Hanalei Moon and Tide Calendar® 2012

Hanalei Watershed Hui

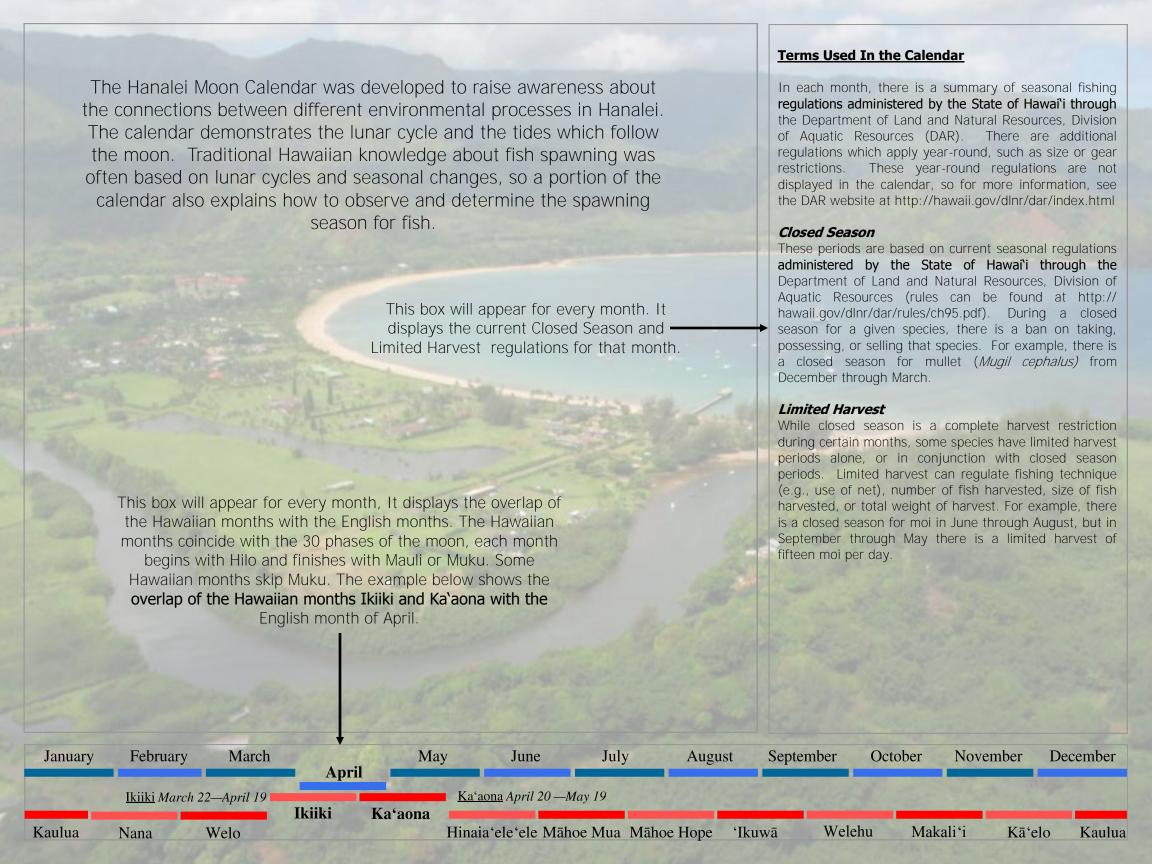
"supporting and protecting the ecology, cultures and sustainable economies of Hanalei"

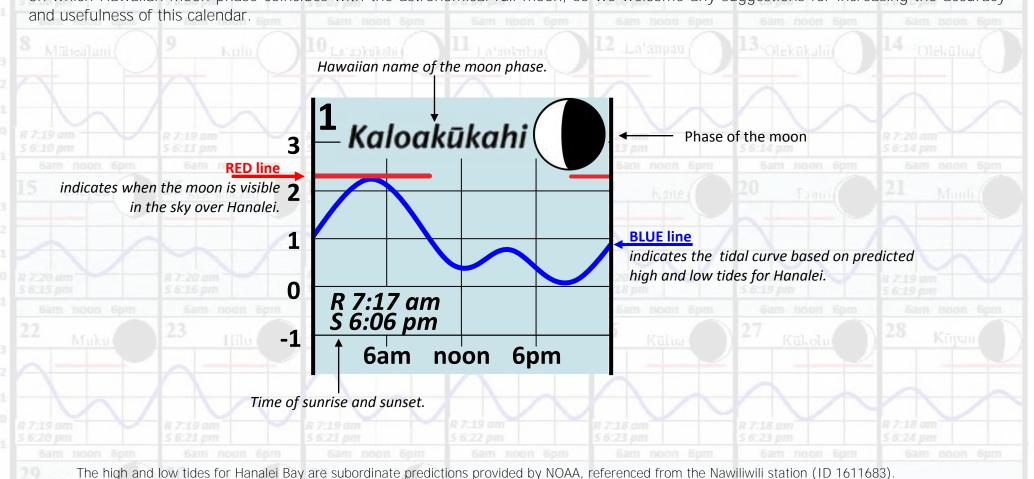
Email: <u>hanaleiriver@hawaiian.net</u>

Phone: <u>808-826-1985</u>

P.O.Box 1285

Hanalei, HI 96714





The times of sunrise, sunset, moonrise, and moonset were provided by NOAA's National Weather Service Forecast Office.

Pō Mahina

Mary Kawena Pukui

These are a few 'ōlelo no'eau (Hawaiian sayings) gathered by Mary Kawena Pukui that relate to the Hawaiian moon phases and months.

Kamali'i 'ike 'ole i ka helu pō Chidren who do not know how to count the nights 'Ekolu Kāloa, Kāne, Lono, Mauli no.

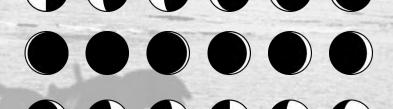
There are three Kāloa (Kanaloa) days, Kāne, Lono, and Mauli (life-spirit). Kanaloa, Kāne and Lono are three major gods of ancient Hawai'i.

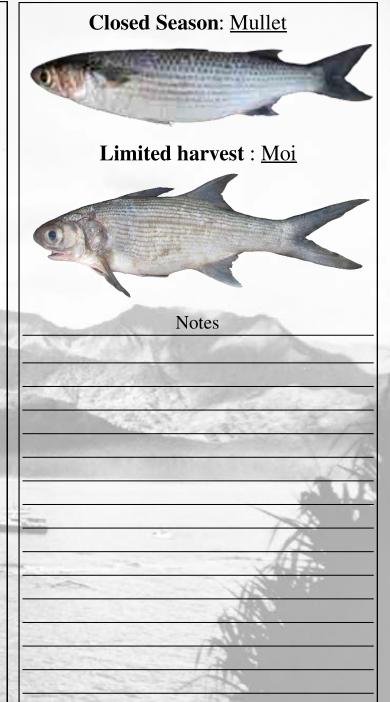
'Ehā Kū, 'ehā 'Ole There are four Kū days, and four 'Ole Muku nei, muku ka malama Here is Muku, cut off is the moon / month

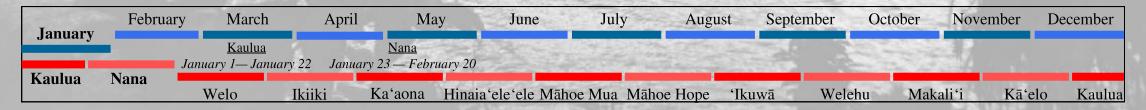
Huna, Mōhalu, Hua, Akua Huna (hidden), Mohala (blooming), Hua (fruit), Akua (god) Hilo nei, kau ka Hoaka Here is Hilo (faint streak of light), the Hoaka (crescent) rises

