

SHORT BIO

Jeremy has 10 years' experience working as a freshwater conservation biologist, and is currently a researcher at the Freshwater Research Centre (FRC) in Cape Town, South Africa. The main thrust of his work is on understanding how human activities influence aquatic biodiversity and ecosystem function, and on working collaboratively to find innovative solutions to the country's freshwater conservation challenges. He has published 15 scientific papers on the subject and is a 2020 National Geographic Explorer, for his freshwater conservation, education and science communication work. Jeremy is also currently working with colleagues at the FRC and other partners to develop a Freshwater Biodiversity Information System (FBIS) to support conservation planning and decision-making in South Africa.

PERSONAL DETAILS

Name: Jeremy Mark Shelton

Birth: 7 September 1981

Nationality: South African

ID Number: 8109075131087

Home address: 181 Boyes Drive, Muizenberg, 7945, Cape Town, South Africa

Work address: Office 23, Imhoff Farm, Kommetjie, 7975, Cape Town, South Africa

Phone: +27 74 141 7807

Email: jeremy@frcsa.org.za

CAREER OVERVIEW

Profession: Freshwater conservation biologist

Profile: available [here](#)

Affiliations and positions: Freshwater Research Centre (Researcher); University of Cape Town (Lecturer); SAIAB (associated researcher), CIB (associated researcher)

Specialisations: aquatic conservation, invasion biology, climate change, ecosystem health, freshwater fish biology, community ecology, biodiversity information systems development, science communication

Experience: 13 years

FORMAL EDUCATION

PhD (Freshwater Ecology, University of Cape Town)

MSc (Conservation Biology, University of Cape Town)

BSc Honours (First class) (Zoology and Freshwater Biology, University of Cape Town)

BSc (Zoology, University of Cape Town)

KEY PROJECTS

- Biological Resources Monitoring within Phase 1 of the Lesotho Highlands Water Project Catchments. Katse and Mohale Dam specialist fish surveys and reports (2014-2015) (Funder: Lesotho Highlands Development Authority).
- Assessing the effect of global climate change on indigenous and alien fish in the Cape Floristic Region (2014 – 2017): Primary researcher on a project to assess the effect of climate change on fish (Funder: Water Research Commission, Pretoria & Table Mountain Fund, WWF).
- Linking rotenone policy support for river rehabilitation by alien fish removals with capacity development by developing a concept for integrating aquatic-ecosystem monitoring in short-term post graduate research projects with particular emphasis on HBUs.(2016-2018). Researcher, science communications and Hons student supervision. (Funder: WRC)

- Developing a freshwater biodiversity information system for evaluating long-term change in rivers in the South Africa (2016-2020): Primary researcher on this data informatics project (Funder: JRS Biodiversity Foundation, United States & South African National Biodiversity Institute).
- Living Labs outdoor education programme (FRC education and outreach node) (2017-2019): Co-founder and project coordinator (Funders: CTEET, KEEN Footwear, National Geographic Society).
- Baseline assessment for a catchment intervention (2018-): freshwater biodiversity conservation in the Amandel, du Toits, and upper Riviersonderend catchments, western cape province, South Africa (Funder: The Nature Conservancy)
- Communities and Freshwater Ecosystems (2018-): Upper Sonderend River Catchment, Western Cape Province, South Africa (Funder: The Nature Conservancy)
- Saving Sandfish (2019-) Conserving South Africa's most threatened migratory freshwater fish

