

VIMS ARCHIVES

Eastern Shore Laboratory



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Marine Science

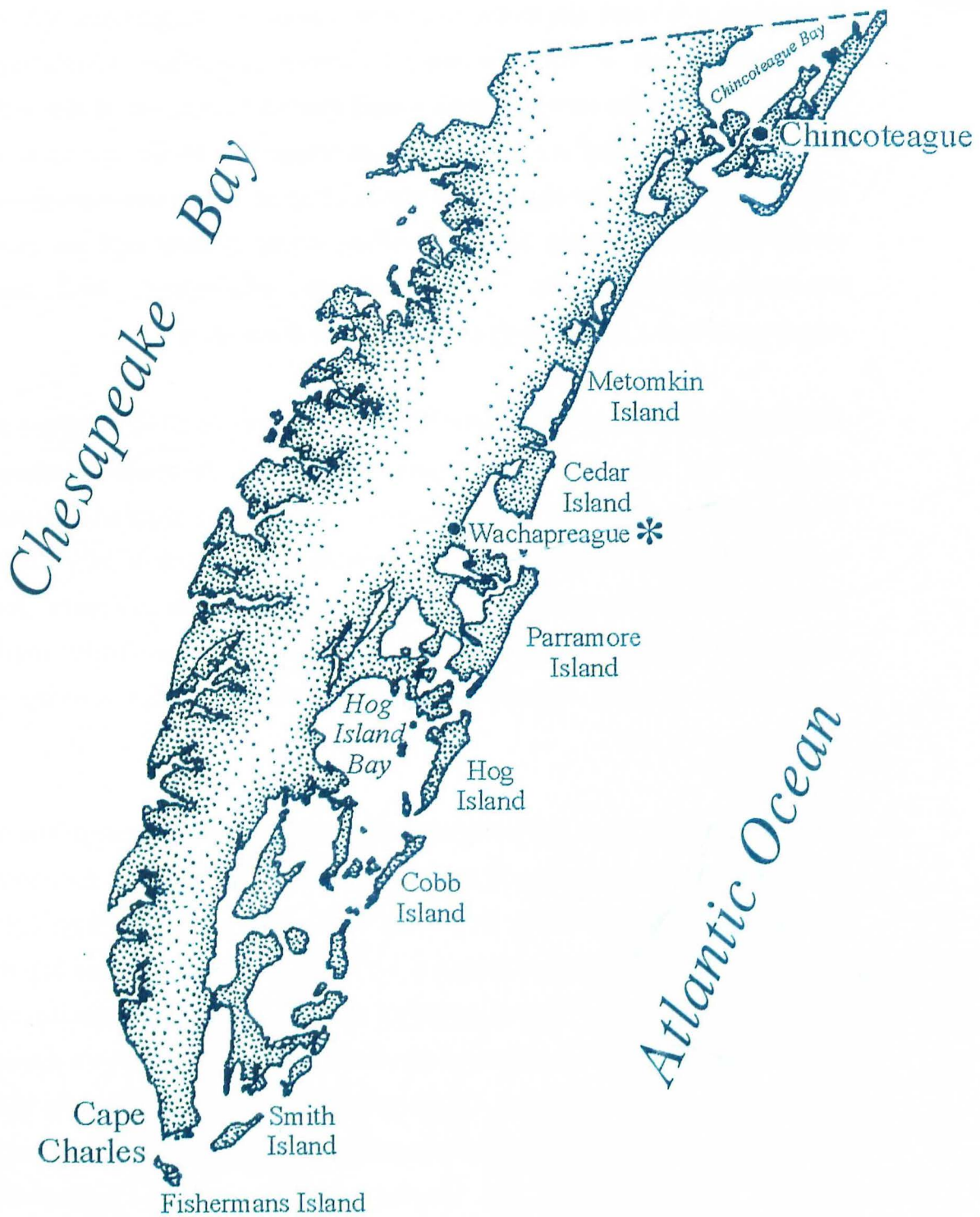
College of William and Mary
Virginia Institute of Marine Science
Wachapreague, Virginia

Introduction

The Virginia Institute of Marine Science Eastern Shore Laboratory (ESL) is located on a 4.3 acre site in the seaside village of Wachapreague, VA, on the landward margin of the mid-Atlantic barrier island/salt marsh/lagoonal system. The facility serves as both a field station in support of research and teaching activities and as a base for on-site research in molluscan aquaculture and the ecology of the region. By virtue of its access to the coastal habitats along Virginia's Eastern Shore, excellent water quality and an extensive seawater laboratory, the facility affords educational and research opportunities not available elsewhere within the region.

