9. **COMMITTEES BOARDS COMMISSION**

b. Approval of the Vegetation Committee's Environmental handbook and Staff recommendation to distribute via web posting rather than direct mail

THE ENVIRONMENTAL REFERENCE HANDBOOK

for

SANIBEL,
A BARRIER ISLAND SANCTUARY

HOW AND WHY
TO JOIN IN THE CONTINUING STEWARDSHIP
OF OUR SANCTUARY ISLAND

THE ENVIRONMENTAL REFERENCE HANDBOOK

for

SANIBEL, A BARRIER ISLAND SANCTUARY

2009
Second Edition

COMPILED BY
THE VEGETATION COMMITTEE
OF THE CITY OF SANIBEL

PUBLISHED BY
THE CITY OF SANIBEL

We would like to acknowledge and thank the following people who were so generous with their time, enthusiasm, and expertise during the compilation of this handbook. Some contributed information, others answered questions, offered advice, proof-read sections, supplied photographs, and helped with formatting.

Kristie Anders
Chris Andrews
Dr. P.J. Deitschel
Holly Downing
Jenny Evans
Richard Finkle
Chris Lechowicz
Erick Lindblad
Patrick Martin
Neil Payne
Cheryl Parrott
Cathy Paus
Dee Serage Century
Brad Smith
Pamela Smith
Melissa Upton

Thank you
from
The City of Sanibel and The Vegetation Committee

The City of Sanibel and the Vegetation Committee
gratefully acknowledge financial support from
the J.N."Ding" Darling National Wildlife Refuge
towards the publication of this handbook.

TABLE OF CONTENTS

INTRODUCTION 1

CITY OF SANIBEL VISION STATEMENT 3

VEGETATION

Native Plants 6

Native Species of Special Interest:

Cabbage Palm (*Sabal palmetto)*

Mangroves

Landscaping for Wildlife

Vegetation Standards for Native Plants

Exotic (Non-Native) Plants 10

Invasive Exotic Plants

Photos of Eight Prohibited Invasive Exotic Plants

Vegetation Standards for Invasive Exotic Plants

Brazilian Pepper Eradication Program

Australian Pines

Other Exotic Vegetation

Coastal Construction Control Line (CCCL)

Gulf Beach Zone 14

Importance of Native Vegetation and Beach Erosion Control

Vegetation Standards to Protect Native Plants in the Gulf Beach Zone

Australian Pines in the Gulf Beach Zone

Soil, Compost, Mulch, and Sod 16

Fertilizers, Pesticides, and Herbicides 18

Fertilizers

2007 Fertilizer Ordinance - A Brief Summary

Pesticides

Herbicides

Vegetation Permits 21

Vegetation Contractors 22

WILDLIFE

Birds 24

Snowy Plover Nesting

Alligators 26

City of Sanibel Alligator Policy

Tortoises and Turtles 28

Gopher Tortoises

Fresh Water Turtles

Sea Turtles

Sea Turtle Nesting

Exotic Lizards 30
Green Iguanas
Nile Monitor Lizards
Florida Bobcats 32
Snakes 33
Raccoons 33
Manatees and Dolphins 34
Other Wildlife 35
Bird and Animal Rescue 35
Fishing Hazards to Birds 35
Rescue Tips for Hooked Birds
Clinic for the Rehabilitation of Wildlife (CROW) 37
CROW's Wildlife Tips

BEACHES
Ethical Beach Behavior for Healthy Wildlife and Healthy Beaches 40
Beach Wildlife Nesting Programs 41
Shelling 42

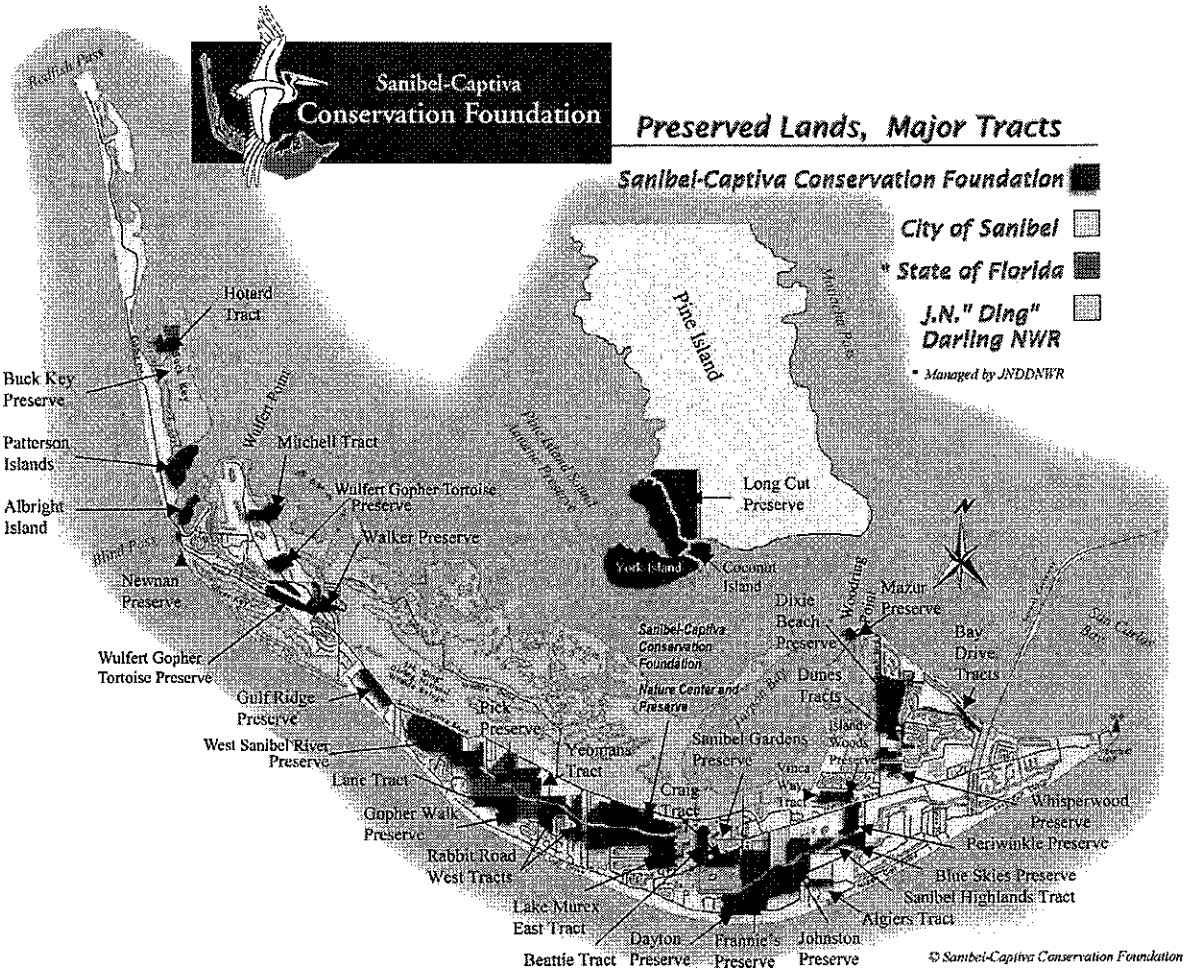
CONSERVATION
Water Conservation / Water-Wise Tips 44
Recycling 46
Hazardous Waste Disposal 46
Organizations 47
J.N. "Ding" Darling National Wildlife Refuge
"Ding" Darling Wildlife Society
Clinic for the Rehabilitation of Wildlife (CROW)
Sanibel-Captiva Conservation Foundation (SCCF)
Sanibel-Captiva Audubon Society

HURRICANE PREPAREDNESS 51

QUESTIONS AND ANSWERS 52

THE CITY OF SANIBEL GOVERNMENT
Overview of Sanibel City Government 58
City of Sanibel Advisory Committees: 58

REFERENCE SECTION
Reference Publications 59
Useful Phone Numbers and Websites 60



Map Courtesy of SCCF

INTRODUCTION

The objective of this handbook is to provide you with an overview and appreciation of the guidelines the City of Sanibel has put in place to protect our sanctuary Island.

The Sanibel we know today did not happen by chance. Visionary residents recognized that change and development would be the inevitable future for the state of Florida, especially coastal Florida. In 1976, two years after incorporation, the City created and adopted a Comprehensive Land Use Plan, believing that future development on Sanibel could and should minimize human impact and occur in an orderly and planned way to preserve the unique and natural characteristics of the Island. In the intervening years, the public stayed informed and worked diligently to ensure this plan retained the wisdom of the original mandates that safeguard our native vegetation, wildlife, and way of life. The Vision Statement, made part of the City Charter in 2007, further emphasizes the importance of the environmental values in the community.

Preservation of our natural environment depends on all of us. Our city ordinances, to some, may appear cumbersome, but these regulations are the very reason our community today has such a unique look and feel. A knowledge and understanding of the City standards will promote motivation for the on-going stewardship of our Island sanctuary. That, in turn, will help sustain a quality of life for humans and wildlife that is rapidly vanishing from coastal Florida.

This handbook outlines the major environmental issues that impact everyone living or doing business on Sanibel. We hope you will keep it handy as you address environmental concerns on the Island.

WELCOME TO OUR SANCTUARY ISLAND
SANIBEL
FLORIDA
INCORPORATED
1974
DO ENJOY
DON'T DESTROY

CITY OF SANIBEL VISION STATEMENT

BACKGROUND

To provide a sense of direction for the future, this Vision Statement was set forth as a confirmation of the community's shared values and goals to guide future decisions.

SANCTUARY

Sanibel is and shall remain a barrier island sanctuary, one in which a diverse population lives in harmony with the Island's wildlife and natural habitats. The Sanibel community must be vigilant in the protection and enhancement of its sanctuary characteristics.

The City of Sanibel will resist pressures to accommodate increased development and redevelopment that is inconsistent with the Sanibel Plan, including this Vision Statement.

The City of Sanibel will guard against and, where advisable, oppose human activities in other jurisdictions that might harm the Island's sensitive habitats, including the Island's surrounding aquatic ecosystems.

COMMUNITY

Sanibel is and shall remain a small town community whose members choose to live in harmony with one another and with nature; creating a human settlement distinguished by its diversity, beauty, uniqueness, character, and stewardship.

Diversity: The City of Sanibel cherishes its cultural, social, ecological, and economic diversity, and will endeavor to maintain it.

Beauty: The City of Sanibel will foster quality, harmony, and beauty in all forms of human alteration of the environment. The community aesthetic is defined as a casual style; one which is adapted to a relaxed island quality of life and respectful of local history, weather, culture, and natural systems.

Uniqueness: The City of Sanibel chooses to remain unique through a development pattern, which reflects the predominance of natural conditions and characteristics over human intrusions. All forms of development and redevelopment will preserve the community's unique small town identity.

Character: The City of Sanibel chooses to preserve its rural character in its setting within an urbanizing county. "Auto-urban" development influences will be avoided. The commercialization of natural resources will be limited and strictly controlled.

Stewardship: In keeping with the foregoing principles, the City of Sanibel affirms a land ethic that recognizes landholding - both public and private - as a form of stewardship, involving responsibilities to the human and natural communities of the Island and its surroundings, and to future generations.

ATTRACTION

The Sanibel community recognizes that its attractiveness to visitors is due to the Island's quality as sanctuary and as community. The City of Sanibel will welcome visitors who are drawn by, and are respectful of, these qualities; it will resist pressures to accommodate visitor attractions and activities that compromise these qualities.

HIERARCHY OF VALUES

This three-part statement of the community's vision of its future is hierarchy; one in which the dominant principle is Sanibel's sanctuary quality. Sanibel shall be developed as a community only to the extent to which it retains and embraces this quality of sanctuary. Sanibel will serve as attraction only to the extent to which it retains its desired qualities as sanctuary and community.

Adopted by Ordinance No. 97-16, October 11, 1997
Incorporated into the City Charter - 2007

VEGETATION

on Sanibel, A Sanctuary Island

Choosing native plants and
sustainable landscaping will contribute to
the health of our wildlife, our Island, and our planet.

Volunteers planting a Periwinkle Partnership garden
Palm Ridge Road

Planting Natives Will Make A Difference

NATIVE PLANTS

There is nothing quite like an authentic native landscape to provide residents and visitors a "sense of place". Trees and shrubs native to Florida, and specifically to Southwest Florida and Sanibel Island, provide an attractive sanctuary island atmosphere and are beneficial habitat for our various resident species of wildlife. Migratory bird populations also depend on our native habitat for food and shelter.

Because of its importance to the Island's environment, ***the City of Sanibel law protects native vegetation.*** This protection is especially important for our rare native plants which otherwise could become extinct.

For most purposes, the phrase "Florida native plant" refers to those species occurring within the state boundaries prior to European contact, according to the best available scientific and historical documentation. More specifically, it includes those species understood as indigenous, occurring in natural association in habitats that existed prior to significant human impact and alterations of the landscape.

Native plants are important to Sanibel because most:

- ***are adapted to local weather conditions, including drought, occasional salt water flooding, and heavy summer rains;***
- ***can exist well without fertilizers or pesticides;***
- ***once established, require little or no supplemental irrigation if placed in the proper location;***
- ***provide a food source and habitat for wildlife;***
- ***have distinctive leaves, flowers, and fruit that will lend character to the landscape.***

The use of native plants is encouraged for all landscape projects. Be aware that Sanibel is made up of ecological zones (ridges and swales of varying elevations) that present different kinds of growing conditions. Choosing trees and shrubs that are best suited to the location of your property on the Island will increase your chances for a successful result.

A copy of the City's Horticulturally Available Native Plant List (plants native to Southwest Florida and suitable for Sanibel) is available at www.mysanibel.com. Click Departments, Natural Resources, Vegetation Information, Native Vegetation, City Native Plant Lists (box in upper right corner). Additional information matching plant material with appropriate Island ecological zones is available at the Sanibel-Captiva Conservation Foundation (SCCF) Native Plant Nursery, 3333 SanCap Road.

A complete list of Florida native plants can be accessed at the Atlas of Florida Vascular Plants', website: *www.plantatlas.usf.edu*. It is permissible to choose any plant from this complete list of Florida natives, but limiting your choice to native plants able to thrive in our Southwest Florida (Zone 10B) climate is recommended.

Information on Sanibel law that protects native vegetation can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 122, Section 122-102.

Native Species of Special Interest

The **Cabbage palm or Sabal palm** (***Sabal palmetto***), a small ecosystem in itself, is the Florida state tree. In addition to hosting other plants, it provides food, shelter, and nesting material for bats, birds, small mammals, snakes, tree frogs, lizards, and a variety of insects. It is perfectly adapted to our South Florida, sometimes harsh, barrier island environment.