PUBLICATIONS

Peer-reviewed

- Shelton JM, Day JA & Griffiths CL (2008) Influence of largemouth bass, *Micropterus salmoides*, on abundance and habitat selection of Cape galaxias, *Galaxias zebratus*, in a mountain stream in the Cape Floristic Region, South Africa. *African Journal of Aquatic Science* 33(3)
- Shelton JM, Samways MJ & Day (2014) Predatory impact of non-native rainbow trout on endemic fish populations in headwater streams in the Cape Floristic Region of South Africa. *Biological Invasions*. Doi: 10.1007/s10530-014-0735-9
- Shelton, JM, Impson ND & Day JA (2014) Preliminary evaluation of the impact of invasive smallmouth bass on native fish abundance in the Witte River, Cape Floristic Region, South Africa. *African Zoology*, 49:277-282
- Shelton JM, Samways MJ & Day (2015) Non-native rainbow trout change the structure of benthic communities in streams of the Cape Floristic Region, South Africa. *Hydrobiologia*. DOI 0.1007/s10750-014-2067-2
- Shelton JM, Woodford DJ, Samways MJ & Day JA (2016) Are native cyprinids or introduced salmonids stronger regulators of benthic invertebrates in South African headwater streams? *Austral Ecology*. DOI: 10.1111/aec.12352
- Shelton JM, Clark BM, Sephaka T & Turpie JK (2016) Population crash in Lesotho's endemic Maloti minnow *Pseudobarbus quathlambae* following invasion by translocated smallmouth yellowfish *Labeobarbus aeneus*. *Aquatic Conservation*. DOI: 10.1002/aqc.2633
- Shelton JM, Bird MS, Samways MJ & Day JA (2016) Non-native rainbow trout (*Oncorhynchus mykiss*) occupy a different trophic niche to native Breede River redfin (*Pseudobarbus burchelli*) which they replace in South African headwater streams. *Ecology of Freshwater Fish*, 26: 484-496
- Shelton JM, Impson DI, Graham S & Esler KJ (2017) Down, but not out: rapid recent decline of Berg-Breede River whitefish (*Barbus andrewi*) in the upper Hex River, South Africa. *Koedoe*. Doi: 10.4102/koedoe.v59i1.1398
- Shelton J, Weyl O, Van Der Walt J, Marr S, Impson D, Maciejewski K, Tye D, Dallas H, Esler K (2017) Effect of an intensive mechanical removal effort on a population of non-native rainbow trout *Oncorhynchus mykiss* in a South African headwater stream. *Aquatic Conservation*. DOI: 10.1002/aqc.2752
- Shelton J, Chakona A, Ellender B, Esler K, Impson D, Jordaan M, Marr S, Ngobela T, Paxton B, Van der Walt J, Weyl O & Dallas H (2017) Vulnerability of Cape Floristic Region freshwater fishes to climate change and other human impacts. *Aquatic Conservation*, 28: 68-77
- Shelton JM, Weyl O L F, Esler K J, Paxton BR, Impson DN and Dallas HF (2018) Temperature mediates the impact of non-native rainbow trout on native freshwater fishes in South Africa's Cape Fold Ecoregion. *Biological Invasions* <https://doi.org/10.1007/s10530-018-1747-7>
- Shelton JM, Bird MS and Marr SM (2018) Evidence for diet partitioning among three coexisting native freshwater fishes in South Africa's Cape Fold Ecoregion. *African Journal of Aquatic Science*, 43: 89–100 DOI:10.2989/16085914.2018.1470490

- Avidon S, Shelton JM, Marr SM, Wey OLF, Bellingan TA, Esler KJ (2018) Preliminary evaluation of non-native rainbow trout (*Oncorhynchus mykiss*) impact on the Cedarberg ghost frog (*Heleophryne depressa*) in South Africa's Cape Fold Ecoregion. African Journal of Aquatic Science. Accepted
- Shelton JM, Weyl OLF, Esler KJ, Paxton BR, Impson ND, Dallas HF (2018) Temperature mediates the impact of non-native rainbow trout on native freshwater fishes in South Africa's Cape Fold Ecoregion. *BioRx* 20: 2927–2944. DOI: 10.1007/s10530-018-1747-7
- Reizenberg JL, Bloy LE, Weyl OLF, Shelton JM and Dallas HF. 2019. Variation in thermal tolerances of native freshwater fishes in South Africa's Cape Fold Ecoregion: examining the east-west gradient in species' sensitivity to climate warming. *Journal of Fish Biology* 94(1): 103-112
- Olsen T, Shelton JS and Dallas HF. 2021. Does thermal history influence thermal tolerance of the freshwater fish *Galaxias zebratus* in a global biodiversity hotspot? *Journal of Thermal Biology* Volume 97, April 2021, 102890. <https://doi.org/10.1016/j.jtherbio.2021.102890>

Book chapters

- Shelton JM (2019) Swimming dangerously close to Extinction: Population Crash in Lesotho's Endemic Maloti Minnow. *A Primer of Conservation Biology*, 5th Edition. In press
- Impson ND & Shelton JM (2019) Trouts of Africa: A mixed blessing for its people and the natural environment. *Trouts of the World*. In press

