

# IOP Monitoring Plan

## For New FDEP EO of 29 Jan 2003

### To

- Measure water budget for each detention area
- Measure concentrations of P and N entering and leaving detention areas
- Calculate loads of P and N entering and leaving through surface and ground water
- Measure and evaluate sources of pesticides and other pollutants to and from the detention areas



**US Army Corps  
of Engineers**

# Monitoring Items Provided By

- Surface water flow- CORPS
- Surface water stage- CORPS
- Groundwater exchange- CORPS
- Meteorological and Evap.- USGS/SFWMD
- Surface water nutrients- CORPS/SFWMD
- Groundwater nutrients- CORPS
- Interior fish THg- CORPS under contract
- Biological and sediment monitoring- SFWMD



**US Army Corps  
of Engineers**

# Corps IOP Emergency Operations

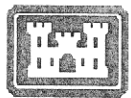
## C111 Water Quality Monitoring

- Corps monitoring WQ in the C-111 basin since the summer of 1999
- Multi purpose including compliance monitoring for the FDEP emergency orders.
- Plan was based on early proposal in C-111 GRR supplement
- Purpose to track system response to the construction changes and to better understand the loading sources, timing and characterization of any nutrient pulses.



**US Army Corps  
of Engineers**

# Vicinity Map



**US Army Corps  
of Engineers**

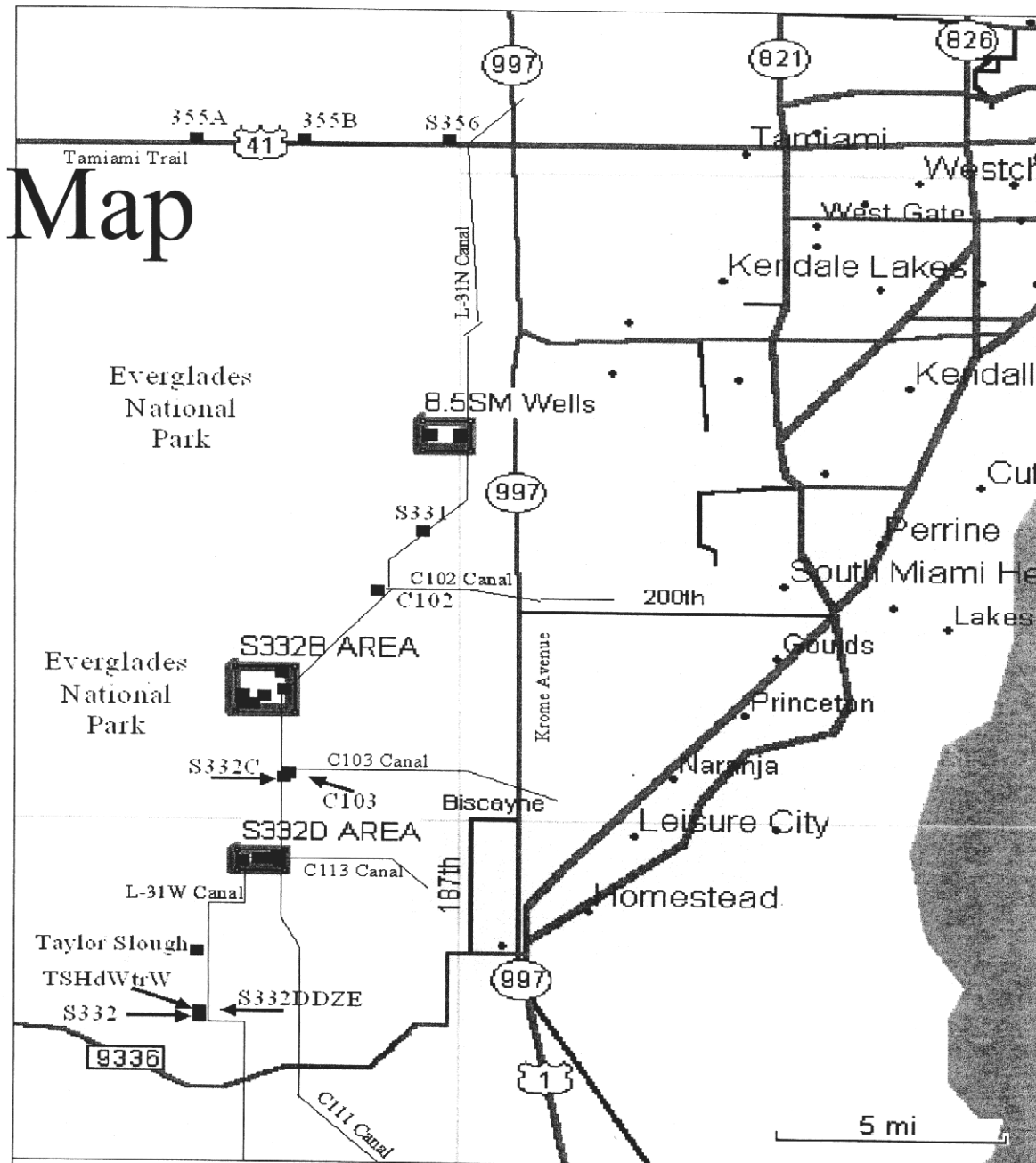


Figure 1. Area Map of the Corps of Engineers Water Quality Monitoring Stations (■) for Emergency Operations for the Cape Sable Seaside Sparrow. North is to the top of the page. Base map © Garmin Corporation 1995-1999. Sources: Water and Air Research, Inc. 2001 and ANAMAR 2002.

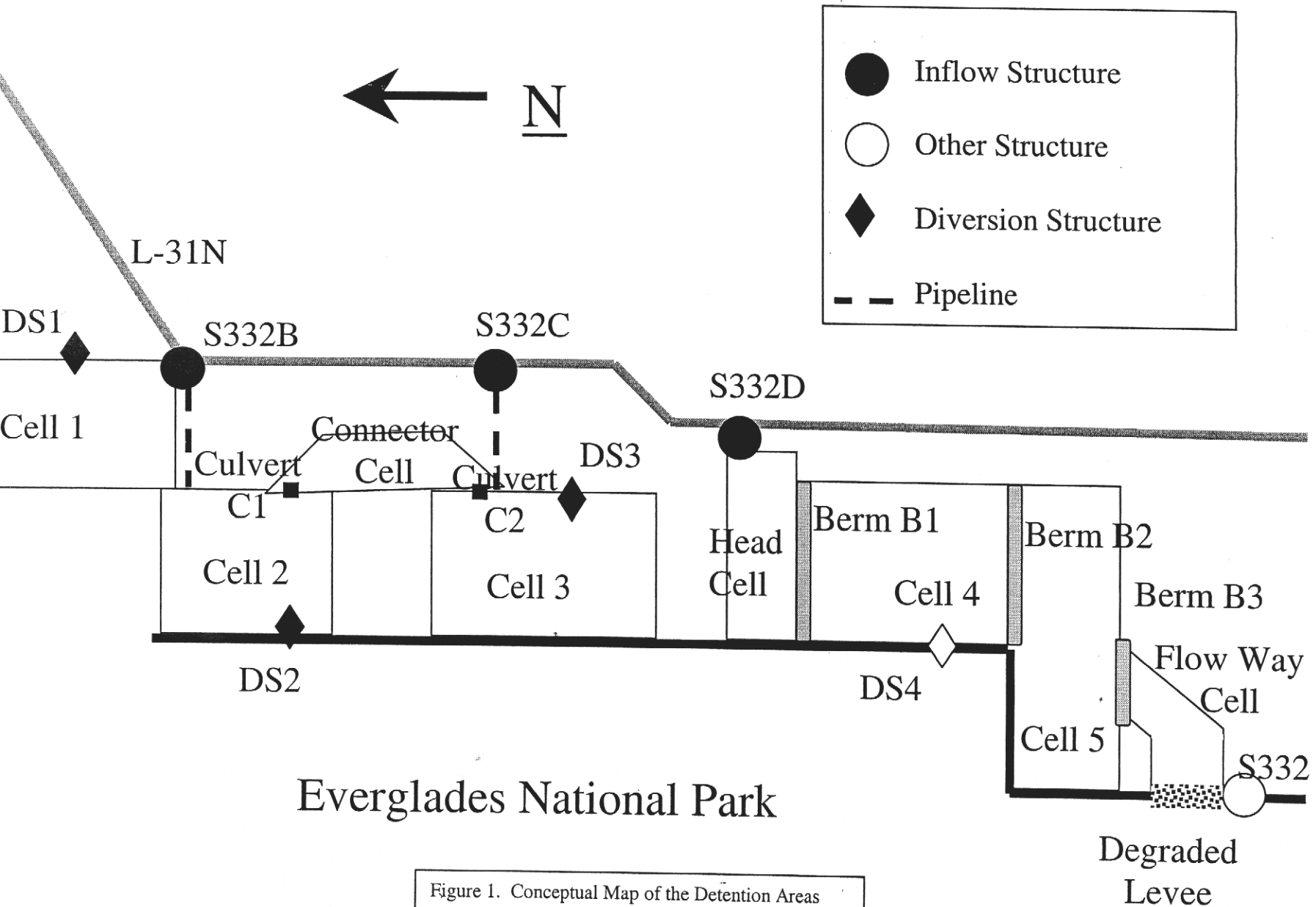
# Water Quality Monitoring Types

- Autosamplers at intakes to pump stations, S-332B,C and D plus various locations in the the 1-31west canal. Also B-3 berm. Nutrients.
- Bi-Weekly grabs taken at all autosampler sites and at several canal locations.
- Ground water monitoring at S-332D
- Analysis to include metals, THg and pesticides on quarterly basis



