DLNR - DIVISION OF AQUATIC RESOURCES

DAR Fish Tagging Information Newsletter

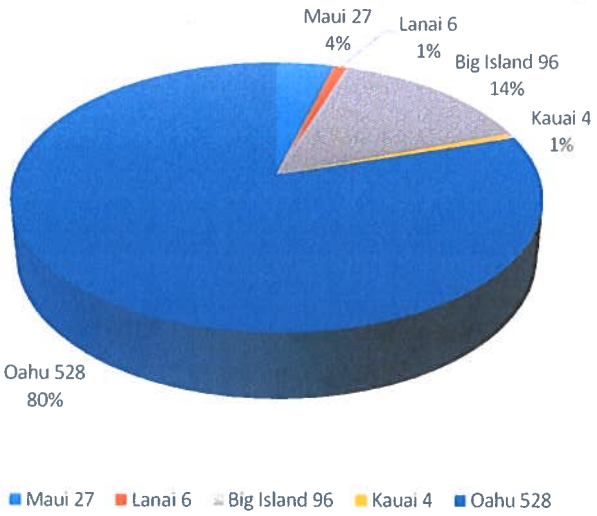
FREE!

November 1, 2018

Volume IV, Issue 1

GOATFISH TAGGING UPDATE

Figure 1. Total Number of Goatfish Tagged By Island as of August 2018



As of August 2018, we now have 175 volunteer anglers for DAR's Goatfish Tagging Project who have helped us tag 661 goatfish statewide with 26 recaptures to date. Hawaii's anglers are truly awesome!!! So now that we have a little more data, let's see if there's more of a story to tell for our goatfish ...

Table 1. Total Number of Goatfish Tagged By Species as of August 2018

Species Common Name	Number Tagged	Size Ranges (inches Fork Length	Number Recaptured	Days of Freedom
White weke	346	5.5 to 14	19	9 to 481
Red weke	72	6.75 to 12.2	3	73 to 112
Weke ula	7	10 to 10.2	0	-
Weke Pueo	19	8.5 to 13	1	?
Nightmare weke	13	6.75 to 11.5	0	-
Moana	144	4.5 to 10.25	1	1
Kumu	30	7.5 to 12	2	? to 8
Moana kali	15	6 to 13.5	0	-
Munu	7	7.5 to 10	0	-
Malu	5	7.5 to 11.2	0	-
TOTAL	**658**		**26**	

Figure 2. Tagged Moana at Reef Runway.
Photo courtesy of Dr. Matthew Parry, NOAA

Growth Rates:

With 26 recaptures so far we are slowly, but steadily getting a little more information each time. For the white weke, there were 19 recaptures total with 23 from Oahu and 3 from Hawaii Island. The data for these recaptures show that at 9 to 78 days at liberty there was no measurable growth rate. However, from 88 to 481 days at liberty growth rates, were calculated at a range between 0.5 to 1.0 inches in fork length which works out to an avearage yearly growth rate of 1.3 inches per year (= 0.12 inches per month). This seems to be a rather slow growth rate, but according to the available growth curve, white weke will grow around 1 inch per year so the growth rate from our recapture data closely matches the available growth curve.

