Change of Estero Bay

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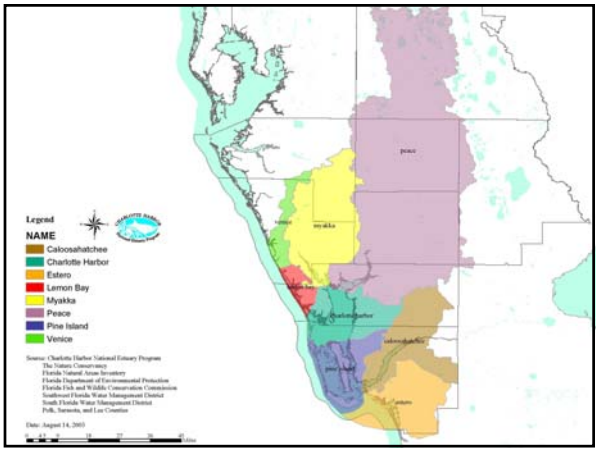
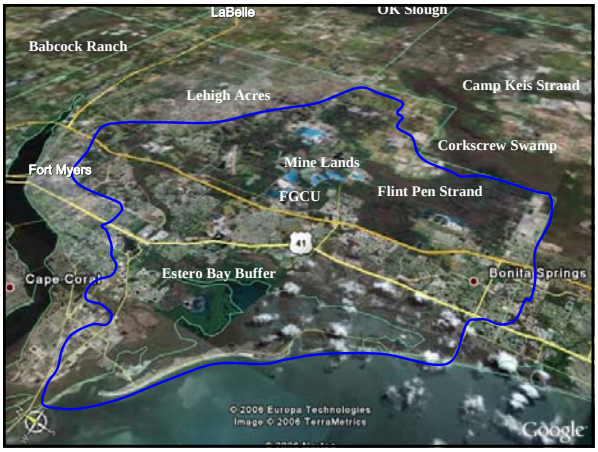
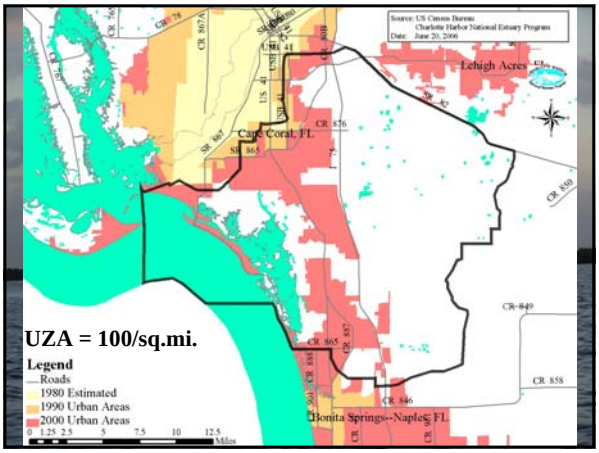
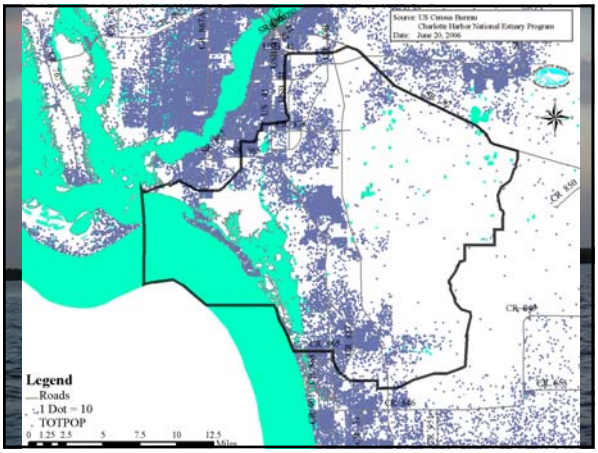
EIS Review Symposium
Fort Myers, Florida

