2.21 Environmental Resource and Habitat Protection – Coastal Barrier and Estuarine Resources

A. Introduction and Background.

The 1989 Growth Management Plan adopted a number of Objectives that addressed the protection and conservation of the County's coastal and estuarine resources. These objectives and their attendant policies specifically identified the maintenance of water quality standards within the estuaries and canals discharging to the estuaries (Objectives 2.2 and 2.3), the appropriate protection of coastal barrier and estuarine habitats (Objectives 2.5, 6.3, and 10.6), the protection of certain listed species within this area (Objectives 7.2 and 7.3) and the creation of artificial reefs (Objective 7.4).

B. Implementation of Specific Objectives and Implementation Activities.

The GMP is implemented during the County's land petition and site development review process. Applicants must submit their development plans including vegetation inventories, the amount of vegetation to be preserved on site, stormwater management plans and listed species management plans, if applicable. Staff reviews these applications for consistency with the requirements of the GMP and the Land Development Code.

The County's Pollution Control Department also conducts a water quality program by collecting and testing surface and ground water samples.

C. Data and analysis.

The County has collected various data to evaluate coastal barrier and estuarine resources. Data are available for the following: coastal habitats, manatees, sea turtles and water quality.

Coastal Habitats. Coastal habitats include the vegetative communities of Coastal Strand, Mangrove Swamp and Coastal Salt Marsh. The results of the analysis performed for Issue #1 for these habitats are summarized in the following table.

	1989-1994				1995-2002			
Coastal Habitat	Total Acres	Permitted Removal	Retained Acres	Percent Retention	Total Acres	Permitted Removal	Retained Acres	Percent Retention
Coastal Strand	-	-	-	n.a.	-	-	-	n.a.
Coastal Salt Marsh	40.0	1.0	39.0	97.5%	10.0	-	10.0	100.0%
Mangrove Swamp	141.0	3.0	138.0	97.9%	335.1	0.5	334.6	99.9%

This analysis indicates that nearly all of these coastal habitats were retained within permitted developments evaluated for the period of 1995-2002. The county has LDC

standards that address the protection of seagrasses from boat dock construction, but no data are available for submerged habitats.

Manatees. Information addressing Manatee deaths within Collier County are depicted in Figures 1 through 4. Boat deaths typically account for less than half of the total manatee deaths in Collier County. The 7-year moving average of boat deaths (Figure 2) for 2002 (6 deaths) is 2 deaths higher than that for 1995 (4 deaths). However, because the number of registered boats are increasing faster than the number of boat-related manatee deaths, the trend of boat-related deaths per 10,000 boats as seen in Figure 3 has been decreasing. The 7-year moving average through the year 2002 is 3.0 boat-related deaths per 10,000 registered boats. The locations of boat related deaths for the period of 1996 through 2002 are depicted in Figure 4.

Sea Turtles. Sea Turtle nesting data are depicted in Figure 5 through Figure 7. Total nesting activity (Figure 5) is subject to many factors that are not controlled by local governments. More within the County's control is insuring that lighting conditions on Collier's beaches do not interfere with nesting and hatching activity. County staff has conducted aggressive nightly inspections for lighting violations in order to decrease the impact on sea turtle activities. Since 1996, recorded lighting violations (Figure 6) have decreased with a corresponding decrease in recorded disorientated nests (Figure 7).

Artificial Reefs. Since 1996, the County has placed 8,740 tons of reef materials on 28 reef sites:

	1996	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
Tons of Material	250	680	710	0	800	1800	1000	3500
Number of Reef Sites	1	2	2	0	2	5	7	9

Water Quality. The Everglades West Coast Basin Status Report (November 2001) contains a planning list of potentially impaired waterbodies where sufficient data were available for assessing potential impairments Figure 8. Table 1 summarizes the information taken from this report. Of the 18 waterbodies that have sufficient data for assessing potential impairments, 9 waterbodies were found to have some degree of potential impairment. The location of these potentially impaired waterbodies are depicted in Figure 9.

The reasons for potential impairments were due to substandard dissolved oxygen values and fish consumption advisories. Fish consumption advisories were based on the Florida Department of Health's "limited consumption" or "no consumption' advisories for surface waters because of high levels of mercury in fish tissues (The Everglades West Coast Basin Status Report).

Collier County has been collecting water quality data for a variety of locations within the County (Figure 10 and Attachment A). Where sufficient data are available, Water Quality Index (WQI) values have been calculated for these locations. The vast majority of these values are "Good", the highest value that can be received. These data are summarized in the charts presented in Attachment B.

C. Objective Achievement Analysis.

Assessment of the data analyzed above indicates that coastal and estuarine habitats have been preserved at levels greater than 99% of the original habitat. Although no data are available for assessing impacts to submerged habitats, the County does implement various sections of the LDC that provide protection for sea grasses around boat docks. Boat-related manatee deaths are within the 3.2 boat deaths per 10,000-boat benchmark identified in CCME Objective 7.2. Sea Turtle disorientations are also within the 5% benchmark identified in CCME Objective 7.3. The County has continued to place materials in the Gulf within its artificial reef sites.

The Everglades West Coast Basin Status Report, which was done in November 2001 by the Florida Department of Environmental Protection, has identified 9 water bodies within Collier County that have potential impairment of water uses. Although the majority of WQI scores are in the "Good" range, it is recommended that the County further evaluate the extent of these potential problems and identify a strategy to address non-point sources of pollution.

Figure 1.

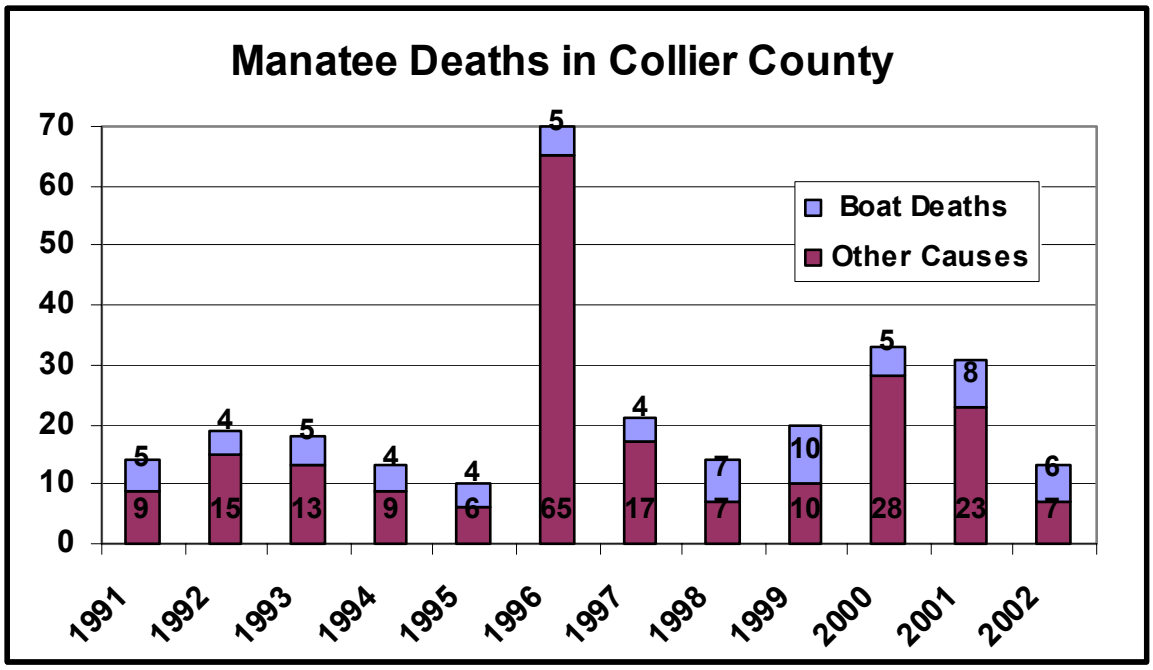


Figure 2.

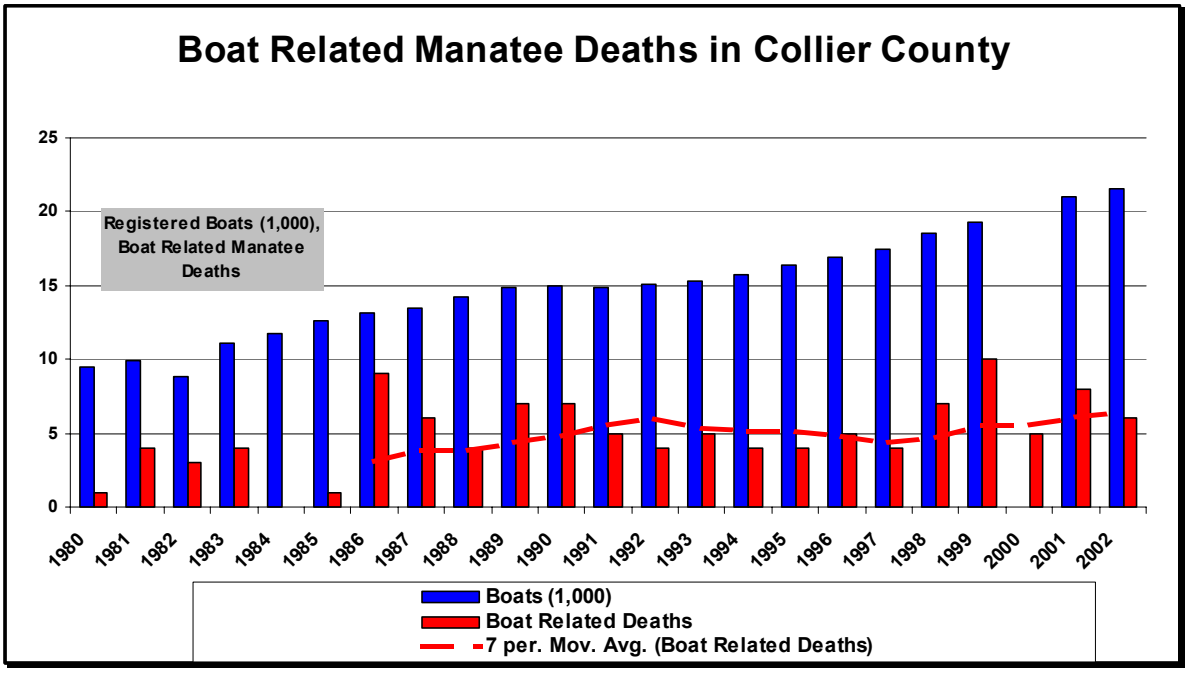


Figure 3.

