

**Prof. Dr.**                      **Tjeerd J. Bouma**  
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## Research motivation / academic profile

*Career path:* Since the start of his career, Tjeerd Bouma has shown a drive to do frontier applied research: i.e., gaining a fundamental understanding needed to resolve societal problems. During his PhD he did fundamental plant physiological research to identify those maintenance processes that caused the greatest reduction in crop yield (potatoes, tomatoes, and beans), to thereby enable targeted crop-breeding. As a post-doc, he continued this line of research on horticultural fruit trees (apples and oranges), while learning how to place his work in a more fundamental ecological context. When starting as tenure-track scientist at the Royal Netherlands Institute for Sea Research NIOZ (former NIOO-CEME) he completely switched his research focus towards the ecology of intertidal and marine ecosystems. In all research fields his work is still well cited

(<https://scholar.google.nl/citations?user=ogQABXIAAAAJ&hl=en>).

*Current research lines:* Coasts and deltas belong to the most densely inhabited and intensively used areas in the world. The strong competition for space has led to large-scale loss of intertidal ecosystems, despite belonging to the most valuable systems in the world in terms of ecosystem services provided. This has fuelled a major interest in ecosystem restoration for ecosystem services. The research team working with Tjeerd Bouma has hence focussed on understanding i) how to improve restoration practice, ii) how to sustainably benefit from ecosystem services, and iii) assessing the resilience of these valuable ecosystems to climate change.

- **Restoration** of intertidal ecosystems as mangroves, seagrasses and salt marshes often fail, due to strong physical drivers. To enhance restoration success, the research team working with Tjeerd Bouma has focussed on obtaining a fundamental understanding how natural systems establish (e.g., Balke et al. 2011 *Mar Ecol Prog Ser.* 440: 1–9, Balke et al. 2014 *Journal of Ecology* 102: 700-708), and translating this understanding into novel, large-scale applicable restoration concepts (e.g., Temmink et al. *Nature Comm* 11 Art# 3668; Fivash et al 2022 *J Appl Ecol.* 59: 1050-1059). This has led to the broad application of the Windows of Opportunity framework in improving coastal restoration and modelling natural dynamics of biogeomorphic systems (e.g., Hu et al 2021 *Geophys Res Letters* 48: e2021GL095596; Poppema et al 2019 *Ocean Coast Manag.* 168: 238-250).
- **Ecosystem-services** such as e.g., Nature-Based Flood Defense, carbon sequestration, supporting biodiversity, enabling aquaculture, recreation, etc., is a key driver of many restoration efforts. The research team working with Tjeerd Bouma focusses on fundamentally understanding the conditionality of services provisioning, as well as the extent that different services are compatible (i.e., win-win) vs. mutually exclusive (i.e., trade-off choice). Within the scientific community, he contributed to the broad acceptance of using tidal ecosystems as Nature-Based Flood Defense (e.g., Borsje et al 2011 *Ecological Engineering* 37: 113-122; Temmerman et al. 2013 *Nature* 504: 79-83). Novel insights in how nature-based flood defence by salt marshes work when a dike breaches (e.g., Zhu et al. 2020 *Nature Sust.* 10: 853), fuelled societal discussion on transitional polders as novel flood-defence system (12 debated articles in local news paper PZC). He actively worked on outreach to the broader public (see list below)
- Understanding the **long-term climate resilience** of ecosystems is a key prerequisite to effectively invest in ecosystem restoration for ecosystem services. To enable this line of research, the team working with Tjeerd Bouma has developed novel field-flume to quantify key parameters needed to feed into models (e.g., de Smit et al. 2020 *Limnol. Oceanogr.: Methods*

18, 585–598; de Smit et al. 2021 *Limnol. Oceanogr.* 9999, 1–12; James et al. 2019 *BioScience* 69: 136–142; James et al. 2020 *J. of Ecology* 108; 2025-2037) and lab set-ups to study bioturbation behaviour under heat stress (e.g., Zhou et al. 2022. *Science of the Total Environment* 824, 153621).