VIMS first established the Eastern Shore Laboratory in 1960 as an outpost to monitor for the spread of oyster pathogens *Perkinsus marinus* and *Haplosporidium nelsoni* in nearby waters. The facility regularly serves in a support role for graduate and undergraduate education at VIMS/College of William & Mary by providing a field station for classes in coastal geology, experimental ecology, malacology and invertebrate zoology. Additionally, the field station is used extensively by other institutions for undergraduate education.

Over the past few years, the Institute has been expanding the use of the facility as a field station for research and education. The ESL has extensive wet laboratory space: a 1,472 sq. ft. wet lab which serves as a hatchery; 1,440 sq. ft. wet lab with 40 seawater tables; a 1,450 sq. ft. seawater flume laboratory; and a 585 sq. ft. temperature controlled wet lab. A dual line seawater system, redundancy in pump capacity and excellent water quality insure a consistent, year-round wet lab capability. A recently constructed 3,200 sq. ft. building provides laboratory and classroom space for visiting classes and investigators. Recent renovations to an on-site dormitory have improved the accommodations for students and visiting researchers.



Geography

The barrier island/salt marsh/lagoonal system along Virginia's Eastern Shore is unique in the contiguous United States in its extent of undeveloped barrier islands. Along its 100 km Atlantic coastline 10 of the 13 barrier islands lack any development. The only barrier islands accessible by bridge are the sites of Assateague National Wildlife Refuge and NASA's Wallops Island launch facility. The Nature Conservancy, a Washington-based, non-profit organization, owns all or part of 10 of the barrier islands, approximately 40,000 acres of marshland and 10,000 acres of uplands adjacent to the marsh. The region, designated by UNESCO as part of their Biosphere Reserve System, has received National Natural Landmark status by the U. S. Department of the Interior, and is included within the Western Hemisphere Shorebird Reserve Network.

At its widest point, the Eastern Shore of Virginia is only 20 miles across from the landward margin of the salt marsh to the shores of Chesapeake Bay. The estuarine environments along Chesapeake Bay's eastern shore differ considerably from those of its western shore. In contrast to the large riverine systems discharging into the western side of the Bay, freshwater input from the east are via small creeks rarely more than ½ km wide and 10 km long. As a result, descriptive and manipulative studies of estuarine processes often are more tractable in these smaller subsystems.

