United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

June 21, 2004

Colonel Robert M. Carpenter
District Engineer
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Service Log No.: 4-1-01-F-707
Corps Application No.: 199404520 (LP-VBA)
Date Received: January 16, 2003
Project: Big Pine Key Park Marina Basin Fill
County: Monroe

Dear Colonel Carpenter:

This document transmits the Fish and Wildlife Service's (Service) biological opinion based on our review of the above referenced proposed Big Pine Key Park Marina basin fill located on Big Pine Key, Florida, and its effects on the Key deer (*Odocoileus virginianus clavium)* in accordance with section 7 of the Endangered Species Act of 1973, as amended (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). This document also transmits the Service's concurrence with the U.S. Army Corps of Engineers' (Corps) determination for the federally endangered West Indian manatee (*Trichechus manatus*). Other federally listed species, including the endangered Lower Keys rabbit (*Sylvilagus palustris hefneri*), the endangered green sea turtle (*Chelonia mydas*), and the endangered hawksbill turtle (*Eretmochelys imbricata*), were addressed in our letter to the Corps, dated March 11, 2003.

This Key deer biological opinion is based on information provided in the January 16, 2003, project proposal; September 23, 2003, information request; telephone conversations; field investigations; and other sources of information. A complete administrative record of this consultation is on file at this office.

In our letter to the Corps, dated March 11, 2003, the Service notified the Corps that we could not concur with the Corps' determination of "may affect, not likely to adversely affect" for the West Indian manatee. The Service has since reviewed plans, maps, and other information provided by the Corps for the permit application, including the conservation measures proposed to reduce adverse effects to the endangered manatee.

The Corps will require during construction of this project that the applicant utilize the *Standard Manatee Protection Construction Conditions* which will minimize adverse effects to the manatee. The project will increase the number of boat slips in Reach 25, Monroe County, Florida.

However, the slips are also located south of the Seven Mile Bridge, below which West Indian manatee mortality caused by boat collisions has never been documented. Therefore, the Service concurs with the Corps' determination of "may affect, not likely to adversely affect" for the West Indian manatee for this project.

CONSULTATION HISTORY

On January 16, 2003, the Corps provided a public notice determination of "may affect, not likely to adversely affect" for federally listed species, including the Key deer and the West Indian manatee.

On March 11, 2003, the Service concurred with the Corps' determination for direct effects to the Key deer, but could not concur with the determination of "may affect, not likely to adversely affect" for the manatee and requested the Corps initiate formal consultation.

On June 10, 2003, the Service suggested the Corps reinitiate consultation to address indirect effects from traffic generated by activities proposed at the planned Big Pine Park.

On August 21, 2003, the Service received the Corps' request for reinitiation of consultation by email.

On September 23, 2003, the Service requested additional information from the Corps, specifically, vehicular traffic expected to be generated by activities at the proposed park and any potential conservation measures to avoid and minimize effects to the Key deer.

On December 11, 2003, the Service received from the Corps, via letter, the information necessary to initiate formal consultation on the Key deer, as required in the regulations governing interagency consultations (50 CFR § 402.14).

On February 23, 2004, the Service notified the Corps by letter that we have all materials necessary to initiate formal consultation and will provide the Corps with a biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

Monroe County (County) applied to the Corps for a permit to fill an existing boat basin. The Service's letter to the Corps, dated March 11, 2003, concurred with the Corps' determination of "may affect, but not likely to adversely affect" for direct effects of the proposed project on the Key deer. Since the fill operation is part of a larger scale project, "Big Pine Park" (Appendix 1), the biological opinion must evaluate the indirect consequences of the entire project as required by 50 CFR § 402.02.

The County has plans to develop a multi-use recreation park on a 10-acre parcel it owns at the end of Sands Road on Big Pine Key, Monroe County, Florida. The proposed park site was formerly a resort and marina, which closed in 1986. Several existing structures on the property will be demolished to make way for construction of the park. The plans include a 120-foot by 15-foot pier and 30-foot by 15-foot dock at the location of an existing boat basin which is proposed for filling. The plans also include the following:

FACILITY	SIZE
• Basketball/roller hockey court	18,000 square feet
• Future pool area	18,000 square feet
• Two tennis courts	12,840 square feet
• Skate park	8,000 square feet
• Community center	4,000 square feet
• Parking	87 spaces
• Playground	not available
• Baseball and softball field	not available
• Multi-purpose court	not available
• Pavilions (2)	not available
• Bocce ball courts (4)	not available
• Shuffleboard courts (4)	not available
• Multi-purpose green space	not available
• Fitness stations (6)	not available
• Walkways	not available

A 25-foot vegetated setback from the road on Vista Linda Lane and Atlantis Drive, which border the western and southern sides, respectively, is planned. Lighting is planned for the park. The County is unsure at this time what the lighting configuration will be, other than indirect lighting will be used. In the County's experience, indirect lighting has proven to be agreeable to adjacent residents of recreation parks. An existing single-family residence on the property will be retained and used for local law enforcement housing.

Sands Road is an 18-foot wide road that runs north and south. County Road is about 600 feet west of Sands Road and parallel to it. Monroe County is proposing to convert Sands Road and County Road from two-way to one-way streets from U.S. Highway 1 to Hibiscus Drive, widen each road and remove exotic vegetation and brush to increase visibility, install 25 miles per hour speed limit signs, install 2 speed humps on County Road to slow traffic, install Key deer caution signs, install a new fence around the property that meets the County's deer-friendly fence code of 15 feet from an abutting street right-of-way, and constructing a two-way bike path along County Road to provide recreation and potentially reduce automobile traffic. The County feels these actions will reduce the potential for deer-automobile collisions and they will accommodate anticipated traffic volumes.