INDEX

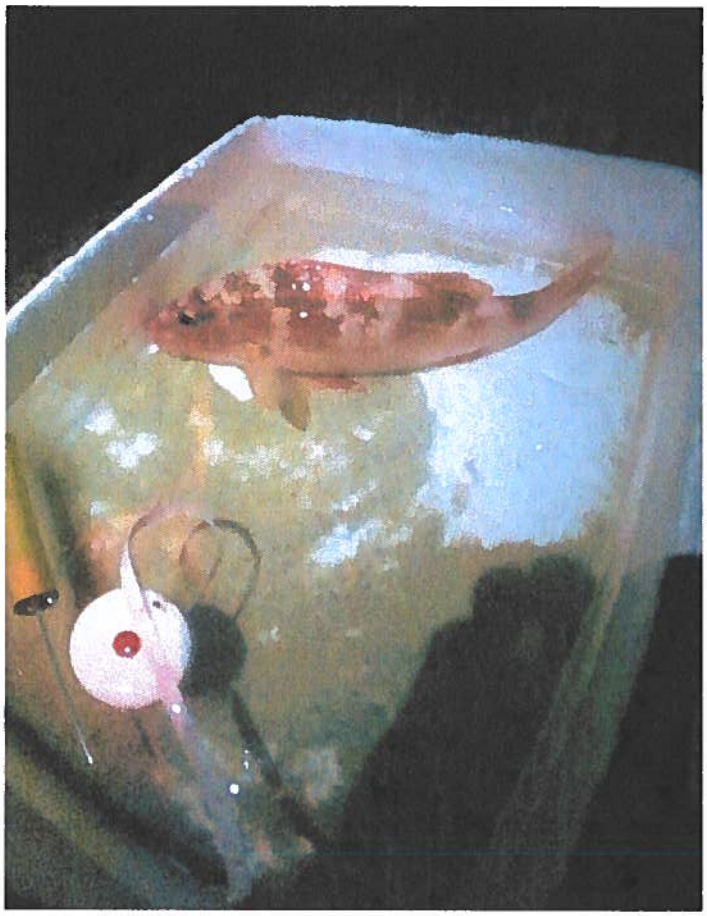


Figure 3. Tagging Kumu at Kaneohe.
Photo courtesy of Kelvin Otaguro

All but one of the white weke recaptured measured between 7 to 9 inches fork length at recapture. This places them into the 2, 3, and 4 year size classes respectively. They are reported to be sexually mature when they are over 6 inches in fork length which means all of the recaptured white weke are adults and capable of spawning. More recapture data is needed to determine any seasonal growth and/ or spawning.

For the red weke, we are still at only 3 recaptures with days at liberty ranging from 72 to 112. Average yearly growth based on these 3 recaptures calculates to about 2 inches per year or 0.17 inches per month. All 3 fish averaged 8 inches fork length which places them in the 1 year old age category. The calculated growth rate is much slower than what the available growth curve shows. There is a definite need for more recapture data for this species.

Other recaptures include 1 moana, 1 weke pueo, and 2 kumu. All three were between 7 to 8 inches in fork length with days of liberty at less than 9 days. Absolutely more recapture data is needed for these 3 species.

Migration:
No migration patterns seen yet in any of the weke species. With that being said, if anyone is interested in volunteering for the Fish Tagging Project for Goatfish and would like to request a Goatfish Tagging Kit, please choose one of the following options:

1) For phone requests call (808) 587-0593.

2) Email requests may be sent to:
<fishtagging@hawaii.gov>

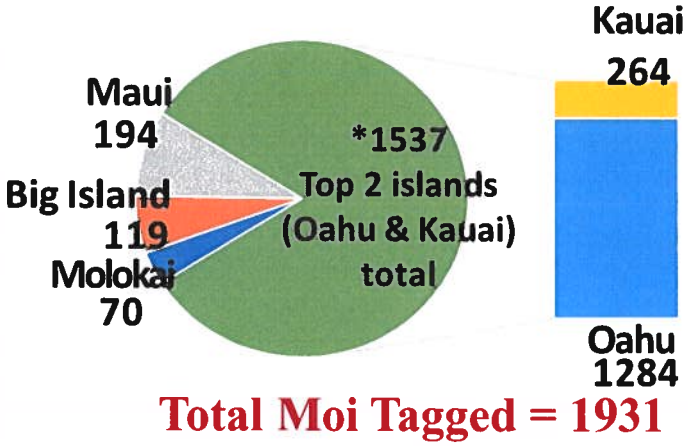
3) For mail-in requests, write down on a piece of paper your name, address, phone number and email address and mail to:

DAR Fish Tagging Project
Division of Aquatic Resources
1151 Punchbowl St., Rm. 330
Honolulu, Hawaii 96813

MOI TAGGING UPDATE

As of August 2018, we have 267 volunteer moi taggers throughout the state who have tagged a total of 1931 moi with 56 recaptures. Below is a pie chart showing the numbers of moi tagged on each island so far: Recaptures are still few and far between, but holding steady at a 2.9% recapture rate.

