

**GUIDE TO THE MUSEUM EXHIBITS IN THE
HALL OF BIODIVERSITY
HALL OF OCEAN LIFE
HALL OF THE PEOPLES OF THE PACIFIC**

SOCIETY AND THE OCEAN
EESC 1050
Brooklyn College
John Beatty

GUIDE TO THE MUSEUM EXHIBITS

This is a kind of “workbook” for things to look for in the three halls assigned for this project. The information included here is not exhaustive, nor are the questions particularly “deep”. There are spaces for you to put in your answers and some suggestions as to what kinds of things you might think about – especially in terms of what is missing and whether or not the signs are particularly helpful or clear in what information they give you. Don’t just fill in the blanks. For example, in the Hall of Ocean Life, there are some questions about the animal suspended from the ceiling in the middle of the hall. What can you say about its size (length, weight), eating habits, social structure, ability to live in the ocean, and its general behavior?

Look at the structure of the Hall of Ocean Life (not the plaster or wood work), but what kind of organization is there to the hall itself. What do the exhibits on the left wall have in common? Do they have anything in common with all the exhibits on the right side? What can you say about the exhibits directly to the right of the lagoon exhibit on the balcony level? What do the exhibits on the lower level share in common? How do they differ from the upper level? Since it is the Hall of Ocean life is there any explanation why certain animals are included (e.g. the polar bear or the penguins)?

How do you react to the lagoon exhibit which runs from the balcony level to the lower level? This is the only exhibit in this hall that deals with people. Are there indications that this hall (and that of biodiversity) share in common in regarding the position of people in the world relative to other life forms?

You should ask yourself similar questions when you look at the Peoples of the Pacific Hall. These are people who are heavily involved in the ocean. How much of that hall is devoted to information about the ocean?

Does either the Hall of Ocean Life or the Peoples of the Pacific Hall give you information about the nature of the ocean? Are there cases dealing with kinds of waves, currents, the relationship between the ocean and the weather?

In addition, you should think about the way the material in the cases relates to the information in the lectures and the readings. Are there differences? How does the article on the most recent thoughts on the classification of life

forms different from what is shown in the museum? How does it differ from what was said in class?

There are a number of issues which can be examined relative to museum exhibits. For example, what information is given and what information seems to be lacking? Is there a "skewing" in the exhibit – that is some things discussed more than others? Is there an organizing principle to the hall and is there a specific way in which the exhibits are ordered? Many of these questions are part of a study of how museums work and exhibit materials. Over the years, new technologies have appeared and been incorporated into the museums. In some museums you can rent audio guides to the museum that you can take with you and get more information about the exhibits. In some places in this museum there are "docents", or people in the hall who are knowledgeable about the materials exhibit and with whom you can speak and ask questions. More recently, video monitors have appeared and you can see more information on these.

Museums like American Museum of Natural History have huge exhibits and many are considered "permanent". (They do often have "temporary" exhibits on special topics that come in from outside the museum.) Permanent exhibits may remain for 75 years or longer. Consider how much change there has been in the knowledge about the things exhibited over such a period of time. Does changing knowledge get reflected in cases over the years? Take a quick look at the exhibit of sea shells which is on the 77th Street side of the museum. If you stand with your back to the 77th Street entrance facing the canoe, go to the left towards the Hall of Human Evolution. Make a right immediately after going through the arch and you will see cases and cases of sea shells. Think about how this exhibit compares with the Hall of Ocean Life.

The techniques for presenting material are also something to keep in mind. Does the idea of suspending a squid and a jellyfish and a whale among other creatures add to the feeling that you might be underwater with the animals swimming above you? In some cases animals have protective coloration and look rather different when seen from above than from below. Does the museum enlarge on this idea with its suspended life forms?

Think about these kinds of things as you tour the halls. Some of the material here is to help you locate materials in the halls which are of particular interest. Feel free to find other things in these halls and other halls which

are not specifically discussed herein. Although there is an “Asian Peoples Hall” which covers many areas including Japan which is an “island” culture in many ways, there is virtually no mention of anything about the Japanese relationship with the sea.

There are also some “fill in questions” in the guide which are there to help you formulate questions about the material in the cases. Other questions are more general.

This Museum Guide is just that – a guide. The project entails several things:

- a) Going to the museum and looking at the exhibits.
- b) Thinking about what you saw

THERE WILL BE QUESTIONS ON THE FINAL EXAM ABOUT THE MUSEUM

There are three halls that you need to visit although others have information that is relevant to the course. The three halls are (a) The Hall of Biodiversity (b) the Hall of Ocean Life and (c) The Hall of the Peoples of the Pacific. Additional halls and areas are the 77th Street entrance foyer which contains a large canoe. There are also some exhibits of shells in a small hallway to the left of the foyer as you enter. Head for the Hall of the Biology of Man and before entering that hall make a right and there are several cases immediately there.

Another hall with some information about boats is the Hall of the Indians of the Northeast Woodlands on the third floor (on the 77th Street side of the building) which you will pass through on your way to the Hall of the Peoples of the Pacific. There is also a Hall of Reptiles on the third floor which has some small amount of material. Finally on the fourth floor you can find the Hall of Vertebrate Origins, which leads to the dinosaur halls. The Hall of Vertebrate Origins contains information about the evolution of early fish. These are exhibits that might be of interest but are not covered by the guide itself, nor will they appear on the examinations.

