

# Paul Cowley *Curriculum vitae*

## Research Interests

Biology, ecology and movement of coastal fishes  
Management of declining fishery resources

My research interests deal primarily with the movement behaviour, habitat use patterns and ecology of coastal fishery species with the aim of improving management and ultimately the abundance of declining fishery resources. Much of my research is done in collaboration with scientists from a number of local and international institutions.

Student training forms a very important part of my vocation and over the past decade I have been involved with the supervision of approximately 25 post-graduate students. I am a Research Associate of the Department of Ichthyology and Fisheries Science and a member of the Faculty of Science at Rhodes University (South Africa), where I also present selected lectures.

I serve on the editorial board of the African Journal of Marine Science and I am an active member of several national research coordinating, namely the Biotelemetry Research Group (BRG), the Marine Linefish Research Group (MLRG) and the Consortium for Estuarine Research and Management (CERM). I am the founder member and standing Chairperson of the BRG, as well as a past Chairperson of the MLRG. I also serve in an advisory capacity to the Linefish Scientific Working Group of the Department of Agriculture, Forestry and Fisheries.

At the international level, I am a member of the Ocean Tracking Network's (OTN) International Scientific Advisory Committee. My involvement with the BRG and OTN in recent years had led to the development of national acoustic telemetry platform called the Acoustic Tracking Array Platform (ATAP). It is envisaged that this initiative will witness substantial growth in biotelemetry research, foster broader national and international collaboration and ensure a sustained future for the study of migration biology and behavioural ecology of marine animals in coastal waters around the African continent

## Research Outputs: Peer-reviewed papers

### 2013

Becker A, Whitfield AK, Cowley PD, Jarnegren J, Naesje TF. 2013. Potential effects of artificial light associated with anthropogenic infrastructure on the abundance and foraging behaviour of estuary-associated fishes. *Journal of Applied Ecology* **50**, 43–50.

Bijoux JP, Dagorn L, Robinson J, Berke G, Cowley PD, Soria M, Gaertner J-C. 2013. Temporal dynamics, residency and site fidelity of spawning aggregations by an herbivorous tropical reef fish *Siganus sutor*. *Marine Ecology Progress Series* **475**, 233–247.

### 2012

Bennett RH, Cowley PD, Childs A-R, Whitfield AK. 2012. Area-use patterns and diel movements of white steenbras *Lithognathus lithognathus* in a temporarily open/closed South African estuary, inferred from acoustic telemetry and long-term seine-netting data. *African Journal of Marine Science* **34(1)**, 81–91.

Holbach A, Cowley PD, Kramar P, Neumann T. 2012. Otolith microchemistry of fishes from Kosi Bay, South Africa: a preliminary multiple analytical methods approach to reconstruct fish migrations. *Estuarine Coastal Shelf Science* **109**, 30-40.

James NC, Götz A, Potts WM, Cowley PD. 2012. Temporal variability of a temperate fish assemblage in Africa's oldest marine protected area. *African Journal of Marine Science* **34(1)**, 15-26.

Naesje TF, Cowley PD, Disrud OL, Childs A-R, Thorstad EB. 2012 Riding the tide: estuarine movements of a sciaenid fish, *Argyrosomus japonicus*. *Marine Ecology Progress Series* **460**, 221–232.

Reddy P, James NC, Whitfield AK, Cowley PD. 2012. Marine connectivity and fish length frequencies of selected species in two adjacent temporarily open/closed estuaries in the Eastern Cape Province, South Africa. *African Zoology* **46(2)**, 239–245.

Sheppard JN, Whitfield AK, Cowley PD, Hill JM. 2012. Effects of altered estuarine submerged macrophyte bed cover on the omnivorous Cape stumpnose *Rhabdosargus holubi*. *Journal of Fish Biology* **80**, 705–712.

Solano- Fernandez S, Attwood CG, Chalmers R, Clark BM, Cowley PD, Fairweather T, Fennessy ST, Gotz A, Harrison TD, Kerwath SE, Lamberth SJ, Mann BQ, Smale MJ, Swart L. 2012. Assessment of the effectiveness of South Africa's marine protected areas at representing ichthyofaunal communities. *Environmental Conservation* **39(3)**, 259- 270.

