

## **JIMAR, PFRP ANNUAL PROGRESS REPORT FY 2003**

**P.I. Name:** Paul Dalzell and Stewart Allen

**Project Proposal Title:** Recreational Meta Data Project

**Funding Agency:** PFRP

**1. Purpose of the project and indicative results.** The Recreational Meta-Data Project was initiated to document and compile, into database format, sources of Hawaii's pelagic recreational fishing information. Though no official record of Hawaii's recreational fishery sector exists, many resources are available in the form of surveys, previous studies, club records, newspaper articles, and fishermen logbooks. This project provides fisheries managers and scientists a convenient way to access previous research on recreational fisheries as well as the raw catch and effort data of recreational fishermen throughout Hawaii.

**2. Progress during FY 2003.** During the first half of the fiscal year, progress was retarded by a lapse in the employment of full time personnel dedicated solely to this project. A field biologist, Jennifer Schultz, was hired in January 2003, to establish rapport with recreational fishermen, continue data collection, and maintain the databases and website.

Recreational fishermen have reacted positively to her effort to attend tournaments and club meetings, resulting in a reciprocal exchange of information. Several new contacts have been made in the past year. The clubs and tournament organizers who have donated information have received graphic summaries of their catch data, (e.g., Fig. 2 and Fig. 3), and many of these have been distributed to participants or included in newsletters. In response to requests for further information, we have also provided applicable research papers, notifications of upcoming legislation and news articles via email or presentations at monthly club meetings.

Additional information will be accessible to fishermen, fisheries managers and scientists via our website to be launched April 30, 2003. Over seventy surveys, papers and reports have been compiled and made available in PDF format with tables in attached spreadsheets. Our hope is to facilitate the review and incorporation of past research in future studies. The website also includes a short history on recreational fisheries in Hawaii, a contact page and a summary of the database, which is available for use by researchers upon request. (A signed agreement to maintain the confidentiality of all clubs and tournaments will be required.)

Radio logs, catch records and weigh-in summaries from eight annual tournaments and monthly tournaments from two clubs were added to the database this year. The new additions are representative of the variety of tournaments held in Hawaii: six professionally organized tournaments with corporate sponsorship, two club sponsored jackpot tournaments with registration fees awarded as prize money, and two monthly club tournaments awarding only points toward an annual competition. Two new sources of recreational fishing data were also added to the database this year: daily charter boat weigh-in summaries generated by two small boat harbors and annual catch statistics as reported by the charter boats to the Hawaii Division of Aquatic Resources (HDAR). The database now consists of a total of 36 annual tournaments on four islands, the monthly tournament records from three local clubs, and charter boat catch statistics from two small boat harbors and HDAR (Appendix 1).

Though the tournament records do provide insight into the nature and scope of Hawaii's pelagic recreational fishery, the data may be compromised by inconsistent or tournament-specific reporting. For example, Tournament 10 (Appendix 1) offers a cash award for the largest total tonnage of fish caught. After indicating the weight of the largest fish of each species on a team's weigh-in slip, additional fish of any species may be combined to give a total weight of "all other fish" (Fig. 1). Though the total weight per year of the tournament would be accurate, the actual number of fish per species caught annually (Fig. 2) and catch per unit effort indices for species (Fig. 3) cannot be determined. The graphs do not include any of the fish listed under the "all other fish" category, and thus underestimate the number of fish caught. Still, the data from this tournament, plotted across a time series, may be useful in determining cyclical peaks in catch abundance of different species.

Catch Report					
Boat Name_____	Team #_____				
Marlin-	Area_____	Weight_____			
Circle:	Blue	Black	Striped	Spearfish	Tag and Release
Ahi-	Area_____		Weight_____		
Ono-	Area_____		Weight_____		
Mahi-	Area_____		Weight_____		
All other fish			Weight_____		
Total gross tonnage			Weight_____		

Figure 1: Portion of catch report from Tournament 10. The entry for "all other fish" may contain multiple, unspecified fish, leading to difficulty in establishing an accurate number of fish caught and CPUE.

