Quarterly Project Report

1. Team Identification

Project Team:	Marine and Climate System ▼
Budget Year:	2018
Quarter:	Q2

2. Scope - Highlights of the Period

Person Days:	0
Accomplishments	
Missed Targets	

3. Activity Tracking

ID	*Task*	*% Complete*	*Status*
30	Task 1.1 Winter estuarine survey	50	data collection completed, analysis and documen
31	Task 1.2 Spring/summer survey	1	minor progress since cruise cancellation. Preparat
32	Task 1.3 Moorings	20	3 moorings recovered and redeployed duri ng fall
33	Task 1.4 Remote sensing	40	OpLcal remote sensing task on separating CDOM across HB in MSc thesis of A Hamilton.

4. Risk And Issue Updates

ID	*Risk Event*	*Status*

5. Budget Information

CURRENT QUARTER SPENDING

Amounts are the cumulative totals to the end of the reporting period.

1. Salaries and Benefits

a) Graduate Students	$15,400.87	Basu, Campbell, Petrusevich
b) PDF's	$8,846.76	Lukovich (from Q1, $0 in this quarter)
c) Technical Staff	$0	-
2. Equipment or Facility		
a) Purchase or Rental	$0	-
b) Operations and Maintenance Cost	$164.52	security clearances
3. Materials and Supplies	$0	-
4. Travel Expenses		
a) Conferences	$0	-
b) Field Work	$386.59	Theriault Nanuk lodge + student per diem and travel
c) Project Related Travel	$0	-
d) Central Planning Meetings	$0	-
5. Dissemination Costs	$0	-
Total	**$24,798.74**	

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	*Contribution*	*Description*
University of Manitoba	17,683.92	Lukovich RA salary
Total	**$17,683.92**	

6. Budget Explanation

Budget Statement	
Cash Contributions	
Expenditure Tracking	Click here to attach a file

7. Research Team

Team Member	*Overview of Participation and Scientific Contributions*
David Barber	Project management, student & RA supervision
Jens Ehn	Team lead since January 2016, field program planning, mooring design, stu ...
Michael Morris	Team co-lead, review of project work plan, participate in team updates and ...

Team Member	Overview of Participation and Scientific Contributions
David Babb	Sea ice dynamics, field program planning and coordination (non-Baysys fun ...
Jennifer Lukovich	Coordination of NEMO modelling, supervision and support for NEMO mod ...
Simon Belanger	Student supervision, remote sensing of freshwater tracers and optical prop...
Sergei Kirillov	Assisting in moorings design, mooring operations, physical oceanography, a ...
Wayne Chan	Computer support for modeling team (non-BaySys funding).
Masayo Ogi	Research into teleconnections between Arctic and temperate climate, with ...
Greg McCullough	Former team lead, field program planning; assisting with student supervisi ...
Atreya Basu	PhD research into freshwater distribution and patterns in Hudson Bay using...
Vlad Petrusevich	PhD research into tidal driven processes in Nelson estuary and in Hudson B ...
Yanique Campbell	MSc research into effects of wave dynamics on Hudson Bay water masses.
Madison Harasyn	MSc research on sea ice passive microwave remote sensing.

8. Other

Please provide any additional information/comments as required.

<< Reasearch Team

Before submitting the form, please confirm that the information contained in this report is complete and accurate to the best of your knowledge.

Upon clicking submit the report will be saved as:

BaySys Quarterly Status Report - Marine and Climate System 2018 Q2

Submit

It will then automatically be sent for review and approval by the project team.