Unfortunately, poor landscaping practices have contributed to damage, even death of these palms. ***It is important to trim only fronds that are completely brown.***

Trimming healthy green fronds or declining fronds:

- ***steals the palm's source of nutrients and can stunt growth;***
- ***encourages development of a bottleneck trunk;***
- ***invites disease;***
- ***reduces resilience to high winds;***
- ***exposes the heart to damage, endangering the life of the palm;***
- ***contributes to loss of food and shelter for wildlife.***

Cabbage Palms

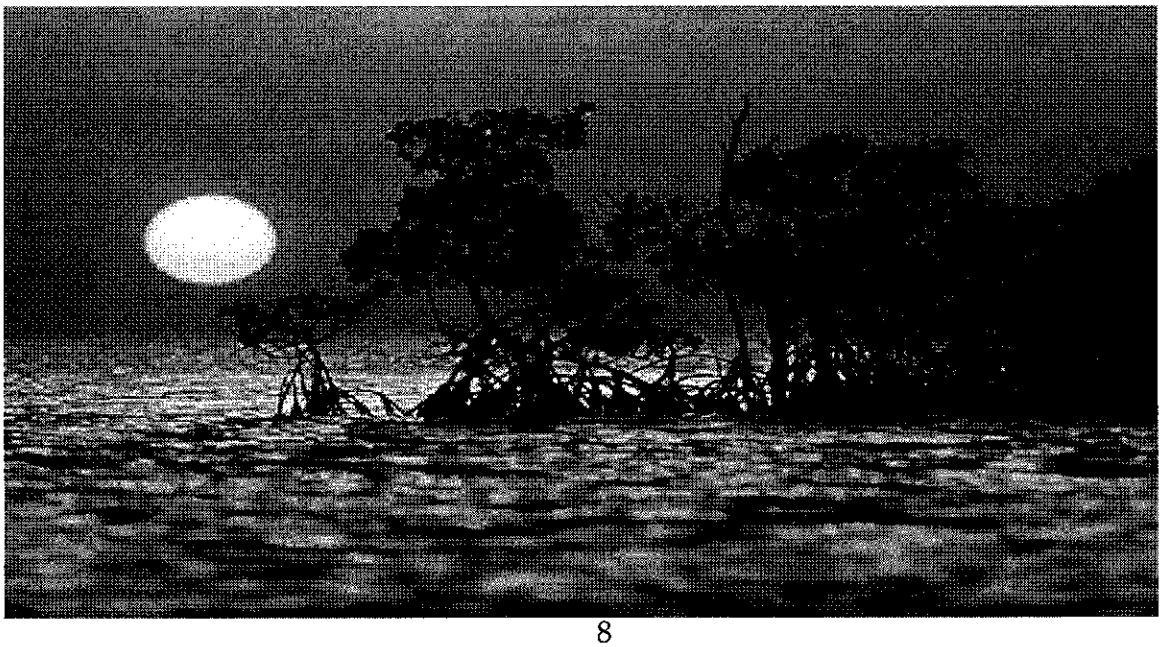
Mangroves grow in tropical and sub-tropical tidelands and are vital to the ecology of Florida. Both the State of Florida and the City of Sanibel recognize the importance of mangroves and have established laws for their protection. The State of Florida has delegated authority to the City of Sanibel to regulate the trimming and alteration (any action other than trimming) of mangroves on the Island. ***Notification to the City of Sanibel is always required before any action involving mangroves. Inspection by the City's Natural Resources staff, before and after trimming mangroves, ensures the law is being correctly interpreted and applied.***

Three species of mangroves occur in Florida. Listed in order of species distribution from the wettest (red) to the driest (white) habitat are: red mangrove (*Rhizophora mangle),* black mangrove (*Avicennia germinans),* and white mangrove (*Laguncularia racemosa).*

Mangroves are extremely valuable because:

- ***They provide essential habitat for more than 80% of the juvenile fin-fish and shellfish that are sought by commercial and sports fishermen;***
- ***Their decomposing leaves and detritus are the basis of the marine food chain and account almost entirely for an estuary's productivity;***
- ***They block wind and wave energy during storms and stabilize soil with their roots, protecting upland property;***
- ***They improve water quality through uptake of nutrients;***
- ***Herons, egrets, and other wading birds, use them for roosting and nesting sites.***

Information on "Mangrove Trimming and Preservation" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 38, Sections 38-31 to 38-113.



Landscaping for Wildlife

Homeowners are encouraged to become aware of the joy and benefits of "landscaping for wildlife". Planting a variety of natives can provide year-round food, shelter, and nesting areas for resident and migratory birds, butterflies, mammals, and reptiles. Native habitat, in the absence of pesticides, encourages wildlife diversity - a contribution to the sanctuary spirit of the Island.

Sanibel-Captiva Conservation Foundation (SCCF) members are entitled to a one-time *free* staff landscape visit that includes personalized advice and suggestions. Throughout the year, the SCCF Native Plant Nursery staff are invaluable resources for information and plant identification.

Vegetation Standards for Native Plants

Native vegetation is protected by City of Sanibel law (Sanibel Code, Chapter 122, Section 122-102).

It is important to be aware of the City's vegetation standards and to understand that their purpose is to preserve and protect the natural qualities of this Island as described in the Sanibel Plan. They also strive to protect native vegetation from improper management or harmful landscaping practices.

Following are several City vegetation standards that apply to native plants.

- ***A permit is required to remove or transplant native trees over 6 feet in height, or more than 2 inches in trunk diameter 2 feet above the ground, or native shrub-like plants that are more than 2 feet in height.***

- ***Prior to construction, property owners are required to transplant or replace all good quality native plants growing within the approved development footprint.***

- ***For new or substantially improved properties, the City requires that at least 75% by count within each category, of all in-ground trees, shrubs, and ground covers be native species. The remaining 25% can be non-invasive exotic species. Landscaping of property seaward of the 1974 Coastal Construction Control Line (CCCL or the Gulf Beach Zone) shall involve only the use of native plants. Coconut palms (Cocos nucifera), however, may be planted in this zone.***

- ***To allow native plants to develop to maturity and provide food and habitat for wildlife, the City requires that pruning be limited to 25% of the leaf area in any one year.***

Note: *Native invasive vines* such as coin vine, morning glory, nickerbean, Virginia creeper, white vine, and love vine (also known as dodder) may be removed by the homeowner without a permit.

A complete description of the City of Sanibel's vegetation policies and standards can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 122.
For further questions on vegetation standards, call the Natural Resources Department, 472-3700 or the Planning Department, 472-4136.

EXOTIC (NON-NATIVE) PLANTS

Non-native or "exotic" plants, used primarily for landscaping and agriculture, have been introduced to Florida since the first Europeans arrived in the 16th century. Some of these exotics sold in the landscaping trade are not naturally adapted to our climate or soil conditions. These plants might demand excessive water, fertilizer, and pest control in order to thrive on our barrier Island.

The Sanibel Code does allow non-invasive exotics to be used within the 25% non-native landscaping allowance.

Invasive Exotic Plants

Over the years, exotic plants introduced to Florida have escaped cultivation and have invaded coastal plant communities on barrier islands as well as wetlands and forests on the mainland. When introduced to a new location, lacking the limiting factors of their own native habitat, they can quickly become pests, invading disturbed sites and natural areas where they crowd out native plants. This, in turn, negatively affects wildlife and disrupts the natural ecological processes of the area.

Unfortunately, nearly 40 of these plant species are growing on Sanibel. The City and conservation land managers continue to remove them from Sanibel's natural areas. ***In an effort to reduce and eventually eliminate the spread of the "worst offenders" from the Island, the City of Sanibel has enacted legislation regulating certain invasive exotic pest plant species. These species are not permitted to be intentionally planted, transplanted, or otherwise introduced in any way on Sanibel.***

Currently, Sanibel prohibits the following eight invasive plants:

1. **Brazilian pepper** *(Schinus terebinthefolius)*
2. **Melaleuca / Punk tree** *(Melaleuca quinquenervia)*
3. **Earleaf acacia** *(Acacia auriculiformis)*
4. **Java plum** *(Syzygium cumini)*
5. **Scaevola / Exotic inkberry** *(Scaevola taccada)*
6. **Lead tree** *(Leucaena leucocephala)*
7. **Mother in-Law's tongue / Bowstring hemp / Snake plant** *(Sansevieria hyacinthoides)*
8. **Air potato** *(Dioscorea bulbifera)*

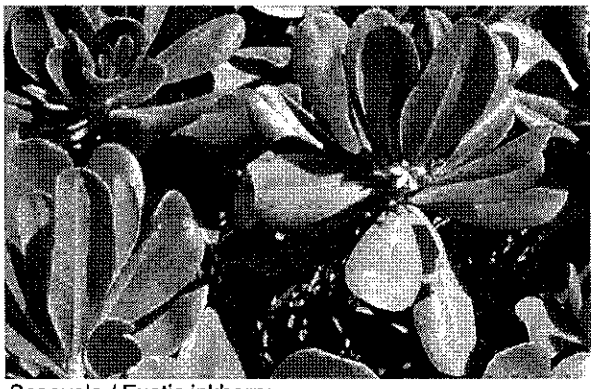
"Certain Vegetation Prohibited" by the City of Sanibel can be accessed at www.mysanibel.com. Click City Codes, Chapter 38, Section 38-1.

The Eight Invasive Exotic Plants Prohibited on Sanibel

Air potato

Brazilian pepper

Lead tree


Scaevola / Exotic inkberry

Earleaf acacia

Melaleuca

Java plum

Sanseveria / Mother-in-law tongue

Vegetation Standards for Invasive Exotic Plants

The purpose of the following regulations is to safeguard native vegetation and identify any protected active wildlife habitats occurring on properties.

- *Sanibel law prohibits the planting or transplanting of the eight invasive plants listed on page 10. Note: The Australian pine (Casuarina sp.) is designated as a non-native invasive species by the State of Florida and may not be planted anywhere in the state.*

- *When applying for a development permit, a vegetation plan for the parcel must be included; identifying any of the invasive exotic species listed on page 10, and a plan for their removal. Elimination of invasives is to be completed before issuance of a Certificate of Occupancy. Thereafter, a homeowner is required to maintain the property free of these plants in perpetuity.*

- *Hand removal of invasive exotic vegetation on developed property does not require a vegetation permit. On undeveloped property, limited hand clearing of exotic vegetation is allowed without a permit, but only to provide access to the property and to accommodate staking of proposed development.*

- *Mechanical removal of exotic vegetation always requires a development permit and a vegetation permit.*

Information on "Required Removal of Exotic Invasive Vegetation" can be accessed at www.mysanibel.com. Click City Codes, Chapter 122, Sections 122-191 to 122-192.

Brazilian Pepper Eradication Program

The City of Sanibel has mandated that invasive exotic Brazilian pepper be eradicated from the Island. Sanibel's program is implemented using the City's Brazilian pepper eradication map that sections the Island into six zones. Homeowners living in the zone up for **mandatory** eradication are notified and expected within a 90-day period to have eradicated all Brazilian pepper. There is an on-going follow-up City program to check for regrowth or new growth.

Homeowners are responsible for keeping their property free of invasive Brazilian pepper.

Additional information on the "Brazilian Pepper Eradication Program" can be accessed at www.mysanibel.com. Click City Codes, Chapter 14, Sections 14-291 to 14-298.

For further questions, call the Natural Resources Department at 472-3700.

Australian Pines

Australian pines (Casuarina sp.) are designated invasive exotic plants by the State of Florida, and may not be propagated, sold, planted, or transplanted within the state. Shallow-rooted Australian pines seed themselves readily on disturbed land and beaches, creating a monoculture that significantly limits and stunts the growth of healthy native vegetation.

In 2004, Australian pines, blown over by Hurricane Charley, wreaked havoc with Sanibel's roadways, water lines, phone, and cable transmission lines. The City removed many remaining pines on public property that were deemed a threat to public or quasi-public infrastructure. In 2007, City Council passed an ordinance (06-021) allowing owners to keep pines on private property if they pose no danger to public safety or infrastructure.

Additional information on "Existing Australian Pines" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 30, Sections 30-121 to 30-127.

Other Exotic Vegetation

There are also undesirable exotic plants that the City recommends not be used in landscaping.

Some examples are:
Carrotwood *(Cupaniopsis anacardiodes)*
Cuban laurel *(Ficus retusa "Nitida")*
Mahoe / Sea hibiscus *(Hibiscus tillaceus)*
Mexican petunia *(Ruellia brittonia)*
Umbrella tree *(Schefflera actinophylla)*
Wandering Jew *(Tradescantia zebrina)*
Wedelia *(Wedelia trilobata)*

The Florida Exotic Pest Plant Council (FLEPPC) was founded in Florida in 1984. FLEPPC goals are directed toward:

- building public awareness about the serious threat invasive exotic plants pose to native ecosystems;
- securing funding and support for control and management of exotic pest plants;
- developing integrated management and control methods to prevent the spread of exotic pest plants throughout the United States.

According to FLEPPC, invasive exotic plants are biological pollutants that wipe out more natural habitat every year than development.

FLEPPC lists invasive species in two categories:

Category 1. those that are invading and disrupting native plant communities in Florida;
Category 2. those that have a potential to do so.

A complete list of Florida's invasive exotic plants may be found on the FLEPPC website at *www.fleppc.org*.

COASTAL CONSTRUCTION CONTROL LINE (CCCL)
GULF BEACH ZONE

The original Coastal Construction Control Line (CCCL) was established by the state Department of Natural Resources (DNR) in 1974 to limit construction too close to the water as well as to define and facilitate protection of Florida's coastal beaches. ***This line is used in the Sanibel Comprehensive Land Use Plan and Land Development Code to define the land seaward of it (CCCL) as the Gulf Beach Zone.***

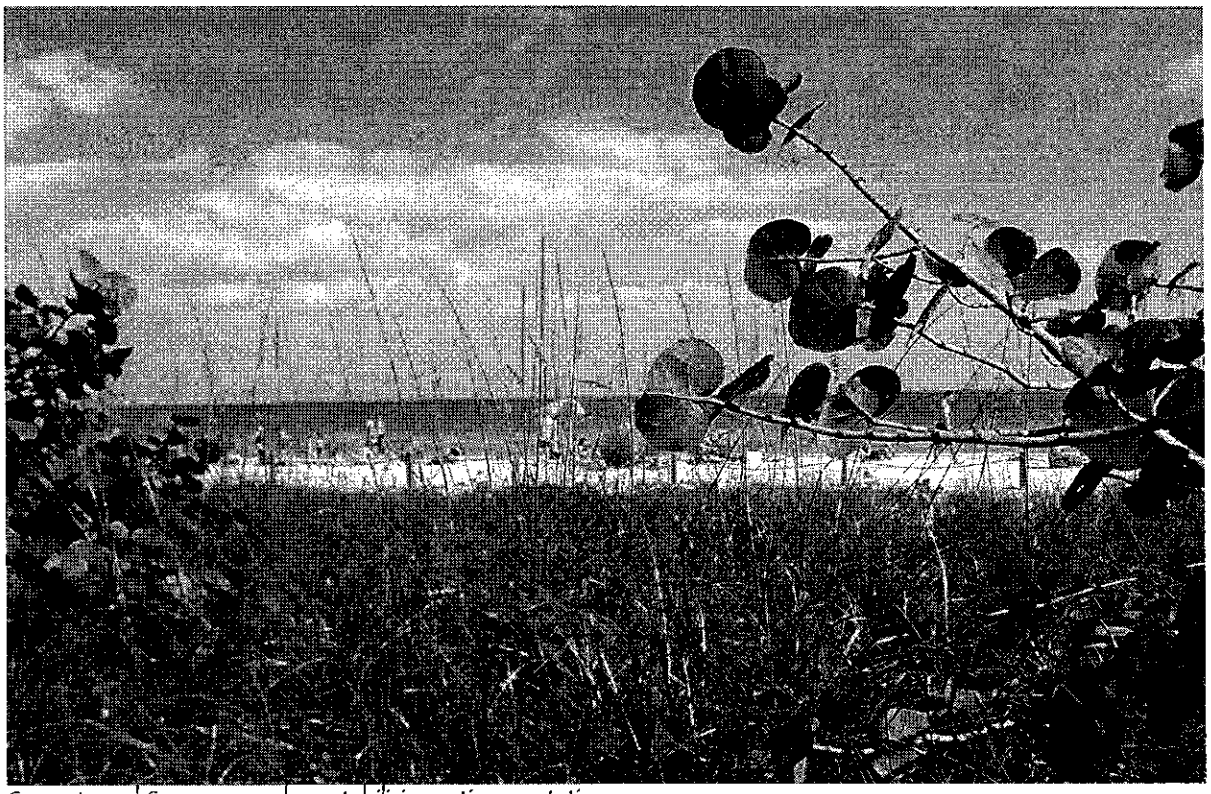
The only new structures allowed seaward of the CCCL are elevated dune walkways. Their use is encouraged because they lessen the likelihood of disturbing vegetation in this very sensitive area. A building permit is required to construct a walkway.

