Case Study

Nature-Based Solutions and Natural Infrastructure Help Build Resilience to Climate Risks and Impacts.

Best practices enable effectively planned and implemented initiatives. It is in the interest of both the public and private sectors, ecologically and commercially, to be able to develop and deploy best practices. EarthDaily Analytics has created such a new model for using remote sensing, satellite-derived geoanalytics, and environmental engineering expertise to generate environmental situational awareness at scale.

Through funding from the Canadian Space Agency and a partnership with Strategic Systems Engineering, EarthDaily Analytics has combined high-quality scientific satellite landcover and vegetation growth products with best-in-class hydrologic engineering technology.

Partners:

Technology Partner:

Industry:

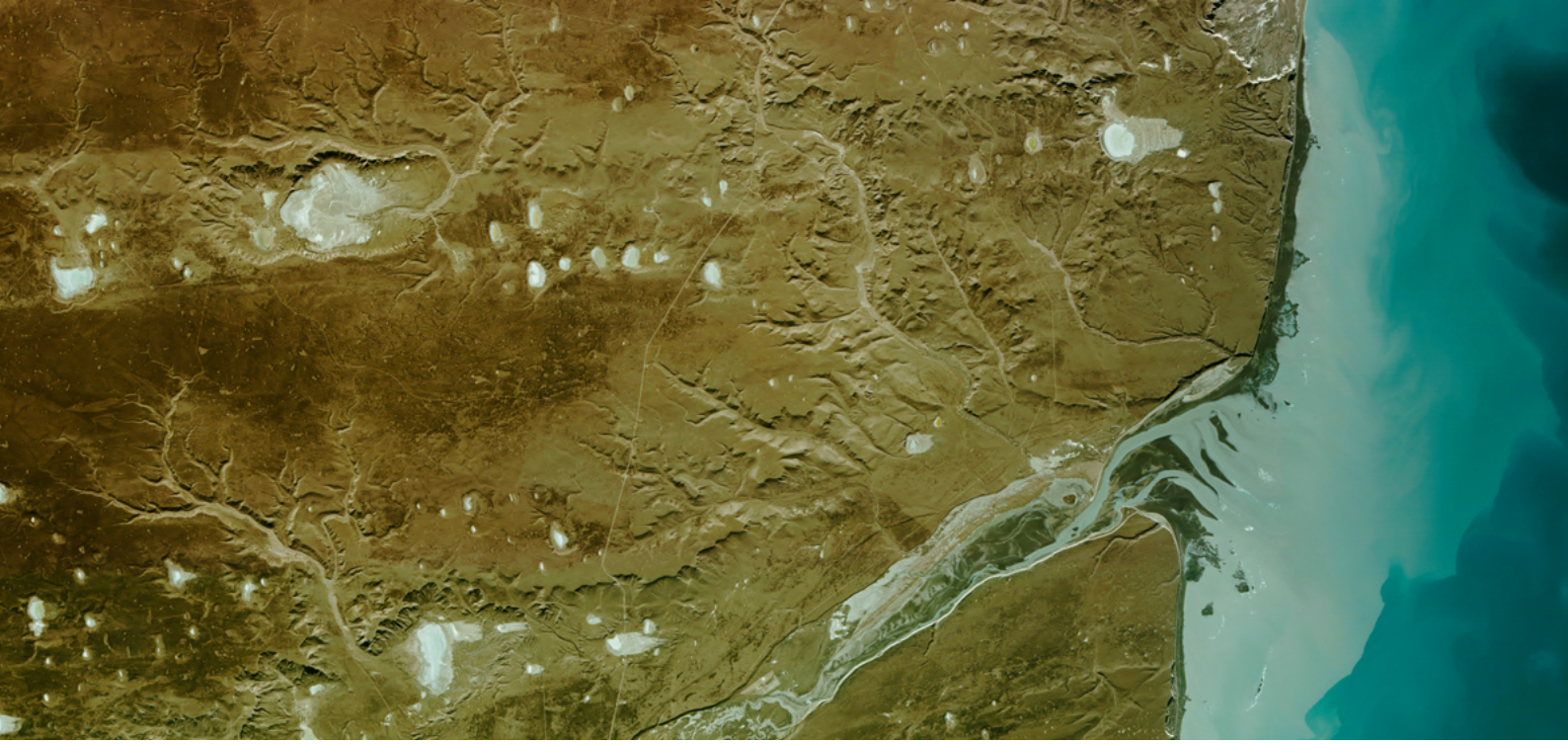
Natural Resource Management

Challenge:

Environmental systems are not subject to jurisdictional borders.

