DLNR - DIVISION OF AQUATIC RESOURCES

DAR Fish Tagging Information Newsletter

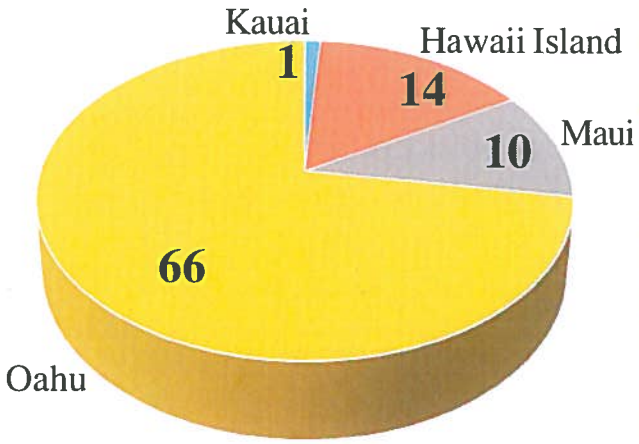
FREE!

May 1, 2017

Volume III, Issue 1

SO HOW ARE WE DOING? SO FAR SO GOOD

Figure 1. Total Number of Volunteeer Anglers By Island as of March 2017



The Goatfish Tagging project is off to a good start with 91 volunteer anglers tagging a total of 295 goatfish tagged statewidesin July 2016. The most common goatfish tagged appears to be the White Weke comprising 57% (168 individual fish) of the total fish tagged and released so far (see Table 1). Next in line is the red weke with 19 fish tagged and released (=14.7%) and coming in third with 16 fish tagged and released (=12.4%) is the Nightmare weke.

White weke

The 80 White weke that were tagged and released measured between 7 to 13.5 inches in fork length indicating that there was a good range of mature fish along the shoreline. Oama season (juvenile white weke less than 7 inches FL) was fairly mild this year with reports that small schools were seen along the shoreline in August.

Red weke

The Red weke tagged and released along the shoreline indicate that they are all juveniles measuring under 9.5 inches FL. Fish at these sizes are generally 1 year or less in age. Are the larger adult Red weke located further away from the shoreline? Only time and tagging efforts will tell.

Obake weke

A total of 16 Obake weke measuring between 7 to 11.5 inches FL were tagged and released. This size range also indicates that these fish were all mature. However, unlike the White weke, no one has ever reported seeing any juveniles along the shoreline. Where the juveniles reside is another mystery that needs to be solved.

RECAPTURES

We have success!!! The goatfish seem to be handling the tagging process pretty well as there have been 10 recaptures so far with 6 White Weke, 3 Red Weke, and 1 Moana. The White Weke were 7 to 9 inches fork length when they were originally tagged. Days of freedom for the White Weke range from 9 to 182 days. Growth rates were minimal with only one White Weke exhibiting a 0.5 inch growth over 88 days. The Red Weke were between 7 to 8 inches in fork length when they were originally tagged with days of freedom ranging from 72 to 112 days. the growth rate for the Red Weke ranged from 0.08 to 0.24 inches per month. The Moana was tagged at 8 inches fork length and recaptured the next day. All fish were tagged and recaptured within the same location. We look forward to getting more recaptures over time to shed more light on information related to their growth, travel and distribution.

Table 1. Total Number of Goatfish Tagged By Species as of March 2017

Species Common Name	Number Tagged	Size Ranges (inches Fork Length	Number Recaptured	Days of Freedom
White weke	163	7 to 13.5	6	9 to 182
Red weke	55	7.25 to 12.2	3	73 to 112
Weke ula	2	10 to 10.2	0	-
Nightmare weke	19	8 to 11.75	0	-
Moana	34	7 to 10.25	1	1
Kumu	8	8.75 to 12	0	-
Moana kali	4	7 to 9.4	0	-
Munu	2	8.5 to 9.6	0	-
Malu	3	8.8 to 11.2	0	-
TOTAL	**290**		**10**	

Figure 2. Areas On Oahu Where Goatfish WereTagged & Released

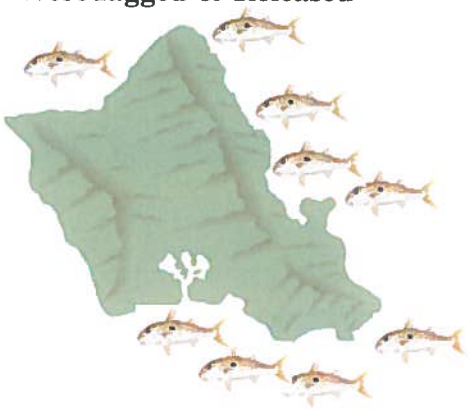


Figure 2. Areas On Maui & Lanai Where Goatfish WereTagged & Released

Figure 3. Areas On Hawaii Island Where Goatfish WereTagged & Released

POSTERS AND T-SHIRTS

A poster specifically designed by Les Hata for the DAR Fish Tagging Project for Goatfish is awarded to any angler who recaptures a tagged goatfish and reports the recapture information to us and also to any volunteer angler who has tagged and released at least 5 goatfish for the project.