National Estuary Programs





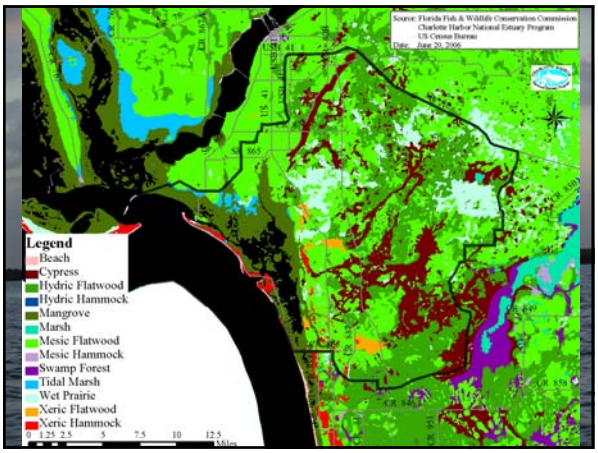


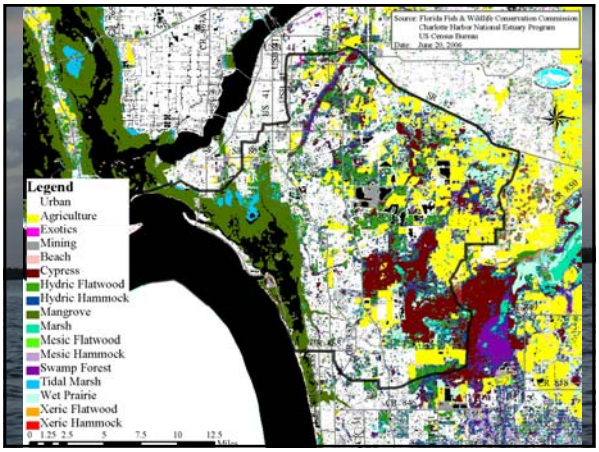


Habitat Change

	Pre-Dev	2003	Difference	% Loss
Beach	252	231	21	8
Cypress	31,989	16,353	15,636	49
Flatwood	116,022	37,754	78,268	67
Hydric Hammock	129	584	-454	-351
Mangrove	13,311	11,969	1,343	10
Mesic/Xeric Hammock	2,577	2,444	133	5
Swamp Forest/Marsh	21,528	18,909	2,619	12
Open Water	34,861	42,450	-7,590	-22
Exotics	0	41	-41	N/A
Agriculture	0	30,396	-30,396	N/A
Urban	0	51,301	-51,301	N/A
Mining	0	820	-820	N/A
Total	220,670	213,252	7,418	3