The action area is defined as all areas affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The Service has described the action area to include the 10-acre project area and the rights-of-way of Sands Road, County Road, and Hibiscus Drive (Appendix 2).

STATUS OF SPECIES/CRITICAL HABITAT

Species/critical habitat description

The Key deer is the smallest subspecies of the North American white-tailed deer. Adult males average 79 pounds and adult females 62 pounds. Fawns weigh about 3 pounds at birth. Height at the shoulder averages 27 inches for adult bucks and 26 inches for adult does. The body appears stockier than that of other deer; the legs are shorter, and the skull is shorter and relatively wider. Pelage varies from deep reddish-brown to grizzled gray, and a distinct black cross or mask is often present between the eyes and across the brow. Antler size and number of points for male Key deer are less than those of other white-tailed deer. Bucks typically grow spikes until their second year, when forked antlers are produced; they attain eight points usually by the 4th year.

In addition to their size, a number of other characteristics distinguish Key deer from other white-tailed deer; these include high saltwater tolerance, low birth rates, low productivity, more solitary habits, and weak family bonds. The Key deer population is the most genetically divergent white-tailed deer population in the southeastern United States.

Life history

Habitat: Key deer utilize all habitat types including pine rocklands, hardwood hammocks, buttonwood salt marshes, mangrove wetlands, freshwater wetlands, and disturbed/developed areas (Lopez 2001). They use these habitats for foraging, cover, shelter, fawning, and bedding. Pine rocklands hold fresh water year-round and are especially important to Key deer survival. However, only 5 of 26 islands occupied by Key deer have significant pine rocklands. Key deer also use disturbed/developed areas extensively for foraging, travel, loafing, and socializing.

Behavior: Key deer have well defined patterns of activity and habitat use, and established trails from years of daily use are clearly visible in many areas within Key deer habitat. Roadkill hotspots are evident from the Service's long-term mortality database, further illustrating the habitual movement patterns of Key deer.

The social structure of the Key deer varies throughout the year with the reproductive cycle. Bucks associate with females only during the breeding season and will tolerate other males when feeding and bedding only during the nonbreeding season. Does may form loose matriarchal groups consisting of an adult female with several generations of her female offspring, but these associations are not stable.

Home ranges of Key deer are highly variable (Lopez 2001). Average monthly home range size for adult males is about 296 acres and for adult females are about 128 acres, while yearly ranges are larger with an average of 790 acres for males and 432 acres for females. Males tend to disperse from their natal range as fawns or yearlings. Adult males range over much larger areas during the breeding season and may shift to an entirely new area (Lopez 2001). Territorial behavior is limited to a buck's defense of a receptive doe from other bucks rather than the defense of a specific territory. Aggressive male behaviors (combat) between rutting males are common in Key deer, especially during the fall breeding season or rut.

Foraging: The Key deer is capable of exploiting a wide variety of foods over a wide range of habitat conditions. Diet varies seasonally with resource availability and changes in nutritional requirements of deer. Key deer forage on over 160 plant species including red mangrove (*Rhizophora mangle*), blackbead (*Pithecellobium keyense*), acacia (*Acacia pinetorum*), Indian mulberry (*Morinda royoc*), and pencil flower (*Stylosanthes hamata*) (Service 1999). Red and black mangroves (*Avicennia germinans*) constitute 24 percent by volume of the diet of the Key deer. Key deer require fresh water for survival.

Population dynamics

Population size: The Key deer population was estimated at 250 to 300 individuals in 1970, and is currently estimated at 700 to 800 individuals (Lopez 2001). Based on habitat condition and the presence of density-dependent disease in the population, the Key deer may be at or near ecological carrying capacity (Lopez 2001).

Population variability: Key deer produce fewer young per female than any other white-tailed deer population in North America. Fecundity (number of fetuses/female) and productivity (percent of females reproducing) are low, mean age of first breeding is high, and twinning is infrequent, resulting in relatively low reproductive potential. The sex ratio of Key deer is initially weighted towards males; with a 1.75:1 fetal ratio and 2:1 fawn ratio. However, significantly higher male mortality at maturity serves to balance adult sex ratios more evenly.

The breeding season for Key deer is September through December/January, although fawns may be observed throughout the year. Key deer rarely breed as fawns but female yearlings may produce a fawn. Parturition occurs about 200 days after breeding and peaks in April and May, with hardwood hammocks and pinelands the preferred fawning habitats.

Status and Distribution

Reasons for listing: Prior to human arrival in the Keys in the early 18th century, the Key deer had few natural competitors or predators. Key deer have evolved to withstand natural phenomena such as drought, hurricanes, fire and disease, but were not adapted to extensive predation or human hunting pressures. However, once a human population was established on

the Lower Keys, extensive hunting of Key deer for food and loss of habitats resulting from development ensued and rapidly diminished their population. By the 1940s it was estimated that as few as 25 Key deer remained.

In response to the threat of extinction from over-hunting and habitat loss from development, the National Key Deer Refuge (NKDR) was established in the 1950s and the Key deer were listed as federally endangered on March 11, 1967 (32 FR 4001).

