

Quarterly Project Report

1. Team Identification

Project Team: Freshwater System ▼

Budget Year: 2019

Quarter: Q2

2. Scope - Highlights of the Period

Person Days: 0

Accomplishments

- Completed uncertainty assessment for lower Nelson river basin (Lilhare and Pokorny)
- Coordinated development of regulated scenarios with Hydro Quebec
- Examined uncertainty and sensitivity bay-wide for Team 6

Missed Targets

- Dissemination of regulated scenarios

3. Activity Tracking

ID	Task	% Complete	Status
36	Task 2.1, Phase 1 Climate Projections	100	complete
37	Task 2.1, Phase 2 Continental-scale m...	100	complete
38	Task 2.2 Uncertainty assessment	98	Submission of manuscripts and editing pending
39	Task 2.3 Regulated system modeling	95	waiting on final scenarios from HQ to integrate w
40	Task 2.4 Projected freshwater sensitivi...	40	Analysis of bay-wide uncertainty and sensitivity u

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	\$14,337.6	partial stipend for S Pokorny; R Lilhare stipend
b) PDF's	\$10,000	Salary for A Tefs (RA)
c) Technical Staff	\$4,372.35	Salary for K Wiens

2. Equipment or Facility

a) Purchase or Rental	\$0	n/a
b) Operations and Maintenance Cost	\$0	n/a

3. Materials and Supplies

	\$16,792.71	Computing equipment
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4. Travel Expenses

a) Conferences	\$1,942.38	ArcticNet
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
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Total **\$47,445.04**

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	Contribution	Description
University of Manitoba	1,438.55	GETS funding (S. Pokorny)
University of Manitoba	1,553	UNBC tuition waiver (Raj)
Ouranos	4,680	HQ N. Thiemoge, M. Braun and V. Fortin hours (@\$
Total	\$7,671.55	

6. Budget Explanation

Budget Statement	\$12,000 backpayment for R. Lilhare stipend is for one year, but appears here due to
Cash Contributions	
Expenditure Tracking	 FAST_Combined -332100_2019-01_2019-03.xls 38.5 KB

7. Research Team

<i>Team Member</i>	<i>Overview of Participation and Scientific Contributions</i>
Kristina Koenig	project management
Tricia Stadnyk	project management
Genevieve Ali	uncertainty analysis and co supervision of S. Pokorny
Stephen Dery	Extending gap-filled record for observed flows; regulated historical flow anl...
Marco Braun	on behalf of Ouranos/N. Thiemonge who is running regulated model for HQ...

8. Other

Please provide any additional information/comments as required.

[<< Reasearch Team](#)

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BaySys Quarterly Status Report - Freshwater System 2019 Q2

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Txt Report Status:

Draft In Progress

Quarterly Project Report

1. Team Identification

Project Team: Marine Ecosystem ▼

Budget Year: 2019

Quarter: Q2

2. Scope - Highlights of the Period

Person Days: 0

Accomplishments

Descheppe

Descheppe was able to couple the carbon biogeochemical components, from Dr. Diane Lavoie (IML, Rimouksi), into BiGCIIM's pelagic components.

She also began creating the initial and boundary conditions for all the biogeochemical components to begin simulations.

Schembri

Schembri finished age reading on Arctic cod larvae, which includes quality checks.

She reviewed the final draft of IRIS chapter on fish and fisheries.

She finished spatial analysis of zooplankton including data from 2018 cruise.

She submitted abstract at the IGS Sea Ice Symposium in Winnipeg in August 2019.

Jacquemot

Jacquemot spent January-March at the University of Vienna analyzing metagenomes and learning advanced bioinformatics. He has successfully partially assembled several genomes of Hudson Bay picophytoplankton and is exploring these for genomic adaptation to Arctic conditions.

Lovejoy lab's have been supervising an undergraduate intern (Carlee Morency) who has extracted, sequenced and analyzed the Churchill River to Bay Transects. The microbial communities of the salt water wedge of the estuary is clearly distinct from river and open water communities. These microorganisms may serve as sensitive indicators of hydrodynamics. Work continues on the Nelson River and other HBS samples.

