**Workshop on WCRP Grand Challenge and Climate Services**

BRGM, Orléans, France, 12 -13th November 2019

The **WCRP** Grand Challenge on Regional Sea Level Change and Coastal Impacts[[1]](#footnote-1) has inspired efforts to link sea-level science and climate services[[2]](#footnote-2). This recognises that coastal zones are strongly in need of coastal climate services (CCS) to support adaptation planning, as they are increasingly threatened by sea level rise and its impacts, such as submergence, flooding, shoreline erosion, salinization and wetland change. To this end, we have reviewed the development of CCS, and identified the research and development efforts needed to overcome barriers to progress and facilitate progress. These include: (1) research in the field of sea level, coastal and adaptation science and (2) cross-cutting research in the area of user interactions, decision making, propagation of uncertainties and overall service architecture design. As a number of projects are currently developing CCSs in a number of countries and regions (e.g. USA, Australia, Europe - Copernicus, ERA4CS…), there is **a need to assess how this research meets the challenges identified above and how it is being transferred to operations**.

This **workshop** will be designed to link these efforts across the Grand Challenge and more widely with our Stakeholder and to develop a manifesto to take this issue forward. This manifesto will re-assess how to stimulate the uptake of CCSs, how they support present days and future coastal resilience, and make recommendations as to the best way forward. The manifesto would be published as a journal paper. The workshop is organized in association with **IOC/GLOSS, WMO** and **Clivar**.

To achieve this aim, the workshop will address the following topics:

* Assessments of the current status of coastal climate services
* Identification and mapping of users
* Identification and analysis of needs for different types of users (e.g., insurance, critical infrastructures or settlements, observation needs…)
* Review of existing practices and how they can be improved
* Translating sea-level science to operations and communicating uncertainties
* Potential Framework for coastal climate services

The **target audience** are members of the WCRP Sea Level and Coastal Impacts Grand Challenge (in particular WP5), as well as a number of invited participants with experience in several projects on coastal climate services involving stakeholders such as coastal planners and engineers and e.g. the Global Framework for Climate Services at WMO. To maximize efficiency, the target number of participant is 25 approximately.

The workshop addresses an important and timely issue because the economic model of climate services, including at the coast, is being defined now. It anticipates future milestones relevant to the WCRP Grand Challenge, such as conferences providing scientifically sound sea-level information to coastal adaptation practitioners. Finally, we believe that **publicizing the results of the workshop as a manifesto in a high impact scientific journal** is effective to inform future research supporting the development of CCS.

Organizing committee: *Robert Nicholls (Univ. Southampton), Gonéri Le Cozannet (BRGM), Detlef Stammer (Univ. Hamburg), Roderik Van De Wal (Univ. Utrecht), Michael Sparrow (WCRP), Kate Hill (GOOS/GCOS), Julie Billy (BRGM), Jing Li (Clivar)*

**To register**, please send a mail to [j.billy@brgm.fr](mailto:j.billy@brgm.fr) and [jing.li@clivar.org](mailto:jing.li@clivar.org)

|  |  |  |  |
| --- | --- | --- | --- |
| http://www.clivar.org/sites/default/files/field/image/CLIVARlogoNew.jpg | https://ocean-climate.org/wp-content/uploads/2017/09/wsi-imageoptim-UNESCO_-_IOC-logo-e1431098397979-1-e1506203972390.jpg | Image result for gloss logo global ocean | **C:\Users\lecozannet\Downloads\Logo_brgm_english.jpg** |

Program of the WCRP Climate Services Workshop

BRGM, Orléans, France, 12-13th November 2019

Tuesday 12th November

|  |  |  |  |
| --- | --- | --- | --- |
|  | Session |  |  |
| 8h00 |  | *Shuttle to the BRGM*  *Meeting point in the city center at the cathedral* |  |
| 8h30 | Welcome | BRGM Registration and Coffee |  |
| 9h00 | Introduction | **Welcome: Philippe Freyssinet** (BRGM) |  |
|  | **WCRP context: Robert Nicholls and Roderik Van De Wal** |  |
|  | **Workshop objectives: Gonéri Le Cozannet** **and Julie Billy** |  |
| 10h00 | Session 1 :  current status of CCS and prospects  Chair / rapporteur | **Angelique Melet** - EU Copernicus Marine Service products and services in relation to sea level changes. | 15’ |
|  | **Robert Muir-wood** - Application of risk modelling for measuring the costs and impacts of sea-level rise | 15’ |
|  | **Marta Marcos -** global to local coastal modeling as a climate service for coastal adaptation : status and perspectives | 15’ |
| 10h45 | *Coffee break* | 30’ |
| 11h15 | **Discussion –** What is required beyond currentcoastal climate services? | 1h30 |
| 12h45 |  | Lunch | 1h30 |
| 14h15 | Session 2 :  Users and  their needs  Chair / rapporteur | **Jonathan Simm** – Experience feedback with coastal climate services at USACE and UK environment agency | 15’ |
|  | **Matt Campo** – Users and uses of sea level rise information: a typology | 15’ |
| 14h45 | **Discussion** - Identification and mapping of users | 1h00 |
| 15h45 | *Coffee break* | 30’ |
| 16h15 | **Jochen Hinkel** – Methods for identifying what kind of sea level rise information users need: experiences from the INSeaPTION project | 15’ |
|  | **Paul Bowyer** – Analysis of sectoral user needs and an example climate service | 15’ |
|  | **Kathleen McInnes** –The Port Phillip Bay Coastal Hazard Assessment: Towards the Development of a Decision Support System for End-users | 15’ |
| 17h00 | **Discussion** - Identification and analysis of users’ needs | 45’ |
| 17h45 | end |  |  |
| 18h00 |  | Shuttle to the city center at the cathedral |  |
| 19h30 |  | Diner in a restaurant in the city center –  ***Le Ver Di Vin*** *- 2 rue des 3 Maries, 45000 Orléans* |  |