**Positions:** The key interest in carrying out fundamental research, that can be translated into application for the benefits of humanity, also translates into having a lector position at the HZ University of Applied Sciences next to academic positions at the Royal Netherlands Institute for Sea Research (NIOZ) and Utrecht University

### International visibility, activities, prizes, scholarships, etc.

In addition to being senior scientist at the Royal Netherlands Institute of Sea Research (NIOZ), TJ Bouma was in 2018 appointed for 0.2 FTE as professor at physical geography at Utrecht University, became in 2017 Visiting professor at the school of marine engineering and technology at Sun Yat-sen University in China, is since 2014 honorary professor at Groningen University, and since 2014 Lector at the HZ University of Applied sciences.

In his position as Lector at the HZ-University of Applied Sciences, he was in the lead of the Raak-Pro “Meerwaarde met Mosselen”, which was about creating additional value for different stakeholders (i.e., the aquaculture sector, Nature NGO’s and RWS as governmental managers) by restoring international mussel beds. This project was granted the RAAK-award in 2019

(<https://www.vereniginghogescholen.nl/actueel/actualiteiten/winnaar-raak-award-2019-meerwaarde-met-mosselen-hz-university-of-applied-sciences>)

The visibility of the research of TJ Bouma is reflected in being invited for giving key-note lectures both at national and international conferences (2022 = 1<sup>st</sup> Symposium on Coastal Research, Spain; 2021 = CORE online conference China & 7<sup>th</sup> ICEC online conference, China; 2019 = NAEM-conference, The Netherlands; 2018 = ICEC-conference, France & Core-conference, China; 2017 = RCEM-conference, Italy & ECSA-conference, China; 2016 = ECORES-conference, Italy). The international visibility of the work by the research group led by TJ Bouma is also reflected in the work being well cited

(<https://scholar.google.nl/citations?user=ogQABXIAAAAJ&hl=en>).

TJ Bouma was rewarded several grants, both as main- and co-applicant. All grants are typically transdisciplinary, with societal relevance. Below some recent examples (last 5 years):

- 2023, main applicant of HPP. Multi-partner project funded to learn from a large-scale managed realignment project (Hedwige Proser Polder), to design future restoration projects and nature-based flood defence schemes.
- 2023, co-applicant of DeltaWEALTH. Transdisciplinary project aimed at analysing the costs and benefits in terms of wealth, of alternative flood-defence strategies for the South-West Delta region
- 2023, co-applicant of DeltaENIGMA, which is an > 10 million EURO NWO Research Infrastructure Grant (2023-2033), aimed at keeping the Dutch research at the forefront of BioGeoMorphology. About 3 million will be invested at NIOZ. Within the programme, TJ Bouma is the lead for the Estuary observations.
- 2022, co-applicant of the TTW-perspective proposal “Future FRM tech”, which is aimed at innovating Flood Rijs Management technologies using nature-based solutions under climate change

- 2022, main applicant “Buitendijkse maatregelen II” (BathOssZim). Multi-partner project to learn from ongoing large-scale nature-enhancing projects to design future restorations of intertidal nature.
- 2020, co-applicant of the NWA proposal “living dikes”, which is aimed at technical, ecological and societal implementation of using saltmarshes as sustainable and nature-inclusive flood defence
- 2019, main applicant of the TTW North-Sea ReViFES (Reef Vitalization for Ecosystem Services), which is aimed on creating reefs that enhance biodiversity but at the same time enable sustainable aquaculture and fisheries
- 2019, co-applicant of the TTW-Woody proposal, which is aimed on designing riverbanks with willow trees that are both biodiverse as well as are effective as wave-breakers
- 2019, co-applicant of the NWO-Living Lab Hedwige Proser Polder. This transdisciplinary proposal was fully based on the findings published in the paper of Zhu et al. (2020) - Nature Sustainability (for details, see key papers), and focusses on a completely new function of foreshores for flood safety, by reducing dimensions of dike-breaches

Based on his expertise, TJ Bouma is member of various Societal and Scientific committees, like

- Member of the European Marine Board working group ‘Coastal Resilience’
- scientific council “de wilde denktank”, of the NGO, ARK Natuurontwikkeling
- Board member, The Netherlands Ecological Research Network (NERN)
- Member of Academic board – MSc-course River Delta Development (HZ University of applied Sciences, Rotterdam University of Applied Sciences, Van Hall Larenstein University of Applied Sciences)
- Program Committee of Netherlands Centre of Coastal Research (NCK) – ended in 2022