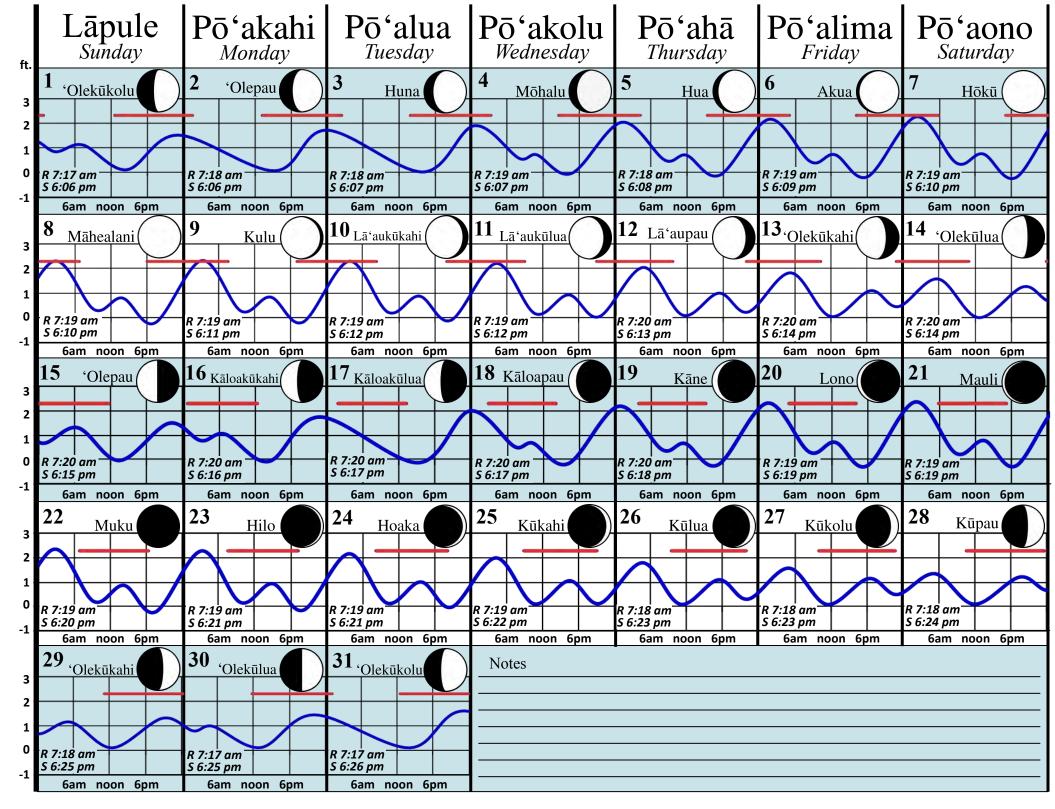
Hoku, Māhealani, Kulua Hoku (full moon night), Māhealani (full moon night), Kulua (trickling away)

'Ekolu Lā'au, 'ekolu 'Ole There are three Lā'au (plant) days, and three 'Ole days









Names of Hanalei

Hanalei is famed for its rains

Kaualoku o Hanalei is the soaking rain of Hanalei

The *Hehipuahala* (stepping upon hala) rain is associated with Po'okū because the plains were once covered with hala.

Lena is a yellow-tinted rain, describing its occurrence in sunshine.

Kauahā'ao is a gentle rain that falls over Hīhīmanu, and its showers follow one another in a way that is similar to the divisions in a chief's procession.

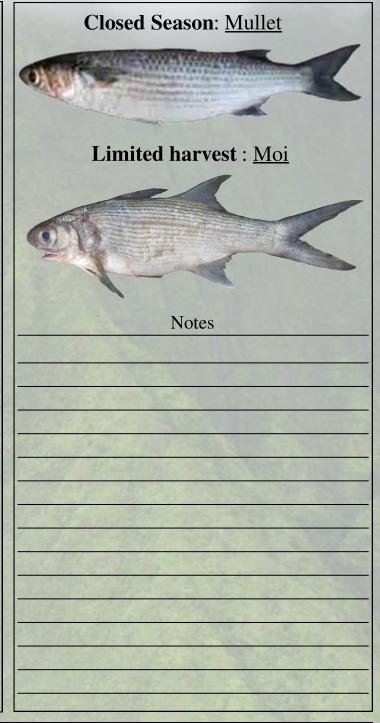
Kūʻula oʻAnini (red Kū of 'Anini) is favored by fishermen.

The Hanalei area includes four ahupua'a: Waikoko, Waipā, Wai'oli, and Hanalei.

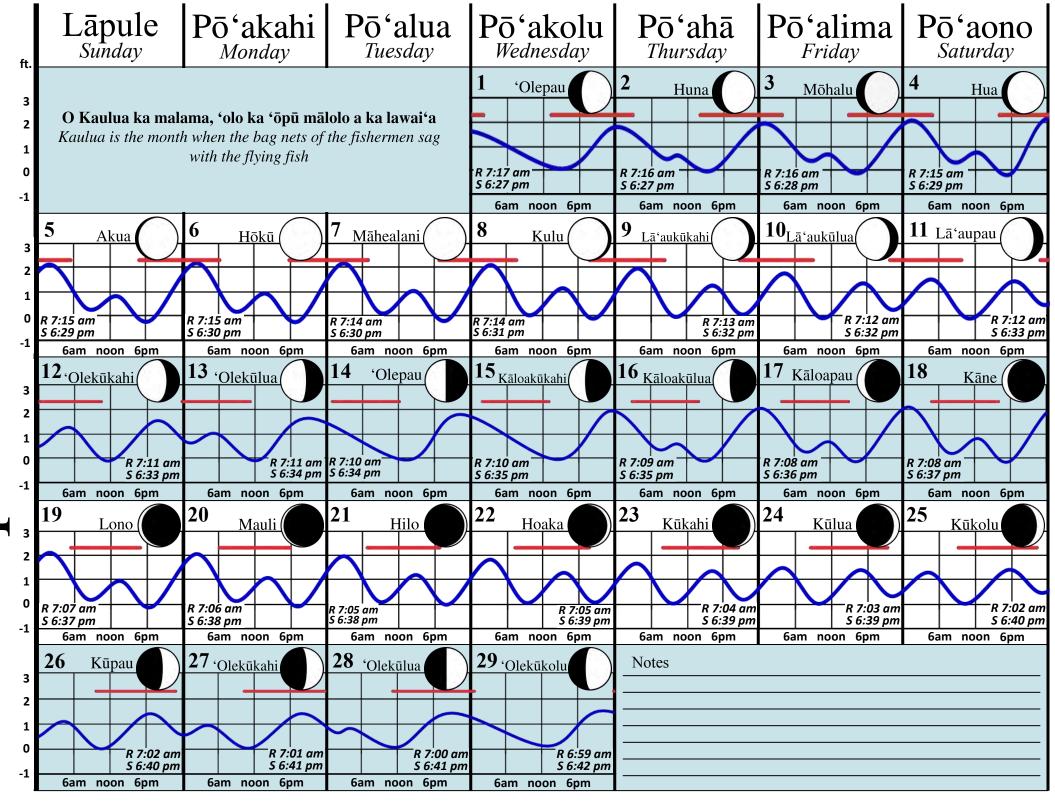
There are several features which are noteworthy and useful in orientation. The dominant peak is *Māmalahoa*, named after the wife of Kāne. *Hīhīmanu* is the double-peak mountain, named for the abundant rays along the Nāpali Coast. The massif between Māmalahoa and Hīhīmanu is *Nāmolokam*a (interweaving bound fast); over twenty waterfalls flow down its face after heavy rains.

The winds of Hanalei are sometimes gentle and life-giving

Hauka'e'e o Hanaleiiki (dried up dews of Hanaleiiki) blows just above the river mouth, and there are also Haumu (silent dew), Hau'ōma'o (green dew), and Līhau o Hanalei uka (scattered dews of upland Hanalei). The Līhau o Lanihuli (gentle cool rain of Lanihuli) was a good omen for fishermen.
There were also rougher winds of 'Ōlauniu o Pu'upoa (coconut leaf piercing wind of Pu'upoa) and Paehahiokaiholena (row of trampled iholena banana trees).



January	为 。	March	April	Ma	ny Jun	e July	y Aug	ust Sep	otember	October	November	December
	February	A Second	<u>Nana</u>		<u>Welo</u>			CONTRACTOR OF THE PARTY OF THE		62.00		
	Nana	Welo	January 23 — F	ebruary 20	February 21—Ma	rch 21						
Kaulua	Titalia	VV CIO	Ikiiki	Kaʻaona	Hinaia'ele'ele	Māhoe Mua	Māhoe Hope	ʻIkuwā	Welehu	ı Maka	ali'i Kā'e	elo Kaulua



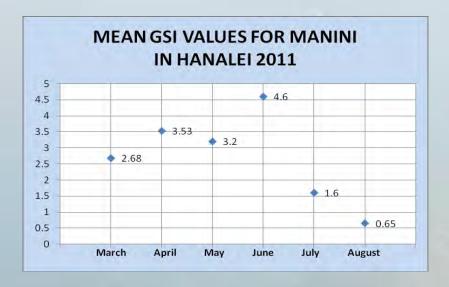
Determining spawning cycle for manini

Each month, several adult fish were examined. The data collected included fork length (tip of snout to fork of tail fin), weight, and gonad weight. The gonadosomatic index (GSI) is a ratio of the gonad weight relative to the weight of the fish, and this value provides a way to compare the amount of sperm or eggs in fishes during different months.