The Importance of Native Vegetation and Beach Erosion Control
Vegetation Standards to Protect Native Plants in the Gulf Beach Zone

The native dune plant community stabilizes the dynamic area seaward of the CCCL. Human disturbance in this area must be minimized to protect the public interest. ***Vegetation permits are required for transplanting, removing, or trimming any vegetation seaward of the 1974 CCCL,*** and will be subject to the following requirements:

- ***Removal or permanent destruction of native species is prohibited.***
- ***Only native vegetation, with the exception of the coconut palm, shall be planted seaward of the CCCL.***
- ***Trimming of native dune species should not reduce the overall height of the individual plant to less than 4 feet above the ground and should not remove more than 25% of the leaf area of any individual plant in any one year.***
- ***Trimming for height reduction of the following native species is not permitted:*** **Joewood (*Jacquinia keyensis*), Sea oats (*Uniola paniculata*), Bay cedar (*Suriana maritima*),** *and* **Cabbage palm (*Sabal palmetto*)**
- ***Stump removal is not permitted as this loosens the soil and causes erosion. Instead, stumps should be cut to ground level and poisoned to prevent regrowth. Refer to the Herbicide table on page 21 for the most effective product.***
- ***If Australian pines are to be removed, a revegetation plan using natives, suitable for dune planting must be submitted with the permit application. Revegetation will reduce soil movement caused by action of the wind or water.***

Information on "The Area Seaward of the 1974 Coastal Construction Control Line (CCCL or Gulf Beach Zone)" may be accessed at *www.mysanibel.com*. Click City Codes, Chapter 122, Section 122-170.



Sea oats and Seagrapes - dune stabilizing native vegetation

Australian pines in the Gulf Beach Zone

- On the beach, Australian pines can form dense masses of trees and seedlings just inches apart. Because of the Island's high water table, these large trees' roots are extremely shallow and prone to uprooting in hurricane conditions. Their shallow root systems also can entangle nesting sea turtles.

- Needles, dropping from these trees, form a thick blanket that significantly limits and stunts the growth of healthy native vegetation. This affects the wildlife that could benefit from food and habitat provided by displaced native plants.

- Replacing the pines with a substantial native vegetation buffer is Sanibel's best mitigation against the destruction of a storm surge. Remember; do not remove the stump because it will loosen the sand and cause erosion.

Native species suitable as a replacement for the pines or for general planting seaward of the 1974 CCCL are sea oats, native inkberry, golden creeper, bay cedar, seagrape, cabbage palm, buttonwood, marsh elder, and palmetto. Coconut palms may also be planted in addition to required native vegetation.

Information on dune landscaping can be obtained from the City's Natural Resources Department, 472-3700 and SCCF Native Plant Nursery, 3333 SanCap Road, 472-1932.

Information on "Existing Australian Pines" may be accessed at *www.mysanibel.com*. Click City Codes, Chapter 30, Sections 30-121 to 30-127.

SOIL, COMPOST, MULCH, AND SOD

Soil

We live on a barrier island that is made up of limestone, sand, and shell. The soil pH is high (alkaline) and there is no practical or feasible way of lowering it. Therefore, we recommend that residents choose plants accordingly, remembering that native plants tend to tolerate this harsh pH. When planting your landscape, be aware that different areas in your yard could have different soils because of fill. Select plants that are compatible with your growing conditions (i.e. sunshine, shade, wetland, upland). Amending the soil with organic matter such as compost and organic mulch will, over time, enhance the nutritive value of the soil.

Compost

Sanibel residents may compost. A closed container should be used, as Sanibel has a large raccoon/rodent population, and open-air composting will contribute to the problem. Several companies carry cylindrical closed containers that are easily turned for mixing. Worm-bed systems also work nicely and do not need to be turned because the earthworms do the work for you. Remember to keep either system elevated to prevent ants and flooding from heavy summer rains. Both systems are odorless and beneficial for controlling waste. Kitchen scraps, coffee grounds, shredded paper, and yard waste can be incorporated. As the composting breaks these elements down, beneficial organic matter left behind will make a healthier yard.

Mulch

Mulch is a very important ingredient for a healthy landscape, especially in Florida. It is recommended that a 3 inch to 4 inch layer of organic mulch be applied to your planting areas, leaving trunks of trees and shrubs exposed.

Mulching:

- buffers the soil temperature around roots of trees and shrubs;
- prevents water loss by evaporation;
- improves water filtration;
- prevents erosion;
- suppresses weeds;
- builds better soil structure from organic matter decomposition.

Environmentally Friendly Mulches:

Product	Description
Eucalyptus	currently a renewable resource raised on plantations, inhibits germination of weeds
Melaleuca	called "Florimulch", available at SCCF Native Plant Nursery, inhibits germination of weeds, termites do not eat it (U of F research)
Pine Bark	by-product of forestry industry
Pine Straw (Pine Needles)	from pine plantations where it is raked and baled, high in nutrients, inhibits germination of seeds, **Do not use in drought conditions**
Australian pine	Australian pine
City of Sanibel mulch	free, shredded trimmings from Sanibel roadways and shared use paths, high in nutrients, available at the recycling area across from the library (Dunlop Rd), might contain seeds of non-native plants

A note on cypress mulch: Cypress trees are among Florida's most impressive trees. They are members of the same family that includes the famed California redwoods and giant sequoias. The bald cypress and pond cypress exhibit a similar grandeur that is renowned in Florida and throughout much of the deep southeast. ***Instead of cypress, consider using any of the eco-friendly mulches.*** Melaleuca trees, for example, are very invasive in Florida. Turning this tree into mulch (Florimulch) helps rid the state of a terrible pest plant.

Sod

Whenever feasible, minimizing the amount of sod is recommended. Landscape choices that reduce the use of fertilizers, pesticides, and herbicides decrease pollution in our interior wetlands, canals, bayous, and surrounding waters. Consider a native ground cover or mulch as an alternative to sod.

The Sanibel Code limits the amount of sod that may be planted on your property. Contact the Planning Department (472-3900) for specific limitations.

Product	Drought Tolerance	Salt Tolerance	Shade Tolerance	Maintenance Levels	Uses
Bahia	excellent	very poor	poor	low	lawns, roadsides
Seashore Paspalum	good	excellent	poor	medium	lawns, golf course

A Sanibel Island motto," MOW WHAT GROWS," is another option.

FERTILIZERS, PESTICIDES, AND HERBICIDES

Fertilizers

In recent years, nutrient concentrations in the waters surrounding Sanibel have risen dramatically. These excess nutrients have resulted in massive algae blooms that have covered our seagrasses and blanketed our beaches. The result: our ecology, economy, and way of life are at risk.

The City of Sanibel is committed to reducing nutrient pollution in area waters. This is a challenging task. Massive freshwater releases from Lake Okeechobee, agriculture and urban development along the Caloosahatchee River, poorly maintained septic systems, and discharges from freshwater treatment plants all contribute nutrients to our local watershed.

Nutrients also come from sources closer to home. Studies have found that on a per acre basis, American homeowners use ten times more chemical fertilizers and pesticides than farmers use on agricultural land. According to the Florida Department of Agriculture and Consumer Services, the sale of residential fertilizer in the Caloosahatchee region increased 62% from 2003 to 2006.

Although run-off from residential property is not the only source of excess nutrients in our local waters, a commitment to reducing our personal contribution to pollution by adhering to the 2007 City fertilizer regulations is an important step in improving our water quality.

Sanibel's 2007 Fertilizer Ordinance 07-003 and Amendment 07-012
A Brief Summary

For those who choose to fertilize, the Ordinance requires the use of slow release nitrogen and low phosphorus fertilizers.

October 1st through June 30th, the following conditions apply to fertilizer use:

<u>Content:</u>

Nitrogen

- ***Total Nitrogen = 20% or less AND***
- ***Slow Release Nitrogen = 50% or more***

Phosphorus

- ***Total Phosphorus = 2% or less***

<u>Application:</u>

- ***Up to 1 pound of nitrogen per 1000 square feet per application***
- ***Up to 4 pounds of nitrogen per 1000 square feet per year***
- ***Up to 6 applications per year***

Fertilizers containing nitrogen and phosphorus CANNOT:

- *be applied during the rainy season (July 1 through September 30);*
- *be applied within 25 feet of a water body;*
- *be applied to impervious (hard) surfaces, such as roads, driveways, and sidewalks;*
- *be dumped into a storm drain.*

Remember, any chemical or non-natural material that is applied to any part of exterior property has the potential to create run-off into surrounding waterways, affecting the water quality. We can make positive changes to lessen our negative impacts by eliminating or reducing the chemicals that we use in our yards.

City properties are "fertilizer-free". Imagine the improvements we can experience when our entire community supports this program.

Important Note to Homeowners Using Commercial Landscaping or Fertilizing Services

If applying fertilizers, all persons for hire (maintenance, landscape, and pest control companies) are required to possess a Vegetation Competency Card and Fertilizer Endorsement. If you hire a commercial applicator, be sure the contractor is City licensed. A list of licensed contractors is available at *www.mysanibel.com*. Click Departments, Building, Licensed Contractors.

Ask to see a current Vegetation Competency Card *and* Fertilizer Endorsement.
At least one certified person must be present, on site, when fertilizers are being applied.

Be aware of and responsible for activities occurring in your yard.

Sanibel's fertilizer information website is www.sanibelh2omatters.com/fertilizer.

For additional information regarding Sanibel's fertilizer ordinance, contact the Natural Resources Department at 472-3700.

Pesticides

There are many methods of pest control that are non-toxic and organically derived. *Before applying any treatment, first identify the pest, and then use the appropriate measure for control.*

Organic Pest Control

Product	Use
Boric acid products (such as Terro)	To control sugar ants and roaches
Diatomaceous Earth	To control insects such as fleas and ants, best used outdoors (do not breathe)
Dipel Dust	To control caterpillars and web worms, Make sure you are not treating desirable butterfly or moth species
Insecticidal Soap (such as Concern)	To control insects such as aphids, mealy bugs, and scale on ornamental plants
Neem	To control insects such as aphids, mealy bugs, and scale on ornamental plants
Sulfur	To control rust, powdery mildew, and spider mites
Tri-Die	To control carpenter ants and wasps, good for spraying into cracks and crevices
Amdro	To control fire ants, carefully follow directions, use the very small recommended dose
Rat Traps Owl Nesting Boxes	To control rats Rats are a favorite prey of owls

Other organic solutions are available from native plant nurseries.

Herbicides

It is best to plan your landscape so that weeds are not encouraged and herbicide use is kept to a minimum. Weeds tend to grow in areas with bare soil, ample amounts of sunlight, and moist conditions. Eliminating any of these three factors will help reduce the amount of unwanted weeds. First, plant your areas densely enough to limit the amount of sunlight. Choose drought tolerant species in order to reduce your watering requirements, and therefore the amount of water that gets to weeds. Also, mulch regularly to help smother out any weeds. Monitor your landscape closely, and hand pull any weedy areas before they have a chance to establish, set seed, and spread further.

Herbicides may be required when an area needs to be cleared (for future planting) and when removing invasive species. ***Be sure to use the right product for the job. Keep in mind that federal law requires that all herbicides be applied according to the label.***

Product	Use
Roundup	To kill weeds and grass in dry upland areas
Rodeo	To kill weeds and grass in wetland areas
Brush-B-Gone (7% Garlon)	To kill non-native "woody" shrubs and small trees
Garlon 4 or Remedy	To kill **difficult**, non-native invasive trees or woody shrubs such as Australian pine, Mahoe, or Brazilian pepper, available at Forestry Resources, (332-3966), sold in large quantities, expensive, recommend using professional applicator, immediately paint solution on fresh-cut stump

When removing invasive plants, follow-up monitoring and treatment is crucial when striving to prevent regrowth.
Note: Individuals sensitive to poison ivy might be sensitive to Brazilian pepper.

For information on disposal of unused pesticides and herbicides, refer to the Hazardous Waste Disposal section (page 46) of this handbook.

VEGETATION PERMITS

A Vegetation permit is required:

- ***To obtain a development permit;***
- ***For removal or transplanting of native trees over 6 feet in height, or more than 2 inches in trunk diameter 2 feet above the ground, or for native shrub-like plants that are more than 2 feet in height. The Natural Resources Department (472-3700) should be notified before removal of any dead or diseased native plants - this is for the homeowner's protection;***
- ***For removal or trimming of any vegetation seaward of the 1974 Coastal Construction Control Line (CCCL);***
- ***For trimming or alteration of mangroves;***
- ***For all removal of invasive exotic vegetation by use of <u>mechanical</u> equipment or from <u>undeveloped</u> property by <u>hand held</u> equipment;***
- ***For chemical control of aquatic plants (cattails can be cleared by hand without a permit);***
- ***For pruning or trimming of more than 25% of the leaf area of any native tree or shrub over 6 feet in height, or 2 or more inches in diameter at 2 feet or more above the ground.***

Information on "Vegetation Permits" can be accessed at *<u>www.mysanibel.com</u>*. Click City Codes, Chapter 122, Sections 122-141 to 122-150.

VEGETATION CONTRACTORS

Sanibel Code requires all vegetation contractors or persons hired to plant, transplant, prune, trim, or remove plants to have a current Competency Card. Those applying fertilizer must also have a Fertilizer Endorsement.

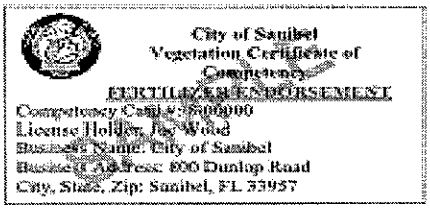
An applicant for a Competency Card and Fertilizer Endorsement must pass both a written test covering the vegetation and fertilizer requirements in the Sanibel Code and a field test consisting of native plant identification. Members of the City of Sanibel Vegetation Committee administer quarterly classes and tests. Contractors are required to renew their Competency Cards annually and be retested every five years.

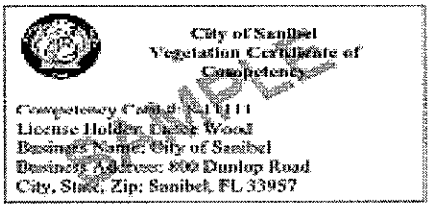
Homeowners are ultimately responsible for violations of vegetation standards occurring on their property.

