

Lesson Plan:

The MPA “GamePlan”

Anne Allard-Wainwright
Created 4/2/2009 for
COSEE-West MPA Workshop

LEARNING GOALS:

Students will be able to recognize the positive and negative trade offs necessary for many stakeholders in the MPA planning process

BENCHMARKS:

AAAS Benchmark 5: The Living Environment

By the end of the 8th grade, students should know that

- *In all environments, organisms with similar needs may compete with one another for limited resources, including food, space, water, air, and shelter. 5D/M1a**
- *The world contains a wide diversity of physical conditions, which creates a wide variety of environments: freshwater, marine, forest, desert, grassland, mountain, and others. In any particular environment, the growth and survival of organisms depend on the physical conditions. 5D/M1b**
- *Given adequate resources and an absence of disease or predators, populations of organisms in ecosystems increase at rapid rates. Finite resources and other factors limit their growth. 5D/M3** (NSES)*

AAAS Benchmark 7: Human Society:

By the end of the 8th grade, students should know that

- *There are trade-offs that each person must consider in making choices—about personal popularity, health, family relations, and education, for example—that often have lifelong consequences. 7D/M1*
- *One common aspect of all social trade-offs pits personal benefit and rights of the individual, on one side, against the general social good, on the other. 7D/M2*
- *Trade-offs are not always between desirable possibilities. Sometimes social and personal trade-offs require accepting an unwanted outcome to avoid some other unwanted one. 7D/M3*

VOCABULARY:

MPA
MPLA
STAKEHOLDER
BLUE RIBBON TASK FORCE
CDFG (CALIFORNIA DEPT OF FISH AND GAME)
SCIENCE ADVISORY TEAM
KELP
HABITAT
NO-TAKE ZONE

MATERIALS:

1. Computer with web access and projector
2. Student copies of California South Coast Study Region (outline only/limited range as described in Procedure below)
3. Colored pencils
4. 1 gameboard** and die per table of 4 students
5. 1 set of picture game pieces
6. Per team: 50 pennies in a cup for “economic value”
7. Per team: 50 skittles or m&ms in a cup for “ocean resources”
8. Set of Game cards per table (Stakeholder cards)
9. Student copies of evaluation questions

** To construct gameboards, cut each horizontal strip. You will be cutting out the 4 strips and gluing one on each side of a blank 8-1/2 X 11 sheet. There is one square for each corner.

** Cut out individual pictures from the game pieces sheet for students to use as place markers.

PROCEDURE:

ENGAGE: SETTING THE STAGE:

Class views web movie “A Sheltered Sea: Inviting Californians to the Ocean Conservation Table”

http://www.thebaumfoundation.org/ashelteredsea_sm.html

Class views/discusses/labels the geography/marine/coastal characteristics of a California South Coast Study Region using classroom projection and individual blank maps for “coloring” using the interactive map at:

<http://marinemap.org/marinemap/>

[Limit area of discussion to coastline from Gaviota (N) to Newport Beach (S)]

- Cities
- Bathymetry
- Kelp
- Commercial Fisheries
- Halibut Fishery
- Recreational Fishery
- Beach Access Areas
- Surfing
- Restricted Areas

EXPLORE: NO MONOPOLY ON OUR COAST!:

Game Time!

Give each team of 4 students:

1 gameboard, 1 die, playing pieces, stakeholder card set, pennies, and two dishes of candy pieces (one for the stakeholder circle and one for the ocean environment in the center of the board)

Roll 1-3: Go ahead 1 space.

Roll 4-6: Go ahead 2 spaces

At the stakeholder circle, players must continue in the circle until they have answered at least 2 different cards, then they may roll out and continue on the board.

After reading a stakeholder card, students return them to the bottom of the pile.

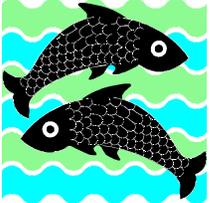
Explain that their goal is not to be “first” to the end, but for each team member to complete the whole process.

ASSESSMENT:

Option 1: Require students to write at least 2 NEW ideas for “Stakeholder Cards”. They must identify the stakeholder and write a short scenario with at least two potential outcomes & their game consequences. Brainstorm ideas for a list of potential stakeholders.

Option 2: Draw a “coloring page” for younger children with a black outline picture and simple text at the bottom to illustrate one of the major steps in the MPA process or a stakeholder’s viewpoint. (The purpose is to gather them into a coloring book for use with younger elementary children and perhaps have the older students “teach” the game to the younger)

