Water & Natural Resources Committee

Wednesday February 22, 2006
1:30 p.m.--3:30 p.m.
Reed Hall

Meeting Packet

REVISED

Allan G. Bense
Speaker

Donna Clarke
Chair

The Florida House of Representatives

Water & Natural Resources Committee

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Agenda

Water & Natural Resources Committee
Wednesday, February 22, 2006
Reed Hall

I. Call to Order

II. Roll Call

III. Opening Remarks by Chair Clarke

IV. Consideration of the following bill:
HB 471 by Troutman
Hunter Safety

V. Presentation on the Oceans & Coastal Resources Council by the Department of Environmental Protection (DEP) and the Fish and Wildlife Conservation Commission (FWCC)

VI. Presentation on the status of the Comprehensive Everglades Restoration Project and Lake Okeechobee by Ernie Barnett, South Florida Water Management District (SFWMD)

VII. Adjournment

1102 The Capitol, 402 South Monroe Street, Tallahassee, Florida 32399-1300

HB 471

HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: HB 471 Hunter Safety
SPONSOR(S): Troutman
TIED BILLS: **IDEN./SIM. BILLS:**

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR
1) Water & Natural Resources Committee		Winker KW	Lotspeich RAL
2) Agriculture & Environment Appropriations Committee			
3) State Resources Council			
4)			
5)			

SUMMARY ANALYSIS

The bill authorizes the Fish and Wildlife Conservation Commission (FWCC) to defer the hunter safety course requirement for a hunting license for 1 year and allow an individual to take wild animal life with the use of a firearm, gun, bow, or crossbow only under the direct supervision and in the physical presence of an adult who has successfully completed or is exempt from the requirement of a hunter safety course for a hunting license.

The bill provides an exemption from the requirement for displaying of a valid hunter safety certification card by persons purchasing a Florida hunting license and hunting under the proposed deferral provisions of the bill.

The bill also removes the current requirement that the FWCC's hunting safety course consists of no less than 12 hours of instruction, while maintaining the current requirement that the course consists of no more than 16 hours of instruction.

The bill has an unknown, but minimal, fiscal impact since no data exists on the expected number of persons who might take advantage of the bill's provisions.

The bill takes effect on July 1, 2006.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. HOUSE PRINCIPLES ANALYSIS:

The bill does not appear to implicate any of the House Principles.

B. EFFECT OF PROPOSED CHANGES:

Hunting Licenses

Section 372.561, F.S., requires the Fish and Wildlife Conservation Commission (FWCC) to issue a license to take wild animal life when an applicant provides proof that he or she is eligible for the license. Hunting licenses may be sold by the FWCC or any tax collector in the state or by any subagent (for example, hunting supply stores) authorized by s. 372.574, F.S.

In FY 2000-2001, FWCC reports that there were 178,069 hunting licenses purchased in Florida. The number of Florida hunting licenses purchased since then has declined to 157,299 in FY 2004-2005. The number of hunting licenses purchased in Florida does not represent the number of persons (residents and non-residents) who are actually hunting, since, as discussed below, Florida law exempts a number of persons from the hunting licenses requirement. In 2001, the U.S. Fish and Wildlife Service conducted a national survey of hunting, fishing and wildlife-associated recreation activities and estimated that Florida had 226,000 hunters.

Exemptions from Requiring Hunting Licenses

Section 372.562, F.S., provides certain residents of Florida an exemption from paying a fee for having a hunting license. Any resident who is certified or determined to be totally or permanently disabled for purposes of workers' compensation under chapter 440, F.S., under the provisions of the Railroad Retirement Board, by the U.S. Department of Veterans Affairs, or under the provisions of the U.S. Social Security Administration, is eligible for a hunting license at no cost. A hunting license obtained under this fee exemption after January 1, 1997, expires after 5 years and must be reissued, upon request, every 5 years. A person qualifying for this exemption under the Social Security Administration must renew the license every 2 years.

Section 372.562(2), F.S., provides that the following persons are exempt from having a hunting license:

- Any child under age 16;
- Any person hunting on his or her homestead property or the homestead property of the person's spouse or minor child;
- Any resident who is a member of the United State Armed Forces and not stationed in this state, when home on leave for 30 days or less; or
- Any resident age 65 or older.

Hunting licenses are non-transferable and must be in the personal possession of the person while taking or attempting to take wild animal life.

Hunting Safety Course

Section 372.5717(2), F.S., requires that persons born after June 1, 1975, may not be issued a hunting license without first successfully completing a hunter safety course and having in their possession a hunter safety certification card.

Section 372.5717(3), F.S., requires the FWCC to institute and coordinate a statewide hunter safety course to be offered in every county. The course must consist of no less than 12 hours and no more than 16 hours of instruction, including, but not limited to, instruction in the competent and safe handling of firearms, conservation, and hunting ethics.

Section 372.5717(4), F.S., requires the FWCC to issue a permanent hunter safety certification card to each person who successfully completes the hunter safety course. FWCC must also maintain records of each person issued a certification card and provide procedures for persons to seek a replacement card.

Section 372.5717(5), F.S., provides that a hunter safety certification card issued by any other state or Canadian province which shows that the person has successfully completed a hunter safety course approved by the FWCC, shall be an acceptable substitute for the hunter safety certification card issued by the FWCC.

Section 372.5717(6), F.S., requires persons who are not exempt from having a hunting license, to have in their personal possession while hunting or purchasing a hunting license, proof of compliance with the hunter safety course requirements, including possessing the hunter safety certification card.

Section 372.5717(8), F.S., provides for a non-criminal penalty for persons who violate the provisions and requirements of the hunter safety course requirements.

Section 372.5718, F.S., requires the FWCC to develop a voluntary hunter safety course statewide for youth 5 to 15 years of age. This course is not a substitute for the required hunter safety course described above.

The FWCC offers the state's hunter safety course through two general methods. One method is an in-class 12-hour course with the successful completion of a test, and a 3-hour experience at a firing range. The second option is either a CD or internet course for persons who wish to take advantage of this option. Persons can register on-line to take the hunter safety course, take on-line quizzes, and then are required to take a 4-hour classroom test and a 3-hour firing range experience.

International Hunter Education Association

The International Hunter Education Association (IHEA) is a national organization which is affiliated with the International Association of Fish and Wildlife Agencies and which represents the interests of 69 state, provincial, and federal hunter education coordinators, and 70, 000 hunter education instructors who teach hunter safety, ethics, and conservation courses to hunters.

The goals of the IHEA are to:

- Serve as the primary resource for information on hunter education;
- Promote hunter education by providing opportunities for the exchange of experiences;
- Promote hunter education by fostering cooperative efforts between government, organized groups, and industry;
- Uphold the image of hunting as a legitimate tool of wildlife management;
- Promote programs which prevent hunting accidents;
- Cultivate honesty, self-discipline, self-reliance, and responsible behavior among hunters; and
- Strive for constant improvement in hunter education programs.

According to the IHEA, state fish and game agencies began offering hunter safety programs in 1949.

All states, including Florida, are currently members of the IHEA. The IHEA does not regulate, nor does it have an accreditation program for any state's hunter safety course program.

The IHEA does have standards and a model hunter safety course program which states are free to

adopt. Each state sets its own hunter safety education program regulations and regulates the program within its own jurisdiction. Each state (including the FWCC) has a coordinator/administrator responsible for the hunter safety program and ensures that the program adheres to IHEA standards which allow for reciprocity.

Reciprocity means that a hunter safety course taken in one state will be honored in all other states. Should a state's hunter safety program not meet IHEA standards, the certification for the hunter safety course may not be accepted by other states. Currently, according to IHEA staff, all states meet standards.

The IHEA model hunter safety program can be viewed and taken on-line at http://homestudy.ihea.com/contents_chechlist.htm The website lists the content areas for the hunter safety course. Besides general content on hunting, the IHEA hunter safety course has content on: firearms; ammunition; firearm safety; shooting skills; hunting safety and skills; hunter responsibility and ethics; and wildlife.

Hunter Mentoring Programs

Florida does not currently have a hunter mentoring program. However, there is current authorization for persons under the age of 16 to participate in hunting activities without needing a hunting license when they hunt in the presence of a parent or guardian (s. 372.562, F.S.)

Several other states have established hunter mentoring programs. For example, Wisconsin recently established a hunter mentoring program which allows persons above of the age of eight who have not taken a hunter safety course to hunt with an adult mentor under highly controlled and safe circumstances.

The Wisconsin hunter mentoring program requires that the mentor must have the person within "arm's reach" at all times while hunting. No person may serve as a hunter mentor unless they are at least 18 years of age, and all mentors born after 1973 must have successfully completed the state's hunter safety program. The mentor must be the parent or guardian of the person for whom he or she is serving as a mentor, or be authorized by the parent or guardian to serve as a mentor. This requirement does not apply to a person serving as a mentor for a person who is 18 years of age or older. A person who is authorized to hunt with a mentor and the mentor with whom the person hunts may jointly have only one firearm or one bow in their possession or control while hunting. A mentor may take only one person at a time for which he or she is serving as a mentor. Finally, the program requires the development of an information pamphlet containing hunter safety information to be given to persons hunting with a mentor.

The Department of Texas Parks and Wildlife has had a hunter mentoring program since 2004. The program allows a person 17 or older, who has not taken and successfully completed a hunter education course, to defer the completion of the course and purchase special deferral hunting license for a $10 fee in addition to the regular hunting license fee. The deferral hunting license can only be purchased on a one-time basis and is effective until August 31 of the same year the deferral hunting license was purchased.

Under the Texas hunter education deferral program, a hunter with a deferral hunting license must be accompanied (within range of normal voice communication) by another licensed hunter 17-years-of-age or older who has completed and passed the hunter education program or is otherwise exempt from the hunter education program. Proof of hunter safety certification or the deferral must be on the person while hunting. A person who has been convicted of or has received a deferred adjudication for a violation of the mandatory hunter education requirement is prohibited from purchasing a deferral.

Texas also has a hunter mentoring program for persons who have qualified as certified hunting safety instructors, but for whatever reasons have been reluctant to use their acquired knowledge and skills in hunting safety to teach courses for other hunters. The mentoring program is targeting new hunter education instructors and provides an opportunity for these instructors to team up with a seasoned more experienced hunting safety instructor who will help organize classes and provide support for the new hunter education instructor.

Effect of Proposed Changes

The bill authorizes the FWCC to defer the hunter safety course requirement for one year and issue a restricted hunting license to persons wanting to try out hunting. Such persons may receive only one deferment and requires that when hunting, a person with a restricted hunting license can only hunt under the direct supervision and in the physical presence of an adult who has successfully completed or is exempt from completing the required hunter safety course.

The bill removes the minimum number of hours (no less than 12 hours) currently required under law for the state's hunter safety course and provides that the course must consist of not more than 16 hours. According to FWCC staff, the intent to removing the minimum number of hours is to provide more flexibility for persons wishing to take the hunter safety course and will not change nor reduce the current hunter safety course content.

The bill provides an exemption to the current requirement that a hunter safety course certification be in a person's possession while hunting or purchasing a hunting license for persons purchasing a restricted hunting license and hunting under such a license.

C. SECTION DIRECTORY:

Section 1: Amends s. 372.5717, F.S., authorizes the Fish and Wildlife Conservation to waive the hunter safety education course for 1 year and issue a one-time restricted hunting license to persons wanting to hunt; requires such persons to hunt only under the direct supervision and in the physical presence of an adult who has successfully completed or is exempt from the hunter safety education course; deletes the minimum number of hours (not less than 12 hours) from the state hunter safety education course; and provides an exemption for the display of a hunter safety certification.

Section 2: Provides and effective date of July 1, 2006.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

   See Fiscal Comments below.

2. Expenditures:

   See Fiscal Comments below.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

   None.

2. Expenditures:

None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

The bill would have a positive impact on the private sector depending on the number of persons participating in and using the hunter safety education deferral provisions of the bill, purchasing a hunting license, and in turn, purchasing hunting equipment and supplies.

D. FISCAL COMMENTS:

FWCC has determined that the revenue impacts from the hunter safety education deferral provisions of the bill and the purchase of hunting licenses are unknown since FWCC has no estimates of the number of persons who may participate in this program. Unlike the Texas hunter mentoring program, the bill does not provide for a fee in addition to the normal hunting license fee. FWCC views the revenue impact of the bill as less important than using the mentoring and deferral provisions of the bill to "...remove obstacles and increase efforts to engage new hunters..." in order to reverse the trend of declining hunters in Florida.

FWCC estimates that there would be minimal costs associated with programming its Total Licensing System (TLS) which produces the state's hunting licenses in issuing and identifying a one-year-option deferral hunting license. A person seeking the special deferral hunting license would purchase a regular hunting license at the regular cost and declare that they do not have the required hunter safety education certificate. The TLS and the actual hunting license would identify that the person is using the deferral option. Since the deferral option is only valid for one-year, the TLS would be programmed to deny the purchase of a subsequent hunting license if the person has not successfully completed the hunter safety course and produced the certification documentation at the time of the purchase.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

The bill does not appear to require cities or counties to spend funds or take actions requiring the expenditure of funds, reduce the authority that cities or counties have to raise revenues in the aggregate, or reduce the percentage of a state tax shared with cities or counties.

2. Other:

Pursuant to Article IV, Section 9 of the Florida Constitution, the FWCC has the authority to "exercise the regulatory and executive powers of the state with respect to wild animal life." The Legislature may only "enact laws in aid of" the FWCC not inconsistent with the Constitutional provision. The bill appears to be "in aid of" the FWCC and does not appear to be inconsistent with the Constitution.

B. RULE-MAKING AUTHORITY:

N/A

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/COMMITTEE SUBSTITUTE & COMBINED BILL CHANGES

1 A bill to be entitled
2 An act relating to hunter safety; amending s. 372.5717,
3 F.S.; authorizing the Fish and Wildlife Conservation
4 Commission to defer the hunter safety course requirement
5 for a specified time period and issue a restricted hunting
6 license; limiting the number of deferrals an individual is
7 allowed; permitting hunting with a restricted license
8 under certain circumstances; deleting the mandatory
9 minimum number of instructional hours for the required
10 hunter safety course; providing exemptions for the display
11 of hunter safety certification; providing an effective
12 date.
13
14 Be It Enacted by the Legislature of the State of Florida:
15
16 Section 1. Subsections (2), (3), and (6) of section
17 372.5717, Florida Statutes, are amended to read:
18 372.5717 Hunter safety course; requirements; penalty.--
19 (2)(a) A person born on or after June 1, 1975, may not be
20 issued a license to take wild animal life with the use of a
21 firearm, gun, bow, or crossbow in this state without having
22 first successfully completed a hunter safety course as provided
23 in this section~~,~~ and without having in his or her personal
24 possession a hunter safety certification card~~,~~ as provided in
25 this section.
26 (b) The Fish and Wildlife Conservation Commission may
27 defer the hunter safety course requirement for 1 year and issue
28 a restricted hunting license. Individuals may receive only one

29 deferment. Individuals issued a restricted hunting license shall
30 only be permitted to take wild animal life with the use of a
31 firearm, gun, bow, or crossbow under the direct supervision and
32 in the physical presence of an adult who has successfully
33 completed or is exempt from completing the required hunter
34 safety course as provided in this section.
35 (3) The Fish and Wildlife Conservation Commission shall
36 institute and coordinate a statewide hunter safety course which
37 must be offered in every county and consist of not ~~less than 12~~
38 ~~hours nor~~ more than 16 hours of instruction including, but not
39 limited to, instruction in the competent and safe handling of
40 firearms, conservation, and hunting ethics.
41 (6) All persons subject to the requirements of subsection
42 (2) must have in their personal possession~~,~~ proof of compliance
43 with this section~~,~~ while taking or attempting to take wildlife
44 with the use of a firearm, gun, bow, or crossbow and must
45 display a valid hunter safety certification card, unless the
46 hunter safety course requirement is deferred pursuant to this
47 section, ~~to county tax collectors or their subagents~~ in order to
48 purchase a Florida hunting license. After the issuance of a
49 license, the license itself shall serve as proof of compliance
50 with this section. A holder of a lifetime license whose license
51 does not indicate on the face of the license that a hunter
52 safety course has been completed must have in his or her
53 personal possession a hunter safety certification card, as
54 provided by this section, while attempting to take wild animal
55 life with the use of a firearm, gun, bow, or crossbow.
56 Section 2. This act shall take effect July 1, 2006.

Bill No. **0471**

COUNCIL/COMMITTEE ACTION

ADOPTED	__	(Y/N)
ADOPTED AS AMENDED	__	(Y/N)
ADOPTED W/O OBJECTION	__	(Y/N)
FAILED TO ADOPT	__	(Y/N)
WITHDRAWN	__	(Y/N)
OTHER	____	

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1 Council/Committee hearing bill: Water & Natural Resources
2 Committee
3 Representative Troutman offered the following:
4
5 **Amendment (with title amendment)**
6 Remove everything after the enacting clause and insert:
7 Section 1. Subsections (5) through (28) of section 370.01,
8 Florida Statutes, are renumbered as subsections (6) through
9 (29), respectively, and a new subsection (5) is added to that
10 section to read:
11 370.01 Definitions.--In construing these statutes, where
12 the context does not clearly indicate otherwise, the word,
13 phrase, or term:
14 (5) "Commercial harvest" means the taking or harvest of
15 marine fish while operating under a permit, license, or
16 authorization issued pursuant to this chapter; while operating
17 in a manner consistent with such a permit, license, or
18 authorization while such permit, license, or authorization is
19 suspended or revoked; or in quantities sufficient to suggest
20 intent to sell.
21 Section 2. Present subsections (1) through (4) of section
22 370.021, Florida Statutes, are renumbered as subsections (2)

23 through (5), respectively, and amended, present subsections (5)
24 through (12) are renumbered as subsections (6) through (13),
25 respectively, and a new subsection (1) is added to that section,
26 to read:
27 370.021 Administration; rules, publications, records;
28 penalties; injunctions.--
29 (1) APPLICATION OF PENALTIES.--The penalties in this
30 section apply when the commission of a violation is related to
31 commercial harvest; when the commission of a violation is
32 related to commercial harvest, the penalties in s. 372.83 do not
33 apply.
34 (2)~~(1)~~ BASE PENALTIES.--Unless otherwise provided by law,
35 any person, firm, or corporation who violates ~~is convicted for~~
36 ~~violating any~~ provision of this chapter, or any rule of the Fish
37 and Wildlife Conservation Commission relating to the
38 conservation of marine resources, shall be punished:
39 (a) Upon a first conviction, by imprisonment for a period
40 of not more than 60 days or by a fine of not less than $100 nor
41 more than $500, or by both such fine and imprisonment.
42 (b) On a second or subsequent conviction within 12 months,
43 by imprisonment for not more than 6 months or by a fine of not
44 less than $250 nor more than $1,000, or by both such fine and
45 imprisonment.
46
47 Upon final disposition of any alleged offense for which a
48 citation for any violation of this chapter or the rules of the
49 commission has been issued, the court shall, within 10 days,
50 certify the disposition to the commission.
51 (3)~~(2)~~ MAJOR VIOLATIONS.--In addition to the penalties
52 provided in paragraphs (2)~~(1)~~(a) and (b), the court shall assess

53 additional penalties against any person, firm, or corporation
54 convicted of major violations as follows:
55 (a) For a violation involving more than 100 illegal blue
56 crabs, crawfish, or stone crabs, an additional penalty of $10
57 for each illegal blue crab, crawfish, stone crab, or part
58 thereof.
59 (b) For a violation involving the taking or harvesting of
60 shrimp from a nursery or other prohibited area, or any two
61 violations within a 12-month period involving shrimping gear,
62 minimum size (count), or season, an additional penalty of $10
63 for each pound of illegal shrimp or part thereof.
64 (c) For a violation involving the taking or harvesting of
65 oysters from nonapproved areas or the taking or possession of
66 unculled oysters, an additional penalty of $10 for each bushel
67 of illegal oysters.
68 (d) For a violation involving the taking or harvesting of
69 clams from nonapproved areas, an additional penalty of $100 for
70 each 500 count bag of illegal clams.
71 (e) For a violation involving the taking, harvesting, or
72 possession of any of the following species, which are
73 endangered, threatened, or of special concern:
74 1. Shortnose sturgeon (Acipenser brevirostrum);
75 2. Atlantic sturgeon (Acipenser oxyrhynchus);
76 3. Common snook (Centropomus undecimalis);
77 4. Atlantic loggerhead turtle (Caretta caretta caretta);
78 5. Atlantic green turtle (Chelonia mydas mydas);
79 6. Leatherback turtle (Dermochelys coriacea);
80 7. Atlantic hawksbill turtle (Eretmochelys imbricata
81 imbracata);
82 8. Atlantic ridley turtle (Lepidochelys kempi); or
83 9. West Indian manatee (Trichechus manatus latirostris),

84
85 an additional penalty of $100 for each unit of marine life or
86 part thereof.
87 (f) For a second or subsequent conviction within 24 months
88 for any violation of the same law or rule involving the taking
89 or harvesting of more than 100 pounds of any finfish, an
90 additional penalty of $5 for each pound of illegal finfish.
91 (g) For any violation involving the taking, harvesting, or
92 possession of more than 1,000 pounds of any illegal finfish, an
93 additional penalty equivalent to the wholesale value of the
94 illegal finfish.
95 (h) Permits issued to any person, firm, or corporation by
96 the commission to take or harvest saltwater products, or any
97 license issued pursuant to s. 370.06 or s. 370.07 may be
98 suspended or revoked by the commission, pursuant to the
99 provisions and procedures of s. 120.60, for any major violation
100 prescribed in this subsection:
101 1. Upon a first conviction, for up to 30 calendar days.
102 2. Upon a second conviction which occurs within 12 months
103 after a prior violation, for up to 90 calendar days.
104 3. Upon a third conviction which occurs within 24 months
105 after a prior conviction, for up to 180 calendar days.
106 4. Upon a fourth conviction which occurs within 36 months
107 after a prior conviction, for a period of 6 months to 3 years.
108 (i) Upon the arrest and conviction for a major violation
109 involving stone crabs, the licenseholder must show just cause
110 why his or her license should not be suspended or revoked. For
111 the purposes of this paragraph, a "major violation" means a
112 major violation as prescribed for illegal stone crabs; any
113 single violation involving possession of more than 25 stone
114 crabs during the closed season or possession of 25 or more

115 whole-bodied or egg-bearing stone crabs; any violation for trap
116 molestation, trap robbing, or pulling traps at night; or any
117 combination of violations in any 3-consecutive-year period
118 wherein more than 75 illegal stone crabs in the aggregate are
119 involved.

120 (j) Upon the arrest and conviction for a major violation
121 involving crawfish, the licenseholder must show just cause why
122 his or her license should not be suspended or revoked. For the
123 purposes of this paragraph, a "major violation" means a major
124 violation as prescribed for illegal crawfish; any single
125 violation involving possession of more than 25 crawfish during
126 the closed season or possession of more than 25 wrung crawfish
127 tails or more than 25 egg-bearing or stripped crawfish; any
128 violation for trap molestation, trap robbing, or pulling traps
129 at night; or any combination of violations in any 3-consecutive-
130 year period wherein more than 75 illegal crawfish in the
131 aggregate are involved.

132 (k) Upon the arrest and conviction for a major violation
133 involving blue crabs, the licenseholder shall show just cause
134 why his or her saltwater products license should not be
135 suspended or revoked. This paragraph shall not apply to an
136 individual fishing with no more than five traps. For the
137 purposes of this paragraph, a "major violation" means a major
138 violation as prescribed for illegal blue crabs, any single
139 violation wherein 50 or more illegal blue crabs are involved;
140 any violation for trap molestation, trap robbing, or pulling
141 traps at night; or any combination of violations in any 3-
142 consecutive-year period wherein more than 100 illegal blue crabs
143 in the aggregate are involved.

144 (l) Upon the conviction for a major violation involving
145 finfish, the licenseholder must show just cause why his or her

146 saltwater products license should not be suspended or revoked.
147 For the purposes of this paragraph, a major violation is
148 prescribed for the taking and harvesting of illegal finfish, any
149 single violation involving the possession of more than 100
150 pounds of illegal finfish, or any combination of violations in
151 any 3-consecutive-year period wherein more than 200 pounds of
152 illegal finfish in the aggregate are involved.
153 (m) For a violation involving the taking or harvesting of
154 any marine life species, as those species are defined by rule of
155 the commission, the harvest of which is prohibited, or the
156 taking or harvesting of such a species out of season, or with an
157 illegal gear or chemical, or any violation involving the
158 possession of 25 or more individual specimens of marine life
159 species, or any combination of violations in any 3-year period
160 involving more than 70 such specimens in the aggregate, the
161 suspension or revocation of the licenseholder's marine life
162 endorsement as provided in paragraph (h).
163
164 Notwithstanding the provisions of s. 948.01, no court may
165 suspend, defer, or withhold adjudication of guilt or imposition
166 of sentence for any major violation prescribed in this
167 subsection. The proceeds from the penalties assessed pursuant to
168 this subsection shall be deposited into the Marine Resources
169 Conservation Trust Fund to be used for marine fisheries research
170 or into the commission's Federal Law Enforcement Trust Fund as
171 provided in s. 372.107, as applicable.
172 (4) ~~(3)~~ PENALTIES FOR USE OF ILLEGAL NETS.--
173 (a) It is a major violation pursuant to this section,
174 punishable as provided in paragraph (b) for any person, firm, or
175 corporation to be simultaneously in possession of any species of
176 mullet in excess of the recreational daily bag limit and any

177 gill or other entangling net as defined in s. 16(c), Art. X of
178 the State Constitution. Simultaneous possession under this
179 provision shall include possession of mullet and gill or other
180 entangling nets on separate vessels or vehicles where such
181 vessels or vehicles are operated in coordination with one
182 another including vessels towed behind a main vessel. This
183 subsection does not prohibit a resident of this state from
184 transporting on land, from Alabama to this state, a commercial
185 quantity of mullet together with a gill net if:
186 1. The person possesses a valid commercial fishing license
187 that is issued by the State of Alabama and that allows the
188 person to use a gill net to legally harvest mullet in commercial
189 quantities from Alabama waters.
190 2. The person possesses a trip ticket issued in Alabama
191 and filled out to match the quantity of mullet being
192 transported, and the person is able to present such trip ticket
193 immediately upon entering this state.
194 3. The mullet are to be sold to a wholesale saltwater
195 products dealer located in Escambia County or Santa Rosa County,
196 which dealer also possesses a valid seafood dealer's license
197 issued by the State of Alabama. The dealer's name must be
198 clearly indicated on the trip ticket.
199 4. The mullet being transported are totally removed from
200 any net also being transported.
201 (b)1. A flagrant violation of any rule or statute which
202 implements s. 16(b), Art. X of the State Constitution shall be
203 considered a felony of the third degree, punishable as provided
204 in s. 775.082 or s. 775.083. For purposes of this paragraph, a
205 flagrant violation shall be the illegal possession or use of a
206 monofilament net or a net with a mesh area larger than 2,000

207 square feet. A violation means any judicial disposition other
208 than acquittal or dismissal.
209 2. In addition to being subject to the other penalties
210 provided in this chapter, any violation of s. 16(b), Art. X of
211 the State Constitution, or any statute or rule of the commission
212 which implements the gear prohibitions and restrictions
213 specified therein shall be considered a major violation; and any
214 person, firm, or corporation receiving any judicial disposition
215 other than acquittal or dismissal of such violation shall be
216 subject to the following additional penalties:
217 a. For a first major violation within a 7-year period, a
218 civil penalty of $2,500 and suspension of all saltwater products
219 license privileges for 90 calendar days following final
220 disposition shall be imposed.
221 b. For a second major violation under this subparagraph
222 charged within 7 years of a previous judicial disposition, which
223 results in a second judicial disposition other than acquittal or
224 dismissal, a civil penalty of $5,000 and suspension of all
225 saltwater products license privileges for 12 months shall be
226 imposed.
227 c. For a third or subsequent major violation under this
228 subparagraph, charged within a 7-year period, resulting in a
229 third or subsequent judicial disposition other than acquittal or
230 dismissal, a civil penalty of $5,000, lifetime revocation of the
231 saltwater products license, and forfeiture of all gear and
232 equipment used in the violation shall be imposed.
233 d. For a first flagrant violation under this subparagraph,
234 a civil penalty of $5,000 and a suspension of all saltwater
235 license privileges for 12 months shall be imposed. For a second
236 or subsequent flagrant violation under this subparagraph, a
237 civil penalty of $5,000, a lifetime revocation of the saltwater

238 products license, and the forfeiture of all gear and equipment
239 used in the violation shall be imposed.
240
241 A court may suspend, defer, or withhold adjudication of guilt or
242 imposition of sentence only for any first violation of s. 16,
243 Art. X of the State Constitution, or any rule or statute
244 implementing its restrictions, determined by a court only after
245 consideration of competent evidence of mitigating circumstances
246 to be a nonflagrant or minor violation of those restrictions
247 upon the use of nets. Any violation of s. 16, Art. X of the
248 State Constitution, or any rule or statute implementing its
249 restrictions, occurring within a 7-year period commencing upon
250 the conclusion of any judicial proceeding resulting in any
251 outcome other than acquittal shall be punished as a second,
252 third, or subsequent violation accordingly.
253 (c) During the period of suspension or revocation of
254 saltwater license privileges under this subsection, the licensee
255 shall not participate in the taking or harvesting, or attempt
256 the taking or harvesting, of saltwater products from any vessel
257 within the waters of the state; be aboard any vessel on which a
258 commercial quantity of saltwater products is possessed through
259 an activity requiring a license pursuant to this section; or
260 engage in any other activity requiring a license, permit, or
261 certificate issued pursuant to this chapter. Any person who is
262 convicted of violating this paragraph:
263 1. Upon a first or second conviction, is guilty of a
264 misdemeanor of the first degree, punishable as provided in s.
265 775.082 or s. 775.083.
266 2. Upon a third or subsequent conviction, is guilty of a
267 felony of the third degree, punishable as provided in s.
268 775.082, s. 775.083, or s. 775.084.

269 (d) Upon reinstatement of saltwater license privileges
270 suspended pursuant to a violation of this subsection, a licensee
271 owning or operating a vessel containing or otherwise
272 transporting in or on Florida waters any gill net or other
273 entangling net, or containing or otherwise transporting in
274 nearshore and inshore Florida waters any net containing more
275 than 500 square feet of mesh area shall remain restricted for a
276 period of 12 months following reinstatement, to operating under
277 the following conditions:
278 1. Vessels subject to this reinstatement period shall be
279 restricted to the corridors established by commission rule.
280 2. A violation of the reinstatement period provisions
281 shall be punishable pursuant to paragraphs (2)~~(1)~~(a) and (b).
282 (5)~~(4)~~ ADDITIONAL PENALTIES FOR MAJOR VIOLATIONS INVOLVING
283 CERTAIN FINFISH.--It is a major violation pursuant to this
284 section, punishable as provided in paragraph (4)~~(3)~~(b), for any
285 person to be in possession of any species of trout, snook, or
286 redfish which is three fish in excess of the recreational or
287 commercial daily bag limit.
288 Section 3. Paragraph (d) of subsection (5) of section
289 370.061, Florida Statutes, is amended to read:
290 370.061 Confiscation, seizure, and forfeiture of property
291 and products.--
292 (5) CONFISCATION AND SALE OF PERISHABLE SALTWATER
293 PRODUCTS; PROCEDURE.--
294 (d) For purposes of confiscation under this subsection,
295 the term "saltwater products" has the meaning set out in s.
296 370.01(27)~~(26)~~, except that the term does not include saltwater
297 products harvested under the authority of a recreational license
298 unless the amount of such harvested products exceeds three times

299 the applicable recreational bag limit for trout, snook, or
300 redfish.
301 Section 4. Section 372.825, Florida Statutes, is created
302 to read:
303 372.825 Captive wildlife penalties.--
304 (1) A person who violates any commission rules or orders
305 for the non-fee permit for the possession of captive wildlife
306 for personal use and related reporting requirements commits a
307 noncriminal infraction.
308 (2) Any person cited for committing a violation of this
309 section shall be cited to appear before the county court. The
310 civil penalty is $50.
311 (3) A person commits a misdemeanor of the second degree,
312 punishable as provided in s. 775.082 or s. 775.083, for any
313 violation of the following:
314 (a) Commission rules or orders that require a person to
315 pay a fee to obtain a permit to possess captive wildlife or that
316 require the maintenance of records relating to captive wildlife.
317 (b) Commission rules or orders relating to captive
318 wildlife not specified in paragraph (a).
319 (c) Provisions of s. 372.86, relating to possessing or
320 exhibiting certain reptiles.
321 (d) Provisions of s. 372.87, relating to licensing of
322 certain reptiles.
323 (e) Provisions of s. 372.88, relating to bonding
324 requirements.
325 (f) Provisions of s. 372.89, relating to housing
326 requirements.
327 (g) Provisions of s. 372.90, relating to transportation.
328 (h) Provisions of s. 372.901, relating to inspection.

329 (i) Provisions of s. 372.91, relating to limitation of
330 access to certain reptiles.
331 (j) Provisions of s. 372.912, relating to certain reptile
332 hunts.
333 (k) Provisions of s. 372.921, relating to exhibition or
334 sale of wildlife.
335 (l) Provisions of s. 372.922, relating to personal
336 possession of wildlife.
337 Section 5. Subsection (8) of section 372.5717, Florida
338 Statutes, is amended to read:
339 372.5717 Hunter safety course; requirements; penalty.--
340 (8) A person who violates this section shall be cited for
341 a level 1 violation as classified in s. 372.83 ~~noncriminal~~
342 ~~infraction~~, punishable as provided in that section ~~s. 372.711~~.
343 Section 6. Section 372.83, Florida Statutes, is amended to
344 read:
345 372.83 Recreational ~~Noncriminal infractions; criminal~~
346 penalties; suspension and revocation of licenses and permits.--
347 (1) LEVEL 1 VIOLATIONS.--
348 (a) Unless otherwise provided by law, a person convicted
349 of an offense classified as a level 1 violation is guilty of a
350 noncriminal infraction, which is punishable as provided in this
351 subsection and includes violation of the following:
352 1. Commission rules or orders relating to the filing of
353 required reports or other documents for licensees or
354 permitholders, excluding those related to commercial harvest of
355 saltwater fish or possession of captive wildlife.
356 2. Commission rules or orders relating to quota hunting
357 permits, daily use permits, hunting zone assignments, check
358 stations, possession of alcoholic beverages, campsite use, and

359 the operation of vehicles within wildlife management areas or
360 other areas managed by the commission.
361 3. Commission rules or orders relating to daily permits,
362 possession of alcoholic beverages, possession of firearms,
363 swimming activities, the operation of watercraft, and the
364 operation of vehicles within fish management areas or other
365 areas managed by the commission.
366 4. Commission rules or orders regulating vessel size or
367 specifying motor restrictions on specified water bodies.
368 5. Provisions of s. 370.063, relating to special
369 recreational crawfish licenses.
370 6. Provisions of s. 372.57, relating to hunting, fishing,
371 and trapping licenses.
372 7. Provisions of s. 372.5717, relating to hunter safety
373 certification.
374 8. Provisions of s. 372.988, relating to required clothing
375 for persons hunting deer.
376 (b) Citations issued for any violation specified in
377 paragraph (a) shall include a requirement for appearance before
378 the county court.
379 (c)1. The civil penalty for any noncriminal level 1
380 violation of the license and permit requirements of s. 372.57 is
381 $50 for the first conviction and $250 for each subsequent
382 conviction in addition to the cost of the required license and
383 permit.
384 2. The civil penalty for any other noncriminal level 1
385 violation is $50 for the first conviction and $250 for each
386 subsequent conviction, except as otherwise provided in this
387 subsection.
388 (d) Any person issued a citation for a violation specified
389 in this subsection may:

390 1. Post a bond equal to the amount of the civil penalty
391 and appear before the court; or
392 2. Pay the civil penalty by mail or in person within 30
393 days after the date of receiving the citation, or if a bond has
394 been posted, forfeit the bond for payment by failure to appear
395 before the court.
396
397 Payment of the civil penalty without appearing before the court
398 is considered an admission of guilt and waives any further right
399 to a hearing on the violation for which the citation was issued.
400 Such admission shall not be used as evidence in any other
401 proceedings except to determine the appropriate fine for any
402 subsequent violations.
403 (e)1. Any person who willfully refuses the issuance of a
404 citation for a violation specified in this subsection commits a
405 misdemeanor of the second degree, punishable as provided in s.
406 775.082 or s. 775.083.
407 2. Any person who willfully fails to pay the civil penalty
408 within 30 days after the issuance of a citation for a violation
409 specified in this subsection commits a misdemeanor of the second
410 degree, punishable as provided in s. 775.082 or s. 775.083.
411 (f)1. Electing or being required to appear before the
412 court shall waive the limitations on the civil penalty specified
413 in this subsection. The court shall determine whether a
414 violation has occurred and may impose a civil penalty not less
415 than those specified in this subsection and not more than $500.
416 2. Violations must be proved beyond a reasonable doubt
417 before the court.
418 3. A person found guilty of a violation may file an appeal
419 with the circuit court.

420 (g) A person charged with violating the requirement for
421 personal possession of a license or permit under s. 372.57 may
422 not be convicted if the person presents the required license or
423 permit for verification by the hearing officer or clerk of the
424 court prior to the scheduled court proceeding. The license or
425 permit must have been issued to the person charged with
426 committing the violation and valid at the time the violation
427 occurred. The clerk of the court may assess a fee of $5 to cover
428 related court costs under this paragraph.
429 (2) LEVEL 2 VIOLATIONS.--
430 (a) Unless otherwise provided by law, a person convicted
431 of an offense classified as a level 2 violation is guilty of a
432 misdemeanor, which is punishable as provided in this subsection
433 and includes violation of the following:
434 1. Commission rules or orders that specify season or time
435 periods for the taking of saltwater fish, freshwater game fish,
436 or wildlife.
437 2. Commission rules or orders that establish bag,
438 possession, or size limits for, or restrict methods of the
439 taking of, saltwater fish, freshwater game fish, or wildlife.
440 3. Commission rules or orders that prohibit public access
441 for specified periods to wildlife management areas or other
442 areas managed by the commission.
443 4. Commission rules or orders that relate to the access to
444 wildlife management areas or other areas managed by the
445 commission.
446 5. Commission rules or orders relating to the feeding of
447 saltwater fish, freshwater game fish, or wildlife.
448 6. Commission rules or orders relating to restricted
449 hunting areas, bird sanctuaries, or critical wildlife areas.

450 7. Commission rules or orders relating to landing
451 requirements for saltwater fish or freshwater game fish.
452 8. Commission rules or orders relating to tagging
453 requirements for game and fur-bearing animals.
454 9. Commission rules or orders relating to the use of dogs
455 for the taking of game.
456 10. Any commission rules or orders not otherwise
457 classified.
458 11. Any prohibitions in chapter 370 not otherwise
459 classified in this section.
460 12. Provisions of s. 370.08, relating to obstructing
461 waterways with net gear.
462 13. Provisions of s. 370.1105, relating to finfish traps.
463 14. Provisions of s. 370.1121, relating to bonefish.
464 15. Provisions of s. 370.14, relating to crawfish.
465 16. Provisions of s. 370.25, relating to placement of
466 artificial reefs.
467 17. Provisions of s. 372.667, relating to feeding or
468 enticement of alligators or crocodiles.
469 18. Provisions of s. 372.705, relating to harassment of
470 hunters, fishers, or trappers.
471 (b)1. A person convicted of any level 2 violation without
472 any previous conviction for a level 2 violation is guilty of a
473 misdemeanor of the first degree, punishable as provided in s.
474 775.082 or s. 775.083.
475 2. A person convicted of any level 2 violation within 3
476 years after any previous conviction for a level 2 violation is
477 guilty of a misdemeanor of the first degree, punishable as
478 provided in s. 775.082 or s. 775.083 and by a minimum mandatory
479 fine of $250 and suspension of all recreational licenses issued
480 pursuant to this chapter for not less than 1 year.

481 3. A person convicted of any level 2 violation within 5
482 years after any three previous convictions for level 2
483 violations is guilty of a misdemeanor of the first degree,
484 punishable as provided in s. 775.082 or s. 775.083 and by a
485 minimum mandatory fine of $500 and suspension of all
486 recreational licenses issued pursuant to this chapter for not
487 less than 3 years.
488 4. A person convicted of any level 2 violation within 10
489 years after any three previous convictions for level 2
490 violations is guilty of a misdemeanor of the first degree,
491 punishable as provided in s. 775.082 or s. 775.083 and by a
492 minimum mandatory fine of $750 and suspension of all
493 recreational licenses issued pursuant to this chapter for not
494 less than 3 years.
495 (3) LEVEL 3 VIOLATIONS.--
496 (a) Unless otherwise provided by law, a person convicted
497 of an offense classified as a level 3 violation is guilty of a
498 misdemeanor, which is punishable as provided in this subsection
499 and includes violation of the following:
500 1. Commission rules or orders related to the prohibited
501 sale of saltwater fish.
502 2. Provisions of s. 370.021(3), relating to major
503 violations.
504 3. Provisions of s. 370.021(5), relating to possession in
505 excess of certain bag limits.
506 4. Provisions of s. 370.081, relating to illegal
507 importation or possession of exotic marine plants and animals.
508 5. Provisions of s. 370.093, relating to the taking of
509 saltwater fish with nets.
510 6. Provisions of s. 372.26, relating to imported fish.

511 7. Provisions of s. 372.57(17), relating to taking while
512 license is suspended or revoked.
513 8. Provisions of s. 372.662, relating to the illegal sale
514 or possession of alligators.
515 9. Provisions of s. 372.99, relating to the illegal taking
516 and possession of deer and wild turkey.
517 10. Provisions of s. 372.9903, relating to the illegal
518 possession and transportation of commercial quantities of
519 freshwater game fish.
520 (b)1. A person convicted of a level 3 violation without
521 any previous conviction for a level 3 violation in the past 10
522 years is guilty of a misdemeanor of the first degree, punishable
523 as provided in s. 775.082 or s. 775.083.
524 2. A person convicted of a level 3 violation within 10
525 years after any previous conviction of a level 3 violation is
526 guilty of a misdemeanor of the first degree, punishable as
527 provided in s. 775.082 or s. 775.083 and by a minimum mandatory
528 fine of $750 and the suspension of all recreational licenses
529 issued pursuant to this chapter for not less than 3 years.
530 3. The penalty for a violation of s. 372.57(17) shall
531 include a mandatory fine of $1,000 and a suspension of all
532 recreational licenses issued pursuant to this chapter for 5
533 years.
534 (4) LEVEL 4 VIOLATIONS.--Unless otherwise provided by law,
535 a person convicted of an offense classified as a level 4
536 violation is guilty of a felony of the third degree, which is
537 punishable as provided in s. 775.082 or s. 775.083 and includes
538 violation of the following:
539 (a) Provisions of s. 370.13, relating to the molestation
540 of stone crab gear.

