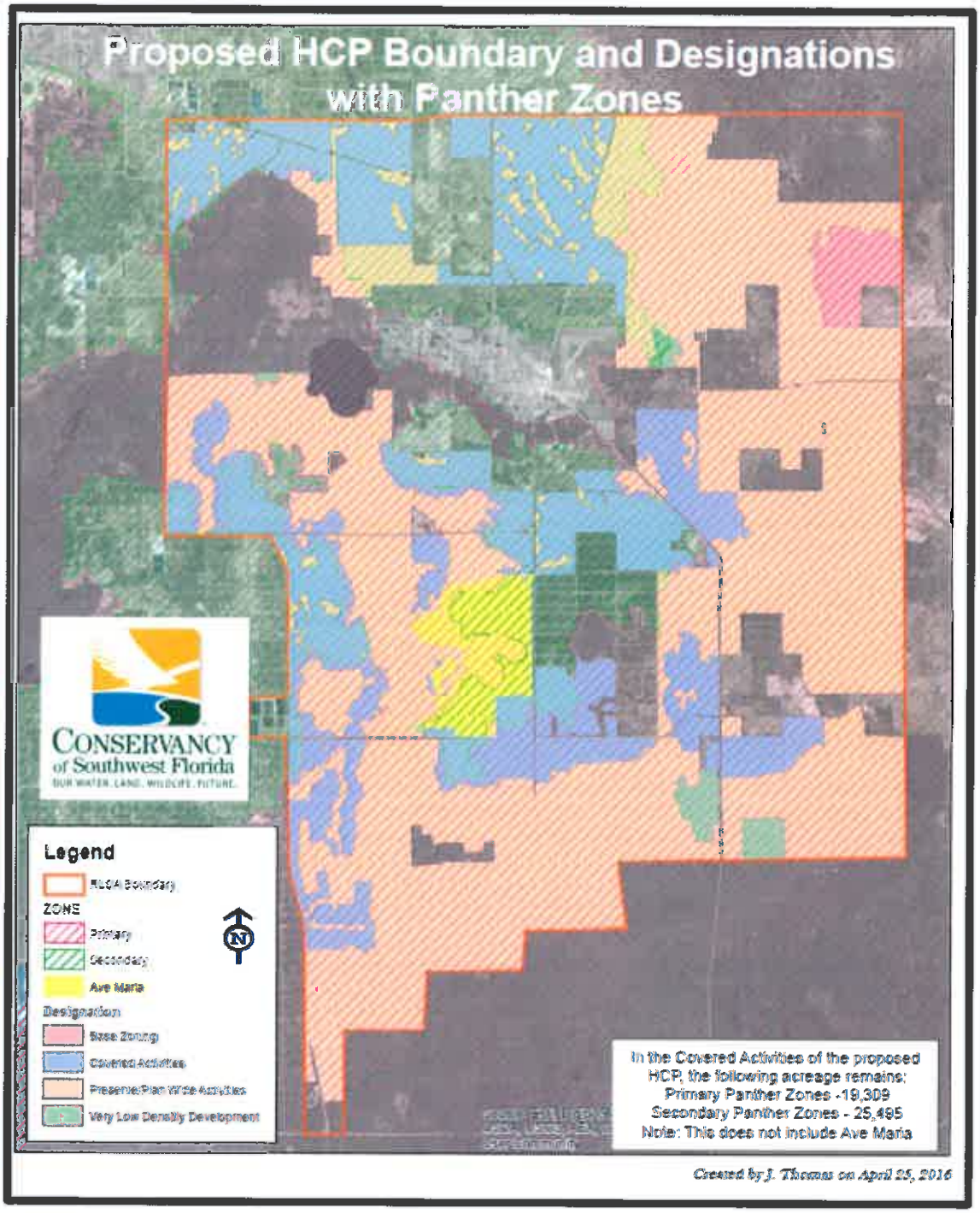
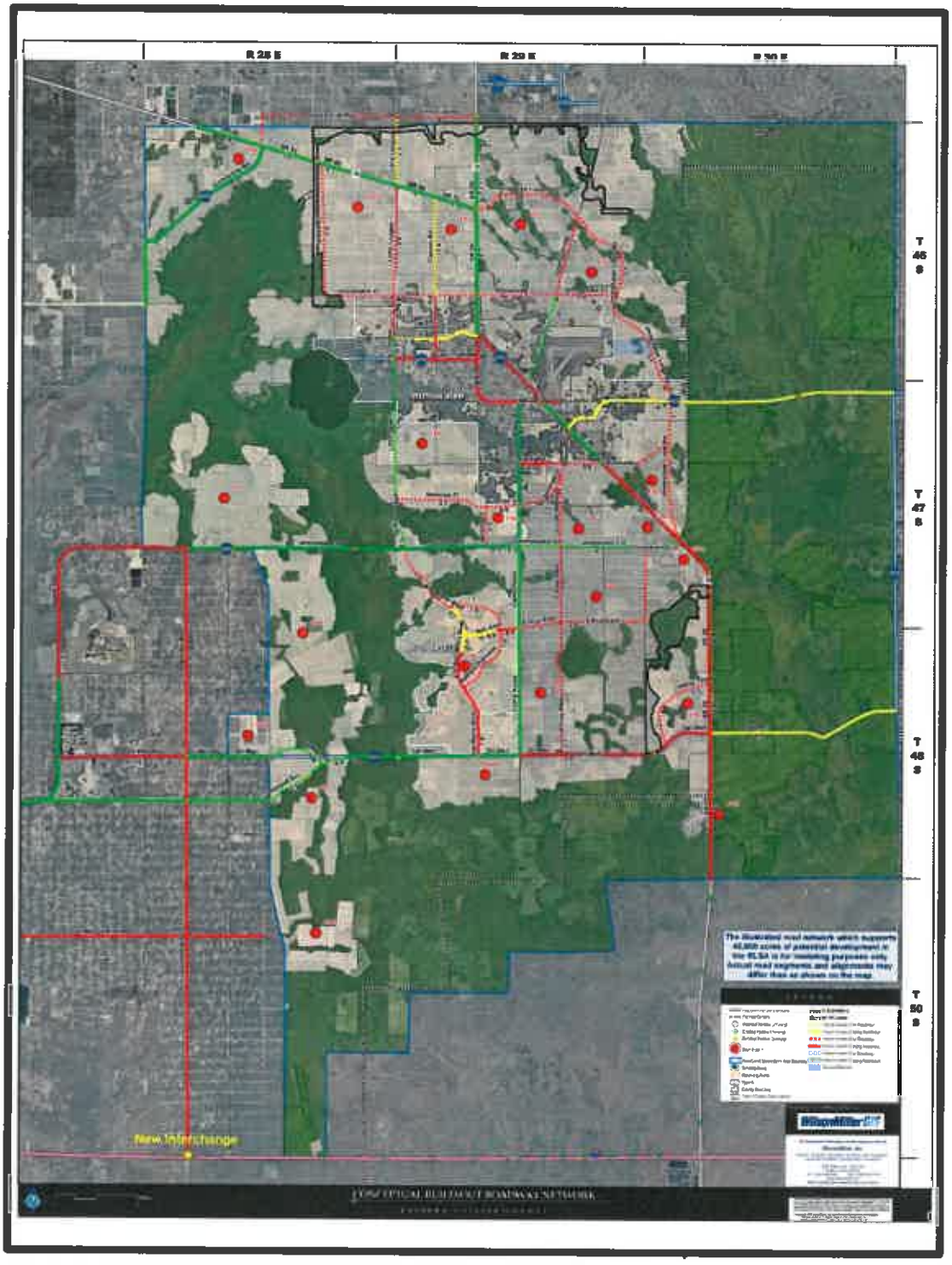
