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AERIAL RADIOMETRY AND TUNA PROSPECTION

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Aerial radiometry and tuna prospection operations started in February 1979 now total 800 observation hours for the Exclusive Economic Zones of New Caledonia and Vanuatu. In the course of the first year, joint operations were conducted by aircraft and survey-vessel teams. This year, tuna purse-seiners were guided on the basis of data obtained by simultaneously operating overhead flights; these provided useful information on the catchability of tuna and skipjack during May and June.

An analysis of the results of the first 500 flying hours deals with technical aspects and with the relationship between presence and abundance of tuna on the one hand and the existence of thermal gradients, the presence of whales, and of birds, on the other. These data are supplemented by temperature charts obtained by satellite.

Three periods were covered during the first year:

- From February to April 1979, the sea surface temperature around New Caledonia was in the 26-28°C range. Most tuna sightings were made in the South-east and near the West Coast reefs during this period. A virtually continuous cold water upwelling was located near the southern lagoon.
- From June to October 1979, the sea surface temperature was between 23° and 26°C. Schools and sightings were plentiful in a contact zone between the warm and desalinated water masses in the North and the cold salty water masses in the South.
- From November 1979 until February 1980, water temperature fluctuated considerably and strong winds made observations difficult.

These prospections confirmed that concentrations of tuna were present for most of the year in the Exclusive Economic Zone of New Caledonia. Fishing vessels could therefore operate there on an annual basis. To gain a more thorough knowledge of existing stocks and of migratory patterns it will now be necessary to actually start exploiting the tuna resources in the zone.