### Examples of 6 recent (last 5 years) publications with clear societal impact

- 1) Temmink RJM, Christianen MJA, Fivash GS, et al., **Bouma TJ**, van der Heide T (2020) Mimicry of emergent traits amplifies coastal restoration success. Nature Communications 11, Article Number: 3668, DOI: 10.1038/s41467-020-17438-4 → *this paper reports on successful experiments that were carried out with stake-holders in search of more successful restoration techniques. We are now discussing the options for upscaling*
- 2) Zhu ZC, Vuik V, Visser PJ, et al., **Bouma TJ** (2020) Historic storms and the hidden value of coastal wetlands for nature-based flood defence. Nature Sustainability 10; 853-. DOI: 10.1038/s41893-020-0556-z → *the findings reported in this paper formed the base of the funded Living-Lab Hedwige project, where stakeholders are now large-scale exploring the safety that salt-marshes provide in case of a dike breaching. These findings also inspired a WWF-funded exploration into the feasibility of the large-scale implementation of double-dike systems with transitional polders, which has led to twelve discussion articles in the local news paper and is currently discussed as future-proof flood defence solution in the political arena and has become part of the national Delta-plan*
- 3) Schotanus J, Walles B, Capelle JJ, Belzen J, Koppel J, **Bouma TJ** (2020) Promoting self-facilitating feedback processes in coastal ecosystem engineers to increase restoration success: Testing engineering measures. Journal of Applied Ecology 57: 1958-1968. DOI: 10.1111/1365-2664.13709 → *Rijkswaterstaat (RWS) has the intention to apply the method described in this paper for restoring mussel-beds at exposed locations, as erosion protection around the upcoming sand-nourishment at the Galgeplaat (Oosterschelde)*
- 4) James RK, Silva R, van Tussenbroek BI, et al., **Bouma TJ** (2019). Maintaining tropical beaches with seagrass and algae: a promising alternative to engineering solutions. BioScience, 69(2), 136-142. → *in*

*the press release about this paper, we had enthusiastic quotes from both WWF and from the international dredging and offshore contractor van Oord, indicating that they both are interested in finding opportunities for large-scale application*

- 5) Leuven JRFW, Pierik HJ, van der Vegt M, **Bouma TJ**, Kleinhans MG (2019) Sea-level-rise-induced threats depend on the size of tide-influenced estuaries worldwide. *Nature Climate Change* 9: 986-+. DOI: 10.1038/s41558-019-0608-4 → *this paper identifies the problem of drowning tidal flats under future sea level rise, and was key to rising awareness with end-users of this problem. As such, this paper has led to the support of end-users to start developing novel systems that can be used to prevent drowning of tidal flats (part of 2022 funded TTW-perspective program Future FRM Tech)*
- 6) Fivash GS, van Belzen J, Temmink RJM, Didden K, Lengkeek W, van der Heide T, **Bouma TJ** (2022) Increasing spatial dispersion in ecosystem restoration mitigates risk in disturbance-driven environments. *J Appl Ecol.* 59, pp 1050-1059 → *this paper reports on a theoretical upscaling framework for BESE*

