

## **APPENDIX F**

### **SUPPORTING INFORMATION FOR BIOLOGICAL RESOURCES**



## BIOLOGICAL RESOURCES

### Federally Listed Species

#### ***Gulf Sturgeon***

The Gulf sturgeon (*Acipenser oxyrinchus desotoi*) is a federally and state listed threatened species. This large fish occurs predominately in the northeastern Gulf of Mexico, feeding in offshore areas and inland bays during the winter months and moving into freshwater rivers during the spring to spawn. Migration into fresh water generally occurs from March to May, while migration into salt water occurs from October through November (U.S. Air Force, 2006).

Almost all of the waters adjacent to Eglin Air Force Base (AFB) are designated Gulf sturgeon critical habitat (see Sensitive Habitats section for more information). The lower rivers provide summer resting and migration habitat, and the bays, sound, and Gulf contain winter feeding and migration habitat (U.S. Air Force, 2006). The major issue for Gulf sturgeon in freshwater and estuarine areas around Eglin AFB and Hurlburt Field is erosion/sedimentation.

#### ***Eastern Indigo Snake***

The eastern indigo snake (*Drymarchon corais couperi*) is listed as a federal and state threatened species that is the largest nonvenomous snake in North America. The primary reason for its listing is population decline resulting from habitat loss and fragmentation. Movement along travel corridors between seasonal habitats exposes the snake to danger from increased contact with humans. Indigo snakes frequently utilize gopher tortoise burrows and the burrows of others species for over-wintering. The snake frequents flatwoods, hammocks, stream bottoms, riparian thickets, and high ground with well-drained, sandy soils. The indigo snake could occur anywhere on the Eglin Range because it uses such a wide variety of habitats (U.S. Air Force, 2006).

The species is extremely uncommon on the Eglin Range with the sighting of only 29 indigo snakes throughout the Eglin Range from 1956 to 1999, while no sightings have been reported since 1999 (Gault, 2009). Most of these snakes were seen crossing roads or after being killed by vehicles. It is difficult to determine a precise number or even estimate of the number of these snakes due to the secretive nature of this species (U.S. Air Force, 2006).

#### ***Reticulated Flatwoods Salamander***

The reticulated flatwoods salamander (*Ambystoma bishopi*) is state and federally endangered. Optimum habitat for this small mole salamander is open, mesic

(moderately wet) woodlands of longleaf or slash pine flatwoods maintained by frequent fires and that contain shallow, ephemeral wetland ponds. Males and females migrate to these ephemeral ponds during the cool, rainy months of October to December. The females lay their eggs in vegetation at the edges of the ponds. Flatwoods salamanders may disperse long distances from breeding sites to upland sites where they live as adults.

Eglin supports approximately 17,000 acres of potential salamander habitat, with 18 known breeding ponds. However, flatwoods salamanders have not been found at several of these wetlands in the past 10 years. A survey conducted between 2002 and 2004 visited all historical wetlands on multiple occasions and captured flatwoods salamanders (larvae and adults) at seven wetlands (six historical, one new) (U.S. Air Force, 2006). Since 2004, larvae have been documented in no more than four ponds in any year. Flatwoods salamanders appear to have declined in numbers of individuals and active breeding wetlands since the original surveys in 1993 and 1994, possibly due in part to several years of drought in the late 1990s and early 2000s. Breeding wetlands may not have remained wet long enough for larvae to complete metamorphosis if rainfall amounts were not sufficient, resulting in little population recruitment over the last few years at these wetlands.

### ***Red-Cockaded Woodpecker***

The red-cockaded woodpecker (RCW) (*Picoides borealis*) is listed as a federally and state endangered bird species. The RCW excavates cavities in live longleaf pine trees that are at least 85 years old. The RCW historically had a habitat range as far north as New Jersey and as far west as Oklahoma. Today, the RCW has been restricted to the southeastern United States, from Florida to Virginia and to southeast Texas, due to a loss of habitat. In the southeast, 98 percent of the longleaf pine forests have been removed, making relatively undeveloped federal lands such as Eglin AFB primary habitat for the species. Due to the preservation of continuous longleaf pine forests on Eglin, the Eglin Range has one of the largest remaining populations of RCWs in the country. In 2003, the USFWS identified Eglin AFB as 1 of 13 primary core populations for the RCW (U.S. Air Force, 2006). Eglin's population goal is 350 Potential Breeding Groups (PBGs). The Eglin RCW population has been increasing since 1994, and it reached the designated recovery goal of 350 PBGs in 2009. The current population size is 420 active clusters and 371 PBGs.

The removal of longleaf pine trees, degradation of quality habitat (i.e., due to fire suppression or ground disturbance), and noise generated from mission-related or other activities are potential threats to the RCW on the Eglin Range. Eglin is executing a USFWS-approved management strategy to meet certain growth objectives of the RCW and to obtain increased mission flexibility with the federal requirements for RCW impacts (U.S. Air Force, 2006).

The Eglin NRS GIS database includes the locations of active RCW cavity trees (tree containing one or more cavities that are utilized by the RCW) and inactive RCW cavity trees (tree containing cavities that were once utilized by the RCW but have not shown recent activity). Inactive RCW cavities, which are defined as those cavities that were once utilized by the RCW but have not shown recent activity, are spatially recorded. The NRS also maps RCW foraging habitat around active clusters of RCW cavities in the GIS. If timber is to be removed within 0.5 miles of active cavity trees, then a forage habitat analysis must be completed to determine potential impacts. Consultation will be required if resulting resources fall below USFWS guidelines.

## **Sea Turtles**

### *Species Description*

Four species of marine turtles found in the Gulf of Mexico have been documented to nest on Eglin AFB's Santa Rosa Island (SRI) beaches: the Atlantic loggerhead, the Atlantic green, the Kemp's ridley, and the leatherback. The Atlantic loggerhead and the Atlantic green sea turtles are known to nest regularly on SRI beaches. A leatherback nest was reported one year on SRI. In 2008, Eglin documented three Kemp's ridley nests on SRI. The officially recognized sea turtle nesting and hatching season in northwest Florida occurs from 1 May through 31 October, with most nesting occurring between May and August and most hatching occurring between mid-August and mid-October.

The Atlantic loggerhead sea turtle (*Caretta caretta*) is federally and state listed as threatened. Loggerhead nests in Florida account for 90 percent of all loggerhead nests in the United States. Their nesting sites are on the numerous barrier islands and beaches between the Florida Keys and the northern Gulf of Mexico. Nesting females approach SRI in the spring and summer and dig their nests either between the high tide mark and the dune line or sometimes between dunes (U.S. Air Force, 2006).

The Atlantic green sea turtle (*Chelonia mydas*) is listed as federally threatened throughout its eastern range around North America, except in Florida, where it is listed as endangered. It is also state listed as endangered. In the United States, it nests on south Florida beaches and also occasionally in the northern Gulf of Mexico and along the North Carolina coast. Eglin AFB's SRI property supports the highest number of green sea turtle nests in northwest Florida (U.S. Air Force, 2006).

The Kemp's ridley (*Lepidochelys kempii*) is federally and state listed as endangered. The Kemp's ridley is one of the smallest of the sea turtles, with adults reaching about 2 feet in length and weighing up to 100 pounds. This turtle is a shallow water benthic feeder with a diet consisting primarily of crabs. This is the only sea turtle species known to lay

eggs during the day time. The Kemp's ridley is a rare nester on Eglin beaches and was documented for the first time in 2008 when three nests were deposited on SRI.

The leatherback sea turtle (*Dermochelys coriacea*) is listed as federally and state endangered. This species commonly nests along the shorelines of the Atlantic, Pacific, and Indian Oceans. Only infrequent nesting activity has been documented for the leatherback in northwest Florida. Until the spring of 2000, the only confirmed leatherback nests in northwest Florida were in Franklin and Gulf Counties. In May and June 2000, leatherback nesting activity was documented for the first time in Okaloosa County on Eglin's portion of SRI (U.S. Air Force, 2006).

### *Sea Turtle Densities*

Based on data collected between 1989 and 2009 on the 17 miles of Eglin SRI beaches, the average annual nesting density for loggerheads is approximately 1.2 nests per mile. During this period, 423 loggerhead nests were recorded. Peak loggerhead nesting on SRI occurs in June and July, with approximately 86 percent of nests established during this period. The average nest incubation length is 68 days, with a range from 52 to 89 days. Loggerhead hatching peaks in August and September. The average annual nest emergence success rate is 54 percent which is based on the number of nest with emergence and total number of nest. Annual hatching success is approximately 35 percent based on number of emerged hatchlings and total number of eggs found in nest. Slightly higher loggerhead nesting densities have been documented near Site A-2, Site A-4, between Sites A-9 and A-13B, and between Sites A-15A and A-15.

