

Wind Energy GIS Database

Year 1 Report Submitted to:
Virginia Coastal Energy Research Consortium

Submitted by:
Center for Coastal Resources Management
Virginia Institute of Marine Science (VIMS)
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During the first year of the project, multiple sources of data were collected in hard copy and digital format and supplied to the Virginia Coastal Energy Research Consortium (VCERC) by the Center for Coastal Resources Management (CCRM). This report consists of brief descriptions of the references and URLs, where available. The area of interest (AOI) consists of Minerals Management Service (MMS) lease blocks in the Atlantic Ocean off the coast of Virginia Beach, Virginia.

Physical Data

Three Virginia Division of Mineral Resources reports include information on economic heavy minerals of the Virginia Inner Continental Shelf.

- Berquist, CR, Jr. and CH Hobbs, III. 1988. Reconnaissance of economic heavy minerals of the Virginia Inner Continental Shelf. Virginia Division of Mineral Resources Open-file report 88-1. Virginia Institute of Marine Science contribution no. 1425.
- Berquist, CR, Jr. and CH Hobbs, III. 1988. Study of economic heavy minerals of the Virginia Inner Continental Shelf. Virginia Division of Mineral Resources Open-file report 88-4.
- Berquist, CR, Jr. (ed). Heavy-mineral studies—Virginia Inner Continental Shelf. 1990. Virginia Division of Mineral Resources, Department of Mines, Minerals and Energy, Division of Mineral Resources Publication 103.

Bathymetry data is available online from the National Geophysical Data Center Tsunami Inundation Gridding Project.

- <http://www.ngdc.noaa.gov/mgg/inundation/tsunami/>
- <http://www.ngdc.noaa.gov/dem/showdem.jsp?dem=Virginia%20Beach&state=VA&cell=1/3%20arc-second>

Amato, RV. 1994. Sand and Gravel Maps of the Atlantic Continental Shelf With Explanatory Text. US Department of the Interior, Minerals Management Service. OSC Monograph MMS 93-0037. (only scanned Virginia portion of report and maps)

This seismic and sediment GIS database contains location, description and attributes of geophysical data taken/databased by various organizations – USGS; U.S. Army Corps of Engineers; and VIMS. The sample locations are off the Atlantic Coast of Virginia and were taken between from 1970 to 2003.

- Virginia Geophysical Database. 2006. GIS data layers. Shoreline Studies Program. Virginia Institute of Marine Science.

Biologic Data

Blue Infrastructure data are available to download from the CCRM website. These include layers such as Artificial Fishing Reefs.

- http://ccrm.vims.edu/gis_data_maps/interactive_maps/blueinfrastructure/bi_intro.html

Combined Studies – contain related physical and biologic components

Multiple studies from the US Geological Survey on the Atlantic Continental Shelf and Slope of the United States were found on the USGS website. Reports with data from the AOI include invertebrate fauna, texture of surface sediments, and petrology of sand-sized sediments. To view these reports, special software is required that is available as a download on the website.

- Wigley, R. L.; Theroux, R. B. 1981. Atlantic continental shelf and slope of the United States; macrobenthic invertebrate fauna of the Middle Atlantic Bight region; faunal composition and quantitative distribution. USGS Professional Paper 529-N. <http://pubs.er.usgs.gov/usgspubs/pp/pp529N>
- Hollister, C. D. 1973. Atlantic continental shelf and slope of the United States; texture of surface sediments from New Jersey to southern Florida. USGS Professional Paper 529-M. <http://pubs.er.usgs.gov/usgspubs/pp/pp529M>
- Milliman, J. D. 1972. Atlantic continental shelf and slope of the United States; petrology of the sand fraction of sediments, northern New Jersey to southern Florida. USGS Professional Paper 529-J. <http://pubs.er.usgs.gov/usgspubs/pp/pp529J>

Multiple-part research project on a variety of topics on Atlantic shelf off the coast of Virginia Beach.

- Hobbs, CH, III (project manager). 1998. Environmental Studies Relative to Potential Sand Mining in the Vicinity of the City of Virginia Beach, Virginia. US Department of the Interior Minerals Management Service. Final Report. MMS Cooperative Agreement 14-35-0001-3087. Virginia Institute of Marine Science. College of William and Mary. Gloucester Point, VA. <http://www.mms.gov/itd/pubs/1997/97-0025/hobbs0.pdf>
- G. R. Cutter, Jr. and R. J. Diaz. Part 1: Benthic Habitats and Biological Resources Off the Virginia Coast 1996 and 1997. <http://www.mms.gov/itd/pubs/1997/97-0025/hobbs1.pdf>

- C. S. Hardaway, Jr., D. A. Milligan, G. R. Thomas, and C. H. Hobbs, III. Part 2: Preliminary Shoreline Adjustments to Dam Neck Beach Nourishment Project Southeast Virginia Coast. <http://www.mms.gov/itd/pubs/1997/97-0025/hobbs2.pdf>
- J. D. Boon. Part 3: Nearshore Waves and Currents Observations and Modeling. <http://www.mms.gov/itd/pubs/1997/97-0025/hobbs3.pdf>
- Valle-Levinson. Part 4. Coastal Currents. <http://www.mms.gov/itd/pubs/1997/97-0025/hobbs4.0.pdf>
- T. M. Cronin, S. Ishman, R. Wagner, and G. R. Cutter, Jr. Part 5: Benthic Foraminifera and Ostracoda from Virginia Continental Shelf. <http://www.mms.gov/itd/pubs/1997/97-0025/hobbs5.pdf>

Several VIMS reports on oceanographic data and fish and fish larvae data collected in the AOI in the 1960's. Another report surveys areas of spoil disposal, waste dumping, and special military uses, dated 1971.

