# POTENTIAL NATURAL RESOURCE IMPACTS

# RESULTING FROM

# THE PROPOSED SUNWEST HARBOURTOWNE

Prepared for:
The Gulf Coast Conservancy
(GCC)

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**the proposed SunWest Harbourtowne**

## Introduction

The mission of the Gulf Coast Conservancy (GCC) is"*to promote the preservation of the natural environment of coastal west central Florida by facilitating efforts among public and private groups to identify and acquire the remaining parcels needed to complete the Nature Coast Greenway and Wildlife Corridor, and to encourage management strategies which will assure the long-term sustainability of wildlife and natural resources as well as the conscientious use by the human population"*. GCC is concerned that the proposed SunWest Development, which is in the pre-application phase of a Development of Regional Impact (DRI)[1], will result in the loss of key black bear core habitat, and negatively impact other natural resources in the region. Towards this end, GCC hired Preserving the Environment through Ecological Research (PEER), a local not for profit ecological organization, to evaluate these issues and develop this report for distribution to interested parties and stakeholders that may be affected by the proposed DRI. PEER, Inc, has assembled this report to address following four key issues

I. An overview of the proposed DRI
II. A brief summary of major agreements within the project area (the footprint of the DRI) on land use between the property owners and regulatory/municipal entities.
III. A time line of events
IV. A Characterization of significant natural resources and potential impacts

## I. Overview

The SunWest Harbourtowne project, as proposed, is to be a mixed use golf course community on approximately 2,640 acres located in coastal Pasco County, south of Aripeka Road and west of US 19. Plans show over 2,500 multi-family units, 540,000sq. ft. of commercial/office space, a 250 room hotel with 100 additional condominium units, a 138-acre golf course and 850 berths for marina storage. The marina plans are contingent on a partnership with the county to dredge a 2.2 mile channel to provide deep water access to the gulf. (This is subject to change based on the formal application).

[1] A DRI is: Any development which because of its character, magnitude, or location would have a substantial effect on the health, safety, or welfare of citizens of more than one county. 380.06, Florida Statutes.

## II Major Agreements and events affecting the project area's land use

- In 1975, Pasco County granted the Hunt family a permit to mine during a mining moratorium. The agreement between the Hunt family and Pasco County stipulated that the subject mining properties revert to Pasco County as designated recreation lands upon the termination of mining operations.

- Based on the language of this agreement, there has been conflict between the land owners and the county as to the extent of property that would be turned over to the County. The County believed it was the entire property; the land owner maintains that it was just the footprint of the mine. This discrepancy has been difficult to resolve because the language of the agreement so poorly defined the extent of the property to be placed in county ownership.

- In 1986, the mine owned and operated by the Hunts, turned over to Pasco County 279 acres of mined lands. This was per the 1975 agreement that stipulated the mined lands would revert to Pasco. ***This set a precedent - the mine followed the terms of the 1975 agreement - which was to give land to Pasco once mining operations are done.***

- In 1999 the Hunts sold operating rights to Sunwest Acquisition Corporation.

- In 2003, Sunwest Acquisition Corporation filed for bankruptcy.

- In 2004, Pasco County sued the Hunts for selling the mining rights because it violated the original agreement. The county sued in bankruptcy court to determine the extent of the county's interest.

- In 2006, the county settled with Sunwest Acquisition Corporation for 3 million dollars and 20 plus acres (in addition to the 279 they received in 1986). This was in exchange for their original interest of 915 acres from the original 1975 agreement.

- Circa 2006: SunWest Acquisition Corp. developed a conceptual plan for SunWest Harbortowne; a mixed use golf course community to be built on SunWest Acquisition Corps landholdings (see description above).

- Community and ecological-based concerns are raised by local advocates and expressed in several news articles. Major issues raised are the loss of Florida black bear habitat, seagrass loss, loss of highly productive flats fishing area, increased traffic concerns, violation of the county comprehensive plan, and loss of the character of the small fishing village of Aripeka.

- In 2006, SunWest Acquisition Corp. approached SWFWMD to initiate discussions regarding swapping the 90-acre SWFWMD parcel for

approximately 300 acres of upland and additional coastal marsh acreage owned by Sunwest and adjacent to conservation land (managed by SWFWMD) to the south (see Figure 1). This swap would provide Sunwest access to their development off Aripeka Road and provide them with additional developable acres of land (presently proposed as a golf course). Bears have been documented on this SWFWMD parcel.