Eglin's SRI property supports the greatest number of green sea turtle nests in northwest Florida. Green sea turtles nested on SRI every other year from 1990 to 2002. However, the pattern changed in 2003 when there were four green sea turtle nests, followed by a year when there were no nests. Then there were four consecutive years with nests (2005-2008), but no nests in 2009. During this period, 131 green sea turtle nests were recorded. The average annual nesting density for green sea turtles is approximately 0.64 nests per mile. Peak green sea turtle nesting occurs in June and July, with approximately 86 percent of nests established during this period. The average nest incubation length is 68 days, with a range from 51 to 82 days. Green sea turtle hatching peaks in August and September. The average annual nest emergence success rate is 54 percent which is based on the number of nests with emergence and total number of nest. Annual hatching success is approximately 35 percent based on number of emerged hatchlings and total number of eggs found in nest. Most green sea turtle nests have been documented between Sites A-7 and A-13B.

Leatherback nesting has been documented only one year on Eglin SRI, during 2000 when three nests were laid in May and June and hatched in September. The three nests were located between Sites A-7 and A-10. In 2008, there were three Kemp's ridley nests

laid on Eglin property. One nest was witnessed and the other two were confirmed through DNA testing. Two of the nests were washed away during storms and the third nest had 88 eggs that showed no signs of development.

### ***Okaloosa Darter***

The Okaloosa darter (*Etheostoma okaloosae*) is a small federally and state-listed endangered fish. Spawning occurs from March to October, with the greatest amount of activity taking place during April (USFWS, 1998). The entire global population of this species is found in the tributaries and main channels of Toms, Turkey, Mill, Swift, East Turkey, and Rocky Creeks, which drain into two bayous of Choctawhatchee Bay. These seepage streams have persistent discharge of clear, sand-filtered water through sandy channels, woody debris, and vegetation beds. The Eglin Range contains 90 percent of the 457-square kilometer (176 square mile) drainage area (U.S. Air Force, 2006). The remaining portions of the watershed are within the urban areas of Niceville and Valparaiso.

The most immediate threat to the Okaloosa darter is loss of habitat through degradation of stream water quality from soil erosion into streams. The sources with high soil and sediment erosion probability are borrow pits, clay roads that cross streams, and a few test area sites where vegetation is maintained by using choppers on slopes. The Eglin Natural Resources Section is over 95 percent complete with erosion control projects in darter watersheds and will soon be entering the maintenance phase (U.S. Air Force, 2009). Due to a recovery plan that Eglin AFB implemented for the Okaloosa darter in 1998, the darter was proposed for downlisting from endangered to threatened in February 2010.

### **State-Listed and Rare Species**

Air Force Instruction (AFI) 32-7064 calls for the protection and conservation of state-listed species when not in direct conflict with the military mission. The conservation of state-listed species and other rare but unlisted species is encouraged and in some cases is critical to ensuring continued mission flexibility. Management actions conducted by Eglin AFB and Hurlburt Field for many of the federally listed species provide direct and indirect benefits to many state-listed and rare species.

### ***Florida Black Bear***

The Florida black bear (*Ursus americanus floridanus*) is currently listed as a state threatened species except in Baker and Columbia Counties and in Apalachicola National Forest. Florida black bear populations are currently found in Florida and Georgia, and there is also a small population in Alabama. Reasons for population declines include loss of habitat due to urban development and direct mortality due to

collisions with vehicles. Black bear in Florida breed in June-July, and young are born in January-February. Many of the black bears in the Eglin Range and Hurlburt Field areas utilize large swamps and floodplain forests, where they feed on fruits, acorns, beetles, and yellow jackets. Black bear sightings have occurred at numerous locations throughout the Eglin and Hurlburt Field areas, both within the interstitial areas and near urban areas (U.S. Air Force, 2006).

### ***Gopher Tortoise***

The gopher tortoise (*Gopherus polyphemus*) is a state threatened species. It also may become a federal "candidate" species. The tortoise is found primarily within the sandhills and open grassland ecological associations on the Eglin Range. Gopher tortoises construct burrows that are frequently located in areas with low-growing plants and sandy, well-drained soils in open, sunny areas with bare patches of ground. Gopher tortoise burrows serve as important habitat for many species, including the federally listed eastern indigo snake (U.S. Air Force, 2006).

### ***Southeastern American Kestrel***

The southeastern American kestrel (*Falco sparverius paulus*), a state threatened species, is a common permanent resident of Eglin. This small raptor typically preys on small rodents, reptiles, and insects in clearings or woodland edges. The species can be found within the sandhills and open grassland/shrubland ecological associations, and may occur on or near any of the test areas at Eglin.

### ***Florida Pine Snake***

The Florida pine snake (*Pituophis melanoleucus mugitus*), a state species of concern, inhabits dry areas such as the longleaf pine, oak woodlands, and sand pine scrub communities found within the Sandhills ecological association. The species is physically adapted for digging into loosely packed sand. It also enters into rodent burrows and occasionally into gopher tortoise burrows.

### ***Gopher Frog***

Gopher frogs (*Rana capito*), a state species of concern, are associated with gopher tortoise habitat, as they use gopher tortoise burrows for cover, but are also known to flourish where the tortoises no longer occur. They also use old field mouse burrows, hollow stumps, and other holes for cover. The species requires nearby seasonally flooded grassy ponds, depression marshes, or Sandhills upland lakes that lack fish populations, found within the Sandhills ecological association, for breeding. They have been found in the longleaf pine, turkey oak, pine flatwood, and sand pine scrub.

## Migratory Birds

Migratory birds pass through the region of influence (ROI), but neither Eglin nor Hurlburt is considered an important stopover area or concentration site for neotropical migratory birds in the spring or fall (Tucker et al., 1996) (Table F-1). Breeding neotropical migrants at Eglin and Hurlburt are primarily found in riparian, hammock, and barrier island habitats. These areas can serve as temporary habitat for neotropical birds migrating to and from the Caribbean and South and Central America. Neotropical migrants are more common within the ROI during fall migration than spring migration (Tucker et al., 1996).

**Table F-1. Neotropical Migratory Birds at Eglin AFB and Hurlburt Field**

Common Name	Scientific Name
Acadian flycatcher	<i>Empidonax virescens</i>
American redstart	<i>Setophaga ruticilla</i>
Black-and-white warbler	<i>Mniotiltavaria</i>
Blackburnian warbler	<i>Dendroica fusca</i>
Blackpoll warbler	<i>Dendroica striata</i>
Black-throated blue warbler	<i>Dendroica caerulescens</i>
Black-throated green warbler	<i>Dendroica virens</i>
Blue-gray gnatcatcher	<i>Polioptila caerulea</i>
Blue grosbeak	<i>Guiraca caerulea</i>
Blue-winged warbler	<i>Vermivora pinus</i>
Broad-winged hawk	<i>Buteo platypterus</i>
Canada warbler	<i>Wilsonia canadensis</i>
Cape May warbler	<i>Dendroica tigrina</i>
Common yellowthroat	<i>Geothlypis trichas</i>
Eastern kingbird	<i>Tyrannus tyrannus</i>
Eastern wood-pewee	<i>Contropus virens</i>
Gray catbird	<i>Dumetella carolinensis</i>
Great crested flycatcher	<i>Myiarchus crinitus</i>
Hooded warbler	<i>Wilsonia citrine</i>
Indigo bunting	<i>Passerina cyanea</i>
Kentucky warbler	<i>Oporornis formosus</i>
Magnolia warbler	<i>Dendroica magnolia</i>
Merlin	<i>Falco columbarius</i>
Northern oriole	<i>Icterus galbula</i>
Northern parula	<i>Parula americana</i>
Northern waterthrush	<i>Seiurus noveboracensis</i>
Orchard oriole	<i>Icterus spurius</i>
Ovenbird	<i>Seiurus aurocapilus</i>
Prairie warbler	<i>Dendroica discolor</i>
Prothonotary warbler	<i>Protonotaria citrea</i>
Red-eyed vireo	<i>Vireo olivaceus</i>

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**Table F-1. Neotropical Migratory Birds at Eglin AFB and Hurlburt Field Cont'd**

Common Name	Scientific Name
Rose-breasted grosbeak	<i>Pheucitcus ludovicianus</i>
Ruby-throated hummingbird	<i>Archilochus colubris</i>
Scarlet tanager	<i>Piranga olivacea</i>
Summer tanager	<i>Piranga rubra</i>
Swainson's warbler	<i>Limnothlypis swainsonii</i>
Tennessee warbler	<i>Vermivora peregrine</i>
Verry	<i>Catharus fuscescens</i>
White-eyed vireo	<i>Vireo griseus</i>
Wood thrush	<i>Hylocichla mustelina</i>
Worm-eating warbler	<i>Helmitheros vermivorus</i>
Yellow-billed cuckoo	<i>Coccyzus americanus</i>
Yellow-breasted chat	<i>Icteria virens</i>
Yellow-throated vireo	<i>Vireo flavifrons</i>
Yellow warbler	<i>Dendroica petechia</i>

## Ecological Assets

### *Habitat Types*

Four broad matrix ecosystems exist on Eglin AFB and Hurlburt Field: sandhills, flatwoods, wetlands/riparian, and maritime hammock. The ecosystems are defined by floral, faunal, and geophysical characteristics. Artificially maintained urban/landscaped areas also exist within the ROI, primarily on the main bases at Eglin AFB and Hurlburt Field. Although urban/landscaped areas are not natural ecosystems, they are included in this section as a type of land use.