Program of the WCRP Climate Services Workshop

BRGM, Orléans, France, 12-13th November 2019

Wednesday 13th November

|  |  |  |  |
| --- | --- | --- | --- |
|  | Session |  |  |
| 8h00 |  | *Shuttle to the BRGM*  *Meeting point in the city center at the cathedral* |  |
| 8h30 | Welcome | BRGM Registration and Coffee |  |
| 9h00 | Session 3 :  Translating sea-level science to operations and communicating uncertainties  Chair / rapporteur | **Judy Lawrence** – Making Coastal Climate Services relevant | 15’ |
|  | **Jeremy Rohmer** – Improving communication by clarifying the impact of epistemic uncertainties on future marine flooding as sea level rises | 15’ |
|  | **David Behar** – Science to Action: A Decision Maker’s Perspective on a Work in Progress | 15’ |
|  | **Thomas James** - Communicating Sea-Level Risk and Updating National Guidance in the Context of an Uncertain High-End | 10’ |
|  | **Discussion -** Translating sea-level science to operations and communicating uncertainties | 50 |
| 10h45 |  | Coffee break | 30’ |
| 11h15 | Session 4 :  Interacting with users  Chair / rapporteur | **Marjolijn Haasnoot** – Adaptation tipping points analysis & early detection of signal of change: how do they fit within adaptation pathways? | 15’ |
|  | **William Sweet** - developing annual-to-decadal SL rise projections framed by societal impact (weather) thresholds of NOAA's National Weather Service | 15’ |
| 11h45 | **Discussion -**  Interacting with users: review of existing practices and methods and how they can be improved | 1H |
| 12h45 |  | Lunch | 1h30 |
| 14h30 | Session 5 :  CCS Framework  Chair / rapporteur |  |  |
|  | **Erica Allis -** Global Framework for climate services | 20’ |
|  | **Robert Kopp** – Coastal adaptation decisions, from theory to practice | 20’ |
|  | **Robert Nicholls** - Toward a common framework for coastal climate services? | 20’ |
|  | **Discussion -**  Framework for Coastal Climate Services – **moderators**: Roderik van de Wal, Déborah Idier | 1h00 |
| 16h30 | Conclusion | workshop end |  |
| 17h30 |  | Shuttle to the city center at the cathedral |  |

