



TRANSATLANTIC WORKSHOP
ON OCEAN LITERACY

Gothenburg, 30 September 2014

REPORT

Contents

[Introduction](#)

[Workshop Rationale](#)

[Workshop Results](#)

[1\) Adopting the US 7 Essential Principles of Ocean Literacy](#)

[2\) A Transatlantic Ocean Literacy Strategy](#)

[a. Priority Actions](#)

[b. Priority Topics](#)

[c. Key target groups](#)

[d. Milestones](#)

[Summary](#)

[ANNEX 1](#) [Workshop Participants](#)

[ANNEX 2](#) [Workshop agenda](#)

The 2014 TOL report was prepared by Evy Copejans and Diana Payne with input from all TOL participants.



Introduction

The Gothenburg workshop on Transatlantic Ocean Literacy (TOL) was held at the University of Gothenburg, Sweden, on 30 September 2014. The TOL workshop preceded the second annual European Marine Science Educators Association (EMSEA) conference.

This report outlines the rationale for and results of the workshop and a strategy for enhanced cooperation between both sides of the Atlantic on the theme of ocean literacy in order to advance the '**Galway Statement on Atlantic Ocean Cooperation**¹'.

Workshop Rationale

This workshop builds upon previous efforts in TOL (e.g., Ostend workshop², TOL Plymouth workshop³, and the Vision Statement on Ocean Literacy and Atlantic Cooperation between the European Union, United States of America & Canada⁴).

Workshop objectives included:

- Synthesize the current state of TOL;
- Increase awareness of opportunities for international collaboration;
- Reach consensus on adopting and/or adapting the Essential Principles of the US Ocean Literacy Framework;
- Identify strategies for implementing the US Ocean Literacy (OL) Framework across different educational systems of participating countries;
- Empower the collective TOL Vision Statement;
- Identify a set of priority actions and topics to advance the TOL Vision Statement; and
- Ensure inclusive, ongoing dialogue on OL among all participants and key partners.

Participant's support to attend the 2014 TOL workshop was provided either through their respective employers or by their own personal resources. A list of participants is included as ANNEX 1 and the 2014 TOL workshop agenda as ANNEX 2. The workshop was partially sponsored by the Sea for Society project as part of the mobilization phase and by the Department of Biological and Environmental Sciences at the University of Gothenburg.

¹ Galway Statement on Atlantic Ocean Cooperation

http://ec.europa.eu/research/iscp/pdf/galway_statement_atlantic_ocean_cooperation.pdf

² Report of the Workshop on Defining an ocean literacy agenda for Horizon2020 and transatlantic cooperation, European Marine Board and Flanders Marine Institute, 25-26 June 2013, Ostend, Belgium

http://www.marineboard.eu/images/publications/Ocean_Literacy_Report_Ostend2013_fnl.pdf

³ Report of the Workshop on Transatlantic Ocean Literacy, 5-6 September 2013, Plymouth, UK

<http://www.emsea.eu/conference-2013-plymouth>

⁴ Tuddenham et al.. (2014). Vision Statement on Ocean Literacy, and Atlantic Ocean Cooperation between European Union, United States of America & Canada. ZENODO. [10.5281/zenodo.11864](https://zenodo.org/record/105281/files/zenodo.11864)

Workshop Results

Two primary results of the workshop were:

- 1) Agreement among participants to adopt the US 7 Essential Principles of Ocean Literacy; and
- 2) Agreement to develop and initiate a TOL Strategy and Implementation Plan.

1) Adopting the US 7 Essential Principles of Ocean Literacy

Marine educators and scientists in the US identified 7 Essential Principles and underlying Fundamental Concepts⁵ that define ocean literacy: an understanding of the ocean's influence on you and your influence on the ocean - and that an ocean literate person understands the Essential Principles and Fundamental Concepts, can communicate about the ocean in a meaningful way, and is able to make informed and responsible decisions regarding the ocean and its resources.

The participants reached consensus to adopt these 7 Essential Principles (below) in Europe, the United States, Canada and Brazil.

- 1. The Earth has one big ocean with many features.*
- 2. The ocean and life in the ocean shape the features of Earth.*
- 3. The ocean is a major influence on weather and climate.*
- 4. The ocean made Earth habitable.*
- 5. The ocean supports a great diversity of life and ecosystems.*
- 6. The ocean and humans are inextricably interconnected.*
- 7. The ocean is largely unexplored.*

The participants also agreed that the Fundamental Concepts are to be adapted for a regional context.