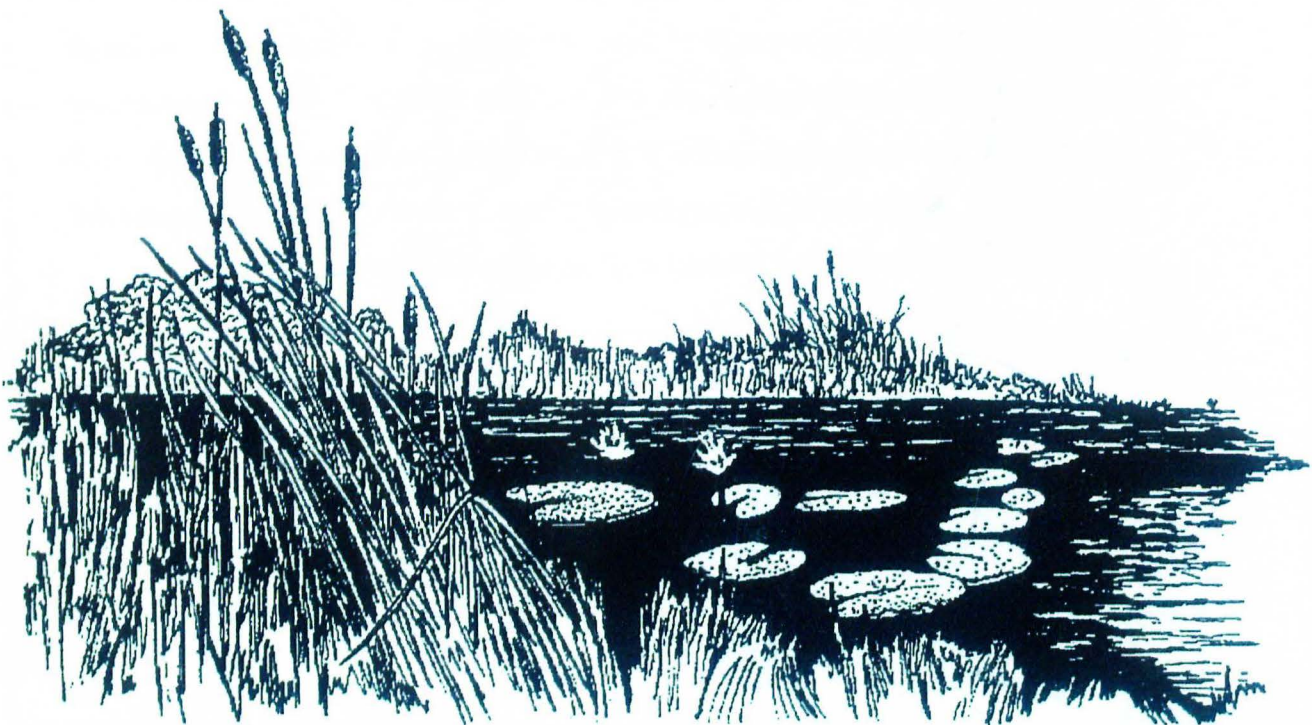
The VIMS-ESL is uniquely positioned to provide easy access to the eastern portion of Chesapeake Bay and the barrier island/salt marsh/lagoonal system along the Atlantic shore.

Lab Staff

A small resident staff at the Eastern Shore Lab is responsible for maintaining the facility and conducting research, educational and advisory activities. Additionally, this staff supports the efforts of visiting researchers and instructors in a variety of ways, including field assistance and the maintenance of animals.

Visiting researchers who are not familiar with vessel operation in the local environments will require the assistance of a resident staff member for boat operation. Resident staff are generally required for the operation of all boats on class field trips.

For most first time users of the lab, it is appropriate to first contact the Director to discuss your needs. As you become more familiar with the operation of the facility, you will often be able to contact appropriate individual staff members directly.



Mark Luckenbach	Director	787-5816	luck@vims.edu
Nancy Lewis	Adm. Assistant	787-5816	nlewis@vims.edu
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Tamara Hurlock	Lab Tech. Sr.	787-5835	tamara@vims.edu
Dave Marshall	Lab Tech	787-5816	
Stephaine Beawitz	Lab Tech	787-5816	

Classroom & Laboratory Facilities

A new 3,200 sq. ft. building at the Eastern Shore Lab provides office, laboratory and classroom space for use by visitors. One room serves as library/classroom/conference room with a total seating capacity of 75. A teaching laboratory has work stations for 24 students and is equipped with dissecting and compound microscopes. Laboratory bench space is available in a common use equipment room which contains most of the equipment listed below. Other features include a fume hood, environmental chambers, an autoclave and deionized water.

