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Progress Report on Oceanographic Hindcasting Using NORWESTLANT Data  
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At the NORWESTLANT working group meeting in Madrid in September 1963, it was suggested that numerical oceanographic analysis/forecasting methods be employed for hindcasting of oceanographic elements in the area and period of NORWESTLANT surveys.

The following information and answers to the following problems were expected from this hindcasting:

1. Testing of the present quantitative knowledge imbodyed in the analyses/forecasting models by investigation of the reproducibility of conditions in the oceans using hindcasts over a period of about a month.
2. Improve the forecasting models where necessary. (It was postulated that any model which gives satisfactory answers in a complex area, such as NW Atlantic, would work on any other less complex area.)
3. If the models were found satisfactory, to solve the problems how to apply synoptic oceanographic analyses/forecasts to fisheries problems in the future.
4. Furthermore, if the models were satisfactory in good, dense synoptic data areas, how could future research cruises contribute useful input data in sparse data areas and what use to make of research cruises in the future for further improvement of analyses/forecasting techniques and models.
5. How large portions of the temperature changes in surface layers are due to advection and heat exchange respectively.
6. How persistent are anomalies in different levels in surface layers.
7. How representative are the results of monthly cruises in respect of short-term fluctuations.

It was found that the hemispheric analyses had too coarse a grid and that special zoom analyses must be created. As there were other requests for oceanographic analysis for NW Atlantic by International Ice Patrol (U.S. Coast Guard, Oceanographic Unit.) two small-scale (zoom) analyses programmes were established. (Reported to this meeting by U. S. Coast Guard, Oceanographic Unit)

In cooperation with U. S. Coast Guard several tests and improvement of the models have been made during the past year.

As the synoptic data density in the N part of ICNAF area is low, it was found necessary to complement this area with interpolated climatology. As no good climatology in the area in question existed, it was necessary to initiate its compilation. Furthermore it is necessary to reenter all past synoptic observations for the hindcast as the synoptic data were not saved in 1963. This is a somewhat time-consuming task.

Several new and/or modified programmes, with 5, 15 and 30 day approaches for the hindcasting purpose are under development, which, if successful, can be used with some modification for the medium range prognostication.

The FNWF oceanographic analyses/forecasts have become more popular and in demand by various users, than was anticipated. This fact, has occupied the time of relatively few workers at FNWF and has saturated the available computers. It is anticipated that with the arrival of large computers and some additional staff this summer, the project will be completed by the fall.

The idea of NORWESTLANT hindcast has, however, already contributed indirectly to the further development of synoptic oceanographic analyses forecasts by a number of different ways, despite that direct results are not yet available.