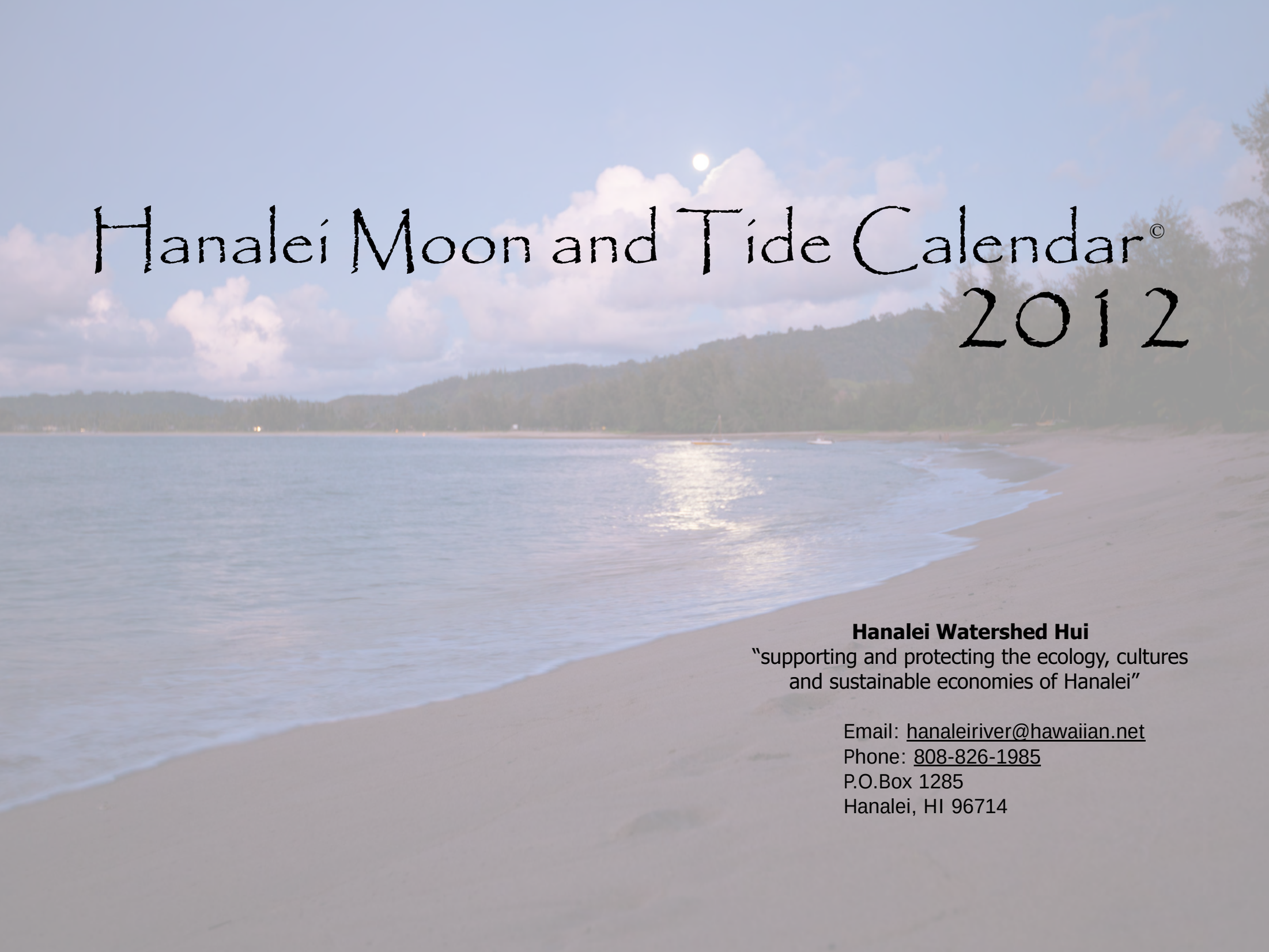

Hanalei Moon and Tide Calendar©
2012

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

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Phone: 808-826-1985
P.O.Box 1285
Hanalei, HI 96714

The Hanalei Moon Calendar was developed to raise awareness about the connections between different environmental processes in Hanalei. The calendar demonstrates the lunar cycle and the tides which follow the moon. Traditional Hawaiian knowledge about fish spawning was often based on lunar cycles and seasonal changes, so a portion of the calendar also explains how to observe and determine the spawning season for fish.

This box will appear for every month. It displays the current Closed Season and Limited Harvest regulations for that month.

This box will appear for every month, It displays the overlap of the Hawaiian months with the English months. The Hawaiian months coincide with the 30 phases of the moon, each month begins with Hilo and finishes with Mauli or Muku. Some Hawaiian months skip Muku. The example below shows the overlap of the Hawaiian months Ikiiki and Ka'aona with the English month of April.

Terms Used In the Calendar

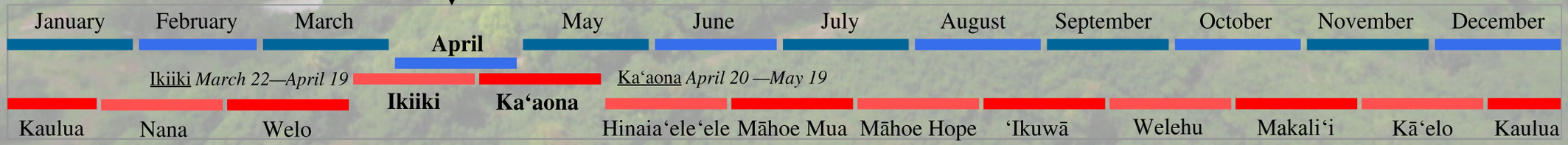
In each month, there is a summary of seasonal fishing regulations administered by the State of Hawai'i through the Department of Land and Natural Resources, Division of Aquatic Resources (DAR). There are additional regulations which apply year-round, such as size or gear restrictions. These year-round regulations are not displayed in the calendar, so for more information, see the DAR website at http://hawaii.gov/dlnr/dar/index.html