541 (b) Provisions of s. 370.135, relating to the molestation
542 of blue crab gear.
543 (c) Provisions of s. 370.14, relating to the molestation
544 of crawfish gear.
545 (d) Provisions of s. 372.57(16), relating to forgery of a
546 license or possession of a forged license.
547 (e) Provisions of s. 372.99(5), relating to the sale of
548 deer or turkey that is taken illegally.
549 (f) Provisions of s. 372.99022, relating to molestation or
550 theft of freshwater gear.
551 ~~(1) A person is guilty of a noncriminal infraction,~~
552 ~~punishable as provided in s. 372.711, if she or he violates any~~
553 ~~of the following provisions:~~
554 ~~(a) Rules, regulations, or orders relating to the filing~~
555 ~~of reports or other documents required of persons who are~~
556 ~~licensed or who hold permits issued by the commission.~~
557 ~~(b) Rules, regulations, or orders relating to fish~~
558 ~~management areas.~~
559 ~~(c) Rules, regulations, or orders relating to quota hunt~~
560 ~~permits, daily use permits, hunting zone assignments, camping~~
561 ~~restrictions, the use of alcoholic beverages, vehicle use, and~~
562 ~~check station requirements within wildlife management areas or~~
563 ~~other areas managed by the commission.~~
564 ~~(d) Rules, regulations, or orders requiring permits free~~
565 ~~of charge to possess captive wildlife for personal use.~~
566 ~~(e) Rules, regulations, or orders establishing size or~~
567 ~~slot limits for freshwater game fish.~~
568 ~~(f) Rules, regulations, or orders regulating vessel size~~
569 ~~or specifying motor restrictions on specified water bodies.~~

570 ~~(g) Rules, regulations, or orders relating to the~~
571 ~~registration of off-road vehicles and airboats operated on state~~
572 ~~lands.~~
573 ~~(h) Section 372.57, relating to hunting, fishing, and~~
574 ~~trapping licenses.~~
575 ~~(i) Section 372.988, relating to required clothing for~~
576 ~~persons hunting deer.~~
577
578 ~~A person who fails to pay the civil penalty specified in s.~~
579 ~~372.711 within 30 days after being cited for a noncriminal~~
580 ~~infraction or to appear before the court pursuant to that~~
581 ~~section is guilty of a misdemeanor of the second degree,~~
582 ~~punishable as provided in s. 775.082 or s. 775.083.~~
583 ~~(2) A person is guilty of a misdemeanor of the second~~
584 ~~degree, punishable as provided in s. 775.082 or s. 775.083, if~~
585 ~~she or he violates any of the following rules, regulations, or~~
586 ~~orders of the commission:~~
587 ~~(a) Rules, regulations, or orders that specify season or~~
588 ~~time periods for the taking of freshwater fish or wildlife.~~
589 ~~(b) Rules, regulations, or orders that specify bag limits~~
590 ~~or restrict methods of taking freshwater fish or wildlife.~~
591 ~~(c) Rules, regulations, or orders that relate to the sale,~~
592 ~~possession for sale, purchase, transfer, transportation, or~~
593 ~~importation of freshwater fish or wildlife.~~
594 ~~(d) Rules, regulations, or orders that prohibit public~~
595 ~~access for specified periods to wildlife management areas or~~
596 ~~other areas managed by the commission.~~
597 ~~(e) Rules, regulations, or orders that require a person to~~
598 ~~pay a fee to obtain a permit to possess captive wildlife or that~~
599 ~~require the maintenance of records relating to captive wildlife.~~

600 ~~(f) All other rules, regulations, and orders of the~~
601 ~~commission, except those specified in subsection (1).~~
602 ~~(3) It is unlawful for any person to make, forge,~~
603 ~~counterfeit, or reproduce a freshwater fishing, hunting, or~~
604 ~~saltwater fishing license unless authorized by the commission.~~
605 ~~It is unlawful for any person to knowingly have in his or her~~
606 ~~possession a forgery, counterfeit, or imitation of such a~~
607 ~~license unless possession by the person has been fully~~
608 ~~authorized by the commission. A person who violates this~~
609 ~~subsection commits a felony of the third degree, punishable as~~
610 ~~provided in s. 775.082, s. 775.083, or s. 775.084.~~
611 (5) ~~(4)~~ Unless otherwise provided in this chapter, a person
612 who violates any provision of this chapter is guilty, for the
613 first offense, of a misdemeanor of the second degree, punishable
614 as provided in s. 775.082 or s. 775.083, and is guilty, for the
615 second offense or any subsequent offense, of a misdemeanor of
616 the first degree, punishable as provided in s. 775.082 or s.
617 775.083.
618 (6) ~~(5)~~ The court may order the suspension or revocation of
619 any license or permit issued to a person pursuant to this
620 chapter, if that person commits a criminal offense specified in
621 this chapter or a noncriminal infraction specified in this
622 section.
623 (7) For purposes of this section, "conviction" means any
624 judicial disposition other than acquittal or dismissal.
625 Section 7. Paragraphs (h), (i), and (j) of subsection (4),
626 paragraphs (e) through (i) of subsection (8), paragraph (b) of
627 subsection (11), and paragraph (b) of subsection (12) of section
628 372.57, Florida Statutes, are amended, and subsections (16) and
629 (17) are added to that section, to read:

630 372.57 Recreational licenses, permits, and authorization
631 numbers; fees established.--
632 (4) RESIDENT HUNTING AND FISHING LICENSES.--The licenses
633 and fees for residents participating in hunting and fishing
634 activities in this state are as follows:
635 (h) Annual sportsman's license, $71 ~~$66~~, except that an
636 annual sportsman's license for a resident 64 years of age or
637 older is $12. A sportsman's license authorizes the person to
638 whom it is issued to take game and freshwater fish, subject to
639 the state and federal laws, rules, and regulations, including
640 rules of the commission, in effect at the time of the taking.
641 Other authorized activities include activities authorized by a
642 management area permit, a muzzle-loading gun season permit, a
643 turkey permit, a Florida waterfowl permit, ~~and~~ an archery season
644 permit, and a crossbow season permit.
645 (i) Annual gold sportsman's license, $87 ~~$82~~. The gold
646 sportsman's license authorizes the person to whom it is issued
647 to take freshwater fish, saltwater fish, and game, subject to
648 the state and federal laws, rules, and regulations, including
649 rules of the commission, in effect at the time of taking. Other
650 authorized activities include activities authorized by a
651 management area permit, a muzzle-loading gun season permit, a
652 turkey permit, a Florida waterfowl permit, an archery season
653 permit, a crossbow season permit, a snook permit, and a crawfish
654 permit.
655 (j) Annual military gold sportsman's license, $18.50. The
656 gold sportsman's license authorizes the person to whom it is
657 issued to take freshwater fish, saltwater fish, and game,
658 subject to the state and federal laws, rules, and regulations,
659 including rules of the commission, in effect at the time of
660 taking. Other authorized activities include activities

661 authorized by a management area permit, a muzzle-loading gun
662 season permit, a turkey permit, a Florida waterfowl permit, an
663 archery season permit, a crossbow season permit, a snook permit,
664 and a crawfish permit. Any resident who is an active or retired
665 member of the United States Armed Forces, the United States
666 Armed Forces Reserve, the National Guard, the United States
667 Coast Guard, or the United States Coast Guard Reserve is
668 eligible to purchase the military gold sportsman's license upon
669 submission of a current military identification card.
670 (8) SPECIFIED HUNTING, FISHING, AND RECREATIONAL ACTIVITY
671 PERMITS.--In addition to any license required under this
672 chapter, the following permits and fees for specified hunting,
673 fishing, and recreational uses and activities are required:
674 (e) A $5 fee is imposed for the following permits:
675 1. An annual archery season permit for a resident or
676 nonresident to hunt within the state during any archery season
677 authorized by the commission.
678 2. An annual crossbow season permit for a resident or
679 nonresident to hunt within the state during any crossbow season
680 authorized by the commission.
681 3. An annual muzzle-loading gun season permit for a
682 resident or nonresident to hunt within the state during any
683 ~~with a~~ muzzle-loading gun season ~~is $5. Hunting with a muzzle-~~
684 ~~loading gun is limited to game seasons in which hunting with a~~
685 ~~modern firearm is not~~ authorized by the commission.
686 ~~(f) An annual archery permit for a resident or nonresident~~
687 ~~to hunt within the state with a bow and arrow is $5. Hunting~~
688 ~~with an archery permit is limited to those game seasons in which~~
689 ~~hunting with a firearm is not authorized by the commission.~~
690 (f) ~~(g)~~ A special use permit for a resident or nonresident
691 to participate in limited entry hunting or fishing activities as

692 authorized by commission rule shall not exceed $100 per day or
693 $250 per week. Notwithstanding any other provision of this
694 chapter, there are no exclusions, exceptions, or exemptions from
695 this permit fee. In addition to the permit fee, the commission
696 may charge each special use permit applicant a nonrefundable
697 application fee not to exceed $10.
698 (g) ~~(h)~~1. A management area permit for a resident or
699 nonresident to hunt on, fish on, or otherwise use for outdoor
700 recreational purposes land owned, leased, or managed by the
701 commission, or by the state for the use and benefit of the
702 commission, shall not exceed $25 per year.
703 2. Permit fees for short-term use of land that is owned,
704 leased, or managed by the commission may be established by rule
705 of the commission for activities on such lands. Such permits may
706 be in lieu of, or in addition to, the annual management area
707 permit authorized in subparagraph 1.
708 3. Other than for hunting or fishing, the provisions of
709 this paragraph shall not apply on any lands not owned by the
710 commission, unless the commission has obtained the written
711 consent of the owner or primary custodian of such lands.
712 (h) ~~(i)~~1. A recreational user permit is required to hunt
713 on, fish on, or otherwise use for outdoor recreational purposes
714 land leased by the commission from private nongovernmental
715 owners, except for those lands located directly north of the
716 Apalachicola National Forest, east of the Ochlocknee River until
717 the point the river meets the dam forming Lake Talquin, and
718 south of the closest federal highway. The fee for a recreational
719 user permit shall be based upon the economic compensation
720 desired by the landowner, game population levels, desired hunter
721 density, and administrative costs. The permit fee shall be set
722 by commission rule on a per-acre basis. The recreational user

723 permit fee, less administrative costs of up to $25 per permit,
724 shall be remitted to the landowner as provided in the lease
725 agreement for each area.
726 2. One minor dependent, 16 years of age or younger, may
727 hunt under the supervision of the permittee and is exempt from
728 the recreational user permit requirements. The spouse and
729 dependent children of a permittee are exempt from the
730 recreational user permit requirements when engaged in outdoor
731 recreational activities other than hunting and when accompanied
732 by a permittee. Notwithstanding any other provision of this
733 chapter, no other exclusions, exceptions, or exemptions from the
734 recreational user permit fee are authorized.
735 (11) RESIDENT LIFETIME HUNTING LICENSES.--
736 (b) The following activities are authorized by the
737 purchase of a lifetime hunting license:
738 1. Taking, or attempting to take or possess, game
739 consistent with the state and federal laws and regulations and
740 rules of the commission in effect at the time of the taking.
741 2. All activities authorized by a muzzle-loading gun
742 season permit, a turkey permit, an archery season permit, a
743 crossbow season permit, a Florida waterfowl permit, and a
744 management area permit, excluding fishing.
745 (12) RESIDENT LIFETIME SPORTSMAN'S LICENSES.--
746 (b) The following activities are authorized by the
747 purchase of a lifetime sportsman's license:
748 1. Taking, or attempting to take or possess, freshwater
749 and saltwater fish, and game, consistent with the state and
750 federal laws and regulations and rules of the commission in
751 effect at the time of taking.
752 2. All activities authorized by a management area permit,
753 a muzzle-loading gun season permit, a turkey permit, an archery

754 season permit, a crossbow season permit, a Florida waterfowl
755 permit, a snook permit, and a crawfish permit.
756 (16) FORGING OF LICENSES.--It is unlawful for any person
757 to make, forge, or counterfeit a freshwater fishing, hunting, or
758 saltwater fishing license. Such a license may be reproduced only
759 as authorized by the commission. It is unlawful for any person
760 to knowingly have in his or her possession a forgery,
761 counterfeit, or imitation of such a license unless possession by
762 the person has been fully authorized by the commission. A person
763 who violates this subsection commits a level 4 violation as
764 classified in s. 372.83 and shall be punished as provided in s.
765 372.83.
766 (17) TAKING OF GAME AND FISH WHILE LICENSE SUSPENDED OR
767 REVOKED.--No person shall take game, freshwater game fish,
768 saltwater fish, or fur-bearing animals within this state while
769 the license required to do so is suspended or revoked. A person
770 who violates this subsection commits a level 3 violation as
771 classified in s. 372.83 and shall be punished as provided in s.
772 372.83.
773 Section 8. Section 372.573, Florida Statutes, is amended
774 to read:
775 372.573 Management area permit revenues.--The commission
776 shall expend the revenue generated from the sale of the
777 management area permit as provided for in s. 372.57(8)(g) ~~(h)~~ or
778 that pro rata portion of any license that includes management
779 area privileges as provided for in s. 372.57(4)(h), (i), and (j)
780 for the lease, management, and protection of lands for public
781 hunting, fishing, and other outdoor recreation.
782 Section 9. Subsection (2) of section 372.661, Florida
783 Statutes, is amended to read:

784 372.661 Private hunting preserve license fees;
785 exception.--
786 (2) A commercial hunting preserve license, which shall
787 exempt patrons of licensed preserves from the license and permit
788 requirements of s. 372.57(4)(c), (d), (f), (h), (i), and (j);
789 (5)(f) and (g); (8)(a), (b), and (e)~~, and (f)~~; (9)(a)2.; (11);
790 and (12) while hunting on the licensed preserve property, shall
791 be $500. Such commercial hunting preserve license shall be
792 available only to those private hunting preserves licensed
793 pursuant to this section which are operated exclusively for
794 commercial purposes, which are open to the public, and for which
795 a uniform fee is charged to patrons for hunting privileges.
796 Section 10. Section 372.831, Florida Statutes, is created
797 to read:
798 372.831 Wildlife Violators Compact.--The Wildlife
799 Violators Compact is created and entered into with all other
800 jurisdictions legally joining therein in the form substantially
801 as follows:
802
803 ARTICLE I
804 Findings
805
806 (1) The participating states find that:
807 (a) Wildlife resources are managed in trust by the
808 respective states for the benefit of all residents and visitors.
809 (b) The protection of the wildlife resources of a state is
810 materially affected by the degree of compliance with state
811 statutes, laws, regulations, ordinances, and administrative
812 rules relating to the management of such resources.
813 (c) The preservation, protection, management, and
814 restoration of wildlife contributes immeasurably to the

815 aesthetic, recreational, and economic aspects of such natural
816 resources.
817 (d) Wildlife resources are valuable without regard to
818 political boundaries; therefore, every person should be required
819 to comply with wildlife preservation, protection, management,
820 and restoration laws, ordinances, and administrative rules and
821 regulations of the participating states as a condition precedent
822 to the continuance or issuance of any license to hunt, fish,
823 trap, or possess wildlife.
824 (e) Violation of wildlife laws interferes with the
825 management of wildlife resources and may endanger the safety of
826 persons and property.
827 (f) The mobility of many wildlife law violators
828 necessitates the maintenance of channels of communication among
829 the various states.
830 (g) In most instances, a person who is cited for a
831 wildlife violation in a state other than his or her home state:
832 1. Is required to post collateral or a bond to secure
833 appearance for a trial at a later date;
834 2. Is taken into custody until the collateral or bond is
835 posted; or
836 3. Is taken directly to court for an immediate appearance.
837 (h) The purpose of the enforcement practices set forth in
838 subsection (7) of this article is to ensure compliance with the
839 terms of a wildlife citation by the cited person who, if
840 permitted to continue on his or her way after receiving the
841 citation, could return to his or her home state and disregard
842 his or her duty under the terms of the citation.
843 (i) In most instances, a person receiving a wildlife
844 citation in his or her home state is permitted to accept the
845 citation from the officer at the scene of the violation and

846 immediately continue on his or her way after agreeing or being
847 instructed to comply with the terms of the citation.
848 (j) The practices described in paragraph (7) of this
849 article cause unnecessary inconvenience and, at times, a
850 hardship for the person who is unable at the time to post
851 collateral, furnish a bond, stand trial, or pay a fine and thus
852 is compelled to remain in custody until some alternative
853 arrangement is made.
854 (k) The enforcement practices described in paragraph (7)
855 of this article consume an undue amount of law enforcement time.
856 (2) It is the policy of the participating states to:
857 (a) Promote compliance with the statutes, laws,
858 ordinances, regulations, and administrative rules relating to
859 management of wildlife resources in their respective states.
860 (b) Recognize the suspension of wildlife license
861 privileges of any person whose license privileges have been
862 suspended by a participating state and treat such suspension as
863 if it had occurred in that person's home state.
864 (c) Allow a violator, except as provided in paragraph (b)
865 of Article III, to accept a wildlife citation and, without
866 delay, proceed on his or her way, regardless of whether he or
867 she is a resident of the state in which the citation was issued,
868 provided that the violator's home state is party to this
869 compact.
870 (d) Report to the appropriate participating state, as
871 provided in the compact manual, any conviction recorded against
872 any person whose home state was not the issuing state.
873 (e) Allow the home state to recognize and treat
874 convictions recorded against its residents, which convictions
875 occurred in a participating state, as though they had occurred
876 in the home state.

877 (f) Extend cooperation to its fullest extent among the
878 participating states for enforcing compliance with the terms of
879 a wildlife citation issued in one participating state to a
880 resident of another participating state.
881 (g) Maximize effective use of law enforcement personnel
882 and information.
883 (h) Assist court systems in the efficient disposition of
884 wildlife violations.
885 (3) The purpose of this compact is to:
886 (a) Provide a means through which participating states may
887 join in a reciprocal program to effectuate the policies
888 enumerated in paragraph (b) of this article in a uniform and
889 orderly manner.
890 (b) Provide for the fair and impartial treatment of
891 wildlife violators operating within participating states in
892 recognition of the violator's right to due process and the
893 sovereign status of a participating state.
894
895 ARTICLE II
896 Definitions
897
898 As used in this compact, unless the context requires otherwise:
899
900 (1) "Citation" means any summons, complaint, summons and
901 complaint, ticket, penalty assessment, or other official
902 document issued to a person by a wildlife officer or other peace
903 officer for a wildlife violation which contains an order
904 requiring the person to respond.
905 (2) "Collateral" means any cash or other security
906 deposited to secure an appearance for trial in connection with

907 the issuance by a wildlife officer or other peace officer of a
908 citation for a wildlife violation.
909 (3) "Compliance," with respect to a citation, means the
910 act of answering a citation through an appearance in a court or
911 tribunal or through the payment of fines, costs, and surcharges,
912 if any.
913 (4) "Conviction" means a conviction, including any court
914 conviction, for any offense related to the preservation,
915 protection, management, or restoration of wildlife which is
916 prohibited by state statute, law, regulation, ordinance, or
917 administrative rule, and such conviction shall also include the
918 forfeiture of any bail, bond, or other security deposited to
919 secure appearance by a person charged with having committed any
920 such offense, the payment of a penalty assessment, a plea of
921 nolo contendere, and the imposition of a deferred or suspended
922 sentence by the court.
923 (5) "Court" means a court of law, including magistrate's
924 court and the justice of the peace court.
925 (6) "Home state" means the state of primary residence of a
926 person.
927 (7) "Issuing state" means the participating state that
928 issues a wildlife citation to the violator.
929 (8) "License" means any license, permit, or other public
930 document that conveys to the person to whom it was issued the
931 privilege of pursuing, possessing, or taking any wildlife
932 regulated by statute, law, regulation, ordinance, or
933 administrative rule of a participating state; however, when
934 applied to licenses issued by the State of Florida, only those
935 licenses issued pursuant to ss. 372.561, 372.562, and 372.57
936 shall be considered licenses.

937 (9) "Licensing authority" means the department or division
938 within each participating state that is authorized by law to
939 issue or approve licenses or permits to hunt, fish, trap, or
940 possess wildlife.
941 (10) "Participating state" means any state that enacts
942 legislation to become a member of this wildlife compact.
943 (11) "Personal recognizance" means an agreement by a
944 person made at the time of issuance of the wildlife citation
945 that such person will comply with the terms of the citation.
946 (12) "State" means any state, territory, or possession of
947 the United States, the District of Columbia, the Commonwealth of
948 Puerto Rico, the Provinces of Canada, and other countries.
949 (13) "Suspension" means any revocation, denial, or
950 withdrawal of any or all license privileges, including the
951 privilege to apply for, purchase, or exercise the benefits
952 conferred by any license.
953 (14) "Terms of the citation" means those conditions and
954 options expressly stated upon the citation.
955 (15) "Wildlife" means all species of animals, including,
956 but not limited to, mammals, birds, fish, reptiles, amphibians,
957 mollusks, and crustaceans, that are defined as "wildlife" and
958 are protected or otherwise regulated by statute, law,
959 regulation, ordinance, or administrative rule in a participating
960 state. Species included in the definition of "wildlife" vary
961 from state to state, and determination of whether a species is
962 "wildlife" for the purposes of this compact shall be based on
963 local law.
964 (16) "Wildlife law" means any statute, law, regulation,
965 ordinance, or administrative rule developed and enacted for the
966 management of wildlife resources and the uses thereof.

967 (17) "Wildlife officer" means any individual authorized by
968 a participating state to issue a citation for a wildlife
969 violation.
970 (18) "Wildlife violation" means any cited violation of a
971 statute, law, regulation, ordinance, or administrative rule
972 developed and enacted for the management of wildlife resources
973 and the uses thereof.
974
975 ARTICLE III
976 Procedures for Issuing State
977
978 (1) When issuing a citation for a wildlife violation, a
979 wildlife officer shall issue a citation to any person whose
980 primary residence is in a participating state in the same manner
981 as though the person were a resident of the issuing state and
982 shall not require such person to post collateral to secure
983 appearance, subject to the exceptions noted in paragraph (b) of
984 this article, if the officer receives the recognizance of such
985 person that he or she will comply with the terms of the
986 citation.
987 (2) Personal recognizance is acceptable if not prohibited
988 by local law, by any issuing agency policy, procedure, or
989 regulation, or by the compact manual and if the violator
990 provides adequate proof of identification to the wildlife
991 officer.
992 (3) Upon conviction or failure of a person to comply with
993 the terms of a wildlife citation, the appropriate official shall
994 report the conviction or failure to comply to the licensing
995 authority of the participating state in which the wildlife
996 citation was issued. The report shall be made in accordance with
997 procedures specified by the issuing state and shall contain

998 information as specified in the compact manual as minimum
999 requirements for effective processing by the home state.
1000 (4) Upon receipt of the report of conviction or
1001 noncompliance pursuant to subsection (3), the licensing
1002 authority of the issuing state shall transmit to the licensing
1003 authority of the home state of the violator the information in
1004 form and content as prescribed in the compact manual.
1005
1006 ARTICLE IV
1007 Procedure for Home State
1008
1009 (1) Upon receipt of a report from the licensing authority
1010 of the issuing state reporting the failure of a violator to
1011 comply with the terms of a citation, the licensing authority of
1012 the home state shall notify the violator and shall initiate a
1013 suspension action in accordance with the home state's suspension
1014 procedures and shall suspend the violator's license privileges
1015 until satisfactory evidence of compliance with the terms of the
1016 wildlife citation has been furnished by the issuing state to the
1017 home state licensing authority. Due process safeguards will be
1018 accorded.
1019 (2) Upon receipt of a report of conviction from the
1020 licensing authority of the issuing state, the licensing
1021 authority of the home state shall enter such conviction in its
1022 records and shall treat such conviction as though it occurred in
1023 the home state for the purposes of the suspension of license
1024 privileges.
1025 (3) The licensing authority of the home state shall
1026 maintain a record of actions taken and shall make reports to
1027 issuing states as provided in the compact manual.
1028

1029 ARTICLE V
1030 Reciprocal Recognition of Suspension
1031
1032 (1) All participating states shall recognize the
1033 suspension of license privileges of any person by any
1034 participating state as though the violation resulting in the
1035 suspension had occurred in their state and could have been the
1036 basis for suspension of license privileges in their state.
1037 (2) Each participating state shall communicate suspension
1038 information to other participating states in form and content as
1039 contained in the compact manual.
1040
1041 ARTICLE VI
1042 Applicability of Other Laws
1043
1044 Except as expressly required by provisions of this compact,
1045 nothing herein shall be construed to affect the right of any
1046 participating state to apply any of its laws relating to license
1047 privileges to any person or circumstance or to invalidate or
1048 prevent any agreement or other cooperative arrangement between a
1049 participating state and a nonparticipating state concerning
1050 wildlife law enforcement.
1051
1052 ARTICLE VII
1053 Compact Administrator Procedures
1054
1055 (1) For the purpose of administering the provisions of
1056 this compact and to serve as a governing body for the resolution
1057 of all matters relating to the operation of this compact, a
1058 board of compact administrators is established. The board shall
1059 be composed of one representative from each of the participating

1060 states to be known as the compact administrator. The compact
1061 administrator shall be appointed by the head of the licensing
1062 authority of each participating state and shall serve and be
1063 subject to removal in accordance with the laws of the state he
1064 or she represents. A compact administrator may provide for the
1065 discharge of his or her duties and the performance of his or her
1066 functions as a board member by an alternate. An alternate shall
1067 not be entitled to serve unless written notification of his or
1068 her identity has been given to the board.
1069 (2) Each member of the board of compact administrators
1070 shall be entitled to one vote. No action of the board shall be
1071 binding unless taken at a meeting at which a majority of the
1072 total number of the board's votes is cast in favor thereof.
1073 Action by the board shall be only at a meeting at which a
1074 majority of the participating states is represented.
1075 (3) The board shall elect annually from its membership a
1076 chair and vice chair.
1077 (4) The board shall adopt bylaws not inconsistent with the
1078 provisions of this compact or the laws of a participating state
1079 for the conduct of its business and shall have the power to
1080 amend and rescind its bylaws.
1081 (5) The board may accept for any of its purposes and
1082 functions under this compact any and all donations and grants of
1083 moneys, equipment, supplies, materials, and services,
1084 conditional or otherwise, from any state, the United States, or
1085 any governmental agency and may receive, utilize, and dispose of
1086 same.
1087 (6) The board may contract with, or accept services or
1088 personnel from, any governmental or intergovernmental agency,
1089 individual, firm, or corporation or any private nonprofit
1090 organization or institution.

1091 (7) The board shall formulate all necessary procedures and
1092 develop uniform forms and documents for administering the
1093 provisions of this compact. All procedures and forms adopted
1094 pursuant to board action shall be contained in a compact manual.
1095
1096 ARTICLE VIII
1097 Entry into and Withdrawal from Compact
1098
1099 (1) This compact shall become effective at such time as it
1100 is adopted in substantially similar form by two or more states.
1101 (2)(a) Entry into the compact shall be made by resolution
1102 of ratification executed by the authorized officials of the
1103 applying state and submitted to the chair of the board.
1104 (b) The resolution shall substantially be in the form and
1105 content as provided in the compact manual and shall include the
1106 following:
1107 1. A citation of the authority from which the state is
1108 empowered to become a party to this compact.
1109 2. An agreement of compliance with the terms and
1110 provisions of this compact.
1111 3. An agreement that compact entry is with all states
1112 participating in the compact and with all additional states
1113 legally becoming a party to the compact.
1114 (c) The effective date of entry shall be specified by the
1115 applying state but shall not be less than 60 days after notice
1116 has been given by the chair of the board of the compact
1117 administrators or by the secretary of the board to each
1118 participating state that the resolution from the applying state
1119 has been received.
1120 (3) A participating state may withdraw from participation
1121 in this compact by official written notice to each participating

1122 state, but withdrawal shall not become effective until 90 days
1123 after the notice of withdrawal is given. The notice shall be
1124 directed to the compact administrator of each member state. No
1125 withdrawal of any state shall affect the validity of this
1126 compact as to the remaining participating states.
1127
1128 ARTICLE IX
1129 Amendments to the Compact
1130
1131 (1) This compact may be amended. Amendments shall be
1132 presented in resolution form to the chair of the board of
1133 compact administrators and shall be initiated by one or more
1134 participating states.
1135 (2) Adoption of an amendment shall require endorsement by
1136 all participating states and shall become effective 30 days
1137 after the date of the last endorsement.
1138 (3) Failure of a participating state to respond to the
1139 chair of the board within 60 days after receipt of a proposed
1140 amendment shall constitute endorsement thereof.
1141
1142 ARTICLE X
1143 Construction and Severability
1144
1145 This compact shall be liberally construed so as to effectuate
1146 the purposes stated herein. The provisions of this compact shall
1147 be severable, and if any phrase, clause, sentence, or provision
1148 of this compact is declared to be contrary to the constitution
1149 of any participating state or of the United States, or if the
1150 applicability thereof to any government, agency, individual, or
1151 circumstance is held invalid, the validity of the remainder of
1152 this compact shall not be affected thereby. If this compact is

1153 declared to be contrary to the constitution of any participating
1154 state, the compact shall remain in full force and effect as to
1155 the remaining states and in full force and effect as to the
1156 participating state affected as to all severable matters.
1157
1158 ARTICLE XI
1159 Title
1160
1161 This compact shall be known as the "Wildlife Violator Compact."
1162 Section 11. Section 372.832, Florida Statutes, is created
1163 to read:
1164 372.832 Compact licensing authority; ratification.--For
1165 purposes of this act and the interstate Wildlife Violator
1166 Compact, the Fish and Wildlife Conservation Commission is the
1167 licensing authority for the State of Florida and shall enforce
1168 the interstate Wildlife Violator Compact and do all things
1169 within its jurisdiction that are necessary to effectuate the
1170 purposes and the intent of the compact. The commission is
1171 authorized to execute a resolution of ratification to formalize
1172 the State of Florida's entry into the compact.
1173 Section 12. Section 372.833, Florida Statutes, is created
1174 to read:
1175 372.833 Compact enforcement; violation review.--Any act
1176 done or omitted pursuant to, or in enforcing, the provisions of
1177 the interstate Wildlife Violator Compact shall be subject to
1178 review by the commission in accordance with chapter 120, but any
1179 review of a suspension for the failure of a violator to comply
1180 with the terms of a citation or a conviction pursuant to the
1181 compact shall be limited to establishing the identity of the
1182 person so convicted or failing to comply with a citation.

1183 Section 13. Section 370.028, Florida Statutes, is amended
1184 to read:
1185 370.028 Enforcement of commission rules; penalties for
1186 violation of rule.--Rules of the Fish and Wildlife Conservation
1187 Commission shall be enforced by any law enforcement officer
1188 certified pursuant to s. 943.13. Any person who violates or
1189 otherwise fails to comply with any rule adopted by the
1190 commission shall be punished pursuant to s. 370.021(2)~~(1)~~.
1191 Section 14. Subsections (3) and (4) of section 370.092,
1192 Florida Statutes, are amended to read:
1193 370.092 Carriage of proscribed nets across Florida
1194 waters.--
1195 (3) Notwithstanding subsections (1) and (2), unless
1196 authorized by rule of the Fish and Wildlife Conservation
1197 Commission, it is a major violation under this section,
1198 punishable as provided in s. 370.021(4)~~(3)~~, for any person,
1199 firm, or corporation to possess any gill or entangling net, or
1200 any seine net larger than 500 square feet in mesh area, on any
1201 airboat or on any other vessel less than 22 feet in length and
1202 on any vessel less than 25 feet if primary power of the vessel
1203 is mounted forward of the vessel center point. Gill or
1204 entangling nets shall be as defined in s. 16, Art. X of the
1205 State Constitution, s. 370.093(2)(b), or in a rule of the Fish
1206 and Wildlife Conservation Commission implementing s. 16, Art. X
1207 of the State Constitution. Vessel length shall be determined in
1208 accordance with current United States Coast Guard regulations
1209 specified in the Code of Federal Regulations or as titled by the
1210 State of Florida. The Marine Fisheries Commission is directed to
1211 initiate by July 1, 1998, rulemaking to adjust by rule the use
1212 of gear on vessels longer than 22 feet where the primary power
1213 of the vessel is mounted forward of the vessel center point in

1214 order to prevent the illegal use of gill and entangling nets in
1215 state waters and to provide reasonable opportunities for the use
1216 of legal net gear in adjacent federal waters.
1217 (4) The Fish and Wildlife Conservation Commission shall
1218 adopt rules to prohibit the possession and sale of mullet taken
1219 in illegal gill or entangling nets. Violations of such rules
1220 shall be punishable as provided in s. 370.021(4) ~~(3)~~.
1221 Section 15. Subsection (5) of section 370.093, Florida
1222 Statutes, is amended to read:
1223 370.093 Illegal use of nets.--
1224 (5) Any person who violates this section shall be punished
1225 as provided in s. 370.021(4) ~~(3)~~.
1226 Section 16. Paragraph (s) of subsection (2) of section
1227 370.12, Florida Statutes, is amended to read:
1228 370.12 Marine animals; regulation.--
1229 (2) PROTECTION OF MANATEES OR SEA COWS.--
1230 (s) Except as otherwise provided in this paragraph, any
1231 person violating the provisions of this subsection or any rule
1232 or ordinance adopted pursuant to this subsection commits a
1233 misdemeanor, punishable as provided in s. 370.021(2) ~~(1)~~(a) or
1234 (b).
1235 1. Any person operating a vessel in excess of a posted
1236 speed limit shall be guilty of a civil infraction, punishable as
1237 provided in s. 327.73, except as provided in subparagraph 2.
1238 2. This paragraph does not apply to persons violating
1239 restrictions governing "No Entry" zones or "Motorboat
1240 Prohibited" zones, who, if convicted, shall be guilty of a
1241 misdemeanor, punishable as provided in s. 370.021(2) ~~(1)~~(a) or
1242 (b), or, if such violation demonstrates blatant or willful
1243 action, may be found guilty of harassment as described in
1244 paragraph (d).

1245 3. A person may engage in any activity otherwise
1246 prohibited by this subsection or any rule or ordinance adopted
1247 pursuant to this subsection if the activity is reasonably
1248 necessary in order to prevent the loss of human life or a vessel
1249 in distress due to weather conditions or other reasonably
1250 unforeseen circumstances, or in order to render emergency
1251 assistance to persons or a vessel in distress.
1252 Section 17. Subsection (2) of section 370.1405, Florida
1253 Statutes, is amended to read:
1254 370.1405 Crawfish reports by dealers during closed season
1255 required.--
1256 (2) Failure to submit a report as described in subsection
1257 (1) or reporting a greater or lesser amount of whole crawfish,
1258 crawfish tails, or crawfish meat than is actually in the
1259 dealer's possession or name is a major violation of this
1260 chapter, punishable as provided in s. 370.021(2)~~(1)~~, s.
1261 370.07(6)(b), or both. The commission shall seize the entire
1262 supply of unreported or falsely reported whole crawfish,
1263 crawfish tails, or crawfish meat, and shall carry the same
1264 before the court for disposal. The dealer shall post a cash bond
1265 in the amount of the fair value of the entire quantity of
1266 unreported or falsely reported crawfish as determined by the
1267 judge. After posting the cash bond, the dealer shall have 24
1268 hours to transport said products outside the limits of Florida
1269 for sale as provided by s. 370.061. Otherwise, the product shall
1270 be declared a nuisance and disposed of by the commission
1271 according to law.
1272 Section 18. Paragraph (c) of subsection (2) of section
1273 370.142, Florida Statutes, is amended to read:
1274 370.142 Spiny lobster trap certificate program.--

1275 (2) TRANSFERABLE TRAP CERTIFICATES; TRAP TAGS; FEES;
1276 PENALTIES.--The Fish and Wildlife Conservation Commission shall
1277 establish a trap certificate program for the spiny lobster
1278 fishery of this state and shall be responsible for its
1279 administration and enforcement as follows:
1280 (c) Prohibitions; penalties.--
1281 1. It is unlawful for a person to possess or use a spiny
1282 lobster trap in or on state waters or adjacent federal waters
1283 without having affixed thereto the trap tag required by this
1284 section. It is unlawful for a person to possess or use any other
1285 gear or device designed to attract and enclose or otherwise aid
1286 in the taking of spiny lobster by trapping that is not a trap as
1287 defined in rule 68B-24.006(2), Florida Administrative Code.
1288 2. It is unlawful for a person to possess or use spiny
1289 lobster trap tags without having the necessary number of
1290 certificates on record as required by this section.
1291 3. It is unlawful for any person to willfully molest, take
1292 possession of, or remove the contents of another harvester's
1293 trap without the express written consent of the trap owner
1294 available for immediate inspection. Unauthorized possession of
1295 another's trap gear or removal of trap contents constitutes
1296 theft. Any person receiving a judicial disposition other than
1297 dismissal or acquittal on a charge of theft of or from a trap
1298 pursuant to this subparagraph or s. 370.1107 shall, in addition
1299 to the penalties specified in ss. 370.021 and 370.14 and the
1300 provisions of this section, permanently lose all his or her
1301 saltwater fishing privileges, including his or her saltwater
1302 products license, crawfish endorsement, and all trap
1303 certificates allotted to him or her through this program. In
1304 such cases, trap certificates and endorsements are
1305 nontransferable. Any person receiving a judicial disposition

1306 other than dismissal or acquittal on a charge of willful
1307 molestation of a trap, in addition to the penalties specified in
1308 ss. 370.021 and 370.14, shall lose all saltwater fishing
1309 privileges for a period of 24 calendar months. In addition, any
1310 person, firm, or corporation charged with violating this
1311 paragraph and receiving a judicial disposition other than
1312 dismissal or acquittal for violating this subparagraph or s.
1313 370.1107 shall also be assessed an administrative penalty of up
1314 to $5,000. Immediately upon receiving a citation for a violation
1315 involving theft of or from a trap, or molestation of a trap, and
1316 until adjudicated for such a violation or, upon receipt of a
1317 judicial disposition other than dismissal or acquittal of such a
1318 violation, the person, firm, or corporation committing the
1319 violation is prohibited from transferring any crawfish trap
1320 certificates and endorsements.
1321 4. In addition to any other penalties provided in s.
1322 370.021, a commercial harvester, as defined by rule 68B-
1323 24.002(1), Florida Administrative Code, who violates the
1324 provisions of this section, or the provisions relating to traps
1325 of chapter 68B-24, Florida Administrative Code, shall be
1326 punished as follows:
1327 a. If the first violation is for violation of subparagraph
1328 1. or subparagraph 2., the commission shall assess an additional
1329 civil penalty of up to $1,000 and the crawfish trap number
1330 issued pursuant to s. 370.14(2) or (6) may be suspended for the
1331 remainder of the current license year. For all other first
1332 violations, the commission shall assess an additional civil
1333 penalty of up to $500.
1334 b. For a second violation of subparagraph 1. or
1335 subparagraph 2. which occurs within 24 months of any previous
1336 such violation, the commission shall assess an additional civil

1337 penalty of up to $2,000 and the crawfish trap number issued
1338 pursuant to s. 370.14(2) or (6) may be suspended for the
1339 remainder of the current license year.
1340 c. For a third or subsequent violation of subparagraph 1.,
1341 subparagraph 2., or subparagraph 3. which occurs within 36
1342 months of any previous two such violations, the commission shall
1343 assess an additional civil penalty of up to $5,000 and may
1344 suspend the crawfish trap number issued pursuant to s. 370.14(2)
1345 or (6) for a period of up to 24 months or may revoke the
1346 crawfish trap number and, if revoking the crawfish trap number,
1347 may also proceed against the licenseholder's saltwater products
1348 license in accordance with the provisions of s.
1349 370.021(3) ~~(2)~~(h).
1350 d. Any person assessed an additional civil penalty
1351 pursuant to this section shall within 30 calendar days after
1352 notification:
1353 (I) Pay the civil penalty to the commission; or
1354 (II) Request an administrative hearing pursuant to the
1355 provisions of s. 120.60.
1356 e. The commission shall suspend the crawfish trap number
1357 issued pursuant to s. 370.14(2) or (6) for any person failing to
1358 comply with the provisions of sub-subparagraph d.
1359 5.a. It is unlawful for any person to make, alter, forge,
1360 counterfeit, or reproduce a spiny lobster trap tag or
1361 certificate.
1362 b. It is unlawful for any person to knowingly have in his
1363 or her possession a forged, counterfeit, or imitation spiny
1364 lobster trap tag or certificate.
1365 c. It is unlawful for any person to barter, trade, sell,
1366 supply, agree to supply, aid in supplying, or give away a spiny
1367 lobster trap tag or certificate or to conspire to barter, trade,

1368 sell, supply, aid in supplying, or give away a spiny lobster
1369 trap tag or certificate unless such action is duly authorized by
1370 the commission as provided in this chapter or in the rules of
1371 the commission.
1372 6.a. Any person who violates the provisions of
1373 subparagraph 5., or any person who engages in the commercial
1374 harvest, trapping, or possession of spiny lobster without a
1375 crawfish trap number as required by s. 370.14(2) or (6) or
1376 during any period while such crawfish trap number is under
1377 suspension or revocation, commits a felony of the third degree,
1378 punishable as provided in s. 775.082, s. 775.083, or s. 775.084.
1379 b. In addition to any penalty imposed pursuant to sub-
1380 subparagraph a., the commission shall levy a fine of up to twice
1381 the amount of the appropriate surcharge to be paid on the fair
1382 market value of the transferred certificates, as provided in
1383 subparagraph (a)1., on any person who violates the provisions of
1384 sub-subparagraph 5.c.
1385 7. Any certificates for which the annual certificate fee
1386 is not paid for a period of 3 years shall be considered
1387 abandoned and shall revert to the commission. During any period
1388 of trap reduction, any certificates reverting to the commission
1389 shall become permanently unavailable and be considered in that
1390 amount to be reduced during the next license-year period.
1391 Otherwise, any certificates that revert to the commission are to
1392 be reallotted in such manner as provided by the commission.
1393 8. The proceeds of all civil penalties collected pursuant
1394 to subparagraph 4. and all fines collected pursuant to sub-
1395 subparagraph 6.b. shall be deposited into the Marine Resources
1396 Conservation Trust Fund.
1397 9. All traps shall be removed from the water during any
1398 period of suspension or revocation.

1399 Section 19. This act shall take effect January 1, 2007.
1400
1401 ========== T I T L E A M E N D M E N T ==========
1402 Remove the entire title and insert:
1403 A bill to be entitled
1404 An act relating to fish and wildlife; amending s. 370.01,
1405 F.S.; defining "commercial harvest"; amending s. 370.021,
1406 F.S.; revising penalties for violations related to
1407 commercial harvest; correcting cross-references; amending
1408 s. 370.061, F.S.; correcting a cross-reference; creating
1409 s. 372.825, F.S.; establishing penalties for violations
1410 related to the possession of captive wildlife; amending s.
1411 372.57, F.S.; specifying seasonal recreational activities;
1412 establishing fees for certain annual licenses; providing
1413 penalties for the production, possession, and use of
1414 fraudulent fishing and hunting licenses; providing
1415 penalties for the taking of game and fish with a suspended
1416 or revoked license; amending s. 372.5717, F.S.; revising
1417 the penalties for violations related to hunter safety
1418 course requirements; amending s. 372.83, F.S.; revising
1419 the penalties for violations of Fish and Wildlife
1420 Conservation Commission rules and orders relating to
1421 recreational activities; defining "conviction"; amending
1422 ss. 372.573 and 372.661, F.S.; correcting cross-
1423 references; creating s. 372.831, F.S.; creating the
1424 Wildlife Violators Compact; providing findings and intent;
1425 providing definitions; providing requirements and
1426 procedures for issuance of violation citations; providing
1427 for reciprocal recognition of certain license suspension
1428 related to fish and wildlife activities; providing for
1429 applicability of laws; providing procedures for compact

1430 administration; establishing a board of compact
1431 administrators; providing requirements and procedures with
1432 respect thereto; providing for compact entry, withdrawal,
1433 ratification, and amendment; providing for compact
1434 construction and severability; creating s. 372.832, F.S.;
1435 providing for compact licensing authority; creating s.
1436 372.833, F.S.; providing for compact enforcement and
1437 violation review; amending ss. 370.028, 370.092, 370.093,
1438 370.12, 370.1405, and 370.142, F.S.; correcting cross-
1439 references; providing an effective date.

