

## PROJECT INFORMATION

|                                    |   |
|------------------------------------|---|
| <b>Lead Principal Investigator</b> | Elizabeth Morris  |
| <b>Institute</b>                   | University of Cambridge, Scott Polar Research Institute |
| <b>Project Title / Grant #</b>     | CryoSat Calibration / Validation (CRYOSAT)              |
| <b>NSF Program and Manager</b>     | Intl - ESA, Ms. Renee Crain                             |
| <b>PFS Project Manager</b>         | Kim Derry   |

## LOGISTICS SUMMARY

For this portion of the CryoSat Calibration/Validation project, researchers from the UK will take a number of measurements along the International Glaciological Expedition Greenland (EGIG) line that crosses central Greenland. CPS has supported this project biennially since 2004.

The 2010<sup>th</sup> season sees the sixth traverse in support of the project, the previous five having been conducted in 2004, 2006, and 2008. Two more campaigns will follow in 2011.

For 2010, a team of two will travel to Kangerlussuaq via commercial air from England in late May. After spending about a week at the hub preparing for the traverse, the pair will fly into Summit with the ANG in early June. From there, they will launch a skidoo traverse. The team will depart Summit and traverse to the southwest, taking snow-density measurements en route, and then will return to Summit. They will resupply fuel and other supplies via caches established previously. When they've finished the work, the two researchers will fly back to Kangerlussuaq and depart Greenland around August 24.

In 2010, CPS will provide ANG flight coordination for passengers and cargo, Summit user days, some fuel(s), safety/communications gear, Air Greenland flight coordination for fuel depots, and Kangerlussuaq and Summit staff assistance. This support will be provided on a billable basis.

For the complete CPS online project record for this grant, including science objectives, go to: [http://www.polar.ch2m.com/arlss\\_reports/arlss\\_projectsdetail.asp?cbPropNum=CRYOSAT](http://www.polar.ch2m.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=CRYOSAT)

For up-to-date information on the project's schedule, please view the online Greenland calendar (<http://www.polar.ch2m.com/> > Greenland > Calendars/Schedules).

## OUTSTANDING ACTIONS AND NOTES

| Issue  | Responsibility    | Date Due | Date Completed/Note |
|--|-------------------|----------|---------------------|
| Obtain all necessary permits for fieldwork   | PI                |          | 18 May 2010         |
| Visit all hyperlinks and review all documents referred to in the support plan  | Entire Field Team |          |                     |
| Contact the GEOSummit Science Coordination Office (SCO) <a href="http://sco.at.summitcamp.org">sco at summitcamp.org</a> regarding your project's plans for the season | PI                |          |                     |
| Provide cost estimate for billable support   | CPS               |          | Kim Derry           |
| Develop a purchase order with CPS prior to field work  | PI                |          | Liz Morris          |
| Provide bill for actual support  | CPS               |          | Jason/Roseanne?     |
| Complete Critical Success Factors  | PI                |          |                     |

## ALLOCATIONS AND SERVICES

### Allocations from Inventory

| Quant/Unit | Item   |
|------------|--|
| 1 ea       | Iridium phone (to be used as back-up)              |
| 2 ea       | Skandic ski-doos purchased by Scott Polar Research |

For more information on satellite phones, radios, manuals and other field communications support, please visit the CPS communications Web site at <http://www.polar.ch2m.com/>.

### Other Services

| Service  | Comments  |
|--|---|
| Transport of cargo by C-130 Kangerlussuaq to/from Summit               | 3000 lb to Summit; 150 lb retrograde to Kanger                    |
| Packing space and assistance while in transit Kangerlussuaq and Summit | Warehouse space for organizing equipment/gear                     |
| Provision and maintenance of ski-doos                                  |   |
| Round-trip transport by C-130 Kangerlussuaq to/from Summit             | 2 passengers  |
| Daily safety check-in with CPS Kangerlussuaq office                    | Time of check-in to be established after arrival in Kangerlussuaq |
| Summit user days   | 14 user days  |
| Arrange Air Greenland flights for fuel caches                          | Locations: T41 and T21  |
| Gasoline for fuel caches   | 4 drums   |
| Oil  | 5 gallons   |
| Coleman fuel   | 6 gallons   |
| Pre-mix glycol   | 20 litres   |
| glycol   | 2 gallons   |
| Medical kit with remote medical support                                | See information later in this plan                                |

## LOCATION INFORMATION

Please visit <http://www.polar.ch2m.com/> and navigate to the Greenland menu for en route and location-specific Greenland information. Prior to deployment, your entire field team should be familiar with the content of the *Greenland Guide* and, if traveling to Summit, with the guidelines provided in the *Summit Users' Guide*. Both are available electronically via our Web site's Greenland menu.

