



Activity 14 – Protect, Conserve & Restore – A Connection to your Community

PURPOSE:

To help students relate the information discovered through their estuary study to the community and the world around them.

TIME REQUIRED:

One class period (~45 minutes) and additional time based on project selected

SUBJECTS:

Science, English

MATERIALS NEEDED:

“Living on the Estuary” story, specific materials required will depend upon the project selected and will be identified by the students using the “TIDES Project Design Worksheet”

VOCABULARY:

Community, conserve, protect, restore, service, stewardship.

Outcomes: 1) Students will be able to define the importance of the estuary through a personal statement; 2) Students will be able to identify at least three actions that are necessary to maintain and improve the health of the estuary; 3) Students will identify and participate in a project that supports protection, conservation, or restoration of the estuary; 4) Students will share the results of this project with the South Slough NERR.

History and Nature of Science

- How scientists investigate

Scientific Inquiry

- Ask questions to support scientific inquiry
- Design scientific investigation
- Collect data
- Analyze data

Science in Personal and Social Perspectives

- Acting on personal and social issues.

Background: Personal action is perhaps the strongest form of commitment an individual can demonstrate on behalf of something they care about. Throughout the course of the TIDES activities, an effort has been made to further understanding of the important role that estuaries play in coastal ecosystems and the many factors that shape and influence these special places. In this final activity, the class is encouraged to explore a variety of ways in which they can share the information they have collected in their study of the estuary with the local community and the staff at South Slough NERR.



In order to identify and participate in a project that supports protection, conservation, and restoration of an estuary, the students and teacher must decide on the scale of the effort and locate the necessary resources to conduct the project. This activity lists a number of ideas which may be developed and expanded upon from simple presentations to more involved annual studies. The education staff at South Slough NERR may be able to provide additional counsel as the idea is developed by the students.

A sample project outline is included to help structure the project proposal and define necessary resources and steps.

Preparation: Review the work and TIDES activities that have been used with the students to inform their understanding of estuaries and the issues related to the particular estuary they are studying if one has been selected. If the Estuaries Feature Series or Estuary Management Issue Papers have not been used with the students, they may be introduced as assigned reading and a follow on discussion held to highlight some of the various topics regarding estuaries.

Activity Description: Introduce the idea of stewardship to the students and relate this to the estuary with an emphasis on the watershed and the area where they live.

“Living on the Estuary” reading assignment

As you prepare for your field trip, you may want to read and discuss chapter 4 of “Living on the Estuary”. Another alternative is to assign this as homework and then have a brief discussion in class as a part of your preparations for the field study. Below are some suggested review questions for discussion.

1. What motivated the volunteers to help with the research?
2. Name at least three threats to the health of the estuary that Will described.
3. In what way were the actions of the volunteers helping to make sure that their friend would have crab to harvest in the future?
4. Describe an activity happening in your area where someone is trying to make a change to improve the condition of the environment. What do you think the outcome will be?
5. What would personally motivate you to take action to help restore or protect the estuary?
6. Describe at least three actions you or your class can take to help restore or protect the estuary.

The class should review and discuss any of the following project ideas to further develop and personalize them within the context of creating a class project. Students should fill out the Project Design Worksheet individually during the group discussion and be encouraged to contribute ideas to the mix.

Project ideas

- Label storm drains in the town to improve community awareness that these drains lead to rivers and to the bay, directly impacting the estuary.
- Develop a class poster or series of posters highlighting the findings of the students during their study of estuaries and include a list of class recommendations to improve the condition of the estuary. Seek a high visibility public location to display the poster(s) and make the local media aware that the poster(s) will be available for public viewing by developing and sending out a press release.



- Develop the watershed map(s) created during TIDES activities 1 or 9 to be a poster for community viewing. Use photographs taken during the studies as place markers associated with particular locations and include text beneath each one describing the scene included in the picture as a story of the estuary.
- Develop a PowerPoint presentation detailing the findings of the class and send it to the South Slough staff for viewing. These types of presentations can also be made into posters fairly easily and displayed at the school or in the community.
- Locate and participate in a watershed symposium, watershed fair, or other appropriate public event by giving a presentation and poster or creating an exhibit booth to share the information learned by the class about estuaries.
- Find a location of a wetland or stream near your school or within your community and conduct a trash clean-up. Map the wetland and work to identify the species of plants and animals that use the wetland or stream. Try to discover the history of the area through interviews with local residents or research, and see if you can map the historic extent of the wetland if it has changed, been filled, or drained.
- Develop and conduct a survey of your friends, family, or neighbors to find out how much they know about estuaries and the issues that affect them. Compile the class results and share them with the South Slough NERR staff.
- Make the collection of data at a particular estuary location an annual activity and repeat the same tests over time. Seek any additional background information and data about the estuary you are studying and share this information with the South Slough NERR staff.

Post activity analysis: Have students write a short personal statement of what their participation in the project has meant to them and what they see as their future role in caring for estuaries. These statements may be compiled into a classroom document describing the impact of the project from the student's perspective. The teacher may wish to add their own perspective on the project and submit the report to a local newspaper for publication.

Collection and evaluation of the project design worksheets developed by the individual students is a more traditional method of assessment for this activity. If the project was conducted by the class as a whole, the individual worksheets should reflect the contribution that that particular student made to the overall project.

Follow up: Some projects such as tree planting and habitat restoration lend themselves to continued monitoring to study the success of the effort or to determine possible changes needed to improve the results. This is known as effectiveness monitoring. In order to properly carry this out, students and teachers must identify objectives during the planning phase of the work and then consult these objectives at completion of the project to determine whether or not they have been achieved. Sometimes this may take several years to determine.