Research reports

- Clark B, Shelton JM & Sephaka T (2014) Biological Resources Monitoring within Phase 1 of the Lesotho Highlands Water Project Catchments 2013-14. Report 5a: Fish Katse Catchment Specialist Report, 57pp
- Clark B, Shelton JM & Sephaka T (2014) Biological Resources Monitoring within Phase 1 of the Lesotho Highlands Water Project Catchments 2013-14. Report 5b: Fish Mohale Catchment Specialist Report, 52pp
- Dallas H, Paxton B, Weyl O, Shelton J, Reizenberg J, Bloy L, Ellender B, Rivers-Moore N, Castaneda R & Esler K (2017) Assessing the effect of global climate change on indigenous and alien fish in the Cape Floristic Region. *Water Research Commission Report K5/2337*
- Dallas, HF; Shelton, JM; Paxton, BR & Weyl, OLF. 2017. Freshwater Fishes of the Cape Fold Ecoregion and Climate Change: Volume 1: Research Synthesis. Prepared on behalf of the Table Mountain Fund by the Freshwater Research Centre. Pp. 12.
- Bragg CJ, Paxton BR, Shelton JM, Bovim LA and Dallas HF. 2017. Freshwater Fishes of the Cape Fold Ecoregion and Climate Change: Volume 2: Policy Uptake Strategy. Prepared on behalf of the Table Mountain Fund by the Freshwater Research Centre. Pp. 14.
- Rafferty MCT, Paxton BR, Bragg CA, Shelton JS, Snaddon K and Frenzel P. Baseline Assessment for Freshwater Biodiversity Conservation in the Riviersonderend catchment, South Africa: Stakeholder Report. Report prepared for The Nature Conservancy by the Freshwater Research Centre. 35pp
- Snaddon K, Shelton JS, Frenzel P and Paxton NR. 2019. A baseline Assessment for Freshwater Biodiversity Conservation in the Riviersonderend catchment, South Africa: River Health Report. Report prepared for The Nature Conservancy by the Freshwater Research Centre. 67 Pp.
- Shelton JM, Snaddon K, Paxton BR, Rafferty M and Frenzel P. 2019. A Baseline Assessment for Freshwater Biodiversity Conservation in the Riviersonderend Catchment, South Africa: Threats and Interventions Report. Report prepared for The Nature Conservancy by the Freshwater Research Centre. 37pp
- Shelton JM, Snaddon K, Paxton BR, Rafferty, M and Frenzel P. 2019. Communities and Freshwater Ecosystems: Upper Sonderend River Catchment, Western Cape Province, South Africa. Final Report. Prepared for The Nature Conservancy by the Freshwater Research Centre. 58pp

- Shelton J, Snaddon K, Paxton B. 2021. Freshwater biodiversity and habitat monitoring at mainstem sites in the Upper Sonderend River Catchment, South Africa. Prepared for The Nature Conservancy by the Freshwater Research Centre. Pp 57.

Conference presentations

- Shelton JM, Samways MJ & Day (2010) Evaluating ecological impacts of non-native rainbow trout *Oncorhynchus mykiss* in mountain streams of the Cape Floristic Region, South Africa. CIB Invasion Biology conference, Stellenbosch, South Africa
- Shelton JM, Samways MJ & Day (2011) Impact of non-native rainbow trout on stream communities in the Cape Floristic Region, South Africa. BIOLIEF Invasion Biology conference, Mar Del Plata, Argentina
- Shelton JM, Samways MJ & Day (2013) Impact of non-native rainbow trout on stream communities in the Cape Floristic Region, South Africa. South African Society of Aquatic Scientists (SASAQS)
- Shelton JM, Samways MJ & Day (2013) Predatory impact of invasive rainbow trout on endemic fish populations in a river catchment in the Cape Floristic Region. Biodiversity SA (UCT)
- Shelton JM, Samways MJ & Day (2013) Impacts of non-native rainbow trout on freshwater ecosystems of the CFR. CapeNature Freshwater Forum meeting (Jonkershoek)
- Shelton JM, Dallas HF, Wey OLF, Karen & Esler KJ (2015) Influence of climate warming on interactions between invasive and native freshwater fish in the Cape Floristic Region. ZSSA, Grahamstown.
- Shelton JM, Dallas HF, Ngobela T, Paxton B, Wey OLF, Karen & Esler KJ (2016) Vulnerability of fynbos fishes to climate change and other human impacts. Fynbos Forum
- Shelton JM, Dallas HD, Weyl OLF, Esler KJE (2018) Trout in hot water? Evaluating consequences of climate warming for non-native rainbow trout and associated impacts on native fishes in South Africa's Cape Fold Ecoregion. SASAQs 2018
- Shelton JM, Weyl OLF (2019) An evaluation of methods for alien fish removals in headwater streams: lessons from South Africa. Society for Ecological Restoration 2019
- Shelton JM, Dallas H, Olsen T, Sutton T, Ciputra D, Job N (2019) An information system for monitoring changes in South Africa's freshwater biodiversity and ecosystem condition. Society for Ecological Restoration 2019
- Shelton JM (2020) Conserving South Africa's freshwater fish: the sandfish story. National Wetlands Indaba (NWI, 2020)

