

Kaulana Mahina

Hawai'i Lunar Calendar

January 3, 2022 - January 21, 2023



Western Pacific Regional
Fishery Management Council

WPCOUNCIL.ORG

Onaga

Longtail Red Snapper / Ruby Snapper ▪ **‘ula‘ula koa‘e**
Etelis coruscans

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - up to 31 in and 35 lbs. ▪ The oldest known was 54 yrs old and 31 in. ▪ Sexually mature at 10 yrs. ▪ Fish near minimum retention size in Hawai'i (1 lb or 12 in) may be just 2-3 yrs old.

STATE RECORD: 34.25 lbs by Marvin Lum

FISHERY INFORMATION: Caught primarily with the vertical hook-and-line method, where weighted and baited lines are lowered and raised with electric, hydraulic or hand-powered reels.

LOCAL KNOWLEDGE: Some local fishers anchor in one spot, catch for the year and then give away most fish to the community. Onaga is seen as a good luck fish and is served at weddings and New Year celebrations in the Hawaiian Islands.

CURRENT REGULATIONS: FEDERAL: Annual catch limit

STATE: Min size - 1 lb ▪ Non-commercial bag limit - 5 total of Deep 7 species

COUNCIL MANAGEMENT: Managing the bottomfish fishery has been difficult due to insufficient fishery data. However, with cooperation between state and federal management agencies and fishermen, the Deep 7 bottomfish annual catch limit increased from 178,000 pounds for the 2007-2008 fishing year to 492,000 pounds for the 2020-2021 fishing year.

STOCK STATUS:

Not overfished; not experiencing overfishing.



Baked Onaga with Tomatoes and Homemade Harissa

MAKES 4 SERVINGS

"Harissa is the chili sauce of the Moroccan people."

FOR THE FRESH HARISSA:

4-6	dried small, hot, red chilies, stems removed*	1 tsp	dried mint
1 tbsp	ground coriander	1 tsp	ground caraway seeds
1 tbsp	ground cumin	5 cloves	garlic
		½ cup	olive oil

**Use "Japanese dried chilies" or any medium-hot chili such as Szechuan chilies or chile de arbol.*

FOR THE FISH:

2-2 ½ lbs	whole onaga, scaled and cleaned	2	sliced lemons
1 tbsp	harissa	1	Maui sweet onion, large, sliced
3 tbsp	extra virgin olive oil	2	tomatoes, large, ripe, sliced
4 cloves	garlic, crushed	3 sprigs	Italian parsley
		3 sprigs	fresh thyme

MAKE THE HARISSA:

1. Using scissors or a sharp knife, cut chilies into pieces. Cover with boiling water and cook to soften, 30 to 90 minutes. Drain chilies and squeeze out excess water.
2. Place chilies in food processor with remaining harissa ingredients. Grind to a paste. Scrape down sides, then process again for 20 seconds. Place in small glass jar (*it will soak into and stain many plastic containers*). Cover surface with a thin layer of olive oil and seal tightly. Harissa keeps in the refrigerator for up to 8 weeks and it's wonderful in soups, sauces, and stews.

PREPARE THE FISH:

1. Pre-heat oven to 400°F. Wash fish under running water for two minutes, making sure to remove all surface blood. Dry the fish well with paper towels.
2. Make two to three diagonal slashes on each side of the fish to ensure even cooking. In a small bowl, combine harissa, olive oil and garlic. Rub the harissa mixture on both sides of the fish and inside the cavity.
3. Lightly grease a baking dish large enough to hold the whole fish, then arrange the sliced onion on the bottom. Arrange tomatoes, parsley, thyme and sliced lemons over onions.
4. Place fish on top and bake uncovered for 35 to 40 minutes, or until the fish is cooked.

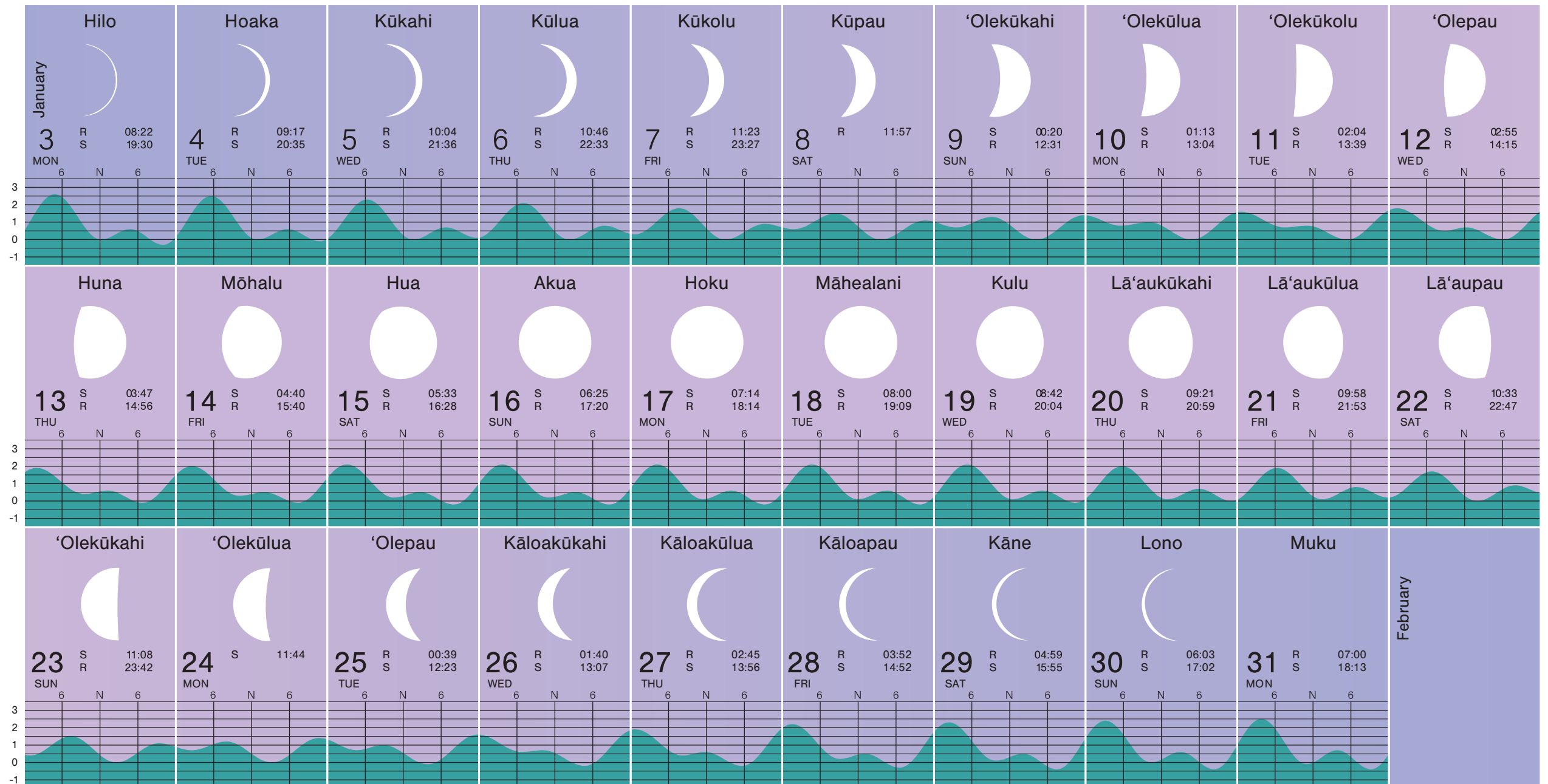
Serve hot with French bread (baguette).

Courtesy Kapi'olani Community College Culinary Arts Department



Kā‘elo

January 3 - January 31
‘Ianauli 3 - ‘Ianauli 31, 2022



OBSERVATIONS

ho‘onui (waxing) _____
 poepoe (full moon) _____
 emi (waning) _____



Western Pacific Regional
Fishery Management Council

Kona Crab

Spanner Crab ▪ **pāpa'i kualoa** ▪ *Ranina ranina*

LIFE HISTORY INFORMATION: Sexually mature at 2.9-in carapace length for males, 2.6 in for females. ▪ Inhabit coarse sandy areas from 1-110 fathoms deep. ▪ Only emerge to feed or mate. ▪ Egg-bearing females are observed May-Sept.

FISHERY INFORMATION: Caught with hoop nets (tangle or Kona crab nets). The nets are baited and deployed in tethered daisy chains and set over sandy bottom, usually free of structure or rocky, hard substrate.

LOCAL KNOWLEDGE: Kona crabs have a short shelf life and rarely make it to the local markets and restaurants. Studies found that they are able to regrow portions of their limbs after being released from nets.

CURRENT REGULATIONS: **FEDERAL:** Annual catch limit **STATE:** Season closed May-August ▪ Min size - 4 in (carapace) ▪ No spearing, taking or killing of females (subject to change)

COUNCIL MANAGEMENT: Managed under an annual catch limit of 30,802 lbs and annual catch target of 25,491 lbs for fishing years 2020-2023. An in-season accountability measure will be implemented to track catch relative to the catch target.

STOCK STATUS:
Not overfished; not
experiencing overfishing



Photo by Keoki Stender

Crab Cakes SERVES 4 AS AN APPETIZER

3 tbsp	unsalted butter
½ tbsp	minced garlic
3 tbsp	minced onion
3 tbsp	minced red bell pepper
3 tbsp	minced green bell pepper
3 tbsp	minced celery
3 tbsp	minced carrots
2 tbsp	minced fresh basil
6 tbsp	heavy cream
Salt and freshly ground white pepper, to taste	
1 ½ lbs	fresh lump crabmeat, preferably Kona crab, picked over for shell
½ cup	all-purpose flour
2 cups	panko (<i>Japanese breadcrumbs</i>)
2	large eggs
1 cup	peanut oil
½ each	red and green bell pepper, seeded, deribbed, and finely diced
4	strips lemon zest
4	small basil sprigs

