

<p>AWARE Quarterly Progress Report Project ID: Question 17b Core Site: Newfoundland Title: What landscape level ecosystem goods and service (ES) indicators can be developed with airborne LiDAR data?</p>	<p>Institution: USherbrooke Project Supervisor: Fournier, R HQP Name: Catherine Frizzle</p>
<p>Report Period Year: 4</p> <p style="text-align: center;"> <input type="checkbox"/> S1 <input checked="" type="checkbox"/> S2 <input type="checkbox"/> S3 Jan-Apr May-Aug Sep-Dec </p>	<p>Committee Members</p> <p><input type="checkbox"/> See Progress Report Year: _____ Q _____</p> <p><input type="checkbox"/> Names: _____</p> <p>Number of Courses Left to Complete</p> <p style="text-align: center;">0</p>
<p>Research Progress During this Reporting Period</p> <p style="text-align: center;">----- Semester 2 May-Aug 2017 -----</p> <p>Milestone: Get familiar with the AWARE Project</p> <ul style="list-style-type: none"> • Deliverable: Attend the 2nd AGM meeting in New Brunswick • Status: Completed <p>Milestone: Visit Core site and meeting local partners (CBPPL)</p> <ul style="list-style-type: none"> • Deliverable: Meet partners, present first thoughts on project and get feedback, field visit of Harry River’s Watershed • Status: Completed <p>Milestone: Familiarize with LiDAR data and software</p> <ul style="list-style-type: none"> • Deliverable: Explore Harry’s river watershed LiDAR data and get familiar with ArcGis (ArcHydro), Fusion, eCognition to produce function indicators with LiDAR • Status: Completed <p>Milestone: Complete the registration procedures for the PhD in program “Doctorat en télédétection” at Université de Sherbrooke under the supervision of Richard Fournier</p> <ul style="list-style-type: none"> • Deliverable: Submit my application case load and get accepted • Status: Completed <p style="text-align: center;">----- Semester 3 Sep-Dec 2017 -----</p> <p>Milestone: Completion of 3 of 3 courses</p> <ul style="list-style-type: none"> • Deliverable: 3 courses completed of 3 required for the PhD • Status: Completed <p>Milestone: Initial literature review on ES quantification, Forest and water ES and the use of LiDAR to quantify ecosystem function indicators</p> <ul style="list-style-type: none"> • Status: Completed 	

----- **Semester 1 Jan-Apr 2018** -----

Milestone: Prepare the PhD proposal which includes literature review and a proposed methodology. This document will be reviewed by a jury

- Deliverable: 20 pages PhD proposal composed by ½ literature review, ½ methodology
- Status: Completed

----- **Semester 2 May-Aug 2018** -----

----- **COMPLETED** -----

Milestone: Submit the PhD proposal which includes literature review and a proposed methodology. This document will be reviewed by a jury

- Deliverable: 20 pages PhD proposal composed by ½ literature review, ½ methodology
- Status: Completed May 25th.

Milestone: Define workflow to implement tests for one ecological service

- Deliverable: Workflow definition, implementation and results analysis
- Status: Workflow definition completed. Implementation still ongoing.

Milestone: Preparation of the presentation at the AWARE AGM meeting June 5-6-7

- Deliverable: Presentation of the research project, and poster (Q17a and Q17b) at the 3rd AGM meeting in Montréal, Québec
- Status: Completed and presented June 6th

Milestone: Preparation of the Visit Core site and meeting with local partners (CBPPL)

- Deliverable: Present the potential of LiDAR for ES quantification in a workshop for partners
- Status: Completed meeting with partners and a field visit were held June 11 to June 14th, but the workshop was delayed.

Milestone: Preparation of the defence for the PhD plan exam (TEL910)

- Deliverable: Prepare a presentation, defend the proposal and make changes in the PhD plan following the suggestions by the jury
- Status: Defence completed on June 27th and successful.

Milestone: Define potential LiDAR indicators for Water and Forest ES mapping

- Deliverable: LiDAR data preprocessing and list of potential indicators relevant for ES mapping. Complete the supervision of an internship for a MSc student from May 7 to Aug 17 in support of my PhD project.
- Status: Internship supervision completed August 17th and LiDAR preprocessing still ongoing

----- **STARTED & ON-GOING FOR NEXT SEMESTER**-----

Milestone: Submit the PhD proposal, which includes literature review and a proposed methodology, and present at a public seminar.

- Deliverable: 20 pages PhD proposal and presentation
- Status: Proposal to be submitted by September 10 and presentation on September 21st.

Milestone: Water quality sampling and analysis (Field data for HRW) NRCan Partner are collecting water samples at four strategic location in the HWR for sediment analysis in order to calibrate the SWAT model

- Deliverable: Water samples Analysis.
- Status: To be completed at the end of November

Milestone: Spatial database preparation (soil, land cover, etc) for HRW and au Saumon Watershed

- Deliverable: Collect, describe, prepare and organize data.
- Status: To be completed at the end of October

Milestone: Ground database preparation (Climate, water quality and flow) for HRW and au Saumon Watershed

- Deliverable: Collect, describe, prepare and organize data.
- Status: To be completed at the end of October.

Milestone: Begin Hydrological modeling for HRW

- Deliverable: Validation of SWAT model for HRW.
- Status: To be completed by the end of December.

Milestone: Define potential LiDAR function indicators to compare with SWAT model

- Deliverable: List of potential LiDAR function indicators and the output variable of SWAT model it could be compared to.
- Status: To be completed at the end of December.

----- **PLANNING AHEAD** -----

- Calibrate the hydrological model (HRW)
- Start au Saumon Watershed hydrological modeling
- Process LiDAR function indicators and start ES mapping
- Prepare data for trade-off analysis between ES

Presentations Done

Presentation for partners at CBPPL (June 15 2017)
AWARE Student Forum #6 (September 15 2017)
Presentation at the third AWARW AGM (June 5-7 2018)

Papers Submitted : none

Annual General Meetings

AGM1

- Attended
- Reported results

AGM2

- Attended
- Reported results

AGM3

- Attended
- Reported results

Research Targets for next Reporting Period

Hydrological modeling

HQP Signature:



Date:

11/09/2018

Project Supervisor Signature:



Date:

11/09/2018