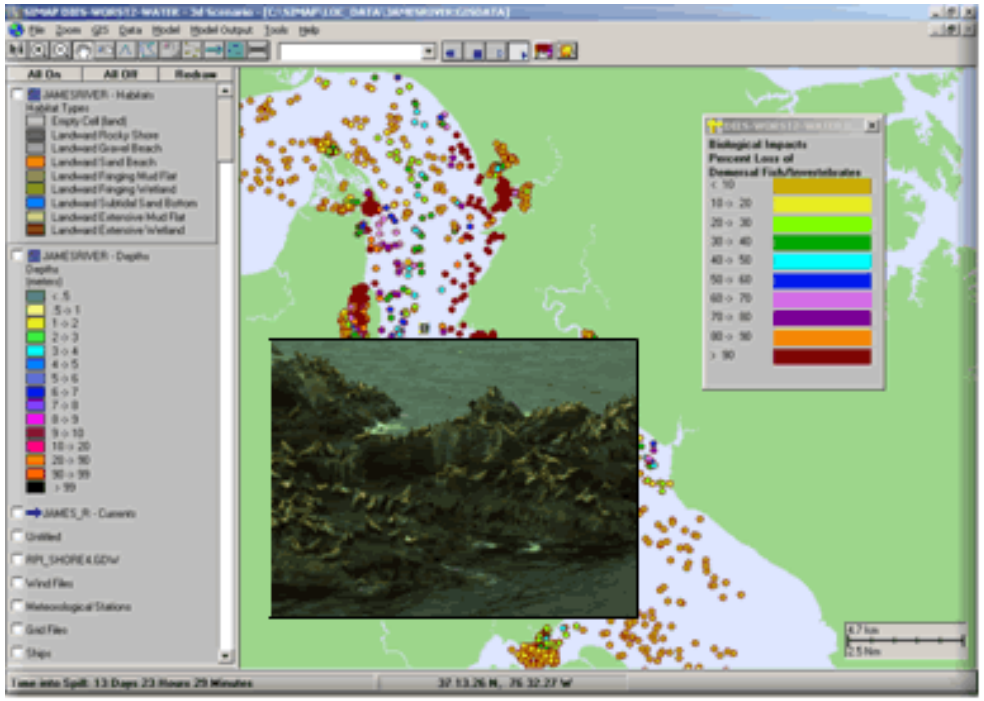
User Perspective:

What Models are NOAA's Assessment and Restoration Division Using?