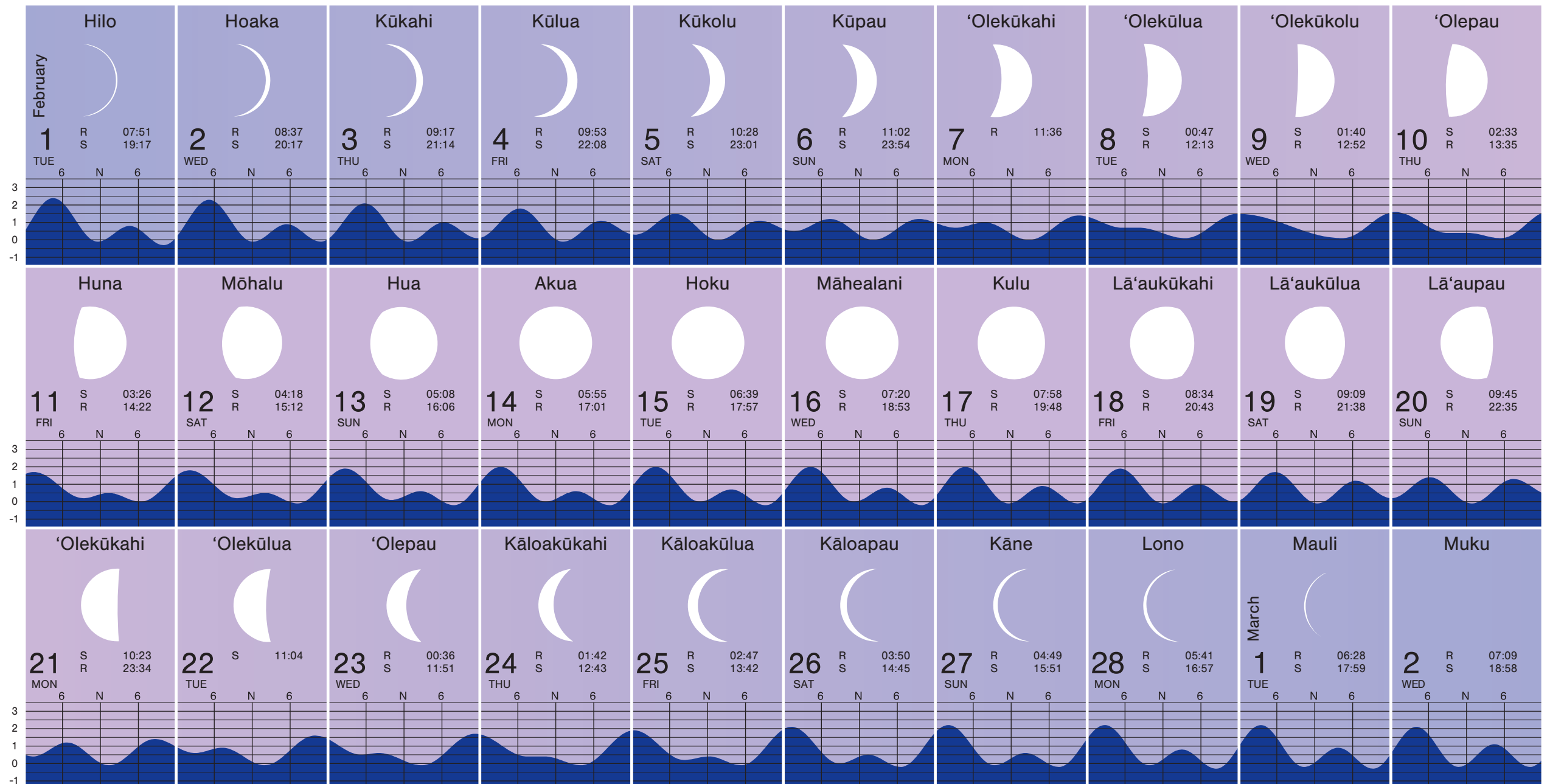
1. Melt the butter in a large sauté pan or skillet over medium-high heat. Add the garlic and onion and sauté for about 1 minute, or until golden brown. Add the red and green bell pepper, celery, carrot and basil and sauté 1 minute longer. Add the cream and continue cooking until the liquid is reduced by half. Season with salt and pepper and transfer to a non-reactive bowl. Let cool. Cover and refrigerate for 1 hour.
2. Add the crabmeat to the chilled mixture and stir thoroughly. Form into 8 balls and squeeze gently to remove any excess liquid; then form the balls into patties.
3. Place the flour and Panko on separate plates and beat the eggs in a shallow bowl. Lightly coat the crab cakes in the flour, then in the egg, and finally, in the Panko.
4. Heat the peanut oil in a heavy sauté pan or skillet over medium heat until it reaches 350°F. Add the crab cakes and sauté for about 1 ½ minutes on each side, or until evenly browned.
5. Serve 2 crab cakes per person. Garnish with the red and green bell pepper and lemon zest. Top with a basil sprig.



Courtesy greateatshawaii.blogspot.com

Kaulua

February 1 - March 2
Pepeluali 1 - Malaki 2, 2022



OBSERVATIONS

ho‘onui (waxing) _____
 poepoe (full moon) _____
 emi (waning) _____



Western Pacific Regional
Fishery Management Council

Swordfish

Shutome ▪ **a‘u kū** ▪ *Xiphias gladius*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - grow rapidly, up to 14 ft and ~1200 lbs. ▪ Ave size caught - 50-200 lbs. ▪ Sexually mature at ~5-6 yrs. ▪ Females reach sexual maturity at ~57 in (4.75 ft). ▪ The bill is one-third the length of its body. ▪ **STATE RECORD:** 503 lbs by Josh Bunch

LOCAL KNOWLEDGE: Hawai‘i is the only place where fishers can sell swordfish due to the available local market, although it is not in high demand.

CURRENT REGULATIONS: FEDERAL REQUIREMENTS FOR LONGLINE PERMIT HOLDERS: Set an hour after dusk and complete their haul before dawn. ▪ Submit logbooks to the National Marine Fisheries Service (NMFS) within 72 hours. ▪ Carry a NMFS observer (100% coverage in shallow-set, 20% coverage in deep-set). ▪ Carry an operational vessel monitoring system unit. ▪ Obtain certification through a NMFS protected species workshop on interaction mitigation techniques. ▪ **Sea Turtle Mitigation Gear Requirement:** Use only circle hooks sized 18/0 or larger with a 10° offset and mackerel-type bait.

COUNCIL MANAGEMENT: In 1991, the Main Hawaiian Islands Longline Fishing Prohibited Area was created to reduce gear conflicts between the longline and troll/handline fishermen.

STOCK STATUS:
Not overfished; not
experiencing overfishing



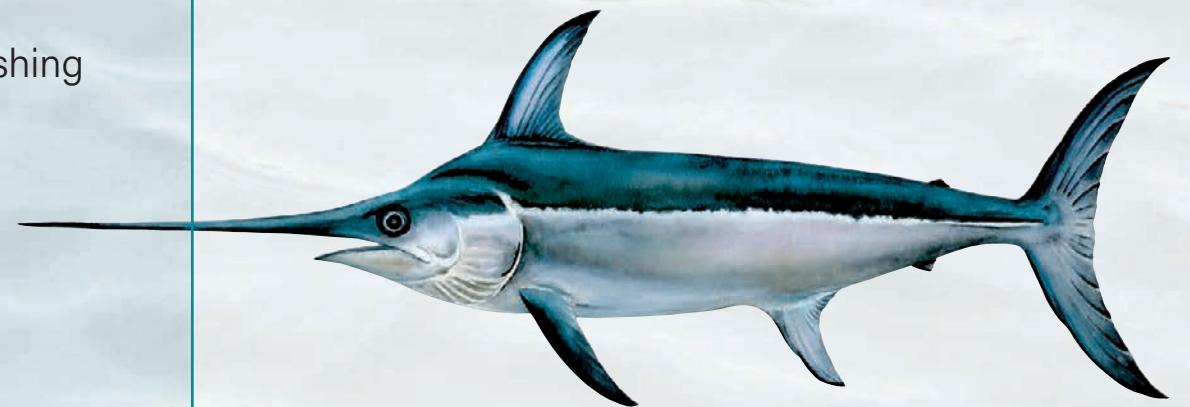
Seafood Miso Soup with Dipping Sauce

MAKES ABOUT 4 SERVINGS OF ABOUT 2 CUPS

2 pieces dashi kombu (dried seaweed, 4 in x 4-in square)
1 slice ginger, crushed (about 1-in piece)
6 cup water
½ cup bonito flakes (2 individual packets)
½ lb clams (or mussels, scrubbed)
8 large shrimp
12 oz swordfish fillet, cut into 1-in pieces
(can substitute opah or mahimahi)
¼ cup sake
3 tbsp miso
4 tsp soy sauce
¼ cup daikon radish, grated fine (use a ginger grater for best results)
4 tsp lemon juice or ponzu
Steamed baby bok choy or Shanghai cabbage, sliced green onions (optional)

1. In a pot, bring kombu, ginger and water to a boil. Remove from heat, add bonito and cover the pot. Let steep at least 15 minutes, strain and discard kombu and bonito. Reserve 2 tbsp of the broth for the dipping sauce.
2. Bring the rest of the broth to a boil, and add clams and shrimp. As soon as clams begin to open and shrimp start to turn opaque (about 2 minutes), remove from heat and add fish. Mix sake with miso, adding 1 tbsp of sake at a time until smooth. This is the broth. Cover and rest 5 minutes or until fish is cooked through.
3. Meanwhile, prepare dipping sauce. In a mixing bowl, combine reserved broth, soy sauce, daikon and lemon juice or ponzu.
4. Divide sauce into 4 small bowls or deep saucers (about 2 tbsp each). Gently re-heat soup (do not bring to a boil).
5. Top each portion with baby bok choy and sliced green onions (if using).
6. Serve with brown rice on the side. Dip fish in sauce as you eat.

Courtesy Kapi‘olani Community College Culinary Arts Department

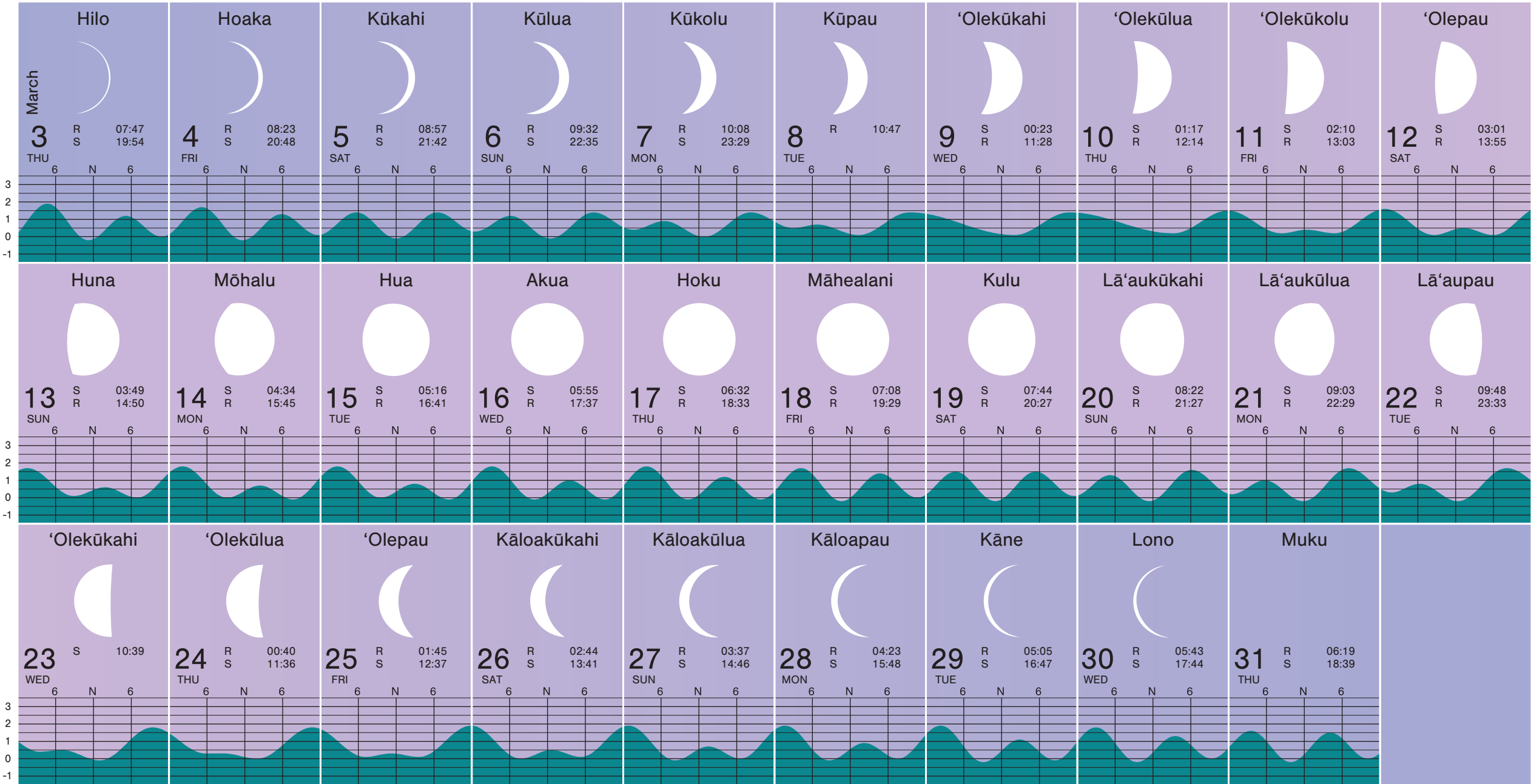


FISHERY INFORMATION: Caught in the shallow-set (about 15-50 fathoms) longline commercial fishery. The sets from the longline boats are buoyed to the surface with 4 large circle hooks between floats. These sets use light sticks to attract swordfish that are primarily targeted at night.

