



### FISHING LINKS

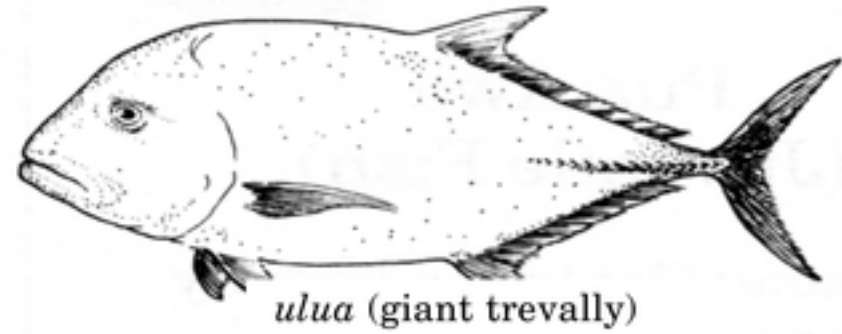
### LEARNING LOG - 1

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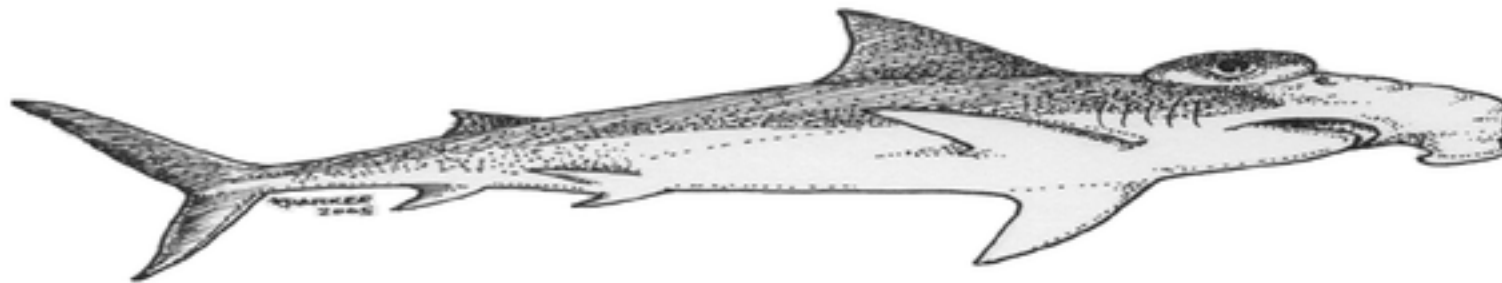
#### PREDATOR/PREY RELATIONSHIPS

Many predator / prey relationships exist to support the largest predators in the bay—the *manō* (shark) and the *ulua* (giant trevally). These predators at the top of the food chain are called apex predators. Think of all of the life that is required to support the *manō*.



*ulua* (giant trevally)

Make a list of the species that you think need to exist on the reef in order for the *manō* and the *ulua* to survive.

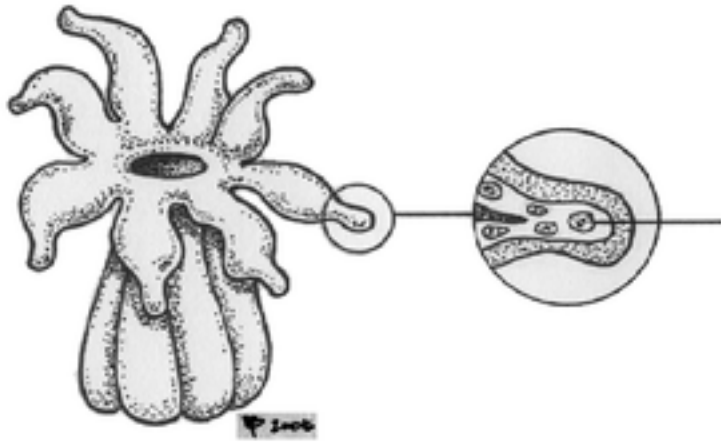


In the Northwestern Hawaiian Islands (NWHI), apex predators make up 54% of the reef. In the Main Hawaiian Islands these top-level predators make up only 3% of the reef. Why do think there is such a difference? List your ideas below:



A symbiotic relationship is one where both species benefit. Some examples are:

### ***Ko'a* (Coral) and *Limu* (Algae)**



coral polyp with zooxanthellae (algae)