Program of the WCRP Climate Services Workshop

BRGM, Orléans, France, 12-13th November 2019

List of participants

|  |  |  |
| --- | --- | --- |
|  | Name | Email address |
| 1 | David Behar | [DBehar@sfwater.org](mailto:DBehar@sfwater.org) |
| 2 | Alexander Bisaro | [sandy.bisaro@globalclimateforum.org](mailto:sandy.bisaro@globalclimateforum.org) |
| 3 | Paul Bowyer | [paul.bowyer@hzg.de](mailto:paul.bowyer@hzg.de) |
| 4 | Matt Campo | [mcampo@ejb.rutgers.edu](mailto:mcampo@ejb.rutgers.edu) |
| 5 | Gael Durand | [gael.durand@univ-grenoble-alpes.fr](mailto:gael.durand@univ-grenoble-alpes.fr) |
| 6 | Marjolijn Haasnoot | [Marjolijn.Haasnoot@deltares.nl](mailto:Marjolijn.Haasnoot@deltares.nl) |
| 7 | Marta Marcos | [marta.marcos@uib.es](mailto:marta.marcos@uib.es) |
| 8 | Kathleen Mcinnes | [Kathleen.Mcinnes@csiro.au](mailto:Kathleen.Mcinnes@csiro.au) |
| 9 | Angelique Melet | [angelique.melet@mercator-ocean.fr](mailto:angelique.melet@mercator-ocean.fr) |
| 10 | Gary Mitchum | [mitchum@usf.edu](mailto:mitchum@usf.edu) |
| 11 | Robert Muir-wood | [Robert.Muir-Wood@rms.com](mailto:Robert.Muir-Wood@rms.com) ; |
| 12 | Robert Nicholls | [R.J.Nicholls@soton.ac.uk](mailto:R.J.Nicholls@soton.ac.uk) |
| 13 | Deborah Idier (BRGM) | [d.idier@brgm.fr](mailto:d.idier@brgm.fr) |
| 14 | Thomas James | [Thomas.James@canada.ca](mailto:Thomas.James@canada.ca) |
| 15 | Jose Jimenez | [jose.jimenez@upc.edu](mailto:jose.jimenez@upc.edu) |
| 16 | Judy Lawrence | [judy.lawrence@vuw.ac.nz](mailto:judy.lawrence@vuw.ac.nz) |
| 17 | Goneri Le Cozannet | [G.LeCozannet@brgm.fr](mailto:G.LeCozannet@brgm.fr) |
| 18 | Jason Lowe | [jason.lowe@metoffice.gov.uk](mailto:jason.lowe@metoffice.gov.uk) |
| 19 | Benjamin Harrison | [benjamin.harrison@metoffice.gov.uk](mailto:benjamin.harrison@metoffice.gov.uk) |
| 20 | Jeremy Rohmer (BRGM) | [j.rohmer@brgm.fr](mailto:j.rohmer@brgm.fr) |
| 21 | Jonathan Simm | [J.Simm@hrwallingford.com](mailto:J.Simm@hrwallingford.com) |
| 22 | Michael Sparrow | [msparrow@wmo.int](mailto:msparrow@wmo.int) |
| 23 | Scott Stephen | [Scott.Stephens@niwa.co.nz](mailto:Scott.Stephens@niwa.co.nz) |
| 24 | William Sweet | [william.sweet@noaa.gov](mailto:william.sweet@noaa.gov) |
| 25 | A.S. Unnikrishnan | [As.unnikrishnan@gmail.com](mailto:As.unnikrishnan@gmail.com) ; [unni@nio.org](mailto:unni@nio.org) |
| 26 | Roderik Van de Wal | [R.S.W.vandeWal@uu.nl](mailto:R.S.W.vandeWal@uu.nl) |
| 27 | Rémi Thieblemont (BRGM) | [r.thieblemont@brgm.fr](mailto:r.thieblemont@brgm.fr) |
| 28 | Philippe Freyssinet (BRGM) | [p.Freyssinet@brgm.fr](mailto:p.Freyssinet@brgm.fr) |
| 29 | Aurélie Maspataud (BRGM) | [a.maspataud@brgm.fr](mailto:a.maspataud@brgm.fr) |
| 30 | Julie BILLY (BRGM) | [j.billy@brgm.fr](mailto:j.billy@brgm.fr) |
| 31 | Iñigo Losada Rodriguez | [inigo.losada@unican.es](mailto:inigo.losada@unican.es) |
| 32 | Alexandra, Toimil Silva | [alexandra.toimil@unican.es](mailto:alexandra.toimil@unican.es) |
|  |  |  |
|  | **Web conference** |  |
| 33 | Robert Kopp | [robert.kopp@rutgers.edu](mailto:robert.kopp@rutgers.edu) |
| 34 | John Church | [church.johna@gmail.com](mailto:church.johna@gmail.com) |
| 35 | Jochen Hinkel | [hinkel@globalclimateforum.org](mailto:hinkel@globalclimateforum.org) |
| 36 | Rosh Ranasinghe | [r.ranasinghe@un-ihe.org](mailto:r.ranasinghe@un-ihe.org) |
| 37 | Erica Allis | [eallis@wmo.int](mailto:eallis@wmo.int) |
| 38 | Benoit Meyssignac | [Benoit.Meyssignac@legos.obs-mip.fr](mailto:Benoit.Meyssignac@legos.obs-mip.fr) |
| 39 | Anny Cazenave | [anny.cazenave@gmail.com](mailto:anny.cazenave@gmail.com) |