CRRC Spill Modeling Summit
Kate Clark and Troy Baker
June 26, 2007

Water Column Modeling

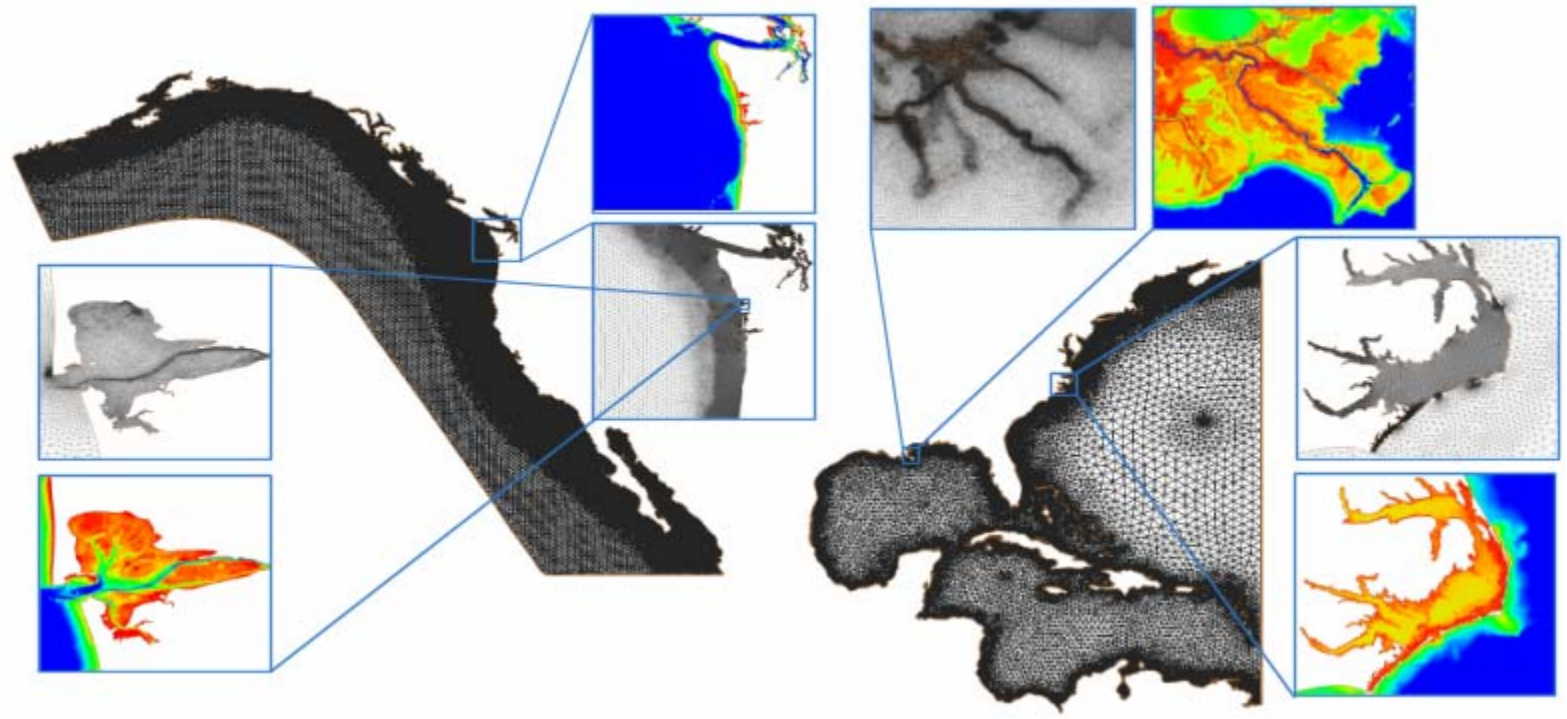
SIMAP; Spill Impact Model



Source: http://www.appsci.com/simap/index.htm

Storm Surge Modeling

ADCIRC; Advanced Circulation Model



Source: www.adcirc.org

Fate and Transport Modeling

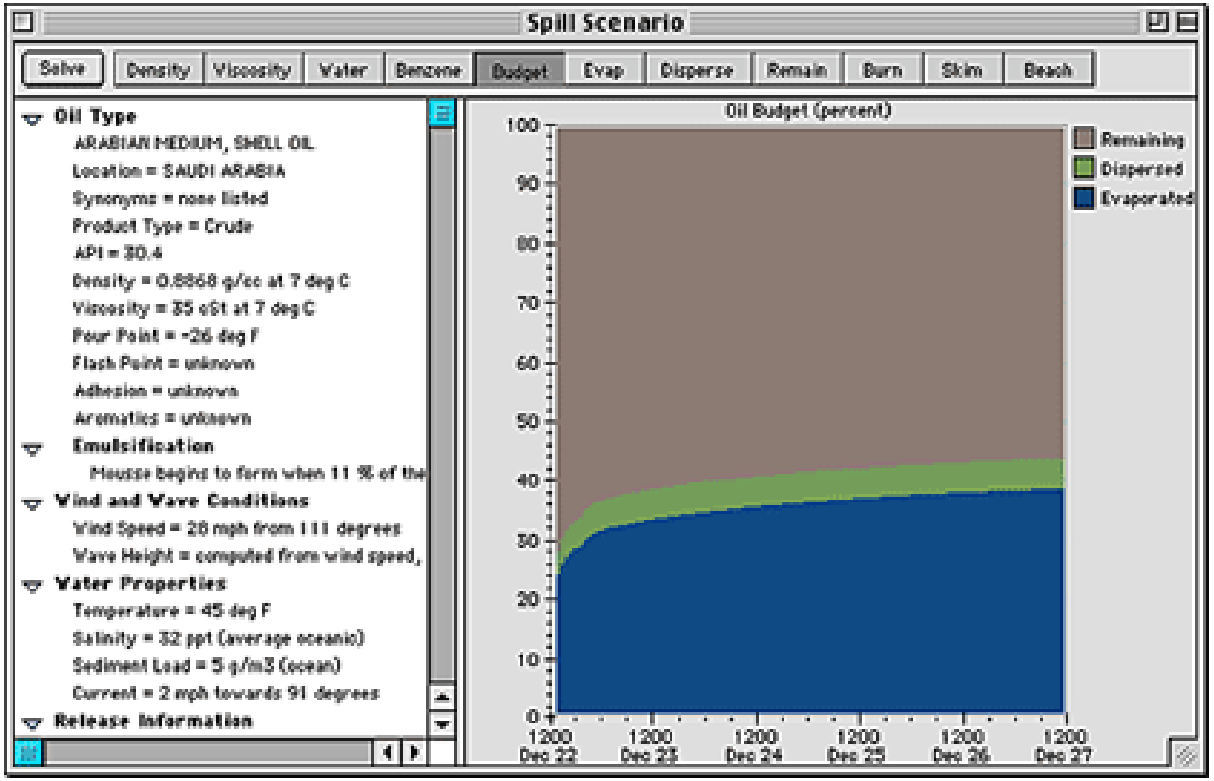
GNOME;

General NOAA Operational Modeling Environment

Source: http://response.restoration.noaa.gov/book_shelf/820_GNOME.pdf

Oil Weathering Model

Adios2; Automated Data Inquiry for Oil Spills



Source: http://response.restoration.noaa.gov/book_shelf/538_adios.pdf

State of the Art?

- Defensible
- GIS compatibility
- Real-time data incorporation
- Cost-effective
- Friendly interface; user friendly

Future

- Biological: expand toxicology databased
  (taxanomically and temporally – research limited)
- 3-D
- Rapid assimilation of real data
- Environmental uncertainty
- Open-source code

Research

- Sensitivity analysis: Stochastic vs. deterministic models.
- How best to incorporate stochasticity into our models?
- Communicating function and results to the public
- How can we incorporate species density or other environmental information in a standardized way?
- Developing computational links between models that may not be in place already (i.e., storm surge and transport and fate)