PierreJean

PierreJean finished the identification of epibenthic organisms and measurement of environmental parameters. She also plans to finish the infauna identification

by the end of May.

Lee

Lee presented a poster about Nutrient inputs from subarctic rivers into Hudson Bay at Gordon Research Conference in Italy (March 2019). This study aims to establish a contemporary baseline of nutrient concentrations and associated transports in major rivers in Hudson Bay.

Dalman

Dalman graduated from her MSc program.

She is still working on her manuscript using BaySys 2017 winter campaign data and 2018 cruise data.

She also submitted an abstract to present her data on the manuscript described above at the IGS Sea Ice Symposium in Winnipeg in August 2019.

Barbedo de Freitas

Barbedo de Freitas is processing primary production data estimated by the remote sensing Takuvik model in Hudson Bay between 2003 and 2016 and in situ bio-optical data collected during the spring summer transition of 2018 in Hudson Bay.

He is also working on modelling and regional parametrization of semi-analytical models to the optically complex waters of Hudson Bay.

Matthes

Matthes is processing data collected in the Nelson estuary during the cruise in 2018.

She also submitted an abstract to present Baysys data at the IGS Sea Ice Symposium in Winnipeg in August 2019.

Missed Targets

- None for this quarter.

3. Activity Tracking

ID	Task	% Complete	Status
41	Task 3.1 Assess the timing of Primary ...	70	Main sampling was done during the 2018 Amund
42	Task 3.2 Estimate the magnitude of Pr...	90	Main sampling was done during the 2018 Amund
43	Task 3.3 Evaluate nutrient processing ...	70	Main sampling was done during the 2018 Amund
44	Task 3.4 Phase 1 Biogeochemical mod...	100	Completed
45	Task 3.4 Phase 2 Biogeochemical mod...	90	On track

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	\$34,950	Salaries for HQPs
b) PDF's	\$27,959	Salaries for RA
c) Technical Staff	\$0	No expense

2. Equipment or Facility

a) Purchase or Rental	\$18	Vehicles use to carry materials
b) Operations and Maintenance Cost	\$3,857	Sequencing for amplicons Nelson River, Churchill River, HB meta

3. Materials and Supplies

\$746	Materials and chemicals for laboratory and fieldwork
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4. Travel Expenses

a) Conferences	\$0	No expense
b) Field Work	\$0	No expense
c) Project Related Travel	\$1,810	Travel expenses for attending the Gordon conference in Italy (Le
d) Central Planning Meetings	\$0	No Expense

5. Dissemination Costs

\$0	No Expense
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Total \$69,340

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	Contribution	Description
University of Laval	15,000	Contribution from Laval University
Total	\$15,000	

6. Budget Explanation

Budget Statement	All expenditures have been done according to schedule. The only deviation from th
Cash Contributions	

7. Research Team

<i>Team Member</i>	<i>Overview of Participation and Scientific Contributions</i>
Frederic Maps	Supervising and training HQP Deschepper.
Jean-Eric Tremblay	Supervising nutrient database and supervising HQPs Deslongchamps, Gagn...
Louis Fortier	Supervising and training HQP Schembri.
Connie Lovejoy	Supervising and training HQP Jacquemot.
Simon Belanger	Supervising and training HQP Barbedo de Freitas.
Philippe Archambault	Supervising and training HQP Marie PierreJean.
C.J. Mundy	Supervising and training HQPs Matthes and Dalman.
Gabriele Deslongchamps	Working on nutrient database, coordinating planning, reporting, communic...
Jonathan Gagnon	Still analyzing samples at Laval University.
Sylvain Blondeau	No more work to be done.
Inge Deschepper	Working on her project.
Sarah Schembri	Working on her project.
Loïc Jacquemot	Working on his project. Participated to a 3-month internship at the Universi...
Lucas Barbedo de Freitas	Working on his project.
Janghan Lee	Working on his project.
Lisa Matthes	Working on her project.
Laura Dalman	Graduated from her master.

8. Other

Please provide any additional information/comments as required.

