

Pieter Daniël van Denderen  
Researcher  
National Institute of Aquatic Resources  
Centre for Ocean Life  
**Type of address: Postal address.**  
Henrik Dams Allé  
201, 049  
2800  
Kgs. Lyngby  
Denmark  
**Email:** pdvd@aqua.dtu.dk  
**Web address:** <http://www.aqua.dtu.dk>



## Employment

### Researcher

National Institute of Aquatic Resources  
Technical University of Denmark  
Kgs. Lyngby, Denmark  
15 Jul 2015 → present

### Centre for Ocean Life

Technical University of Denmark  
Kgs. Lyngby, Denmark  
16 Jul 2015 → present

## Research outputs

### Demersal fish biomass declines with temperature across productive shelf seas

van Denderen, P. D., Maureaud, A., Andersen, K. H., Gaichas, S., Lindegren, M., Petrik, C. M., Stock, C. A. & Collie, J., 2023, In: *Global Ecology and Biogeography*. 32, 10, p. 1846-1857

### Relating benthic sensitivity and status to spatial distribution and intensity of trawling in the Eastern Mediterranean

Smith, C. J., Papadopoulou, N. K., Maina, I., Kavadas, S., van Denderen, P. D., Katsiaras, N., Reizopoulou, S., Karakassis, I., Tselepidis, A. & Tsikopoulou, I., 2023, In: *Ecological Indicators*. 150, 13 p., 110286.

### Setting thresholds for good ecosystem state in marine seabed systems and beyond

Hiddink, J. G., Valanko, S., Delargy, A. J. & van Denderen, P. D., 2023, In: *ICES Journal of Marine Science*. 80, 4, p. 698-709 12 p., fsad035.

### Deriving population scaling rules from individual-level metabolism and life history traits

Denechere, R., van Denderen, P. D. & Andersen, K. H., 2022, In: *American Naturalist*. 199, 4

### Effects of bottom trawling and hypoxia on benthic invertebrate communities

van Denderen, P. D., Törnroos, A., Sciberras, M., Hinz, H., Friedland, R., Lasota, R., Mangano, M. C., Robertson, C., Valanko, S. & Hiddink, J. G., 2022, In: *Marine Ecology Progress Series*. 694, p. 13-27 15 p.

### Emergent global biogeography of marine fish food webs

van Denderen, P. D., Petrik, C. M., Stock, C. A. & Andersen, K. H., 2021, In: *Global Ecology and Biogeography*. 30, 9, p. 1822-1834 13 p.

### Harvesting forage fish can prevent fishing-induced population collapses of large piscivorous fish

Soudijn, F. H., Daniël van Denderen, P., Heino, M., Dieckmann, U. & de Roos, A. M., 2021, In: *Proceedings of the National Academy of Sciences of the United States of America*. 118, 6, 8 p., e1917079118.

### **Trawl fishing impacts on the status of seabed fauna in diverse regions of the globe**

Mazor, T., Pitcher, C. R., Rochester, W., Kaiser, M. J., Hiddink, J. G., Jennings, S., Amoroso, R. O., McConnaughey, R. A., Rijnsdorp, A. D., Parma, A. M., Suuronen, P., Collie, J., Sciberras, M., Atkinson, L. J., Durholtz, D., Ellis, J. R., Bolam, S. G., Schratzberger, M., Couce, E., Eggleton, J., & 9 others Garcia, C., Kainge, P., Paulus, S., Kathena, J. N., Gogina, M., van Denderen, P. D., Keller, A. A., Horness, B. H. & Hilborn, R., 2021, In: Fish and Fisheries. 22, 1, p. 72-86 15 p.

### **Different bottom trawl fisheries have a differential impact on the status of the North Sea seafloor habitats**

Rijnsdorp, A. D., Hiddink, J. G., van Denderen, P. D., Hintzen, N. T., Eigaard, O. R., Valanko, S., Bastardie, F., Bolam, S. G., Boulcott, P., Egekvist, J., Garcia, C., van Hoey, G., Jonsson, P., Laffargue, P., Nielsen, J. R., Piet, G. J., Sköld, M. & van Kooten, T., 2020, In: ICES Journal of Marine Science. 77, 5, p. 1772-1786 15 p., fsaa050.