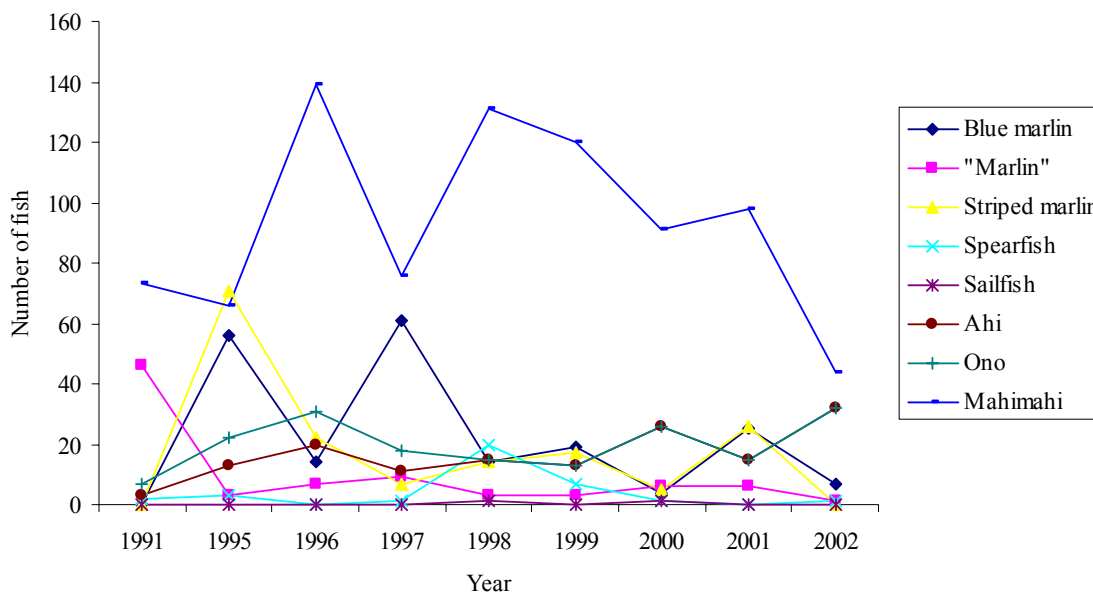


Figure 2: Number of each species caught annually at Tournament 10. Entries for both "marlin" and specific billfish were recorded throughout the tournament, even during the same year. The 2002 tournament was held in August, while all others were held in late October/early November.

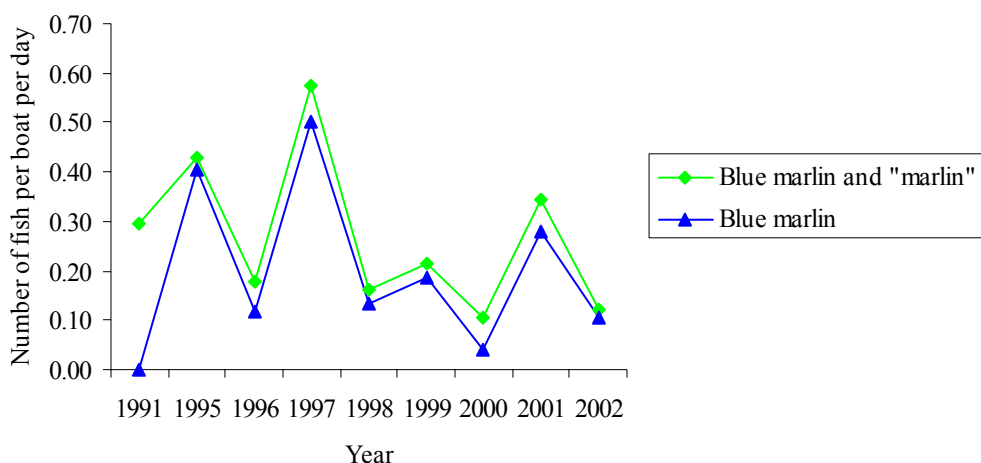


Figure 3: Catch per unit effort indices as the number of blue marlin per boat per day from Tournament 10. A comparison between the number reported as blue marlin (blue line) and the number reported as blue marlin and “marlin” (green line) reveals a similar overall trend.

Unfortunately, there is no standard methodology for reporting tournament catch. While some tournaments simply report the species and weight of the fish, others include the area caught, the use of live/dead bait or lure, breaking strength of line, time of strike and capture or time fought, and the disposition of the fish. In addition, species classification may vary between tournaments, years, and weigh masters. Variation may even occur within a single catch report. For example, Tournament 10 records show that while specific billfish may be listed, they are often lumped under the general term of “marlin” (Fig. 2). This general term appears to be used concurrently with the species name because all billfish are included under a single prize category. Though this classification confounds the analysis of the data, the general trends of species abundance do not appear to be effected (Fig. 3). The suggestion of a standardized catch report form, with input from this project, tournament organizers and clubs, has been positively received and will be a goal in the upcoming year.