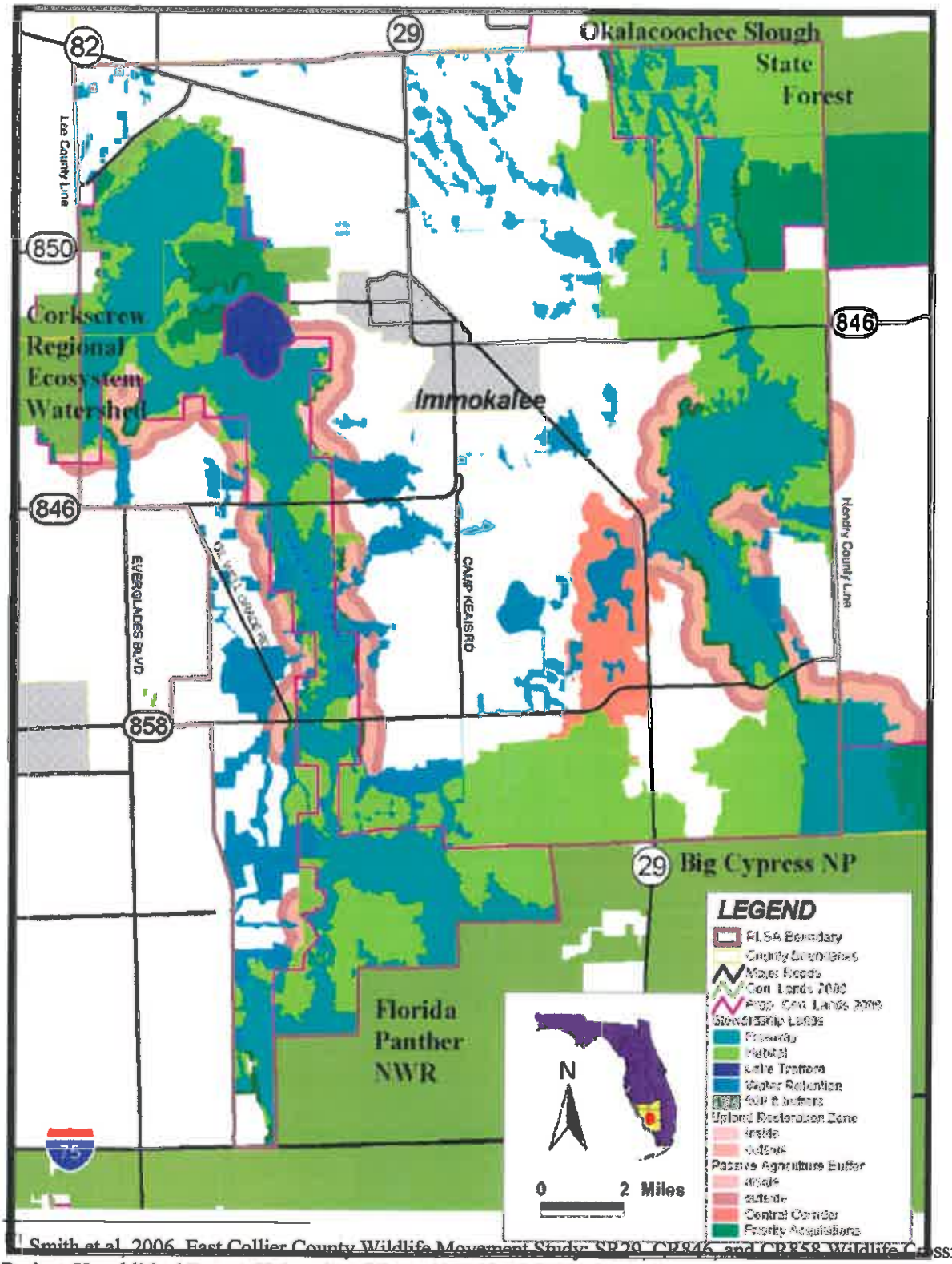

