011 Pono Fishing Calendar Mo'omomi Bay Kawa'aloa Beach Hui Malama o Mo'omomi The Nature Conservacy of - principal monitor of Northwest Hawai'i and Dr. George Balazs Moloka'i Moloka'i marine activities, - monitoring sea turtle nesting at Kalaupapa focusing on ahupua'a Kawa'aloa Beach. Kalaupapa National Historical management. WAIKIKI

In January,

- 'Ama'ama peak spawning begins in December and ends in February. Harvesting is kapu.
- 'O'io peak spawning begins in December and lasts several months.
- Aholehole females have eggs.



'Ama'ama



'O'io



Aholehole

Why *Pono* Fishing?

So there are fish for future generations.







Know When to Fish ... Know When to Leave Fish Alone.



January 2011

Ianuali

Lāpule	Pō`akahi	Põ`alua	Pō`akolu	Põ`ahā	Pō`alima	Pō`aono
						Kane
Lono S	3 S Muku	Hilo 💸	5 Moaka ¾	6	7	8 Kukolu
S Lono S	*Olekukahi	Olekulua	12 'Olekukolu	* Kukani ** 13 'Olepau	Huna	Mohalu 💥
16 * Hua *	Akua	Hoku Hoku	Mahealani	20 Kulu	La'aukukahi	22 La'aukulua
La'aupau	2.4 'Olekukahi	'Olekulua	Olepau	27 Kaloakukahi	28 Kaloakulua	29 Kaloapau
30 Kane 💸	31 Lono \$	Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	X Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In February,

- 'Ama'ama peak spawning begins in December and ends in February. Harvesting is kapu.
- Aholehole males mature. Peak spawning begins in February and lasts several months.
- Kumu peak spawning begins in February and lasts several months.



'Ama'ama



Aholehole



Kumu

Pono Practices:

Learn how to recognize fish spawning. Spawning occurs when both females and males are ready. Females have ripe eggs, and males are milting.

Learn how to distinguish male and female fish by variations in body size, color, and habits.

Examine sex organs (gonads) at different reproductive stages and determine peak spawning times.



Observe *kapu* periods. These times are important for many species to reproduce. Take care not to disrupt these cycles.

Be *Pono*! Let Fish *Hanau*.



February 2011

Pepeluali

Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Pō`ahā	Pō`alima	Pō`aono
		1 Mauli	2 Muku	Hilo 💥	4	5 X Kukahi X
€ Kulua	7 Kukolu	Kupau	9 'Olekukahi	Olekulua	11 'Olekukolu	12 Olepau
Huna	Mohalu 💥	15 ** Hua **	Akua	Hoku	Mahealani	Kulu
La'aukukahi	La'aukulua	La'aupau	Olekukahi	°Olekulua	Olepau 💥	26 X Kaloakukahi X
27 Kaloakulua	28 Kaloapau					
		Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	X Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In March,

- Aholehole peak spawning begins in February and lasts several months.
- Kumu peak spawning begins in February and lasts several months.
- Kole can spawn in any month, but March
 is often a peak spawning time. A kapu may be
 needed so that local kole can recover from
 heavy fishing.



Aholehole



Kumu



Kole

Pono Practices:

Be *Pono*. Ask permission before fishing in someone else's *ahupua'a*.



Be Pono! Follow the Local Code of Conduct!



March 2011

Malaki

Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Pō`ahā	Pōʻalima	Pō`aono
		Kane 💸	Lono %	₹ Mauli	4 Muku	Hilo 💸
6	7	% Kulua	9 Kukolu	10 Kupau	11 'Olekukahi	12 Olekulua
¹Olekukolu	Olepau	Huna	Mohalu 💥	17 ** Hua **	18 * Akua	Hoku
20 Mahealani	Z1 Kulu	22 La'aukukahi	La'aukulua	2.4 La'aupau	25 'Olekukahi	26 Olekulua
Olepau 💥	28 X Kaloakukahi	29 Kaloakulua	30 Kaloapau	31 Kane 💸		
		Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	X Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In April,

- Aholehole peak spawning begins in February and lasts several months.
- Kole can spawn in any month. A kapu may be needed so that local kole can recover from heavy fishing.