GSI = (Gonad Weight/Somatic Weight) x 100

Somatic Weight = Total Weight - Gonad Weight

The resulting GSI data is then plotted on a graph to show when gonad weight, and therefore spawning, has reached its peak for each species. The following is the GSI graph produced for manini (*Acanthurus triostegus*):

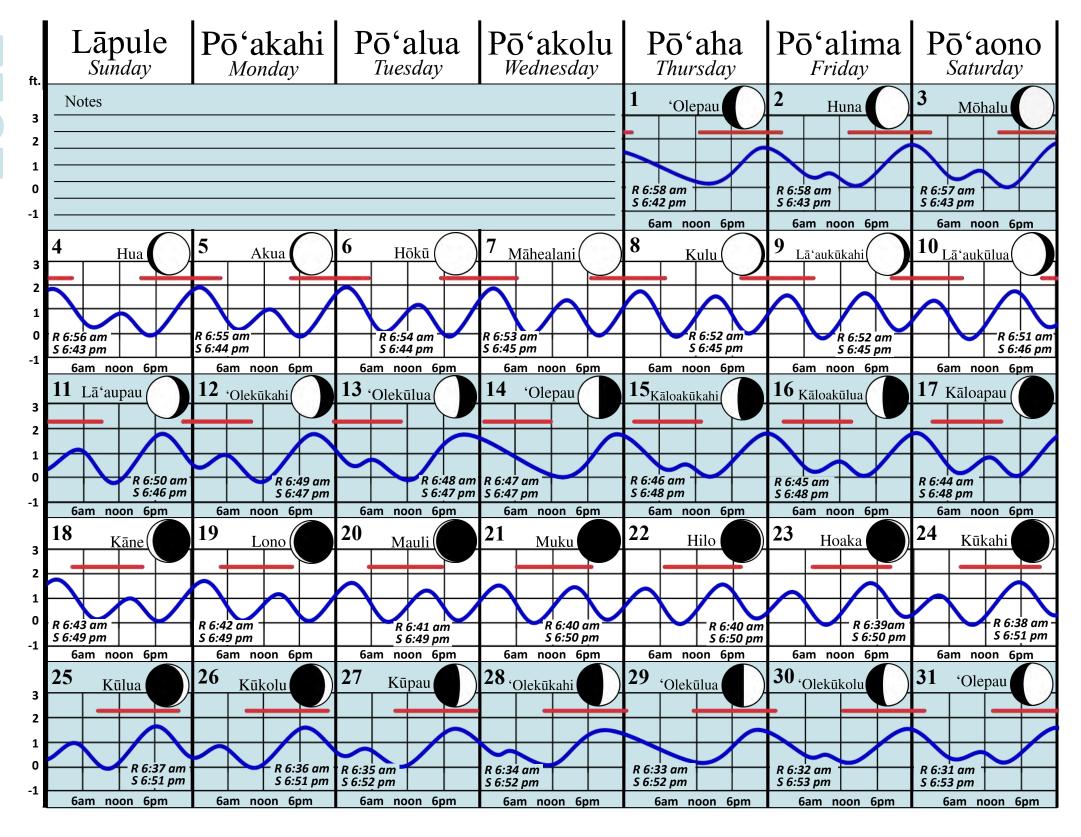


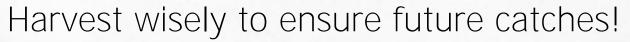
The information collected reflects the spawning cycle of manini in Hanalei during 2011. Based on this information, predictions can be made for 2012, although variations in the peak spawning months are likely to occur.

Limited harvest: Moi Manini may begin to spawn this month so practice caution when harvesting during this time.

Closed Season: Mullet

January	February	March Ikiiki March 22—April 19 Welo Ikiiki	November	December							
Welo		March		<u>Ikiiki</u>			District Committee	THE RESIDENCE OF	STATE OF THE OWNER, TH	1000	The second
February 21 —	March 21	Welo		March 22—Ap	ril 19	200		6630	Charles N. Co.	2000	
Kaulua	Nana	VV CIO	IKIIKI	Ka'aona	Hinaia'ele'ele Mā	ihoe Mua Ma	āhoe Hope '	ʻIkuwā We	lehu Mak	ali'i Kā'd	elo Kaulua





Slot limit catches: recognizing the importance of leaving very large individuals



Small fish = no take.

Allow them to reach reproductive size!



Good choice to fish sustainably!