Oceans & Coastal
Resources Council

Florida Oceans and Coastal Resources Council

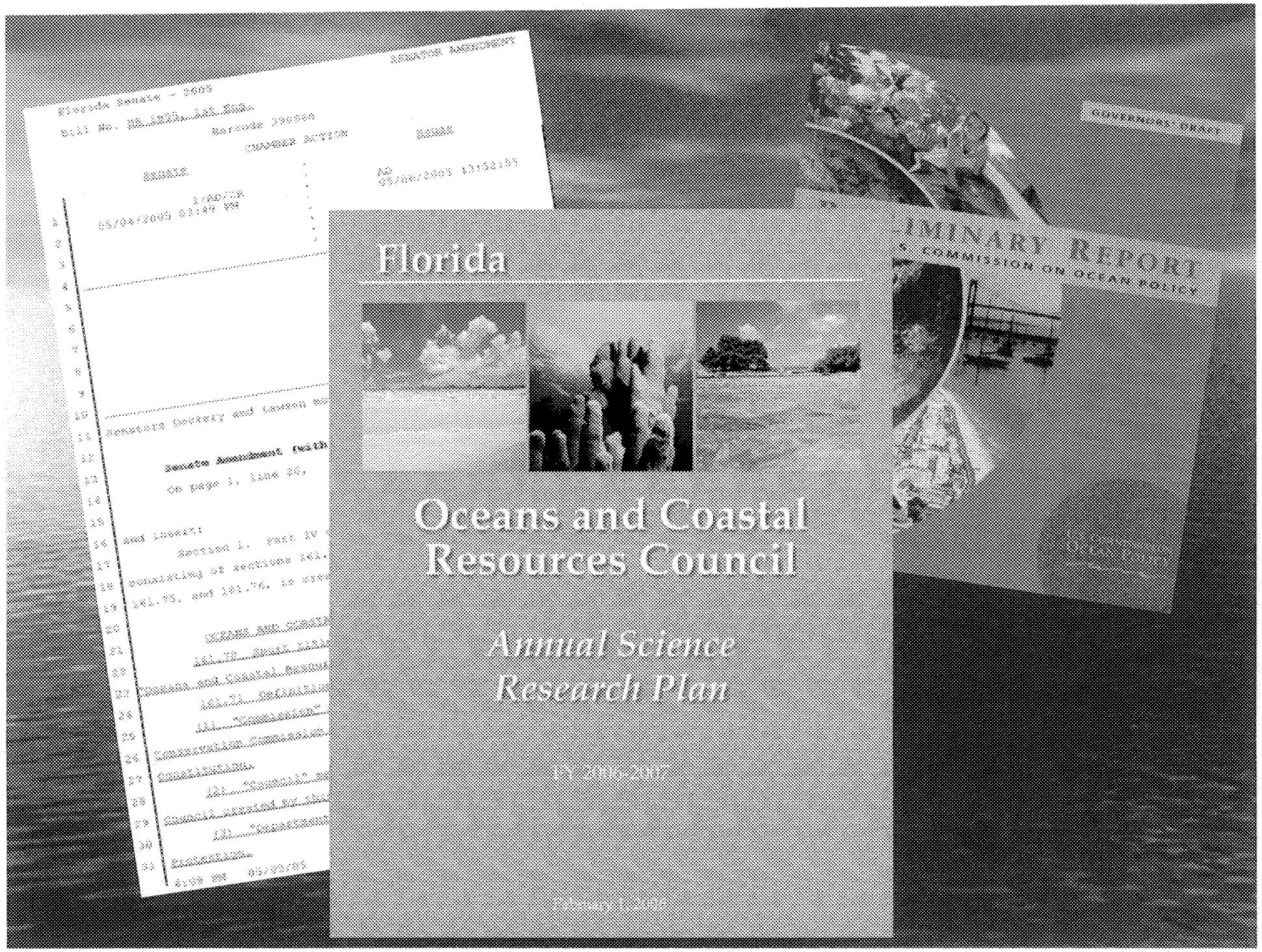
Stephanie Bailenson

Director

Office of Coastal and Aquatic Managed Areas

Florida Dept. Environmental Protection

Tallahassee, FL


Florida
Oceans and Coastal Resources Council
Annual Science Research Plan
FY 2006-2007
February 1, 2006
COMMISSION ON OCEAN POLICY

Council makeup

- *18 members, 15 voting & 3 ex officio*
- *Ex officio = heads of DEP, FWC, and DACS*
- *Voting*
  5 scientists by DEP
  5 scientists by FWC
  5 coastal/oceans stakeholders by DACS

Council Members:

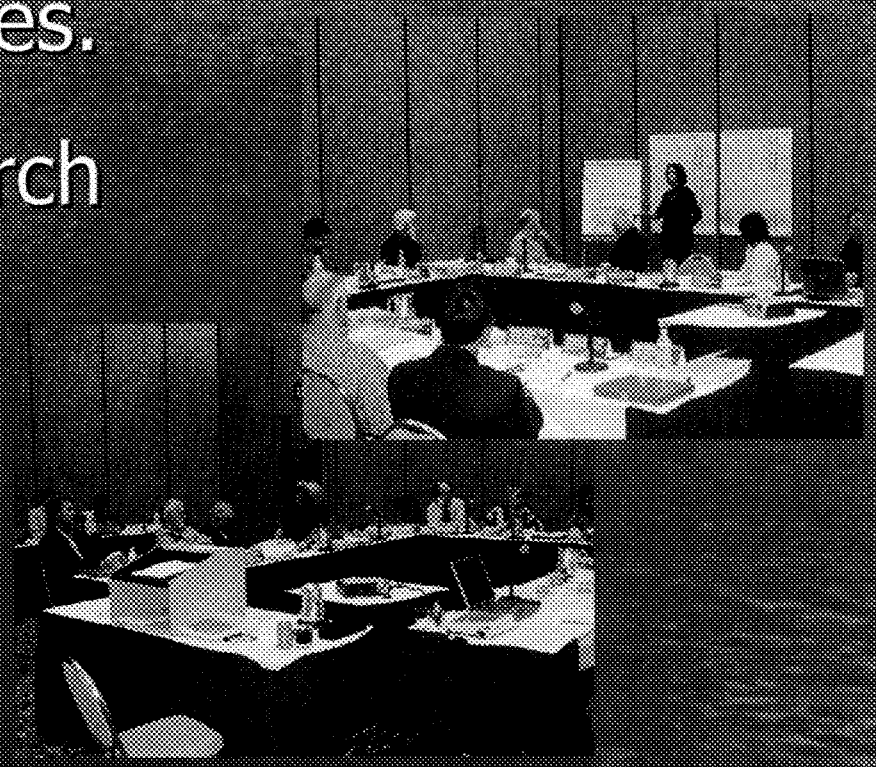
- James Cato, Ph.D.
- Billy Causey
- Jane Davis
- Ernest Estevez, Ph.D.
- R. Grant Gilmore, Ph.D.
- Shirley Pomponi, Ph.D.
- Lisa Robbins, Ph.D.
- Jerry Sansom
- Jody Thomas
- Thomas D. Waite, Ph.D.
- Karl Havens, Ph.D.
- Rob Kramer
- Thomas N. Lee, Ph.D.
- Jerome Lorenz, Ph.D.
- John C. Ogden, Ph.D.

2006 Research Plan contents

- *Prioritized list of research needs*
- *Integrated Data Management recommendations*

Research Plan development process

- Received prioritized lists of Management Needs from State agencies.
- Reviewed ongoing research
- Identified research gaps
- Prioritize research, targeting Management Needs

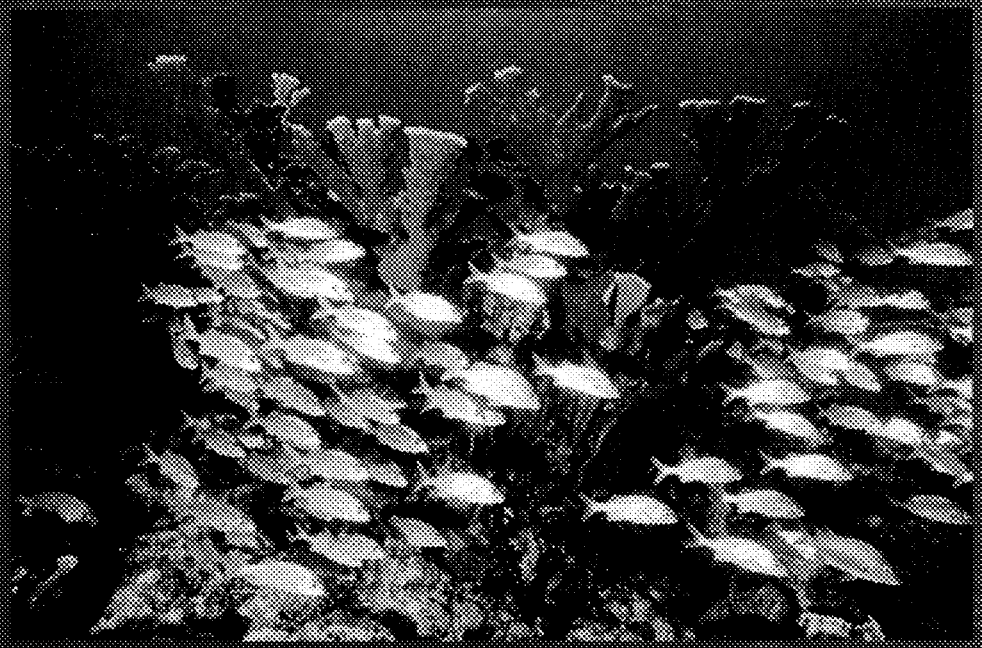


Research Categories "3Ms"

A: Habitat Mapping and Characterization

B: Ecosystem Monitoring and Assessment

C: Modeling of Systems



Integrated Data Management

- Important problem: the State's data cannot be readily shared between government and other entities or researchers. Generally can't even be shared among state agencies, and often not among parts of an agency.

What's Next?

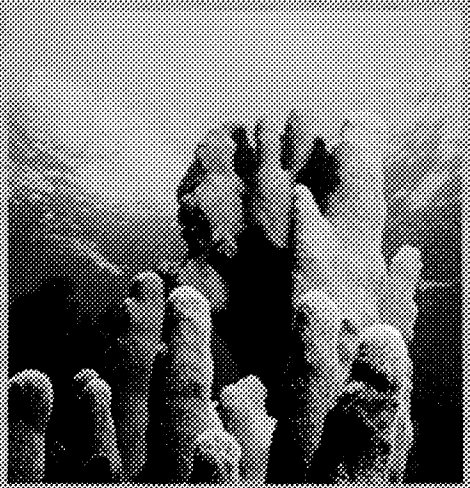
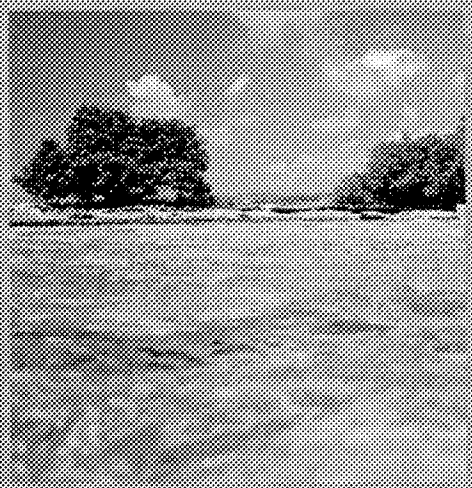
- Collect Management Needs
- Update Research Review
- Create Resource Inventory
- Aquaculture Pilot
- FY07-08 Annual Research Plan

Florida Oceans and Coastal Resources Council

For more information:

www.dep.state.fl.us/oceanscouncil

Florida

Oceans and Coastal Resources Council

Annual Science Research Plan

FY 2006-2007

February 1, 2006

Florida Oceans and Coastal Resources Council

COUNCIL COMPOSITION

Ex officio (non-voting) members:

- **Colleen Castille (co-chair)** – Secretary, Dept. of Environmental Protection (DEP).
- **Ken Haddad (co-chair)** – Executive Director, Fish and Wildlife Conservation Commission (FWC).
- **Sherman Wilhelm** – Director of Aquaculture, Dept. of Agriculture and Consumer Services (DACS).

Voting members:

Appointed by DEP

- **Karl Havens**, Ph.D. – Chair of the Department of Fisheries and Aquatic Sciences, University of Florida.
- **Thomas N. Lee**, Ph.D. – Research Professor of Meteorology and Physical Oceanography at the Rosenstiel School of Marine and Atmospheric Sciences, University of Miami.
- **John C. Ogden**, Ph.D. – Director of the Florida Institute of Oceanography and Professor of Biology, University of South Florida.
- **Lisa Robbins**, Ph.D. – Chief Scientist, United States Geological Survey Center for Coastal and Watershed Studies.
- **Thomas D. Waite**, Ph.D. – Dean of the College of Engineering, Florida Institute of Technology.

Appointed by FWC

- **James Cato**, Ph.D. – Director, Florida Sea Grant.
- **Billy Causey** – Superintendent, Florida Keys National Marine Sanctuary.
- **R. Grant Gilmore**, Ph.D. – Senior Scientist, Estuarine, Coastal and Ocean Science, Inc., (ECOS).
- **Jerome Lorenz**, Ph.D. – Research Director, National Audubon Society's Tavernier Science Center.
- **Shirley Pomponi**, Ph.D. – President and Chief Executive Officer, Harbor Branch Oceanographic Institution.

Appointed by DACS

- **Jane Davis** – Aquarium Curator, The Living Seas at Walt Disney World's Epcot®.
- **Ernest Estevez**, Ph.D. – Director, Mote Marine Laboratory's Center for Coastal Ecology.
- **Rob Kramer** – President, International Game Fish Association.
- **Jerry Sansom** – Executive Director, Organized Fishermen of Florida.
- **Jody Thomas** – Director, The Nature Conservatory's South Florida Region.

Council staff

- **Steven H. Wolfe** – Council Liaison, DEP Office of Coastal and Aquatic Managed Areas (CAMA).
- **Elizabeth Jenkins** – Assistant to Liaison, DEP Office of Coastal and Aquatic Managed Areas (CAMA).
- **Janice Fleischer** – Meeting Facilitator, Flash Resolutions, Inc.

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I. EXECUTIVE SUMMARY

1. Introduction

The Oceans and Coastal Resources Act, §161.70, et seq., Florida Statutes, created the Florida Oceans and Coastal Resources Council and charged it with—among other things—coordinating coastal and marine research in Florida, identifying research gaps and creating an annual Research Plan, and recommending new management strategies that enhance management efforts for our coastal and marine resources.

To identify research gaps, the Council collected prioritized lists of management needs from the primary state agencies with coastal and oceans management responsibilities. The Council compared the needs to available research to identify where research funding was needed. A common theme throughout the lists was the need to understand and predict environmental change on an ecosystem level.

Developing a system to monitor and predict ecosystem change due to environmental perturbations, whether from human or natural causes, will help Florida's resource managers balance the needs for sustainable use and preservation.

2. Research Recommendations

The Council organized the Management Needs into the categories of research needed to address them. These Research Categories are:

- A: Habitat Mapping and Characterization
- B: Ecosystem Monitoring and Assessment
- C: Modeling Systems
- D: Understanding Effects From Climate Change
- E: Watershed and Freshwater Flow
- F: Water Quality
- G: Harmful Algal Blooms (HABs)
- H: Public Health Issues
- I: Living Marine Resources
- J: Habitat Restoration
- K: Non-native Invasive Species
- L: Aquaculture
- M: Measuring Coastal Economies and Assessing Human Impacts on Resources

The Council identified Research Focus Areas within each Category. These describe broad areas around which to organize research. Within the Focus Areas, more specific Research Components describe research to address a specific goal aimed at the Management Needs. Budgets were created for the Research Components, but these will generally require multiple individual research projects to accomplish. The Council recommends the appropriate agencies, with Council input, establish committees of scientists and agency managers to detail the research projects and select researchers to fund.

The research listed here was selected by the Council as the most important of the complete set identified as needed. Each year, research results should be assessed for their success in achieving goals and funding mechanisms adjusted when necessary to improve results.

The budget for a Research Component is intended to fund the individual projects required by that Component. The budgets do not account for the administrative costs associated with implementation. The Council strongly recommends that an amount proportional to overall funding should be provided to the agency overseeing the research program to enable proper management, oversight, external review, and feedback mechanisms for the research program.

Additionally, the Council encourages the agency or agencies charged with implementing the Research Components to use existing mechanisms, or develop new mechanisms as appropriate, to fund innovative collaborative work between the private sector and Florida universities and research institutions in order to maximize the expertise of each and effectively link research with education of the next generation of scientists.

3. Integrated Data Management and Dissemination

In addition to specific research topics, managers of coastal resources in Florida stressed the need to deal more effectively with the data and communication portion of the research/management circle.

The need for and benefits from improvements in this area cannot be overemphasized. The Council believes improved collection, handling, sharing, and interpretation of research and monitoring data is a critical first step towards improving the State's resource management. The steps proposed below should begin as soon as possible.

To ensure continued support for this necessary part of the management/research circle, the Council encourages that an appropriate percentage of research funding be targeted to support the costs of providing a strong integrated data management and dissemination program.

Data Focus Area 1: Enable more effective use of present and future data by establishing data-exchange (metadata) standards and requiring their adoption by appropriate state entities.

Recommended 1st-year action: Establish a working panel by July 1, 2006, to solicit input from stakeholders (state and local agencies, water management districts, private research institutes, and non-governmental organizations (NGOs)) and charged with developing a statewide strategy by June 30, 2007, to develop data-exchange (metadata) standards for use by all state agencies. To the extent possible, coordinate with Gulf of Mexico Alliance and federal efforts.

Data Focus Area 2: Establish means for comprehensive management of assessment, monitoring, real-time, and historical data, including support of researchers, storage and archiving of data, and easy access to data.

Recommended 1st-year actions:

1) DEP, FWC, and DACS, in consultation with this Council and collaborating with the Water Management Districts and other stakeholders in Florida's coastal and oceans data, will identify specific shared baseline information needs and collaborate on the design of a system that will store, manage, and maintain this data. Funding requirements to implement this proposal will be provided to this Council for inclusion in the FY2007-2008 Annual Research Plan.

2) Undertake a pilot project to identify key historical data for rescue and restoration and develop methods to achieve restoration in a cost-effective manner. Have state and local agencies identify existing databases that are candidates for conversion and compile information describing data contained therein.

Data Focus Area 3: Establish programs to support effective collection of data.

Recommended 1st-year action: Establish a working panel to recommend the best means for providing strong statistical support to researchers during both the design and analysis phases of their research and to ensure that support is incorporated into the state's research programs. They will provide this information to the Oceans Council for possible inclusion in the FY 2007-2008 Annual Research Plan.

Data Focus Area 4: Establish programs to support effective use of data.

Recommended 1st-year action: Establish working panel to recommend best means for providing strong data-interpretation support to researchers and to ensure that support is incorporated into the state's research programs.

4. What This Report Does and Does Not Do

The short time-frame for this first report has necessitated a somewhat abbreviated Research Plan. The Council has extracted this more-targeted Annual Research Plan, to be annually submitted to the Legislature.

Management Needs

Available time prevented collection of a comprehensive, prioritized set of all state Management Needs. This year's Research Plan was limited to the main state agencies with coastal and oceans responsibilities.

Research Review

The Council began collecting a Research Review that describes past and present coastal and oceans research. The present "working draft" of the Research Review contains results from an initial call for information. This collection continues and will become available on the Council's website.

Ongoing Research Efforts

The Act seeks better coordination of coastal and oceans research. The Council realizes, however, that in the time available this year, it was not able to acquire the desired all-encompassing understanding of this research. The Council stresses that this year's Research Plan is not generally intended to replace ongoing state-funded research efforts and partnerships. These research recommendations are based on identified research gaps and are intended to supplement that research already underway.

5. Research Priority

The Council offers the following list in order of importance. It is also expected to provide guidance on state research priorities to state and federal programs. Note that the integrated data management recommendation is not incorporated in this list. Budget estimates for the Research Components in the list will be generated by Council staff and added as an appendix. The Council will review the estimates and submit a final table.

Rank	**Research Component** **Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan** **Note: if research requires more than one year to complete, budgets are costs for first-year.**
1	*Establish real-time interdisciplinary observing systems in areas that currently have no or minimal observing. [B. Monitoring; RC3.2]*
2	*Identify and evaluate new technologies—including but not limited to sensors (LIDAR, sonar, passive acoustics, infrared), telemetry (radio, satellite, telephone) and bio-chemical analyses (elemental isotopic, genetic)—for their potential to measure biological activity continuously at a level similar to that presently used to monitor water quality, hydrology, and climate. These technologies and/or techniques should be compatible and simultaneously deployed with Integrated Oceanographic Observation Systems (IOOS) that are located in coastal waters around the United States. [F. Water Quality; RC 18.4]*
3	*Establish continuous, long-term monitoring of salinity and dissolved-oxygen conditions in the estuaries to support development of modeling tools, assess the impact of sea-level rise, and assist in resource management (for instance, commercial and sport fisheries). [B. Monitoring; RC 3.7]*
4	*Using a historical approach, estimate the effect of the loss of coastal mangrove and seagrass habitat on the species that depend upon them. [E. Freshwater Flow; RC 14.3]*
5	*Develop, install, and implement new and improved biological monitoring instrumentation and protocols that will make biological observations match the geographic scale of physical oceanography measurements. Examples are tracking migratory species, developing methods for interdisciplinary observations of nutrients, chlorophyll, algal blooms, and fisheries and other aquatic resources to link physical-chemical conditions to biological effects. [B. Monitoring; RC 3.5]*
6	*Establish an interdisciplinary remote sensing capacity for Florida's coastal and offshore waters. [B. Monitoring; RC 3.4]*
7	*Produce present-day highest-resolution bathymetric maps, identifying physical geologic setting (sediment/rock) and submarine aquatic vegetation with the goal of mapping the entire State's waters by 2015. [A. Mapping; RC 2.1]*
8	*Use existing technology, including satellite remote sensing, to better link red tide research and monitoring to physical oceanography in order to better predict red tide size, trajectory, and intensity and potential impacts and to provide an early warning system. [B. Monitoring; RC 5.5]*
9	*Develop an integrated statewide water budget, considering watersheds outside of Florida as necessary, that accounts for inputs, storages, transfers, and losses of atmospheric, surface, and ground waters to identify the extent of inflow change to the state's coastal waters. [E. Freshwater Flow; RC 11.3]*
10	*Develop new methods for the assessment of fishery populations that include acoustical and genetic methods. [I. Living Marine Resources; RC 28.1]*
11	*Identify and prioritize specific coastal areas around the State for bathymetric mapping - with the goal of mapping the entire State's coast by 2010. [A. Mapping; RC 1.1]*
12*	*Develop coastal, estuarine, riverine, and lagoonal models to be nested with adjacent shelf models to improve understanding of land-sea linkages. [C. Modeling; RC 6.3]*
12*	*Conduct monitoring, assessment, and modeling evaluations of the impacts of fishing on ecosystems. These studies will include impacts of various gear uses; removal of both predator and prey species, sex, size population-dynamic relationships; loss of keystone species; and other trophic-level interactions. [I. Living Marine Resources; RC 28.2]*
14	*Evaluate the long-term stability of coastal wetlands (marshes, mangroves, seagrasses) in relation to sea-level rise and episodic disturbances (i.e., hurricanes). [C. Climate Change; RC 9.5]*
15	*Assess effectiveness of Marine Protected Areas and Marine Reserves and other types of protected areas to enhance the surrounding ecosystem, for instance through "spillover" effect. [I. Living Marine Resources; RC 27.2]*

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: if research requires more than one year to complete, budgets are costs for first-year.
16	*Determine the market and non-market values for all sectors of the Florida ocean and coastal economy using a consistent methodology and available data bases that can be repeated periodically to track the performance of each sector dependent on the coast and ocean. Make the information available to the legislature and the public on the web. [M. Coastal Economics; RC 35.1]*
17	*Integrate HAB monitoring with data collection in the Ocean Observing System to allow examination of empirical relationships between HAB occurrence, spatial extent and intensity with physical-chemical data and provide an improved understanding of factors controlling HABs. [B. Monitoring; RC 5.4]*
18	*Create maps to link previously mapped areas on the coast (identified through the State Coastal Inventory) seamlessly to existing offshore data where possible. This will show where gaps exist and identify datasets that are not compatible [A. Mapping; RC 1.2]*
19	*Establish and enhance hydrological, chemical, and biological monitoring and assessment, including stationary and mobile systems such as shipboard surveys with accompanying modeling of the systems being monitored, to support agency programs to preserve and manage Florida's natural resources. [B. Monitoring; RC3.6]*
20	*Assess the effect that human waste management, and septic tank use in particular, has on nutrient loading and water quality in nearshore habitats. [F. Water Quality; RC 17.1]*
21	*Identify quantitative relationships between nutrient concentrations in coastal waters and impairment of flora and fauna, so that agencies can use this information to establish scientifically-sound targets (such as nutrient criteria) for nutrient concentrations and loads. [F. Water Quality; RC 15.7]*
22	*Assess the impacts of non-point source pollution, particularly storm-water runoff from urban areas, and determine the most effective means of abatement. [F. Water Quality; RC 16.1]*
23	*Perform bathymetric and benthic-habitat mapping of important Florida tidal rivers and estuaries by 2010. These are to be used to determine essential environmental conditions needed for living marine resources and to provide data for modeling the environmental impacts of management decisions regarding water use. [A. Mapping; RC 2.3]*
24	*Develop and field-test biotic indicators (species, species groups, habitats, communities) as criteria and targets for statewide use in determining whether watershed and stream management practices are protecting natural estuaries and marine ecosystems, and restoring impaired ones. [E. Freshwater Flow; RC 13.1]*
25	*Work with fishers to identify fishery spawning aggregation sites around the state, and then validate and characterize these areas. [I. Living Marine Resources; RC28.5]*
26	*Determine the relationship of the timing, quantity, and distribution of major river outflows and submarine groundwater discharges to the distribution and abundance patterns of coastal marine organisms. [E. Freshwater Flow; RC 14.1]*
27	*Develop and demonstrate recirculating marine aquaculture technology for marine sport fish stock enhancement and restoration. [K. Aquaculture; RC34.1]*
28	*Quantify the impacts of HABs on commercial and recreational fisheries, coastal tourism, contact recreation, and other human activities integral to the economy of Florida's coastal areas. [G. Harmful Algal Blooms; RC 23.3]*
29*	*Determine the locations and sizes, dominant physico-chemical features, living resources, and unique ecological functions of all oligohaline and tidal-fresh waters in Florida. [E. Freshwater Flow; RC 13.2]*
29*	*Conduct studies linking key fish spawning areas to larval distribution and adult population-distributions on the Florida shelf, for example Riley's Hump in the Tortugas Ecological Reserve. [I. Living Marine Resources; RC 27.1]*
29*	*Determine the economic impacts of long term trends in beach loss, including:* *a) Determine the economic and environmental costs and benefits of continued beach-renourishment projects, including determining the economic feasibility, extent, availability, quantity and quality of offshore sands suitable for beach renourishment. Link to water quality studies of this issue in the Water Quality section.* *b) Determine the effect of continued beach-renourishment projects on turtle, seabird, and adjacent coral and fish populations and on other organisms dependent on beach ecosystems for food, shelter, and reproduction. Include subsequent economic impact as well. [M. Coastal Economics; RC 36.6]*
32	*Coordinate methods of sampling and analysis among the multiple State, Federal, and local agencies and universities and research institutions that monitor and research HABs in Florida. [B. Monitoring; RC 5.1]*
33	*Determine coastal construction and design practices related to reducing shoreline erosion. Determine the social, economic, and environmental consequences of increasing rates of beach erosion, coastal armoring, and beach renourishment. [M. Coastal Economics; RC37.3]*

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: if research requires more than one year to complete, budgets are costs for first-year.
34	*Develop and implement rapid monitoring and assessment tools and procedures for identifying microbial pathogens in rivers, coastal waters, sediments (including beaches), and seafood. [H. Public Health; RC 24.1]*
35	*Compare the environmental risk to water quality of septic systems to that of centralized sewage systems to area waters, particularly on islands. [F. Water Quality; RC 17.3]*
36*	*Assess the effects of nutrients from ocean outfalls on coastal habitats. [F. Water Quality; RC 17.2]*
36*	*Determine the hydrologic conditions that result in HAB development, using a combination of observations and modeling. Enhance the collection of data on the size, duration, intensity of blooms. [G. Harmful Algal Blooms; RC 20.2]*
38	*Determine influence of watershed nutrients resulting from land-use practices on HAB formation and collapse. [G. Harmful Algal Blooms; RC 20.3]*
39	*Evaluate the potential benefits and risks of offshore aquaculture in Florida. [K. Aquaculture; RC33.4]*
40	*Determine the economic value of coastal ecosystems and habitat when left to function as a natural system. [M. Coastal Economics; RC35.2]*
41*	*Building on existing initial efforts (DEP, FWC, WMDs, CERP), hold statewide workshops to identify initial habitats for which to develop bioassessment methods. Discuss possible pilot projects in different regions that pose different expectations. [F. Water Quality; RC 18.1]*
41*	*Determine which geospatial habitat conditions support an increase in fish recruitment as a result of marine reserves. This research should consider the size and location in relation to biotic and abiotic conditions. [I. Living Marine Resources; RC29.3]*
43	*Demonstrate economically feasible production and marketing of a high-value marine fish species that can be farmed in a land-based recirculating production system. [K. Aquaculture; RC33.1]*
44	*Determine the social and economic costs and benefits that derive from public and private conversion of coastal and waterway access points to non-water dependent uses. Determine incentives to retain water-dependent and water-related facilities that serve public needs and reflect public values in order to maintain public access to public coastal waters. Produce annual reports stating the length of Florida's sandy beaches that are publicly accessible. [M. Coastal Economics; RC36.1]*
45	*Determine factors resulting in macro-algal blooms. [G. Harmful Algal Blooms; RC 23.2]*
46	*Create coastal ocean environmental indices in support of fisheries research and spatial management of the fisheries. Monitoring of habitat conditions on a daily basis will be important to understanding linkages of the environment to marine resources. [I. Living Marine Resources; RC28.6]*
47	*Determine the role of the shoreline in reducing wave and flood damage, including ways to implement shoreline protection measures that do not damage the coastal and offshore natural environment. Develop a scientific basis for determining erosion and coastal setback zones. [M. Coastal Economics; RC37.4]*
48	*Develop methods for determining sources of nutrients so agencies can improve source regulation. [F. Water Quality; RC 15.1]*
49	*Define potential impacts of offshore oil and gas development of Florida's coastline with an emphasis on effects on fish, wildlife and their habitats. [F. Water Quality; RC 16.5]*
50	*Use existing water quality monitoring programs to collect samples for algal identification and toxin analysis concurrent with nutrient and other water-quality samples. [B. Monitoring; RC 5.2]*
51	*Determine the relationship, if any, of the increased frequency of coral diseases and elevated seasonal seawater temperatures to better target management activities that may focus on other possible causes. [D. Climate Change; RC 9.2]*

* - Tied in rank

II. INTRODUCTION

Florida is the only continental state largely surrounded by coastal seas and oceans. The quality of life of its people and much of their livelihood are directly connected to the condition of these waters and their tributaries. Florida's weather and climate are strongly modified by the warm waters flowing from the Caribbean and along all of the State's coasts through the offshore boundary currents, as part of the Gulf Stream current system. Florida is also undergoing explosive growth and development that is concentrated in the coastal zone, where multiple interests intersect and informed management is critical. Loss of habitat to support fish and wildlife, degradation of water quality, increasing harmful algal blooms, storm impacts, and the decline of fisheries and ecologically and economically important marine ecosystems, such as coral reef communities, clearly demonstrate the need for sound governance of State and connecting waters.

Managers of coastal and marine resources face the challenge of balancing conservation and development objectives in the context of the uncertainty of our knowledge of natural systems and the political and social pressures of human systems. In order to make the wise decisions necessary to achieve this balance, decisions on commercial or recreational use of these resources must be coupled with an increasingly comprehensive understanding of the marine environment and of the socio-economic factors that influence use of that environment. In this complex undertaking, research is not limited to seeking understanding of nature and its interactions. Here it plays a critical role in finding answers to pressing questions that managers and public policy makers have in their efforts to achieve a balance between sustainable use and conservation of Florida's natural resources.

To achieve this goal of informed decision-making and stewardship requires accurate assessment, continuous monitoring, and real-time ability to predict changes to the physical, chemical, biological, geological, and socioeconomic components of our marine ecosystems. It also requires a fully-integrated data handling system to allow all resource managers and other interested parties to easily use present and future data in making their decisions.

A. The Oceans and Coastal Resources Council

The Oceans and Coastal Resources Act, § 161.70, et seq., Florida Statutes, created the Florida Oceans and Coastal Resources Council and charged it with—among other things—coordinating coastal and marine research in Florida, identifying research gaps and creating an annual Research Plan, and recommending new management strategies that enhance management efforts for our coastal and marine resources.

To help identify the research gaps, Florida's primary state agencies with coastal and oceans management responsibilities submitted to the Council prioritized lists of their significant management needs (www.dep.state.fl.us/oceanscouncil). The Council attempted to compare the needs to previous and current research collected as part of a Research Review to identify where research funding might be warranted. A common theme throughout the lists received was the need to understand and predict environmental change to water quality, habitat, and biological communities on an ecosystem level. Developing a system to monitor and predict ecosystem change due to environmental perturbations will provide new insights and a higher level of understanding of natural versus human-induced effects and help guide future uses and remediation/restoration activities.

B. What is an Ecosystem?

An ecosystem is a dynamic, complex association of plants, animals, microbes, and the chemical, physical, and social conditions that surround them. Humans both depend on and impact marine ecosystems. All living and non-living components within an ecosystem are directly or indirectly connected. Ocean currents, lunar tides, climate, and water chemistry all influence the survival, reproduction, and feeding of the aquatic organisms dependent on a specific ecosystem.

Ecosystems come in many sizes and the boundaries are not sharply defined. Even something as apparently constrained as a tidal pool is affected by rainwater and periodic inputs of new water from the adjacent ocean and land. Most marine species use multiple habitats within their ecosystem. Many larval or juvenile stages settle from the plankton into temporary "nursery" habitats, then take up adult life in other habitats. Migratory species annually and predictably move over great distances, even whole oceans. Marine ecosystems of the State of Florida are connected by the strong oceanic flows surrounding the state, requiring a comprehensive, collaborative, statewide view of coastal management.

C. What is Ecosystem-Based Management?

The Oceans and Coastal Resources Act cites the report of the U.S. Commission on Ocean Policy while specifying the need for Florida's resource management to continue transition to "an ecosystem-based management approach."

Ecosystem-based management is an adaptive and integrated approach to management that considers the entire ecosystem—the organisms (including humans), their interactions, and the chemical, physical, and social environment that surrounds and sustains them. The goal of ecosystem-based management is to maintain a healthy, productive and resilient ecosystem so that it can sustainably provide the services human beings want and need today as well as for future generations. Ecosystem-based management differs from traditional approaches that usually focus on a single species, area, activity or concern; it considers the cumulative impacts of all of these.

Coastal and ocean ecosystems are vitally important to coastal states and they are at risk. Over half of the U.S. population lives along the coast, and more than $200 billion in economic activity was associated with the ocean in 2000. Despite their economic significance, U.S. oceans, like those around the world, are changing in unprecedented ways.

Combinations of factors, many resulting from human activities, are affecting the marine ecosystems of Florida and the world. Major disturbances to the ocean are: (1) the direct and indirect effects of fishing, (2) land-based sources of pollution, (3) loss of habitat, and (4) changing climate. These disturbances can threaten the ability of ocean ecosystems to provide the benefits that people require from them. Traditional marine-resources management approaches consider each activity or threat in isolation. Coordinated, integrated management is rare. The ecosystem-based approach addresses these concerns by considering the cumulative impacts from all sources. It looks at interactions and takes into account ecosystem knowledge and uncertainties while trying to balance the diverse human objectives.

Florida's Ocean Strategies (1999), the report of the U.S. Commission on Ocean Policy (2004), and the U.S. Ocean Action Plan (2004) describe the ecosystem approach as the cornerstone of a new vision for healthy, productive, resilient marine systems that provide stable fisheries, abundant wildlife, clean beaches, vibrant coastal communities, and healthy seafood for all Americans.

Management that emphasizes the protection of ecosystem structure, function, and key processes is much more likely to ensure the long-term delivery of these important services. From a governance perspective,

implementation of an ecosystem-based approach will enable more coordinated and sustainable management of activities that affect the oceans. Ecosystem-based management should reduce duplication and conflicts, and in the long run be more cost-effective. A delay in full transition to management based on an ecosystem approach will result in continued conflicts over resources, degradation of ocean ecosystems, disruption of fisheries, loss of recreational opportunities, health risks to humans and wildlife, and loss of biodiversity.

Full implementation of ecosystem-based management involves all ~~of~~ the general categories of research that the Florida Ocean and Coastal Resources Council has identified in this report, including comprehensive mapping of the distribution of habitats and resources, the dynamics of currents linking areas around the state, key areas such as spawning aggregations and migration routes, and existing human impacts on the coastal ocean.

D. Integrated Data Management

Data is only useful if it can be placed in the hands of those needing the information. In many cases, the data is most useful if it is first translated from the raw numbers into more-easily understood forms. At present, sharing of data is very difficult, even among and often within state agencies. Experience indicates that this is a situation not likely to be resolved solely through voluntary efforts.

One of the critical recommendations contained in this Research Plan is for the Legislature to undertake steps to create a standard for data sharing, require all state agencies to use those standards, and encourage others to follow suit. The full recommendation is contained in the *Integrated Data Management and Dissemination* section of this report.

E. What This Report Does and Does Not Do

Council members have worked diligently toward developing a comprehensive Research Plan for the Legislature to consider. The short time-frame for this first report (four months from the first meeting of the Council) has necessitated for this year a somewhat abbreviated Research Plan from what is envisioned to become the norm.

One of the challenges of creating a means to coordinate statewide research is the need to arrive at a "big picture" for how to improve the connections among research, management needs, and available funding. At the same time, we need to provide for appropriate feedback mechanisms that assess how well the effort is working so that adaptive changes can be made to establish a constantly-improving mechanism that is responsive to those who fund and use the research results.

This 'big picture" requires a plan with short-term and long-term goals, mechanisms to track progress toward those goals, and management aspects not appropriate in a document like this one that is meant to describe the research for support in the next year's budget. As a result, the Council has extracted this more-targeted Annual Research Plan, to be annually updated and submitted to the Legislature.

Management Needs

Available time prevented collection of a single comprehensive, prioritized set of the state agencies' Management Needs. The list used to guide this Research Plan was limited to the main state agencies with coastal and oceans responsibilities and who responded to the request for a prioritized list of their agencies Needs. These lists are available on the Council's website. While the scope of the resulting combined list is broad, it almost certainly does not include all of the Management Needs of all state and

local agencies. This collection effort will be expanded in the coming year to better incorporate the full spectrum of Management Needs of Florida's state and local governments.

Also during the coming years, universities, research laboratories, and non-governmental organizations will be be invited to submit lists of Florida's management needs. This does not mean that these groups will be submitting their own needs, but will be invited to submit their perspective on the needs the agencies should consider in managing the state's coastal and marine resources. The broad range of perspective outside the state agencies can lead to increased recognition of critical problems and potentially-innovative solutions.

Research Review

In the time provided, the Council began to build a Research Review, intended to become a continually-updated, online database that describes the who, what, when, where, and why of past and present coastal and oceans research. The Research Review will not contain research results themselves, but the supporting information about the research.

The present "working draft" of the Research Review contains results from the initial call for information from the various private, state, and some federal research entities in Florida. After creation of a user-friendly interface is completed, this will be available on the Council's website. This collection of information continues, now focusing on researchers who did not respond during the first short-turnaround request, older research not requested during the initial call, and additional federal agencies. While the short time period available to develop the research plan prevented a comprehensive comparison, it is the intent of the Council to prepare a more complete Research Review prior to the awarding of specific contracts for new research.

Ongoing Research Efforts

The Oceans and Coastal Resources Act seeks better coordination of coastal and oceans research. In response, the Council strived to include in its considerations all ongoing research in Florida. The Council realizes, however, that in the time available it was not able to acquire the all-encompassing understanding of this research that is desirable. ***As a result, the Council stresses that recommendations in this year's Research Plan are not generally intended to replace ongoing research efforts and partnerships that are funded by the state.*** These research recommendations contained herein are based on identified research gaps and are intended to supplement that research already underway.

III. RESEARCH TO ADDRESS MANAGEMENT NEEDS

Introduction

The Council organized the previously-discussed list of state-agency Management Needs based upon the types of research necessary to address them. The set of Research Categories arrived at was used to help organize the Research Plan.

Because a single Management Need might require several different types of research and a single piece of research might help address several Management Needs, the Council identified Research Focus Areas within each Research Category. These describe fairly broad research areas around which to organize a research effort. Within the Focus Areas, more specific Research Components were created with the intent to describe research to address a specific goal aimed at one or more of the Management Needs. Budgets were created for the Research Components, but it is envisioned that it will generally require multiple individual research projects to accomplish the goal contained in a Research Component.

The Research Components contained in this document identify research and information gathering that is either needed to address high-priority state Management Needs or forms an initial step required before the research to directly address those Needs can be undertaken. The research listed here is that the Council selected as the most important from the complete set of research they identified during this effort. Each year, research results should be assessed for their success in achieving goals and funding mechanisms adjusted when necessary to improve results.

The budgets for the individual Research Components are intended to fund the individual Research Projects that make up that Component. The budgets do not account for the administrative costs associated with implementation. The Council strongly recommends that an amount proportional to overall funding should be to provided to the agency overseeing the research program to enable proper management, oversight, external review, and feedback mechanisms for the research program.

Additionally, the Council encourages the agency or agencies charged with implementing the Research Components to utilize existing mechanisms, or develop new mechanisms as appropriate, to fund innovative collaborative work between the private sector and Florida universities and research institutions in order to maximize the expertise of each and effectively link research with education of the next generation of scientists.

The following Research Focus areas and Research Components are the most important of the total research identified by the Council. As a result, to maintain their overall relationship, the original numbering is retained resulting in discontinuous numbering of this list.

The "3 Ms"

In studying the state's management needs and the research required to address them, the Council realized that three of the proposed Research Categories could be viewed as tools to provide necessary information to support much of the research in the other categories, as well as to directly support management decisions. These "tool" research categories—Mapping, Monitoring, and Modeling—became known as the "3Ms". Improved science-based ecosystem management of Florida's coastal and offshore marine resources depends on establishing this coordinated, integrated foundation.

Mapping provides the basic information of "what" and "where." Without this accurate information readily available, tasks like directing development to minimize environmental impacts and identifying habitats and areas that need preservation are difficult and prone to error.

Monitoring provides information on the status and functioning of key ecosystem components and identifies trends that portend trouble, thereby allowing problems to be addressed or prevented. It helps measure restoration progress and assists regulators in making permitting decisions. Monitoring also provides data necessary to build and verify useful models.

Modeling helps scientists understand how ecosystem components function and provides managers with means to predict effects of management actions or natural occurrences (like storms) on the ecosystem. Modeling can also help managers optimize management actions by permitting them to better predict the outcomes of alternate management tactics.

The 3Ms will provide prediction capabilities that, in combination with hypothesis-driven, cause-and-effect research, form the foundation for good resource management in Florida.

Research Category A: Habitat Mapping and Characterization

Introduction

Coastal and nearshore habitat and resources on the Florida coast and shelf are shaped by geological, hydrological, and biological processes interacting on a variety of scales from 100s of kilometers (for instance, groundwater flow and climate change) to millimeters (like microbial communities and small benthic invertebrates). A comprehensive understanding of the ecosystems making up these areas depends upon reliable baseline data in order to ultimately support wise management of resources and habitats.

One of the significant gaps in baseline data describing the Florida coastal and marine areas are maps describing bathymetry, substrate, habitat, and biological and natural resources. These maps are critical for managers to understand the environment, its change through time, and the impacts of natural and human-induced changes to the environment. Much of Florida's coastal ocean was dry land in the last ice age and both geological and physical features reflect this.

Florida has hundreds of square miles of coastline and submerged marine areas. Because of the enormity of the area, the mapping of these in their entirety must likely be a phased approach, including the acquisition of a variety of data that will be used in defining Essential Fish Habitat and wetland, mangrove, seagrass, hard bottom, and coral habitats, etc. These data in turn will be used as the baseline to conduct sustained observations of how the biological communities are affected by their environment and to develop user-friendly biophysical models for research and management applications, such as fishery management and habitat restoration.

This research would provide the geological characterization and physical attributes that are necessary for conducting biological resource assessments of the benthic habitats. Studies of beach erosion, coastal processes, and nearshore sand transport would provide the scientific underpinning for examining health issues related to fluctuations in bacteria on sand and possible purging of the marine water and sediment systems by storms.