- 28% Wetland Loss
- 66% Upland Loss
- 52% Habitat Loss

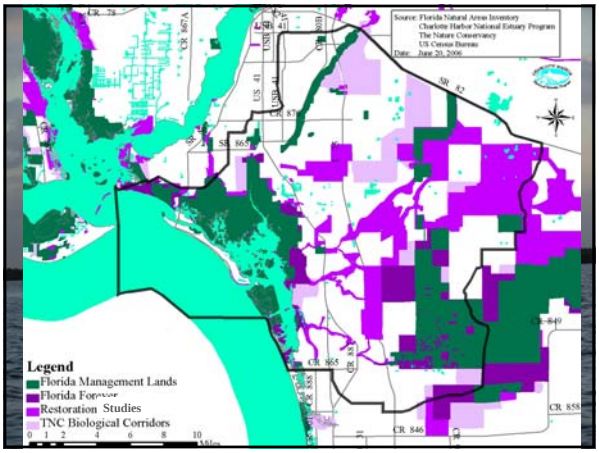


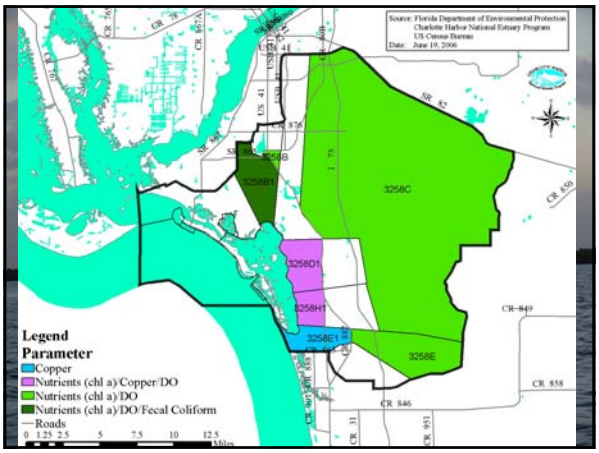


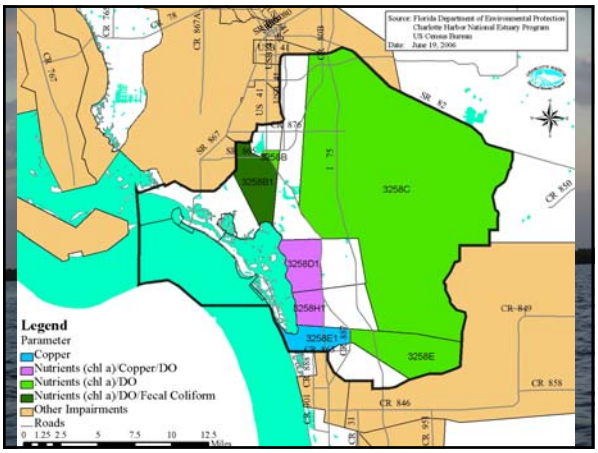
The Florida scrub jay became locally extinct in the Estero Bay Basin in the mid-1990's. At least one and perhaps two families of Florida scrub jays were found on the Chapel Ridge scrub system. Presence was confirmed during surveys by Estero Bay Aquatic Preserve biologists in 1989. The nest territories were within the proposed acquisition area for the Estero Bay Buffer Preserve CARL project. During site reviews for the development project now known as West Bay Club these jay families were no longer present. The last confirmed siting was in 1994.

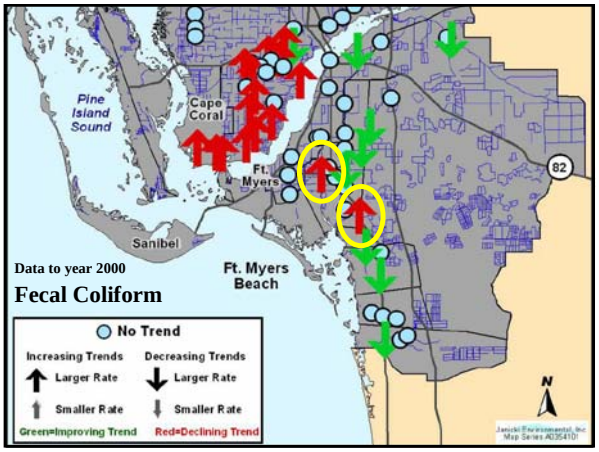
Photo by: Joe Vidulich

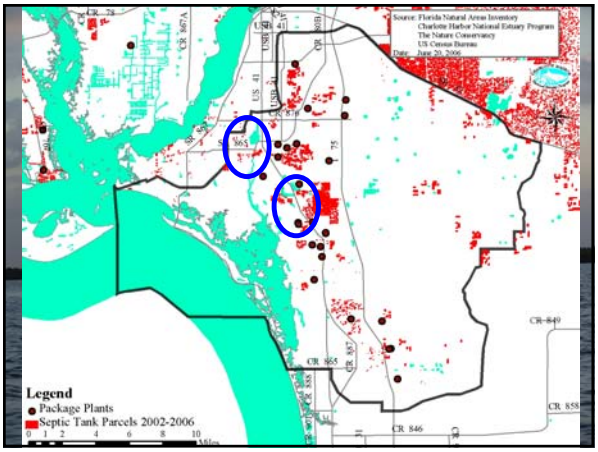
Year	Number of Nests	Success Rate
1989	2	2 (100%)
1993	1	unknown
1995	0	0
1999	0	0
2001	0	0




Legend
Parameter
Copper
Nutrients (chl a)/Copper/DO
Nutrients (chl a)/DO
Nutrients (chl a)/DO/Fecal Coliform
Roads
3258C
3258D1
3258H1
3258E1
3258E
CR 849
CR 858
CR 846


Legend
Parameter
Copper
Nutrients (chl a)/Copper/DO
Nutrients (chl a)/DO
Nutrients (chl a)/DO/Fecal Coliform
Other Impairments
Roads
3258C
3258D1
3258H1
3258E1
3258E
CR 849
CR 858
CR 846


