

What is Canadian Ocean Literacy?

This co-created answer to the question of “What is Canadian Ocean Literacy?” was formed through dialogue facilitated by the Canadian Network for Ocean Education (CaNOE) between 2013 and 2018. Please consider this answer as a beginning and as an invitation to help shape what Canadian ocean literacy becomes in the third decade of the 21st century.

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Context

CaNOE has explored the question: *What is Canadian Ocean Literacy* since its inception. For this iteration, the quest culminated with the CaNOE’s 2018 third National Symposium on Ocean Literacy, which included a workshop on Canadian perspectives. A separate report specifically focused on that workshop is posted here on oceanliteracy.ca This statement paints a picture of Canadian Ocean Literacy with broader strokes, and is distilled from many diverse answers to the same question, over the years. The need to keep refining our collective answer is essential. Please review and send comments to [<oceanliteracyATgmail.com>](mailto:oceanliteracyATgmail.com) with Canadian OL in the subject line.

Ocean what?

Oxford Dictionary’s first definition of literacy is the ‘ability to read and write’ however it is the second definition¹ ‘a competence or knowledge in a specified area’ that best fits the phrase ocean literacy. Even that fit is loose because the ocean is very large and there are many diverse areas of competence or knowledge about the ocean. The term ocean literacy began to be used as a shortened form of ocean science literacy in the United States, as part of a consensus-based movement of scientists and science educators working together to counter a lack of ocean topics in schools and a lack of ocean science literacy in society. This is how ocean literacy has come to be known somewhat synonymously with ocean science literacy. The term ocean literacy and the science knowledge framework are well received internationally, in spite of difficulties in translating the word literacy.

Canada is not an exception but the norm in terms of ignoring ocean topics in curriculum, teacher training and textbooks. Challenges to and possible solutions for teachers to include ocean topics in schools has been well studied in nine

¹ <https://en.oxforddictionaries.com/>

European countries through the EU *Sea Change* Project. In Canada, the gaps and reasons for the gaps appear to be similar.

As the Canadian Ocean Literacy movement attempts to promote filling those educational and community engagement gaps, the meaning of the phrase in Canada needs to be addressed. While the phrase ocean literacy may continue to vex ocean literacy proponents and practitioners nationally and internationally the use of the phrase becomes more widespread. Ocean Literacy is now embedded in the United Nations Decade of Ocean Science and Sustainability through UNESCO's Intergovernmental Ocean Commission (IOC). While knowledge of ocean science is a big part of ocean literacy everywhere, Canadians distinguish themselves by bringing diverse perspectives into play that shape a distinctively Canadian ocean literacy viewpoint.

Diverse Perspectives

Diverse Canadian perspectives recognize the significance of the ocean to basic Canadian wealth and quality of life. From an economic perspective, the ocean economy creates billions of Canadian GDP dollars, provides good jobs and involves transportation, trade, high-speed digital communication and resource extraction.

From an ecological perspective, ocean ecosystems provide well-documented and invaluable services ranging from the basics of oxygen, water and food, to climate regulation, element cycling and life support for the whole planet.

From a jurisdictional perspective most of our global ocean is outside national law except for the Exclusive Economic Zones along the shorelines of nations and Canada has the longest shoreline in the world. Canada is also party to international agreements that pertain to shared portions of the global ocean including the Galway Statement, which implicitly includes advancing ocean literacy amongst signatories' citizens. Canada's ocean is a federal jurisdiction, however education is mostly a provincial and territorial imperative.

From an educational perspective, Canadian schools, largely miss the ocean, just as it is left out of most grade school systems around the world. Our universities are doing well in the ocean literacy realm but generally do not use the term ocean literacy. Although there are exceptions (for example - Ocean Networks Canada at the University of Victoria, the Marine Institute at Memorial University and the Ocean Frontier Institute based at Dalhousie University) much ivory tower knowledge is often confined to specialist silos.

From an arts and culture perspective, the ocean is important and continues to inspire and provide a muse to creative minds. It is also socially important in terms of sharing the bounty of the sea with family and community, celebrating connections with the sea through festivals, events and cultural observances.

On a day-to-day basis the ocean is especially important to coastal people but we are all linked to the sea through our watersheds. Perhaps water is the common denominator that pulls us together for ocean literacy.

From an emotional perspective, even people who are afraid of the sea can also love and appreciate it. The sound of the sea can soothe us and the sight can touch our hearts.

From a spiritual perspective the sea can be an important spiritual mediator that can help people relax, reflect on their own purpose and spirituality and feel gratitude.

Not to take away from the importance of ocean science knowledge to ocean literacy, but these social links rooted in deeply held values, may add powerful vectors for change to ocean science literacy and eventually to ocean sustainability. In Canada we are also open to including traditional knowledge in ocean science knowledge, which has been until quite recently, quite exclusive.

From an Indigenous perspective, much of what is called Canada is on unceded (some say stolen) lands and waters. Much of Canada is under treaty or co-management agreements with Indigenous Peoples, however on the Pacific coast where few treaties have been established, most coastal First Nations have not ceded lands and waters and are by choice, in many cases without treaties.

