

IDEAL COLLECTIONS of BIOTA from MARINE DEBRIS:

- Fill out Event Log **or** record location of debris, the date it was located, and details on its size and the extent of biofouling on the object (i.e., 25% covered with barnacles, 10% algae).
- Acquire digital images of entire object, ideally with some object of known size in the field of view. Please be sure that your habit photos include the algae as well as the animals.
- Always collect one to a small handful of every organism (and alga) on a debris item – **for use in taxonomy and biometrics**
- Then, select one of the following two ways to sample additional organisms:
 - For **distribution information**: Sample organisms (and algae) from multiple areas on large debris items noting the exact location for each.
 - For **quantitative information as well as distribution data**: For **small** debris items: Take and bag all of the biota (algae and animals). For **larger** debris items: Take and bag all of the biota (algae and animals) from 1 or more well-spaced measured areas (length & width) on the debris. Using the enclosed quadrat would be the easiest. Be sure to bag and label the biota from each quadrat separately – noting the location.
- Samples can be placed in labeled bags with a description of where the sample was taken (i.e., stern of small boat). Please include information on where and when the sample was collected from on the debris item as well as your name.

Additional details on sample collection:

Marine algae range from small microscopic forms to huge. Debris algae arriving can be small filaments and blades. It is important to sample all of the algal forms and as many sizes as you can. Also, collect reproductive material if you can recognize it.

For algal collections: Scrape the entire alga or group of algae off the substratum with your scraper, being sure to get the holdfasts. If possible, collect the blades separately from the filaments. If the algae are in good shape, typically 2-4 of the very large species (like kelp) and a handful of medium and small-sized species are adequate. Be sure to collect fertile material if you can

For animal collections: Scrape from base of animal, try to include any biota growing on and around all organisms.

For ALL collections: Place each collection into plastic bags with a small amount of seawater and add a label. Be sure to also collect the algae on animals but bag these separately as they will desintegrate the quickest.

For transport: If shipped or delivered within 1-2 days, seal the bags and place on ice in an ice chest. If longer-term storage is required, all samples can be placed in ethanol, rubbing alcohol, or a freezer EXCEPT the algae. For the algae, please drain the bags and add enough 10% formalin in seawater to cover the specimens, if available. Seal the bags and place in a sealed bucket.

Please call Dr. Jessica Miller (503-939-9812) or Dr. John Chapman (541-961-3258) for questions about animals. Please call Dr. Gayle Hansen (541-265-4061 (AM) or 541-867-5012 (PM) for questions about algae. To report marine debris, email beach.debris@state.or.us or call 211 or 1-800-SAFENET.

SHIPPING ADDRESS: 2030 SE Marine Science Dr, Newport, OR 97365

BIOFOULING SPECIES

On Tsunami-Generated Debris from the Japanese Earthquake and Tsunami

Native gooseneck barnacles
Length from <1" to >24"
NOT an invasive species &
 common on marine debris






Examples of debris with potentially invasive species



Examples of organisms not typically on marine debris that **could be** non-native and invasive



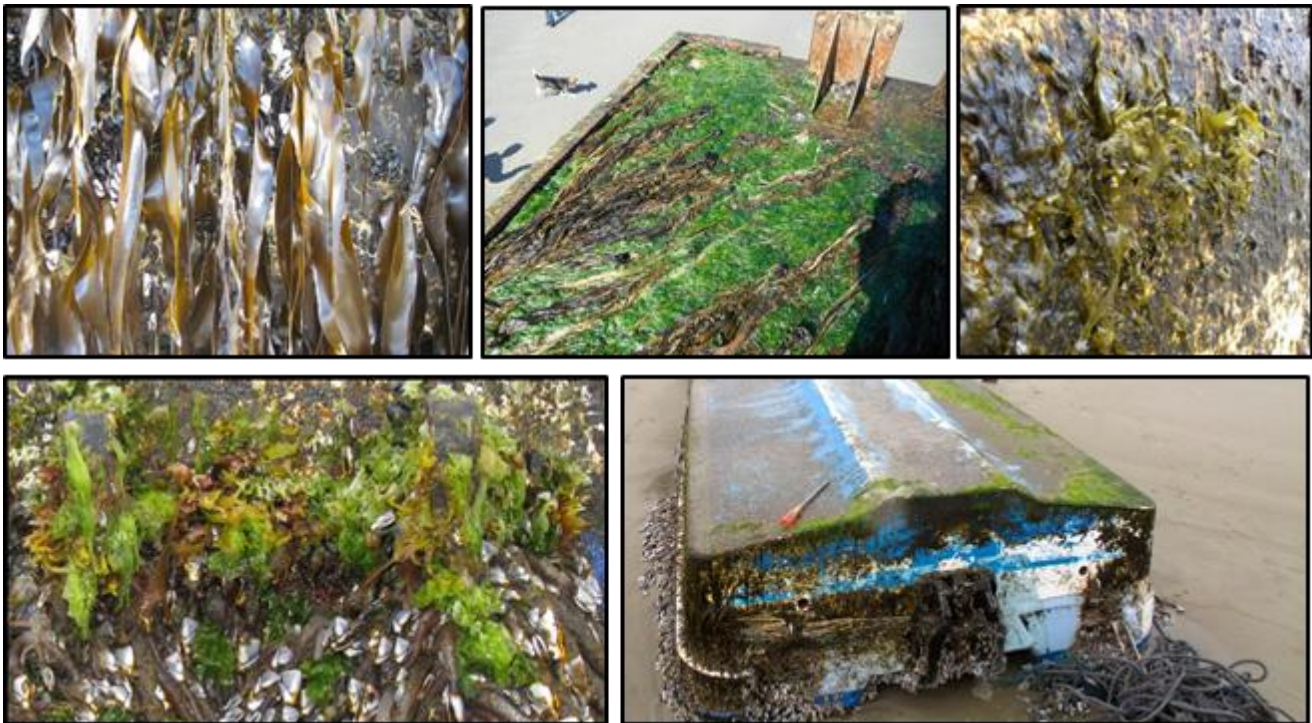
Japanese Kelp
Undaria pinnatifida

Mussel
Mytilus

Japanese Barnacle
Megabalanus rosa

Japanese Oyster
Crassostrea gigas

Examples of organisms that you may find on Japanese marine debris.



Examples of algae in the field – note the large and small blades and the filaments.