Whitfield AK, Bate GC, Adams JB, Cowley PD, Froneman PD, Gama PT, Strydom NA, Taljaard S, Theron AK, Turpie JK, van Niekerk L, Wooldridge TH. 2012. A review of the ecology and management of temporarily open/closed estuaries in South Africa, with particular emphasis on river flow and mouth state as primary drivers of these systems. *African Journal of Marine Science* **34(2)**, 163-180.

## 2011

Becker A, Cowley PD, Whitfield AK, Järnegren J & TF Næsje. 2011. Diel fish movements in the littoral zone of a temporarily closed South African estuary. *Journal of Experimental Marine Biology and Ecology* **406**, 63-70.

Becker A, Whitfield AK, Cowley PD, Järnegren J & TF Næsje. 2011. An assessment of the size structure, distribution and behaviour of fish populations within a temporarily closed estuary using dual frequency identification sonar (DIDSON). *Journal of Fish Biology* doi:10.1111/j.1095-8649.2011.03057.

Bennett RH, Childs, A-R, Cowley PD, Næsje TF, Thorstad EB & F Økland. 2011. First assessment of estuarine space use and home range of juvenile white steenbras, *Lithognathus lithognathus*. *African Zoology* **46(1)**, 32–38.

Childs A-R, Næsje TF & PD Cowley. 2011. Long-term effects of different sized surgically implanted acoustic transmitters on the sciaenid *Arygyrosomus japonicus*: breaking the 2% tag-to-body mass rule. *Marine and Freshwater Research* **62**, 432–438.

Filmalter JD, Dagorn L, Cowley PD & M Taquet. 2011. First descriptions of the behavior of silky sharks, *Carcharhinus falciformis*, around drifting fish aggregating devices in the Indian Ocean . *Bulletin of Marine Science* **87(3)**, 325-337.

Reddy P, James NC, Whitfield AK & PD Cowley. 2011. Marine connectivity and fish length frequencies of selected species in two adjacent temporarily open/closed estuaries in the Eastern Cape Province, South Africa. *African Zoology*, **46 (2)**, 239-245.

Sheppard JN, James NC, Whitfield AK & PD Cowley. 2011. What role do beds of submerged macrophytes play in structuring estuarine fish assemblages? Lessons from a warm-temperate South African estuary. *Estuarine, Coastal and Shelf Science* **95 (1)**, 145-155.

## 2010

Becker A, Cowley PD & Whitfield AK. 2010. Use of remote underwater video to record littoral habitat use by fish within a temporarily closed South African estuary. *Journal of Experimental Marine Biology and Ecology* **391**,161-168.

Bernatzeder, A.K., Cowley, P.D. & Hecht, T. 2010. Do juveniles of the estuarine-dependent dusky kob, *Argyrosomus japonicus*, exhibit optimum growth indices at reduced salinities? *Estuarine, Coastal and Shelf Science* **90**, 111-115.

Hedger RD, Næsje TF, Cowley PD, Thorstad EB, Attwood C, Økland F, Wilke CG & Kerwath SE. 2010. Residency and migratory behaviour by adult *Pomatomus saltatrix* in a South African coastal embayment *Estuarine, Coastal and Shelf Science* **89**, 12-20.

Teske, P.R., Forget, F.R.G., Cowley, P. D., von der Heyden, S. & Beheregaray, L.B. 2010. *Connectivity between marine reserves and exploited areas in the philopatric reef fish *Chrysolephus laticeps* (Teleostei: Sparidae)*. *Marine Biology* **157** (9), 2029-2042.

Whifield AK & Cowley PD. 2010. The status of fish conservation in South African estuaries. *Journal of Fish Biology* **76**(9), 2067-2089.

## 2009

Bennett, R.H., Götz, A., Sauer, W.H.H., Cowley, P.D. & Palmer, R.M. 2009. Optimisation of underwater visual census and controlled angling methods for monitoring subtidal temperate reef fish communities. *African Journal of Marine Science* **31**(3): 277-287.

Ebert, D.A. & Cowley, P.D. 2009. Reproduction and embryonic development of the blue stingray, *Dasyatis chrysonota*, in southern African waters. *Journal of the Marine Biological Association of the United Kingdom* **89**(4): 809-815.

Kerwath, S.E., Thorstad, E.B., Næsje, T.F., Cowley, P.D., Økland, F., Wilke, C. & Attwood, C.G. 2009. Crossing invisible boundaries: the effectiveness of the Langebaan Marine Protected Area as a harvest refuge for a migratory fish species in South Africa. *Conservation Biology* **23**(3): 653-661.

