

Dr. Jon Hill  
Senior lecturer  
Environment and Geography  
Email: [jon.hill@york.ac.uk](mailto:jon.hill@york.ac.uk)  
Phone: (01904) 324480



## Research output

### Evaluating the impact of the Storegga tsunami on Mesolithic communities in Northumberland

Sharrocks, P. D. & Hill, J., 19 Dec 2023, (E-pub ahead of print) In: Journal of Quaternary Science. 15 p.

### Resolving tsunami wave dynamics: Integrating sedimentology and numerical modelling

Hill, J., Rush, G., Peakall, J., Johnson, M., Hodson, L., Barlow, N. L. M., Bowman, E. T., Gehrels, W. R., Hodgson, D. M. & Kesserwani, G., 14 Sept 2023, (E-pub ahead of print) In: Depositional Record. 20 p.

### On the varied impact of the Storegga tsunami in northwest Scotland

Woodroffe, S. A., Hill, J., Bustamante-Fernandez, E., Lloyd, J. M., Luff, J., Richards, S. & Shennan, I., 30 May 2023, (E-pub ahead of print) In: Journal of Quaternary Science. 14 p.

### Tidal dynamics drive ooid formation in the Capricorn Channel since the Last Glacial Maximum

Lee, K. C., Webster, J. M., Salles, T., Mawson, E. E. & Hill, J., 1 Dec 2022, In: Marine Geology. 454, 11 p., 106944.

### Sea-level change, palaeotidal modelling and hominin dispersals: The case of the southern Red Sea.

Hill, J., Avdis, A., Bailey, G. & Lambeck, K., 1 Oct 2022, In: Quaternary Science Reviews. 293, 15 p., 107719.

### Sea level rise and the Great Barrier Reef the future implications on reef tidal dynamics

Mawson, E. E., Lee, K. C. & Hill, J., 4 Aug 2022, (E-pub ahead of print) In: Journal of Geophysical Research: Oceans. 127, 8, p. e2021JC017823

### Prediction of shoreline-shelf depositional process regime guided by palaeotidal modelling

Collins, D. S., Avdis, A., Wells, M. R., Dean, C. D., Mitchell, A. J., Allison, P. A., Johnson, H. D., Hampson, G. J., Hill, J. & Piggott, M. D., Dec 2021, In: Earth-Science Reviews. 223, 39 p., 103827.

### Detailing the impact of the Storegga Tsunami at Montrose, Scotland

Bateman, M. D., Kinnaird, T. C., Hill, J., Ashurst, R. A., Mohan, J., Bateman, R. B. I. & Robinson, R., 3 Jun 2021, In: Boreas. 50, 4, p. 1059-1078

### Morphodynamic controls for growth and evolution of a rubble coral island

Talavera, L., Vila-Concejo, A., Webster, J. M., Smith, C., Duce, S., Fellowes, T. E., Salles, T., Harris, D., Hill, J., Figueira, W. & Hacker, J., 19 Apr 2021, In: Remote Sensing. 13, 8, 1582.

### A new methodology for performing large scale simulations of tsunami generated by deformable submarine slides

Smith, R. C., Hill, J., Mouradian, S., Piggott, M. D. & Collins, G. S., Sept 2020, In: Ocean Modelling. 153, 101674.

### Modelling the impact of tidal range energy on species communities

Baker, A. L., Craighead, R. M., Jarvis, E. J., Stenton, H. C., Angeloudis, A., Mackie, L., Avdis, A., Piggott, M. D. & Hill, J., 1 Aug 2020, In: Ocean and Coastal Management. 193, 13 p., 105221.

### Aragonite bias exhibits systematic spatial variation in the late Cretaceous Western Interior Seaway, North America

Dean, C., Allison, P. A., Hampson, G. & Hill, J., 23 Sept 2019, (E-pub ahead of print) In: Paleobiology.

**Reconciling Storegga tsunami sedimentation patterns with modelled wave heights: a discussion from the Shetland Isles field laboratory.**

Dawson, A., Dawson, S., Bondevik, S., Costa, P., Hill, J. & Stewart, I., 24 Jun 2019, In: *Sedimentology*. p. 1-10 10 p.