### *Sandhills Matrix*

This system is the most extensive natural community type within the ROI. Longleaf pine sandhills are characterized by an open, savanna-like structure with a moderate-to-tall canopy of longleaf pine, a sparse midstory of oaks and other hardwoods, and a diverse groundcover composed mainly of grasses, forbs, and low-stature shrubs. Its structure and composition are maintained by frequent fires (every 3-5 years), which control hardwood, sand pine, and titi encroachment. Longleaf Pine Sandhills consist of a high diversity of species adapted to fire and the heterogeneous conditions that fires create. The dominant native grass species in sandhills within the ROI is either wiregrass or bluestem, depending on location. Sandhills are often associated with and grade into scrub, upland pine forest, xeric hammock, or slope forests. This matrix is also known as longleaf pine turkey oak, longleaf pine-xerophytic oak, longleaf pine-deciduous oak, or high pine (U.S. Air Force, 2007).

The functional significance of the sandhills matrix is to provide maintenance of regional biodiversity. As little as 5,000 acres of old growth longleaf pine forest remains globally and Eglin's Sandhills contain more than any other forest in the world. The Eglin Range

represents the largest and least fragmented longleaf pine ownership in the world and has the best remaining stand of old-growth longleaf pine (U.S. Air Force, 2007).

### *Flatwoods Matrix*

Pine flatwoods occur on flat, moderately well drained sandy soils with varying levels of organic matter, often underlain by a hard pan. While the canopy consists of slash pine and longleaf pine, the understory varies greatly from shrubby to an open diverse understory of grasses and herbs. The primary environmental factors controlling vegetation type are soil moisture (soil type and depth to groundwater) and fire history. The average fire frequency in flatwoods is one to eight years, with nearly all of the plants and animals inhabiting this community adapted to recurrent fires. Home to numerous rare and endangered plants and animals, the flatwoods matrix plays a significant role in maintaining regional biodiversity. Eglin's more than 300 acres of old growth flatwoods are among the last remaining of such high quality (U.S. Air Force, 2007).

### *Wetlands/Riparian Matrix*

Wetlands are extraordinarily important contributors to the health and diversity of the Eglin and Hurlburt Field landscapes. Riparian areas are generally found along a water feature such as a river, stream, or creek. Great diversity of invertebrate and fish species is found within the streams associated with these watersheds. At least 11 different plant community types are found within riparian areas of the ROI. Streams are perennial, originating in the sandy uplands of the installation and fed by groundwater recharge. Flood events only occur during extreme rain events (e.g., hurricanes); otherwise, flows are relatively consistent. Temperatures fluctuate during the year and each day, being more constant near the headwaters. These seepage streams are moderately acidic. The specific types of wetlands/riparian matrices found within the ROI are depression wetlands, seepage slopes, and floodplain wetlands (U.S. Air Force, 2007).

### *Maritime Hammock*

Maritime hammocks consist of a narrow strip of hardwood forest inland from coastal areas. Live oak, redbay, and cabbage palm dominate the canopy. These hammocks occur on old, stabilized coastal dunes. Fires are infrequent, occurring only every 26 to 100 years (FNAI and FDNR, 1990).

### *Urban/Landscaped Areas*

This land use predominantly occurs within the main base within the ROI. Bahia grass (*Panicum notatum*) is the primary turf grass that is used in the semi-improved areas while St. Augustine grass (*Stenotaphrum secundatum*) and centipede grass (*Eremochloa ophiuroides*) are the primary turf grasses used in the improved areas. Ground

maintenance encourages low-maintenance landscaping and uses native plants whenever possible (U.S. Air Force, 2007).

### Flora and Fauna of Each Habitat Type

Table F-2 provides a summary of some of the plant and animal species commonly found within the habitats described above. The list is not a comprehensive inventory of the species found within these habitats; the table provides a reference summary.

**Table F-2. Typical Plant and Animal Species of Eglin AFB and Hurlburt Field by Habitat Type**

Plants		Animals	
Common Name	Scientific Name	Common Name	Scientific Name
<b>Sandhills</b>			
Long leaf pine	<i>Pinus palustris</i>	Red-cockaded woodpecker	<i>Picoides borealis</i>
Turkey oak	<i>Quercus laevis</i>	Bobwhite quail	<i>Colinus virginianus</i>
Blackjack oak	<i>Q. marilandica</i>	Great horned owl	<i>Bubo virginianus</i>
Bluejack oak	<i>Q. incana</i>	Gopher tortoise	<i>Gopherus polyphemus</i>
Wiregrass	<i>Aristida stricta</i>	Indigo snake	<i>Drymarchon corais</i>
Saw palmetto	<i>Serenoa repens</i>	Diamondback rattlesnake	<i>Crotalus adamanteus</i>
Bracken fern	<i>Pteridium aquilinum</i>	Six-lined racerunner	<i>Cnemidophorus sexlineatus</i>
Blueberry	<i>Vaccinium</i> spp.	Florida black bear	<i>Ursus americanus floridanus</i>
Yaupon	<i>Ilex vomitoria</i>	Fox squirrel	<i>Sciurus niger</i>
Gallberry	<i>Ilex glabra</i>	Least shrew	<i>Cryptodus parva</i>
Gopher apple	<i>Licania michauxii</i>	Cottontail rabbit	<i>Sylvilagus floridanus</i>
Blackberry	<i>Rubus cuneifolius</i>	Pocket gopher	<i>Geomys pinetus</i>
Pine-woods bluestem	<i>Andropogon arctatus</i>	White-tailed deer	<i>Castor canadensis</i>
Wiregrass	<i>Aristida stricta</i>	Raccoon	<i>Procyon lotor</i>
<b>Flatwoods</b>			
Longleaf pine	<i>Pinus palustris</i>	Wood duck	<i>Aix sponsa</i>
Runner oak	<i>Quercus pumila</i>	Red-winged blackbird	<i>Agelaius phoeniceus</i>
Saw palmetto	<i>Serenoa repens</i>	Cotton mouth	<i>Agkistridon piscivorus</i>
St. John's wort	<i>Hypericum brachyphyllum</i>	Reticulated flatwoods salamander	<i>Ambystoma bishopi</i>
Slash pine	<i>Pinus elliottii</i>	River otter	<i>Lutra canadensis</i>
Black titi	<i>Cliftonia monophylla</i>	Beaver	<i>Castor canadensis</i>
Milkweed	<i>Asclepias humistrata</i>	Florida black bear	<i>Ursus americanus floridanus</i>
Pitcherplant	<i>Sarracenia</i> spp.	Gray fox	<i>Urocyon cinereoargenteus</i>

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**Table F-2. Typical Plant and Animal Species of Eglin AFB and Hurlburt Field by Habitat Type Cont'd**