## 12 key publications

- 1) Fivash GS, van Belzen J, Temmink RJM, Didden K, Lengkeek W, van der Heide T, **Bouma TJ** (2022) Increasing spatial dispersion in ecosystem restoration mitigates risk in disturbance-driven environments. *J Appl Ecol.* 59, pp 1050-1059
- 2) Zhou Z, **Bouma TJ**, Fivash GS, Ysebaert T, van IJzerloo L, van Dalen J, van Dam B, Walles B (2022) Thermal stress affects bioturbators' burrowing behavior: A mesocosm experiment on common cockles (*Cerastoderma edule*). *Science of the Total Environment* 824 (2022) 153621
- 3) de Smit JC, Bin Mohd Noor MS, Infantes E, **Bouma TJ** (2021) Wind exposure and sediment type determine the resilience and response of seagrass meadows to climate change. *Limnol. Oceanogr.* 9999, 1–12; doi: 10.1002/lno.11865
- 4) Fivash GS, Temmink RJM, D'Angelo M, van Dalen J, Lengkeek W, Didden K, Ballio F, van der Heide T, **Bouma TJ** (2021) Restoration of biogeomorphic systems by creating windows of opportunity to support natural establishment processes. *Ecological Applications* 31(5):e02333. 10.1002/eap.2333
- 5) Hu, Z., Borsje, B. W., van Belzen, J., Willemsen, P. W. J. M., Wang, H., Peng, Y., et al. **Bouma TJ** (2021). Mechanistic modeling of marsh seedling establishment provides a positive outlook for coastal wetland restoration under global climate change. *Geophysical Research Letters*, 48, e2021GL095596. <https://doi.org/10.1029/2021GL095596>
- 6) Temmink RJM, Christianen MJA, Fivash GS, Angelini C, Bostrom C, Didden K, Engel SM, Esteban N, Gaeckle JL, Gagnon K, Govers LL, Infantes E, van Katwijk MM, Kipson S, Lamers LPM, Lengkeek W, Silliman BR, van Tussenbroek BI, Unsworth RKF, Yaakub SM, **Bouma TJ**, van der Heide T (2020) Mimicry of emergent traits amplifies coastal restoration success. *Nature Communications* 11, Article Number: 3668, DOI: 10.1038/s41467-020-17438-4
- 7) Zhu ZC, Vuik V, Visser PJ, Soens T, van Wesenbeeck B, van de Koppel J, Jonkman, SN, Temmerman S, **Bouma TJ** (2020) Historic storms and the hidden value of coastal wetlands for nature-based flood defence. *Nature Sustainability* 10; 853-. DOI: 10.1038/s41893-020-0556-z
- 8) James RK, Silva R, et al., **Bouma TJ** (2019). Maintaining tropical beaches with seagrass and algae: a promising alternative to engineering solutions. *BioScience*, 69, 136-142.
- 9) van Belzen J, van de Koppel J, Kirwan ML, et al., **Bouma TJ** (2017) Vegetation recovery in tidal marshes reveals critical slowing down under increased inundation. *Nature Comm.* 8: 15811. DOI: 10.1038/ncomms15811
- 10) **Bouma TJ**, van Belzen J, Balke T, van Dalen J, Klaassen P, Hartog AM, Callaghan DP, Hu Z, Stive, MJF, Temmerman S, Herman PMJ (2016) Short-term mudflat dynamics drive long-term cyclic salt marsh dynamics. *Limnology & Oceanography* 61: 2261-2275.

- 11) Balke T, Herman PMJ, **Bouma TJ (2014)** Critical transitions in disturbance-driven ecosystems: identifying Windows of Opportunity for recovery. *Journal of Ecology* 102: 700-708. doi: 10.1111/1365-2745.12241
- 12) Balke T, **Bouma TJ**, Horstman EM, Webb EL, Erftemeijer PLA, Herman PMJ (2011) Windows of opportunity: thresholds to mangrove seedling establishment on tidal flats. *Mar Ecol Prog Ser.* Vol. 440: 1–9 (doi: 10.3354/meps09364)

## Overview of public outreach (last 5 years)

- Publieklesing voor het waterschap – 23 Feb. 2023
- Opendag watersnoodmuseum
  - o Publiekslesing “Lessen uit ons verleden voor de waterveiligheid van de toekomst” opendag watersnoodmuseum <https://watersnoodmuseum.nl/wp-content/uploads/2023/01/Uitgebreid-programma.pdf>
  - o Uitleg over belang van schorren voor waterveiligheid van de toekomst op de opendag watersnoodmuseum “Interactieve waterbakken van NIOZ & Watersnoodmuseum” <https://watersnoodmuseum.nl/wp-content/uploads/2023/01/Uitgebreid-programma.pdf>
- Contributing to various media outings (TV and newspapers) in remembrance of the 1953 flood disaster.
  - o NOS website
    - <https://nos.nl/collectie/13921/artikel/2461547-al-65-jaar-houden-de-deltawerken-ons-droog-maar-er-wachten-nieuwe-uitdagingen> (video fragment)
  - o NOS journaal 28 January 2023 20:00 uur
    - [https://www.npostart.nl/nos-journaal/28-01-2023/POW\\_05467895](https://www.npostart.nl/nos-journaal/28-01-2023/POW_05467895) (vanaf 16:46)
    - <https://nos.nl/l/2461547>
  - o NOS radio 1 journaal 28 January 2023 7:00 uur:
    - <https://www.nporadio1.nl/uitzendingen/nos-radio-1-journaal/f7ff6638-6218-4456-a6bd-d223851a7b75/2023-01-28-nos-radio-1-journaal> (vanaf 41:38)
    - alleen het fragment op youtube: <https://www.youtube.com/watch?v=8nNbLnLoP-8>
  - o RTL Nieuws 28 January 2023 19:30
    - <https://www.rtlnieuws.nl/video/uitzendingen/video/5362337/rtl-nieuws-1930-uur> (vanaf 13:59)
  - o Vroege vogels 29 januari 2023 7:00 uur:
    - <https://www.nporadio1.nl/uitzendingen/vroege-vogels/af15c1fc-0dd9-40d6-9b88-036560b9d151/2023-01-29-vroege-vogels> (vanaf 47:24)
- NOS serie ‘Het water komt’, aflevering 4 van 27 January 2023:
  - o [https://www.npostart.nl/het-water-komt/27-01-2023/VPWON\\_1339676](https://www.npostart.nl/het-water-komt/27-01-2023/VPWON_1339676) (vanaf 47:12)