Research Focus Area 1: Creation of high-resolution bathymetric/topographic coastal maps

In their lists of Management Needs, resource managers recognized the critical need to understand coastal habitat vulnerability and the need for reliable scientific information on which to base decisions about what, how, where, and if to restore coastal and nearshore habitats.

The geology of Florida coasts, both in terms of substrate and low lying, karstic landscape, is a critical factor in shaping the ecosystem. In addition, catastrophic events such as hurricanes and storms can affect beaches and interact with local geology. Understanding such events is key to understanding current shoreline form and long-term processes such as supply of sand and sediment to beaches and wetlands. These mechanisms pose significant risk to human development and restoration projects.

High-resolution coastal elevation and nearshore bathymetric data are critically needed to provide a baseline from which to assess beach and coastal erosion, understand the impacts of existing land uses on the coast, and assess loss of habitat such as coastal wetlands and nearshore seagrasses. While coastal elevation data are presently being collected by a few agencies at different resolutions along different parts of the coast, an inventory of these data will be critical to our understanding of the remaining gaps that need to be collected and the coordination of the agencies in future collection.

Complicating the collection, traditional technology is not adequate in the very shallow, broad areas nearshore to provide the information needed for fisheries habitat characterization. These data must be collected using specialized equipment and this has prevented mapping large portions of beaches, wetlands, estuaries, and the subtidal coast. However, for existing data, a seamless bathymetric/topographic map can be created as a baseline in characterizing habitat.

All Research Components in this Focus Area should be coordinated with other agencies performing mapping (for instance, USGS and NOAA) and refer to habitat maps of FWC where appropriate to help identify gaps.

The projects listed will provide agencies with much needed base-line data to evaluate short-term and long-term trends on the coast, including coastal erosion and habitat change and for evaluating the success of restoration efforts.

Research Components

RC 1.1: Identify and prioritize specific coastal areas around the State for bathymetric mapping - with the goal of mapping the entire State's coastline by 2010. [Priority 11 of 51]

RC 1.2: Create maps to link previously mapped areas on the coast (identified through the State Coastal Inventory) seamlessly to existing offshore data where possible. This will show where gaps exist and identify datasets that are not compatible. [Priority 18 of 51]

Research Focus Area 2: Mapping Marine Habitats

Nearshore and offshore Florida coasts are historically rich and productive ecosystems supporting abundant populations of fish and wildlife. At the present, declines in key populations of species of fish are of considerable concern for resource managers and public alike. Marine living resources are associated with specific habitat, yet the high-resolution characterization of much of these habitats is

lacking, thus impeding understanding of the fundamentals necessary to manage the living resources. Habitat is created in large part by geologic and hydrologic processes which together determine the nature of living communities. For example, sandy sediment supports a biological community distinct from hardbottom or mud. Identifying areas of specific sediment cover versus hardbottom will also allow determination of extent, availability, quantity, and quality of offshore sands that may or may not be suitable as a resource for beach renourishment.

Habitat characterization is needed to provide resource managers parameters to evaluate health of an ecosystem and resilience to anthropogenic effects. For example, seagrass beds provide important habitat to both fish and birds and are an important source of primary production in the nearshore coastal and estuarine region of Florida. Seagrasses, however, are threatened by anthropogenic activities which cause increased turbidity levels, shading, and physical disturbance of the bottom. Managers recognize that this habitat is critical for healthy marine waters, however, not enough information is known about their distribution.

The first step in habitat mapping is to provide a map of the seafloor composition (sand, silt, muddy sand, sand, rock, etc.) and those organisms who themselves form habitat (seagrasses, corals, etc). There are technologies available for mapping shallow-water habitats and small areas of deep water, but improved methods are needed for cost-effectively mapping large deep-water areas.

All Research Components in this Focus Area should be coordinated with other agencies performing mapping (for instance, USGS and NOAA) and refer to habitat maps of FWC where appropriate to help identify gaps. They must also be coordinated with the coastline-mapping efforts of Research Focus Area 1 above.

These data are also crucial when modeling sediment processes and transport of pollutants. Habitat mapping will provide baseline data from which Management can compare changes over time. These data can also be fed into integrated models which can predict change in a habitat once critical parameters change.

Research Components

RC 2.1: Produce present-day highest-resolution bathymetric maps, identifying physical geologic setting (sediment/rock) and submarine aquatic vegetation with the goal of mapping the entire State's waters by 2015. [Priority 7 of 51]

RC 2.3: Perform bathymetric and benthic-habitat mapping of important Florida tidal rivers and estuaries by 2010. These are to be used to determine essential environmental conditions needed for living marine resources and to provide data for modeling the environmental impacts of management decisions regarding water use. [Priority 23 of 51]

Research Category B: Ecosystem Monitoring and Assessment

Introduction

Florida is unique in that it is surrounded by oceanic boundary currents. The Loop Current in the eastern Gulf of Mexico continues as the Florida Current in the Straits of Florida and along the east coast. These

offshore boundary currents directly affect the adjacent coastal environments by driving water circulation patterns, generating upwelling that can stimulate red tide blooms, provide the pathway for recruitment of fish and invertebrate larvae, and directly connecting Florida's waters with those of the Caribbean and the entire southeast U. S. coast.

Science-based management of Florida's coastal and offshore marine resources requires a systematic, interdisciplinary monitoring and assessment approach that integrates physical, chemical, and biological processes, including statewide discharges of surface and ground waters to the coasts. Monitoring and assessment is the collection and analysis of long-term data and results of controlled experiments conducted to establish cause-effect relationships.

Ecosystem monitoring and assessment includes periodic, continuous, and real-time data collection at fixed stations and by mobile sampling equipment and crews, each at scales sufficient to address management questions. Present needs requires greatly improved integration of methods for sampling physical and chemical constituents and the biological communities to provide the necessary ecosystem information that supports good management decisions.

Monitoring can be conducted for many purposes. These can be divided broadly into two categories, the collection of data to inform one about status and trends of a system, and the collection of data in an attempt to understand the functioning of the system, typically through data analysis, modeling, and scientific interpretation. Data from status-and-trends monitoring can also be used in the model development and verification. Research to develop methods for monitoring and research which depends on monitoring data for modeling or other purposes will be addressed here. Monitoring to provide raw information for management needs (for instance, to determine whether minimum water quality criteria are being met) will not be addressed here, though these efforts can also provide data for modeling.

Research Focus Area 3: Integrated Observation and Prediction System for Florida's Coastal Marine Ecosystems.

Fulfilling Florida's need to observe and predict environmental change and the ecosystem response of its coastal waters will require two components. The first is the creation of a sustained interdisciplinary observing system that spans all three of Florida's shelf regions: the West Florida Shelf (WFS), South Florida Shelf (SFS), and East Florida Shelf (EFS) from the outer shelf to the coastal estuaries and rivers. This will require a mix of remote sensing, shipboard and small-boat surveys, and in-situ stations for continuous monitoring of water quality and status of marine resources. This system must be fully integrated with regional and international integrated ocean observing systems (IOOS) in Florida waters, and will require Florida to fund additional ocean observing stations to provide Florida-specific information. These facilities will also support improved shipping and port operations. Research and development of biological observation methods for use at these stations will also be required to provide the necessary information to link the ocean currents and chemistry to the coastal biology and resources.

The second necessary component is the establishment of data/modeling center(s) for data quality control and dissemination, model development, and web-based posting of user-friendly data and model results to accommodate science-based decisions by management agencies. These will be addressed in the *Integrated Data Management and Dissemination* section of this report.

The monitoring component of the ecosystem prediction system will be presented here (in Focus Area 3) and the modeling component will be presented below in Category C: Modeling Systems (Focus Area 7).

Research Components

To establish and maintain an integrated state-wide, observation-based, predictive system of coastal marine ecosystem monitoring, it will be necessary to:

RC 3.2: Establish real-time interdisciplinary observing systems in areas that currently have no or minimal observing. [Priority 1 of 51]

Review of ongoing observation programs using fixed moorings in state coastal waters shows no or sparse observations from regions along the east Florida coast, the Dry Tortugas, the northwest Florida coast, and also within several major estuaries. Real-time moored monitoring stations need to be established in these regions to make continuous observations of physical, chemical, and biological constituents and to improve ecosystem forecasts for the highly-connected coastal shelf environments.

RC 3.4: Establish an interdisciplinary remote sensing capacity for Florida's coastal and offshore waters. [Priority 6 of 51]

This capacity is needed to improve spatial and temporal coverage of presently-available satellite data, improve reliability of methods for shallow coastal waters, and develop new methods for remote monitoring of HAB and other planktonic species and sea grass distributions. New methods are needed to improve user access and provide user-friendly tools for data manipulation of satellite information. These satellite data products are necessary to help assimilate data into predictive models and are the only means available for simultaneous coverage of large coastal and offshore regions.

RC 3.5: Develop, install, and implement new and improved biological monitoring instrumentation and protocols that will make biological observations match the geographic scale of physical oceanography measurements. Examples are tracking migratory species, developing methods for interdisciplinary observations of nutrients, chlorophyll, algal blooms, and fisheries and other aquatic resources to link physical-chemical conditions to biological effects. [Priority 5 of 51]

RC 3.6: Establish and enhance hydrological, chemical, and biological monitoring and assessment, including stationary and mobile systems such as shipboard surveys with accompanying modeling of the systems being monitored, to support agency programs to preserve and manage Florida's natural resources. [Priority 19 of 51]

RC 3.7: Establish continuous, long-term monitoring of salinity and dissolved-oxygen conditions in the estuaries to support development of modeling tools, assess the impact of sea-level rise, and assist in resource management (for instance, commercial and sport fisheries). [Priority 3 of 51]

Research Focus Area 5: Regional Monitoring of Toxic Blooms

To understand the factors causing HABs and regulating their toxicity, it is critical that their spatial distribution, taxonomic composition, and toxin levels be regularly monitored, ideally in concert with ongoing water-quality monitoring programs carried out by resource management agencies and/or citizen monitoring programs. Initially this work can be done using existing methods, and then expanded in scope as new rapid methods are developed under Research Focus Area 18.

The expected outcome is an enhanced ability to track the intensity, spatial distribution, and potential toxicity of HABs over time, to better inform the public regarding potential risks, and to provide necessary information for identifying environmental causes.

Research Components

RC 5.1: Coordinate methods of sampling and analysis among the multiple State, Federal, and local agencies and universities and research institutions that monitor and research HABs in Florida. [Priority 32 of 51]

RC 5.2: Use existing water quality monitoring programs to collect samples for algal identification and toxin analysis concurrent with nutrient and other water-quality samples. [Priority 50 of 51]

RC 5.4: Integrate HAB monitoring with data collection in the Ocean Observing System to allow examination of empirical relationships between HAB occurrence, spatial extent and intensity with physical-chemical data and provide an improved understanding of factors controlling HABs. [Priority 17 of 51]

RC 5.5: Use existing technology, including satellite remote sensing, to better link red tide research and monitoring to physical oceanography in order to better predict red tide size, trajectory, intensity, and potential impacts and to provide an early warning system. [Priority 8 of 51]

Research Category C: Modeling Systems

The tools by which managers can fully realize the benefit of good monitoring data are models that allow the prediction of the results of alternate management actions. Development of models that reliably predict outcome must be based on data from monitoring systems designed with this use in mind. Data from monitoring systems developed for other uses help to develop good models, but aren't likely to answer the specific questions the models need resolved. When proper data is available, then Florida must develop the models that provide its managers with these prediction tools.

Model development also inherently helps understanding of how ecosystems work, thereby helping to design more cost-effective research strategies.

Research Focus Area 6: Modeling Component of the Integrated Observation and Prediction System for Coastal Marine Ecosystems.

Existing models of currents, temperature, and salinity changes of Florida's coastal waters need to be linked to provide circulation forecasts for the entire Florida coastal waters. These circulation models also need to be linked to estuarine models to provide the necessary information on fresh water discharge to the coasts and atmospheric effects as well as to a large-scale oceanic model that includes the strong offshore current systems that surround the state. The resulting linked system of models would then provide the boundary information necessary for water quality and biological models that will provide the information needed by Florida's managers regarding ecosystem change.

Recommendations for this Center were given in the RC13 of the Monitoring section. Additional Research Components are recommended below to provide modeling support for making ecosystem predictions:

Research Components

RC 6.3: Develop coastal, estuarine, riverine, and lagoonal models to be nested with adjacent shelf models to improve understanding of land-sea linkages . [Priority 12 of 51]

Research Category D: Understanding Effects From Climate Change

Introduction

The State of Florida is particularly vulnerable to the effects of climate change and the resulting impacts will have an ever-increasing effect on the sunshine state's citizens, economy and environment. Global climate change poses risks to human health and to terrestrial and aquatic ecosystems.

Scientists have already observed changes in Florida consistent with the early effects of global climate change: warmer air and sea-surface temperatures; declining coral reefs in the Florida Keys due to the effects of coral bleaching; retreating and eroding shorelines; saltwater intrusion into inland freshwater aquifers; an upswing in forest fires; and a recorded increase in sea level. There is evidence that increased seawater temperatures are involved in the increasing frequency and severity of major storms and hurricanes as well as changes in ocean circulations patterns

According to the United States Environmental Protection Agency, the earth's climate is predicted to continue to change as a result of human activities. These changes are most likely to be increases in temperature and changes in precipitation, soil moisture, and sea level, which could affect many ecological systems, as well as on human health and the economy.

Two independent commissions that recently published reports on the health of the nation's oceans, the Pew Oceans Commission (May 2003) and the President's U.S. Commission on Ocean Policy (July 2004), both reported on the threats of climate change. The Ocean Commission reported that the causes and impacts of climate variability and climate change are among the most pressing scientific questions facing our nation and the planet.

State decision-makers and resource managers will require reliable scientific information on which to establish short-term and long-term strategies to address the impacts due to climate change. This will require a science plan that will rigorously address climate change issues. Long-term, as well as short-term changes in water quality (the link between water temperature and algae population dynamics, for example) are important in the State of Florida to the health of marine resources, including corals. Using historical data from buoys, as well as from satellite remote sensing, in addition to supporting the long-term monitoring of water quality and circulation are critical for understanding changes in climate variation. Sustained, synoptic monitoring of the physical, biological, geological and chemical aspects must be systematically supported by the State of Florida. It will be fundamental to distinguish between man-made changes in the ecosystem and changes resulting from natural environmental change.

Because of the enormous environmental and economic risks that climate-change variability poses for the State of Florida, it is crucial that the state take the lead in focusing research on its effects. The long-term solutions to climate change occur at the local, regional and national scales. In order to raise national awareness of the ecological and economic impacts to the state, it will require focused research.

Research Focus Area 9: Effects of Ambient Temperature Trends on marine ecosystems and biological processes

Research Components

RC 9.2: Determine the relationship, if any, of the increased frequency of coral diseases and elevated seasonal seawater temperatures to better target management activities that may focus on other possible causes. [Priority 51 of 51]

RC 9.5 Evaluate the long-term stability of coastal wetlands (marshes, mangroves, seagrasses) in relation to sea-level rise and episodic disturbances (i.e., hurricanes). [Priority 14 of 51]

Research Category E: Watershed and Freshwater Flow

Introduction

Ocean scientists and resource managers have long understood that watershed properties and uses, and the flow of freshwater to the coast, are significant determinants of coastal ocean health. Despite this understanding, these terrestrial issues have been poorly incorporated in the guidance of ocean and coastal research priorities and programs. As late as 1994, the National Research Council's *Environmental Science in the Coastal Zone: Issues for Further Research*, stated a concern for terrestrial effects generally, and river flow manipulations specifically, as an overlooked problem. Because of the many non-river means of freshwater flow to the coasts of Florida, this concept must be extended to include other types of freshwater flow as well.

Watershed issues are mentioned--but freshwater flow issues are not--in Florida's Ocean Strategies (1999), and freshwater flow issues are not mentioned by the Commission on Ocean Policy (2004) or the U.S. Ocean Action Plan (2004). On balance, the State of Florida has developed an acute awareness of the importance of watersheds and freshwater flows from its experiences in the Apalachicola-Chipola-Flint Rivers Basin and Apalachicola Bay, Everglades restoration, and the programs and projects of numerous water management districts, national estuary programs, and allied endeavors.

Of special relevance to the development of Florida's ocean and coastal research priorities is the expression by state agencies of numerous management needs for more effort addressing the watershed-ocean and watershed-estuary linkages that affect agencies' abilities to fulfill their respective missions. Almost twenty percent of agency input received by the Council concerned watershed and freshwater inflow issues, with major themes concerning:

a) The hydrological connectivity of Florida's land and inland waters to the coast and oceans, via surface and sub-surface conduits;

b) the existing and future forms and uses of watersheds, and the manner of downstream hydrological changes expected with changes thereto;

c) how the totality of changes to Florida's water cycle will affect the quantity, timing, and locations of fresh water provided to the coast, especially in terms of salinity;

d) how past, present, and future changes to freshwater flows will cumulatively affect habitat, biodiversity, and useful productivity of specific estuaries and Florida's coastal ocean as a whole; and,

e) how to best identify and use biologically-based criteria and targets in estuaries and coastal oceans as guides to effective water management.

These major themes inform the following research focus areas and specific projects. Focus areas and the specific projects identified within each are presented in order according to how each builds on prior steps. No ranking according to importance is implied, and some areas and projects are amenable to being combined.

All of the proposed projects are intended for statewide application. In some cases, where watersheds extend into other states, the projects should, as well. Though space limitations prevent their explicit recognition, exemplary models for many recommended projects already exist for specific areas of the state, often as the result of water management district initiatives.

Research Focus Area 11: Filling Information Gaps

State agencies, working in concert with regional planning councils and water management districts, have compiled a robust body of knowledge concerning Florida's watersheds, land covers and uses, and streams. Despite these significant accomplishments, substantial gaps need to be filled in order to effectively articulate the co-management of land and sea on a *state-wide* basis. Basic questions remain, as in the definition of watersheds where boundaries depend on stage; as in the present-day, cumulative status and trends of dominant land covers (e.g., wetlands) and uses (impervious areas), and as in how much fresh artesian water finds its way to tide. The time has come for Florida to undertake a synthesis of agency, district and council data, updated by such new information as needed, to develop a single state-wide assessment of watersheds and water resources that can inform coastal and ocean management. This need is enhanced by the organization of the Water Management Districts based on surface-water flows, though substantial water flows between some districts through underground flow through the aquifers. Because many watersheds and streams extend into other states, the undertaking will have to consider a landscape larger than Florida's political domain.

Research Components:

RC 11.3: Develop an integrated statewide water budget, considering watersheds outside of Florida as necessary, which accounts for inputs, storages, transfers, and losses of atmospheric, surface, and ground waters to identify the extent of inflow change to the state's coastal waters. [Priority 9 of 51]

Research Focus Area 13: Create Indices and Metrics to Improve Management

The widespread call by management agencies for indices, standards, and metrics is also evident where issues of freshwater inflow are concerned. Across Florida and the world, there are clear examples of harm to living resources in estuarine and marine environments, caused by extreme alterations to freshwater inflow. Studies are underway, but the wide variety of conditions in Florida's coastal waters requires research targeted at specific areas of the state as well as development of bioassessment tools (also discussed in Research Category F, RC 18.1.

Research Components:

RC 13.1: Develop and field-test biotic indicators (species, species groups, habitats, communities) as criteria and targets for statewide use in determining whether watershed and stream management practices are protecting natural estuaries and marine ecosystems, and restoring impaired ones. [Priority 24 of 51]

RC 13.2: Determine the locations and sizes, dominant physico-chemical features, living resources, and unique ecological functions of all oligohaline and tidal-fresh waters in Florida. [Priority 29 of 51]

Research Focus Area 14: The land-sea connection

As living marine resources are linked over broad regions by ocean currents, they are also linked to the land through the outflow of rivers and tidal currents from estuaries. These connections can occur over long distances. For example, the 1993 floods in the Mississippi River drainage entrained the runoff in the Loop Current in the Gulf of Mexico which, some days later, caused significant drop in the salinity of water over Florida Keys coral reefs.

Many marine organisms use estuaries and rivers as spawning and/or nursery areas or, as in the case of sturgeon, spend their adult life in rivers and spawn in the sea.

Research Components

RC 14.1: Determine the relationship of the timing, quantity, and distribution of major river outflows and submarine groundwater discharges to the distribution and abundance patterns of coastal marine organisms. [Priority 26 of 51]

RC 14.3: Using a historical approach, estimate the effect of the loss of coastal mangrove and seagrass habitat on the species that depend upon them. [Priority 4 of 51]

Research Category F: Water Quality

Introduction

Water quality is of critical importance to Florida. A seemingly simple topic, water quality determines what biological communities can live in a water body, whether the water is harmful to humans drinking or exposed to it, and whether the water is suitable for human uses such as manufacturing or cooling. With an economy driven by tourism focused on use and appreciation of water resources, maintenance of high water quality to support reefs, grassbeds, fishing, and beach activities, among many others, must be a high priority.

Nutrients concentrations in Florida's surface, ground, and coastal waters have become a widespread water-quality problem in Florida. Excess nutrients support plant and algal growth which can result in overgrowth of grassbeds with resulting die-off, prevent light from reaching the grassbeds, and smother corals and other organisms.

Contaminant discharges to Florida's waters are less widespread than in the past, but problems remain, especially for coastal waters. Physical-chemical factors result in many contaminants settling out of rivers and streams when they mix with salt water. As a result, the estuaries and areas near coastal streams accumulate contaminated sediments, causing problems for benthic communities at these locations.

Certain contaminants like mercury are causing significant problems by accumulating in the coastal food chains. At present, health advisories have been issued to minimize human consumption (or, in the case of pregnant women, prevent consumption) of many of the sport and commercial fish species along Florida's coasts because of excessive mercury levels in the fish tissues.

Different aspects of human wastewater problems could fall under nutrient, contaminant, and human health categories, but there are aspects of dealing with human wastewater sources that warrant separate consideration.

One of the most significant changes in water quality science in the last decade is the expansion from considering water quality only as the physical and chemical components making up the water to including the water's suitability for supporting healthy aquatic communities. The term biological water quality refers to using the health of the biological community within a water body to better determine whether problems exist with the physical-chemical components of the water. While these biological assessment (or bioassessment) methods are now widely used in Florida's freshwater systems, only initial development has begun for Florida's coastal and ocean waters. There is a critical need to develop estuarine and marine bioassessment methods, which are tools that support many of the other research efforts.

Human-health issues and harmful algal blooms (HABs) are also water-quality issues, but their widespread importance and specificity has prompted the Council to assign them their own areas in this Research Plan, so those aspects will not be addressed in this section.

Research Focus Area 15: Nutrients

As a direct result of Florida's large human population, various industries, and agriculture, there are high rates of nutrient transport from watersheds to downstream receiving waters, including the coastal waters that support economically important fisheries, recreational beaches and waterways, reefs, and other natural environments. Resource managers require information to guide management actions that will reduce these nutrient inputs and their deleterious effects. This includes information on relative cost and effectiveness of different methods of nutrient control at the source, effects of alteration of flow pathways (e.g., channelization) on nutrient transport and transformation, opportunities for instream and downstream nutrient controls (e.g., riparian restoration, wetland treatment areas) and a better understanding of how particular concentrations, ratios, and loads of nutrients affect native flora and fauna in rivers, estuaries and offshore coastal waters. This improvement in Florida's marine water quality would protect economically important habitats such as benthic communities and beaches.

Research Components:

RC 15.1: Develop methods for determining sources of nutrients so agencies can improve source regulation. [Priority 48 of 51]

RC 15.7: Identify quantitative relationships between nutrient concentrations in coastal waters and impairment of flora and fauna, so that agencies can use this information to establish scientifically-sound targets (such as nutrient criteria) for nutrient concentrations and loads. [Priority 21 of 51]

Research Focus Area 16: Contaminants

There is a need to better understand water quality issues to allow resource managers to take action before adverse effects take place. For the purposes of this section, contaminants will be used to include both natural and other constituents which put the biological community at risk, but not including nutrients, addressed in Research Focus Area 14, and red tide, addressed in Category G, Harmful Algal Blooms.

Two examples of adverse effects from water borne contaminants are loss of fisheries and esthetic damage to beaches and other recreational areas. These, in turn, can have significant economic impacts by reducing industry and tourism.

Research Components:

RC 16.1: Assess the impacts of non-point source pollution, particularly storm-water runoff from urban areas, and determine the most effective means of abatement. [Priority 22 of 51]

RC 16.5: Define potential impacts of offshore oil and gas development of Florida's coastline with an emphasis on effects on fish, wildlife and their habitats. [Priority 49 of 51]

Research Focus Area 17: Domestic Wastewater

Although many of the problems associated with wastewater management are human health issues (hence placed in a separate part of the Research Plan), there are other environmental issues. Florida's burgeoning population has in some areas out-paced our ability to deal effectively with sewage issues.

Research Components:

RC 17.1: Assess the effect that human waste management, and septic tank use in particular, has on nutrient loading and water quality in nearshore habitats. [Priority 20 of 51]

RC 17.2: Assess the effects of nutrients from ocean outfalls on coastal habitats. [Priority 36 of 51]

RC 17.3: Compare the environmental risk to water quality of area waters from septic systems to that of centralized sewage systems, particularly on islands. [Priority 35 of 51]

Research Focus Area 18: Determining the Health of Biological Communities in order to Measure Ecosystem Health and Assess Water Quality

Water quality is one of the main factors controlling biological communities in Florida's estuaries, coasts, and marine waters.

Over the past decade, research and practical experience in freshwater systems (including in Florida) has demonstrated the advantage of using focused biological monitoring to identify areas of impaired water quality. Biological monitoring provides intuitive information about actual environmental quality and

results are easier for the public to understand. Additionally, it is now recognized that physical and chemical measurements alone often poorly predict the presence of effects on exposed biological communities.

Because of national guidance and leadership demonstrating new biological monitoring approaches, Florida embarked on a major initiative to redesign its monitoring and assessment strategies for managing water resources.

The initiative began in freshwater systems because both the mechanisms driving changes in water quality and the biological communities themselves are simpler to understand and assess than those in salt waters. After extensive research and development efforts, the cost-effectiveness of using a biological assessment approach has been demonstrated and such methods are now important components of numerous freshwater surface water management programs in Florida.

Biological monitoring offers a relatively inexpensive means to document where problems exist and help focus where more intensive chemical and physical monitoring may be required to determine sources and causes of the problems.

In salt waters, however, bioassessment methods-development has been minimal and limited in scope. There is a need to expand meaningful biological monitoring and develop new and improved biological assessment methods for our coastal and oceans waters to provide the management benefits already available for Florida's fresh waters.

In contrast to freshwater communities, the physical and chemical factors underlying biological communities in salt water systems are much more difficult to understand. Therefore, a considerable portion of the work required to develop new biological monitoring tools will consist of research to understand physical and chemical factors combined with biological and geographical settings to develop classification systems for the types of saltwater communities.

Bioassessment inherently depends on the ability to identify the species makeup of the biological communities being assessed. For methods to be widely useable, these identifications must be performed in a repeatable manner, with the same attention to QA/QC as is required by any other analytical method. Experience with the freshwater bioassessment program has demonstrated the need for centers of taxonomic expertise to provide statewide quality assurance programs to ensure consistency in identifications and, thereby, consistency of results from using bioassessment methods. These centers also responsible for developing new and improved methods to more cost-effectively perform the identifications.

As a part of developing community bioassessment methods, there is a need to develop techniques and technology that allows researchers to measure biological activity continuously at a level similar to that presently used to monitor water quality, hydrology, and climate.

These technologies include new sensor systems (LIDAR, sonar, passive acoustics, IR), telemetry (radio, satellite, telephone) and bio-chemical (elemental isotopic, genetic) analyses.

Development of biological assessment and monitoring approaches in marine systems will also help support work in many of the other Research Focus Areas in this document. Of the 145 Management Needs identified to the Council by state agencies to help them better fulfill their coastal and oceans responsibilities, 75 depend on development of either new or improved bioassessment methods to address those needs.

Research Components:

RC 18.1: Building on existing initial efforts (DEP, FWC, WMDs, CERP), hold a statewide workshop to identify initial habitats for which to develop bioassessment methods. Discuss possible pilot projects in different regions that pose different expectations. [Priority 41 of 51]

RC 18.4: Identify and evaluate new technologies—including but not limited to sensors (LIDAR, sonar, passive acoustics, infrared), telemetry (radio, satellite, telephone) and bio-chemical analyses (elemental isotopic, genetic)—for their potential to measure biological activity continuously at a level similar to that presently used to monitor water quality, hydrology, and climate. These technologies and/or techniques should be compatible and simultaneously deployed with Integrated Oceanographic Observation Systems (IOOS) that are located in coastal waters around the United States. [Priority 2 of 51]

Research Category G: Harmful Algal Blooms (HABs)

Introduction

Coastal waters of Florida recently have displayed widespread blooms of microscopic algae and bacteria that produce toxins that are potentially harmful to humans, fish, and other living aquatic organisms. In the Gulf of Mexico, 'red tide' blooms of the toxic dinoflagellate *Karenia brevis* (previously *Gymnodinium breve*) have caused mass mortalities of fish, shellfish poisoning, and human respiratory irritation. In the Atlantic Ocean the bioluminescent dinoflagellate, *Pyrodinium bahamense* var. *bahamense*, has been associated recently with the accumulation of saxitoxins (potent neurotoxins) in pufferfish. In coastal rivers and estuaries along the east and west coast of Florida, blooms of the cyanobacterium *Microcystis aeruginosa* and associated high levels of its toxin microcystin (a hepatotoxin) raise concerns about safety of water for drinking, recreation, and fishing.

Dinoflagellate and cyanobacteria blooms of the magnitude experienced in 2005 in the Gulf of Mexico and other Florida coastal waters impact fishing and tourist industries, may alter population levels and/or recruitment of fish and other marine animals, and have the potential to reduce sales of seafood products from within the region and impact values of waterfront property. There is an ongoing discussion regarding why blooms appear to be more frequent and widely distributed in recent years, with explanations including natural mechanisms related to species dispersal, natural climate cycles, and human-related factors such as enhanced nutrient runoff from developed watersheds. Whatever the cause, it is clear that HABs are common in Florida waters, the blooms have negative consequences, and major uncertainties remain regarding their cause and scope of human and ecological impacts.

While understanding of the factors controlling red tides is developing, less is known of the ecology of the other HAB species. Nutrients appear to be a factor in all algal blooms, but there are a number of unresolved questions regarding HABs that need to be addressed if we are to develop a predictive understanding of their occurrence, their risk to human health and natural ecosystems, and importantly, the opportunities for their control. The items listed here are taken from national research planning documents recently under development based on workshops involving leading scientists from around the world who deal with HABs. They also reflect the management questions submitted to the Oceans

Council by state agencies, water management districts, and other governmental entities involved in the management of Florida's coastal waters.

Research Focus Area 20: Environmental controls of toxic blooms

If blooms are to be controlled, then resource managers must have information regarding the factors responsible for their development, movement, and die-off. This information may come largely from field observations, but it ultimately needs to include controlled experiments (where scale of questions makes this feasible) and predictive modeling.

Knowing what factors control blooms is critical to resource managers in regard to decisions regarding whether or not to take actions (e.g., natural vs. anthropogenic cause) and what actions to take (e.g., reduce total nutrient inputs vs. also focus on critical nutrient ratios in effluent waters).

Research Components

RC 20.2: Determine the hydrologic conditions that result in HAB development, using a combination of observations and modeling. Enhance the collection of data on the size, duration, intensity of blooms. [Priority 36 of 51]

RC 20.3: Determine influence of watershed nutrients resulting from land-use practices on HAB formation and collapse. [Priority 38 of 51]

Research Focus Area 23: Ecological effects of non-toxic macro-algal blooms

Several macro-algal species (e.g., *Lyngbya* and *Caulerpa*) are causing problems in nearshore areas, particularly on southeast Florida reefs. Dense blooms of these large algae smother corals and other benthic communities.

Research Components

RC 23.2: Determine factors resulting in macro-algal blooms. [Priority 45 of 51]

RC 23.3: Quantify the impacts of HABs on commercial and recreational fisheries, coastal tourism, contact recreation, and other human activities integral to the economy of Florida's coastal areas. [Priority 28 of 51]

Research Category H: Public Health Issues

Introduction

The ocean is a source of both threats and benefits to human (public) health. A number of National Research Council studies have recommended research priorities for understanding the linkages among physical oceanography, marine biology, public health, epidemiology, and medicine. The U.S. Commission on Ocean Policy recommended that "significant investment must be put into developing a coordinated national research effort to better understand the links between the oceans and human health". The President's Ocean Action Plan recognized the economic and human health impacts of beach closings, seafood contamination, and the toxic effects of harmful algal blooms—all of which have increased in the State of Florida.

Threats to public health include infectious and toxic microorganisms (including harmful algae) that affect humans through ingestion of contaminated seafood, direct contact with seawater and sediment during

recreational or occupational activities, and contact with sea spray containing toxins. Pathogens and chemical pollutants, such as heavy metals, enter coastal waters in runoff from sewers, rivers, and streams. Vivid impacts of the ocean on human health are most dramatically observed when high water associated with storm surges, heavy rainfall, and hurricanes exacerbates the spread of pathogens and chemical pollutants.

The oceans are also the source of benefits to human health, including marine-derived pharmaceuticals to treat diseases such as cancer and Alzheimer's, as well as nutritional supplements and diagnostics. Exploration of Florida's rich marine biodiversity has already resulted in the discovery of novel chemicals with pharmaceutical applications. The first two drugs ever derived from marine organisms were discovered from Florida coastal waters during the 1950's. As a result of more recent discoveries made by scientists at State and private universities and research centers, particularly during the past two decades, Florida is one of the top two states (with California) for marine biomedical research and development.

Toward this end, one of the goals laid out in the Oceans and Coastal Resources Act was to reduce negative health impacts of marine organisms, and promote marine biomedical or biotechnology research and product discovery and development to enhance Florida's opportunity to maximize the beneficial uses of marine-derived bioproducts.

Research Focus Area 24: Develop a comprehensive program to assess the occurrence and persistence of water-borne and sediment-associated disease-producing organisms in fresh, estuarine, coastal, and marine waters and associated sediments.

It is not at present possible to reliably identify where there is risk to humans from exposure to water-borne or sediment-borne disease-causing organisms (pathogens) in Florida's waters. Recent investigations indicate that presently-used methods may not distinguish between conditions where pathogenic bacteria are present and those where only naturally-occurring populations of non-pathogenic bacteria are present. Presently-used methods appear to give frequent false indications that pathogens are present. The economic effects from unnecessary closing of Florida's beaches and shellfish waters as a result of this error are potentially significant. A comprehensive research program for assessment of the environmental conditions that influence the occurrence and persistence of water-borne and sediment-associated pathogens of concern to human health in fresh, estuarine, coastal, and marine waters and associated sediments is needed.

Research Components:

RC 24.1: Develop and implement rapid monitoring and assessment tools and procedures for identifying microbial pathogens in rivers, coastal waters, sediments (including beaches), and seafood. [Priority 34 of 51]

These should be rapid, ultimately inexpensive, sensitive, and robust methods for detection and measurement of all classes of waterborne pathogens and their indicators, and they should be capable of deployment in the field and on coastal and ocean observing platforms.

Research Category I: Living Marine Resources

Introduction

Much of Florida's economy is based on living marine resources. Commercial and sport fishing along the coasts, recreational diving, and tourism are just a few examples of activities based on the coastal ecosystems and having substantial economic impact.

Florida's Ocean Strategies (1999), the Commission on Ocean Policy (2004), and the U.S. Ocean Action Plan (2004), and Florida's Oceans and Coastal Resources Act (2005) all specify the implementation of Ecosystem-Based Management (EBM) in the U.S. Exclusive Economic Zone. EBM is sometimes perceived to apply exclusively to fisheries management, but as a recent scientists' statement (e.g. www.compassonline.org) has emphasized, it is intended to be an overarching, comprehensive approach, whose goal is sustainable human uses of marine resources. It also requires consideration of "upstream" effects from other states and countries.

Implementation of EBM involves most of the categories of research that the Florida Ocean and Coastal Resources Council has considered, beginning with comprehensive mapping of the geographic distribution of habitats and resources, the currents linking areas around the state, key areas such as spawning aggregations and migration routes, and existing human uses in the coastal ocean. Using the map information in Research Category A as a background, EBM can be envisioned to move forward regionally within the state, driven by stakeholders, for which the definition of the *"ecosystem"* in EBM could be described as the *"area of concern."*

Most fishery species have suffered declines in distribution and abundance, such that their contemporary populations are a fraction of what they once were. Jackson et al. (2001) and Pandolfi et al. (2003, 2005) have pioneered a historical approach to ecology, using scientific records, archaeological records, popular accounts, and other sources to provide great detail on the historical trajectory of decline. Some of the best historical records are the commercial fishing records mandated by the FAO and by other government authorities. The use of marine "zoning" to identify—among others—areas to preserve (like Aquatic Preserves and Marine Protected Areas), areas for commercial/industrial activities (like ports and shipping channels), areas for fishery harvesting, areas for fishery replenishment (like Marine Reserves), and areas for research (like National Estuarine Research Reserves) is effective. For instance, five different types of marine zones have been implemented in the Florida Keys National Marine Sanctuary that protect important resources, lessen conflicts between uses, provide research sites, and preserve the authorities of overlapping jurisdictions. However, proper identification of marine zones calls for methods to identify what areas of our waters constitute their best use.

Of course, there is no possibility of re-creating ecosystems as they were before modern human populations expanded. But the historical ecology approach suggests measures that may be effective and can provide quantitative information on the effectiveness of management.

Research Focus Area 27: Connectivity: linking the distribution and abundance of living marine resources to ocean currents

The understanding of ocean currents is as critical to management of the marine environment as the chart. Currents are the highways by which many living marine resources move, particularly eggs and larvae. Currents also move food and nutrients around the system.

Physical oceanographers commonly use make empirical observations data from widely-spaced automated monitoring equipment over broad areas and then use models to provide a comprehensive view of ocean circulation. A basic problem is that the geographic scale of this oceanography is generally much larger than that necessary for understanding the much smaller scales of biological observations of fishes, red tides, or pollution, for example, are mismatched. Research is needed to bring biological observations into line with physical observations and the arena of ocean-circulation models. As with all ecosystem changes, it will be critical to distinguish between anthropogenic effects on the ecosystem and natural environmental changes. A combination of fishery independent data along with environmental monitoring of both biological and physical data taken in the same time and space scales are critical. Satellite remote sensing (ocean color-chlorophyll and sea surface temperature) is an important tool for answering some significant issues. These types of data should be combined integrated with useful ocean circulation models to produce both diagnostic and predictive bio-physical models. Understanding the linkages between the physical environment and the biology is fundamental.

Almost all marine species have a free-swimming, planktonic larval stage of several days to months in duration. This is an important and still mysterious stage in the life of any marine organism and better understanding is basic to management. Marine organisms commonly have particular spawning areas and/or spawning seasons that often are well known. Larvae produced at these times can be distributed over great distances. Understanding the "source" areas for larvae is critical for the management of target species.

Research Components

RC 27.1: Conduct studies linking key fish spawning areas to larval distribution and adult population-distributions on the Florida shelf, for example Riley's Hump in the Tortugas Ecological Reserve. [Priority 29 of 51]

RC 27.2: Assess effectiveness of Marine Protected Areas and Marine Reserves and other types of protected areas to enhance the surrounding ecosystem, for instance through "spillover" effect. [Priority 15 of 51]

Research Focus Area 28: Improve scientific input to fisheries management

All of the recent ocean policy reviews and studies have stressed the need to reform fisheries management. With the current review by Congress of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) the issue has come to the forefront. The fundamental problem is the need to separate scientific assessment of stocks and allowable catch from allocation of those resources to fishing interests.

Finally, improved scientific assessment of fishes must be an integral part of the development of the Coastal Ocean Observing System (COOS) and new techniques must be developed to supplement the traditional fisheries dependent and independent methods of stock assessment.

Research Components

RC 28.1: Develop new methods for the assessment of fishery populations that include acoustical and genetic methods. [Priority 10 of 51]

RC 28.2: Conduct monitoring, assessment, and modeling evaluations of the impacts of fishing on ecosystems. These studies will include impacts of various gear uses; removal of both predator and prey species, sex, size population-dynamic relationships; loss of keystone species; and other trophic-level interactions. [Priority 12 of 51]

RC 28.5: Work with fishers to identify fishery spawning aggregation sites around the state, and then validate and characterize these areas. [Priority 25 of 51]

RC 28.6: Create coastal ocean environmental indices in support of fisheries research and spatial management of the fisheries. Monitoring of habitat conditions on a daily basis will be important to understanding linkages of the environment to marine resources. [Priority 46 of 51]

Research Focus Area 29: Spatial management

Management of marine resources using zoning is integral to EBM. While we often speak of the ocean as a commons, open to all but the responsibility of none, zoning has been extensively used, for example, for ship channels, disposal areas, military activities, minerals leases, aquaculture, and fisheries management. But, unlike zoning on land, the implementation of marine zones has been piecemeal and without planning and sufficient understanding of the distribution of habitats, living marine resources, and potentially-conflicting human uses. This is in large part due to the lack of comprehensive mapping of the seafloor and the habitats and natural resources on it. One must map first, then zone. Any zoning efforts should also consider benefits and values of microhabitats as well as global considerations.

We are entering an era where there will be greatly increased pressure for development, leasing, and exploitation of marine regions, for example, offshore aquaculture, hydrokinetic and wind power generation, pipelines and IT cable corridors, and offshore minerals and mining. Before these decisions are taken, we need to have an idea of what is there, what we can afford to give over to human use, and what we must manage and conserve for sustainability.

Research Components

RC 29.3: Determine which geospatial habitat conditions support an increase in fish recruitment as a result of Marine Reserves. This research should consider the size and location in relation to biotic and abiotic conditions. [Priority 41 of 51]

Research Category J: Habitat Restoration

No research projects from this category were included in this year's final list.

Research Category K: Non-native Invasive Species

No research projects from this category were included in this year's final list.

Research Category L: Aquaculture

Introduction

Floridians pioneered early efforts to culture marine species. Culturing hard clams started during the 1960s in St. George Sound and other coastal locations around the state. Experimental marine shrimp

farming by Floridians led to the development of a global industry in tropical countries where longer growing seasons made production profitable. Experimental work led by Florida's first publicly-employed marine biologist tested the culture of marine finfish at the Department of Natural Resources laboratory in St. Petersburg, (now the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute), the summer feeding of oysters at a laboratory on Cedar Key, and initiated the creation and maintenance of oyster reefs in Apalachicola Bay using oyster cultch in 1949.

Today Florida is the largest producer of the hard clam for national and international markets with production occurring on leased sovereign submerged lands; the largest producer of marine ornamental fish, invertebrates, and hard corals for marine aquarists from inland, recirculating production systems; and the largest producer of live rock for marine aquarists from leased sovereign submerged lands

Florida is a significant seafood consumer and an excellent market entry point for new sources of seafood. The United States is the third largest consumer of seafood in the world, importing 45 percent of its seafood fare by weight or 81 percent by value.

Florida is also at the epicenter of where marine work can be accomplished to (1) replenish depleted marine stocks through the release of cultured fishes and invertebrates, (2) recognize and protect essential or critical habitat for key fisheries stocks, (3) develop a better understanding of life-history and ecological requirements and how to use this knowledge to develop sound fishery regulations (4) advance the understanding of current trends in ecosystem-based management, fisheries stock assessment, and modeling, and (5) develop innovative methods for monitoring fish abundances and exploitation rates.

In an effort to help meet state and national seafood demand; protect, conserve, and restore declining recreational fisheries and reef species; and stimulate economic growth, the Council will focus research efforts on evaluating the potential for inland, recirculating aquaculture technology to produce food or ornamental marine species, offshore technologies, and the implementation of new marine stock enhancement initiatives. The proposals are supported by a planning document, The Florida Aquaculture Plan, as authorized by Chapter 597, Florida Aquaculture Policy Act, Florida Statutes.