Figure 4. Total Moi Tagged By Island



The Division of Aquatic Resources has been doing a shoreline survey two days a month of the Waikiki and Diamond Head area for several decades. The survey encompasses sampling of all species of fish observed, with measurements of fish caught with a small mesh throw net. As of 1999 our survey has been concentrating to collect better data on the Moi (*Polydactylus sexfilis)* in the area

and as a result we have numbers and measurements of Moi in the area.

It seems that between the years 2004 to 2009 there was a spike in the amount of Moi sampled in the area. The Moi Tagging Project began in 2006. Between 2006 to 2009 a total of 737 Moi were tagged by project volunteer anglers. To date, this is the largest amount of Moi tagged within a four year period since the Moi Tagging Project began. This seems to correlate with the shoreline sampling data for the Waikiki-Diamond Head area (see Figure *5a).*

The size range of the Moi in the area meaured between 1.1 inches to 15.7 inches in fork length with the average being 2 inches. Since the survey is a shoreline survey most of the fish caught were within 20 to 30 feet of the high water mark.

Data was also collected for the occurrence of Oama (juvenile Mulloidichthys flavolineatus) along the Waikiki-Diamond Head Shoreline Area. Totals for the influx of Oama (see Figure 5b) differs from that of the Moi. Some would think that the juveniles of both species would have a similar pattern of recruitment into the nearshore area except the Moi number

Figure 5a. Total Moi Sampled Along the Waikiki-Diamond Head Shoreline (1999 to Present)