Pine Island Sound
Cape Coral
Ft. Myers
Sanibel
Ft. Myers Beach
82
Data to year 2000
Fecal Coliform
No Trend
Increasing Trends
Larger Rate
Smaller Rate
Decreasing Trends
Larger Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend
N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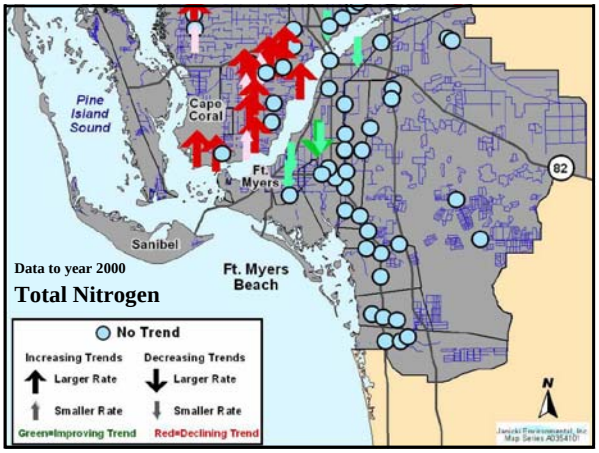
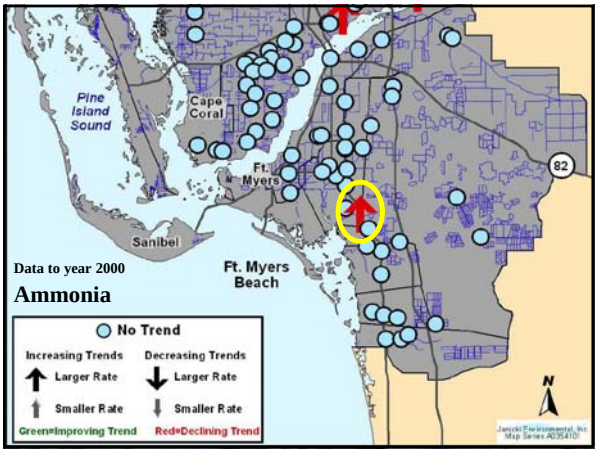
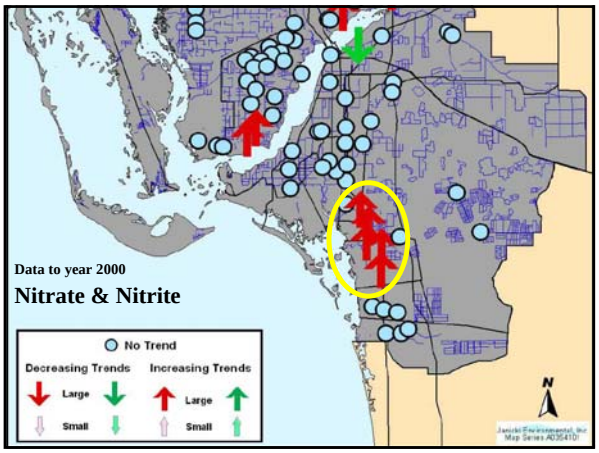
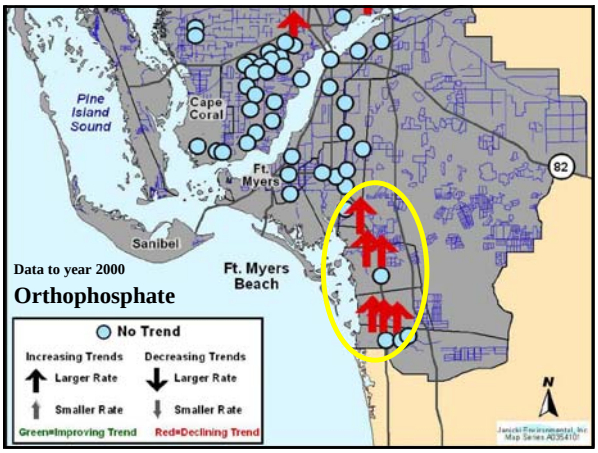
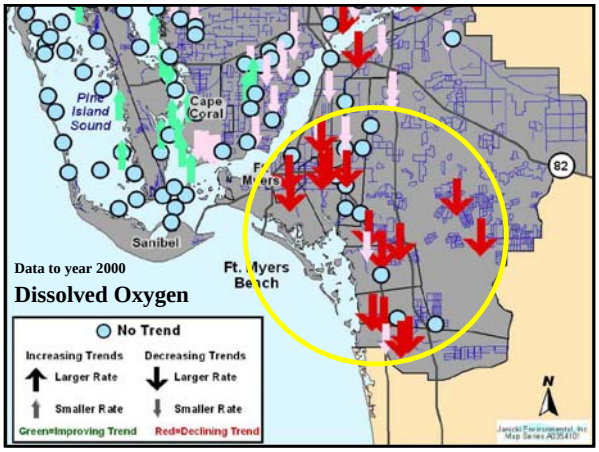
Package Plants
Septic Tank Parcels 2002-2006
CR 849
CR 858
CR 846