Nana

March 3 - March 31

Malaki 3 - Malaki 31, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

Uku

Gray Jobfish/Blue-green Snapper ▪ **uku** ▪ *Aprion virescens*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - up to 40 in and 30 lbs. ▪ The oldest known was 32 yrs old. ▪ Sexually mature at 4 yrs, ~17 in. ▪ Inhabits reef slopes, seamounts and banks from shallow waters down to 200 fathoms. ▪ Spawn May-Oct, with peak in June. ▪ Diet - fish, shrimp, crabs, cephalopods (e.g., octopus) and plankton. ▪ **STATE RECORD:** 39 lbs 8 oz by Won Park

LOCAL KNOWLEDGE: Uku serves an important role in Hawai'i's bottomfish fishery. During years when the Hawai'i Deep 7 bottomfish fishery closed after reaching its annual catch limit, many fishermen relied on uku to sustain their commercial operations. This was especially true during slow yellowfin tuna years, which typically peak from May through August. Since then, uku has increased in prominence in restaurants and homes.

CURRENT REGULATIONS: FEDERAL: Managed as a management unit species ▪ Commercial catch limit of 127,205 lbs for 2019-2021 fishing years ▪ Prohibited gears - bottom trawls, bottom set gillnets, poisons, explosives and intoxicating substances
STATE: Min size for commercial sale and spearfishing - 1 lb

COUNCIL MANAGEMENT: A management plan is currently in development.

STOCK STATUS:

Not overfished; not experiencing overfishing



Portuguese Uku Pupu

MAKES 4-6 SERVINGS

FOR THE PUPU:

2 lbs	uku steaks, fillets or other pieces
1	fresh chili pepper, small, seeded and diced
2 tsp	Hawaiian salt
1-2 cloves	garlic, minced
¾ cup	cider vinegar
¼ cup	water
olive oil	

FOR THE ONION TOPPING:

1 tbsp	onion, minced, and a few very thinly sliced rounds of onion for garnish
1 tbsp	parsley, minced
½	fresh chili pepper, small, seeded (<i>optional</i>)
½ tsp	Hawaiian salt
1½ tbsp	cider vinegar

1. Place fish in flat, non-reactive container with cover.
2. In a bowl, stir together chili, salt, garlic, vinegar and water, pour over fish and allow to marinate, covered, for at least an hour, turning once.
3. Combine onion topping ingredients in a separate non-reactive bowl and marinate 15 minutes or more.
4. Preheat broiler and brush pan with olive oil. Broil fish 3 to 4 minutes, turn and repeat. Place fish in rimmed bowl or platter.
5. Pour sauce over hot fish. Serve with cold beer and crusty country-style bread for dipping up the juices.

Courtesy Kapi'olani Community College Culinary Arts Department

FISHERY INFORMATION:

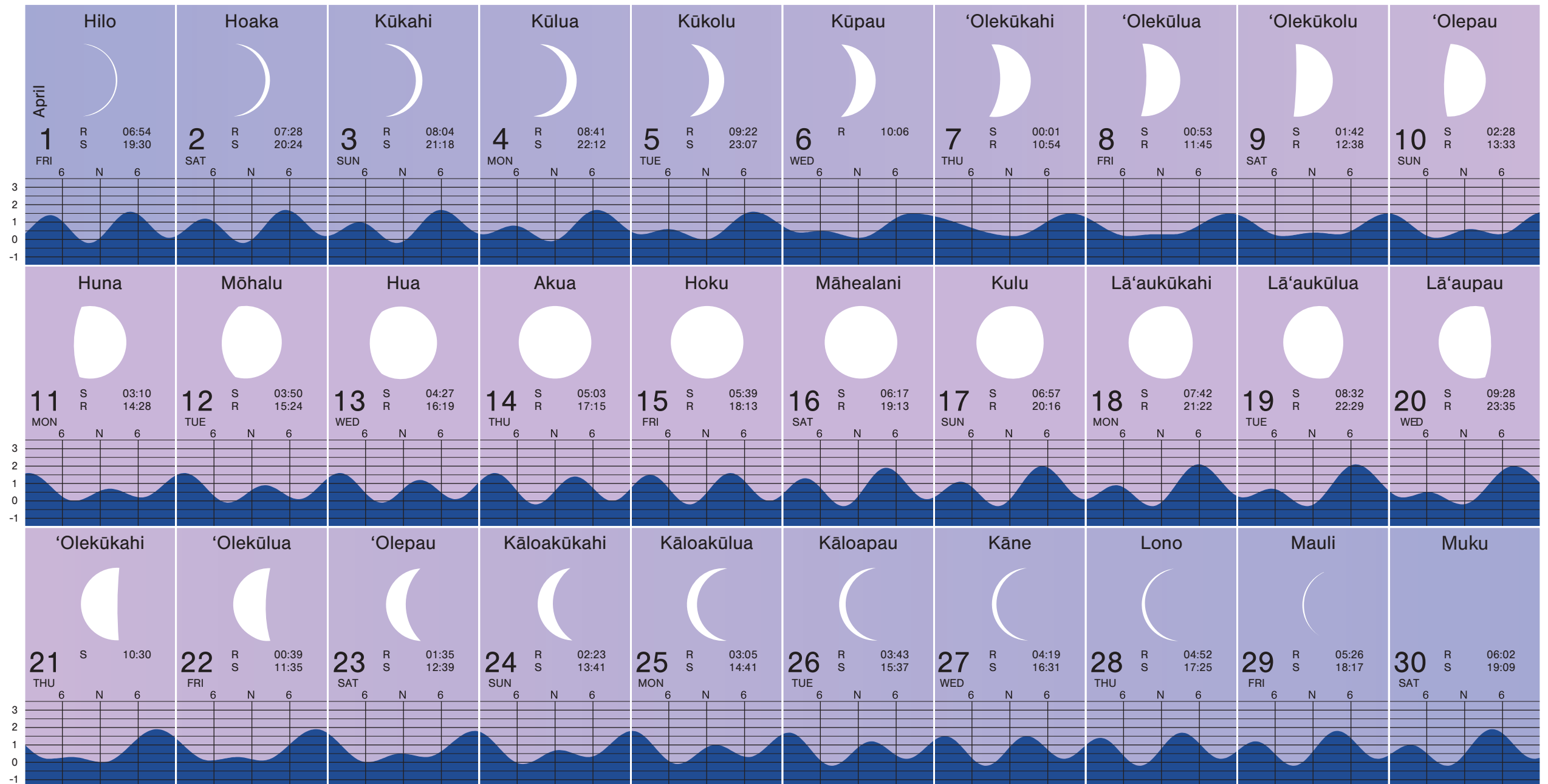
Caught using both light and heavy handline and troll gear by kayakers and boaters. Other methods include shorecasting and spearfishing. Catches boomed when the Deep 7 species complex was declared overfished in the late 2000s.



Welo

April 1 - April 30

‘Apelila 1 - ‘Apelila 30, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

‘Ahi

Bigeye Tuna ▪ ‘ahi po‘o nui ▪ *Thunnus obesus*

Yellowfin Tuna ▪ ‘ahi ▪ *Thunnus albacares*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - up to 6 ft and >400 lbs. ▪ Ave lifespan - 6-7 yrs. ▪ Sexually mature at ~2.5 yrs, 58 lbs or 44 in. ▪ Inhabit warm, clear tropical and subtropical oceans around the world. ▪ Spawn April-Oct in Hawai'i, with peak June-Aug. ▪ Females expel millions of eggs on a near-nightly basis. ▪ Diet - fish, squid and crustaceans. ▪ **STATE RECORD (YELLOWFIN):** 325 lbs by Joey Cabell ▪ **STATE RECORD (BIGEYE):** 277 lbs 5 oz by Jason Van Den Hende, Thomas Pantalion and Charley Lively

FISHERY INFORMATION: Caught in the deep-set (about 25-220 fathoms) longline commercial fishery and by trolling and using handlines (e.g., ika shibi) year-round.

CURRENT REGULATIONS: FEDERAL: Annual catch limit

STATE: Min size for commercial sale - 3 lbs

COUNCIL MANAGEMENT: In 1994, the Hawai'i longline limited entry permit was established. Permits were issued to all permit holders whose vessels had made at least one landing in Hawai'i. This was in response to the rapid growth of the fishery from 1987-1992. The bigeye tuna catch limit for U.S. longline fisheries in the western and central Pacific set for 2021 was 3,554 metric tons (~7.8 million lbs).

STOCK STATUS: Bigeye & Yellowfin - Not overfished; not experiencing overfishing in the Western and Central Pacific Ocean



Pressed Spicy ‘Ahi Sushi Squares

MAKES 8-10 SERVINGS

4 tbsp	mayonnaise
2 tsp	sriracha chili sauce
1 tsp	hot sesame oil
½ tsp	togarashi seasoning
1 lb	‘ahi, diced
1 tbsp	tobiko (<i>brightly colored flying fish roe</i>)
5 cups	rice (<i>short- or medium-grain "Japanese style" rice</i>)
1½ cups	vinegar
¾ cups	sugar
1½ tsp	salt

Black sesame seeds, wasabi sprouts, roasted nori strips, hana ebi (*shrimp powder*), or additional tobiko for garnish

1. In a large bowl, mix together mayonnaise, sriracha, sesame oil and togarashi until smooth. Fold in ‘ahi and tobiko. Mix until blended. Cover and refrigerate.
2. Cook 5 cups of rice. Let rest 5 to 10 minutes after completely cooked.
3. In a small bowl, combine vinegar, sugar, and salt. Stir until sugar dissolves.
4. Place hot cooked rice in a roomy wooden bowl. Pour vinegar mixture on top. Using a rice paddle and a vertical chopping motion, lift and mix rice to coat every grain with the seasoning liquid. Do not stir in a circular motion; fold lightly, lifting and turning, until all liquids are absorbed.
5. Lightly oil a 9x13-inch pan and pat half of the seasoned rice into the pan. Evenly spread the spicy ‘ahi on top. Cover with remaining sushi rice and press gently. Cover tightly with plastic wrap and chill until needed.
6. Cut into small squares and garnish with black sesame seeds, wasabi sprouts, roasted nori strips, hana ebi, or additional tobiko.

Courtesy Kapi'olani Community College Culinary Arts Department

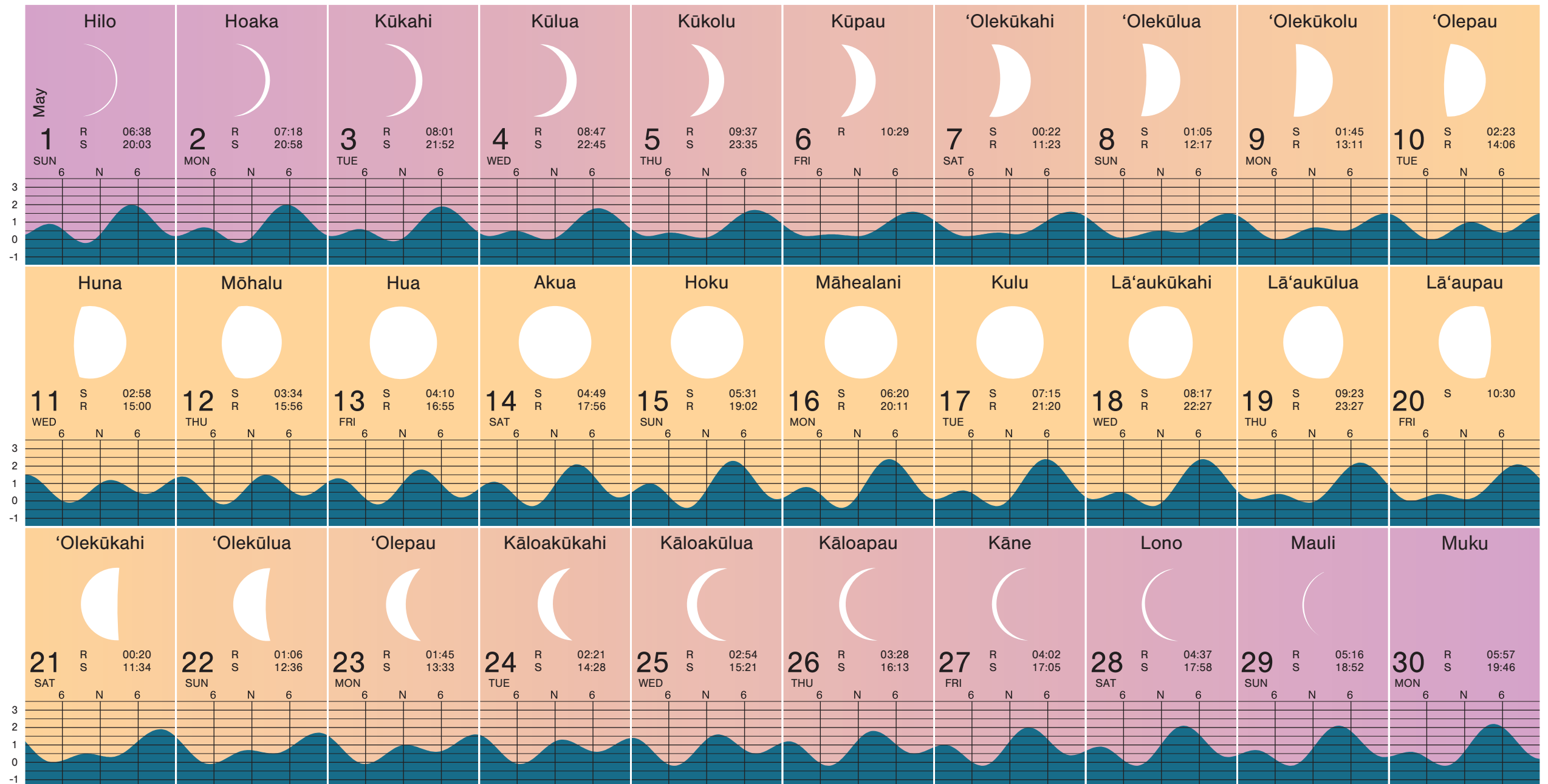
LOCAL KNOWLEDGE:

