

CMI Final Reports and Technical Summaries

General Process

Your final report and a technical summary (FR/TS) are both due on your project's end date. The *final drafts* are due to CMI six months before your end date so review, revision, and printing can be completed on time. Final drafts may receive a CMI technical/copy edit first and then be forwarded to MMS, which will scientifically edit your FR/TS and ensure they adequately address all of the objectives and hypotheses of the task order. MMS reviewers have 60 days to comment. If you do not include them in your report, you will be responsible for addressing all MMS comments in a letter, which will accompany your revised final report when it's submitted to CMI for its final edit, covers, printing and distribution. CMI also prepares electronic files for MMS in pdf format, and references in a ProCite data file. In some cases the report will be sent straight to MMS for review and the CMI edit will follow the principal investigator's response to the MMS comments.

Before You Begin

It is recommended that you contact your COTR to discuss what will be in your final report. After your discussion, you could send the COTR an outline of the report to be sure you agree on content.

Report Details

Reports should not be more than 200 single-spaced pages in 11-point type. Margins are 1 inch on all sides. Graphics and tables must also adhere to these margin limits, i.e., maximum 6.5 x 8 inches in portrait format and 6 x 9 in landscape (allowing space for a caption). A hard copy and an electronic version are to be submitted. Text should be in Word with minimal formatting; do not use "styles". The text will be reformatted by CMI to be consistent with the final report series.

Each figure or table should have a caption, be referred to in the text, and be numbered consecutively. Units should be metric, with English or other common units shown in parentheses when the metric unit is uncommon. Do not embed figures or tables in the text file, but, rather, submit them in a separate, stand-alone file. Figure and table captions should also be included in a separate Word file. The preferred formats for figures (including charts and graphs), are eps, tiff, png, pict, high ppi pdf, Photoshop, and Illustrator. Check with CMI re: compatibility if you are saving in other file formats or are unsure about what is the best format for your type of figure.

Check your references for completeness and accuracy. CMI follows the format used by *Limnology and Oceanography*, but you may submit your references in other formats if the same information is included.

Only include data pertinent to the report. The raw data will be archived at NODC (see CMI for procedures). Your COTR may want a copy also—check with him or her.

Report Outline

- *Title page* – title; PI's name, institution and e-mail address; additional authors if appropriate
- *Project organization* – who did what on the project (optional)
- *Table of contents* – headings, sub-headings and page numbers; tables and page numbers; figures and page numbers
- *Abstract* – one or two pages
- *Introduction* – background and objectives for the study (i.e., as specified in the task order)
- *Methods*
- *Results*
- *Discussion*
- *Acknowledgments* – minimally, CMI/MMS and your sources of matching funds
- *Study products* – a list of project publications—including journal articles, other formal, reviewed reports (i.e., CMI annual reports), and presentations at scientific meetings (including the annual CMI research review) that resulted from this project
- *References* – Use the following format : Hart, J.E. and P.D. Killworth. 1976. On open ocean baroclinic instability in the Arctic. Deep Sea Res. Oceanogr. Abstr. 23(7):637–645. doi: 10.1016/0011-7471(76)90006-1
- *Appendices* – as needed

Specifications for Technical Summaries

The following guidelines and specifications should be followed precisely, as the technical summary is used for intra-agency information transfer. Any questions regarding the preparation of technical summaries should be addressed to CMI or your COTR. The technical summary should be approximately 2 single-spaced printed pages in length, using 10-point Arial font. A range of 1½ to 3 single-spaced printed pages will be acceptable (excluding the map page). CMI will provide a sample upon request. The technical summary should be prepared using the following elements:

ACCESS NUMBER: **TO-xxxxx** (upper right of each page)

STUDY TITLE:

REPORT TITLE: usually same as study title

CONTRACT NUMBER(S): 14-35-001-xxxxx, TASK ORDER (TO):

SPONSORING OCS REGION: Alaska

APPLICABLE PLANNING AREA(S):

FISCAL YEAR(S) OF PROJECT FUNDING:

COMPLETION DATE OF REPORT:

COST(S): (by fiscal year); CUMULATIVE PROJECT COST:

PROJECT MANAGER(S):

AFFILIATION (of project manager):

ADDRESS:

PRINCIPAL INVESTIGATOR(S)*:

