NOAA Fisheries Service Best Guess Project

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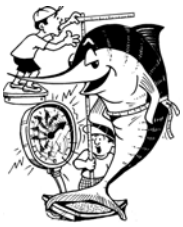

At last year's Ahi Fever Tournament, NOAA Fisheries Service collected your guesses on 143 ahi and marlin that were weighed in at the tournament. In total, we collected 373 guesses from 226 fishermen. While initial results were published in *Hawaii Fishing News* and the Waianae Boat Fishing Club's August 2007 newsletter, I wanted to share the results of some more extensive analyses that have been completed since that time.

Rail Jennings and the crew of the Follow Me weigh in their ahi Saturday morning. These fish were good enough for a 6th place finish the first day.

We already knew that we had 21 guesses within a pound of the actual weight, and that almost 80 percent of the total guesses were within 20 lbs. That sounds impressive, yet these summaries don't account for the size differences of the fish. In other words, isn't a five pound difference more accurate on a 600 lb fish, rather than a 100 lb fish? The smallest fish in our dataset was 87 lbs; the largest 953 lbs (both marlin, incidentally), so we needed to devise a way to analyze the results that would account for this.

The first thing we did was separate the ahi and marlin guesses, and create size categories within each. In the ahi data set we had 340 guesses on 128 fish. We separated the guesses into five weight classes:

- 1 (less than 100 lbs)
- 2 (100-124.9 lbs)
- 3 (125-149.9 lbs)
- 4 (150-174.9 lbs)
- 5 (175 lbs and over)

Then we calculated the percent difference between the actual weight and the estimate.
(Actual Weight – Fisherman Estimate)/Actual Weight = Percent Difference

A young member of the Kaleilehua crew poses with the boat's catch and the Ahi Fever Queen. They would go on to take 5th place on Saturday.

While conventional wisdom might suggest that fishermen always exaggerate, we found that fishermen didn't consistently overestimate or underestimate when it came to ahi. The direction and degree of the difference depended on the weight class. They tended to underestimate smaller fish and overestimate larger fish, and were most accurate in the 125-149.9 lb weight class. In fact, the average (or mean) percent difference across all of the guesses was an underestimate of two percent. Two percent! Incredible! A summary of the results appear in Table 1.

In the marlin dataset, we had only two weight classes: less and 175lbs and 175lbs and over. There were 33 total guesses on 15 fish. In the case of marlin, fishermen had a much more difficult time guessing the weight. Most guesses were within 20 percent of the actual weight and were overestimates (24 out of 33). Weight class did not seem to be a determining factor as 71 percent of the guesses in weight class one were overestimates, as were 78 percent of the guesses in weight class two.

Table 1: 2007 Ahi Results by Weight Class

Weight Class	No. of Fish	No. of Guesses	Mean Percent Difference
1 (less than 100)	12	34	-0.08
2 (100 - 124.9)	37	98	-0.07
3 (125 - 149.9)	48	126	-0.02
4 (150-174.9)	17	47	0.04
5 (175 and over)	14	35	0.07
Overall			**-0.02**

Last year we also asked fishermen about their motivation for fishing, i.e. whether they fish for fun/not to sell, to cover fishing expenses, for subsistence or to earn income from the sale of fish (commercial). We noted responses for 186 fishermen out of the 226 who made guesses. Sixty percent said they fish for fun/do not sell, 26 percent indicated they fish to recover expenses, two percent characterized themselves as subsistence fishermen and the remaining 12 percent as commercial. Table 2 summarizes the accuracy of the guesses by fisherman category. The "n" indicates the number of fishermen in each category.

Table 2: Ahi Results by Fisherman Category

Fisherman Category	Mean Percent Difference by Weight Class					
	1	2	3	4	5	**Total**
Does not sell (n=110)	-0.04	-0.07	-0.01	0.08	0.07	**-0.01**
To recover expenses (n=49)	-0.21	-0.06	-0.01	0.12	0.1	**-0.02**
Subsistence (n=4)				-0.02	-0.05	**-0.03**
Commercial (n=23)	-0.11	-0.1	-0.07	0.02	0.03	**-0.06**

Though the number of fishermen varies greatly across category, fishermen who do not sell were collectively only one percent under when it came to ahi. Remember, the results of this project are being used to determine whether we should allow *recreational* fishermen to estimate the weight of large ahi or marlin when they are encountered in our statewide marine recreational fisheries survey, the HMRFS. As you can see, the initial results are promising. Recreational fishermen did pretty well in their own right, and even relative to the commercial guys, who theoretically would see more fish.

One of the remaining questions is what type of fishermen participates in Ahi Fever, and are they representative of the fishermen the HMRFS might encounter in the field? To better answer this question, at this year's tournament we will ask each fisherman who guesses a weight how many times they fished in the last 2 months. This question is asked in the standard HMRFS survey and will allow us to compare the fishermen in both surveys.

At the 2008 Ahi Fever, volunteers working on behalf of NOAA will once again be asking fishermen for their "best guess" on ahi and marlin weighed in during the two-day tournament. Every captain will receive a cooler backpack with the project's website address (www.fpir.noaa.gov/RCF/bestguess.html) so you can stay tuned on our progress. Like last year, we will also be awarding three $100 gift certificates at random to participating captains after the tournament concludes.

I would like to extend a big mahalo to the Waianae Boat Fishing Club for assisting NOAA with this important effort, and *Hawaii Fishing News* for the logo. It's an honor to be a part of Ahi Fever and I look forward to sharing this year's results! If you have questions about this project, or ideas for other cooperative research, please contact me at nicole.bartlett@noaa.gov, or 808-944-2151.