If SWFWMD swaps land with SunWest, it effectively severs any linkage to all points south where black bear have been documented with radiotelemetry. Furthermore, without publicly held lands on either side of Aripeka Road, the site's characteristics no longer meets criteria needed to justify state or local funding of a wildlife underpass under Aripeka Road. Thus, despite the ELAMP potential acquisition of Aripeka Heights, the black bear core habitat area would end north of Aripeka Road. Preliminary indications via the Sunwest pre-application suggest that the applicant will try and maintain some linkage – ***however core black bear habitat will be eliminated.*** Additionally, the wildlife corridor currently designated with the zoning that was linked to development of Aripeka Heights ceases to exist, thus functionally denying the bears access to preserved land further south...

What SWFWMD gains with the land swap is additional upland habitat inhabited by the federally protected scrub jays and a larger block of land that will provide access and facilitate management of their existing coastal marsh holdings south of the SunWest property. The SWFWMD land swap will expand the SunWest development footprint and allow access to the development by providing frontage off of Aripeka Road.

If SWFWMD doesn't swap the land, with the purchase of Aripeka Heights by the County, the black bear corridor remains intact to the southern boundary of the SWFWMD property and the need for the wildlife underpass on Aripeka Road remains.

The ecological "down side" of not making the swap is that the scrub jays on the southern parcel (to be swapped) would be only protected by existing regulations.

- In 2007 Pasco County's ELAMP successfully contracts to acquire Aripeka Heights; effectively completing a landscape linkage between public land to the north and the SWFWMD property to the south – presuming that SWFWMD doesn't swap their land with SunWest.

- In 2007 Pasco County submitted an Environmental Resource Permit Application for the development of a county park. The park sits on the 312 acres that had

previously reverted to the county from the Sunwest mines. The county will share a canal with SunWest Harbourtowne; the SunWest proposed development includes deep water access through the dredged canal. The marina and accompanying deep-water canal are a key component of the SunWest development.

## I. III. Site time line of events

1975: Hunt purchases mine property.

1975: Pasco County permits mining with the stipulation that post-mined lands revert to Pasco County as Conservation lands.

1986: As per the original agreement, the first 279 acres of post-mined lands is deeded over to Pasco County.

1997: Aripeka Heights is put on the Southwest Florida Water Management District (SWFWMD) acquisition list.

1999: Hunt sells operating rights to SunWest Acquisition Corp. but maintains the mortgage lien.

2001: SWFWMD purchases 90 acres south of Aripeka Road and north of SunWest within the core area of the Chassahowitzka /Aripeka black bear population. This acquisition adds to publicly-owned core black bear habitat in the region.

2003: SunWest Acquisition Corp. files for bankruptcy.

2004: Pasco County sues the Hunts for selling the operating rights to Sunwest because **they violated the 1975 agreement that stated that the land was to revert to the County**.

2005: Hunt increases adjacent land holdings by purchasing property- later to be part of the SunWest development footprint.

2005: Florida Fish and Wildlife Commission (FWC) designates a black bear wildlife corridor between the 90-acre SWFWMD property and Aripeka Heights. The corridor was designated as such because of the SWFWMD property that lies adjacent to Aripeka Heights. The corridor restricted development in the central portion of the "Aripeka Heights" property north of Aripeka Road. As part of a zoning designation for Aripeka Heights, there is a commitment to building a wildlife underpass under Aripeka Road to facilitate the maintenance of this corridor and link Aripeka Heights and the SWFWMD property.

2006: Pasco settles with SunWest Acquisition Corporation by accepting 3 million dollars, and an additional 20 plus acres in lieu of their interest in the 915-acres of the mining property. This virtually allows SunWest to develop the remaining ***uplands that were to revert to Pasco County post-mining.***

2007: SunWest Acquisition Corps submits pre-application for "Sunwest Harbourtowne.

2007: Pasco County submits an Environmental Resource Permit Application for the development of a county park. The permit includes dredging a 2.2 mile canal through ecological sensitive areas (seagrass beds, wildlife habitat).

The county plans to share a canal with SunWest Harbourtowne; the SunWest proposed development includes deep water access through the dredged canal.

