Logistics Planning Outline for the 2010/2011 NBP/ODEN 2-boat Operation

In an attempt to coordinate the science between the ODEN and the NBP for next year's 2-boat operation, the information below will be compiled and passed out during the planning meeting in November.

Principal Investigator: Rebecca Dickhut
Project leader onboard NBP/ODEN (if other than P.I.):
Project title: **COLLABORATIVE RESEARCH: PERSISTENT ORGANIC POLLUTANTS IN THE ANTARCTIC MARINE FOOD WEB: IMPACT OF CLIMATE CHANGE AND INSIGHTS INTO THE FEEDING ECOLOGY OF APEX PREDATORS**
Participants onboard (tentative): Total: 2 persons Name and function: Rebecca Dickhut - scientist Renee Falconer - scientist

Please give a brief cruise synopsis. Include the following: research objectives and proposed cruise track.

Research Objectives: Trace the movement of persistent organic pollutants (POPs) stored in glacier ice into the Antarctic marine food web. Evaluate the dietary preferences and feeding ecology of Antarctic seabirds and marine mammals using POPs and stable isotopes.

Sampling Requirements: Collect phytoplankton, zooplankton, snow, and air samples from within 100 km of the western Antarctic Peninsula, and in the Amundsen and Ross Sea polynyas.

Proposed Cruise Track: Within 100 km of the western Antarctic Peninsula → Amundsen Sea → Ross Sea.

Briefly describe sampling methods and major systems and equipment (collection method (i.e standard CTD, plankton nets, MOCness Nets, etc…)

Net tows for phytoplankton – horizontal drift net @ 5 – 40 m; winch required Net tows for zooplankton – vertical and oblique tows from 120 m to surface; winch required Snow sampling – shovels Air sampling – high volume air samplers Surface water sampling – flow through seawater system; sieves

Sampling methods and sites when ship in motion

Site/area/transect	Type of sampling to be performed, volume of H_2O collected
All/continuous	Air and surface water

Sampling methods and sites from stationary ship

Sampling site	Type of sampling, weight/volume of samples and equipment, etc.	Time per station
Antarctic Peninsula (3-5 times)	Plankton net tows.	< 2h
Amundsen Sea (3-5 times)	Plankton net tows.	< 2h
Ross Sea (3-5 times)	Plankton net tows.	< 2h

Sampling method and sites away from the ship, on ice

Sampling site	No. of persons	Type of sampling, weight/ volume of samples and equipment, etc.	Time per station
Antarctic Peninsula (3-5 times)	2 scientists + 1 small boat operator	Snow ≈200L	< 2h
Amundsen Sea (3-5 times)	2 scientists + 1 small boat operator	Snow ≈200L	< 2h
Ross Sea (3-5 times)	2 scientists + 1 small boat operator	Snow ≈200L	< 2h

Deployment/retrieval of equipment

Site	Type of equipment, weight/ volume, procedure, etc.	Time per station

Which are the most prioritized sampling areas/methods?

Site/area	Method/type of sample	Other info
1. Antarctic Peninsula	snow	
2. Antarctic Peninsula	Net tows/plankton	
3. Amundsen Sea	Net tows/plankton	
4. Ross Sea	Net tows/plankton	
5. Amundsen Sea	snow	
6. Ross Sea	snow	
7. Antarctic Peninsula	Air/surface water	
8. Amundsen Sea	Air/surface water	
9. Ross Sea	Air/surface water	

The following equipment needs to be installed onboard
(describe in detail, also needed connections to electricity, water, gas etc):

High volume air samplers – Deck 4 Oden in front of sampling vans. Electricity required.

Lab space	Wet lab	Dry lab	Other / specify
Meters of bench space	2 - in vicinity of flowing seawater lines	2 - on deck 4 near air samplers	
Power needs (VA) 220/380 V		Yes	
Cold water (yes/no)	yes		
Hot water (yes/no)			
Sewage (yes/no)			
Compressed air (yes/no)			
Gas (yes/no)			
Fume hood (yes/no)	yes	yes	
Sea water intake (yes/no)	yes		
Other (specify)			

Special lab areas needed:

Clean air room	Clean room space is preferred for processing samples so that they are not contaminated by ship air/electronics equipment.
Other (specify)	

Storage of equipment and samples:

	Space needed (m^2/m^3)
Container	
Cold +2°C	0.1 m^3
Freezer -20°C	1.5 m^3
Other (specify)	Freezer (-80°C) – 0.2 m^3

The following chemicals, gases or other hazardous substances will be used, including radioisotopes or other substances which may constitute a threat of contamination for sensitive analyses:

Substance	Weight/vol.	To be used for:
acetone	5 L	cleaning
cyclohexane	5 L	cleaning

Hazardous waste:

Substance	Weight/vol.	Comments
acetone	5 L	
cyclohexane	5 L	

Disturbance to or sampling of organisms:

1. Species (scientific and English name)	
2. Handling/sampling method	
3. Storage or handling onboard	
4. Possible risks to health or environment	
5. Consideration required from the ship/other researchers	

Cargo to be taken onboard the ship:

Type, handling/storage	Weight (kg)	Volume (m3)
Scientific gear	250	4

Cargo and samples to be taken off the ship:

Type, handling/storage	Weight (kg)	Volume (m3)
Scientific gear	250	4
samples	75	1

Other support needed onboard Oden, or in preparation phase:

Help with or training in winch operation. Seawater and freshwater hoses for rinsing nets. Small vessel operator, as noted above.