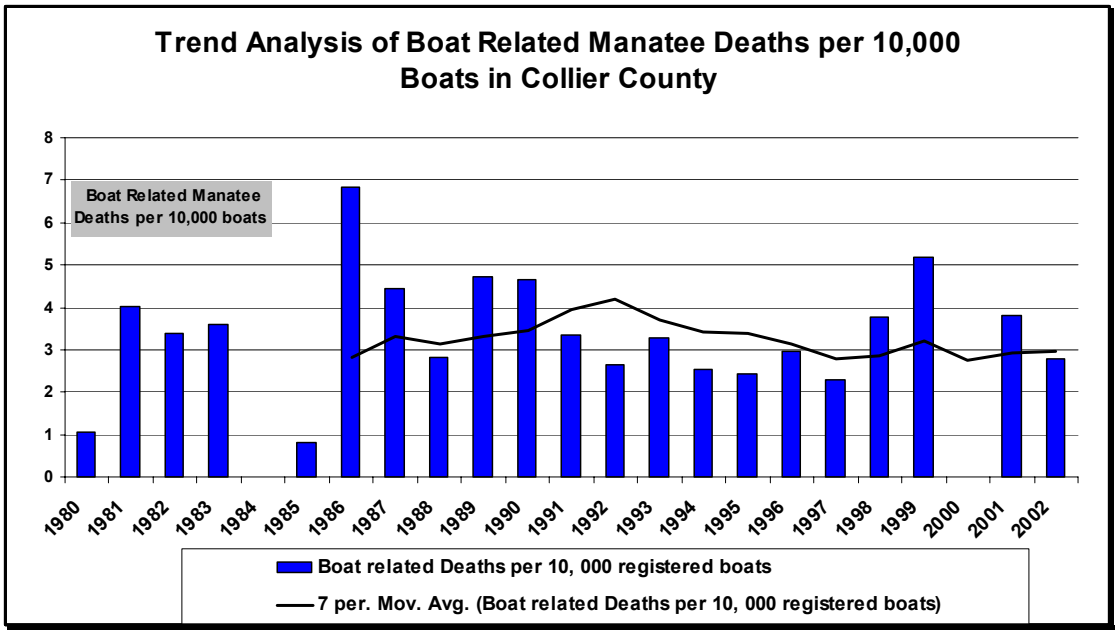

Trend Analysis of Boat Related Manatee Deaths per 10,000 Boats in Collier County
Boat Related Manatee Deaths per 10,000 boats
8
7
6
5
4
3
2
1
0
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Boat related Deaths per 10, 000 registered boats
7 per. Mov. Avg. (Boat related Deaths per 10, 000 registered boats)

Figure 4.

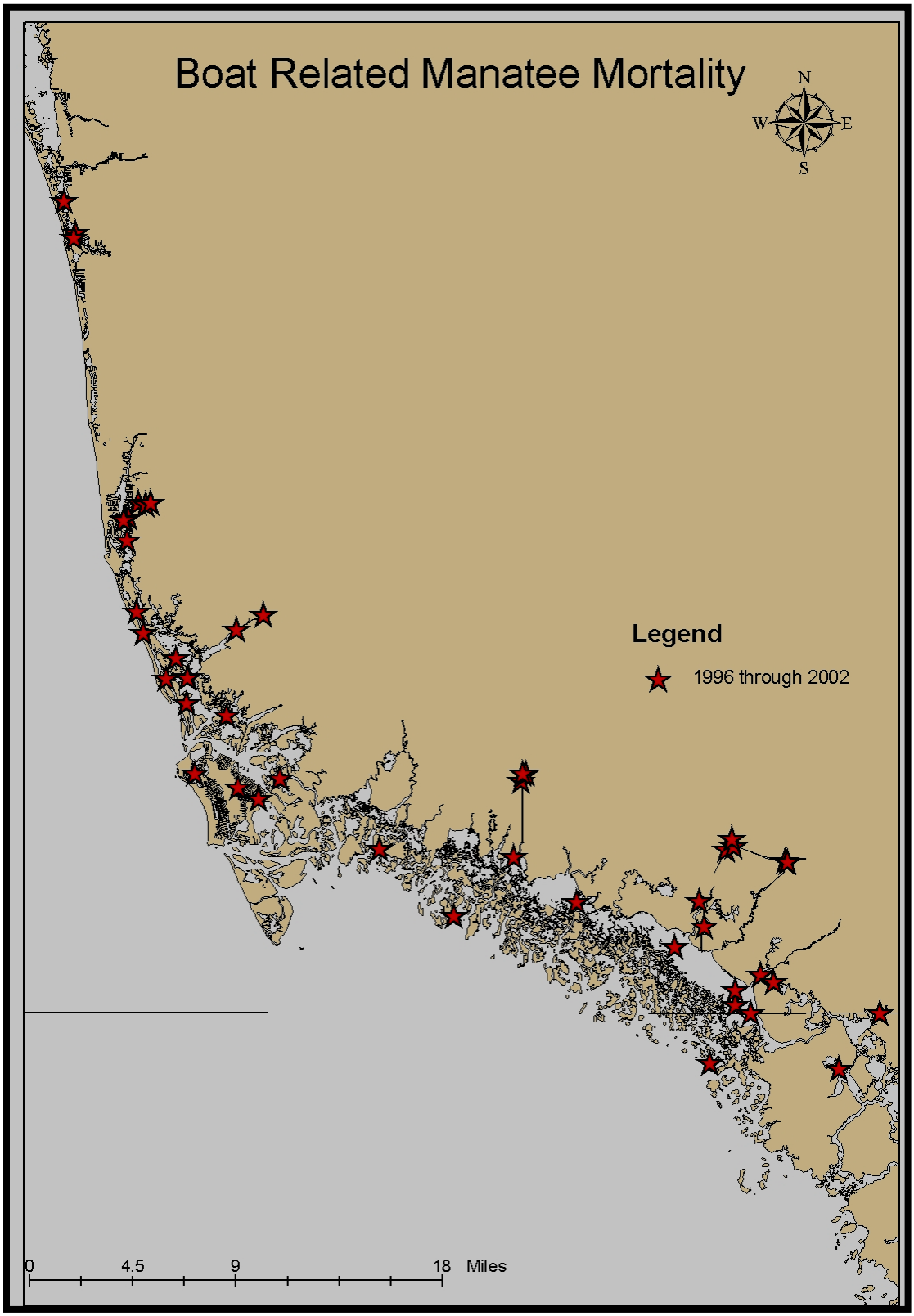

Boat Related Manatee Mortality
N
W
E
S
Legend
1996 through 2002
0
4.5
9
18
Miles

Figure 5.

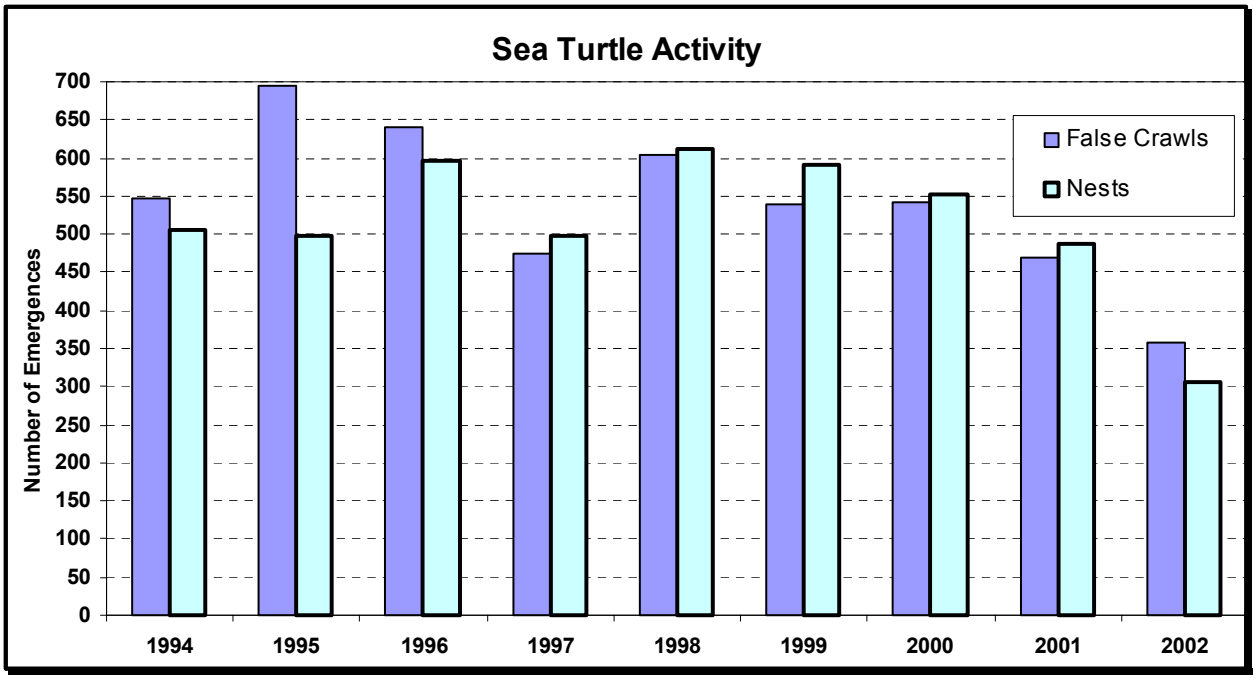


Figure 6

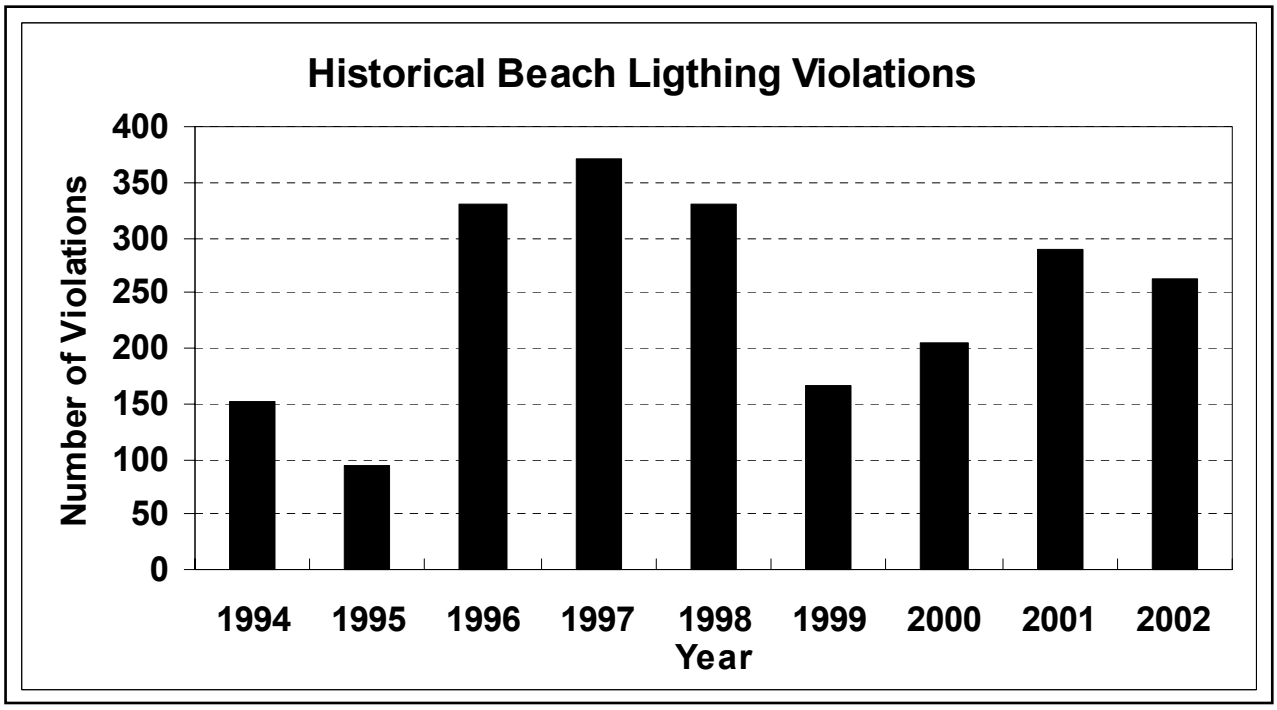


Figure 7.