**HRDS: A Python package for hierarchical raster datasets**

Hill, J., 13 May 2019, In: *Journal of open source software*. 4, 37, 2 p., 1112.

**The trade-off between tidal-turbine array yield and environmental impact: a habitat suitability modelling approach**  
du Feu, R. J., Funke, S., Kramer, S. C., Hill, J. & Piggott, M. D., 4 May 2019, (E-pub ahead of print) In: *Renewable Energy*. 143, p. 390-403 14 p.

**Controls on tidal sedimentation and preservation: Insights from numerical tidal modelling in the Late Oligocene–Miocene South China Sea, Southeast Asia**

Collins, D., Avdis, A., Allison, P. A., Johnson, H. D., Hill, J. & Piggott, M. D., 23 Mar 2018, In: *Sedimentology*. 55 p.

**Efficient unstructured mesh generation for marine renewable energy applications**

Candy, A. S., Avdis, A., Hill, J., Kramer, S. C. & Piggott, M. D., 19 Sept 2017, (E-pub ahead of print) In: *Renewable Energy*. p. 1-40 40 p.

**The trade-off between tidal-turbine array yield and impact on flow: A multi-objective optimisation problem**

du Feu, R. J., Funke, S. W., Kramer, S. C., Culley, D. M., Hill, J., Halpern, B. S. & Piggott, M. D., 20 Jul 2017, In: *Renewable Energy*.

**Was Doggerland catastrophically flooded by the Mesolithic Storegga tsunami?**

Hill, J., 19 Jul 2017, (Submitted).

**Tidal dynamics and mangrove carbon sequestration during the Oligo-Miocene in the South China Sea**

Collins, D. S., Avdis, A., Allison, P. A., Johnson, H. D., Hill, J., Piggott, M. D., Hassan, M. H. A. & Damit, A. R., 15 Jun 2017, In: *Nature Communications*. 8, 12 p., 15698.

**Application of the adjoint approach to optimise the initial conditions of a turbidity current with the AdjointTurbidity 1.0 model**

Parkinson, S. D., Funke, S. W., Hill, J., Piggott, M. D. & Allison, P. A., 7 Mar 2017, In: *Geoscientific Model Development*. 10, 3, p. 1051-1068 18 p.

**Global cooling as a driver of diversification in a major marine clade**

Davis, K., Hill, J., Astrop, T. & Wills, M., 4 Oct 2016, In: *Nature Communications*. 7, 8 p., 13003.

**Comparing approaches for numerical modelling of tsunami generation by deformable submarine slides**

Smith, R. C., Hill, J., Collins, G. S., Piggott, M. D., Kramer, S. C., Parkinson, S. D. & Wilson, C., 1 Apr 2016, In: *Ocean Modelling*. 100, p. 125-140 16 p.

**Adaptive Haar wavelets for the angular discretisation of spectral wave models**

Adam, A., Buchan, A. G., Piggott, M. D., Pain, C. C., Hill, J. & Goffin, M. A., 15 Jan 2016, In: *Journal of Computational Physics*. 305, p. 521-538 18 p.

**Submarine landslides on the Great Barrier Reef shelf edge and upper slope: A mechanism for generating tsunamis on the north-east Australian coast?**

Webster, J. M., George, N. P. J., Beaman, R. J., Hill, J., Puga-Bernabéu, Á., Hinestrosa, G., Abbey, E. A. & Daniell, J. J., 1 Jan 2016, In: *Marine Geology*. 371, p. 120-129 10 p.

**Lateglacial and Holocene relative sea-level changes and first evidence for the Storegga tsunami in Sutherland, Scotland**

Long, A. J., Barlow, N. L. M., Dawson, S., Hill, J., Innes, J. B., Kelham, C., Milne, F. D. & Dawson, A., 2016, In: *Journal of Quaternary Science*. 31, 3, p. 239-255 17 p.