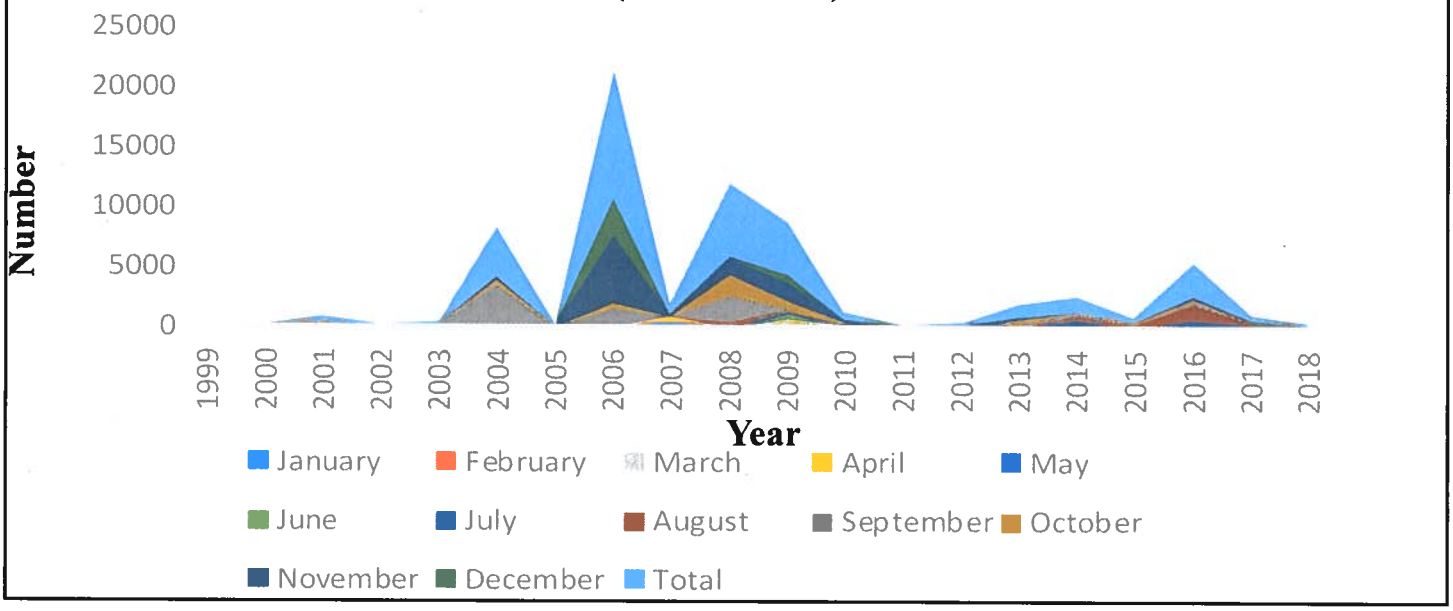
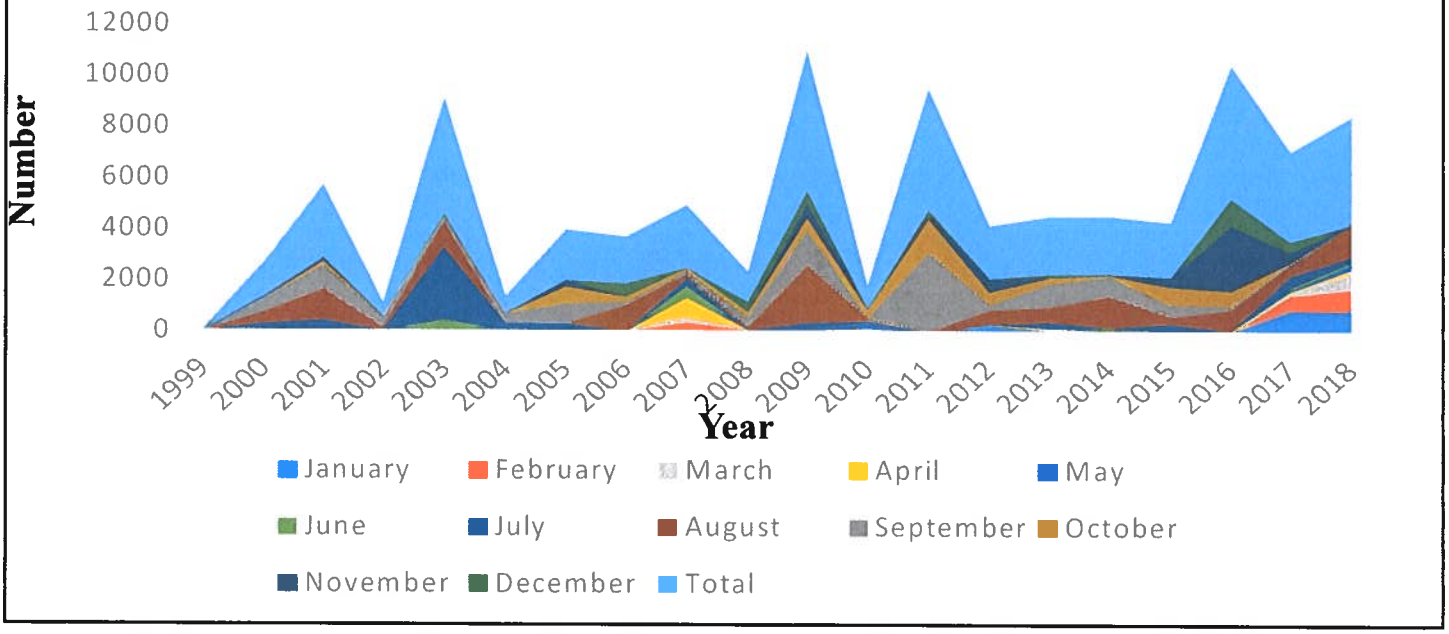


Figure 5b. Total Oama Sampled Along the Waikiki-Diamond Head Shoreline (1999 to Present)



totals would be a lot smaller. Comparing the two graphs, the peak totals for each species occur within different years where the Moi peaks during the years that the Oama numbers are low. Regardless of highest peak totals for the oama, when an influx of Moi occurs with high numbers, those peaks are even higher than the highest totals of oama for any given year.