In addition, a tshirt specifically designed for the DAR Fish Tagging Project for Goatfish by Derek Wada of Nature Prints Hawaii is awarded to any angler who recaptures a tagged goatfish and reports the recapture information back to us.

A deeply sincere MAHALO to both Les and Derek for lending their artistic talents in helping to promote DAR's new Fish Tagging Project for Goatfish!

HAVE YOU EVER NOTICED?

Did you know that there are two types of weke pueo found in Hawaiian waters? One of them is native while the other one was thought to be accidentally introduced.

How to tell the difference between the two:

The subtle differences between these two species lies in the banding patterns found on the body, tail and primary dorsal fin.

In the name Weke pueo, the Hawaiian word "pueo" means "owl". This name was probably given to this

fish by the Hawaiian people because of the similarity of the stripes on the tail to the bars of the Hawaiian owl's feathers.

The native weke pueo has two stripes running along the side of its body where the upper stripe is orange running from the eye to the upper base of the tail while the lower stripe is yellow and narrower running from the corner of the mouth to the lower base of the tail. In addition, the upper lobe of the tail have 6 to 7 dark horizontal stripes and the lower lobe has 4 or 5 dark horizontal stripes. The dorsal fins have several dusky orange bands.

***Upeneus taeniopterus* a.k.a Weke pueo**
NATIVE

The introduced weke pueo or Striped Goatfish was thought to have been accidentally introduced from the Marquesas Islands along with the Marquesan sardine when it was introduced to Hawaii in 1955. However, another school of thought exists speculating that the Striped Goatfish could have naturally dispersed to the Hawaiian Islands from the waters of Japan where it naturally occurs. The world may never know for sure how it got to Hawaii in the first place, but we do know that it is definitely here to stay.

The introduced Striped Goatfish has 4 orange-yellow stripes running along the side of its body. The upper lobe of the tail has 5 dark horizontal stripes while the lower lobe has 3 dark bands with the band closest to the lower tip of the tail being the darkest and twice as broad as the others. The primary or first dorsal fin has two yellowish brown bands with the tip of the fin broadly black.

***Upeneus vittatus* a.k.a Striped Goatfish**
INTRODUCED

Interestingly, the native Weke pueo have other more common names such as 'obake weke' ('obake' is the Japanese word for 'ghost') and 'nightmare weke'. These other names are more commonly used among the local fishermen because this fish is known for causing hallucinations or nightmares when eaten. The head of this fish in particular has been associated with having a poisonous quality.

If the Weke pueo causes hallucinations and nightmares, what about the introduced Striped Goatfish? It seems that this fish is consumed in other areas where it occurs naturally and has been listed as being harmless to humans. However, no one has any idea if the Striped Goatfish being in Hawaiian waters has the same risk factors for causing hallucinations or nightmares like the native Weke pueo can. When in doubt, the rule of thumb would be it seems better to be safe and avoid eating the Striped Goatfish rather than sorry by taking a chance with eating this fish.

Taape or Weke?

If you ever see a fish that looks like a taape but seems a little unusual, you may possibly be looking at the Mimic Goatfish. So far only one specimen has been caught by a fisherman on Kauai in October 2004. Just like the taape, the body is yellow with narrow blue stripes. However they do have barbels which characterize them as goatfish. They are called the "Mimic Goatfish" because it mimics the taape with their color pattern blending in with the taape schools. During the day it can be found schooling with the taape. Hiding among the taape may offer some protection from predators who may prefer to eat the less spiny goatfish rather than the taape. Mixed among a school of taape, it's not always easy to tell them apart from each other. The best way to tell them apart is to look at the back edge of their tail. The tail of the Mimic Goatfish is forked while the the tail of the taape is truncate with a straight edge. See if you can tell the taape apart from the Mimic Goatfish in the photo below:

Mulloidichtys ninicus
a.k.a Mimic Goatfish

So far only one specimen has been caught in Hawaiian waters so if you happen to see and/or catch the Mimic Goatfish, please do give us a call at (808) 587-0087 or (808) 587-0593 as we're looking to see if there are more of them here in Hawaii.

If anyone is interested in volunteering for the Fish Tagging Project for Goatfish or Moi and would like to request a Fish Tagging Kit, please choose one of the following options:

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

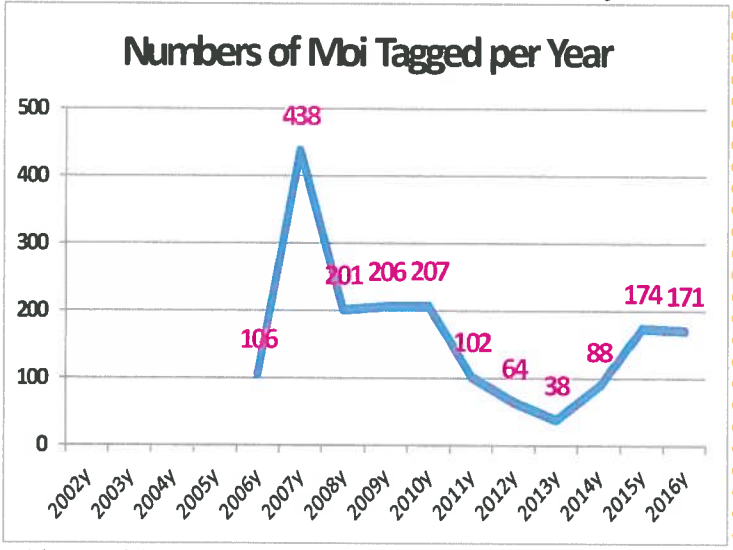
2) Email requests may be sent to: <fishtagging@hawaii.gov>