Rangewide trends: The protection afforded the Key deer through prohibitions on hunting, habitat management, and habitat protection through acquisition has resulted in significant increases in the Key deer population. Despite the obvious increase in population levels of Key deer, there has been a contraction of the range of Key deer from a 1970 study and a more recent 1999 study (Lopez 2001). Key deer have become increasingly abundant on Big Pine Key and adjacent islands, but have decreased to near extirpation on more distant islands such as Cudjoe and Sugarloaf Keys (Lopez 2001). Although Key deer were never abundant on Cudjoe and Sugarloaf Keys, they now exist at such low numbers that local extirpation is likely in the near future (Lopez 2001). This contraction in the range has decreased the overall viability of the Key deer population by increasing the probability that a stochastic event such as a severe hurricane or disease epidemic may have catastrophic impacts to the core population on and around Big Pine Key.

The Key deer's historical range probably extended from Key Vaca to Key West. The current range includes approximately 26 islands from Little Pine Key west to Sugarloaf Key (Lopez 2001). The NKDR and Great White Heron National Wildlife Refuge encompass much of this territory and are managed for the Key deer and other wildlife. The Big Pine and No Name Key complex forms the center of the Key deer's range, supporting greater than 75 percent of the entire population (Lopez 2001).

The principal factor influencing the distribution and movement of Key deer in the Keys is the location and availability of fresh water. Key deer swim easily between keys and use all islands during the wet season, but suitable water is available on only 13 islands during the dry season. Big Pine Key and No Name Key provide the most fresh water source and support the majority of the Key deer population (Lopez 2001).

Threats: Current threats to the Key deer include fencing of Key deer habitat, habitat loss and degradation resulting from development, fire suppression resulting in ecological succession in pine rockland habitats, habitat loss resulting from invasive exotic plant invasions, density-dependent disease, and road mortality.

Loss of habitat resulting from development is the most significant and obvious threat to Key deer. The human population on Big Pine Key has increased an estimated 77 percent from 1980 to1990. An estimated 116 acres/year of Key deer habitat was cleared on Big Pine Key from 1969

to 1973. Habitat loss from development remains a threat. Fencing associated with development may cause direct Key deer habitat loss and alter movement patterns and prevent access to important resources.

Road mortality is the greatest known source of deer mortality documented by NKDR staff over the last 30 years. Road mortality contributes to approximately 75 to 80 percent of all documented mortalities recorded. An average of 54 roadkills per year were recorded for the period 1990-2000, with the majority of those on Big Pine Key, with U.S. Highway 1 accounting for approximately 60 percent of this total (Appendix 3). A similar trend is observed if only the most recent 5-year period from 1996-2000 is analyzed (Appendix 3). These time periods were selected for analysis because they represent the most current ecological and sociological conditions in the action area and are most representative of projected conditions for construction of the proposed project.

Fire suppression promotes ecological succession in pine rockland communities, resulting in increased hardwood cover, dense brush, decreased herbaceous cover, reduced light penetration, and a general deterioration of habitat quality for Key deer. Exotic plant species such as Australian pine (*Casuarina* spp.), Brazilian pepper (*Schinus terebinthifolius*), and latherleaf (*Colubrina asiatica*) are invading Key deer habitat, out competing native vegetation, and reducing habitat quality for Key deer.

Analyses of the species likely to be affected

The current range of the Key deer is restricted to the Lower Keys. The deer lives in a complex of native upland and wetland habitats interspersed in a matrix of light to dense urban development. The Key deer herd has increased substantially over the past 40 years, due principally to a ban on hunting and protection and management of habitat within NKDR and surrounding lands. Natural stochastic events and the influences of human development, as manifested through habitat loss, fragmentation, and degradation, continue to negatively affect Key deer survival. Road mortality represents the largest known source of documented Key deer mortality (Lopez 2001).

Key deer prefer upland habitat types, which are also the preferred locations for development to be allowed by local governments. Thus, the potential exists for proposed development projects to adversely impact Key deer through direct habitat loss and also from secondary impacts from development such as free-ranging dogs, fencing, and traffic.

ENVIRONMENTAL BASELINE

Status of the species/critical habitat within the action area

The project site is a former resort and marina, approximately 10 acres in size, bounded on the west and south by residential areas with canals and to the east by the ocean. It has been noted that canals act as barriers that restrict Key deer movement and result in deer mortality by

drowning (Folk 1991). Lopez (2001) assumed in his calculations that areas surrounded by canals would have a lower impact because of the small likelihood that deer would use these areas. Therefore, one effect of canalized residential areas is to funnel Key deer around them and into non-canalized areas such as the action area.

The Sands Road area has become known as the "Sands corridor." The Sands corridor is an elongate area, primarily in the Sands Road residential area, nine-tenths of a mile long and varying from two-tenths of a mile wide in the Sands Road area to one-tenth of a mile wide bordering U.S. Highway 1 (Appendix 4). It begins just south of the project area and extends southeast across U.S. Highway 1. This corridor constitutes the main travel route connecting Key deer habitat north and south of U.S. Highway 1. Most of the properties along Sands Road and Hibiscus Road are developed. County Road is less developed and vegetated along the action area.

Factors affecting species environment within the action area

Traffic Mortality: Residential and commercial development that has occurred over the past 20 years has increased the number of vehicles and vehicular traffic in the Keys. This additional traffic has increased the likelihood of Key deer/vehicle collisions. Road mortality is the greatest known source of Key deer deaths, and can impact the population by removing large numbers of animals. Telemetry data estimates approximately 50 percent of deer mortality is attributed to roadkills (Lopez 2001). Road mortalities may be correlated to an increase in deer numbers related to improved habitat conditions. Although lower speed limits have been imposed in an attempt to reduce traffic mortality, continuing traffic mortality in some areas may be caused by speeding motorists.