Aholehole



Kole

Pono Practices:

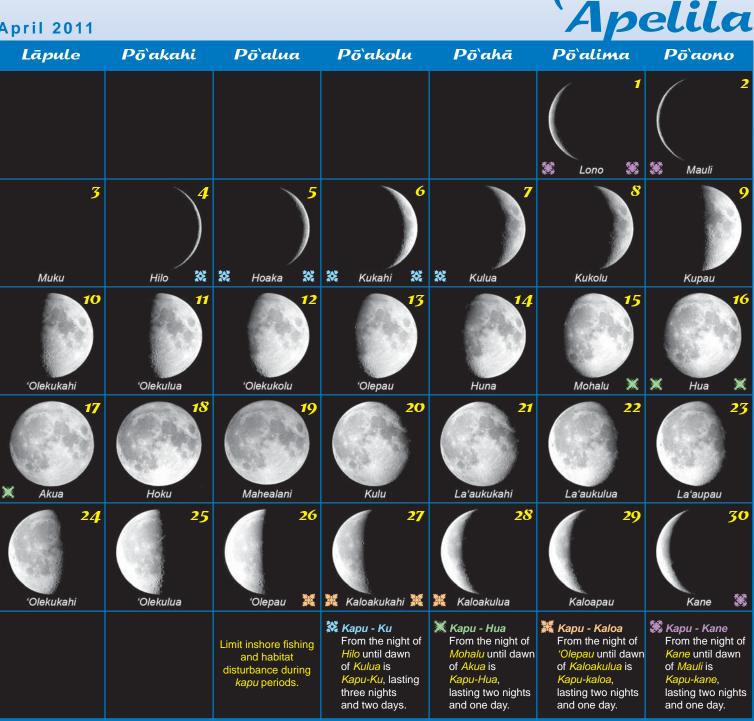
Eat Pono. Try a variety of fish species, not just your favorite. This will help relieve pressure on prized species.



Eat Pono! Try a Variety of Fishes!



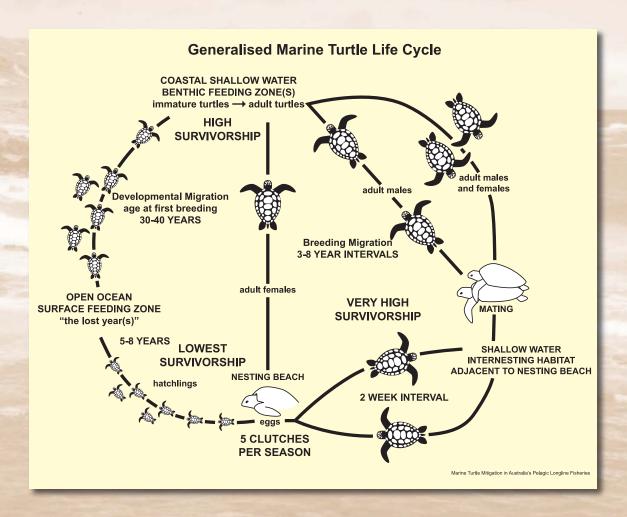
April 2011



Honu (May)

Honu nesting takes place primarily from May through August. Each nesting female comes ashore to lay eggs as many as 7 times, at 11- to 18-day intervals. Females deposit a clutch of 100-120 leathery eggs. The eggs will hatch about 60 days later. It takes 25 to 40 years for Hawaii's honu to reach sexual maturity in the wild.

Molokai *honu* nesting population seems isolated from other nesters. These nesters are closely related. Theory is that the Kawa'aloa *honu* population was founded by a pioneer



(likely from French Frigate Shoals in the Northwestern Hawaiian Islands) and the hatchlings produced have returned as adult nesters that make up the current

population.

At least 7 different turtle nestings were found at Kawa'aloa between 2004 and 2009.