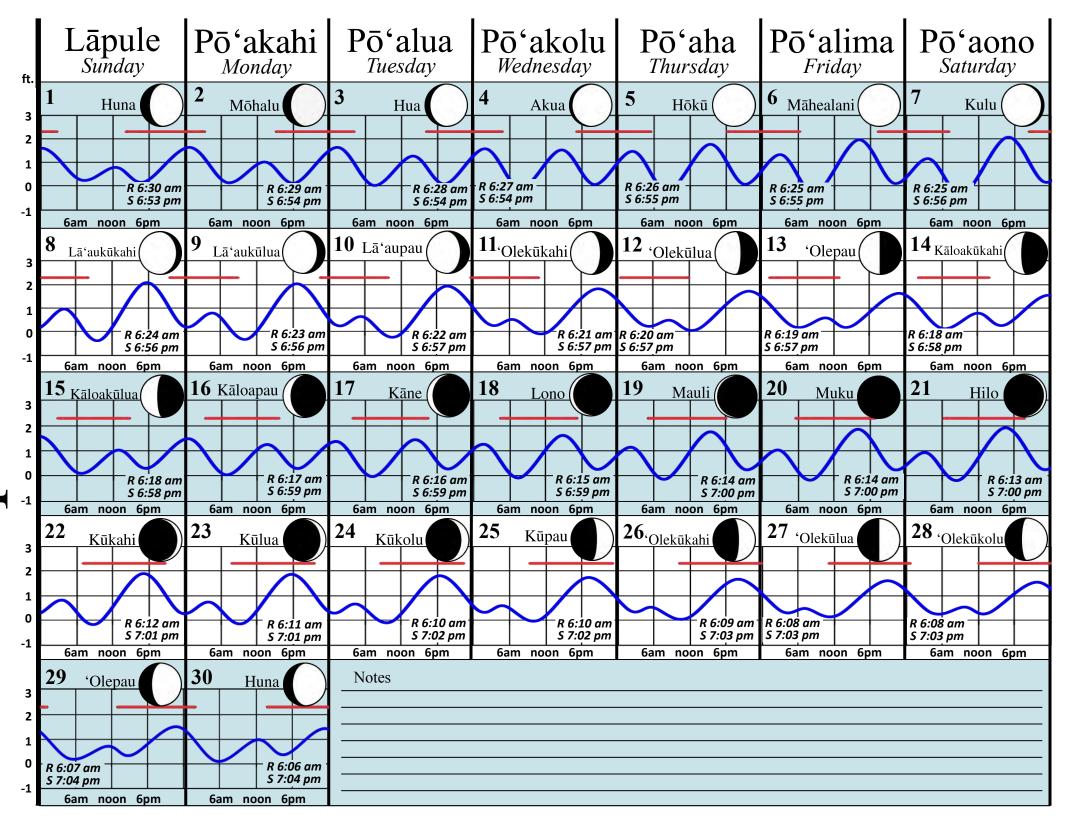


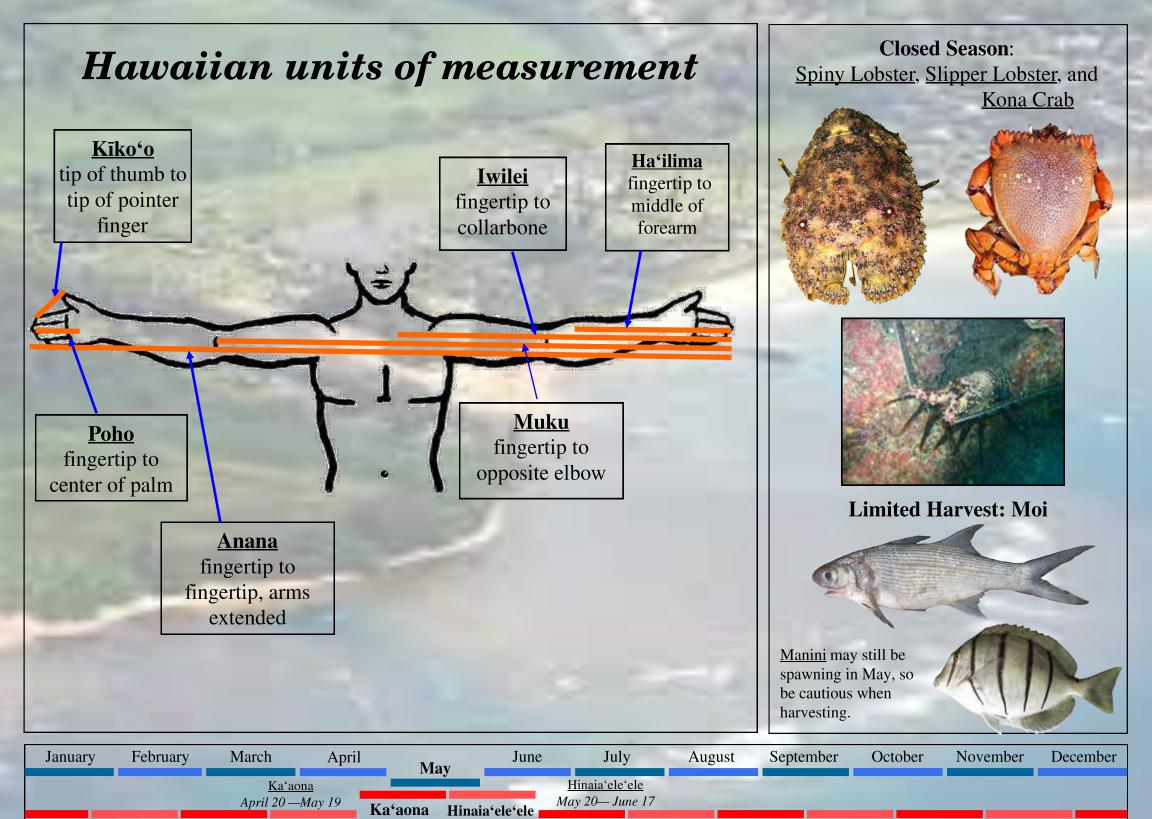
Large fish = no take.

Larger fish in every species produce MANY more eggs than fish that have just reached their reproductive size. The yolk reserves in eggs from large fish are also much larger, offering a much better chance of survival for the juveniles that hatch.



Janu	ıary	Februar	ry	March	Apri	M:	ay	June	July	Augu	ıst S	eptember	Octobe	er Nov	vember	December
		<u>Ikiiki</u> March 22—April 19		Ikiiki	Kaʻaona	April 20	<u>Kaʻaona</u> April 20 —May 19									
Kaulu	ıa	Nana	W	elo	IKIIKI	Karaona	Hinai	ia'ele'ele Māhoe	Mua Māl	пое Норе	ʻIkuwā	. We	lehu I	Makali'i	Kā'e	lo Kaulua





