

Connecticut State University

**Five Year Plan for Outreach, Education
and Research on Outer Island**

Draft Document

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Outer Island Executive Committee

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Individual or Family Access to Outer Island

Individuals or family groups who wish to visit the island from May 30th to September 25th may do so during normal operating hours (8am to sunset) without a reservation. [Island keeper interns will be on the island until approximately August 15th to serve visitors; after this date visitation may be curtailed due to lack of availability of island keepers]

There are several ways groups can get to Outer Island: they may arrive by kayak or other motorless craft and beach their boat in front of the education lab building. Visitors may also bring small motorboats and tie them to the floating dock in accordance with posted signs and rules. Finally they may take a ferry or water taxi and be dropped off.

On weekends or other designated times that volunteer docents are present visitors may take a guided tour or participate in other types of "enhanced visitation" such as special programs or lectures of the day. If visitors prefer not to do that, or arrive on the island when no docents are present, they may explore the open areas of the island at their own pace. Open areas include the majority of the east side of the island - areas immediately around the main house and the educational pavilion, the concrete walkway leading to the south side of the island, the south observation deck and the moon garden. All other areas remain closed. On the weekends when USFWS volunteers are present, visitors may view the large east tide pool and the southern rocky shore. The map attached in the appendix of this document provides more details on open and closed areas.

Visitors must obey all posted sign and any appropriate instructions given to them by island keeper interns, CSU coordinators, USFWS staff and volunteers. In order to assist the public, CSU in coordination with USFWS, will work together to establish informational signs in Stony Creek about the Outer Island and its open and closed status.

Group Access to Outer Island

Connecticut State University coordinators will schedule all environmental education groups to include schools, universities, community and civic associations, group travel/trip organizers or other parties interested in going to Outer Island. Scheduling will only occur during the period that the USFWS has opened the island for visitation (May 30th to September 25th of each calendar year). Reservations for the coming summer season will be taken starting March 1st of each year. Most groups will be interested in examining the intertidal areas of Outer Island during their visit so they should consult a tide chart. Supervising teachers and chaperones should be prepared to be active participants in supervising group behavior and assisting in the conduct of the educational programming.

Groups and other organizations should contact Vincent Breslin (Professor, SCSU) via email at breslinv1@southernct.edu to schedule a day and time for the visit. Groups must do this at least two weeks before their intended visit. All requests will be scheduled on a first-come, first-served basis. Email requests should include "Outer Island Visit" in the subject line, the name of the organization, cell phone number of the organization's representative (this number must be a

person who will accompany the group to the island), primary requested date and time, secondary date and time, and lastly a short description of activities.

The recommended maximum group size is 30 persons including chaperones. In the case of groups made up of persons under eighteen years of age - there must be one chaperone for every eight minors. Names of chaperones must be provided. Trips will be scheduled, and the contact person notified, by the CSU coordinators within three business days of receipt of the email. The group will receive the link to the CSU website which will show that their reservation has been placed on the Outer Island schedule.

Scheduling will be based on activity and number of people involved. Because a group is scheduled to be on the island, that does not necessarily mean that they will be the only group on the island at that time. This link on the CSU schedule website provides more group information: www.outerisland.org

Visiting groups are responsible for their own transportation from their respective locations to the dock at Stony Creek in Branford. Visiting groups are also responsible for making reservations for their group with the island ferry service. The ferry service may be contacted at 203-889-8365 (and www.thimbleislandsferry.com). Two trained interns and/or a CSU faculty coordinator/representative will supervise educational programming on the island. During the period from June 1 to late August Island Keeper interns will supervise educational activities. Group visits will be scheduled starting on May 30th of each year depending on CSU staff availability and the availability of adequate docking facilities on the island. Group visits in September will also depend on availability of CSU coordinators/representatives and the availability of adequate docking facilities. Group visits will end on September 25th of each year.