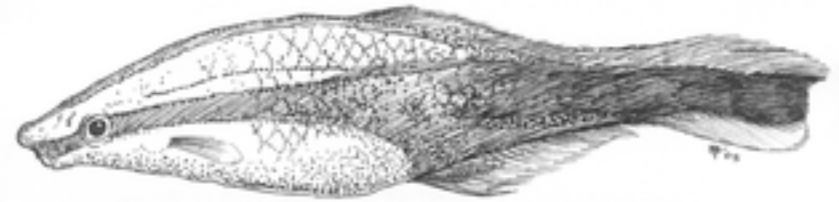
Corals are made up of tiny polyps that have a sac-like gut with an opening surrounded by tentacles with tiny stinging cells. These cells capture zooplankton—very tiny animals that drift by in the currents. Living inside the coral's tissues are single-celled algae called zooxanthellae. These algae use the sun's energy to convert water and carbon dioxide into food that the polyps utilize. The algae benefit from this relationship by being protected from animals that feed on it.

### **STOP BY THE CLEANER'S!**

#### ***Pō'ou* (Cleaner Wrasse)**

This tiny fish is only a few inches long. If it nibbles on bait that it does not find tasty, its skin will change to a paler shade of color (Titcomb, 1977).

The *pō'ou* has an interesting behavior. It picks parasites off the bodies of other fishes. These cleaner wrasses tend to “set up shop” in a particular area of the reef. Fishes in need of a cleaning know these locations or “cleaner stations” and stop by for a cleaning. When these fish arrive, they pose motionless which attracts the cleaner to come and inspect and then pick off and feed on irritating parasites (Hobson, 1972).



### **YOUR RELATIONSHIP TO THE CORAL REEF**

Write a paragraph or a poem that summarizes your relationship to the coral reef.



## FISHING LINKS

## STUDENT READING 1

### Kuhaimoana, Shark-guardian of Ko'olaupoko

More than a thousand years ago, when the first Polynesians began to venture out from Nu'uhiwa (the Marquesas Islands), the bravest of them took small journeys as far as the winds they could name and call upon. One of those early *ho'okelewa'a* (navigators) was Kalani-menehune (Wichman, 1998). Kalani's ancestors were famous for their skill in reading the star-trails, calling the *makani* (winds) and reading the ocean currents. Still, none of them had ever gone beyond the limits of their *'ike* (knowledge).

One day Kalani decided to seek out the lands-beyond-the-horizon. He realized this would take him beyond the star-trails, the *makani* and the currents that his family and people had known. Yet his sense of *kuleana* (responsibility) would not allow him to stay home. It was also clear that he could not complete his mission alone. So, he chose a handful of skilled ones—specialists in the areas of plant medicine, woodworking, masonry, fishing and farming. The stars, *makani*, and currents would be his *kuleana* for their journey.

Kula! When the day dawned for their *wa'a* (canoe) to rise through the waters, Kalani gathered his crew and they shared breath with their *'ohana* one last time. (The exchanging of breath between two people, nose-to-nose and forehead-to-forehead, has been commonly practiced among *ka po'e o Ni'ihau* and other Hawaiians and Polynesians for time immemorial (Keale

and Tava, 1989). Each crewmember would have a role in guiding the *wa'a* toward its new home. The first day and night were easiest since Kalani knew the names of the *makani* that would aid in filling the sails of



the *wa'a*. They blew, and they blew, and they blew! And finally, when they could no longer fill the sails and still remain connected to the ancestral lands, the *makani* turned back toward home. All night without a breeze the lazy sea lapped against the sides of the motionless *wa'a*.

For two nights and two days, the sails of Kalani's *wa'a* hung empty as he and his crew drifted aimlessly on the open sea. At night, it mattered not that Kalani could see the star of Kāne or the dim eyes of Makali'i. Their *wa'a* would not be moving anywhere





soon! While the sails sagged on the mast all members of the crew devoted their time to catching fish, taking note of the new star-trails at night, and offering *pule* (prayers) day and night to *ke Akua*, *nā kūpuna*, and the *'aumakua*.

At sunrise on the third day, the crew was awakened by a gentle breeze blowing out of the north. Maybe this nameless *makani* would befriend them; but could they trust it to carry them to the land-beyond-the-horizon? What land was it from? How would they know what direction it would lead them if it decided to really blow? Luckily this playful *makani* still wasn't strong enough for the crew to put up sails.