### **Evaluating impacts of bottom trawling and hypoxia on benthic communities at the local, habitat, and regional scale using a modelling approach**

van Denderen, P. D., Bolam, S., Friedland, R., Hiddink, J. G., Noren, K., Rijnsdorp, A. D., Sköld, M., Törnroos, A., Virtanen, E. A. & Valanko, S., 2020, In: ICES Journal of Marine Science. 77, 1, p. 278-289

### **Global analysis of fish growth rates shows weaker responses to temperature than metabolic predictions**

van Denderen, D., Gislason, H., van der Heuvel, J. & Andersen, K. H., 2020, In: Global Ecology and Biogeography. 29, 12, p. 2203-2213 11 p.

### **Large pelagic fish are most sensitive to climate change despite pelagification of ocean food webs**

Petrik, C. M., Stock, C. A., Andersen, K. H., van Denderen, P. D. & Watson, J. R., 2020, In: Frontiers in Marine Science. 7, 19 p., 588482.

### **Reducing fisheries impacts on the seafloor: a bio-economic evaluation of policy strategies for improving sustainability in the Baltic Sea**

Bastardie, F., Danto, J., Rufener, M-C., van Denderen, P. D., Eigaard, O. R., Dinesen, G. E. & Nielsen, J. R., 2020, In: Fisheries Research. 230, 16 p., 105681.

### **Seasonal strategies in the world's oceans**

Visser, A. W., Brun, P., Chakraborty, S., Dencker, T. S., Daniël van Denderen, P., van Gemert, R., van Someren Gréve, H., Heilmann, I., Holm, M. W., Huld Jónasdóttir, S., Kenitz, K. M., Kiørboe, T., Lindegren, M., Mariani, P., Nielsen, L. T., Pancic, M., Payne, M., Pécuchet, L., Schnedler-Meyer, N. A., Thygesen, U. H., & 2 others Törnroos, A. & Andersen, K. H., 2020, In: Progress in Oceanography. 189, 16 p., 102466.

### **Working Group on Fisheries Benthic Impact and Trade-offs: (WGFBIT; outputs from 2019 meeting)**

Eigaard, O. R., Hoey, G. V., Kooten, T. V., Valanko, S., van Denderen, P. D., Bastardie, F., Bolam, S., Boulcott, P., Buhl-Mortensen, L., Burgos, J., Coleman, P., Colombelli, A., D'Andrea, L., Depestele, J., Dinesen, G. E., Egekvist, J., Fanelli, E., Fiorentino, D., Hiddink, J. G., Kazanidis, G., & 11 others Laffargue, P., Jørgensen, L. L., Mangano, M. C., Martinez, R., Parry, M., Punzo, E., Sala, A., Scarcella, G., Sköld, M., Tassetti, A. N. & Vina-Herbon, C., 2020, International Council for the Exploration of the Sea (ICES). 107 p. (ICES Scientific Report; No. 6, Vol. 2).

### **Biodiversity-ecosystem functioning relationships in fish communities: biomass is related to evenness and the environment, not to species richness**

Maureaud, A., Hodapp, D., van Denderen, P. D., Hillebrand, H., Gislason, H., Dencker, T. S., Beukhof, E. D. & Lindegren, M., 2019, In: Proceedings of the Royal Society B: Biological Sciences. 286, 1906, 20191189.

### **Bottom-up drivers of global patterns of demersal, forage, and pelagic fishes**

Petrik, C. M., Stock, C. A., Andersen, K. H., van Denderen, P. D. & Watson, J., 2019, In: Progress in Oceanography. 176, 102124.

### **Challenges in quantifying, interpreting and predicting distributional shifts of marine species**

Marshall, C. T., Audzijonyte, A., Baudron, A., Champion, C., Fallon, N., Haynie, A. C., Haltuch, M., Townhill, B., van Denderen, P. D., Pecl, G., Pinnegar, J. K., Pinsky, M. L., Spencer, P., Stawitz, C. & Thorsen, J., 2019. 1 p.

### **Limited impact of big fish mothers for population replenishment**

Andersen, K. H., Jacobsen, N. S. & van Denderen, P. D., 2019, In: Canadian Journal of Fisheries and Aquatic Sciences. 76, 3, p. 347-349 3 p.

### **Vertical feeding strategies and pelagic-benthic energy flows determine fish food-web structure across marine ecosystems**

van Denderen, P. D. & Andersen, K. H., 2019. 1 p.

