























## Models Listed Generally From West to East

ID #	Location.....	Modeler.....	Pg
<b>Intra-America Seas</b>			
39)	Intra-America Seas (includes ALL coastal areas around the State of Florida) .....	Kourafalou and Halliwell.....	17
<b>Gulf of Mexico</b>			
14)	Gulf of Mexico and ?? .....	Graber (?).....	6
22)	Gulf of Mexico .....	Halliwell, Kourafalou and Shay.....	10
38)	Northern Gulf of Mexico Shelf (includes the Florida Panhandle) .....	Kourafalou and Halliwell.....	16
47)	Gulf of Mexico .....	Morey.....	20
67)	Northern Gulf of Mexico .....	Sheng).....	28
87)	Eastern Gulf of Mexico and West Florida Continental Shelf (WFS).....	Weisberg, Barth, Alvera, and Zheng.....	36
88)	Eastern Gulf of Mexico and West Florida Shelf.....	Weisberg, Zheng, Barth, and Alvera.....	37
<b>Escambia Bay</b>			
16)	Escambia Bay .....	Hagen.....	7
<b>Choctawhatchee Bay</b>			
31)	Choctawhatchee Bay .....	Huang.....	13
<b>St. Andrews Bay</b>			
32)	St. Andrews Bay .....	Huang.....	14
<b>Apalachicola Bay</b>			
25)	Apalachicola Bay.....	Harwell,et al.....	11
30)	Apalachicola Bay.....	Huang and Jones.....	13
34)	Apalachicola Bay.....	Jones, Galperin, Wu, and Weisberg.....	14
78)	Apalachicola Bay.....	Unknown.....	32
80)	Apalachicola Bay.....	Vansant.....	33
<b>Suwannee River and Estuary</b>			
12)	Suwannee River and Estuary .....	Dynamic Solutions LLC.....	5
66)	Suwannee River, estuary, and coastal waters .....	Sheng.....	28
<b>Hillsborough River estuary</b>			
6)	Lower Hillsborough River estuary.....	Chen.....	2
<b>Tampa Bay</b>			
10)	Tampa Bay.....	Danish Hydraulic Inst, USGS.....	4
11)	Tampa Bay to south of Venice jetties .....	Driscoll.....	5
21)	Tampa Bay.....	Hagen.....	9
40)	Tampa Bay estuary .....	Luther, Meyers, Gilbert and Subramanian.....	17
69)	Tampa Bay.....	Sheng.....	29
70)	Tampa Bay.....	Sheng.....	29
71)	Tampa Bay.....	Sheng.....	29
83)	Tampa Bay, Charlotte Harbor, and West Florida Shelf.....	Weisberg, Zheng, Barth, and Alvera.....	34
85)	Tampa Bay, Sarasota Bay, Manatee River, Pinellas Co. ICW, and .....	Weisberg, Zheng, Barth, and Alvera.....	35
<b>Alafia River estuary</b>			
2)	Lower Alafia River estuary.....	Chen.....	1
3)	Lower Alafia River estuary.....	Chen.....	1
<b>Manatee River</b>			
4)	Manatee and Braden Rivers.....	Chen.....	2
28)	Sarasota Bay system (including tributaries) ... and including Manatee River and all of Manatee County .....	Heyl.....	12
29)	Manatee River.....	Heyl.....	12
85)	Tampa Bay, Sarasota Bay, Manatee River, Pinellas Co. ICW, and .....	Weisberg, Zheng, Barth, and Alvera.....	35
<b>Intracoastal Waterway, Gulf of Mexico</b>			
85)	Tampa Bay, Sarasota Bay, Manatee River, Pinellas Co. ICW, and.....	Weisberg, Zheng, Barth, and Alvera.....	35
<b>Braden River</b>			
4)	Manatee and Braden Rivers.....	Chen.....	2















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urbanized coastal area include boating and fishing pressures, as well as loss of natural habitat through physical alterations to the system. A conceptual ecological model of the cause-and-effect relationships of flora and fauna to human-induced and natural conditions within the system was developed. The model consists of ecosystem external drivers and ecological stressors, ecological attributes, and ecological effects, and presents research hypotheses, including the effects of altered volume, timing and distribution of fresh water relative to seagrasses, macroinvertebrates, salinity, fishes, nutrients, toxins, suspended solids, and dissolved organic loads that will assist in the development of a quantitative hydrodynamic model for this system.