**Tidal resource extraction in the Pentland Firth, UK: Potential impacts on flow regime and sediment transport in the Inner Sound of Stroma**

Martin-Short, R., Hill, J., Kramer, S. C., Avdis, A. & Piggott, M. D., 1 Apr 2015, In: Renewable Energy. 76, p. 596–607

**BioAcoustica: a free and open repository and analysis platform for bioacoustics**

Baker, E., Price, B. W., Rycroft, S. D., Hill, J. & Smith, V. S., 2015, In: Database. 2015, bav054.

**Not all aragonitic molluscs are missing: taphonomy and significance of a unique shelly lagerstätte from the Jurassic of SW Britain**

Jordan, N., Allison, P. A., Hill, J. & Sutton, M. D., 2015, In: Lethaia.

**How does multiscale modelling and inclusion of realistic palaeobathymetry affect numerical simulation of the Storegga Slide tsunami?**

Hill, J., Collins, G. S., Avdis, A., Kramer, S. C. & Piggott, M. D., 1 Nov 2014, In: Ocean Modelling. 83, p. 11-25 15 p.

**Direct numerical simulations of particle-laden density currents with adaptive, discontinuous finite elements**

Parkinson, S. D., Hill, J., Piggott, M. D. & Allison, P. A., 5 Sept 2014, In: Geoscientific Model Development. 7, 5, p. 1945-1960 16 p.

**Adapting to life: ocean biogeochemical modelling and adaptive remeshing**

Hill, J., Popova, E. E., Ham, D. A., Piggott, M. D. & Srokosz, M., 1 Sept 2014, In: Ocean Science. 10, 3, p. 323-343 21 p.

**The Supertree Toolkit 2: a new and improved software package with a Graphical User Interface for supertree construction**

Hill, J. & Davis, K., 26 Mar 2014, In: Biodiversity Data Journal. 2, p. e1053

**Exploiting Parallel R in the Cloud with SPRINT**

Piotrowski, M., McGilvary, G. A., Sloan, T. M., Mewissen, M., Lloyd, A. D., Forster, T., Mitchell, L., Ghazal, P. & Hill, J., 2013, In: Methods of Information in Medicine. 52, 1, p. 80-90

**Preservation of forcing signals in shallow water carbonate sediments**

Hill, J., Wood, R., Curtis, A. & Tetzlaff, D. M., 1 Nov 2012, In: Sedimentary geology. 275-276, p. 79-92 14 p.

**On the performance of a generic length scale turbulence model within an adaptive finite element ocean model**

Hill, J., Piggott, M. D., Ham, D. A., Popova, E. E. & Srokosz, M. A., Oct 2012, In: Ocean Modelling. 56, p. 1-15 15 p.

**Optimisation and parallelisation of the partitioning around medoids function in R**

Piotrowski, M., Sloan, T. M., Mewissen, M., Forster, T., Mitchell, L., Petrou, S., Dobrzański, B., Ghazal, P., Trew, A. & Hill, J., 1 Jul 2011, *High Performance Computing and Simulation (HPCS), 2011 International Conference on*. p. 707-713 7 p.

**Optimization of a parallel permutation testing function for the SPRINT R package**

Petrou, S., Sloan, T. M., Mewissen, M., Forster, T., Piotrowski, M., Dobrzański, B., Ghazal, P., Trew, A. & Hill, J., 2011, In: Concurrency and Computation: Practice and Experience. 23, 17, p. 2258-2268 11 p.

**The supertree tool kit**

Davis, K. E. & Hill, J., 2010, In: BMC research notes. 3, p. 95 1 p.

**Modeling shallow marine carbonate depositional systems**

Hill, J., Tetzlaff, D., Curtis, A. & Wood, R., Sept 2009, In: Computers & geosciences. 35, 9, p. 1862-1874 13 p.

**Performance of a Lattice Quantum Chromodynamics kernel on the Cell processor**

Spray, J., Hill, J. & Trew, A., 1 Nov 2008, In: Computer Physics Communications. 179, 9, p. 642-646 5 p.