Questions about vegetation standards, vegetation permits, and Competency Card and Fertilizer Endorsement should be directed to the City of Sanibel Planning Department at 472-4136 or the Natural Resources Department at 472-3700.

A current listing of licensed vegetation contractors and fertilizer applicators holding valid Competency Cards and Fertilizer Endorsements is available at the Building Department, City Hall, 800 Dunlop Rd., or accessed at *www.mysanibel.com*. Click Departments, Building, Licensed Contractors.

Information on "Vegetation Contractors" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 14, Sections 14-146 to 14-166.





WILDLIFE

on Sanibel, A Sanctuary Island

The value of wildlife in our daily lives is immeasurable.
Viewing wildlife excites our senses and
connects us with the natural world.

Bobcaton SCCF Porch

Learn, Understand, Appreciate, and Protect

"When one tugs at a single thing in nature,
he finds that it is attached to the rest of the world."

Observe, admire, marvel, and photograph wildlife from a respectful distance. Please do not feed or harass any Island wildlife!

Feeding wild animals alters their instinctive behavior and results in loss of their natural fear of humans. Ultimately, this behavior might create an unnecessary and dangerous encounter for someone in the future. Those who feed wildlife are at risk of being bitten and possibly exposed to rabies. Sadly, there is always the danger of mutilation and/or death from larger wildlife such as alligators.

Conversely, wild animals can also be at risk when we choose to feed them. Their natural protective instinct becomes diminished, making them a more vulnerable creature, a nuisance, or an aggressive threat to humans. The simple singular act of a human tossing "only a tidbit," multiplied many times over can eventually lead to potentially tragic consequences for some wild animals. Aggressive behavior caused by human feeding can lead to the destruction of the alligator by a Florida state trapper.

BIRDS

Sanibel is both a paradise for birds and a bird lovers' paradise! Two-thirds of the Island is designated conservation land, making it prime habitat for birds. Many species, both common and rare, are found on Sanibel and Captiva. These include:

- Wading birds - herons, egrets, spoonbills, storks, and ibises
- Shorebirds - gulls, terns, skimmers, plovers, ruddy turnstones, willets, dowitchers, dunlins, sanderlings, and sandpipers
- Water birds - anhingas, cormorants, pelicans, and ducks
- Raptors - eagles, ospreys, hawks, and vultures.
- Woodpeckers and perching birds

The Island's wide variety of habitats supports a large and diverse bird population. Our resident birds, along with numerous species that over-winter here, provide a rich and rewarding bird-watching experience. Sunrise, sunset, or periods of low tide are usually the best times to see the most birds.

Habitat loss and decline in habitat quality are major factors affecting birds, especially coastal species and species that rely on freshwater wetlands. Conservation of land on Sanibel is, therefore, very important for the protection of both migrant and resident populations. Because many migratory birds are small and fly great distances, they are under particular stress as they try to rest and refuel prior to continuing their journey. Please maintain a respectful distance when viewing or photographing them.

Note: Cats are a threat to wild birds. It is important to make sure cats remain indoors.

Hand feeding wild birds is prohibited on Sanibel and is subject to a $50 fine. More information can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 10, Section 10-9.

Snowy Plover Nesting

Snowy plovers (Charadrius alexandrinus) are among the rarest nesting birds in Florida. With fewer than 200 nesting pairs from the Gulf Coast of Mississippi, Alabama, and down through South- west Florida, Sanibel Island is an important nesting beach for these birds. The birds are rare due, in large part, to disturbance and development of their beach nesting areas.

Snowy plovers are on Sanibel year round. Research has shown that survivorship during the non-nesting season, when food resources are more scarce, is as important to the species' continued existence as during the nesting season.

Each year, starting in February, males begin to establish territories along the beach. Females come soon after and ***nesting begins in March.*** Because they rely on cryptic coloration (camouflage) to hide from predators, both the birds and their nests are very difficult to see.

These birds use the high beach for nesting; therefore, limit your activities to the lower part of the beach. Avoid flying kites on the beach during nesting season. Birds view these as predators and will flee the area. Keep your dog on a short leash at all times and keep clear of posted nesting areas. Snowy plover chicks are small, can be anywhere on the beach, and very difficult to see. Your dog can quickly kill one without you even noticing.

Do not feed birds on the beach. Gulls and crows are the top avian predators of nesting shorebirds. By feeding them, you attract more predators to the beach and increase the likelihood that a plover chick will be spotted.

Enjoy Sanibel's birds, always maintaining a respectful distance.

Information on "Protection of Wildlife Nesting Sites and Nesting Activities" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 74, Section 74-182.

Snowy Plover and chicks

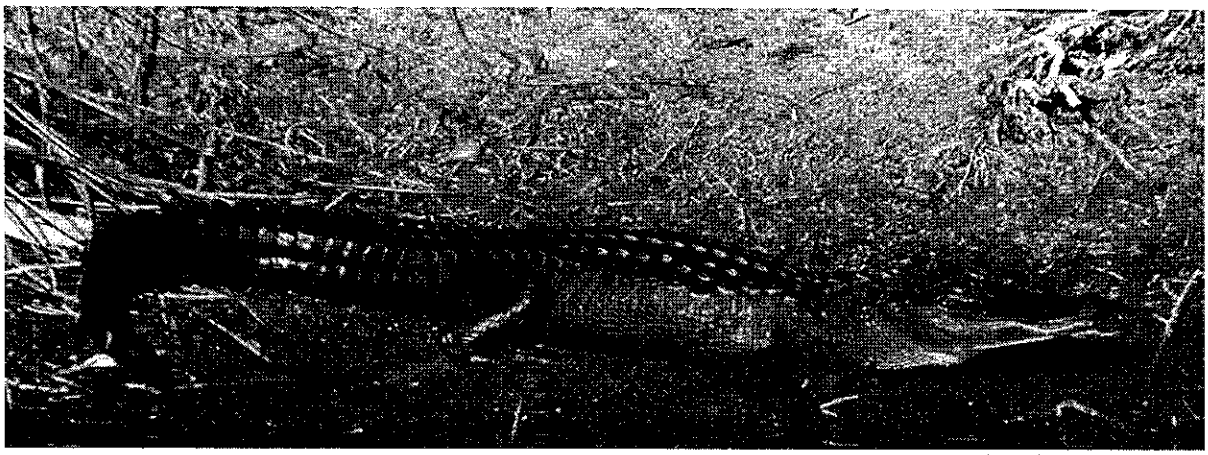


Photo by Paul Duval

ALLIGATORS

The alligator was designated Florida's State Reptile in 1987.

Alligators (*Alligator mississippiensis*), naturally shy and retiring, are one of the most interesting and valuable of our wildlife species. They patrol and protect bird rookeries from marauding raccoons and snakes, and depressions alligators make on the bank provide rare "watering holes" for other animals during periods of dry weather.

On Sanibel, alligators can be residents of a particular body of water or can migrate from one body of water to another, especially in drought conditions. Though alligators' short legs tend to limit their movement on land, they are capable of extremely quick speeds over short distances and can actually jump 6 feet into the air from a resting position. In the water, their long undulating tails make them very fast swimmers. They are capable of staying submerged up to twenty minutes.

Alligators can be found in any body of freshwater, including swimming pools. Anyone who feeds an alligator or allows children or pets to play unattended near alligator habitats is contributing to a potential tragedy.

Never attempt to touch or feed an alligator. An alligator accustomed to being fed by people loses its natural fear of humans and is more likely to aggressively approach people for food. Even the smallest one is capable of inflicting a serious bite. Remember, a baby alligator should not be approached either, as its mother is never far away.

Binoculars are the safest way to observe alligators; approaching closer than 20 feet is risky.

If you see someone feeding or harassing an alligator, or if you encounter an aggressive or nuisance alligator, immediately call the Sanibel Police at 472-3111. Any molesting or feeding of alligators is against the law anywhere in Florida and can incur a fine of up to $500.

Additional information on "Feeding Alligators" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 10, Section 10-7.

FOR THE SAFETY OF HUMANS AND THE SURVIVAL OF ALLIGATORS ON SANIBEL, WE MUST STOP EVERYONE FROM FEEDING THEM.

City of Sanibel Alligator Policy

Sanibel Island had a viable alligator population, without incident, for many years. In August 2004, following four alligator attacks in 36 months, two being fatalities, the City of Sanibel realigned its policy to mirror the State of Florida nuisance alligator program.

Nuisance alligators on Sanibel are defined, consistent with the State of Florida, to include:

- Large alligators in residential and commercial areas;
- Large alligators that make residents feel unsafe;
- Large alligators located in public areas or areas of high pedestrian traffic;
- Alligators in situations of close proximity with children.

Procedure for reporting an alligator complaint:

Call the Sanibel Police Department at 472-3111 to report an aggressive or nuisance alligator.

Procedure for official response and possible action:

Police are sent to the location to talk with the complainant, assess the situation, and make a determination as to the fate of the alligator according to the following policies:

- Contracted Florida state trappers will destroy alligators, of any length, deemed aggressive by the police.

- Contracted Florida state trappers will remove and destroy alligators, ***over*** 4 ***feet in length,*** deemed a ***nuisance*** by the police, according to the above standards.

- ***Non-nuisance*** alligators, ***up to 4 feet in length,*** can be relocated to conservation areas.

TORTOISES AND TURTLES

Gopher Tortoises

The gopher tortoise (*Gopherus polyhemus*) is a fascinating and gentle creature with a life expectancy of over 60 years. In the state of Florida, gopher tortoises are listed as a "threatened species". Of every 100 eggs laid, it is estimated that only 1-3 survive to the adult breeding stage.

Gopher tortoises dig and live in burrows that can extend 20 to 30 feet in length. These burrows are shared by many other animals, making the ecosystem of the gopher hole an important contribution to the diversity found on Sanibel. Opossums, rabbits, rodents, snakes and the gopher frog are a few of the co-habitants.

Disturbing gopher tortoises or their burrows is prohibited.

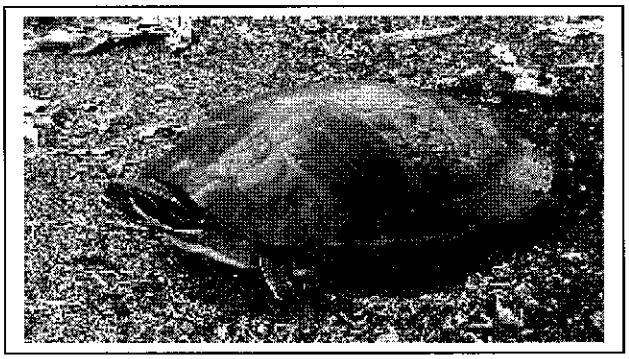
Like all tortoises, gopher tortoises are **LAND** reptiles. On Sanibel, tortoise burrows can be found on almost any upland area, although, the largest concentrations of tortoises now are on conservation lands. They also live on coastal dunes. This proximity to water causes some people to assume they are sea turtles. The gopher tortoise **CANNOT** swim. They do not have flippers but, instead, have flattened fore-limbs with claws. **NEVER** try to take them to the water.

Gopher tortoise

The Florida box turtle is another land turtle that can be found on Sanibel.

Information on the "Protection of Gopher Tortoises and Other Turtles" can be accessed at www.mysanibel.com. Click City Codes, Chapter 10, Section 10-6.

Fresh-Water Turtles



Penisula cooter

There are several species of fresh-water turtles on Sanibel. The 2008 SCCF turtle census includes the peninsula cooter, Florida redbelly, yellowbelly slider, and striped mud turtle. Although these turtles are not dangerous, it is best to be cautious. If frightened, they could potentially nip a finger. Also included on the list are the Florida snapping turtle and the Florida soft-shell turtle. Both are capable of inflicting a more serious bite. ***All turtles on Sanibel are protected.***

Sea Turtles

Adult sea turtles can grow to more than 3 feet long and weigh between 250 and 400 pounds. Sea turtles live their entire life in the water except when the female comes ashore to lay eggs. Female loggerheads (*Caretta caretta*) emerge at night to lay from 50 to 175 leathery, ping-pong-ball-sized eggs. The eggs will hatch 55 to 60 days later. Two inch long hatchlings, weighing less than 1 ounce, emerge from the nest at night and use the light of the horizon to orient themselves to the water. ***The annual sea turtle nesting season is May 1st to October 31st.***

Following are ways to help make the nesting season successful.

- ***KEEP LIGHT NEAR THE BEACHES OFF or shielded May through October. Artificial lighting confuses nesting females and hatchlings. Disoriented by lights, baby sea turtles wander away from the water and die.***

- ***KEEP THE BEACH AND WATER FREE OF LITTER. Eating balloons, plastic bags, and Styrofoam they mistake for food has caused sea turtle deaths.***

- ***PARENTS, DURING NESTING SEASON, PLEASE HAVE CHILDREN FILL IN LARGE SAND PITS AT THE END OF THE DAY (This is a great teaching opportunity). Females finding their path obstructed might fail to nest. Hatchlings, who fall into these pits on their way to the water, become stranded and vulnerable to predators.***

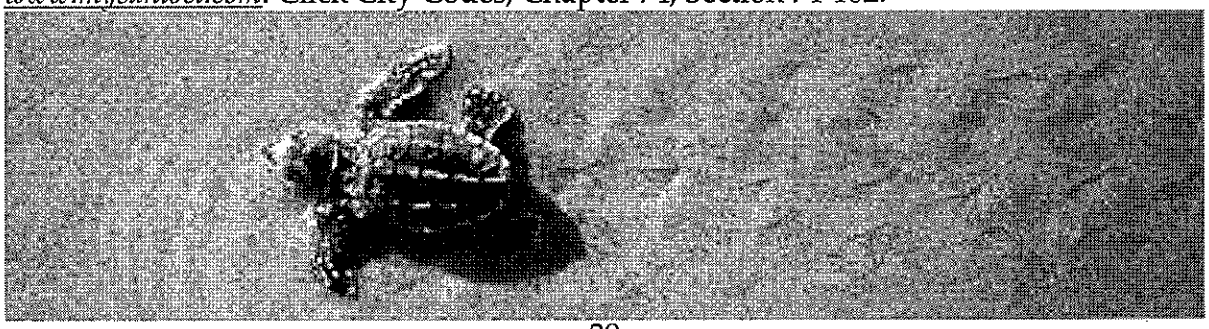
- ***BRING IN ALL FURNITURE AND EQUIPMENT WHEN YOU LEAVE THE BEACH. The Sanibel Code requires this between 9 p.m. and 7 a.m., as it might entangle nesting females or hatchlings.***

- ***GIVE NESTING FEMALES ROOM, DARKNESS, AND QUIET. It is illegal to disturb nesting turtles with lights or noise.***

- ***HONOR THE LAW. All dogs on the beach must be on a leash and cannot be allowed to disturb nesting sea turtles or hatchlings.***

- ***IF YOU FIND LOST HATCHLINGS, place them in the shade, in a container with moist sand in the bottom. Call the Sanibel-Captiva Conservation Foundation (SCCF) at 472-2329 and a qualified volunteer will pick up the turtles.***

Information on "Protection of Nesting Sea Turtles" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 74, Section 74-182.