Yellowfin is usually most abundant during the summer season (May-September), and is frequently targeted at local tournaments. Yellowfins usually migrate north to south along the Hawai'i island chain, with Kaua'i getting the first of the bite before the other islands.



Ikiiki

May 1 - May 30
Mei 1 - Mei 30, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

Ono

Wahoo ▪ **ono** ▪ *Acanthocybium solandri*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - grow rapidly, up to 8 ft and 158 lbs. ▪ Sexually mature at 2.8 ft (males) and 3.3 ft (females), ~1 yr old. ▪ Spawn year-round and during summer in higher latitudes. ▪ Females expel millions of eggs to compensate for low survival rate. ▪ **STATE RECORD:** 133 lbs 3 oz by Tom Brandt and Sky Mullins

FISHERY INFORMATION: Caught in the deep-set (about 25-220 fathoms) longline commercial fishery (non-target species) and by trolling and using handlines.

CURRENT REGULATIONS: FEDERAL REQUIREMENTS FOR LONGLINE PERMIT HOLDERS: Submit logbooks to the National Marine Fisheries Service (NMFS) within 72 hours. ▪ Carry a NMFS observer (100% coverage in shallow-set, 20% coverage in deep-set). ▪ Carry an operational vessel monitoring system unit. ▪ Obtain certification through a NMFS protected species workshop on interaction mitigation techniques. ▪ **Sea Turtle Mitigation Gear Requirement:** Use only circle hooks sized 18/0 or larger with a 10° offset and mackerel-type bait.

COUNCIL MANAGEMENT: In 1991, the Main Hawaiian Islands Longline Fishing Prohibited Area was created to reduce gear conflicts between the longline and troll/handline fishermen.

STOCK STATUS:
Not overfished; not
experiencing overfishing



Ono in a Creamy Tahini Sauce

MAKES 4 SERVINGS

1 tsp	olive oil
1	onion, diced
2 tsp	cumin
1 tsp	sumac
1¼ tsp	sea salt
2 cup	water
2 tsp	tahini (<i>sesame butter</i>)
2 tsp	lemon juice
1 lb	ono fillet, cut bite-sized

1. In a heavy-bottomed skillet sauté onion in oil over medium-low heat. Cook until the onions are a deep brown, stirring occasionally (*about 15 minutes*).
2. Add cumin and cook for 2 minutes. Add sumac, salt and water. Stir in tahini and lemon juice.
3. Add fish and cook for 5 minutes, or until fish is opaque and firm. Add more water if sauce gets too thick.

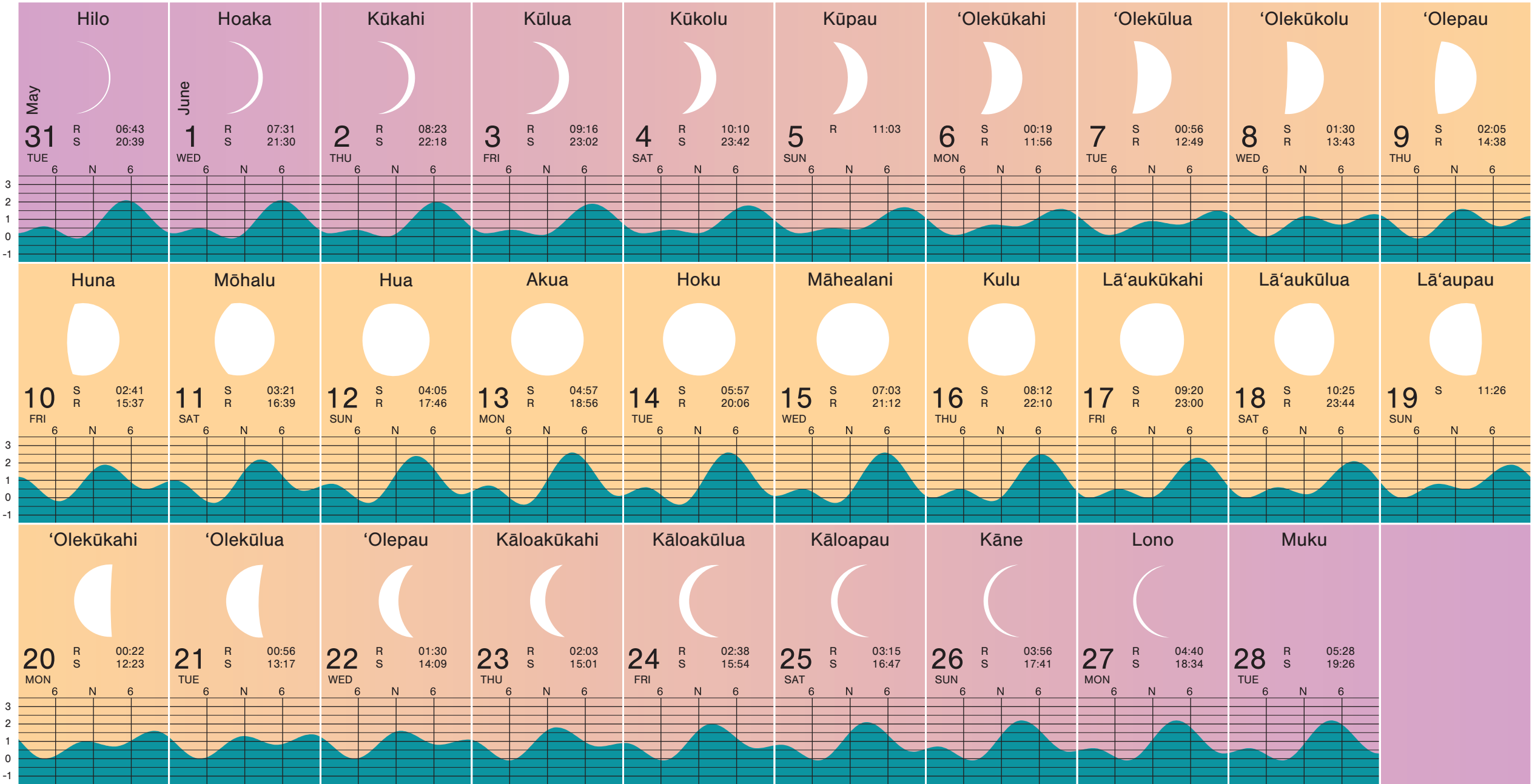
Courtesy Kapi'olani Community College Culinary Arts Department



LOCAL KNOWLEDGE: The bite usually starts in February and runs through the summer before tapering off. The season usually happens after the mahimahi season (typically November to March). It is a high demand nearshore fish.

Ka'aona

May 31 - June 28
Mei 31 - Iune 28, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____

Striped Marlin

Nairagi • **a'u** • *Kajikia audax*

LIFE HISTORY INFORMATION: Size - among fastest growth rate of all bony fish, up to 12 ft and >450 lbs. • Life span - up to 20 yrs. • Sexually mature at ~2-3 yrs. • Able to produce up to 500,000 eggs in a single spawning event. • Solitary fish, known to make regular seasonal migrations, moving toward the equator in winter and away in summer. • Favor water temps of 68-77°F.

FISHERY INFORMATION: The Marlin and Billfish Conservation Act prohibits the export of billfish to the U.S. mainland. Kona on the Big Island of HI has the largest charter vessel fishery in the state. The Hawaiian International Billfish Tournament, one of the oldest and most prestigious fishing competitions, is based on the availability of large marlins in the summer off the Kona Coast. HI is the birthplace of the modern day, big game, resin head trolling lure.

CURRENT REGULATIONS: FEDERAL REQUIREMENTS FOR LONGLINE PERMIT HOLDERS:

Submit logbooks to the National Marine Fisheries Service (NMFS) within 72 hours. • Carry a NMFS observer (100% coverage in shallow-set, 20% coverage in deep-set). • Carry an operational vessel monitoring system unit. • Obtain certification through a NMFS protected species workshop on interaction mitigation techniques. • **Sea Turtle Mitigation Gear Requirement:** Use only circle hooks sized 18/0 or larger with a 10° offset and mackerel-type bait.

COUNCIL MANAGEMENT: A rebuilding plan is being developed. Currently waiting for an updated assessment for the North Pacific stock. Recommended an initial catch limit of ~1 million lbs (457 metric tons) in 2022. An in-season accountability measure will be implemented to track catch relative to the limit.

STOCK STATUS:

Overfished; experiencing overfishing (primarily due to foreign fishing)



Nairagi and Hon-Shimeji Mushroom Lettuce Wraps with Crispy Rice

MAKES 8 LETTUCE WRAPS

Canola oil for deep-frying	1 tbsp	soy sauce	
1 cup	leftover cooked rice, separated*	1 tbsp	oyster sauce
2 tbsp	canola oil	1 tbsp	water
2 tsp	ginger, finely chopped	1 tsp	sesame oil
1 tbsp	garlic, finely chopped	2 tsp	sugar
½ cup	onions, chopped	2 tsp	chili bean sauce
1 lb	nairagi, cut into small cubes	1 tsp	cornstarch
1 cup	hon-shimeji mushrooms, very coarsely chopped	¼ cup	green onions, sliced thin
2 tbsp	sherry or shaoxing wine	½ cup	roasted peanuts, chopped
½ cup	water chestnuts, roughly chopped	½ cup	cilantro leaves
½ cup	bamboo shoots, cut into strips	8 each	Island-grown lettuce (e.g., <i>Manoa</i>), large leaves
1 tbsp	hoisin sauce		

1. Make the crispy rice: In a deep, heavy-bottomed pot large enough for deep frying, heat canola oil until 350°F. Use only enough oil to fill the pot one-third full to prevent boil-over. Don't overcrowd food as you're frying; fry in batches if necessary. Overcrowding the pot causes rice grains to clump; a drop in oil temperature will not allow the rice to puff up and crisp properly.
2. When the rice is puffed and light brown in color, remove from oil and drain on paper towels. Reserve.
3. In a large skillet, heat a little canola oil and fry the ginger, garlic and onions until light brown around the edges. Add the nairagi and hon-shimeji mushrooms and stir-fry for a minute or until nairagi is half done. Add sherry or shaoxing wine and simmer to burn off alcohol.
4. Add water chestnuts and bamboo shoots and stir fry. In a separate bowl, mix the hoisin sauce, soy sauce, oyster sauce, water, sesame seed oil, sugar, chili bean sauce and cornstarch.
5. Add this mixture to the fish mixture while stir-frying. When mixture has thickened, which should take a few seconds, remove mixture from the heat and mix in green onions.
6. Place a lettuce leaf on a plate, fill center with nairagi mixture. Sprinkle crispy rice, peanuts and cilantro on top. Serve.

