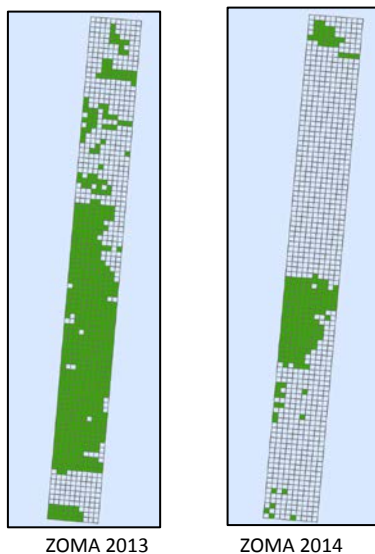




## Does natural variation in eelgrass edge movement exceed agency applied protective buffer distances?



Eelgrass edge sites represent a range of the geographic differences in nearshore systems in Washington state.



An eelgrass grid is produced from field data collected at each research site. The green grids reflect *Zostera marina* (ZOMA) distribution. In this example, the eelgrass edge at the Hood Canal site has decreased in one year.

Eelgrass (*Zostera marina*) has been identified as a species of importance that provides essential nearshore habitat to the state of Washington. One management method applied to areas where eelgrass occurs is to implement a protective buffer, which is the distance from a potential impact to the edge (or boundary) of an eelgrass bed. DNR Aquatics currently applies a 25 foot (7.62m) protective buffer distance for eelgrass from activities that occur on state owned aquatic lands.

Eelgrass is a dynamic habitat type that is continuously changing in density, biomass and distribution. Typical nearshore water movement can alter an eelgrass bed as it tears leaves, shifts sediment, exposes rhizomes, buries plant parts, and changes the amount of light in the water column. These types of impacts cause there to be natural variation in movement of the eelgrass edge because they reshape the habitat. AAMT is in the process of determining if the current 25 foot buffer allows for the natural variation of movement observed in the field.

AAMT has partnered with Central Washington University and conducted research at 14 sites. At each site an echosounder on a boat was used to map eelgrass (*Zostera marina* and *Zostera japonica*). An underwater video camera, eelgrass stem counts (density and blade length), and sediment sampling also occurred at each sample site. Three years of data was collected at each site and the natural variation in eelgrass edge movement was calculated. Movement has been defined to occur in two ways:

- **shoreward movement** - from a deeper area to a shallower area; movement from a lower tide line towards the extreme high water tide line.
- **seaward movement** – from a given area (shallow or deep) to a deeper area; movement toward the deeper seafloor

Preliminary results suggest that over a two year period of time, an eelgrass edge gains no more than an additional 8.63 feet (2.63 meters) of eelgrass. This implies that the current protection buffer for eelgrass of 25 feet is adequate. A detailed report is currently being written and will be posted on the AAMT webpage once it is complete.