EXOTIC LIZARDS

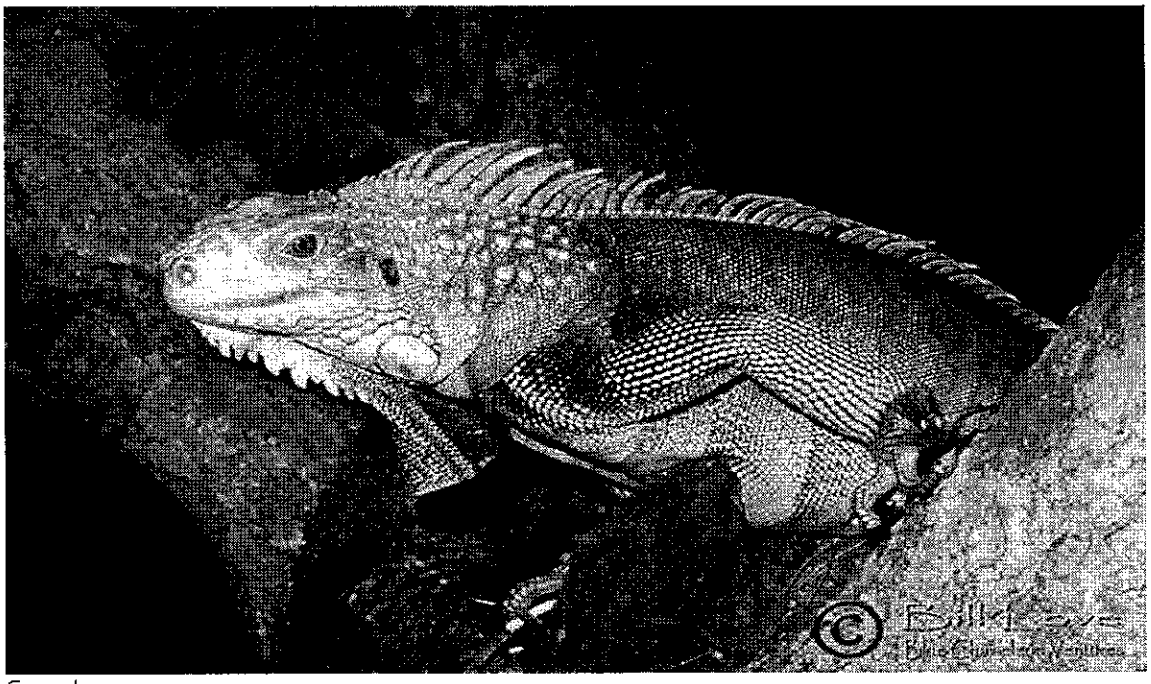
Several species of exotic lizards are present on Sanibel. They are often released by overwhelmed pet owners unwilling to care for them as they grow larger. As exotic animals, they do not have the natural predator-prey relationships that native species do, so their populations tend to grow unchecked.

Green Iguanas

Full-grown green iguanas (*Iguana iguana*) are usually between 4 and 6 feet long, including the tail, which can make up half the body length. Adult coloration varies from green to brown, red, and even orange. They have a spiny crest on their neck and back, and males have a loose hanging flap of skin under their chin called a "dewlap". They have a high reproductive rate, with a single clutch producing 65 eggs. The incubation time for the eggs is about 12-16 weeks.

Green iguanas eat the leaves, flowers, and fruits of a variety of landscape plants. In addition to destroying landscaping efforts, iguanas also cause problems by digging nesting burrows. When it comes time to lay eggs, female green iguanas dig burrows several meters long in the dirt. After the eggs are laid, the female closes up the burrow and does not return. Green iguanas may also dig false burrows to deter predators.

Adult iguanas spend most of their time above ground in trees, overhanging salt or freshwater sources, so when threatened can dive into the water and swim swiftly away.



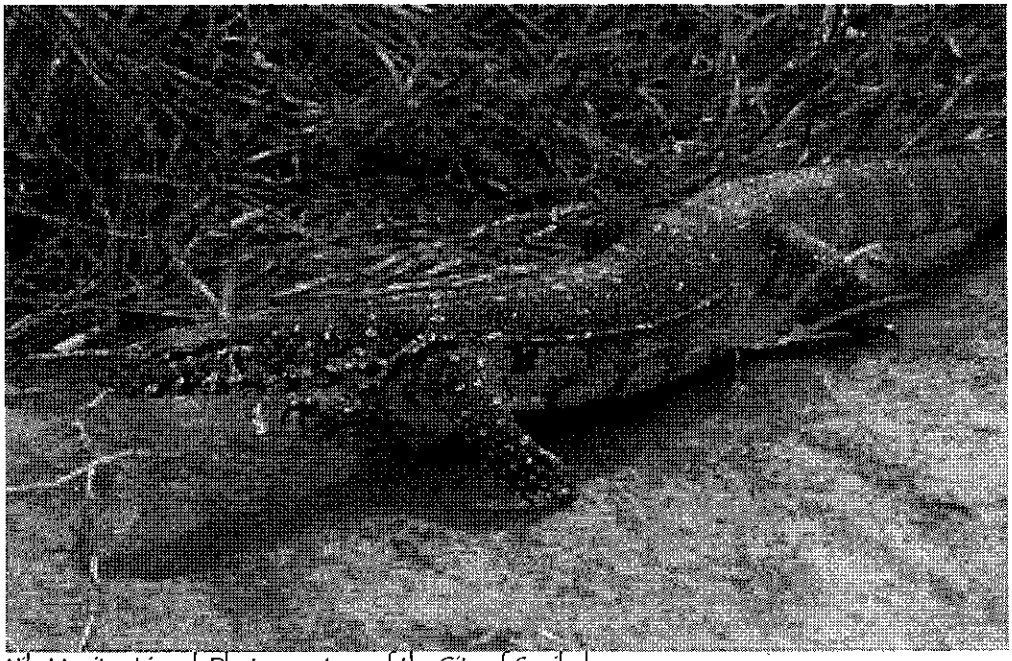
Green Iguana

Nile Monitor Lizards

The Nile monitor lizard (Varanus niloticus) is a voracious predator that represents a severe risk to native wildlife species. Native to Africa, it can reach lengths upward of 7 feet and is capable of moving great distances on land and in the water. The Nile monitors are easily distinguishable from green iguanas by their elongated head and lack of a spiny crest and dorsal spine. The Nile monitor has a blue-purple forked tongue that darts in and out of its mouth when the lizard is in motion.

These animals live and reproduce in burrows in the ground, generally near canals or other waterways. The lizards may excavate a new burrow or overtake the burrow of another animal, such as a gopher tortoise. They are extremely good swimmers.

The Nile monitor is an omnivorous predator and will eat snails, clams, crabs, fish, amphibians, reptiles, and mammals. A major danger for Sanibel is the lizard's particular fondness for eggs, including those of birds, gopher tortoises, sea turtles, and alligators. Their expert climbing skills allow them to invade bird rookeries and completely destroy nests. One of the greatest concerns is that they have a very high reproductive rate, laying an average of 60 eggs per clutch. This exotic species threatens the population balance of wildlife on Sanibel.



Nile Monitor Lizard, Photo courtesy of the City of Sanibel

The City of Sanibel has launched an exotic lizard management program. Citizens are requested to report all green iguana and Nile monitor lizard sightings, 24 hours a day, seven days a week, to the Sanibel Police Department at their non-emergency number 472-3111. Unless there is an imminent threat to human safety, DO NOT call 911.

For more information regarding exotic lizards, please contact the Natural Resources Department at 472-3700.

FLORIDA BOBCATS

The bobcat (*Lynx rufus floridanus*) is a warm-blooded, solitary, and territorial predator mammal. It is one of two species of felines that can currently be found in wild Florida. The other species is the Florida panther. Not as big as panthers, bobcats usually weigh less than 30 pounds, comparable to a medium sized dog. Generally, Florida bobcats are easily identified by their short tails. However, Sanibel bobcats typically have longer tails and are taller and darker in color. Their fur is short, soft, and dense. Its color is brown with black spots and bars most visible along the sides and legs. The backs of their ears are white with black outlines. Their undersides are generally white.

Bobcats can be extremely active, although are reclusive and not often seen. Normally, an average bobcat in Florida sticks to a territory between five and six square miles. Because Sanibel is a barrier island, a smaller territory area for bobcats here seems likely. Primarily hunting at night, they track down rabbits, rats, other small mammals, and small birds.

Currently, due to its abundance in Florida, the bobcat is not listed as endangered or threatened, but central to the dynamics of species extinction is the loss or fragmentation of habitat. Fortunately, Sanibel is ideal habitat for the bobcat because of the large amount of protected natural environment available. This promotes necessary prey densities and offers protective cover for den-sites, when foraging, and during severe weather.

Bobcat and kitten, Photo courtesy of SCCF

SNAKES

It is best to leave snakes alone. Whether venomous or non-venomous, snakes will bite when feeling threatened. Their striking range is 1/3 to 1/2 of their body length.

The non-venomous snakes found on Sanibel are the yellow rat snake, corn snake, southern black racer, eastern coachwhip, southern ringneck snake, Florida brown snake, peninsula ribbon snake, Florida water snake, mangrove water snake, and the non-native brahminy blind snake. The eastern indigo snake, last seen on Sanibel in 1999, is also non-venomous and is a federally protected species.

Sanibel has two venomous snakes. They are the eastern diamondback rattler, last seen on the Island in 1996, and the coral snake which is also extremely rare.

RACCOONS

Although raccoons (Procyon lotor) might be entertaining to watch, they can carry rabies and are capable of spreading canine distemper. Feeding them is dangerous and can be costly. Intentional feeding, or providing any situation which encourages raccoons to feed on garbage, is prohibited and can incur a fine of up to $500, provided a written warning has been issued for the same violation within the year.

The City of Sanibel Code Enforcement regularly monitors dumpsters throughout the City for violations.

Humans share some responsibility for raccoons' increase in population and nuisance behavior on Sanibel. Residents can help by making certain garbage cans are securely covered (a bungee cord over the lid from handle to handle works well). Condos and restaurants are encouraged to latch and secure dumpster lids on their property. Let's be part of the solution instead of the problem.

Information on "Feeding of Raccoons Prohibited; Penalties" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 10, Section 10-8.

MANATEES AND DOLPHINS

Manatees and dolphins are not actually Sanibel wildlife, but they do live and swim in our surrounding waters. They are exciting to spot in the water and fascinating to watch. There are simple but important ways we can help protect these marine mammals. The single best practice is to minimize our human impact.

Manatees

The gentle-natured Florida manatee (*Trichechus manatus latirostris*) is an endangered marine mammal, native to Florida, and found in rivers, estuaries, and inshore coastal areas where they feed on seagrasses and other aquatic vegetation. While the manatee is among Florida's most recognizable and popular native inhabitant, it is also one of the most imperiled. Its low reproductive rate, combined with loss of habitat and high rates of mortality (often from human causes), threaten the manatees' survival.

Please, do not feed them or provide fresh water for them. It can prove harmful, make them less wary of humans, and will diminish their natural protective behavior.

Unfortunately, these slow moving mammals continue to be injured by boat propellers and by impact with boats.
Boaters, wear polarized glasses. It will be easier to see objects beneath the water's surface. Observe the posted boating speed zones that are mandated by law to protect manatees in their sanctuaries. The Sanibel Police Marine Unit enforces minimum wake zones, designated by a ring of white plastic buoys around Sanibel Island.

Divers, remember, you are entering the manatees' habitat. Be respectful. Snorkel gear is less frightening to the animals than scuba gear. Look, but don't touch, don't pursue, and don't feed wild manatees, as it encourages dependence on humans.

The Marine Mammal Protection Act of 1972, the Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act of 1978 protect manatees. To report a stranded or dead manatee, call the Fish and Wildlife Commission at 1-(888) 404-3922.

Bottlenose Dolphins

Bottlenose dolphins (*Tursiops truncatus*), for their protection and yours, should also be admired from a distance. They have a reputation for being friendly, but are wild animals, which should be treated with caution and respect. In addition to losing their natural wariness, which creates dangerous situations for them, interactions with people change the behavior of wild dolphins for the worse.

Feeding wild dolphins disrupts their social groups, threatening their ability to survive in the wild. Truly wild dolphins will bite when they are angry, frustrated, or afraid, and may become disturbed when people try to swim with them. Dolphins who have become "career moochers" can get pushy, aggressive, and threatening when they do not get the handout they expect.

It is always best to let wild animals stay wild. Do not feed, swim with, or harass wild dolphins. They are also protected under the Marine Mammal Protection Act. Observe and enjoy them from a distance of at least 50 yards.

OTHER WILDLIFE

Sanibel is home to a diverse array of fauna. Numerous species of butterflies, moths, and dragonflies can be seen on the Island; many are permanent residents and others migrants. Sanibel is also home to a diverse group of mammals. Otters, marsh rabbits, opossums, and bats reside here, as do Sanibel rice rats, Sanibel cotton rats, and non-native black rats, to name only a few. During the wet season, you can hear a chorus of green tree frogs, pig frogs, squirrel tree frogs, southern leopard frogs and narrow mouth toads. Cuban tree frogs, a non-native species, join in. Sanibel is home to several other exotic species of wildlife including the Cuban brown anole, the green iguana, and the banded armadillo.

BIRD AND ANIMAL RESCUE

Keep a towel, gloves, a ventilated carrying container, and Clinic for the Rehabilitation of Wildlife (CROW's) address and phone number in your car for unanticipated rescues.

The first step in the rescue of injured or orphaned wildlife is capture. Remember birds and wild animals are easily frightened and might attack once cornered so, most importantly, protect yourself.

Never give injured birds or animals food or water.

If you need help with rescue instructions, the actual rescue itself, or transporting the injured animal to CROW, please call CROW at 472-3644, Ext #1, 8 a.m. to 5 p.m., 7 days a week.

FISHING HAZARDS TO BIRDS

Birds do not need fish scraps or bait to survive. The bones in a fish carcass can be dangerous to birds. Keep bait covered.

Watch where you cast. Cast netting is not allowed from the Sanibel fishing pier. It is allowed at the beach.

For safety reasons, fishing poles must be attended. If keeping fish on a stringer, attach a large egg sinker at the end to keep the fish out of the birds' reach.

Discard waste and fishing line properly. The State of Florida and the City of Sanibel prohibit the disposal of monofilament fishing line in the water. The City of Sanibel also prohibits the disposal of fishing line on beaches, public parks, and recreation areas. There are monofilament recycling receptacles along Wildlife Drive in the J.N."Ding" Darling National Wildlife Refuge and at the Sanibel fishing pier on the east end of the Island. The Bait Box (1041 Periwinkle Way) will also accept used monofilament for recycling.

Information on "Proper Disposal of Monofilament Fishing Line" can be accessed at *www.mysanibel.com*. Click City Codes, Chapter 30, Section 30-40.

Rescue Tips For Hooked Birds

If you should accidentally hook a bird while fishing or encounter a hooked bird:

- *DO NOT IMMEDIATELY CUT THE LINE AND LET THE BIRD GO.* The line remaining can become tangled in mangroves, rocks, or trees, preventing the bird from being able to move or eat.

- *DO NOT ATTEMPT TO REMOVE THE HOOK.* Hooks can cause tremendous damage to the soft tissue of birds, and over time may cause death from infection.

- Reel the bird in slowly.

- In a boat, use a landing net and boat the bird.

- If on a pier, gently walk the bird to shore.

- Cover the bird's head with a shirt or towel. When a bird cannot see, it will stop struggling and become calm.

- For pelicans, egrets, or herons, hold the middle of the bill with one hand and place your other arm over the bird's back and around its wings. Do not hold their bills too tightly closed. Shore birds, especially pelicans, have tiny nostrils and need to breathe through their mouths when under duress. It may take more than one person to help with the bird.