2007: Pasco County's Environmental Lands Acquisition and Management Program (ELAMP) contracts to acquire Aripeka Heights.

**Florida black bear (*Ursus americanus floridanus*)**

The Greater Chassahowitzka Ecosystem (GCE) encompasses about 165,786 acres of land within Pasco, Hernando and Citrus counties. The GCE contains the smallest, isolated black bear population in North America, with estimates at fewer than 20 individuals (Maehr et al., 2003). The southern extent of the GCE bears occurs just to the south of the SunWest property. The GCE bear population is isolated to the west by the Gulf of Mexico, to the south by development, and to the east by U.S. 19, which is heavily developed. This population is very vulnerable; small populations are more susceptible than larger populations to negative impacts from occurrences such as unpredictable shifts in the demographics, environmental uncertainty (such as habitat degradation or loss) and natural weather events (e.g., wildfire, drought) (Meffe and Carroll 1997).

The GCE is comprised of habitats preferred by black bear: mixed hardwood swamp, bottomland forest, scrub, hammock, and pine flatwoods. The black bears in the GCE area have been documented most frequently in bottomland forest, perhaps because this is the dominant habitat type (Maehr, et al. 2003). It contains den sites, cover, and forage. As a whole, the GCE is predominantly a mosaic of upland and wetland forested habitat (44% of total area) that collectively provides foraging options throughout the year; bears are opportunistic feeders that predominantly rely on saw palmetto and sabal palm, as well as other plant matter (Orlando, 2003; Brown, 2004). The reduction of contiguous, diverse habitats reduces the foraging options for bears. In essence, bears prefer and depend on forested habitats, both upland and wetland. Their food sources come from a variety of different habitats; they depend on this variety to forage in certain places during certain times of the year. Reducing this variety of habitat types reduces their ability to find available food.

There have been 37 bear roadway mortalities within GCE population between 1976 and 2004 (Orlando, 2003; Brown, 2004); six of these have occurred within the last eight years. This represents a substantial loss to this vulnerable population and indicates the pressure the bear population is already under with the current residential/commercial development in the region. "In such limited habitat, cubs typically are able to establish a viable home range only when one is vacated by an adult as a result of that adults death. Cubs unable to establish a viable home range are typically killed, either by vehicles, poaching, or other bears", (Smith, pers. communication[2]).

Contrary to popular notions regarding this area, there are no black bear corridors within our focus area, which by definition, link two existing populations or core areas**.** ***The***

[2] Judy Smith, Wildlife Biologist, HDR Engineering, Inc. Judy conducted her graduate research on the Chassahowitzka black bear population.

***entire GCE, including the Sunwest Development property, the 90-acre SWFWMD parcel and Aripeka Heights are part of an area that better meets the definition of "core" bear habitat. Core habitat encompasses entire, overlapping home ranges of individuals because it provides all the things bears need – food, shelter, and cover.*** The corridor perception has probably been introduced because of the elongated nature of this core habitat; this is likely due to highways and associated human activity. This elongation is mirrored by the shapes of the individual black bear home ranges and is directly related to the constraints to the GCE by natural and artificial landscape features (Maehr, et al., 2003). Simply put, under the existing management and land use regime, the GCE is probably at or near black bear carrying capacity; it is supporting about as many bears as it can at the present time (Smith, pers. communication). The carrying capacity can be increased by a combination of management and conservation strategies (see below). ***The entire GCE is critical to this small population and any reduction in size will likely result in a reduction in bear population, and reduced resistance to extinction.***

The Florida black bear has been recognized as an umbrella species (Eason and McCown, 2004; Maehr et al., 2001) Sustenance of core Florida black bear habitat with proper conservation and management translates to long-term protection and management of contiguous blocks of diverse natural habitat. These large contiguous preservation lands serve to protect enough lands to ensure the continuation of viable populations of several other forest-dwelling protected and unprotected (unlisted) species. These include, but are not limited to: white-tailed deer, grey fox, bobcat, Sherman's fox squirrel (protected), great horned owl, barred owl, pileated woodpecker, red-eyed vireo, yellow-throated vireo, yellow-throated warbler, northern parula, several foraging wading birds (both protected and unprotected), Eastern indigo snake (protected), barking treefrog, and southern leopard frog.