Closed Season

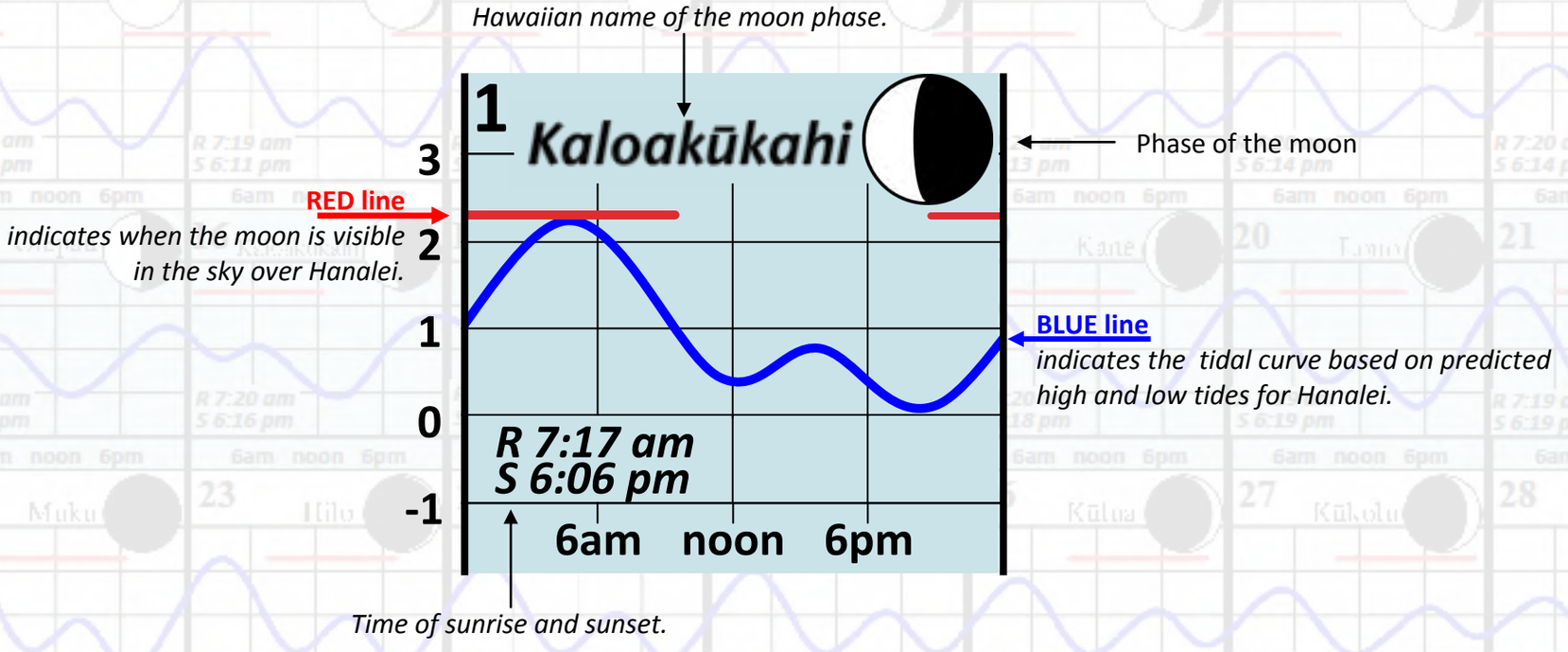
These periods are based on current seasonal regulations administered by the State of Hawai'i through the Department of Land and Natural Resources, Division of Aquatic Resources (rules can be found at http://hawaii.gov/dlnr/dar/rules/ch95.pdf). During a closed season for a given species, there is a ban on taking, possessing, or selling that species. For example, there is a closed season for mullet (*Mugil cephalus)* from December through March.

Limited Harvest

While closed season is a complete harvest restriction during certain months, some species have limited harvest periods alone, or in conjunction with closed season periods. Limited harvest can regulate fishing technique (e.g., use of net), number of fish harvested, size of fish harvested, or total weight of harvest. For example, there is a closed season for moi in June through August, but in September through May there is a limited harvest of fifteen moi per day.



Many calendars today are based on the synodic month, which is the average orbital period of the moon. A synodic month is 29.53 days. However, there are 30 Hawaiian moon phases. In this calendar, Māhealani was matched with the astronomical full moon (as indicated by National Oceanic and Atmospheric Administration (NOAA) National Weather Service Weather Forecast Office), and the rest of the moon phases are laid out accordingly. In some months, Muku is omitted to adjust for the difference. There are different opinions on which Hawaiian moon phase coincides with the astronomical full moon, so we welcome any suggestions for increasing the accuracy and usefulness of this calendar.



The high and low tides for Hanalei Bay are subordinate predictions provided by NOAA, referenced from the Nawiliwili station (ID 1611683).

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

‘Ehā Kū, ‘ehā ‘Ole
There are four Kū days, and four ‘Ole

Huna, Mōhalu, Hua, Akua
Huna (hidden), Mohala (blooming), Hua (fruit), Akua (god)

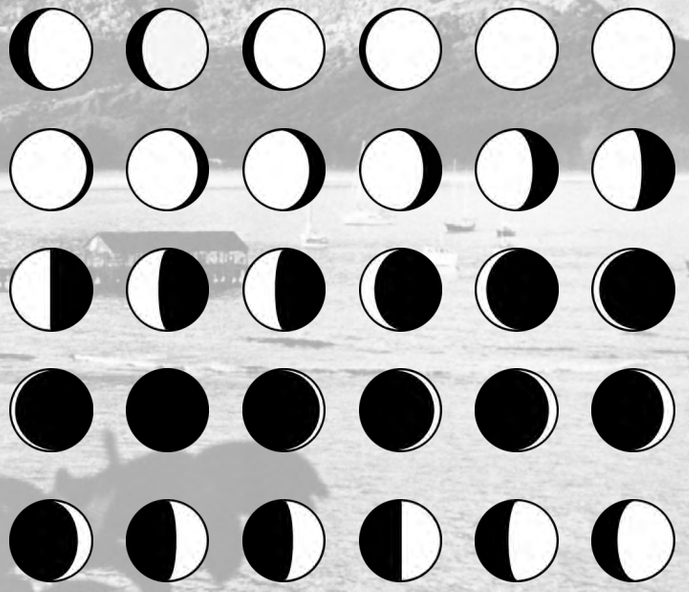
Hoku, Māhealani, Kulua
Hoku (full moon night), Māhealani (full moon night), Kulua (trickling away)

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

‘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.

Muku nei, muku ka malama
Here is Muku, cut off is the moon / month

Hilo nei, kau ka Hoaka
Here is Hilo (faint streak of light), the Hoaka (crescent) rises



Closed Season: Mullet

Limited harvest : Moi

Notes

	January	February	March	April	May	June	July	August	September	October	November	December
			Kaulua		Nana							
			January 1— January 22		*January 23 — February 20*							
Kaulua	**Nana**	Welo	Ikiiki	Ka‘aona	Hinaia‘ele‘ele	Māhoe Mua	Māhoe Hope	‘Ikuwā	Welehu	Makali‘i	Kā‘elo	Kaulua

Ianuali *January* 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
1 ʻOlekūkolu	2 ʻOlepau	3 Huna	4 Mōhalu	5 Hua	6 Akua	7 Hōkū
R 7:17 am S 6:06 pm	R 7:18 am S 6:06 pm	R 7:18 am S 6:07 pm	R 7:19 am S 6:07 pm	R 7:18 am S 6:08 pm	R 7:19 am S 6:09 pm	R 7:19 am S 6:10 pm
8 Māhealani	9 Kulu	10 Lāʻaukūkahi	11 Lāʻaukūlua	12 Lāʻaupau	13 ʻOlekūkahi	14 ʻOlekūlua
R 7:19 am S 6:10 pm	R 7:19 am S 6:11 pm	R 7:19 am S 6:12 pm	R 7:19 am S 6:12 pm	R 7:20 am S 6:13 pm	R 7:20 am S 6:14 pm	R 7:20 am S 6:14 pm
15 ʻOlepau	16 Kāloakūkahi	17 Kāloakūlua	18 Kāloapau	19 Kāne	20 Lono	21 Mauli
R 7:20 am S 6:15 pm	R 7:20 am S 6:16 pm	R 7:20 am S 6:17 pm	R 7:20 am S 6:17 pm	R 7:20 am S 6:18 pm	R 7:19 am S 6:19 pm	R 7:19 am S 6:19 pm
22 Muku	23 Hilo	24 Hoaka	25 Kūkahi	26 Kūlua	27 Kūkolu	28 Kūpau
R 7:19 am S 6:20 pm	R 7:19 am S 6:21 pm	R 7:19 am S 6:21 pm	R 7:19 am S 6:22 pm	R 7:18 am S 6:23 pm	R 7:18 am S 6:23 pm	R 7:18 am S 6:24 pm
29 ʻOlekūkahi	30 ʻOlekūlua	31 ʻOlekūkolu				
R 7:18 am S 6:25 pm	R 7:17 am S 6:25 pm	R 7:17 am S 6:26 pm				

ft. 3 2 1 0 -1 — 6am noon 6pm

Notes

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.