Research Focus Area 33: Achieve Sustainable Marine Aquaculture Species and Production Systems

Florida aquaculture must expand production and reduce costs to meet increasing national demand and falling global prices for high-quality seafood and ornamental species. A dedicated and coordinated effort is needed to identify suitable species and design sound production systems. High market value species amenable to intensive production systems and plant-based protein diets must be identified and tested in commercial systems. Marine aquatic animal production systems must be improved through the development and application of innovative biological and engineering approaches to reduce energy consumption, increase carrying capacity, incorporate plant-based biofiltration, and automate command and control functions.

Research Components

RC 33.1: Demonstrate economically-feasible production and marketing of a high-value marine fish species that can be farmed in a land-based recirculating production system. [Priority 43 of 51]

RC 33.4: Evaluate the potential benefits and risks of offshore aquaculture in Florida. [Priority 39 of 51]

Research Focus Area 34: Aquaculture of Marine Fish Species for Stock Enhancement

Many of Florida's economically important marine species have declined in abundance due to over-fishing, estuarine nursery habitat loss and acute environmental impacts such as chemical spills or periodic winter kills. Hatchery production is frequently suggested as one remedy for declines related to early-juvenile-habitat loss and acute impacts. The release of hatchery-reared fish may be particularly effective in restoring a population in areas where the abundance of naturally occurring fish has declined to a level at which natural recovery is unlikely in a reasonable amount of time. Hatchery releases may also increase fishing opportunities by providing a source of juveniles to supplement weak year classes and to stock inland ponds in urban areas suffering from coastal-habitat degradation.

Research Components

RC 34.1: Develop and demonstrate recirculating marine aquaculture technology for marine sport fish stock enhancement and restoration. [Priority 27 of 51]

Research Category M: Measuring Coastal Economies and Assessing Human Impacts on Resources

Introduction

The draw of Florida's coasts is undeniable; people relish the opportunity to work and play as close to Florida's shorelines and waterways as possible. The state's economic and environmental well-being is inextricably linked to its coastal and marine resources. Florida's coastal communities and water-dependent businesses face difficult and critical challenges: how to balance population growth, development pressure, recreational demands and tourism with maintenance and enhancement of coastal environmental quality. Almost 80% of the state's population lives in the 35 coastal counties. By 2025, the population of Florida's coastal counties is projected to be almost the same as the population of the entire state in 2000. There is a compelling need to create strategies for community development and business growth that are compatible with the environment and that are sustainable.

Gaps among diverse, often conflicting interests of all citizens regarding the use of the coasts and ocean are daunting, but they must be closed if coastal communities are to realize their full economic and environmental potential. Policy and decision-makers need the best science-based information to consider as they plan the future of Florida. Research needs in this area require an interdisciplinary approach and they require the involvement of a diverse range of disciplines including the natural, physical and social sciences, architecture and engineering.

Research Focus Area 35: Resource Valuation

Sustainable coastal ecosystems provide a variety of goods and services, including fisheries, recreation, waste assimilation, erosion, flood control and biological diversity. They also provide a desired place to live and provide business services.

Research Components

RC 35.1: Determine the market and non-market values for all sectors of the Florida ocean and coastal economy using a consistent methodology and available data bases that can be repeated periodically to track the performance of each sector dependent on the coast and ocean. Make the information available to the legislature and the public on the web. [Priority 16 of 51]

RC 35.2: Determine the economic value of coastal ecosystems and habitat when left to function as a natural system. [Priority 40 of 51]

Research Focus Area 36: Indicators of Sustainable Development

Planners and decision makers need an integrated set of economic, environmental and social indicators that track progress toward achieving the goal of sustainable coastal development and use.

Research Components

RC 36.1: Determine the social and economic costs and benefits that derive from public and private conversion of coastal and waterway access points to non-water dependent uses. Determine incentives to retain water-dependent and water-related facilities that serve public needs and reflect public values in order to maintain public access to public coastal waters. Produce annual reports stating the length of Florida's sandy beaches that are publicly accessible. [Priority 44 of 51]

RC 36.6: Determine the economic impacts of long term trends in beach loss, including:

a) Determine the economic and environmental costs and benefits of continued beach-renourishment projects, including determining the economic feasibility, extent, availability, quantity and quality of offshore sands suitable for beach renourishment. Link to water quality studies of this issue in the Water Quality section.

b) Determine the effect of continued beach-renourishment projects on turtle, seabird, and adjacent coral and fish populations and on other organisms dependent on beach ecosystems for food, shelter, and reproduction. Include subsequent economic impact as well. [Priority 29 of 51]

Research Focus Area 37: Response to Coastal Hazards

A pre-hazard response is necessary to enhance preparedness and reduce losses of human life, property and coastal ecosystems and habitats from natural hazards. The research projects listed here focus on coastal ecosystems and natural habitats.

Research Components

RC 37.3: Determine coastal construction and design practices related to reducing shoreline erosion. Determine the social, economic, and environmental consequences of increasing rates of beach erosion, coastal armoring, and beach renourishment. [Priority 33 of 51]

RC 37.4: Determine the role of the shoreline in reducing wave and flood damage, including ways to implement shoreline protection measures that do not damage the coastal and offshore natural environment. Develop a scientific basis for determining erosion and coastal setback zones. [Priority 47 of 51]

IV. RESEARCH NEEDS AND COSTS IN ORDER OF FUNDING PRIORITY

The Council offers the following list of research in order of importance. Note that the integrated data management recommendation is not incorporated in this list, but presented separately in the Integrated Data Management and Dissemination section. Budget estimates for the Research Components in the list will be generated by Council staff and added as an appendix. The Council will review the estimates and submit a final table.

Rank	**Research Component** **Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan** **Note: If research requires more than one year to complete, budgets are costs for first-year.**
1	*Establish real-time interdisciplinary observing systems in areas that currently have no or minimal observing. [B. Monitoring; RC3.2]*
2	*Identify and evaluate new technologies—including but not limited to sensors (LIDAR, sonar, passive acoustics, infrared), telemetry (radio, satellite, telephone) and bio-chemical analyses (elemental isotopic, genetic)—for their potential to measure biological activity continuously at a level similar to that presently used to monitor water quality, hydrology, and climate. These technologies and/or techniques should be compatible and simultaneously deployed with Integrated Oceanographic Observation Systems (IOOS) that are located in coastal waters around the United States. [F. Water Quality; RC 18.4]*
3	*Establish continuous, long-term monitoring of salinity and dissolved-oxygen conditions in the estuaries to support development of modeling tools, assess the impact of sea-level rise, and assist in resource management (for instance, commercial and sport fisheries). [B. Monitoring; RC 3.7]*
4	*Using a historical approach, estimate the effect of the loss of coastal mangrove and seagrass habitat on the species that depend upon them. [E. Freshwater Flow; RC 14.3]*
5	*Develop, install, and implement new and improved biological monitoring instrumentation and protocols that will make biological observations match the geographic scale of physical oceanography measurements. Examples are tracking migratory species, developing methods for interdisciplinary observations of nutrients, chlorophyll, algal blooms, and fisheries and other aquatic resources to link physical-chemical conditions to biological effects. [B. Monitoring; RC 3.5]*
6	*Establish an interdisciplinary remote sensing capacity for Florida's coastal and offshore waters. [B. Monitoring; RC 3.4]*
7	*Produce present-day highest-resolution bathymetric maps, identifying physical geologic setting (sediment/rock) and submarine aquatic vegetation with the goal of mapping the entire State's waters by 2015. [A. Mapping; RC 2.1]*
8	*Use existing technology, including satellite remote sensing, to better link red tide research and monitoring to physical oceanography in order to better predict red tide size, trajectory, and intensity and potential impacts and to provide an early warning system. [B. Monitoring; RC 5.5]*
9	*Develop an integrated statewide water budget, considering watersheds outside of Florida as necessary, that accounts for inputs, storages, transfers, and losses of atmospheric, surface, and ground waters to identify the extent of inflow change to the state's coastal waters. [E. Freshwater Flow; RC 11.3]*
10	*Develop new methods for the assessment of fishery populations that include acoustical and genetic methods. [I. Living Marine Resources; RC 28.1]*
11	*Identify and prioritize specific coastal areas around the State for bathymetric mapping - with the goal of mapping the entire State's coast by 2010. [A. Mapping; RC 1.1]*
12*	*Develop coastal, estuarine, riverine, and lagoonal models to be nested with adjacent shelf models to improve understanding of land-sea linkages. [C. Modeling; RC 6.3]*

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.
12*	*Conduct monitoring, assessment, and modeling evaluations of the impacts of fishing on ecosystems. These studies will include impacts of various gear uses; removal of both predator and prey species, sex, size population-dynamic relationships; loss of keystone species; and other trophic-level interactions. [I. Living Marine Resources; RC 28.2]*
14	*Evaluate the long-term stability of coastal wetlands (marshes, mangroves, seagrasses) in relation to sea-level rise and episodic disturbances (i.e., hurricanes). [C. Climate Change; RC 9.5]*
15	*Assess effectiveness of Marine Protected Areas and Marine Reserves and other types of protected areas to enhance the surrounding ecosystem, for instance through "spillover" effect. [I. Living Marine Resources; RC 27.2]*
16	*Determine the market and non-market values for all sectors of the Florida ocean and coastal economy using a consistent methodology and available data bases that can be repeated periodically to track the performance of each sector dependent on the coast and ocean. Make the information available to the legislature and the public on the web. [M. Coastal Economics; RC 35.1]*
17	*Integrate HAB monitoring with data collection in the Ocean Observing System to allow examination of empirical relationships between HAB occurrence, spatial extent and intensity with physical-chemical data and provide an improved understanding of factors controlling HABs. [B. Monitoring; RC 5.4]*
18	*Create maps to link previously mapped areas on the coast (identified through the State Coastal Inventory) seamlessly to existing offshore data where possible. This will show where gaps exist and identify datasets that are not compatible [A. Mapping; RC 1.2]*
19	*Establish and enhance hydrological, chemical, and biological monitoring and assessment, including stationary and mobile systems such as shipboard surveys with accompanying modeling of the systems being monitored, to support agency programs to preserve and manage Florida's natural resources. [B. Monitoring; RC3.6]*
20	*Assess the effect that human waste management, and septic tank use in particular, has on nutrient loading and water quality in nearshore habitats. [F. Water Quality; RC 17.1]*
21	*Identify quantitative relationships between nutrient concentrations in coastal waters and impairment of flora and fauna, so that agencies can use this information to establish scientifically-sound targets (such as nutrient criteria) for nutrient concentrations and loads. [F. Water Quality; RC 15.7]*
22	*Assess the impacts of non-point source pollution, particularly storm-water runoff from urban areas, and determine the most effective means of abatement. [F. Water Quality; RC 16.1]*
23	*Perform bathymetric and benthic-habitat mapping of important Florida tidal rivers and estuaries by 2010. These are to be used to determine essential environmental conditions needed for living marine resources and to provide data for modeling the environmental impacts of management decisions regarding water use. [A. Mapping; RC 2.3]*
24	*Develop and field-test biotic indicators (species, species groups, habitats, communities) as criteria and targets for statewide use in determining whether watershed and stream management practices are protecting natural estuaries and marine ecosystems, and restoring impaired ones. [E. Freshwater Flow; RC 13.1]*
25	*Work with fishers to identify fishery spawning aggregation sites around the state, and then validate and characterize these areas. [I. Living Marine Resources; RC28.5]*
26	*Determine the relationship of the timing, quantity, and distribution of major river outflows and submarine groundwater discharges to the distribution and abundance patterns of coastal marine organisms. [E. Freshwater Flow; RC 14.1]*
27	*Develop and demonstrate recirculating marine aquaculture technology for marine sport fish stock enhancement and restoration. [K. Aquaculture; RC34.1]*

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.
28	*Quantify the impacts of HABs on commercial and recreational fisheries, coastal tourism, contact recreation, and other human activities integral to the economy of Florida's coastal areas. [G. Harmful Algal Blooms; RC 23.3]*
29*	*Determine the locations and sizes, dominant physico-chemical features, living resources, and unique ecological functions of all oligohaline and tidal-fresh waters in Florida. [E. Freshwater Flow; RC 13.2]*
29*	*Conduct studies linking key fish spawning areas to larval distribution and adult population-distributions on the Florida shelf, for example Riley's Hump in the Tortugas Ecological Reserve. [I. Living Marine Resources; RC 27.1]*
29*	*Determine the economic impacts of long term trends in beach loss, including: a) Determine the economic and environmental costs and benefits of continued beach-renourishment projects, including determining the economic feasibility, extent, availability, quantity and quality of offshore sands suitable for beach renourishment. Link to water quality studies of this issue in the Water Quality section. b) Determine the effect of continued beach-renourishment projects on turtle, seabird, and adjacent coral and fish populations and on other organisms dependent on beach ecosystems for food, shelter, and reproduction. Include subsequent economic impact as well. [M. Coastal Economics; RC 36.6]*
32	*Coordinate methods of sampling and analysis among the multiple State, Federal, and local agencies and universities and research institutions that monitor and research HABs in Florida. [B. Monitoring; RC 5.1]*
33	*Determine coastal construction and design practices related to reducing shoreline erosion. Determine the social, economic, and environmental consequences of increasing rates of beach erosion, coastal armoring, and beach renourishment. [M. Coastal Economics; RC37.3]*
34	*Develop and implement rapid monitoring and assessment tools and procedures for identifying microbial pathogens in rivers, coastal waters, sediments (including beaches), and seafood. [H. Public Health; RC 24.1]*
35	*Compare the environmental risk to water quality of septic systems to that of centralized sewage systems to area waters, particularly on islands. [F. Water Quality; RC 17.3]*
36*	*Assess the effects of nutrients from ocean outfalls on coastal habitats. [F. Water Quality; RC 17.2]*
36*	*Determine the hydrologic conditions that result in HAB development, using a combination of observations and modeling. Enhance the collection of data on the size, duration, intensity of blooms. [G. Harmful Algal Blooms; RC 20.2]*
38	*Determine influence of watershed nutrients resulting from land-use practices on HAB formation and collapse. [G. Harmful Algal Blooms; RC 20.3]*
39	*Evaluate the potential benefits and risks of offshore aquaculture in Florida. [K. Aquaculture; RC33.4]*
40	*Determine the economic value of coastal ecosystems and habitat when left to function as a natural system. [M. Coastal Economics; RC35.2]*
41*	*Building on existing initial efforts (DEP, FWC, WMDs, CERP), hold statewide workshops to identify initial habitats for which to develop bioassessment methods. Discuss possible pilot projects in different regions that pose different expectations. [F. Water Quality; RC 18.1]*
41*	*Determine which geospatial habitat conditions support an increase in fish recruitment as a result of marine reserves. This research should consider the size and location in relation to biotic and abiotic conditions. [I. Living Marine Resources; RC29.3]*
43	*Demonstrate economically feasible production and marketing of a high-value marine fish species that can be farmed in a land-based recirculating production system. [K. Aquaculture; RC33.1]*
44	*Determine the social and economic costs and benefits that derive from public and private conversion of coastal and waterway access points to non-water dependent uses. Determine incentives to retain water-dependent and water-related facilities that serve public needs and reflect public values in order to maintain public access to public coastal waters. Produce annual reports stating the length of Florida's sandy beaches that are publicly accessible. [M. Coastal Economics; RC36.1]*

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.
45	*Determine factors resulting in macro-algal blooms. [G. Harmful Algal Blooms; RC 23.2]*
46	*Create coastal ocean environmental indices in support of fisheries research and spatial management of the fisheries. Monitoring of habitat conditions on a daily basis will be important to understanding linkages of the environment to marine resources. [I. Living Marine Resources; RC28.6]*
47	*Determine the role of the shoreline in reducing wave and flood damage, including ways to implement shoreline protection measures that do not damage the coastal and offshore natural environment. Develop a scientific basis for determining erosion and coastal setback zones. [M. Coastal Economics; RC37.4]*
48	*Develop methods for determining sources of nutrients so agencies can improve source regulation. [F. Water Quality; RC 15.1]*
49	*Define potential impacts of offshore oil and gas development of Florida's coastline with an emphasis on effects on fish, wildlife and their habitats. [F. Water Quality; RC 16.5]*
50	*Use existing water quality monitoring programs to collect samples for algal identification and toxin analysis concurrent with nutrient and other water-quality samples. [B. Monitoring; RC 5.2]*
51	*Determine the relationship, if any, of the increased frequency of coral diseases and elevated seasonal seawater temperatures to better target management activities that may focus on other possible causes. [D. Climate Change; RC 9.2]*

* - Tied in rank

V. INTEGRATED DATA MANAGEMENT AND DISSEMINATION

Introduction

This research plan attempts to address the questions that the Florida Ocean and Coastal Resources Council finds to be most critical based on consultation with Florida's coastal resource managers. In addition to specific research topics, managers of coastal resources in Florida stressed the need to deal more effectively with the data and communication portion of the research/management circle.

The great need for and benefits from improvements in this area cannot be overstated. The Council believes improved collection, handling, sharing, and interpretation of research and monitoring data represents a critical first step towards improving the State's resource management. The Council further believes that the steps proposed below should commence as soon as possible to support an enhanced program of oceans and coastal research.

To ensure continued support for this necessary part of the management/research circle, the Council encourages that an appropriate percentage of research funding be targeted to support administrative costs to ensure a strong integrated data management and dissemination program.

A. Key Outcomes of a Comprehensive Data-Management System:

1. A statewide, standardized approach to development and maintenance of a metadata registry is available to expand access to data, prevent duplication of research, and maximize efforts to combine research results by resource managers and research scientists.

2. Resource assessment, long-term monitoring, and real-time or in-situ data collection results are managed in a comprehensive way to avoid duplication among agencies or institutions and maximize the utility of the information to both the research and resource management communities and the public.

3. Requirements for making publicly-funded research data available to the research community, resource managers, and the public are enforced, thereby maximizing the return on public investment in marine and coastal research.
4. Historical data are rescued and archived to allow their continued use in data-integration efforts and to enhance analyses of resource change over time.

B. Goals for Developing a Comprehensive and Integrated Data-Management System:

Data Focus Area 1: Enable more effective use of present and future data by establishing data-exchange (metadata) standards and requiring their adoption by appropriate state entities.

The Council believes that one of the more cost-effective strides toward improved management of Florida's coasts and oceans would be more effective use of data already being collected, but not readily available to managers. The single most important step toward this would be requiring all state organizations to agree on, and use, a single set of data standards that allows exchange of data while not constraining individual data handling, and then making data from all Florida sources easily available.

A core issue is that the state of Florida does not have a standard way of dealing with metadata—information about what data has been collected and when, the QA/QC used in generating the data, the format that was used, who the principle contact is, etc. The metadata show those interested in using the data whether it is suitable for their purpose. A coordinated and standardized approach to handling metadata for publicly-funded research would help avoid duplication and would encourage collaboration across agencies and institutions. In addition, Florida research entities must develop the ability to interact seamlessly with evolving federal and international data standards and management strategies. Finally, the technology associated with data management is advancing rapidly, requiring investments in hardware and training to assure maximum benefit from data-management schemes. It is important to ensure inter-agency cooperation in this task.

Issues to be addressed:

- Creation of a registry of metadata, development and enforcement of data standards, coordination with regional or national data-management systems, and the development of state-of-the-art data tools such as web-based access.
- Coordination with Gulf of Mexico Alliance data-standardization efforts.
- Coordination with Federal data-management efforts, including EPA-ECOS Environmental Data Standards Council and EPA's Environmental Information Exchange Network
- Integration with the Integrated Ocean Observing System.
- Development of methods for ongoing enforcement of data standards.
- Assessment of training and systems, including web/portal access and hardware needed to support the system.

Recommended 1st-year action: ***Establish a working panel by July 1, 2006, to solicit input from stakeholders (state and local agencies, water management districts, private research institutes, and non-***

governmental organizations (NGOs)) and charged with developing a statewide strategy by June 30, 2007, to develop data-exchange (metadata) standards for use by all state agencies. To the extent possible, coordinate with Gulf of Mexico Alliance and federal efforts.

Data Focus Area 2: Establish means for comprehensive management of assessment, monitoring, real-time, and historical data, including support of researchers, storage and archiving of data, and easy access to data.

The Council in this Research Plan recommends significant focus on improving the state's baseline information about Florida's coastal and marine resources, including updated mapping, resource assessments, improvement of long-term monitoring systems, and development of real-time data collection systems. The availability of this kind of information in an organized and accessible way will enhance our ability to cost-effectively understand, protect, and predict resource health. It will improve our ability to provide products to resource managers and policy makers that synthesize, translate, or interpret data in a way that responds to specific management or policy needs. It will also assist in meeting the regulatory responsibilities of state agencies. In addition, the ability to rescue and store historical data collected prior to the development of modern technology and/or modern data/metadata standards would aid researchers in analysis of ecosystem health and change.

Support for the large datasets collected with modern technology is important to their effective use. Data from satellite and other remote-sensing technologies, from IOOS and other ocean observation sampling sites, and from ecosystem monitoring systems creates the need for expert handling and storage facilities to make it readily available to users.

To meet this need Florida must develop the capacity for storage, coordination, and management of mapping data, resource assessments, long-term monitoring programs, and real-time and in-situ data. Additionally, a special effort to make older data available for reanalysis using newer methods and for use in ecosystem models would both help advance ecosystem understanding and leverage the value of data that has already been paid for. Special attention should be given to integrating different agency needs and approaches, to the extent possible, so a single system can serve multiple users.

Recommended 1st-year actions:

1) The Department of Environmental Protection, the Florida Fish and Wildlife Conservation Commission, and the Florida Department of Agriculture and Consumer Services, in consultation with the Florida Oceans and Coastal Resources Council and collaborating with the Water Management Districts and other stakeholders in Florida's coastal and oceans data, will identify specific shared baseline information needs and collaborate on the design of a system that will store, manage, and maintain this data. Funding requirements to implement this proposal will be provided to the Florida Oceans and Coastal Resources Council for inclusion in the FY2007-2008 Annual Research Plan.

2) Undertake a pilot project to identify key historical data for rescue and restoration and develop methods to achieve restoration in a cost-effective manner. Have state and local agencies identify existing databases that are candidates for conversion and compile information describing data contained therein.

Data Focus Area 3: Establish programs to support effective collection of data.

Well-designed research includes during the earliest phases consideration of how the data will be analyzed. In today's research arena, this means that statistical aspects of the study must be incorporated from the beginning. Good researchers are generally competent at the statistics of their particular area. However, statistics itself is a constantly-evolving field where improved methods are continually being developed. Statisticians are generally reluctant to offer advice outside their particular area of statistics because of the difficulty of maintaining expertise across the whole statistical arena.

It is, therefore, unreasonable to expect marine researchers to on their own always be able to use the most up-to-date statistical methods, but this use is clearly desirable. It is equally unreasonable to expect the state to fund research not carried out in the most cost-effective manner, which good statistical support helps ensure.

> **Recommended 1st-year action:** ***Establish a working panel to recommend the best means for providing strong statistical support to researchers during both the design and analysis phases of their research and to ensure that support is incorporated into the state's research programs. They will provide this information to the Oceans Council for possible inclusion in the FY 2007-2008 Annual Research Plan.***

Data Focus Area 4: Establish programs to support effective use of data.

For data to be useful to resource managers, tools are required to convert the raw data into information useable by managers for supporting management decisions and understandable by the public. While many researchers are expert at translating their results into forms understood by other scientists, fewer are expert at translating them into forms easily used by managers and the public. As with the statistical methods above, the methods and software available for this task are constantly changing as improvements are made. Helping to use these tools to convert research data into management decisions might be best achieved with external support.

> **Recommended 1st-year action:** ***Establish working panel to recommend best means for providing strong data-interpretation support to researchers and to ensure that support is incorporated into the state's research programs.***

VI. MANAGEMENT RECOMMENDATIONS

Introduction

The legislation creating the Oceans and Coastal Resources Council includes a charge to "to assist the state in identifying new management strategies to achieve the goal of maximizing the protection and conservation of ocean and coastal resources while recognizing their economic benefits".

This Research Plan has been generated based on information from the State's managers, so management recommendations are inherent in the Plan. Recommendations not directly related to research will be more completely addressed next year. The Council did not feel that the time available this year allowed them to give the full consideration deserved by the issues.

The single management recommendation of the Council this year warranted its own section in this report, *Integrated Data Management and Dissemination.*

VII. LITERATURE CITED

Florida's Ocean Strategies. 1999. Final Report to the Governor, Florida Governor's Ocean Committee.

Florida's Oceans and Coastal Resources Act. 2005. §161.70, et seq., Florida Statutes

Jackson, J.B.C. et al. 2001. Historical overfishing and the recent collapse of coastal ecosystems. Science 293: 629-637.

Pandolfi, J.M. et al. 2003. Global trajectories of the long-term decline of coral reef ecosystems. Science 301: 955-958.

Pandolfi, J.M. et al. 2005. Are US coral reefs on the slippery slope to slime? Science 307: 1725-1726.

Pew Oceans Commission. 2003. America's Living Oceans: Charting a Course for Sea Change.

U.S. Commission on Ocean Policy. 2004. An Ocean Blueprint for the 21st Century.

U.S. Ocean Action Plan. 2004. President's report to Congress.

APPENDIX 1. PRIORITIZED LIST OF RESEARCH WITH BUDGET ESTIMATES.

Budget estimates added by Council staff after Research Plan finalized by Council. Council will review budget estimates and submit Council-approved version.

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.	Budget FY 2006-2007	Est. time
1	*Establish real-time interdisciplinary observing systems in areas that currently have no or minimal observing. [B. Monitoring; RC3.2]*	$7.72 M[1]	10 yr
2	*Identify and evaluate new technologies—including but not limited to sensors (LIDAR, sonar, passive acoustics, infrared), telemetry (radio, satellite, telephone) and bio-chemical analyses (elemental isotopic, genetic)—for their potential to measure biological activity continuously at a level similar to that presently used to monitor water quality, hydrology, and climate. These technologies and/or techniques should be compatible and simultaneously deployed with Integrated Oceanographic Observation Systems (IOOS) that are located in coastal waters around the United States. [F. Water Quality; RC 18.4]*	$400K-$1.5M	2 yr
3	*Establish continuous, long-term monitoring of salinity and dissolved-oxygen conditions in the estuaries to support development of modeling tools, assess the impact of sea-level rise, and assist in resource management (for instance, commercial and sport fisheries). [B. Monitoring; RC 3.7]*	$150K	5 yr
4	*Using a historical approach, estimate the effect of the loss of coastal mangrove and seagrass habitat on the species that depend upon them. [E. Freshwater Flow; RC 14.3]*	$450K	2 yr
5	*Develop, install, and implement new and improved biological monitoring instrumentation and protocols that will make biological observations match the geographic scale of physical oceanography measurements. Examples are tracking migratory species, developing methods for interdisciplinary observations of nutrients, chlorophyll, algal blooms, and fisheries and other aquatic resources to link physical-chemical conditions to biological effects. [B. Monitoring; RC 3.5]*	$750K-$1M	3-5 yr
6	*Establish an interdisciplinary remote sensing capacity for Florida's coastal and offshore waters. [B. Monitoring; RC 3.4]*	$1M-$2.9M	--
7	*Produce present-day highest-resolution bathymetric maps, identifying physical geologic setting (sediment/rock) and submarine aquatic vegetation with the goal of mapping the entire State's waters by 2015. [A. Mapping; RC 2.1]*	$250K-$16M	10 yr
8	*Use existing technology, including satellite remote sensing, to better link red tide research and monitoring to physical oceanography in order to better predict red tide size, trajectory, and intensity and potential impacts and to provide an early warning system. [B. Monitoring; RC 5.5]*	$150K	--
9	*Develop an integrated statewide water budget, considering watersheds outside of Florida as necessary, that accounts for inputs, storages, transfers, and losses of atmospheric, surface, and ground waters to identify the extent of inflow change to the state's coastal waters. [E. Freshwater Flow; RC 11.3]*	$800K-$1.5M	5 yr
10	*Develop new methods for the assessment of fishery populations that include acoustical and genetic methods. [I. Living Marine Resources; RC 28.1]*	$250K	3 yr
11	*Identify and prioritize specific coastal areas around the State for bathymetric mapping - with the goal of mapping the entire State's coast by 2010. [A. Mapping; RC 1.1]*	$100K	1 yr
12	*Develop coastal, estuarine, riverine, and lagoonal models to be nested with adjacent shelf models to improve understanding of land-sea linkages. [C. Modeling; RC 6.3]*	$650K-$1M	5-10 Yr

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.	Budget FY 2006-2007	Est. time
12 *	*Conduct monitoring, assessment, and modeling evaluations of the impacts of fishing on ecosystems. These studies will include impacts of various gear uses; removal of both predator and prey species, sex, size population-dynamic relationships; loss of keystone species; and other trophic-level interactions. [I. Living Marine Resources; RC 28.2]*	$200K	3 yr
14	*Evaluate the long-term stability of coastal wetlands (marshes, mangroves, seagrasses) in relation to sea-level rise and episodic disturbances (i.e., hurricanes). [C. Climate Change; RC 9.5]*	$250K	–
15	*Assess effectiveness of Marine Protected Areas and Marine Reserves and other types of protected areas to enhance the surrounding ecosystem, for instance through "spillover" effect. [I. Living Marine Resources; RC 27.2]*	$500K	5 yr
16	*Determine the market and non-market values for all sectors of the Florida ocean and coastal economy using a consistent methodology and available data bases that can be repeated periodically to track the performance of each sector dependent on the coast and ocean. Make the information available to the legislature and the public on the web. [M. Coastal Economics; RC 35.1]*	$375K [2]	1 yr
17	*Integrate HAB monitoring with data collection in the Ocean Observing System to allow examination of empirical relationships between HAB occurrence, spatial extent and intensity with physical-chemical data and provide an improved understanding of factors controlling HABs. [B. Monitoring; RC 5.4]*	$150K	3 yr
18	*Create maps to link previously mapped areas on the coast (identified through the State Coastal Inventory) seamlessly to existing offshore data where possible. This will show where gaps exist and identify datasets that are not compatible [A. Mapping; RC 1.2]*	$300K	2 yr
19	*Establish and enhance hydrological, chemical, and biological monitoring and assessment, including stationary and mobile systems such as shipboard surveys with accompanying modeling of the systems being monitored, to support agency programs to preserve and manage Florida's natural resources. [B. Monitoring; RC3.6]*	$2.1M	long-term
20	*Assess the effect that human waste management, and septic tank use in particular, has on nutrient loading and water quality in nearshore habitats. [F. Water Quality; RC 17.1]*	$150K	2 yr
21	*Identify quantitative relationships between nutrient concentrations in coastal waters and impairment of flora and fauna, so that agencies can use this information to establish scientifically-sound targets (such as nutrient criteria) for nutrient concentrations and loads. [F. Water Quality; RC 15.7]*	$750K	3 yr
22	*Assess the impacts of non-point source pollution, particularly storm-water runoff from urban areas, and determine the most effective means of abatement. [F. Water Quality; RC 16.1]*	$1M	5 yr
23	*Perform bathymetric and benthic-habitat mapping of important Florida tidal rivers and estuaries by 2010. These are to be used to determine essential environmental conditions needed for living marine resources and to provide data for modeling the environmental impacts of management decisions regarding water use. [A. Mapping; RC 2.3]*	$600K	5 yr
24	*Develop and field-test biotic indicators (species, species groups, habitats, communities) as criteria and targets for statewide use in determining whether watershed and stream management practices are protecting natural estuaries and marine ecosystems, and restoring impaired ones. [E. Freshwater Flow; RC 13.1]*	$1.8M	5 yr
25	*Work with fishers to identify fishery spawning aggregation sites around the state, and then validate and characterize these areas. [I. Living Marine Resources; RC28.5]*	$75K	3 yr

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.	Budget FY 2006-2007	Est. time
26	*Determine the relationship of the timing, quantity, and distribution of major river outflows and submarine groundwater discharges to the distribution and abundance patterns of coastal marine organisms. [E. Freshwater Flow; RC 14.1]*	$750K	3 yr
27	*Develop and demonstrate recirculating marine aquaculture technology for marine sport fish stock enhancement and restoration. [K. Aquaculture; RC34.1]*	$600K	–
28	*Quantify the impacts of HABs on commercial and recreational fisheries, coastal tourism, contact recreation, and other human activities integral to the economy of Florida's coastal areas. [G. Harmful Algal Blooms; RC 23.3]*	$150K	1 yr
29 *	*Determine the locations and sizes, dominant physico-chemical features, living resources, and unique ecological functions of all oligohaline and tidal-fresh waters in Florida. [E. Freshwater Flow; RC 13.2]*	$80K	2 yr
29 *	*Conduct studies linking key fish spawning areas to larval distribution and adult population-distributions on the Florida shelf, for example Riley's Hump in the Tortugas Ecological Reserve. [I. Living Marine Resources; RC 27.1]*	$275K	3 yr
29 *	*Determine the economic impacts of long term trends in beach loss, including: a) Determine the economic and environmental costs and benefits of continued beach-renourishment projects, including determining the economic feasibility, extent, availability, quantity and quality of offshore sands suitable for beach renourishment. Link to water quality studies of this issue in the Water Quality section. b) Determine the effect of continued beach-renourishment projects on turtle, seabird, and adjacent coral and fish populations and on other organisms dependent on beach ecosystems for food, shelter, and reproduction. Include subsequent economic impact as well. [M. Coastal Economics; RC 36.6]*	$175K	3 yr
32	*Coordinate methods of sampling and analysis among the multiple State, Federal, and local agencies and universities and research institutions that monitor and research HABs in Florida. [B. Monitoring; RC 5.1]*	$150K	2 yr
33	*Determine coastal construction and design practices related to reducing shoreline erosion. Determine the social, economic, and environmental consequences of increasing rates of beach erosion, coastal armoring, and beach renourishment. [M. Coastal Economics; RC37.3]*	$150K	2 yr
34	*Develop and implement rapid monitoring and assessment tools and procedures for identifying microbial pathogens in rivers, coastal waters, sediments (including beaches), and seafood. [H. Public Health; RC 24.1]*	$450K	2 yr
35	*Compare the environmental risk to water quality of septic systems to that of centralized sewage systems to area waters, particularly on islands. [F. Water Quality; RC 17.3]*	$100K	2 yr
36 *	*Assess the effects of nutrients from ocean outfalls on coastal habitats. [F. Water Quality; RC 17.2]*	$200K	3 yr
36 *	*Determine the hydrologic conditions that result in HAB development, using a combination of observations and modeling. Enhance the collection of data on the size, duration, intensity of blooms. [G. Harmful Algal Blooms; RC 20.2]*	$400K	3 yr
38	*Determine influence of watershed nutrients resulting from land-use practices on HAB formation and collapse. [G. Harmful Algal Blooms; RC 20.3]*	$500K	5 yr
39	*Evaluate the potential benefits and risks of offshore aquaculture in Florida. [K. Aquaculture; RC33.4]*	$150K	1 yr
40	*Determine the economic value of coastal ecosystems and habitat when left to function as a natural system. [M. Coastal Economics; RC35.2]*	$150K	2 yr

Rank	Research Component Exact intent of RC may require context provided by surrounding text in the 2006-2007 Annual Research Plan Note: If research requires more than one year to complete, budgets are costs for first-year.	Budget FY 2006-2007	Est. time
41 *	*Building on existing initial efforts (DEP, FWC, WMDs, CERP), hold statewide workshops to identify initial habitats for which to develop bioassessment methods. Discuss possible pilot projects in different regions that pose different expectations. [F. Water Quality; RC 18.1]*	$30K	1 yr
41 *	*Determine which geospatial habitat conditions support an increase in fish recruitment as a result of marine reserves. This research should consider the size and location in relation to biotic and abiotic conditions. [I. Living Marine Resources; RC29.3]*	$275K	3 yr
43	*Demonstrate economically feasible production and marketing of a high-value marine fish species that can be farmed in a land-based recirculating production system. [K. Aquaculture; RC33.1]*	$450K	4 yr
44	*Determine the social and economic costs and benefits that derive from public and private conversion of coastal and waterway access points to non-water dependent uses. Determine incentives to retain water-dependent and water-related facilities that serve public needs and reflect public values in order to maintain public access to public coastal waters. Produce annual reports stating the length of Florida's sandy beaches that are publicly accessible. [M. Coastal Economics; RC36.1]*	$200K	3 yr
45	*Determine factors resulting in macro-algal blooms. [G. Harmful Algal Blooms; RC 23.2]*	$150K	3 yr
46	*Create coastal ocean environmental indices in support of fisheries research and spatial management of the fisheries. Monitoring of habitat conditions on a daily basis will be important to understanding linkages of the environment to marine resources. [I. Living Marine Resources; RC28.6]*	$75K	1 yr
47	*Determine the role of the shoreline in reducing wave and flood damage, including ways to implement shoreline protection measures that do not damage the coastal and offshore natural environment. Develop a scientific basis for determining erosion and coastal setback zones. [M. Coastal Economics; RC37.4]*	$250K	2 yr
48	*Develop methods for determining sources of nutrients so agencies can improve source regulation. [F. Water Quality; RC 15.1]*	$1M	5 yr
49	*Define potential impacts of offshore oil and gas development of Florida's coastline with an emphasis on effects on fish, wildlife and their habitats. [F. Water Quality; RC 16.5]*	$150K	2 yr
50	*Use existing water quality monitoring programs to collect samples for algal identification and toxin analysis concurrent with nutrient and other water-quality samples. [B. Monitoring; RC 5.2]*	$25K	--
51	*Determine the relationship, if any, of the increased frequency of coral diseases and elevated seasonal seawater temperatures to better target management activities that may focus on other possible causes. [D. Climate Change; RC 9.2]*	$500K	--

* - Tied in rank [1] Estimate may include federal funding; [2] Second phase, first phase funded by Oceans Initiative

Florida Oceans and Coastal Resources Council

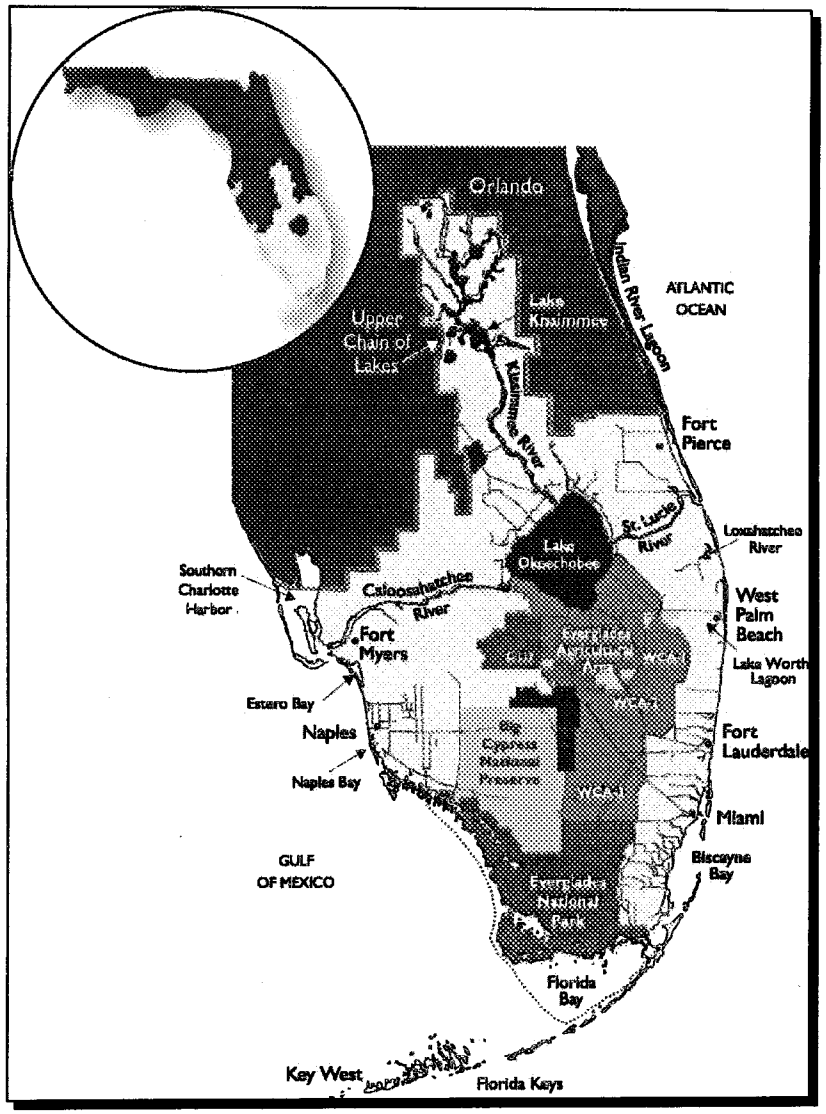
Everglades & Lake
Okeechobee Restoration

Everglades and Lake Okeechobee Restoration UPDATE

House Water and Natural Resources Committee

February 22, 2006

SFWMD Geographic Region

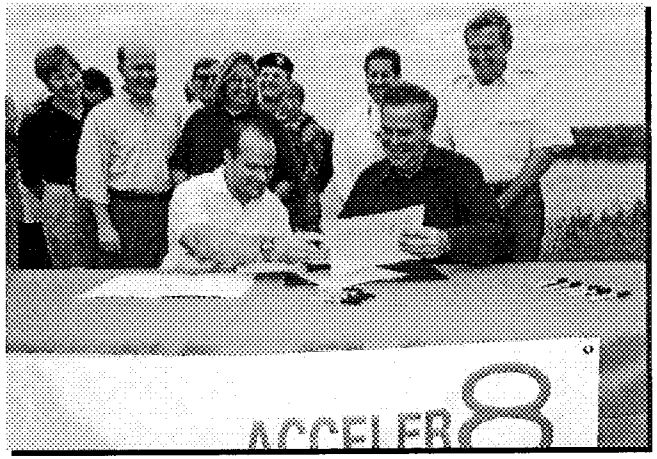


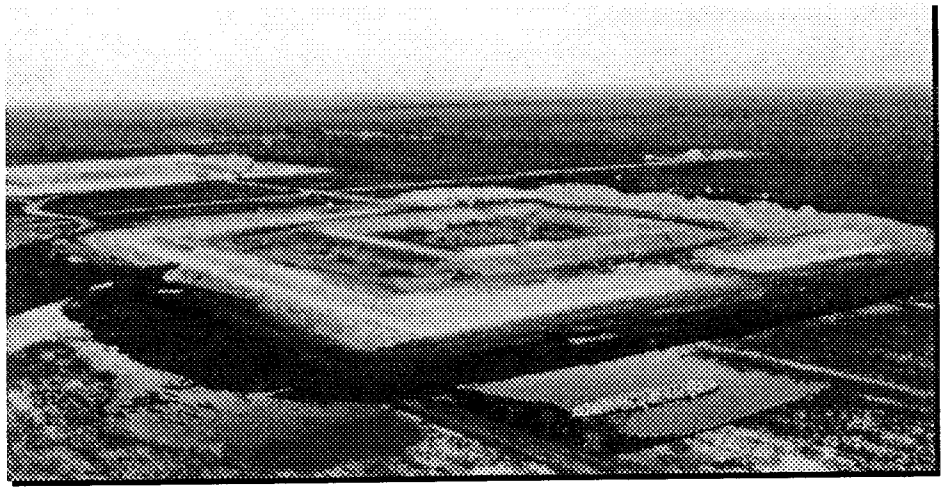
Status

- **The Florida Legislature, Governor Jeb Bush, and the South Florida Water Management District Governing Board have committed:**
  - **$1.3 Billion toward the Comprehensive Everglades Restoration Plan**
  - **$1.7 Billion toward the Acceler8 Everglades Restoration Projects**
  - **$1 Billion toward Everglades water quality improvements (with an additional $650 million dedicated through the year 2016)**
  - **$135 Million toward Lake Okeechobee restoration**

Acceler8 Progress

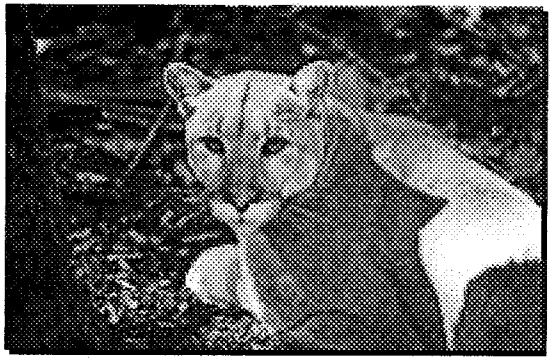
- Acceler8 rollout
- 2 EAA Test Cells complete
- 6 BODRs complete
- 19 permits issued
- Secured financial services and foundation for long-term debt (COPs)