Then something amazing happened! Bump. Bump! The once motionless *wa'a* shuddered with a thud. Something had just banged and brushed up against the outer rigging of the *wa'a* and it was enormous! First a bump, then a dark shadow blurred beneath the hull only to return with another thud. Yet each time, rather than causing fear it seemed as if the giant *manō* (shark), easily the length of their *wa'a*, was simply trying to get their attention.

Like the traveling guardians spoken of by the Ancient Ones, a *kia'i kapu* or what some called a *kupua* had come to save them! Slowly, as Kalani-menehune and his crew

charted the star-trails for the first journey to Hawai'i nei, Kuhaimoana led them with the help of the Malanai and Nāulu winds. In the years to come these early settlers of Hawai'i nei would come to revere the awesome canoe-leading *manō* of Ni'ihau and Ko'olaupoko, O'ahu—Kuhaimoana. The shark, distinguished by the giant barnacles that dot its back, is often seen where it originally led the first settlers. At 'Āina o Ka'ula in Ni'ihau and Mokumanu near Kailua Bay, both "bird-islands", the *'aumakua* guards its sacred lands.

#### VOCABULARY

*'ike* — knowledge or understanding

*makani* — wind

*'ohana* — family and extended family

*Nu'uhiwa* — otherwise known as the Marquesas Islands

*ho'okelewa'a* — navigator or one who sails a canoe

*kula* — rising of the Sun or the canoe through a wave

*wa'a* — canoe; *pahi* is the old word from Kalani's land of origin

*kuleana* — destiny, responsibility or calling

*pule* — a prayer or chant of request

*Kāne, Ke Akua* — the Creator

*nā kūpuna* — ancestors

*'aumakua* — family guardian, benefactor or provider

*kia'i kapu* — a sacred guardian

*kupua* — a supernatural guardian

*manō* — shark

Malanai — the famous wind of Kailua, O'ahu

Nāulu — the famous wind of the island of Ni'ihau

#### REFERENCES

Keale, Sr., Moses K. and Rerioterai Tava. 1989. *NIIHAU- The Traditions of an Hawaiian Island*. Mutual Publishing. Honolulu, HI.

Wichman, Frederick B. 1998. *Kaua'i, Ancient Place-Names and Their Stories*. A Latitude 20 Book. The University of Hawai'i Press. Honolulu, HI.



## FISHING LINKS

## STUDENT READING 2

## SHARKS AS 'AUMAKUA

Excerpts from: *The Honolulu Advertiser* Sunday, January 14, 2001

By Katherine Nichols, Advertiser Staff Writer

Kahu Charles Kauluwehi Maxwell Sr. will never forget the day he saw a free diver off Moloka'i tossing away every other fish he speared. "All of a sudden, this huge tiger (shark) came up and took the fish," said Maxwell, a former police officer who is now a cultural practitioner on Maui. "I thought he was going to be attacked. Then I realized: He's feeding his 'aumakua. The man said, 'Wherever I go, this manō (shark) help me. He follow me all over.'"

Maxwell, 63, who has been given the title of "kahu," meaning a shepherd or religious leader, also serves as a consultant to the Maui Ocean Center. He told another story about a tour boat that sank off Moloka'i in the 1930s. Sharks swarmed, and all of the tourists were attacked and killed. The captain of the boat, however, started to chant. "His 'aumakua appeared, offered his dorsal fin and carried the captain to shore," said Maxwell. "Even in modern times, things like this happen. People try to explain, but you can't. A lot of our culture cannot really be explained."

In Western culture, the shark is the predator, which, when it kills, must be killed. It's the "Jaws" syndrome. But the relationship between traditional Hawaiians and sharks was, and is, far more complex: The Hawaiian way is to value all creatures as having a rightful place in the ecosystem. Sharks are useful game, yet it is also

believed that some sharks are the embodiment of gods, family deities called 'aumakua.

But where does this belief fit today? How do contemporary Hawaiians, especially those who spend time in the ocean, reconcile the two conflicting views of sharks?

In Hawaiian, 'aumakua is defined as a guardian spirit or family protector. Though some view the practice as a religious one involving worship, most, like Maxwell, a Christian, regard it as a continuation of an ancient belief system, a cultural practice that does not interfere with other religious beliefs. For those who have a relationship with their 'aumakua today, it remains a powerful force.