Plants		Animals	
Common Name	Scientific Name	Common Name	Scientific Name
<b>Wetland and Riparian Areas</b>			
<b>Freshwater</b>			
Yellow water lily	spp.	Raccoon	<i>Procyon lotor</i>
Saw grass	<i>Cladium jamaicensis</i>	Florida black bear	<i>Ursus americanus floridanus</i>
Cattail	<i>Typha domingensis</i>	Sherman's fox squirrel	<i>Sciurus niger shermani</i>
Phragmites	<i>Phragmites australis</i>	American alligator	<i>Alligator mississippiensis</i>
White cedar	<i>Chamaecyparis thyoides</i>	Pine barrens tree frog	<i>Hyla andersonii</i>
Water tupelo	<i>Nyssa biflora</i>	Five-lined skink	<i>Eumeces fasciatus</i>
Pitcher plant	<i>Sarracenia purpurea</i>	Green anole	<i>Anolis carolinensis</i>
Red titi	<i>Cyrtura racemiflora</i>	Garter snake	<i>Thamnophis sirtalis</i>
Tulip poplar	<i>Liriodendron tulipifera</i>	Indigo snake	<i>Drymarchon corais</i>
Sweet bay magnolia	<i>Magnolia virginiana</i>	American beaver	<i>Castor canadensis</i>
Red bay	<i>Persea borbonia</i>	Parula warbler	<i>Parula americana</i>
<b>Saltwater</b>			
Black needle rush	<i>Juncus roemerianus</i>	Periwinkles	<i>Littorina irrorata</i>
Salt marsh cordgrass	<i>Spartina alterniflora</i>	Oyster	<i>Crassostrea virginica</i>
Salt meadow hay	<i>Spartina patens</i>	Gulf Crab	<i>Calinectes smilis</i>
Seaside elder	<i>Iva imbricata</i>	Long-nosed killifish	<i>Fundulus similis</i>
Saltgrass	<i>Distichylis spicata</i>	Sheepshead minnow	<i>Cyprinodon variegatus</i>
Wax myrtle	<i>Myrica certifera</i>	American alligator	<i>Alligator mississippiensis</i>
Yaupon holly	<i>Ilex vomitoria</i>	Great blue heron	<i>Ardea herodias</i>
Cattail	<i>Typha angustifolia</i>	Belted kingfisher	<i>Megaceryle alcyon</i>
Palmetto	<i>Serenoa repens</i>	Raccoon	<i>Procyon lotor</i>
Marsh elder	<i>Iva frutescens</i>	Salt marsh rabbit	<i>Sylvilagus aquaticus</i>
<b>Maritime Hammock</b>			
Live oak	<i>Quercus virginiana</i>	Gray squirrel	<i>Sciurus carolinensis</i>
Redbay	<i>Persea borbonia</i>	Squirrel treefrog	<i>Hyla squirella</i>
Saw palmetto	<i>Serenoa repens</i>	Ring-necked snake	<i>Diadophis punctatus</i>
Beautyberry	<i>Callicarpa americana</i>	Rat snake	<i>Elaphe obsoleta spiloides</i>
American holly	<i>Ilex opaca</i>	Hooded warbler	<i>Wildsonia citrina</i>
Wild olive	<i>Osmanthus americanus</i>	White-eyed vireo	<i>Vireo griseus</i>

Sources: U.S. Air Force, 2003; U.S. Air Force, 2007a; FNAI and FDNR, 1990.

## Sensitive Habitats

### ***Gulf Sturgeon Critical Habitat***

The USFWS designated Gulf sturgeon critical habitat in 2003 in multiple Gulf of Mexico rivers, bays, and the Gulf itself. Federally designated critical habitat is defined as a specific area that contains physical or biological features essential to a species' conservation and that may require special management considerations or protection.

As it pertains to the Eglin Range and Hurlburt Field, designated critical habitat includes the following: Choctawhatchee Bay (including the main body of Choctawhatchee Bay, Hogtown Bayou, Jolly Bay, Bunker Cove, and Grassy Cove, and excluding all other bayous, creeks, and rivers at their mouths/entrances), Santa Rosa Sound, Yellow River, Shoal River, Blackwater Bay, East Bay, and the Gulf of Mexico out to 1 nautical mile offshore of SRI. The lower rivers provide summer resting and migration habitat, and the bays, sound, and Gulf contain winter feeding and migration habitat (U.S. Air Force, 2006).

### **Essential Fish Habitat**

The 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act require, among other things, that the National Marine Fisheries Service (NMFS) and regional Fishery Management Councils designate essential fish habitat (EFH) for species included in a fishery management plan. EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Federal agencies that fund, permit, or carry out activities that may adversely affect EFH are required to consult with NMFS regarding potential impacts, and respond in writing to NMFS and Fishery Management Council recommendations. Adverse impacts are defined as impacts that reduce quality and/or quantity of EHF, and may include contamination, physical disruption, loss of prey, and reduction in species' fecundity. EFH present in the area includes emergent vegetation and submerged aquatic vegetation (seagrasses), discussed below.

### *Emergent Vegetation*

Emergent vegetation species occur in isolated locations in Choctawhatchee Bay, Santa Rosa Sound, and East Bay as areas of saltmarsh and beach vegetation. North Florida marshes typically support *Juncus roemerianus* (black needle rush), *Spartina* sp. (smooth cordgrass), *Distichlis spicata*, *Scirpus* spp., *Salicornia* spp., and *Phragmites australis*, among others. The primary occurrence of emergent vegetation at the proposed action locations appears to be a wetland or beach component and not as fish habitat, since inundation by marine or estuarine waters occurs only during storm events. As such, the areas at the Eglin sites on Choctawhatchee Bay and Hurlburt sites on Santa Rosa Sound are technically considered wetland and are not providing fish habitat. As a result, this area is addressed in this document as a part of the wetland environment.

### *Seagrasses*

Submerged aquatic vegetation, or seagrasses, are submerged grass-like plants that inhabit shallow coastal waters. Seagrasses are a vital component of Florida's coastal ecology and perform invaluable functions in aquatic ecosystems by filtering and trapping sediment and absorbing nutrients (i.e., nitrogen and phosphorus), which can adversely affect water quality. Seagrasses are found along much of Santa Rosa Sound

and in areas of Choctawhatchee Bay where the sunlight, salinity, water depth, and bottom sediment allow these grasses to flourish.

## Invasive Non-native Species Management

Invasive non-native species (INS) include plants, animals, insects, diseases, and other organisms that are becoming established and spreading at an alarming rate throughout the world. An invasive species can be defined as a species that is non-native to an ecosystem and whose intentional or accidental introduction causes or is likely to cause environmental or economic damage or harm to human health. Eglin AFB and Hurlburt Field INS management focuses on invasive non-native plant and animal species that cause or may cause negative environmental impacts to native ecosystems. The purpose of the program is to protect the integrity of Eglin and Hurlburt's natural ecosystems by reducing and controlling the spread of INS. Some of the main invasive non-native species of concern are Chinese tallow, cogon grass, Japanese climbing fern, Chinese privet, torpedo grass, feral pigs, and feral cats.

## References

- Florida Natural Areas Inventory (FNAI) and Florida Department of Natural Resources (FDNR), 1990. Guide to the Natural Communities of Florida. FNAI and FDNR, Tallahassee, Florida. February 1990.
- Gault, K. 2009. Personal communication between Kathy Gault, Eglin Natural Resources Section, Wildlife, and Stephanie Hiers, SAIC. January 2009.
- Tucker, J.W., G.E. Hill, and N.R. Holler, 1996. *Distribution of Nearctic-Neotropical Migrant and Resident Bird Species Among Habitats at Eglin and Tyndall Air Force Bases, Florida*. Alabama Cooperative Fish and Wildlife Research Unit, Auburn University.
- U.S. Air Force, 2003. Eglin Military Complex Environmental Baseline Study Resource Appendices, Volume 1—Eglin Land Test and Training Range.
- U.S. Air Force, 2006. Threatened and Endangered Species Component Plan, Eglin AFB, FL. 96 CEG/CEVSN.
- U.S. Air Force, 2007. Integrated Natural Resources Management Plan, Eglin AFB, FL. 96 CEG/CEVSN.
- U.S. Air Force, 2007a. Integrated Natural Resources Management Plan, Hurlburt Field, FL. 1<sup>st</sup> Special Operations Civil Engineer Squadron.
- U.S. Air Force, 2009. Final Erosion Control Component Plan. Eglin AFB Natural Resources Forestry Section.
- U.S. Fish and Wildlife Service (USFWS), 1998. Okaloosa Darter (*Etheostoma okaloosae*) Recovery Plan (Revised). Atlanta, GA 42p.

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## Agency Correspondence

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 96TH AIR BASE WING (AFMC)  
EGLIN AIR FORCE BASE FLORIDA

Mr. Stephen M. Seiber  
Chief, Natural Resources Section  
96 CEG/CEVSN  
501 De Leon Street, Suite 101  
Eglin AFB FL 32542-5133

MAR 15 2010

Mr. Donald W. Imm, Ph.D  
U.S. Fish and Wildlife Service  
1601 Balboa Avenue  
Panama City FL 32405

Dear Mr. Imm:

Eglin Air Force Base (AFB) Natural Resources Section (NRS) is reinitiating Section 7 consultation under the Endangered Species Act for the Military Housing Privatization Initiative (MHPI) due to a change in the Proposed Action at Eglin AFB and Hurlburt Field, Florida (FWS Log No. 2008-I-0221). Eglin NRS still maintains a No Effect determination based on the following: 1) no federally-listed threatened or endangered species are present, and 2) no known essential habitat is present.