Proposed HCP Boundary and Designations with Panther Zones
CONSERVANCY of Southwest Florida
Legend
ZONE
Primary
Secondary
Ave Maria
Designation
Base Zoning
Covered Activities
Preserve/Non Wide Activities
Very Low Density Development
In the Covered Activities of the proposed HCP, the following acreage remains:
Primary Panther Zones -19,309
Secondary Panther Zones - 25,495
Note: This does not include Ave Maria
Created by J. Thomas on April 25, 2016

Exhibit J[170]



[170] Conceptual Build-Out Roadway Network. Retrieved from http://www.colliergov.net/home/showdocument?id=21624

Exhibit K[171]



[171] Smith et al. 2006. East Collier County Wildlife Movement Study: SR 29, CR 846, and CR 858 Wildlife Crossing Project. Unpublished Report. University of Central Florida, Orlando, FL. P. 65.

Exhibit L[172]

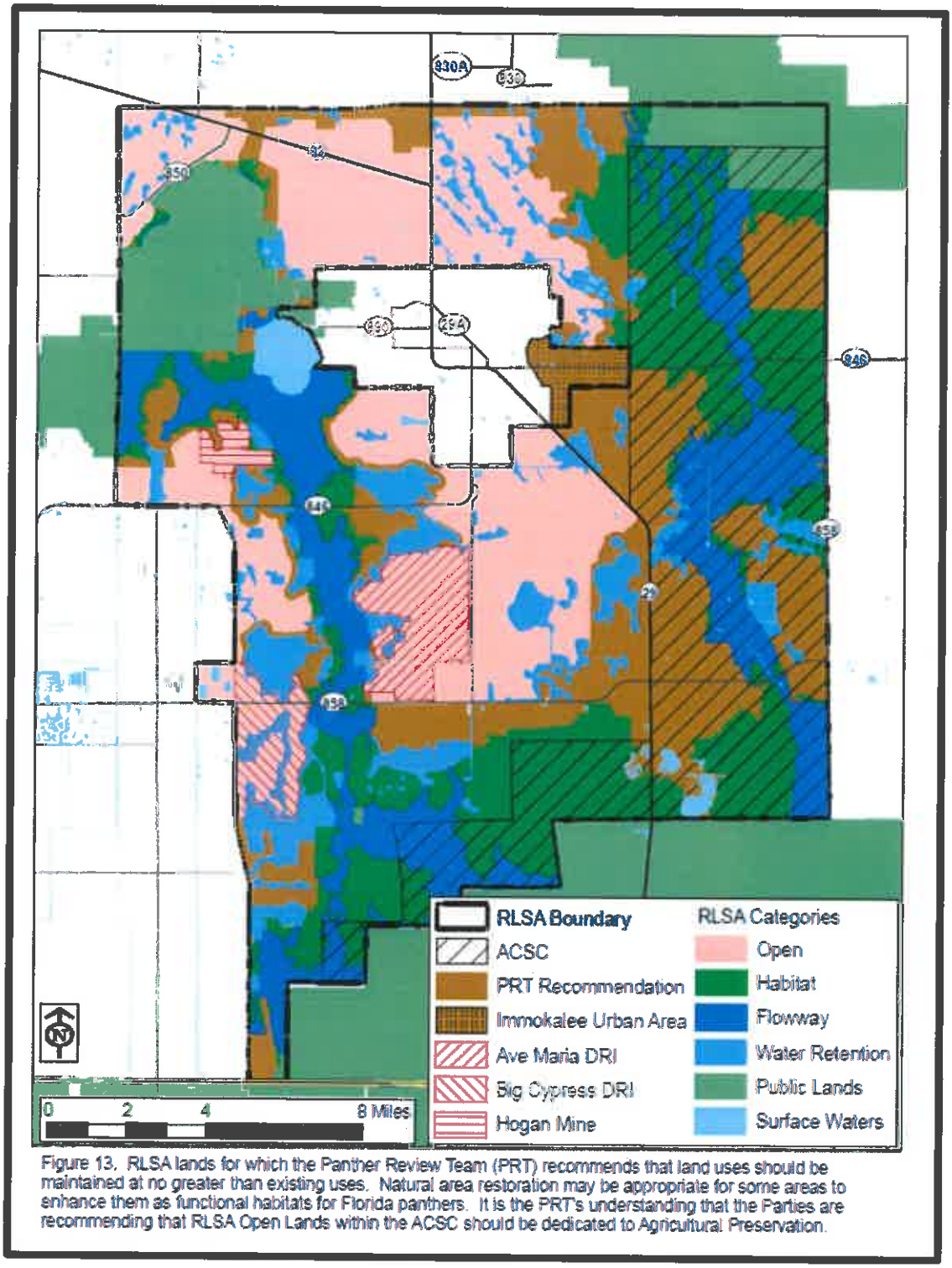


Figure 13. RLSA lands for which the Panther Review Team (PRT) recommends that land uses should be maintained at no greater than existing uses. Natural area restoration may be appropriate for some areas to enhance them as functional habitats for Florida panthers. It is the PRT's understanding that the Parties are recommending that RLSA Open Lands within the ACSC should be dedicated to Agricultural Preservation.

[172] Florida Panther Protection Program Technical Review Team, 2009. Technical Review of the Florida Panther Protection Program Proposed for the Rural Lands Stewardship Area of Collier County, Florida. Final Report. Figure 13.