Kū‘ula o ‘Anini (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).

Closed Season: Mullet

Limited harvest : Moi

Notes

January	February	March	April	May	June	July	August	September	October	November	December
			Nana		Welo						
			January 23 — February 20		*February 21—March 21*						
	Nana	Welo									
Kaulua			Ikiiki	Ka‘aona	Hinaia‘ele‘ele	Māhoe Mua	Māhoe Hope	‘Ikuwā	Welehu	Makali‘i	Kā‘elo	Kaulua

Pepeluali *February* 2012

Lāpule *Sunday*	Pō‘akahi *Monday*	Pō‘alua *Tuesday*	Pō‘akolu *Wednesday*	Pō‘ahā *Thursday*	Pō‘alima *Friday*	Pō‘aono *Saturday*
O Kaulua ka malama, ‘olo ka ‘ōpū mālolo a ka lawai‘a *Kaulua is the month when the bag nets of the fishermen sag with the flying fish*			1 ‘Olepau R 7:17 am S 6:27 pm	2 Huna R 7:16 am S 6:27 pm	3 Mōhalu R 7:16 am S 6:28 pm	4 Hua R 7:15 am S 6:29 pm
5 Akua R 7:15 am S 6:29 pm	6 Hōkū R 7:15 am S 6:30 pm	7 Māhealani R 7:14 am S 6:30 pm	8 Kulu R 7:14 am S 6:31 pm	9 Lā‘aukūkahi R 7:13 am S 6:32 pm	10 Lā‘aukūlua R 7:12 am S 6:32 pm	11 Lā‘aupau R 7:12 am S 6:33 pm
12 ‘Olekūkahi R 7:11 am S 6:33 pm	13 ‘Olekūlua R 7:11 am S 6:34 pm	14 ‘Olepau R 7:10 am S 6:34 pm	15 Kāloakūkahi R 7:10 am S 6:35 pm	16 Kāloakūlua R 7:09 am S 6:35 pm	17 Kāloapau R 7:08 am S 6:36 pm	18 Kāne R 7:08 am S 6:37 pm
19 Lono R 7:07 am S 6:37 pm	20 Mauli R 7:06 am S 6:38 pm	21 Hilo R 7:05 am S 6:38 pm	22 Hoaka R 7:05 am S 6:39 pm	23 Kūkahi R 7:04 am S 6:39 pm	24 Kūlua R 7:03 am S 6:39 pm	25 Kūkolu R 7:02 am S 6:40 pm
26 Kūpau R 7:02 am S 6:40 pm	27 ‘Olekūkahi R 7:01 am S 6:41 pm	28 ‘Olekūlua R 7:00 am S 6:41 pm	29 ‘Olekūkolu R 6:59 am S 6:42 pm			

ft. 3 2 1 0 -1 — 6am noon 6pm

Notes

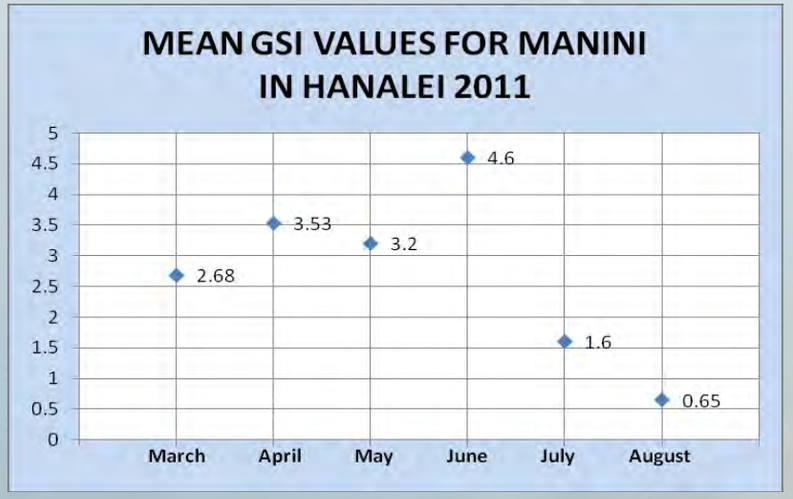
Determining spawning cycle for manini

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.

Closed Season: Moi

Limited harvest : Mullet

Manini may begin to spawn this month so practice caution when harvesting during this time.

January	February	March	April	May	June	July	August	September	October	November	December
Welo				Ikiiki							
February 21 —March 21				*March 22—April 19*							
		Welo	**Ikiiki**								
Kaulua	Nana			Ka‘aona	Hinaia‘ele‘ele	Māhoe Mua	Māhoe Hope	‘Ikuwā	Welehu	Makali‘i	Kā‘elo	Kaulua

Malaki *March* 2012

Lāpule *Sunday*	Pō‘akahi *Monday*	Pō‘alua *Tuesday*	Pō‘akolu *Wednesday*	Pō‘aha *Thursday*	Pō‘alima *Friday*	Pō‘aono *Saturday*
Notes				1 ‘Olepau R 6:58 am S 6:42 pm	2 Huna R 6:58 am S 6:43 pm	3 Mōhalu R 6:57 am S 6:43 pm
4 Hua R 6:56 am S 6:43 pm	5 Akua R 6:55 am S 6:44 pm	6 Hōkū R 6:54 am S 6:44 pm	7 Māhealani R 6:53 am S 6:45 pm	8 Kulu R 6:52 am S 6:45 pm	9 Lā‘aukūkahi R 6:52 am S 6:45 pm	10 Lā‘aukūlua R 6:51 am S 6:46 pm
11 Lā‘aupau R 6:50 am S 6:46 pm	12 ‘Olekūkahi R 6:49 am S 6:47 pm	13 ‘Olekūlua R 6:48 am S 6:47 pm	14 ‘Olepau R 6:47 am S 6:47 pm	15 Kāloakūkahi R 6:46 am S 6:48 pm	16 Kāloakūlua R 6:45 am S 6:48 pm	17 Kāloapau R 6:44 am S 6:48 pm
18 Kāne R 6:43 am S 6:49 pm	19 Lono R 6:42 am S 6:49 pm	20 Mauli R 6:41 am S 6:49 pm	21 Muku R 6:40 am S 6:50 pm	22 Hilo R 6:40 am S 6:50 pm	23 Hoaka R 6:39am S 6:50 pm	24 Kūkahi R 6:38 am S 6:51 pm
25 Kūlua R 6:37 am S 6:51 pm	26 Kūkolu R 6:36 am S 6:51 pm	27 Kūpau R 6:35 am S 6:52 pm	28 ‘Olekūkahi R 6:34 am S 6:52 pm	29 ‘Olekūlua R 6:33 am S 6:52 pm	30 ‘Olekūkolu R 6:32 am S 6:53 pm	31 ‘Olepau R 6:31 am S 6:53 pm

ft. 3 2 1 0 -1 — 6am noon 6pm

Harvest wisely to ensure future catches!