Eglin is currently preparing a Preliminary Draft Environmental Impact Statement (EIS) for the MHPI at Eglin AFB and Hurlburt Field. The Proposed Action is for the Air Force, through privatization, to initially convey 1,413 housing units (including infrastructure and utilities) located on Eglin and Hurlburt (854 at Eglin Main Base, 4 at Camp Pinchot, 150 at Poquito Bayou, 25 at Camp Rudder, and 380 at Hurlburt Field) to a private real estate development and property management company (Figure 1 and Table 1). Of the 1,413 units, the Air Force proposes that the contractor would demolish a minimum of 1,404 existing dwellings through a phased approach (25 at Camp Rudder; 849 at Eglin Main Base; 150 at Poquito Bayou; and 380 at Hurlburt Field).

Using the same phased approach, the Air Force proposes that the private developer would construct 1,477 new units (35 units at Camp Rudder, 484 units at Hurlburt Field, 958 units at Eglin AFB on Parcel 1), which would be owned and operated by the private developer on behalf of Eglin and Hurlburt Field (Figure 1 and Table 1). While for Parcel 1 a total of 673 acres may actually be leased, only approximately 603 acres are available for development at this parcel. Once suitable replacement housing has been developed, 9 historic units (4 at Camp Pinchot and 5 at Georgia Avenue) and associated facilities within the Historic Districts would be returned to the Air Force for adaptive reuse. The Recreation Center Family Camp (FAMCAMP) would be relocated to the eastern portion of Hurlburt Field (Figure 2).

The majority of the parcels proposed for demolition and construction at Eglin AFB and Hurlburt Field are already urban or landscaped. The undeveloped portion of the Main Base Parcel is mostly poor quality, fire-suppressed longleaf pine sandhills. The Camp Rudder parcel

is already developed, although it is surrounded by high quality sandhills habitat. At Hurlburt Field, the undeveloped portions of the Pine Shadows and FAMCAMP parcels are flatwoods and hammock habitats, and the relocation sites for the FAMCAMP are flatwoods.

Confirmed flatwoods salamander habitat exists west of the Pine Shadows and Live Oak Terrace parcels at Hurlburt Field (Figure 2). Gulf sturgeon critical habitat is present off-shore of Soundside Manor, the Capehart and Wherry parcels slated for demolition, and Eglin Main Base Parcel 1 (Figures 2 and 3). The Eastern indigo snake has been sighted near the Camp Rudder parcel and red-cockaded woodpecker (RCW) foraging habitat is located approximately 0.25 miles to the east of the Camp Rudder parcel (Figure 3). Two inactive RCW cavity trees exist along the western boundary of the Eglin Main Base Parcel 1, and recent surveys documented one inactive gopher tortoise burrow on this parcel (Figure 3). Black bears have been sighted at or near each of the proposed sites. No sensitive animal species were documented within the boundaries of the proposed areas during surveys conducted during October and November, 2009 (Entrix, 2010).

#### **Eastern Indigo Snake and Gopher Tortoise**

The gopher tortoise and indigo snake may be found anywhere on Eglin. While these species prefer frequently burned pine forests, they may traverse lower quality habitats, and may also use open areas such as road right-of-ways and sandy spots within developed areas. Land clearing, demolition, and construction activities must abide by certain restrictions per the *Indigo Snake Programmatic Biological Opinion for Eglin AFB* (USFWS, 2009). One month prior to any demolition, land clearing or construction, a gopher tortoise/indigo snake survey must be completed. If any tortoises or indigo snakes are found in the path of construction/demolition, Eglin NRS personnel will relocate the animals in accordance with Florida Fish and Wildlife Conservation Commission (FWC) guidelines.

Before any clearing or construction activities begin, personnel must view a brief on Eglin threatened and endangered species, including the indigo snake. Informational brochures containing the following information must be distributed to contractors, and signs with this same information must be posted at land clearing, demolition, and construction sites:

- A description of the indigo snake, its habits, and protection under Federal Law;
- Instructions not to injure, harm, harass, or kill this species;
- Directions to stop clearing activities and allow the indigo snake sufficient time to move away from the site on its own before resuming clearing;
- Telephone number to call if a live or dead eastern indigo snake is encountered.

Although unlikely, there is the possibility that one of these species may traverse a demolition or construction area; thus, vehicle and equipment operators will be directed to cease any activities should an indigo snake or gopher tortoise be sighted, and allow the animal sufficient time to move away from the site on its own before resuming activities. Personnel must immediately report any sightings of an indigo snake or gopher tortoise to the Eglin NRS. If a gopher tortoise burrow is discovered during demolition, land clearing, or construction, all

activities will be avoided within 25 feet of the burrow until Natural Resources staff have had a chance to examine the burrow and relocate the animal and any commensal species, if necessary.

Given the poor habitat quality of most of the proposed Military Family Housing (MFH) sites, and implementation of requirements from the *Indigo Snake Programmatic Biological Opinion*, impacts to the gopher tortoise and indigo snake will not be significant, and there will be no effect on the indigo snake.

#### **Red-cockaded Woodpecker**

Two inactive RCW cavity trees are located along the northwestern boundary of Eglin Main Base Parcel 1. No good foraging habitat is available near the trees, with most of the surrounding habitat consisting of sand pine. Additionally, the closest active clusters are over five miles away, and RCWs do not fly this great a distance, particularly with no foraging habitat available. These areas are not significant or of importance in future RCW management or as an emphasis area as designated by the *Eglin Integrated Natural Resources Management Plan* (U.S. Air Force, 2006). Furthermore, the U.S. Fish and Wildlife Service (USFWS) concurred with the Eglin NRS that any future developments impacting inactive RCW trees on Eglin Main Base were not likely to adversely affect the RCW (USFWS, 1997). Thus, there will be no effect on the RCW at Parcel 1.

The Camp Rudder parcel is bordered on three sides by high quality sandhills habitat, much of which serves as foraging habitat for the federally endangered RCW. The housing area is approximately 0.25 mile from RCW foraging habitat and 0.75 mile from the nearest active RCW cavity tree (Figure 3). No direct impacts to RCW foraging habitat or cavity trees will occur, but noise impacts from demolition, construction, and daily housing activities may occur. Only 25 units will be demolished and 35 built at the Camp Rudder site, so demolition/construction noise impacts will be short-term. If the nearby RCW cluster was disturbed by demolition/construction activities, the birds will likely just utilize other portions of their foraging habitat during that short time period. Over the long-term, daily housing operations will not constitute a significant impact to RCWs in the Camp Rudder area because these birds are already exposed and habituated to visual and noise disturbances from the existing development and roads. There will be no effect on the RCW at the Camp Rudder Parcel.

#### **Reticulated Flatwoods Salamander**

Buffer habitat for confirmed reticulated flatwoods salamander ponds is about 0.25 miles to the west of Pine Shadows at Hurlburt Field. Stormwater runoff may increase the amount of sediment, pollutants, and volume of water (thus altering hydrology) entering wetlands. However, the 1,500-foot vegetated buffer around the pond will serve to treat pollutants, uptake excess nutrients, control erosion, slow the flow of water, and decrease the volume of water reaching the wetland. Thus, there will be no effect on the reticulated flatwoods salamander at the Hurlburt parcels.

On the southeast portion of the Eglin Main Base Parcel 1, there is a small area of overgrown flatwoods surrounding a shallow depression that is considered potential habitat for the federally endangered reticulated flatwoods salamander (120 acres) (Figure 3); however, Eglin NRS

biologists stated that this pond has very low potential to support the flatwoods salamander as it is more of a sand pit than a natural pond (Gault, 2010). No land clearing or construction will occur within at least 50 feet of the wetland, leaving a vegetated buffer to help filter pollutants and prevent erosion. Permits will mandate stormwater management and erosion control measures, which will provide additional pollutant treatment. Given the low likelihood of occurrence and the implementation of buffer and stormwater and erosion control requirements, there will be no effect to the reticulated flatwoods salamander at Eglin Main Base Parcel 1.

### **Gulf Sturgeon**

Demolition at Capehart and Wherry on Eglin Main Base, and demolition and construction at Eglin Main Base Parcel 1 and Hurlburt's Soundside Manor will occur in close proximity to bay shoreline, and may result in increased polluted runoff and turbidity in nearby Choctawhatchee Bay where Gulf sturgeon critical habitat is designated. Potential adverse effects to Gulf sturgeon and Gulf sturgeon critical habitat from this polluted runoff could include species avoidance of the impact area, minor physiological effects (such as interference with respiratory functions), and indirect effects related to the reduction of light and degradation of bottom substrates where prey items reside. However, less than one mile of shoreline will be temporarily affected, and will not result in significant or long-term effects to water quality or the quality of bottom sediments.

The developer must implement stormwater management and erosion control measures as mandated by permits. These controls would help to slow the velocity of the water, allow infiltration, allow sediments to settle out, and treat pollutants in the runoff. Additionally, a minimum vegetated buffer width of 50 feet will be maintained along the bay shoreline at the Eglin Main Base Parcel 1, and no new vegetated areas along the shoreline at Soundside Manor will be cleared.