Conducting this survey allows us to continue monitoring the area for fluctuations in the populations of fish species along the shoreline. Over time we hope to accumulate more data that will allow us to determine if there is a pattern for Moi recruitment into our nearshore areas.

ULUA & PAPIO TAG RECAPTURES

Even though the DAR Ulua Tagging Project ended in June 2012, we will continue to honor all recaptures as they are reported to us. Within the last 12 months anglers have reported the following 13 recaptures: 2 kahala (one recaptured on Oahu and one recaptured on Hawaii Island), 10 omilu (7 recaptured on Oahu and 3 recaptured on Hawaii Island) and 1 white ulua (recaptured on Oahu) - no channel crossers reported.

Table 2. Two Kahala Tag Recaptures Within the Last 12 Months

	Range	Average
Fork Length Tagged	12 to 40 inches	26 inches
Fork Length Recaptured	21 to 57 inches	49.5 inches
Days of Freedom	185 to 2155 days (= approx. 0.5 to 5.9 years)	1170 days (= approx. 3.2 years)

Table 3. Ten Omilu Tag Recaptures Within the Last 12 Months

	Range	Average
Fork Length Tagged	8 to 23 inches	13.54 inches
Fork Length Recaptured	8 to 24 inches	14.51 inches
Days of Freedom	58 to 376 days	163.43 days

Table 4. One White Ulua Recapture Within the Last Twelve Months

	Range	Average
Fork Length Tagged	34 inches	same
Fork Length Recaptured	37.75 inches	same
Days of Freedom	2767 days (= approx. 7.6 years)	same

Mahalo to all of you who have reported your recaptures. Please continue to report your recaptures as the data is still important to us providing valuable information on growth and movement for these species.

YELLOWTAIL OR HAMACHI?

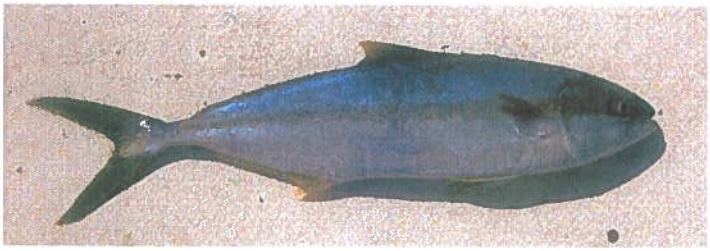


Figure 6. Yellowtail Amberjack a.k.a. Hiramasa caught at Haleiwa. **Photo courtesy of Edward Nakamura**

Earlier this year we've had several reports of Yellowtail Amberjack showing up along Hawaii's shoreline. Not to be confused with Yellowtail which is the Japanese Amberjack, known as Hamachi, both fish are in the same family as the more commonly seen Kahala. The Yellowtail Amberjack is rarely seen in Hawaiian waters but every so often they do show up as they are doing this year in 2018. On Oahu, volunteer angler, Darren Ishikawa reported that a friend of his, Edward Nakamura, caught a Yellowtail Amberjack at Haleiwa and that several have been reportedly caught at Waimea Bay also. Diver John Chang also reported catching a Yellowtail Amberjack at the Sea Tiger Shipwreck location on the South Shore of Oahu. Other fishermen as well have been reporting an unusual abundance of Yellowtail Amberjack during this past winter season. It's a mystery as to why we're seeing Yellowtail Amberjack showing up this year.

These two Yellowtail Amberjack pictured above were caught sometime between February and March of this year. It was during this time that we were at the tail end of the La Nina

event of 2017-18 which ended in April 2018 so it's possible the La Nina could have influenced the influx that we were seeing of Yellowtail Amberjack. However, another Yellowtail Amberjack was caught at Waimea Bay during September where weather patterns are indicating the beginnings of a weak El Nino event so the earlier La Nina is apparently not the only event influencing this influx of Yellowtail Amberjack.