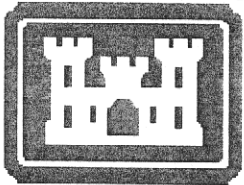
**US Army Corps  
of Engineers  
Jacksonville District**

[http://hpm.saj.usace.army.mil/issueweb/Sparrow/Sparrow\\_Page.htm](http://hpm.saj.usace.army.mil/issueweb/Sparrow/Sparrow_Page.htm)



# Autosampler Locations

S-332B(Upstream)  
 S-332B(Downstream)  
 S-332C(Upstream)  
 S-332C(Downstrm)  
 L-31W  
 S-332(upstream)  
 S-332D(upstream)  
 S-332DW(Dwnstrm)  
 B-3 Berm



**US Army Corps  
 of Engineers  
 Jacksonville District**

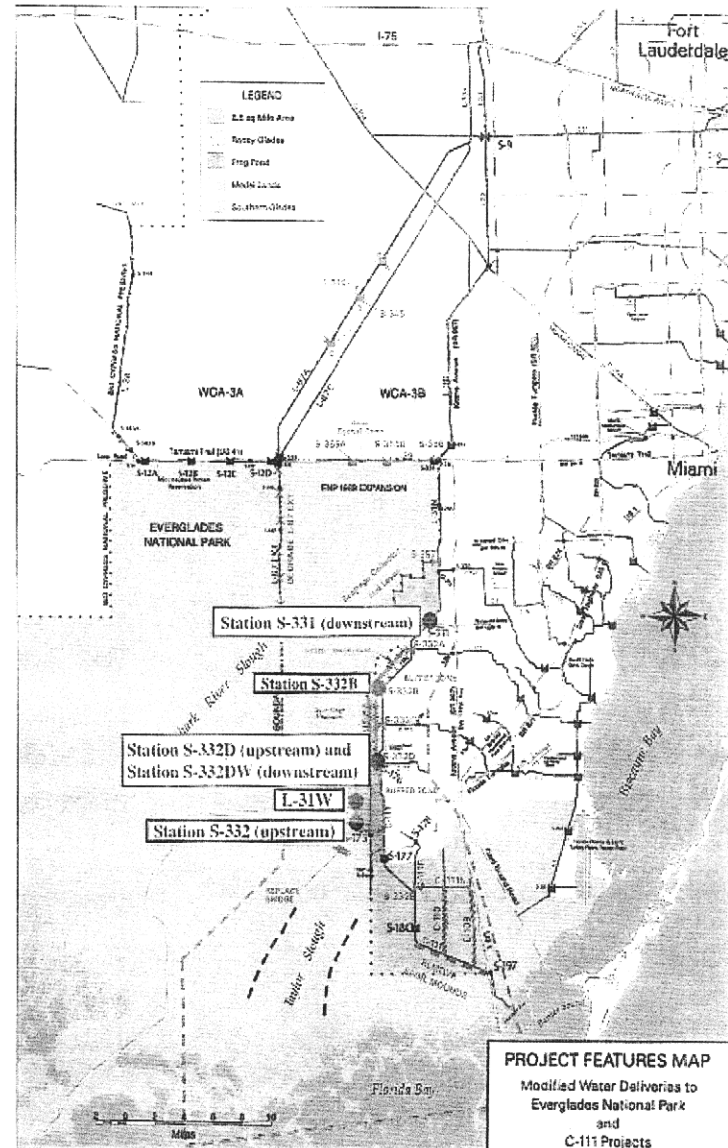
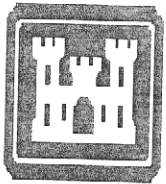


Figure 1. Station Locations for Cape Sable Seaside Sparrow Emergency Field Sampling Activities, Water Quality Monitoring Effort

# Key Monitoring Events/Points

- S-332D pump startup monitoring, 1999
- S-332B detention system initial overflow into ENP Sept 2000.
- Extreme weather event in Oct 2000
- S-332B detention sys. Startup summer 2002
- Start up of S-332D detention system
- Autosampler results at the S-332D intake



**US Army Corps  
of Engineers  
Jacksonville District**