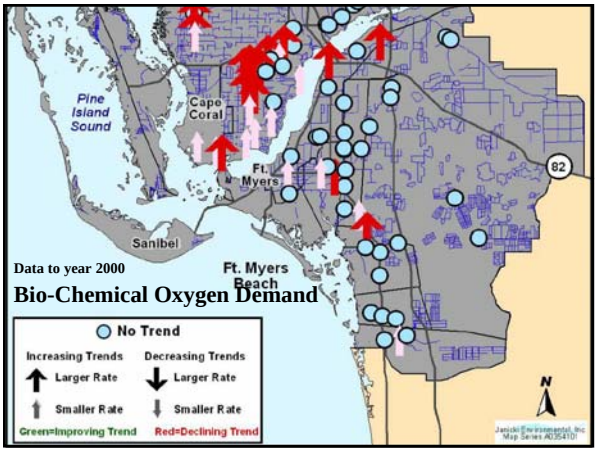

Pine Island Sound
Cape Coral
Ft. Myers
Sanibel
Ft. Myers Beach
82
Data to year 2000
Total Nitrogen
No Trend
Increasing Trends
Larger Rate
Smaller Rate
Decreasing Trends
Larger Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend
N

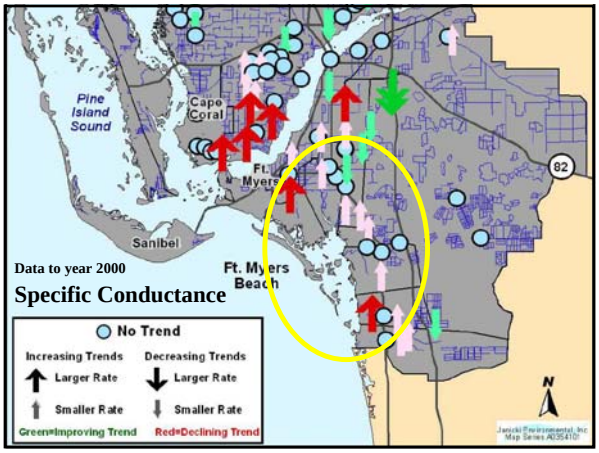

Pine Island Sound
Cape Coral
Ft. Myers
Sanibel
Ft. Myers Beach
82
Data to year 2000
Ammonia
No Trend
Increasing Trends
Larger Rate
Smaller Rate
Decreasing Trends
Larger Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend
N

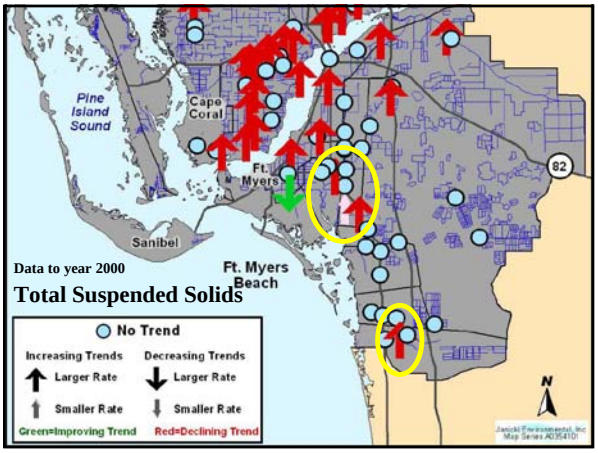

Data to year 2000
Nitrate & Nitrite
No Trend
Decreasing Trends
Increasing Trends
Large
Small
Large
Small

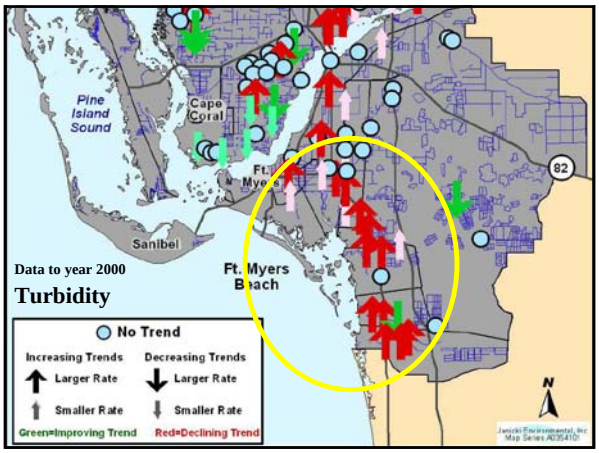

Pine Island Sound
Cape Coral
Ft. Myers
82
Sanibel
Ft. Myers Beach
Data to year 2000
Orthophosphate
No Trend
Increasing Trends
Decreasing Trends
Larger Rate
Larger Rate
Smaller Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend