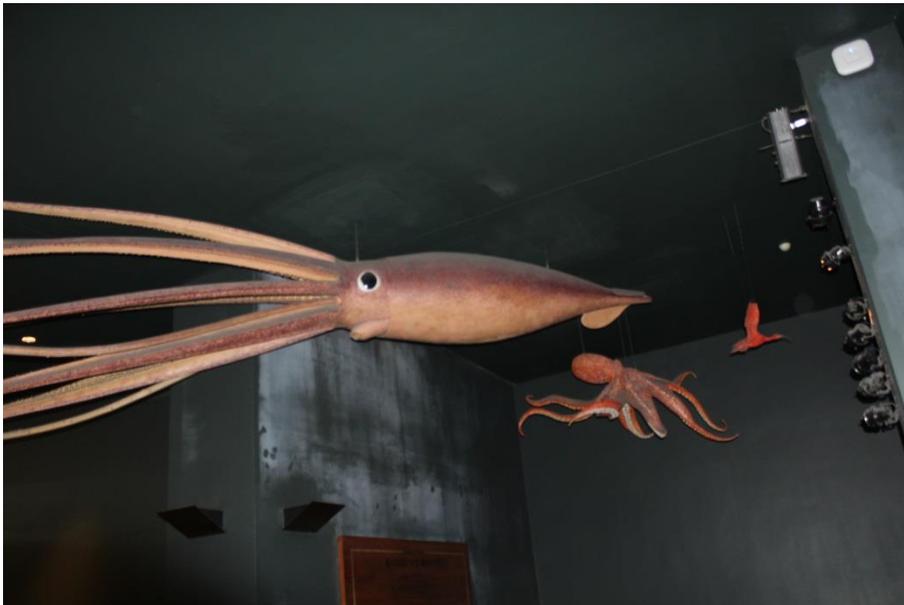
What are the ways in which the museum added to (or detracted from) the materials presented in the class. It should contain information about how the exhibits deal with the material covered during the classes. You should look carefully at the way in which the museum organized the materials, and the ways in which the material is presented. You needn't go from case to case and try to recall all about individual exhibits, but you should be looking at

the larger issues. You should think about what you got from the museum that you might not have gotten had you not gone.

HALL OF BIODIVERSITY

As you enter the relatively dark hall, there are a number of exhibits directly in front of you.

Off to the right of the entrance is a large giant clam shell. Above the clam shell, on the ceiling hang two multi-legged animals.



What are they? _____

What, if anything can you tell anything about the classification?

_____.

Go into the area straight ahead. There are exhibits to the left on the wall, on exhibits on the right. Most of these are textual and photographic.

The Hall deals largely with the nature of the disruption of the environment which stems from two things. One is destruction caused largely by increasing old populations and a growing need for food. The other has to do with the introduction of new species of organisms from outside the area

(They are often called "invasive species"). These are some introduced accidentally and sometimes deliberately.

Some of the problems have resulted for example from planting crops which are not indigenous to the area and modifying the existing ecology to do so. One example given has to do with coffee plantations.

There is mention made of "management for biodiversity". The exhibit indicates that there is a kind of "mental set" in people who believe that managing the environment means improving it. Where does the museum feel this kind of thinking will lead?

There are some examples of human health being impacted by these processes of altering the environment. One example deals with rodents. What kinds of changes are discussed in the material on human health and the introduction or removal of species from the environment?

Organisms may come to extinction if there are changes in the environment to which they cannot adapt. Sometimes this is the result of a very alien invasive species called *Homo sapiens* (humans). Hunting, for example has dramatically reduced the numbers of certain animals. Animals are hunted for food and clothing – and occasionally medical (or pseudo medical) reasons. Many cultures use parts of animals for aphrodisiac purposes although there is no evidence these actually work but are cultural beliefs. The change the cultural beliefs is to change the culture and in a sense to cause it to become extinct. There is a small exhibit about cultural extinction on the wall as well. How do these two factors interact with one another? That is changing beliefs to protect animals and cultural extinction?

Whatever the reasons that organisms are being taken, the decrease in the members of a species can have far reaching effects on the ecology.

Some of the exhibits in this area deal with attempts to protect and restore the natural environment for the area. In what ways is this done?

One exhibit talks about laws that have been enacted. What laws are there discussed on the panel on the wall?

There is a video about fishing techniques and the need to reduce resource destruction. This relates to problems of maximum sustainable yields. What does the exhibit have to say about this?

As you leave this corridor, turn right and look at the animals suspended from the ceiling. There is a huge Portuguese Man of War hanging as well as schools of fish. If you head back toward the entrance, there will be a wall on your left showing the various kinds of "phyla" (singular "phylum"). This wall shows a great deal of the taxonomic classification of living organisms. The exhibit begins on the far side of the wall closest to where you emerged from the corridor.



The exhibit shows how organisms are classified. Two categories are shown into which all living things can be placed. These have to do with the question of the nature of the nucleus in the cell. What two kinds of organisms are these? _____ and _____

The division having the simplest structure of the two is also divided into 2 categories. What are these?

_____ and _____

The other group contains all the other living organisms in the world.

Most text books on zoology (the study of animals) list more than 20 phyla of animals. How many are listed on the wall? _____ What are they? (You can list them on a separate paper).

Does the information on the wall give you any information on what an organism is required to have to become classified in any of the groups displayed? _____

What information can you find about "algae" and "seaweeds" relative to their classification? _____