- Ruzecki, EP, JJ Norcross, and FJ Wojcik. 1972. Oceanographic data collected in the Chesapeake Bight of the Virginian Sea from 1966 through 1969. Data Report Number 8. Virginia Institute of Marine Science. Gloucester Point, VA. 274p. <http://www.vims.edu/GreyLit/VIMS/dr008.pdf>
- Joseph, EB, WH Massmann, and JJ Norcross. 1960. Investigations of inner continental shelf water off lower Chesapeake Bay. Part I – General introduction and hydrography. Chesapeake Science 1(3-4):155-168.
- Massmann, WH, J.J. Norcross, E.B. Joseph. 1961. Fishes and fish larvae collected from Atlantic plankton cruises of R/V Pathfinder, December 1959-December 1960. Special Scientific Report No. 26. Virginia Fisheries Laboratory. 16p. <http://www.vims.edu/GreyLit/VIMS/ssr026.pdf>
- Norcross, JJ. 1962. Data on coastal currents off Chesapeake Bay. Special Scientific Report no. 31. Virginia Institute of Marine Science. 35p. <http://www.vims.edu/GreyLit/VIMS/ssr031.pdf>
- Massman, WH. 1962. Fishes and fish larvae collected from Atlantic plankton cruises of R/V Pathfinder, March 1961-March 1962. Special Scientific Report no. 33. Virginia Institute of Marine Science. 21p. <http://www.vims.edu/GreyLit/VIMS/ssr033.pdf>
- Pleasants, JB. 1971. Special purpose areas in Virginia's coastal zone. Special Scientific Report no. 61. Virginia Institute of Marine Science. 40p. <http://www.vims.edu/GreyLit/VIMS/ssr061.pdf>

Scanned copies of the Bureau of Land Management studies are available as Special Reports in Applied Marine and Ocean Engineering. The data from these studies, collected in the Mid-Atlantic Outer Continental Shelf, include chemical, biological, physical and geological findings. The study area is north (New Jersey to northern Eastern Shore of Virginia) of the current AOI. Studies date from the late 1970's.

- Welch, CS. 1979. Physical oceanography and climatology. Special report in applied science and ocean engineering no. 191. Virginia Institute of Marine Science. 591p. <http://www.vims.edu/GreyLit/VIMS/sramsae191-192.pdf>
- Grant, GC. 1979. Middle Atlantic Bight zooplankton: second year results and a discussion of the two-year BLM-VIMS survey. Special report in applied science and ocean engineering no. 192. Virginia Institute of Marine Science. 591p. <http://www.vims.edu/GreyLit/VIMS/sramsae191-192.pdf>
- Boesch, DF. 1979. Bottom sediments and sedimentary framework. Special report in applied science and ocean engineering no. 193. Virginia Institute of Marine Science. 565p. <http://www.vims.edu/GreyLit/VIMS/sramsae193-194-195pdf>
- Boesch, DF. 1979. Benthic ecological studies: Macrobenthos. Special report in applied science and ocean engineering no. 194. Virginia Institute of Marine Science. 565p. <http://www.vims.edu/GreyLit/VIMS/sramsae193-194-195pdf>
- Hartzband, DJ. 1979. Benthic ecological studies, meiobenthos. Special report in applied science and ocean engineering no. 195. Virginia Institute of Marine Science. 565p. <http://www.vims.edu/GreyLit/VIMS/sramsae193-194-195pdf>
- VIMS. 1979. Middle Atlantic outer continental shelf environmental studies. Special report in applied science and ocean engineering no. 204. Virginia Institute of Marine Science. 165p. <http://www.vims.edu/GreyLit/VIMS/sramsae204> and <http://www.vims.edu/GreyLit/VIMS/maocsv3>

Report (1978) provides “technical information on pipeline siting and construction requirements as well as on the potential environmental impacts associated with pipelines”. In addition, there are numerous maps of risk to living resources.

- Rooney-Char, AH and RP Ayres. 1978. Offshore pipeline corridors and landfalls in coastal Virginia. Special report in applied science and ocean engineering no. 190. Volumes 1 and 2. Virginia Institute of Marine Science.

Miscellaneous

Atl-use.pdf is a map of Multiple Uses of the Outer Continental Shelf, dated October 2003, compiled by the Minerals Management Service (<http://www.mms.gov/>).

Hobbs, C. Comprehensive list of references pertaining to offshore sampling, through approximately 1995. Format: Access database

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