[<< Research Team](#)

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BaySys Quarterly Status Report - Marine Ecosystem 2019 Q2

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Txt Report Status:

Draft In Progress

Quarterly Project Report

1. Team Identification

Project Team: Contaminants ▼

Budget Year: 2019

Quarter: Q2

2. Scope - Highlights of the Period

Person Days: 0

Accomplishments
Ongoing laboratory analysis of samples for particulate matter, sediment, and mercury species determination. Completion of aqueous (water column and ice) mercury species quantification.
Re-analysis of historical fish mercury data and waterbody level.

Missed Targets None.

3. Activity Tracking

ID	Task	% Complete	Status
51	Task 5.1 Relationship between mercur...	75	On track. Awaiting completion of sediment analy
52	Task 5.2 Suspended Sediment and Org...	85	On track.
53	Task 5.3 Mass balance modeling of m...	75	On track. Awaiting completion of sediment analy

4. Risk And Issue Updates

ID	Risk Event	Status
2	Sequence of data analysis, and model outputs causes c	On track. Involved in cross-team meetings to mair

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	\$10,768.7	Salary for Huyghe.
b) PDF's	\$39,832.75	Salary for Munson and Capelle (w/team 4)
c) Technical Staff	\$0	None
2. Equipment or Facility		
a) Purchase or Rental	\$0	None
b) Operations and Maintenance Cost	\$5,821.13	Mercury analysis and laboratory maintenance.
3. Materials and Supplies	\$686.95	Laboratory consumables.
4. Travel Expenses		
a) Conferences	\$0	Reflects in-kind contribution from NSERC (Wang)
b) Field Work	\$0	None
c) Project Related Travel	\$2,483.42	Robie Macdonald Winnipeg visit for meetings
d) Central Planning Meetings	\$0	None
5. Dissemination Costs	\$365.94	Q1 costs.
Total	\$59,958.89	

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

Organization	Contribution	Description
NSERC CREATE H2O	9,000	Salary for PhD#1, G
University of Manitoba/Lobb	11,000	laboratory analysis of sediment
NSERC Northern Supplement (Wang)	439.96	Q1 conference airfare (Munson)
Total	\$20,439.96	

6. Budget Explanation

Budget Statement	
Cash Contributions	Lobb: Stipend of PhD1 covered by NSERC CREATE. Lobb: Laboratory analysis of sediment and soils ~\$13,000 at 60% actual cost. Wang: NSERC Northern Supplement support for Munson conference (reported in C
Expenditure Tracking	 Click here to attach a file

7. Research Team

<i>Team Member</i>	<i>Overview of Participation and Scientific Contributions</i>
Feiyue Wang	Supervision of MSc#2 and PDF#1; project reporting.
Allison Zacharias	Coordination of Manitoba Hydro data transfer.
Sarah Wakelin	Coordination of Manitoba Hydro data transfer.
Kathleen Munson	Sample analysis for total and methyl mercury, data interpretation; re-analys...
James Singer	Ongoing data interpretation and thesis preparation.
Zou Zou Kuzyk	Supervision of MSc#1, MSc#4, data interpretation.
Tassia Stainton	Final thesis submission, preparation of manuscripts from thesis results.
Samantha Huyghe	Completion of sediment core dating analysis from Bay-wide cruise, data int...
David Lobb	Supervision of PhD#1 (co-supervised with Philip Owens), data interpretation.
Masoud Goharrokhi	Preparation of manuscripts, particle size and radiochemistry analysis of Nel...
Robie Macdonald	Trip to Winnipeg for thesis presentation, meetings on data interpretation
Philip Owens	Supervision of PhD#1 (co-supervised with Philip Owens), data interpretation.
Ellen Petticrew	Supervision of MSc#1, data interpretation.
Gary Stern	Supervision of PDF#1, recruitment of technician for zooplankton mercury a...

8. Other

Please provide any additional information/comments as required.