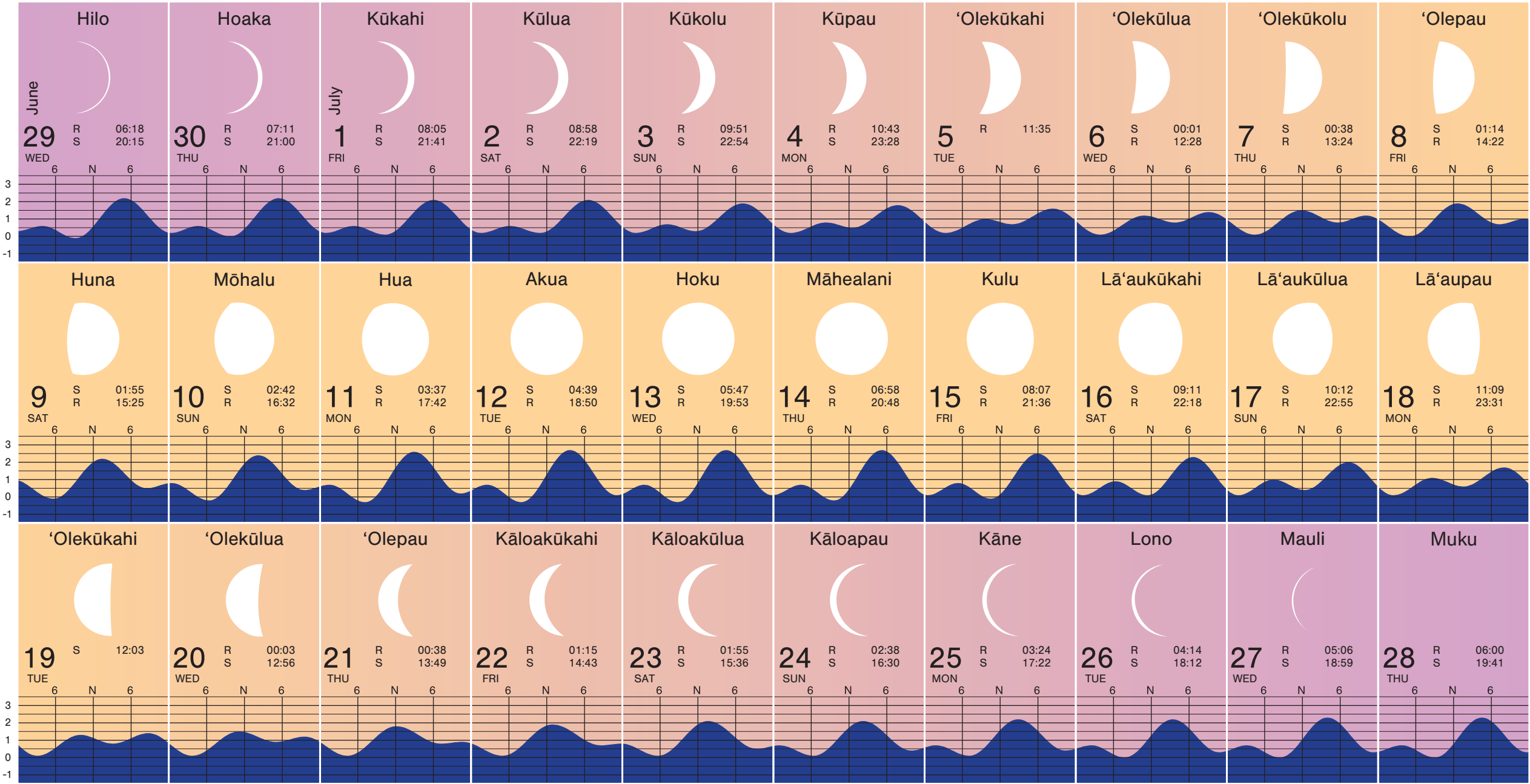
Courtesy Kapi'olani Community College Culinary Arts Department

LOCAL KNOWLEDGE: Nairagi is a seasonal fish, with a small catch window. It is considered the finest eating of all marlin species due to its tender flesh.



Hinaia‘ele‘ele

June 29 - July 28
June 29 - Iulai 28, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____

Mahimahi

Dolphinfish / Dorado ▪ **mahimahi** ▪ *Corphaena spp.*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Life span - 5 yrs.
▪ Sexually mature at 4-5 months, 17-21 in. ▪ Thought to spawn every 2-3 days, releasing between 33,000-66,000 eggs in each spawning event. ▪ Congregate around large floating objects such as logs and other marine debris. ▪ **STATE RECORD:** 82 lbs by Kathy Hunter

FISHERY INFORMATION: Caught in the longline commercial fishery (non-target species) and by trolling.

LOCAL KNOWLEDGE: Mahimahi are available most of the year, with a peak in March to May and September to November. While it is known around the world, Hawai'i mahimahi are the bestest!

CURRENT REGULATIONS: FEDERAL: Monitored, but no annual catch limit

COUNCIL MANAGEMENT: In 1991, the Main Hawaiian Islands Longline Fishing Prohibited Area was created to reduce gear conflicts between the longline and troll/handline fishermen.

STOCK STATUS:
Not overfished; not experiencing overfishing



Pan-Roasted Mahimahi with Ginger Garlic Shoyu

MAKES 6 SERVINGS

1/8 cup	shoyu (soy sauce), low sodium
2 tbsp	sugar
2 tbsp	vegetable oil
4 cloves	garlic, crushed
2 in	fresh ginger, sliced and crushed
2 lbs	fish fillets (<i>mahimahi</i> , <i>onaga</i> , <i>ono</i> , or <i>wahoo</i>)
4 stalks	green onions, sliced
4 stalks	cilantro sprigs

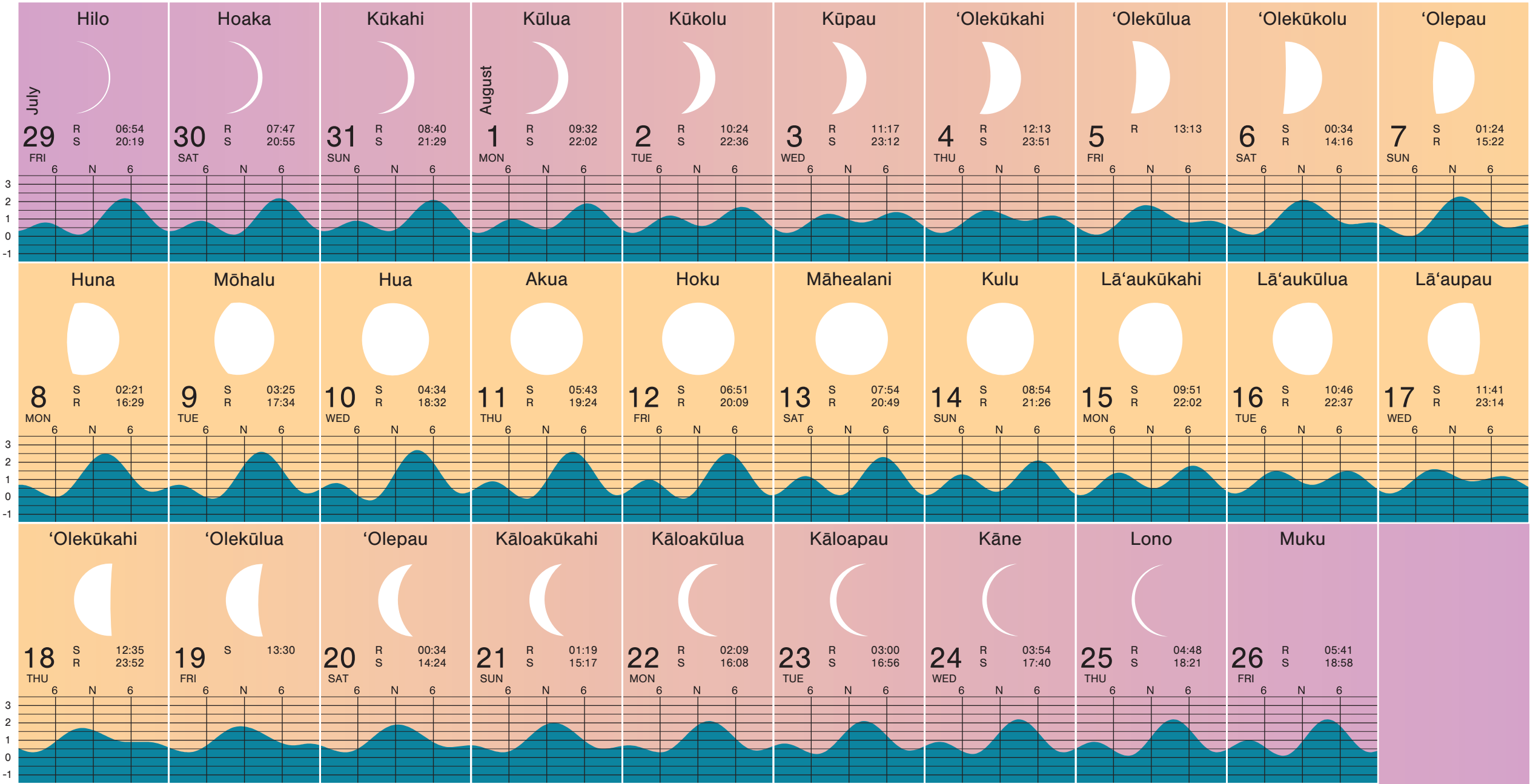
1. Combine shoyu and sugar and mix until sugar dissolves. Set aside.
2. Preheat a large skillet on medium-high heat. Add oil, garlic, and ginger. Sauté until golden.
3. Add the fillets and brown quickly on both sides.
4. Pour in shoyu mixture and cover pan tightly. Reduce heat to low and simmer for 4 to 5 minutes, or until desired doneness.
5. To serve, discard garlic and ginger and place on platter. Sprinkle with green onions and garnish with cilantro.

Courtesy Kapi'olani Community College Culinary Arts Department



Māhoe Mua

July 29 - August 26
Iulai 29 - ‘Akukake 26, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____

Monchong

Sickle Pomfret ▪ **mukau** ▪ *Taractichthys steindachneri*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - ~30 in and ~30 lbs. ▪ The oldest known was ~8 yrs. ▪ Spawn in the spring (March-May).
STATE RECORD: 23 lbs 6 oz by Mark Vierra

FISHERY INFORMATION: Commonly caught in the deep-set longline commercial fishery (non-target species) and using bottomfish deepwater handline gear with power reels. Harvested at depths >150-250 fathoms. Catches typically peak in spring.

LOCAL KNOWLEDGE: Monchong was once seen as a bycatch species and is now popular in restaurants, especially for sushi.

CURRENT REGULATIONS: **FEDERAL:** Monitored, but no annual catch limit

COUNCIL MANAGEMENT: Currently monitored as a pelagic management unit species.

STOCK STATUS:
Not overfished; not experiencing overfishing



Monchong Pomodoro MAKES 4 SERVINGS

FOR THE POMODORO SAUCE:

9 cup crushed tomatoes (*with basil leaf, if possible*)
or 3 pounds very ripe heirloom tomatoes, peeled, seeded and dice
2 tbsp extra virgin olive oil
1 clove garlic
1 tsp sea salt
freshly ground black pepper (*Tellicherry, if you've got it*)
half a bunch torn fresh basil
or 1 tbsp dried, well-ground with a mortar and pestle

FOR THE FISH:

4 pieces monchong (3-4 oz each)
salt and pepper to taste
cornstarch
2 tbsp light olive or canola oil
minced or snipped flat-leaf parsley

MAKE THE SAUCE:

1. Prepare the tomatoes if you're using fresh.
2. In a large, heavy pan such as a Dutch oven, coat the bottom with the olive oil.
3. Peel the garlic, cut into three pieces and place in pan with olive oil. Simmer over a low flame until the garlic is golden (*but DO NOT let it burn*). Press the garlic with the back of a wooden spoon to release its fragrant esters, and swish the garlic around in the oil. Then fish out the garlic and discard it.
4. Add the tomatoes to the pan all in one swift movement (*if you slowly pour, the juices may spit and splatter*). Add the salt, pepper and basil. Cook on low, stirring frequently, for 10 minutes or so; then raise the heat to medium and let the sauce cook without bubbling until the water has evaporated and the sauce is kind of jammy. Taste and correct seasonings.