## 2022

- Kunnen levende dijken ons redden? Reporter Roos zoekt het uit
  - o <https://www.youtube.com/watch?v=NA26-13sR6w>
- Inspiratie pitch bijdrage aan “Kennis en Innovatiecafé dialoogsessie Dijken en Natuur – Ecologie” dinsdag 6 december van 8:30 uur tot 10:00 uur.
- Contribution to German TV documentary on Nature-based flood defence – broadcasted by ARTE on Tuesday 29 November at 19.40
  - o <https://www.youtube.com/watch?v=UTkzRkJgB4>

- Public lecture at STOWA relatiin day to celebrate the 50 year anniversary of STOWA - 21 april - Fort Voordorp, Voordorpsedijk 28b, Groenekan
  - o Arts en oud-astronaut André Kuipers trapt de STOWA relatiedag af. We kunnen met recht zeggen dat hij een bijzondere kijk heeft op de aarde. Ook meteorologe Nicolien Kroon (o.a. werkzaam voor RTL Nieuws en Buienradar) en hoogleraar Tjeerd Bouma verzorgen een lezing. De dag staat onder leiding van presentatrice Sacha de Boer. We sluiten de dag af met een verrassende keynote. Van wie? Dat houden we nog even geheim
  - o <https://www.stowa.nl/50-jaar/stowa-relatiedag>
- Interview Zeeuwse kamer – 21 april - 10 jaar NIOZ in Zeeland
  - o <https://www.omroepzeeland.nl/nieuws/14601950/tien-jaar-nioz-zeeland-is-een-onderzoekslab-om-van-te-dromen>
- Interview PZC over SCIENCE paper CO<sub>2</sub> opslag – 13 mei 2022
  - o <https://www.pzc.nl/zeeuws-nieuws/schorren-zijn-koolstofkluisen-ze-houden-vijf-keer-meer-c02-vast-dan-een-bos-en-500-keer-dan-een-oceaan~a5cc3769/>
- Tree-Reefs related media topics
  - o Jeugdjournaal → <https://jeugdjournaal.nl/uitzending/67137-avondjournaal.html>
  - o Radio interview wetenschap-vandaag BNR → <https://www.bnr.nl/podcast/wetenschap-vandaag/10479097/vissen-helpen-met-perenbomen>
  - o BNR twitter → <https://twitter.com/BNR/status/1537449346827841536?s=20&t=-QxclFsbFAXH9EbwcTXEDw>
  - o Radio interview 14 juni tijd 16.04 “Zeeland komt thuis” → <https://www.omroepzeeland.nl/radio/aflevering/zeeland-komt-thuis/470307676>
  - o Toelichtende tekst website omroep zeeland → <https://www.omroepzeeland.nl/nieuws/14736236/je-moet-er-maar-opkomen-bomen-planten-op-zee-om-vissen-te-beschermen>
  - o Diverse krantenberichten:
    - [https://www.noordhollandsdagblad.nl/cnt/dmf20220614\\_80601158?utm\\_source=google&utm\\_medium=organic](https://www.noordhollandsdagblad.nl/cnt/dmf20220614_80601158?utm_source=google&utm_medium=organic)
    - <https://www.watersport-tv.nl/nw-31400-7-4054566/nieuws/natuurherstel-op-zee-door-planten-van-perenboom-riffen.html>
    - <https://www.ad.nl/friesland/onderzoekers-bouwen-riffen-van-dode-perenbomen-in-waddenzee~aa4f1430/?referrer=https%3A%2F%2Fwww.google.com%2F>
    - <https://www.regionoorkop.nl/14/06/2022/perenbomen-op-de-bodem-helpen-bij-herstel-waddenzee-riffen/>
    - PZC → “vis legt eitjes in perenbomen” → heb de PDF, maar kan geen link vinden
- Contribution to **Atlas** (program on the science behind the news, and news from science) on how salt-marshes may help protect our coast (see 2021) was in 2022 made available on school-TV
  - o <https://schooltv.nl/video/hoe-kan-een-plantje-ons-behoeden-voor-een-watersnoodramp-kustbescherming-door-middel-van-planten/>
- Dutch daily television show – Een Vandaag – about wind on sea and ecosystem restoration – 3 August 2022
  - o [https://www.npostart.nl/zo-beschermen-perenbomen-visverjagers-en-zelfs-windmolens-de-vissen-in-de-noordzee/03-08-2022/POMS\\_AT\\_16971500](https://www.npostart.nl/zo-beschermen-perenbomen-visverjagers-en-zelfs-windmolens-de-vissen-in-de-noordzee/03-08-2022/POMS_AT_16971500)
  - o <https://eenvandaag.avrotros.nl/item/zo-beschermen-perenbomen-visverjagers-en-zelfs-windmolens-de-vissen-in-de-noordzee/>