**How Design of Online Learning Materials can Accommodate the Heterogeneity in Student Abilities, Aptitudes and Aspirations**

Bates, S. P., Hardy, J., Hill, J. & McKain, D., 2008, In: Learning and Teaching in Higher Education Journal. 2, p. 3-25 23 p.

**SPRINT: a new parallel framework for R**

Hill, J., Hambley, M., Forster, T., Mewissen, M., Sloan, T. M., Scharinger, F., Trew, A. & Ghazal, P., 2008, In: BMC Bioinformatics. 9, p. 558 1 p.

**Tracking and Visualisation of Student Use of Online Learning Materials in a Large Undergraduate Course: Advances in Web Based Learning – ICWL 2007**

Hardy, J., Bates, S., Hill, J. & Antonioletti, M., 2008, *Advances in Web Based Learning – ICWL 2007*. Leung, H., Li, F., Lau, R. & Li, Q. (eds.). Springer, Vol. 4823. p. 464-474 11 p. (Lecture Notes in Computer Science).

**Complexity in Carbonate Systems**

Hill, J., Curtis, A., Wood, R. A. & Tetzlaff, D. M., 2005, *GIS and Spatial Analysis, Vol 1 and 2*. Cheng, Q. & BonhamCarter, G. (eds.). p. 1141-1146 6 p.

## Activities

**International Coral Reef Symposium**

Jon Hill (Advisor)

3 Jul 2022 → 8 Jul 2022

**Resolving the tsunami wave: interpreting palaeotsunami deposits by integrating numerical modelling and sedimentology**

Jon Hill (Speaker)

25 Sept 2019

**Resolving the tsunami wave: interpreting palaeotsunami deposits by integrating numerical modelling and sedimentology**

Jon Hill (Keynote/plenary speaker)

9 Sept 2019

**Evolution 2019**

Jon Hill (Advisor)

21 Jun 2019 → 25 Jun 2019

**XXXVIII Annual Meeting of the Willi Hennig Society**

Jon Hill (Advisor)

26 May 2019 → 29 May 2019

**Univ Sydney**

Jon Hill (Collaborator)

24 Sept 2018 → 24 Nov 2018

**Do palaeotides make a difference to our estimates of the size of the Storegga tsunami?**

Jon Hill (Speaker)

29 Nov 2017

**The interaction of tides and tsunami**

Jon Hill (Speaker)

4 Sept 2017 → 5 Sept 2017

**Evolution 2017**

Jon Hill (Participant)

23 Jun 2017 → 28 Jun 2017

**iEvoBio**  
Jon Hill (Participant)  
23 Jun 2017

**Mozilla Science Lab Bi-monthly Community Call**  
Jon Hill (Speaker)  
13 Apr 2017

**Year 12 Pathways to STEM**  
Jon Hill (Presenter)  
1 Mar 2017

**Tools and methods for constructing the Tree of Life**  
Jon Hill (Organiser)  
19 Dec 2016 → 20 Dec 2016

**'Good enough' practice in computational Geography**  
Jon Hill (Organiser)  
28 Nov 2016

**58th Phylogenetic Symposium "Evolution meets Ecology"**  
Jon Hill (Participant)  
18 Nov 2016 → 20 Nov 2016

**Automatically creating large phylogenies**  
Jon Hill (Invited speaker)  
23 Mar 2016

**Recreating the Mesolithic Storegga tsunami event**  
Jon Hill (Invited speaker)  
17 Mar 2016

**The terrifying tsunami that devastated Britain**  
Jon Hill (Interviewee)  
1 Mar 2016

**Arthur Holmes Meeting 2015 - Tsunami Hazards and Risks: Using the Geological Record**  
Jon Hill (Participant)  
25 Sept 2015

**Evolution 2015**  
Jon Hill (Participant)  
26 Jun 2015 → 30 Jun 2015

**Supertree Toolkit Workshop**  
Jon Hill (Organiser)  
15 Dec 2014

**OpenTree Hackathon**  
Jon Hill (Participant)  
15 Sept 2014 → 19 Sept 2014

**Prehistoric North Sea 'Atlantis' hit by 5m tsunami**

Jon Hill (Interviewee)

1 May 2014