Key deer move more during dry season and breeding season between islands and over islands to find fresh water and females. During cycles when deer numbers are high, road mortalities may have less of a negative impact on the Big Pine Key deer population because many of the animals removed are dispersing males. However, as habitat continues to be degraded and fragmented, carrying capacity and deer numbers are lowered. Catastrophes, such as hurricanes, may reduce Key deer numbers to the extent that road mortalities could adversely affect the population and could actually drive the deer to extinction.

Fencing: Fencing of private property associated with residential and commercial development has reduced habitat availability for the Key deer. Native habitat that is fenced is no longer available for use by the Key deer. This loss of habitat has reduced food and water availability, shelter, and fawning areas needed by deer to survive and reproduce. Large networks of fencing have fragmented Key deer habitat and restricted movement which has further reduced the availability and value of these areas to Key deer. Although fencing is regulated under the Monroe County Comprehensive Land Use Plan, many areas important to deer continue to be lost to fences. An additional concern is the injury or loss of deer as a result of attempting to jump these fences.

Exotic vegetation and brush: Exotic vegetation and underbrush on unoccupied property adjacent to the action area restrict Key deer movements and concentrate their movements along well established trails. Since utilizable habitat is limited, Key deer must move more to access preferred areas, which involves crossing streets and roads. This results in more Key deer crossing roads at fewer access routes or walking along roads, increasing their vulnerability to traffic.

Noise and Lighting: There are no street lights along the roads in the action area, although many home owners have yard lights at night. Other lighting comes from homes and automobiles. Noise is usually from traffic, yard maintenance, boats, construction, and children playing.

EFFECTS OF THE ACTION

The majority of the Key deer population resides on Big Pine and No Name Keys. The population is currently estimated to be 700 to 800 on all islands and 500 to 600 on Big Pine Key (Service 1999). The proposed action would occur in an area on Big Pine Key that is considered to be a movement corridor from the northern portion to the southern portion of the island.

Direct Effects: The direct effect of the proposed action, the loss of habitat, was addressed in the Service's concurrence letter, dated March 11, 2003, in which the Service concurred with the Corps' determination of "may affect, not likely to adversely affect." The Service determined the site is not normally available as habitat because it is enclosed by an existing fence.

Indirect Effects: Indirect effects are defined as those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR § 402.02). This biological opinion addresses the indirect effects of the proposed recreation park on the Key deer. The Service has identified traffic, noise, and lighting as potential indirect effects of the proposed action.

Indirect effects of the proposed action will be permanent and most likely occur in morning and evening when Key deer are most active. These effects will continue throughout the year, including breeding season and other seasonal events when Key deer activity and movements are at a peak. The frequency of disturbance is anticipated to be intermittent, but continuous from early morning to evening on a daily basis and continuous throughout the year. The indirect effects of the proposed action on Key deer are expected to peak on weekends when activity would increase at the proposed park, during breeding season when Key deer are most active, and during dry periods when Key deer move more in search of fresh water and forage. Once the park is established, the frequency of effects is not expected to increase appreciably.

Traffic

The Sands corridor intersects about 220 feet of County Road and about 660 feet of Sands Road. The corridor boundary, as currently drawn, terminates about 100 feet to the west of County Road.

The Service believes 3.5 percent, or less, of the existing road network and attendant traffic within the Sands corridor will be impacted by this project.

As mentioned previously in this document, deer/vehicle collisions (roadkills) have been determined to be responsible for 50 percent or more of all known Key deer mortality. Therefore, the volume of traffic generated by the proposed facility is of concern to the Service. Monroe County commissioned a traffic analysis and trip generation analysis to determine the potential affects of the project on traffic in the area. Trip generation is the method by which the amount of traffic, or the number of trips to and from a site, is estimated. In May 2003 URS Corporation, as the County's consultant, submitted a traffic analysis, "Big Pine County Park Final Traffic Impact Study." The acreage of the proposed park was the basis for the estimates of traffic impacts caused by the park in this study. Another study, "Big Pine Park Traffic Circulation Analysis" (Miles Moss and Associates 2002), evaluated "recent traffic reports" for the proposed recreation park. This study addressed the County's methodology in determining traffic volumes, but produced no new or revised estimates of traffic volume resulting from the proposed park.

URS (2003) calculated that the current average number of daily trips was 1,629 and 1,753 on Sands Road and County Road, respectively. URS (2003) estimated that an average of 38 trips per day (13, 870 trips per year) would initially be generated as a result of the proposed facility. This figure is based on estimates of an average of 22 weekday daily trips, 118 Saturday daily trips, and 40 Sunday daily trips. Assuming the park is open to the public 12 hours a day and 7 days a week, the facility would generate an average of one trip every 19 minutes. Assuming a worst case scenario, all 118 Saturday daily trips occurring within 1 hour, one trip would occur every 30 seconds as a result of the proposed project. This provides an estimate of what the resultant traffic volume could be like on one road. If the County implements its proposal to convert Sands and County Roads from two-way to one-way streets, the number of trips resulting from the project on either Sands Road or County Road may be reduced. Continued growth will increase traffic on roads in the action area. The average trips per day on these roads are expected to increase 71 trips-per-day, *i.e.* from the current 1,629 trips-per-day on Sands Road to 1,700 trips-per-day, not including proposed park traffic, 3 years after the building moratorium is lifted for Big Pine Key (URS 2003). The projected average number of daily trips, 38, resulting from the proposed project represents a 2.3 percent increase above the 1,629 current average number of daily trips on Sands Road.