## 2021

- Significant **media impact of the NIOZ Report 2021-01** “Dubbele dijken als robuuste waterkerende landschappen voor een welvarende Zuidwestelijke Delta” by van Belzen, J.; Rienstra, G.U. & Bouma, T.J., has lead to
  - o 1 featured article in the PZC <https://www.pzc.nl/zeeuws-nieuws/polders-tijdelijk-onder-water-om-zeeland-veilig-te-houden~aab2a217/>
  - o This article was followed by around 10 more response articles, some opposing, some discussing, and some supporting the proposed flood safety approach for the future.
  - o A joined radio interview with Philipp Keller (waterboard Scheldestromen) in the program De Zeeuwsekamer (omroep Zeeland) → <https://www.omroepzeeland.nl/nieuws/125650/Polders-tijdelijk-onder-water-zetten-zorgt-voor-betere-bescherming-tegen-stijgende-zeespiegel>
  - o WNF-blad → <https://magazine.wwf.nl/magazine-februari-2021/natuur-als-oplossing>
  - o Several follow up papers in the PZC
- Contribution to **Atlas** (program on the science behind the news, and news from science) on how salt-marshes may help protect our coast
  - o [https://www.npostart.nl/deze-plantengroep-helpt-het-water-buiten-de-deur-te-houden/13-10-2021/POMS\\_NTR\\_16666748](https://www.npostart.nl/deze-plantengroep-helpt-het-water-buiten-de-deur-te-houden/13-10-2021/POMS_NTR_16666748)
  - o aired on Thursday 13 October (13.10.2021) at 20:30 on Nederland2t.
- Contribution to **German TV documentary** (related to bridging threshold / BESE project)
  - o <https://www.3sat.de/wissen/wissenschaftsdoku/210415-weltretterwurzeln-wido-104.html>
  - o aired on 15 April (15.4.2021) at 20:15 on 3Sat.
  - o <https://www.3sat.de/wissen/wissenschaftsdoku/210415-weltretterwurzeln-wido-104.html#:~:text=Wurzeln%20machen%20über%20die%20Hälfte,Klimawandels%20und%20Umweltschutzes%20zu%20bewältigen>
- **Article in the New Scientist**, about the Raak-Award winning project
  - o <https://www.newscientist.nl/blogs/weekdieren-als-kustbeschermers/>
- News article by PhD student Bea Marin Diaz in “Dagblad van het Noorden” about publication - Grazing paper Bea
  - o <https://www.dvhn.nl/groningen/Dijkdoorbraak-voorkomen-Neem-een-gans-26837074.html> (they contacted me to check the article)
  - o <https://www.omroepfryslan.nl/nieuws/1059439-onderzoek-op-schiermonnikoog-beweiding-van-kwelders-gaat-slijtage-tegen>
  - o <https://www.eurekalert.org/multimedia/pub/265245.php>
  - o <https://www.sciencedaily.com/releases/2021/05/210518114151.htm>
  - o <https://www.dredgingtoday.com/2021/05/20/study-grazing-management-of-salt-marshes-contributes-to-coastal-defense/>
  - o <https://www.preventionweb.net/news/view/77937>
- **Omroep Zeeland interview (also partly aired in the national Dutch news on TV, the day after)** related to an article by PhD student Bea Marin Diaz - Grazing paper Bea
  - o <https://www.omroepzeeland.nl/nieuws/129016/Grazers-zijn-goed-voor-de-Zeeuwse-kust>
- **Co-organizing + presentation + discussion panel** for local policymakers and managers on Dynamic Dike-zones, in the working-conference South-West Delta (Werkconferentie Zuid-Wetselijke Delta) 30 june 2021
  - o <https://www.zwdelta.nl/werkconferentie-1/workshops>
  - o <https://www.zwdelta.nl/werkconferentie-1/livestream>

