

## Section 2.0 - Project Information

- If you would like to change the above Title Extension, enter the new extension in the field below:
- Please specify the Ships, Stations, and Field Sites you plan to visit.

**Season: 2002 - 2003**

Station / Vessel	# in Party	From Date	To Date	Site Activity
Laurence M. Gould		01/02/2003	02/01/2003	Hydrographic and ecological survey of LTER Grid
Palmer Station		10/15/2002	04/01/2003	Field sampling and experimental work

**Season: 2003 - 2004**

Station / Vessel	# in Party	From Date	To Date	Site Activity
Laurence M. Gould		01/02/2004	02/01/2004	Hydrographic and ecological survey of LTER Grid
Palmer Station		10/15/2003	04/01/2004	Field sampling and experimental work

**Season: 2004 - 2005**

Station / Vessel	# in Party	From Date	To Date	Site Activity
Laurence M. Gould		01/02/2005	02/01/2005	Hydrographic and ecological survey of LTER Grid
Palmer Station		10/15/2004	04/01/2005	Field sampling and experimental work

**Season: 2005 - 2006**

Station / Vessel	# in Party	From Date	To Date	Site Activity
Laurence M. Gould		01/02/2006	02/01/2006	Hydrographic and ecological survey of LTER Grid
Palmer Station		10/15/2005	04/01/2006	Field sampling and experimental work

**Season: 2006 - 2007**

Station / Vessel	# in Party	From Date	To Date	Site Activity
Laurence M. Gould		01/02/2007	02/01/2007	Hydrographic and ecological survey of LTER Grid
Palmer Station		10/15/2006	04/01/2007	Field sampling and experimental work

**Season: 2007 - 2008**

Station / Vessel	# in Party	From Date	To Date	Site Activity
Laurence M. Gould		01/02/2008	02/01/2008	Hydrographic and ecological survey of LTER Grid
Palmer Station		10/15/2007	04/01/2008	Field sampling and experimental work

- If proposing vessel research, can the work be accomplished ONLY on the US Antarctic Program research vessels you specified above?  Yes  No

(For further information on the capabilities of the R/V LAURENCE GOULD or the R/V NATHANIEL B. PALMER, please refer to the Online Help.)

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- Describe your science objectives:

1. Maintain annual oceanographic sampling on the full PAL-LTER grid stations off West Antarctic Peninsula.

2. Define and investigate seasonal scale processes (plankton succession, krill recruitment, penguin breeding cycle) in the vicinity of Palmer Station using Zodiac-based local sampling.

3. Perform process-level experimental research on coastal Antarctic populations and biogeochemical cycles using lab-based approaches at PAL.

4. Install an array of autonomous sensors and data recorders/transmitters to facilitate physical & biological data collection at higher frequency and in seasons or regimes where manned sampling is not feasible.

5. Using an array of multivariate statistical techniques, investigate and analyze the long-term patterns and trends in the decade-long LTER data sets pertaining both to spatial pattern on the LTER grid, and temporal variability in meteorology, sea ice extent and duration, ocean color, plankton and biogeochemical properties; and secular trends in ecosystem response to climate change.

6. Understand the mechanistic linkages between physical and ecological processes governing Antarctic marine ecosystem organization and change.

- Briefly summarize how you will be conducting research in Antarctica (refer to the online help for instructions on completing this question):

1. For Objective 1 and 4 above: annual 28-day cruise (Palmer Station to Palmer Station) aboard LMG or NBP.

2. For objectives 2, 3, 4: season-long (October- April) stays by up to ten persons at Palmer Station, primarily relying on Zodiac-based sampling.

3. For objectives 2,3,4 acquire and install new moored autonomous physical- and biological-optical sensor systems in the Palmer Station nearshore and offshore (LTER grid) region (eg, underwater profiling systems).

NB: this project (H Ducklow, BP-045, lead PI) also includes integral participation by the following co-PI's and their teams:

co-PI Raymond Smith BP-032  
co-PI Maria Vernet BP-016  
co-PI Bill Fraser BP-013  
co-PI Robin Ross BP-028  
co-PI Langdon Quetin BP-028  
co-PI Doug Martinson BP-021

For other operational details, please refer to earlier LTER ORW and SIP submissions. This project involves no substantial revision in scope or needs, with the exception of installation of new autonomous sensors in the PAL region.

- If your project requires support from Ice Core Drilling Services (ICDS), the USAP drilling contractor, please describe below:

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Please include locations, number of corings, and approximate depth.