

APPENDIX A: Teacher Pages

ACTIVITY III: Identifying Environmental Events, Problems, and Issues?

How Do We Distinguish Between Environmental Events, Problems, and Issues?

Oyster Wars – Event-Problem-Issue Chart

ACTIVITY IV: Identifying Beliefs and Values - *Where Do You Stand* Signs

(Where Do You Stand Statements, Environmental Value Descriptors, and What Are the Values pages can be found in Appendix C)

ACTIVITY V: Oyster Wars – Identifying Stakeholders, Beliefs, and Values Chart

ACTIVITY VI: Current Oyster-Related Issues

Events-Problems-Issues Chart

Stakeholders-Beliefs-Values Chart can be found in IEEIA Appendix C

EXTENSION: Historical Oyster Harvests and Laws Graph

ACTIVITY III:

How Do We Distinguish Between Environmental Events, Problems, and Issues?

(NOTE: See Appendix C for IEEIA Issue Investigation: Definition of Terms)

1. What is an *Environmental Event*? Name (2) CURRENT or RECENT environmental events (local, national, or global).

Definition: _____

a. _____

b. _____

2. What is an *Environmental Problem*? Name (2) environmental problems that may be associated with the examples you listed above.

Definition: _____

a. _____

b. _____

3. What is an *Environmental Issue*? Name (2) environmental issues that may be associated with the examples you listed above.

Definition: _____

a. _____

b. _____

4. What, if any, solutions/actions were listed to solve the problem(s)? _____

5. Evaluate the *Oyster Wars: The Historic Fight for the Bay's Riche* article, and complete the *Oyster Wars: The Historic Fight for the Bay's Riches, Event-Problem-Issue Sequence – Student Page* to illustrate your findings. The first two listed in the sequence are *practice* for you as your teacher reviews the procedure.

ACTIVITY III: Oyster Wars - Event-Problem-Issue Chart – TEACHER PAGE

Oyster Wars: The Historic Fight for the Bay's Riches (Kimmel, 2008)

Approximate Year	The Event	Environmental Problem	Environmental Issue
Mid-1800s	<i>Industrial Revolution – better methods for food preservation and transportation by trains led to...</i>	(INFERENCE)... increased fishing pressure on the Eastern oyster.	No issues were identified by stakeholders
Post-Civil War, 1865	<i>After the Civil War, businessmen had large amounts of capital available, and turned subsistence harvesting of oysters into mass harvesting resulting in...</i>	(INFERENCE)... increased fishing pressure on the Eastern oyster.	No issues were identified
Post-Civil War	<i>New England states depleted their own oyster population, and moved to Chesapeake Bay to harvest oysters. VA and MD fought over territory, as well as counties within MD and VA.</i>	Greed led to violent behavior between watermen from different states and/or counties within states.	Should the states limit who and where watermen can harvest oysters in Chesapeake Bay?
1868	<i>Legislation was passed to limit who, when, and where watermen could fish, legal harvest size, and what kind of gear they could use. Laws were not enforced because of political concern over antagonizing watermen. Sufficient funds were not allocated to the Oyster Navy by the legislature.</i>	Watermen ignored the laws. People were killed in pursuit of the resource.	Should Maryland fund the Oyster Navy and enforce oyster harvest laws to prevent violence and protect the oyster resource in Chesapeake Bay?

1878	<i>Scientific research by Winslow Homer indicated that the current rate of oyster harvest is unsustainable.</i>	<i>Winslow's warnings were ignored.</i>	Why doesn't the scientific data guide management of the resource in Chesapeake Bay?
1884	<i>The harvest of 15 million bushels in 1884, declined by 1/3 within 5 years; science was beginning to show that current harvest was not sustainable.</i>	The public was beginning to feel the loss of this valuable resource; loss of economic benefits.	How do stakeholders ensure economic viability of the oyster population in Chesapeake Bay?

Teacher Note: There may be other issues that you and your students identify in this article. Feel free to interpret the list as you work with your students.

