

Opinion: Indigenous and Western science work together to make water-first decisions



KIM STEPHENS

[More from Kim Stephens](http://vancouversun.com/author/kim-stephens) (HTTP://VANCOUVERSUN.COM/AUTHOR/KIM-STEPHENS)



MICHAEL BLACKSTOCK

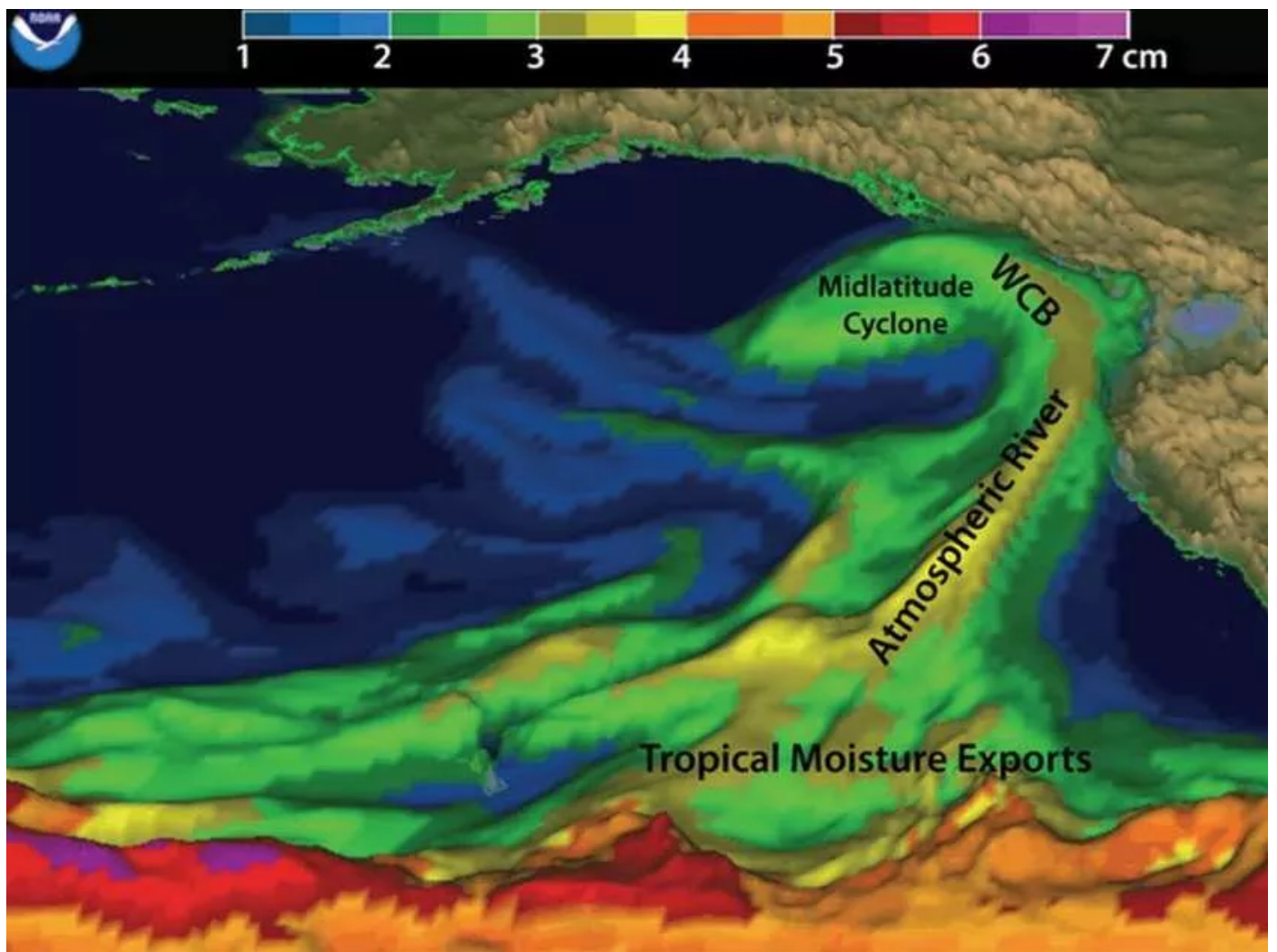
[More from Michael Blackstock](http://vancouversun.com/author/michael-blackstock) (HTTP://VANCOUVERSUN.COM/AUTHOR/MICHAEL-BLACKSTOCK)