Pono Practices:

Limu provides food and habitat for marine life. Young shoots are the most nutritious for *limu*-eating fish. Larger growths shelter small animals that are eaten by carnivorous fish.



Protect native *limu* habitat from being damaged by storm water and sediment runoff or by invasive alien seaweeds.

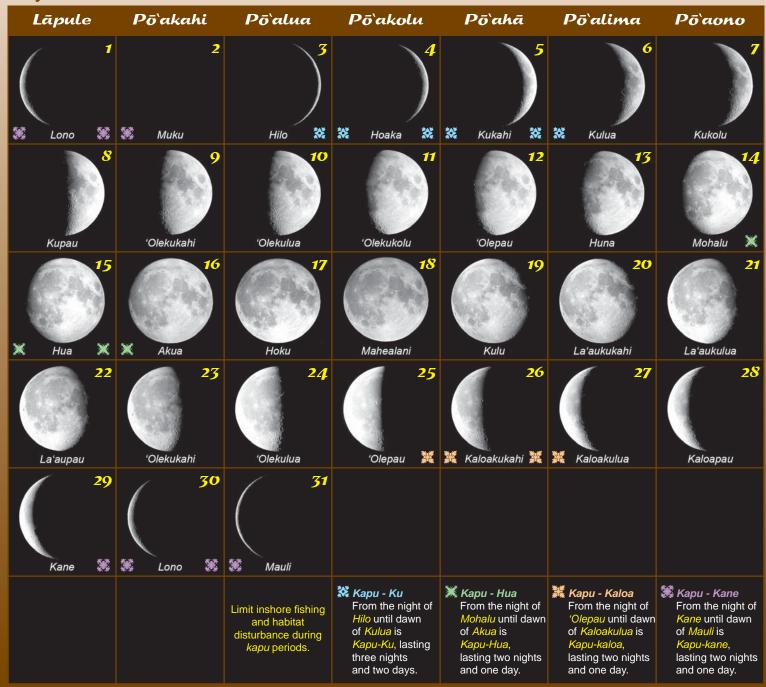
During the *huli* (change) from *hoʻoilo* (wet season) to *kaʻu* (dry season), *limu kohu* on the *papa* (inter-tidal bench) die back from sun exposure. Take what you need.

Be Pono. Take Only What You Need.



May 2011





In June,

- Moi peak spawning begins in June and ends usually in August or September. Harvesting is kapu.
- Uhu peak spawning begins in June and lasts several months. A kapu may be needed so that the local uhu population can recover.
- Ula peak spawning begins in May and ends in August. Harvesting is kapu.



Moi



Uhu



Ula

Pono Practices: Fishing **Moi**



Do not disrupt spawning schools or habitat during peak spawning season.

In some years, spawning season may end as early as August, but in other years, it may continue into September.

During turtle
spawning season
(May through August),
the following are
prohibited near
Kawa`aloa Bay:

- --No camping.
 --No night fishing.
 --No netting.
 --No vehicle driving close to the bay.

June 2011



	Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Pō`ahā	Pō`alima	Pō`aono
ı				1	2	3	A
-				Muku	Hilo 💸		🗱 Kukahi 💥
36	Kulua	Kukolu	Kupau	*Olekukahi	9 Olekulua	Olekukolu	Olepau
ı	Huna	Mohalu 💥	1.4 ** Hua **	¥ Akua	Hoku	Mahealani	18 Kulu
(19 La'aukukahi	20 La'aukulua	La'aupau	*Olekukahi	Olekulua	'Olepau	25 Kaloakukahi 💥
×	26 Kaloakulua	27 Kaloapau	28 Kane	29 & Lono \$\$	30 ⊗ Muku		
			Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	X Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau' until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In July and August,

- Peak spawning of moi, uhu and ula continues.
 Harvesting of moi and ula is kapu. A kapu may be needed so that the local uhu population can recover.
- U'u peak spawning begins in July and lasts several months.



Mo



Ula



1141



Uhu

Pono Practices: Fishing **Uhu**

During spawning season, *uhu* form harems of one male (blue-green) with several females (red).