WCRP Grand Challenge meeting

BRGM, Orléans, France, 14-15th November 2019

Thursday 14th November

|  |  |  |  |
| --- | --- | --- | --- |
|  | Session |  |  |
| 8h00 |  | *Shuttle to the BRGM*  *Meeting point in the city center at the cathedral* |  |
| 8h30 | Welcome | BRGM Registration and Coffee | 30’ |
| 9h00 |  | **Goal of the Meeting** (*RW/RN*) | 15’ |
|  |  | Reflection on the climate service workshop 12-13thNov. | 1H15 |
| 10h30 |  | *Coffee break* | 30’ |
|  | Report of the different Working Groups – part 1 | **WP1 Paleo sea level** - *Thomas James,*  *Roderik van de Wal* | 30’ |
|  | **WP2 Ice/ISMIP** - *Tony Payne* | 30’ |
|  | **WP3 causes for regional variability and change** –  *Catia Domingues* | 45’ |
| 12h45 |  | Lunch | 1h30 |
| 14h30 | Report of the different Working Groups - part 2 | **WP4 Predictability of RSL** – Jonathan Gregory | 45’ |
|  | **WP5 Sea Level science for coastal zone management** - *Scott Stephens* NZ adaption |
|  | **WP5 wave in ESL** - *Kathy McInnes* | 15’ |
| 15h30 | *Coffee break* | 30’ |
|  | **WP6 Sea Level budget** - *Roderik on behalf of Anny Cazenave, Garry Mitchum* on Gloss | 30’ |
| 16H00 |  | Presentations of guests to the meeting - *Bette Otto-Bliesner* | 30’ |
|  |  | AR6 developments Bob Kopp |  |
| 17h30 |  | *Shuttle to the city center at the cathedral* |  |

Friday 15th November

|  |  |  |  |
| --- | --- | --- | --- |
|  | Session |  |  |
| 8h00 |  | *Shuttle to the BRGM*  *Meeting point in the city center at the cathedral* |  |
| 8h30 | Welcome | BRGM Registration and Coffee | 30’ |
| 9H00 |  | Summary of Achievement so far and knowledge gaps Future meetings, Grand Challenge Papers, acknowledgements | 1H |
| 10H00 |  | Sea Level Conference in 2022 (RW) | 30’ |
| 10h30 |  | *Coffee break* | 30’ |
| 11h00 |  | WCRP developments (RN/Michael Sparrow)? | 20’ |
|  |  | Organizational aspects of WCRP grand challenge Stepping back of Detlef (RW) | 20’ |
|  |  | **Next Meeting** | 1H |
| 12h45 |  | Lunch | 1h30 |
| 14h30 |  | **End of the meeting** |  |
|  |  | *Shuttle to the city center at the cathedral* |  |

WCRP Grand Challenge meeting

BRGM, Orléans, France, 14-15th November 2019

List of participants

|  |  |  |
| --- | --- | --- |
|  | Name | Email address |
| 1 | David Behar | [DBehar@sfwater.org](mailto:DBehar@sfwater.org) |
| 2 | Catia Domingues | [Catia.Domingues@csiro.au](mailto:Catia.Domingues@csiro.au) |
| 3 | Jochen Hinkel | [hinkel@globalclimateforum.org](mailto:hinkel@globalclimateforum.org) |
| 4 | Kathleen McInnes | [Kathleen.Mcinnes@csiro.au](mailto:Kathleen.Mcinnes@csiro.au) |
| 5 | Gary Mitchum | [mitchum@usf.edu](mailto:mitchum@usf.edu) |
| 6 | Robert Nicholls | [R.J.Nicholls@soton.ac.uk](mailto:R.J.Nicholls@soton.ac.uk) |
| 7 | Thomas James | [Thomas.James@canada.ca](mailto:Thomas.James@canada.ca) |
| 8 | Judy Lawrence | [judy.lawrence@vuw.ac.nz](mailto:judy.lawrence@vuw.ac.nz) |
| 9 | Goneri Le Cozannet | [G.LeCozannet@brgm.fr](mailto:G.LeCozannet@brgm.fr) |
| 10 | Bette Otto-Bliesner | [ottobli@ucar.edu](mailto:ottobli@ucar.edu) ; |
| 11 | Tony Payne | [a.j.payne@bristol.ac.uk](mailto:a.j.payne@bristol.ac.uk) |
| 12 | Michael Sparrow | [msparrow@wmo.int](mailto:msparrow@wmo.int) |
| 13 | Scott Stephen | [Scott.Stephens@niwa.co.nz](mailto:Scott.Stephens@niwa.co.nz) |
| 14 | A.S. Unnikrishnan | [As.unnikrishnan@gmail.com](mailto:As.unnikrishnan@gmail.com)  ; [unni@nio.org](mailto:unni@nio.org) |
| 15 | Roderik Van de Wal | [R.S.W.vandeWal@uu.nl](mailto:R.S.W.vandeWal@uu.nl) |
|  | **Web conference** |  |
| 16 | Jonathan Gregory | [j.m.gregory@reading.ac.uk](mailto:j.m.gregory@reading.ac.uk) |

1. [*https://www.wcrp-climate.org/gc-sea-level*](https://www.wcrp-climate.org/gc-sea-level) [↑](#footnote-ref-1)
2. *See e.g.* [*https://doi.org/10.3390/jmse5040049*](https://doi.org/10.3390/jmse5040049) [↑](#footnote-ref-2)