

Name: \_\_\_\_\_

Period: \_\_\_\_\_

## Quadrat Sampling

Dr. Fiona Tomas Nash and Dr. Ryan Mueller had two sites in Yaquina Bay that they visited to collect data. These are Sally's Bend North and Idaho Flats.

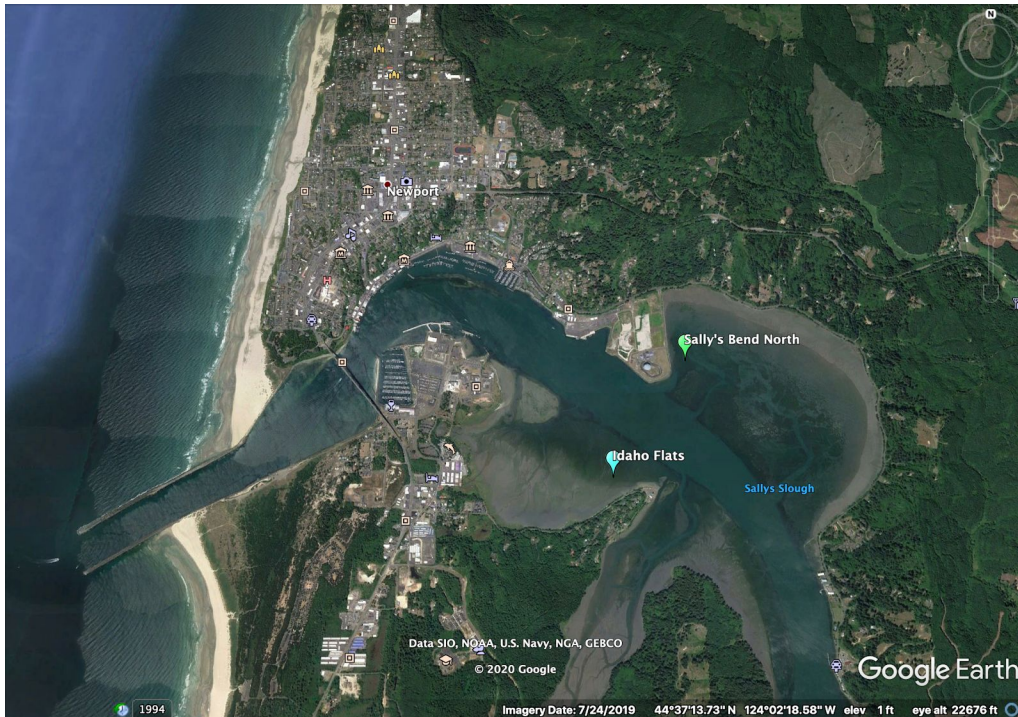


Figure 1: Study sites were near the city of Newport, Oregon.

You can see the eelgrass in Yaquina Bay here: <https://youtu.be/D6LX03nPhck>

Dr. Nash & Dr. Mueller used two techniques to survey the seagrass at their study sites: quadrats and transects. Quadrats are squares of a known size. The ones Dr. Nash & Dr. Mueller used were PVC pipe squares 30cm X 30cm in size. They counted the number of seagrass shoots inside the quadrat (see Figure 2 for an example). They set up a transect line that ran parallel to the low tide line. This meant that all the seagrasses on that transect line spent about as much time exposed to the air at low tide. Why would this be important?

They counted the seagrass in twelve quadrats along their transect line. By calculating the average number of seagrass shoots per square meter, they can estimate the density of seagrass shoots at that site. They did two transects per site-- one nearer the shore and one further out in the bay.

