

CV – Dr Jeremy Shelton

PERSONAL DETAILS

Name: Jeremy Mark Shelton

Birth: 7 September 1981

Nationality: South African

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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)
- Current position: Freshwater Research Centre (since 2016)
- Specialisations: aquatic conservation, invasion biology, climate change, ecosystem health, freshwater fish biology, community ecology, biodiversity information systems development, science communication
- Experience: 15 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

- **2014-2015:** 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).
- **2014-2017:** Assessing the effect of global climate change on indigenous and alien fish in the Cape Floristic Region (Primary researcher on a project to assess the effect of climate change of fish. Funder: Water Research Commission, Pretoria & Table Mountain Fund, WWF).
- **2016-2018:** 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. (Researcher, science communications and Hons student supervision. Funder: WRC)
- **2017-present:** Living Labs outdoor education programme (FRC education and outreach node. Co-founder and project coordinator (Funders: CTEET, KEEN Footwear, National Geographic Society).
- **2017-present:** Developing a freshwater biodiversity information system (FBIS) for evaluating long-term change in rivers in the South Africa. (Primary researcher on this data informatics project. Funder: JRS Biodiversity Foundation, United States & South African National Biodiversity Institute).

- **2018-present:** Conserving Freshwater Ecosystems in the upper Sonderend River Catchment, Western Cape Province, South Africa (Funder: The Nature Conservancy)
- **2018-Present:** Saving Sandfish: Conserving South Africa's most threatened migratory freshwater fish (2018-present) (Funders: National Geographic, IUCN Save Our Species, Species Survival Commission, MBZ Species Conservation Fund, Rufford Foundation).
- **2022-Present:** Breekkrans River Restoration Project. Restoring the Breekkrans river by mechanically removing invasive bass to conserve the Critically Endangered Giant Redfin (Funder: Total Energies)

PUBLICATIONS

Peer-reviewed papers

1. 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)
2. 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
3. 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
4. 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 10.1007/s10750-014-2067-2
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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
11. 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>
12. 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

13. Avidon S, Shelton JM, Marr SM, Weyl 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
14. 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. Biol Inv 20: 2927–2944. DOI: 10.1007/s10530-018-1747-7
15. 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
16. 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>
17. Cerrilla C, Afrika J, Impson D, Jordaan MS, Kotze N, Paxton BR, Reed C, Schumann, van der Walt JA and Shelton JM. 2022. Rapid population decline in one of the last recruiting populations of the endangered Clanwilliam sandfish (*Labeo seeberi*): The roles of climate change and non-native fish. Aquatic Conservation: Marine and Freshwater Ecosystems DOI: 10.1002/aqc.3785.
18. Dallas HF, Shelton JM, Sutton T, Tri Cuptura D, Kajee M and Job N. 2021. The Freshwater Biodiversity Information System (FBIS) – mobilising data for evaluating long-term change in South African rivers. African Journal of Aquatic Science DOI: 10.2989/16085914.2021.1982672.
19. Kajee M, Henry DA, Dallas H, Griffiths CL, Pegg J, Van Der Colff D, Impson D, Chakona A, Raimondo DC, Job N, Paxton B, Jordaan MS, Bills R, Roux F, Zengeya TA, Hoffman A, Rivers-Moore N, Shelton JM. 2023. How the Freshwater Biodiversity Information System (FBIS) is supporting national freshwater fish conservation decisions in South Africa. Frontiers in Environmental Science. 11. DOI: 10.3389/fenvs.2023.1122223/abstract.
20. Kajee M, Dallas HF, Swanepoel A, Griffiths CL and Shelton JM. 2023. The Freshwater Biodiversity Information System (FBIS) fish data: a georeferenced dataset of freshwater fishes occurring in South Africa. Journal of Limnology.

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
- Jordaan M, Shelton J, Chakona A, van der Colff D. 2022. Under water and out of sight: the hidden world of the threatened freshwater fishes of the Cape Fold Ecoregion Elephant. In: M.T. Sethusa, D.L. Dalton & C. Pretorius (eds), South African animals at risk of extinction. South African National Biodiversity Institute, Pretoria

Selected recent popular science and photo stories

- [Clear Water Revival](#) (bioGraphic Magazine, 2022)
- [Safe havens: Conserving endangered Clanwilliam sandfish, pool by pool](#) (UCT News, 22 April 2022)

- [Scientists, farmers team up to save one of SA's most threatened fish](#) (News 24, 1 April 2022)
- [Red die onderbekvis](#) (Landbou Weekblad, 22 April)
- [The unprecedented effort to save one of Africa's most threatened fish](#) (National Geographic, 2022)
- [Giant Redfin: Conserving South Africa's Native Fish](#) (The Nature Conservancy's Cool Green Science Blog, 21 March 2022)
- [South Africa's freshwater fish face extinction](#) (Mail and Guardian 2021)

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

- Cecilia Cerrilla (University of Cape Town, 2018-) Ecology and conservation of the Endangered Clanwilliam sandfish.

AWARDS

- 2022: Mail & Guardian Greening the Future Award for the Preservation of Natural Habitats
- 2023: NSTF - South32 Award for Data for Research Award