"An 'aumakua was actually a dead ancestor's spirit that was deified into an entity," explained Maxwell. "Could be clouds or trees or animals." But the best known of the 'aumakua seems to be the shark. Why? "We're ocean people," said Maxwell. "In ancient times, you either lived in the mountains or the ocean. The owl, the eel and the whale were also famous 'aumakua." **'Blood relationship'**





This does not mean every owl or shark is an 'aumakua. And even if a shark is your 'aumakua, "not every shark is going to be gracious to you," said Carol Silva, a researcher of Hawaiian culture. "'Aumakua are identified very specifically by body markings, and are named. They are part of the family. There is a direct connection, a blood relationship."

How is this unique and enduring tie to an 'aumakua determined? Paul Brown, 35, a fisherman, free diver and teacher at Kaimuki High School, said his family's 'aumakua can be traced several generations back to his roots on the Kohala coast at 'Upolu Point on the Big Island.

Maxwell said that his grandmother fed the sharks, and everyone knew the sharks had been their family's 'aumakua for several thousand years. "It would be a cultural insult if I asked my parents, 'How did we get this 'aumakua?' You're just told." Western man, he said, "thinks everything has to be in black and white to be fact."

Beyond the stories, Silva said that there is "usually some kind of sign," when an 'aumakua makes itself known, by behaving in a non-threatening manner, or even coming to the aid of a family member in a dangerous situation. The recognition between human and animal is instant and mutual.

Where the 'aumakua resides is usually determined by a significant family event that occurred there. "Maybe the family had a miscarriage or a stillborn and sent the fetus or the child out to sea," said Silva. "Or

maybe the family had a drowning. Wherever this event occurred, if a sea animal showed up in that area, this is generally seen as a reincarnation."

The affinity is often so strong that older family members make significant efforts to introduce their children and grandchildren to the relative who resides in the ocean. Silva said she knows of a man in Kona whose grandfather led him on a diving expedition into a specific cave to acquaint him with their shark 'aumakua.

### Care and feeding

But the connection is not limited to meeting and greeting. "Care and feeding of your 'aumakua was an essential part of this **sympiotic relationship**," said Silva. "The 'aumakua shark would drive off all bad sharks and carry its mortal family members to safety, but in return, family members were responsible for scraping the barnacles off the shark's back, and making sure it was well."

A clergyman called Kaiwi told author Martha Warren Beckwith the following story for a 1917 magazine article. Speaking of a shark 'aumakua and its family of fishermen, he said, "The men give out some of the first catch, then it disappears, and they always come back with full nets. Only when the shark appears do they have luck. Sometimes the 'aumakua tells them beforehand in a dream that it has gathered the fish together."



Maxwell says most Hawaiians will not speak about their 'aumakua with anyone outside their families. Ka'uhane Lee, a canoe paddler of Hawaiian, Chinese and Tahitian descent and owner of the Lomi Shop, agreed: "It's kapu to have (your 'aumakua) known," she said. "It's only known for certain reasons and purposes."

### Power of sharks

Both Maxwell and Silva believe that ancient Hawaiians' relationship with the environment helped them connect more readily with their 'aumakua. Said Maxwell: "In ancient times, there was one penalty for polluting the ocean or taking things out of turn: death. Every wind, every piece of

land, every cloud had a name and a story. Hawaiians could talk to the trees, mountains and the animals, and they would answer. But we've lost that." In fact, he said, every Hawaiian "has an 'aumakua, and sometimes two < from their mother's side and their father's side < but most people don't know."

Hawaiians did kill sharks, but only for specific purposes, and given that they used nothing more than a canoe and a spear or fishhook, obviously they took sharks in small quantities. And they wasted nothing. Leighton Taylor wrote in "Sharks of Hawai'i < Biology and Cultural Significance" (University of Hawai'i Press, 1993) that Hawaiians used the teeth as cutting tools, ate the meat of the shark, and used the skin to stretch across ceremonial drums.

However, Maxwell has written, "In ancient times, families were careful not to eat certain forms of animal life if their 'aumakua was thought to appear in that form, for if they did, they knew the punishment could be as severe as death."

**WRITING CHALLENGE:** Describe how the Hawaiian relationship with the *manō* as 'aumakua was symbiotic.