**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**“There’s something fishy about oyster reef saltmarsh and seagrass habitats”- Assessing fish-habitat value**

1. Measure the elapsed time that the fish spends in each habitat type using the video. The fish moves in and out of habitats, which makes this tricky. Measure time using either a hand-held timer or the timer on the play-back bar at the bottom of the application. When the fish enters a new habitat, you need to pause the playback and record the elapsed time the fish was in that particular habitat. Using your computer, create a spreadsheet like the one below to record your data. Calculate the total time the fish spent in each habitat type.

|  |  |  |  |
| --- | --- | --- | --- |
| Sandflat (seconds) | Seagrass (seconds) | Saltmarsh (seconds) | Oyster Reef (seconds) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Total time: | Total time: | Total time: | Total time: |

2. Assume the fish spends the most time in the habitat type that is most valuable to it. Based on that assumption and your data collected from the film, which habitat type is most valuable to fish?

3. Think about the assumption above. Why might our working definition of fish-habitat value not be appropriate? Write down your thoughts below to prepare for a class discussion on the topic.

4. Using the “Study\_area\_map\_grid.jpg” image file and the movie, create a habitat map of the study area and measure the areal extent of each habitat. Using colored pencils, make each habitat a different color on the map (e.g. when the fish swims past an oyster reef, note where the fish is on the map and what oyster reef looks like on the map. Color all areas that look like oyster reef blue). After the habitat map is created, use the grid cells to measure areal extent of each habitat type. Each grid cell is 100 m2.

5. Scale those durations that the fish spent in each habitat by habitat area. A better definition of habitat value is **duration/proportion of habitat area** (expressed as a decimal). If the fish is in oyster reef habitat for 25 seconds and oyster reef covers 0.01 of the study area (divide oyster reef area by total area to calculate proportion of habitat area), then the value of oyster-reef habitat to fish is 25/0.01 or 2500. Using this new definition of habitat value, which habitat type is most valuable to fish?

6. What are the characteristics that make different habitats more or less valuable to fish? Present your results and ideas to the class.