Female uhu 'ahu'ula



Male uhu uliuli

Removing the only male disrupts the harem so there is no reproduction for a year.

Heavy fishing by divers and dive charters is depleting *uhu uliuli* (male) and *uhu 'ahu'ula* (female) off the Mo'omomi coast.

A *kapu* may be needed so the local *uhu* population can recover.

July 2011



Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Pō`ahā	Pō`alima	Pō`aono
					Hilo 💸	2
3	4 ☆ Kulua	5 Kukolu	Kupau	Olekukahi	*Olekulua	Olekukolu
10 'Olepau	Huna	Mohalu 💥	13 ** Hua **	Akua	Hoku	Mahealani
Kulu	18 La'aukukahi	La'aukulua	La'aupau	Olekukahi	Olekulua	Olepau 💥
2.4 X Kaloakukahi		Kaloapau	27 Kane	28 Lono \$\$	29 Mauli	30 Muku
Hilo 💥		Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	★ Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day. ★ Kapu - Hua A Company A	From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	** Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

'Opihi (August)

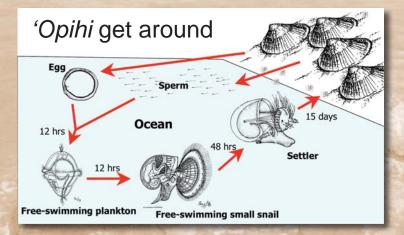
- Black-foot `opihi spawn across the State but yellow-foot `opihi and ko`ele spawning may be more localized.
- Spawning occurs shortly after the new moon (*Muku* to *Kukolu*).
- Black-foot and yellow-foot 'opihi are sexually mature at 3/4 inch long.
- Ko'ele is legal minimum size at 1.25 inches long.
- Sexes are naturally separated.
 Testes: yellow/orange/white. Ovaries: green/brown.

For conservation of 'opihi

 Rotate areas when collecting 'opihi. Don't "pound" one place. Never harvest the deeper-dwelling ko'ele. Don't sell 'opihi off island.











Kamali'i 'ike 'ole i ka helu po Muku Nei, Muku ka malama Hilo nei, kau ka Hoaka 'Eha Ku, 'Eha 'Ole; Huna, Mohalu, Hua, Akua, Hoku, Mahealani, Kulu; 'Ekolu La'au, 'Ekolu 'Ole, 'Ekolu Kaloa; Kane, Lono, Mauli, Muku.

Children who do not know the moon phases;
Muku is here, Muku the moon;
Hilo is next, then Hoaka
Then the four nights of Ku;
Followed by
the four nights of 'Ole;
Huna, Mohalu, Hua, and Akua,
Hoku, Mahealani, Kulu;
Then the three nights of La'au;
Three nights of 'Ole;
And the three nights of Kaloa;
Kane, Lono, Mauli, Muku

A traditional chant for children to learn the names of the moon phases.

Pono Fishing is About Proper Timing.



August 2011



Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Pō`ahā	Pō`alima	Pō`aono
	↑ ** Hoaka **	2	¥ Kulua	Kukolu	Kupau	'Olekukahi
'Olekulua	*Olekukolu	Olepau 'Olepau	Huna	Mohalu 💥	12 ** Hua **	X Akua
Hoku	Mahealani	Kulu	La'aukukahi	18 La'aukulua	La'aupau	20 Olekukahi
*Olekulua	Olepau	23 X Kaloakukahi X	2.4 Kaloakulua	25 Kaloapau	26 Kane 💸	27 Lono \$
28 Muku	Hilo 💸	30	31			
		Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	X Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In September,

- Enenue older females have eggs.
- Moi is open for harvest. Moi li'i born a year ago are on the sand inshore.
- Ula is open for harvest.



Enenue



Moi



Ula

Pono Practices: Harvesting *Ula*

(Hawaiian Spiny Lobster, Panulirus penicillatus)



End of 5th pair of walking legs are claw shaped (pincher like) on females. This is used to transfer sperm to fertilize eggs.

No more than 6 sections of lay net per fishing group (Moloka'i special gill net rules).

No harvesting during peak summer spawning season.

