

Please review all of the following information, including the gear allocations and field team information, to ensure accuracy. This plan is an agreement between CH2M HILL Polar Services (CPS), and your group, documenting the logistics support you will receive.

## PROJECT INFORMATION

<b>Lead Principal Investigator</b>	Henry Harlow
<b>Institute</b>	University of Wyoming, Department of Zoology
<b>Project Title / Grant #</b>	Adaptive long-term fasting in land- and ice-bound polar bears: coping with ice loss in the Arctic? (0732713)
<b>NSF Program and Manager</b>	NSFOD\OPPARCVANS, Dr. Brendan Kelly
<b>PFS Project Manager</b>	Marin Kuizenga

## LOGISTICS SUMMARY

This grant funds biological and ecological studies of polar bears aimed at understanding what the impact of retreating summer sea ice in the Beaufort Sea region of the Arctic may have on these animals (who use sea ice to hunt). Working in close collaboration with United States Geological Survey (USGS) teams, the NSF researchers will study bears at the beginning of the ice-retreat period in the summer, and shortly before annual ice is re-formed in autumn, along the Beaufort Sea coast during field seasons in 2008 and 2009. The goal of the study is to establish whether polar bears that follow the pack ice north of the continental shelf experience food deprivation, and to estimate their ability for prolonged adaptive fasting and skeletal muscle protein and strength retention in comparison with land-bound bears.

In 2008, a team based from Prudhoe Bay for a two-phased field effort. Using helicopter support to reach their subjects, the team captured, tagged (with GPS radiocollars), collected samples from and assessed bears after the annual sea ice break-up, in August. They then returned in October to recapture and study some subset of their sample population.

In 2009, the Harlow team will visit the region three times: in April/May, August, and Sept/October. During the first two trips, the group will lodge in Prudhoe and commute daily via helicopter. The final capture period will be onboard an ice breaker, from which they will use onboard helicopters to capture bears on the fast ice. The bears will be weighed, examined, sampled, tagged and released.

During the month-long trip in April/May, the four person Harlow team will have its own helicopter but will work in conjunction with the USGS capture team and helicopter. Some other resources (for example, a helo mechanic) will be shared with the USGS team. The August and October trips will involve intermingling support with the USGS team – these arrangements are still developing. A Polar TREC teacher will join the field team in October.

In 2008, the USFWS provided an R44 helicopter to assist with gear transport and animal spotting in August; the USFWS also provided a spotting plane.

For 2008 and 2009, USGS will assist with all operations but will cover costs related to their own room and board. USGS will provide all helicopter support for the August period. USGS will cover remote fuel costs at Barter Island and Lonely.

The US Department of the Interior (DOI) Aviation Management Directorate (AMD) will work directly with the NSF to provide air support in 2008 and 2009, though CPS is involved in developing tasking and coordinating communication.

For 2008 and the spring 2009 trip, CPS will provide lab space with power and water, a chest freezer for sample storage, lodging and per diem, communications equipment and vehicle rental and will cover the cost for the Oilfield Unescorted training, if needed. For the August 2009 trip, CPS support will be limited to lodging

and per diem and vehicle rental. CPS can cover one charter flight to Kaktovik, if needed.

For October 2009, the PI will arrange logistics and ship costs directly with AMD and the USCG. Plans for the support via helicopter aboard the icebreaker are in process.

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=0732713](http://www.polar.ch2m.com/arlss_reports/arlss_projectsdetail.asp?cbPropNum=0732713)

## OUTSTANDING ACTIONS AND NOTES

Issue	Responsibility	Date Completed / Comment
Review support plan for accuracy and distribute to all field team members. Please review support schedule and correct.	PI	4/6/09
Visit all hyperlinks and review all documents referred to in the support plan	Field Team Members	4/6/09
Obtain all necessary permits for fieldwork	PI	
As the shipper of hazardous substances, you are legally responsible for declaring, documenting, and packaging hazardous materials in accordance with all applicable state and federal laws.	Note	
Provide update on status of pop-out floats for Hughes 500	AMD	

## ALLOCATIONS AND SERVICES

### Allocations from CH2M HILL Polar Services Inventory

Quant/Unit	Item	ID Number
1 ea	Iridium phone [8816-5143-0626]	NSF #5295

For more information on satellite phones, radios, manuals and other field communications support, please visit the CPS communications website at <http://vpr.sri.com>.