Kimmel, Ross M. (Winter 2008) Oyster wars: The historic fight for the Bay's riches. MD Department of Natural Resources. http://www.dnr.state.md.us/naturalresource/winter2008/oyster_wars.pdf
OR See APPENDIX D.

**STRONGLY
AGREE**

AGREE

NEUTRAL

DISAGREE

STRONGLY

DISAGREE

ACTIVITY V: Oyster Wars – Identifying Stakeholders, Beliefs, and Values – TEACHER PAGE
Oyster Wars: The Historic Fight for the Bay's Riches (Kimmel, 2008)

ISSUE: Should there have been regulation of the oyster industry during the Chesapeake Bay Oyster Wars?

The Stakeholder & Position	Historical Accounts/ Belief Statements may be "Inferred"	Value(s)
John Crisfield/ Business Investors (No management)	<i>With large amounts of capital available, businessmen contrived ways to turn the subsistence harvesting of oysters into a rapacious industry.</i>	Economic
New England watermen (Management was not a consideration)	<i>Depleted oysters in their local waters, sailed to the Chesapeake Bay to harvest oysters in MD & VA.</i>	Economic, Egocentric
MD and VA watermen (There was no management of where to harvest in the Bay, and by whom. Watermen took problem into their own hands - like the "Wild West").	<i>Considered Bay off limits to watermen from out-of-state. "Shots were fired, people were killed... MD & VA went to war with each other."</i>	Political, Economic (unstated), Legal
Individual Counties (There was no management of where to harvest in the Bay, and by whom. Watermen took problem into their own hands - like the "Wild West").	<i>"... individual counties went to war with watermen of rival counties, each poaching in the others' rivers as the oyster supplies dwindled."</i>	Legal, Economic
Government Officials (Pro-Management, Harvest Regulations)	<i>Fearing the oyster supply would not last forever, officials began regulating harvests.</i>	Legal
Watermen (Against Regulations and Management)	"... ignored the laws"	Economic, Egocentric
Elected Officials (Against Regulations/Management)	"... realized that antagonizing watermen was political suicide."	Political