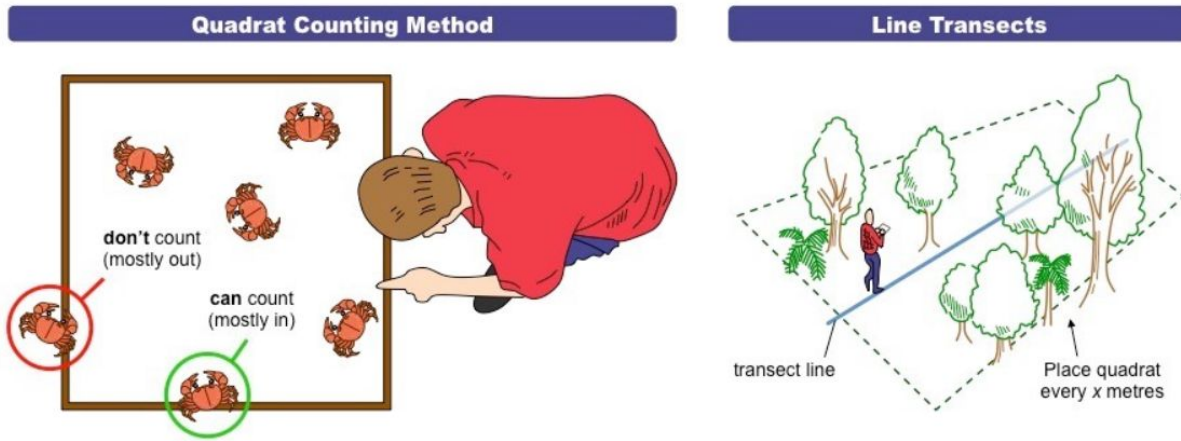


Figure 2: Quadrats are squares frames of known area (left), usually made out of PVC pipe. Scientists count the number of organisms inside the quadrat, and use this number to estimate demographics about the population, like the total population size or density. Quadrats are often done along a transect (right), a long line made of string or meter tape. *Image from BioNinja.com*

### Seagrass Monitoring Activity

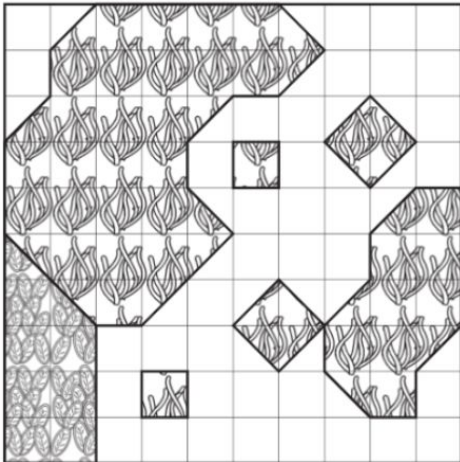
This activity allows you to estimate the percent cover of two species of seagrass, using the same techniques as Dr. Nash & Dr. Mueller. In each of the quadrats below, measure the percentage of each seagrass species (*Halophila* and *Zostera*) and add them together to make up the total cover. Each grid is equal to 1%.

Modified from *Seagrass Watch Activity Book*

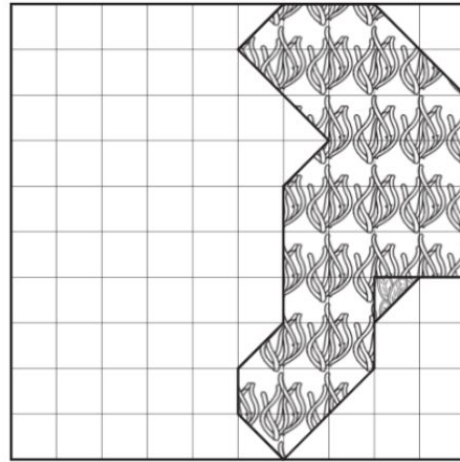
Legend



Halophila



Zostera

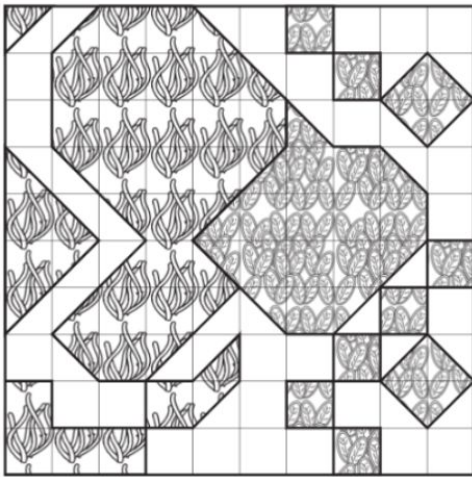


**Quadrat #1**

% Halophila=  
% Zostera =  
TOTAL COVER=

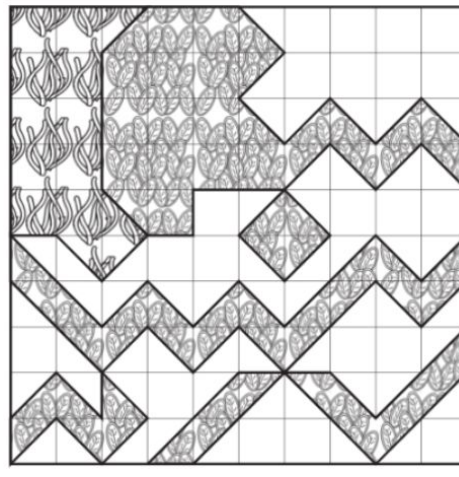
**Quadrat #2**

% Halophila=  
% Zostera =  
TOTAL COVER=



**Quadrat #3**

% Halophila=  
% Zostera =  
TOTAL COVER=



**Quadrat #4**

% Halophila=  
% Zostera =  
TOTAL COVER=

**Averages**

% Halophila=  
% Zostera =  
TOTAL COVER=