**Impacts**

Development of the Sunwest Property will reduce the core habitat of the GCE population and completely or partially eliminate areas where bears have been documented. Bears depend on the forested upland habitat types that SunWest is planning to develop. It is possible that bears in this population could fail to reproduce if important food supplies are eliminated. There is locally abundant food, unfortunately however, highways and encroaching development act as barriers to food sources **(**Maehr et al., 2003).

Additionally, the development will directly displace core habitat and sever connections to bear habitat south of the development. Females have been documented to reside in the southern area of the GCE- hence males inhabit this area during breeding season (Smith 2001; Orlando 2003). The proposed development will isolate any breeding black bears residing in the south from the rest of the population to the north. Severing this linkage also limits the southern bear's ability to respond to change in food availability- and travel to another food source when needed (Smith, pers.communication). ***There are no other practicable alternatives for bear movement.***

Vehicle collisions are the most frequented cause of death in the population. Highway mortality increases with traffic volume (Orlando, 2003). Black bear roadway mortality is likely to increase with the added traffic that will be introduced along Aripeka Road and Old Dixie Highway when the Sunwest property is developed.

***The loss of habitat associated with the SunWest development would be extremely detrimental to this bear population.*** Given current management regimes and landscape uses, the population is at or near carrying capacity and also at the lower limit of existence. The proposed development will remove available bear habitat and food sources, and we will lose part of documented black bear home ranges. In this population, a loss of a home range equates to loss of a bear (Smith, pers. communication). The loss of even one bear could be detrimental to the continued existence of the population.

**Past Studies.**

The University of Kentucky conducted numerous studies on the GCE population during the years 1997-2002. The resulting data has given us much-needed information on the bears in this region. Radio-telemetry technology in the late 1990s and early 2000s enabled scientists to make generalizations about habitat use, social structure, and highway impacts- but it was not all-inclusive. What the data does give us is information on the habitat preferences of bears, and the impact of new development and roads on this bear population (Maehr, pers. communication[3]). From these studies we know that intensifying development has greatly restricted the bear core habitat, their food sources, and their ability to move and breed. Highway mortality has been the biggest direct cause of death; they are killed when they cross roads to explore, and search for mates and food.

The radio-telemetry data available shows where the bears were at a given point in time; without additional intensive studies we will not know exactly where they are now. We know that from 1997- 2002 bears lived in and around the SunWest property. It is possible there may be even more bears living in this area, or less. The issue is not the number of bears living on the SunWest property at any given time; the property is still critical habitat-even if no bears were found on it at the time of data collection. We do know that this property contains high-quality bear habitat; because it is good quality bear habitat, every effort should be made to allow for the natural ebb and flow that occurs in any population. Just because a particular place may be absent of a resident, breeding adult today, does not mean that this is a permanent situation. (Maehr, pers. communication). Loss or changes to the forested habitat in the GCE is a threat to this very small black bear population; new developments that promote additional infrastructure and human activity will result in permanent reductions in bear habitat – something that this small population cannot afford (Maehr, pers. communication).

It is also important to note that we do not know what the demographic status of the black bear is in all parts of the GCE; researchers never claimed (nor tried) to catch every bear in the population (Maehr, pers. communication). The focus areas of past studies were on public lands, not private.

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[3] David Maehr, PhD. Associate Professor Dept. of Forestry, University of Kentucky,

**Recommendations**

The GCE black bear population is in danger of extinction due to: habitat loss, vehicle mortality, low population numbers, and isolation. To prevent the extinction of this population we must focus on land management and creating connections with other bear populations (Browne, 2004; Larkin et al., 2004) and the preservation of its core habitat (Maehr pers. communication). Continued development in the GCE eliminates crucial core habitat (Maehr, pers. communication) and the potential for maintaining or restoring landscape linkages to other bear populations (Larkin et al., 2004; Orlando, 2003).These linkages can be accomplished by: preserving and/or acquiring core habitat, and focusing on habitat acquisitions and restoration that promote natural connections.
Connecting nearby populations to the GCE should now be a priority (Hoctor, 2003). These connections must then be made conducive for black bear travel. Examples include the creation of wildlife underpasses and greenways, reforestation and reducing speed limits. Initially, scientists may want to consider stimulating immigration by supplanting the GCE population every few years with individuals from a nearby population. It is likely that this population will go extinct without the protection and restoration of landscape connections to other bear populations (Larkin et al., 2004).