Exhibit M

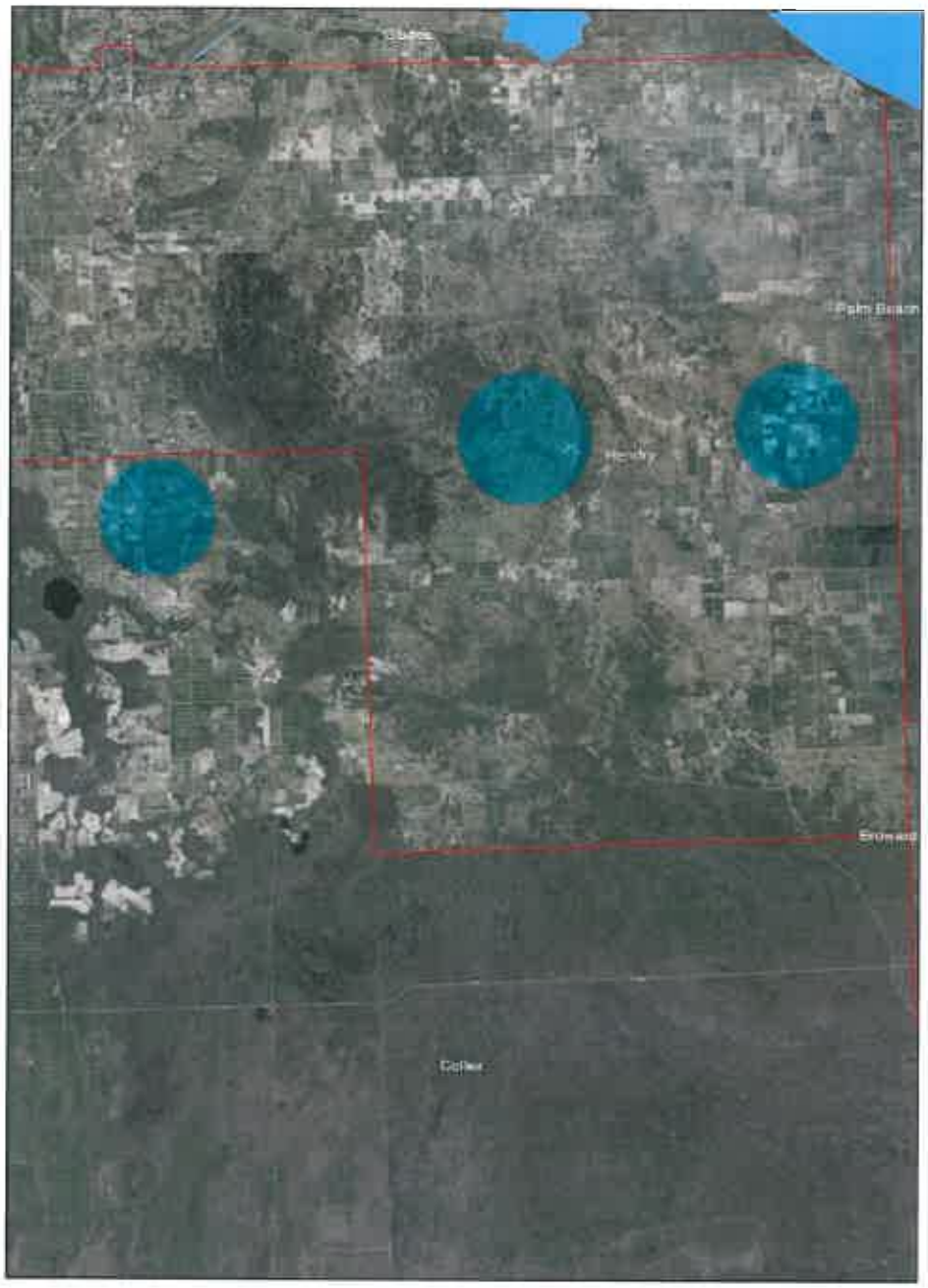