### **Workshop on scoping of physical pressure layers causing loss of benthic habitats D6C1– methods to operational data products (WKBEDLOSS)**

Degraer, S., Valanko, S., van Denderen, P. D., Boulcott, P., Abaza, V., Bouchard, G., Bianchelli, S., Brivois, O., Coleman, P., Connor, D., Grasso, F., Kaikkonen, L., Papadopoulou, N., Eigaard, O. R., Rowe, O., Schmitt, P., Spinu, A. & Van Lancker, V., 2019, International Council for the Exploration of the Sea (ICES). 56 p. (ICES Scientific Report; No. 15, Vol. 1).

### **Workshop on Tradeoffs Scenarios between the Impact on Seafloor Habitats and Provisions of catch-value (WKTRADE2)**

Bastardie, F., Berkenhagen, J., Bitetto, I., Callery, O., Coleman, P., D'Andrea, L., Depestele, J., Frost, H., Goldsborough, D., Hamon, K., Hoff, A., Holah, H., Jørgensen, L. L., Kraak, S., Malvarosa, L., Martinez, R., Norton, D., Orey, S., Rodmell, D., Russo, T., & 4 othersSchultze, T., Sulanke, E., Valanko, S. & van Denderen, P. D., 2019, International Council for the Exploration of the Sea (ICES). 73 p. (ICES Scientific Report; No. 63, Vol. 1).

### **Workshop to evaluate and test operational assessment of human activities causing physical disturbance and loss to seabed habitats (MSFD D6 C1, C2 and C4) (WKBEDPRES2)**

Boulcott, P., Valanko, S., van Denderen, P. D., Abaza, V., Addington, L., Bennecke, S., Brivois, O., Carter, A., Connor, D., De Backer, A., Egekvist, J., Franceschini, G., Hiddink, J. G., Kenny, A., Krawack, M. L., Laamanen, L., Middelboe, A. L., Muller, H., Papadopoulou, N., Papathanasiou, V., & 5 othersSmith, C. J., Spinu, A., Stolk, A., Trabucco, B. & Van Lancker, V., 2019, International Council for the Exploration of the Sea (ICES). 94 p. (ICES Scientific Report; No. 69, Vol. 1).

### **Estimating sensitivity of seabed habitats to disturbance by bottom trawling based on the longevity of benthic fauna**

Rijnsdorp, A. D., Bolam, S. G., Garcia, C., Hiddink, J. G., Hintzen, N. T., van Denderen, P. D. & van Kooten, T., 2018, In: Ecological Applications. 28, 5, p. 1302-1312

### **Estimating sensitivity of seabed habitats to disturbance by bottom trawling based on the longevity of benthic fauna**

Rijnsdorp, A. D., Bolam, S. G., Garcia, C., Hiddink, J. G., Hintzen, N. T., van Denderen, P. D. & Kooten, T. V., 2018.

### **Fish community structure from productive shelf systems to open ocean environments**

van Denderen, P. D., Petrik, C. M., Stock, C. & Andersen, K. H., 2018.

### **Global patterns in marine predatory fish**

van Denderen, P. D., Lindegren, M., MacKenzie, B., Watson, R. & Andersen, K. H., 2018, In: Nature Ecology & Evolution. 2, 1, p. 65-70

### **Growth of teleost fish across marine regions and ecological lifestyles**

van Denderen, P. D., Gislason, H. & Andersen, K. H., 2018.

### **Spatial distribution of life-history traits and their response to environmental gradients across multiple marine taxa**

Pécuchet, L., Reygondeau, G., Cheung, W. W. L., Licandro, P., van Denderen, P. D., Payne, M. R. & Lindegren, M., 2018, In: Ecosphere (Washington, D.C.). 9, 10, p. e02460

### **Assessing impact of bottom trawling and hypoxia on seafloor status of the Baltic Sea**

van Denderen, P. D., Friedland, R., Hiddink, J. G., Noren, K., Rijnsdorp, A. D., Törnroos, A. & Valanko, S., 2017.

### **Development of and use of the fisheries impact tool in BalticBOOST**

Bastardie, F., van Denderen, P. D., Dorrien, C. V., Milardi, M., Nielsen, J. R., Noren, K., Sköld, M., Valanko, S. & Zweifel, U., 2017, 175 p.