- After the bird has been captured, to ensure the CROW medical staff can find the point of injury, cut the line, if the bird is not entangled, leaving at least 12 inches remaining. If the bird is entangled, do not try to remove monofilament from wings, legs, and body, unless it is after hours at CROW.

- Place the bird in a **ventilated container** (recycling bin, cardboard box). The animal should not be able to see out. To decrease the chance of life-threatening stress, minimize noise and movement. ***DO NOT offer any food or water. Feeding or giving water to a dehydrated or injured animal can be fatal.*** Bring the bird to CROW, 3883 Sanibel Captiva Road, as quickly as possible. If the rescue occurs after CROW has closed for the day, keep the bird in the container overnight, and bring it to CROW at 8 a.m. the next morning.

CROW - CLINIC FOR THE REHABILITATION OF WILDLIFE

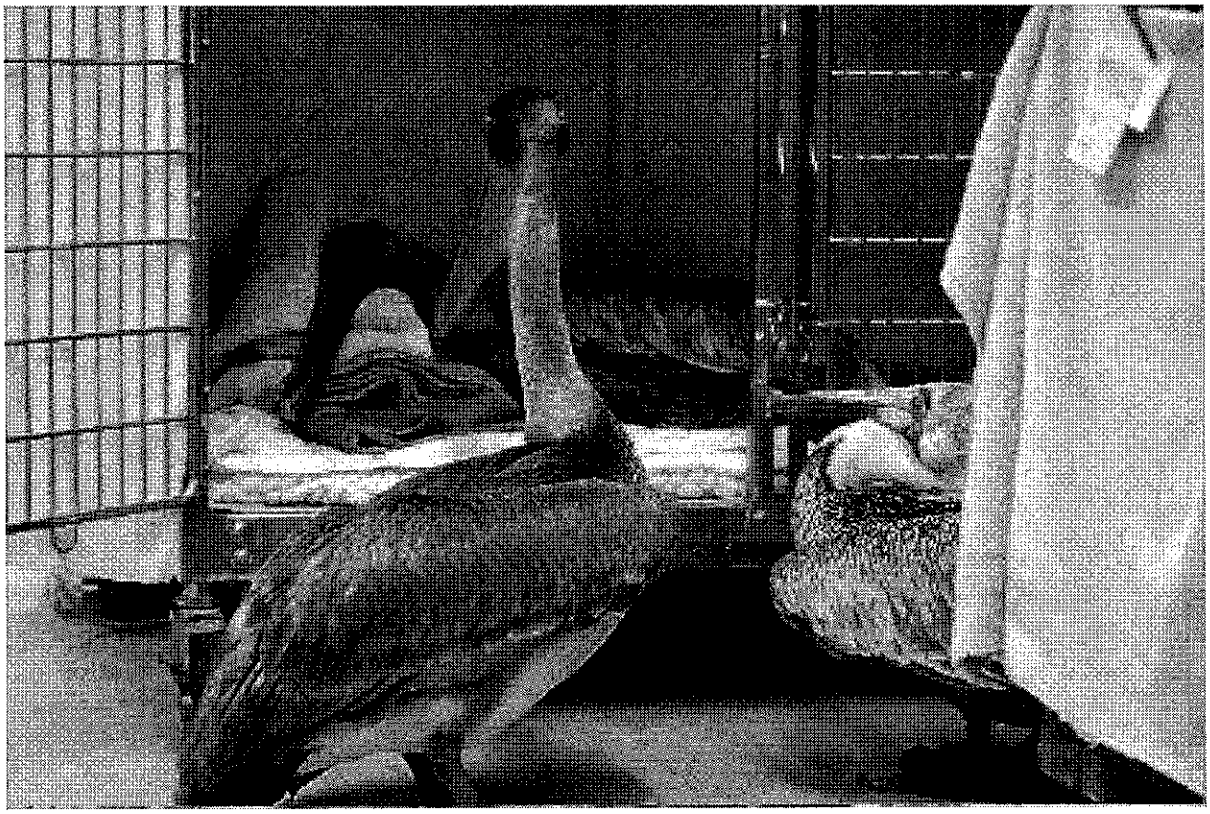
CROW'S mission is the rescue, rehabilitation, and eventual release back to the wild of sick, injured, and orphaned native and migratory wildlife. Inherent in this mission is the education of the public, stressing the importance of minimizing human interference and living in harmony with our wildlife.

Under the direction of two full-time veterinarians, CROW's staff provides high quality medical care to nearly 4000 patients annually, representing 170 different species. The medical care incorporates both western and eastern modalities such as surgery, acupuncture, proper nutrition, herbal supplements, and physical therapy.

Between 80% and 90% of trauma experienced by wildlife is a direct result of interaction with humans. An important part of the CROW mission is to increase public awareness of the perils to which wildlife is subjected in the face of continued land development and human population growth and activity.

CROW seeks to prevent these environmental hazards through a variety of educational programs designed to help us respect and protect our native wildlife populations and to preserve the delicate balance required by the habitat they must share.

If you find wildlife in distress, please call 472-3644. CROW, located at 3883 SanCap Road, is open 365 days a year and can receive patients between the hours of 8 a.m. and 5 p.m.



CROW'S Wildlife Tips

Do:

- Drive at or below the speed limit and keep an eye out for wild animals crossing the road. Automobiles are the leading cause of wildlife deaths.

- If you hit an animal in your car, stop and bring it to CROW. Put a towel over its head to calm the animal.

- Fish responsibly. Clean up all loose fishing line and hooks so wildlife does not become entangled in it. Be careful when casting not to hook a bird.

- Use safe alternatives to pesticides, rodenticides, and herbicides.

- Place bird feeders at a safe distance from windows and cats.

- Use native plants in landscaping to provide authentic habitat for wildlife.

Don't:

- Don't pick up baby animals. Many are not orphans. Call CROW first to discuss the situation.

- Don't feed wild animals.

- If you rescue an injured animal, don't give it food or water.

- If you come across an injured animal, don't delay. A quick response can mean the difference between life and death.

BEACHES

on Sanibel, A Sanctuary Island

A healthy coastal ecosystem supports
dune stabilizing plants, small mammals, live shells,
sea turtles, and shorebirds.

Lighthouse Beach

Humans are part of the natural world -
our contribution can be the responsible
stewardship of our natural resources.

ETHICAL BEACH BEHAVIOR FOR HEALTHY WILDLIFE AND HEALTHY BEACHES

Beautiful beaches normally receive high levels of recreational activity. Balancing use and protection of resources is critical for the process that protects wildlife and habitats while ensuring an enjoyable experience for residents and visitors. Positive human experiences can foster an appreciation for our beaches as a resource. Our goal in this section is to contribute to that appreciation by adding to and reinforcing your understanding of why certain beach behaviors are harmful.

- **Respecting Birds and Their Beach Habitat**

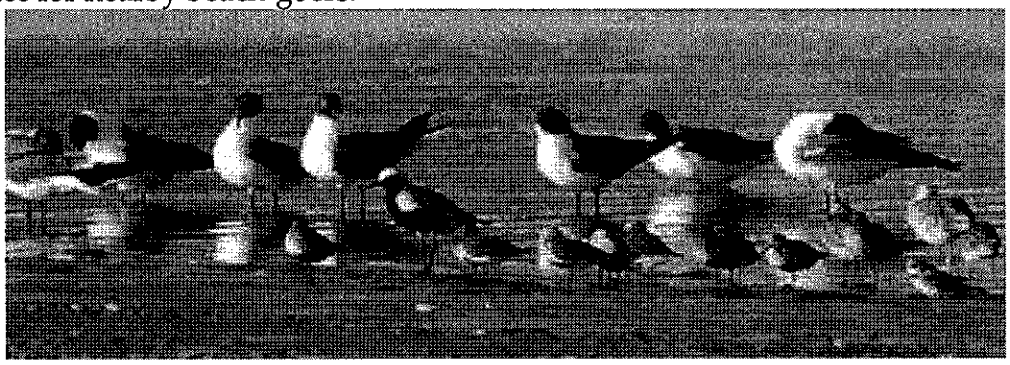
Sanibel has resident shorebirds, but there are others that use our beaches as stopover areas during migration. These birds need to "refuel" their energy. ***Flushing shorebirds (causing them to fly) wastes precious energy needed to survive migration. Please give shorebirds a wide berth. Observe and enjoy them from a distance.***

Beach nesting birds need quiet, protected areas for their eggs and chicks. Disturbing nesting birds leaves eggs exposed to sun and chicks exposed to gulls and other opportunistic predators.

- **Feeding Pelicans and Shorebirds**

Feeding birds might seem harmless enough, until you know the facts. Pelicans are designed to swallow *small* fish. Attempts to swallow large fish or large fish parts, which can puncture the stomach and intestines, can be fatal. Pelicans that have learned to associate human activity with food are more likely to attempt to steal baited hooks.

When shorebirds become dependent on people for food, their diets can be severely altered, which might lead to poor health. Offspring of birds that beg learn to beg instead of developing normal skills for obtaining food. Feeding seagulls, a prime example of the most common beggars, quickly attracts more gulls and creates a major nuisance for nearby beach-goers.



- **Dune Vegetation and Organic Beach Debris**

The stabilizing effect of dune vegetation is so critical for maintenance of the dunes that this vegetation is protected by Sanibel law (City Codes, Chapter 122, Section 122-170). Avoid trampling or picking dune vegetation, and please use established dune walkovers and trails.

Normal organic beach debris is a food source for wildlife. Grooming or raking the beach is not allowed.

- **Doggie Dont's**

The City allows us the privilege of walking our dogs on Sanibel beaches. Common sense, personal responsibility, and adherence to the rules will protect this privilege. Dogs are usually playful fun-loving animals, but shorebirds and beach nesting birds see approaching unleashed dogs as predators. Relaxing or picnicking humans might not appreciate unwanted dog visits either. Leaving unsightly dog waste is inconsiderate, unhealthy, and contributes to water pollution. It is not difficult to imagine that too many complaints logged with Code Enforcement might one day cause a "No Dogs Allowed" ordinance to be drafted.

Therefore, please control and keep dogs on a leash (under 8 feet) when on the beach. Common sense tells us that a 20-30 foot retractable lead could still pose problems. Always clean up after your dog.

- **Beach Furniture and Equipment**

Storage of beach equipment (chairs, umbrellas, tents, boats, toys, etc.) is not allowed on the sensitive dune area, and only on the rest of the beach during daylight hours. ***This equipment must be moved and stored off the beach between 9 p.m. and 7 a.m.***

- **Trash and Monofilament**

Beach litter, especially plastics, can be harmful to marine life. Plastic bags resemble jellyfish which are an important food source for sea turtles. Monofilament fishing line is perhaps one of the most ecologically destructive trash products regularly disposed of in coastal waters. Manatees, sea turtles, dolphins, sea birds, and fish all can become entangled. Many die. Please, properly dispose of trash and monofilament in a covered container. Monofilament recycling tubes are available along Wildlife Drive in the J.N. "Ding" Darling National Wildlife Refuge and at the Lighthouse fishing pier.

- **Fireworks**

For the protection of wildlife, fireworks are prohibited on the beach and throughout the Island.

Information on "Destruction or Diminishment of the Beach or Dune System" can be accessed at www.mysanibel.com. Click City Codes, Chapter 74, Section 74-182.

BEACH WILDLIFE NESTING PROGRAMS

The Sanibel-Captiva Conservation Foundation (SCCF) educates, monitors, and collects data annually on beach nesting programs for sea turtles and snowy plovers.
The sea turtle nesting season is May 1st through October 31st. Loggerhead turtles will lay 50 to 175 eggs that will hatch 55 to 60 days later. Complete information can be found in the sea turtle section of this handbook (page 29).

The snowy plovers begin nesting in March. Nests have been found on Sanibel beaches into the first part of August. Complete information can be found in the snowy plover nesting section of this handbook (page 25).

Throughout both seasons, volunteers patrol the entire beach daily to identify any new nesting. A likely nest will be verified and then staked off. Explanatory signage is attached for the publics' information.

SHELLING

Live shells are an important part of the coastal food web. Shorebirds depend on them for food. Often, live shells are found near the tide line and are an easy pick for beach walkers. Sanibel's beaches receive thousands of visitors each year, so the cumulative effects of live shelling could cast a heavy toll on this important biological and economic asset.

For that reason, in the late 1980s, the City petitioned the Florida Marine Fisheries Commission (MFC) to restrict live shelling. As a result, the MFC passed a special Sanibel Shelling Rule restricting live shell collection to two specimens of any one species per person per day. ***In 1993, Sanibel was the first city in Florida to petition the MFC to establish a complete ban on live shelling. The new rule was approved and went into effect January 1, 1995.***

Since then, all Sanibel beaches and near-shore waters (up to one-half mile from shore) are protected by the Florida Department of Environmental Protection Rule 46-26 that prohibits the harvest and possession of live shellfish. Sand dollars, sea stars (starfish), and sea urchins are also protected. All shelling is prohibited within the waters of the J.N. "Ding" Darling National Wildlife Refuge.

Some live species, such as olives, horse conchs, and others that live close to the shore, can be temporarily beached. If you are in doubt about a shell's viability, and there are soft parts present in the shell, consider it alive. If a bivalve is closed tightly, it is alive. Although possibly in distress, they are still protected. Returning them to the water will likely save most to produce future generations.

Empty, or seemingly empty, shells play another role - hermit crabs use them as homes. Since these invertebrates cannot secrete their own shell, they must find larger and larger empty shells as they continue to grow. Be aware that hermit crabs retreat into the shell when disturbed, so look closely before assuming the shell is abandoned.

Enjoy your shelling and the natural beauty surrounding you. Protecting our live shell populations today will allow others who follow that same enjoyment.

In January 2002, the Florida Fish and Wildlife Conservation Commission approved the Lee County Commission proposed ban on the collection of live shells within Lee County.

CONSERVATION

on Sanibel, A Sanctuary Island

Appreciating and living an environmentally ethical lifestyle is not a moral-superiority issue; it is simply an awareness issue.

Youth in the City 's summer recreation program help with SCCF's beach revegetation project

Lifestyles that incorporate ecological awareness help preserve our environment.

WATER CONSERVATION

Water conservation is an issue of increasing importance. The relationship between gulf and fresh water in the coastal zone is delicate. In these areas, freshwater resources are easily depleted by overuse and degraded by pollution. When groundwater, the major supplier of fresh-water in most coastal areas, is exhausted or overdrawn, there is a risk of saltwater intrusion into the aquifers.

As Florida continues to expand development, fueled by the continuing growth in population, its fresh-water resource is compromised. It has been shown that landscape irrigation water consumes over 50% of all the potable water available. Over the next decade, water use and distribution will become a leading environmental issue in Florida.

The Island Water Association, Inc. (IWA) is a non-profit, member-owned water utility that produces the drinking water for Sanibel and Captiva. Reverse osmosis treatment is used to produce potable water (fit for drinking) from brackish water (slightly salty or briny). The source of the water is a series of wells that draw from the Suwannee and Lower Hawthorne aquifers.

Reclaimed or reused water is a nutrient-rich product of a biological treatment system. It is produced at the City of Sanibel's Donax Water Reclamation Facility and can be used for irrigation of lawns, golf courses, and ornamental gardens only. It is available on a limited basis and only where existing transmission pipes are nearby.