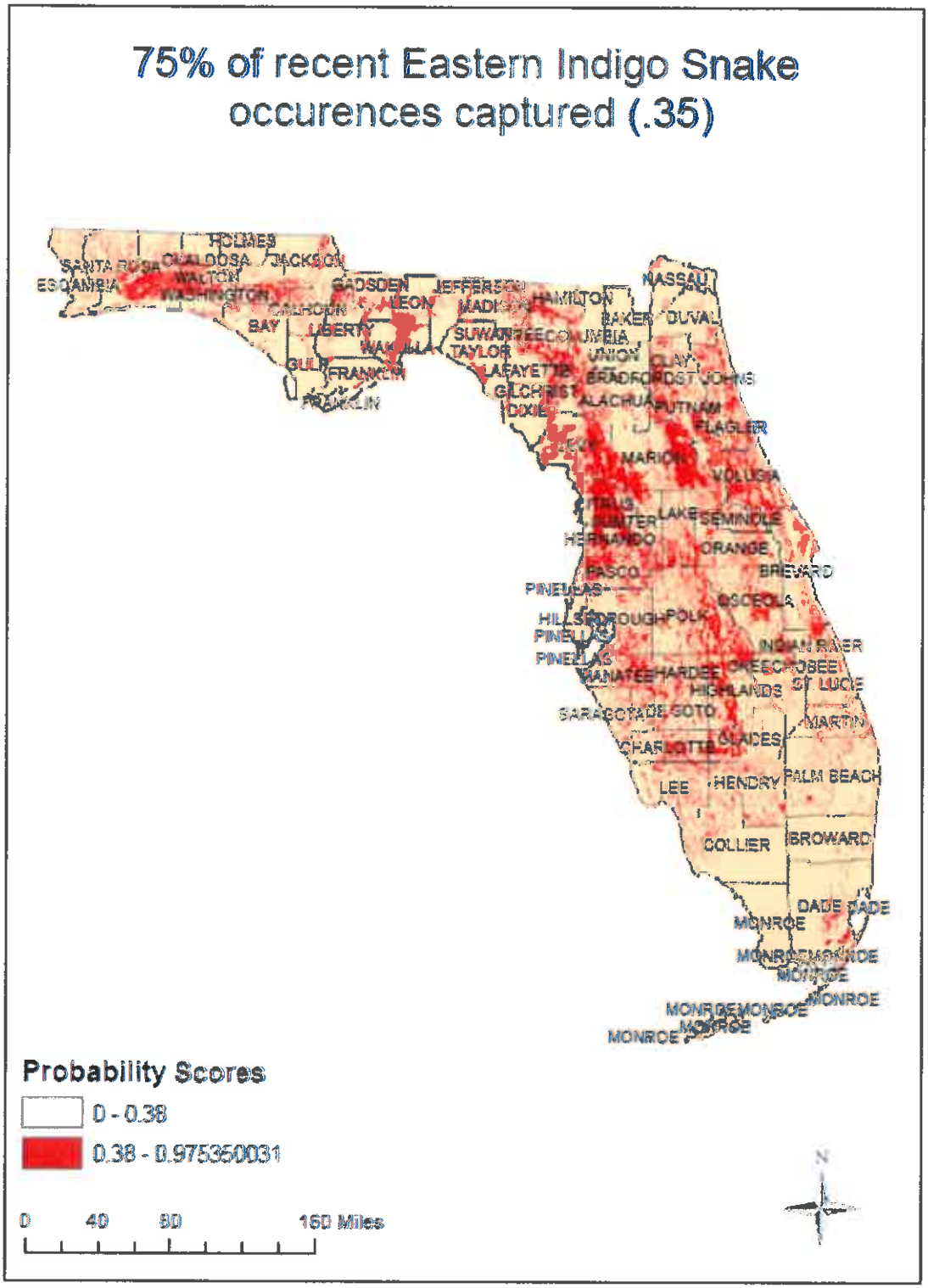