In each country/region the key stakeholders for OL will be identified, including marine and educational research institutions, public institutions regulating marine and maritime sectors, education players (e.g., science center and aquaria) and relevant civil society organizations. A consortium will be created with these institutions to adapt, promote and disseminate OL in the particular context of the country/region.

⁵ Ocean Literacy: The Essential Principles of Ocean Sciences for Learners of All Ages, Version 2, 2013
http://oceanservice.noaa.gov/education/literacy/ocean_literacy.pdf

2) A Transatlantic Ocean Literacy Strategy and Implementation Plan

The 2014 TOL participants suggest the adoption of a TOL Vision Statement:

A society where citizens are ocean literate and adapt their everyday behavior by making informed and responsible decisions on ocean stewardship.

The participants identified a set of Priority Actions (2a), Priority Topics (2b), the main Target Groups with a list of services and expertise the TOL community can provide to these target groups (2c), and Milestones for the implementation plan (2d).

Participants also discussed ideas of cultural sensitivity and the role of art, dance, and music as part of the toolkit to connect to people regarding OL.

2a. Priority Actions

To advance the TOL Vision Statement, participants defined three objectives and proposed a list of Priority Actions on short, mid and long term. **Additional detail regarding actions will be provided in the implementation plan. Please note that some actions may be combined or adjusted to different time frames.**

Objective 1. Encourage cooperation and best practice exchanges between Marine Education Associations and all interested parties from both sides of the Atlantic, and seek to promote and apply ocean literacy globally.

Objective 2. Raise awareness of the two-way interactions between the Atlantic and daily life and empower citizens to adapt their everyday behavior.

Objective 3. Seek and apply innovative ways to make citizens ocean literate so they understand environmental challenges and policies and make informed, responsible decisions regarding ocean stewardship.

Short-term actions:

- Identify the **key players** in TOL and create a OL address book;
- Identify and provide a **forum** for communication between all key players in TOL, in articulation with projects resulting from BG13 and BG14;
- Develop, translate and disseminate a **Global Ocean Literacy guide**;
- Organize **collaborative activities** for World Ocean Day (June 8, 2015), Global Ocean Literacy Day (June 28, 2015) or at other existing initiatives (e.g., Ocean Sampling Day, Ocean Sciences Bowl); and
- Identify and make use of large scale ocean related **events** to **promote OL**.

Mid-term actions:

- Identify **transnational complementarities** on the theme of ocean literacy;
- Design a **Global Ocean Literacy Campaign**;
- Identify **services and expertise the TOL community** can provide to its target groups to further ocean literacy;

- Identify **funding possibilities** for TOL initiatives;
- Identify and synthesize **key ocean science, education, and policy documents** from EU, US and Canada to find synergies;
- Identify and document ocean literacy **best practices** on both sides of the Atlantic in collaboration with project resulting from BG14;
- Designate an **Atlantic Ocean day**; and
- **Expand** the TOL effort to include more countries in the Atlantic Ocean basin.

Long-term actions:

- Promote ‘**Open Marine Science**’ by educating and encouraging researchers on methods to lower all access barriers to marine research, and better engage citizen scientists and society.

These priority actions and the implementation of these initiatives will be further addressed in the next TOL meeting(s).

2b. Priority Topics

At the Ostend workshop in 2013, a list of common issues that could be addressed in Ocean Literacy activities was developed. Of these topics, three were considered as most relevant to the 2013 TOL discussion in Plymouth:

- 1) *Sustainable food from the sea*;
- 2) *How oceans benefit people*; and
- 3) *Oceans and human health*.

‘*Oceans and human health*’ was considered the most central topic and has been selected by the European Commission as the overarching theme for the Blue Growth 13 call⁶ in 2013.

A similar brainstorming exercise was proposed to the participants of the 2014 TOL workshop. From the discussion, the following topics were recognized to resonate with all stakeholder groups across the Atlantic ocean basin and to be a focal point for the future TOL activities:

1. *Aquaculture & Food Provisions (or Sustainable food from the Sea)* incorporating issues on sustainability, stimulation of localized economies responsible ocean management (see Priority Area ‘Aquaculture’ identified in the Galway Statement⁷);
2. *Ocean Observation & Technological Innovation* towards Ocean Exploration to inspire and train the next generation of scientists and engineers (see Priority Area ‘Ocean Observation’ identified in the Galway Statement); and
3. *Marine Pollution (or Marine Environmental Stresses)* affecting the environment and human health.