### Other Services

Quant/Unit	Item	Notes
1 ea	Freezer unit	
QTY	Lab space with water	Bald Mountain Air
QTY	Assistance with lab gear	Deionized water & gasses arranged and shipped or driven to Deadhorse
QTY	Gear storage	As needed between campaigns
QTY	Medical kit with remote telemedicine service	See RMI, in Safety section, below
150 days	Meals at Prudhoe Bay Hotel, Ice Services	Charge meals with your name, to CH2MHill Polar Services

### Accommodations

Quant/Unit	Item	Notes
168 days	Prudhoe user days	Four each Harlow research team members
50 days	Prudhoe user days	Two each flight crew members, as needed

**Air Support**

Type	Location	Date	Comment
Helicopter	Prudhoe	31 days – 4/20-5/20	Via AMD. Helicopter will not be the capture aircraft – for personnel and gear transit only
Fixed Wing	Deadhorse >BTI/BRW	TBD	Unless you can provide a date in advance this will likely have to be reimbursed via an expense report. Cost is NTE \$7000 for charters or commercial tickets.

**Truck Support**

You are responsible for your own fuel. Like all rental agencies, the vehicle we provide you needs to be returned clean, with a full tank of gas. Let us know if your vehicle will be dropped off late, or at a location other than where you picked it up. For more information regarding your vehicle contact: [matt@polarfield.com](mailto:matt@polarfield.com)

Pick Up	Drop Off	# Days	Comment
April 14	May 23	40	CPS Alaska truck from Fairbanks
August 2	August 9	8	CPS Prudhoe truck from Deadhorse

For the duration of your CPS-provided truck rental, you are covered by CPS automobile insurance. Please carry a copy of the following information with you. **If you are involved in an accident, please take photos and contact the Alaska Logistics Manager.**

Name Insured: CH2M HILL Polar Services 9191 South Jamaica Street Englewood, CO 80112-5946 303.771.0900	Producer: Marsh USA Inc. 1031 West 4 <sup>th</sup> Street Anchorage, AK 99501 907.276.5617 Policy - #BAP534531802
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(This statement is issued for information purposes only and is subject to the terms, exclusions, and conditions of the policy.)

**Support Schedule**

*In the below table, items in italics are for reference only. CPS is not involved with this support.*

Date	Location	Activity
<i>March 20<sup>th</sup> – May 20<sup>th</sup></i>	<i>Prudhoe Bay</i>	<i>USGS capture operations with Prism AStar —precedes arrival of Harlow team</i>
April 18-19 <sup>th</sup>	Prudhoe Bay	NSF-contracted AMD helicopter mobs to Prudhoe
April 20 <sup>th</sup>	Prudhoe Bay	First day of operations for personnel helicopter
May 20 <sup>th</sup>	Prudhoe Bay	Final day of NSF-contracted AMD helicopter ops
May 23 <sup>rd</sup>	Prudhoe Bay	Last of UW crew leaves Deadhorse
August 2-9 <sup>th</sup>	Prudhoe Bay	UW crew in Deadhorse - CPS support for rooms and truck
<i>Month of August</i>	<i>Prudhoe Bay</i>	<i>USGS capture operations with two helicopters – R44 &amp; L3. Harlow researchers will participate in this work.</i>
<i>September 24<sup>th</sup> – October 31<sup>st</sup></i>	<i>Arctic Ocean</i>	<i>The researchers will use the icebreaker as the platform to recapture ice-bound bears. Harlow researchers will work with the USCG to arrange all logistics; details are TBD.</i>
<i>September - October</i>	<i>Arctic Ocean</i>	<i>There will be two capture crews – one on ship; one on land. USGS will cover all aspects of the two helicopters used for land based capture operations during this period.</i>

## FIELD TEAM INFORMATION

Note: Names below in italics are not Harlow research team members and will not receive CPS support. Still, because USGS researchers work so closely with the UW team, CPS has listed them here as well.