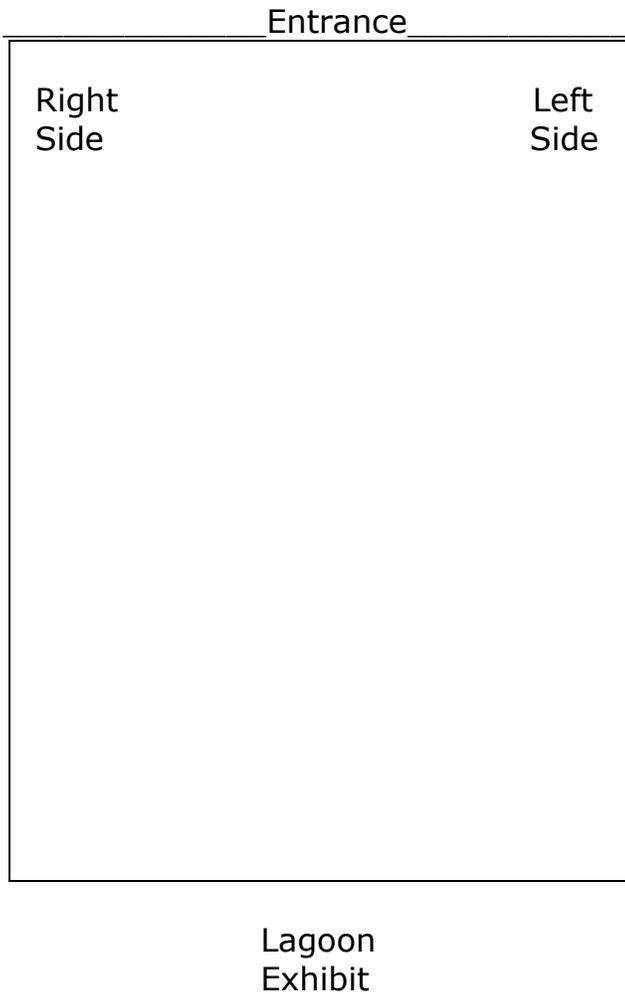
As you continue along the wall, you pass the entrance to the Hall of Ocean Life. Continue along the wall until you have looked at all the information on the taxonomy.

Consider some terms like "algae", "nekton", "plankton" "kelp" and "sea weed". Do any of these terms appear in this exhibit? Watch for them in other exhibits in this hall and in the Hall of Ocean Life.

Is there information about unusual events in the ocean such as algae blooms or red tides? Where is that information located?

The Hall of Ocean Life

The Hall of ocean life is a large basically rectangular two level set of exhibits. For the purpose of this guide, the general orientation of the hall on both levels:



This hall is on two different levels and you need to look at both levels. There is also a screen on the lower levels where different videos are shown.

When most people enter this hall they immediately are aware of the huge blue whale suspended in the middle of the hall. There is some information about what terrestrial (land) animals this animal is related to. What are the land animals most closely associated with it?

For many people, the signs in this hall are a problem. They are rather hard to read since many of the cases are quite dark and the text does not "leap out at you". You might bring a small flashlight with you!

Where is the signage about the whale and what does it tell you about the physical characteristics of the blue whale?

What information is there about the whale's behavioral traits?

Is there any information about the way this whale is classified and what its relationship is to other animals like the blue whale?

Turning so you are facing the entrance to the Hall of Ocean Life through which you passed, there are two large "trees" of life which show the relationships between the various marine animals. There is one "tree" on either side of the entrance way. What characteristic separates the exhibits of the two groups of animals?

Starting around the upper level of the hall (going to the left as you face the way you entered, the first case you come to is labeled "Life in the water. Vertebrates." It is associated with the display of vertebrate animals on the wall. It discusses the various problems the animals have in feeding, breathing and moving (locomotion). These involve both chemical problems like salinity, oxygen availability as well as problems of pressure.

Continuing in this direction, the first case you come to deals with mangrove forests. Make note of the ways in which attitudes about the mangrove forests have changed over time. The cases contain much information on the kinds of organisms that live in the environments, what basic purposes they serve and why it is important to preserve them. This is fairly consistent throughout the exhibits on this floor.

This exhibit discusses the importance of the mangrove forests both under water as well as on the surface. What kinds of creatures live in mangrove forests both above and below the water? What problems do animals living

there have to solve? Are there other environments discussed in this case? If so what?

The next case deals with coral reefs. It starts by discussing changes that happen during the period when the sun is visible and when it is night. What kinds of changes occur when the evening and night come on the coral reef?

The exhibit also mentions some interesting things about the behavior of the animals, not only in terms of their movement, but in terms of cleaning, sexual behavior and so on. What are these?

The third case deals with the sea floor. In the first section of the case, there is the depiction of a whale skeleton that has sunk to the bottom of the ocean. What purpose does the body of the deceased what serve at the bottom?

A second part of the case deals with the mud bottom of the abyssal plain and the animals that live there. How do the problems raised by the first exhibit (food getting, locomotion and breathing) apply here?

The third part of the case talks about "The Fountain of Life" and the situation around the hydrothermal vents. What important points are made here?

The fourth and last case on this side shows "Kelp forests". The first part of the exhibit talks about "holdfasts". Why are these different than roots and what is the relevance in terms of the classification of these organisms?

Kelp is defined as a "brown algae" although most algae are thought of as one celled. These certainly are not since they grow to lengths of 100 or more feet. The exhibit gives information about the kinds of functions the kelp forests serve. What are they? Do they serve purposes only for organisms in the water?

Next to the kelp forests, there is an exhibit of a rocky shore. Here there may be significant problems since one has to consider changes in the environment made by the tides. What kinds of adjustments do organisms living here have to make?

At this point, as you turn the corner, notice the sharks suspended from the ceiling.

The first case you reach after rounding the corner is one that has a great deal of information about the ocean as a whole, its movements, its currents and its impact on climate. It discusses changes that can happen in the ocean as a result of changes in the climate – and vice versa. What is meant by the “conveyor system” What would be the impact on climates in different parts of the world if the currents were to slow or stop? What impact would there be on plants and animals that are affected by the currents?

To the right of that case are three small dioramas that show the ocean in three periods: The Cretaceous (145.5 to 65.5 mya), the Permian (299.0 to 251.0 mya) and the Ordovician (488.3 to 443.7 mya). Is there much explanation about what significant changes went on in these periods? Why are these singled out?

In a free standing exhibit next to the three small dioramas there is a part of the ocean bottom showing an ancient forerunner of today’s horseshoe crab (but looking very much like it) and the track made by its meanderings. The horseshoe crab appears before the dinosaurs and has had an amazing long run on earth.

Following this, the next exhibit shows the waters of the continental shelf. These are extremely rich waters. Why would that be?

There is a short piece on cod fish and the changes in their numbers. How does the exhibit explain the decline in the species?

The exhibit also mentions those organisms that live at the bottom of the water column. What role do they play and how were they impacted by trawling?