Txt Report Status:

Draft In Progress

Quarterly Project Report

1. Team Identification

Project Team:	Freshwater System ▼
Budget Year:	2018
Quarter:	Q2

2. Scope - Highlights of the Period

Person Days:	0
Accomplishments	-re-bias correction of climate scenarios for input data consistency (using Global Forcing Data, GFD from SMHI) -regulated system model scenarios produced -arctic-HYPE (pan arctic) domain historical scenario disseminated to Team 6 (NEMO modelling) for testing -input forcing data uncertainty analysis completed for BaySys domain; resulted in 4 different calibrations of the model
Missed Targets	-dissemination of regulated system scenarios delayed as a result of needing the new future re-biased corrected climate scenarios

3. Activity Tracking

ID	*Task*	*% Complete*	*Status*
36	Task 2.1, Phase 1 Climate Projections	90	re-doing bias correction with new forcing data set
37	Task 2.1, Phase 2 Continental-scale m...	90	will need to regenerate future scenarios as a resu
38	Task 2.2 Uncertainty assessment	60	Input uncertainty analysis complete; parameter u
39	Task 2.3 Regulated system modeling	80	Regulated system models are completed and emb
40	Task 2.4 Projected freshwater sensitivi...	20	Drafting a manuscript on input data (GCM) uncert

4. Risk And Issue Updates

ID	*Risk Event*	*Status*

ID	Risk Event	Status
19	Redo bias correction for climate scenarios	on-going. Should be done within 1 month so othe

5. Budget Information

CURRENT QUARTER SPENDING

Amounts are the cumulative totals to the end of the reporting period.

1. Salaries and Benefits		
a) Graduate Students	$8,642.48	MSc students (A. Tefs, S. Pokorny) and PhD (R. Lilhare)
b) PDF's	$12,500	PDF2 (Sohom Mandal)
c) Technical Staff	$3,119.62	BSc research assistant for A-HYPE far field modelling
2. Equipment or Facility		
a) Purchase or Rental	$0	n/a
b) Operations and Maintenance Cost	$0	n/a
3. Materials and Supplies	$0.85	postage
4. Travel Expenses		
a) Conferences	$1,110.73	CWRA student workshop registration
b) Field Work	$0	n/a
c) Project Related Travel	$0	n/a
d) Central Planning Meetings	$69.17	parking and taxi fare for MH meetings
5. Dissemination Costs	$0	n/a
Total	**$25,442.85**	

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	*Contribution*	*Description*
University of Manitoba	4,000	Matt MacDonald (50 hrs @$80/hr) for manuscript
University of Manitoba	1,680.24	UNBC graduate scholarship top-up (for R. Lilhare)
University of Manitoba	5,357.52	GETS funding for A Tefs and S. Pokorny
Ouranos	3,780	Catherine Guay: 21 hrs @ 180/hr
Total	**$14,817.76**	

6. Budget Explanation

Budget Statement	our overall budget is on track

Cash Contributions	
Expenditure Tracking	BAYSyS 319259 Expenditure Report Jan 1 2018 to March 31 2018.xls 39.5 KB

7. Research Team

Team Member	*Overview of Participation and Scientific Contributions*
Kristina Koenig	team coordination and meeting coordination
Tricia Stadnyk	academic team coordination, supervision of students, and preparation of d...
Stephen Dery	co-supervision of students, preparation of deliverables
Rene Roy	(Catherine Guay) coordination of Hydro Quebec regulated system modelling
Marco Braun	bias-correction of climate scenarios

8. Other

Please provide any additional information/comments as required.

submitted manscript on regulated system analysis

<< Reasearch Team

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Upon clicking submit the report will be saved as:

BaySys Quarterly Status Report - Freshwater System 2018 Q2

Submit

It will then automatically be sent for review and approval by the project team.

Txt Report Status:

MH Team Lead Review

BaySys Project – Individual Team Quarterly Update

Date Submitted: April 28, 2018 (Period between Jan. 1 and Mar. 31)

Budget Year Ending: Dec 31 2018 Quarter: Q2

1. TEAM IDENTIFICATION

Team Number: 4
Team Name: Carbon Cycling
Prepared by: Tim Papakyriakou
Submitted by (University Team Lead): Tim Papakyriakou

2. SCOPE - HIGHLIGHTS OF THE PERIOD

Number of person-days in the field this quarter:
person-days, as detailed below:

Accomplishments

- Developed improved sampling plan for spring 2018 Amundsen cruise
- Progressed writing on the Carbon Cycle chapter for the Hudson Bay IRIS document
- Progressed on review paper of Hudson Bay Carbon Cycle
- Started writing papers on carbon cycle in Churchill River and Estuary
- Began writing manuscript on photomineralization
- Collation of previously collected sub-bottom geophysical data to support development of carbon budget and inform sediment sampling program for program for BaySys cruise
- Met with NEMO modeling team on BGCM modeling. Decision made to port the BGCM to NEMO. PhD student Inge Deschepper will speed months at Paul Myers lab this spring and summer working with the modeling team on integration. The plan is to run the BGCM model with NEMO for the full suite of BaySys NEMO runs.

Missed Targets

- We are 12 months behind with the BaySys bay-wide survey of the Amundsen.
- Salinity sample measurement was postponed due to instrument malfunction – samples will be measured on Amundsen in May
- Monthly sampling at Limestone GS was cancelled due to relocation of Mathew Bannerman to Winnipeg

3. TASKS AND COMPLETION STATUS

ID	Task	%Complete	Status
46	4.1 Fall Cruise	100	On Track cruise & sample analysis complete
47	4.2 Winter Camp	90	On Track field program is complete. Waiting on water analysis results from collaborating laboratories.
15	2.1 Safety Training	100	On Track **students and staff requiring training receive training**
18	Procurement, preparation and calibration of sensors/supplies	60	On Track Majority of supplies procured and sensors prepared.
25	3.3 Bay-Wide Survey	15	[redacted] Cruise cancelled in 2017 and rescheduled for 2018
82	4.9 Contemporary river discharge impacts on the regional CO2 source/sink status -- Analysis of remote sensing data	15	On Track HQP (Calgary) successfully completed his candidacy exam & and familiarized with existing remote sensing retrieval algorithms. Monthly river water sampling
80	4.9 Contemporary river discharge impacts on the regional CO2 source/sink status - photochemical reduction of OC to IC	15	On Track HQP (Trent) successfully defended his thesis proposal and has scheduled candidacy exams.
71/83	4.8 Biogeochemical Modelling & 4.10 Anticipated future regional CO2 source/sink status of the Bay	15	On Track HQP (PhD 5 shared with Team 3, Laval) successfully completed her candidacy exam and familiarizing with needs for biogeochemical modeling within NEMO. Are are arranging for the student to spend time at University of Alberta and she is already in contact with other graduate students there.

Completed On Track **Potential Issue** [redacted]

4. UPDATE RISKS/ISSUES

Update Existing Risk Items

Risk Item	Status
ID= 2; Sequence of data analysis and model output causes a delay	Normal – entering into the field and modeling phases and are cognizant of our modeling needs.
ID=15; Heavy ice restricts planned Bay-wide survey	Normal – work out contingencies using helicopter
ID=82; Ship-based sensors damaged by elements	Normal – work out contingenices
ID=48; Bay-wide survey of Amundsen	High. Data is needed for Task 4.9 Contemporary river discharge impact on CO2 sources/sink status (T4H1)