According to Service records dating back to 1966, three Key deer are known to have been the victims of road mortality in the action area in the last 37 years. One was killed on Sands Road and two were killed on County Road (Appendix 5). In the 14 year period from 1990 to 2003, no Key deer were killed in the action area by vehicles, even though the Key deer population has been high in recent years.

However, the Service anticipates that increased traffic during the morning and evening when Key deer are most active, combined with continued growth and increased use of the recreation park, may result in the potential for higher Key deer road mortality. The Service believes that less than

one Key deer road mortality per year or 0.0014 (0.14 percent) of the current estimated population may occur in the future as a result of this project.

Noise and Lighting

Recreational activities at the proposed park, maintenance, and increased traffic will generate associated noise. Accessory lighting, allowing use of the site after sundown, may also affect Key deer. The County plans to install indirect lighting to decrease glare in the area surrounding the park. Numerous studies have documented that deer quickly become habituated to noise and lights. Bashore and Ellis (1982) found that deer quickly became accustomed to noise and lights on Pennsylvania airfields. Krausman et al. (1993) investigated the effects of low-altitude jet aircraft noise on the behavior and physiology on captive mule deer and mountain sheep, finding that all study animals became habituated to noise levels ranging from 92 to 112 decibels.

The Key deer on Big Pine Key are widely known to be habituated to human noises, lights, and vehicular traffic. Folk and Klimstra (1991) observed that Key deer "often bedded in open sites within 2 meters of a road and were not disturbed by cars, pedestrians, and cyclists. Loud noises from within 40 meters, such as circular saws, lawn leaf-blowers, and wood chippers brought little response."

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

The Service is not aware of any cumulative effects associated with this proposed project.

Summary of effects

The primary indirect effect of the proposed project on the Key deer is an increase in traffic. Past effects of traffic on the Key deer in the action area have been low. The proposed park is expected to increase traffic in the action area, but not result in significantly higher traffic-related Key deer mortality. Deer in general have been shown to acclimate quickly to noise and lights. Key deer have been shown to acclimate to the indirect effects of noise and lights that will be associated with traffic and the use of the park.

CONCLUSION

After reviewing the status of the Key deer, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Big Pine Park, as proposed, is not likely to jeopardize the continued existence of the Key deer and is not likely to destroy or adversely modify designated critical habitat.

INCIDENTAL TAKE STATEMENT

Sections 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in action 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement.

Amount or extent of take anticipated

Key deer traffic mortalities in the action area have been low in the past. The Service believes that the proposed park will not result in a net increase in baseline mortality. However, we are authorizing an incidental take of one Key deer traffic mortality per year.

Effect of take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

Reasonable and prudent measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of Key deer:

1. Increase awareness of endangered Key deer in the action area.

2. Enforce speed limits and increase visibility.

3. Facilitate Key deer movements across and along streets in the action area.

Terms and conditions

To be exempt from the prohibitions of section 9 of the ESA, the applicant must comply with the following terms and conditions, which implement the reasonable and prudent measures, described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. Install signs on Sands Road and County Road warning motorists to watch for Key deer and obey the speed limit.

2. Install speed humps on County Road to reduce vehicle speeds.

3. Convert Sands and County Roads from two-way to one-way roadways from U.S. Highway 1 to Hibiscus Drive and widen each road.

4. Bring existing fencing around the proposed park up to the County's deer-friendly fence code by setting fences back 15 feet from the edge of the abutting streets rights-of-way.

5. Improve sight lines for motorists and deer along County Road, Sands Road, and Hibiscus Drive by removing exotic vegetation, underbrush, trash, and fences on County-owned land. The County will provide a Vegetation Removal Plan for Service approval within 90 days of being issued a Corps permit for this project.

6. If four or more Key deer are killed by vehicles within the action area in a 3 year period, and if analysis of the deaths shows that they occurred when the park was in use, additional or larger speed humps will be located and installed on the street(s) where the deaths occurred. If two or more Key deer are determined to have been killed by vehicles in a 3 year period after sunset when the park was in use, street lighting will be installed on the street where the majority of the deaths occurred or, if there is no majority, on the street in the action area deemed most beneficial to the Key deer. The Corps will require the applicant to monitor the number of vehicle-caused Key deer deaths, time of death, and hours the park is in operation and provides the Service with an annual summary report.

7. Upon locating a dead, injured, or sick specimen, initial notification must be made to the NKDR, 28950 Watson Boulevard, Big Pine Key, Florida 33043; (305-872-2239). Secondary notification should be made to the Florida Fish and Wildlife Conservation Commission; South Region, 3900 Drane Field Road, Lakeland, Florida, 33811-1299; (1-800-282-8002). Care should be taken in handling sick or injured specimens to ensure

effective treatment and care or in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of sick or injured specimens or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

None are being proposed at this time.

The Service requests notification of the implementation of any conservation recommendations and to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in the reinitiation request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation and effort in protecting Key deer. If you have any questions regarding this project, please Winston Hobgood, at 772-562-3909, extension 306.