KEY WORDS:

BACKGROUND:

OBJECTIVES:

DESCRIPTION:

SIGNIFICANT CONCLUSIONS:

STUDY RESULTS:

STUDY PRODUCT(S):

Map showing area of study (digital version of base map available from CMI)

As shown above, all headings are in upper case letters; eight of the headings and the access number are in bold print. For CMI, this number is “**TO-**” followed by the five digit task order number. When a contract results in several reports that are to be summarized separately, the access number should include a decimal followed by sequential numbers for each technical summary. For example, if CMI Task Order #59999 resulted in six final products *that were summarized separately*, the numbering should reflect the natural (volume 1, 2, 3) or chronological (year 1, 2, 3) order of the reports. The access numbers for those six summaries would be:

TO-59999 TO-59999.2 TO-59999.3
TO-59999.4 TO-59999.5 TO-59999.6

An endnote should be placed at the bottom of the last page of text, following conclusion of the STUDY PRODUCT(S) element. An asterisk is placed after the PRINCIPAL INVESTIGATOR(S) element for reference to the endnote. The endnote is worded as follows:

*P.I.’s affiliation may be different than that listed for Project Manager(s).

The map provides a quick reference to the study location and is on a separate page from the text. You must use an MMS base map (available from CMI). Base maps have been prepared for three general Alaska OCS subregions (Arctic, Bering Sea and Gulf of Alaska). You may prepare an additional map to more closely identify your study area. Maps may not be appropriate for some studies. For example, a technical summary prepared for a laboratory study with generic application of results to all OCS areas would not require a map—check with CMI or your COTR.

The following is a sample Technical Summary:

ACCESS NUMBER: **TO-15169**

STUDY TITLE: Beaufort Sea Nearshore Under-Ice Currents: Science, Analysis and Logistics

REPORT TITLE: Beaufort Sea Nearshore Under-Ice Currents: Science, Analysis and Logistics

CONTRACT NUMBER: 1435-01-98-CA 30909; TASK ORDER (TO): 15169

SPONSORING OCS REGION: Alaska

APPLICABLE PLANNING AREA: Beaufort Sea

FISCAL YEAR OF PROJECT FUNDING: 1999

COMPLETION DATE OF REPORT: August 2001

COST: FY 1999: \$144,894; CUMULATIVE PROJECT COST: \$144,894

PROJECT MANAGER: Thomas J. Weingartner

AFFILIATION: University of Alaska Fairbanks

ADDRESS: Institute of Marine Science, University of Alaska Fairbanks, Fairbanks, AK 99775-7220

PRINCIPAL INVESTIGATOR*: Thomas J. Weingartner

KEY WORDS: Circulation, landfast ice zone, nearshore Beaufort Sea

BACKGROUND:

The development of offshore oil exploration and production facilities on the inner shelf of the Beaufort Sea might impact the nearshore biota and inhibit clean up of spilled pollutants. This project was undertaken to determine the circulation characteristics of Stefansson Sound throughout the year. Particular interest focused on obtaining direct current measurements from beneath the landfast ice that covers the area for up to nine months of the year. The results will help establish design criteria for spill clean up and guide the development of pollutant trajectory models for this region.

OBJECTIVES:

Our goals were to: 1) deploy three instrumented moorings in the vicinity of the Liberty and Northstar projects for a period of one year, 2) analyze current and wind records to quantify the correlation between the currents and winds, and 3) determine the vertical structure of the currents throughout the water column and how this structure changes throughout the year.

DESCRIPTION:

The moorings collected velocity, temperature, salinity, and transmissivity data at hourly intervals. (Transmissivity is an indirect measure of suspended sediment.) The moorings spanned an alongshore distance of about 40 km. Current measurements were made with a 1200 kHz upward-looking acoustic Doppler current profiler (ADCP) mounted on a rigid PVC frame resting on the seabed. Temperature, salinity, and transmissivity data were collected from temperature/conductivity recorders (SEACATs) installed on the frames. All instruments were about 1 m above the seabed in 6–8 m water depth. The ADCPs provide a measure of ice thickness and ice displacement throughout the deployment period. The latter capability allowed accurate determination of the formation and breakup of the landfast ice. Data recovery was excellent overall.