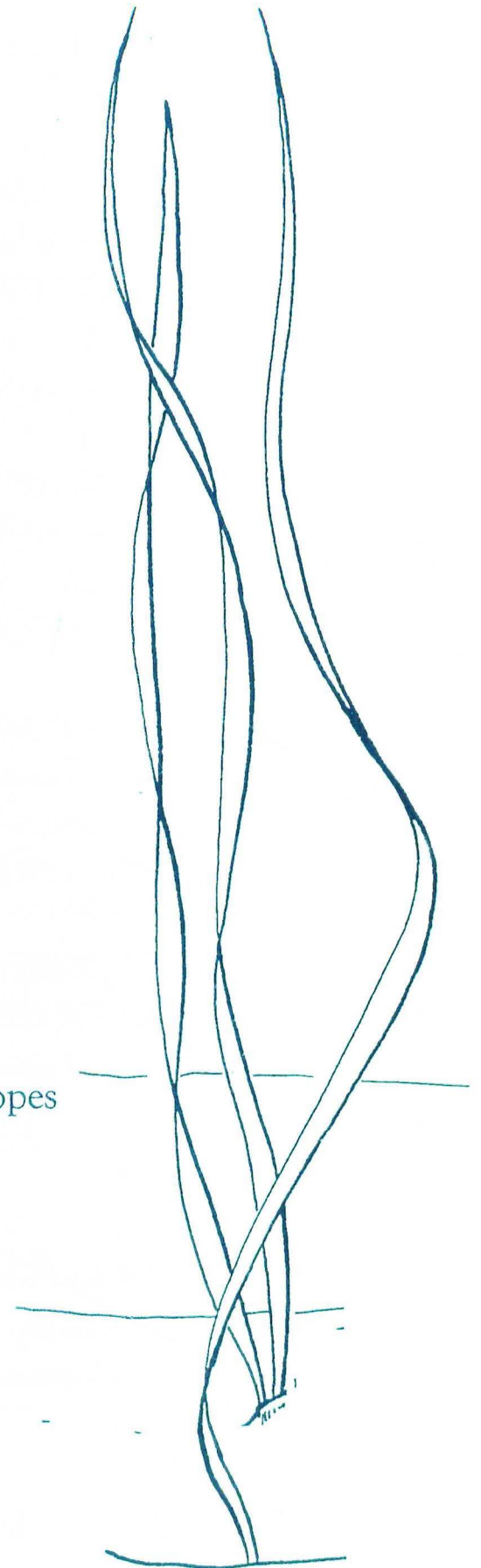
Three 144 ft² offices, located in this building, are available for use by visitors. Each office contains desk and lab bench space, telephone and a personal computer (Macintosh or Windows platforms). Assignments to offices are made on the basis of need and the order of requests.

A hallmark of the Eastern Shore Lab is a large flexible seawater system. Approximately 50 flowing seawater tables are located at the facility, some inside a building, others outside. Tanks and aquaria of various sizes, ranging from 10 to 15,000 gal, are available for use in either flow-through or recirculating modes. [Maintenance and experimentation with animals in these tanks may require compliance with animal care procedures; potential users should read the section entitled "Animal Maintenance" and complete the accompanying forms.]

A 5-m long recirculating seawater flume can be used for controlled flow experiments. This flume features steady 2-dimensional flow for modeling benthic boundary layer conditions. Temperature control, filtration and velocity characterization are available.

Partial Equipment List

- Spectrophotometer (UV/visible)
- Analytical balance
- Fluorometer
- Top loading electronic balance
- Acoustic doppler velocimeter
- (2) 20-ft³ environmental chambers
- Muffle furnace
- Autoclave
- Compound and dissecting microscopes
- Dredge
- Otter trawl
- Plankton net
- Image Analysis System



Dormatory Facilities

The dormitory facility at the Eastern Shore Lab is a 4,000 ft², two-story house, converted from a single-family dwelling. Total sleeping capacity is 35 people. There are 3 private rooms each with one single bed and 2 rooms with 4 and 6 single bunks each downstairs. The upstairs has 3 large rooms with a total of 22 bunks. Two restroom and shower facilities are located on each floor. Handicap access to the lower floor is provided.

Kitchen and dining facilities, located on the first floor, are available for use by dorm residents. Appliances and cookware are available, but all food must be brought by guests. Consideration of other guests requires that these facilities be maintained clean and orderly by all users.