	Task 4.10 Future source/sink status (T4H2) On Task 4.9, we have data on river discharge during the winter and fall and have sampled a variety of estuaries during the fall season. We've collected data in support of a detailed study of the Nelson C input to the Bay and have data examining the response of the estuary to C received from the river. We are starting routine collection of river water from Limestone GS on the Nelson and on the Great Whale in support of objectives. Critical however is the gap in spring/summer data on the variation in the C-system of the Bay in response to sea ice and river inflow. These data would support the development of a remote sensing tool to 'map' the distribution of some carbon parameters with time. I have arranged to piggy back on my ArcticNet project to get data necessary to build the inversion model from data collected by another student in Baffin Bay. Preliminary work on model verification can be accomplished using data from the ArcticNet 2010 cruise. However, at some point we need to validate the model with data from a dedicated summer cruise in Hudson Bay before we can apply the model in any confidence. The data set from 2010 lacks precision data on surface pCO2 and isotopic tracers to understand the source of the water affecting the pCCO2 supporting the flux. In my opinion We can not adequately address T4H1 without these data. The team is eagerly looking forward to the research cruise. Task 4.10 is similarly affected. The HQP (PhD 5) in Laval is working on the biochemical model in conjunction with the ecosystem modelling initiative (Task 4.8). She has data from 2005 and 2010, in addition to the data we will relay to her from the fall and winter program. As with the previous task, these data are not sufficient on their own to meet objectives T4H2. PhD1 had been converted to a PDF - Dave Capelle. His task is the development of a Bay Wide synthesis of the carbon system in support of Task 4.9 and 4.10. The success of his PDF depends on a comprehensive summer cruise in the Bay. PhD2 is onboard - Mohamed Ahmed. His task is the development of a remote sensing product to made pCO2 and flux distribution in the Bay. As mentioned above (text on task 4.9), data from a comprehensive summer cruise in the Bay is required, although much preparation can be accomplished using data from Baffin Bay (2017) and existing data from 2010 and 2005 in the Bay. Without those data he will fall short of a paper in support of objectives surrounding Task 4.9.

~~5. Budget Information~~

5. BUDGET TABLES / 6. EXPLANATION

5.1. Salaries and Benefits

a) Graduate Students	875.01 12,000 3,256	Ahmed (PhD, UCalgary) Islam (PhD, Trent) Partial stipend to Stainton (remainder paid by UM GETS program)
b) PDF's	15888.70	Partial salary for Butterworth (Calgary) and Capelle (UofM)
c) Technical Staff	0	

5.2. Equipment or Facility

a) Purchase or Rental	0	
b) Operations and Maintenance cost	1884.93 100.00	Shipping costs (UManitoba) User Fees (Trent)

5.3. Materials and Supplies

a) Materials and Supplies	1821.99 751.73 3,559	automated flux sensor supplies (UManitoba) 751.37 (Trent) Graphical assistance (UManitoba)

5.4. Travel Expenses

a) Conferences	810.12	Trent
b) Field Work	358.89 125.00	 Nanuk lodge charge transferred from previous period
c) Project related travel		
d) Central planning meetings		

5.5. Dissemination Costs

a) Dissemination Costs	

Total	$27,131.37	

5.6. Other organizations and in-kind contributions

Organization	Contribution	Description

Calgary	$12,500	Cash: Scholarship to PhD student Ahmed and 30% PDF salary of Butterworth
Trent	$5,705	Cash: Scholarship to PhD student Islam
Manitoba	$8,700	In-kind: 60% salary of S. Luque this quarter
Manitoba	$3,937	In-kind: 25% salary of E. Wiley this quarter
Manitoba	$2,600	In-kind: 25% salary of L. Chow this quarter
ArcticNet and MEOPAR	$10,000	Graduate Stipends for MSc #1, MSc#4, Kazmiruk
Total	$43,442	

7. RESEARCH TEAM

Please provide an overview of the participation in and scientific contributions to the project for each member of the research team (principal investigator, co-investigators, collaborators, company and government scientists, research associates, postdocs, students, etc.).

Team Member	Overview of participation and scientific contributions to the project
Bob Gill (Manitoba Hydro)	Industry oversight
Tim Papakyriakou (UM)	Project lead. Recruitment. Steering committee meeting and field planning. Assist with carbon system research (Task 4.1) and assist where necessary on other tasks.
Brent Else (University of Calgary)	Recruited PhD student to begin work on Task 4.4 (remote sensing of carbon system) and Post Doc working on ship-based flux
Mohamed Ahmed (University of Calgary, PhD)	Completed candidacy exam. (Task 4.4)
Celine Gueguen (Trent University)	Recruitment of PhD student and began work on photochemistry (H4.1)
Sohidul Islam (Trent PhD)	Photodegradation of DOM (H4.1)
Lisa Miller (IOS, DFO)	Analysis of water samples from fall and winter BaySys experiments
Zou Zou Kuzyk (UM)	Recruitment and field planning (H4.1 & 4.2). Organic carbon system and sediment analysis
Zakhar Kazmiruk (UM PhD)	Preparation: mineralization of organic matter in the estuary and Bay (H4.1); Fall cruise and one leg of Winter program
Samantha Huyghe (UM MSc)	Planning: Sediments, organic carbon system and paleo discharge analysis (T4; H4.2)
Dave Capelle (PDF, UM)	Carbon System in Hudson Bay (participated in winter program and led preparations for Bay-wide survey of Amundsen)
Brian Butterworth (PDF, Calgary)	ship-based flux system