The end of the case points out that the gentle slope of the continental shelf ends rather rapidly as the ground drops off into trenches and deep valleys once the continental shelf is left behind.

The next case deals with the “Polar Seas”. This harsh environment contains a number of organisms which have adapted to the cold waters. What kind of adaptations have organisms made?

Estuaries are examined in the next case. What constitutes an estuary? What kinds of variability occur in an estuary during the day? Estuaries are often referred to as “Cradles of the seas”. Why is that?

The final case on this level is "Deep Seas". The exhibit talks about the lack of light and the immense pressures. At sea level, the pressure is 1 atmosphere or about 15 pounds per square inch. For every 10 meters (33 feet) one descends in the ocean, the pressure increases another atmosphere. At the great depths of the ocean there is no light. Some organisms are transparent. Bio-luminescence ("living light") appears in many animals. What functions does this serve?

Some animals shown in this case exhibit an ability to give off light. What is this called _____?

What explanations are given for this process?

If you know of animals outside of those in the ocean that exhibit this ability, list them here. _____.

Do the explanations given here also fit the situation for animals that "glow" outside of the ocean? _____

Might the explanations for animals having this ability out of the ocean apply to those that are living in the ocean? _____

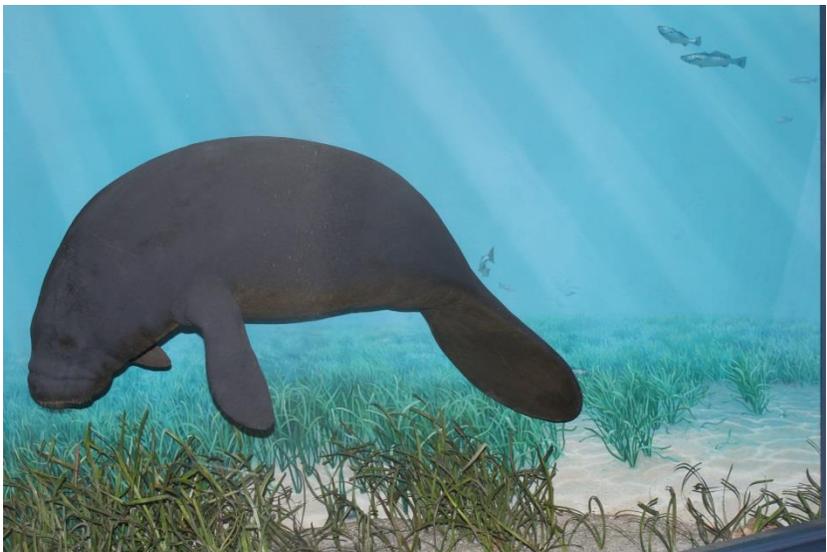
What seems to be the organizing principle behind the cases on the balcony level? _____

Just before leaving this floor, there is another "tree" showing the kinds of invertebrates that live in the ocean parallels that of the vertebrates on the other side of the entrance

At this point go down to the lower level. When you arrive at the lower level, start with the case with the elephant seal which is basically below the entrance and on the right side.



From there continue along the right side of the hall to the case with the manatee.



The diorama with the elephant seal is one of the first to deal with mammals. Up to this point the exhibits have been involved with invertebrates and fish. You will (or should) notice that many of the cases on this level deal with animals that are frequently out of the water. On what grounds do you think they were included in this hall? Do you find any explanation for why the specific animals have been chosen to exhibit on this floor?

You should notice that each sign about the case has a "fast facts" bit near the bottom of the sign that gives you "quick" data about the animals. The signs often talk about behavioral aspects of the animal. What kind of food

does the elephant seal eat? Where does it have to go to get it? What problems does it face in getting its food? Remember the three questions raised at the start of the exhibit upstairs that dealt with food getting, breathing and locomotion. Do you see how these are related now?

The second exhibit shows the manatee. What does it lack and what impact does that have on where it can live? What dangers does it face? How does the manatee differ from the elephant seal (as well as the walrus in the next case?)

Following the manatee exhibit, we find an exhibit dealing with walrus. Here it is possible to touch a walrus tusk. What kind of information does the signage give you? Is the information given on this level as much as there is on the upper level?



Following the walrus case is a case labeled Sargasso Sea. The case does not focus on any single species of animal, but shows a number of animals in a specific area of the ocean known as the Sargasso Sea. This is the only sea which has no land boundaries. It is also the subject of many strange tales and legends. Why is this area of the ocean important?



The following case shows a polar bear- hardly what anyone would think of as "marine life". Why do you think it was included in this hall?



As you turn onto the adjacent wall, you find a case which has no light at all! You need a light to see what is in it. It is actually an octopus. This, along with the squid, is a very large mollusk. Most mollusks are much smaller and have shells, but the squid and the octopus are rather odd animals compared to other mollusks. There is not much information in the case about this jet

propelled animal. Research has shown them to be able to remember how to find their way through mazes. They are even capable of crossing small areas of land.



In the only case in this hall that contains people, there are two divers from the South Pacific. Is there any mention of this in the Peoples of the Pacific Hall? The discussion here is about pearl diving and the development of the pearl industry. What information is given about that development?



The next case shows a coral reef. The reef (as you might recall) is discussed in detail on the floor above. The importance of coral reefs cannot be overestimated. None the less, they are in great danger from rising water temperatures and other factors.





The last case on this wall shows a sperm whale going after its favorite food, the giant squid which lives at great depths in the ocean. Think about the lighting in the case.



Like the elephant seal, this requires very deep dives by the sperm whale with all the concomitant problems the elephant seal faced. Compare the elephant seal and the sperm whale in terms of the way they have adapted to their environments. Do they face similar problems? How are they different?

Turning onto the third wall, tiger sharks occupy the next case.

Fish are generally divided into two kinds – Chondrichthyes and Osteichthyes. Sharks and rays fall into the former. What distinguishes these two groups? Is there information here? Is there any in the Hall of Biodiversity?