Pine Island Sound
Cape Coral
82
Sanibel
Ft. Myers Beach
Data to year 2000
Dissolved Oxygen
No Trend
Increasing Trends
Decreasing Trends
Larger Rate
Larger Rate
Smaller Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend


Pine Island Sound
Cape Coral
Ft. Myers
82
Sanibel
Ft. Myers Beach
Data to year 2000
Bio-Chemical Oxygen Demand
No Trend
Increasing Trends
Decreasing Trends
Larger Rate
Larger Rate
Smaller Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend

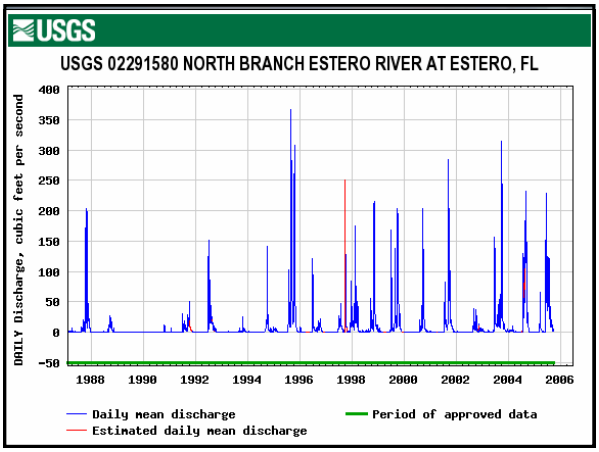

Pine Island Sound
Cape Coral
Ft. Myers
82
Sanibel
Ft. Myers Beach
Data to year 2000
Specific Conductance
No Trend
Increasing Trends
Decreasing Trends
Larger Rate
Larger Rate
Smaller Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend

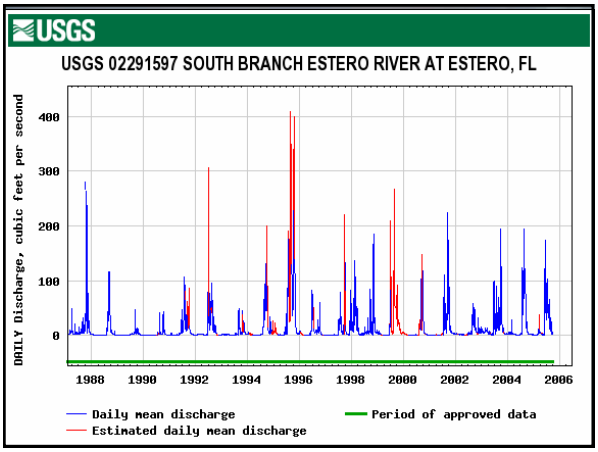

Pine Island Sound
Cape Coral
Ft. Myers
82
Sanibel
Ft. Myers Beach
Data to year 2000
Total Suspended Solids
No Trend
Increasing Trends
Decreasing Trends
Larger Rate
Larger Rate
Smaller Rate
Smaller Rate
Green=Improving Trend
Red=Declining Trend