Name	Location	Date In	Date Out	Email
<b>Spring Trip:</b>				
<i>Simac, Kristin</i>	Prudhoe Bay	4/19	5/21	USGS <a href="mailto:ksimac@usgs.gov">ksimac at usgs.gov</a>
<i>Lockhart, Mike</i>	Prudhoe Bay	4/19	5/21	USGS
<i>Durner, George</i>	Prudhoe Bay	4/19	5/21	USGS <a href="mailto:gdurner@usgs.gov">gdurner at usgs.gov</a>
Harlow, Henry	Prudhoe Bay	5/3	5/23	<a href="mailto:harlow@uwyo.edu">harlow at uwyo.edu</a>
Ben-David, Merav	Prudhoe Bay	4/18	5/23	<a href="mailto:bendavid@uwyo.edu">bendavid at uwyo.edu</a>
Whiteman, John	Prudhoe Bay	4/14	5/23	<a href="mailto:jwhitema@uwyo.edu">jwhitema at uwyo.edu</a>
Roosa, James	Prudhoe Bay	4/18	5/4	
<b>August Trip:</b>				
TBD	Prudhoe Bay			
<b>Fall Trip:</b>				
TBD	Prudhoe Bay			
Galvan, Christina	Prudhoe Bay			Note: Polar TREC participant

### Research Team

Role	Name	Email	Phone / Fax
Co-PI	Merav Ben-David	<a href="mailto:bendavid@uwyo.edu">bendavid at uwyo.edu</a>	307.766.5307 /
Principal Investigator	Henry Harlow	<a href="mailto:harlow@uwyo.edu">harlow at uwyo.edu</a>	307.766.3321 /307.766.5625

## PROJECT CONTACT INFORMATION

### CPS Team Members

Contact for	Name	Email	Primary Phone(s)
Alaska operations	Marin Kuizenga	<a href="mailto:Marin@polarfield.com">Marin at polarfield.com</a>	Fairbanks: 907.590.0755
Alaska operations	Naomi Whitty	<a href="mailto:Naomi@polarfield.com">Naomi at polarfield.com</a>	Fairbanks: 907.590.3954
Alaska operations	Matt Irinaga	<a href="mailto:Matt@polarfield.com">Matt at polarfield.com</a>	Fairbanks: 907.978.0564
Sat phones & comms	Roy Stehle	<a href="mailto:Roy.Stehle@sri.com">Roy.Stehle at sri.com</a>	Menlo Park: 650.859.2552
RMI	Kyli Olson	<a href="mailto:Kyli@polarfield.com">Kyli at polarfield.com</a>	Denver: 303.489.2151
Denver operations	Jill Ferris	<a href="mailto:Jill@polarfield.com">Jill at polarfield.com</a>	Denver: 720.320.6155

### CPS Offices

Denver	Fairbanks
CH2M HILL Polar Services Western Office 8110 Shaffer Parkway, Suite150 Littleton, CO 80127 Tel: 303.984.1450/1439 Fax: 303.984.1445	CH2M HILL Polar Services Alaska Office 2325 King Road Fairbanks, AK 99709 Tel: 907.455.4214 Fax: 907.455.4126

### Other

Organization	Internet	Phone
Remote Medical International (RMI) (see below for Remote Telemed #)	<a href="http://www.remotemedical.com">http://www.remotemedical.com</a>	Office: 800.597.4911

CH2M HILL Alaska Region of Energy Services and Operations (ESO), truck rentals - Contact Debbie Ross or Bob Preston. Call dispatch if Debbie and Bob aren't available.	<a href="mailto:Debra.Ross@ch2m.com">Debra Ross at ch2m.com</a> <a href="mailto:Bob.Preston@ch2m.com">Bob Preston at ch2m.com</a>	Debbie Ross 907.659.3308 Bob Preston 907.659.3359 Dispatch 659.3313
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## SAFETY, ENVIRONMENT, HEALTH and PERMITS

Researchers are responsible for all permits required to conduct fieldwork. Please visit <http://www.polar.ch2m.com/> and navigate to Alaska > Permits for more information regarding this topic.

### Remote Medical International (RMI) Support

If you need medical advice/assistance, don't hesitate to contact Remote Medical International (RMI) 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 RMI service in the field. For further information on RMI, please visit our Web site <http://www.polar.ch2m.com/> and navigate to Medical>Remote Medical Services/Kits.

#### RMI 24/7 Telemed Service

Primary: 206.734.3430

Alternate: 360.754.9805

Member ID: CH2M HILL Polar Services

## CRITICAL SUCCESS FACTORS

Please list the support 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>
Helicopter operations
Lab space

## 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.