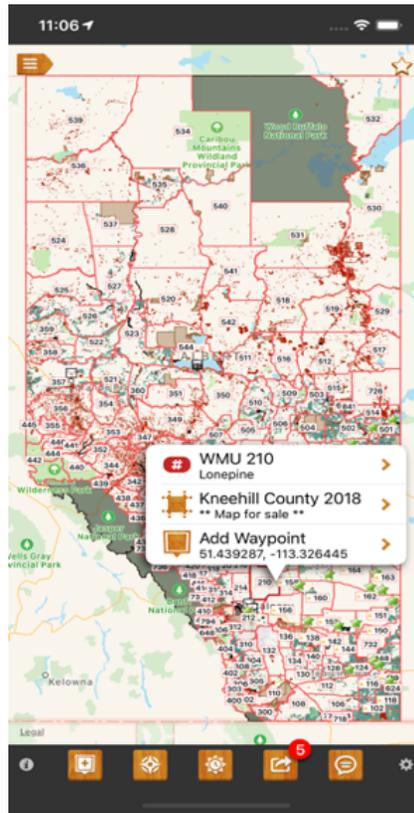


Evaluating Technologies for the Measurement of Ecosystem Service Values from Recreation

Recreation activities, such as hunting and angling, create economic benefits that are challenging to measure as they do not arise from traditional markets. Economic values are important for understanding the contribution of ecosystem services to society and for use in decision making frameworks. Much of the information used in measuring economic value is collected using various types of surveys. Compared to traditional surveys, an activity survey app on a smartphone has the potential to reduce response burden, be more accurate, and measure activity levels over time – thereby identifying how behaviour (and therefore economic value) changes in response to changes in habitat, regulations/policies, climate, economic conditions, and other factors.



Smartphone screenshot from the iHunter app, which was augmented to include activity survey functionality. (<https://www.ihunterapp.com/>)



RECIPIENT:

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PARTNERS:

Alberta Conservation Association



TOTAL BUDGET:

\$129,700



AI FUNDING:

\$96,000



PROJECT DATES:

September 2016 – June 2020

APPLICATION

Review the current technologies in smartphone / big data applications to recreation activity and evaluate the potential for use in measuring economic values associated with changes in ecosystem services in Alberta.



ALBERTA INNOVATES

CLEAN RESOURCES

ENVIRONMENTAL INNOVATION

ECOSYSTEM SERVICES AND BIODIVERSITY

PROJECT GOALS

- **Stakeholder Survey:** Meetings were held with the Alberta Conservation Association and stakeholders. The idea of augmenting the iHunter app was shared, and stakeholder were asked for their opinions of such an app. Feedback was generally positive and the vision for a long-term research plan based upon data generated from an augmented iHunter app was well received.
- **App Development:** The developer of the iHunter app was commissioned to integrate activity survey functionality into their popular hunting app. Preliminary testing of the augmented app was then completed.
- **Pilot Study:** 25 hunters have been given the augmented version of iHunter to use during the 2020 spring hunting season (April 1 to June 15). Activity data from the participants' hunting trips is being collected. At the end of the pilot study an exit survey will collect feedback on improving the app. Then, depending on the status of COVID-19, a wrap-up meeting is planned so researchers can collaborate with the pilot study participants regarding future research using the app.
- **Pilot Study Report:** The purpose of this report will be to highlight the "learning by doing" process from the pilot study. Each of the steps in the pilot will be listed, the key learnings from each of these steps will be described, and the data generated from the pilot will be examined to determine if it could be useful (if the sample size was greater than 25 hunters) for use in future economic valuation studies.

BENEFITS TO ALBERTA

If the pilot study is successful, the data generated by the augmented iHunter app will yield several important lines of future research, for example:

- What is the economic value of recreation activities – such as hunting, angling, hiking and birdwatching – within the province of Alberta?
- What is the economic impact of policy changes, such as the closures of hunting, angling or hiking areas?
- Are data collected from apps more accurate in reporting recreation activity and economic value information versus traditional survey approaches?
- Does the use of an app reduce recall bias and selection bias compared to traditional survey approaches?
- What is the impact of climate (temperature, precipitation) on recreation activities? What is the economic impact of climate change on recreation activities?
- How do hunters respond to information or incentives?
- How do climate change regulations, such as the carbon tax, affect recreation activities?



1 New Product



1 Publication

CURRENT STATUS

APRIL 2020

Researchers are currently conducting the pilot study, whereby 25 hunters have been given the augmented iHunter app to use during the 2020 Spring hunting season. The researchers will collect data from the participants' hunting trips, elicit feedback on the app, and evaluate the data for use in future research aimed at measuring economic values and assessing recall and selection bias.