When dry conditions exist, the South Florida Water Management District (SFWMD) can institute water use restrictions. Households on private wells or a surface water supply (such as a lake or pond) might also be subject to restrictions.

These restrictions are subject to change by the SFWMD. Visit their website at www.sfwmd.gov/conserve for up-to-date information.

Water Wise Tips:

- Know your irrigation system. Know how many zones it has, how the timers work, and what the watering schedule is. Turn it off when the summer rains arrive.

- Irrigation timers should be adjusted as temperatures and rainfall fluctuate. Florida law requires that all new irrigation systems have sensors. A sensor ensures that your system doesn't irrigate when it is raining. For older systems, a sensor called a "Mini-Clic" can be added. It is available at the Island Water Association, 3651 Sanibel-Captiva Road, 472-1502. Wireless rain sensors are available at irrigation supply companies.

- Install irrigation devices that are the most efficient for each use. Micro and drip irrigation and soaker hoses are examples. While voluntary reduction is encouraged, drip, bubble, and micro-jet systems can be used any time without restrictions.

- Sprinklers work best in turf areas. Turf requires no more than one inch of water each week, and shrubs even less. Less water makes the root system stronger as it goes deeper looking for water. Sprinkler heads should be checked regularly for clogs, direction of spray, and head damage. In bedded areas of trees, shrubs, and ground covers, a bubbler or drip system is more efficient.

- The Mobile Irrigation Laboratory Evaluation Program, funded by South Florida Water Management District (SFWMD) and operated by Collier Soil and Water Conservation District and Natural Resources Conservation Service, offers a *free* field observation at your residence to determine the uniformity and efficiency of the irrigation system. The staff will provide written recommendations for enhancing your landscape and conserving water. Call 995-5678 for an appointment.

- Native plants, once established, require less water than exotics.

- Water only when needed (grass blades will fold up when they are under stress; new growth on other plants will droop when water is needed).

- Use mulch (non-cypress) to retain moisture in the soil and control weeds that compete with plants for water.

- Operate automatic dishwashers and washing machines when they are fully loaded or set the level for the size load you are washing.

- Check your water meter reading to make sure your home is leak free.

- Replace your showerheads with an ultra low-flow version.

- Retrofit household faucets by installing aerators with flow restrictors.

- Turn off the tap as you brush your teeth or shave.

- Replace old toilets with new water-saving models.

RECYCLING

The City of Sanibel's recycling program provides green plastic bins to homeowners for weekly pick-up at residences. Glass bottles and jars, metal cans, aluminum foil, plastics numbered 1-7 (on the bottom of container within the recycle symbol), newspapers, magazines, junk mail, brown paper shopping bags, phone books, and light cardboard are accepted. Styrofoam is not accepted. Certain supermarkets will recycle Styrofoam and plastic shopping bags.

Recycling materials are also accepted at the City of Sanibel's recycling center located opposite the Sanibel library on Dunlop Road. Several local organizations, such as Noah's Ark or Goodwill, recycle wearable used clothing and household articles. Used automotive oil, transmission fluid, and auto/boat batteries may be dropped off at the Sanibel Shell station at 2435 Periwinkle Way. Out-of-date prescriptions and over-the-counter medicines can be brought to Island Pharmacy at 2330 Palm Ridge Road for recycling.

Alkaline batteries purchased after 1993 are non-hazardous and can be thrown into your normal garbage. Ni-cad, lithium, button-cell, pre 1993 alkaline batteries, computer and camcorder batteries should be put in a clear plastic zip-lock bag and placed *beside* your recycling bin on waste pick up day (the City of Sanibel contracts with Waste Pro for Island pick-up).

HAZARDOUS WASTE DISPOSAL

Hazardous waste that poses a substantial or potential threat to public health and the environment generally exhibits one or more of these characteristics:

- ignitability
- corrosiveness
- reactivity
- toxicity

Household items that are categorized as hazardous waste include motor oil, gasoline, brake fluid, paint, paint thinner, solvents, pool chemicals, rechargeable batteries, and lawn and garden chemicals. Used fluorescent lighting contains mercury and should be disposed of as hazardous waste.

Buy yard chemicals in the size you need for the job to be done. Do not stockpile chemicals that could be released into the environment during a tidal surge.

Lee County Solid Waste Division operates a permanent Household Chemical Waste Facility located at 6441 Topaz Court, Fort Myers. The hours are 8 a.m. to 5 p.m., Monday through Friday. Sanibel residents are urged to use this facility to dispose of any hazardous materials. The City of Sanibel, in addition, holds an annual Household Hazardous Waste Collection Day on the Island.

For additional information, contact Lee County Solid Waste at 533-8000 or visit their website at *www.leegov.com/solidwaste*.

ORGANIZATIONS

J.N. "Ding" Darling National Wildlife Refuge

In 1945, the Sanibel National Wildlife Refuge was established to safeguard and enhance the pristine wildlife habitat on Sanibel Island, protect endangered and threatened species, and provide feeding, nesting, and roosting areas for migratory birds. In 1967, it was renamed to honor Jay Norwood "Ding" Darling, a political cartoonist, conservationist, and one of the original advocates for the creation of the Refuge.

The Refuge protects over 6,400 acres of mangrove forest, submerged seagrass beds, cordgrass marshes, interior freshwater wetlands, and West Indian hardwood hammocks. Over 220 species of birds, 50 species of reptiles and amphibians, and 32 species of mammals use the habitats within the Refuge lands and water. Approximately 2,800 acres of the Refuge have been designated by Congress as a federal wilderness area. The guiding principle on national wildlife refuges is "wildlife first", but appropriate opportunities are provided for public uses such as fishing, environmental education, wildlife observation, and photography. Hundreds of thousands of visitors travel to the Refuge each year to view the stunning array of birds, enjoy the education center, seek just the right view for a photograph of a basking alligator, or cast a line for fish.

Staff actively manages the Refuge lands to protect and enhance habitat while providing safe opportunities for Refuge visitors to enjoy the wildlife and educational facilities. Management activities include water level manipulation in impoundments, prescribed burning, wildlife population surveys, public education and interpretation, law enforcement, and facility maintenance. Long-standing and successful cooperative partnerships with outside groups such as Sanibel-Captiva Conservation Foundation and the City of Sanibel assist the Refuge to achieve its goals while supporting natural resource protection on lands adjoining the Refuge.

The J.N. "Ding" Darling National Wildlife Refuge is part of a larger complex that encompasses the Caloosahatchee NWR, Matlacha Pass NWR, Pine Island NWR, and Island Bay NWR. Most lands in these refuges are nesting and roosting islands. The entire complex is about 8,000 acres.

From a single volunteer in 1982, the volunteer program has grown to over 250 participants, performing a wide range of duties including, roving the Refuge as interpreters and working at the education center desk, the bookstore, or with the maintenance staff.
Website: www.dingdarling.fws.gov

"Ding" Darling Wildlife Society

The "Ding" Darling Wildlife Society, a non-profit group, supports environmental education and services at the Refuge including funding for visitor facilities, internships, interpretive signage, research, student education, and informational literature. The Society also performs advocacy for the benefit of the Refuge and the national wildlife refuge system.
Website: www.dingdarlingsociety.org

Clinic for the Rehabilitation of Wildlife (CROW)

CROW, established in 1968, is one of the nation's leading wildlife rehabilitation hospitals for the rescue, rehabilitation, and release back to the wild of orphaned, sick, and injured wildlife. There is a complete description of CROW at the end of the "Wildlife" section (page 37).
Website: www.crowclinic.org

Sanibel-Captiva Conservation Foundation (SCCF)

The Sanibel-Captiva Conservation Foundation, Inc. is a not-for-profit organization dedicated to the preservation of natural resources and wildlife habitat on and around Sanibel and Captiva through:

- Environmental Education
- Land Acquisition
- Landscaping for Wildlife
- Marine Research
- Natural Resource Policy
- Sea Turtle Conservation
- Wildlife Habitat Management

The SCCF Marine Laboratory investigates the status and trends and promotes the health of the habitat and fauna around the barrier islands of Sanibel and Captiva. As a vital part of the Charlotte Harbor National Estuary, nursery areas around the Islands encompass the environments used for the reproductive and maturation processes of marine life. Since incorporation in 1967, SCCF has acquired and continues to manage over 1,900 acres of wildlife habitat. SCCF expanded its focus in 2002 to include marine research and regional water quality issues.

The Foundation staff, 3000 members and 300 volunteers:

- introduce over 65,000 people a year to the Islands' ecology;
- propagate and sell plants at the Native Plant Nursery, encouraging residents to landscape for wildlife;
- monitor nesting sea turtles and shorebirds;
- remove invasive non-native plants and restore native plant communities;
- positively influence public officials, resource managers, and regulatory officials in making decisions affecting our local estuarine system through the collection and dissemination of scientific knowledge and data.

Website: www.sccf.org

Sanibel-Captiva Audubon Society

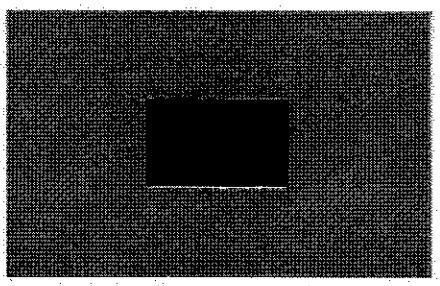
The Sanibel-Captiva Audubon Society is an affiliated Chapter of the National Audubon Society and Audubon of Florida. The Chapter's mission is to promote interests in wildlife on Sanibel and Captiva Islands, and foster the cause of conservation with emphasis on birds and their habitat.

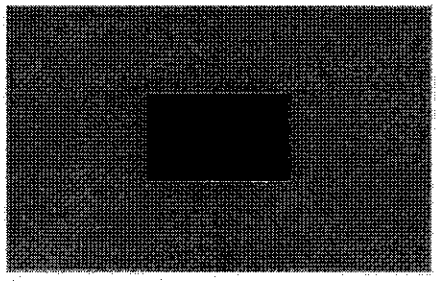
The San-Cap Audubon Society hosts weekly evening programs during the winter season that feature speakers discussing a variety of environmental topics. Members, also in season, lead weekly-guided bird walks featuring not only birds, but diverse Island and near-Island habitats.

In addition, the Chapter participates in local conservation activities as well as regional and national issues.
Website: www.sancapaudubon.org

City of Sanibel

SANIBEL POLICE





Hurricane Season

It's a matter of Life or Death

This pamphlet may be obtained at the Police Department located at Sanibel City Hall, 800 Dunlop Road

HURRICANE PREPAREDNESS

The Atlantic Hurricane Season is June 1 to November 30, with the peak mid-August through mid-October.

The City of Sanibel government has an official, comprehensive emergency management plan that is frequently updated as conditions require. ***Because Sanibel is a barrier island, it is also important for each of us to update our individual hurricane plans annually to be ready to deal with an emergency situation.***

Preparing before a storm is critical. The Sanibel Police Department's hurricane pamphlet includes useful information regarding:

- essential phone numbers and websites
- important "before the storm" preparations
- family preparedness tips
- disaster supply kit items
- important papers to take when evacuating
- home protection tips
- information for individuals with special needs

Prior to hurricane season, the Sanibel Police Department holds an annual Hurricane Seminar for the community. About that time, the annual auto hang tag, required for reentry onto the Island after an evacuation, will be available.

Access to Information :	
• *Sanibel Hurricane Hotline*	*(800) 933-6093*
• *Sanibel Police Department*	*(239) 472-3111*
• *City ER Management Plan*	*www.mysanibel.com - Click on Departments, Police including ER Management, Hurricane ER Management*

Ways to receive City notification about an emergency or an evacuation:

- Receive automatic e-mails from the City detailing advisories and instructions for pending serious storms or hurricanes that might impact Sanibel. Access the City's website, *www.mysanibel.com*. Click on "Sign Up for City Announcements and Agendas" in the Quick Links box at the top right of the City's home page.

- Sanibel emergency "alert radios" sound an alarm when it is necessary to provide local weather related information. These radios operate on AC or battery power. Radios are no longer available for purchase, though residents who already own them will continue to receive alerts.

- Reverse 911 allows homeowners to receive, automatically and quickly, emergency notifications that affect your street, neighborhood, or the Island. You can be informed by phone of weather dangers, accidents, chemical spills, crime alerts, evacuation advisories, etc. If phone lines are busy, the system will attempt to redial those numbers a predetermined number of times to make contact. If an answering machine picks up the call, the emergency message will be left on the answering machine.

QUESTIONS AND ANSWERS

• Native Plants

Where will I find a listing of native plants?
The most comprehensive list is the Atlas of Florida Vascular Plants, compiled by the University of South Florida Institute for Systematic Botany (www.plantatlas.usf.edu). The City considers this list its authority for the designation of a plant as a Florida native. The Atlas of Florida Vascular Plants is also the basis for the City of Sanibel's shorter List of Horticulturally Available Native Plants, available at either City Hall or on the City's website, *www.mysanibel.com*. Click on Departments, Natural Resources, Vegetation Information, Native Vegetation, List without Links to Images.

Where can I purchase native plants?
SCCF Native Plant Nursery sells many species and can help with your questions. The All-Native Garden Center and Plant Nursery in Ft. Myers is another good source. The Florida Native Plant Society (www.fnps.org) and the Association of Florida Native Nurseries (www.afnn.org) can guide you to other Florida native plant nurseries.

Where can I purchase non-cypress mulch?
SCCF Native Plant Nursery, All-Native Garden Center and Plant Nursery, Forestry Resources, Inc. and other local retailers sell Florimulch (mulch from melaleuca trees).

Is the green buttonwood (*Conocarpus erecta*) considered a mangrove?
Though sometimes called button mangrove, the buttonwood is not a true mangrove. It is often found associated with mangroves in higher elevation areas. Silver buttonwood grows in drier locations.

Is a coconut palm a native plant?
Though coconut palms are not native to Florida, the City considers them a neutral species. They are not counted in your plant inventory as either native or non-native.

• City of Sanibel Standards

Who can tell me whether or not I need a vegetation permit?
See page 21 of this handbook or, contact the City's Natural Resources Department staff, (472-3700) for help with this or any other questions about vegetation on Sanibel.

When must I obtain a vegetation permit to move or remove a native tree or shrub from my yard?
When native trees are *either* over 6 feet in height, *or* more than 2 inches in trunk diameter 2 feet above the ground and when native shrub-like plants are more than 2 feet in height.

Are there fees for a vegetation permit?
There are no fees for a permit to move or remove a native plant from existing property. There are fees for altering mangroves, altering vegetation forward of the 1974 Coastal Construction Control Line (CCCL), and *mechanical* alteration of vegetation.

May I remove a strangler fig that is growing close to my house?
Strangler figs can be root pruned. You can also prune 25% of the leaf area per year. This may solve the problem. If the roots are threatening the foundation, however, you will be permitted to move or remove it. As the strangler fig is a native tree, a vegetation permit is required.

May I remove an exotic tree or shrub?
Except for property seaward of the Coastal Construction Control Line (CCCL), any exotic plant or tree, such as an Australian pine, may be removed, by hand, from developed land without a permit. A permit is required to clear exotics from *vacant* property.

How much may I trim mature native vegetation?
Only 25% of the leaf area of any plant may be trimmed in any one year.