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

Small fish = no take.

Allow them to reach reproductive size!

Medium fish = go for it.

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.

Limited Harvest: Moi

Manini may still be spawning in April, so be cautious when harvesting.

Notes

January	February	March	April	May	June	July	August	September	October	November	December
	Ikiiki *March 22—April 19*				Ka‘aona *April 20 —May 19*						
			Ikiiki	**Ka‘aona**							
Kaulua	Nana	Welo			Hinaia‘ele‘ele	Māhoe Mua	Māhoe Hope	‘Ikuwā	Welehu	Makali‘i	Kā‘elo	Kaulua

ʻApelila *April* 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻaha *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
1 Huna	2 Mōhalu	3 Hua	4 Akua	5 Hōkū	6 Māhealani	7 Kulu
R 6:30 am S 6:53 pm	R 6:29 am S 6:54 pm	R 6:28 am S 6:54 pm	R 6:27 am S 6:54 pm	R 6:26 am S 6:55 pm	R 6:25 am S 6:55 pm	R 6:25 am S 6:56 pm
8 Lāʻaukūkahi	9 Lāʻaukūlua	10 Lāʻaupau	11 ʻOlekūkahi	12 ʻOlekūlua	13 ʻOlepau	14 Kāloakūkahi
R 6:24 am S 6:56 pm	R 6:23 am S 6:56 pm	R 6:22 am S 6:57 pm	R 6:21 am S 6:57 pm	R 6:20 am S 6:57 pm	R 6:19 am S 6:57 pm	R 6:18 am S 6:58 pm
15 Kāloakūlua	16 Kāloapau	17 Kāne	18 Lono	19 Mauli	20 Muku	21 Hilo
R 6:18 am S 6:58 pm	R 6:17 am S 6:59 pm	R 6:16 am S 6:59 pm	R 6:15 am S 6:59 pm	R 6:14 am S 7:00 pm	R 6:14 am S 7:00 pm	R 6:13 am S 7:00 pm
22 Kūkahi	23 Kūlua	24 Kūkolu	25 Kūpau	26 ʻOlekūkahi	27 ʻOlekūlua	28 ʻOlekūkolu
R 6:12 am S 7:01 pm	R 6:11 am S 7:01 pm	R 6:10 am S 7:02 pm	R 6:10 am S 7:02 pm	R 6:09 am S 7:03 pm	R 6:08 am S 7:03 pm	R 6:08 am S 7:03 pm
29 ʻOlepau	30 Huna					
R 6:07 am S 7:04 pm	R 6:06 am S 7:04 pm					

ft. 3 2 1 0 -1 — 6am noon 6pm

Notes

Hawaiian units of measurement

Kīkoʻo
tip of thumb to tip of pointer finger

Iwilei
fingertip to collarbone

Haʻilima
fingertip to middle of forearm

Poho
fingertip to center of palm

Muku
fingertip to opposite elbow

Anana
fingertip to fingertip, arms extended

Closed Season:
Spiny Lobster, Slipper Lobster, and Kona Crab

Limited Harvest: Moi

Manini may still be spawning in May, so be cautious when harvesting.

January	February	March	April	May	June	July	August	September	October	November	December
		Kaʻaona *April 20 —May 19*				Hinaiaʻeleʻele *May 20— June 17*					
				Kaʻaona	**Hinaiaʻeleʻele**						
Kaulua	Nana	Welo	Ikiiki			Māhoe Mua	Māhoe Hope	ʻIkuwā	Welehu	Makaliʻi	Kāʻelo	Kaulua

Mei *May* 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
Ka iʻa a ke kualau i lawe mai ai *The fish brought in by the rain at sea* The spawn of the manini fish that came to the islands by the millions during the summer months. They were said to come after a shower at sea, in the early morning.		1 Mōhalu R 6:06 am S 7:05 pm	2 Hua R 6:06 am S 7:05 pm	3 Akua R 6:04 am S 7:06 pm	4 Hōkū R 6:04 am S 7:06 pm	5 Māhealani R 6:03 am S 7:06 pm
6 Kulu R 6:09 am S 7:07 pm	7 Lāʻaukūkahi R 6:02 am S 7:07 pm	8 Lāʻaukūlua R 6:01 am S 7:08 pm	9 Lāʻaupau R 6:01 am S 7:08 pm	10 ʻOlekūkahi R 6:00 am S 7:09 pm	11 ʻOlekūlua R 6:00 am S 7:09 pm	12 ʻOlepau R 5:59 am S 7:10 pm
13 Kāloakūkahi R 5:59 am S 7:10 pm	14 Kāloakūlua R 5:58 am S 7:10 pm	15 Kāloapau R 5:58 am S 7:11 pm	16 Kāne R 5:58 am S 7:11 pm	17 Lono R 5:57 am S 7:12 pm	18 Mauli R 5:57 am S 7:12 pm	19 Muku R 5:57 am S 7:13 pm
20 Hilo R 5:56 am S 7:13 pm	21 Hoaka R 5:56 am S 7:14 pm	22 Kūkahi R 5:56 am S 7:14 pm	23 Kūlua R 5:55 am S 7:14 pm	24 Kūkolu R 5:55 am S 7:15 pm	25 Kūpau R 5:55 am S 7:15 pm	26 ʻOlekūkahi R 5:55 am S 7:16 pm
27 ʻOlekūlua R 5:54 am S 7:16 pm	28 ʻOlekūkolu R 5:54 am S 7:17 pm	29 ʻOlepau R 5:54 am S 7:17 pm	30 Huna R 5:54 am S 7:18 pm	31 Mōhalu R 5:54 am S 7:18 pm	Notes	

ft. 3 2 1 0 -1 — 6am noon 6pm

Harvest wisely to ensure future catches!

Know your fish before you harvest

Moi: He kane a i ʻole he wahine?

Young moi are all males which eventually turn into females when they reach about 13 inches (fork length).

10 inches fork length and smaller = male

Palā moi are transforming from male to female, having both eggs and sperm.

11-12 inches fork length = hermaphroditic phase

Releasing very large moi helps to ensure females will survive to spawn successfully.

13 inches fork length and larger = female

Closed Season:

Moi, Spiny Lobster, Slipper Lobster, and Kona Crab

Manini may still be spawning in May, so be cautious when harvesting.