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

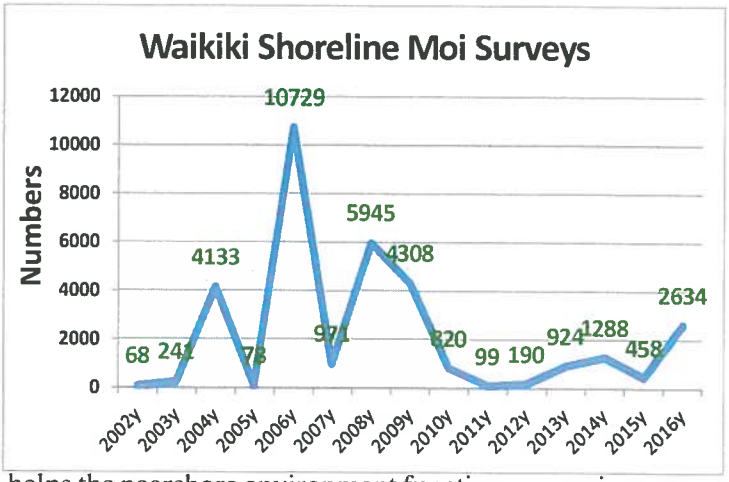
DAR Fish Tagging Project
Division of Aquatic Resources
1151 Punchbowl St., Rm. 330
Honolulu, Hawaii 96813

MOI TAGGING UPDATE

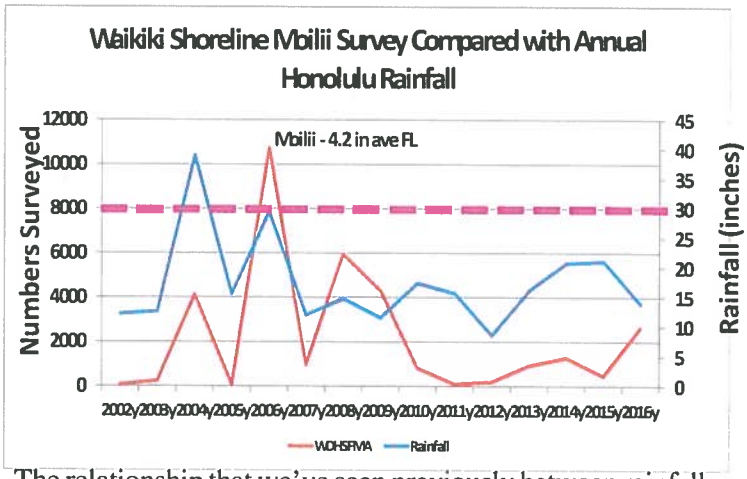
As of February 2017 we have 237 volunteer moi taggers throughout the state. A total of 1797 moi have been tagged with 42 recaptures showing a 2.3% recapture rate. Tagging moi has been a slow but steady process over the years.



Along with volunteer anglers tagging moi, DAR's Fishery Technicians have been monitoring the moi resources along the shoreline within the Waikiki-Diamond Head Shoreline Fisheries Management Area (WDHSFMA). The average size moi tagged by our volunteers is 6.72 inches fork length while the average size moi (or moilii) surveyed along the WDHFSMA is 3.88 inches. There is no doubt that the Waikiki area serves as a nursery ground for the moilii. As Waikiki was at one time a swamp, there still must be some remnants of freshwater seeping into the shoreline area which



helps the nearshore environment function as a moi nursery ground. It seems as if the total numbers of moilii were low during the 2010s, but may currently be on an upswing from last year. One possible reason could be tied to the amount of rainfall we've been having (see graph below):



The relationship that we've seen previously between rainfall and numbers of moi observed has been that whenever there is an annual rainfall close to 30 inches total or more, there seems to be a subsequent rise in the number of moi observed. In 2004 there was a total annual rainfall of 39.01 inches in Honolulu. Two years later our staff observed a rise in the number of moi seen along the shoreline at Waikiki (total of 10,729 observed). In 2006 total annual rainfall for Honolulu was 29.45 inches and again two years later in 2008 the numbers of moilii observed increased from 971 observed in 2007 to 5945 observed in 2008. Overall in the years following 2004 the annual rainfall for Honolulu fell below 30 inches per year and the numbers of moilii observed have remained relatively low. Staff will continue to monitor the moilii in the WDHSFMA to see if there is their numbers will continue to slowly increase or decrease over time.