This means initiatives that are critically important to the future of our world, such as reducing greenhouse gas emissions, intercepting and recycling agricultural nutrients before they damage lake and river ecosystems, and building resilience to climate impacts are all complex challenges.

EarthDaily Analytics (EDA) has responded to this challenge by forging new partnerships and maximizing cutting-edge technology. New funding from the Canadian Space Agency under the smartEarth initiative, as well as a partnership with Strategic Systems Engineering (SSE), is allowing us to harness the power of Canadian remote sensing, satellite-derived geoanalytics, and environmental engineering expertise to achieve operational reliability for environmental management, hazard mitigation, and resource capture – all of which can be accurately and consistently measured from space using EDA's market-leading solutions.



Solution:

EarthDaily Analytics will use high-frequency multi-spectral imagery to detect the presence and growth rate of wetland plants able to extract agricultural runoff nutrients found in wet agricultural areas, ditches, and municipal allowances.

Using Amazon Web Services enables EDA to support enterprise grade scalability, security, and reliability in our satellite processing and analytics services. Strategic Systems Engineering (SSE) will leverage EDA's value-added geoanalytics capabilities to plan and execute a macrophyte biomass harvesting program using conventional agricultural equipment modified for the task.
This abundant renewable resource will be harvested for its nutrient, energy, and carbon content, with some biomass replacing fossil energy as a space heating fuel, and some biomass converted to biochar – a stable form of carbon loaded with agricultural nutrients that when applied as fertilizer accelerates the soil's sequestration of atmospheric carbon.
A key target of this process will be the collection of phosphorus, which is a key pollutant responsible for lake eutrophication – but also a scarce and valuable resource in its own right.

EDA's new EarthDaily Constellation will become operational in 2024. The Constellation will allow scaling of Earth Observation-driven concepts such as phosphorus interception and re-use to global markets. By supplying value-added data and insights to our on-the-ground partners for environmental management solutions, we are also verifying the potential for EDA to make possible Environmental, Social, and Governance (ESG) solutions in the physical environment, while also providing investment accountability and ensuring compliance with ESG mandates and environmental regulations.

Result:

This collaboration represents an important step forward in the pursuit of a comprehensive green solution, utilizing an innovative combination of high-quality scientific satellite landcover and vegetation growth products with best-in-class hydrologic engineering technology.

Because agricultural and environmental resources are shared, Earth Observation informed by scientific data is poised to play a key role in scaling hydrologic management systems from a local to a regional basis. The regional benefits of this work are enormous and will prove larger networks of pollutant interception and beneficial re-use are feasible – a concept that scales for global environmental protection. In Manitoba, this work has the potential to transform a significant piece of the agriculture landscape with limited economic value into multi-functional climate risk management zones. This technology represents the possibility of intercepting and harvesting high-energy, high-nutrient biomass to protect our ecosystems, fight climate change, and build resilient communities.

Strategic Systems Engineering (SSE) CEO Hank Venema remarked,

> “As the business case for harvesting and processing multi-functional biomass proves out, we expect that farmers will re-purpose their lowest value, frequently flooded land as floodwater retention areas designed for biomass harvesting. This collaboration with EarthDaily Analytics is a huge step forward in proving to investors, farmers, and municipal officials the scale of this resource and the practicality of our harvesting and processing logistics.”
>
>
>
> — **Henry (Hank) Venema**
> **CEO and Senior Engineer**

Contact us

EarthDaily Analytics aims to change the way we view the planet. We have assembled an international management team of experienced leaders who have come together to change the Earth Observation industry.

Any questions?
Our experts are happy to help.

Contact EarthDaily Analytics
sales@earthdaily.com

Company Offices

Canada
Headquarters
33 – 1055 Canada Pl
Vancouver, BC
V6C 0C3

United States

7365 Kirkwood Court N., Suite 150
Maple Grove,
MN 55369