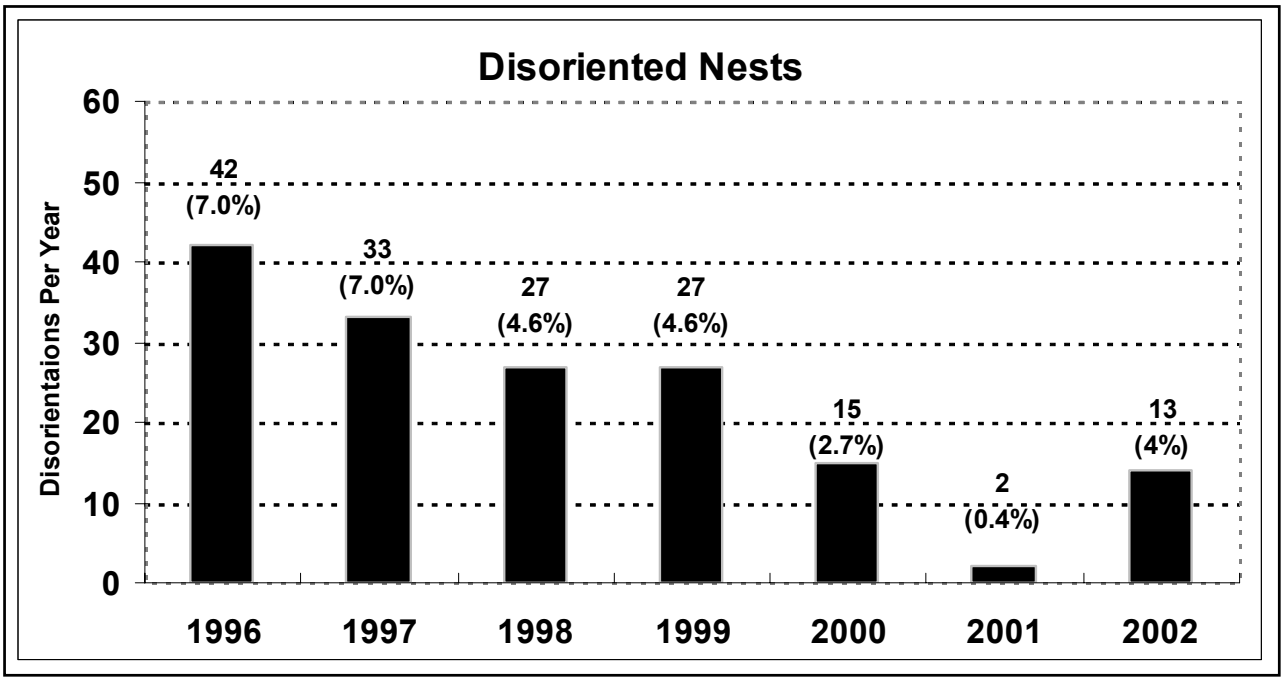

Disoriented Nests
Disorientaions Per Year
60
50
40
30
20
10
0
42
(7.0%)
33
(7.0%)
27
(4.6%)
27
(4.6%)
15
(2.7%)
2
(0.4%)
13
(4%)
1996
1997
1998
1999
2000
2001
2002

Figure 8.

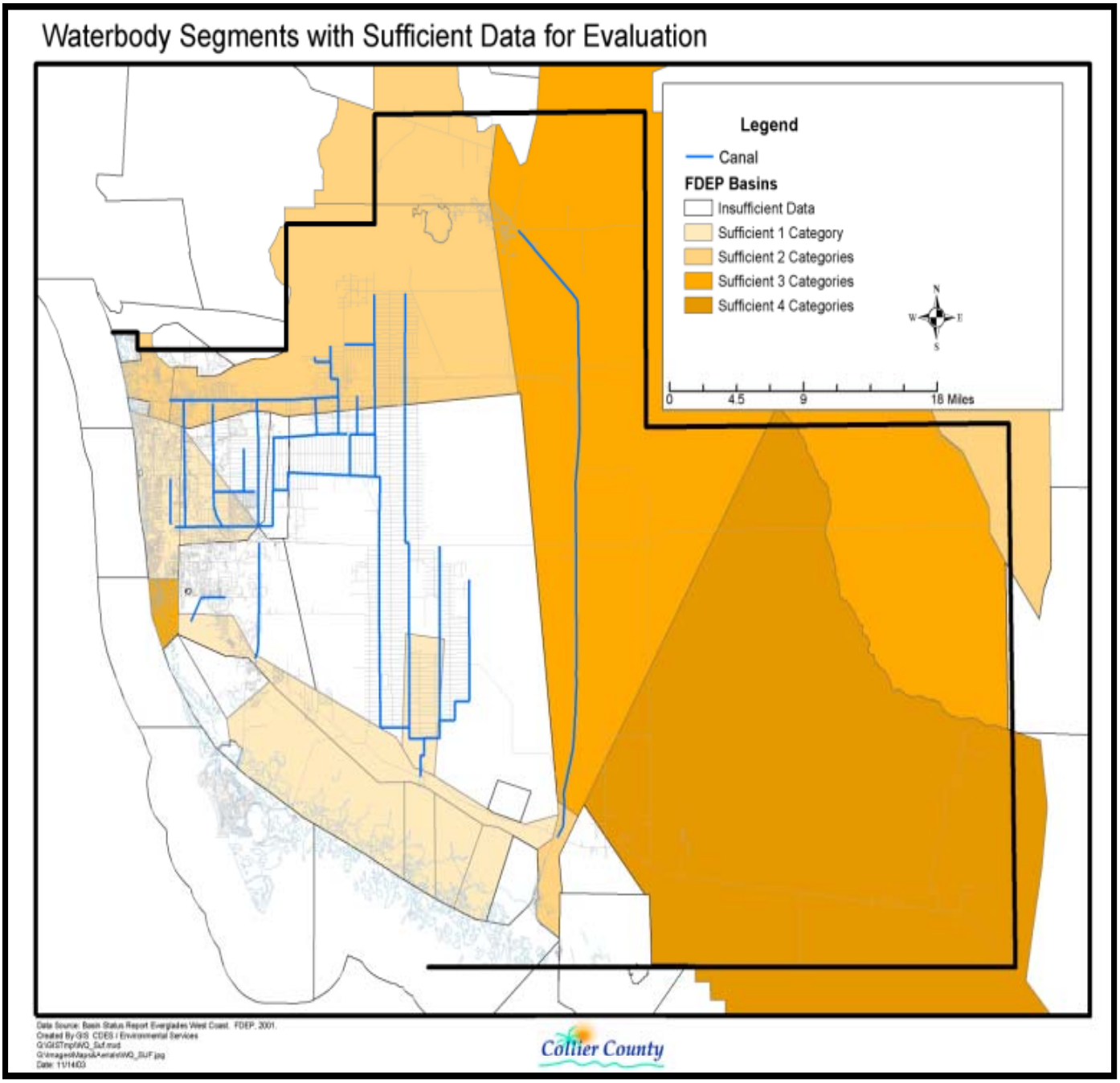

Waterbody Segments with Sufficient Data for Evaluation
Legend
Canal
FDEP Basins
Insufficient Data
Sufficient 1 Category
Sufficient 2 Categories
Sufficient 3 Categories
Sufficient 4 Categories
N
W
E
S
0
4.5
9
18 Miles
Collier County

Figure 9.