La Ninas, like El Ninos, can shift habitat ranges due to temperature changes, changes in weather patterns, ocean current patterns, etc., so if the environment somehow changes, that could influence a shift in abundance for some species of fish that we see from time to time. Unusual things reported by our volunteer anglers like the yellowtails that you've been seeing, omilus biting in the evenings, small (4-inch) papio schools in March, along with lots of other unusual observations, definitely indicate that there are some changes happening out there in the ocean. How everything relates together causing all of these changes is still an unsolved mystery and it's hard putting all the pieces of the puzzle together to solve that mystery.

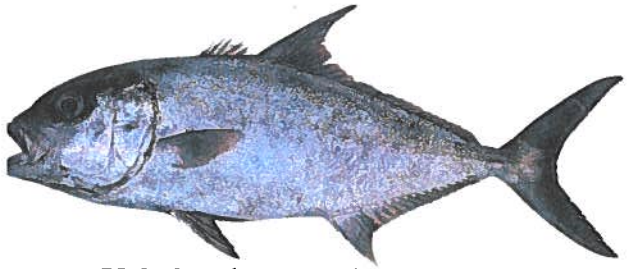
So how do we tell all our Kahala cousins apart? We have 3 different types of Kahala in Hawaii:

Kahala, Greater Amberjack
Seriola dumerili

DESCRIPTION
Bluish to olive gray dorsally sahding to silvery below; dark yellowish band through the eye; lateral yellowish stripe sometimes present; tip of pelvic and anal fins often white; front of second dorsal fin twice the height of the first dorsal fin.

SIZES
Length: will reach a length of up to 6 feet.
Weight: up to about 120 lbs., maximun known weight is 178 lbs.

LIFESTYLE
Habitat: Inhabits deep seaward reefs. Usually inhabits the inner reef as well as the outer slopes of the island shelf.
Diet: Diurnal and nocturnal, feeds on fishes, squids and other invertebrates
Life Span: maximum known age in captivity is 11.6 years

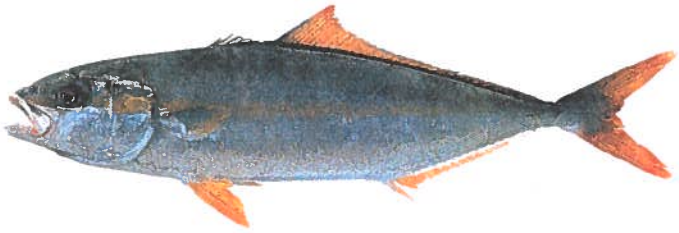


Kahala, Almaco Jack, Kampachi
Seriola rivoliana

DESCRIPTION
Bluish to olive gray dorsally sahding to silvery below; dark yellowish band through the eye; lateral yellowish stripe usually present; leading edge of the pelvic fins and margin of the anal fin is white; front of second dorsal fin is about four times the height of the first dorsal fin.

SIZES
Length: will reach between 47 to 63 inches in length.
Weight: angling record is 132 lbs.

LIFESTYLE
Habitat: Inhabits depths between 3 to 804 feet, tends to range in deeper water in warmer seas.
Diet: Feeds mainly on fishes, but also on invertebrates
Life Span: 26.3 years.



Kahala 'opio, Yellowtail Amberjack, Hiramasa
Seriola lalandi

DESCRIPTION
Broad yellow stripe running across the body from the front of the snout through the eye to the base of the tail; top part of body above the stripe usually silvery blue-green, body below the yellow stripe is silver; front part of the second dorsal twice the height of the first dorsal fin; pectoral fins are shorter than pelvic fins; fins are yellow to yellowish brown.

SIZES
Length: will reach 59 inches in length but can reach 98 inches
Weight: world angling record is 114.6 lbs.