Teske, P.R., Cowley, P.D., Forget, F.R.G. & Beheregaray, L.B. 2009. Microsatellite markers for the roman, *Chrysolephus laticeps* (Teleostei: Sparidae), an overexploited seabream from South Africa. *Molecular Ecology Resources* **9**(4): 1162-1164.

Thorstad, E.B., Kerwath, S.E., Attwood, C.G., Økland, F., Wilke, C., Cowley, P.D. & Næsje, T.F. 2009. Long-term effects of two sizes of surgically-implanted acoustic transmitters on a predatory marine fish species (*Pomatomus saltatrix*). *Marine and Freshwater Research* **60**: 183-186.

## 2008

Bernatzeder, A., Cowley, P.D. and T. Hecht 2008. Effect of short-term exposure to the anaesthetic 2-phenoxyethanol on plasma osmolality of juvenile dusky kob, *Argyrosomus japonicus* (Sciaenidae). *Journal of Applied Ichthyology* (2008): 1-3.

Childs, A-R., Cowley, P.D., Næsje, T.F., Booth, A.J., Potts, W.M., Thorstad, E.B. and F. Økland. 2008. Do environmental factors influence the movement of an estuarine fish? A case study using acoustic telemetry. *Estuarine, Coastal and Shelf Science*. **78**: 227-236.

Childs, A-R., Cowley, P.D., Næsje, T.F., Booth, A.J., Potts, W.M., Thorstad, E.B. and F. Økland. 2008. Estuarine use by spotted grunter *Pomadasys commersonnii* in a South African estuary. *African Journal of Marine Science* **30**(1): 123-132.

Childs, A-R., Cowley, P.D., Næsje, T.F., Booth, A.J., Potts, W.M., Thorstad, E.B. and F. Økland. 2008. Home range of an estuarine-dependent fishery species *Pomadasys commersonnii* in a South African estuary. *Fisheries Management and Ecology* (in press).

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Ebert, D. A., Compagno, L. J. V., and Cowley, P. D. 2008. Aspects of the reproductive biology of skates (Chondrichthyes: Rajiformes: Rajoidei) from southern Africa. *ICES Journal of Marine Science* **65**: 81-102.

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- Thorstad, E.B., Kerwath, S.E., Attwood, C.G., Økland, F., Wilke, C., Cowley, P.D. and T.F. Næsje 2008. Long-term effects of two sizes of surgically-implanted acoustic transmitters on a predatory marine fish species (*Pomatomus saltatrix*) (in press).
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## 2007

- Næsje, T.F., Childs, A-R., Cowley, P.D., Potts, W.M., Thorstad, E.B., and F. Økland. 2007. Movements of undersized spotted grunter (*Pomadasys commersonnii*) in the Great Fish Estuary, South Africa: implications for fisheries management. *Hydrobiologia* **582**: 25-34.
- Attwood, C.G., Cowley, P.D., Kerwath, S.E., Næsje, T.F., Thorstad, E.B. and F. Økland. 2007. First tracking of white stumpnose *Rhabdosargus globiceps* (Sparidae) in a South African marine protected area. *African Journal of Marine Science* **29**: 147-151.
- Kerwath, S.E., Götz, A., Attwood, C.G., Cowley, P.D. and W.H.H. Sauer. 2007. Movement pattern and home range of roman *Chrysoblephus laticeps*. *African Journal of Marine Science* **29**: 93-104.
- James, N.C., Cowley, P.D. and A.K. Whitfield. 2007. Abundance, recruitment and residency of two sparid fishes in an intermittently open estuary in South Africa. *African Journal of Marine Science* **29(3)**: 527-538.
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## 2006

- Ebert, D.A., L.J.V. Compagno and P.D. Cowley. 2006. Reproductive biology of catsharks (Chondrichthyes: Scyliorhinidae) off the west coast of southern Africa. *ICES Journal of Marine Science* **63**: 1053-1065.

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Potts, W.M. and P.D. Cowley. 2005. Validation of the periodicity and timing of opaque zone formation in the otoliths of four temperate reef associated fishes from South Africa. *African Journal of Marine Science* **27(3)**: 659-669.

#### **2004**

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#### **2002**

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#### **2001**

Bell, K.N.I., Cowley, P.D. and A.K. Whitfield. 2001. Seasonal variation in frequency of access to estuaries: implications for recruitment strategies. *Estuarine and Coastal Shelf Science* **52**: 327-337.

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#### **2000 and earlier**

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