- [https://www.zwdelta.nl/terugblik-werkconferentie2021?utm\\_medium=email&utm\\_campaign=Terugblik%20op%20zeer%20geslaagde%20werkconferentie%20Zuidwestelijke%20Delta&utm\\_content=Terugblik%20op%20zeer%20geslaagde%20werkconferentie%20Zuidwestelijke%20Delta+CID\\_cad949a433438ff2736b7a3c51dd7f43&utm\\_source=CampaignMonitor&utm\\_term=Bekijk%20de%20terugblik%20op%20de%20werkconferentie](https://www.zwdelta.nl/terugblik-werkconferentie2021?utm_medium=email&utm_campaign=Terugblik%20op%20zeer%20geslaagde%20werkconferentie%20Zuidwestelijke%20Delta&utm_content=Terugblik%20op%20zeer%20geslaagde%20werkconferentie%20Zuidwestelijke%20Delta+CID_cad949a433438ff2736b7a3c51dd7f43&utm_source=CampaignMonitor&utm_term=Bekijk%20de%20terugblik%20op%20de%20werkconferentie)
- All-risk **seminar** on foreshore 29 June 2021
  - <https://kbase.ncr-web.org/all-risk/all-risk-webinar-series-june-2/#webinardinsdag29juni>
- **NIOZ-podcast**
  - <https://www.nioz.nl/en/blog/nioz-podcast-van-delta-tot-diepzee-aflevering-12-de-zee-als-bondgenoot-bij-kustverdediging>
- **YouTube outreach movie** on publication - *Ten Commandments for Sustainable, Safe, and W/Healthy Sandy Coasts Facing Global Change*
  - <https://www.youtube.com/watch?v=-RF3LxxK5VE>
- **YouTube professional outreach movie** by Dr. Eduardo Infantes on publication - *Making realistic wave climates in low-cost wave mesocosms: A new tool for experimental ecology and biogeomorphology. Limnology and Oceanography: Methods*
  - <https://www.youtube.com/watch?v=MDzQXn64OQ4>
- **YouTube outreach movie** by PhD student Bea Marin Diaz on publication - *How grazing management can maximize erosion resistance of salt marshes*
  - <https://www.youtube.com/watch?v=GeHn4598cXQ>
- **Co-organizing** sub-session Noordzeedagen
- **Co-organizing** sub-session lecture Pathways to Sustainability - Water Climate Future Deltas (UU) Workshop 2: Enabling Ecosystem-based adaptation
- 7 October 2021 – meeting with representatives of the Province of Zeeland, including CvdK Han Polman (D66), Gedeputeerde Joannes de Bat (CDA), Gedeputeerde Anita Pijpelink (PvdA), Richard Anthonisse: Adviseur Landbouw en Visserij provincie Zeeland, Jaap Broodman; beleidsmedewerker visserij en aquacultuur provincie Zeeland, Maarten Both (SGP) (Wethouder gemeente Reimerswaal), Kees Verburg (PvdA) (Wethouder gemeente Reimerswaal, Arjen Meeuwssen (bedrijfscontactfunctionaris gemeente Reimerswaal)
- 7 October 2021 – round-table discussion related to “kringgesprek leven op de grens van land en zee, met bekendmaking laureaat Goessche DiepFondsprijs 2020” organised by the “Prins Bernhard Cultuurfonds Zeeland”