Once construction is complete, establishment of only a limited number of access points to the water will help maintain the vegetated buffer such that it will filter most runoff from the MFH areas. Any access point that begins to become an erosion problem will be temporarily closed and rehabilitated to minimize sedimentation issues in the bay and sound. Recreational activities of MFH residents may disturb bottom sediments and degrade or destroy area of submerged vegetation. Measures that will minimize these impacts include roping off designated swimming areas and providing educational materials (i.e., signs, brochures) to residents on the importance of protecting these habitats.

Required stormwater management and erosion controls, maintenance of a vegetated buffer, and designation of access points and swimming areas will serve to minimize impacts to nearby waters from runoff and sedimentation. Thus, there will be no effect on the Gulf sturgeon or Gulf sturgeon critical habitat.

### **Sea Turtles**

Several species of sea turtles utilize Santa Rosa Island (SRI) for nesting. Urban glow associated with street and house lighting can disorient nesting turtles and hatchlings. The use of "turtle friendly" lighting for new street or dock lights at the Soundside Manor location will

minimize the effect of urban glow to sea turtles and hatchlings on SRI. There will be no effect on sea turtles.

### **Migratory Birds**

Noise and human presence associated with demolition, construction, and daily activities may affect migratory birds using nearby habitats. However, neither Hurlburt Field nor Eglin AFB is considered an important stopover area or concentration site for neotropical migratory birds. Migratory birds that do use the area may avoid habitats along the border with the development, but will still have many acres of suitable habitat in the nearby area. Thus, although MFH noise may affect migratory birds, Hurlburt Field and Eglin AFB will still maintain a sizeable area of habitat to support migratory birds during spring and fall migrations; thus, impacts to migratory bird populations will not be significant.

### **Management Requirements**

The developer (through lease agreement) will implement all permitting requirements and management actions developed through coordination with regulatory agencies, such as utilization of stormwater management techniques. Additionally, the following management actions will occur to minimize impacts to biological resources.

- Maintain at least a 50-foot vegetated buffer around all wetlands and water bodies on Eglin Main Base, with a suggested minimum of 100 feet.
- Do not clear any new areas along the sound shoreline or around wetlands at the Hurlburt Field parcels.
- Avoid construction in jurisdictional wetlands.
- Control suspended sediments and increases in turbidity through management practices such as sediment curtains.
- Implement the highest standards possible for stormwater management.
- Limit the number of access points to the water to maintain the vegetated buffer.
- Temporarily close and rehabilitate any access point that begins to become an erosion problem.
- Designate swimming areas to minimize disturbance to shoreline vegetation.
- Provide educational materials (i.e., signs, brochures) to residents on the importance of protecting water quality and shoreline vegetation.
- One month prior to land clearing, demolition, or construction activities, conduct a gopher tortoise/indigo snake survey, and relocate any animals in accordance with FWC guidelines.
- Provide project personnel with a description of the eastern indigo snake, its habitat, and protection under federal law. Instruct personnel not to injure, harm, or kill this species.

- Direct project personnel and residents to cease any activities if an eastern indigo snake or gopher tortoise is sighted, and to allow the animal sufficient time to move away from the site on its own before resuming such activities.
- Direct project personnel and residents to report any sightings of indigo snakes or gopher tortoises to the Eglin NRS.
- Direct personnel to contact Eglin NRS staff if a gopher tortoise burrow is discovered during demolition, land clearing, or construction. All activities should be avoided within 25 feet of the burrow until NRS personnel have had a chance to examine the burrow and relocate the animal and any commensal species if necessary.
- Use “turtle friendly” lighting (low-pressure sodium vapor street lighting) at Soundside Manor, Pine Shadows, and FAMCAMP.

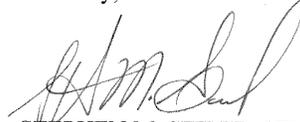
Additional potential mitigations not directly related to federally-listed species that are under consideration include:

- Educate workers and residents on the need to contain their household wastes in a manner so as to not attract bears.
- Educate vehicle/equipment operators and residents on the need to stop the vehicle or equipment if a bear is sighted and to allow the bear to move away from the site before resuming activities.
- Direct personnel and residents to report any sightings of black bears to the Eglin NRS.
- Require off-site equipment to be cleaned for invasive non-native species prior to first-time use on Eglin.
- Coordinate with Eglin NRS to monitor the MFH areas during demolition, construction, and post-construction for early detection and treatment of any invasive non-native species that are discovered.
- Require the developer to remove any invasive non-native species within the MFH areas.

Eglin NRS biologists indicate there is no potential for direct or indirect effects from the proposed action on protected species. Eglin NRS has made a No Effect determination concerning the MHPI at Eglin AFB and Hurlburt Field.

Eglin AFB will notify the U.S. Fish and Wildlife Service immediately if it modifies any of the actions considered in this No Effect determination or if additional information on listed species becomes available, as the USFWS may require a reinitiation of consultation. If impacts to listed species occur beyond what Eglin has considered in this assessment, all operations will cease and Eglin will notify the USFWS. Prior to commencement of activities, Eglin will implement any modifications or conditions resulting from consultation with the USFWS. Eglin NRS believes this fulfills all requirements of Section 7 of the Endangered Species Act and no further action is necessary. If you have any questions regarding this letter or require a copy of the EIS, please feel free to contact Bob Miller (850-883-1153) or myself (882-8391).

Sincerely,



STEPHEN M. SEIBER, YF-02  
Chief, Natural Resources Section

Attachments:  
Table 1  
Figures 1-3

### References

Entrix, 2010. Eglin Air Force Base Military Housing Privatization Initiative Habitat Assessment and Biological Survey. Prepared by Russell Burdge and Andy Barth. January, 2010.

Gault, 2010. Personal communication between Kathy Gault, Eglin Endangered Species Biologist and Stephanie Hiers, SAIC Environmental Scientist, regarding potential flatwoods salamander ponds at Eglin Main Base Parcel 1. February 2010.

U.S. Air Force, 2006. Threatened and Endangered Species Component Plan, Eglin AFB, FL. 96 CEG/CEVSN.

USFWS, 1997. Concurrence signature on Section 7 Consultation letter regarding development on Eglin Main Base and inactive RCW trees. June 10, 1997.

USFWS, 2009. Indigo Snake Programmatic Biological Opinion for Eglin AFB, FL. February 18, 2009.

Table 1. Proposed MHPI Activities

Parcel		Current Number of Units	Year Built	Commonalities			Max # Units Potentially Constructed*	
Name	Acres			Action for Current Units	# Units Demolished (minimum)	# Units Renovated		
<b>Eglin AFB</b>								
Wherry	306	479	1951-58	Demolition	479			
Capehart								
Georgia Avenue	3	5	1943	Adaptive Reuse	0			
Hidden Oaks		126	2001	Demolition	126			
Old Plew	651	58	1966-68	Demolition	58		0	
New Plew		186	1968	Demolition	186			
Poquito Bayou	91	150	1976	Demolition	150			
Camp Pinchot	15	4	1912-1940	Adaptive Reuse	0			
Camp Rudder	10	25	1975	Demolition	25		35	
<b>Total</b>	<b>1,076</b>	<b>1,033</b>	<b>N/A</b>	<b>N/A</b>	<b>1,024</b>		<b>35</b>	
Eglin Main Base Parcel 1		0		N/A			958	
<b>Hurlburt Field</b>								
Live Oak Terrace	35	110	1957 & 1976		110			
Pine Shadows	85	196	1957		196			
Soundside Manor	31	74	1957 & 1997	Demolition	74		0	
FAMCAMP	19	0	N/A	N/A	N/A			
<b>Total</b>	<b>158</b>	<b>380</b>	<b>N/A</b>	<b>N/A</b>	<b>380</b>		<b>0</b>	
<b>Overall Totals</b>	<b>N/A</b>	<b>1,413</b>			<b>1,404</b>		<b>0</b>	
<b>Total End State</b>	<i>(current units (1,413) - adaptive reuse (9) - demolition (1,404) + new construction (1,477))</i>							<b>1,477 Units</b>

Source: Eglin AFB and Hurlburt Field Housing Offices, 2009  
 \*Numbers represent the optimal development scenario at each location based on desired features in the privatization RFO and are for planning purposes only; actual numbers of units and distribution may vary depending on proposals offered by developers. Existing FAMCAMP would be relocated near Commando Village on Hurlburt Field as part of the Proposed Action.