⁶ Blue Growth: Unlocking the potential of Seas and Oceans, BG-13-2014, Topic: Ocean literacy – Engaging with society – Social Innovation. <http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2456-bg-13-2014.html>

⁷ Galway Statement on Atlantic Ocean Cooperation http://ec.europa.eu/research/iscp/pdf/galway_statement_atlantic_ocean_cooperation.pdf

2c. Key target groups

The TOL community identified the following as key target groups:

- *Marine Educators Communities*
- *Marine Science Communication Communities*
- *Marine Research Community*
- *Graduates in Marine Sciences*
- *Regulatory/Policy Community*
- *Maritime Industry*
- *Public at large*
- *Students (various age groups)*

Services and expertise from the TOL community:

The participants considered it a task of the TOL community to develop methods for all of these groups to better inform one another in relation to their work and ocean issues.

A more detailed list of potential services the TOL community aims to deliver to its target groups was developed from the brainstorming discussion on priority actions:

Marine Educators & Communication Communities

- Train and engage educators;
- Contribute to student engagement and workforce development; and
- Facilitate and encourage knowledge sharing across these disciplines.

Marine Research Community

- Incorporate Ocean Science Communication Excellence in the postgraduate training curricula;
- Train ocean scientists how to better place fundamental research in context of Societal Challenges, and use that know-how to facilitate research fundraising tasks; and
- Facilitate mutual learning opportunities between scientists and stakeholders.

Regulatory/Policy Community

- Mediate dialogue with society by providing critical information and discourse on politically topical issues on Ocean Health & Ocean Management.⁸

Maritime Industry

- Stimulate corporate responsibility with respect to Ocean Management; and
- Seek common ground for cooperation & use OL as a long-term recruitment strategy for the engineering and ocean exploitation sectors.

This list will be revisited as the implementation plan is developed and at future TOL meetings.

⁸ Indicators of Ocean Health in the EU Legislation follows Marine Strategy Framework Directive Good Environmental Status descriptors in the EU http://ec.europa.eu/environment/marine/good-environmental-status/index_en.htm and Ocean Health Index' 10 axis in general <http://www.oceanhealthindex.org/>

2d. Milestones

Past and Future TOL milestones were identified, beginning with the formation of EMSEA in 2011. The Future Milestones will be revisited and elaborated upon as part of the implementation plan.

| Past Milestones | |
|-------------------------|---|
| 2011, 30 June | Formation of the European Marine Science Educators Association EMSEA, NMEA conference Boston (US) |
| 2011, 15 November | Portugal adopts the 7 Essential Principles of Ocean Literacy: ‘conhecer o oceano, principios essenciais e conceitos fundamentais’ |
| 2012, 12 July | Session on ‘Atlantic Ocean Literacy : a Grand Challenge for Marine Science Communication and Education’ at <i>Euroscience Open Forum (ESOF)</i> , Dublin (IE) |
| 2012, 12 October | <i>First Conference on Ocean Literacy in Europe</i> , Bruges (BE) |
| 2013, 23-24 May | Release of Galway Statement on Atlantic Ocean Cooperation , Galway (IE) |
| 2013, 25-26 June | Workshop ‘Defining an ocean literacy agenda for Horizon2020 and Transatlantic cooperation’, Ostend (BE) |
| 2013, 5-6 September | TOL meeting after the <i>EMSEA13 conference</i> (3-5 September), Plymouth (UK) |
| 2014, 13 February | Release of Vision Statement for Transatlantic Ocean Literacy |
| 2014, 3 March – 4 April | Online workshop to Advance Transatlantic Ocean Science Literacy on Deep-sea Discoveries in the Atlantic on board the NOAA Ship Okeanos Explorer |
| 2014, 20 May | Session on ‘Ocean Literacy’, at <i>European Maritime Days</i> , Bremen (DE) |
| 2014, 21 June | Activities at <i>Ocean Sampling Day (OSD)</i> |
| 2014, 22 July | OL meeting prior to NMEA 2014 |
| 2014, 30 September | TOL meeting prior to <i>EMSEA14 conference</i> (1-3 October), Gothenburg (SE) |

| Future Milestones | |
|----------------------|--|
| 2014, 31 October | Release of TOL Strategic Plan |
| 2014, October | EMSEA becomes a legal entity |
| 2014, 10-12 November | Session at <i>UNESCO’s World Conference on Education for Sustainable Development</i> , Aichi-Nagoya (JP) |