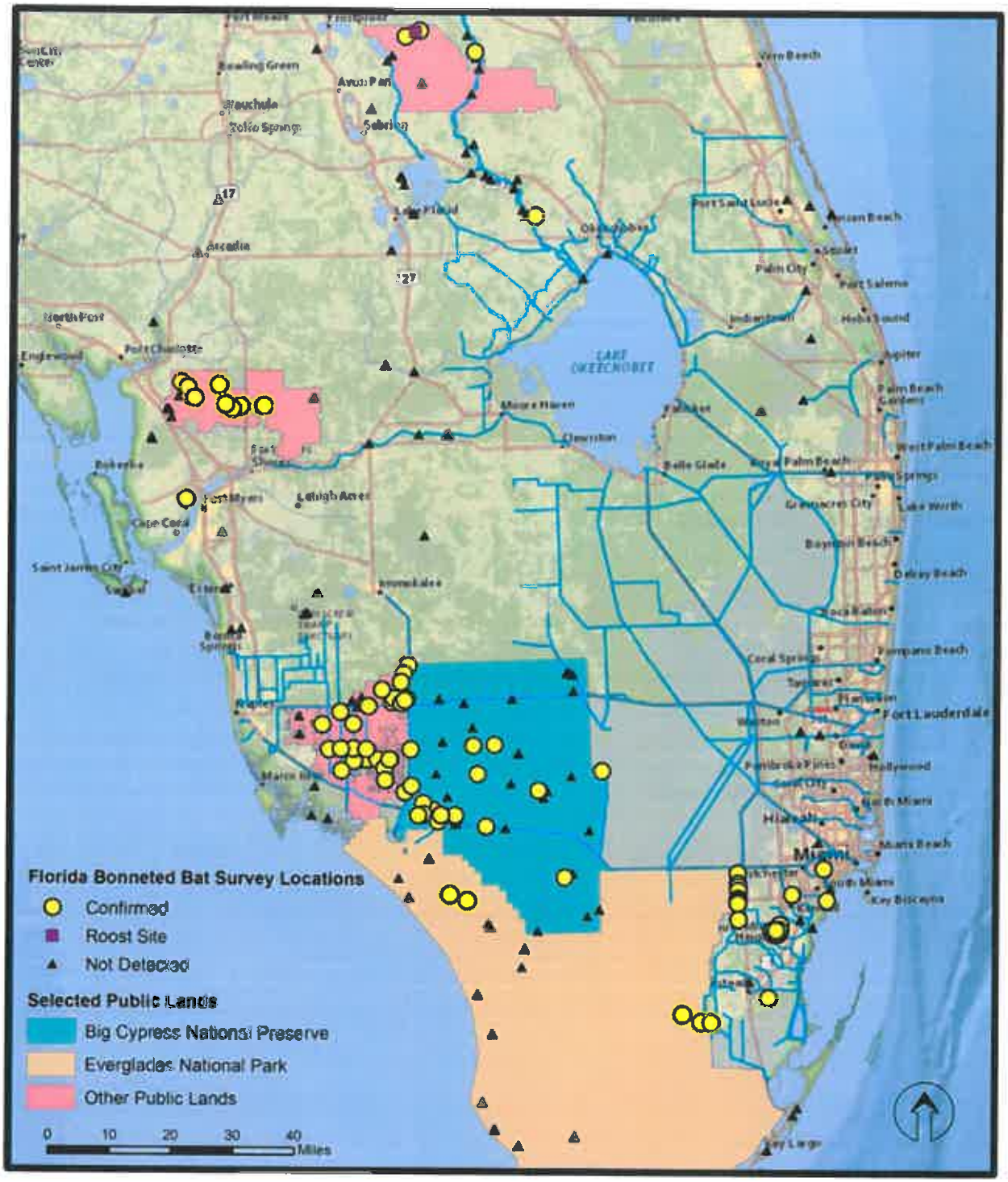