Only a limited amount of linens are available, so visitors should bring their own linens. As with the rest of the Eastern Shore facility, there is no janitorial service and guests are required to keep the dorm clean and neat. A full listing of dormitory rules is provided on the following page.

There is a telephone in the dormitory. After hours, there is no one in the administrative office to answer the phone. If you are expecting personal calls, the dormitory number should be used.

Dormatory Rates

	Person/Night	Person/Week
VIMS and W&M Staff, Students and Faculty	\$ 6.00	\$ 30.00
Virginia Institutions	8.00	30.00
Non-Virginia Institutions	10.00	50.00

ESL dormitory phone: (757) 787-5838

Dorm Rules

This dormitory is the property of the Commonwealth of Virginia, and, as such, laws and rules which apply to Commonwealth property will be applied here. Further, because this is a dormitory, rules of the Accomack public health service and the fire marshal will be enforced.

1. The College of William and Mary's policy on alcohol in dormitories is to be observed in the ESL dormitory. Policy states that all faculty, staff, visitors and guests will observe Virginia law as it pertains to the purchase and consumption of alcoholic beverages.
 - a. Persons who are not 21 years of age may not purchase, possess, or consume any type of alcoholic beverage.
 - b. Alcoholic beverages shall not be sold to or served to individuals who appear or are intoxicated.

No person shall be served or consume alcoholic beverages at or in any unlicensed public area (any area for which a special license has not been requested from the Alcoholic Beverage Control Board) on campus or college property. Public areas include those areas where the general public has access such as lobby/lounge/living room areas of College residence halls including fraternity and sorority houses, and outdoor areas.

2. No smoking in the building.
3. No food or drink except in kitchen and dining room.
4. No pets inside the building at any time.
5. Do not move furniture between rooms.

6. Put all refuse and recyclables in the appropriate containers.
7. Do not wear boots or wading shoes into dorm. Leave them outside or in alcove by the door.
8. Before you depart
 - a. Turn heat down to 50°,
 - b. Turn off all lights and electric appliances,
 - c. Close and lock all windows and doors,
 - d. Put garbage in outside trash hut,
 - e. Mop up mud and spills,
 - f. Put food away,
 - g. Pick up and put away personal gear.

Vessels

The Eastern Shore Laboratory maintains a fleet of small vessels for the support of research and educational activities. The emphasis in this fleet is on small, shallow draft vessels which provide access to shallow-water habitats along the seaside and bayside of the Eastern Shore. At the present time the fleet includes:

Qty	Vessel	Capacity
(2)	24' Carolina Skiffs	12
(1)	14' Carolina Skiff	4
(1)	22' Chincoteague scow	9
(2)	29' monitors	12
(1)	21' Sea Ox	10
(2)	17' aluminum skiffs	9

Small sampling gear, including dredges and trawls, is available at the lab and may be checked out along with the vessels. The monitors each have a boom with power winch for retrieval of heavier pieces of gear.

Use of vessels is restricted to VIMS personnel and visiting investigators with training in vessel operations and local area knowledge commensurate with needs.

Vessel use is charged at a rate of \$65/day plus fuel costs.

Individuals who are not employees or students of the College of William and Mary should complete the liability waiver on the following page before embarking on a VIMS boat.

Scheduling of vessels should be done in advance by contacting Nancy Lewis at 787-5816 or nlewis@vims.edu. If you have not previously received approval for operating vessels at the Eastern Shore Lab, contact Mark Luckenbach at luck@vims.edu to schedule training or the assistance of the staff.

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LIABILITY RELEASE

I, the undersigned, do hereby absolve and relieve the Virginia Institute of Marine Science from any claims or litigation resulting from injury, death or damages to me or my property during _____

Further, I understand and declare that my participation is voluntary and that I will also not present or instigate any claim against the Commonwealth of Virginia or any officers, agents or employees of the Virginia Institute of Marine Science.

Signed: _____

In witness whereof I have affixed my signature this _____ day of _____ 19__.

Witnessed: _____

One of the hallmarks of the Eastern Shore Laboratory is the facilities for maintaining and

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Animal Maintenance

experimenting with live marine and estuarine organisms. A flexible seawater system and large number of seawater tanks, tables and aquaria make it possible to support a variety of marine culture and animal maintenance needs.