The sea otter – another mammal is shown here floating on its back. The sea otter plays an important role in the kelp forests. It is a fascinating animal that was hunted almost to extinction for its fur.



The next case shows dolphins and tuna fish. Can you tell the difference? The tuna are fish and the dolphins are mammals. One quick way to tell them apart is by their tails. Fish tails are vertical while the cetaceans (whales dolphins, porpoises etc.) are horizontal and usually referred to as “flukes”. Notice the description of the “fin” and how it is constructed. How are porpoises different from the tuna (and other fish) in this respect?

The harbor seal in the next case is the second seal exhibited – the elephant seal being the first. Where is the location of the exhibit supposed to be?

The following case contains diving birds. There are no birds which live exclusively in the ocean, although many like the polar bear are heavily

dependent on it. The bird that is most adapted to ocean going is the penguin, one of the flightless birds.

The last case shows a sea lion. Sea lions are distinguished from seals by the presence of an external ear. Compare the seals in the various cases with the sea lion here.

Between the two stairways coming down from the entrance to the hall on the balcony level is a projection screen. Look at the films they are showing? What kinds of information can you get from the film you can't get from the exhibits?

General questions about the Hall:

Does the exhibit contain as much information about plants as animals?

Does the exhibit contain as much information about protists and plant life? _____

Does the exhibit give much information about the ocean itself? _____

THE HALL OF THE PEOPLES OF THE PACIFIC

The Hall of the Peoples of the Pacific is on the third floor of the museum towards the 77th Street side of the building. Pass through the Hall of the Indians of the North East Woodlands, Indians of the Plains to find the hall. The culture area itself is sometimes referred to as Oceania.

The hall was designed by world famous anthropologist Dr. Margaret Mead, and is named for her. She was one of the curators at the museum.

Before entering the hall proper there is a small passageway which talks about Dr. Mead and her contributions to anthropology which were considerable. The passageway contains many photographs which indicate her interest in using both still and motion picture photography to document what was happening in other cultures.

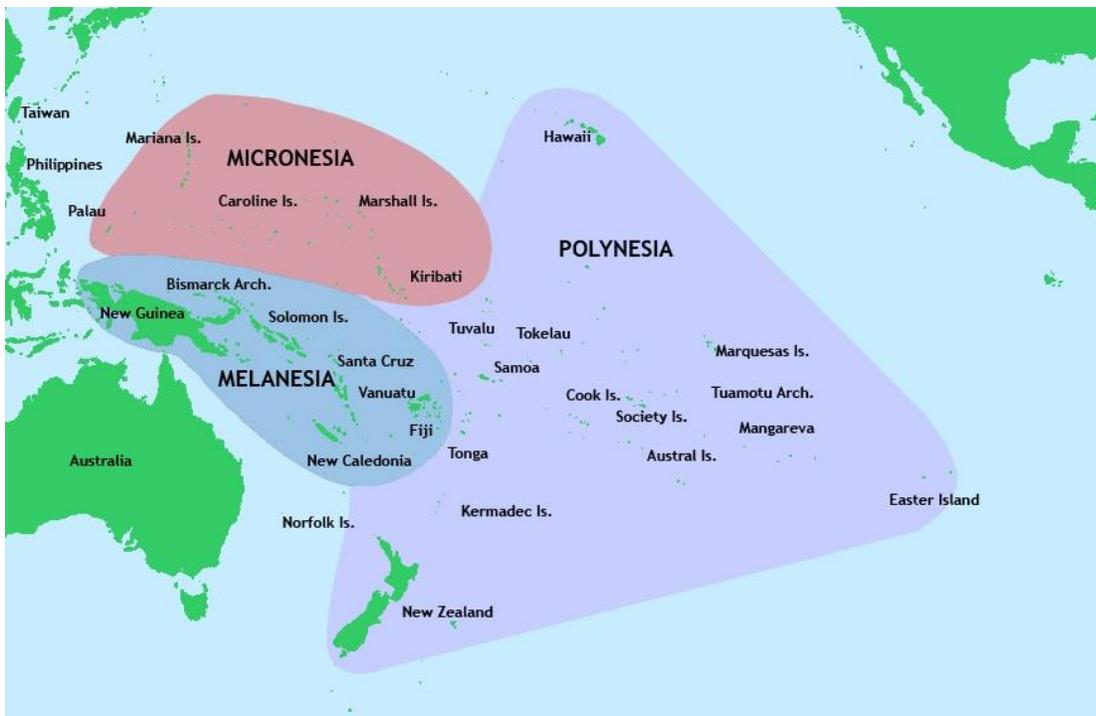
The hall is designed to give you something of the feeling of the Pacific Islands with a blue sky and a floor that could easily be seen as "sand". At

the far end of the hall is a Moai, one of the great statues from Rapa Nui (formerly Easter Island).



