

# Spacecraft Oceanography with a Biological Flavor — Fact or Fiction?

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## **Abstract**

A project to determine the feasibility of making useful oceanographic measurements from spacecraft has been undertaken. The advantages unique to spacecraft will be investigated, e.g., global and synoptic coverage, all-weather capability, and accessibility to remote areas. Multiband photography, passive microwave radiometry, infrared radiometry, and radar imagery are among the remote sensors being investigated. Additionally, telemetering buoys utilizing satellites as data relays are under study. Aircraft experiments at a number of field test sites have been flown to compare recorded signatures with ground truth in preparation for future space flight experiments. More aircraft experiments, at increasing altitudes, under all kinds of weather conditions are being planned. GEMINI photographs over a number of oceanic and coastal areas of interest to oceanographers have been analyzed and found to be of significant value. Some of these strikingly illustrate the potential of spacecraft photography for correcting nautical charts, tracking river effluent, and detecting shoal areas. Among other applications to be explored are the possible mapping of upwelling areas, of areas infested by "red tide", and thermal mapping of the sea surface.

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