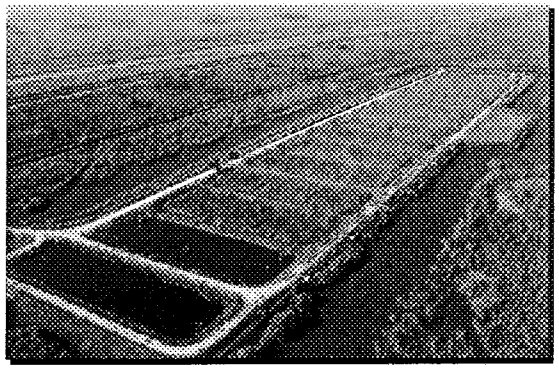




Acceler8 Progress

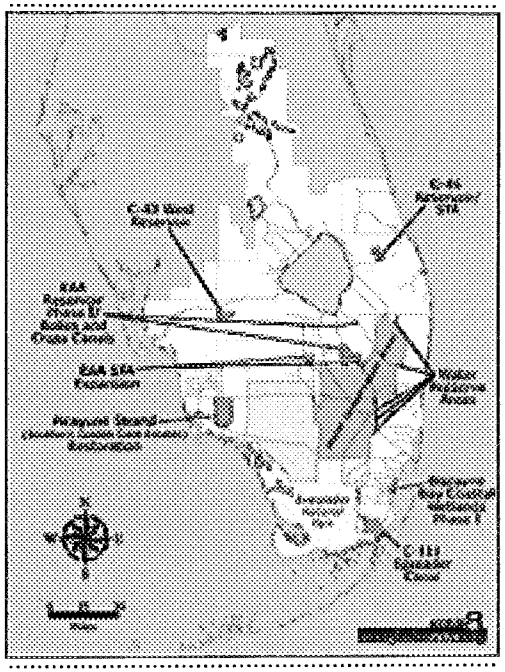
- Picayune Strand Project – return of natural habitat
- C-43 Reservoir – test cell plan complete
- C-44 Reservoir/STA – 12,000-acre land acquisition to close first of year
- 92% of total acres needed for A8 acquired (over 50% of land needed for CERP acquired)
- Construction started on 6,000 acres of STA expansion





Land Acquisition for Restoration

- **92 percent of the land needed for Acceler8 is in public ownership**
- **193,514 acres acquired for the initial 10 authorized projects**
- **More than half -- 52 percent, or 209,610 acres – of land needed to implement CERP is in public ownership**
- **Aggressive land acquisition has averaged 23,000 acres per year. At this pace, all remaining CERP lands will be acquired within 8 ½ years**

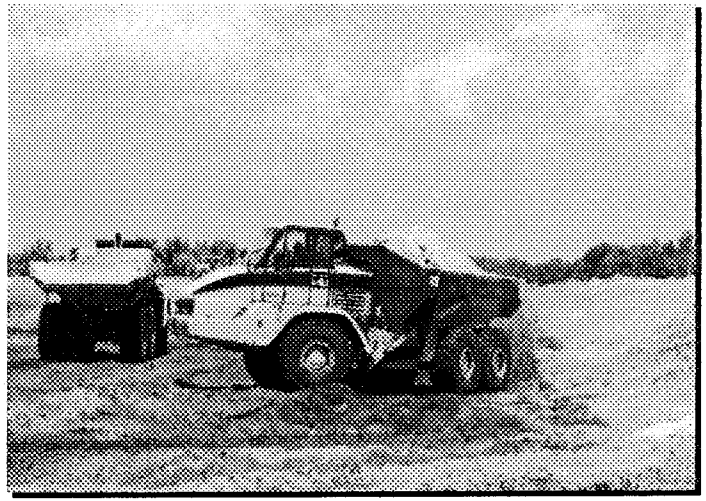


Upcoming Acceler8 Construction Starts

▪ C-43 Reservoir Test Cell	Feb 06
▪ C-44 Reservoir & STA Test Cells	Feb 06
▪ EAA STAs Enhancement	Feb 06
▪ WPAs: Acme Basin B	Feb 06
▪ Picayune Strand – Prairie Canal Backfilling	Mar 06
▪ EAA Reservoir	Apr 06
▪ WPAs: C-9 Impoundment	Jul 06
▪ WPAs: WCA 3A/3B Seepage Mgt	Jul 06
▪ WPAs: C-11 Impoundment	Aug 06
▪ Picayune Strand Restoration	Aug 06
▪ WPAs: Site 1 Impoundment	Oct 06
▪ C-44 Reservoir	Oct 06

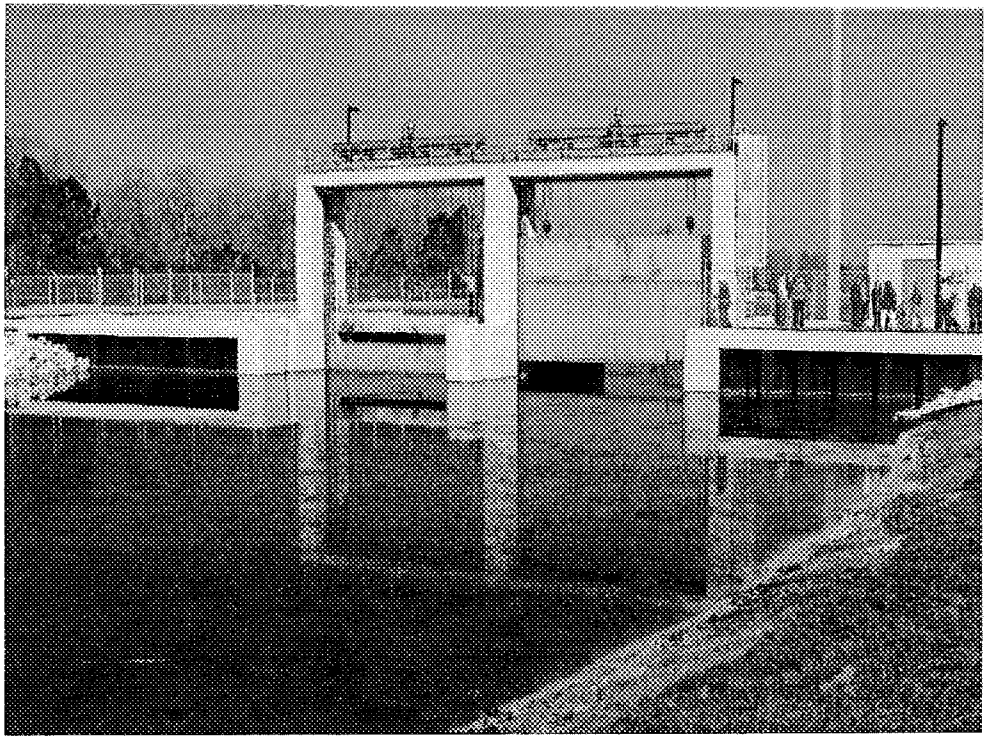
Lake Trafford Restoration Project

- **Dredging under way – will remove approximately 3 feet of organic sediment from lake bottom (4 million cubic yards)**
- **Dredging 25% complete**
- **Removed 1.5 million cubic yards**



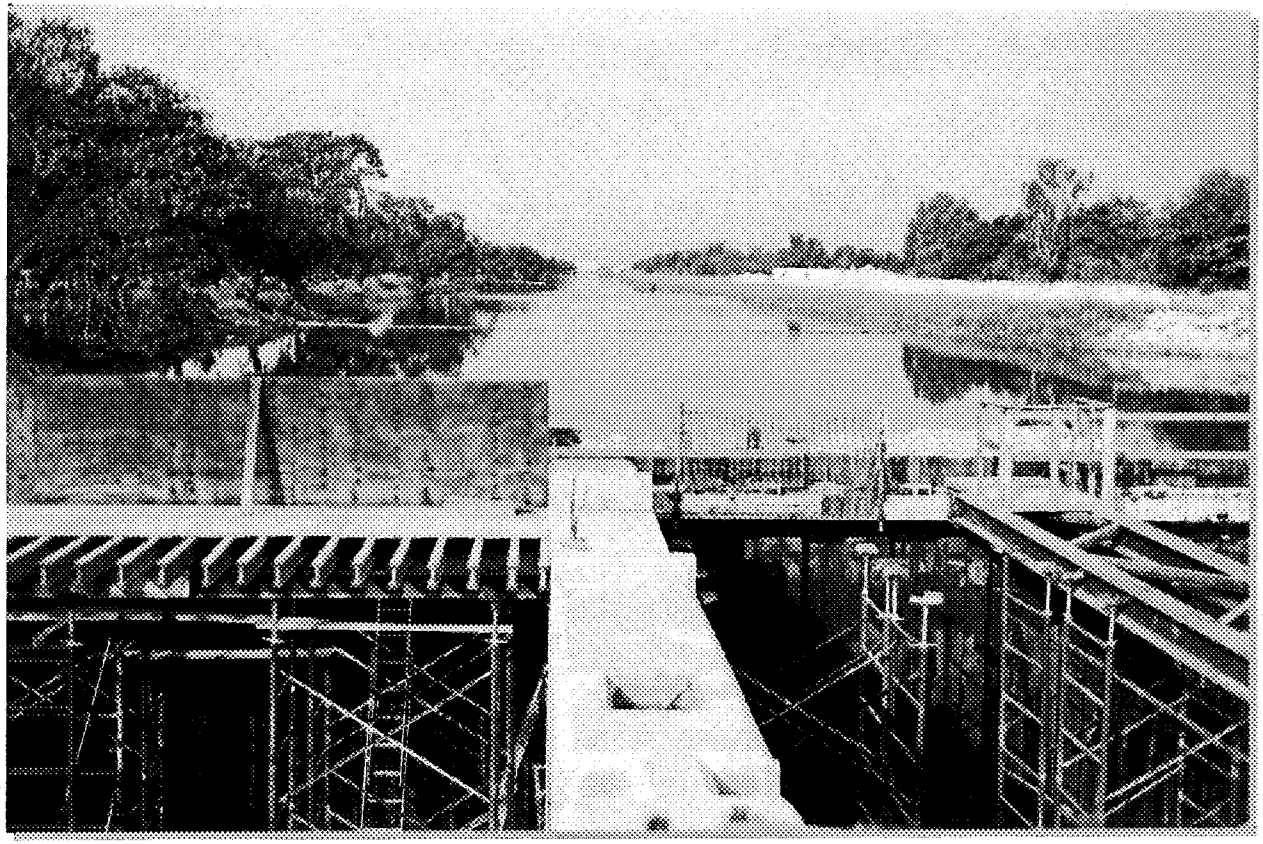
North Palm Beach County Part 1

- Construction on G-161 water control structure and widening of M Canal began in 2005
- To be completed in 2006



Western C-11 Water Quality Project

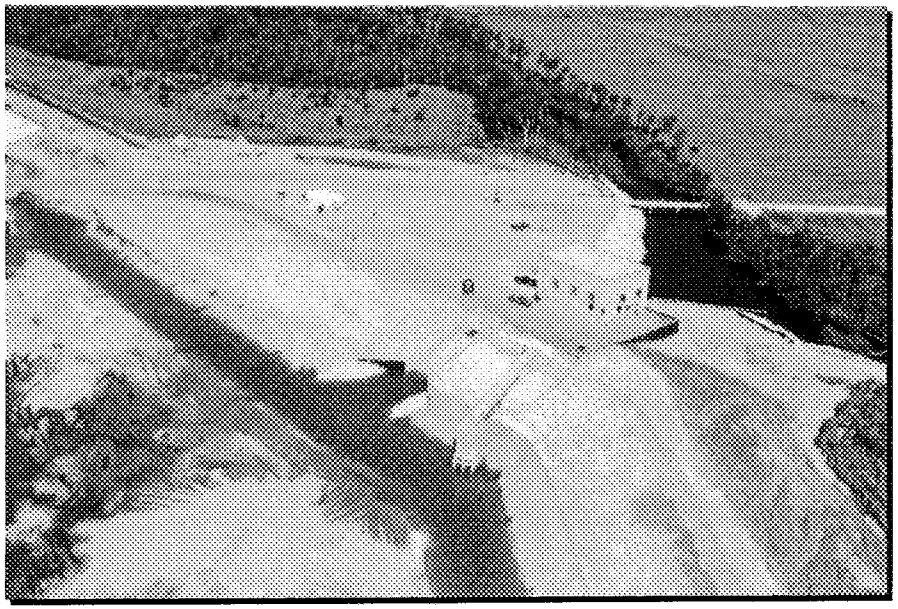
- Project completed

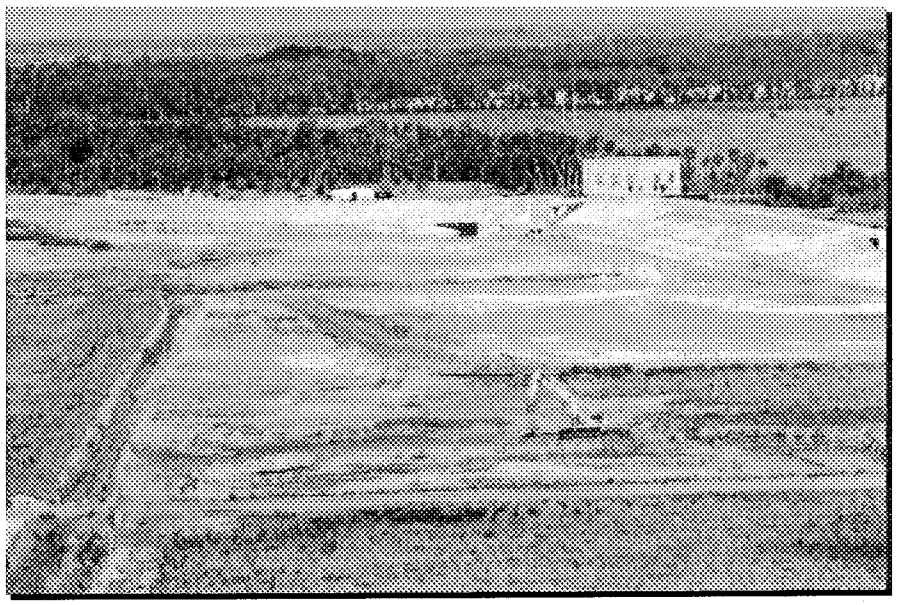


Ten-Mile Creek

Just Completed Ten-Mile Creek Reservoir & STA

- ***...improving water quality entering the St. Lucie River/Indian River Lagoon***



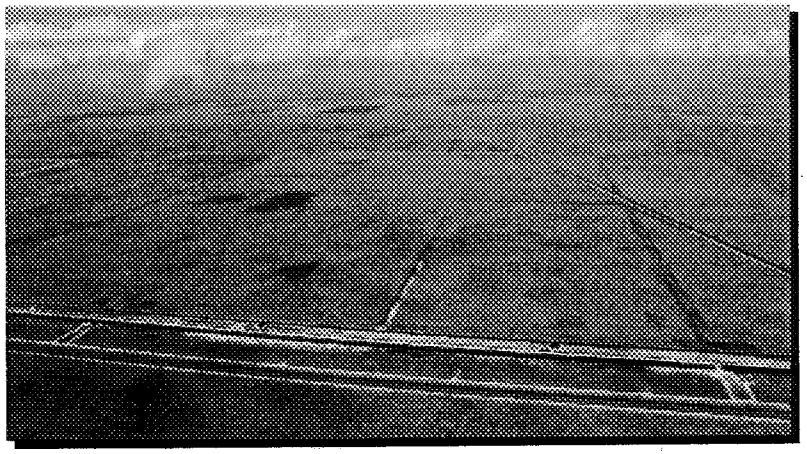


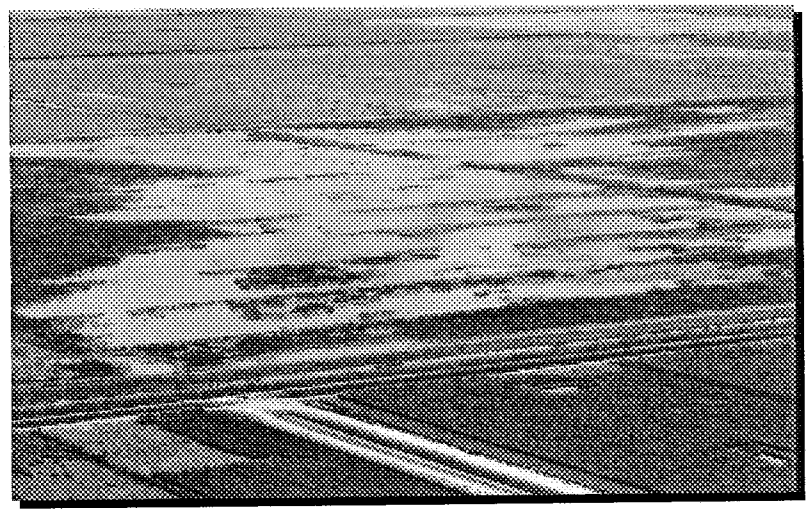
Everglades Restoration Expenditures

- **FY05 CERP Revenues** **$237 million**
- **Total CERP Expenditures** **$260 million**
- **Anticipated FY06 Expenditures** **$442 million**

Water Quality Improvements

- **Stormwater Treatment Areas:**
  - **Six STAs on-line**
  - **More than 40,000 acres constructed**
  - **STA 3 / 4 -- largest constructed wetland in world, has treated over 500,000 acre-feet of stormwater**
- **Combined with BMPs, more than 2,200 metric tons of phosphorus removed since 1996**

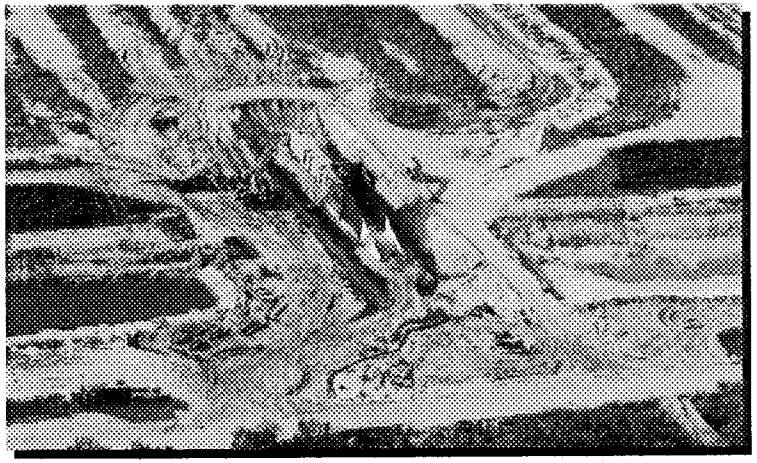


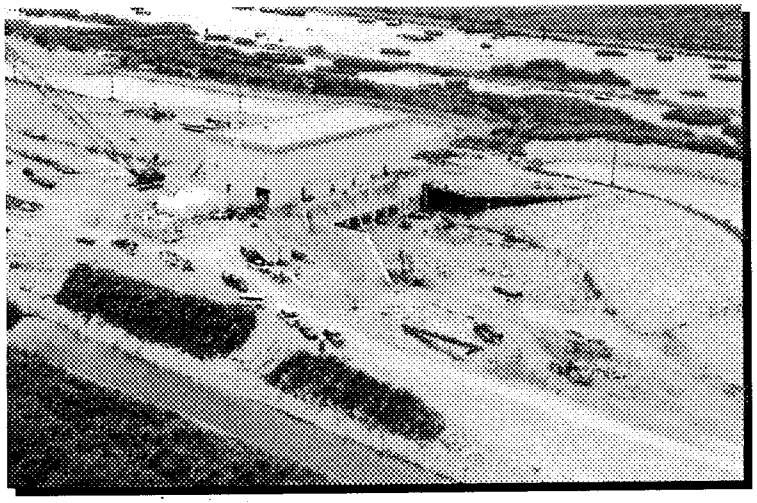


Water Quality Improvements

This past year alone:

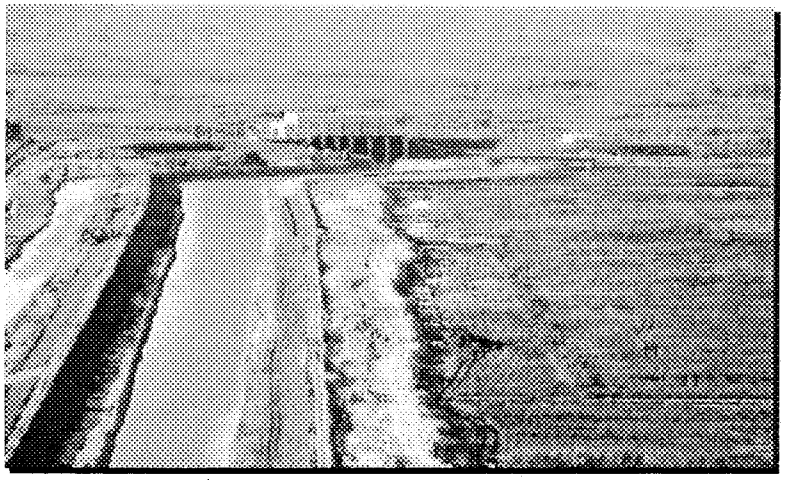
- **Enhanced 11,236 acres of STAs**
- **STAs treated more than 1.5 million acre-feet of stormwater**
- **Last year, the STAs prevented more than 189 metric tons of phosphorus from entering the Everglades.**

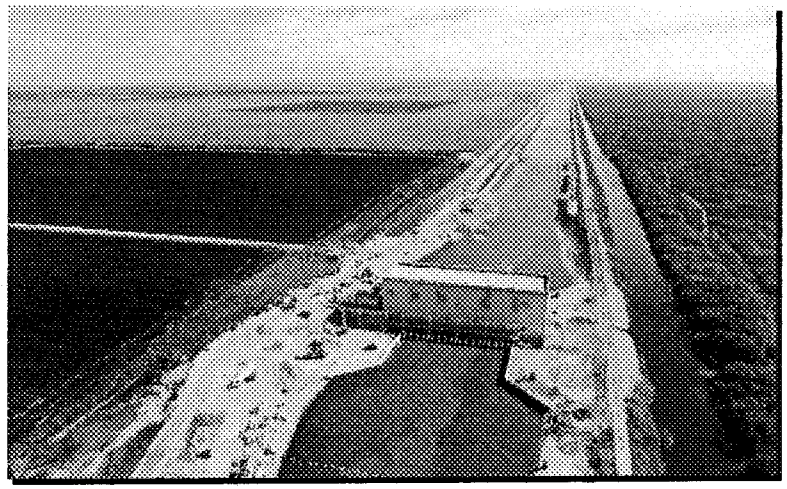




Water Quality Improvements

- **STAs achieved 71% phosphorus removal rate in WY2005***
- **Together with improved farming practices, construction wetlands cut phosphorus loads to the River of Grass by 71 percent.**





***Water Year 2005: May 1, 2004 – April 30, 2005**

Water Quality Improvements

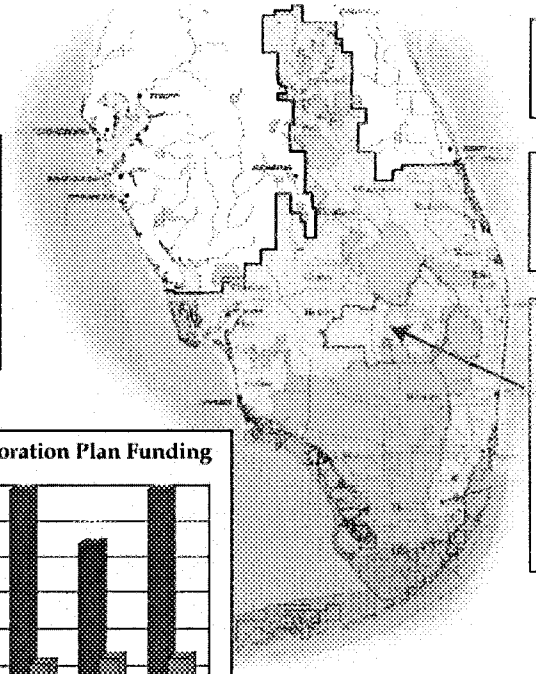
- **2005 Results:**
  - **261 tons of phosphorus prevented from entering Everglades (this year)**
  - **Phosphorus reductions in EAA better than double amount required by law**

- **10 year total:**
  - **BMPs: 1600 tons of phosphorus from entering Everglades**
  - **Annual reductions ranged from 34-73% (25% required by law)**

In Summary

EVERGLADES RESTORATION
Stepping Up the Pace

Invested: $1.3 billion already invested to clean up and restore the River of Grass; $3.2 billion committed through the end of the decade, including $1.7 billion to accelerate critical projects.

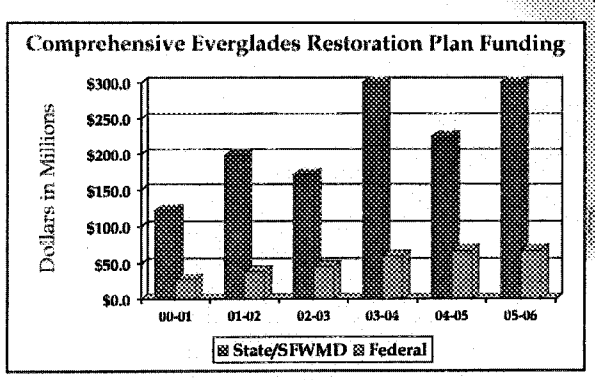


Acquired: 193,514 acres - more than 87 percent of the land needed for the initially authorized projects.

Accelerated: Eight critical Everglades restoration projects by a decade; 92 percent of the land acquired to complete the Acceler8 projects.

Completed: 41,000 acres of constructed wetlands to clean the water flowing into the Everglades.

Exceeding Expectations: Advanced water quality technologies prevented 2,178 tons of phosphorus from entering the Everglades.



Lake Okeechobee Funding History

All Sources

FY 2000-01	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	All Years
38,500,000	10,000,000	7,500,000	0	10,000,000	37,500,000	**$103,500,000**

Lake Okeechobee Funding

Agency	Appropriation
FDACS - FY01	$15,000,000
FDACS - FY05	$5,000,000
FDACS - FY06 (TMDL – SB 444)	$7,500,000
FDEP - Pahokee WWTP Improvements	$700,000
SFWMD (FY01-06)	$75,300,000
Lake Okeechobee Protection Program	$103,000,000

Lake Okeechobee Funding

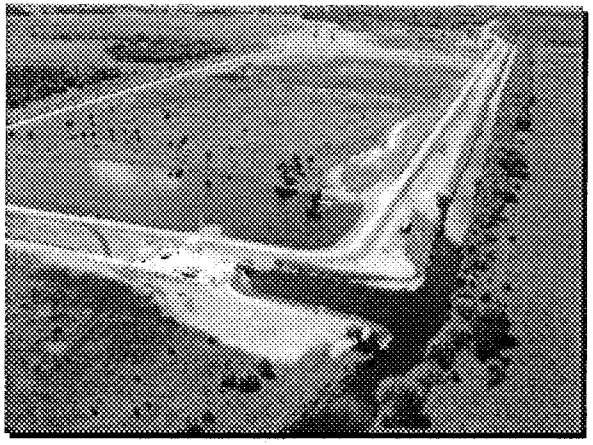
South Florida Water Management District	
Phosphorus Source Control Grant (PSCG) Program	$7,500,000
Isolated Wetlands Restoration	$3,058,508
Capital Projects	$5,741,492
In Lake Restoration Projects	$3,533,215
Land Acquisition	$8,520,250
Monitoring & Assessment	$4,085,188
Planning	$254,007
Public-Private Partnerships	$4,750,000
Watershed P Reduction/Storage	$3,864,648
Regulatory Assessments	$330,000
Structure Replacement/Retrofits	$3,237,692
LOER ($25 M TMDL – SB 444; $5 M Water Projects)	$30,000,000
Stormwater Planning	$425,000
District Subtotal	**$75,300,000**

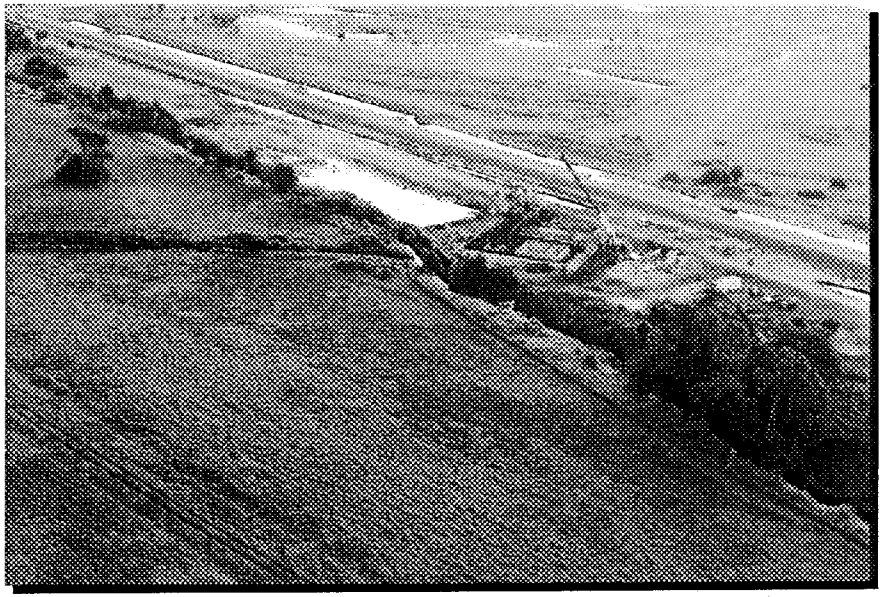
Lake Okeechobee Funding SFWMD

Taylor Creek/ Nubbin Slough STAs

- Taylor Creek STA construction completed

- Nubbin Slough STA nearing completion





LOER

LAKE OKEECHOBEE &
ESTUARY RECOVERY

Expedited Projects + Innovative Teamwork =
Measurable Improvements to the Health of Lake Okeechobee and the St. Lucie and Caloosahatchee Estuaries

Primary Benefits

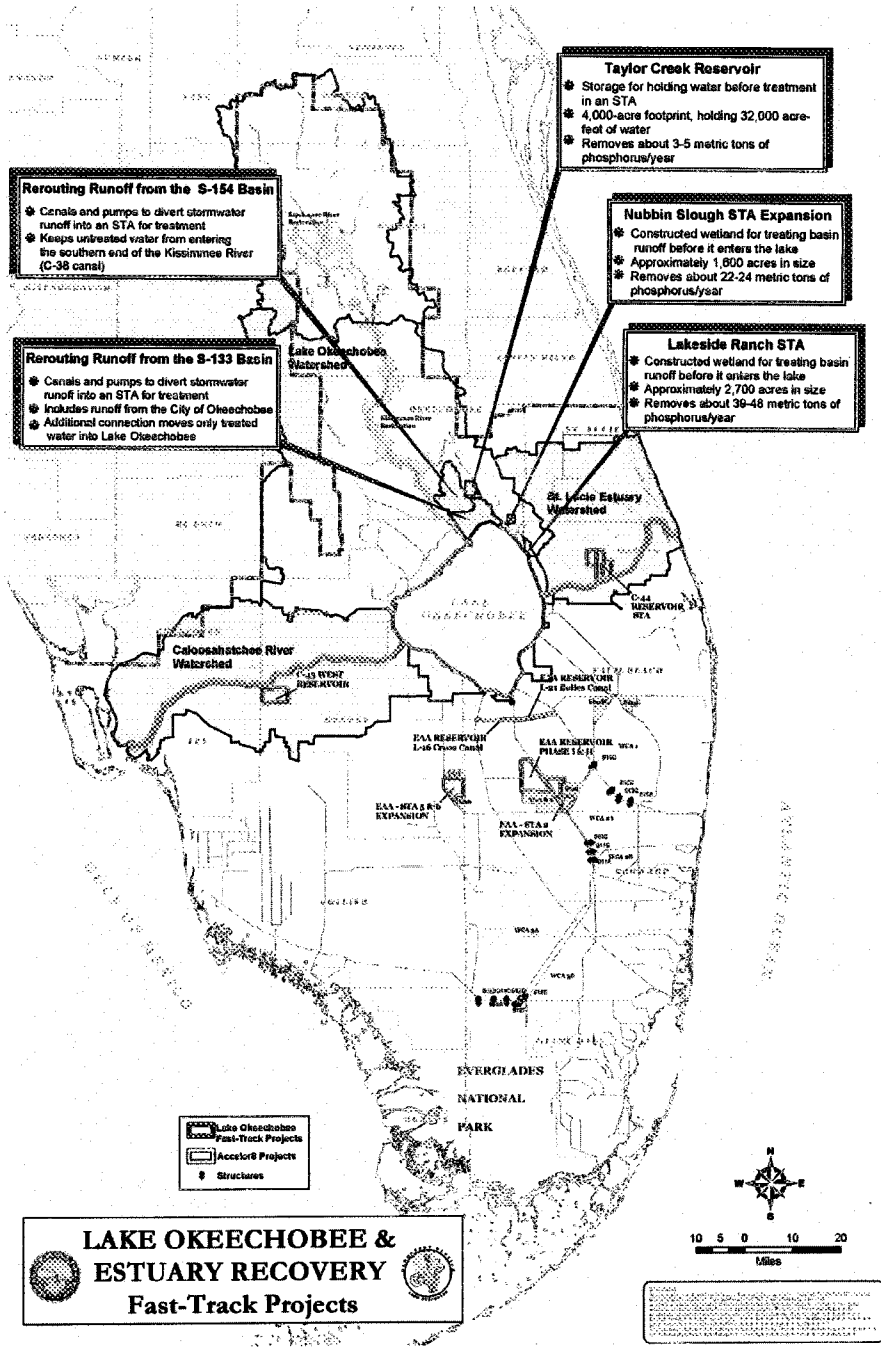
- Improve water quality
- Expand water storage
- Enhance lake health
- Facilitate land acquisition

Lake Okeechobee Fast-Track Projects

- **5 construction projects north of Lake Okeechobee**
  - **Nubbin Slough STA Expansion**
  - **Taylor Creek Reservoir**
  - **Lakeside Ranch STA**
  - **Rerouting Runoff from the S-133 Basin**
  - **Rerouting Runoff from the S-154 Basin**

- **Leadership and financial assistance of the Governor and Legislature**

Lake Okeechobee Fast-Track Projects



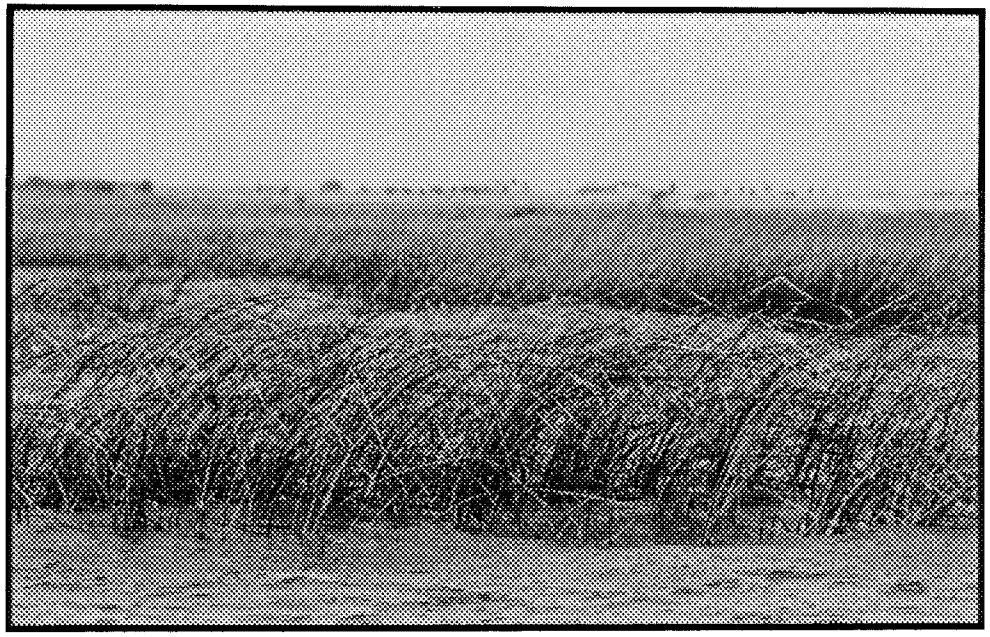
Lake Okeechobee Fast Track Funding

- **$200,000,000 over 4 years**
  - **$150,000,000 anticipated Legislative Support**
    - **FY 05-06 $25 Million (SB 444/TMDL)**
    - **FY 06-07 $25 Million (GR)**
    - **FY 07-08 $50 Million (TBD)**
    - **FY 08-09 $50 Million (TBD)**
  - **$50,000,000 SFWMD**

Remaining Components Will Provide:

Short-Term Relief and Long-Term Protection

- **Implement wide-ranging changes in how we:**
  - **manage lake levels**
  - **govern land-use changes**
  - **acquire lands for restoration and protection**
  - **reduce impacts from fertilization and land application of wastewater treatment plant residuals**
- **Provide relief in the short term and help maintain progress in the long term**



Revise Lake Okeechobee Regulation Schedule

Revise the Lake Okeechobee Regulation Schedule

- **Work with U.S. Army Corps of Engineers to revise federal regulation schedule levels**
  - **Achieve a better balance among lake management objectives**

Set TMDLs for Lake Okeechobee Tributaries

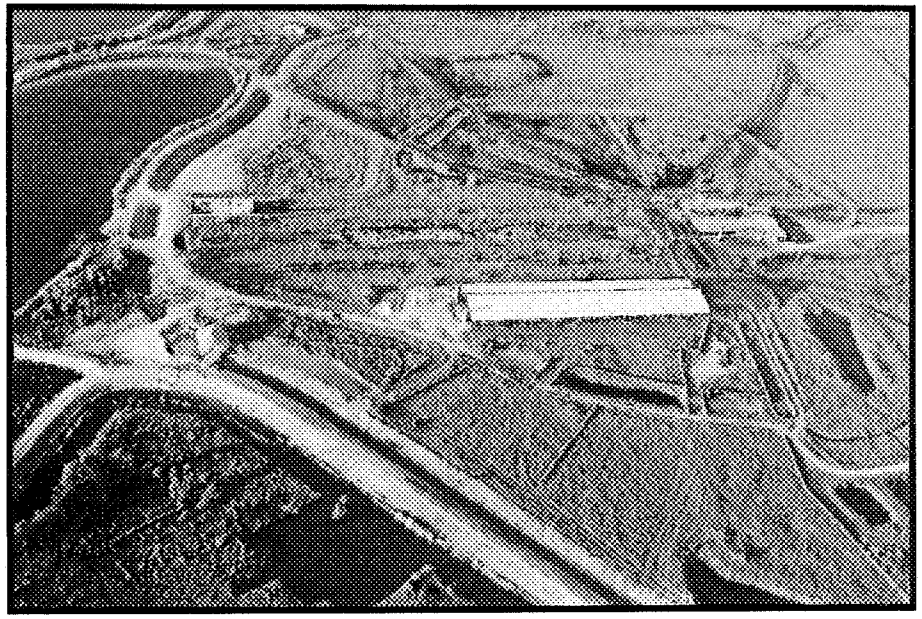
TMDLs = Total Maximum Daily Loads

- **Speed up development of total maximum daily loads of phosphorus allowed for the Lake Okeechobee watershed tributaries to protect and restore downstream water bodies**

Mandatory Fertilizer BMPs

Mandatory Fertilizer Best Management Practices (BMPs):

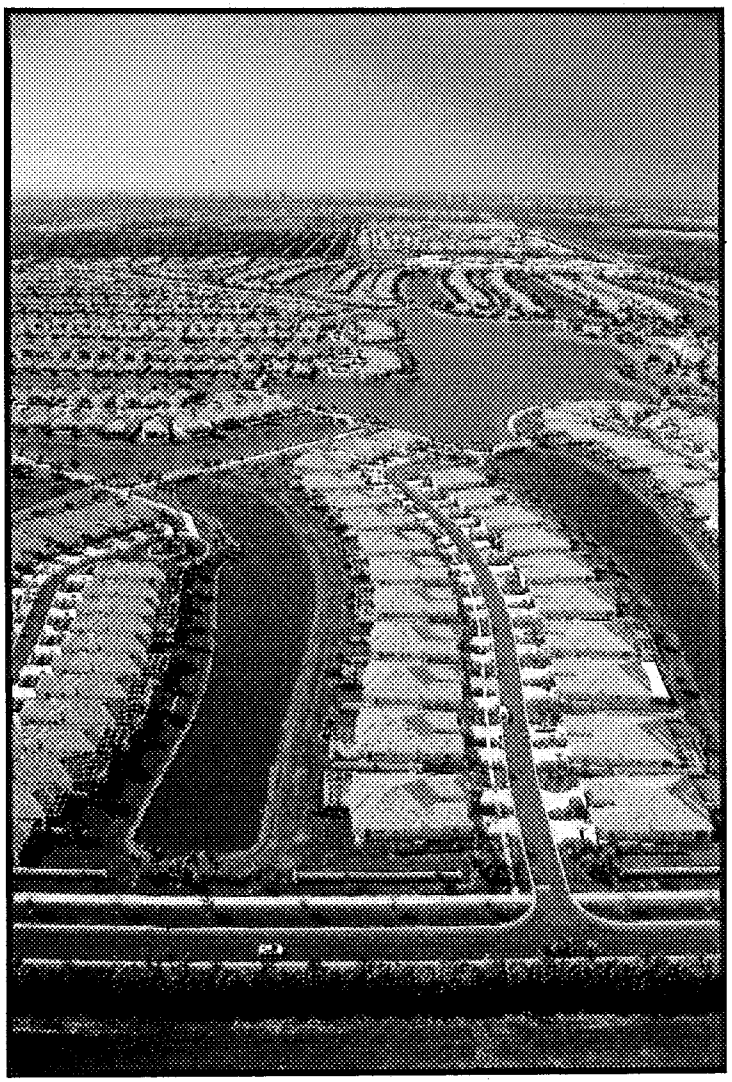
- **Revised application rates for agriculture; low phosphorus for urban use**
- **Reassess fertilizer application rates for agriculture and encourage the development and use of low phosphorus fertilizer in urban settings**



Revise ERP Criteria

Supplement the Environmental Resource Permit (ERP) Criteria

- **Revise the Environmental Resource Permit (ERP) criteria to better address the water quality impacts due to new development and land-use changes within the Kissimmee, Lake Okeechobee, Caloosahatchee Estuary and St. Lucie Estuary watersheds**



Alternative Storage/Disposal of Excess Surface Water

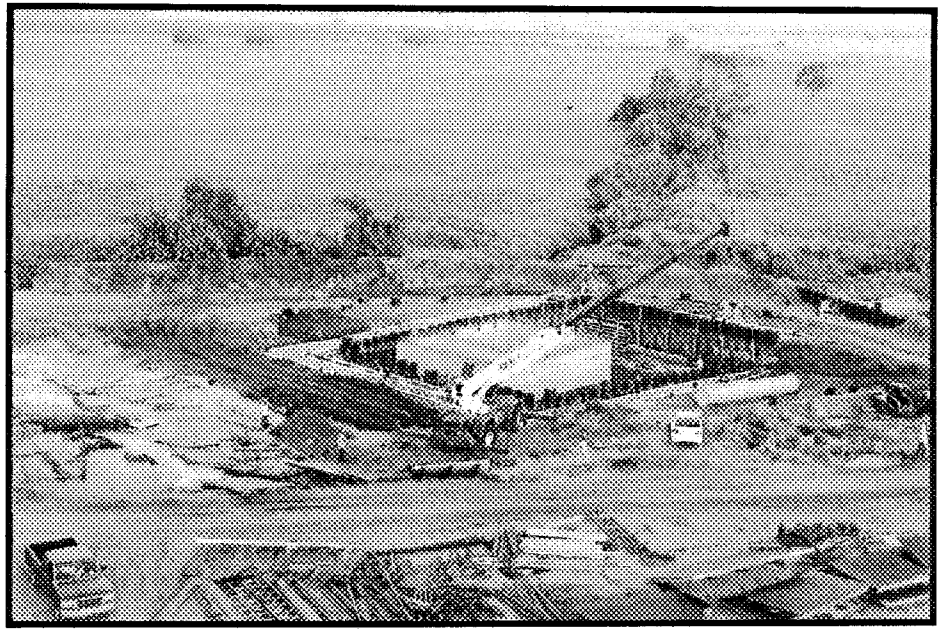
Options for Storage and/or Disposal of Excess Surface Water