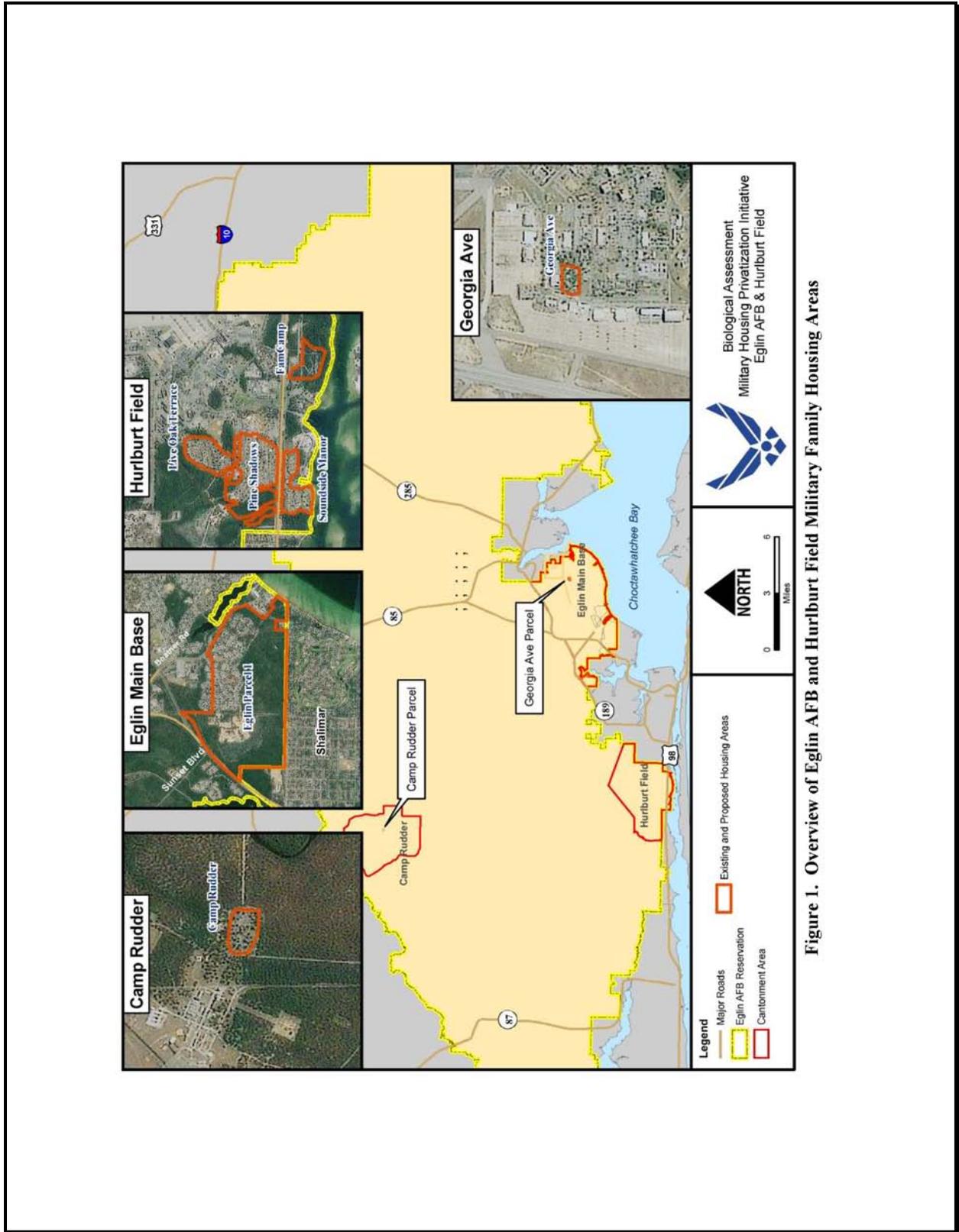


Figure 1. Overview of Egin AFB and Hurlburt Field Military Family Housing Areas

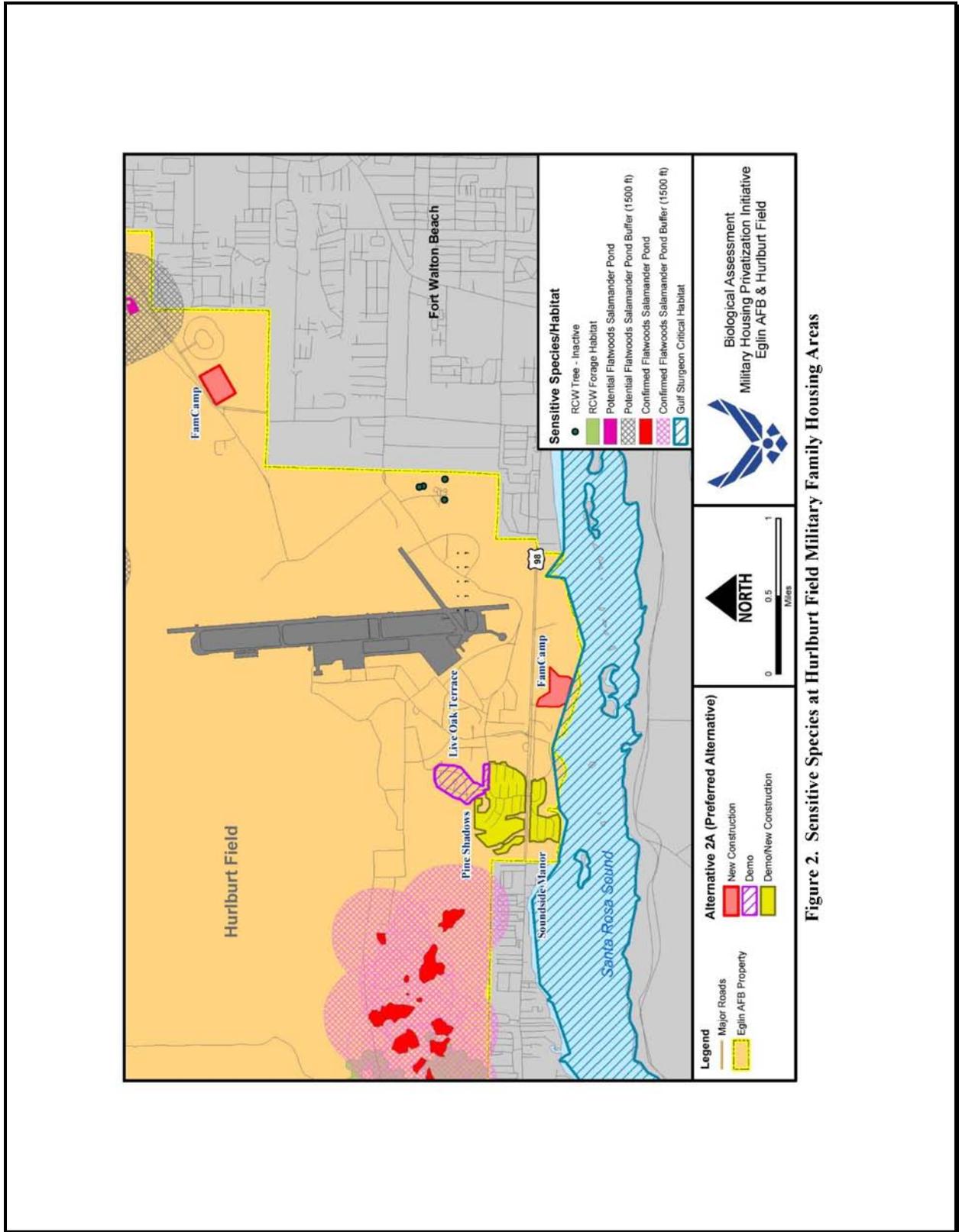
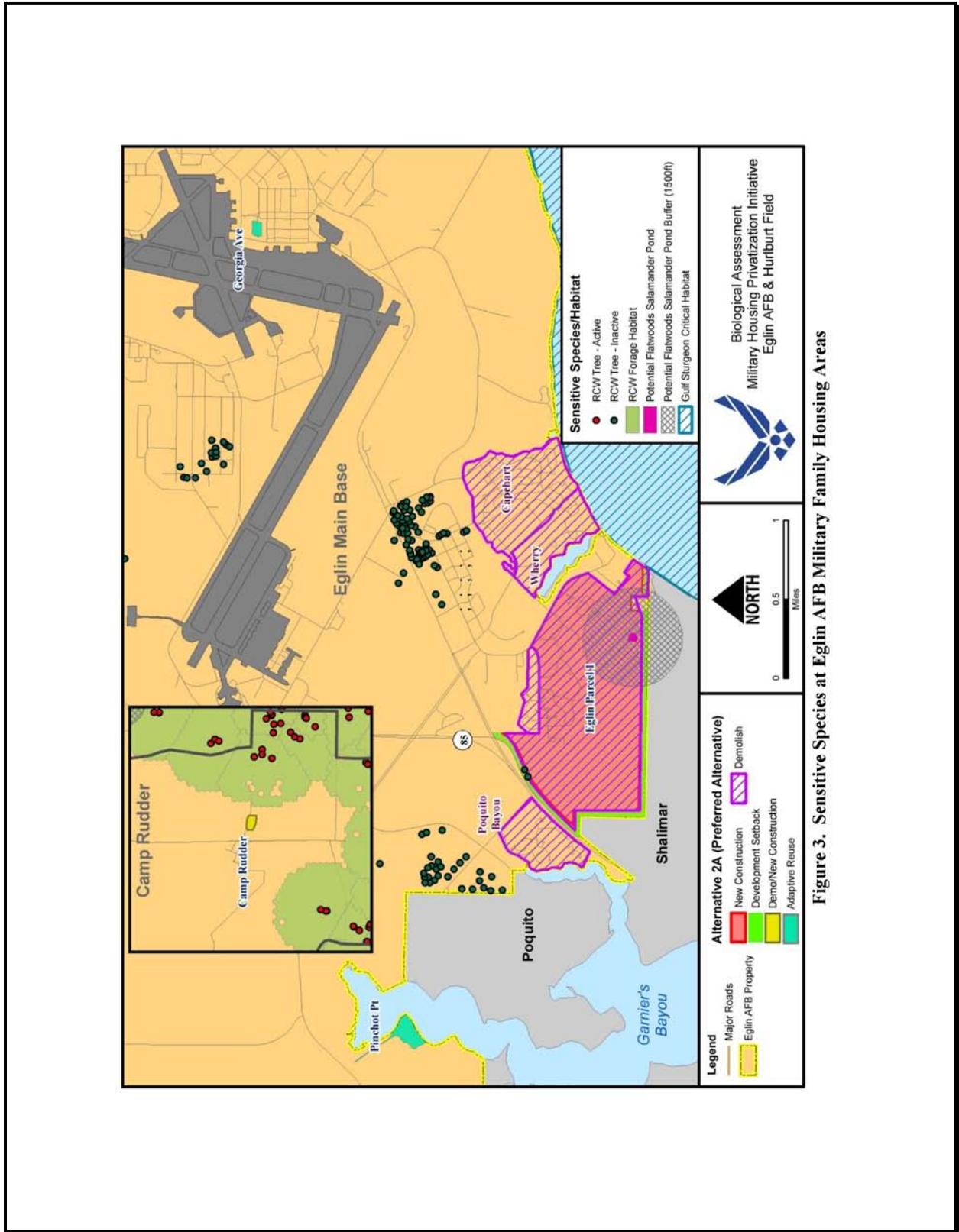