Māhoe Mua Māhoe Hope

Kaulua

Nana

Welo

Ikiiki

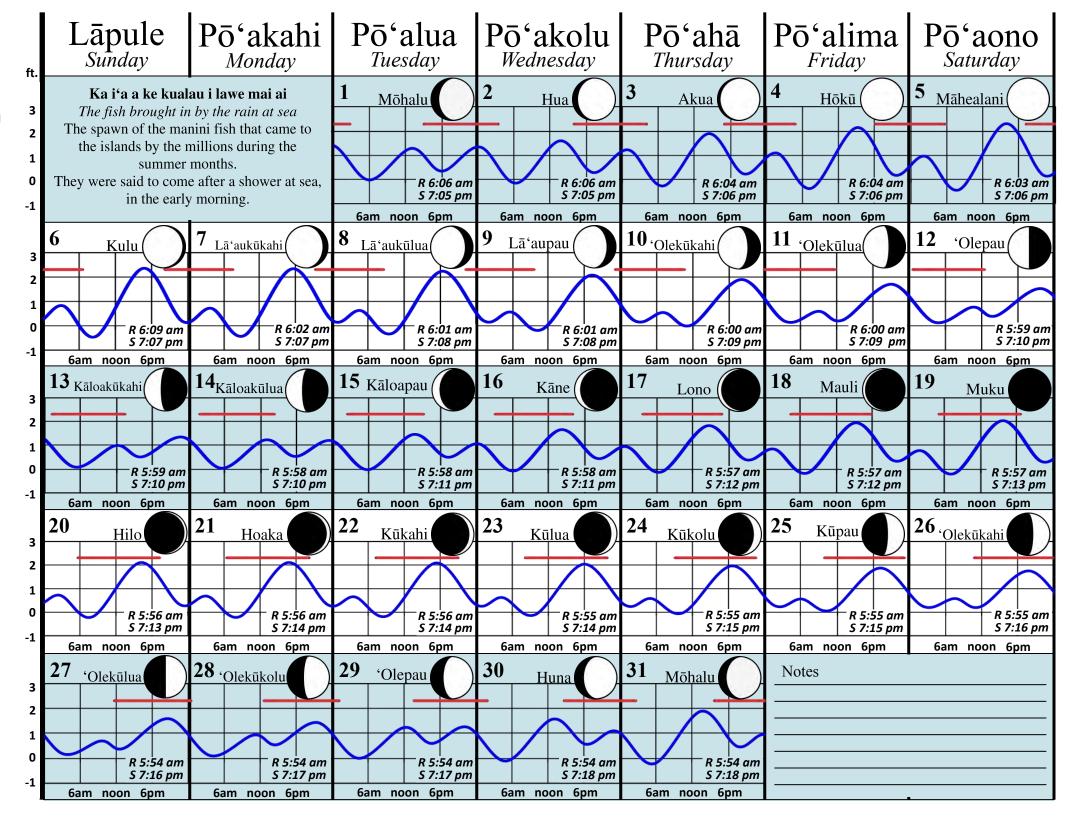
Welehu

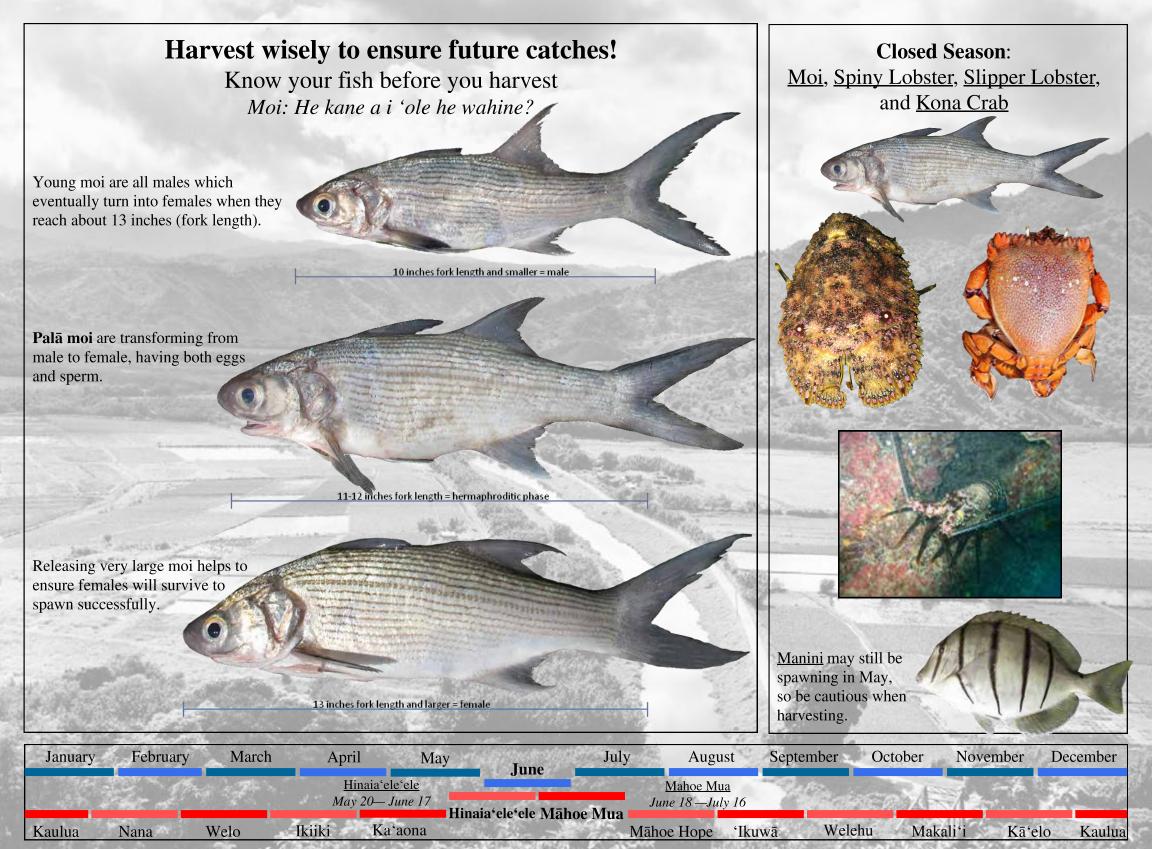
'Ikuwā

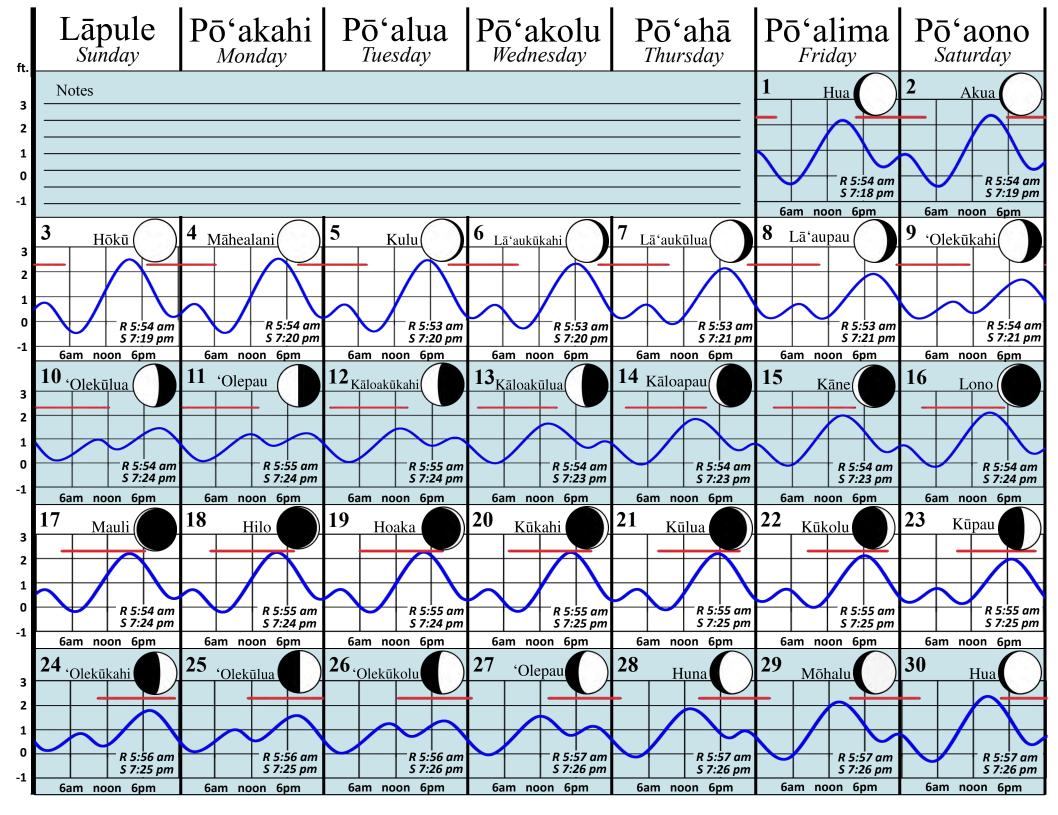
Makali'i

Kā'elo

Kaulua







The environment all around us

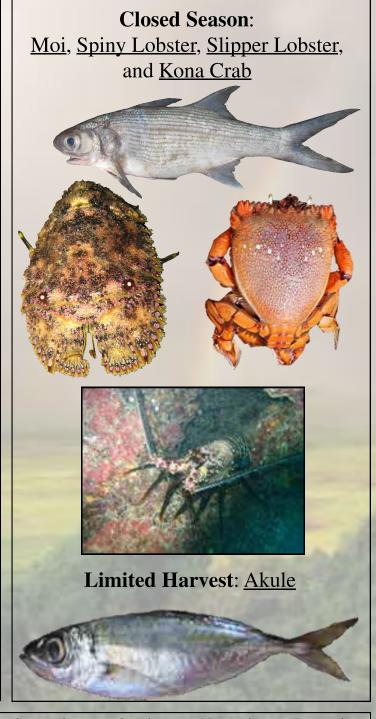
Although Hawai'i is renowned for its comfortable and mild weather, people of the islands know that there can be a huge variation of conditions throughout the year, and even in a single day. No wonder people always talk about the weather!

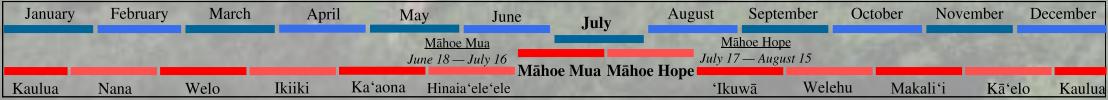
Native Hawaiians were so mindful of the weather conditions that their observations are reflected in chants, legends, and proverbs. Sometimes there are even connections to fishing!

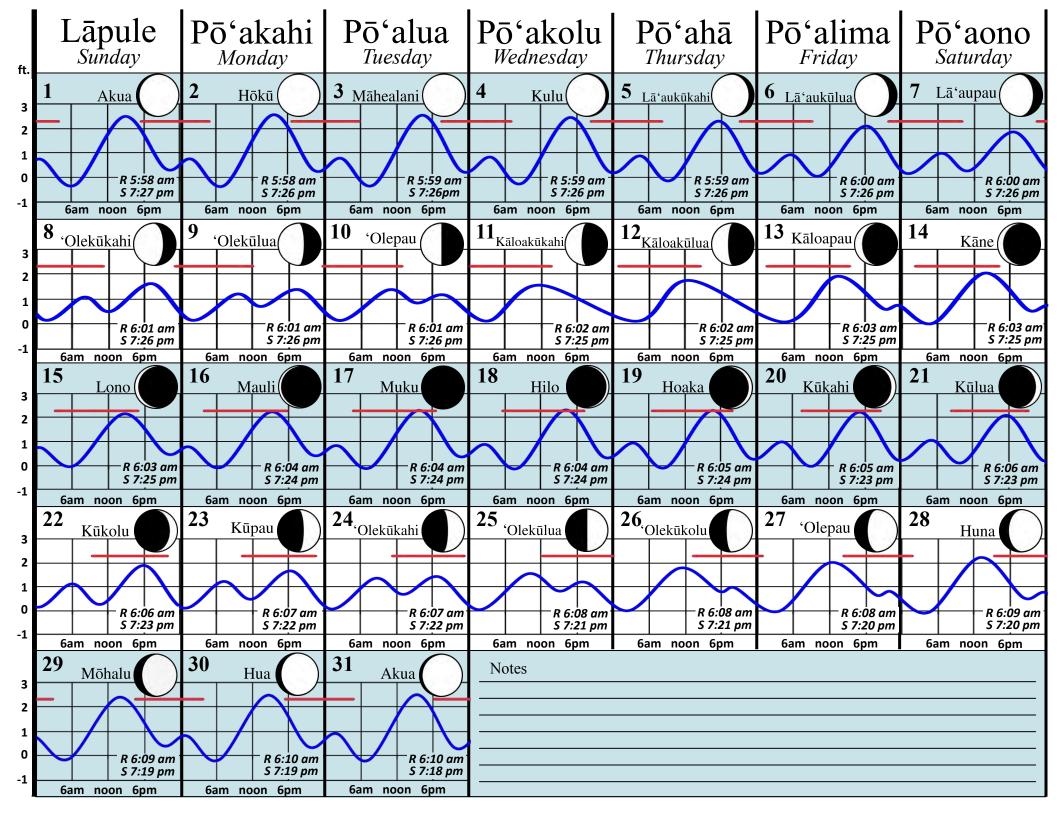
He ua he'e nehu no ka lawai'a

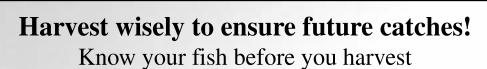
It is rain that brings nehu for the fishermen Refers to the rain that precedes the run of nehu fish.

In Hanalei, the Kūʻula oʻAnini rain and the Līhau o Lanihuli wind are favorable good omens for fishermen.