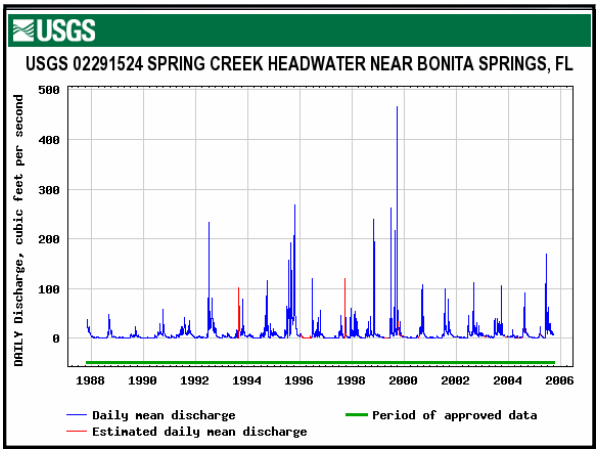


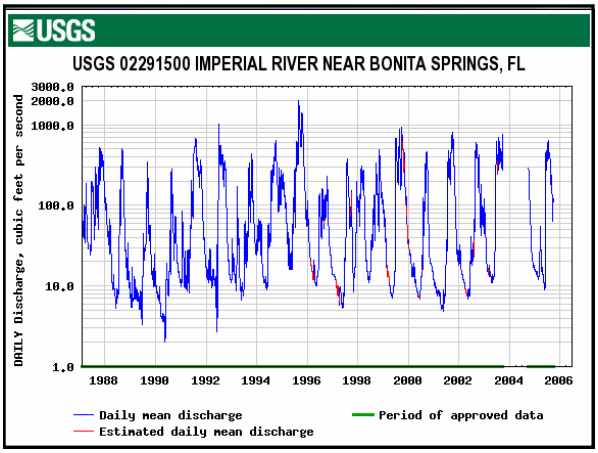
WQ Trends to Watch Out For

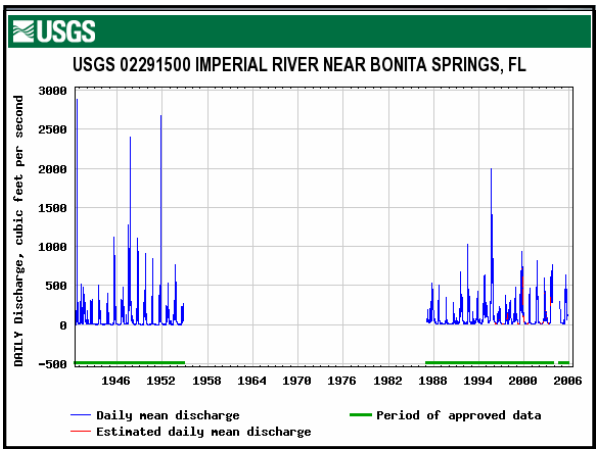
- Fecal Coliform in Hendry & Mullock Creeks
- Ammonia in Mullock (San Carlos Park)
- Nitrates/Nitrites Mullock to Imperial River
- Orthophosphate Mullock to Estero River
- Dissolved Oxygen Everywhere
- Specific Conductance (thru-out but not yet severe)
- Turbidity & Suspended Solids
- Copper (no trends data to year 2000)

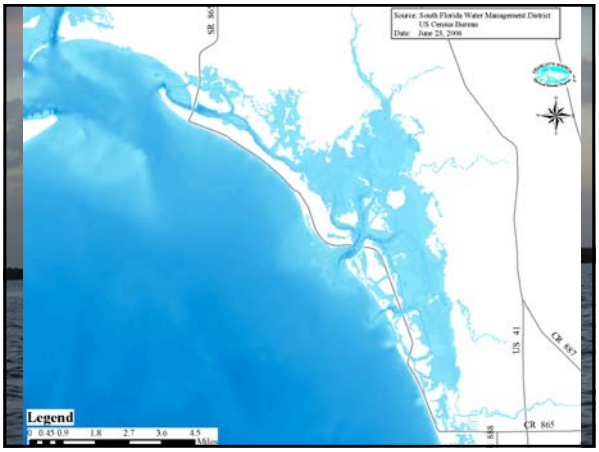


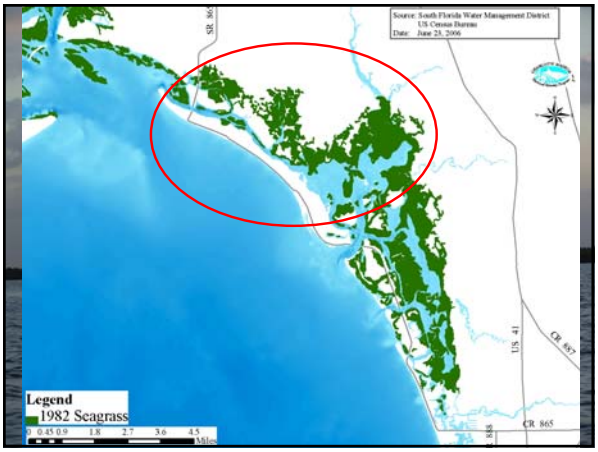


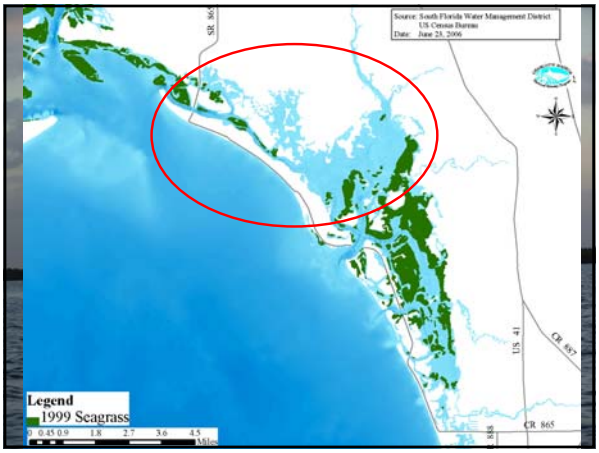





USGS
USGS 02291500 IMPERIAL RIVER NEAR BONITA SPRINGS, FL
DAILY Discharge, cubic feet per second
3000
2500
2000
1500
1000
500
0
-500
1946 1952 1958 1964 1970 1976 1982 1988 1994 2000 2006
Daily mean discharge
Estimated daily mean discharge
Period of approved data