- **Identify alternative sites on both public and private lands for moving and storing excess water from the lake and its tributary basins to help reduce high discharge volumes to the estuaries**

Innovative Land-Use Planning

Growth Management to Encourage Innovative Land-Use Planning

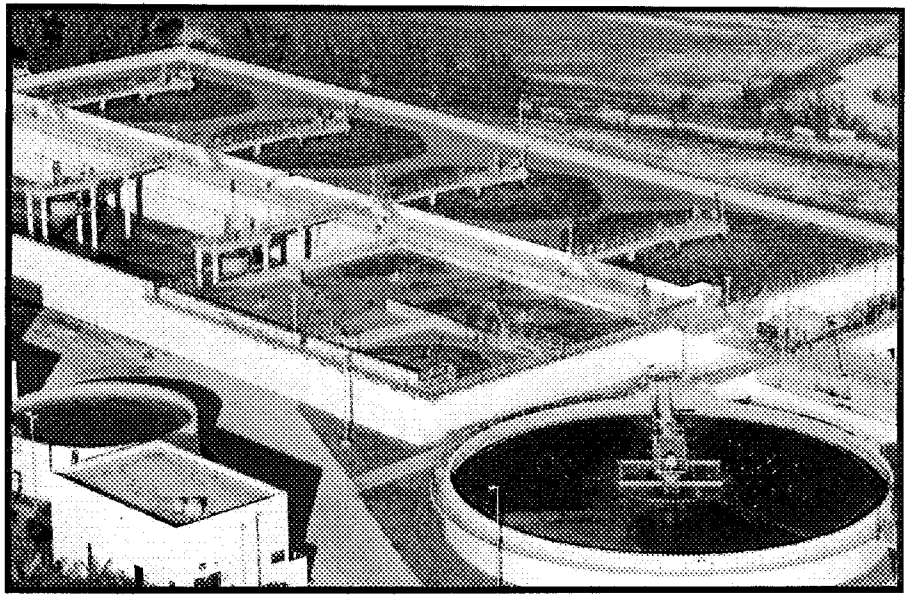
- **Innovative land-use planning techniques, including use of Florida's Rural Land Stewardship Areas Program, to facilitate the acquisition of lands for public works**



Eliminate Land Applications of Residuals

Residuals Contain Nutrients that are Imported into Phosphorus-Sensitive Basins

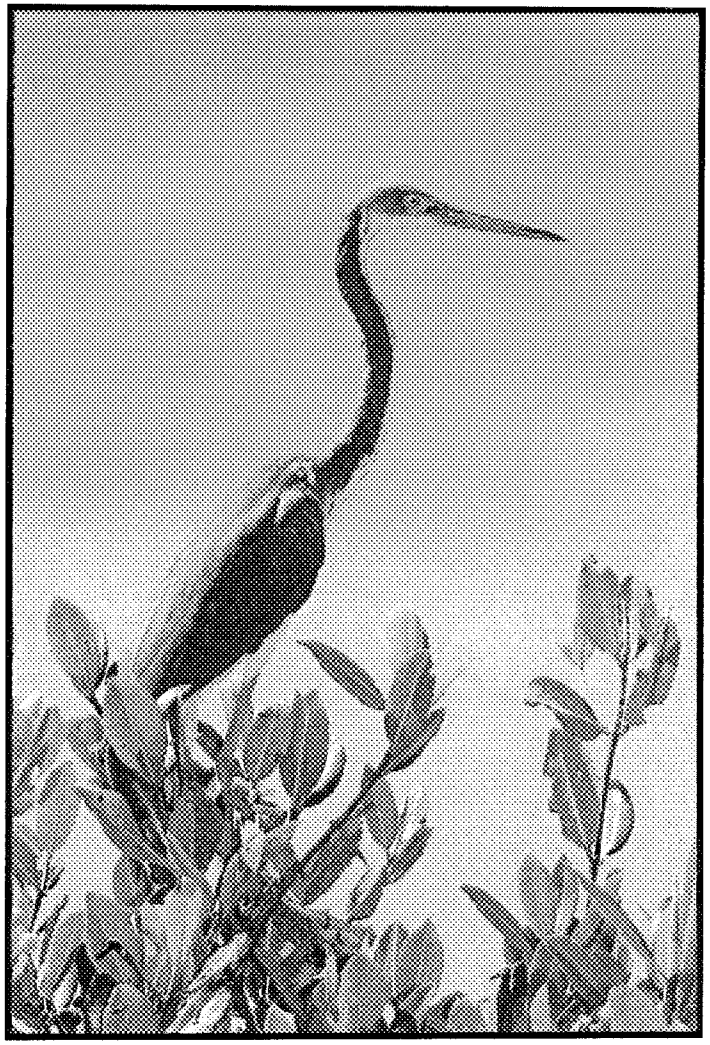
- **End the practice of depositing domestic wastewater residuals on land, which can result in excess nutrients getting in tributaries and estuaries**



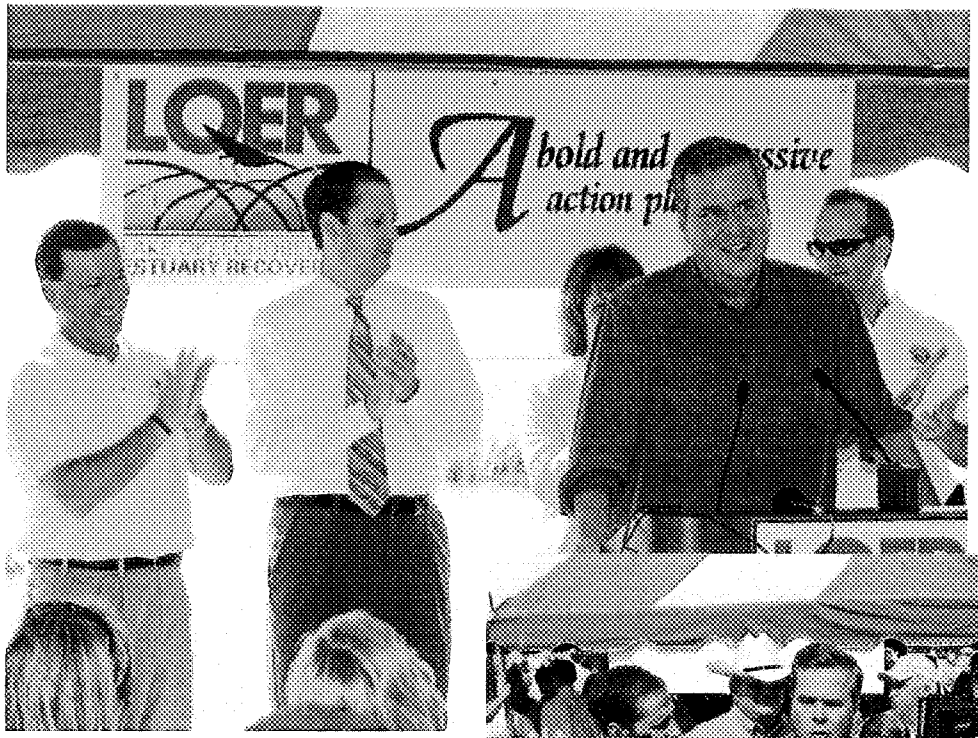
Continued Implementation of the LOPP & CERP LOWP

Continued Implementation of the Lake Okeechobee Protection Program and CERP Lake Okeechobee Watershed Project

- **Comprehensive, phased approach already under way to reduce phosphorus loadings and provide water storage to the lake by 2015**



Governor Jeb Bush and Legislature Leadership Unveils LOER Plan

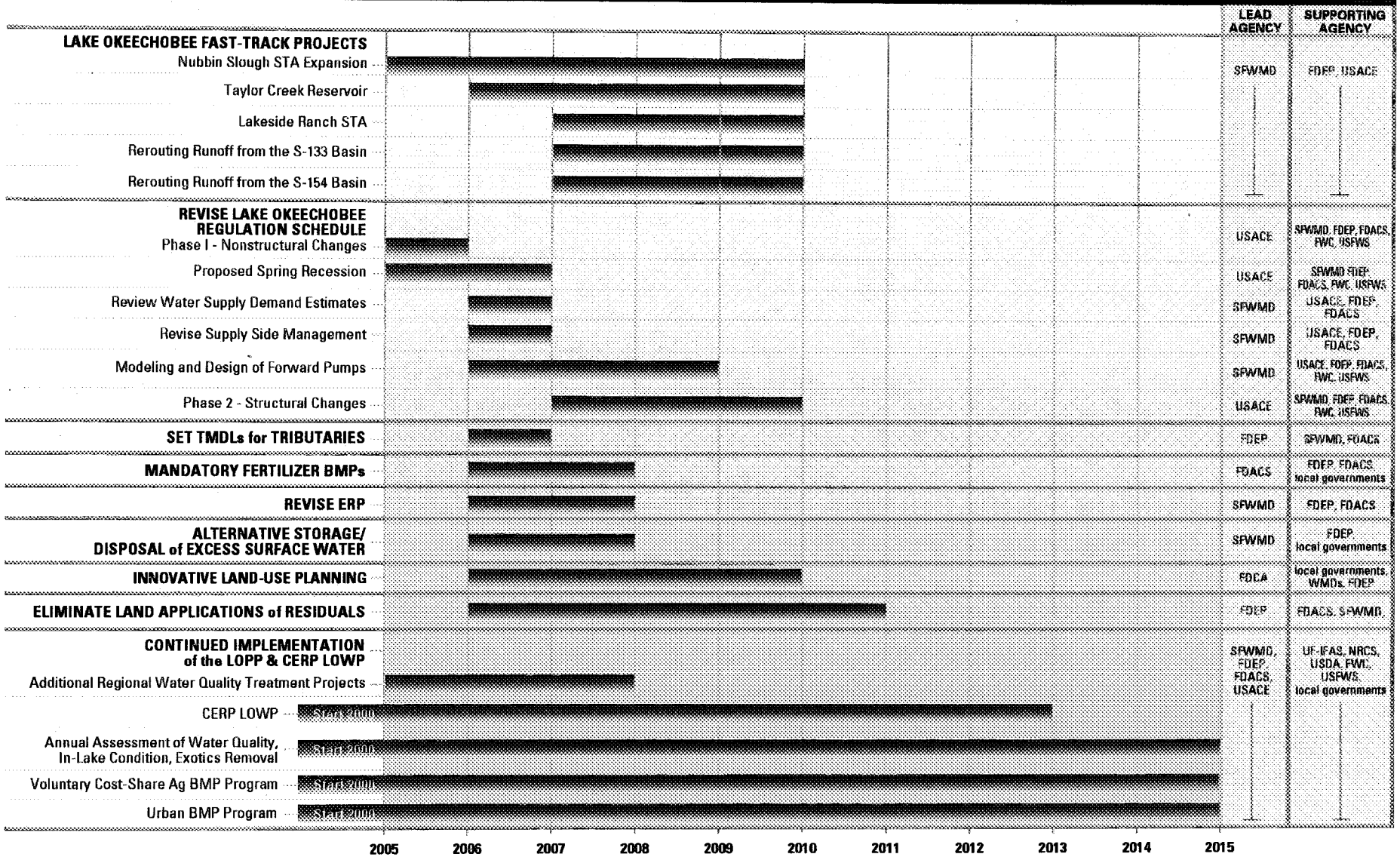


"Our commitment to protect and restore this vital habitat is unwavering."

"Lake Okeechobee is the gateway to America's Everglades. Restoring this dynamic system is critical to the long-term economic and environmental health of South Florida."

October 11, 2005

Lake Okeechobee & Estuary Recovery Plan



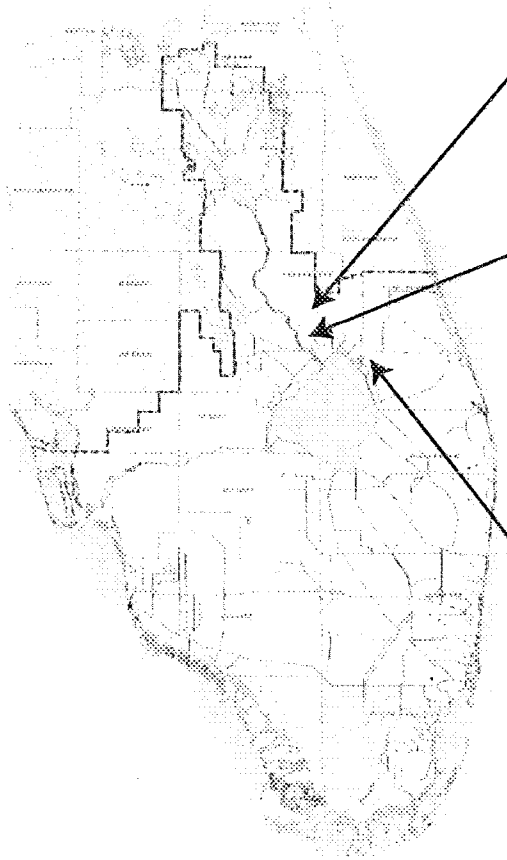
Lake Okeechobee

LAKE OKEECHOBEE
Stepping Up the Pace

Invested: $100 million to improve the health of Lake Okeechobee.

Launched: Lake Okeechobee and Estuary Recovery Plan to fast track the construction of water storage areas, construct treatment marshes and expedite environmental management initiatives.

Committed: Another $200 million through the Lake Okeechobee and Estuary Recovery Plan to clean up and restore America's second largest freshwater lake.



Adding Water Storage: Constructing 4,000 acre Taylor Creek Reservoir to provide 32,000 acre-feet of water storage.

Enhancing Stormwater Treatment: Rerouting runoff from the S-154 and S-133 Basins to Storm Water Treatment Areas to protect the Kissimmee River and Lake Okeechobee.

Expanding Treatment Wetlands: Constructing Lakeside Ranch STA and expanding Nubbin Slough STA, creating an additional 3,500 acres of treatment wetlands that will prevent up to 72 metric tons of phosphorus from entering Lake Okeechobee each year.

Water & Natural Resources Committee

Wednesday February 22, 2006
1:30 p.m.—3:30 p.m.
Reed Hall

ADDENDUM A

Allan G. Bense
Speaker

Donna Clarke
Chair

COUNCIL/COMMITTEE ACTION

ADOPTED	__	(Y/N)
ADOPTED AS AMENDED	__	(Y/N)
ADOPTED W/O OBJECTION	__	(Y/N)
FAILED TO ADOPT	__	(Y/N)
WITHDRAWN	__	(Y/N)
OTHER	____	

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1 Council/Committee hearing bill: Water & Natural Resources
2 Committee
3 Representative(s) Troutman offered the following:
4
5 **Substitute Amendment for Amendment (1) by Representative**
6 **Troutman (with title amendment)**
7 Remove everything after the enacting clause and insert:
8 Section 1. Subsections (5) through (28) of section 370.01,
9 Florida Statutes, are renumbered as subsections (6) through
10 (29), respectively, and a new subsection (5) is added to that
11 section to read:
12 370.01 Definitions.--In construing these statutes, where
13 the context does not clearly indicate otherwise, the word,
14 phrase, or term:
15 (5) "Commercial harvest" means the taking or harvest of
16 marine fish while operating under a permit, license, or
17 authorization issued pursuant to this chapter; while operating
18 in a manner consistent with such a permit, license, or
19 authorization while such permit, license, or authorization is
20 suspended or revoked; or in quantities sufficient to suggest
21 intent to sell.

RAL

22 Section 2. Present subsections (1) through (4) of section
23 370.021, Florida Statutes, are renumbered as subsections (2)
24 through (5), respectively, and amended, present subsections (5)
25 through (12) are renumbered as subsections (6) through (13),
26 respectively, and a new subsection (1) is added to that section,
27 to read:
28 370.021 Administration; rules, publications, records;
29 penalties; injunctions.--
30 (1) APPLICATION OF PENALTIES.--The penalties in this
31 section apply when the commission of a violation is related to
32 commercial harvest; when the commission of a violation is
33 related to commercial harvest, the penalties in s. 372.83 do not
34 apply.
35 (2) ~~(1)~~ BASE PENALTIES.--Unless otherwise provided by law,
36 any person, firm, or corporation who violates ~~is convicted for~~
37 ~~violating any~~ provision of this chapter, or any rule of the Fish
38 and Wildlife Conservation Commission relating to the
39 conservation of marine resources, shall be punished:
40 (a) Upon a first conviction, by imprisonment for a period
41 of not more than 60 days or by a fine of not less than $100 nor
42 more than $500, or by both such fine and imprisonment.
43 (b) On a second or subsequent conviction within 12 months,
44 by imprisonment for not more than 6 months or by a fine of not
45 less than $250 nor more than $1,000, or by both such fine and
46 imprisonment.
47
48 Upon final disposition of any alleged offense for which a
49 citation for any violation of this chapter or the rules of the
50 commission has been issued, the court shall, within 10 days,
51 certify the disposition to the commission.

52 (3) ~~(2)~~ MAJOR VIOLATIONS.--In addition to the penalties
53 provided in paragraphs (2) ~~(1)~~ (a) and (b), the court shall assess
54 additional penalties against any person, firm, or corporation
55 convicted of major violations as follows:
56 (a) For a violation involving more than 100 illegal blue
57 crabs, crawfish, or stone crabs, an additional penalty of $10
58 for each illegal blue crab, crawfish, stone crab, or part
59 thereof.
60 (b) For a violation involving the taking or harvesting of
61 shrimp from a nursery or other prohibited area, or any two
62 violations within a 12-month period involving shrimping gear,
63 minimum size (count), or season, an additional penalty of $10
64 for each pound of illegal shrimp or part thereof.
65 (c) For a violation involving the taking or harvesting of
66 oysters from nonapproved areas or the taking or possession of
67 unculled oysters, an additional penalty of $10 for each bushel
68 of illegal oysters.
69 (d) For a violation involving the taking or harvesting of
70 clams from nonapproved areas, an additional penalty of $100 for
71 each 500 count bag of illegal clams.
72 (e) For a violation involving the taking, harvesting, or
73 possession of any of the following species, which are
74 endangered, threatened, or of special concern:
75 1. Shortnose sturgeon (Acipenser brevirostrum);
76 2. Atlantic sturgeon (Acipenser oxyrhynchus);
77 3. Common snook (Centropomus undecimalis);
78 4. Atlantic loggerhead turtle (Caretta caretta caretta);
79 5. Atlantic green turtle (Chelonia mydas mydas);
80 6. Leatherback turtle (Dermochelys coriacea);
81 7. Atlantic hawksbill turtle (Eretmochelys imbricata
82 imbracata);

83 8. Atlantic ridley turtle (Lepidochelys kempi); or
84 9. West Indian manatee (Trichechus manatus latirostris),
85
86 an additional penalty of $100 for each unit of marine life or
87 part thereof.
88 (f) For a second or subsequent conviction within 24 months
89 for any violation of the same law or rule involving the taking
90 or harvesting of more than 100 pounds of any finfish, an
91 additional penalty of $5 for each pound of illegal finfish.
92 (g) For any violation involving the taking, harvesting, or
93 possession of more than 1,000 pounds of any illegal finfish, an
94 additional penalty equivalent to the wholesale value of the
95 illegal finfish.
96 (h) Permits issued to any person, firm, or corporation by
97 the commission to take or harvest saltwater products, or any
98 license issued pursuant to s. 370.06 or s. 370.07 may be
99 suspended or revoked by the commission, pursuant to the
100 provisions and procedures of s. 120.60, for any major violation
101 prescribed in this subsection:
102 1. Upon a first conviction, for up to 30 calendar days.
103 2. Upon a second conviction which occurs within 12 months
104 after a prior violation, for up to 90 calendar days.
105 3. Upon a third conviction which occurs within 24 months
106 after a prior conviction, for up to 180 calendar days.
107 4. Upon a fourth conviction which occurs within 36 months
108 after a prior conviction, for a period of 6 months to 3 years.
109 (i) Upon the arrest and conviction for a major violation
110 involving stone crabs, the licenseholder must show just cause
111 why his or her license should not be suspended or revoked. For
112 the purposes of this paragraph, a "major violation" means a
113 major violation as prescribed for illegal stone crabs; any

114 single violation involving possession of more than 25 stone
115 crabs during the closed season or possession of 25 or more
116 whole-bodied or egg-bearing stone crabs; any violation for trap
117 molestation, trap robbing, or pulling traps at night; or any
118 combination of violations in any 3-consecutive-year period
119 wherein more than 75 illegal stone crabs in the aggregate are
120 involved.

121 (j) Upon the arrest and conviction for a major violation
122 involving crawfish, the licenseholder must show just cause why
123 his or her license should not be suspended or revoked. For the
124 purposes of this paragraph, a "major violation" means a major
125 violation as prescribed for illegal crawfish; any single
126 violation involving possession of more than 25 crawfish during
127 the closed season or possession of more than 25 wrung crawfish
128 tails or more than 25 egg-bearing or stripped crawfish; any
129 violation for trap molestation, trap robbing, or pulling traps
130 at night; or any combination of violations in any 3-consecutive-
131 year period wherein more than 75 illegal crawfish in the
132 aggregate are involved.

133 (k) Upon the arrest and conviction for a major violation
134 involving blue crabs, the licenseholder shall show just cause
135 why his or her saltwater products license should not be
136 suspended or revoked. This paragraph shall not apply to an
137 individual fishing with no more than five traps. For the
138 purposes of this paragraph, a "major violation" means a major
139 violation as prescribed for illegal blue crabs, any single
140 violation wherein 50 or more illegal blue crabs are involved;
141 any violation for trap molestation, trap robbing, or pulling
142 traps at night; or any combination of violations in any 3-
143 consecutive-year period wherein more than 100 illegal blue crabs
144 in the aggregate are involved.

145 (l) Upon the conviction for a major violation involving
146 finfish, the licenseholder must show just cause why his or her
147 saltwater products license should not be suspended or revoked.
148 For the purposes of this paragraph, a major violation is
149 prescribed for the taking and harvesting of illegal finfish, any
150 single violation involving the possession of more than 100
151 pounds of illegal finfish, or any combination of violations in
152 any 3-consecutive-year period wherein more than 200 pounds of
153 illegal finfish in the aggregate are involved.
154 (m) For a violation involving the taking or harvesting of
155 any marine life species, as those species are defined by rule of
156 the commission, the harvest of which is prohibited, or the
157 taking or harvesting of such a species out of season, or with an
158 illegal gear or chemical, or any violation involving the
159 possession of 25 or more individual specimens of marine life
160 species, or any combination of violations in any 3-year period
161 involving more than 70 such specimens in the aggregate, the
162 suspension or revocation of the licenseholder's marine life
163 endorsement as provided in paragraph (h).
164
165 Notwithstanding the provisions of s. 948.01, no court may
166 suspend, defer, or withhold adjudication of guilt or imposition
167 of sentence for any major violation prescribed in this
168 subsection. The proceeds from the penalties assessed pursuant to
169 this subsection shall be deposited into the Marine Resources
170 Conservation Trust Fund to be used for marine fisheries research
171 or into the commission's Federal Law Enforcement Trust Fund as
172 provided in s. 372.107, as applicable.
173 (4) ~~(3)~~ PENALTIES FOR USE OF ILLEGAL NETS.--
174 (a) It is a major violation pursuant to this section,
175 punishable as provided in paragraph (b) for any person, firm, or

176 corporation to be simultaneously in possession of any species of
177 mullet in excess of the recreational daily bag limit and any
178 gill or other entangling net as defined in s. 16(c), Art. X of
179 the State Constitution. Simultaneous possession under this
180 provision shall include possession of mullet and gill or other
181 entangling nets on separate vessels or vehicles where such
182 vessels or vehicles are operated in coordination with one
183 another including vessels towed behind a main vessel. This
184 subsection does not prohibit a resident of this state from
185 transporting on land, from Alabama to this state, a commercial
186 quantity of mullet together with a gill net if:
187 1. The person possesses a valid commercial fishing license
188 that is issued by the State of Alabama and that allows the
189 person to use a gill net to legally harvest mullet in commercial
190 quantities from Alabama waters.
191 2. The person possesses a trip ticket issued in Alabama
192 and filled out to match the quantity of mullet being
193 transported, and the person is able to present such trip ticket
194 immediately upon entering this state.
195 3. The mullet are to be sold to a wholesale saltwater
196 products dealer located in Escambia County or Santa Rosa County,
197 which dealer also possesses a valid seafood dealer's license
198 issued by the State of Alabama. The dealer's name must be
199 clearly indicated on the trip ticket.
200 4. The mullet being transported are totally removed from
201 any net also being transported.
202 (b)1. A flagrant violation of any rule or statute which
203 implements s. 16(b), Art. X of the State Constitution shall be
204 considered a felony of the third degree, punishable as provided
205 in s. 775.082 or s. 775.083. For purposes of this paragraph, a
206 flagrant violation shall be the illegal possession or use of a

207 monofilament net or a net with a mesh area larger than 2,000
208 square feet. A violation means any judicial disposition other
209 than acquittal or dismissal.
210 2. In addition to being subject to the other penalties
211 provided in this chapter, any violation of s. 16(b), Art. X of
212 the State Constitution, or any statute or rule of the commission
213 which implements the gear prohibitions and restrictions
214 specified therein shall be considered a major violation; and any
215 person, firm, or corporation receiving any judicial disposition
216 other than acquittal or dismissal of such violation shall be
217 subject to the following additional penalties:
218 a. For a first major violation within a 7-year period, a
219 civil penalty of $2,500 and suspension of all saltwater products
220 license privileges for 90 calendar days following final
221 disposition shall be imposed.
222 b. For a second major violation under this subparagraph
223 charged within 7 years of a previous judicial disposition, which
224 results in a second judicial disposition other than acquittal or
225 dismissal, a civil penalty of $5,000 and suspension of all
226 saltwater products license privileges for 12 months shall be
227 imposed.
228 c. For a third or subsequent major violation under this
229 subparagraph, charged within a 7-year period, resulting in a
230 third or subsequent judicial disposition other than acquittal or
231 dismissal, a civil penalty of $5,000, lifetime revocation of the
232 saltwater products license, and forfeiture of all gear and
233 equipment used in the violation shall be imposed.
234 d. For a first flagrant violation under this subparagraph,
235 a civil penalty of $5,000 and a suspension of all saltwater
236 license privileges for 12 months shall be imposed. For a second
237 or subsequent flagrant violation under this subparagraph, a

238 civil penalty of $5,000, a lifetime revocation of the saltwater
239 products license, and the forfeiture of all gear and equipment
240 used in the violation shall be imposed.
241
242 A court may suspend, defer, or withhold adjudication of guilt or
243 imposition of sentence only for any first violation of s. 16,
244 Art. X of the State Constitution, or any rule or statute
245 implementing its restrictions, determined by a court only after
246 consideration of competent evidence of mitigating circumstances
247 to be a nonflagrant or minor violation of those restrictions
248 upon the use of nets. Any violation of s. 16, Art. X of the
249 State Constitution, or any rule or statute implementing its
250 restrictions, occurring within a 7-year period commencing upon
251 the conclusion of any judicial proceeding resulting in any
252 outcome other than acquittal shall be punished as a second,
253 third, or subsequent violation accordingly.
254 (c) During the period of suspension or revocation of
255 saltwater license privileges under this subsection, the licensee
256 shall not participate in the taking or harvesting, or attempt
257 the taking or harvesting, of saltwater products from any vessel
258 within the waters of the state; be aboard any vessel on which a
259 commercial quantity of saltwater products is possessed through
260 an activity requiring a license pursuant to this section; or
261 engage in any other activity requiring a license, permit, or
262 certificate issued pursuant to this chapter. Any person who is
263 convicted of violating this paragraph:
264 1. Upon a first or second conviction, is guilty of a
265 misdemeanor of the first degree, punishable as provided in s.
266 775.082 or s. 775.083.

267 2. Upon a third or subsequent conviction, is guilty of a
268 felony of the third degree, punishable as provided in s.
269 775.082, s. 775.083, or s. 775.084.
270 (d) Upon reinstatement of saltwater license privileges
271 suspended pursuant to a violation of this subsection, a licensee
272 owning or operating a vessel containing or otherwise
273 transporting in or on Florida waters any gill net or other
274 entangling net, or containing or otherwise transporting in
275 nearshore and inshore Florida waters any net containing more
276 than 500 square feet of mesh area shall remain restricted for a
277 period of 12 months following reinstatement, to operating under
278 the following conditions:
279 1. Vessels subject to this reinstatement period shall be
280 restricted to the corridors established by commission rule.
281 2. A violation of the reinstatement period provisions
282 shall be punishable pursuant to paragraphs (2)~~(1)~~(a) and (b).
283 (5)~~(4)~~ ADDITIONAL PENALTIES FOR MAJOR VIOLATIONS INVOLVING
284 CERTAIN FINFISH.--It is a major violation pursuant to this
285 section, punishable as provided in paragraph (4)~~(3)~~(b), for any
286 person to be in possession of any species of trout, snook, or
287 redfish which is three fish in excess of the recreational or
288 commercial daily bag limit.
289 Section 3. Paragraph (d) of subsection (5) of section
290 370.061, Florida Statutes, is amended to read:
291 370.061 Confiscation, seizure, and forfeiture of property
292 and products.--
293 (5) CONFISCATION AND SALE OF PERISHABLE SALTWATER
294 PRODUCTS; PROCEDURE.--
295 (d) For purposes of confiscation under this subsection,
296 the term "saltwater products" has the meaning set out in s.
297 370.01(27)~~(26)~~, except that the term does not include saltwater

298 products harvested under the authority of a recreational license
299 unless the amount of such harvested products exceeds three times
300 the applicable recreational bag limit for trout, snook, or
301 redfish.
302 Section 4. Section 372.825, Florida Statutes, is created
303 to read:
304 372.825 Captive wildlife penalties.--
305 (1) A person who violates any commission rules or orders
306 for the non-fee permit for the possession of captive wildlife
307 for personal use and related reporting requirements commits a
308 noncriminal infraction.
309 (2) Any person cited for committing a violation of this
310 section shall be cited to appear before the county court. The
311 civil penalty is $50.
312 (3) A person commits a misdemeanor of the second degree,
313 punishable as provided in s. 775.082 or s. 775.083, for any
314 violation of the following:
315 (a) Commission rules or orders that require a person to
316 pay a fee to obtain a permit to possess captive wildlife or that
317 require the maintenance of records relating to captive wildlife.
318 (b) Commission rules or orders relating to captive
319 wildlife not specified in paragraph (a).
320 (c) Provisions of s. 372.86, relating to possessing or
321 exhibiting certain reptiles.
322 (d) Provisions of s. 372.87, relating to licensing of
323 certain reptiles.
324 (e) Provisions of s. 372.88, relating to bonding
325 requirements.
326 (f) Provisions of s. 372.89, relating to housing
327 requirements.
328 (g) Provisions of s. 372.90, relating to transportation.

329 (h) Provisions of s. 372.901, relating to inspection.
330 (i) Provisions of s. 372.91, relating to limitation of
331 access to certain reptiles.
332 (j) Provisions of s. 372.912, relating to certain reptile
333 hunts.
334 (k) Provisions of s. 372.921, relating to exhibition or
335 sale of wildlife.
336 (l) Provisions of s. 372.922, relating to personal
337 possession of wildlife.
338 Section 5. Subsections (2), (3), (6), and (8) of section
339 372.5717, Florida Statutes, are amended to read:
340 (2)(a) A person born on or after June 1, 1975, may not be
341 issued a license to take wild animal life with the use of a
342 firearm, gun, bow, or crossbow in this state without having
343 first successfully completed a hunter safety course as provided
344 in this section~~,~~ and without having in his or her personal
345 possession a hunter safety certification card~~,~~ as provided in
346 this section.
347 (b) The Fish and Wildlife Conservation Commission may
348 defer the hunter safety course requirement for 1 year and issue
349 a restricted hunting license. Individuals may receive only one
350 deferment. Individuals issued a restricted hunting license shall
351 only be permitted to take wild animal life with the use of a
352 firearm, gun, bow, or crossbow under the direct supervision and
353 in the physical presence of an adult who has successfully
354 completed or is exempt from completing the required hunter
355 safety course as provided in this section.
356 (3) The Fish and Wildlife Conservation Commission shall
357 institute and coordinate a statewide hunter safety course which
358 must be offered in every county and consist of not ~~less than 12~~
359 ~~hours nor~~ more than 16 hours of instruction including, but not

360 limited to, instruction in the competent and safe handling of
361 firearms, conservation, and hunting ethics.
362 (6) All persons subject to the requirements of subsection
363 (2) must have in their personal possession~~,~~ proof of compliance
364 with this section~~,~~ while taking or attempting to take wildlife
365 with the use of a firearm, gun, bow, or crossbow and must
366 display a valid hunter safety certification card, unless the
367 hunter safety course requirement is deferred pursuant to this
368 section, ~~to county tax collectors or their subagents~~ in order to
369 purchase a Florida hunting license. After the issuance of a
370 license, the license itself shall serve as proof of compliance
371 with this section. A holder of a lifetime license whose license
372 does not indicate on the face of the license that a hunter
373 safety course has been completed must have in his or her
374 personal possession a hunter safety certification card, as
375 provided by this section, while attempting to take wild animal
376 life with the use of a firearm, gun, bow, or crossbow.
377 (8) A person who violates this section shall be cited for
378 a level 1 violation as classified in s. 372.83 ~~noncriminal~~
379 ~~infraction~~, punishable as provided in that section ~~s. 372.711~~.
380 Section 6. Section 372.83, Florida Statutes, is amended to
381 read:
382 372.83 Recreational ~~Noncriminal infractions; criminal~~
383 penalties; suspension and revocation of licenses and permits.--
384 (1) LEVEL 1 VIOLATIONS.--
385 (a) Unless otherwise provided by law, a person convicted
386 of an offense classified as a level 1 violation is guilty of a
387 noncriminal infraction, which is punishable as provided in this
388 subsection and includes violation of the following:
389 1. Commission rules or orders relating to the filing of
390 required reports or other documents for licensees or

391 permitholders, excluding those related to commercial harvest of
392 saltwater fish or possession of captive wildlife.
393 2. Commission rules or orders relating to quota hunting
394 permits, daily use permits, hunting zone assignments, check
395 stations, possession of alcoholic beverages, campsite use, and
396 the operation of vehicles within wildlife management areas or
397 other areas managed by the commission.
398 3. Commission rules or orders relating to daily permits,
399 possession of alcoholic beverages, possession of firearms,
400 swimming activities, the operation of watercraft, and the
401 operation of vehicles within fish management areas or other
402 areas managed by the commission.
403 4. Commission rules or orders regulating vessel size or
404 specifying motor restrictions on specified water bodies.
405 5. Provisions of s. 370.063, relating to special
406 recreational crawfish licenses.
407 6. Provisions of s. 372.57, relating to hunting, fishing,
408 and trapping licenses.
409 7. Provisions of s. 372.5717, relating to hunter safety
410 certification.
411 8. Provisions of s. 372.988, relating to required clothing
412 for persons hunting deer.
413 (b) Citations issued for any violation specified in
414 paragraph (a) shall include a requirement for appearance before
415 the county court.
416 (c)1. The civil penalty for any noncriminal level 1
417 violation of the license and permit requirements of s. 372.57 is
418 $50 for the first conviction and $250 for each subsequent
419 conviction in addition to the cost of the required license and
420 permit.

421 2. The civil penalty for any other noncriminal level 1
422 violation is $50 for the first conviction and $250 for each
423 subsequent conviction, except as otherwise provided in this
424 subsection.
425 (d) Any person issued a citation for a violation specified
426 in this subsection may:
427 1. Post a bond equal to the amount of the civil penalty
428 and appear before the court; or
429 2. Pay the civil penalty by mail or in person within 30
430 days after the date of receiving the citation, or if a bond has
431 been posted, forfeit the bond for payment by failure to appear
432 before the court.
433
434 Payment of the civil penalty without appearing before the court
435 is considered an admission of guilt and waives any further right
436 to a hearing on the violation for which the citation was issued.
437 Such admission shall not be used as evidence in any other
438 proceedings except to determine the appropriate fine for any
439 subsequent violations.
440 (e)1. Any person who willfully refuses the issuance of a
441 citation for a violation specified in this subsection commits a
442 misdemeanor of the second degree, punishable as provided in s.
443 775.082 or s. 775.083.
444 2. Any person who willfully fails to pay the civil penalty
445 within 30 days after the issuance of a citation for a violation
446 specified in this subsection commits a misdemeanor of the second
447 degree, punishable as provided in s. 775.082 or s. 775.083.
448 (f)1. Electing or being required to appear before the
449 court shall waive the limitations on the civil penalty specified
450 in this subsection. The court shall determine whether a

451 violation has occurred and may impose a civil penalty not less
452 than those specified in this subsection and not more than $500.
453 2. Violations must be proved beyond a reasonable doubt
454 before the court.
455 3. A person found guilty of a violation may file an appeal
456 with the circuit court.
457 (g) A person charged with violating the requirement for
458 personal possession of a license or permit under s. 372.57 may
459 not be convicted if the person presents the required license or
460 permit for verification by the hearing officer or clerk of the
461 court prior to the scheduled court proceeding. The license or
462 permit must have been issued to the person charged with
463 committing the violation and valid at the time the violation
464 occurred. The clerk of the court may assess a fee of $5 to cover
465 related court costs under this paragraph.
466 (2) LEVEL 2 VIOLATIONS.--
467 (a) Unless otherwise provided by law, a person convicted
468 of an offense classified as a level 2 violation is guilty of a
469 misdemeanor, which is punishable as provided in this subsection
470 and includes violation of the following:
471 1. Commission rules or orders that specify season or time
472 periods for the taking of saltwater fish, freshwater game fish,
473 or wildlife.
474 2. Commission rules or orders that establish bag,
475 possession, or size limits for, or restrict methods of the
476 taking of, saltwater fish, freshwater game fish, or wildlife.
477 3. Commission rules or orders that prohibit public access
478 for specified periods to wildlife management areas or other
479 areas managed by the commission.

480 4. Commission rules or orders that relate to the access to
481 wildlife management areas or other areas managed by the
482 commission.
483 5. Commission rules or orders relating to the feeding of
484 saltwater fish, freshwater game fish, or wildlife.
485 6. Commission rules or orders relating to restricted
486 hunting areas, bird sanctuaries, or critical wildlife areas.
487 7. Commission rules or orders relating to landing
488 requirements for saltwater fish or freshwater game fish.
489 8. Commission rules or orders relating to tagging
490 requirements for game and fur-bearing animals.
491 9. Commission rules or orders relating to the use of dogs
492 for the taking of game.
493 10. Any commission rules or orders not otherwise
494 classified.
495 11. Any prohibitions in chapter 370 not otherwise
496 classified in this section.
497 12. Provisions of s. 370.08, relating to obstructing
498 waterways with net gear.
499 13. Provisions of s. 370.1105, relating to finfish traps.
500 14. Provisions of s. 370.1121, relating to bonefish.
501 15. Provisions of s. 370.14, relating to crawfish.
502 16. Provisions of s. 370.25, relating to placement of
503 artificial reefs.
504 17. Provisions of s. 372.667, relating to feeding or
505 enticement of alligators or crocodiles.
506 18. Provisions of s. 372.705, relating to harassment of
507 hunters, fishers, or trappers.
508 (b)1. A person convicted of any level 2 violation without
509 any previous conviction for a level 2 violation is guilty of a

510 misdemeanor of the first degree, punishable as provided in s.
511 775.082 or s. 775.083.
512 2. A person convicted of any level 2 violation within 3
513 years after any previous conviction for a level 2 violation is
514 guilty of a misdemeanor of the first degree, punishable as
515 provided in s. 775.082 or s. 775.083 and by a minimum mandatory
516 fine of $250 and suspension of all recreational licenses issued
517 pursuant to this chapter for not less than 1 year.
518 3. A person convicted of any level 2 violation within 5
519 years after any three previous convictions for level 2
520 violations is guilty of a misdemeanor of the first degree,
521 punishable as provided in s. 775.082 or s. 775.083 and by a
522 minimum mandatory fine of $500 and suspension of all
523 recreational licenses issued pursuant to this chapter for not
524 less than 3 years.
525 4. A person convicted of any level 2 violation within 10
526 years after any three previous convictions for level 2
527 violations is guilty of a misdemeanor of the first degree,
528 punishable as provided in s. 775.082 or s. 775.083 and by a
529 minimum mandatory fine of $750 and suspension of all
530 recreational licenses issued pursuant to this chapter for not
531 less than 3 years.
532 (3) LEVEL 3 VIOLATIONS.--
533 (a) Unless otherwise provided by law, a person convicted
534 of an offense classified as a level 3 violation is guilty of a
535 misdemeanor, which is punishable as provided in this subsection
536 and includes violation of the following:
537 1. Commission rules or orders related to the prohibited
538 sale of saltwater fish.
539 2. Provisions of s. 370.021(3), relating to major
540 violations.

541 3. Provisions of s. 370.021(5), relating to possession in
542 excess of certain bag limits.
543 4. Provisions of s. 370.081, relating to illegal
544 importation or possession of exotic marine plants and animals.
545 5. Provisions of s. 370.093, relating to the taking of
546 saltwater fish with nets.
547 6. Provisions of s. 372.26, relating to imported fish.
548 7. Provisions of s. 372.57(17), relating to taking while
549 license is suspended or revoked.
550 8. Provisions of s. 372.662, relating to the illegal sale
551 or possession of alligators.
552 9. Provisions of s. 372.99, relating to the illegal taking
553 and possession of deer and wild turkey.
554 10. Provisions of s. 372.9903, relating to the illegal
555 possession and transportation of commercial quantities of
556 freshwater game fish.
557 (b)1. A person convicted of a level 3 violation without
558 any previous conviction for a level 3 violation in the past 10
559 years is guilty of a misdemeanor of the first degree, punishable
560 as provided in s. 775.082 or s. 775.083.
561 2. A person convicted of a level 3 violation within 10
562 years after any previous conviction of a level 3 violation is
563 guilty of a misdemeanor of the first degree, punishable as
564 provided in s. 775.082 or s. 775.083 and by a minimum mandatory
565 fine of $750 and the suspension of all recreational licenses
566 issued pursuant to this chapter for not less than 3 years.
567 3. The penalty for a violation of s. 372.57(17) shall
568 include a mandatory fine of $1,000 and a suspension of all
569 recreational licenses issued pursuant to this chapter for 5
570 years.