Sincerely yours,

James J. Slack
Field Supervisor
South Florida Ecological Services Office

Appendix 1

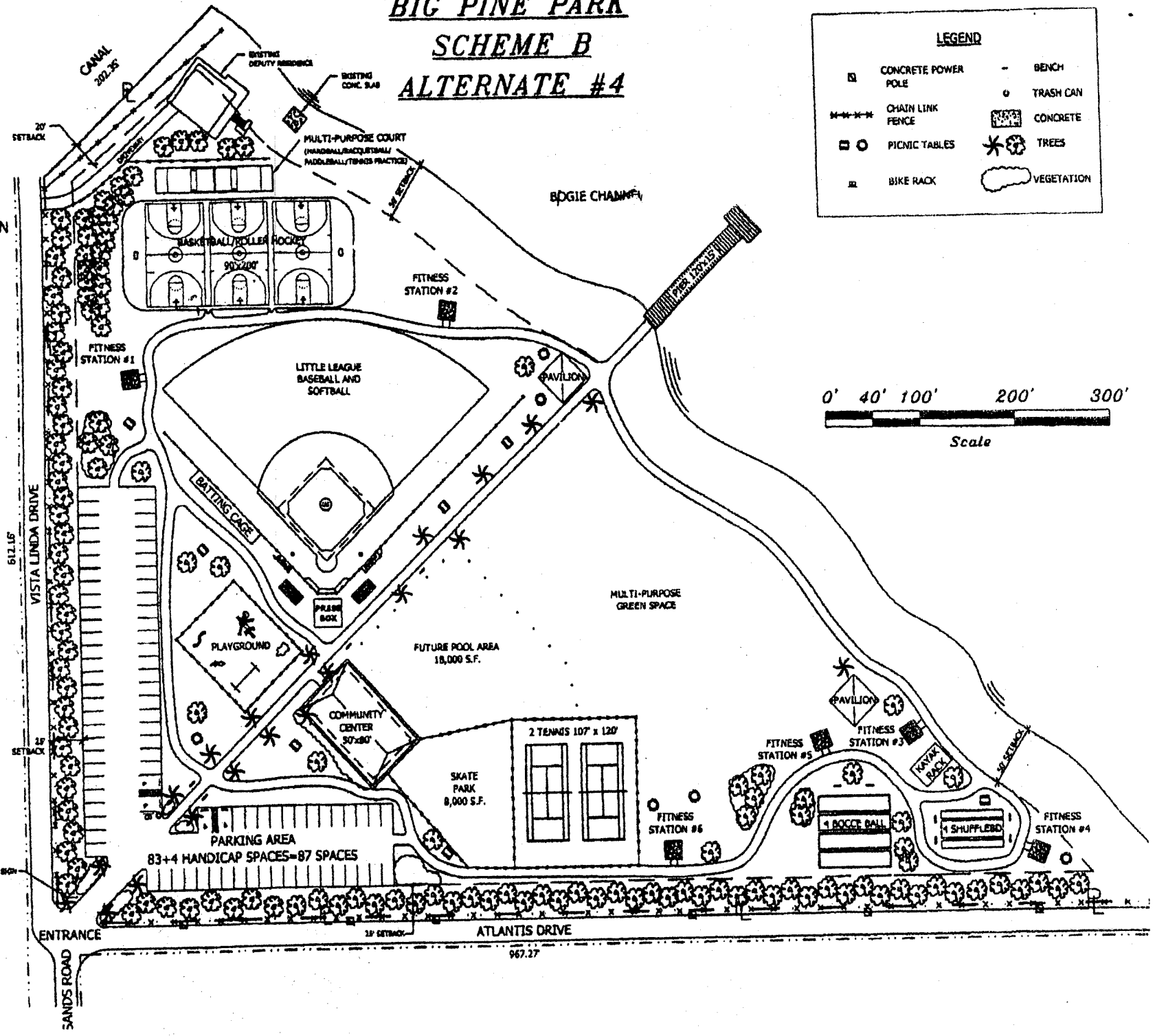
"BIG PINE PARK"

