

WHP Ref. No.: PR6  
Last updated: 15 March 1995

CRUISE REPORT  
Repeat hydrography on Line PR6

A. Cruise narrative

A.1. Highlights

- a. WOCE designation: PR6
- b. Expedition designation: 18DD9501/1
- c. Chief scientist: Frank Whitney  
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- d. Ship: John P. Tully
- e. Ports of call: Patricia Bay, B.C.
- f. Cruise dates: February 7 to February 23, 1995

A.2. Cruise Summary Information

a. Geographic boundaries: Line PR6 starts at the mouth of Juan de Fuca Strait on the west coast of Canada, and heads almost due west for 900 n mi. The terminal station is PRS1, formerly designated Ocean Weather Station Papa (50°N, 145°W).

b. Stations occupied: The stations occupied on the cruise are tabulated by type in Table 1.

TABLE 1: Table of stations by type

Sample type:	No. Stations:	Max. Depth (m):
CTD casts	33	4300±dbar
Rosette/Hydro casts	4	4200
Loop samples	36	5
Moorings	2	1000

c. Floats and drifters deployed: A drifting sediment trap line was deployed for 3 days at Station PRS1. On recovery, the trap line was cut by the ship's propeller resulting in the loss of all traps.

A 230µm mesh net was used to collect mesozooplankton. In addition, at PRS1 an in situ drifter was deployed for 7 hours to measure primary production rates.

A.3. List of Principal Investigators

Principal Investigator	Parameters	Institution
Howard Freeland	Ocean Physics	IOS
C. S. Wong	Climate Chemistry CO <sub>2</sub> , biological measurements	IOS
Frank Whitney	Coordinator Nutrients	IOS

A.4. Scientific Programme and Methods

This joint WOCE/JGOFs cruise continued measurements of water property changes seasonally and inter-annually. Sampling was not as intensive as in past cruises, since we are still recovering from Line P15N and JGOFs awaits fresh funding.

Under WOCE, a CTD survey along Line PR6 was completed, but weather restricted

our rosette casts to 4 stations (7 were planned). Salinity, oxygen and nutrients (NO<sub>3</sub>+NO<sub>2</sub>, PO<sub>4</sub> and Si) were analyzed onboard ship. JGOFS participants sampled plankton at several stations, and incubated water to measure growth and grazing rates of plankton. Continuous fluorescence measurements estimated chlorophyll in surface waters. Occasional water samples were taken from 15 m for the assessment of flavodoxin a marker for in situ iron limitation of phytoplankton growth.

#### Preliminary Results

Typical winter conditions were encountered along Line PR6. In surface waters, nitrate has increased slightly over what was measured last February, reversing a 5 year trend of decreasing winter nutrient levels.

#### Goals Achieved

Complete CTD survey of Line PR6.  
Successful Rosette casts at 4 stations on Line P.  
Completion of JGOFS sampling for plankton and productivity measurements.

#### A.5. Major Problems and Goals Not Achieved

Rosette misfires resulted in several lost samples.

Less water sampling was completed than had been planned, due to poor weather.

A drifting sediment trap line was deployed for 3 days at Station PRS1. On recovery, the trap line was cut by the ship's propeller resulting in the loss of all traps.

#### A.6. Other Incidents of Note

None noted.