PREPARE THE FISH:

1. Sprinkle monchong with salt and pepper to taste. Dredge in cornstarch until coated.
2. Meanwhile, heat oil in a frying pan over medium-high heat (*hot but not smoking*). Fry the monchong until golden brown on both sides; turn only once.
3. Serve topped with a goodly dollop of pomodoro. Or place in a pool of the sauce, if preferred. Scatter minced or snipped flat-leaf parsley over all.

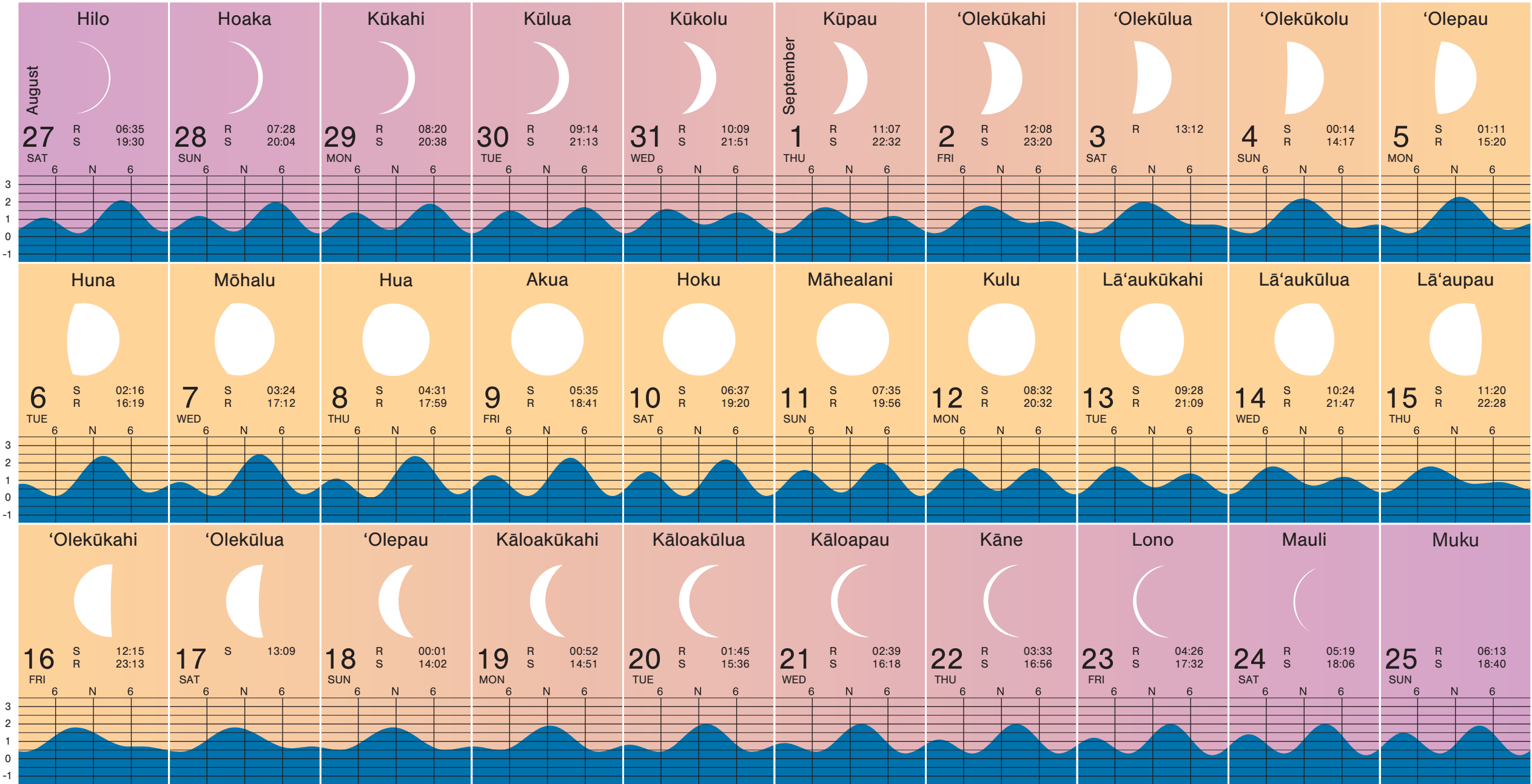
Courtesy Kapi'olani Community College Culinary Arts Department



Māhoe Hope

August 27 - September 25

‘Akukake 27 - Kepakemapa 25, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

Gindai

Brigham's Snapper • 'ūkīkiki • *Pristipomoides zonatus*

LIFE HISTORY INFORMATION AND HI STATE RECORD: The oldest known was 39 yrs and 17 in. ▪ Adults inhabit waters 40-220 fathoms and are often associated with hard, rocky seafloor habitats. ▪ Well loved by fishermen, but not usually targeted, so are uncommon in the market. ▪ **STATE RECORD:** 4 lbs 5 oz by Roger Takabayashi

FISHERY INFORMATION: Caught primarily with the vertical hook-and-line method, where weighted and baited lines are lowered and raised with electric, hydraulic or hand-powered reels.

LOCAL KNOWLEDGE: Gindai does not have a good shelf life. It is best served as sashimi on the day it's caught. Gindai is known as the best tasting bottomfish and is often kept by fishermen.

CURRENT REGULATIONS: FEDERAL: Annual catch limit
STATE: Min size - 1 lb ▪ Non-commercial bag limit - 5 total of Deep 7 species

COUNCIL MANAGEMENT: Managing the bottomfish fishery has been difficult due to insufficient fishery data. However, with cooperation between state and federal management agencies and fishermen, the Deep 7 bottomfish annual catch limit increased from 178,000 pounds for the 2007-2008 fishing year to 492,000 pounds for the 2020-2021 fishing year.

STOCK STATUS:
Not overfished; not
experiencing overfishing



Photo by PIFG BFISH Project

Grilled, Lettuce-Wrapped Gindai with Tokyo Negi

MAKES 4 SERVINGS (2 TBSP VINAIGRETTE PER SERVING)

1 cup	thin-sliced Tokyo negi (<i>green onion</i>), white parts only
2 tsp	butter, unsalted
¼ tsp	sea salt
8 each	romaine lettuce, large leaves
1 lb	gindai fillet, cut into 4, 1/2-inch thick pieces
½ tsp	sea salt
½ tsp	pepper
1 tsp	thyme leaves, fresh, minced
1 tsp	oil for brushing

1. Sauté Tokyo negi in butter on medium heat until very soft (*about 10 minutes*).
2. Meanwhile, bring a pot of water to boil. Add lettuce leaves and cook for 10 seconds. Remove leaves, drain and cool. Pat leaves dry, trim tough ends (*about bottom 2 inches*).
3. Lay 2 leaves side by side, overlapping by one-third. Spread one quarter of onion mixture in the middle. Lay one gindai fillet over leeks, and sprinkle with ¼ tsp salt, pepper and thyme to taste.
4. Roll up leaves to cover fish tightly (*like a burrito*). Brush with oil.
5. Grill for 7 to 8 minutes on each side, until lettuce has a nice brown color. Serve with roasted pepper vinaigrette (*recipe follows*).

ROASTED PEPPER VINAIGRETTE MAKES 8 SERVINGS

1	sweet red bell pepper, roasted, peeled and seeded (8 oz if using prepared)
1 clove	garlic
2 tbsp	sliced almonds, toasted
1 tbsp	red wine vinegar
½ tsp	sea salt
½ tsp	pepper
3 tbsp	olive oil, extra virgin

1. Combine pepper, garlic, almonds, vinegar, salt and pepper in a blender.
2. Blend until smooth. With blender running, drizzle in olive oil.

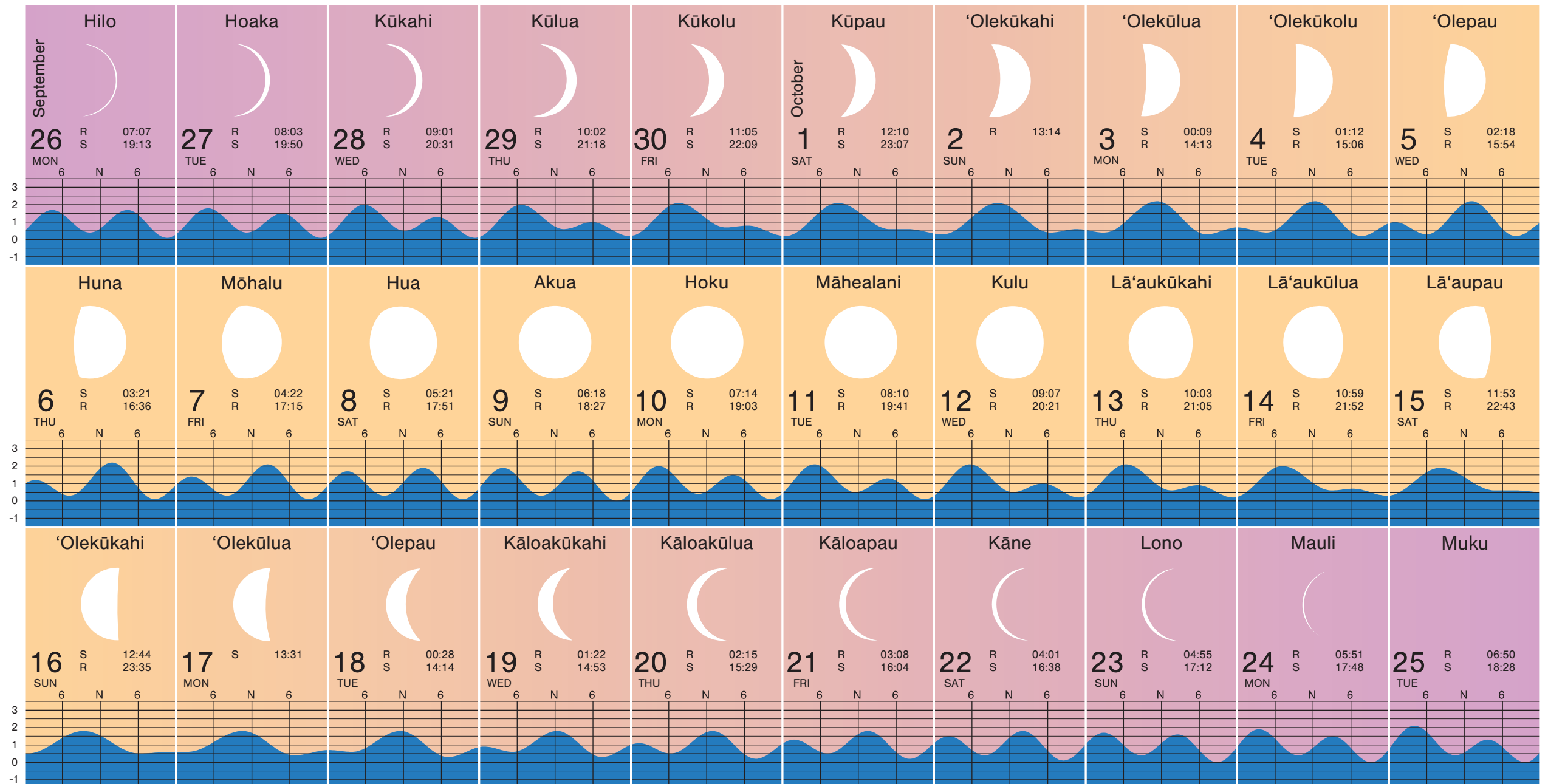
Courtesy Kapi'olani Community College
Culinary Arts Department



‘Ikuwā

September 26 - October 25

Kepakemapa 26 - ‘Okakopa 25, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

‘Ōpakapaka

Pink Snapper • ‘ōpakapaka • *Pristipomoides filamentosus*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Life span - up to 40 yrs. • Sexually mature at ~3.5 yrs. • Commonly found near rocky bottoms in deep offshore waters of 20-100 fathoms. • **STATE RECORD:** 18.5 lbs by Greg Holzman

FISHERY INFORMATION: Caught primarily with the vertical hook-and-line method, where weighted and baited lines are lowered and raised with electric, hydraulic or hand-powered reels.