We will need to engage in a combination of conservation and management actions to prevent the extinction of the GCE bear population (Brown, 2004). The SunWest Harbourtowne development is detrimental to the health of the GCE bear population. The planned development sits on the southern part of the bear's core habitat; this development will essentially eliminate the southern portion of their range. A combination of land management and restoration could improve this area, making it even more conducive to bear use and travel. We question whether further reduction of habitat is compatible with these other objectives. The decision makers need to evaluate this issue closely to determine if, as has been suggested by the experts, a new development is worth the price of possibly contributing to the loss of this local bear population.

**Sea grasses**

Aripeka and Pasco County represent the southern extent of what is known as the Nature Coast. Starting from the landward side, this region is typically characterized by coastal hammock, then a wide band of salt marsh dotted with upland and mangrove islands, and then a wide zone of seagrasses. Seagrasses are rooted aquatic plants that, in this area, form patches and meadows that persist throughout the year. Seagrasses contribute to water clarity by trapping particles in foliage, as well as by stabilizing sediments and reducing sediment resuspension due to waves or currents. In addition, seagrasses contribute important habitat functions to coastal ecosystems by providing shelter, nursery, breeding, and/or foraging areas for many of our signature gamefish species

including, but not limited to: snook, seatrout, and redfish. It is also habitat for other marine life, including pinfish, scallops, blue crabs, dolphins and the endangered manatee.

The coastal region adjacent to Aripeka meets this definition. Due in part to excellent water clarity in this area, there is a wide zone of seagrass adjacent to the coastline. An existing shallow dredged channel (4ft. depth) currently extends out approximately 2 miles. Mitigation for dredging that occurred for the Hudson River Channel (to the south) resulted in the restoration of approximately 3.0 acres of seagrass habitat at the SunWest mine/Fillman's Bayou site by the partial removal of the spoil extending from the mine into Fillman's Bayou. Spoil was removed near the proposed canal, while upland islands, which were dominated by native species, were left undisturbed to maintain refuge habitat for many wading and shore birds, including but not limited to: willets, plovers, little blue herons, white ibis, and brown pelican (Scheda, 2007). In the years since the completion of this mitigation project, 100% of the area that was scraped down has been colonized by seagrass and other submerged aquatic vegetation species (SAV) (Scheda, 2007).

Pasco County has applied for a permit to develop the 312 acres that had previously reverted to them from SunWest into a county park (as part of the 1975 agreement). Part of the permit application includes (a) the re-dredging of the existing shallow channel to a deeper minimum depth, and (b) creating an entirely new channel, leading from the proposed county park into the deeper waters of the Gulf. The county park will be located on the southern side of the channel; the land on the northern side of the channel will be part of the proposed SunWest development. Per the SunWest website: "Central to the resort community is deep-water boat access. An existing channel, located just south of SunWest Harbourtowne, will be enhanced and extended approximately 2.2 miles to the west northwest".

**Impacts**

There will be numerous direct and cumulative negative impacts to this coastal ecosystem associated with the dredging project. The project proposes dredging 188,000 yards of cubic material from the existing channel as well as from a new proposed area; the channel will be 80 feet wide (on average). ***The development will directly displace almost 12 acres of seagrass and other submerged aquatic vegetation*** (L. Pillsbury, 2007); much more will be impacted by the cumulative effects of dredging, and increased boat traffic.It is also likely to directly impact the mitigation area for Hudson Bayou.

***Dredging the channel will cause direct damage to seagrass habitats and the local fisheries and potentially negatively impact surrounding areas.***

Primary environmental impacts associated with dredging activities can include: immediate loss of fisheries habitat due to direct displacement of SAV; decrease in water clarity due to loss of seagrass stabilization of bottom sediments, and disruption of hydrodynamic patterns which can lead to further decreases in water quality and further damage to remaining/ surrounding seagrasses... Increased turbidity from dredging

activities and boat wakes causes a decrease of light penetration into the water, which reduces seagrass growth and survival. (http://www.flmnh.ufl.edu/Fish/southflorida/seagrass/impacts.html).

Secondary environmental impacts include increased noise from the dredging activities and associated boat traffic and increased pollution from the boats. Dredging also affects marine habitats by changing the nature of the waterway; contaminants are released from bottom sediments and the spawning, nursery and food production areas are altered (http://www.flmnh.ufl.edu/Fish/southflorida/seagrass/impacts.html). All of these impacts will negatively affect the natural community, the quality of the local commercial and recreational fisheries and other wildlife, such as manatees, dolphins and wading birds.