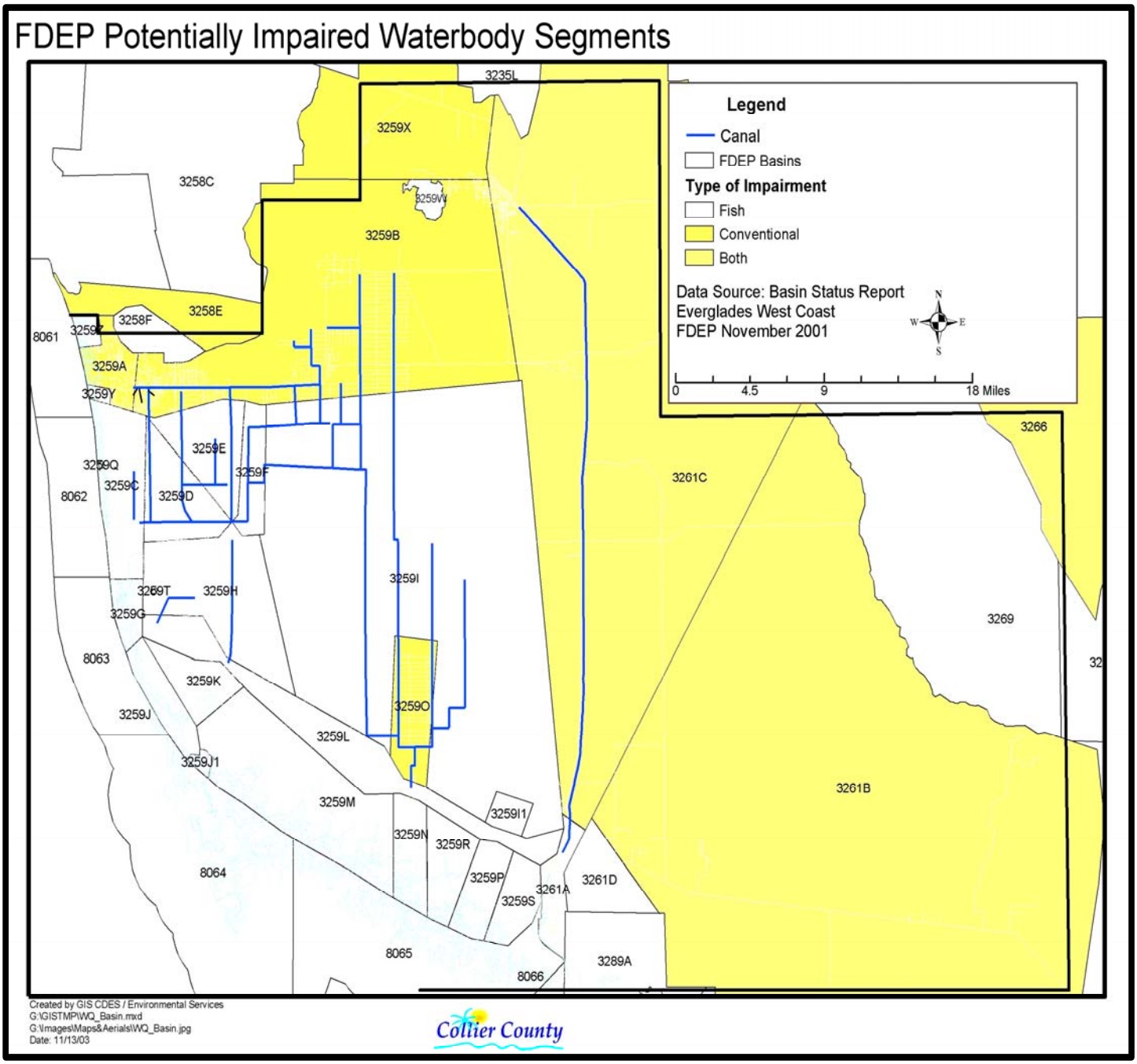
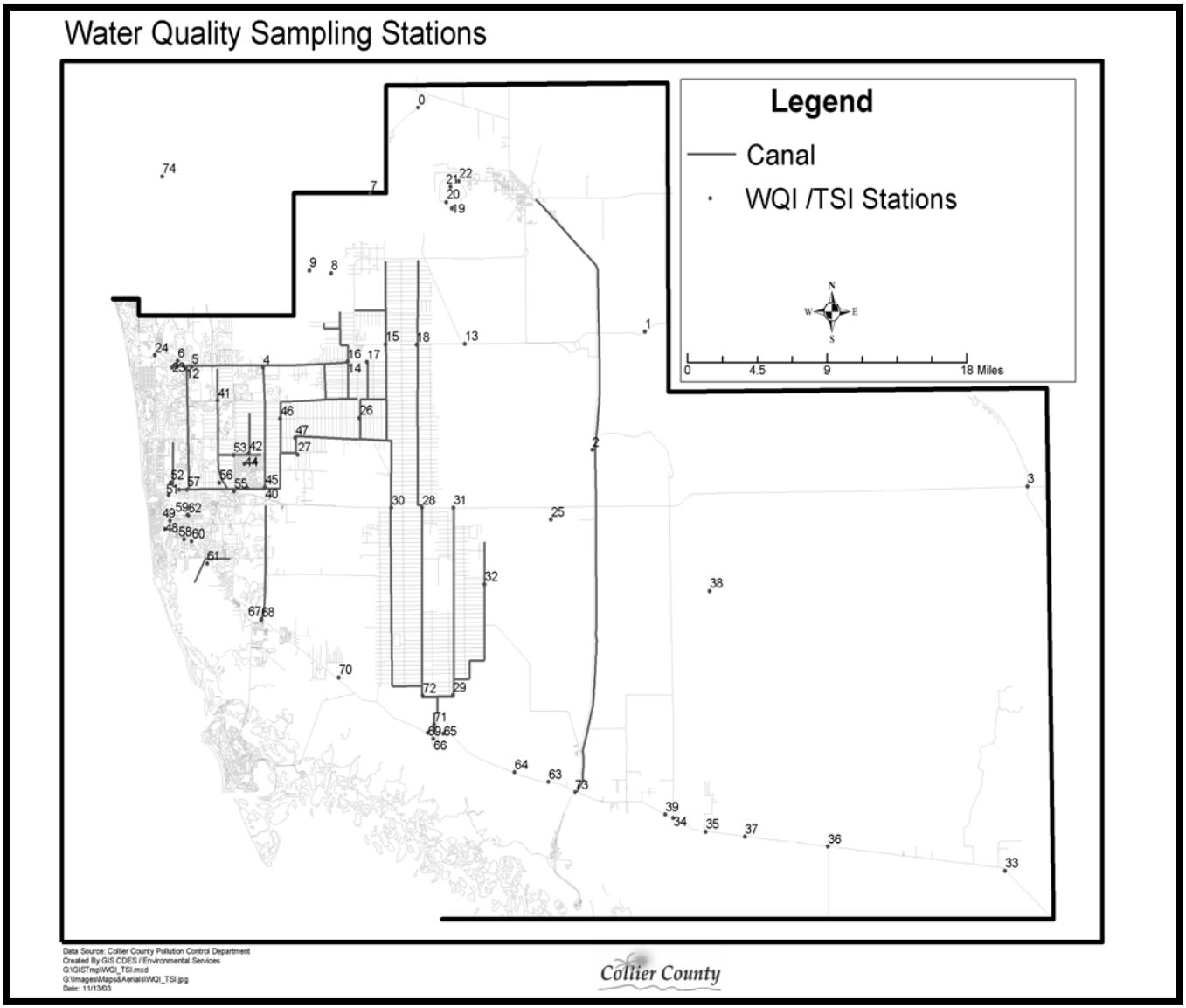

FDEP Potentially Impaired Waterbody Segments
Legend
Canal
FDEP Basins
Type of Impairment
Fish
Conventional
Both
Data Source: Basin Status Report
Everglades West Coast
FDEP November 2001
N
W
E
S
0
4.5
9
18 Miles
3235L
3259X
3258C
3259W
3259B
3258E
3258F
3258Z
8061
3259A
3259Y
3259E
3259Q
3259C
3259F
8062
3259D
3259I
3259T
3259H
3259G
8063
3259K
3259J
3259O
3259L
3259J1
3259M
3259I1
3259N
3259R
8064
3259P
3259S
3261A
3261D
8065
3289A
8066
3266
3261C
3269
3261B
Created by GIS CDES / Environmental Services
G:\GISTMP\WQ_Basin.mxd
G:\Images\Maps&Aerials\WQ_Basin.jpg
Date: 11/13/03
Collier County

Figure 10.



See Attachment A for the Map Index of Collier County Monitoring Stations

Table 1. Potentially Impaired Waterbody Segments (Source: The Everglades West Coast Basin Status Report, November 2001)

Waterbody (WBID)	Waterbody Type	Metals	Conventionals	Nutrients	Fish Advisories	Bio-assessments	Impairment Analytes
Cocohatchee River (3259A)	Stream		*Potentially impaired		*Potentially impaired		DO, fish consumption
Cocohatchee River Canal (3259B)	Stream	*	*Potentially impaired				DO
Gordon River (3259C)	Stream		*				
Gordon River Canal (3259D)	Stream		*				
Henderson Creek Canal (3259E)	Stream						
Golden Gate Canal (3259F)	Estuarine						
Naples Bay (3259G)	Estuarine	*	*	*			
Henderson Creek Canal (3259H)	Stream						
West Collier (3259I)	Stream						
Rookery Bay (3259J)	Estuarine						
Runoff to Gulf (3259K)	Stream						
Blackwater River (3259L)	Stream		*				
Runoff to Gulf (3259M)	Estuarine		*				
Runoff to Gulf (3259N)	Estuarine		*				
Faka Union Canal (3259O)	Stream		* Potentially impaired				DO
Ferguson River (3259P)	Estuarine		*				
Outer Clam Bay (3259Q)	Estuarine		*				
Runoff to Gulf (3259R)	Estuarine		*				
Runoff to	Estuarine						

Table 1. Potentially Impaired Waterbody Segments (Source: The Everglades West Coast Basin Status Report, November 2001)

Waterbody (WBID)	Waterbody Type	Metals	Conventionals	Nutrients	Fish Advisories	Bio-assessments	Impairment Analytes
Gulf (3259S)							
Lake Avalon (3259T)	Lake						
Lake Trafford (3259W)	Lake		*		*		
Drainage to Corkscrew (3259X)	Stream	*	* Potentially impaired				DO
Vanderbilt Waterway (3259Y)	Estuarine						
Little Hickory Bay (3259Z)	Estuarine						
C-139 (3255)	Stream				* Potentially impaired		Fish Consumption
Barron River Canal (3261A)	Stream		*		* Potentially impaired		Fish Consumption
Tamiami Canal (3261B)	Stream	*	* Potentially impaired	*	* Potentially impaired		DO, Fish Consumption
Barron River Canal (3261C)	Stream	*	* Potentially impaired		* Potentially impaired		DO, Fish Consumption
Tamiami Canal (3266D)	Stream						
L-28 Interceptor (3266)	Stream	*	* Potentially impaired		Potentially impaired		DO, Fish Consumption

WBID – Waterbody ID,
*** Sufficient data available for assessing impairment,**
DO – Dissolved oxygen

Table 2. Analysis of Objectives relating to the Coastal Barrier and Estuarine Resources Issue

CCME Objectives Linked to the Issue	Extent to which Objectives have been achieved	Unanticipated Changes Resulting in Problems or Opportunities	Recommendations
OBJECTIVE 2.2: All canals, rivers, and flow ways discharging into estuaries shall meet all applicable Federal, State, or local water quality standards.	The Everglades West Coast Basin Status Report has identified 9 waterbodies within Collier County that have potential impairment of water uses, therefore, this objective has not been completely achieved.	Not applicable.	Continue with monitoring water quality within Collier County waterbodies. Coordinate with FDEP's effort for determining TMDLs. Consider developing and implementing a program to reduce non-point source pollution to identified surface waters.
OBJECTIVE 2.3: All estuaries shall meet all applicable federal, state and local water quality standards.	The Everglades West Coast Basin Status Report has identified 9 waterbodies within Collier County that have potential impairment of water uses, therefore, this objective has not been completely achieved.	None applicable.	Continue with monitoring water quality within Collier County waterbodies. Coordinate with FDEP's effort for determining TMDLs. Consider developing and implementing a program to reduce non-point source pollution to identified surface waters.

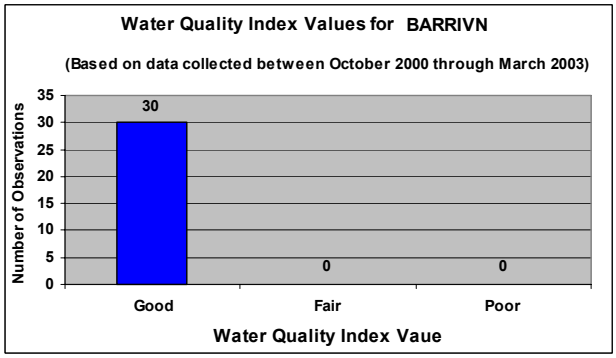
CCME Objectives Linked to the Issue	**Extent to which Objectives have been achieved**	**Unanticipated Changes Resulting in Problems or Opportunities**	**Recommendations**
OBJECTIVE 2.5: The County will continue with the implementation of its estuarine management program by requiring development to meet its current standards addressing stormwater management, and the protection of seagrass beds, dune and strand, and wetland habitats.	This Objective has been achieved by applying the referenced standards in its development review process.	Not applicable.	None.
OBJECTIVE 6.3 The County shall protect and conserve submerged marine habitats.	This Objective has been achieved by applying the boat dock standards in its development review process.	Not applicable.	None.
OBJECTIVE 7.2 Historical data from 1990-1996 shows that the average number of manatee deaths in Collier County due to incidents with watercraft is approximately 3.2 per year per 10,000 boats. Through Policies 7.2.1 through 7.2.4, the County's objective is to minimize the number of manatee deaths due to boat related incidents.	The data presented demonstrates that this Objective has been achieved.	The County is working with a stakeholders group to review the current Manatee Protection Plan to determine possible improvements. A preliminary set of recommendations may be available in June 2004.	Subject to the review of the Manatee Protection Stakeholders Group recommendations.