- 9) **1. Cunningham, Brett (Jones Edmunds & Associates, Inc.)**
- 2. Water Body: Bays in Sarasota County**
3. *Model Name:* Spatially Integrated Model for Pollutant Loading Estimates
4. *Model Type:* ??
5. *Model Domain:* One model was developed for all of Sarasota County and another was extended into Manatee County to pick up the remainder of the Sarasota Bay watershed.
- a) *Inshore distance:* ??
- b) *Offshore distance:* ??
- c) *Alongshore distance:* ??
6. *Year of Model Development/Application:* 2005
7. *Model Grid:* not applicable
- a) *Grid type:* ??
- b) *Grid resolution (min, avg, max):* ??
8. *Purpose of Model:* Pollutant loading
9. *Simulation Period:* Seasonal and annual loading - monthly for approximately 15 years in next phase
10. *Validation with Data?:* Upcoming phase
11. *Used for Forecasting?:* Yes, but not in the same context as most other models in this list
12. *Comments:* Per Gary Raulerson, Sarasota Bay Estuary Program: This is a GIS-based pollutant loading model for Sarasota County, which the SBEP extended to Anna Maria. JEA (I think with PBSJ as a sub) is doing ground-truthing to build on the first year's work. So far the northern portion of Sarasota Bay has not been added. Work should be complete in 2007.
- 10) **1. Danish Hydraulic Inst, USGS**
- 2. Water Body: Tampa Bay**
3. *Model Name:* ??
4. *Model Type:* finite volume, flexible mesh MIKE 3 FM, finite volume model with 3D hydrodynamic module, fine sediment transport module (MIKE 3 MT) dynamically coupled to the HD model, and ecological module based on ECOLab for Tampa Bay, FLA.
5. *Model Domain:* covers the Tampa Bay and adjacent parts of the Mexican Gulf.
- a) *Inshore distance:* ??
- b) *Offshore distance:* ??
- c) *Alongshore distance:* ??
6. *Year of Model Development/Application:* ??
7. *Model Grid:*
- a) *Grid type:* ??
- b) *Grid resolution (min, avg, max):* ??
8. *Purpose of Model:* establish a general management tool for Tampa Bay; sediment module is being focused on describing suspended sediment transport with relation to the navigational system within the bay. The ecological module has the aim of describing possible consequences of man-made activities on the ecosystem of the bay.
9. *Simulation Period:* ??

10. *Validation with Data?: ??*
11. *Used for Forecasting?: ??*
12. *Editor's comments: The model will be linked to a large scale Caribbean Model through boundary conditions.*

**11) 1. Driscoll, Andy (Danish Hydraulic Institute)**

**2. Water Body: Tampa Bay to somewhere south of Venice jetties**

3. *Model Name: MikeShe*
4. *Model Type:*
5. *Model Domain: Tampa Bay to somewhere south of Venice Jetties and "way out in the Gulf"*
  - a) *Inshore distance: ??*
  - b) *Offshore distance: ??*
  - c) *Alongshore distance: ??*
6. *Year of Model Development/Application: late 1999 or early 2000*
7. *Model Grid:*
  - a) *Grid type: ??*
  - b) *Grid resolution (min, avg, max): ??*
8. *Purpose of Model: focus was re-opening of Midnight Pass*
9. *Simulation Period: ??*
10. *Validation with Data?: ??*
11. *Used for Forecasting?: ??*
12. *Editor's comments: Per Mike Heyl, SFWMD: used some of Peter Sheng's tower data that was funded by EPA and SBNEP.*

**12) 1. Dynamic Solutions LLC**

**2. Water Body: Suwannee River and Estuary**

3. *Model Name: EFDC\_Explorer*
4. *Model Type: EFDC Hydrodynamic and Salinity Model; 3-D hydrodynamic and water quality model of salinity*
5. *Model Domain:*
  - a) *Inshore distance: ??*
  - b) *Offshore distance: ??*
  - c) *Alongshore distance: ??*
6. *Year of Model Development/Application:*
7. *Model Grid: included 15 miles of the Suwannee River, ~28 miles of shore line and extended ~18 miles offshore into the Gulf of Mexico and Suwannee Sound.*
  - a) *Grid type: ??*
  - b) *Grid resolution (min, avg, max): ??*
8. *Purpose of Model: ??*
9. *Simulation Period: ??*
10. *Validation with Data?: Yes*
11. *Used for Forecasting?: ??*
12. *Comments: for USGS; model was successfully calibrated to historical records of flow and salinity.*

**13) 1. Erickson, Karen (Ericson Consulting Engineers)**

**2. Water Body: Little Sarasota Bay (and maybe a little farther north and south).**

3. *Model Name: ??*
4. *Model Type: circulation model*
5. *Model Domain:*
  - a) *Inshore distance: ??*

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b) Offshore distance: ??

c) Alongshore distance: ??

