

WORLD METEOROLOGICAL ORGANIZATION

**INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)**

DATA BUOY COOPERATION PANEL

DBCP-XXVII/Doc. 9.4
(24-Aug-11)

TWENTY-SEVENTH SESSION

ITEM: 9.4

GENEVA, SWITZERLAND
26-30 SEPTEMBER 2011

ENGLISH ONLY

DATA BUOY VANDALISM

(Submitted by the Secretariat)

Summary and purpose of the document

This document provides information on actions undertaken during the last intersessional period for preventing vandalism on data buoys.

ACTION PROPOSED

The Panel will review the information contained in this report and comment and make decisions or recommendations as appropriate.

Reference:

[DBCP Technical Document No. 41, Data Buoy Vandalism: Incidence, response, Impact](#)

Appendices: A. Executive Summary of DBCP TD No. 41
B. DBCP Vandalism Working Group Charter

-A- DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

9.4 Vandalism

9.4.1 The Panel recalled discussions at previous DBCP Sessions about the issue of vandalism on data buoys. The Panel noted with appreciation the many developments in this regard.

DBCP report on vandalism

9.4.2 The report on “Ocean Data Buoy Vandalism - Incidence, Impact and Responses “ prepared by Ken Jarrott (Australia), has been published as DBCP Technical Document No. 41, and is available from the JCOMM web site¹. The executive summary of the report is reproduced in Appendix A. The Panel thanked Mr Jarrott for this comprehensive, detailed, and useful report. The Panel in particular concurred with the nine recommendations from the report as reproduced in Appendix A.

DBCP Working Group on Vandalism

9.4.3 The Panel also recalled that at its previous Session it had established a small working group (with limited lifetime) on vandalism, and comprised of Ross Hibbins (Australia), Shannon McArthur (USA), Mike McPhaden (USA), K. Premkumar (India), R. Venkatesan (India), and Robert Weller (USA). The working group would provide continuity of attention to this important issue, and would provide a focal point for follow-up action by the Panel. It would also be a channel for further information requests, following the release of the vandalism report.

9.4.5 The Panel noted that during the last intersessional period, the working group established its charter (Appendix B) with primary objective to ensure the continuity of attention within the DBCP, WMO and IOC on the subject of buoy vandalism and to discover, share and promote counter vandalism best practices throughout the international buoy operator community. The primary objectives of the working group are (i) to share lessons learned in counter vandalism efforts among buoy network operators; (ii) to facilitate a conversation among buoy operators on counter vandalism approaches; including technical, educational, operational, and enforcement approaches; (iii) to facilitate a conversation on the development of best practices to mature the various methodologies used to quantify the impacts of buoy vandalism; and (iv) to serve as a communication channel within the DBCP for further information requests on the subject of vandalism following the release of the WMO vandalism report.

WMO Resolution 4.4/2 (Cg-XVI) and IOC Assembly Resolution XXVI/6 on data buoy vandalism: Incidence, Impact and Responses

9.4.6 The Panel further noted with appreciation that the WMO Congress, and IOC Assembly have adopted WMO Resolution 4.4/2 (Cg-XVI) and IOC Resolution XXVI/5 respectively (see Appendix A of doc No. 11.3). Both Resolutions are similar. The Resolutions particularly urge Members and invites relevant International and Intergovernmental Organizations to work with the Food and Agricultural Organization (FAO) and regional fisheries management organizations and bodies, especially those with the competence to manage highly migratory fisheries, to educate and encourage stakeholders to adopt binding measures to prevent and minimize vandalism and damage to ocean observing networks and data systems. The Panel agreed that it could assist the WMO Secretary General, and the IOC Executive Secretary to:

- (1) promote collection of more consistent and systematic statistics on vandalism, to increase capture and exchange of damage records and performance measures for ocean observing networks, and to conduct comprehensive cost-benefit assessments and risk-value analyses taking into account life, health, social and economic impacts of

1: http://www.jcomm.info/index.php?option=com_oe&task=viewDocumentRecord&docID=7150

vandalism and damage to ocean observing networks and data systems;

- (2) encourage and assist, where appropriate, the development of specific regional efforts and solutions in addressing the vandalism of ocean data platforms;

9.4.7 Regarding item (1) above, the Panel requested the Technical Coordinator to collect statistics and information on actual vandalism occurrences, and maintain relevant information on the DBCP website (**action; TC DBCP; ongoing**). It requested the working group on vandalism to propose a methodology, and conduct comprehensive cost-benefit assessments and risk-value analyses in the view to present its findings at the next Panel Session (**action; Vandalism WG; DBCP-28**).

9.4.8 Regarding item (2) above, the Panel requested the Task Team on Capacity Building to make sure the data buoy vandalism aspects are being addressed as part of its activities (**action; TT-CB; ongoing**).