SIGNIFICANT CONCLUSIONS:

The results show two seasonal circulation regimes. The open water/loose ice regime lasts from early July through mid-October, during which time the currents are swift, highly variable, and correlated with the alongshore winds. Current speeds typically exceeded 10 cm s^{-1} and maximum currents were greater than 100 cm s^{-1} . The region was covered by landfast ice from mid-October through the end of June. Currents at this time were feeble ($\sim 3 \text{ cm s}^{-1}$) and the current variations were primarily tidal. Less than 1% of the current speeds exceeded 20 cm s^{-1} and less than 10% of the current speeds exceeded 10 cm s^{-1} . Current fluctuations are horizontally coherent throughout the year over the 40 km separating the moorings. Vertical current shears are weak beneath the landfast ice, but can be large during the open water period. The mean winds are westward on annual average and drive a weak ($< 3 \text{ cm s}^{-1}$), mean westward flow. Thus wind-driven flows will predominantly determine the dispersal of pollutants in this region.

Two events were observed that involved very high suspended sediment concentrations (as determined from the transmissometer). The first occurred in early October 1999 during a storm event, but prior to freeze-up. The second event occurred in early June, when the landfast ice was intact and winds were weak. The June sediment signal is presumed to reflect the under-ice spreading of the Sagavanirktok River plume. Sediment transport includes both storm-forced re-suspension events during the open water season and settling from under-ice river plumes that might extend as far as 10 km from the river mouth.

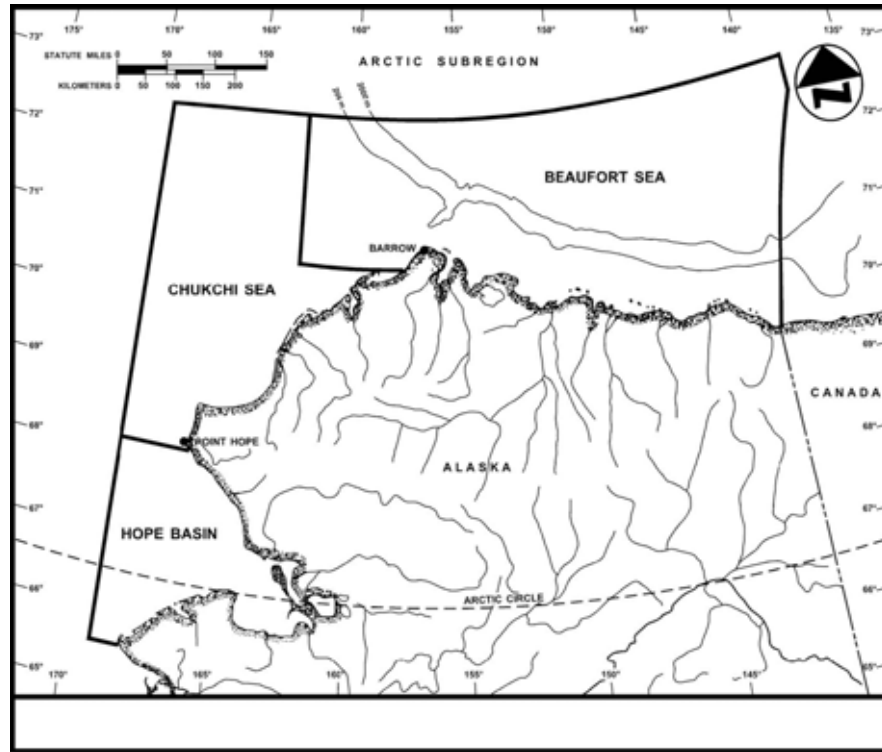
STUDY RESULTS:

This work represents the first year-round measurements of under-ice currents in the nearshore Beaufort Sea, including both the freeze-up and break-up periods. This success was achieved because ADCPs were used for the measurements. These current meters can be moored near the seabed and are therefore less susceptible to destruction by deep ice keels. From the perspective of oil spill risk assessment and cleanup design, the most important result of this work is that current speeds beneath the landfast ice seldom (less than 1%) exceed 20 cm s^{-1} . These findings were consistent among all of the moorings. The results reflect the inhibiting effects of landfast ice on the transfer of momentum from the atmosphere to the ocean. The current measurements might be biased toward low values because the measurements were made within the relatively protected lagoons inshore of the barrier island complex. The islands might restrict communication between the outer and inner shelf. Therefore, we recommend that sampling be undertaken outside of the barrier island complex to determine if there are substantial differences in under-ice current magnitudes inshore and offshore of the barrier islands.

