



## Tricky Trawling Activities

Created by scientists at ZSL's Institute of Zoology, Tricky Trawling explores the impacts of unsustainable fishing practices such as seabed trawling on the unique ecosystem of Greenland's deep sea floor.

Casting their nets far and wide, players must attempt to catch fish out in the open ocean, while avoiding vulnerable seabed-dwelling creatures like octopus and skates.

[Play the game here](#)

**Explore the game and then have a go at the following activities exploring ecosystems and sustainability in more detail...**

### **Part 1: What is a benthic ecosystem?**

#### **Activity 1**

1. Create a word cloud or mind map below of words describing what it's like in a benthic habitat, at the bottom of the ocean.
2. Think about:
  - a. Is it light or dark?
  - b. What's the landscape like? (rocky/sandy)
  - c. What temperature it is?
  - d. Are the conditions very variable, like a beach, or nearly always the same?

## Activity 2

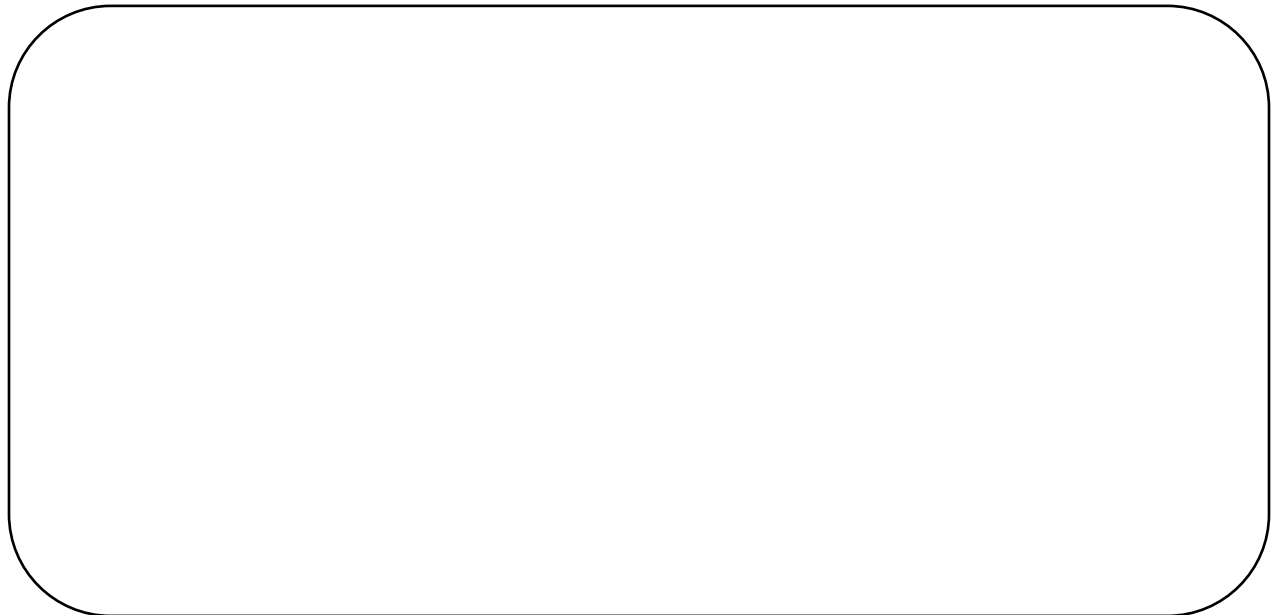
1. Select 3 of your favourite species from the Tricky Trawling game, using the species facts on the main landing page for the game to get ideas.
2. Research your species and answer the following questions:
  - a. What other animals does it interact with? (to eat, shelter in, provide shelter for etc.)
  - b. What does the animal spend its time doing (sitting in one spot on the sea floor, swimming around, hiding etc.)
  - c. How big does the animal get?
  - d. How old can the animal live?

Species 1:

Species 2:

Species 3:

3. Draw a picture of the place where these animals live, including your three animals and features of the area that are important for their survival.



4. Label the image with the living animals (biotic factors) and the non-living, physical parts of the environment (abiotic factors). An ecosystem is made up of all of these factors, both living and non-living, and the complex interactions between them.

## Part 2: What is sustainable fishing?

Use the following activity to explore how fishing effects marine life populations, as well as why fish populations are declining in some places and how they can be managed more sustainably to prevent this.

### Materials required:

- Four bags of small sweets (to represent shrimp)
- Four bags of large sweets (to represent benthic species)
- One bag of popped popcorn (to represent other marine life)
- A medium sized dish or bowl, (to represent your fishing areas)
- Small cup (to represent their boat)
- Spatula (trawl fishing)
- Spoons (net fishing)
- Tongs or chop sticks (line fishing)
- Stop watch/timer

### Prep:

- Create your 'ocean'
  - Put a layer of the large sweets at the bottom of the medium sized dish (the benthic species)
  - Cover this with 40 smaller sweets (shrimp) mixed with popcorn (other marine species)

### Game rules:

- You are a 'fisher' whose livelihood depends on you catching a certain amount of fish.
- Your target species is 'shrimp' (small sweets), and you must catch at least five of these per 'fishing season'.
- 'Fishing seasons' will last 30 seconds, during which time you should use their 'fishing equipment' (spatula) to fish out as many of the target species as possible and place them in your 'boat' (plastic cup)
- If any 'non-target species' (popcorn or large sweets) end up in your 'boat', you cannot put them back in the ocean.
- The animals left in the 'ocean' reproduce between fishing seasons, therefore after each 'fishing season' one new small sweet/large sweet/popcorn should be added for every ocean animal left in the 'ocean'.

### The Game:

1. Ensure you've read the rules above.
2. For the first fishing season, use a spatula as your fishing equipment (trawl fishing). You are only allowed to use this for catching fish, not your fingers!
3. Start fishing! Start you timer – you only have 30 seconds for the first fishing season.



4. Write a theoretical letter to either:

- A local politician
- A shrimp trawl fishery

Explaining:

- What is special about the benthic ecosystem?
- How is fishing effecting it?
- Why should people care?
- What can the politician/fishery do to help protect it?

A large, empty rounded rectangular box with a thin black border, intended for writing a theoretical letter. The box is centered on the page and occupies most of the lower half of the document.

## Additional Resources and Further Reading

[Research the science behind the game](#)

[Video depicting the work itself](#)

[Find out about how we're working with students in Greenland just like you!](#)