9.4.9 The Panel noted that the DBCP Report on Vandalism shall be presented to the United Nations General Assembly, with a view to promoting an integrated UN approach to address this critical issue.

Regional Workshop on Establishing a Cooperative Mechanism for Protection of Met-Ocean Data and Tsunami Buoys in the Northern Indian Ocean Region

9.4.10 The Panel also noted that the National Institute of Ocean Technology (NIOT) and the Bay of Bengal Programme inter-Governmental Organization (BOBP-IGO) have jointly organized a “*Regional Workshop on Establishing a Cooperative Mechanism for Protection of Met-Ocean Data and Tsunami Buoys in the Northern Indian Ocean Region*” in Chennai, India from 6 to 7 May 2011. The workshop particularly made recommendations along the following lines:

- Amendment to international law relating to platforms in the open ocean (specifically the UN Conventions on the Law of the Sea UNCLOS) to recognize acts of ocean platform vandalism as an offence. Provisions such as those relating to Piracy would afford a framework for protection of ocean data buoys in international waters.
- International / regional cooperation to declare a safe zone around buoy and to promulgate a protective ordinance, as is currently done in some countries for oil rigs; and
- Development of cooperative measures to engage other agencies in the chain of education, interception or enforcement, including cross-border cooperation with countries which may have delegated custody of buoys deployed far from the host country.

APPENDIX A

EXECUTIVE SUMMARY OF DBCP TECHNICAL DOCUMENT NO. 41² DATA BUOY VANDALISM: INCIDENCE, RESPONSE, IMPACT

The tragic loss of over 230,000 people in fourteen countries during the Sumatra Tsunami in 2004 and the thousands lost recently in tsunami events in Chile in 2007, Haiti, Samoa, American Samoa, and Tonga in 2010, and Japan in 2011 reinforce the need for robust, reliable tsunami warning systems, and other ocean observing systems that give the international community a deeper understanding our planet's oceans. Understanding our oceans is critical to protect people from natural disasters and the impending challenges of a changing climate. Nearly 90 percent of the world's observing systems were installed after the Sumatra tragedy; this reports estimates that nearly half of these systems have been vandalized or damaged (either intentionally or unintentionally) in the last five years.

Many nations and the global community rely on a rapidly expanding ocean observing network to promote sustainable development and economic growth, to understand global weather, climate and ecosystems, and protect human life, communities, and infrastructure threatened by marine hazards such as storm surge and tsunamis. Vandalism and negligent damage to moored ocean observing systems takes many forms including ship collisions, incidental damage (e.g., fouling from fishing lines, nets or cables), direct exploitation of moorings as fish aggregation devices, intentional damage from gunshots, and theft of entire systems or the components and parts. Unfortunately, the rate of damage is highest in the Indian Ocean, with over half of the 36 tsunameters in the newly established Indian Ocean Tsunami Warning System and Adjacent Seas network suffering damage in the last four years.

This damage results in the loss of invaluable data for early warning systems and long term climate observations and it doubles the budget needed for maintained these systems due to the high cost of resulting repairs and replacement. The damaged ocean observing systems also results in the loss of critical ocean data, degraded weather and marine forecast capabilities, and it undermined confidence in and reliability of the tsunami warning system, which could result in significant loss of life and property as well as costly evacuations in response to false tsunami warnings.

The United Nations, through UNESCO's Intergovernmental Oceanographic Commission (IOC), and the World Meteorological Organization (WMO), cooperates with member states to help establish and maintain these systems, and recently, the United Nations General Assembly has called for policies and guidance to help prevent and minimize actions that often result in extensive damage to these critical ocean observing networks.

In 2009, the IOC Assembly, at its 25th Session, adopted Resolution 13 on Global Coordination of Early Warning and Mitigation Systems for Tsunamis and other Sea-Level Related Hazards. The resolution called for an: (a) inventory and assessment of the problem of ocean observing platform vandalism globally; (b) an assessment of the impacts of such vandalism, including on the functionality of tsunami warning systems; (c) the annual cost of ocean observing platform vandalism to member States; and (d) recommendations for IOC and Member State action.

Also in 2009, the UN General Assembly recognized the problem through the Resolution on Oceans and Law of the Sea (64/71, para 172) and the Resolution on Sustainable Fisheries (64/72 para 109); both called on States and appropriate UN agencies to take appropriate action to address intentional and unintentional damage to ocean observing systems.

In 2010, the WMO 62nd Executive Council Session adopted a declaration of concern (para 3.4.1.) about the significant occurrence of intentional or unintentional damage to ocean observing systems that urged Members to help promote understanding of the impacts that seriously undermine efforts to establish national and regional ocean hazard warning systems and to coordinate with relevant organizations to take necessary action.