571 (4) LEVEL 4 VIOLATIONS.--Unless otherwise provided by law,
572 a person convicted of an offense classified as a level 4
573 violation is guilty of a felony of the third degree, which is
574 punishable as provided in s. 775.082 or s. 775.083 and includes
575 violation of the following:
576 (a) Provisions of s. 370.13, relating to the molestation
577 of stone crab gear.
578 (b) Provisions of s. 370.135, relating to the molestation
579 of blue crab gear.
580 (c) Provisions of s. 370.14, relating to the molestation
581 of crawfish gear.
582 (d) Provisions of s. 372.57(16), relating to forgery of a
583 license or possession of a forged license.
584 (e) Provisions of s. 372.99(5), relating to the sale of
585 deer or turkey that is taken illegally.
586 (f) Provisions of s. 372.99022, relating to molestation or
587 theft of freshwater gear.
588 ~~(1) A person is guilty of a noncriminal infraction,~~
589 ~~punishable as provided in s. 372.711, if she or he violates any~~
590 ~~of the following provisions:~~
591 ~~(a) Rules, regulations, or orders relating to the filing~~
592 ~~of reports or other documents required of persons who are~~
593 ~~licensed or who hold permits issued by the commission.~~
594 ~~(b) Rules, regulations, or orders relating to fish~~
595 ~~management areas.~~
596 ~~(c) Rules, regulations, or orders relating to quota hunt~~
597 ~~permits, daily use permits, hunting zone assignments, camping~~
598 ~~restrictions, the use of alcoholic beverages, vehicle use, and~~
599 ~~check station requirements within wildlife management areas or~~
600 ~~other areas managed by the commission.~~

601 ~~(d) Rules, regulations, or orders requiring permits free~~
602 ~~of charge to possess captive wildlife for personal use.~~
603 ~~(e) Rules, regulations, or orders establishing size or~~
604 ~~slot limits for freshwater game fish.~~
605 ~~(f) Rules, regulations, or orders regulating vessel size~~
606 ~~or specifying motor restrictions on specified water bodies.~~
607 ~~(g) Rules, regulations, or orders relating to the~~
608 ~~registration of off-road vehicles and airboats operated on state~~
609 ~~lands.~~
610 ~~(h) Section 372.57, relating to hunting, fishing, and~~
611 ~~trapping licenses.~~
612 ~~(i) Section 372.988, relating to required clothing for~~
613 ~~persons hunting deer.~~
614
615 ~~A person who fails to pay the civil penalty specified in s.~~
616 ~~372.711 within 30 days after being cited for a noncriminal~~
617 ~~infraction or to appear before the court pursuant to that~~
618 ~~section is guilty of a misdemeanor of the second degree,~~
619 ~~punishable as provided in s. 775.082 or s. 775.083.~~
620 ~~(2) A person is guilty of a misdemeanor of the second~~
621 ~~degree, punishable as provided in s. 775.082 or s. 775.083, if~~
622 ~~she or he violates any of the following rules, regulations, or~~
623 ~~orders of the commission:~~
624 ~~(a) Rules, regulations, or orders that specify season or~~
625 ~~time periods for the taking of freshwater fish or wildlife.~~
626 ~~(b) Rules, regulations, or orders that specify bag limits~~
627 ~~or restrict methods of taking freshwater fish or wildlife.~~
628 ~~(c) Rules, regulations, or orders that relate to the sale,~~
629 ~~possession for sale, purchase, transfer, transportation, or~~
630 ~~importation of freshwater fish or wildlife.~~

631 ~~(d) Rules, regulations, or orders that prohibit public~~
632 ~~access for specified periods to wildlife management areas or~~
633 ~~other areas managed by the commission.~~
634 ~~(e) Rules, regulations, or orders that require a person to~~
635 ~~pay a fee to obtain a permit to possess captive wildlife or that~~
636 ~~require the maintenance of records relating to captive wildlife.~~
637 ~~(f) All other rules, regulations, and orders of the~~
638 ~~commission, except those specified in subsection (1).~~
639 ~~(3) It is unlawful for any person to make, forge,~~
640 ~~counterfeit, or reproduce a freshwater fishing, hunting, or~~
641 ~~saltwater fishing license unless authorized by the commission.~~
642 ~~It is unlawful for any person to knowingly have in his or her~~
643 ~~possession a forgery, counterfeit, or imitation of such a~~
644 ~~license unless possession by the person has been fully~~
645 ~~authorized by the commission. A person who violates this~~
646 ~~subsection commits a felony of the third degree, punishable as~~
647 ~~provided in s. 775.082, s. 775.083, or s. 775.084.~~
648 (5) ~~(4)~~ Unless otherwise provided in this chapter, a person
649 who violates any provision of this chapter is guilty, for the
650 first offense, of a misdemeanor of the second degree, punishable
651 as provided in s. 775.082 or s. 775.083, and is guilty, for the
652 second offense or any subsequent offense, of a misdemeanor of
653 the first degree, punishable as provided in s. 775.082 or s.
654 775.083.
655 (6) ~~(5)~~ The court may order the suspension or revocation of
656 any license or permit issued to a person pursuant to this
657 chapter, if that person commits a criminal offense specified in
658 this chapter or a noncriminal infraction specified in this
659 section.
660 (7) For purposes of this section, "conviction" means any
661 judicial disposition other than acquittal or dismissal.

662 Section 7. Paragraphs (h), (i), and (j) of subsection (4),
663 paragraphs (e) through (i) of subsection (8), paragraph (b) of
664 subsection (11), and paragraph (b) of subsection (12) of section
665 372.57, Florida Statutes, are amended, and subsections (16) and
666 (17) are added to that section, to read:
667 372.57 Recreational licenses, permits, and authorization
668 numbers; fees established.--
669 (4) RESIDENT HUNTING AND FISHING LICENSES.--The licenses
670 and fees for residents participating in hunting and fishing
671 activities in this state are as follows:
672 (h) Annual sportsman's license, $71 ~~$66~~, except that an
673 annual sportsman's license for a resident 64 years of age or
674 older is $12. A sportsman's license authorizes the person to
675 whom it is issued to take game and freshwater fish, subject to
676 the state and federal laws, rules, and regulations, including
677 rules of the commission, in effect at the time of the taking.
678 Other authorized activities include activities authorized by a
679 management area permit, a muzzle-loading gun season permit, a
680 turkey permit, a Florida waterfowl permit, ~~and~~ an archery season
681 permit, and a crossbow season permit.
682 (i) Annual gold sportsman's license, $87 ~~$82~~. The gold
683 sportsman's license authorizes the person to whom it is issued
684 to take freshwater fish, saltwater fish, and game, subject to
685 the state and federal laws, rules, and regulations, including
686 rules of the commission, in effect at the time of taking. Other
687 authorized activities include activities authorized by a
688 management area permit, a muzzle-loading gun season permit, a
689 turkey permit, a Florida waterfowl permit, an archery season
690 permit, a crossbow season permit, a snook permit, and a crawfish
691 permit.

692 (j) Annual military gold sportsman's license, $18.50. The
693 gold sportsman's license authorizes the person to whom it is
694 issued to take freshwater fish, saltwater fish, and game,
695 subject to the state and federal laws, rules, and regulations,
696 including rules of the commission, in effect at the time of
697 taking. Other authorized activities include activities
698 authorized by a management area permit, a muzzle-loading gun
699 season permit, a turkey permit, a Florida waterfowl permit, an
700 archery season permit, a crossbow season permit, a snook permit,
701 and a crawfish permit. Any resident who is an active or retired
702 member of the United States Armed Forces, the United States
703 Armed Forces Reserve, the National Guard, the United States
704 Coast Guard, or the United States Coast Guard Reserve is
705 eligible to purchase the military gold sportsman's license upon
706 submission of a current military identification card.
707 (8) SPECIFIED HUNTING, FISHING, AND RECREATIONAL ACTIVITY
708 PERMITS.--In addition to any license required under this
709 chapter, the following permits and fees for specified hunting,
710 fishing, and recreational uses and activities are required:
711 (e) A $5 fee is imposed for the following permits:
712 1. An annual archery season permit for a resident or
713 nonresident to hunt within the state during any archery season
714 authorized by the commission.
715 2. An annual crossbow season permit for a resident or
716 nonresident to hunt within the state during any crossbow season
717 authorized by the commission.
718 3. An annual muzzle-loading gun season permit for a
719 resident or nonresident to hunt within the state during any
720 ~~with a~~ muzzle-loading gun season ~~is $5. Hunting with a muzzle-~~
721 ~~loading gun is limited to game seasons in which hunting with a~~
722 ~~modern firearm is not~~ authorized by the commission.

~~(f) An annual archery permit for a resident or nonresident to hunt within the state with a bow and arrow is $5. Hunting with an archery permit is limited to those game seasons in which hunting with a firearm is not authorized by the commission.~~

(f)~~(g)~~ A special use permit for a resident or nonresident to participate in limited entry hunting or fishing activities as authorized by commission rule shall not exceed $100 per day or $250 per week. Notwithstanding any other provision of this chapter, there are no exclusions, exceptions, or exemptions from this permit fee. In addition to the permit fee, the commission may charge each special use permit applicant a nonrefundable application fee not to exceed $10.

(g)~~(h)~~1. A management area permit for a resident or nonresident to hunt on, fish on, or otherwise use for outdoor recreational purposes land owned, leased, or managed by the commission, or by the state for the use and benefit of the commission, shall not exceed $25 per year.

2. Permit fees for short-term use of land that is owned, leased, or managed by the commission may be established by rule of the commission for activities on such lands. Such permits may be in lieu of, or in addition to, the annual management area permit authorized in subparagraph 1.

3. Other than for hunting or fishing, the provisions of this paragraph shall not apply on any lands not owned by the commission, unless the commission has obtained the written consent of the owner or primary custodian of such lands.

(h)~~(i)~~1. A recreational user permit is required to hunt on, fish on, or otherwise use for outdoor recreational purposes land leased by the commission from private nongovernmental owners, except for those lands located directly north of the Apalachicola National Forest, east of the Ochlocknee River until

754 the point the river meets the dam forming Lake Talquin, and
755 south of the closest federal highway. The fee for a recreational
756 user permit shall be based upon the economic compensation
757 desired by the landowner, game population levels, desired hunter
758 density, and administrative costs. The permit fee shall be set
759 by commission rule on a per-acre basis. The recreational user
760 permit fee, less administrative costs of up to $25 per permit,
761 shall be remitted to the landowner as provided in the lease
762 agreement for each area.
763 2. One minor dependent, 16 years of age or younger, may
764 hunt under the supervision of the permittee and is exempt from
765 the recreational user permit requirements. The spouse and
766 dependent children of a permittee are exempt from the
767 recreational user permit requirements when engaged in outdoor
768 recreational activities other than hunting and when accompanied
769 by a permittee. Notwithstanding any other provision of this
770 chapter, no other exclusions, exceptions, or exemptions from the
771 recreational user permit fee are authorized.
772 (11) RESIDENT LIFETIME HUNTING LICENSES.--
773 (b) The following activities are authorized by the
774 purchase of a lifetime hunting license:
775 1. Taking, or attempting to take or possess, game
776 consistent with the state and federal laws and regulations and
777 rules of the commission in effect at the time of the taking.
778 2. All activities authorized by a muzzle-loading gun
779 <u>season</u> permit, a turkey permit, an archery <u>season</u> permit, <u>a</u>
780 <u>crossbow season permit,</u> a Florida waterfowl permit, and a
781 management area permit, excluding fishing.
782 (12) RESIDENT LIFETIME SPORTSMAN'S LICENSES.--
783 (b) The following activities are authorized by the
784 purchase of a lifetime sportsman's license:

785 1. Taking, or attempting to take or possess, freshwater
786 and saltwater fish, and game, consistent with the state and
787 federal laws and regulations and rules of the commission in
788 effect at the time of taking.
789 2. All activities authorized by a management area permit,
790 a muzzle-loading gun season permit, a turkey permit, an archery
791 season permit, a crossbow season permit, a Florida waterfowl
792 permit, a snook permit, and a crawfish permit.
793 (16) FORGING OF LICENSES.--It is unlawful for any person
794 to make, forge, or counterfeit a freshwater fishing, hunting, or
795 saltwater fishing license. Such a license may be reproduced only
796 as authorized by the commission. It is unlawful for any person
797 to knowingly have in his or her possession a forgery,
798 counterfeit, or imitation of such a license unless possession by
799 the person has been fully authorized by the commission. A person
800 who violates this subsection commits a level 4 violation as
801 classified in s. 372.83 and shall be punished as provided in s.
802 372.83.
803 (17) TAKING OF GAME AND FISH WHILE LICENSE SUSPENDED OR
804 REVOKED.--No person shall take game, freshwater game fish,
805 saltwater fish, or fur-bearing animals within this state while
806 the license required to do so is suspended or revoked. A person
807 who violates this subsection commits a level 3 violation as
808 classified in s. 372.83 and shall be punished as provided in s.
809 372.83.
810 Section 8. Section 372.573, Florida Statutes, is amended
811 to read:
812 372.573 Management area permit revenues.--The commission
813 shall expend the revenue generated from the sale of the
814 management area permit as provided for in s. 372.57(8)(g) ~~(h)~~ or
815 that pro rata portion of any license that includes management

816 area privileges as provided for in s. 372.57(4)(h), (i), and (j)
817 for the lease, management, and protection of lands for public
818 hunting, fishing, and other outdoor recreation.
819 Section 9. Subsection (2) of section 372.661, Florida
820 Statutes, is amended to read:
821 372.661 Private hunting preserve license fees;
822 exception.--
823 (2) A commercial hunting preserve license, which shall
824 exempt patrons of licensed preserves from the license and permit
825 requirements of s. 372.57(4)(c), (d), (f), (h), (i), and (j);
826 (5)(f) and (g); (8)(a), (b), and (e)~~, and (f)~~; (9)(a)2.; (11);
827 and (12) while hunting on the licensed preserve property, shall
828 be $500. Such commercial hunting preserve license shall be
829 available only to those private hunting preserves licensed
830 pursuant to this section which are operated exclusively for
831 commercial purposes, which are open to the public, and for which
832 a uniform fee is charged to patrons for hunting privileges.
833 Section 10. Section 372.831, Florida Statutes, is created
834 to read:
835 372.831 Wildlife Violators Compact.--The Wildlife
836 Violators Compact is created and entered into with all other
837 jurisdictions legally joining therein in the form substantially
838 as follows:
839
840 ARTICLE I
841 Findings
842
843 (1) The participating states find that:
844 (a) Wildlife resources are managed in trust by the
845 respective states for the benefit of all residents and visitors.

846 (b) The protection of the wildlife resources of a state is
847 materially affected by the degree of compliance with state
848 statutes, laws, regulations, ordinances, and administrative
849 rules relating to the management of such resources.
850 (c) The preservation, protection, management, and
851 restoration of wildlife contributes immeasurably to the
852 aesthetic, recreational, and economic aspects of such natural
853 resources.
854 (d) Wildlife resources are valuable without regard to
855 political boundaries; therefore, every person should be required
856 to comply with wildlife preservation, protection, management,
857 and restoration laws, ordinances, and administrative rules and
858 regulations of the participating states as a condition precedent
859 to the continuance or issuance of any license to hunt, fish,
860 trap, or possess wildlife.
861 (e) Violation of wildlife laws interferes with the
862 management of wildlife resources and may endanger the safety of
863 persons and property.
864 (f) The mobility of many wildlife law violators
865 necessitates the maintenance of channels of communication among
866 the various states.
867 (g) In most instances, a person who is cited for a
868 wildlife violation in a state other than his or her home state:
869 1. Is required to post collateral or a bond to secure
870 appearance for a trial at a later date;
871 2. Is taken into custody until the collateral or bond is
872 posted; or
873 3. Is taken directly to court for an immediate appearance.
874 (h) The purpose of the enforcement practices set forth in
875 subsection (7) of this article is to ensure compliance with the
876 terms of a wildlife citation by the cited person who, if

877 permitted to continue on his or her way after receiving the
878 citation, could return to his or her home state and disregard
879 his or her duty under the terms of the citation.
880 (i) In most instances, a person receiving a wildlife
881 citation in his or her home state is permitted to accept the
882 citation from the officer at the scene of the violation and
883 immediately continue on his or her way after agreeing or being
884 instructed to comply with the terms of the citation.
885 (j) The practices described in paragraph (7) of this
886 article cause unnecessary inconvenience and, at times, a
887 hardship for the person who is unable at the time to post
888 collateral, furnish a bond, stand trial, or pay a fine and thus
889 is compelled to remain in custody until some alternative
890 arrangement is made.
891 (k) The enforcement practices described in paragraph (7)
892 of this article consume an undue amount of law enforcement time.
893 (2) It is the policy of the participating states to:
894 (a) Promote compliance with the statutes, laws,
895 ordinances, regulations, and administrative rules relating to
896 management of wildlife resources in their respective states.
897 (b) Recognize the suspension of wildlife license
898 privileges of any person whose license privileges have been
899 suspended by a participating state and treat such suspension as
900 if it had occurred in that person's home state.
901 (c) Allow a violator, except as provided in paragraph (b)
902 of Article III, to accept a wildlife citation and, without
903 delay, proceed on his or her way, regardless of whether he or
904 she is a resident of the state in which the citation was issued,
905 provided that the violator's home state is party to this
906 compact.

907 (d) Report to the appropriate participating state, as
908 provided in the compact manual, any conviction recorded against
909 any person whose home state was not the issuing state.
910 (e) Allow the home state to recognize and treat
911 convictions recorded against its residents, which convictions
912 occurred in a participating state, as though they had occurred
913 in the home state.
914 (f) Extend cooperation to its fullest extent among the
915 participating states for enforcing compliance with the terms of
916 a wildlife citation issued in one participating state to a
917 resident of another participating state.
918 (g) Maximize effective use of law enforcement personnel
919 and information.
920 (h) Assist court systems in the efficient disposition of
921 wildlife violations.
922 (3) The purpose of this compact is to:
923 (a) Provide a means through which participating states may
924 join in a reciprocal program to effectuate the policies
925 enumerated in paragraph (b) of this article in a uniform and
926 orderly manner.
927 (b) Provide for the fair and impartial treatment of
928 wildlife violators operating within participating states in
929 recognition of the violator's right to due process and the
930 sovereign status of a participating state.
931
932 ARTICLE II
933 Definitions
934
935 As used in this compact, unless the context requires otherwise:
936

937 (1) "Citation" means any summons, complaint, summons and
938 complaint, ticket, penalty assessment, or other official
939 document issued to a person by a wildlife officer or other peace
940 officer for a wildlife violation which contains an order
941 requiring the person to respond.
942 (2) "Collateral" means any cash or other security
943 deposited to secure an appearance for trial in connection with
944 the issuance by a wildlife officer or other peace officer of a
945 citation for a wildlife violation.
946 (3) "Compliance," with respect to a citation, means the
947 act of answering a citation through an appearance in a court or
948 tribunal or through the payment of fines, costs, and surcharges,
949 if any.
950 (4) "Conviction" means a conviction, including any court
951 conviction, for any offense related to the preservation,
952 protection, management, or restoration of wildlife which is
953 prohibited by state statute, law, regulation, ordinance, or
954 administrative rule, and such conviction shall also include the
955 forfeiture of any bail, bond, or other security deposited to
956 secure appearance by a person charged with having committed any
957 such offense, the payment of a penalty assessment, a plea of
958 nolo contendere, and the imposition of a deferred or suspended
959 sentence by the court.
960 (5) "Court" means a court of law, including magistrate's
961 court and the justice of the peace court.
962 (6) "Home state" means the state of primary residence of a
963 person.
964 (7) "Issuing state" means the participating state that
965 issues a wildlife citation to the violator.
966 (8) "License" means any license, permit, or other public
967 document that conveys to the person to whom it was issued the

968 privilege of pursuing, possessing, or taking any wildlife
969 regulated by statute, law, regulation, ordinance, or
970 administrative rule of a participating state; however, when
971 applied to licenses issued by the State of Florida, only those
972 licenses issued pursuant to ss. 372.561, 372.562, and 372.57
973 shall be considered licenses.
974 (9) "Licensing authority" means the department or division
975 within each participating state that is authorized by law to
976 issue or approve licenses or permits to hunt, fish, trap, or
977 possess wildlife.
978 (10) "Participating state" means any state that enacts
979 legislation to become a member of this wildlife compact.
980 (11) "Personal recognizance" means an agreement by a
981 person made at the time of issuance of the wildlife citation
982 that such person will comply with the terms of the citation.
983 (12) "State" means any state, territory, or possession of
984 the United States, the District of Columbia, the Commonwealth of
985 Puerto Rico, the Provinces of Canada, and other countries.
986 (13) "Suspension" means any revocation, denial, or
987 withdrawal of any or all license privileges, including the
988 privilege to apply for, purchase, or exercise the benefits
989 conferred by any license.
990 (14) "Terms of the citation" means those conditions and
991 options expressly stated upon the citation.
992 (15) "Wildlife" means all species of animals, including,
993 but not limited to, mammals, birds, fish, reptiles, amphibians,
994 mollusks, and crustaceans, that are defined as "wildlife" and
995 are protected or otherwise regulated by statute, law,
996 regulation, ordinance, or administrative rule in a participating
997 state. Species included in the definition of "wildlife" vary
998 from state to state, and determination of whether a species is

999 "wildlife" for the purposes of this compact shall be based on
1000 local law.
1001 (16) "Wildlife law" means any statute, law, regulation,
1002 ordinance, or administrative rule developed and enacted for the
1003 management of wildlife resources and the uses thereof.
1004 (17) "Wildlife officer" means any individual authorized by
1005 a participating state to issue a citation for a wildlife
1006 violation.
1007 (18) "Wildlife violation" means any cited violation of a
1008 statute, law, regulation, ordinance, or administrative rule
1009 developed and enacted for the management of wildlife resources
1010 and the uses thereof.
1011
1012 ARTICLE III
1013 Procedures for Issuing State
1014
1015 (1) When issuing a citation for a wildlife violation, a
1016 wildlife officer shall issue a citation to any person whose
1017 primary residence is in a participating state in the same manner
1018 as though the person were a resident of the issuing state and
1019 shall not require such person to post collateral to secure
1020 appearance, subject to the exceptions noted in paragraph (b) of
1021 this article, if the officer receives the recognizance of such
1022 person that he or she will comply with the terms of the
1023 citation.
1024 (2) Personal recognizance is acceptable if not prohibited
1025 by local law, by any issuing agency policy, procedure, or
1026 regulation, or by the compact manual and if the violator
1027 provides adequate proof of identification to the wildlife
1028 officer.

1029 (3) Upon conviction or failure of a person to comply with
1030 the terms of a wildlife citation, the appropriate official shall
1031 report the conviction or failure to comply to the licensing
1032 authority of the participating state in which the wildlife
1033 citation was issued. The report shall be made in accordance with
1034 procedures specified by the issuing state and shall contain
1035 information as specified in the compact manual as minimum
1036 requirements for effective processing by the home state.
1037 (4) Upon receipt of the report of conviction or
1038 noncompliance pursuant to subsection (3), the licensing
1039 authority of the issuing state shall transmit to the licensing
1040 authority of the home state of the violator the information in
1041 form and content as prescribed in the compact manual.
1042
1043 ARTICLE IV
1044 Procedure for Home State
1045
1046 (1) Upon receipt of a report from the licensing authority
1047 of the issuing state reporting the failure of a violator to
1048 comply with the terms of a citation, the licensing authority of
1049 the home state shall notify the violator and shall initiate a
1050 suspension action in accordance with the home state's suspension
1051 procedures and shall suspend the violator's license privileges
1052 until satisfactory evidence of compliance with the terms of the
1053 wildlife citation has been furnished by the issuing state to the
1054 home state licensing authority. Due process safeguards will be
1055 accorded.
1056 (2) Upon receipt of a report of conviction from the
1057 licensing authority of the issuing state, the licensing
1058 authority of the home state shall enter such conviction in its
1059 records and shall treat such conviction as though it occurred in

1060 the home state for the purposes of the suspension of license
1061 privileges.
1062 (3) The licensing authority of the home state shall
1063 maintain a record of actions taken and shall make reports to
1064 issuing states as provided in the compact manual.
1065
1066 ARTICLE V
1067 Reciprocal Recognition of Suspension
1068
1069 (1) All participating states shall recognize the
1070 suspension of license privileges of any person by any
1071 participating state as though the violation resulting in the
1072 suspension had occurred in their state and could have been the
1073 basis for suspension of license privileges in their state.
1074 (2) Each participating state shall communicate suspension
1075 information to other participating states in form and content as
1076 contained in the compact manual.
1077
1078 ARTICLE VI
1079 Applicability of Other Laws
1080
1081 Except as expressly required by provisions of this compact,
1082 nothing herein shall be construed to affect the right of any
1083 participating state to apply any of its laws relating to license
1084 privileges to any person or circumstance or to invalidate or
1085 prevent any agreement or other cooperative arrangement between a
1086 participating state and a nonparticipating state concerning
1087 wildlife law enforcement.
1088
1089 ARTICLE VII
1090 Compact Administrator Procedures

1091
1092 (1) For the purpose of administering the provisions of
1093 this compact and to serve as a governing body for the resolution
1094 of all matters relating to the operation of this compact, a
1095 board of compact administrators is established. The board shall
1096 be composed of one representative from each of the participating
1097 states to be known as the compact administrator. The compact
1098 administrator shall be appointed by the head of the licensing
1099 authority of each participating state and shall serve and be
1100 subject to removal in accordance with the laws of the state he
1101 or she represents. A compact administrator may provide for the
1102 discharge of his or her duties and the performance of his or her
1103 functions as a board member by an alternate. An alternate shall
1104 not be entitled to serve unless written notification of his or
1105 her identity has been given to the board.
1106 (2) Each member of the board of compact administrators
1107 shall be entitled to one vote. No action of the board shall be
1108 binding unless taken at a meeting at which a majority of the
1109 total number of the board's votes is cast in favor thereof.
1110 Action by the board shall be only at a meeting at which a
1111 majority of the participating states is represented.
1112 (3) The board shall elect annually from its membership a
1113 chair and vice chair.
1114 (4) The board shall adopt bylaws not inconsistent with the
1115 provisions of this compact or the laws of a participating state
1116 for the conduct of its business and shall have the power to
1117 amend and rescind its bylaws.
1118 (5) The board may accept for any of its purposes and
1119 functions under this compact any and all donations and grants of
1120 moneys, equipment, supplies, materials, and services,
1121 conditional or otherwise, from any state, the United States, or

1122 any governmental agency and may receive, utilize, and dispose of
1123 same.
1124 (6) The board may contract with, or accept services or
1125 personnel from, any governmental or intergovernmental agency,
1126 individual, firm, or corporation or any private nonprofit
1127 organization or institution.
1128 (7) The board shall formulate all necessary procedures and
1129 develop uniform forms and documents for administering the
1130 provisions of this compact. All procedures and forms adopted
1131 pursuant to board action shall be contained in a compact manual.
1132
1133 ARTICLE VIII
1134 Entry into and Withdrawal from Compact
1135
1136 (1) This compact shall become effective at such time as it
1137 is adopted in substantially similar form by two or more states.
1138 (2)(a) Entry into the compact shall be made by resolution
1139 of ratification executed by the authorized officials of the
1140 applying state and submitted to the chair of the board.
1141 (b) The resolution shall substantially be in the form and
1142 content as provided in the compact manual and shall include the
1143 following:
1144 1. A citation of the authority from which the state is
1145 empowered to become a party to this compact.
1146 2. An agreement of compliance with the terms and
1147 provisions of this compact.
1148 3. An agreement that compact entry is with all states
1149 participating in the compact and with all additional states
1150 legally becoming a party to the compact.
1151 (c) The effective date of entry shall be specified by the
1152 applying state but shall not be less than 60 days after notice

1153 has been given by the chair of the board of the compact
1154 administrators or by the secretary of the board to each
1155 participating state that the resolution from the applying state
1156 has been received.
1157 (3) A participating state may withdraw from participation
1158 in this compact by official written notice to each participating
1159 state, but withdrawal shall not become effective until 90 days
1160 after the notice of withdrawal is given. The notice shall be
1161 directed to the compact administrator of each member state. No
1162 withdrawal of any state shall affect the validity of this
1163 compact as to the remaining participating states.
1164
1165 ARTICLE IX
1166 Amendments to the Compact
1167
1168 (1) This compact may be amended. Amendments shall be
1169 presented in resolution form to the chair of the board of
1170 compact administrators and shall be initiated by one or more
1171 participating states.
1172 (2) Adoption of an amendment shall require endorsement by
1173 all participating states and shall become effective 30 days
1174 after the date of the last endorsement.
1175 (3) Failure of a participating state to respond to the
1176 chair of the board within 60 days after receipt of a proposed
1177 amendment shall constitute endorsement thereof.
1178
1179 ARTICLE X
1180 Construction and Severability
1181
1182 This compact shall be liberally construed so as to effectuate
1183 the purposes stated herein. The provisions of this compact shall

1184 be severable, and if any phrase, clause, sentence, or provision
1185 of this compact is declared to be contrary to the constitution
1186 of any participating state or of the United States, or if the
1187 applicability thereof to any government, agency, individual, or
1188 circumstance is held invalid, the validity of the remainder of
1189 this compact shall not be affected thereby. If this compact is
1190 declared to be contrary to the constitution of any participating
1191 state, the compact shall remain in full force and effect as to
1192 the remaining states and in full force and effect as to the
1193 participating state affected as to all severable matters.
1194
1195 ARTICLE XI
1196 Title
1197
1198 This compact shall be known as the "Wildlife Violator Compact."
1199 Section 11. Section 372.832, Florida Statutes, is created
1200 to read:
1201 372.832 Compact licensing authority; ratification.--For
1202 purposes of this act and the interstate Wildlife Violator
1203 Compact, the Fish and Wildlife Conservation Commission is the
1204 licensing authority for the State of Florida and shall enforce
1205 the interstate Wildlife Violator Compact and do all things
1206 within its jurisdiction that are necessary to effectuate the
1207 purposes and the intent of the compact. The commission is
1208 authorized to execute a resolution of ratification to formalize
1209 the State of Florida's entry into the compact.
1210 Section 12. Section 372.833, Florida Statutes, is created
1211 to read:
1212 372.833 Compact enforcement; violation review.--Any act
1213 done or omitted pursuant to, or in enforcing, the provisions of
1214 the interstate Wildlife Violator Compact shall be subject to

1215 review by the commission in accordance with chapter 120, but any
1216 review of a suspension for the failure of a violator to comply
1217 with the terms of a citation or a conviction pursuant to the
1218 compact shall be limited to establishing the identity of the
1219 person so convicted or failing to comply with a citation.
1220 Section 13. Section 370.028, Florida Statutes, is amended
1221 to read:
1222 370.028 Enforcement of commission rules; penalties for
1223 violation of rule.--Rules of the Fish and Wildlife Conservation
1224 Commission shall be enforced by any law enforcement officer
1225 certified pursuant to s. 943.13. Any person who violates or
1226 otherwise fails to comply with any rule adopted by the
1227 commission shall be punished pursuant to s. 370.021(2)~~(1)~~.
1228 Section 14. Subsections (3) and (4) of section 370.092,
1229 Florida Statutes, are amended to read:
1230 370.092 Carriage of proscribed nets across Florida
1231 waters.--
1232 (3) Notwithstanding subsections (1) and (2), unless
1233 authorized by rule of the Fish and Wildlife Conservation
1234 Commission, it is a major violation under this section,
1235 punishable as provided in s. 370.021(4)~~(3)~~, for any person,
1236 firm, or corporation to possess any gill or entangling net, or
1237 any seine net larger than 500 square feet in mesh area, on any
1238 airboat or on any other vessel less than 22 feet in length and
1239 on any vessel less than 25 feet if primary power of the vessel
1240 is mounted forward of the vessel center point. Gill or
1241 entangling nets shall be as defined in s. 16, Art. X of the
1242 State Constitution, s. 370.093(2)(b), or in a rule of the Fish
1243 and Wildlife Conservation Commission implementing s. 16, Art. X
1244 of the State Constitution. Vessel length shall be determined in
1245 accordance with current United States Coast Guard regulations

1246 specified in the Code of Federal Regulations or as titled by the
1247 State of Florida. The Marine Fisheries Commission is directed to
1248 initiate by July 1, 1998, rulemaking to adjust by rule the use
1249 of gear on vessels longer than 22 feet where the primary power
1250 of the vessel is mounted forward of the vessel center point in
1251 order to prevent the illegal use of gill and entangling nets in
1252 state waters and to provide reasonable opportunities for the use
1253 of legal net gear in adjacent federal waters.
1254 (4) The Fish and Wildlife Conservation Commission shall
1255 adopt rules to prohibit the possession and sale of mullet taken
1256 in illegal gill or entangling nets. Violations of such rules
1257 shall be punishable as provided in s. 370.021(4) ~~(3)~~.
1258 Section 15. Subsection (5) of section 370.093, Florida
1259 Statutes, is amended to read:
1260 370.093 Illegal use of nets.--
1261 (5) Any person who violates this section shall be punished
1262 as provided in s. 370.021(4) ~~(3)~~.
1263 Section 16. Paragraph (s) of subsection (2) of section
1264 370.12, Florida Statutes, is amended to read:
1265 370.12 Marine animals; regulation.--
1266 (2) PROTECTION OF MANATEES OR SEA COWS.--
1267 (s) Except as otherwise provided in this paragraph, any
1268 person violating the provisions of this subsection or any rule
1269 or ordinance adopted pursuant to this subsection commits a
1270 misdemeanor, punishable as provided in s. 370.021(2) ~~(1)~~(a) or
1271 (b).
1272 1. Any person operating a vessel in excess of a posted
1273 speed limit shall be guilty of a civil infraction, punishable as
1274 provided in s. 327.73, except as provided in subparagraph 2.
1275 2. This paragraph does not apply to persons violating
1276 restrictions governing "No Entry" zones or "Motorboat

1277 Prohibited" zones, who, if convicted, shall be guilty of a
1278 misdemeanor, punishable as provided in s. 370.021(2) ~~(1)~~(a) or
1279 (b), or, if such violation demonstrates blatant or willful
1280 action, may be found guilty of harassment as described in
1281 paragraph (d).
1282 3. A person may engage in any activity otherwise
1283 prohibited by this subsection or any rule or ordinance adopted
1284 pursuant to this subsection if the activity is reasonably
1285 necessary in order to prevent the loss of human life or a vessel
1286 in distress due to weather conditions or other reasonably
1287 unforeseen circumstances, or in order to render emergency
1288 assistance to persons or a vessel in distress.
1289 Section 17. Subsection (2) of section 370.1405, Florida
1290 Statutes, is amended to read:
1291 370.1405 Crawfish reports by dealers during closed season
1292 required.--
1293 (2) Failure to submit a report as described in subsection
1294 (1) or reporting a greater or lesser amount of whole crawfish,
1295 crawfish tails, or crawfish meat than is actually in the
1296 dealer's possession or name is a major violation of this
1297 chapter, punishable as provided in s. 370.021(2) ~~(1)~~, s.
1298 370.07(6)(b), or both. The commission shall seize the entire
1299 supply of unreported or falsely reported whole crawfish,
1300 crawfish tails, or crawfish meat, and shall carry the same
1301 before the court for disposal. The dealer shall post a cash bond
1302 in the amount of the fair value of the entire quantity of
1303 unreported or falsely reported crawfish as determined by the
1304 judge. After posting the cash bond, the dealer shall have 24
1305 hours to transport said products outside the limits of Florida
1306 for sale as provided by s. 370.061. Otherwise, the product shall

1307 be declared a nuisance and disposed of by the commission
1308 according to law.
1309 Section 18. Paragraph (c) of subsection (2) of section
1310 370.142, Florida Statutes, is amended to read:
1311 370.142 Spiny lobster trap certificate program.--
1312 (2) TRANSFERABLE TRAP CERTIFICATES; TRAP TAGS; FEES;
1313 PENALTIES.--The Fish and Wildlife Conservation Commission shall
1314 establish a trap certificate program for the spiny lobster
1315 fishery of this state and shall be responsible for its
1316 administration and enforcement as follows:
1317 (c) Prohibitions; penalties.--
1318 1. It is unlawful for a person to possess or use a spiny
1319 lobster trap in or on state waters or adjacent federal waters
1320 without having affixed thereto the trap tag required by this
1321 section. It is unlawful for a person to possess or use any other
1322 gear or device designed to attract and enclose or otherwise aid
1323 in the taking of spiny lobster by trapping that is not a trap as
1324 defined in rule 68B-24.006(2), Florida Administrative Code.
1325 2. It is unlawful for a person to possess or use spiny
1326 lobster trap tags without having the necessary number of
1327 certificates on record as required by this section.
1328 3. It is unlawful for any person to willfully molest, take
1329 possession of, or remove the contents of another harvester's
1330 trap without the express written consent of the trap owner
1331 available for immediate inspection. Unauthorized possession of
1332 another's trap gear or removal of trap contents constitutes
1333 theft. Any person receiving a judicial disposition other than
1334 dismissal or acquittal on a charge of theft of or from a trap
1335 pursuant to this subparagraph or s. 370.1107 shall, in addition
1336 to the penalties specified in ss. 370.021 and 370.14 and the
1337 provisions of this section, permanently lose all his or her

1338 saltwater fishing privileges, including his or her saltwater
1339 products license, crawfish endorsement, and all trap
1340 certificates allotted to him or her through this program. In
1341 such cases, trap certificates and endorsements are
1342 nontransferable. Any person receiving a judicial disposition
1343 other than dismissal or acquittal on a charge of willful
1344 molestation of a trap, in addition to the penalties specified in
1345 ss. 370.021 and 370.14, shall lose all saltwater fishing
1346 privileges for a period of 24 calendar months. In addition, any
1347 person, firm, or corporation charged with violating this
1348 paragraph and receiving a judicial disposition other than
1349 dismissal or acquittal for violating this subparagraph or s.
1350 370.1107 shall also be assessed an administrative penalty of up
1351 to $5,000. Immediately upon receiving a citation for a violation
1352 involving theft of or from a trap, or molestation of a trap, and
1353 until adjudicated for such a violation or, upon receipt of a
1354 judicial disposition other than dismissal or acquittal of such a
1355 violation, the person, firm, or corporation committing the
1356 violation is prohibited from transferring any crawfish trap
1357 certificates and endorsements.
1358 4. In addition to any other penalties provided in s.
1359 370.021, a commercial harvester, as defined by rule 68B-
1360 24.002(1), Florida Administrative Code, who violates the
1361 provisions of this section, or the provisions relating to traps
1362 of chapter 68B-24, Florida Administrative Code, shall be
1363 punished as follows:
1364 a. If the first violation is for violation of subparagraph
1365 1. or subparagraph 2., the commission shall assess an additional
1366 civil penalty of up to $1,000 and the crawfish trap number
1367 issued pursuant to s. 370.14(2) or (6) may be suspended for the
1368 remainder of the current license year. For all other first

1369 violations, the commission shall assess an additional civil
1370 penalty of up to $500.
1371 b. For a second violation of subparagraph 1. or
1372 subparagraph 2. which occurs within 24 months of any previous
1373 such violation, the commission shall assess an additional civil
1374 penalty of up to $2,000 and the crawfish trap number issued
1375 pursuant to s. 370.14(2) or (6) may be suspended for the
1376 remainder of the current license year.
1377 c. For a third or subsequent violation of subparagraph 1.,
1378 subparagraph 2., or subparagraph 3. which occurs within 36
1379 months of any previous two such violations, the commission shall
1380 assess an additional civil penalty of up to $5,000 and may
1381 suspend the crawfish trap number issued pursuant to s. 370.14(2)
1382 or (6) for a period of up to 24 months or may revoke the
1383 crawfish trap number and, if revoking the crawfish trap number,
1384 may also proceed against the licenseholder's saltwater products
1385 license in accordance with the provisions of s.
1386 370.021(3) ~~(2)~~(h).
1387 d. Any person assessed an additional civil penalty
1388 pursuant to this section shall within 30 calendar days after
1389 notification:
1390 (I) Pay the civil penalty to the commission; or
1391 (II) Request an administrative hearing pursuant to the
1392 provisions of s. 120.60.
1393 e. The commission shall suspend the crawfish trap number
1394 issued pursuant to s. 370.14(2) or (6) for any person failing to
1395 comply with the provisions of sub-subparagraph d.
1396 5.a. It is unlawful for any person to make, alter, forge,
1397 counterfeit, or reproduce a spiny lobster trap tag or
1398 certificate.

1399 b. It is unlawful for any person to knowingly have in his
1400 or her possession a forged, counterfeit, or imitation spiny
1401 lobster trap tag or certificate.
1402 c. It is unlawful for any person to barter, trade, sell,
1403 supply, agree to supply, aid in supplying, or give away a spiny
1404 lobster trap tag or certificate or to conspire to barter, trade,
1405 sell, supply, aid in supplying, or give away a spiny lobster
1406 trap tag or certificate unless such action is duly authorized by
1407 the commission as provided in this chapter or in the rules of
1408 the commission.
1409 6.a. Any person who violates the provisions of
1410 subparagraph 5., or any person who engages in the commercial
1411 harvest, trapping, or possession of spiny lobster without a
1412 crawfish trap number as required by s. 370.14(2) or (6) or
1413 during any period while such crawfish trap number is under
1414 suspension or revocation, commits a felony of the third degree,
1415 punishable as provided in s. 775.082, s. 775.083, or s. 775.084.
1416 b. In addition to any penalty imposed pursuant to sub-
1417 subparagraph a., the commission shall levy a fine of up to twice
1418 the amount of the appropriate surcharge to be paid on the fair
1419 market value of the transferred certificates, as provided in
1420 subparagraph (a)1., on any person who violates the provisions of
1421 sub-subparagraph 5.c.
1422 7. Any certificates for which the annual certificate fee
1423 is not paid for a period of 3 years shall be considered
1424 abandoned and shall revert to the commission. During any period
1425 of trap reduction, any certificates reverting to the commission
1426 shall become permanently unavailable and be considered in that
1427 amount to be reduced during the next license-year period.
1428 Otherwise, any certificates that revert to the commission are to
1429 be reallotted in such manner as provided by the commission.

1430 8. The proceeds of all civil penalties collected pursuant
1431 to subparagraph 4. and all fines collected pursuant to sub-
1432 subparagraph 6.b. shall be deposited into the Marine Resources
1433 Conservation Trust Fund.
1434 9. All traps shall be removed from the water during any
1435 period of suspension or revocation.
1436 Section 19. This act shall take effect January 1, 2007.
1437
1438 ========== T I T L E A M E N D M E N T ==========
1439 Remove the entire title and insert:
1440 A bill to be entitled
1441 An act relating to fish and wildlife; amending s. 370.01,
1442 F.S.; defining "commercial harvest"; amending s. 370.021,
1443 F.S.; revising penalties for violations related to
1444 commercial harvest; correcting cross-references; amending
1445 s. 370.061, F.S.; correcting a cross-reference; creating
1446 s. 372.825, F.S.; establishing penalties for violations
1447 related to the possession of captive wildlife; amending s.
1448 372.57, F.S.; specifying seasonal recreational activities;
1449 establishing fees for certain annual licenses; providing
1450 penalties for the production, possession, and use of
1451 fraudulent fishing and hunting licenses; providing
1452 penalties for the taking of game and fish with a suspended
1453 or revoked license; amending s. 372.5717, F.S.;
1454 authorizing the Fish and Wildlife Conservation Commission
1455 to defer the hunter safety course requirement for a
1456 specified time period and issue a restricted hunting
1457 license; limiting the number of deferrals an individual is
1458 allowed; permitting hunting with a restricted license
1459 under certain circumstances; deleting the mandatory
1460 minimum number of instructional hours for the required

1461 hunter safety course; providing exemptions for the display
1462 of hunter safety certification; revising the penalties for
1463 violations related to hunter safety course requirements;
1464 amending s. 372.83, F.S.; revising the penalties for
1465 violations of Fish and Wildlife Conservation Commission
1466 rules and orders relating to recreational activities;
1467 defining "conviction"; amending ss. 372.573 and 372.661,
1468 F.S.; correcting cross-references; creating s. 372.831,
1469 F.S.; creating the Wildlife Violators Compact; providing
1470 findings and intent; providing definitions; providing
1471 requirements and procedures for issuance of violation
1472 citations; providing for reciprocal recognition of certain
1473 license suspension related to fish and wildlife
1474 activities; providing for applicability of laws; providing
1475 procedures for compact administration; establishing a
1476 board of compact administrators; providing requirements
1477 and procedures with respect thereto; providing for compact
1478 entry, withdrawal, ratification, and amendment; providing
1479 for compact construction and severability; creating s.
1480 372.832, F.S.; providing for compact licensing authority;
1481 creating s. 372.833, F.S.; providing for compact
1482 enforcement and violation review; amending ss. 370.028,
1483 370.092, 370.093, 370.12, 370.1405, and 370.142, F.S.;
1484 correcting cross-references; providing an effective date.
1485
1486
1487
1488
1489
1490 ========== T I T L E A M E N D M E N T ==========
1491 Remove line(s) and insert:

1492