LOCAL KNOWLEDGE: The sampan fleet helped to introduce ‘ōpakapaka to Hawai‘i in the early 1950s, when it was harder to sell. In contrast to onaga and uku, ‘ōpakapaka is a great entry-level species since it’s easier to catch and is available year-round. There is a market demand and it has a shelf-life of up to 2 weeks.

CURRENT REGULATIONS: **FEDERAL:** Annual catch limit
STATE: Min size - 1 lb • Non-commercial bag limit - 5 total of Deep 7 species

COUNCIL MANAGEMENT: Managing the bottomfish fishery has been difficult due to insufficient fishery data. However, with cooperation between state and federal management agencies and fishermen, the Deep 7 bottomfish annual catch limit increased from 178,000 pounds for the 2007-2008 fishing year to 492,000 pounds for the 2020-2021 fishing year.

STOCK STATUS:
Not overfished; not
experiencing overfishing



Thai Fish Soup MAKES 8 SERVINGS

2 tbsp	canola oil
1	onion, large, chopped
1	Hawaiian chili pepper (<i>nioi</i>), chopped*
2 tbsp	cilantro (<i>leaves and stems</i>) coarsely chopped
2 stalks	lemongrass, trimmed and cut diagonally into 1 in pieces
1	yam or sweet potato, cubed into ½ in pieces
1 tbsp	ginger, freshly grated
3 cloves	garlic, minced
3	limes, zested and juiced
2 cans	coconut milk (<i>15 oz can, light is OK</i>)
4 cup	low-sodium chicken broth
2 tbsp	fish sauce
2	tomatoes, cubed
1 lb	‘ōpakapaka, cubed into ½ in pieces
2 stalks	green onions, thinly sliced

* Substitute a single tiny hot pepper in place of the Hawaiian chili pepper (*nioi*), or use ¼ tsp cayenne pepper instead.

1. Heat a large pot over medium heat. Add oil and sauté onions, chili peppers, cilantro, lemongrass, yams, ginger, garlic, lime zest and juice. Stir often, cooking until vegetables are slightly softened, about 5 minutes.
2. Add the coconut milk, broth, and fish sauce and bring to a boil. Reduce heat to low and simmer for 15 to 20 minutes.
3. Add the tomatoes, ‘ōpakapaka and green onions and cook for another 5 to 8 minutes or until fish is just cooked through.
4. Remove the lemongrass and serve hot.

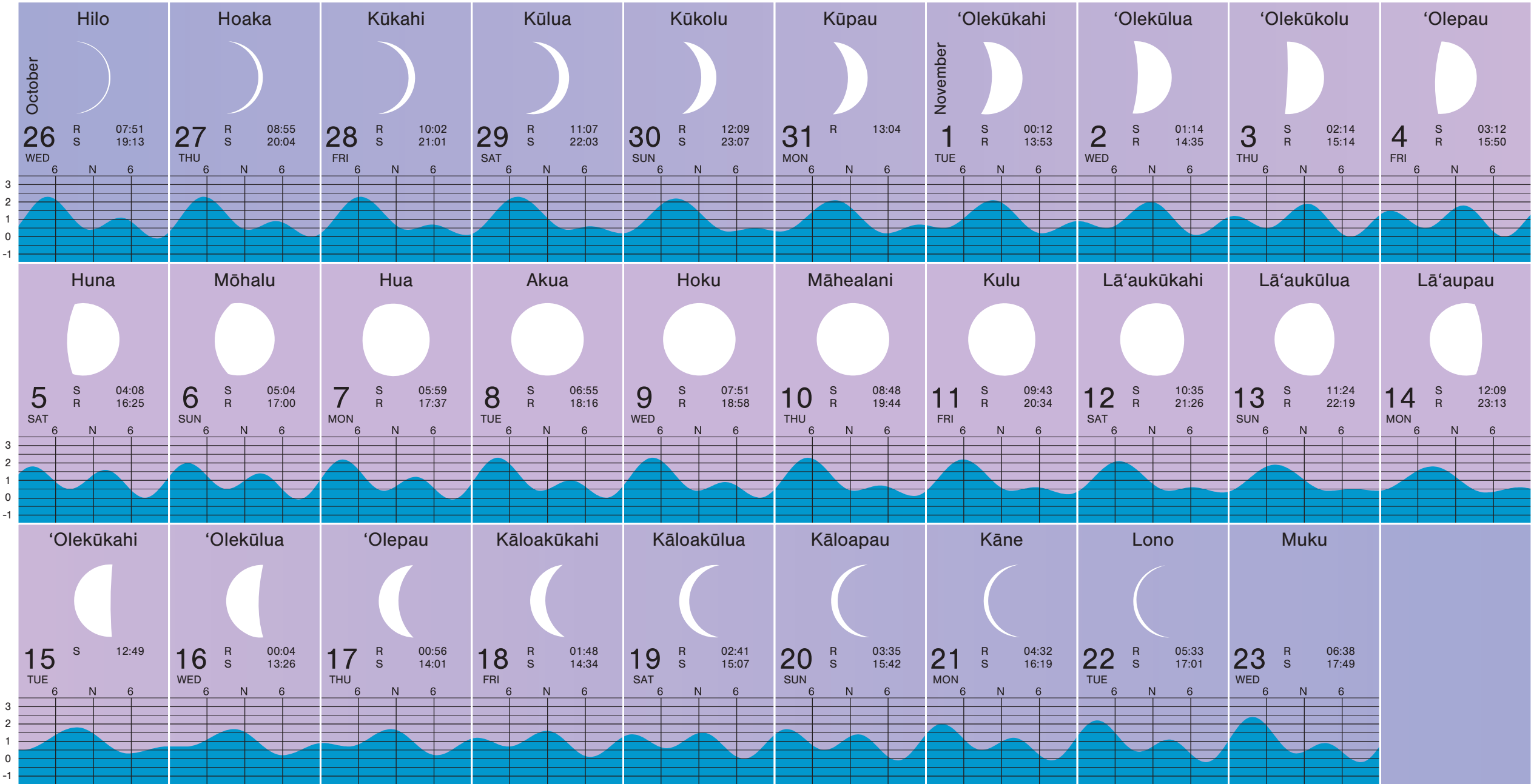
Courtesy Kapi‘olani Community
College Culinary Arts Department



Welehu

October 26 - November 23

‘Okakopa 26 - Nowemapa 23, 2022



OBSERVATIONS

ho'onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____

Skipjack Tuna

Skipjack Tuna ▪ **aku** ▪ *Katsuwonus pelamis*

LIFE HISTORY INFORMATION AND HI STATE RECORD: Size - up to 4 ft and >70 lbs. ▪ Age range - 8-12 yrs. ▪ Spawn all year in tropical waters and seasonally in subtropical waters. ▪ Females produce between 100,000-2 million eggs each time they spawn. ▪ Once fertilized, the egg can hatch in ~1 day, depending on temperature. ▪ **STATE RECORD:** 40 lbs 8 oz by David Borgman

FISHERY INFORMATION: Caught using artificial barbless lures and occasionally live bait, such as anchovies, herring, or silversides that are mainly used to attract and hold a school close to the vessel. ▪ The aku boat fishery was once the largest commercial fishery in Hawai'i, with landings exceeding 5.5 million pounds annually from 1937 to 1973.

CURRENT REGULATIONS: **FEDERAL:** Managed domestically and internationally, but no catch limit **STATE:** Min size - 3 lbs (commercial)

COUNCIL MANAGEMENT: Currently monitored as a pelagic management unit species.

STOCK STATUS:
Not overfished; not
experiencing overfishing



Skipjack Fish Burgers MAKES 4 SERVINGS

½ small onion, chopped
½ cup mushrooms, chopped
oil, for frying
1 lb ground skipjack
½ cup bread crumbs
1 egg
1 tsp Worcestershire sauce
salt and pepper, to taste
water chestnuts, chopped (*optional*)

1. Sauté onions and mushrooms in a little oil. Remove from the heat.
2. In a bowl combine all the remaining ingredients and form into patties. Pan fry for approximately 4 minutes, being careful not to overcook.
3. Serve in a hamburger bun or with rice.

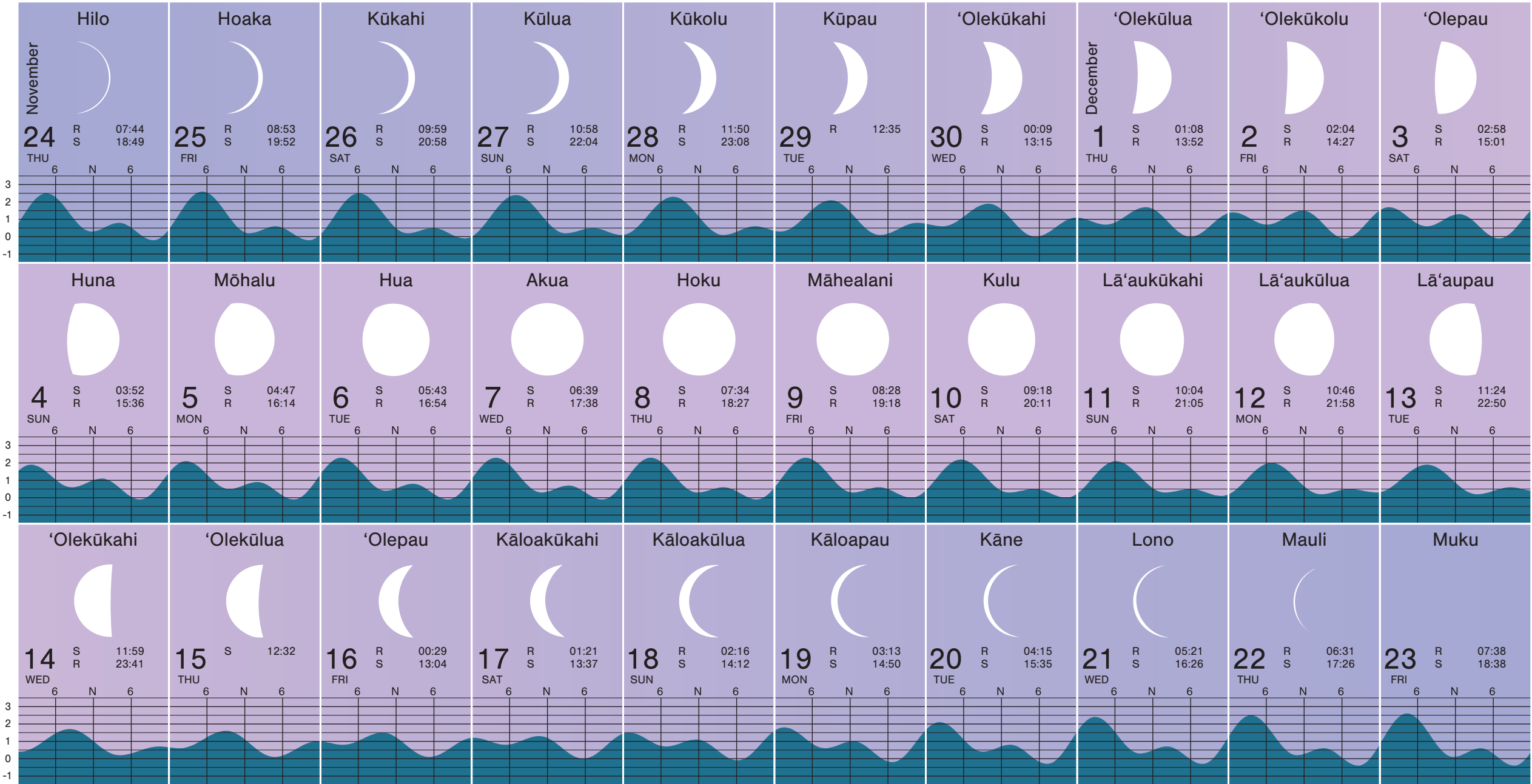
Courtesy Guam Fishermen's Cooperative Association



LOCAL KNOWLEDGE: Aku used to be the prized pelagic species "back in the day." Aku boats kept the market and cannery well-stocked. The Japan market helped to sustain this fishery. More recently, there has been a transition from aku to 'ahi, but dried aku is still in high demand.

