Monitoring Salmon Freshwater Habitat using Satellites

ASL Environmental Sciences Inc. (ASL) recently signed a contribution agreement with the Canadian Space Agency for a 2-year project under the Satellite Mobilization for Biodiversity Action (SaMBA) opportunity, part of the smartEarth funding initiative.

Habitat loss is the top threat to biodiversity, accounting for endangerment of over 80% of all species. Pacific salmon are a keystone species closely linked to the functional integrity and biodiversity of many aquatic and riparian ecosystems in western North America, directly affecting hundreds of other species. Disturbances to salmon freshwater habitats can occur in remote, unmonitored areas, resulting in delayed assessment and response (see Figure below). Effective monitoring will promote biodiversity, healthy ecosystems, and stable salmon populations for food and economic security.

Under this project, ASL will develop the DeCAF Rapid Response Tool (RRT) to support near-real-time monitoring of salmon habitats. It builds on ASL's wide-area satellite monitoring solution, DeCAF, that was recently developed with funding from the Department of National Defence (DND) Innovation for Defence Excellence and Security (IDEaS) program. DeCAF uses advanced machine learning and artificial intelligence (ML/AI) techniques to process open access or commercial satellite data and find landscape changes, including human disturbances and natural phenomena.

ASL will work with Kitasoo Xai'xias Stewardship Authority (KXSA) and collaborate with a wide range of end-user organizations and stakeholders that include:

- Kitasoo Xai'xias First Nation
- DFO Integrated Planning for Salmon Ecosystems (IPSE)
- Pacific Salmon Foundation (PSF)
- British Columbia Ministry of Water, Land and Resource Stewardship (WLRS)

Figure: Examples of catastrophic habitat destruction. Panel A shows part of the Lower Nicola River that was impacted by flooding in 2021. Panel B shows an area where ranchers illegally re-routed a stream to create grazing land near Kleena Kleene, BC. Panel C shows the aftermath of the Big Bar landslide.

For more information, visit www.aslenv.com/decaf or contact:
Dr. Kaan Ersahin, Director, Remote Sensing kersahin@aslenv.com

ASL Environmental Sciences
#1-6703 Rajpur Place
Saanichton, BC
V8M 1Z5 Canada

Phone: +1 250 656-0177
Email: asl@aslenv.com
Website: aslenv.com