Recently, regional fisheries management organizations (RFMOs), in particular those that manage tuna fisheries, have adopted measures to protect moored ocean observing systems. The RFMOs that have taken action are the Western and Central Pacific Fisheries Commission (2009), the Inter-American

2: Full report is available from http://www.jcomm.info/index.php?option=com_oe&task=viewDocumentRecord&docID=7150

Tropical Tuna Commission (2010) and the Indian Ocean Tuna Commission (2011).

This DBCP report recommends a nine point international action plan to build our understanding of this problem, mitigate the impact on human communities, and promote public education to protect ocean observing networks and save human lives.

- Recommendation 1: Improve the ocean observing platform design to make more impervious to damage and install other mechanisms to prevent access to the individual buoys.
- Recommendation 2: Redesign networks and their operations to promote avoidance.
- Recommendation 3: Upgrade network operations to improve their availability
- Recommendation 4: Promote improved data exchange and network optimization in the Indian Ocean Tsunami Warning System that will establish enough redundancy to provide warnings even with outages.
- Recommendation 5: Encourage nations to recognize the issue of marine platform vandalism and develop, harmonize, and coordinate statutes to protect ocean observing systems.
- Recommendation 6: Call on Fisheries Management and Regulatory Bodies to develop measures and strategies to help mitigate the damage to ocean observing systems.
- Recommendation 7: Develop more reliable and consistent methods of maintaining records about vandalism that can be cross-referenced and analyzed to understand the global costs of the problem.
- Recommendation 8: Encourage States party to the Law of the Sea Convention to use this legal instrument to promote protection of ocean observing networks.
- Recommendation 9: Expand international education and outreach to both emphasize the importance of ocean observing systems and how everyone can help protect these systems from vandalism and negligent damage.

This report is being released following the extraordinarily destructive Tohoku tsunami of Japan. Though the human and economic loss assessments are astounding, many lives were saved because of robust Japanese and international ocean observing systems and exceptional preparedness programs that resulted in immediate community response and evacuation.

The nine recommendations underscore that national tsunami warning systems and community response are dependent on fully functioning national and regional tsunami observing systems that are not compromised by ocean observing systems that have been rendered inoperable by vandalism or negligent damage.



APPENDIX B

DATA BUOY COOPERATION PANEL VANDALISM WORKING GROUP CHARTER

Background:

United Nations Educational, Scientific and Cultural Organization (UNESCO), Intergovernmental Ocean Commission (IOC) Resolution XXV-13 (2009) requested that the DBCP conduct a global assessment of the scope and impact of vandalism on buoy networks in order to formulate strategies to reduce vandalism incidences and consequences. Additionally, the Executive Council of the World Meteorological Organization (WMO) requested from the DBCP that a report on vandalism be made available to the WMO Sixteenth Congress in 2011 in order to further encourage support and action from WMO members on the problem.

In response to these requests, a decision was made by the DBCP Executive Panel during the twenty-fifth session of the DBCP (2009) to collaborate with the IOC's International Tsunameter Partnership to perform an assessment the buoy vandalism problem and to produce a report on the findings. This report, DBCP Technical Document No.41, was subsequently prepared and approved by the DBCP Executive Panel and submitted to the WMO.

During the twenty-sixth session of the DBCP (2010), the DBCP Executive Panel made a decision to authorize the initiation of a limited term DBCP Vandalism Working Group to ensure the continuity of attention to the subject of buoy vandalism.

Working Group Scope Statement:

To ensure the continuity of attention within the DBCP, WMO and IOC on the subject of buoy vandalism and to discover, share and promote counter vandalism best practices throughout the international buoy operator community.

Primary Objectives:

- to share lessons learned in counter vandalism efforts among buoy network operators
- to facilitate a conversation among buoy operators on counter vandalism approaches; including technical, educational, operational, and enforcement approaches
- to facilitate a conversation on the development of best practices to mature the various methodologies used to quantify the impacts of buoy vandalism
- to serve as a communication channel within the DBCP for further information requests on the subject of vandalism following the release of the WMO vandalism report

Working Group Composition:

- Ross Hibbins (Australia), Australia Bureau of Meteorology
- Mike McPhaden (USA), National Oceanic and Atmospheric Administration
- R. Venkatesan (India), National Institute Of Ocean Technology
- K. Premkumar (India), Win marine consultancy services
- Robert Weller (USA), Woods Hole Oceanographic Institute
- Shannon McArthur (USA), National Oceanic and Atmospheric Administration, (Team Lead)
- Etienne Charpentier, Secretariat

Communication:

This working group will convene virtually when possible and will meet annually as a breakout session of the Data Buoy Cooperation Panel meetings.

Working Group Terms:

This is a temporary working group of the Data Buoy Cooperation Panel. It will convene to promote the objectives stated above and terminate at the recommendation of the working group members with the consensus of the DBCP Executive Panel.
