

How to Look for Surface Life

A how-to guide on how to look for and document the life present at the ocean's surface



Introduction

Surface life very broadly refers to the life present at the ocean's surface. This ecosystem is comprised of a couple of different kinds of organisms. The first group of organisms are the free floaters which are known as **neuston** (noo-ston). The neuston all have some method of staying afloat at the ocean's surface. This can be a gas-filled float, a sail that catches the wind, a bubble raft, or just a very lightweight body. The neuston are probably the most unique and beautiful organisms present at the surface and are nearly always bright purple or blue.



Many neustonic organisms are bright blue or gold, which makes them easy to find!

The second group of organisms that are part of the surface ecosystem are known as **rafters**. These are the organisms that attach to objects present at the ocean's surface. These objects can be neuston, driftwood, feathers, plastic, and any other material that floats at the surface. Although these organisms can't float on their own and rely on other objects, they are still present at the surface, so they play a role in the surface ecosystem. This group is a little broader because some organisms are only present at the surface for part of their lifecycle, and because this varies more between geographical regions. If you are unsure whether something you found is surface life, ask yourself: "does it float on its own?" or "was it attached to something that was floating?" If the answer is yes to either question, then you've most likely found surface life.



Rafting life attaches to floating objects like plastic (left) or wood (right).

Methods

1. Choose a coastline that is natural, or has not been recently 'cleaned'. Many resorts will rake the beach and remove debris. Some will even use tractors to bury debris. Look for beaches where these practices are not in place. If you cannot avoid this, learn when they clean the beach and go before cleanup so that enough time has passed for some floating life or debris to wash ashore.
2. For your walk, first walk the surf zone (if it is safe to do so). Look for any fresh floating life or debris washing ashore.
3. On your return, walk along the high tide line (called the wrack line, it is a zone of the beach where you can find lots of debris and shells).
 - If you cannot find a wrack line you may be beachcombing at high tide, or combing on a particularly 'pristine' beach. If this is the case, walk the surf zone the whole time.



4. If you find neuston, take at least two photographs.
 - One photograph should be a close up of the neustonic animals, including a ruler for scale.
 - The second photograph should be a zoomed out photograph with the animal on the beach.
5. For rafting organisms take at least two pictures:
 - One photograph that shows the whole object, including the ruler (for example, the piece of plastic or driftwood)
 - At least one picture of each rafting species found on the object (there will usually only be one).
 - If you are lucky enough to find an object that has many different species on it, let us be the first to tell you HOW COOL THIS IS! If this happens, follow the above steps: take one photograph of the whole item, and then one photograph for each rafting species. When you upload, include the picture of the whole object in every species report, so we know that all the different organisms you found came from one floating object.
6. For each species, document how many are on the beach within twenty large steps and include this information in the notes section.
 - For example, if there are 12 blue buttons within 20 steps you will record 12. If there are 7 pieces of plastic debris, and three pieces of life on them, record 7 pieces, three with life (if you can, specify what kind of life).

7. If you do not see any rafters or neuston remember: this knowledge is VERY IMPORTANT. Take a picture of at least one cool thing you see.
8. Next, upload your observations to our project (GO-SEA) on iNaturalist. You will be asked if you saw floating life.
 - If you saw neuston or rafters, click yes, and in the notes add any information you collected on the approximate number of organisms in 20 large steps.
 - If you did not see floating life, click 'no' and upload a picture of one cool organism you found.
 - In both cases you are welcomed and encouraged to include in the notes any additional information you would like to remember, such as the wind state, sea state, the duration of your walk, or any exciting moments. It's a really nice way to remember a day at the ocean. Just keep in mind that notes can be seen by everyone, so share only what you're comfortable with.
9. Repeat uploading for all the species of floating creature you found.
10. And that's it! You've now created a record for your day at the ocean. Your record will be used to help map ocean surface life.

California Species List

Neuston

Portuguese man o' war

Physalia physalis

By-the-wind sailor

Velella velella

Blue button

Porpita porpita

Violet snails

Janthina umbilicata

Buoy barnacle

Dosima fascicularis

Sargassum

Sargassum spp.

Hitchhikers/Rafters

Gooseneck barnacles

Lepas anatifera

Lepas hillii

Lepas pacifica

Other barnacles

Shrimp

Crabs

Planes spp.

Isopods

There may be others! Get out there and see what you can find, there's still so much to discover and learn!

Follow @goseascience on Instagram, Twitter, and TikTok to find out more about surface life.