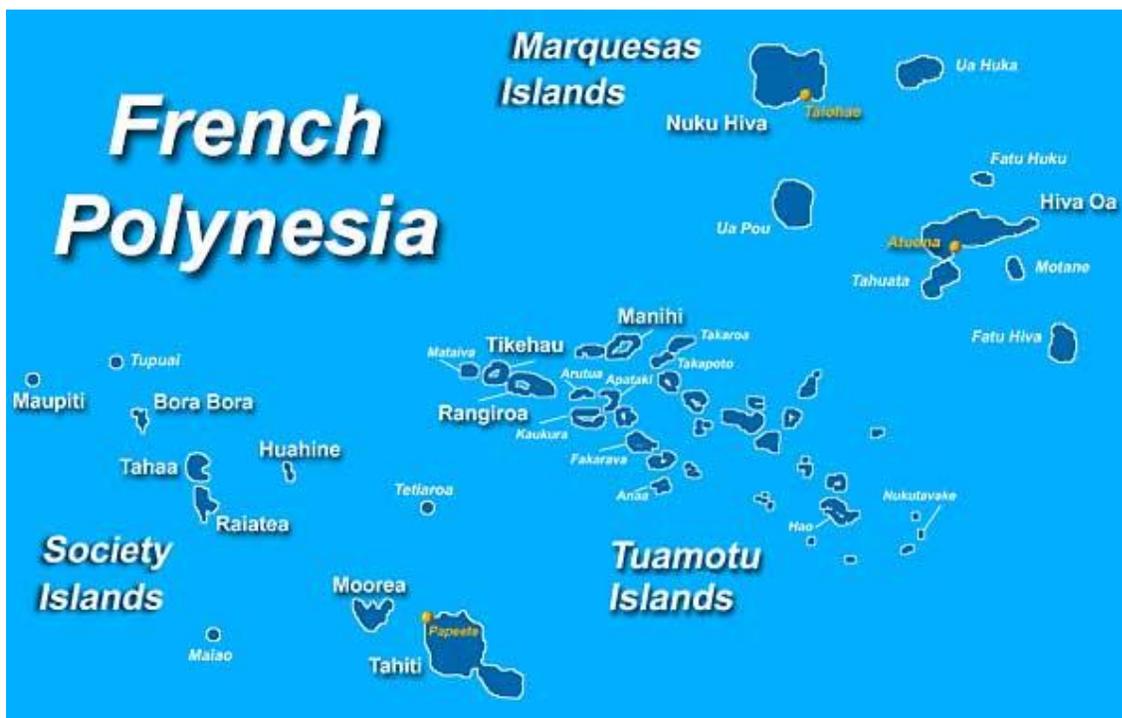
As you enter the hall, immediately to the left is a map of the Pacific with the Western half dotted with a large number of small islands. The area of the Pacific has been divided into several cultural areas. Sometimes there are only three basic areas: Micronesia, Melanesia (which includes New Guinea), and Polynesia (which includes New Zealand, Hawaii and Rapa Nui). Australia, being a continent is often excluded from the definition of the "Pacific Islands". Japan, the Philippines, Indonesia, the Aleutian Islands and several small archipelagos are generally excluded as well, although strictly speaking are "islands" in the Pacific. The more inclusive term "Oceania" in its broadest use refers to all of these, but even that is often more restricted as to which islands are involved. Japan is excluded from this hall, but a small exhibit about the Japanese is found in the "Hall of Asian Peoples". Many of these islands became known to Americans during World War II when there were a number of battles fought in this area.

The hall here is divided into six areas: Australia, Indonesia, the Philippines, Melanesia, Micronesia and Polynesia. The map lists some of the more well-known islands in each area.



The map on the wall of the Peoples of the Pacific Hall is more extensive than the one pictured above. Notice how far apart the islands are. Consider the problems of travelling across such great expanses of ocean to get from one island to another. These Micronesian, Polynesian and Melanesian islanders are seafaring peoples and were able to travel without modern technology across great expanses of open ocean and find other islands.

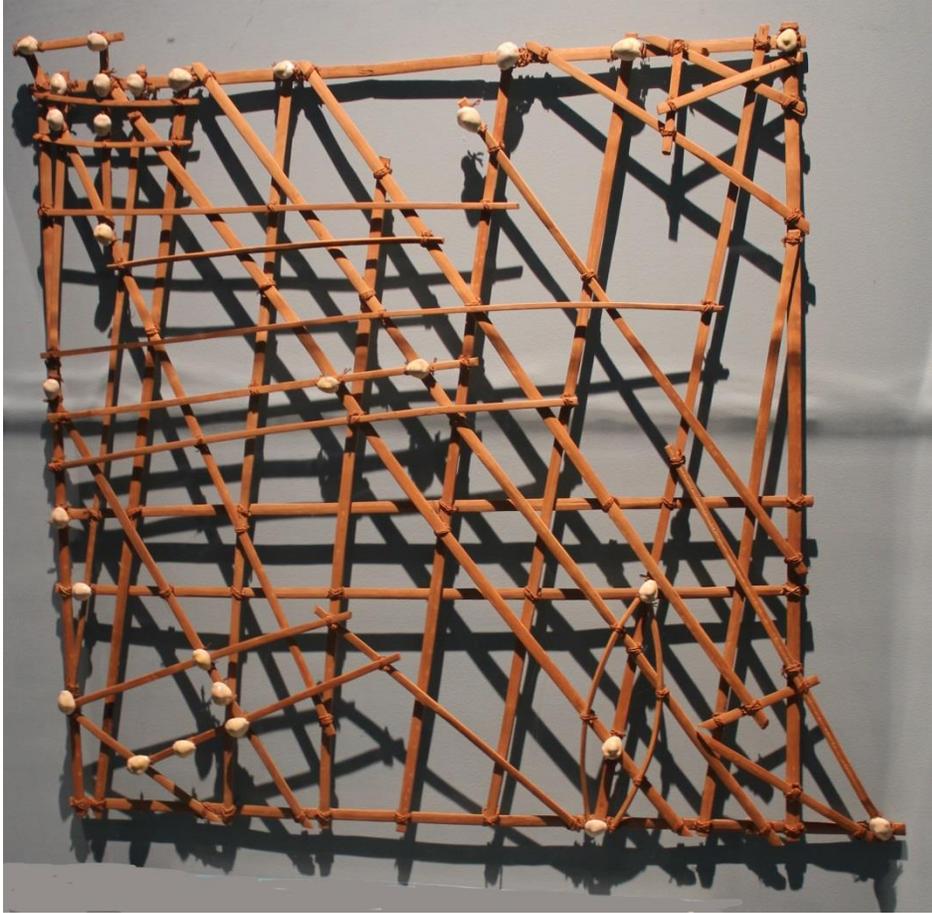
All the genetic evidence now point to the fact that these are people who moved out from Asia into the Pacific although in 1947 Thor Heyerdahl, a Norwegian explorer, built a small raft, called Kon Tiki and demonstrated that it was possible to sail from Peru and after a journey of 101 days and approximately 5,000 miles, the raft crashed into a reef at [Raroia](#) in the Tuamotus – a part of French Polynesia.