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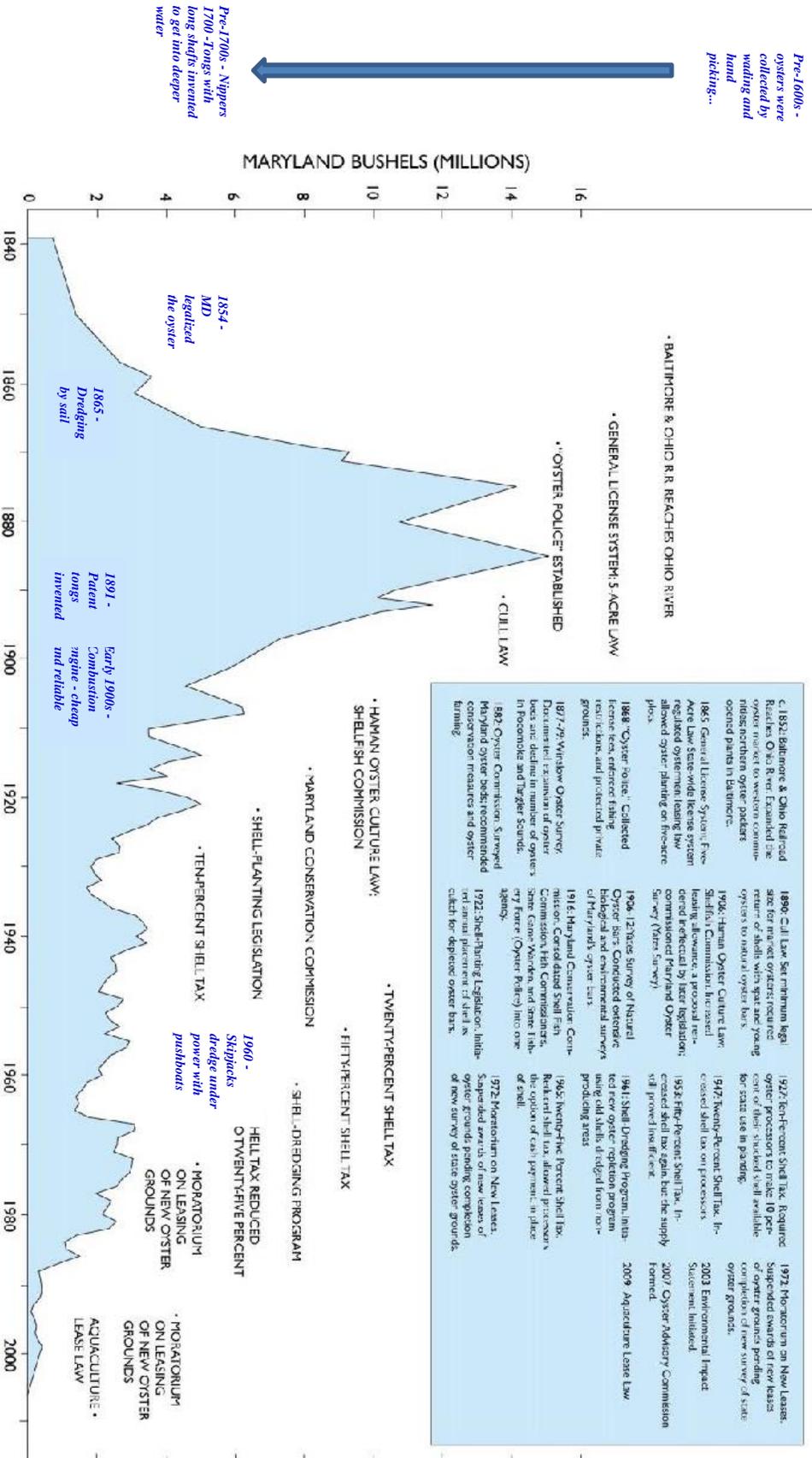
The Player & Position	Historical Accounts/ Belief may be Statements "Inferred"	Value(s)
Hunter Davidson, Commander of Oyster Navy (Pro-Management)	"... Charged with enforcing oyster laws, but gave up because of lack of skills by his men and resources. Moved out of the country."	Legal
Oyster Navy (Pro-Management)	"... was dominated by political forces sympathetic to the oyster industry."	Political, Legal
Boat Captains (Management was not an issue; finding workers was)	"... were so desperate for labor that a form of slavery continued on the Bay long after the Civil War."	Economic, Moral
Otto Mayher (Management was not an issue for this person)	"... eager to find employment he voluntarily signed onto an oyster boat with two fellow countrymen."	Economic
Francis Winslow (Pro-Management/ Regulations)	"... was able to demonstrate scientifically that oysters were being taken from the Bay at a rate greater than natural replenishment could replace."	Scientific
Public Citizens (Pro-Management/ Regulations)	" Social forces, including religion... vigilantism... sought to stem oyster piracy... the outrages of oyster pirates were turning public opinion in favor of law enforcement..."	Moral, Social, Legal

Kimmel, Ross M. (Winter 2008) *Oyster wars: The historic fight for the Bay's riches*. MD Department of Natural Resources. http://www.dnr.state.md.us/naturalresource/winter2008/oyster_wars.pdf

This exercise is based on the IEIIEA Environmental Education Model:
Hungerford, H.R., Volk, T.L., Ramsey, John M., Litherland, & Ralph A., Peyton, (1996).
Investigating and Evaluating Environmental Issues and Actions: Skill Development Program.
Stipes Publishing L.L.C., Champaign, IL.

(*Data – Kennedy and Breisch, *Graph MD Sea Grant*
<http://www.mdsg.umd.edu/> (See References Section)

A History of Oyster Harvests and Laws in Maryland



NOTE: The original chart (Kennedy and Breisch, MD Sea Grant) has been modified using information from Kimmel (2008).