The CSU coordinators and/or the US Fish and Wildlife Service will have the right to cancel any scheduled trip due to weather concerns or infrastructure issues on the island.

Outer Island Interns

Two Outer Island interns will be hired each summer by the CSU coordinators to staff the island in support of the educational programs, provide an on-site presence for the island, and perform maintenance duties in support of the island infrastructure. The island keeper interns will be provided a stipend by the CSU system and will be given the opportunity to receive university directed study (1-3 credits) for the summer internships. The directed studies will be supervised by the CSU coordinators and interns will perform associated duties including water quality measurements, fouling measurements, and supervise and conduct educational activities with visiting school groups. Interns will be on the island from May-August each summer.

The US Fish and Wildlife Service will have the opportunity to review the CVs of any potential candidates for the internships at Outer Island. The USFWS will also serve as supervisors to the interns on a day-to-day basis, directing their duties regarding public use, security and maintenance. Interns will participate in two weeks of USFWS training at the start of the season

to prepare them to operate government-owned boats and vehicles, to properly interpret the mission of both the National Wildlife Refuge System and the Stewart B. McKinney NWR, and to follow procedures required for living and working on US Department of the Interior property. Interns will wear a uniform (developed jointly by USFWS and CSU) that is similar to other intern uniforms used at the Stewart B. McKinney NWR. This uniform will be issued during the first week of intern training by USFWS.

CSU will work with the Refuge Manager of the Stewart B. McKinney NWR to develop a job description for the island keeper intern position and determine the appropriate salary (currently a stipend of approximately \$2,750) and start/end dates for this position. CSU will have the responsibility for receiving and administering funds from the Outer Island Foundation for the purpose of hiring the interns for this and future years. In order to increase communications with island keeper interns, CSU will investigate the ability to establish internet and email access and, if practical, provide internet to the interns while stationed on the island.

Outer Island Website

Several existing websites feature Outer Island, but each of these websites has deficiencies and a comprehensive website needs to be established to serve our research and educational programs. The Outer Island website is being designed to accomplish the following goals: (1) to increase the awareness of educators in Connecticut of the opportunity to accompany CSU faculty and staff on an educational experience to Outer Island and to integrate Long Island Sound environments into their science curriculum; (2) to increase the number of individuals and groups (schools, nature centers, youth groups, etc.) visiting Outer Island each year; (3) to provide a pre-visit and post-visit tool for educators to use in support of their curriculum for increasing student knowledge concerning the ecology of Outer Island and Long Island Sound; and (4) to serve as a general introduction to marine ecology and increase student awareness of the importance of protecting and preserving the diverse natural habitats within Long Island Sound. At present, the Center for Coastal and Marine Studies is providing funds to support a computer science student and faculty member (Scott Graves) to develop the website. This work is well underway. The CCMS has purchased the domain name (outerisland.org) and hosting services for 3 years.

As the website is only useful if maintained, we request 50 hours (50 hours x \$10/hour = \$500) of student support each summer for a student to update the Outer Island website. These funds would be requested starting in year 2. These duties would include posting water quality data (and other research results), updating group visit schedules, posting photographs and new content, etc. We also request that the domain hosting services and any additional domain name registration fees be paid using foundation funds.

Outer Island Web-Camera #2 Installation

We are requesting a second web-camera system for Outer Island monitoring and education. The 2nd web-camera is intended to provide additional online video coverage of Outer Island habitats, thus further enhancing Island monitoring as well as learning opportunities for local area school teachers wishing to use Outer Island resources and place-based environmental and coastal marine science learning activities to enhance their curriculum.

A major initiative for the proposed Outer Island Weather and Climate Professional Development Workshops will be promoting the infusion of technology in teaching and learning through the use of Outer Island's weather station and web-cameras to extend and enhance the on-Island adventures into year round opportunities to monitor and track weather conditions on the island through the seasons. The requested additional web-camera system, installation, and possibly and additional digital router and wireless network card will serve to extend visual access to key locations on the Island – potentially, the bird refuge area or other island habitat locations.