Legend
US 41
CR 865


Legend
1982 Seagrass
US 41
CR 865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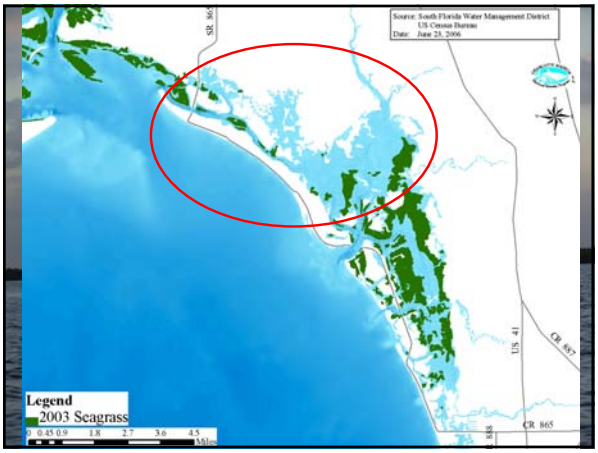
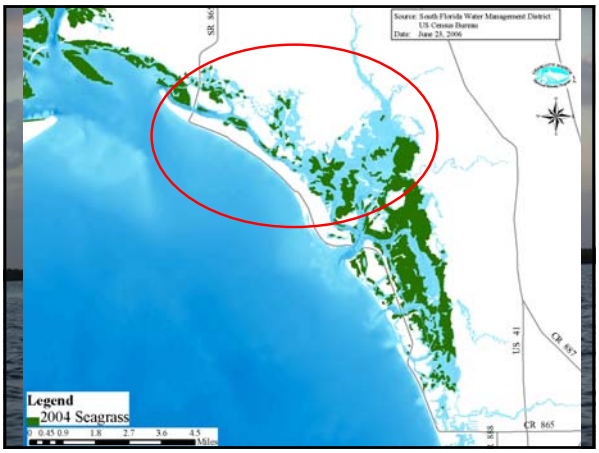
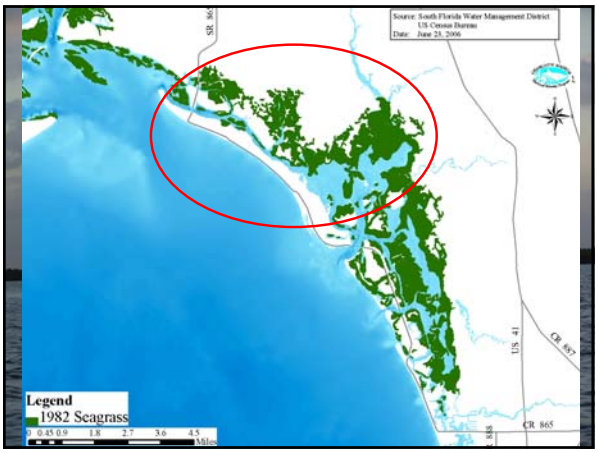
1999 Seagrass
US 41
CR 865


Legend
2003 Seagrass
US 41
CR 865





Parameters of Concern

- Turbidity (suspended matter)
- Chlorophyll a (nutrients)
- Color (natural component)

- Prop wash re-suspending matter

Suggested Fixes for Estero Basin

- Central Sewer or Septic Mgmt Program
  - San Carlos Park & Hendry Creek
- Significantly reduced Fertilizer Use
  - Esp. San Carlos Park, Estero, and Bonita Springs
- Return to an older style of non-cleared and filled earth development
- Increased percentage of pervious surfaces
- Shallower and vegetated stormwater systems
- Discontinued use of Copper Sulfate
- Acquisition and protection of an additional 67,000 acres
- Restoration of another 15,000 acres of existing public conservation land
- Consider closing some areas to motor boats

Charlotte Harbor National Estuary Program

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Communications Manager: Maran Hilgendorf
Grants and Contracts Manager: Liz Donley, esq.

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