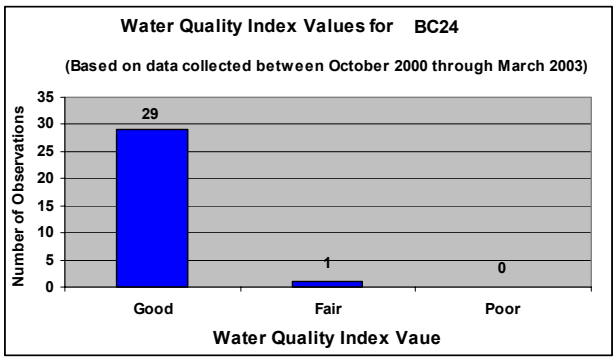
CCME Objectives Linked to the Issue	**Extent to which Objectives have been achieved**	**Unanticipated Changes Resulting in Problems or Opportunities**	**Recommendations**
OBJECTIVE 7.3 Historical data from 1996-1999 shows that the average number of sea turtle disorientations is 5% of total nests. Through the following policies, the County's objective is to minimize the number of sea turtle disorientations.	The data presented demonstrates that this Objective has been achieved.	Not applicable.	None.
OBJECTIVE 7.4 The County shall continue to improve marine fisheries productivity by building additional artificial reefs.	The data presented demonstrates that this Objective has been achieved.	Not applicable.	None.
OBJECTIVE 10.6: The County shall conserve the habitats, species, natural shoreline and dune systems contained within the County's coastal zone.	The data presented demonstrates that this Objective has been achieved.	Not applicable.	None.

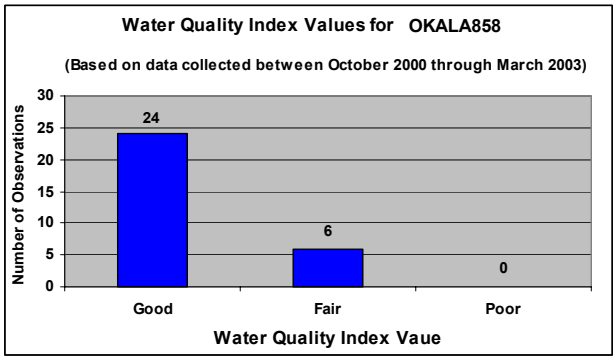
Attachment A.
Map Index of Collier County Monitoring Stations

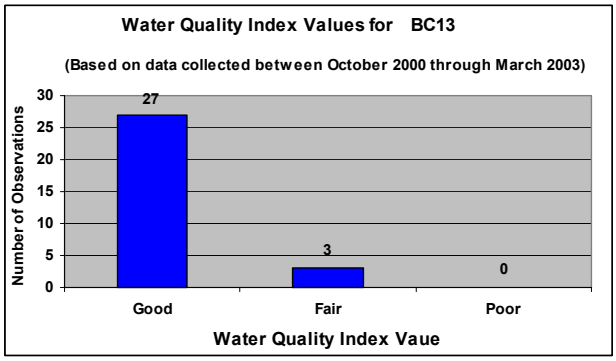
ID	Station	Lattitude	Longitude	Basin	Description	WBID
0	CORKSCRD	26.49581	-81.52881	CRB	COCOHATCHEE RIVER	3259X
1	OKALA858	26.30483	-81.29206	OK	OKALOACOOCHEE	3261C
2	BC24	26.20352	-81.34646	BRC	BARON RIVER CANAL	3261C
3	TIEBACK	26.17277	-80.89416	L28	L-28 TIEBACK BASIN	3266
4	BC26	26.27242	-81.68936	CRB	COCOHATCHEE RIVER	3259B
5	COCEOF31	26.27283	-81.76352	CRB	COCOHATCHEE RIVER	3259B
6	COCPALM	26.27780	-81.77806	CRB	COCOHATCHEE RIVER	3259B
7	CORKN	26.42202	-81.57849	CRB	COCOHATCHEE RIVER	3259B
8	CORKS	26.35366	-81.61880	CRB	COCOHATCHEE RIVER	3259B
9	CORKSW	26.35596	-81.64131	CRB	COCOHATCHEE RIVER	3259B
10	BC13	26.27308	-81.77989	CRB	COCOHATCHEE RIVER	3259B
11	BC14	26.27268	-81.77832	CRB	COCOHATCHEE RIVER	3259B
12	BC15	26.27109	-81.76943	CRB	COCOHATCHEE RIVER	3259B
13	BC25	26.29396	-81.47943	FSB	FAKAHATCHEE STRAND	3259B
14	CORK@846	26.27798	-81.60102	MGG	MAIN GOLDEN GATE	3259B
15	GGC@858	26.29332	-81.56176	MGG	MAIN GOLDEN GATE	3259B
16	CORK@846	26.27798	-81.60102	MGG	MAIN GOLDEN GATE	3259B
17	ORANGETR	26.27759	-81.58105	MGG	MAIN GOLDEN GATE	3259B
18	FAKA858	26.29288	-81.52964	FKC	FAKA-UNION CANAL	3259B
19	LKTRAF5	26.40946	-81.49341	FSB	FAKAHATCHEE STRAND	3259W
20	LKTRAF4	26.41521	-81.49902	FSB	FAKAHATCHEE STRAND	3259W
21	LKTRAF3	26.42810	-81.49493	FSB	FAKAHATCHEE STRAND	3259W
22	LKTRAF1	26.43287	-81.48631	FSB	FAKAHATCHEE STRAND	3259W
23	ECOCORIV	26.27207	-81.78376	CRB	COCOHATCHEE RIVER	3259A
24	COCAT41	26.28245	-81.80188	MCB	MISCELLANEOUS COASTAL BASI	3259A
25	CHKMATE	26.14361	-81.38929	FSB	FAKAHATCHEE STRAND	3259I
26	GGC@GGBE	26.22989	-81.58861	MGG	MAIN GOLDEN GATE	3259I
27	GGC05@23	26.19814	-81.65282	MGG	MAIN GOLDEN GATE	3259I
28	BC10	26.15314	-81.52340	FKC	FAKA-UNION CANAL	3259I
29	BC8	25.99350	-81.49049	FKC	FAKA-UNION CANAL	3259I
30	BC9	26.15317	-81.55526	FKC	FAKA-UNION CANAL	3259I
31	BC11	26.15351	-81.49064	FKC	FAKA-UNION CANAL	3259I
32	BC12	26.08830	-81.45811	FKC	FAKA-UNION CANAL	3259I
33	GATOR	25.84308	-80.91769	MCB	MISCELLANEOUS COASTAL BASI	3261B
34	BC16	25.88780	-81.26172	T B	TURNER RIVER CANAL	3261B
35	BC17	25.87638	-81.22805	T B	TURNER RIVER CANAL	3261B
36	MONROE	25.86358	-81.10118	T B	TURNER RIVER CANAL	3261B
37	TAMBR90	25.87223	-81.18740	T B	TURNER RIVER CANAL	3261B
38	CHKMATE	26.08310	-81.22420	T B	TURNER RIVER CANAL	3261B
39	TURNER	25.89084	-81.26975	T B	TURNER RIVER CANAL	3261B
40	BC23	26.17034	-81.68674	MGG	MAIN GOLDEN GATE	3259E
41	I75C@VAN	26.24413	-81.73611	MGG	MAIN GOLDEN GATE	3259E
42	GGC14	26.19881	-81.70361	MGG	MAIN GOLDEN GATE	3259E
43	GCB02@SUN	26.19186	-81.69648	MGG	MAIN GOLDEN GATE	3259E
44	GCB01@20	26.19017	-81.70792	MGG	MAIN GOLDEN GATE	3259E
45	GGCAT951	26.17034	-81.68674	MGG	MAIN GOLDEN GATE	3259E
46	CYPR@GGB	26.22903	-81.67112	MGG	MAIN GOLDEN GATE	3259F
47	GGC@WHITE	26.21266	-81.65528	MGG	MAIN GOLDEN GATE	3259F
48	BC1	26.13412	-81.79046	MCB	MISCELLANEOUS COASTAL BASI	3259C
49	BC2	26.14094	-81.78513	MCB	MISCELLANEOUS COASTAL BASI	3259C
50	BC3	26.16328	-81.78654	GRE	GORDON RIVER	3259C
51	BC4	26.16777	-81.77574	GRE	GORDON RIVER	3259C
52	GORDONRIV	26.17380	-81.78461	GRE	GORDON RIVER	3259C
53	GREEN@SB	26.19744	-81.71936	MGG	MAIN GOLDEN GATE	3259D
54	MGG03@32	26.16997	-81.70515	MGG	MAIN GOLDEN GATE	3259D
55	GGC10	26.16678	-81.71858	MGG	MAIN GOLDEN GATE	3259D
56	D2886	26.17397	-81.73378	MGG	MAIN GOLDEN GATE	3259D
57	GGCAT31	26.16806	-81.76754	GRE	GORDON RIVER	3259D
58	BC5	26.12536	-81.77037	MCB	MISCELLANEOUS COASTAL BASI	3259H
59	ROCKW	26.14603	-81.76665	MCB	MISCELLANEOUS COASTAL BASI	3259H
60	HALDCRK	26.12370	-81.76263	WM6	WATER MANAGEMENT	3259H
61	LELY	26.10465	-81.74625	WM6	WATER MANAGEMENT	3259H
62	ROCKE	26.14549	-81.76620	WM6	WATER MANAGEMENT	3259H
63	BC18	25.91867	-81.39096	FSB	FAKAHATCHEE STRAND	3259L
64	BC19	25.92696	-81.42645	FSB	FAKAHATCHEE STRAND	3259L
65	BC21	25.96047	-81.50022	FSB	FAKAHATCHEE STRAND	3259L
66	FAKAUPOI	25.95594	-81.51051	MCB	MISCELLANEOUS COASTAL BASI	3259L
67	BC22	26.05711	-81.68955	HEC	HENDERSON CREEK	3259L
68	BC6	26.05667	-81.68986	HEC	HENDERSON CREEK	3259L
69	BC20	25.96104	-81.51664	SCB	SOUTHERN COASTAL	3259L
70	TOMATO41	26.00800	-81.60911	SCB	SOUTHERN COASTAL	3259L
71	FAKA	25.96797	-81.50983	FKC	FAKA-UNION CANAL	3259O
72	BC7	25.99276	-81.52181	SCB	SOUTHERN COASTAL	3259O
73	BARRIVN	25.90977	-81.36348	MCB	MISCELLANEOUS COASTAL BASI	3261A
74	LKTRAF2	26.43551	-81.79511			

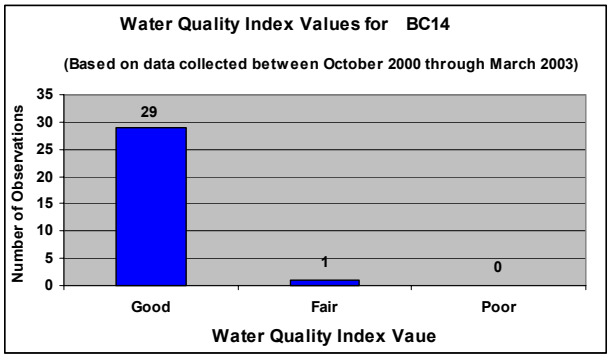
Attachment B.
Water Quality Index Scores for Collier County Monitoring Stations