May I clear cattails from wetland on my property?
Hand removal of cattails is allowed without a permit. Chemical herbicides for aquatic areas may be applied only by persons qualified by the State of Florida (call Lee County Hyacinth Control - 694-2174). Such action would require a permit.

A native plant on my property died. May I remove it without a permit?
No. Most likely you will be allowed to remove the dead plant, but once it is removed, it is difficult to tell if it died before or after removal. To protect yourself from possible violation, you should call the Planning Department (472-4136) and apply for a permit.

What should I ask a landscape contractor whom I hire to work on my property?
The contractor should be able to show you a Business Tax Receipt (formerly an Occupational License) from the City of Sanibel, a Vegetation Competency Card and, if applying fertilizer, a Fertilizer Endorsement stamped on the card.

How long is a Vegetation Competency Card valid?
Contractors are required to renew the card each year by October 1. Retesting is required every five years.

What penalties are assessed against violators of the vegetation ordinances?
The City can issue a "stop work" order that stands until the deficiency has been corrected. The City can also withhold the issue of a development permit, causing a delay in the start of a project, or withhold the issue of a Certificate of Occupancy, thus delaying the owner's move in. Fines might be imposed and mitigation might be required.

What is mitigation?
Mitigation is the lessening of the severity of damage done by the destruction of native vegetation and wetlands. Owners or contractors who have destroyed native trees or other native vegetation will be required to replace them with large numbers of similar new plants, sometimes on a site other than the one where the violation occurred.

May I cover my yard with gravel or shell?
This practice is no longer allowed. These materials are now included in the definition of "developed area" and the amount of permitted "developed area" varies with the size of the property. The Planning Department (472-4136) can furnish you with the percentage allowed for your lot.

• Wildlife

Why are there no squirrels or cottontail rabbits on Sanibel?
The water barrier, the fact that Sanibel is an island, is the main reason. While we do have oaks, there are probably not enough of them to feed squirrels. Brown marsh rabbits are native to Sanibel.

Are panthers ever seen on Sanibel?
In recent years there have been numerous reports of panther sightings. None of these, however, has been substantiated and it seems unlikely since panthers require a one hundred square mile habitat and diet that primarily includes deer and hogs. Sightings are most likely of bobcats.

Woodpeckers are destroying the soffit boards of my house and getting into the attic. What should I do?
First check to see if the birds are nesting in the attic. If not, or after they have nested, you might consider choosing a manufactured material to replace the wood. Also, it is beneficial to leave one or more dead trees on your property; woodpeckers hollow out nests in them.

What can I plant at the water's edge to discourage alligators from sunning on the bank?
Plant vegetation that an alligator cannot see through. Low plants that still allow you to see the water could include leather fern (*Acrostichum danaeifolium*), sand cordgrass (*Spartina bakeri*), and Fakahatchee grass (*Tripsocum floridanum*). A few suggestions for taller vegetation are wax myrtle (*Myrica cerifica*), myrsine (*Rapanea punctata*), and Florida privet (*Forestiera segregata*). Planting should be dense, in staggered layers.

Why might an alligator be walking across my yard?
At certain times of the year, males may be looking for mates. In dry periods, an alligator might be moving from one small pond that has dried up to a larger one. Appreciate the privilege of observing, from a distance, a prehistoric creature.

What does a gopher tortoise burrow look like?
The gopher tortoise's burrow can be recognized by its half-moon shape (roundish on top and flat on the bottom) and the mound of sand 3-6 ft wide at the entrance. They are usually found in dry upland areas and sand dunes.

What animal could be digging a round hole in my garden?
This might be an armadillo or a raccoon.

I see ospreys around my property. Where do I find out about putting up a nesting platform?
Contact the International Osprey Foundation (TIOF), P.O.Box 250, Sanibel, to obtain a brochure that gives instructions about building and erecting a platform or, go on-line for complete instructions at *www.lcec.net/learning/osprey%20brochure.pdf*

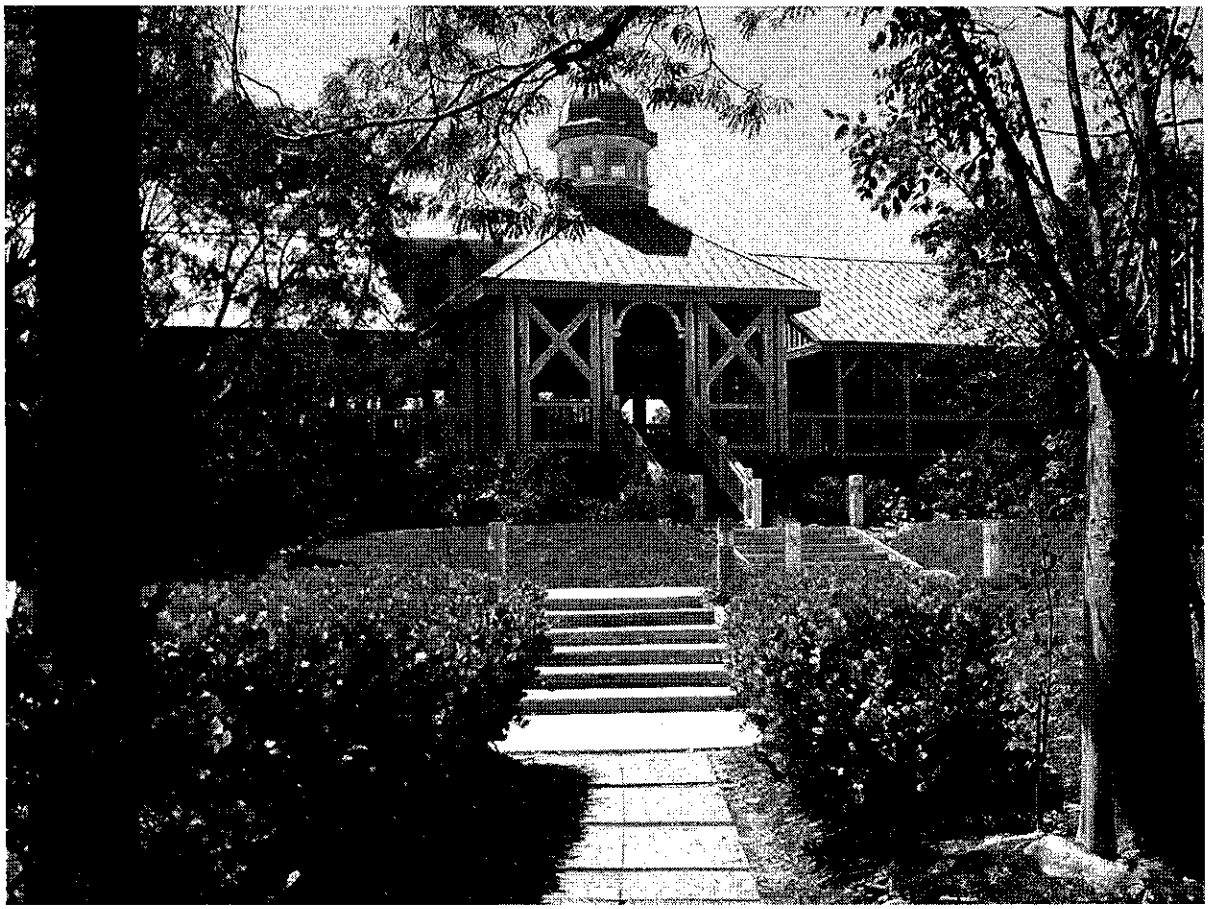
Is it safe to let my cat roam about outdoors?
By their nature, cats will stalk and kill birds. You should not let them roam freely, even in your yard. Cats are also vulnerable to attacks by bobcats, owls, and hawks.

I have not seen a green anole lizard for a long while. Why?
The green anole is native to Sanibel, but is seen less often now, due to competition from other lizards, particularly the exotic brown anole. Green anoles are rarely seen at ground level.

I have heard of Sanibel's "aquatic lens". What is this, and why is it important to wildlife?
Sanibel Island has two longitudinal ridges collecting rainwater which form the Sanibel River. This freshwater becomes a lens that floats above the saltwater, depressing it, creating the unique interior wetlands that are essential to the health of Sanibel's wildlife.

GOVERNMENT

on Sanibel, A Sanctuary Island



Sanibel City Hall

Civic dedication
has characterized the residents of Sanibel
since the City's 1974 incorporation.

THE CITY OF SANIBEL GOVERNMENT

A Brief Overview of Sanibel City Government

- Sanibel City Council (5 members) is an elected body with legislative powers to make policy and exercise and perform all duties and obligations imposed on the City by law. Council meets at City Hall the 1st and 3rd Tuesdays of each month at 9 a.m., to discuss and vote on policy decisions. Meetings are open to the public.

- The City Manager and City Attorney, who work for City Council, direct the staff to develop materials necessary for making and carrying out policy decisions.

- The Planning Commission (7 members), established in 1975 and incorporated into the City Charter, is appointed by the City Council. The Commission acts as a quasi-judicial board to plan for, and where appropriate, limit development and redevelopment in the City consistent with the Sanibel Plan, Land Development Code, and other ordinances. The Planning Commission meets at City Hall the 2nd and 4th Tuesdays of the month at 9 a.m. Meetings are open to the public.

- City Advisory Committees are appointed by City Council to study and prepare recommendations on their areas of expertise. Meeting dates and times of the various committees are available by calling the City Administration Office at 472-3700. All meetings are open to the public.

- A lengthy list of community based organizations and agencies are critical partners collaborating with the local government to protect the Island's environment. They are listed in the "Reference Section" (page 61) of this handbook.

The City Council invites everyone to participate in the governing process by coming to meetings, or making your thoughts known by calling 472-3700 or e-mailing members at *sancouncil@mysanibel.com*. Recognizing what each of us can do to help will determine whether we can keep the unique environmental characteristics of our Island.

Access complete contents of the City Charter at *www.mysanibel.com*. Click City Council, City Charter.
Access the complete Land Development Code at *www.mysanibel.com*. Click City Codes.

City of Sanibel Advisory Committees:

Citizens interested in serving on a City Council Advisory Committee can access a complete description of the current committees and a membership application form at www.mysanibel.com. Click City Council, Council Advisory Committees.

REFERENCE SECTION

Reference Publications

Information Package for the Vegetation Contractors Certificate of Competency/Fertilizer Endorsement Test	Available at City Administration Office
Horticulturally Available Native Plant List	Available at Natural Resources Department City's Website - www.mysanibel.com
National Audubon Society Field Guide to Florida	Peter Alden
Guide to Florida Wildflowers	Walter K. Taylor
Florida Wildflowers in their Communities	Walter K. Taylor
Florida's Best Native Landscape Plants	Gil Nelson
A Gardener's Guide to Florida's Native Plants	Rufino Osorio
Native Florida Plants	Robert G. Haehle Joan Brookwell
The Sibley Guide to Birds	David Allen Sibley
Birds of Florida	Bill Pranty
The Shorebird Guide	Crossley, Karlson, O'Brien
Beginner's Guide to Shorebirds	Donald and Lillian Stokes
The Sanibel Kaleidoscope; a View of Seashell Variations in Color, Pattern and Structure	Harlan Wittkopf
Florida's Snakes	Richard Bartlett
Florida's Fabulous Reptiles and Amphibians	Peter Carmichael
Butterflies of Florida Field Guide	Janet Daniels
Florida Butterfly Gardening	Marc Minno

Books about Sanibel's plants and wildlife are available at the Sanibel Public Library. They may also be purchased at the J.N. "Ding" Darling National Wildlife Refuge Education Center and at SCCF Nature Center. Both have exhibit areas that are open to the public.

Useful Phone Numbers and Websites

All phone numbers are in the 239 area code.

City of Sanibel:

City website ..... www.mysanibel.com
City Council..... (E-mail) sancouncil@mysanibel.com
City Hurricane Hotline ..... 1(800) 933-6093
Administrative Offices 472-3700
Building Department 472-4555
Natural Resources Department..... 472-3700
Planning Department 472-4136
Police Department 472-3111
Public Works 472-6397
Utilities/Sewer Department..... 472-1008

Island Water Association. ..... 472-1502 ..... www.islandwater.com
Waste Pro of Florida 337-0800
garbage/recycling pick-up,
contracted by the City of Sanibel

Lee County:

Lee Co., Departments and Divisions ..... www.lee-county.com
Cooperative Extension Service 461-7500
Mosquito Control ..... 694-2174 ..... www.lcmcd.org
Hyacinth Control District 694-2174
Public Works, Solid Waste Division .... 533-8000.
includes: garbage, household
recycling and horticultural waste
Household Chemical Waste Facility.... 533-8000.... www.leegov.com/solidwaste
(hazardous waste drop-off site)

Fishing Licenses:

The Bait Box 472-1618
1041 Periwinkle Way, Sanibel

Florida License Sales (by phone) ..... 1(888) 347-4356
www.myfwc.com/license.html

Organizations:

Environmental Conservation:

Clinic for the Rehabilitation of Wildlife, (CROW) ..... 472-3644..... www.crowclinic.org
J.N."Ding" Darling National Wildlife Refuge 472-1100 .... www.dingdarling.fws.gov
"Ding" Darling Wildlife Society ..... 472-1100 Ext. 233 .... www.dingdarlingsociety.org
Sanibel-Captiva Conservation Foundation, (SCCF) ..... 472-2329 .... www.sccf.org
SCCF Marine Laboratory ..... 395-4617 .... www.sccf.org
Sanibel-Captiva Audubon Society ..... 472-3156 .... www.sancapaudubon.org
Sanibel Sea School ..... 472-8585 .... www.sanibelseaschool.org
Florida Fish and Wildlife Conservation Commission (Ft. Myers) 332-6971

Plants and Landscape Info:

Sanibel-Captiva Conservation Foundation: .... 472-2329 .... www.sccf.org
SCCF Native Plant Nursery 472-1932
Landscaping for Wildlife (SCCF) ..... www.sccf.org
Weeds and Seeds (SCCF)..... www.sccf.org
Lee County Extension Service ..... 461-7500 .... www.lee.ifas.ufl.edu
Lee County Horticultural Desk 461-7504
9 a.m. - 12 p.m. & 1 p.m. - 4 p.m.
Monday - Friday
Atlas of Florida Vascular Plants ..... www.plantatlas.usf.edu
Association of Florida Native Nurseries ..... www.afnn
Florida Native Plant Society ..... www.fnps.org
Florida Exotic Pest Plant Council ..... www.fleppc.org

Shells:

Bailey-Matthews Shell Museum ..... 395-2233 .... www.shellmuseum.org

Water Quality:

The Island Water Association, Inc. ..... 472-1502 .... www.islandwater.com
PURRE (People United to Restore Our Rivers and Estuaries) ..... 274-7873 .... www.purre.org
SCCF Marine Lab ..... 395-4617 .... www.sccf.org
South Florida Water Mgmt. District ..... 338-2929 .... www.sfwmd.gov

Wildlife:

Clinic for the Rehabilitation of Wildlife, (CROW) ..... 472-3644 ... www.crowclinic.org
International Osprey Foundation ..... www.ospreyfoundation.org
Sanibel-Captiva Conservation Foundation, (SCCF) ..... 472-2329 ... www.sccf.org
Sea Turtle Program (SCCF) ..... www.sccf.org
Snowy Plover Nesting Program (SCCF)..... www.sccf.org
Wildlife Habitat Management (SCCF)..... 472-3984 ... www.sccf.org

NOTES

NOTES