Poster presentations

- Shelton JM, Samways MJ & Day (2009) Ecological impacts of alien rainbow trout in the Cape Floristic Region, South Africa. CIB Invasion Biology conference, Stellenbosch, South Africa
- Dallas H, Paxton B, Shelton J & Reizenberg J (2015) Assessing the effect of global climate change on native and alien fish in the Cape Floristic Region. National Wetlands Indaba, Goudini, South Africa.

Popular articles

[Redfins a Conservation Story](#) (2014)

[Trout in the fynbos](#) (2015)

[What climate change means for our freshwater fish](#) (2017)

[Emerging Freshwater Biologists Learn To Monitor River Rehabilitation](#) (2017)

[Why our rivers matter](#) (2018)

[Below the Surface of South Africa's Worst Drought On Record](#) (2018)

[The Maloti minnow, a fish out of water](#) (2018)

[River and Redfin](#) (2018)

[Fish have prepared for Cape drought for millions of years](#) (2018)

SCIENCE COMMUNICATION

[Film](#)

[Photography](#)

TEACHING

- Organisation for Tropical Studies (2013-2017): Freshwater ecology Hons module and project coordinator
- UCT Conservation Biology MSc, lecturer (2013-): Lecturer and Freshwater Ecology module coordinator
- Multivariate statistics course at University of Western Cape (2017-2018): Course coordinator
- Conservation Ecology Hons lectures at Stellenbosch University (2016-2017): Freshwater ecology lectures

STUDENTS

Honours

- Sean Graham (Stellenbosch University, 2016). Habitat and Population Trends of the Berg-Breede River Whitefish, *Barbus andrewi*, in the Upper Hex River.
- Steve Avidon (Stellenbosch University, 2017). Trout impacts on Cederberg ghost frog
- Bethel Muller (Stellenbosch University, 2018). Clanwilliam rock catfish habitat and conservation.

MSc

- Jody-Lee Reizenberg (University of Cape Town, 2016-2017). Thermal tolerances and preferences of Cape Fold Ecoregion freshwater fishes.
- Keir Lynch (University of Cape Town, 2018-) Redfin in the Renosterveld.
- Toni Olsen (University of Cape Town, 2017-2018) Influence of thermal history on the thermal tolerance of Cape galaxias (*Galaxias zebratus*) on the Cape Peninsula, South Africa
- Steve Avidon (Stellenbosch University, 2018-) Agrarian land use and freshwater ecosystems: toward appropriate methods for conservation in the Chintsa River catchment, South Africa
- Ceci Cerrilla (University of Cape Town, 2018-) How do alien fish impact the Clanwilliam Sandfish in the Oorlogskloof River, Northern Cape?
- Dan van Blerk (Stellenbosch University, 2019-) Impact of alien trout and bass on the Cape ghost frog
- Jess Burnette (University of Cape Town, 2020-) Role of images in freshwater conservation

PhD

- Jody-Lee Reizenberg (University of Cape Town, 2018-)
- Mohammed Kajee (University of Cape Town, 2018-) Meta-analysis of the status of South African freshwater fishes: predicting the impacts of climate change
- Ceci Cerrilla (University of Cape Town, 2018-) Ecology and conservation of the Endangered Clanwilliam sandfish.