SCHEME B

ALTERNATE #4

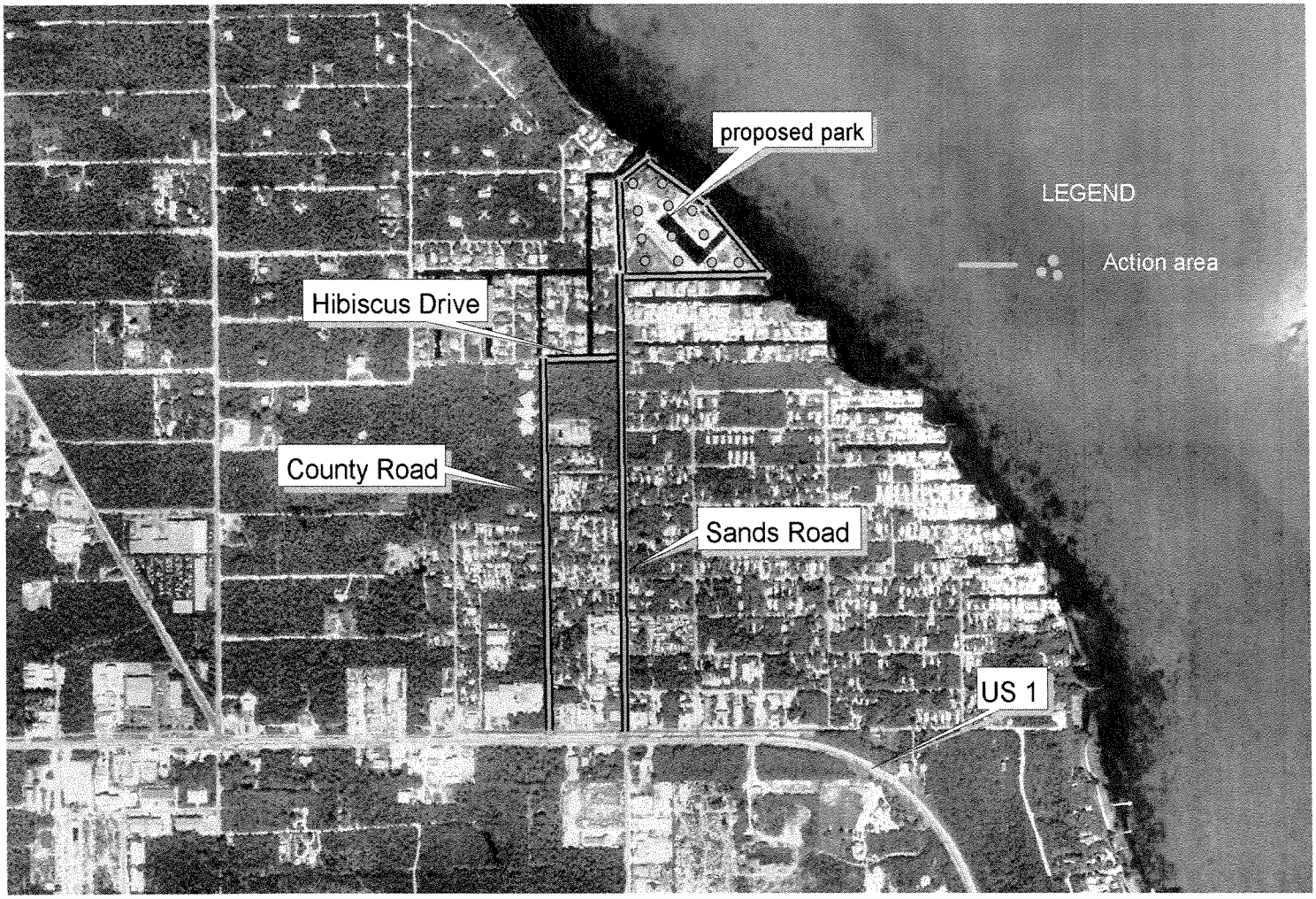
PREPARED BY:
MONROE COUNTY
ENGINEERING
DEPARTMENT