January	February	March	April	May	June	July	August	September	October	November	December
			Hinaiaʻeleʻele *May 20— June 17*				Mahoe Mua *June 18 —July 16*				
Kaulua	Nana	Welo	Ikiiki	Kaʻaona	**Hinaiaʻeleʻele Māhoe Mua**		Māhoe Hope	ʻIkuwā	Welehu	Makaliʻi	Kāʻelo	Kaulua

June 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
Notes					1 Hua	2 Akua
					R 5:54 am S 7:18 pm	R 5:54 am S 7:19 pm
3 Hōkū	4 Māhealani	5 Kulu	6 Lāʻaukūkahi	7 Lāʻaukūlua	8 Lāʻaupau	9 ʻOlekūkahi
R 5:54 am S 7:19 pm	R 5:54 am S 7:20 pm	R 5:53 am S 7:20 pm	R 5:53 am S 7:20 pm	R 5:53 am S 7:21 pm	R 5:53 am S 7:21 pm	R 5:54 am S 7:21 pm
10 ʻOlekūlua	11 ʻOlepau	12 Kāloakūkahi	13 Kāloakūlua	14 Kāloapau	15 Kāne	16 Lono
R 5:54 am S 7:24 pm	R 5:55 am S 7:24 pm	R 5:55 am S 7:24 pm	R 5:54 am S 7:23 pm	R 5:54 am S 7:23 pm	R 5:54 am S 7:23 pm	R 5:54 am S 7:24 pm
17 Mauli	18 Hilo	19 Hoaka	20 Kūkahi	21 Kūlua	22 Kūkolu	23 Kūpau
R 5:54 am S 7:24 pm	R 5:55 am S 7:24 pm	R 5:55 am S 7:24 pm	R 5:55 am S 7:25 pm	R 5:55 am S 7:25 pm	R 5:55 am S 7:25 pm	R 5:55 am S 7:25 pm
24 ʻOlekūkahi	25 ʻOlekūlua	26 ʻOlekūkolu	27 ʻOlepau	28 Huna	29 Mōhalu	30 Hua
R 5:56 am S 7:25 pm	R 5:56 am S 7:25 pm	R 5:56 am S 7:26 pm	R 5:57 am S 7:26 pm	R 5:57 am S 7:26 pm	R 5:57 am S 7:26 pm	R 5:57 am S 7:26 pm

ft. 3 2 1 0 -1 — 6am noon 6pm

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 **Kū‘ula o ‘Anini** rain and the **Līhau o Lanihuli** wind are favorable good omens for fishermen.

Closed Season:
Moi, Spiny Lobster, Slipper Lobster, and Kona Crab

Limited Harvest: Akule

January	February	March	April	May	June	July	August	September	October	November	December
				Māhoe Mua *June 18 — July 16*				Māhoe Hope *July 17 — August 15*			
Kaulua	Nana	Welo	Ikiiki	Ka‘aona	Hinaia‘ele‘ele	**Māhoe Mua Māhoe Hope**		‘Ikuwā	Welehu	Makali‘i	Kā‘elo	Kaulua

Iulai *July* 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
1 Akua R 5:58 am S 7:27 pm	2 Hōkū R 5:58 am S 7:26 pm	3 Māhealani R 5:59 am S 7:26pm	4 Kulu R 5:59 am S 7:26 pm	5 Lāʻaukūkahi R 5:59 am S 7:26 pm	6 Lāʻaukūlua R 6:00 am S 7:26 pm	7 Lāʻaupau R 6:00 am S 7:26 pm
8 ʻOlekūkahi R 6:01 am S 7:26 pm	9 ʻOlekūlua R 6:01 am S 7:26 pm	10 ʻOlepau R 6:01 am S 7:26 pm	11 Kāloakūkahi R 6:02 am S 7:25 pm	12 Kāloakūlua R 6:02 am S 7:25 pm	13 Kāloapau R 6:03 am S 7:25 pm	14 Kāne R 6:03 am S 7:25 pm
15 Lono R 6:03 am S 7:25 pm	16 Mauli R 6:04 am S 7:24 pm	17 Muku R 6:04 am S 7:24 pm	18 Hilo R 6:04 am S 7:24 pm	19 Hoaka R 6:05 am S 7:24 pm	20 Kūkahi R 6:05 am S 7:23 pm	21 Kūlua R 6:06 am S 7:23 pm
22 Kūkolu R 6:06 am S 7:23 pm	23 Kūpau R 6:07 am S 7:22 pm	24 ʻOlekūkahi R 6:07 am S 7:22 pm	25 ʻOlekūlua R 6:08 am S 7:21 pm	26 ʻOlekūkolu R 6:08 am S 7:21 pm	27 ʻOlepau R 6:08 am S 7:20 pm	28 Huna R 6:09 am S 7:20 pm
29 Mōhalu R 6:09 am S 7:19 pm	30 Hua R 6:10 am S 7:19 pm	31 Akua R 6:10 am S 7:18 pm				

ft. 3 2 1 0 -1 — 6am noon 6pm

Notes

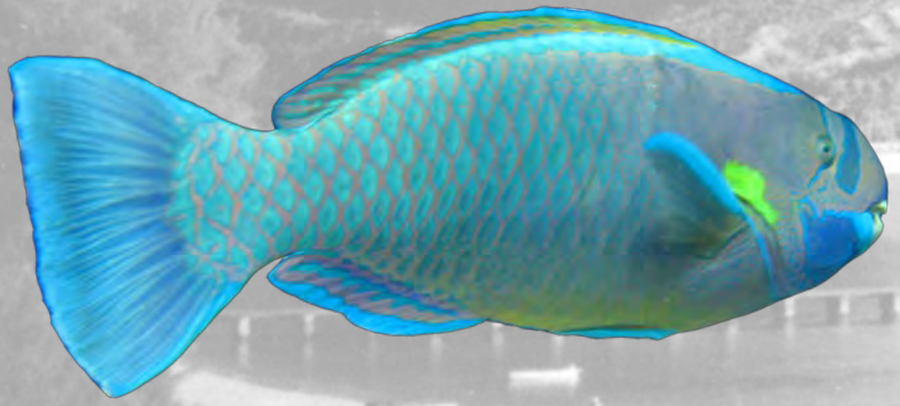
Harvest wisely to ensure future catches!

Know your fish before you harvest

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.

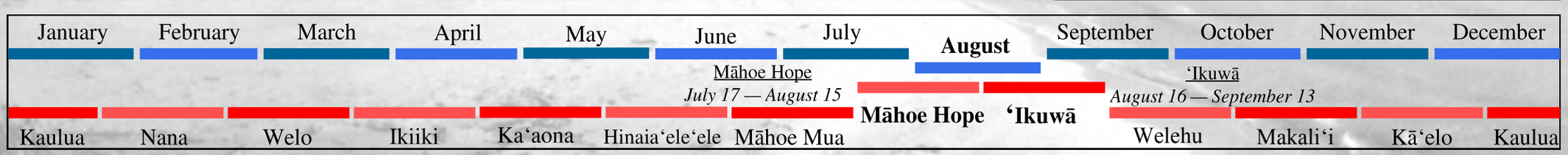


This change takes several months and can disrupt the spawning cycle.