Figure 2. Sensitive Species at Hurlburt Field Military Family Housing Areas

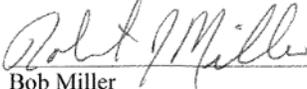


## SIGNATURES

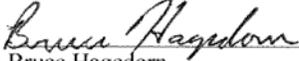
## CONSULTATION REGARDING

IMPACTS TO FEDERALLY LISTED SPECIES  
 RESULTING FROM MILITARY HOUSING PRIVATIZATION INITIATIVE  
 AT EGLIN AFB, FLORIDA AND HURLBURT FIELD, FLORIDA

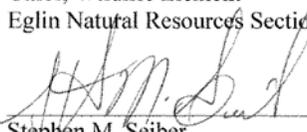
Reviewed by:

  
 Bob Miller  
 Endangered Species Biologist  
 Eglin Natural Resources Section

3/10/10  
 Date

  
 Bruce Hagedorn  
 Chief, Wildlife Element  
 Eglin Natural Resources Section

3/10/10  
 Date

  
 Stephen M. Seiber  
 Chief, Eglin Natural Resources Section

3/11/10  
 Date

USFWS CONCURRENCE:

  
 Project Leader  
 U. S. Fish and Wildlife Service  
 Panama City, FL

3/26/10  
 Date

FWS Log No.

4H10-2010-J-0175

**Addendum per April 14 email from USFWS:** All exterior (outside building lights including houses, recreational facilities and all street lights) within the areas known as Soundside Manor and FamCamp-south shall be wildlife lighting ([http://myfwc.com/CONSERVATION/Conservation\\_LivingWith\\_WildlifeLighting\\_index.htm](http://myfwc.com/CONSERVATION/Conservation_LivingWith_WildlifeLighting_index.htm)). In addition, At Pine Shadows full cut-off low pressure sodium street lighting only is needed. Replaces language regarding sea turtle friendly lighting in original March 2010 consultation and March 17 email from USFWS.

**Utsey, Tara D.**

---

**From:** Utsey, Tara D.  
**Sent:** Friday, April 16, 2010 3:48 PM  
**To:** Utsey, Tara D.  
**Subject:** FW: MFHP Eglin

-----Original Message-----

From: Hiers, Stephanie D CTR USAF AFMC 96 CEG/CEVSNW  
 [mailto:Stephanie.Hiers.ctr@Eglin.af.mil]  
 Sent: Thursday, April 15, 2010 8:35 AM  
 To: Akstulewicz, Kevin D.; Utsey, Tara D.  
 Cc: Koralewski, Jason M.  
 Subject: FW: MFHP Eglin

This email is an addendum to the original USFWS, 2010 concurrence. The wording in the EIS will need to be updated to match Lorna's wording.

Ref: USFWS, 2010. Addendum to March 26, 2010, USFWS Concurrence Letter regarding Endangered Species Act Section 7 Consultation for Eglin MHPI EIS.  
 April 14, 2010.

Jason/Tara: Please add this email to the folder containing government coordination.

-----Original Message-----

From: Lorna\_Patrick@fws.gov [mailto:Lorna\_Patrick@fws.gov]  
 Sent: Wednesday, April 14, 2010 3:40 PM  
 To: Miller, Bob CIV USAF AFMC 96 CEG/CEVSNW  
 Cc: Harold\_Mitchell@fws.gov  
 Subject: Re: MFHP Eglin

Bob,

Thank you for the clarification of the location of the residential areas and their distance to Santa Rosa Island where sea turtles nest. Based on telephone discussions and email correspondence the Service concurs with Eglin AFB determination of effects resulting from the Military Housing Privatization Initiative at Eglin AFB and Hurlburt Field, Florida based on the following:

All exterior (outside building lights including houses, recreational facilities and all street lights) within the areas known as Soundside Manor and FamCamp-south shall be wildlife lighting ([http://myfwc.com/CONSERVATION/Conservation\\_LivingWith\\_WildlifeLighting\\_index.htm](http://myfwc.com/CONSERVATION/Conservation_LivingWith_WildlifeLighting_index.htm)). In addition, At Pine Shadows full cut-off low pressure sodium street lighting only is needed.

lorna

\*\*\*\*\*

Lorna Patrick  
 Fish and Wildlife Biologist  
 U.S. Fish and Wildlife Service  
 1601 Balboa Ave  
 Panama City, FL 32405  
 (850) 769-0552 x229

1

Fax (850) 763-2177

[lorna\\_patrick@fws.gov](mailto:lorna_patrick@fws.gov)

\*\*\*\*\*

"Miller, Bob CIV USAF AFMC 96 CEG/CEVSNW"

<[bob.miller@eglin.af.mil](mailto:bob.miller@eglin.af.mil)>

04/14/2010 10:05 AM

To

<[Lorna.Patrick@fws.gov](mailto:Lorna.Patrick@fws.gov)>

Subject

MFHP Eglin

Lorna

Here is some better verbiage for the No Effects statement, we did state in the No Effects Letter the last bullet under management requirements that only the Sounside Manor, Pine Shadow, and FamCamp housing would require sea turtle friendly lighting. I hope this helps if you have any questions please feel free to contact me.

At Hurlburt Field, construction of new housing will occur only at Soundside Manor, Pine Shadows, and FamCamp. Units at Live Oak Terrace will be demolished and no new units will be built.

The northern FamCamp area will be the new camping area with 50 recreational vehicle spaces and a new bath house; there will be few lights and the area is surrounded by forested habitat, thus no glow should reach SRI.

Eglin agrees to the requirements that exterior lighting at Soundside Manor, Pine Shadows, and the new housing units at the old FamCamp site must be fully shielded and downward directed, and all street lights must use full cut-off fixtures and 35-watt or less low pressure sodium or amber LED lamps.

The parcels at Eglin Main Base are almost five miles from the nearest sea turtle nesting beach, thus it is unlikely sufficient amounts of light would reach SRI to disorient turtles. Eglin does not feel that sea turtle friendly lighting requirements would be necessary at the Eglin Main Base parcels.

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