



What is the purpose of the expedition? Go to the Project Overview section of the website. Read the pages on the expedition challenge and goals. List the three challenges and the five questions that relate to the project goals.

Begin Your Exploration . . .

Challenges

1)

2)

3)

Goals

1)

2)

3)

4)

5)

Now find out a little more about Alaska's corals. Go to Corals in Alaska. Read about corals, the first Alaska explorations and recent work on Alaska's corals. What interests you the most?

List some new things you learned about corals or coral science.

Now go back to the Project Overview. Read the biographies of the scientists on the cruise. Considering the expense of sending professionals on research expeditions, why do you think each of these researchers was chosen? Did they cover all their bases?

Use this space to reflect on the team. Is this the team you would assemble for such an expedition? Is there any skill that you feel was left out? Invent a team member you think would be an important addition. Write a brief biography. (Continue on the back, if necessary.)



Where do corals live and what kinds are there? How deep are they, on what surfaces and in what geographical locations?

Scientists are especially interested in figuring out which areas have a larger number of species (greater diversity) and a larger number of individual animals (greater abundance).

In each of the following sections, you are encouraged to explore the cruise website with a particular objective in mind. Read through the journal entries. Retrace the journey using the photo archives. Listen to the audio clips, and view the short films. Your job will be to find evidence that the scientists were, in fact, able to gather information that will help them to fulfill the objective.

Journal Entries

Account of a Jason Dive
The Control Van: Sights from the Seafloor
Deep-sea pigtailed?
Where are all the corals?
Parallels between the seafloor and — Arizona?

Audio Clips

What are the corals like?
What is it like down there?

Movie Clip:

Gathering Corals from Jason II
Various coral photos from the archives

What can you write about the diversity and abundance of corals in the following areas?

- 1) water depths of 350m and above
- 2) depths below 350m
- 3) rocky outcrops
- 4) silty/muddy ocean floor

In the journal entry from August 4th, Bob Stone expresses surprise about the surveys from deeper waters. Do the findings surprise you? What is Stone's guess about the data? Can you think of other explanations?



How important are corals to other animals? What is their role in the ecosystem?

Scientists are especially interested in how coral habitats may be used by commercially important species such as cod, rockfish and king crabs.

Use the following resources:

- **Journal Entries**

- Crab spied in black coral
 - Account of a Jason dive

- **Audio Clip**

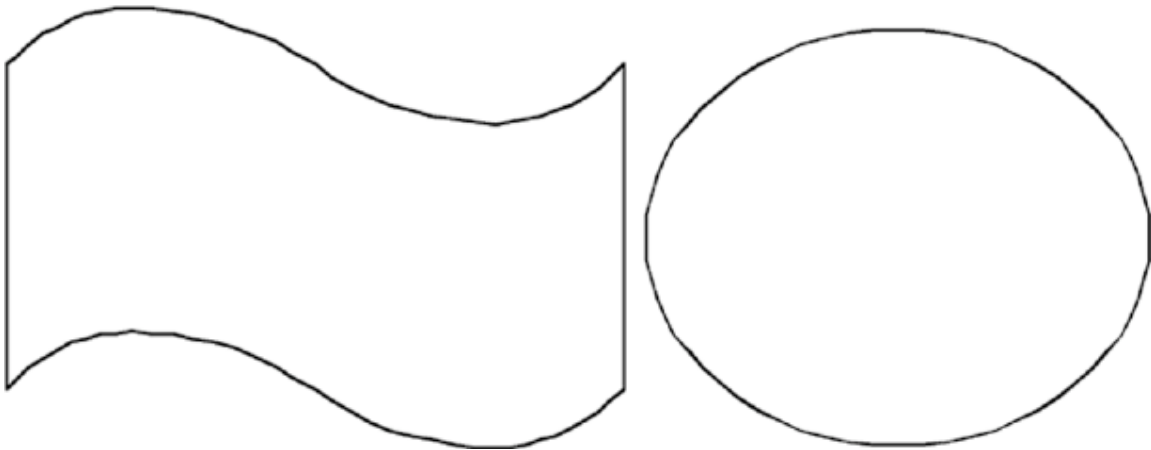
- What ecosystem role do corals play?

- **Photos** of different animals from the archives.

How do other animals use coral? What is your guess?

The scientists have just begun to collect important data on the importance of coral to other species. As professional scientists, they will guess (or hypothesize) about how other animals use coral habitat. They will not, however, conclude anything until they have evidence. So far, some of their hypotheses are that crabs and brittle stars that they see climbing to the top of coral colonies are using them as feeding platforms.

How do you think these or other animals use coral gardens? Look through the photo archives. Use the spaces below to describe or sketch your ideas. Make it plausible, but use your imagination! Some of the best theories in science started as somebody's highly imaginative idea.





Can the scientists map enough habitat in enough detail?

The researchers need to create maps of the seafloor topography that are as complete as possible and contain details such as depth, slope angle, seafloor roughness and bottom material. For example, they may determine how much of the flat seafloor at a certain depth is covered in mud, how much in pebbles and how much in larger rocks. Once they know which species of coral are found where, they can place them on the maps.

Covering the entire 1600-km long Aleutian archipelago on this trip was not possible, so the cruise focused on a 500-km long area in the middle where fishing has been heavy and previous studies indicated that there was a great diversity and abundance of corals. Within this area, the scientists were required to sample smaller sections of the seafloor. If they cover enough different habitats in their samples, they can fill in the rest.

Refer to the following resources as you answer questions 1 and 2, below.

Journal Entries:

Mapping out a plan

Just started and already changing course

Technical difficulties

Why Adak Canyon?

Jason hits a snag

Go to **The Technology** page. Read about multibeam sonar.

Audio Clip: Sounds of research: sonar.

1) What were some of the unexpected difficulties encountered on the cruise? Do you think that these were large enough to prevent the scientists from collecting important data?

2) We all use sampling techniques in our daily lives. For example, we count one small area in a jellybean-filled jar and multiply or evaluate a movie's popularity based on the reviews of a few friends. How do you use sampling techniques? How can you make sure that your techniques are more accurate and your conclusions more valid?