Water Quality Monitoring

Water quality monitoring programs are an important aspect of determining the overall health of ecosystems within Long Island Sound. Current monitoring programs within LIS are conducted by interstate, state and local agencies, academic institutions, and volunteer and community organizations. Government agencies and academic institutions have primarily focused on the open sound while community and volunteer organizations have examined water quality within rivers, bays and harbors. We propose establishing a water quality monitoring program at Outer Island. The water quality data set can be a regional asset in contributing to our knowledge of local water quality while providing long term data sets for use in our educational programs and teaching.

The proposed monitoring program will be established in response to a lack of high quality monitoring data for the Branford Stony Creek area and to provide a long-term continuous record of water quality measurements for this region. The water quality program supplements our (SCSU) recently established on-going water quality program for New Haven harbor. To date, water quality monitoring at Outer Island was only conducted periodically by select visiting groups. Water quality parameters examined in this program will include temperature, salinity, dissolved oxygen, turbidity, secchi disk depth, and pH. We need to conduct a complete assessment of the water quality monitoring equipment and supplies on Outer Island to determine the needs for this program. However, we can assume that the equipment stored on the island has not been frequently used, maintained or calibrated. If these instruments are in poor condition they will need to be replaced. Cost estimates for the equipment necessary for the monitoring program include a hand held pH meter, dissolved oxygen meter, temperature/salinity/conductivity meter, turbidity meter, Nansen bottle (for collecting the water sample), and secchi disk. Supporting weather data will be obtained from the weather station. Annual supplies will be required to support the calibration of these instruments and various expendable supplies associated with their use.

SCSU has an existing water quality monitoring program established to examine long-term changes in New Haven water quality parameters. We will train the Outer Island interns to properly use and maintain the instrumentation necessary to conduct water quality testing. Water quality measurements will be conducted daily and recorded for input into spreadsheets, graphed to show trends and linked to the Outer Island website for access for educational programs.

Education Supplies

We would like to supplement the existing literature on the island used in support of the educational and research programs on the island. We would like to supplement the holding with new invertebrate keys and additional copies of existing keys (Weiss, Marine Animals of Southern NE and NY). Several basic marine ecology textbooks targeted for different grade levels should also be available on the island. Also, with the large screen TV and DVD player on the island, we should increase our holdings of educational videos and programming. Copies of the CT Sea Grant curriculum materials should also be available on the island.

In addition to the literature, we need to increase the inventory of disposable supplies including plasticware (bottles, containers) and glassware (beakers, graduated cylinders, etc.). Additional hydrometers, large plastic containers (serve a small touch tanks), tape measures, quarter meter quadrats, seine nets will also be required.

Fouling Community Research Project

Long Island Sound, like so many estuaries around the world, has been subjected to a variety of anthropogenically induced changes over the past several decades. Increasing inputs of nutrients have changed species abundances and species composition of benthic and pelagic communities including both macroscopic and microscopic organisms. In addition, foreign species have been, and continue to be, introduced into Long Island Sound through a variety of mechanisms. The Asian shore-crab, *Hemigrapsus sanguineus* is one example of an invasive species in Long Island sound that is here to stay and which has been the center of many education activities on Outer Island. In addition to mobile species, many fouling organisms have been introduced into LIS and compete with native species for resources. Since fouling organisms exist intertidally and subtidally, they often go unnoticed by many who visit the shore and yet they serve a vital function in coastal ecosystems. We propose to develop a Long-term Monitoring project that will focus on the fouling community at Outer Island. The goal of this project will be to monitor the species composition, population abundance, and seasonality of fouling communities on Outer Island and to use these data to inform and educate the public and others about these important communities. Long term data collection will allow us to identify any trends in species abundance or composition and will allow us to identify any foreign species that may occur. We envision developing curriculum materials which can be applied across age groups (with modification of course) and ultimately we hope to disseminate these materials to all who are interested. CSU will analyze 2nd year data from fouling community project and will begin review of model programs of environmental education/outreach and develop new curriculum modules or modify existing modules for education and outreach use on Outer Island. CSU will offer training for graduate students and volunteers on “best practices” for science education and outreach. Curriculum based on the fouling community project will be piloted. We further hope that our data may be of use to university, state, and federal researchers and other interest groups and plan to make our data and sampling protocols available on the “official” Outer Island website.