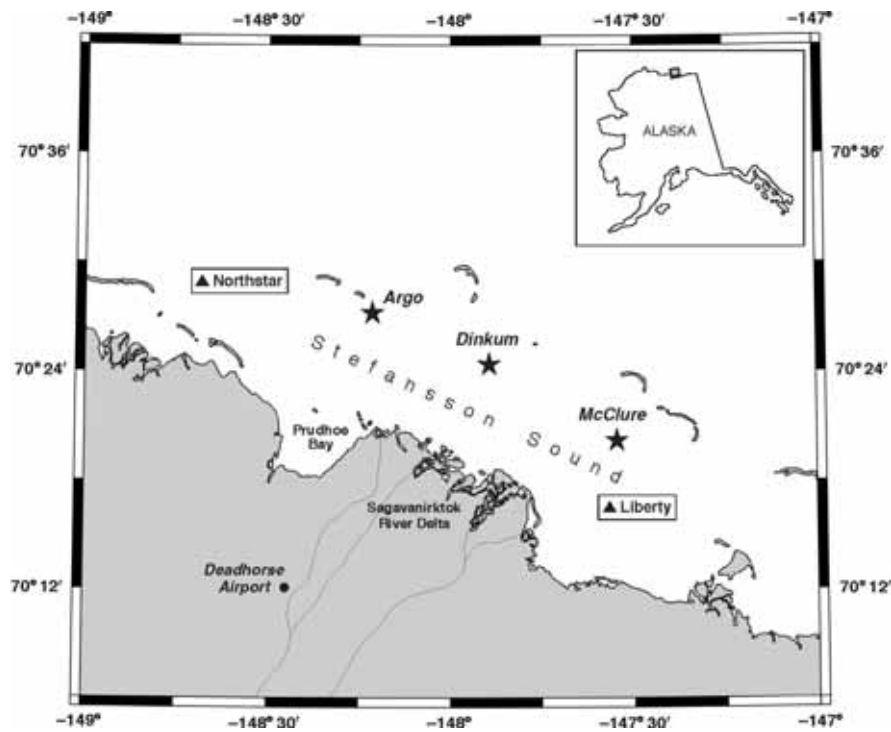
STUDY PRODUCTS:

- Weingartner T.J. 2000. Beaufort Sea nearshore under-ice currents: Science, analysis and logistics, p. 75. *In* University of Alaska Coastal Marine Institute Annual Report No. 6. OCS Study MMS 2000-046, University of Alaska Fairbanks and USDOI, MMS, Alaska OCS Region.
- Weingartner T.J. 2000. Beaufort Sea nearshore under-ice currents: Science, analysis and logistics, p. 37-41. *In* University of Alaska Coastal Marine Institute Annual Report No. 7. OCS Study MMS 2000 070, University of Alaska Fairbanks and USDOI, MMS, Alaska OCS Region. Weingartner T.J. 2001. Beaufort Sea nearshore under-ice currents: Science, analysis and logistics. University of Alaska Coastal Marine Institute Annual Research Review, February 2001, Fairbanks. Weingartner, T.J. 2001. Beaufort Sea nearshore under-ice currents: Science, analysis and logistics. MMS Information Transfer Meeting, April 2001, Anchorage. Weingartner, T.J. 2001. Going to extremes: Buoyancy forcing on arctic continental shelves. Gordon Conference on Coastal Ocean Circulation, June 2001, New London, NH. Dr. Weingartner was an invited speaker at this conference and presented some of the results from this project at the meeting.
- Weingartner T.J., and S.R. Okkonen. 2001. Beaufort Sea nearshore under-ice currents: Science, analysis and logistics. Final Report. OCS Study MMS 2001-068, University of Alaska Coastal Marine Institute, University of Alaska Fairbanks and USDOI, MMS, Alaska OCS Region, 22 p.

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Focus area for Beaufort Sea Nearshore Under-Ice Currents: Science, Analysis and Logistics.



Map of Prudhoe Bay and Stefansson Sound, Alaska with the location of the three mooring sites indicated.