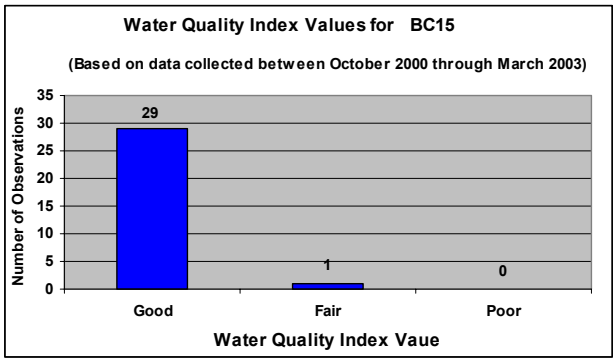


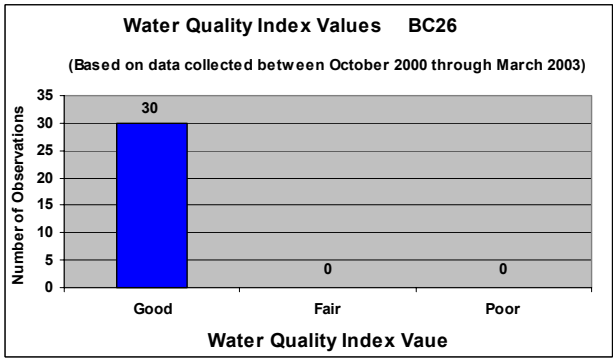


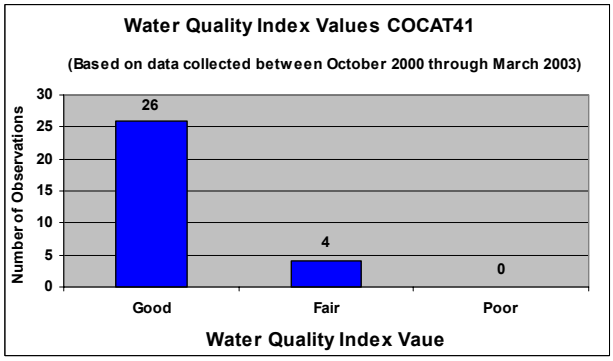


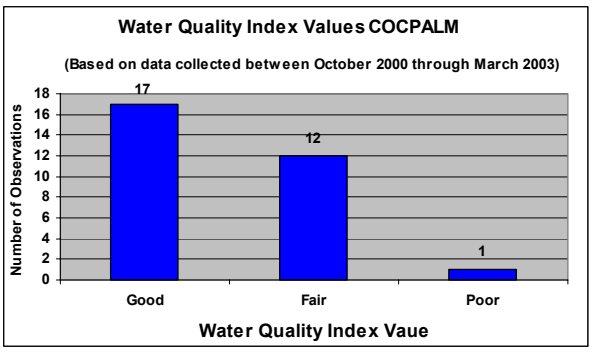


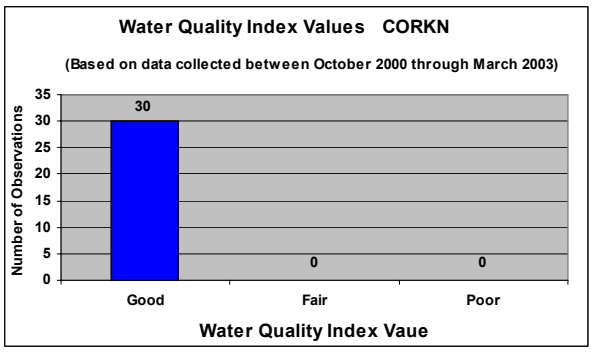


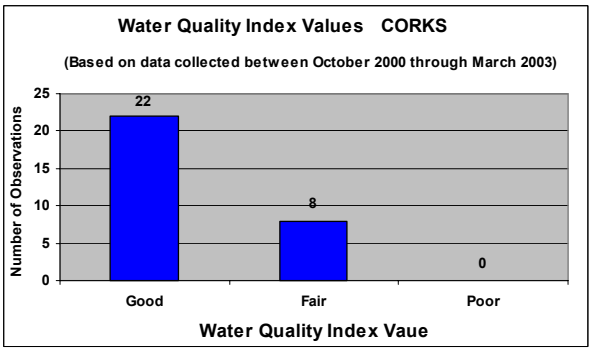


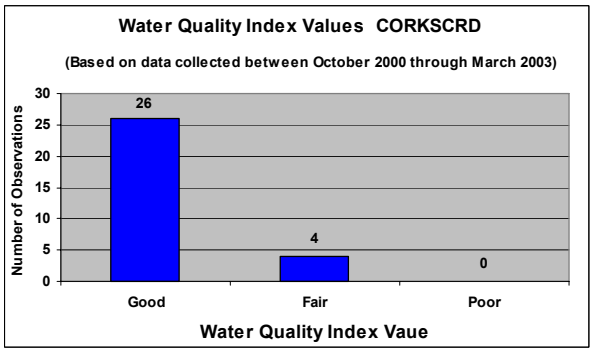


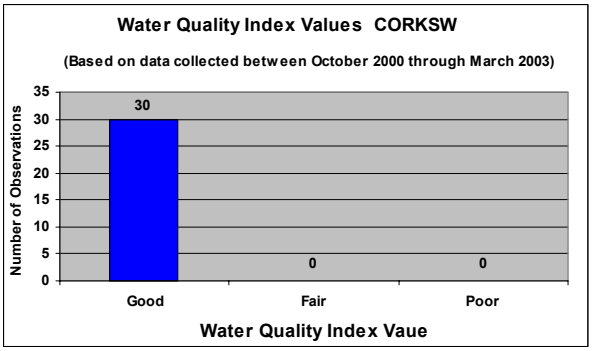


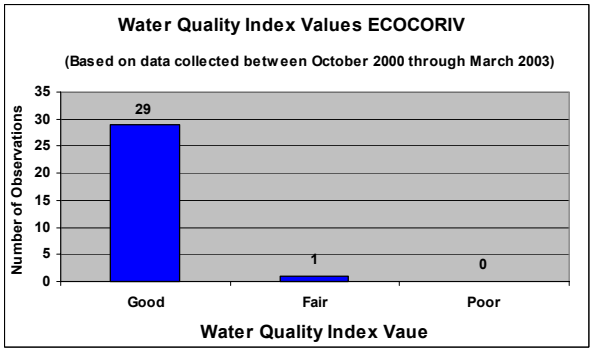

Water Quality Index Values COCPALM
(Based on data collected between October 2000 through March 2003)
Number of Observations
17
12
1
Good
Fair
Poor
Water Quality Index Vaue

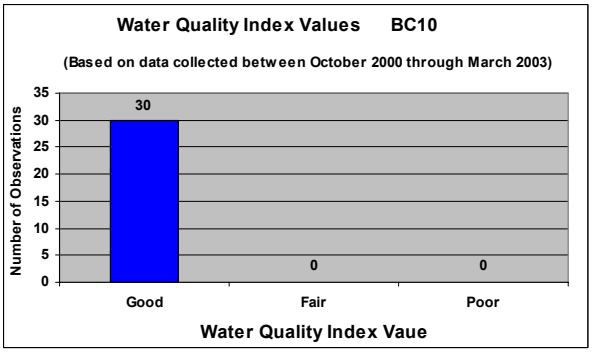

Water Quality Index Values CORKN
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

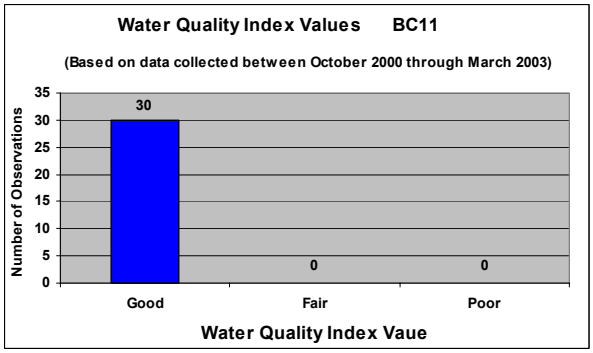

Water Quality Index Values CORKS
(Based on data collected between October 2000 through March 2003)
Number of Observations
22
8
0
Good
Fair
Poor
Water Quality Index Vaue

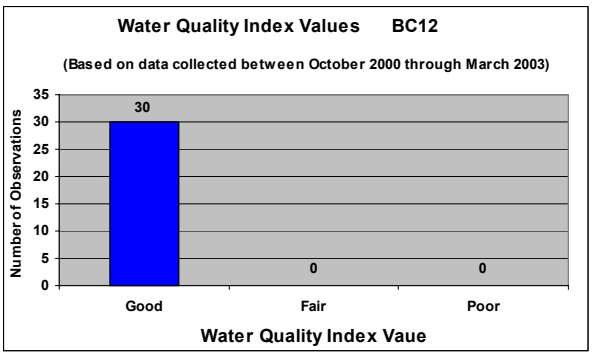

Water Quality Index Values CORKSCRD
(Based on data collected between October 2000 through March 2003)
Number of Observations
26
4
0
Good
Fair
Poor
Water Quality Index Vaue

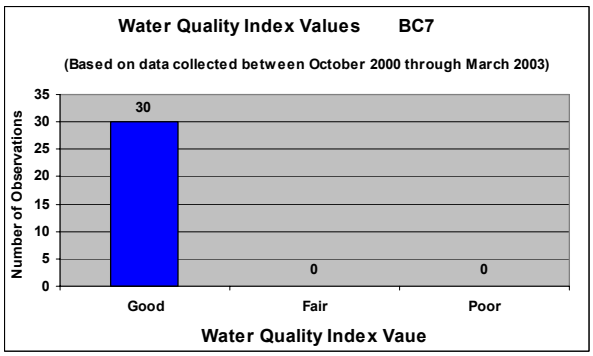

Water Quality Index Values CORKSW
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

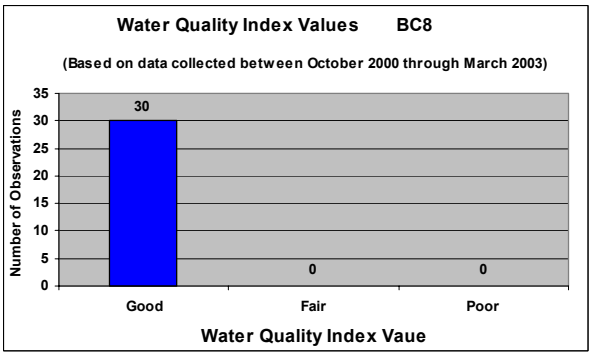

Water Quality Index Values ECOCORIV
(Based on data collected between October 2000 through March 2003)
Number of Observations
29
1
0
Good
Fair
Poor
Water Quality Index Vaue

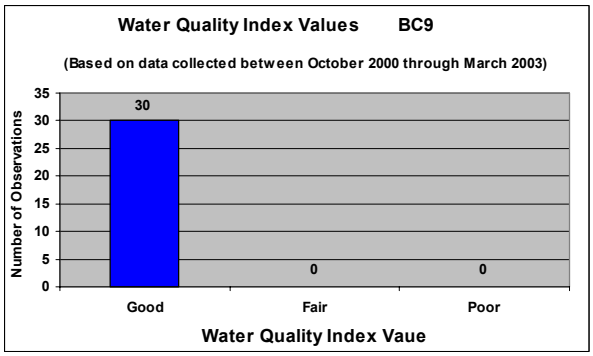

Water Quality Index Values BC10
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