The estimate of the impact of increased canal use on adjacent seagrass habitat may be underestimated. Reports of dredging and boat channel use have shown that the effects of these activities on nearby seagrass beds are frequently underestimated. For instance, increased boat traffic, especially by deep draft, non-planning boats, will produce greater surge and wave action in an area where bottom sediments are described by Scheda (2007) as "soft mud-sand mixture" or "silty sand". These types of sediments are likely easily re-suspended and will compromise water clarity for the seagrasses outside of the channel boundary.

The cumulative impacts of dredging cannot be quantitatively measured at this time. However, they may include: ***alterations in aquatic species composition, reduced nursery function, and reduced recreational (e.g. scallops, tarpon, snook) fishery catches.***

According to the permit application, an estimated 250 boats associated with the county park are likely to use this channel each day; ***this number does not take into account the fact that this channel is directly tied to a 2000+ home development, and a large marina (storage for 850 boats).***

Additionally, the new, deeper channel will provide direct access to Fillman's Bayou for larger vessels. The new channel won't go through the bayou, but it will provide easier access to the area. Fillman's Bayou is an ecologically diverse area of seagrass beds, oyster beds, salt marsh communities and mangrove islands (Scheda, 2007). It is relatively undisturbed; additional boat traffic will disrupt the natural systems.

While the mitigation plan proposes to displace 12 acres of seagrass and replant in one of the mined lakes, the expected salinity at the target mitigation site won't support the seagrass species that are being removed by the dredging operation. ***The proposed mitigation area for seagrass replanting may not support the same seagrass species that will be removed by dredging.*** As reported in project application and DEP comments ((L. Pillsbury, 2007), the salinities in the existing lakes were 6 practical salinity units (psu) and less than 1 psu on the other. True seagrasses such as Turtle grass (*Thalassia*) and Shoal grass (*Halodule*) will not survive in salinity this low; only Widgeon grass (*Ruppia*) would be able to persist. This implies that the mitigation project would not support the same habitat it is replacing.

**Scrub jays**

There is a population of scrub jays that is known to inhabit the southwestern SunWest tract adjacent to the SWFWMD property. There is also the potential that they may occur on other parcels within the SunWest holdings that include scrub habitat

**Impacts**

If the uplands in this area are developed, the applicant will need to comply with all federal and state regulations pertaining to the scrub jay.

**Other natural resource issues** that need to be evaluated once the DRI application is submitted**:**

- Sink holes – more than 10 documented within 2 miles of site. There are likely to be many more that have not been reported.
- Golf course in a floodplain
- Fertilizers and stormwater runoff into sensitive salt marsh
- Other canal-related issues
- Impacts to other listed species (e.g., gopher tortoise, indigo snake, least tern, royal tern)

***In Summary***

The County allowed mining during a moratorium with the stipulation that the area would all convert to recreation. Now, decisions have been made that pave the way for the area to not only be mined but intensively developed – right in one of the more ecologically sensitive regions in the county. **Is this a violation of public trust?**

This is the smallest, most isolated black bear population in the country. The suitable habitat is already hemmed in by the coastline and development. Reducing the size of their habitat in any way further exposes this already stressed population to extirpation. Individual bears home ranges have been documented to overlap on the SunWest property. Development, as proposed, will reduce core habitat and increase traffic, the primary cause of bear fatalities in the region.