As Canadians learn more Canada's hidden history, they become more open to learning about different Indigenous and Inuit perspectives and supporting cultural and language recovery efforts. Canada's Truth and Reconciliation Commission's calls Canadians to action to counter our tragic history of racism and residential school legacies and heeding that call in developing Canadian Ocean Literacy differentiates what is and will become Canadian Ocean Literacy.

Canadians who have contributed to the CaNOE dialogue seem to agree that boiled down to its' essence, ocean literacy is about our reciprocal relationship with the ocean, an understanding of ocean influence on us, and our influence on the ocean. This reciprocal relationship is more involved, complex and holistic than previously acknowledged by the American and European ocean science literacy models.

Traditional Ways of Knowing

Varied and distinct ancient wisdoms have parallels in the modern ocean sustainability movement: both keep our relationship with the sea and with future generations top of mind. Although very different, both distinguish relationships of pure exploitation from mutually beneficial relationships that include obligation and responsibility. Traditional Indigenous and Inuit pedagogies have real potential to teach everyone something of value when it comes to ocean literacy.

A vital difference between American, European and International versions of ocean literacy is that more and more Canadians explicitly value and respect Traditional Indigenous Knowledge and Inuit Qaujimaqatugangit (IQ). These ageless laws and ways of knowing and sustaining water, ocean and land span very long time frames and bring different worldviews into our definition of ocean literacy. Canadians look to diverse Indigenous peoples for important leadership in further developing Canadian ocean literacy and what it means.

Ocean Science Literacy

Canadian ocean literacy explicitly includes the internationally accepted Framework² of Ocean Literacy, with its seven essential principles and 45 fundamental concepts and that knowledge framework included here on oceanliteracy.ca for reference. While the framework does not appear to be in dispute, discussions of Canadian ocean literacy always go beyond the knowledge content to touch on contemporary ocean science. The conventional academic hierarchy of science is leveling with open access, crowd-sourced and citizen science and both science and science education are evolving to a more process oriented approach wherein learners and citizens model doing science rather than just learning “the facts”.

Twenty-first century pedagogy with its important links to experiential, enquiry, project and place-based learning, promotes critical thinking, creativity and innovation for rich and meaningful learning through doing. Canadians also see value in interdisciplinary learning and it is of note that many educators who have been successful in overcoming the challenges of including ocean topics often use ocean examples to marinate learning within and across subjects. They also link learning locally with place using local waterways and nature. There is real interest by Canadians in including and going beyond ocean science knowledge content. The use of 21st century and Indigenous pedagogies have real potential to enrich life-long learning and improve our reciprocal relationship with the ocean.

Freshwater connections

A majority of Canadians live away from the coast and are linked to the ocean through freshwater, yet we are all influenced by the ocean and in turn influence the ocean. Wherever we live, we are connected to each other and to life through water that comes from the ocean and of course, runs downhill, eventually to the sea. Canadian ocean literacy has an underlying goal of achieving a healthy, productive ocean that is recognized and revered as the planet’s life support system. Fundamental to Canadian ocean literacy is our responsibility to care for the health of water, freshwater or salt. Making freshwater connections to the sea is one way to help all learners become more ocean literate.

² Ocean Literacy Framework <https://oceanservice.noaa.gov/education/literacy.html>

Ocean Conservation

That the ocean has been oddly overlooked in school systems and in society in this era of burgeoning human populations, increased ecological impacts and declining ocean health, manifests outmoded thinking. Education is key to turning the tide on those downward trends and understanding how the ocean functions and how we can be responsible for our influences on the ocean are big parts of modern Canadian ocean literacy.

We know that the ocean is finite (we can measure its volume) and we have clearly demonstrated that there are limits to what we can take without giving back (sustainability science). Modern education includes life-long learning and for ocean literacy, includes societal ocean literacy, not just grade school education.

Canadian ocean literacy proponents feel that education in its broadest sense is a key tool in the ocean conservation toolbox. Education can leverage and amplify societal change and empower sustainable approaches.

On the only blue planet we know, we cannot truly call ourselves literate without also being ocean literate. We can't even say that we are science literate without being ocean science literate. Education along with science, traditional ways of knowing, laws, policies and sustainable entrepreneurship can all work together to help pull us *'towards the ocean we need for the future we want'*³.

Working together

Mutually beneficial collaboration between educators, education systems, scientists, science communicators, Indigenous leaders and speakers, media, entrepreneurs, law and policy makers and artists, will inspire an ocean literate Canada. In this diverse country with shorelines on three ocean basins, a vast freshwater network and distinct regional perspectives, the definition of Canadian ocean literacy is both clear and fluid. None of us can do it alone and the only hope we have of navigating towards a more ocean literate Canadian society is by working together in respect.

Please send your review of this statement to infoAToceanliteracy.ca with the phrase "Canadian OL" in the subject line.

³ UN Decade of Ocean Science and Sustainability 2021 - 2030