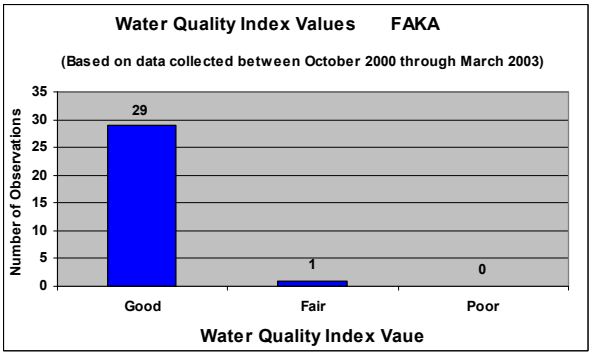

Water Quality Index Values BC11
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

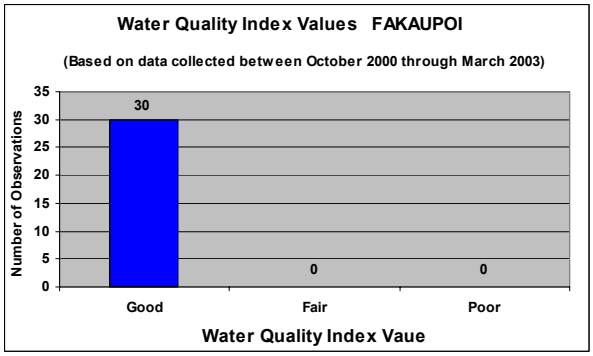

Water Quality Index Values BC12
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

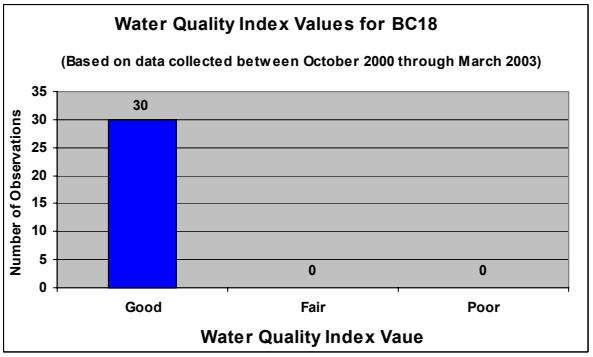

Water Quality Index Values BC7
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

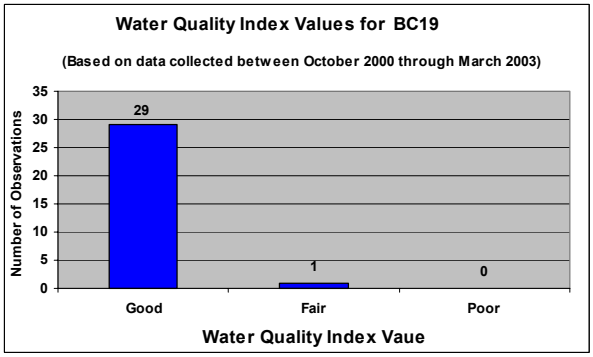

Water Quality Index Values BC8
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

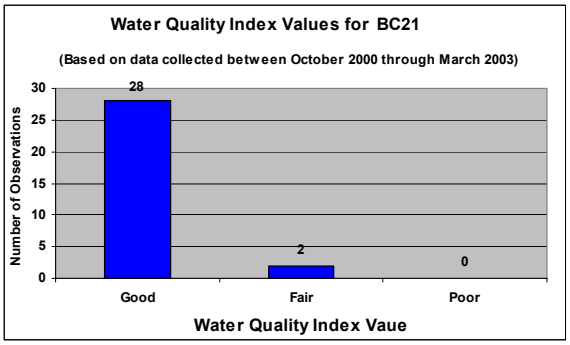

Water Quality Index Values BC9
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

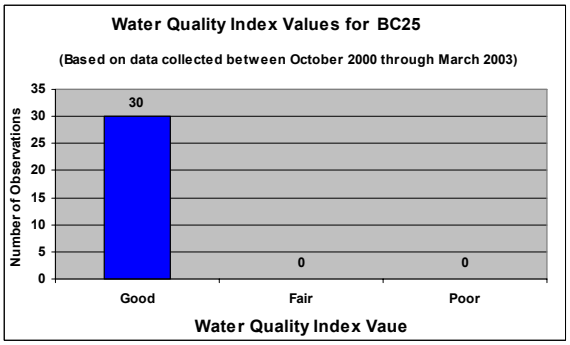

Water Quality Index Values FAKA
(Based on data collected between October 2000 through March 2003)
Number of Observations
29
1
0
Good
Fair
Poor
Water Quality Index Vaue

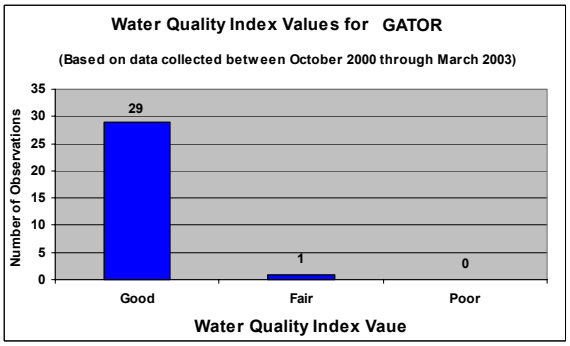

Water Quality Index Values FAKAUPOI
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

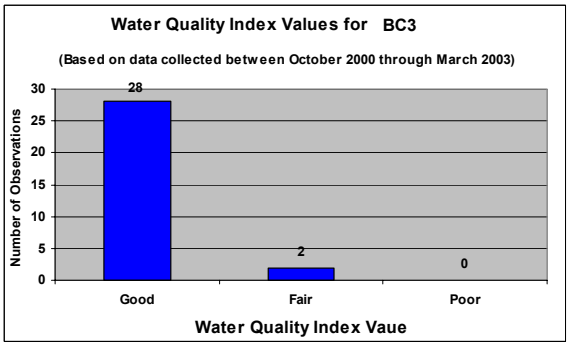

Water Quality Index Values for BC18
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

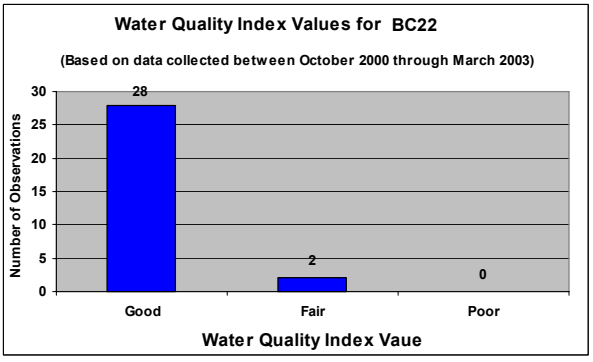

Water Quality Index Values for BC19
(Based on data collected between October 2000 through March 2003)
Number of Observations
29
1
0
Good
Fair
Poor
Water Quality Index Vaue

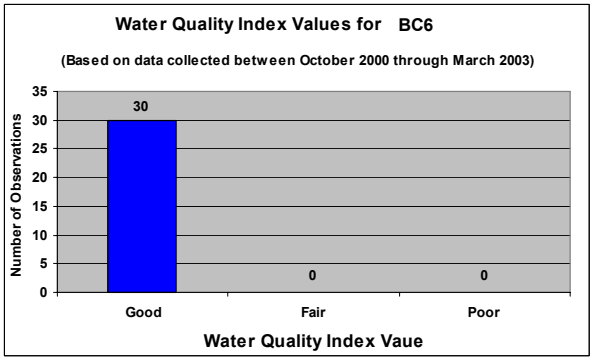

Water Quality Index Values for BC21
(Based on data collected between October 2000 through March 2003)
Number of Observations
28
2
0
Good
Fair
Poor
Water Quality Index Vaue

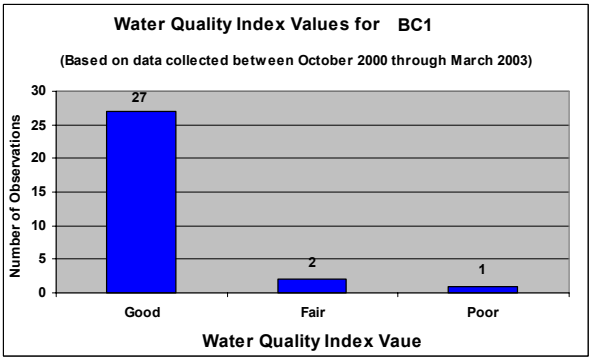

Water Quality Index Values for BC25
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

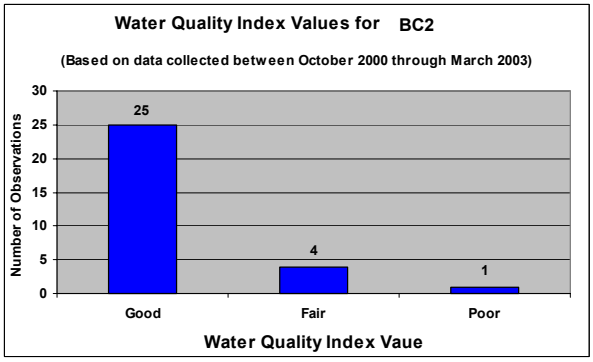

Water Quality Index Values for GATOR
(Based on data collected between October 2000 through March 2003)
Number of Observations
29
1
0
Good
Fair
Poor
Water Quality Index Vaue

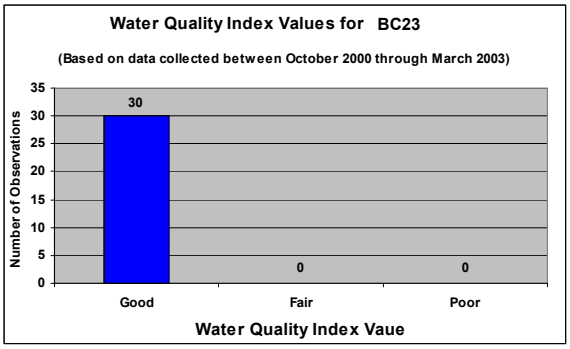

Water Quality Index Values for BC3
(Based on data collected between October 2000 through March 2003)
Number of Observations
28
2
0
Good
Fair
Poor
Water Quality Index Vaue

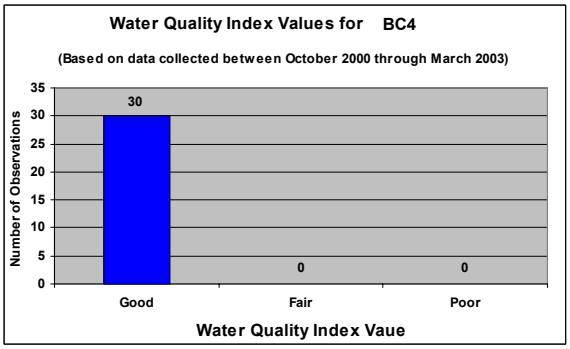

Water Quality Index Values for BC22
(Based on data collected between October 2000 through March 2003)
Number of Observations
28
2
0
Good
Fair
Poor
Water Quality Index Vaue