While the tournaments give an annual snap-shot of fishing activity, charter boat catches reflect an almost daily effort. We have obtained the daily charter boat weigh-in records from two small boat harbors and the HDAR annual charter boat catch statistics. These new additions to the database allow us to compare two aspects of the recreational fishery (charter boat and tournament) over different time intervals. Analyzing annual marlin catch of a tournament and charter boats weigh-in records using the same harbor reveals a similar trend in activity, with the exception of the 1996 blue marlin catch (Fig. 4). A comparison of catch per unit effort indices as the weight of fish per boat per day between HDAR’s charter boat catch and tournament catch does not yield consistent results (Fig. 5). The reason for this discrepancy is not yet understood and will be the subject of future analysis. Additional comparisons between all sources of data may provide further insight into the pelagic recreational fishery of Hawaii.

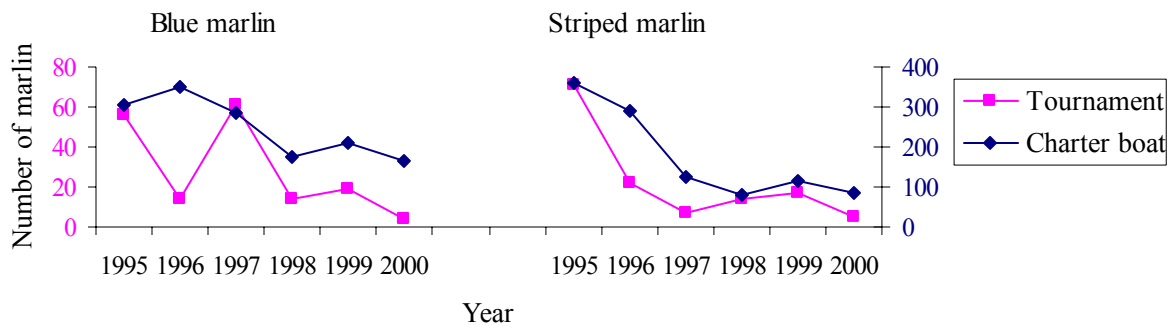


Figure 4: Marlin (blue and striped) caught annually at a tournament and by charter boats as reported at weigh-in.

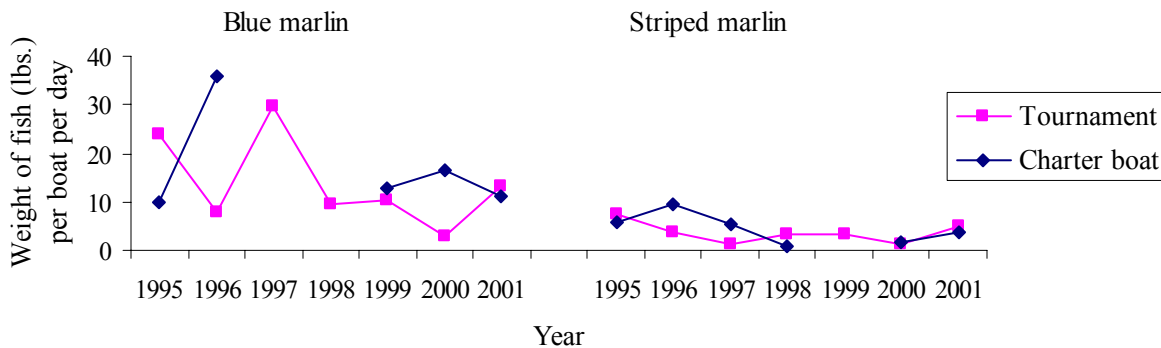


Figure 5: Marlin (blue and striped) caught annually at a tournament and by charter boats from a single island as reported to HDAR.