The State requires release of all female lobsters.

Release lobsters smaller than 1 pound and larger than 4 pounds.

Harvest other species with care.

September 2011

Kepakemapa

Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Põ`ahā	Pō`alima	Pō`aono
				¥ Kulua	2 Kukolu	Kupau
40lekukahi	'Olekulua	6 Olekukolu	*Olepau	Huna	9 Mohalu Ж	10 * Hua *
₩ Akua	Hoku	Mahealani	Kulu Kulu	15 La'aukukahi	La'aukulua	La'aupau
18 Olekukahi	Olekulua	Olepau	21 Kaloakukahi	22 Kaloakulua	23 Kaloapau	2.4 Kane 🗱
Lono S	26 Mauli	27	28	29	30	
🐺 Lono 🕃	溪 Mauli	Muku Limit inshore fishing and habitat disturbance during kapu periods.	Hilo Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	 Hoaka Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day. 	Kapu - Kaloa From the night of	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In October,

 Enenue peak spawning begins in October and lasts several months.

Harvest other species with care.



Enenue

Moloka'i Residents are Connoisseurs of Enenue

- When sand moves off the papa, tender young shoots of limu grow and entice enenue inshore to feed.
- Local consumers can detect the area where a particular enenue was caught based on its taste.
- Enenue tirelessly clean the ocean floor, keeping a balance of various limu.
- Prevent damage to enenue habitat from soil erosion and runoff due to overgrazing and land development on adjacent hillsides.



Large-Scale Sand Movements Affect Fish Behavior



Large-scale sand movements cause seasonal ecosystem shifts along the Moʻomomi coast.



Marine species shift locations as their habitats fill with sand.



Change in habitat may trigger fish spawning activity.

Sand may bury or expose fish nursery habitat.

Kulua

Kukolu



and two days.

and one day.

and one day.

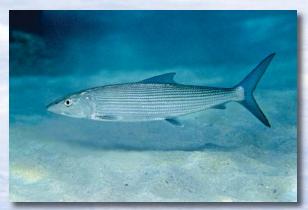
and one day.

In November,

- Enenue peak spawning begins in October and lasts several months.
- 'O'io peak spawning begins in November and lasts several months.



Enenue



'O'io

Pono Practices:

Hui Malama o Moʻomomi manages from the mountain into the sea. Bare land in the *ahupuaʻa* is the source of soil erosion that can damage fish habitat when it reaches the ocean.



To reduce runoff and its damaging effects on fish habitat, the Hui has closed and re-vegetated many dirt roads with native plants, built berms and stabilized gullies.



Fencing along the Mo'omomi coast discourages all-terrain vehicle operation and directs other vehicles onto a single improved road.

November 2011

Nowemapa

Lāpule	Pō`akahi	Pō`alua	Pō`akolu	Pō`ahā	Pō`alima	Pō`aono
		Kupau	Olekukahi	'Olekulua	4 'Olekukolu	'Olepau
Huna 6	Mohalu 💥	* Hua *	₹ Akua	Hoku Hoku	Mahealani	Kulu Kulu
13 La'aukukahi	14 La'aukulua	La'aupau	16 'Olekukahi	'Olekulua	18 'Olepau	19 X Kaloakukahi
20 Kaloakulua	Kaloapau	Z2 Kane	23 Lono \$	2.4 8 Muku	Hilo 💸	26
27	28 X Kulua	Kukolu	30 Kupau	200000		
		Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	X Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	Kapu - Kane From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day.

In December,

- 'Ama'ama spawning begins in December and ends in February. Harvesting is kapu.
- 'O'io peak spawning begins in November and lasts several months.

Harvest other species with care.



'Ama'ama



'O'io



Limu Kohu

Reproductive spores are trapped in the root mass of *limu kohu*, so leave this part of the plant intact while gathering so the local *limu* population can replenish.

Hoʻopomaika (Blessings) to the Keiki of Moʻomomi and Molokaʻi.

Leave Mo'omomi Bay for *keiki* who are learning to swim and dive and for kupuna who have trouble getting around.