## 2020

- **Radio-interview** Zeeuwse kamer, omroep Zeeland, 6 januari
- **Various media** in relation to paper Zhu et al. (2020) in Nature Sustainability
  - <https://www.omroepzeeland.nl/nieuws/121265/Schorren-zorgen-voor-minder-slachtoffers-bij-dijkdoorbraak>
- **General introduction and closure at session in an outreach conference**, via professional live stream, aimed at local policymakers and water-managers on Smart Sediment (kennisdag en eindconferentie)
  - <https://www.zwdelta.nl/kennisdag2020>
  - <https://www.zwdelta.nl/kennisdag2020/livestream>
- **Interview with Lex Bohlmeijer**, for the regular item “Goede Gesprekken” door De Correspondent: “Als het water komt, kan de natuur een handje helpen”
  - <https://decorrespondent.nl/10952/als-het-water-komt-kan-de-natuur-een-handje-helpen-stelt-deze-bioloog/772036619904-ed717682>
  - <https://yoo.rs/kustbescherming-als-het-water-komt-1581144854.html>



- Made a **contribution to a movie for the annual werkconferentie Zuidwestelijke Delta** on 19 march 2020, which was due to covid moved to a virtual meeting held on 14 May. The movie was used as part of the inspiration session
  - <https://www.youtube.com/watch?v=D81eKEfrDgk>
- **Outreach paper** in “Duinbehoud”, together with Gerben Ruessink
  - <https://www.duinbehoud.nl/bouwen-met-de-natuur/>

## 2019

- **Radio interview** related to sediment accretion due to management measures for nature improvement (buitendijkse maatregelen)
  - o <https://www.omroepzeeland.nl/media/55316/Onderzoeker-Tjeerd-Bouma-van-het-NIOZ-over-de-nieuwe-slikken-die-ontstaan>
- **Television interview** related to sediment accretion due to management measures for nature improvement (buitendijkse maatregelen)
  - o <https://www.omroepzeeland.nl/nieuws/115041/Wetenschappers-blij-met-halve-meter-slik>
- **News article** related to the Bioscience paper of PhD student Rebeca James
  - o <https://www.trouw.nl/nieuws/zeegras-bescherm-t-die-bountystranden-beter-dan-beton~bea85243/>
- **News article** related to the inauguration at Utrecht University
  - o <https://www.nrc.nl/nieuws/2019/12/02/zet-ook-de-natuur-in-voor-waterbouw-a3982301>

## 2018

- **News article** related to the inauguration at Univ. of Applied Sciences, Vlissingen (HZ)
  - o <https://www.internetbode.nl/regio/reimerswaal/262977/-zeeland-is-ontzettend-vruchtbaar->
- Significant **media impact of** the construction and opening of the “Onderwaterlab”, for which I am the initiator, received a lot of media attention
  - o Newspapers & journals for professionals
  - o <https://www.pzc.nl/zeeuws-nieuws/nieuw-onderwaterlab-bij-nioz-in-yerseke~abf9240a/>
  - o <https://www.pzc.nl/video/kanalen/pzc~c357/series/korte-reportage~s990/nioz-opent-onderwaterlab-in-yerseke~p101892>
  - o <https://www.ad.nl/zeeland/nieuw-onderwaterlab-bij-nioz-in-yerseke~abf9240a/156574998/>
  - o <https://www.internetbode.nl/regio/reimerswaal/actueel/296335/nieuw-onderwaterlab-helpt-klimaatvraagstukken-te-beantwoorden>
  - o <https://www.h2owaternetwerk.nl/h2o-actueel/onderzoek-naar-bodemleven-in-onderwaterlaboratorium-yerseke>
  - o <https://www.civieletechniek.net/onderwaterlaboratorium-in-yerseke-geopend/>
  - o <https://www.zeelandnet.nl/nieuws/nieuw-onderwaterlab-helpt-klimaatvraagstukken-te-beantwoorden>
  - o Omroep Zeeland
  - o <https://www.omroepzeeland.nl/nieuws/107116/Uniek-onderwaterlaboratorium-in-de-Oosterschelde>
  - o <https://www.omroepzeeland.nl/nieuws/115480/Onderzoek-naar-beste-steensoort-voor-dijkverzwaring>
  - o Outreach YouTube movie
  - o <https://www.youtube.com/watch?v=5tGjPGikeUg>

- Minister Cora van Nieuwenhuizen heeft in het nieuwe pand van de HZ aan het Groene Woud in Middelburg een stroomgoot aangezet. Zo lanceerde zij officieel het samenwerkingsplatform 'Slimme Delta Oplossingen'.
  - o <https://www.omroepzeeland.nl/nieuws/109216/Minister-drukt-op-knop-samenwerkingsplatform-een-feit>