Uhu: no blue for you

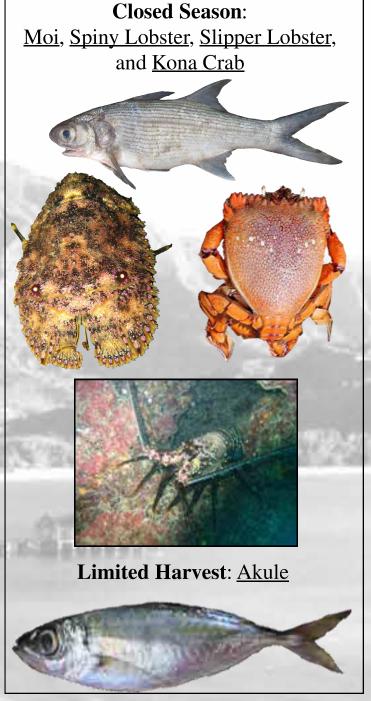
All species of uhu live in family groups called harems, which are comprised of one male and several females.

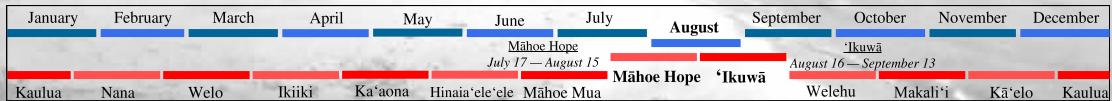
If the male is removed from the harem, the largest female will undergo a sex change and turn into the lead male.

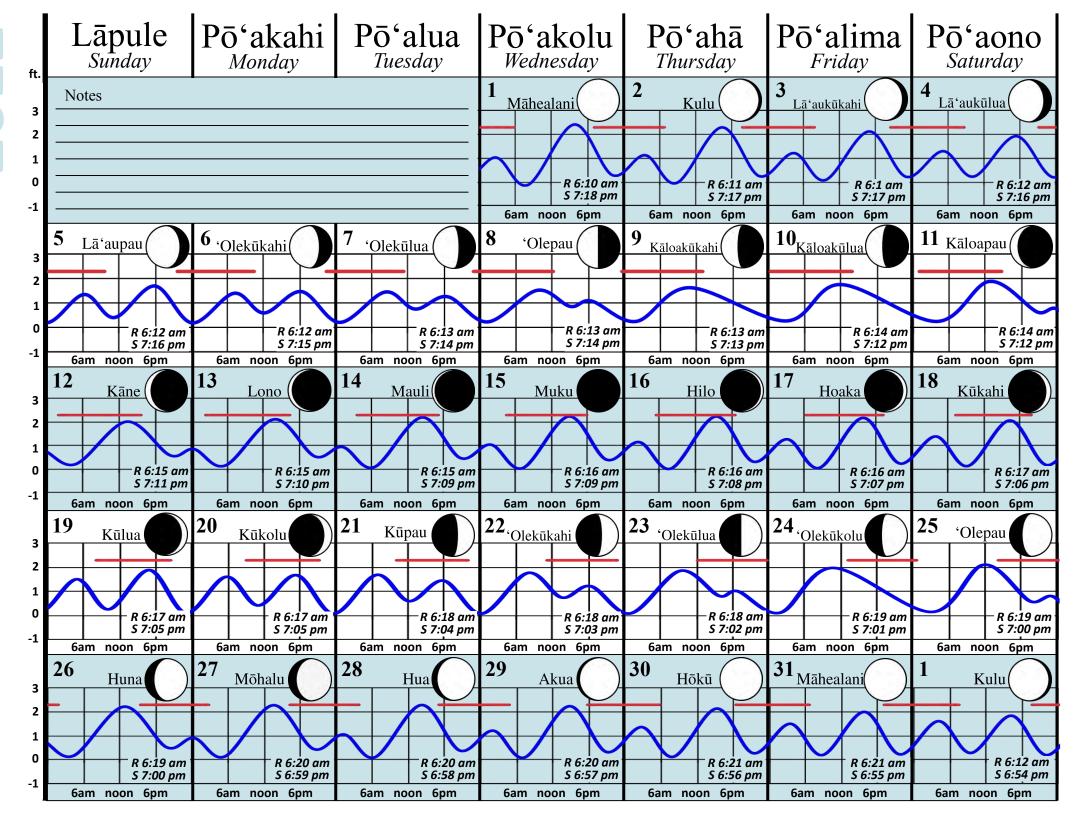


This change takes several months and can disrupt the spawning cycle.

Harvesting only medium-sized females helps to limit the impact on the harems and their spawning cycles.







Determining sex for crabs

Crabs are crustaceans and the shape of their abdominal shell section makes it easy to tell males and females apart!



Immature female



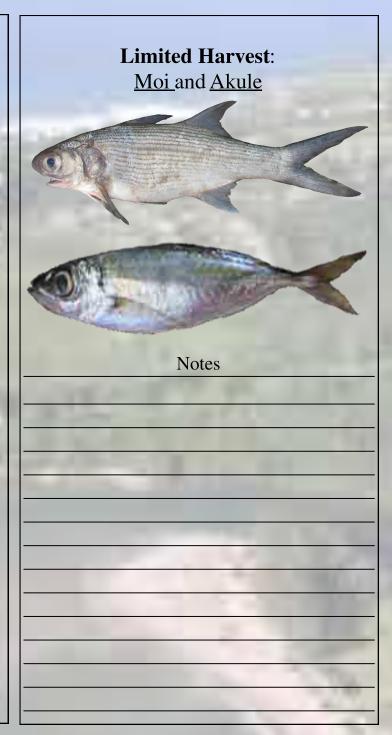
Mature female

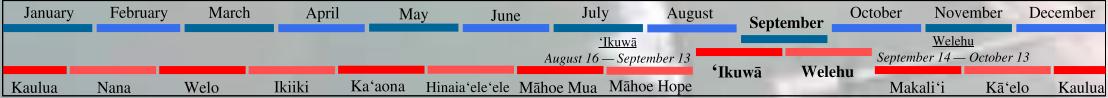


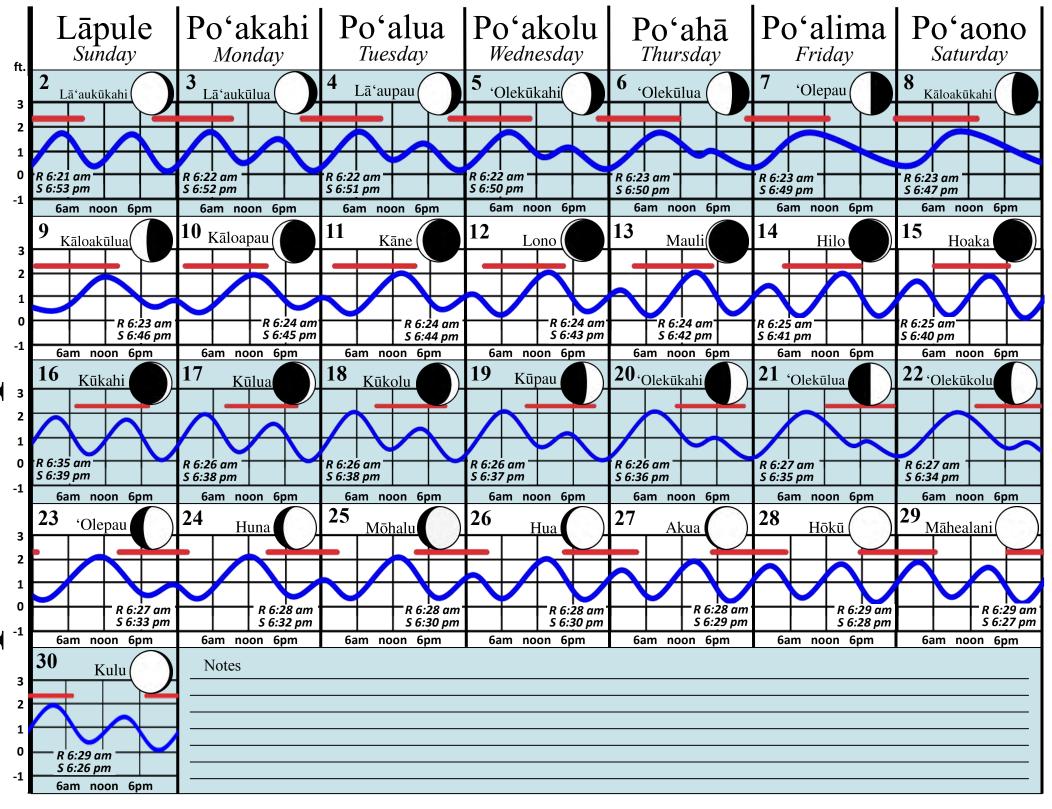
Mature male

Male crabs have thin, elongated abdomens.

Female crabs have triangular or dome -shaped abdomens. Don't harvest females when you see that they are carrying eggs!