## CARGO AND CUSTOMS

All cargo required for your project should arrive in Scotia, NY, **no later than 2 weeks prior** to the desired northbound Air National Guard (ANG) flight, must be entered into our online Cargo Tracking System, and must be properly registered with Customs.

For the most current ANG flight schedule go to <http://www.polar.ch2m.com/> and navigate to Greenland > Calendars/Schedules.

If you are a **new user** requiring access to the Cargo Tracking System, contact [Jason Buening](#).

(If you need **technical support** with the Cargo Tracking System, contact [Mike Dover](#) .

Customs instructions are available on our Web site at <http://www.polar.ch2m.com/> (go to Greenland > Customs). More information is available via the *Greenland Guide*, under Greenland on the CPS site.

The following is our current understanding of your overall cargo requirements:

**Cargo List**

| Items                   | Weight/Cube    |
|-------------------------|----------------|
| Assorted cargo and fuel | 3150 lbs total |

For the most up-to-date information on the project's schedule, please view the online Greenland calendar (<http://www.polar.ch2m.com/> > Greenland > Calendars/Schedules).

**FIELD TEAM INFORMATION**

| Name           | Location      | Date In   | Date Out  | Email   |
|----------------|---------------|-----------|-----------|---|
| Liz Morris     | Kangerlussuaq | 5/28/2010 | 6/4/2010  | <a href="mailto:emm36@hermes.cam.ac.uk">emm36 at hermes.cam.ac.uk</a> |
|                | Summit        | 6/4/2010  | 7/20/2010 |   |
| Martin Hignell | Kangerlussuaq | 5/28/2010 | 6/4/2010  |   |
|                | Summit        | 6/4/2010  | 7/20/2010 |   |

**PROJECT CONTACT INFORMATION**
**Research Team**

| Role                   | Name             | Email   | Phone / Fax                        |
|------------------------|------------------|---|------------------------------------|
| Principal Investigator | Elizabeth Morris | <a href="mailto:emm36@cam.ac.uk">emm36 at cam.ac.uk</a>               | (44)1223 33.6568 /(44)1223 33.6549 |
| Collaborator           | Peter Nienow     | <a href="mailto:pnienow@geog.gla.ac.uk">pnienow at geog.gla.ac.uk</a> | (44)141 330.3634 /(44)141 330.4894 |

**CPS Team Members**

| Contact for   | Name              | Email   | Primary Phone  |
|---|-------------------|---|--|
| Greenland science planning & support                              | Robin Abbott      | <a href="mailto:Robin@polarfield.com">Robin at polarfield.com</a>             | Denver: 303.748.8507                                 |
| Summit science planning & support                                 | Katrine Gorham    | <a href="mailto:Katrine@polarfield.com">Katrine at polarfield.com</a>         | Denver: 303.349.2884                                 |
| Thule science planning & support                                  | Kim Derry         | <a href="mailto:Kim@polarfield.com">Kim at polarfield.com</a>                 | Denver: 303.349.6382                                 |
| Kangerlussuaq base operations                                     | Kathy Young       | <a href="mailto:Kathy@polarfield.com">Kathy at polarfield.com</a>             | Denver: 720.320.6160<br>Greenland:<br>011.299.524218 |
| Sat phones & comms  | Roy Stehle        | <a href="mailto:Roy.Stehle@sri.com">Roy.Stehle at sri.com</a>                 | Menlo Park:<br>650.859.2552                          |
| Remote Medical (kits & service) and Medical/Dental Clearance (PQ) | Robbie Score      | <a href="mailto:Robbie@polarfield.com">Robbie at polarfield.com</a>           | Denver: 303.906.0093                                 |
| Purchase orders   | Karen Shaughnessy | <a href="mailto:Karen.Shaughnessy@ch2m.com">Karen Shaughnessy at ch2m.com</a> | Tel: 720.286.0413<br>Fax: 720.286.9165               |

**CPS Offices**

| Denver  | Kangerlussuaq  |
|---|--|
| Polar Field Services<br>8110 Shaffer Parkway<br>Suite 150<br>Littleton, CO 80127<br>Tel: 303.984.1450/1439<br>Fax: 303.984.1445 | CH2M HILL Polar Services<br>Attn: Name of<br>Employee/Researcher<br>Postboks 1015<br>DK-3910<br>Kangerlussuaq, Greenland<br>Tel: 011.299.841598<br>Fax: 011.299.841599 |