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

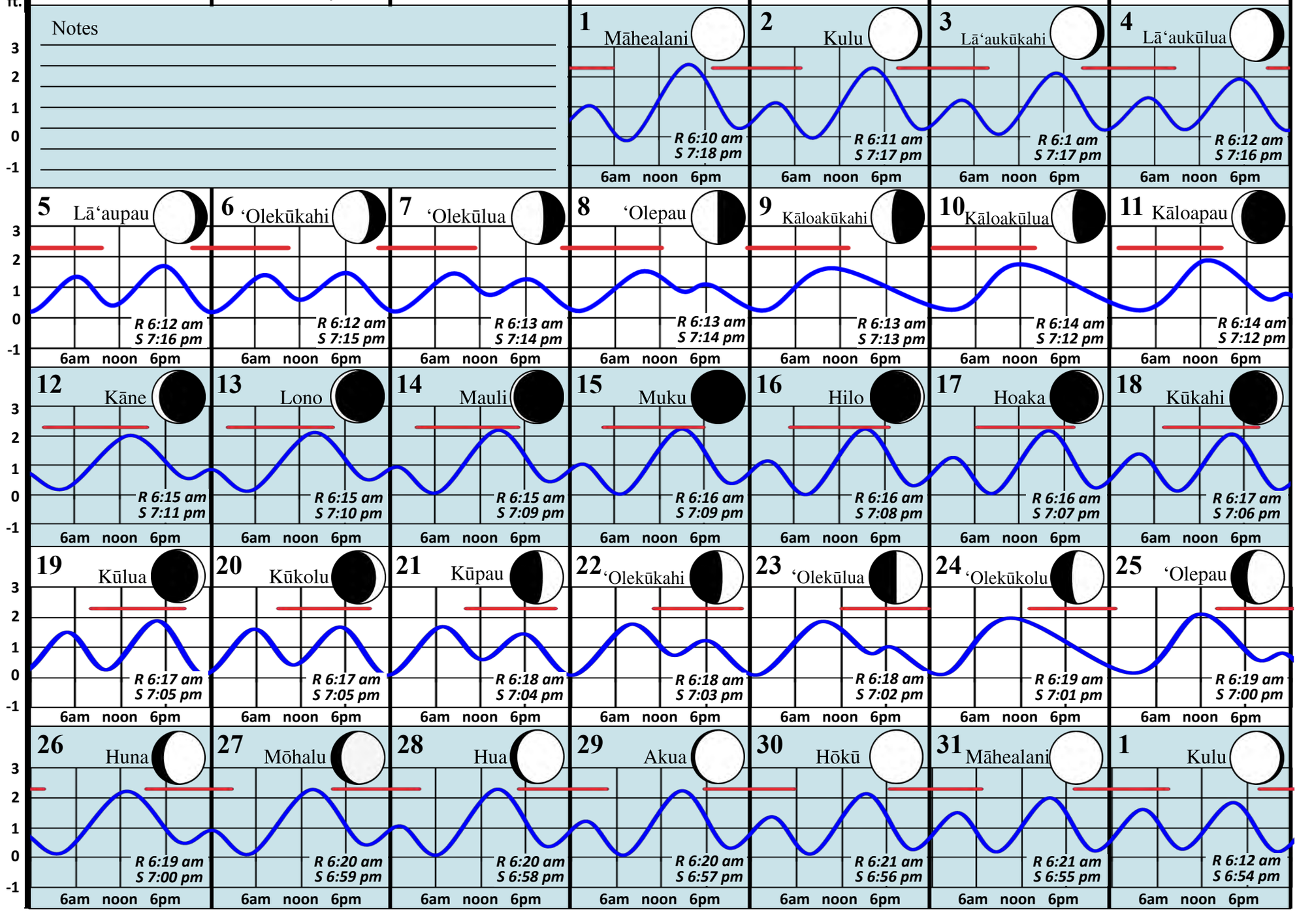
Closed Season:
Moi, Spiny Lobster, Slipper Lobster, and Kona Crab

Limited Harvest: Akule



ʻAukake *August* 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
Notes			1 Māhealani	2 Kulu	3 Lāʻaukūkahi	4 Lāʻaukūlua
5 Lāʻaupau	6 ʻOlekūkahi	7 ʻOlekūlua	8 ʻOlepau	9 Kāloakūkahi	10 Kāloakūlua	11 Kāloapau
12 Kāne	13 Lono	14 Mauli	15 Muku	16 Hilo	17 Hoaka	18 Kūkahi
19 Kūlua	20 Kūkolu	21 Kūpau	22 ʻOlekūkahi	23 ʻOlekūlua	24 ʻOlekūkolu	25 ʻOlepau
26 Huna	27 Mōhalu	28 Hua	29 Akua	30 Hōkū	31 Māhealani	1 Kulu



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 male

Male crabs have thin, elongated abdomens.

Mature female

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

Limited Harvest:
Moi and Akule

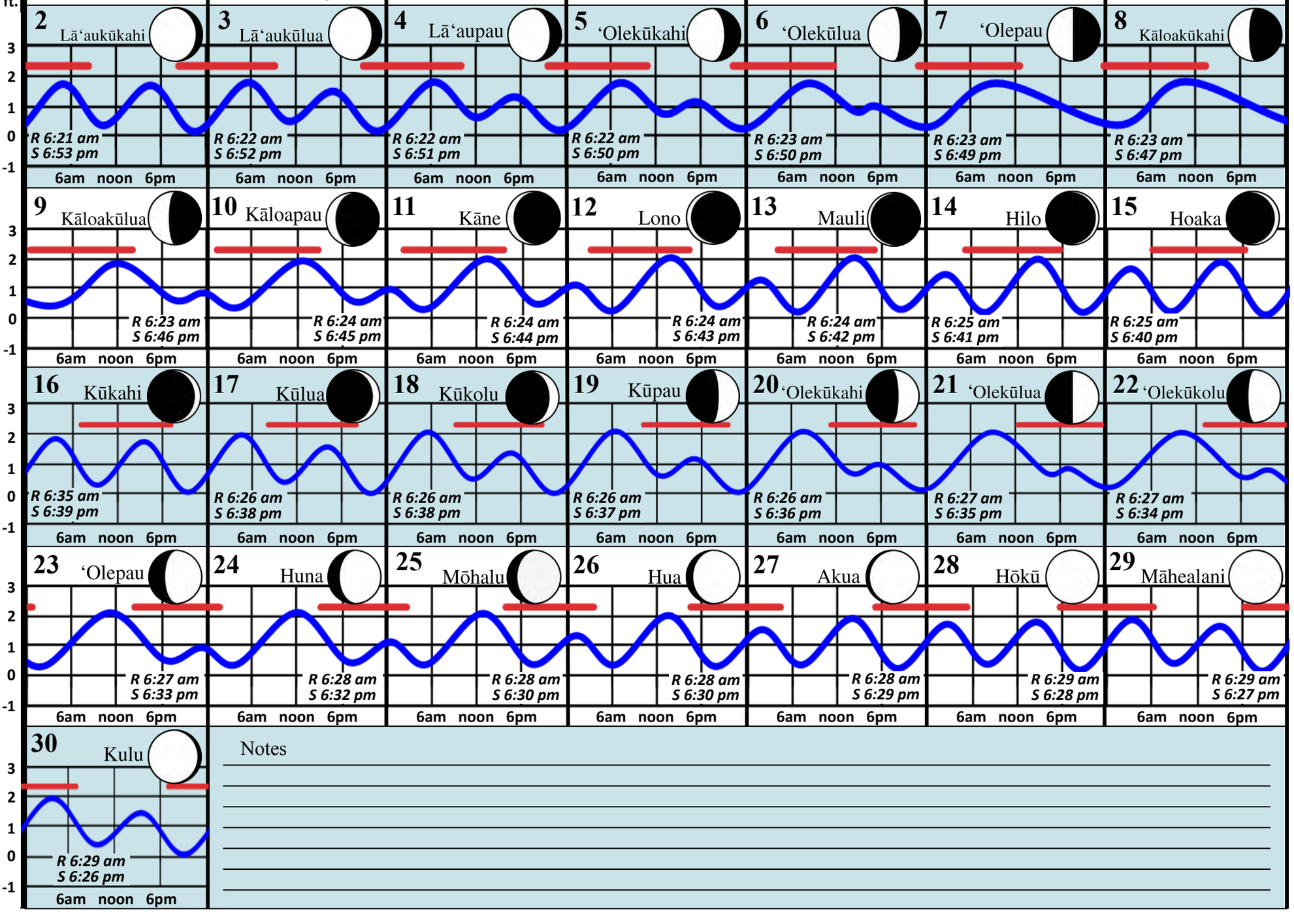
Notes

January	February	March	April	May	June	July	August	September	October	November	December
						ʻIkuwā				Welehu	
						August 16 — September 13				*September 14 — October 13*	
Kaulua	Nana	Welo	Ikiiki	Kaʻaona	Hinaiaʻeleʻele	Māhoe Mua	Māhoe Hope	**ʻIkuwā**	**Welehu**	Makaliʻi	Kāʻelo	Kaulua