LIFESTYLE
Habitat: Benthopelagic (Living and feeding near the bottom as well as in midwaters or near the surface.) in coastal and oceanic waters, solitary or in small groups and can be found near rocky shores, reefs and islands. Schools of juveniles are generally found in offshore waters.
Diet: Feeds on small fish, squids and crustaceans
Life Span: approximately 22 years

The Yellowtail Amberjack is often confused with the Japanese Yellowtail that we all know as Hamachi. So far there have been no confirmed reports that the Hamachi has been established in Hawaiian waters. Also known locally known as Hiramasa, you can tell the difference between the Hiramasa and the Hamachi by looking at the length of the pectoral fins compared to the dorsal fins. For the Hiramasa, the pectoral fins are shorter than the pelvic fins while the pectoral fins on the Hamachi are almost equal to the length of the pelvic fins.

Hamachi, Japanese Yellowtail, Japanese Amberjcak
Seriola quinqueradiata

DESCRIPTION
Similar in color to the Hawaiian Yellowtail, the body also has a longitudianl yellows tripe running from the snout, though the eye and to the base of the tail; lacks scutes on the lateral line; pectoral and pelvic fins are almost equal in length. Endemic to Japan.

SIZES
Length: maximum length is 59 inches.
Weight: up to 88 lbs.

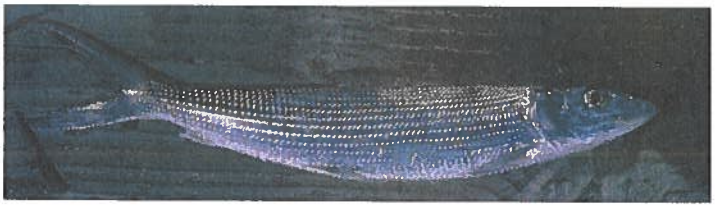
LIFESTYLE
Habitat: reaches depths over 300 ft.
Diet: feeds on fishes and small microorganisms
Life Span: approximately 9 years

In Japan juvenile Hamachi are collected and raised in captivity for aquaculture and marketed fresh for sashimi. The texture of the Hiramasa is similar to the Hamachi, but leaner with less fat. Neither of these fish have been reported for causing ciguatera poinsoning but the Kahala and Kampchi have both been implicated with causing ciguatera fsih poisoning.

UH MANOA, FISHERIES ECOLOGY RESEARCH LAB OIO TAGGING PROJECT

Many of you have been asking if DAR has taken over the Oio Tagging Project that was run by the Fisheries Ecology Research Lab at UH Manoa. The short answer would be "No." DAR has not taken over the UH Oio Tagging Project, but has agreed to continue to collect all incoming Oio tagging data and honor all Oio recaptures for the time being. No new Oio tags will be distributed at this time. When resources become available, DAR will consider adding Oio to its list of target species for tagging by volunteer anglers. For those of you that have any remaining tags from the UH Oio Tagging Project, please contiue to use them for tagging Oio and you can report your tagging data to DAR by phone at (808) 587-0593 or by email at <fishtagging@hawaii.gov>.

The Oio fishery is the second biggest recreational fishery in the state directly right behind the Ulua and Papio fisheries. More commonly known as Bonefish, these fiah are found in nearshore tropical waters all over the world. Bonefish typically occur on shallow sandy flats but will often move into brackish water environments. Often times they can be found in extremely shallow water, sometimes with their tails sticking out of the water as they search for food in the sand. They mainly feed on small worms, mollusks and crustaceans that live in the sand and occasionally on small fishes. There are two species of Oio that occur in Hawaii:



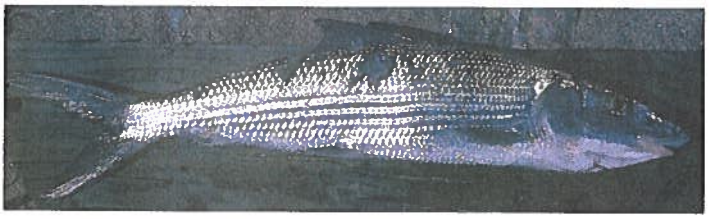
Oio, Shortjaw Bonefish, Roundjaw Bonefish
Albula glossodonta

DESCRIPTION
Silvery body with a black mark on the underside of the snout, front of the lower jaw is rounded in shape.