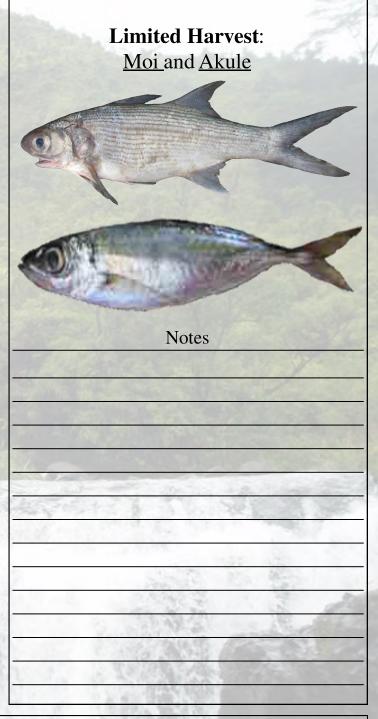




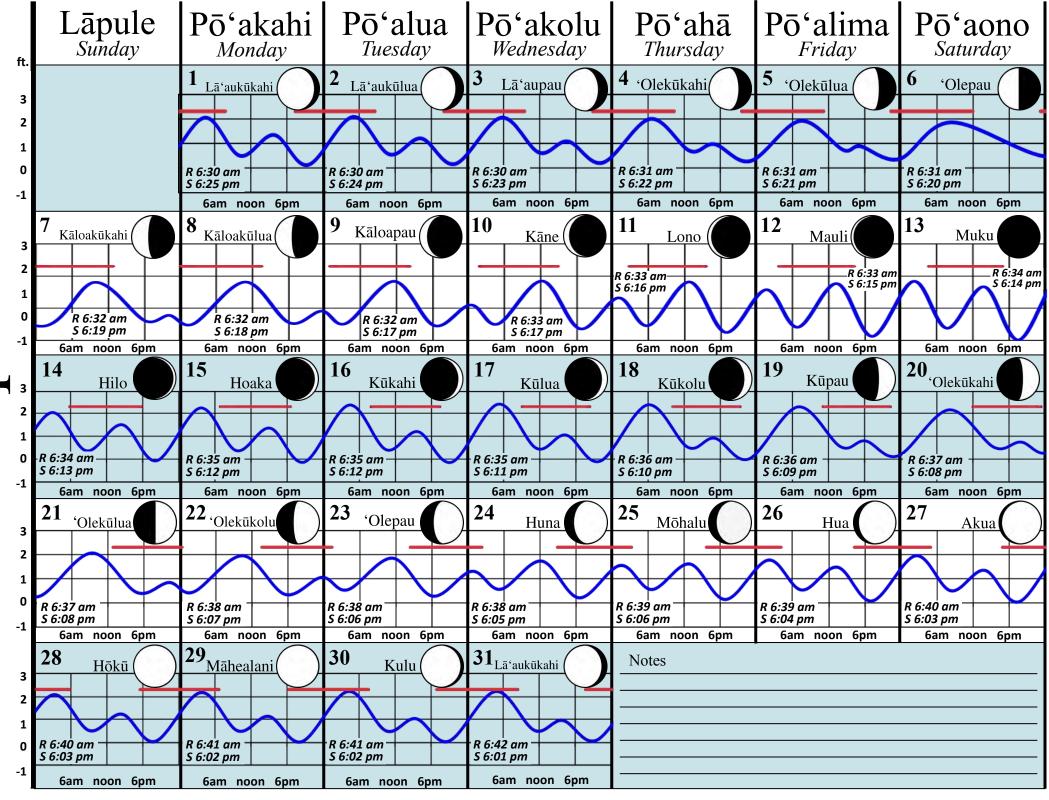


In Hawai'i, all aspects of the environment are connected to each other. To protect our ocean, shoreline and coastal areas, be mindful of everything you do on land!

- Reduce your use of herbicides, pesticides, and cleaning products. These can wash into the ocean untreated during heavy rains.
- Reduce your use of fertilizers because they affect the natural balance of nutrients in the ocean. Extra nutrients can cause too much algae to grow, using up oxygen in the water. Fish, coral, and stream life need oxygen! Grass clippings also carry nutrients, so when you mow your lawn, keep the clippings and throw them in the trash or on a contained compost pile.
- Storm drains flow directly into the ocean! Never pour oil paints, automotive fluids, and other chemical products on the ground or into gutters and storm drains.
- Maintain your vehicle to prevent oil leaks because anything on the ground will eventually flow into the ocean. Additionally, don't use a water hose to clean your garage and driveway wipe up the oil and gunk instead!
- When doing home improvements, or even working in your yard, try your best to prevent soil from escaping and polluting the ocean. Dirt limits sunlight penetration in the water, and it also covers reefs which kills fish and coral.
- Dispose of 'opala properly and recycle what you can!



January	February	March	April	May	June	e Jul	y Aug	ust Septe		tober No	ovember	December
								elehu 4 — October 13		tober		Makaliʻi 4 - November 12
Kaulua	Nana	Welo	Ikiiki K	Ka'aona]	Hinaia'ele'ele	Māhoe Mua	Māhoe Hope	ʻIkuwā	Welehu	Makali'i	Kā'e	



Everyone has their favorite preparation for cooking fish...or eating fish that someone else prepared! Here are some of the most common methods for preparing different kinds of fish.

Grilling, broiling, and sautéing can cook fish quickly over high heat, which keeps moisture in!

Frying is great for fish with strongly-flavored, firm flesh. Try a sauce with shoyu, lemon juice, peanut oil, garlic, and green onions!

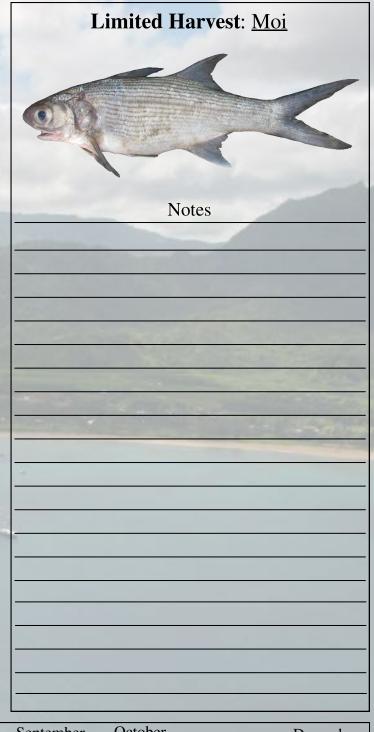
Gentle cooking methods like steaming are great for mild-tasting fish.

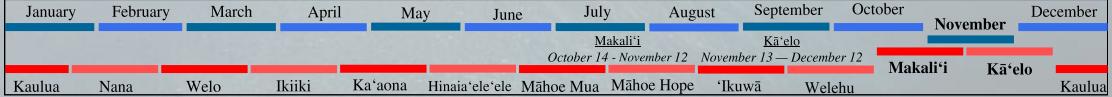
Here is a ceviche recipe which can be used for any fish. Try it with nenue, which is abundant and 'ono if you prepare it right!