STAFF RECOMMENDATION



Appendix 2

Action area



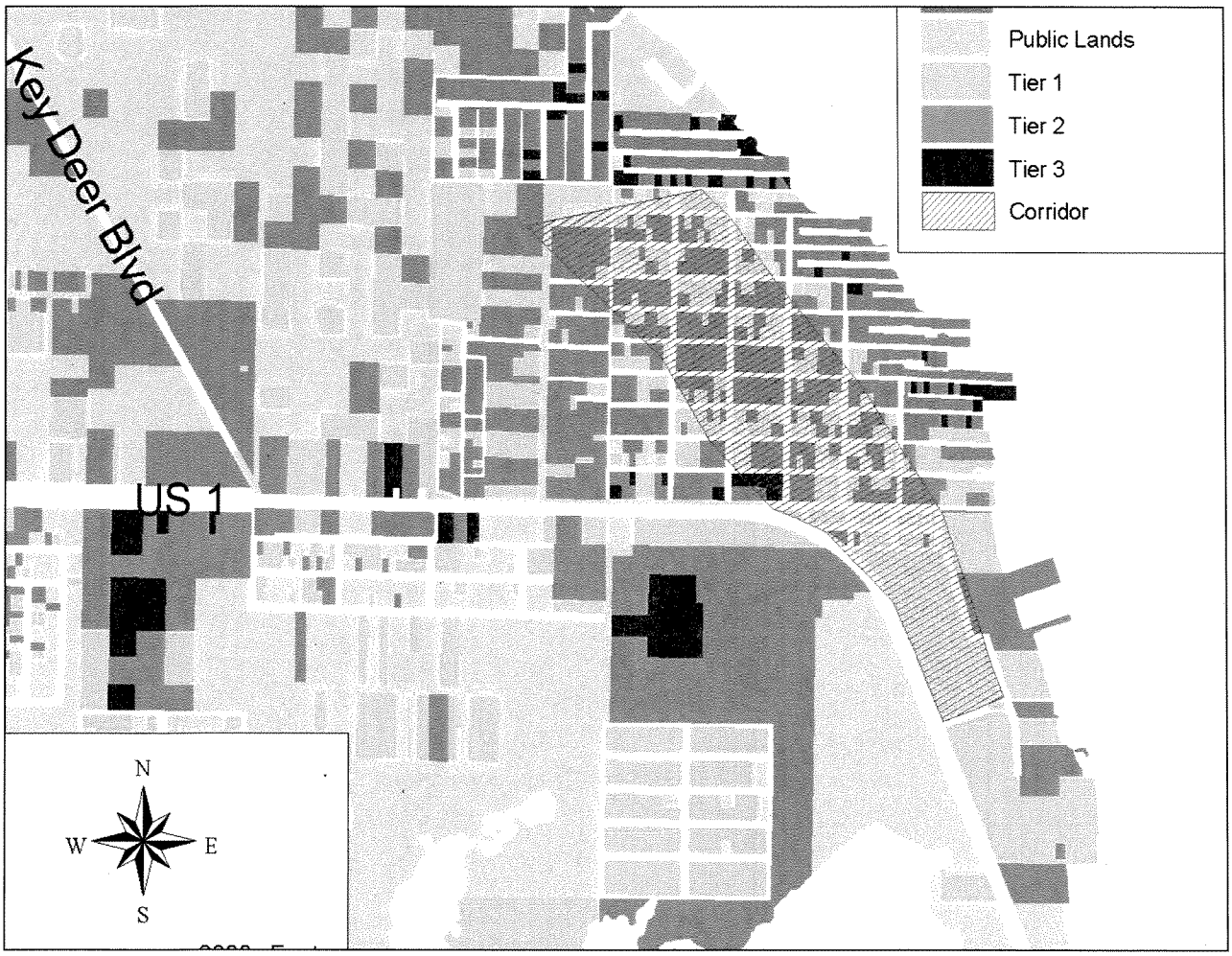
Appendix 3

Analysis of Key deer road mortality for two time periods, from 1990 to 2000 and from 1996 to 2000. Road mortality data was estimated by field examination and necropsy of carcasses recovered by staff at the NKDR. Data were compiled in a Geographic Information System database and are maintained by NKDR.

YEAR	U.S. Highway 1	OFF U.S. Highway1	COMBINED
1990-2000 Annual Average	32 (60 percent)	22 (40 percent)	54
1990-2000 Total	350	241	591
1996-2000 Annual Average	39 (56 percent)	30 (44 percent)	69
1996-2000 Total	195	151	346

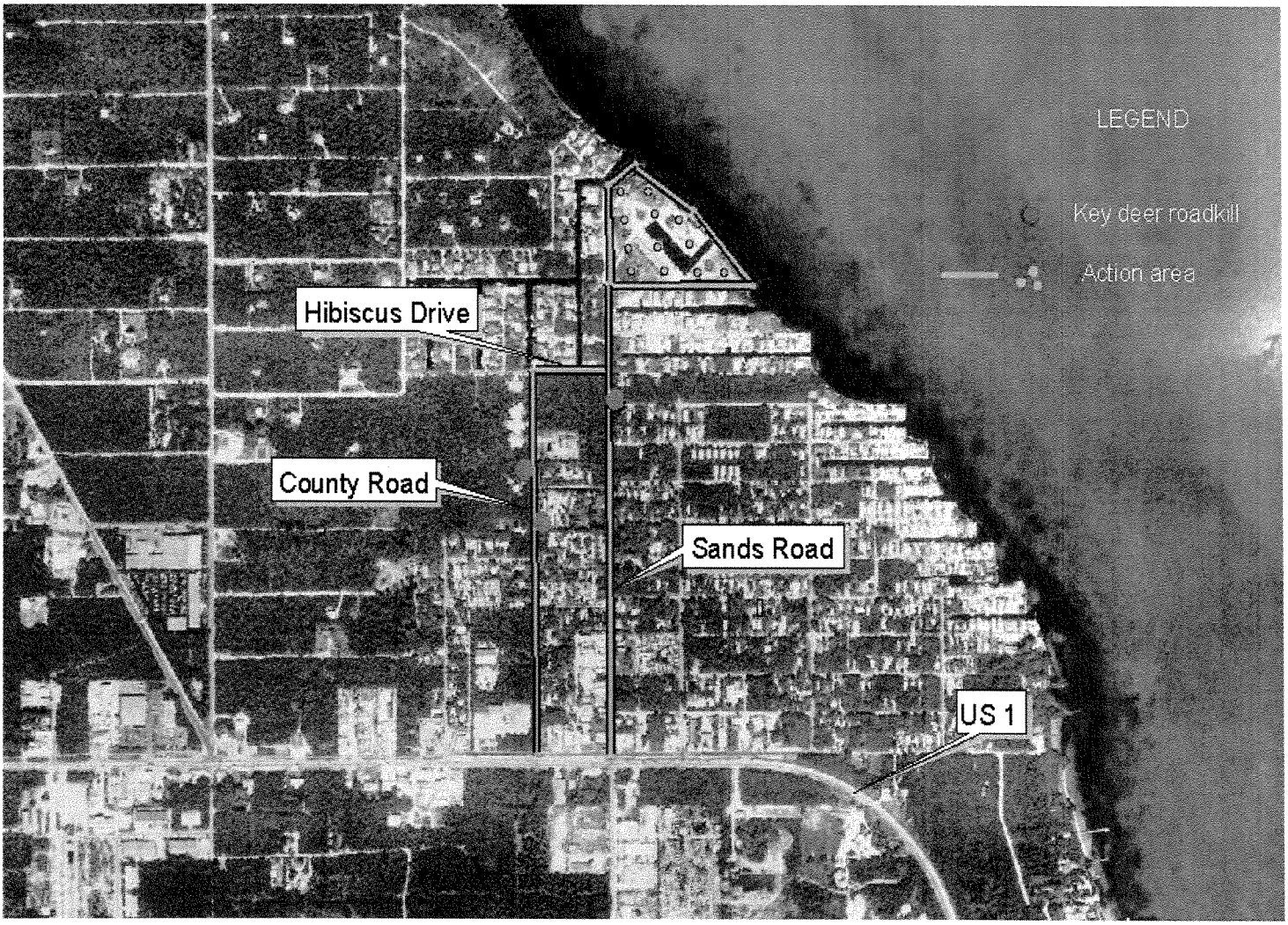
Appendix 4

Sands Corridor and Monroe County land classification



Appendix 5

Key deer road mortalities in the action area, 1966 to 2003



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