Chesapeake Bay Academy: Virginia Coastal Ecosystems Field Course

July 10-14, 2011

Tentative Daily Schedule

Activities will take place over five consecutive days in July 2011, with additional pre- and post institute activities conducted via a project website and other methods of online communication. There will be a minimum of 40 hours instructional time in classroom, lab, field and online. Field activities as described may be adjusted to accommodate tides, weather and other scheduling factors.

Day 1

- Arrival at VIMS Gloucester Point for orientation
- Travel to VIMS Eastern Shore Lab (Wachapreague, VA); field activities en route may include: Chesapeake Bay Bridge-Tunnel; Kiptopeke State Park; Cherrystone Aqua-Farms; etc.
    - o *Topics covered: aquaculture (resource use); land use; watersheds*
- Arrive at Eastern Shore Lab facility, move into dormitory 7
- Tour of lab
    - o *Topics covered: aquaculture; benthic research; shark studies; near-shore research*
- Review of objectives, practice using field equipment and data recording protocol
- Viewing and discussion of "Lifestyles of the Wet and Muddy" (National Geographic film made on Eastern Shore)
    - o *Topics covered: ecosystems; coastal ecology*

Day 2: Field Studies – Bay side

Topics covered: coastal ecology; submerged aquatic vegetation beds; aquatic food webs; water chemistry; shoreline topography; geology

Skills learned: canoeing; plankton and trawl sampling; seining; field identification; responsible handling of samples; observation and measuring abiotic parameters; GPS

- Field observations and activities (Scarborough Island and Pungoteague Creek near Harborton, VA) on board VIMS vessels, including plankton and trawl sampling, seining, identification of key habitats, fish and bird species and their prey
- Observation and measurement of currents, tides, water chemistry, shoreline topography, geology
- Follow-up laboratory activities, analyzing data collected in field
- Wachapreague exploration (local navigation on foot, using hand-held GPS units)

Day 3: Field and lab activities – Sea side

Topics covered: coastal ecology; the Bay as nursery grounds; mud flats; barrier island ecology and geology; ocean inlet dynamics; sediments

Skills learned: beach profiling; observing and measuring abiotic parameters; responsible handling of samples; sediment; graphing/Excel

- Field activities as described in Day 2, at a tidal creek, oyster reef, mud flat, barrier island and Wachapreague Inlet
- Follow-up laboratory activities, analyzing data collected in field

- Presentations by scientists (topics TBA, may include research on benthos, fisheries, water quality or aquaculture)

Day 4: Classroom resources; Summary of field and lab data and activities
Topics covered: online and print resources; MWEEs

Skills learned: graphing/Excel; basic statistics; PowerPoint

- Chesapeake Bay teaching resources, inquiry lessons using on-line data and activities from the Bridge (Sea Grant–sponsored online ocean education resource center) and other environmental education resources including *Project WET* and *Virginia's Water Resources*.
- Instruction and discussion on implementing Meaningful Watershed Educational Experiences (MWEE)
- Summary discussion of field and laboratory data and activities: *What did we learn?*
- Draft individual plans for implementing aquatic field experiences (MWEE) for students

Day 5: (half-day) Classroom applications and follow-through planning

- Roundtable discussion of applications of workshop activities and strategies for classroom and field instruction
- MWEE plan presentations
- Discussion of follow-up communication and post-course activities
- Evaluation of workshop and content post-test