Weather & Climate Professional Development Workshops

The Outer Island Weather & Climate Professional Development Workshops are intended to provide learning opportunities for local area school teachers wishing to use Outer Island resources and place-based environmental and coastal marine science learning activities to enhance their curriculum. The educators recruited for these professional development opportunities will include those teachers/schools that have a history of utilizing Outer Island in our annual spring/summer site visits, as well as new recruits from underserved schools in the Greater New Haven area. Teachers will be trained in environmental and marine science data collection protocols, including conducting - Weather observations, Water Quality monitoring, Inter-Tidal Transects, Flora and Fauna (bird) identification, Island Vegetation Mapping (including Tree height and biomass), and Soil Analysis. All these data collection activities will follow the International GLOBE Program protocols so that observations and data will conform to GLOBE's online database requirements.

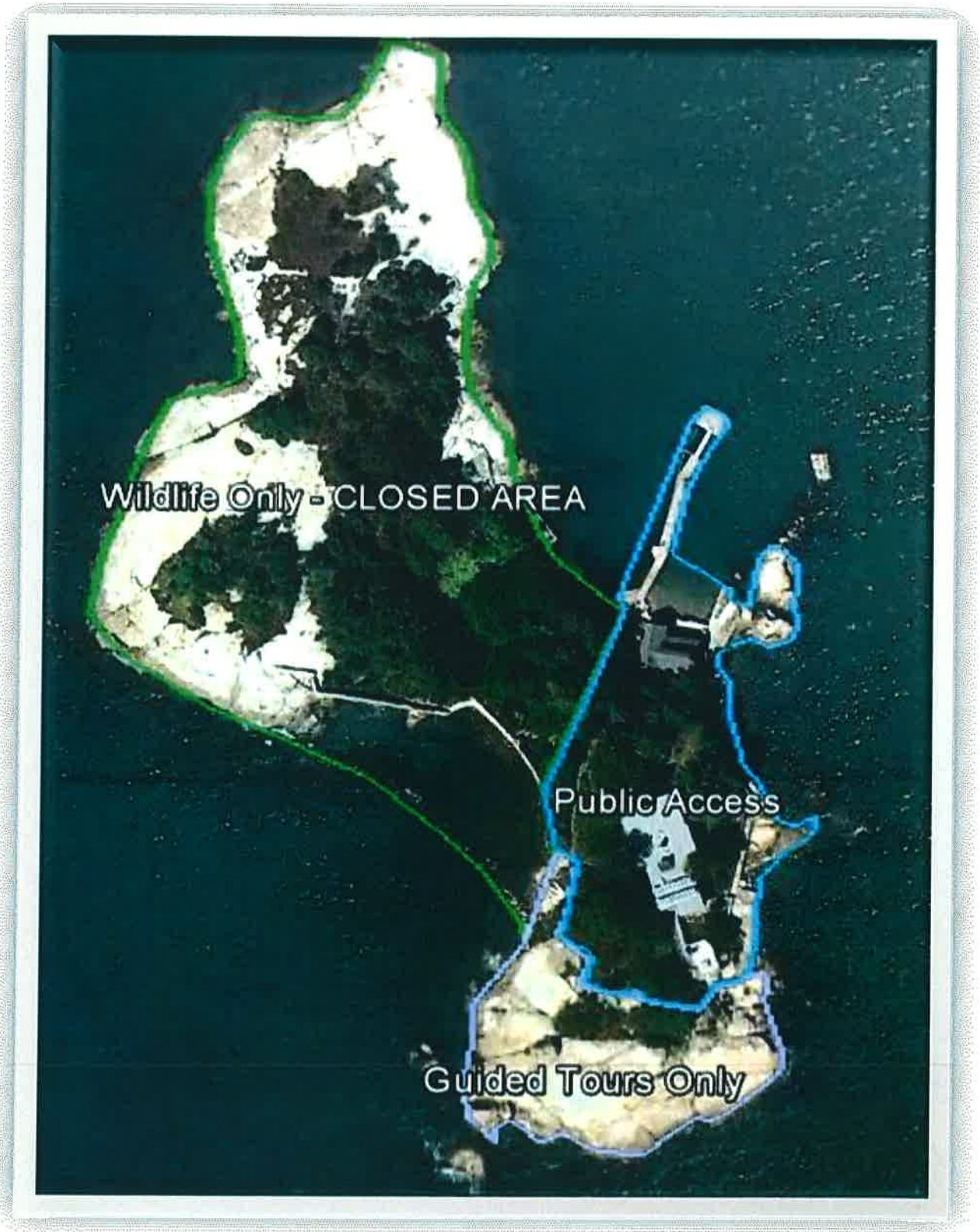
A major initiative for the OIWC workshops will be promoting the infusion of technology in teaching and learning through the use of Outer Island's weather station and web-cameras to extend and enhance the on-Island adventures into year round opportunities to monitor and track weather conditions on the island through the seasons. The proposed OIWC teacher training be conducted each Spring, starting in 2013. This Professional Development Institute will require teachers to commit to the full course of trainings [10 hours over two weekends from May to June]. In exchange for their full commitment, each participant will be supported through a modest stipend and award of a multipurpose environmental monitoring data probe.