Makali‘i

November 24 - December 23
Nowemapa 24 - Kēkēmapa 23, 2022



OBSERVATIONS

ho‘onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

Ehu

Short-tail Red Snapper • ‘ula‘ula • *Etelis carbunculus*

LIFE HISTORY INFORMATION AND HI STATE RECORD: The oldest known was 22 yrs and 20 in. • Sexually mature at ~9 in. • Commonly found near rocky bottoms in deep offshore waters of 20-100 fathoms. • **STATE RECORD:** 11 lbs 6 oz by Michael Matsunaga

FISHERY INFORMATION: Caught primarily with the vertical hook-and-line method, where weighted and baited lines are lowered and raised with electric, hydraulic or hand-powered reels.

LOCAL KNOWLEDGE: Ehu is a preferred steamed fish, with a meat consistency similar to ‘ōpaka

CURRENT REGULATIONS: **FEDERAL:** Annual catch limit
STATE: Min size - 1 lb • Non-commercial bag limit - 5 total of Deep 7 species

COUNCIL MANAGEMENT: Managing the bottomfish fishery has been difficult due to insufficient fishery data. However, with cooperation between state and federal management agencies and fishermen, the Deep 7 bottomfish annual catch limit increased from 178,000 pounds for the 2007-2008 fishing year to 492,000 pounds for the 2020-2021 fishing year.

STOCK STATUS:
Not overfished; not experiencing overfishing



Spicy Fish Soup

SERVES 8 AS A STARTER AND 12 AS A MAIN COURSE

4 tbsp	extra-virgin olive oil
2 tbsp	Cajun spice (<i>recipe follows</i>)
1 lb	ehu, filleted
2 cans	stewed tomatoes (<i>14.5 oz. can, organic or good quality Italian-style, stewed tomatoes</i>), chopped or pulsed in food processor
8 cups	vegetable broth/stock, low sodium
2 tbsp	spicy spaghetti seasoning (<i>commercial blend</i>)
2 tbsp	hot pepper sauce (<i>preferably a Louisiana hot pepper sauce, such as Crystal, not Tabasco</i>)
½ tsp	Worcestershire sauce
2 cups	Trinity (<i>recipe follows</i>)

CAJUN SPICE:

½ tsp	garlic powder	½ tsp	oregano
½ tsp	onion powder	¼ tsp	cayenne
½ tsp	paprika	¼ tsp	black pepper
½ tsp	thyme		

Blend and use as desired. Double or triple the ingredients and store in an airtight container in your spice cupboard.

TRINITY: Mince together equal amounts of celery, onion and red, yellow or orange bell peppers (*NOT green*).

1. Mix oil and Cajun spice in large zippered plastic bag. Marinate fish fillets for 10 minutes.
2. Broil fish in foil-lined pan, 3 minutes each side; set aside to cool.
3. In medium stock pot, combine tomatoes, water, spicy spaghetti seasoning, vegetable broth, hot pepper sauce and Worcestershire sauce. Bring to a simmer for about 15 minutes to incorporate flavors.
4. Gently flake fish with fork or by hand. Add fish and Trinity and simmer on low for 10 minutes.
5. Taste and correct seasonings; if too spicy, add 1/2 cup water, if more spice is desired, add Cajun spice to your own bowl. Serve hot.

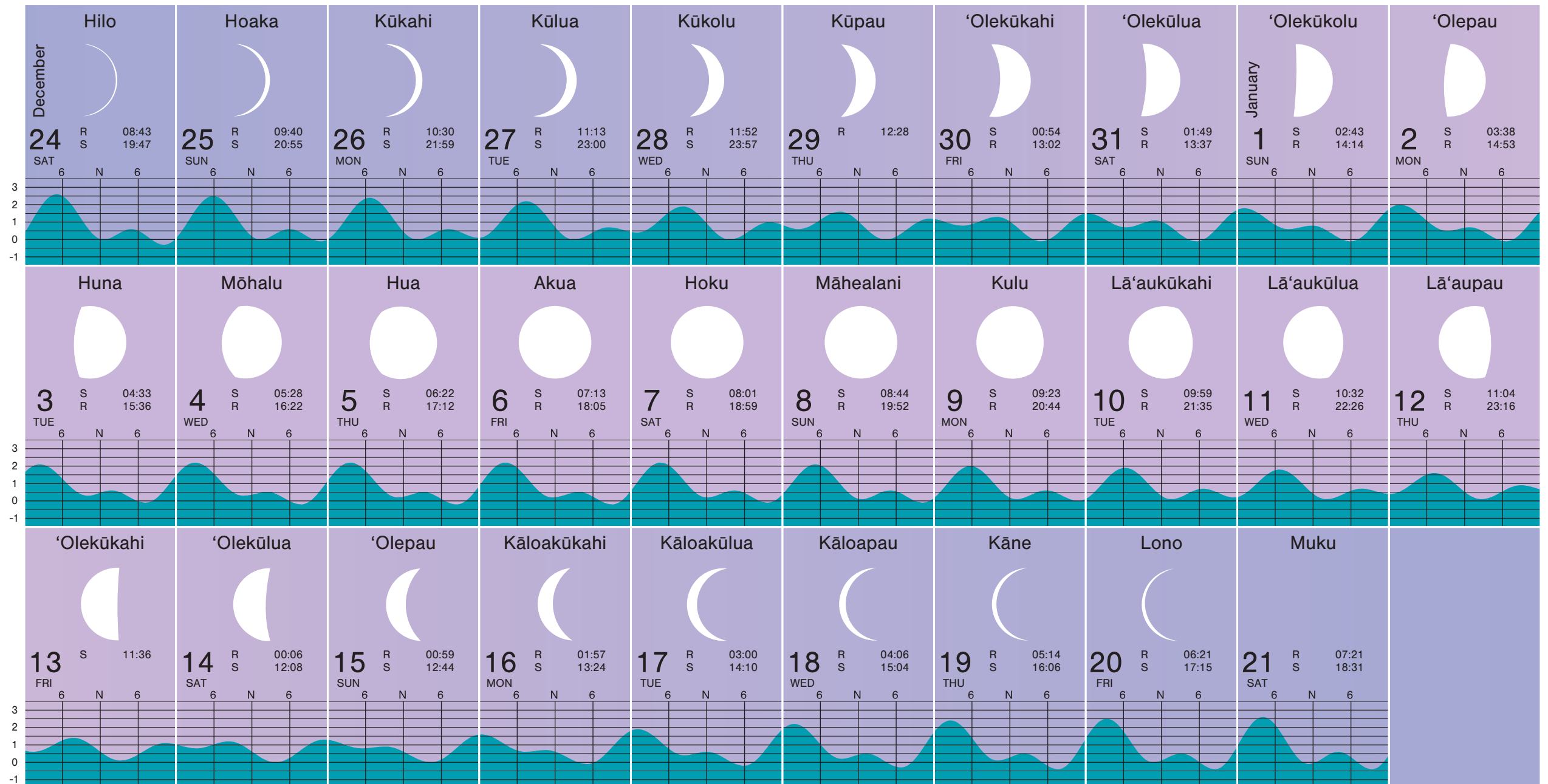
Courtesy Kapi'olani Community College Culinary Arts Department



Kā‘elo

December 24, 2022 - January 21, 2023

Kēkēmapa 24, 2022 - ‘Ianauli 21, 2023



OBSERVATIONS

ho‘onui (waxing) _____

poepoe (full moon) _____

emi (waning) _____



Western Pacific Regional
Fishery Management Council

About This Calendar

The **2022 Kaulana Mahina** (Hawai'i Lunar Calendar) features 13 pelagic, bottomfish and crustacean species managed under the Council's Fishery Ecosystem Plans. Each month gives common, Hawaiian and scientific names for each species, along with life history and fishery information, current regulations, management and stock status, and a delicious recipe to enjoy. For the stock status, a stock is experiencing overfishing when more fish are being removed than is sustainable, and is overfished when the stock population size is too low and may not be able to recover.

The literal meaning of kaulana mahina is position of the moon. In the traditional Hawaiian calendar, each malama (month) was determined by the 29.5-day cycle of the mahina and divided into three anahulu (traditional 10-day period). The first period was called ho'onui (growing bigger), beginning when the first crescent moon was visible to the naked eye. The second anahulu was poepoe (round or full). The last anahulu was emi (decreasing).

The calendar includes an observational space each month with hopes that others will take up the practice of using the calendar as well.

Traditionally, nā pō mahina (lunar phases) are used to determine when specific activities should take place, such as fishing times and spawning times when harvesting of some species was limited. Moon phase and moon month names could vary by island and moku (district). This calendar uses the moon phases for O'ahu listed in the Hawaiian Almanac by Clarice Taylor (1995. Honolulu: Mutual Publishing). The tide charts with moon rise and set times were provided by OceanFun Publishing, NZ. The lunar months, moon phases, and traditional calendar months are given in Hawaiian.

Special mahalo to calendar contributors including Council Advisory Panel members Clay Tam (chair), Gil Kualii (vice-chair), Nathan Abe, Khang Dang, Eddie Ebisui III, Carrie Johnston, Basil Oshiro, Chad Pacheco; Council staff Joshua DeMello, Amy Vandehey, Zach Yamada; Kapi'olani Community College Culinary Arts Department; Jeremy Martins; Marc Montocchio; PIFG BFISH Project; and Keoki Stender.

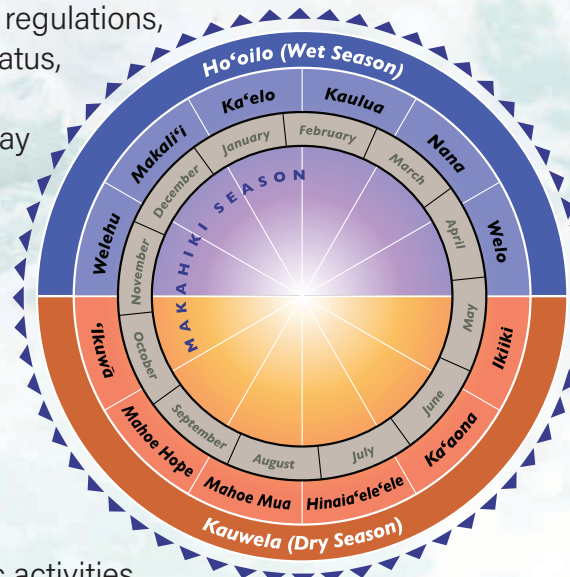
DATA SOURCES USED: greateatshawaii.blogspot.com, Hawai'i Fishing News, National Marine Fisheries Service, Shutterstock and wpcouncil.org/annual-reports.

FRONT COVER: From the boat to the table.

For an electronic version of this calendar, go to wpcouncil.org/educational-resources/lunar-calendars.

About the Council

The Western Pacific Regional Fishery Management Council has worked with communities in Hawai'i, American Samoa, Guam and the Commonwealth of the Northern Mariana Islands since 2006 to produce traditional lunar calendars to promote ecosystem-based fisheries management, support indigenous fishing and management practices, and enhance community involvement in the fisheries management decision-making process. In Hawai'i, the Council strongly supports the traditional 'aha moku system of natural resource management, which recognizes the traditional moku (districts) as a basis for cultural and community consultation, adaptive management, education, general knowledge and a code of conduct. More information and the 'aha moku system can be found at wpcouncil.org and ahamoku.org. If your moku is interested in working with the Council on a future calendar, please send an email to info@wpcouncil.org.



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Front cover: From the boat to the table.