Kepakemapa

September 2012

Lāpule *Sunday*	Poʻakahi *Monday*	Poʻalua *Tuesday*	Poʻakolu *Wednesday*	Poʻahā *Thursday*	Poʻalima *Friday*	Poʻaono *Saturday*
2 Lāʻaukūkahi R 6:21 am S 6:53 pm	**3** Lāʻaukūlua R 6:22 am S 6:52 pm	**4** Lāʻaupau R 6:22 am S 6:51 pm	**5** ʻOlekūkahi R 6:22 am S 6:50 pm	**6** ʻOlekūlua R 6:23 am S 6:50 pm	**7** ʻOlepau R 6:23 am S 6:49 pm	**8** Kāloakūkahi R 6:23 am S 6:47 pm
9 Kāloakūlua R 6:23 am S 6:46 pm	**10** Kāloapau R 6:24 am S 6:45 pm	**11** Kāne R 6:24 am S 6:44 pm	**12** Lono R 6:24 am S 6:43 pm	**13** Mauli R 6:24 am S 6:42 pm	**14** Hilo R 6:25 am S 6:41 pm	**15** Hoaka R 6:25 am S 6:40 pm
16 Kūkahi R 6:35 am S 6:39 pm	**17** Kūlua R 6:26 am S 6:38 pm	**18** Kūkolu R 6:26 am S 6:38 pm	**19** Kūpau R 6:26 am S 6:37 pm	**20** ʻOlekūkahi R 6:26 am S 6:36 pm	**21** ʻOlekūlua R 6:27 am S 6:35 pm	**22** ʻOlekūkolu R 6:27 am S 6:34 pm
23 ʻOlepau R 6:27 am S 6:33 pm	**24** Huna R 6:28 am S 6:32 pm	**25** Mōhalu R 6:28 am S 6:30 pm	**26** Hua R 6:28 am S 6:30 pm	**27** Akua R 6:28 am S 6:29 pm	**28** Hōkū R 6:29 am S 6:28 pm	**29** Māhealani R 6:29 am S 6:27 pm
30 Kulu R 6:29 am S 6:26 pm	Notes					



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.

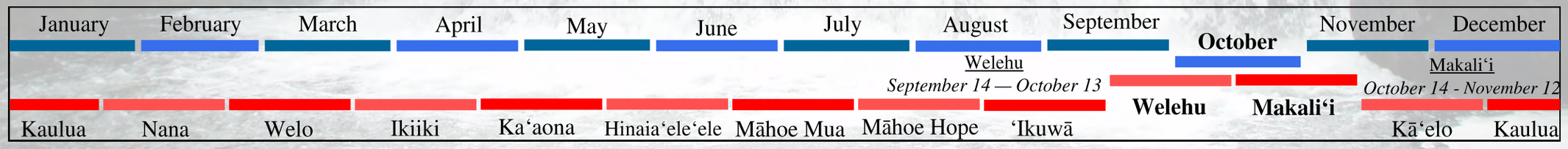
- Maintain your vehicle to prevent oil leaks because anything on the ground will eventually flow into the ocean. Additionally, don't use a water hose to clean your garage and driveway – wipe up the oil and gunk instead!

- 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 ‘ōpala properly and recycle what you can!

Limited Harvest:
Moi and Akule

Notes



ʻOkakopa *October* 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
	1 Lāʻaukūkahi R 6:30 am S 6:25 pm	2 Lāʻaukūlua R 6:30 am S 6:24 pm	3 Lāʻaupau R 6:30 am S 6:23 pm	4 ʻOlekūkahi R 6:31 am S 6:22 pm	5 ʻOlekūlua R 6:31 am S 6:21 pm	6 ʻOlepau R 6:31 am S 6:20 pm
7 Kāloakūkahi R 6:32 am S 6:19 pm	8 Kāloakūlua R 6:32 am S 6:18 pm	9 Kāloapau R 6:32 am S 6:17 pm	10 Kāne R 6:33 am S 6:17 pm	11 Lono R 6:33 am S 6:16 pm	12 Mauli R 6:33 am S 6:15 pm	13 Muku R 6:34 am S 6:14 pm
14 Hilo R 6:34 am S 6:13 pm	15 Hoaka R 6:35 am S 6:12 pm	16 Kūkahi R 6:35 am S 6:12 pm	17 Kūlua R 6:35 am S 6:11 pm	18 Kūkolu R 6:36 am S 6:10 pm	19 Kūpau R 6:36 am S 6:09 pm	20 ʻOlekūkahi R 6:37 am S 6:08 pm
21 ʻOlekūlua R 6:37 am S 6:08 pm	22 ʻOlekūkolu R 6:38 am S 6:07 pm	23 ʻOlepau R 6:38 am S 6:06 pm	24 Huna R 6:38 am S 6:05 pm	25 Mōhalu R 6:39 am S 6:06 pm	26 Hua R 6:39 am S 6:04 pm	27 Akua R 6:40 am S 6:03 pm
28 Hōkū R 6:40 am S 6:03 pm	29 Māhealani R 6:41 am S 6:02 pm	30 Kulu R 6:41 am S 6:02 pm	31 Lāʻaukūkahi R 6:42 am S 6:01 pm			

ft. 3 2 1 0 -1 — 6am noon 6pm

Notes

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!