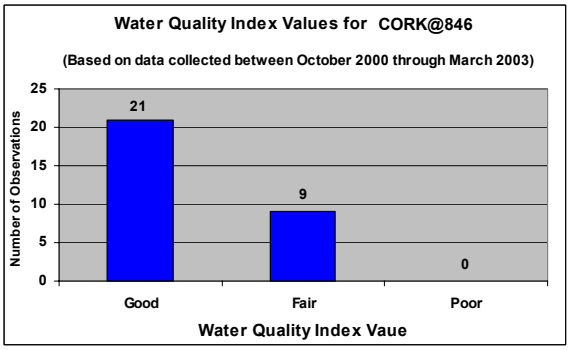

Water Quality Index Values for BC6
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

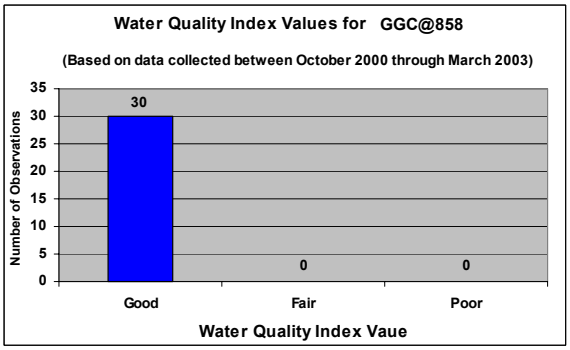

Water Quality Index Values for BC1
(Based on data collected between October 2000 through March 2003)
Number of Observations
27
2
1
Good
Fair
Poor
Water Quality Index Vaue

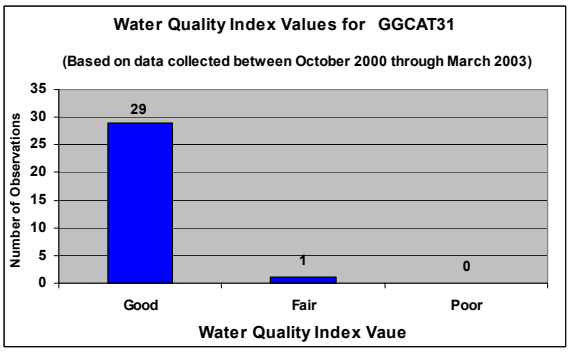

Water Quality Index Values for BC2
(Based on data collected between October 2000 through March 2003)
Number of Observations
25
4
1
Good
Fair
Poor
Water Quality Index Vaue

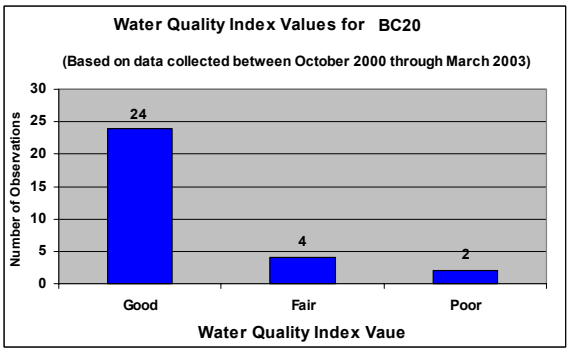

Water Quality Index Values for BC23
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

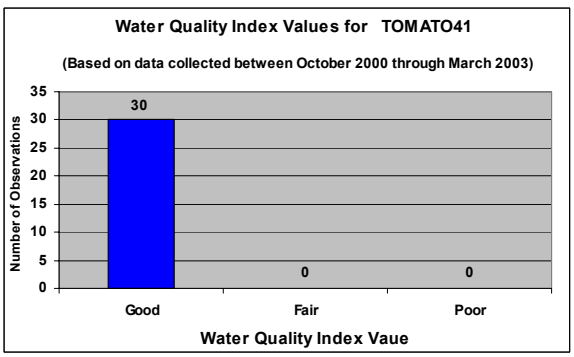

Water Quality Index Values for BC4
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

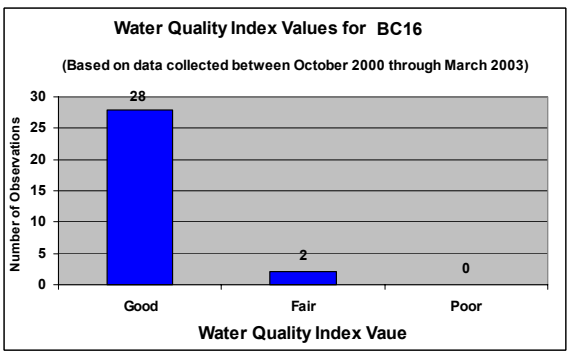

Water Quality Index Values for CORK@846
(Based on data collected between October 2000 through March 2003)
Number of Observations
21
9
0
Good
Fair
Poor
Water Quality Index Vaue

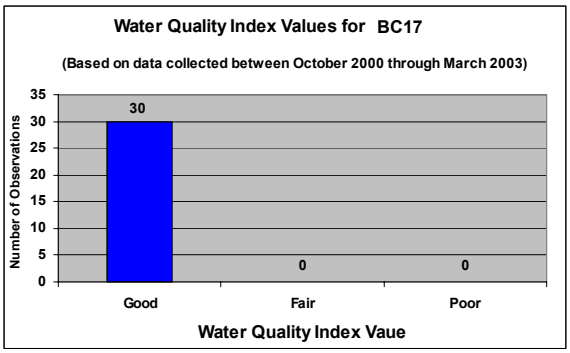

Water Quality Index Values for GGC@858
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

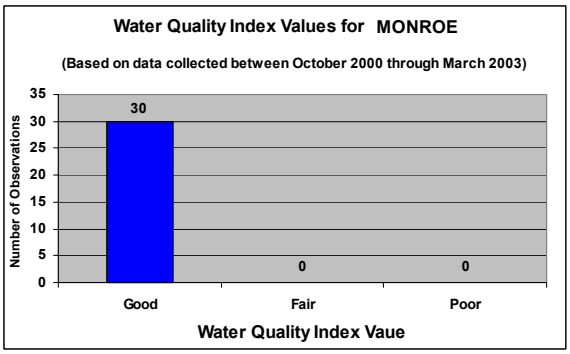

Water Quality Index Values for GGCAT31
(Based on data collected between October 2000 through March 2003)
Number of Observations
29
1
0
Good
Fair
Poor
Water Quality Index Vaue

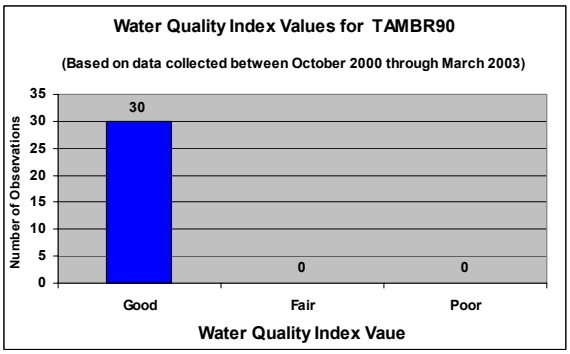

Water Quality Index Values for BC20
(Based on data collected between October 2000 through March 2003)
Number of Observations
24
4
2
Good
Fair
Poor
Water Quality Index Vaue

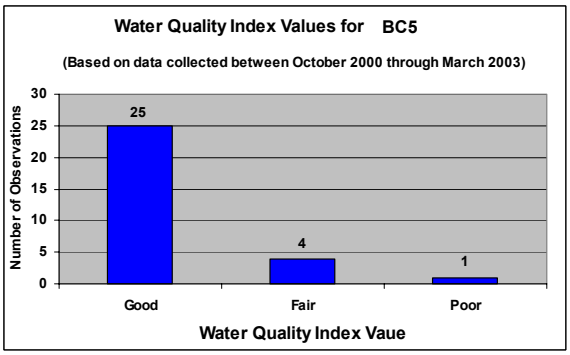

Water Quality Index Values for TOMATO41
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
0
0
Good
Fair
Poor
Water Quality Index Vaue

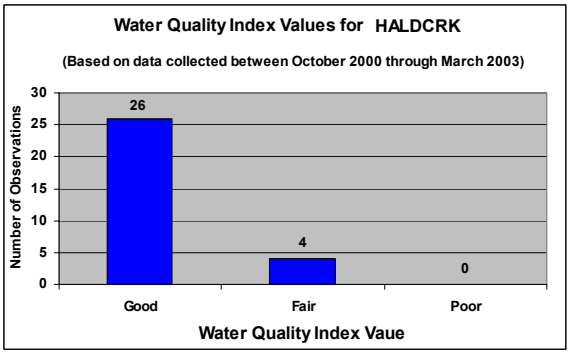

Water Quality Index Values for BC16
(Based on data collected between October 2000 through March 2003)
Number of Observations
28
2
0
Good
Fair
Poor
Water Quality Index Vaue

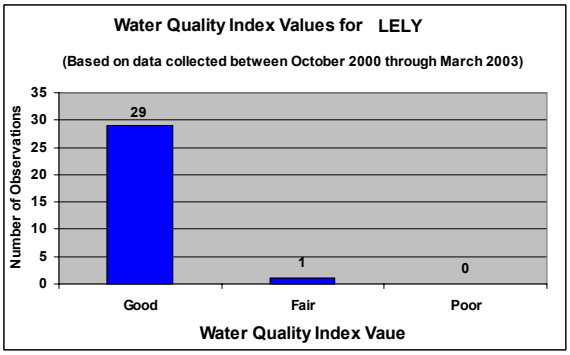

Water Quality Index Values for BC17
(Based on data collected between October 2000 through March 2003)
Number of Observations
35
30
25
20
15
10
5
0
30
0
0
Good
Fair
Poor
Water Quality Index Vaue


Water Quality Index Values for MONROE
(Based on data collected between October 2000 through March 2003)
Number of Observations
35
30
25
20
15
10
5
0
30
0
0
Good
Fair
Poor
Water Quality Index Vaue


Water Quality Index Values for TAMBR90
(Based on data collected between October 2000 through March 2003)
Number of Observations
35
30
25
20
15
10
5
0
30
0
0
Good
Fair
Poor
Water Quality Index Vaue


Water Quality Index Values for BC5
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
25
20
15
10
5
0
25
4
1
Good
Fair
Poor
Water Quality Index Vaue


Water Quality Index Values for HALDCRK
(Based on data collected between October 2000 through March 2003)
Number of Observations
30
25
20
15
10
5
0
26
4
0
Good
Fair
Poor
Water Quality Index Vaue


Water Quality Index Values for LELY
(Based on data collected between October 2000 through March 2003)
Number of Observations
35
30
25
20
15
10
5
0
29
1
0
Good
Fair
Poor
Water Quality Index Vaue

E. Conclusion

Overall, the majority of the enabling policies continues to be relevant to the all of the objectives listed in Table 1, and will be retained in the updated comprehensive plan.

It will require some time to evaluate the impact of the recently adopted vegetation retention policies. Therefore, no changes are recommended in this EAR for the set of objectives listed above in Table 2.