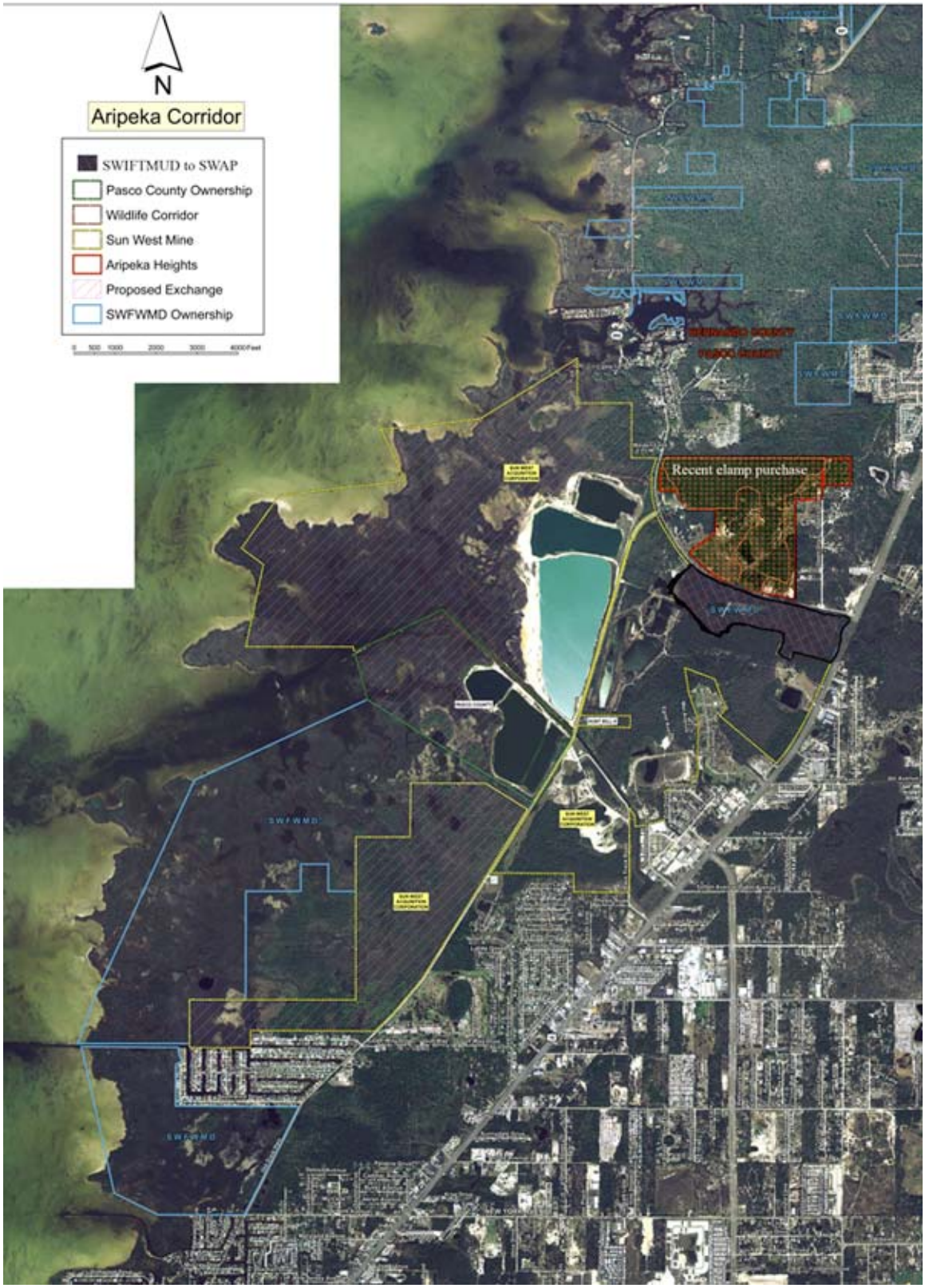
Pasco County has partnered with SunWest Harbourtowne to dredge a deep-water canal through ecologically sensitive areas; the success of the SunWest Harbourtowne development is dependant on the canal. **While we recognize the need for boat ramps for the general public, there is already a dredged 4ft canal present; enough for the flats boats that are typical of the region. Is there a need to dredge a deeper canal?** It

appears that the driving reason to dredge a deeper canal, as well as an additional canal, is the size of the boats that will be associated with the development and its marina.

In addition, ***the proposed canal traverses a mitigation area for the dredging of the Hudson River Channel.*** Parts of a berm were removed in this area, and seagrasses have naturally recolonized. Scientists have been monitoring this area and can attest to the presence of seagrasses, other SAV and a rich array of wildlife species. The dredging activity and associated heavy boat traffic stemming from the SunWest marina will have an adverse impact of local ecosystems- including the local fishing grounds. **A 4 ft. channel and boat ramps would serve the general public; there is no need to dredge to the width and depth proposed, other than the SunWest Harbourtowne development.**

**Fig. 1 on page 14.**

**Map of areas of interest.**



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