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

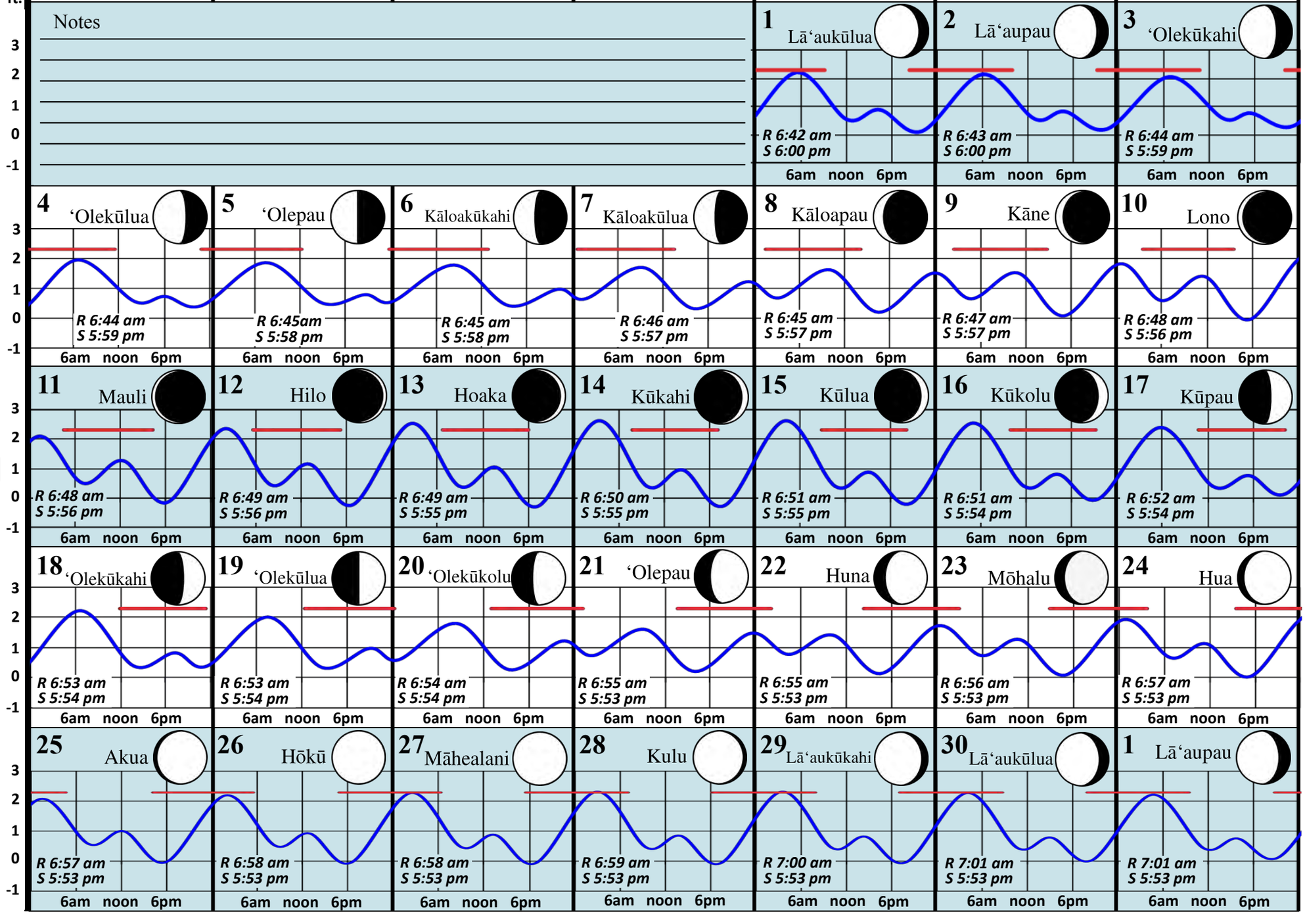
Limited Harvest: Moi

Notes

January	February	March	April	May	June	July	August	September	October	November	December
						Makali‘i		Kā‘elo			
						October 14 - November 12		*November 13 — December 12*			
Kaulua	Nana	Welo	Ikiiki	Ka‘aona	Hinaia‘ele‘ele	Māhoe Mua	Māhoe Hope	‘Ikuwā	Welehu	**Makali‘i**	**Kā‘elo**	Kaulua

Novemapa November 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
Notes				1 Lāʻaukūlua	2 Lāʻaupau	3 ʻOlekūkahi
4 ʻOlekūlua	5 ʻOlepau	6 Kāloakūkahi	7 Kāloakūlua	8 Kāloapau	9 Kāne	10 Lono
11 Mauli	12 Hilo	13 Hoaka	14 Kūkahi	15 Kūlua	16 Kūkolu	17 Kūpau
18 ʻOlekūkahi	19 ʻOlekūlua	20 ʻOlekūkolu	21 ʻOlepau	22 Huna	23 Mōhalu	24 Hua
25 Akua	26 Hōkū	27 Māhealani	28 Kulu	29 Lāʻaukūkahi	30 Lāʻaukūlua	1 Lāʻaupau



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.

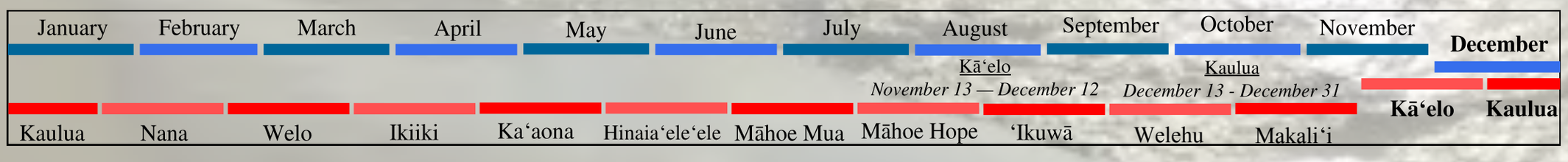
Ka iʻa ʻimi i ka moana, na ka manu e haʻi mai
The fish sought for in the ocean, whose presence is revealed by birds
A school of aku, whose presence is signaled by the gathering of noio at sea.

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

Closed Season: Mullet

Limited Harvest: Moi

Notes



Kekemapa

December 2012

Lāpule *Sunday*	Pōʻakahi *Monday*	Pōʻalua *Tuesday*	Pōʻakolu *Wednesday*	Pōʻahā *Thursday*	Pōʻalima *Friday*	Pōʻaono *Saturday*
2 Lāʻaupau	3 ʻOlekūkahi	4 ʻOlekūlua	5 ʻOlepau	6 Kāloakūkahi	7 Kāloakūlua	8 Kāloapau
R 7:02 am S 5:54 pm	R 7:03 am S 5:54 pm	R 7:03 am S 5:54 pm	R 7:04 am S 5:54 pm	R 7:04 am S 5:54 pm	R 7:05 am S 5:54 pm	R 7:06 am S 5:55 pm
9 Kāne	10 Lono	11 Mauli	12 Muku	13 Hilo	14 Hoaka	15 Kūkahi
R 7:06 am S 5:55 pm	R 7:07 am S 5:55 pm	R 7:08 am S 5:56 pm	R 7:08 am S 5:56 pm	R 7:09 am S 5:56 pm	R 7:09 am S 5:57 pm	R 7:10 am S 5:57 pm
16 Kūlua	17 Kūkolu	18 Kūpau	19 ʻOlekūkahi	20 ʻOlekūlua	21 ʻOlekūkolu	22 ʻOlepau
R 7:11 am S 5:58 pm	R 7:11 am S 5:58 pm	R 7:12 am S 5:58 pm	R 7:12 am S 5:59 pm	R 7:13 am S 5:59 pm	R 7:23 am S 6:00 pm	R 7:14 am S 6:00 pm
23 Huna	24 Mōhalu	25 Hua	26 Akua	27 Hōkū	28 Māhealani	29 Kulu
R 7:14 am S 6:01 pm	R 7:15 am S 6:01 pm	R 7:15 am S 6:02 pm	R 7:15 am S 6:03 pm	R 7:16 am S 6:03 pm	R 7;16 am S 6:04 pm	R 7:17 am S 6:04 pm
30 Lāʻaukūkahi	31 Lāʻaukūlua					
R 7:15 am S 6:02 pm	R 7:15 am S 6:03 pm					

ft. 3 2 1 0 -1 — 6am noon 6pm

Notes

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."
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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

HAR 13-95. Hawaii Administrative Rules Title 13 Department of Land and Natural Resources, Subtitle 4 Fisheries, Part V Protected Marine Fisheries Resources, Chapter 95 Rules Regulating the Taking and Selling of Certain Marine Resources. http://hawaii.gov/dlnr/dar/rules/ch95.pdf
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NOAA Tides and Currents, http://tidesandcurrents.noaa.gov/tide_predictions.shtml.
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