<< Research Team

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Draft In Progress

Quarterly Project Report

1. Team Identification

Project Team: NEMO Modeling ▼

Budget Year: 2019

Quarter: Q2

2. Scope - Highlights of the Period

Person Days: 0

Accomplishments

Major accomplishments include the completion of additional simulations, training of HQP, dissemination of NEMO simulations for the BaySys 2016-2018 timeframe, manuscripts published, in press, and in progress, and continued research and analysis. Specific accomplishments are as follows:

Simulations (launched and run at the University of Alberta by Natasha Ridenour, Paul Myers and University of Alberta team)

NEMO 3.6

Experiment (1/4 degree) launched with ERA Interim atmospheric forcing, finalized HYPE, and Arctic-HYPE river discharge provided by Team 2; data to the end of 2017 has been uploaded and provided to Team 1 upon request (ENR006)

Experiment (1/4 degree) with SAL tide correction, CGRF atmospheric forcing, monthly runoff, and Greenland melt); data to the end of 2018 has been uploaded (ENG017)

High-resolution (1/12 degree) experiment launched with ERA Interim forcing, calibrated HYPE, HBC runoff, and HBC inflow tracers is running (AGRIF CAA12, ENR007)

NEMO 3.4

High-resolution (1/12 degree) experiment with CGRF forcing, monthly runoff, and Greenland melt; data to the end of 2018 has been uploaded and provided upon request (EXH006).

Analysis and evaluation

- a) Initial model evaluation for years prior to BaySys completed in a study led by HQP Natasha Ridenour, revisions completed and submitted
- b) Evaluation of freshwater circulation and anomalous features completed by HQP Natasha Ridenour and published in GRL in March, 2019.
- c) SST analysis and sensitivity to atmospheric forcing and resolution completed by HQP Shabnam JafariKhasragh and in press, April, 2019
- d) Sensitivity of modeled sea ice volume budget to atmospheric forcing led by Shabnam JafariKhasragh in preparation, and to be submitted in early May, 2019
- e) Baseline evaluation outlining atmospheric and discharge conditions for 2016-2018 BaySys timeframe, and comparing observations with model output using existing simulations in progress
- f) Comparison of RIOPS output with ANHA4 and ANHA12 simulations for ice and oceanographic variables in progress

Planning

- a) Coordination of tasks for BaySys subgroup to conduct
 - i) baseline evaluation and model-data comparison, and
 - ii) relative climate change and regulation impacts assessment for relevant team variables

Initial baseline evaluation results were made available in February; evaluation of sea ice conditions, and comparison of model output and observations in progress. Shabnam Jafarikhasragh has recently been hired as a research associate to continue with graduate work on BaySys and diagnostic development for model-data comparison.

- b) BaySys simulations for CMIP5 scenarios, with tides, HBC HYPE and Arctic-HYPE discharge will be launched with incorporation of biogeochemical module in May/June.

Missed Targets

RIOPS data has been provided by ECCC; evaluation and comparison of RIOPS and ANHA model output is in progress to address prior missed targets.

3. Activity Tracking

ID	Task	% Complete	Status

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	\$9,000	salary; Please note that this information will need to be completed
b) PDF's	\$14,000	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
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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
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Total **\$23,000**

OTHER ORGANIZATIONS IN-KIND CONTRIBUTIONS

<i>Organization</i>	<i>Contribution</i>	<i>Description</i>
Compute Canada	20,000	Computing resources
Total	\$20,000	

6. Budget Explanation

<i>Budget Statement</i>	Please note that this section will need to be completed by an individual with access
<i>Cash Contributions</i>	
<i>Expenditure Tracking</i>	Click here to attach a file

7. Research Team

<i>Team Member</i>	<i>Overview of Participation and Scientific Contributions</i>
Paul Myers	Team 6 co-lead; NEMO modeling, student supervision
Natasha Ridenour	PhD1; freshwater dynamics and circulation, model evaluation
Jennifer Lukovich	Team 6 co-lead; model-data comparison, sea ice dynamics
Shabnam Jarfarikhasragh	model evaluation, SSTs, heat, energy, and momentum fluxes
Kevin Sydor	Manitoba Hydro Team 6 co-lead; NEMO modelling coordination
Karen Wong	Manitoba Hydro Team 6 co-lead; NEMO and MIKE3 modelling coordination

8. Other

Please provide any additional information/comments as required.

[<< Research Team](#)

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