## Summit Station

|  |
|--|
| <b>Summer</b><br>CH2M HILL Polar Services<br>Attn: Name of Employee/Researcher - Summit Station<br>C/O Earl Vaughn<br>109 <sup>th</sup> Aerial Port<br>Bldg. 20<br>Stratton Air Base<br>Scotia, NY 12302-9752<br>Tel:518.344.2635<br>Fax: 518.344.2537 |
|--|

## Other

| Organization  | Internet  | Phone                           |
|---|---|---------------------------------|
| Medical Advisory Service (MAS)<br><b>(see below for Remote Telemed #)</b> | <a href="http://www.medaire.com/corp_medlink.html">http://www.medaire.com/corp_medlink.html</a>                                     | Office:<br>480.333.3771         |
| Summit Science Coordination Office<br>(SCO)                               | <a href="http://www.geosummit.org">http://www.geosummit.org</a><br><a href="http://sco.at.summitcamp.org">sco at summitcamp.org</a> | John Burkhart<br>+47 96 82 5011 |

## SAFETY, ENVIRONMENT, HEALTH and PERMITS

Effective January 1, 2010 the Government of Greenland assumed responsibility for the permitting process for research in Greenland. All science teams planning to conduct research in Greenland must complete an **annual application** in order to obtain approval from the Government of Greenland. The application forms are available from the Department of Domestic Affairs, Nature and Environment at <http://www.nanog.gl/expeditions> or by sending an email to [ekspeditioner at gh.gl](mailto:ekspeditioner@gh.gl). Applications are submitted directly through the Department of Domestic Affairs, Nature and Environment. Be advised that a new fee of 4000 DKK has been put in place for permits. For assistance with the application process, contact:

Martin Schiøtz  
 Head of Section  
 Section of Nature  
 Department of Domestic Affairs, Nature and Environment P.O. Box 1614  
 3900 Nuuk  
 Greenland  
 e-mail: [ekspeditioner at gh.gl](mailto:ekspeditioner@gh.gl)

### Medical Advisory Service (MAS) Support

If you need medical advice/assistance, do not hesitate to contact Medical Advisory Service (MAS) using the card included with the medical kit or the information below. Be sure that each team member knows where the kit is located and understands how to use the MAS service in the field. For further information on MAS, please visit our Web site <http://www.polar.ch2m.com/> and navigate to Medical>Remote Medical Services/Kits.

### MAS 24/7 Telemed Service

Worldwide Phone: 1.480.333.3876  
 Fax: 1.480.333.3821  
 Member ID: CH2M HILL Polar Services

## RISK ASSESSMENT

See Appendix for Risk Factors and Mitigation.

## CRITICAL SUCCESS FACTORS

Please list the factors that are most important for the success of your science. We track these factors in order to measure the success of CPS' support. Examples might be the availability of the helicopter or camp gear.

| <b>Factors</b>   |
|--|
| Skidoos in good working order                                |
| All cargo safely delivered to Summit                         |
| Facilities for testing and packing equipment in Kangerlusuaq |

## GOVERNMENT AND PERFORMANCE REPORTING ACT OF 1993 (GPRA)

NSF/OPP requires your help in complying with the Government Performance and Reporting Act of 1993 (GPRA). One measure of CPS' performance is a "facility-performance metric" which counts the number of productive days your project has in the field while relying on CPS facilities or support. Please keep track of any "lost days" and report these to us at the end of the season.

## APPENDIX

Risk Factors and Mitigation

**RISK FACTORS and MITIGATION**

| <b>Factor</b>   | <b>Mitigation and Control</b>  |
|---|--|
| Cold Weather  | -Cold Weather injury training (WFR)<br>-Proper clothing<br>-Appropriate camping gear<br>-Check forecast before going out of camp/town.   |
| Fixed Wing Travel   | -SAR plan in place<br>-Pilot briefing  |
| Foot/ski travel   | -Communication plan in place (carry a radio)<br>-Check out policy in place   |
| Fuel Handling   | -Fuel handling training/AHA<br>-Have a plan for fuel spills/first aid  |
| Generator   | Generator training/AHA   |
| Glacier Travel  | -Training<br>-SAR plan in place  |
| Heavy lifting/body strains and sprains                    | Team lifting/coordination  |
| High Altitude   | -Training<br>-MAS available<br>-SAR plan in place<br>-Oxygen available in high altitude camps  |
| Medical fitness for remote work outside ANG flight period | NSF Physical Qualification   |
| Remote Camp   | -MAS available<br>-SAR plan in place<br>-First Aid kit available<br>-Communication/ check-in plan in place<br>-Maintain a list of current camp member's training levels and certifications<br>-Maintain back-up equipment and supplies in case of emergency (comms, generators, tents, food) |