Job Title: Research assistant (specific project(s) depending on the candidate skills set and interests, and the priorities and needs).

Digital skills: GIS, data synthesis, remote sensing (image classification), modelling, optimization and/or visualization (thematic mapping applications) of results.

Activities relating to information technology that will be undertaken by the candidate:

The chosen candidate will work alongside researchers, research professionals and collaborators on a large-scale initiative on the evaluation of ecosystem services associated with hydrology (availability and seasonal variation of water levels and mitigation of flood risk and damages), water quality (water purification: retention of N, P and sediments) and eventually carbon sequestration and storage at the scale of wetlands and six subwatersheds in New Brunswick’s Northwest region. Of particular note, this initiative will use a world-class methodological approach along with related modelling and optimization tools. One of the objectives of this initiative is to characterize the study area under different approaches (e.g. database queries, image classification) and from different perspectives (e.g. agriculture, wetlands), while another objective seeks to examine:

- The relative roles and cumulative impacts of different ecosystems/vegetation cover/land use and occupation.
- The impact of development in the study area during the 1990 to 2020 period.
- The impact of climate change for two projected periods centered around 2050 and 2080 under RCP 4.5 and RCP 8.6 scenarios.
- The impact of different agricultural and forestry scenarios as they relate to the studied ecosystem service delivery.

* The candidate will make frequent use of GIS software to:
  - Develop maps
  - Prepare spatial/imagery data for subsequent analysis
  - Classify the land use and occupation of the study area through satellite and aerial imagery
  - Develop agricultural and forestry scenarios
  - Participate in the geospatial modelling of the evolution of ecosystem service delivery based on different climate change and agricultural scenarios using five models from the InVEST (“Integrated Valuation of Ecosystem Services and Tradeoffs”; Annual Water Yield, Seasonal Water Yield, Sediment Delivery Ratio, Nutrient Delivery Ratio and Urban Flood Risk Mitigation).
  - Synthesis of data and results
  - The development and production of communication tools through interactive mapping applications, online dashboards, or other online data communication tools
- Any other tasks or activities necessary for the advancement of the larger initiative that relate to the development of digital skills that interest the intern

There will be many opportunities for the candidate to develop their digital skill aptitudes as they engage in various projects, in undertaking innovative approaches (“The NatCap Approach: https://naturalcapitalproject.stanford.edu/) and through the use of digital tools and specialized software (e.g. cutting edge ecosystem service evaluation models from the InVEST suite and through interaction with the research team). The candidate should be an undergraduate, Masters or doctoral student working in the fields of biology, ecology, geography, forestry, planning, applied communication, environment, geomatics or a related field.

Skills sought:

- Interest for the subject (e.g. integrated watershed management, land-use planning, ecosystem services);
- Skills relating to research and data management
- Photointerpretation, geomatics, remote sensing, modelling, optimization and interactive visualization of results on online platforms (e.g. infographics)
- Programming and development of applications
- A strong capacity for analysis and data synthesis
- Curiosity and an interest for innovation

Work environment:

- This project will take place as part of a collaboration between the Northwest Regional Service Commission (https://csrno.ca) and the CCNB-INNOV network.
- The project will take place in an applied research context
- The project addresses the objectives of partners (e.g. the city of Edmundston) and grant agencies
- There is a strong focus on the objectives and deliverables

Possibility for the candidate to work remotely

Competitive salary

Less than 31 years old

Permanent resident or Canadian citizen

University diploma

Starting date: As soon as possible

Until February 28th 2022
To apply, PLS, send your resume to Dodick Gasser

Dodick.Gasser@ccnb.ca

506-475-3604