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Daily fishing forecasts use satellite

TWENTY fisheries oceanographic factors are being used by Roffer's Ocean Fishing Service Inc. to produce fishing charts to locate such species as tuna, swordfish, herring and mackerel.

The company, which supplies ROFFS Fishing Forecasting Analyses, has outgrown its facilities and moved into new offices in Maimi.

Four full-time fisheries oceanographers produce the forecasts comprising daily fishing analyses for purse seine and longline operations.

Areas covered include off the east coast of Africa (Oman to Madagascar), west coast of Africa (Mauritania to Guinea), northeast coast of South America (Brazil, Surinam, French Guyana), northern coast of South America (Venezuela and Columbia), Caribbean region and off the coast of the United States.

The factors on which the analysis are based include: 1. water temperature; 2. water colour; 3. biological quality of the water; 4. orientation of local currents; 5. strength, orientation, history and duration of ocean fronts; 6. forage preference and availability; 7. bottom topography; and 8. habitat preference.

The analyses comprise a map and a written forecast, the background maps being derived from nautical charts and other fishing charts. Latitude and longitude or Loran lines – and special bottom topography – are often highlighted.

The map shows outlines which represent significant ocean frontal zones derived primarily from the satellite sea surface temperature information.

Specific areas are marked indicating where it is expected to find mostly fish. Additional information on current direction, water colour, flotsam (weed concentrations, etc.) is usually included.

The text portion of ROFFS Fishing Oceanographic Analyses provides a diagnosis and forecast of fishing conditions.

Forecasts are based on local and regional ocean circulation, wind velocity, climatology and persistence.

Navigational co-ordinates are included to help fishermen locate the areas where fish are likely to be concentrated. Other factors likely to affect catch success are given, such as hook depth, feeding times and swimming depth.

The analyses are updated several times a day when new satellite data and fishing data are received.

Oceanographic data sources include satellite data (U.S. NOAA, U.S. GOES, Russian Meteor and European Meteosat), aircraft, ocean bouys, fixed platforms and ships.

Satellite data are received in real-time at the ROFFS satellite receiving station, with additional infra red data acquired from outside sources.

Additional information on fishing conditions and hydrographic data are provided by local fishermen, the data usually being less than 24 hours old when distributed, according to the company.

Different chart formats are provided for inshore, offshore and high-seas fishermen, so that the spatial resolution of the data on the maps remains high (data point spacing is about one to five km).

The forecasts are used to reduce costs when searching for fish. While some fishermen direct their efforts to the exact areas suggested, others use the analyses to eliminate unproductive ocean areas.

Distribution of the forecasts is primarily by fax. Also, they are sent via COMSAT and other computer electronic mail systems. In addition, ROFFS communicates with clients via cellular and radiotelephones.