Two cases dealing with these peoples connection with the ocean are right next to the map and across from it. To the right, are models of canoes built in the islands. What purpose do these models have? An additional purpose has been developed lately as a result of tourism. What is it?



Across from the map, on the other side of the center aisle in the case on the right is a navigation map. On it there are several shells. What do the shells represent?



How is the object held? What do the three shells marked by an oval shape represent?

Down the hall to the right there is a case about the Admiralty Islands. Fishing is an important source of food for these island people and the exhibit shows some of the fishing equipment. What kind of equipment is shown? What kinds of food do they catch?



There is also an exhibit which shows a model of the houses and the people's proximity to the water. You can see how close to the water these people are in their everyday lives.



Note the "cut away roof" so you can see inside.

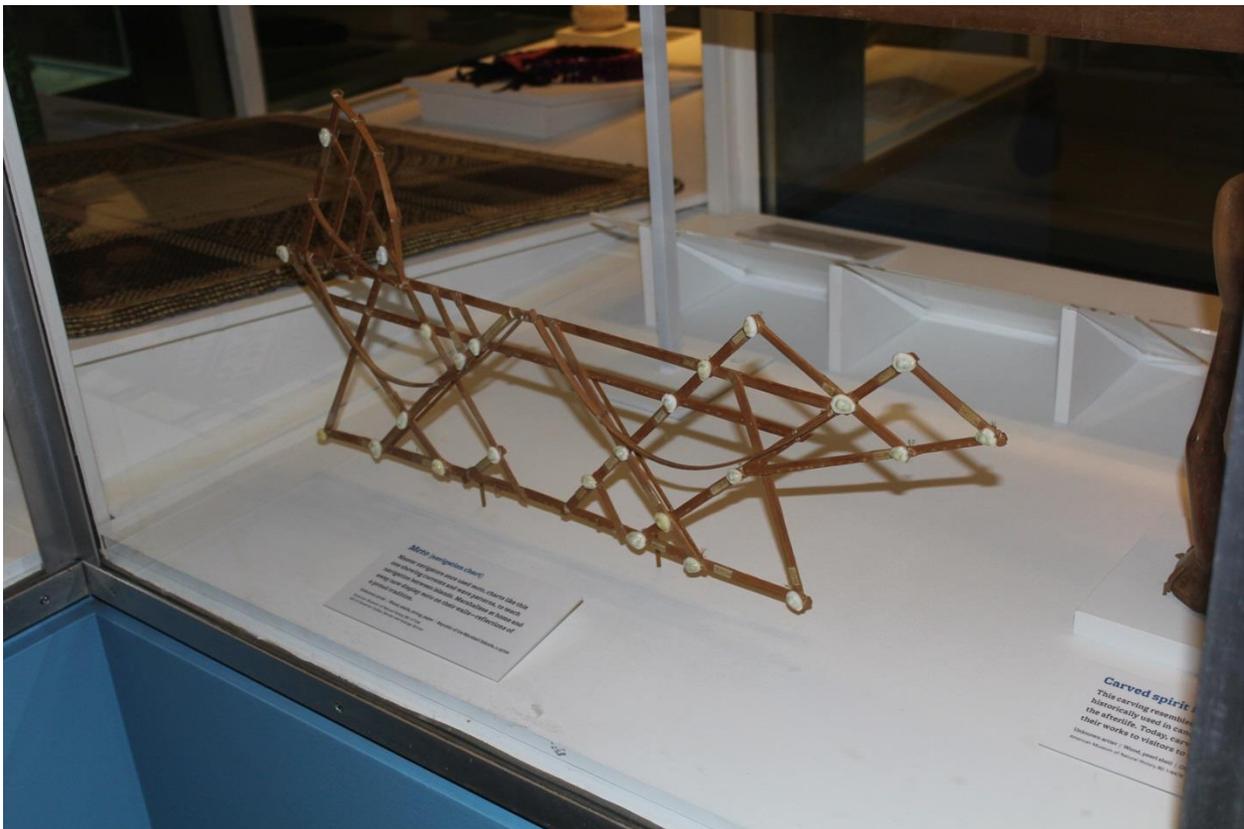
Further down the hall, closer to the Moai is case in which a Maori canoe is shown in a photograph. The exhibit itself contains only the paddles. What can you say about the size of the canoe and the number of people it can hold?

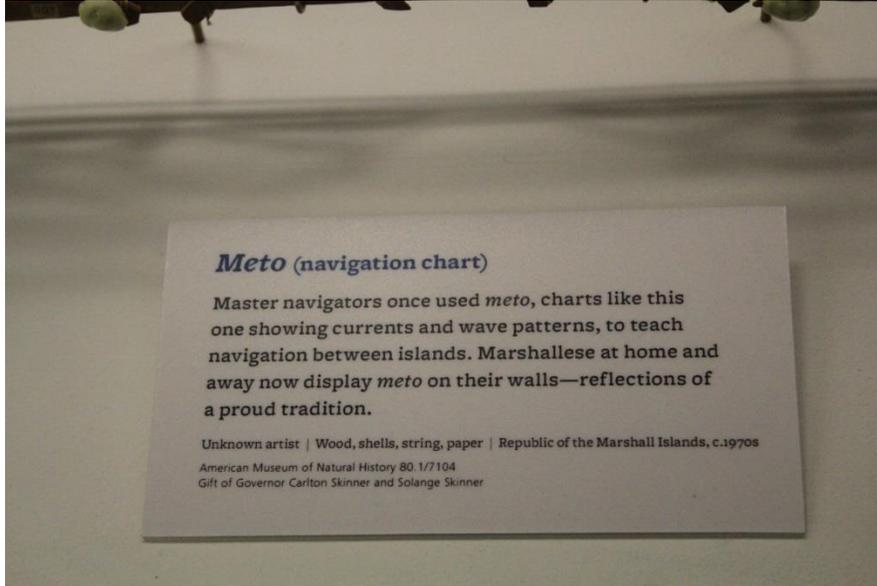


In the lobby of the 77th Street entrance to the museum on the first floor is a Haida canoe from the N.W. Coast. How do they compare?