If you are able-bodied, *holoholo* to other fishing grounds.







Be PONO for them.

December 2011

Kēkēmapa

Lāpule	Pō`akahi	Pōʻalua	Pō`akolu	Pō`ahā	Pōʻalima	Pō`aono
				*Olekukahi	*Olekulua	Olekukolu
'Olepau	Huna	Mohalu 💥	X Hua X	X Akua	Hoku	Mahealani
Kulu Kulu	La'aukukahi	La'aukulua	La'aupau	15 'Olekukahi	16 Olekulua	17 Olepau
18 X Kaloakukahi	19 Kaloakulua	20 Kaloapau	Z1 Kane	22 & Lono \$	23 Mauli	24 Muku
Hilo 💸	26	27	28	Kukolu	30 Kupau	31 'Olekukahi
		Limit inshore fishing and habitat disturbance during <i>kapu</i> periods.	Kapu - Ku From the night of Hilo until dawn of Kulua is Kapu-Ku, lasting three nights and two days.	Kapu - Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.	Kapu - Kaloa From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.	X Kapu - Kane From the night of



Mahina - the Moon

The moon was very important to the survival of Hawaiians. To the Hawaiian people, the moon was not an astral object that was projected into the sky millions of years ago as a result of a catastrophic event. The moon, *Mahina*, was family. Personified, she was the goddess *Hina*. She gave us the cycle of birth, life, death and rebirth each month—without fail. By her very nature of predictability, she was a reliable source of information that insured survival for generations upon generations. Just as lunar patterns and cycles were distinguished by nightly observations, so were correlating patterns and cycles noted in the sky, land and among living things on earth.

Planting and fishing patterns were developed in alignment with lunar patterns that gave optimum yields. The times for resting fishing grounds or gardens were just as important and also widely known, because of the moon. Hawaiian knowledge of the moon names, functions and rhythms was a common knowledge, shared with all, because the moon was a benevolent provider of time proven, life giving resources and knowledge. As such, great reverence was given to the moon and chants offered in her honor.

From Kamalu Poepoe. *Ka Mahina Ke Kai a me Na Kau*, the moon, the tides and the seasons, Moloka`i, Hawai`i.

Hawaiian Names for Nights of the Rising (ho'onui), Full (poepoe), and Falling (emi) Moon Phases and Kapu Periods

Kapu - Ku

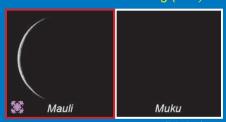
- Kapu Ku
 From the night of
 Hilo until dawn
 of Kulua is
 Kapu-Ku, lasting
 three nights
 and two days.
- ★ Kapu Hua From the night of Mohalu until dawn of Akua is Kapu-Hua, lasting two nights and one day.
- Kapu Kaloa
 From the night of 'Olepau until dawn of Kaloakulua is Kapu-kaloa, lasting two nights and one day.
- From the night of Kane until dawn of Mauli is Kapu-kane, lasting two nights and one day. In months without Mauli, this kapu ends on the dawn of Muku.











Limit inshore fishing and habitat disturbance during *kapu* periods.





Monitoring and Research

Hui Malama o Moʻomomi, particularly resource manager Mac Poepoe and assistants Kanohowailuku Helm, Laʻakea Poepoe, Anela Florendo and Joey Albino

Calendar Design

Paul Bartram, Mac Poepoe, Kanohowailuku Helm, Lindy Helm (Hui)
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Photos

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Keiki Advice

Kealohanui Helm, Kekumuikawaiokeola Helm, lokepa Albino, Keaoalono Ross

Honu

Dr. George Balazs
Pacific Whale Foundation. 2006. Sea turtles, a Hawai'i wildlife guide.

`Opihi

S. Kehau Tom, Effects of harvesting pressure on *'opihi* populations at Kalaupapa National Historic Park
Dr. Christopher E. Bird

Funding

Western Pacific Fishery Management Council Duke's Waikiki

Further Reference

'Aha Moku



To download a copy of this calendar, go to www.ahamoku.org