6. Year of Model Development/Application:

7. Model Grid:

a) Grid type: ??

b) Grid resolution (min, avg, max): ??

8. Purpose of Model: ??

9. Simulation Period: ??

10. Validation with Data?: ??

11. Used for Forecasting?: ??

12. Comments: Per Gary Raulerson, Sarasota Bay EP: part of Sarasota County's permit application to re-open Midnight Pass

**14) 1. Graber (?), Hans**

**2. Water Body: Gulf of Mexico and ??**

3. Model Name: WindGen; WAM Cycle 4.2; ADCIRC coupled models

4. Model Type:

5. Model Domain:

a) Inshore distance: ??

b) Offshore distance: ??

c) Alongshore distance: ??

6. Year of Model Development/Application: ??

7. Model Grid:

a) Grid type: ??

b) Grid resolution (min, avg, max):

A) High resolution wind fields from WindGen at 10 km grid spacing from 5 N to 54 N and 30 W to 100 W

B) High resolution wave fields from WAM Cycle 4.2 at 20 km resolution basin wide and with nesting to 1 km resolution at select areas such as Tampa Bay for example over a grid from 5 N to 54 N and 30 W to 100 W

C) Storm surge predictions with ADCIRC coupled to wave with grid spacing of 10's km in the open ocean and 100's m near the coast covering the area 5 N to 54 N and 50 W to 100 W

8. Purpose of Model: NOPP project on Hurricane Forecasting, realtime wind, wave, surge models

9. Simulation Period: ??

10. Validation with Data?: ??

11. Used for Forecasting?: Yes

12. Comments: we run in realtime the above coupled models with time steps of every 15 minutes.

**15) 1. Hagen, Scott (UCF)**

**2. Water Body: Atlantic Intracoastal Waterway (AIW)**

3. Model Name: Three versions of the AIW model exist: 1) Inlet-based; 2) Shelf-based; 3) The full Western North Atlantic Tidal (WNAT) model domain.

4. Model Type: 2D model of astronomic tides with wind/pressure forcings (including hurricane storm surge) and inflows

5. Model Domain: The entire AIW for the east coast of Florida from south of Lake Worth inlet into southern Georgia and including the St. Johns River through Lake George

a) Inshore distance: ??

b) Offshore distance: ??

c) Alongshore distance: ??

6. Year of Model Development/Application: 2006





































































The present WFS ROMS/HYCOM model evolved from previous applications of the Princeton Ocean Model (POM) with a similar regional domain. Numerous hindcast studies were published with quantitative comparisons made against available observing system data. A review of these (Weisberg et al., 2005) is available.

- 88) **1. Weisberg, Robert H., Lianyuan Zheng, Alex Barth, and Aida Alvera (USF)**
- 2. *Water Body: Eastern Gulf of Mexico and West Florida Shelf***
3. *Model Name: FVCOM*
4. *Model Type: finite difference, 3-D, baroclinic*
5. *Model Domain:*
- a) *Inshore distance: ??*
- b) *Offshore distance: ??*
- c) *Alongshore distance: ??*
6. *Year of Model Development/Application: ??*
7. *Model Grid:*
- a) *Grid type: uses unstructured grids horizontally but solves the equations of motion by finite difference and hence is mass conserving in its 3-D, baroclinic usage*
- b) *Grid resolution (min, avg, max): ??*
8. *Purpose of Model: For higher resolution over the inner shelf and the estuaries*
9. *Simulation Period: ??*
10. *Validation with Data?: ??*
11. *Used for Forecasting?: ??*
12. *Comments: This FVCOM construct also has provision for a biological sub-model. Both the ROMS/HYCOM and the FVCOM models have provision for fully 3-D Lagrangian particle tracking.*

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