

MPA Simulation

Goal: to use an interactive game to show the benefits of a marine protected area on fisheries

Time: ~ 45 minutes

Group size: up to 40 students

Materials: tape or quadrat, candy, peanuts or pennies, marker, paper, straws

Procedure:

1. Split students into groups of 4 or 5.
2. Each group selects an area that will be their fishing grounds.
3. Start each group with 50 pieces of candy, pennies or peanuts to spread throughout their fishing grounds.
4. Explain that they are fisherfolk and that the candy, pennies or peanuts represent fish.
5. Students have 15 seconds to fish. They may only take one piece at a time and may use only one hand (different techniques can be used to represent different fishing methods/gear.)
6. Repeat this 3 – 5 times (so each student has a chance to fish in each group.)
7. Stop and talk about what happened. Count the amount of total fish catch (what usually happens is that almost all of the candy, pennies or peanuts are gone quickly which represents overfishing by not allowing the fish to remain to reproduce.)
8. Start over with a model MPA. Take half of the pieces and place them into a taped off area (the MPA which the students can decide the size of) or a preformed quadrat. Repeat the fishing from before, but don't allow take from the MPA.
9. Add again one piece of candy, pennies or peanuts for every remaining piece both in the MPA and in the open fishing area.
10. After a few times, the pieces in the MPA won't fit, representing a spillover effect.
11. Discuss where the fish will go, and play the game one more round. Count total remaining fish with an MPA. How is an MPA effective in increasing fish stocks?

Modification: Different objects can be used to represent high or low value fish stocks or different sizes of fish.