Application for Consent to Conduct Marine Scientific Research

1. General Information

1.1 Reference ID:

Application number: F2010-079
Project name: Keil, Washington-Vancouver Island Margin 2010

1.2 Sponsoring institution(s):

Institution	Contact Information	Director
Oregon State University	College of Oceanic and Atmospheric Sciences 104 COAS Administration Building Corvallis, OR 97331-5503 541 737 0225	Dr Mark Abbott

1.3 Scientist in charge of the project:

Name: Keil, Rick
Affiliation: University of Washington
Address: Box 355351
Phone: 206 616 1947
Fax: 206 685 3351
Email: rickkeil@u.washington.edu

1.4 Scientists from coastal states involved in the planning of the project:

See Section 8 (*Participation*)

1.5 Submitting officer:

Name: Zerr, Pete
Affiliation: Oregon State University
Address: 2020 SE OSU Drive
Phone: 541-867-0225
Fax: 541-867-0294
Email: zerrp@onid.orst.edu

2. Description of Project

2.1 Nature and objectives of the project:

Watercolumn and sediment sampling of the Washington and Vancouver Island margins. Water column processes to be studied: optics, bacterial growth rates and community structure, phytoplankton community assemblage. Sediments to be sampled with small multicorer and Van Veen grabs. Two moored sediment traps will be deployed for 24-48 hr to collect settling particles. Drifting sediment traps will also be deployed. The ship will stay with the deployed instruments at all times.

2.2 Relevant previous or future research projects:

We have been working in Clayoquot Sound since 1999 and conducted a similar cruise off the Vancouver Island margin in 2004.

2.3 Previously published research data relating to project:

2000-2009 State Department cruise data reports for our previous cruises. Multiple peer reviewed article based on data from previous cruises (below). Three additional manuscripts in press or submitted. Nuwer J. and Keil R.G. submitted. Organic-mineral aggregates along a continental margin: implications for degradation and transport of marine and terrestrial organic matter. Geochimica et Cosmochimica Acta Keil, R., Nuwer, J., and Strand S. in press. Burial of Agricultural Byproducts in the Deep Sea as a form of Carbon Sequestration. Marine Chemistry Ingalls, A., Ellis, E.,

Santos, G., McDuffee, K., Truxal, L., Keil, R., Druffel, E. submitted. HPLC Purification of higher plant-derived lignin phenols for compound specific radiocarbon analysis., Analytical Chemistry. Nuwer, J. and Keil, R.G. 2005. Organic Carbon preservation in an intermittently anoxic fjord; Clayoquot Sound BC. Limnology and Oceanography v50, 1119-1128. Walsh, E.M., Ingalls A.E. and Keil R.G. 2008. Sources and transport of terrestrial organic matter in Vancouver Island fjords and the Vancouver-Washington margin: A multiproxy approach using d13Corg, lignin phenols and the ether lipid BIT index. Limnology and Oceanography 53(3), 1054-1063. Arnarson, T.S. and Keil, R.G. 2007. Importance of different physical protective mechanisms on organic matter preservation along a continuum of oxygen exposure time. Geochimica et Cosmochimica Acta71, 3545-3556. Nunn, B.A., and Keil, R.G. 2006. A comparison of non-hydrolytic methods for extracting amino acids and proteins from coastal marine sediments. Marine Chemistry 98: 31-42. Nunn, B.A. and Keil, R.G. 2005. Size distribution and amino acid chemistry of base-extractable proteins from Washington coast sediments. Biogeochemistry 75: 177-200.

3. Methods and Means to be Used

3.1 Platform:

Name:	WECOMA
Nationality (Flag State):	United States
Overall length:	185
Maximum draught (meters):	19
Displacement/gross tonnage:	287
Propulsion:	
Call sign:	WSD 7079
Cruising speed:	
Maximum speed:	
Name of captain/master:	Pete Zerr
Number of crew:	13
Number of scientists on board:	18

3.2 Other craft used in the project:

none

3.3 Methods and scientific instruments:

Types of Samples and Data	Methods to be Used	Instruments to be Used
Water Sampling	CTD, oxygen analysis, large volume filtration, DNA and RNA sampling, chlorophyll, oxygen titrations, optical measurements, ADCP	CTD, fluorometer, beta-max counter, ADCP, optical sensor (e.g. AC-9)
Sediment and sediment traps	Post-cruise lab analyses include geochemical processing for C, N and H. protein, long-chain poly amine, lipid and carbohydrate analyses.	Multicorer, sediment trap, Van Veen grab and 3 inch gravity corer.

3.4 Will harmful substances be used?

No.

3.5 Will drilling be carried out?

No.

3.6 Will explosives be used?

No.

3.7 Will protected species be studied?

No.

4. Installations and Equipment

4.1 Will there be any installations?

Yes. With two exceptions, all equipment deployed is tethered to the ship, nothing in the water for more than 30 minutes or so at a time. The two freely deployed pieces are sediment traps. Both are temporarily deployed out of the normal lanes of ship traffic and are free-drifting. We keep track of them with ARGOS tracking devices and RF transmitters. They are deployed for 24-48 h and the ship stays within tracking distance of the two instruments to keep them safe from accidental boat traffic.

5. Geographical Area(s)

5.1 Indicate geographical areas in which the project is to be conducted (with reference in latitude and longitude):

Vancouver Island Margin and slope, see attached map of stations we visited in 2004 and intend to reoccupy in 2010. About 1/2 of these stations are in US waters and 1/2 in Canada.

5.2 Attach chart(s) showing the geographical areas of the intended work and, as far as practicable, the positions of intended stations, the tracks of survey lines, and the locations of installations and equipment:

See Section 10 (*Attachments*)

6. Dates

6.1 Expected dates:

Project start date: Sep 21, 2010
Project end date: Oct 08, 2010

Coastal Area	Entry Date	Final Departure Date	Multiple Entries Expected?
Canada	Sep 21, 2010 12:00:00 AM	Oct 7, 2010 12:00:00 AM	No
Explanation of multiple entries:			
Extent to which Canada will be enabled to participate or to be represented in the research project: We collaborate loosely with scientists at the Bamfield Marine Station and at the Tofino Botanical Gardens Field Station. We have space aboard ship should anyone wish to sail with us.			

7. Port Call(s)

Port	Arrival Date	Departure Date	Special Logistical Requirements	Shipping Agent
No Ports provided.				

8. Participation

8.1 Extent to which coastal state(s) will be able to participate or to be represented in the research project:

See Section 6 (*Dates*)

8.2 Proposal dates and ports for embarkation/disembarkation:

See Section 7 (*Port Call(s)*)

9. Access to Data, Samples and Research Results

9.1 Expected dates of submission to coastal State of preliminary reports, which should include the expected

dates of submission of the final results:

No more than 30 days from the end date of the research.

9.2 Propose means for access by coastal state to data and samples:

Data will be provided through official channels at no cost to the coastal State(s). Samples will be provided upon request.

9.3 Propose means to provide coastal State with assessment of data, samples and research results or provide assistance in their assessment or interpretation:

Assessment of data, samples, and research results will be provided at no cost to the coastal State(s). Assistance in futher assessment or interpretation will be provided upon request.

9.4 Propose means of making results internationally available:

Peer reviewed papers, presentations at international meetings.

10. Attachment(s)

Final Report	
Attachment	**Estimated Delivery Date**
No Final Report Currently Available	

Additional Attachments		
Attachment Type	**Attachment**	**Submission Date**
Proposed Cruise Track	1280776768049_2004 Keil stations.png	