| | |
|----------------------|--|
| 2014, 17-21 November | <i>IOC/UNESCO's 2nd International Ocean Research Conference, One Planet One Ocean (IORC), Barcelona (ES)</i> |
| 2014, December | Present Strategic Plan to coordinators of BG13 and BG14 |
| 2015, February | Production of Global OL guide |
| 2015, 17-20 March | <i>23rd Session of the IODE Committee, Bruges (BE)</i> |
| 2015, May | <i>European Maritime day, Piraeus (GR)</i> |
| 2015, 8 June | Activities at <i>World Ocean Day</i> |
| 2015, 28 June | Workshop at the <i>Global Ocean Literacy Day</i> at NMEA2015 (US, Rhode Island) |
| 2015, September | TOL meeting prior to <i>EMSEA15</i> , Crete (GR) |
| 2015, 30 November | <i>21st Conference of the Parties on Climate Change 2015 - COP21 CMP11, Paris (FR)</i> |

Summary

The 2014 TOL workshop was held at the University of Gothenburg, Sweden on 30 September. Twenty-eight people participated (twenty-six in person and two virtually) representing 11 countries: Belgium, Brazil, Canada, Denmark, France, Greece, Portugal, Spain, Sweden, the United Kingdom, and the United States. The purpose of the workshop was enhanced cooperation between both sides of the Atlantic on the theme of ocean literacy in order to advance the Galway Statement on Atlantic Ocean Cooperation, and was framed in the context of previous OL and TOL workshops, meetings and publications. An intentionally ambitious agenda provoked thoughtful dialogue and discussions necessary to advance TOL. As a result, participants reached consensus to adopt the 7 Essential Principles of Ocean Literacy, develop a TOL strategy and implementation plan (including priority actions, topics and identification of key target groups), and noted past and future milestones. Additionally, participants agreed to the development of a TOL strategy/implementation plan and a timeline of activities. With a solid outline of TOL deadlines and activities, we foresee the 2015 TOL workshop building on the strong foundation of our collective efforts to advance TOL.

ANNEX 1

Workshop Participants

| | | |
|--------------------------|--|----------|
| Adam Frederick | Maryland Sea Grant/University of Maryland; National Marine Educators Association (NMEA) National Office | USA |
| Ana Noronha | Ciência Viva | Portugal |
| Anne Stewart | Pearson College, British Columbia; Canadian Network for Ocean Education (CaNOE) | Canada |
| Craig Strang (virtual) | Lawrence Hall of Science/University of California-Berkeley; National Marine Educators Association (NMEA) Past President and Chair, NMEA Ocean Literacy committee | USA |
| Danilo Koetz de Calazans | Instituto de Oceanografia Rio Grande | Brazil |
| Diana Payne | Connecticut Sea Grant/University of Connecticut; National Marine Educators Association (NMEA), Past President and Vice Chair, NMEA Ocean Literacy committee | USA |
| Eva Balsa-Canto | (Bio)Process Engineering Group IIM-CSIC | Spain |
| Evy Copejans | Flanders Marine Institute (VLIZ)/ Flemish Geography Teacher Association /EMSEA | Belgium |
| Fiona Crouch | Marine Biological Association (MBA)/EMSEA | UK |
| Francesca Santoro | Intergovernmental Oceanographic Commission of UNESCO | France |
| Gaëlle Le Bouler | European Commission, Directorate-General for Research and Innovation | Belgium |
| Gail Scowcroft | University of Rhode Island; Consortium for Ocean Science Exploration and Engagement (COSEE) | USA |
| Géraldine Fauville | University of Gothenburg/EMSEA/ European Marine Board Communication Panel (EMBCP) | Sweden |
| Ivar Babb | Northeast Underwater Research Technology and Education Center (NURTEC)/University of Connecticut | USA |
| Ivo Grigorov | Technical University of Denmark (DTU) | Denmark |
| Jan Seys | Flanders Marine Institute (VLIZ)/ European Marine Board Communication Panel (EMBCP) | Belgium |
| Jon Parr | Marine Biological Association (MBA) | UK |
| Luc Zwartjes | EUROGEO/University Ghent/Flemish Geography Teacher Association | Belgium |
| Martha Papathanassiou | Hellenic Centre for Marine Research (HCMR)/EMBCP | Greece |
| Matthew Rockall | British Columbia School of Business on Education for Sustainability | Canada |
| Meghan Marrero | Mercy College - Dobbs Ferry, NY ; National Marine Educators Association (NMEA) Board of Directors | USA |
| Melissa Ryan (virtual) | Ocean Technology Foundation | USA |
| Peter Tuddenham | College of Exploration/National Marine Educators Association (NMEA) International Committee Chair | USA/UK |

| | | |
|-----------------|---|----------|
| Rita Grecco | Instituto de Educação da Universidade Federal do Rio Grande – IE/FURG | Brazil |
| Sam Dupont | University of Gothenburg, Department of Biological and Environmental Sciences | Sweden |
| Susan Haynes | National Marine Educators Association (NMEA), Past President | USA |
| Tina Bishop | College of Exploration | USA |
| Vanessa Batista | Ciência Viva | Portugal |