**Fisheries Impact Evaluation Tool (FIT) with application to assess the bottom fishing footprint in Western Baltic sea (ICES Subdivisions 22-24)**

Bastardie, F., Eigaard, O. R., Nielsen, J. R., Egekvist, J., Hintzen, N., van Denderen, P. D. & Rijnsdorp, A., 2017, 11 p.

**Fisheries Impact Evaluation Tool (FIT) with Application to Assess the Bottom Fishing Footprint in Western Baltic Sea (ICES Subdivisions 22-24)**

Bastardie, F., Eigaard, O. R., Nielsen, J. R., Egekvist, J., Hintzen, N. T., van Denderen, P. D. & Rijnsdorp, A., 2017, International Council for the Exploration of the Sea (ICES). 25 p.

**Fish growth in pelagic and benthic food webs across marine ecosystems**

van Denderen, P. D. & Andersen, K. H., 2017.

**Global patterns in the productivity of marine fish along parallel pathways of energy**

van Denderen, P. D., Lindegren, M., MacKenzie, B., Watson, R. & Andersen, K. H., 2017.

**Guidelines for setting environmental targets for benthic habitats**

Korpinen, S., Zweifel, U., Bastardie, F., van Denderen, P. D., Hoppe, K., Kauppila, P., Milardi, M., Nielsen, J. R., Noren, K., Nygaard, H., Sköld, M., Valanko, S. & Zettler, M., 2017, HELCOM. 12 p.

**Physical loss and damage to seabed habitats**

Korpinen, S., Bastardie, F., van Denderen, P. D., Hoppe, K., Jonsson, P., Kauppila, P., Milardi, M., Nielsen, J. R., Nilsson, H., Noren, K., Nygaard, H., Sköld, M., Valanko, S. & Zettler, M., 2017, HELCOM. 44 p.

**Global patterns in the feeding ecology of large marine fish**

van Denderen, P. D., Lindegren, M., MacKenzie, B., Watson, R. A. & Andersen, K. H., 2016.

**Spatial structuration of life history traits: congruence between multiple taxa and environmental drivers in the North Sea**

Péculchet, L., Reygondeau, G., Beukhof, E., Brun, P. G., Cheung, W., Dencker, T. S., van Denderen, P. D., Licandro, P., Törnroos, A., Payne, M. & Lindegren, M., 2016.

**Towards a framework for the quantitative assessment of trawling impact on the seabed and benthic ecosystem**

Rijnsdorp, A. D., Bastardie, F., Bolam, S. G., Buhl-Mortensen, L., Eigaard, O. R., Hamon, K., Hiddink, J. G., Hintzen, N. T., Ivanovic, A., Kenny, A., Laffargue, A., Nielsen, J. R., O'Neill, F. G., Polet, H., Sala, A., Smith, C., van Denderen, P. D., Kooten, T. V. & Zenging, M., 2016, In: ICES Journal of Marine Science. 73, Suppl. 1, p. 127-138

**Using marine reserves to manage impact of bottom trawl fisheries requires consideration of benthic food-web interactions**

van Denderen, P. D., Rijnsdorp, A. D. & van Kooten, T., 2016, In: Ecological Applications. 26, 7, p. 2302-2310

**Similar effects of bottom trawling and natural disturbance on composition and function of benthic communities across habitats**

van Denderen, P. D., Bolam, S. G., Hiddink, J. G., Jennings, S., Kenny, A., Rijnsdorp, A. D. & van Kooten, T., 2015, In: Marine Ecology - Progress Series. 541, p. 31-43

## Activities

**Vertical feeding strategies and pelagic-benthic energy flows determine fish food-web structure across marine ecosystems**

Pieter Daniël van Denderen (Speaker) & Ken Haste Andersen (Other)

19 Aug 2019

**Challenges in quantifying, interpreting and predicting distributional shifts of marine species**

C. Tara Marshall (Guest lecturer), James T. Thorson (Guest lecturer), Alan Baudron (Guest lecturer), Malin L. Pinsky (Guest lecturer), Curtis Champion (Guest lecturer), Gretta Pecl (Guest lecturer), Pieter Daniël van Denderen (Guest lecturer), Bryony Townsend (Guest lecturer), Paul Spencer (Guest lecturer), Melissa Haltuch (Guest lecturer) & John Morrongiello (Guest lecturer)

24 Jul 2019