Individuals wishing to use these facilities for the maintenance of marine organisms should first contact the Director for scheduling purposes. The form on the following page, describing your tank and maintenance needs, should be filled out and returned in advance. If your work will involve the use of vertebrates, you should also complete the form from the Research on Animal Subjects Committee (attached) and send one copy to the Animal Research Committee at the VIMS main campus and one copy to the Eastern Shore Lab.

The proper care and maintenance of organisms generally includes establishing feeding schedules, monitoring water quality, temperature control and the cleaning of tanks, filters and seawater lines. To ensure that we meet all of these needs it is essential that each investigator work with the Director and staff of the Laboratory to develop a clear maintenance schedule. It is recognized that at a coastal field station investigators will often be away from the laboratory for periods during which their organisms will require maintenance by the resident staff. It is absolutely imperative that this maintenance be the product of prior planning, in writing, with the Director.

(Note: It is not sufficient to ask someone to look after your fish while you are away.) We require that regular water quality monitoring be a part of any culture or maintenance of marine organisms and that an Animal Maintenance Schedule form be completed for all projects.

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EASTERN SHORE LABORATORY

Request for Maintenance or Culture of Marine Organisms

Name: _____

Institution: _____

Phone: _____ E-mail: _____

Organism(s): _____

Project start date: _____ End date: _____

Seawater System Needs (fill in as much as you know at this time)

Type of tanks: _____

Number of tanks: _____

Mode of operation:

_____ recirculating _____ flow-through

Temperature requirements: _____

Salinity range: _____

Other needs:

Brief project description:

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EASTERN SHORE LABORATORY

Animal Maintenance Schedule

Name: _____

Organism(s): _____

Project start date: _____ End date: _____

Investigator's Schedule (Will you be here for the entire project? If not, note when you will be away?):

Tanks in use: _____

Feeding schedule:

S	M	T	W	T	F	S
am						
pm						

Food source: _____

Dead animal procedures:

Cleaning schedule:

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Hazardous Materials

Use

Faculty, staff, students, volunteers, and guests are expected to follow all established safety regulations and procedures, to include those published in the Laboratory Safety Handbook and the Hazard Communication Standard Program, Chemical Waste Management Program, April 1996 (2nd Revision). We would remind everyone "When chemicals are transferred from the original container to a secondary container, the individual making the transfer will ensure that this container is properly labeled with the chemical identity and appropriate hazard warning(s)" (page 5, Hazard Communication Standard Program, Chemical Waste Management Program, April 1996 (2nd Revision)). Chemical names and common names are listed on material safety data sheets (MSDS). Container means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank.

Visitors to the lab should discuss their chemical use and storage needs with the resident staff.

Directions, etc.

To reach the Eastern Shore Laboratory: On Highway 13 approximately 40 miles north of the Chesapeake Bay Bridge Tunnel and 30 miles south of the Virginia/Maryland line, in the small town of Keller, take Highway 180 East. Follow for approximately 4 miles until it ends at the waterfront street in Wachapreague. Take a left on the waterfront street (Atlantic Avenue) and travel approximately 400 yards to the ESL campus. The main administration office is in the one-story brick building.

- During winter months, there is no restaurant open for any meals. Off-season the restaurant is open only on certain days. In summer, the restaurant is open all week.
- There is a small grocery store/sandwich shop within walking distance of the campus.
- There is a post office within walking distance of the campus.
- Wachapreague does not have a bank or ATM.
- For these facilities, restaurants or fast food, it is necessary to drive back to Highway 13.
- It is important to have transportation if you plan to be at the ESL for several days.

Mailing address: Virginia Institute of Marine Science
Eastern Shore Laboratory
P.O. Box 350
Wachapreague, VA 23480

Administrative phone: (757) 787-5816
Dormitory phone: (757) 787-5838

Virginia Institute of Marine Science
The College of William & Mary
**Wachapreague
Campus**

