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From: Pierre Flament

To: John Sibert, Program Manager, Pelagic Fisheries Project

Subject: second annual report
"Physical oceanography environment of pelagic fishes"

Cc: Dennis Moore, JIMAR
Bo Qui, Oceanography
Lorenz Magaard, SOEST
Peter Garrod, University Research Council

During the second year of this project (1 May 1994 to 31 July 1995), we have performed the following activities:

(a) we procured the drifting buoys from Clearwater Instrumentation, in successive orders of 40 and 30 buoys. These are standard WOCE-SVP buoys, modified to increase their resistance to fish attacks by shielding all jacketed wire with kevlar-reinforced hydraulic hose (a modification suggested by our experience with moored instrumentation in Hawaiian waters). Both procurement were shared at 33% cost by the University Research Council. All buoys have been delivered or are in the process of being shipped.

(b) we deployed 40 buoys in three successive batches of 10 to 15 units, using cruises on the R/V Cromwell contributed by NMFS (in August and October 1994, and July 1995 respectively). Based on our analysis of historical drifter data, we deployed the buoys in the immediate lee of Maui and Hawaii, to maximize their residence time in the Hawaiian EEZ. This strategy proved fruitful, as most of the buoys drifted slowly northwestward towards the western islands, some escaping north of the ridge and sampling this area as well. Fewer than 25% of the buoys escaped more rapidly southwestward in the North Equatorial Current.

(c) with junior researcher J. Firing, we developed software

and implemented an automated real-time processing of buoys positions. Tracking data from our receiving station as well as from Service ARGOS, delivered over the Internet, are now ingested twice weekly, including calibration of the temperature sensors, generation of plots of the trajectories, and of digital movies of the buoys motion.

(d) the plots and movies are delivered in real time on the Internet, through ftp and world-wide-web accesses. Since January, the number of anonymous accesses has reached the astounding numbers of 13,000 for the plots and 850 for the movies. Access is through http://satftp.soest.hawaii.edu/.

(e) we interacted with B. Qiu and D. Koh regarding the modeling effort. A separate modeling proposal was submitted by B. Qiu as P.I. and funded by this program. With computer specialist D. Young, we helped B. Qiu expand his computing power to meet the needs of this new project (D. Young has also assured the general maintenance of our own computing infrastructure).

(f) we have hosted a three-month visit of Ms. E. Perres, who, under the supervision of Prof. E. Barton at the University of Wales (UK), is completing a PhD on the ocean circulation around the Canary islands (which displays many characteristics similar to those found around Hawaii). Prof. Barton, together with Profs. Bas and Aristegui at the University of Gran Canarias, are reciprocating by hosting my participation in a summer workshop on upwelling and fisheries, at no cost to Pelagic Fisheries program.

(g) we have interacted as needed with other investigators in the Pelagic Fisheries program, by participating in:

- the Lake Arrowhead conference (delivering an interactive poster on the preliminary results from this project, as well as a lecture on equatorial oceanography),

- the two semi-annual Pelagic Fisheries Workshops,

- local work groups organized to foster interactions between physicists, modelers and fisheries scientists.

(h) we have kept a close contact with WOCE-SVP scientists, by attending the annual working group meeting, held in November 1994 in La Jolla, and presenting our preliminary results.

This second year concludes the procurement, software development and most of the deployment phase of this project. Additional funding will be sought to maintain the array for the next two years, analyze the

data and publish the results.