<p>STAKEHOLDER: Sportsfisherman</p>	<p>You desire to help the MPA process because you feel that ultimately it will help sustain the fisheries you enjoy. Choice One: (+ 1 Ocean/-1 Stakeholder Recreational Gain) You are willing to have an MPA boundary that may require you to fish further out. Choice Two:(-1 Ocean/+1 Stakeholder Recreational Gain) You do not wish to travel in your small boat too far offshore.</p>
<p>STAKEHOLDER: Kayak Outfitter</p>	<p>You see a benefit in MPAs because they will enhance the wildlife in the area which makes your tourists happy. The MPAs, however, may limit your ability to access the beaches. Choice One: (+ 1 Ocean/-1 Stakeholder Recreational Gain) You are willing to have an MPA boundary that may require you to launch your kayaks in another location, or be a nonfishing zone. Choice Two:(-1 Ocean/+1 Stakeholder Recreational Gain) You do not wish to change your beach access or have limits on the fishing because it may drive away the tourist trade you depend on.</p>
<p>STAKEHOLDER: Commercial Halibut Fisherman</p>	<p>Your halibut trolling grounds parallel a large portion of the upper South California Coast and are essential for your livelihood. Choice One: (+ 1 Ocean/-1 Stakeholder Economic Gain) You are willing to have an MPA boundary that may require you to fish further out, especially if it keeps the halibut fishery healthy. Choice Two:(-1 Ocean/+1 Stakeholder Economic Gain) You do not wish to adjust your trolling grounds because it would impact your economic well-being and culture.</p>
<p>STAKEHOLDER: Waterfront Resort Owner</p>	<p>You own a waterfront hotel that has exclusive balconies that overlook the bay. Your hotel has a reputation for being able to “fish from your deck”. Choice One: (+ 1 Ocean/-1 Stakeholder Economic Gain) You are willing to have an MPA boundary that may not allow your guests to fish from their decks. This MPA location may reduce your tourist trade, but will keep the fishing sustainable in the region. Choice Two:(-1 Ocean/+1 Stakeholder Economic Gain) You do not wish to support the MPA at your location because it would significantly affect your special tourist niche.</p>
<p>STAKEHOLDER: Electrical Power Station</p>	<p>The proposed MPA location is in an ideal location for a power generation station which would require utilizing seawater for cooling. Choice One: (+ 1 Ocean/-1 Stakeholder Economic Gain) You may have a significant increase in power costs to the region if the location is not available due to the presence of the MPA. Choice Two:(-1 Ocean/+1 Stakeholder Economic Gain) The cooling water intake/outflow may impact the marine environment.</p>

<p>(Row1)</p> <p>Headline EXTRA! EXTRA! Read all about it! California Legislature passes the MLPA!</p> <p>The Marine Protection Act (MLPA) is a state law that mandates the creation of a network of Marine Protected Areas (MPAs) along the California coast.</p>	<p><u>MPLA GOAL #1:</u> (1) To protect the natural diversity and abundance of marine life, and the structure, function, and integrity of marine ecosystems. (+1 ocean)</p>	 <p>A fisherman writes a letter to the editor that the catches in the bay have been significantly declining. Remove 1 piece of candy from the center (Remove 1 from Ocean)</p>	<p>In the South California Region, the early PUBLIC MLPA information gathering meetings were attended by a highly agitated public!! (Remove 2 from Ocean)</p> 	<p><u>The “Plastic Navy”</u></p> <p>Kayak Fisherman’s Association sends 2 representatives to the Regional Stakeholders Group.</p>  <p>(+2 ocean)</p>
<p>(Row 2)</p> <p><u>MPLA GOAL #2:</u> (2)To help sustain, conserve, and protect marine life populations, including those of economic value, and rebuild those that are depleted. (+1 ocean)</p>	 <p>(Remove 1 Ocean)</p>	<p><u>MPLA GOAL #3:</u> (3)To improve recreational, educational, and study opportunities provided by marine ecosystems that are subject to minimal human disturbance, and to manage these uses in a manner consistent with protecting biodiversity. (+1 ocean)</p>	 <p>Californians LOVE sushi. (Remove 1 ocean)</p>	<p><u>MPLA GOAL #4:</u> (4) To protect marine natural heritage, including protection of representative and unique marine life habitats in California waters for their intrinsic value. (+1 ocean)</p>
<p>(Row 3)</p>  <p>“Spill-over” of adult marine organisms and/or their larvae to other regions is a positive affect of establishing MPA’s (+1 ocean)</p>	<p><u>MPLA GOAL #5:</u> (5) To ensure that California's MPAs have clearly defined objectives, effective management measures, and adequate enforcement, and are based on sound scientific guidelines. (+1 ocean)</p>		<p><u>MPLA GOAL #6:</u> (6) To ensure that the state's MPAs are designed and managed, to the extent possible, as a network. (+1 ocean)</p>	 <p>Dedicated scientists inform the decisions of the stakeholders all along the way. They also monitor and measure MPA effectiveness after they are established. They will make recommendations for revisions as science expands its knowledge base of oceans. (+2 oceans)</p>

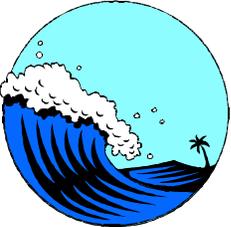
(Row 4)

MPA boundaries may result in fishermen having to go out further into the ocean to fish. (For this compromise, +2 to the ocean)



Surfing

Beaches are important to the culture, economy, and recreation of Southern California. For following MPA rules + 2 ocean



Those who

love the ocean desire to conserve it (+2 ocean)



Halibut

trolling grounds may be affected by MPA closures, but MPA's may keep halibut stocks healthy and sustainable. (+2 ocean)



STAKEHOLDER Circle

Blue Ribbon Taskforce

California Dept of Fish & Game

THE END:
MPA's are implemented

Player Game Pieces (Cut Out Individually)