8. OTHER
Please provide any additional information/comments as required. *"Insert Text Here"*

Quarterly Project Report

1. Team Identification

Project Team:	Contaminants
Budget Year:	2018
Quarter:	Q2

2. Scope - Highlights of the Period

Person Days:	0
Accomplishments	Collation of previously collected sub-bottom geophysical data to support development of carbon budget and inform sediment sampling program for bay-wide cruise. Creation of bay-wide sampling plan for coordinated sampling between teams 4-5.
Missed Targets	No missed targets for this quarter.

3. Activity Tracking

ID	*Task*	*% Complete*	*Status*
51	Task 5.1 Relationship between mercur...	15	Behind schedule due to delays in bay-wide sampli
52	Task 5.2 Suspended Sediment and Org...	40	On track in anticipation of bay-wide samples
53	Task 5.3 Mass balance modeling of m...	35	Behind schedule due to delays in bay-wide sampli

4. Risk And Issue Updates

ID	*Risk Event*	*Status*
11	Availability of Manitoba Hydro sediment data	Potential issue; team has not requested updated s
10	Hydro-Quebec historical data is not provided	On track: recent publication of historical fish data
9	Mercury cross-contamination on the Amundsen	On track: system will be tested on board prior to t
2	Sequence of data analysis, and model outputs causes c	On track: will participate in modelling meeting to

5. Budget Information

CURRENT QUARTER SPENDING

Amounts are the cumulative totals to the end of the reporting period.

1. Salaries and Benefits		
a) Graduate Students	$25,794.57	Cumulative graduate student for Q1/Q2
b) PDF's	$32,889.37	Cumulative PDF for Q1/Q2
c) Technical Staff	$0	none
2. Equipment or Facility		
a) Purchase or Rental	$0	none
b) Operations and Maintenance Cost	$172.17	Q1 costs only; no Q2 costs
3. Materials and Supplies	$4,501	Q2: graphical assistance (Kuzyk)
4. Travel Expenses		
a) Conferences	$0	none
b) Field Work	$580	Q2: 125 from 2017 Nanuk field work applied charges (Kuzyk)
c) Project Related Travel	$48.11	Q2: sum of flight minus reimbursement from payment reallocati
d) Central Planning Meetings	$316.86	Q2: none
5. Dissemination Costs	$0	None
Total	**$64,302.08**	

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	*Contribution*	*Description*
ArcticNet	20,000	Graduate student stipends (Kuzyk)
University of Manitoba	21,044.48	Q2: GETS program for graduate student stipend (W
NSERC	9,000	CREATE program PhD stipend (Lobb)
Canada Graduate Scholarship Program	8,748	Graduate student stipend (Wang)
Total	**$58,792.48**	

6. Budget Explanation

Budget Statement	Materials and supplies budget is largely covered after end of fiscal year due to dela
Cash Contributions	Graduate student stipends supported by University of Manitoba, NSERC, Canada Gı
Expenditure Tracking	Click here to attach a file