Grants

Any organization applying for a grant that will have an effect on Outer Island's habitat or public use must notify both the CSU coordinators and USFWS staff of their plans and give them the opportunity to read any draft grant proposals before they are submitted.

Appendix

Outer Island Map – Open/Closed Areas



CSU Proposed Budget 2012-2016

Red = CCSU Funds; Bold Black = SCSU Funds

Category	2012	2013	2014	2015	2016	Total
Personnel						
Intern #1	2722.50	2858.63	3001.56	3151.63	3309.22	15043.53
Intern #2	2722.50	2858.63	3001.56	3151.63	3309.22	15043.53
Computer Student Stipend	0	500	550	600	650	2,300.00
CSU Tuition + Fees (1-3 credits/Intern)						
in state	\$1,336.00	\$1,336.00	\$1,336.00	\$1,336.00	\$1,336.00	6,680.00
out of state	1,378	1,378	1,378	1,378	1,378	6,890.00
Supplies						
Water Quality	500	300	300	300	300	1,700.00
Fouling Communities	0	0	0	0	0	
Educational Materials	600	400	400	400	400	2,200.00
Plankton Surveys	0	0	0	0	0	
Website						
Domain host	0	0	200	0	0	200.00
Equipment						
Turbidity Meter	700	0	0	0	0	700.00
Sal/Cond/Temp meter	850	0	0	0	0	850.00
DO meter	850	0	0	0	0	850.00
Nansen Bottle	600	0	0	0	0	600.00
Weather Station						
Broadband Access fee	720	720	800	840	900	3,980.00
Webcam #2 + Installation	0	\$10,390	0	0	0	10,390.00
Weather and Climate Workshops	0	5,100	5,100	5,100	5,100	20,400.00
Total Annual Request	12,979.00	25,841.25	16,067.11	16,257.27	16,682.43	87,827.06
Total SCSU Funds	\$4,820.00	\$17,410.00	\$7,300.00	\$7,240.00	\$7,350.00	\$46,420.00