SIZES
Length: will reach 27.5 inches in length. Maximum size recorded at 35.4 inches
Weight: maximum weight known is 19 lbs.

LIFESTYLE
Habitat: will occur from brackish water areas to depths of

about 30 ft. Inhabits mud flats, mangroves and sandy laDiet:: feeds mainly on inverttebrates, mollusks and small crustaceans
Life Span: approximately 28.3 years



Oio, Longjaw Bonefish, Sharpjaw Bonefish
Albula virgata

DESCRIPTION
Silvery body with a cheveron-shaped black mark on the tip of the snout, a yellow spot at the upper portion of the base of the pectoral fin, front of the lower jaw is pointed.

SIZES
Length: will reach between 12 to 15.75 inches in length.
Weight: maximum weight unknown. Hawaii Fishing News Hawaii State Record Fish listing shows 11.12 lbs

LIFESTYLE
Habitat: marine; reef associated, occurs in deeper channels and bays
Diet: feeds mainly on invertebrates, crustaceans, sea cucmbers and fishes
Life Span: longest known life span is 11 years

INTERESTING FACT
The Sharpjaw Oio is an endemic fish to Hawaii which means that it's found only here in Hawaii and no where else in the world.

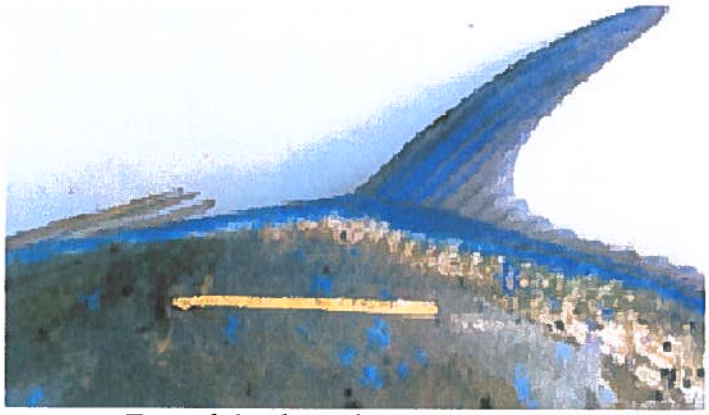
OIO CROSSES KAIWI CHANNEL!

The Fisheries Ecology Research Lab's Oio Tagging Project has a channel crosser! Channel crossers always amaze us because distance they need to swim as well as the predators that they are exposed to makes you wonder how they manage to navigate to another island in one piece.

This particular Oio is a Roundjaw Oio that was tagged by Doug Lum in Kaneohe Bay, Oahu at 25.5 inches fork length on Aug. 19, 2011. 6.2 years (=2252 days free) later it was recaptured at Kamalo on Molokai on Oct. 18, 2017 by Zac Crowder. This fish traveled approximately 74 miles and measured 27 inches fork length upon recpature.

Figure 7. Angler Zac Crowder with Roundjaw Oio Tag No. 10037 tagged on Oahu and recaptured on Molokai. **Photo courtesy of Capt. Clay Ching**

REMINDERS FOR TAGGERS



Tagged Omilu with Tag No. P64294.
Photo courtesy of Kewalo Keiki Fishing Conservancy

FISH TAG RECAPTURES
If you happen to catch a tagged moi or ulua/papio, please call our recapture hotline at 832-5003 moi recaptures and 587-0593 (ulua, papio and goatfish recaptures or email us your recpture data at <fishtagging@hawaii.gov>. DAR will award each angler for each recapture with the following information:

1) WHO (angler name)
2) TAG NO (tag i.d. no.)
3) WHEN (date)
4) WHERE (locale caught)
5) TIME (time caught)
6) SIZE (fork length)
7) FISH (species)
8) KEPT OR RELEASED

DAR FISH TAGGING PROJECT VOLUNTEER
Interested in becoming a volunteer tagger for the DAR Fish Tagging Project? Call Annette Tagawa at 587-0593 or request by email at fishtagging@hawaii.gov.