

**WAC 220-660-350 Seagrass/macroalgae habitat surveys.** (1) **Description:** The department has developed survey guidelines for seagrass and macroalgae habitat to improve protection of these important habitats in Puget Sound and coastal waters. The guidelines contain protocols for both preliminary and advanced surveys to help evaluate potential impacts to these habitats at project sites with various conditions. Because statistical considerations are an integral part of the advanced surveys, the guidelines include a sample size calculator to help determine the number of samples the diver/biologist must take. The guidelines are available on the department's website.

(2) **Fish life concerns:**

(a) Seagrass and macroalgae such as kelp play a critical role in the nearshore zone ecosystem as primary producers, generating nutrients and substrate that form the base of the food chain. The dense and complex structure created by seagrass and macroalgae beds also provides refuge and foraging habitat for fishes, invertebrates, and other organisms.

(b) Direct impacts can occur on a local or site-specific scale from impacts to substrate and changes to light levels. Dredging, filling, or otherwise altering the substrate can make a site uninhabitable for seagrass and macroalgae and the species that depend on them. Boat propellers and anchors can physically damage plants, disturb sediments, and alter the habitat that supports fish life. Over-water structures such as piers, docks, and floats decrease the amount of light available. These habitat impacts can cause a substantial reduction in the size and diversity of the plant community.

(3) **Seagrass and macroalgae surveys:**

(a) The department will require a person to submit a seagrass and macroalgae survey as part of an HPA application for the following work unless the department can determine the project will not impact seagrass and macroalgae:

(i) Constructing a new dock, mooring buoy, wharf, or other over-water structure;

(ii) Constructing a replacement over-water structure outside the previously approved footprint;

(iii) New dredging, trenching, filling (boat ramps, fixed breakwaters, artificial habitat structures), or grading; and

(iv) Maintenance dredging, trenching, filling, or grading outside the previously approved footprint.

(b) The department will use the preliminary survey to:

(i) Determine if seagrass or macroalgae are present at the proposed work area;

(ii) Help the applicant locate and construct the project while following the mitigation sequence to protect seagrass and kelp beds, and in herring spawning beds other macroalgae used as spawning substrate.

(c) Seagrass and macroalgae surveys must be conducted between June 1 and October 1 because the full extent of seagrass and macroalgae distribution can be more accurately mapped. If the preliminary survey shows that the project can be located and built without impacting seagrass and kelp beds or in herring spawning areas other macroalgae used as spawning substrate, the preliminary survey will meet the needs for mapping the project area. However, if the preliminary survey shows the project footprint will impact existing seagrass and kelp beds or in herring spawning areas other macroalgae beds used as spawning substrate, the department will require an advanced survey.

(d) The department will use an advanced survey to estimate project impacts to seagrass and kelp beds and in herring spawning areas other macroalgae beds used as herring spawning substrate. Advanced surveys are conducted to:

- (i) Measure the project's impact to seagrass and macroalgae; and
- (ii) Measure the performance of mitigation actions.

(e) The department must measure direct impacts by calculating the total area and density of seagrass and macroalgae affected by the project. The department uses this information to help calculate the size of the mitigation area required to compensate for seagrass and macroalgae loss.

(f) The department must measure mitigation success by comparing seagrass and macroalgae densities at a mitigation (or impact) site to those of a reference site. These comparisons must be statistically rigorous. The department has set monitoring standards for these surveys:

- (i)  $\alpha = 0.10$ ;
- (ii) Power  $(1 - \beta) = 0.90$ ; and

(iii) A difference of mean seagrass density of at least twenty percent. The department has developed survey guidelines for seagrass and macroalgae habitat. The department will consider other survey methods if they meet established monitoring standards.

(g) The divers/biologists who conduct the surveys must be qualified to identify the predominant seagrass and macroalgae species in the work area.

(h) If the department approves a monitoring and contingency plan, the department will require a qualified diver/biologist to monitor project impacts to determine seagrass or macroalgae loss and the required mitigation.

(i) Survey results and interpretation are subject to department approval.

[Statutory Authority: RCW 77.04.012, 77.04.020, and 77.12.047. WSR 15-02-029 (Order 14-353), § 220-660-350, filed 12/30/14, effective 7/1/15.]