7. Research Team

Team Member	*Overview of Participation and Scientific Contributions*
Feiyue Wang	Project lead – mercury methylation and mass budget; supervision of MSc#2...
Allison Zacharias	Project co-lead – project reporting.
Sarah Wakelin	Project co-lead – project reporting; handling of data requests.
Kathleen Munson	PDF#1 – project coordination, mercury methylation and mass budget; prep...
James Singer	MSc#2 – mercury methylation and mass budget; on-going methylmercury, ...
Zou Zou Kuzyk	Lead on particulate organic matter sources and transport; preparation of H...
Tassia Stainton	MSc#1 – particulate organic matter sources and transport. Data interpretati...
Samantha Huyghe	MSc#4 – data analysis of archived geophysical and geochemical data, wrote...
David Lobb	Sediment budget and fingerprinting - (inorganic); participation in planning s...
Masoud Goharrokhi	PhD#1 – sediment budgeting and fingerprinting (inorganic): Preparation of t...
Robie Macdonald	Planning and consultation for bay-wide cruise.
Philip Owens	Sediment budgeting and fingerprinting (inorganic); participation in planning...
Ellen Petticrew	Sediment and organic matter fingerprinting – supervision of MSc#1, data in...
Gary Stern	Supervision of PDF#1. Planning of 2018 bay-wide cruise.

8. Other

Please provide any additional information/comments as required.

<< Reasearch Team

Before submitting the form, please confirm that the information contained in this report is complete and accurate to the best of your knowledge.

Upon clicking submit the report will be saved as:

BaySys Quarterly Status Report - Contaminants 2018 Q2

Submit

It will then automatically be sent for review and approval by the project team.

Txt Report Status:

Draft In Progress

Quarterly Project Report

1. Team Identification

Project Team:	NEMO Modeling ▼
Budget Year:	2018
Quarter:	Q2

2. Scope - Highlights of the Period

Person Days:	0
Accomplishments	Research on SSTs, freshwater and sea ice dynamics, and model evaluation is ongoing. Feedback on Team 6 proposal objectives and plans was provided, and subsequent action items determined, including engagement with Environment Canada, which are currently underway. Engagement with other teams is ongoing to enable coordination in observational and modeling efforts.
Missed Targets	No additional missed targets have resulted since the last quarterly report; simulations will proceed following decisions made with action items from the Team 6 proposal assessment.

3. Activity Tracking

ID	*Task*	*% Complete*	*Status*

4. Risk And Issue Updates

ID	*Risk Event*	*Status*
20	NEMO Model area	The Team 6 proposal has been reviewed, with the

5. Budget Information

CURRENT QUARTER SPENDING

Amounts are the cumulative totals to the end of the reporting period.

1. Salaries and Benefits

a) Graduate Students	$12,000	salary
b) PDF's	$20,000	salary
c) Technical Staff	$0	N/A
2. Equipment or Facility		
a) Purchase or Rental	$0	N/A
b) Operations and Maintenance Cost	$0	N/A
3. Materials and Supplies	$0	N/A
4. Travel Expenses		
a) Conferences	$0	N/A
b) Field Work	$0	N/A
c) Project Related Travel	$0	N/A
d) Central Planning Meetings	$0	N/A
5. Dissemination Costs	$0	N/A
Total	**$32,000**	

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	*Contribution*	*Description*
in-kind contribution	55,000	Compute Canada, in-kind salary support (25% for N
Total	**$55,000**	

6. Budget Explanation

Budget Statement	
Cash Contributions	
Expenditure Tracking	Click here to attach a file

7. Research Team

Team Member	*Overview of Participation and Scientific Contributions*
Paul Myers	Academic Co-Lead – Coordinates and supervises T6 activities and NEMO m...
Natasha Ridenour	Freshwater dynamics and circulation in the Hudson Bay Complex; freshwat...
Shabnam Jarfarikhasragh	Assessment of SST and sensitivity to atmospheric forcing and model resolu...
Jennifer Lukovich	Academic Co-Lead – Coordinates T6 activities; contributes to student super...

Team Member	Overview of Participation and Scientific Contributions
Kevin Sydor	Industry Co-Lead – Overall project management; contributes to Team 6 coo...

8. Other

Please provide any additional information/comments as required.

David, please note that updates to the budget will be required, as I do not have access to this information.

<< Reasearch Team

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BaySys Quarterly Status Report - NEMO Modeling 2018 Q2

Submit

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Txt Report Status:

Draft In Progress