### 3. Plans for Fiscal Year 2004.

In the coming year we plan to:

- Continue collection of tournament data.
- Focus on the collection of club data.
- Develop and implement a standardized catch report format with input from clubs and tournament organizers.
- Develop and conduct a survey of tournament attendees and club members to define fishing communities in Hawaii and to describe the demographics and motivations of Hawaii's recreational fishermen.
- Compare our data to the NMFS Marine Recreational Fisheries Statistical Survey (MRFSS) for Hawaii managed by the Hawaii Division of Aquatic Resources.
- Publish a SOEST/JIMAR publication describing the fishing tournaments of Hawaii, with an in depth description of their characteristics, sponsors and participants.
- Publish a comparative study of the catch rates and fishing effort of charter boats, fishing tournament participants and as estimated by the NMFS MRFSS.
- Publish a paper on the use of fish aggregating devices by the Hawaiian recreational fishery in a peer reviewed journal

**4. Papers Published in Journals During FY 2003.** None.

**5. Other Papers, Reports, and Presentations during FY 2003.**

Oral Presentations: 52<sup>nd</sup> Annual Tuna Conference, Lake Arrowhead, CA May 2003

**6. Graduating Students with M.S. or Ph.D. Degrees during FY 2003.** None.

**7. Budget FY 2004.** There are adequate funds remaining in the budget to support a full time employee and project needs through fiscal year 2004. During this time, we will identify an appropriate state or federal agency to house and maintain the databases in the future.

**Appendix 1:** Summary of data collected to date. All information will be provided to fisheries managers and scientists upon request, though we ask that specific tournaments and sources be kept confidential.

Code	Event	Source of Data	Type of Data	Island	Years of Data
1	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	1959-1997, 2000-2002
2	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	1995-1997, 2000-2001
3	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	1996-2002
4	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2000-2001
5	Annual tournament	Tournament organizer	Weigh in summary	Hawaii	1999, 2001-2002
6	Annual tournament	Tournament organizer	Weigh in summary	Hawaii	1999, 2001-2002
7	Annual tournament	Tournament organizer	Weigh in summary	Hawaii	1999, 2002
8	Annual tournament	Tournament organizer	Weigh in summary	Oahu	2002
9	Annual tournament	Fishing club	Weigh in summary	Oahu	1997-2001
10	Annual tournament	Fishing club	Weigh in slips	Maui	1991, 1995-2002
11	Annual tournament	Fishing club	Weigh in slips	Maui	1996-1999, 2001-2002
12	Annual tournament	Fishing club	Radio logs	Kauai	1999-2000
13	Annual tournament	Fishing club	Radio logs	Kauai	2000
14	Annual tournament	Fishing club	Radio logs	Kauai	2000
15	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2001-2002
16	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2001-2002
17	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2001-2002
18	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2002
19	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2002
20	Annual tournament	Tournament organizer	Weigh in slips	Hawaii	2001-2002
21	Annual tournament	Fishing club	Radio logs	Hawaii	1983-1985, 1995-1996
22	Annual tournament	Fishing club	Radio logs	Hawaii	1983-1985, 1995-1996
23	Annual tournament	Fishing club	Weigh in slips	Oahu	1996
24	Annual tournament	Fishing club	Weigh in slips	Oahu	1991, 1996, 1998-2000
25	Annual tournament	Fishing club	Weigh in slips	Oahu	1986, 1991, 1996, 1998-2000
26	Annual tournament	Fishing club	Weigh in slips	Oahu	1989-1991, 1999
27	Annual tournament	Fishing club	Weigh in slips	Oahu	1996, 1998-2000
28	Annual tournament	Fishing club	Weigh in slips	Oahu	1996, 1998-2000
29	Annual tournament	Fishing club	Weigh in slips	Oahu	2001
30	Annual tournament	Fishing club	Weigh in slips	Oahu	1990, 1996, 1998-2000
31	Annual tournament	Fishing club	Weigh in slips	Oahu	1999-2001
32	Annual tournament	Fishing club	Weigh in slips	Oahu	1990, 1991, 1996, 1998-2001
33	Annual tournament	Fishing club	Weigh in slips	Oahu	1996, 1998-2001
34	Club tournaments	Fishing club	Radio logs	Hawaii	1981-1996
35	Club tournaments	Fishing club	Weigh in slips	Oahu	2003
36	Club tournaments	Fishing club	Weigh in summary	Oahu	2003
37	Daily charter boat catch	Private citizen/harbor	Weigh in summary	Maui	1994-present
38	Daily charter boat catch	Private business/harbor	Weigh in summary	Hawaii	2001-present
39	Annual charter boat catch	HDAR	Total weight/year	All	1981-2001