

## Science Bite

### Joining the Marine Food Web

As our chum and pink smolts leave the safety of net pens, they have many predators to avoid. Our hatchery crew - Bill, Brian, and Haley - have been feeding these little guys diligently to bring all of them to a 2-gram minimum size. Hatchery managers know that fish are more likely to survive in the open ocean if they are at least that large.

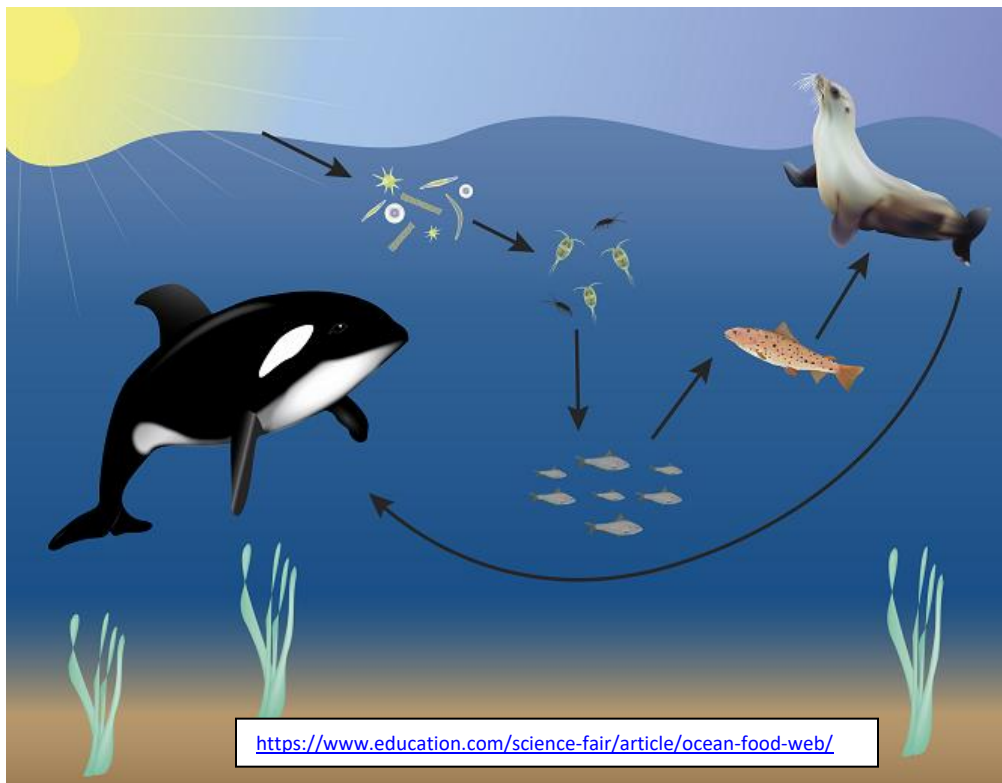
Let's imagine what is available in the ocean for the newly released salmon smolts to eat and what marine **predators** they will have to stay away from! Our small smolt are likely **prey** for many organisms.

In the image below, you see a food **chain**:

Phytoplankton (algae)  $\xrightarrow{\text{eaten by}}$  zooplankton (copepods)  $\xrightarrow{\text{eaten by}}$  herring  $\xrightarrow{\text{eaten by}}$  salmon and cod  $\xrightarrow{\text{eaten by}}$  seals and sea lions  $\xrightarrow{\text{eaten by}}$  orcas.

Notice the direction of the arrows. The arrows show how energy flows.

Of course, the ocean is more complex than this simple picture. We can better represent the food interactions in a **food web** – many arrows going to and from many organisms.



- Each of the organisms pictured have a role in the food interactions of the ocean. We use the terms on the next page for those roles. Use the diagram above and fill in the names of the organisms in each category.

**Producers**  
(photosynthesize)

**Primary Consumers**  
(eat only plants)

**Secondary Consumers**  
(may eat producers and  
primary consumers)

**Tertiary Consumers**  
(eat other consumers)

- When you have completed placing the animals in the image, list 10 other marine organisms that are found in the ocean with salmon smolt. Put each in the correct column. Which ones will our pink and chum smolt eat? Which ones will try to eat them?
- Can you draw a food web? Try putting all of the organisms you have listed in the columns above into a diagram that shows who eats who! Remember the arrow direction: Arrows show how energy flows.

## Key

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**Tertiary Consumers**  
(eat other consumers)

phytoplankton

zooplankton

herring

orca

salmon

cod

seals

kelp

copepods

salmon smolt

eagles

larvae of jellyfish

squid

clams

halibut

bears

urchins

sea stars