BOB SANDFORD

[More from Bob Sandford](http://vancouversun.com/author/bob-sandford) (HTTP://VANCOUVERSUN.COM/AUTHOR/BOB-SANDFORD)

Published on: January 23, 2017 | Last Updated: January 23, 2017 1:00 AM PST



This depiction of an atmospheric river, interacting with West Coast mountains and a mid-latitude cyclone over the northeast Pacific on Feb. 5, 2015, provides an example of approximate locations of associated tropical moisture exports and a warm conveyor belt (WCB). *NOAA/ESRL PHYSICAL SCIENCES DIVISION / PNG*

Our climate is indeed changing. Flood, drought, fire, wind and cold — extreme events are becoming the norm. From a water-first perspective, we are at a moment of truth.

To make the right choices, we must understand how and where the rhythms of water are changing. Then we can apply ecosystem-based understanding to adapt our practices to suit a changing climate.

Adapting to changes in the water cycle requires that British Columbians re-think our relationship with nature. Over the generations, we have lost our way. The path to a water-resilient future starts with Western science acknowledging water for its central functional and spiritual roles in our

world. Western science is not wrong. It is just not complete. It does not account for water as part of a living ecosystem.

Created more than a decade ago, Blue Ecology is a “made in B.C.” concept that offers a path forward. Blue Ecology is an idea whose time has come.

Blue Ecology is defined as the interweaving of Western science and traditional First Nations teaching and local knowledge.

International recognition led to inclusion in the 2008 final report of the UNESCO expert panel on water and cultural diversity. Then, the International Association of Hydrological Sciences accepted Blue Ecology into mainstream science. Their peer review in 2009 gave Blue Ecology credibility and profile

Yet there has been little awareness in B.C. of either this watershed moment or the opportunity Blue Ecology offers for “getting it right”.

This article is an early step in a process to raise awareness of Blue Ecology and inform a provincial conversation about what we can do to manage water as a whole-system. Blue Ecology aligns with the whole-system, water balance approach that the Partnership for Water Sustainability champions for restoration of watershed systems within the built environment.

Time is of the essence. The rate and manner in which water moves through the global hydrological (water) cycle is accelerating. This is causing hydrologic instability, and this is why recently identified phenomena such as atmospheric rivers demand our attention.

An atmospheric river is a narrow corridor of concentrated water vapour aloft. These great rivers can be 400 kilometres across and thousands of kilometres long. The best known is the famous “Pineapple Express” which periodically crosses the Pacific from Hawaii and unloads heavy rain when it hits the west coast of North America.

When moderate in scale, atmospheric rivers bring badly needed water to dry states like California. When larger in scale, they can cause flooding of magnitudes not witnessed before.

The laws of physics provide a reality-check: the warmer the global temperature becomes, the more water the atmosphere can carry. The risk is that, until we stabilize the composition of the Earth’s atmosphere, phenomena such as atmospheric rivers are likely to cause greater flooding

and related economic damage widely — forever making sustainability and adaptive resilience a moving target. So what will we do?

Clearly, we need to better understand the “critical thresholds” that exist within our water and water-related climate systems; and then better connect that understanding to social, economic and public health policy and associated political risks and tipping points.

There is hope for future generations. Success depends on embracing a water-first approach. Water is a core human interest upon which we can build collaborative cross-cultural climate change strategies. We need to build on that core interest now.

Water is a living entity. It is the sacred centre from which all other activities radiate. Adoption by hydrologists and water managers of the companion Blue Ecology water cycle would enhance Western science’s hydrological cycle. It would do so by providing a holistic cultural context.

What we are essentially talking about is reconciliation: going back to the headwaters of where we got our relationships with water and with one another wrong; and then starting back down the river of time — this time together — with a full understanding of the importance of embracing a water-first approach to planning human interventions in the environment.

Western science and Blue Ecology are truly partners. It is time the marriage was made official.

Kim Stephens is executive director at Partnership for Water Sustainability in B.C.; Michael Blackstock is an independent scholar, professional forester and chartered mediator of European and Gitxsan descent; Bob Sandford is the EPCOR chair for Water and Climate Security at the United Nations University Institute for Water, Environment and Health.