ANNEX 2

Workshop Agenda

09.00 - 09.05 Welcome

Conference Chairs: Evy Copejans, Diana Payne, Fiona Crouch, Géraldine Fauville

09.05 - 09.15 Introduction of delegates

09.15 - 09.30 Overview: Results of previous TOL meetings

Presenter: Jon Parr, MBA

- *Galway Statement on Atlantic Ocean Corporation*, 2013 [view pdf](#)
- *Defining an ocean literacy agenda for Horizon 2020 and transatlantic cooperation*, Ostend, 2013 [view report](#)
- *Workshop on Transatlantic Ocean Literacy*, Plymouth 2013 [view report](#)
- *Vision Statement on Ocean Literacy and Atlantic Ocean Cooperation between European Union, United States of America & Canada*, 2014 [view pdf](#)

Objectives:

- Increase awareness of previous workshop results
- Synthesize the current state of TOL
- Increase understanding of Ocean Literacy and TOL

09.30 - 10.30 Overview: Recent and upcoming TOL activities

Facilitator: Fiona Crouch, MBA/EMSEA

- The Marine Working Group (JCG MWG) established after the *Galway Statement on Atlantic Ocean Corporation* Gaëlle Le Bouler, European Commission
- Global Ocean Literacy workshop, USA July 2014 Peter Tuddenham, College of Exploration
- National Marine Educators Association conference 2015 Diana Payne, University of Connecticut/NMEA
- Aichi-Nagoya conference UNESCO, Japan, November 2014 Francesca Santoro, UNESCO

Objectives:

- Provide updates on the latest events in ocean literacy
- Increase awareness of opportunities for international collaboration

10.30 - 11.00 Break

11.00 - 12.00 Workshop 1 - Adapting and Implementing the US Ocean Literacy Framework

Presenters/Facilitators: Ana Noronha, Ciência Viva and Evy Copejans, VLIZ/EMSEA

- Example 1: Adapting the US Ocean Literacy Framework in Portugal
- Example 2: Adapting the US Ocean Literacy Framework in Belgium
- Discussion on implementing the US Ocean Literacy Framework - what are the challenges, strategies and successes related to incorporating Ocean Literacy? How to create awareness and engagement.

Objectives:

- Debate on adopting/adapting the Essential Principles of the US Ocean Literacy Framework
- Identify strategies for implementing the US Ocean Literacy Framework across different educational systems

12.00 - 13.00 Lunch and Networking

13.00 - 15.00 Workshop 2 - Developing an Action Plan for Transatlantic Ocean Literacy

Workshop 2A

Session Chairs: Jan Seys, VLIZ/EMBCP and Diana Payne, University of Connecticut/NMEA

Transnational complementarities on the theme of ocean literacy

What are we doing that is similar? How can we do more? How can we capitalize on what we can do together? What are specific examples we can cite? What are best practices that can be shared between regions/countries?

Objectives:

- Review of the results of the 2013 TOL workshop in Plymouth
- Identify transnational complementarities on the theme of ocean literacy

Workshop 2B

Session Chairs: Ivo Grigorov, DTU and Susan Haynes, NMEA

Priority actions to increase transatlantic ocean literacy

To achieve the Transatlantic Ocean Literacy Vision, what is needed with regards to funding, assessments, evaluation, education research, education resources, college courses, partnerships with stakeholders and professional organizations, improving communication?

Objectives:

- Empower toward the collective Transatlantic Ocean Literacy Vision
- Identify a set of priority actions to achieve the Transatlantic Ocean Literacy Vision

15.00 - 15.30 Break

15.30 – 16.30 Conclusion and discussion

- Reflections on the Importance of TOL from European, American and Canadian points of view
Peter Tuddenham, Ana Noronha and Anne Stewart, Pearson College British Columbia
- Discussion on results, future TOL-meetings and communication **conference chairs**

Objectives:

- Identify methods and audiences for dissemination of 2014 TOL workshop results
- Explore agenda topics and possibilities for future TOL meetings
- Ensure inclusive, ongoing discussion of OL and sharing of communications at all levels

16.30 - ... Optional Post-TOL Workshop gathering