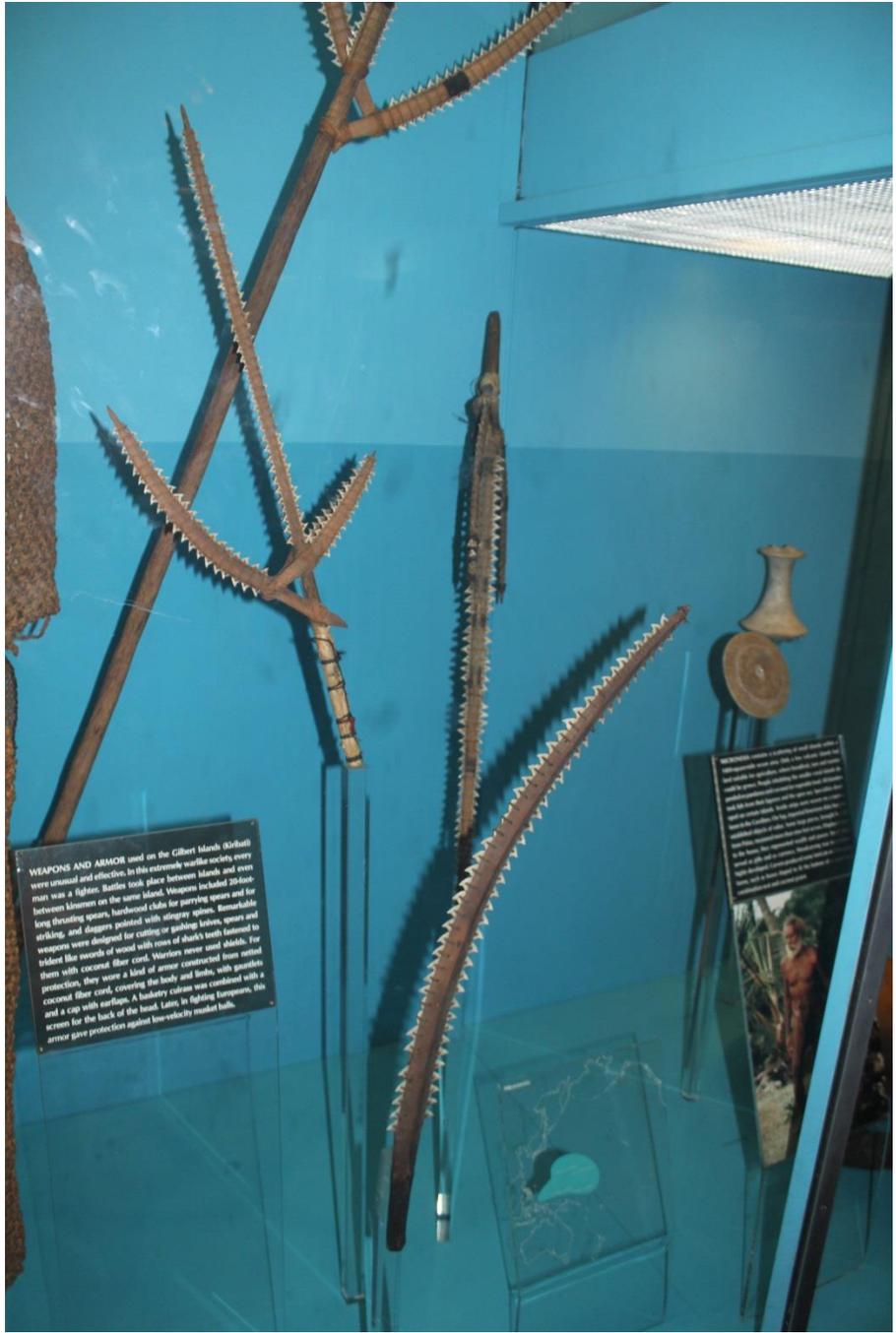


Almost directly across the aisle is a case dealing with climate change. Around the rear of the case is another navigation chart. What additional information is given here?





On either side of the Moai are cases. The ones to the right deal with Micronesia and there are, in the cases along the wall to the right, examples of weaponry. Here there are some weapons which have along their cutting edge, shark teeth.



WEAPONS AND ARMOR used on the Gilbert Islands (Kiribati) were unusual and effective. In this extremely warlike society every man was a fighter. Battles took place between islands and even between islands on the same island. Weapons included jagged long thrusting spears, barbed clubs for parrying spears and striking, and daggers pointed with stingray spines, spines and weapons were designed for cutting or gouging holes. Remarkable shields the swords of wood with cones of shark's teeth lashed to them with coconut fiber cord. Warriors never used shields. For protection, they wore a kind of armor constructed from natural coconut fiber cord, covering the body and limbs, with gauselets and a cap with earflaps. A headdress was combined with a screen for the back of the head. Late in fighting Europeans, this armor gave protection against low-velocity musket balls.

To the left of the Moai there is a case showing a conch shell trumpet from Fiji.



You can look around the Peoples of the Pacific Hall to see if you can find more evidence of materials from the sea being used as cultural artifacts or if there is any further material relating to the ocean.

Check out the other ethnographic halls like Indians of the Plains, Indians of the NE Woodlands; Peoples of Asia; Peoples of Central America, Peoples of South America and Peoples of Africa. Unfortunately the Hall of the Indians of the N.W. Coast is currently dismantled but had some wonderful masks involving marine life



Note the octopus and killer whale masks.

There is also a Hall of Reptiles which has some information about a few reptiles that might be considered relative to a marine habitat.