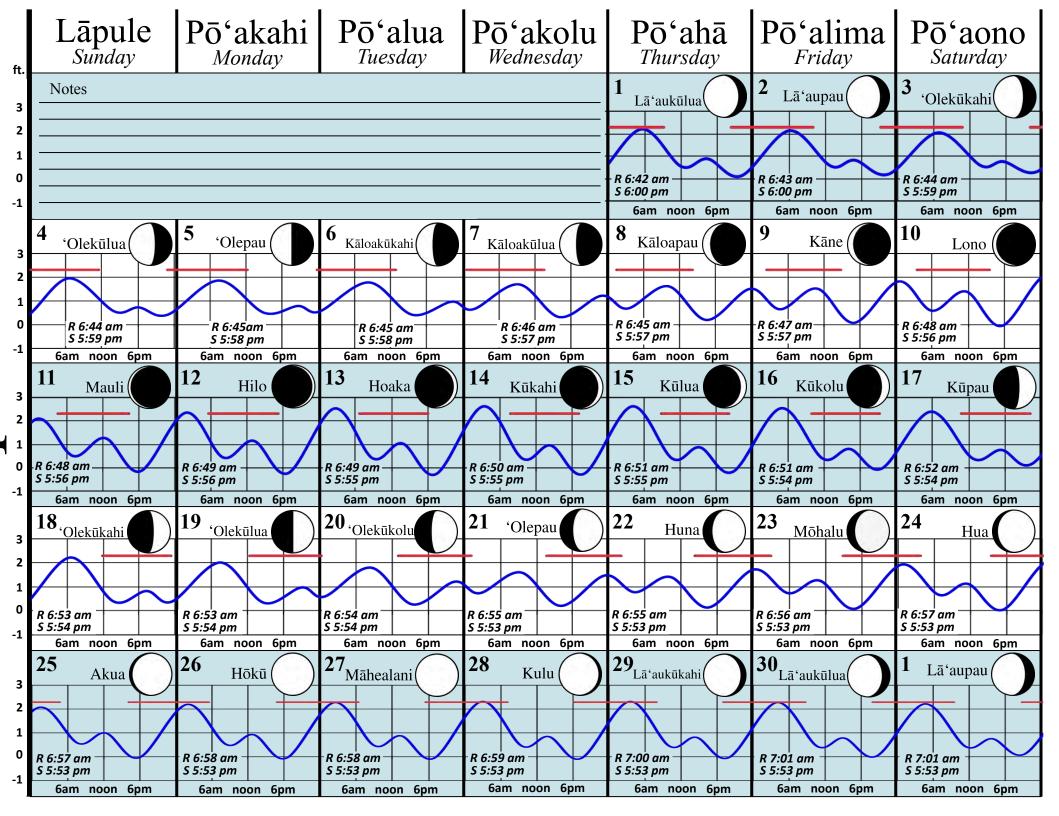
- o 1 pound of Nenue, skin removed, cubed
- o Juice from half of a large Tahitian lime
- o 1 tsp. cider vinegar
- o Half of one round onion (Maui onion preferred), sliced julienne
- o 1 medium-sized tomato, seeds removed, sliced julienne
- o 1 Hawaiian chili pepper, finely minced
- o 2 cloves of garlic, finely chopped
- o 1 large green onion, chopped
- o 1 tbsp. shoyu
- o 1 tsp. sesame oil

Hawaiian salt (add last)

Mix all ingredients without salt. Taste and add salt as desired. Let mixture sit in refrigerator for 3-4 hours before serving.







From the mountain ridges to the ocean depths

Over many generations of observing their surroundings, Native Hawaiians accumulated an intimate understanding of seasonal changes in the natural environment. Sometimes, plants and animals undergo changes at the same time. By observing one aspect of the environment, such as a plant in the uplands, you can relate it to another aspect which may be surprisingly distinct, such as an animal in the ocean!

Pua ka wiliwili nanahu ka manō

When the wiliwili tree blooms, the sharks bite

When the wiliwili trees are in bloom the sharks bite,
because it is their mating season.

Pala ka hala, momona ka hāʻukeʻuke When the hala fruit ripens, the hāʻukeʻuke sea urchin is fat

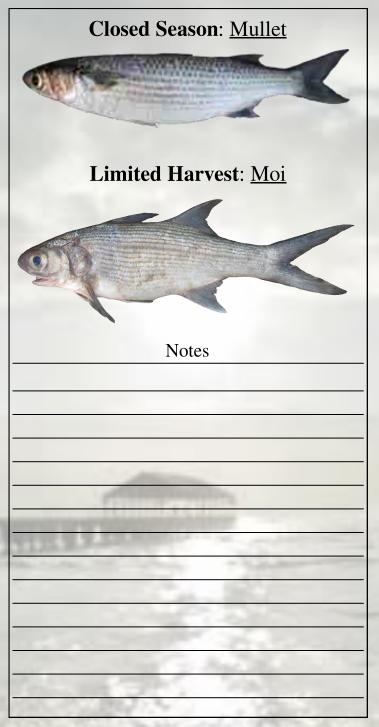
Pua ka neneleau, momona ka wana When the neneleau blooms, the sea urchin is fat The neneleau blooms about the time when the hala fruit ripens. These were signs for uplanders that the sea urchins were ready to be gathered.

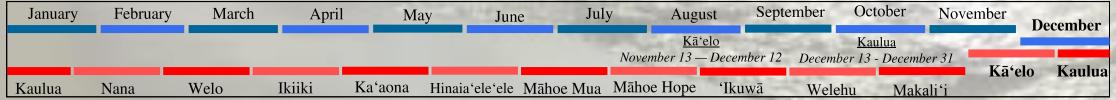
Ka i'a 'imi i ka moana, na ka manu e ha'i mai

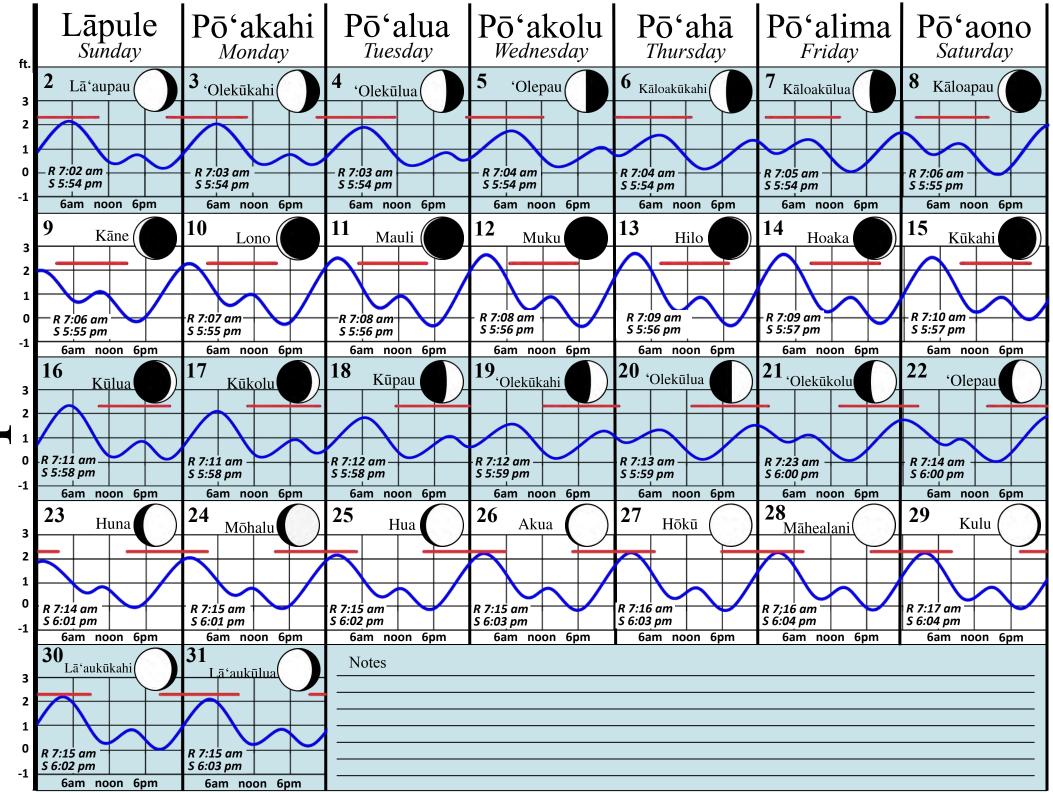
The fish sought for in the ocean, whose presence
is revealed by birds

A school of aku, whose presence is signaled by
the gathering of noio at sea.

Pala ka hala, momona ka uhu When the hala fruit ripens, the parrotfish is fat







The proceeds from this calendar will directly support activities of the Hanalei Watershed Hui.

The Hanalei Watershed Hui mission is to support and protect the ecology, cultures and sustainable economies of Hanalei.

If you are interested in learning how you can help contribute information to this project, please contact the Hanalei Watershed Hui at (808) 826-1985 or hanaleiriver@hawaiian.net

Acknowledgements

The Hanalei Moon Calendar was made possible through the Hanalei Watershed Hui and its following supporters:

Harold K.L. Castle Foundation
Hawaii Community Stewardship Network
NOAA - Papahānaumokuākea Marine National Monument and
NOAA - Hawaiian Islands Humpback Whale National Marine Sanctuary
Hanalei Makai Watch

"The Hanalei Makai Watch Program works to restore and sustain life-giving marine resources through vigilant community involvement."

Inkspot Linnea Heu, UH PIPES

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Joel Guy—front and back cover pictures

This calendar includes the current seasonal regulations which are administered by the State of Hawaii through the Department of Land and Natural Resources, Division of Aquatic Resources.

The full listing of rules, including year-round regulations, can be found at http://hawaii.gov/dlnr/dar/regulations.

References

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NOAA National Weather Service Weather Forecast Office, http://www.srh.noaa.gov/jax/?n=astro.

NOAA Tides and Currents, http://tidesandcurrents.noaa.gov/tide_predictions.shtml.

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