Exhibit N[173]



[173] Florida Fish and Wildlife Conservation Commission, 2015. Eastern Indigo snake Potential Habitat Modeling.

Exhibit O[174]



[174] US Fish and Wildlife Service, 2014. Conserving the Florida Bonneted Bat, South Florida Ecosystem Restoration Trask Force. Joint Working Group/Science Coordination Group, April 2, 2014.

Exhibit P

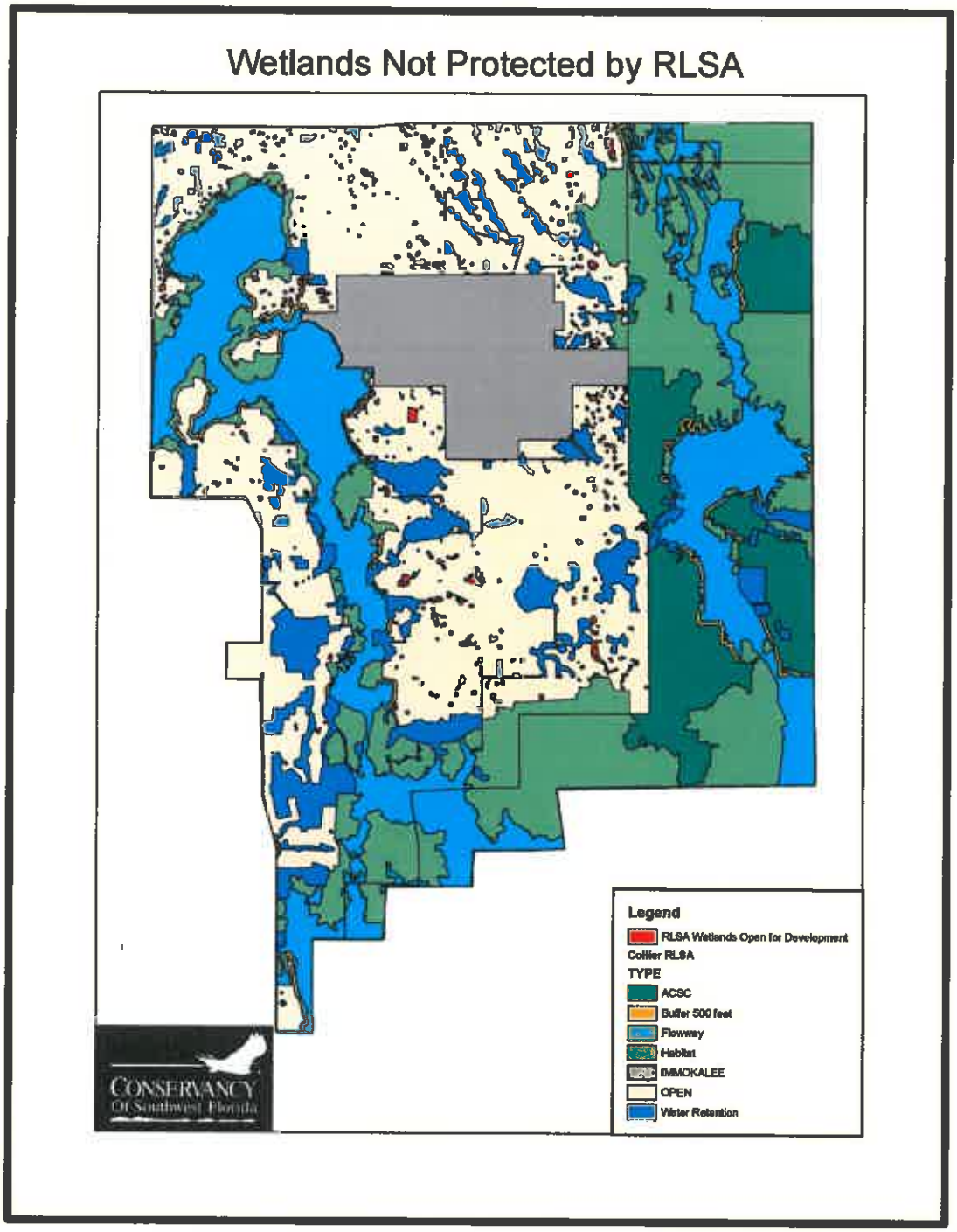
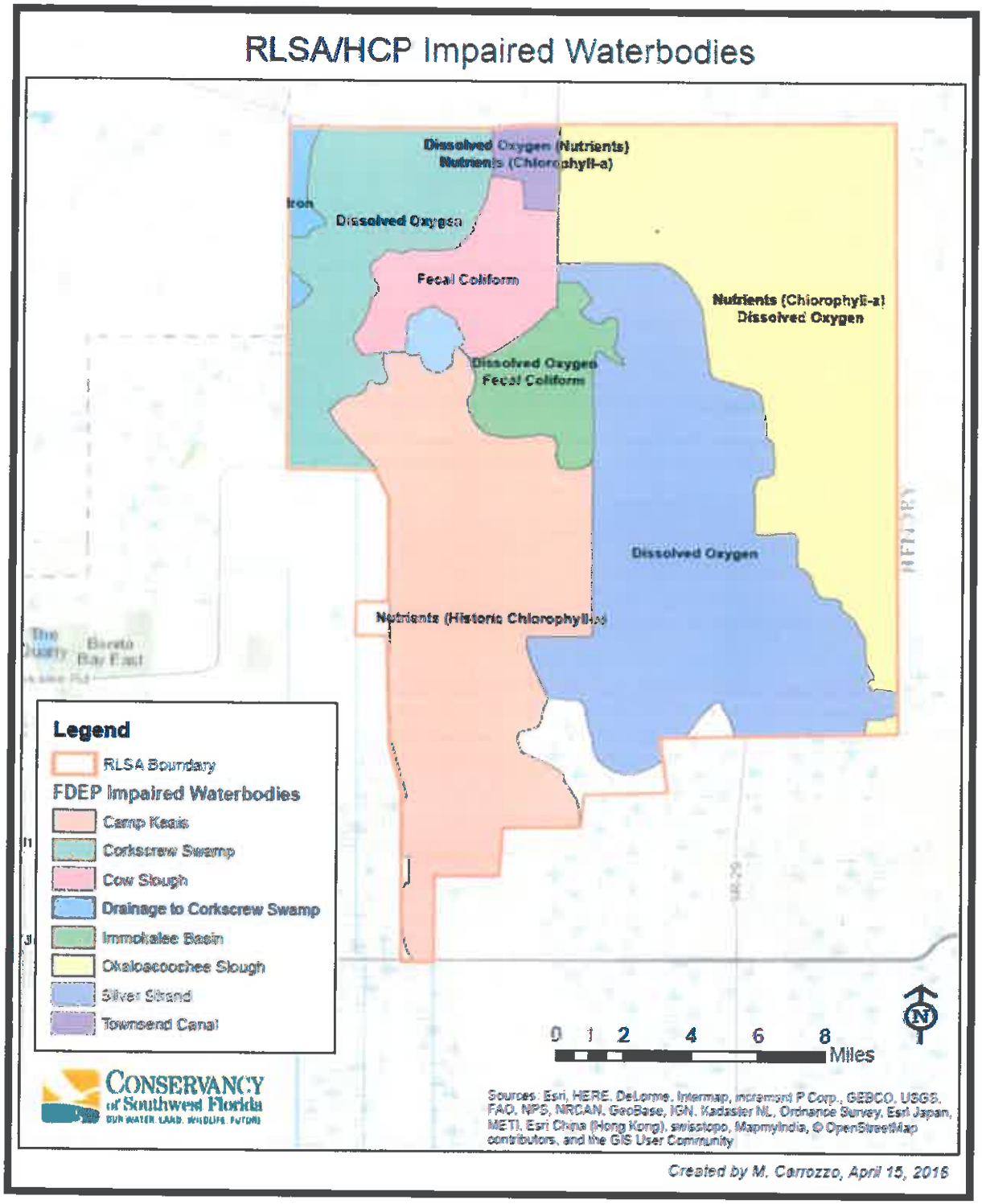

Wetlands Not Protected by RLSA
Legend
RLSA Wetlands Open for Development
Collier RLSA
TYPE
ACSC
Buffer 500 feet
Flowway
Habitat
IMMOKALEE
OPEN
Water Retention
Conservancy
Of Southwest Florida

Exhibit Q


RLSA/HCP Impaired Waterbodies
Dissolved Oxygen (Nutrients)
Nutrients (Chlorophyll-a)
Iron
Dissolved Oxygen
Fecal Coliform
Nutrients (Chlorophyll-a)
Dissolved Oxygen
Dissolved Oxygen
Fecal Coliform
Dissolved Oxygen
Nutrients (Historic Chlorophyll-a)
Legend
RLSA Boundary
FDEP Impaired Waterbodies
Camp Keais
Corkscrew Swamp
Cow Slough
Drainage to Corkscrew Swamp
Immokalee Basin
Okaloacoochee Slough
Silver Strand
Townsend Canal
0 1 2 4 6 8
Miles
N
CONSERVANCY of Southwest Florida
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Created by M. Carrozzo, April 15, 2016