

CURRICULUM VITAE: Alan Kenneth Whitfield

Employer: South African Institute for Aquatic Biodiversity (SAIAB)
Position: Chief Scientist
Specialization: Estuarine Ichthyology
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Educational Qualifications

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| • BSc Zoology, Botany | University of Natal, Pietermaritzburg | 1974 |
| • BSc (Hons) Zoology | University of Natal, Pietermaritzburg | 1975 |
| • MSc (<i>cum laude</i>) Ichthyology | University of Natal, Pietermaritzburg | 1978 |
| • PhD Estuarine Ecology | University of Natal, Pietermaritzburg | 1983 |
| • DSc Estuarine Ichthyology | Rhodes University, Grahamstown | 2011 |

Past & Present Professional Associations

- Estuarine and Coastal Sciences Association - Life Member
- Royal Society of South Africa - Fellow Member
- Southern African Society of Aquatic Scientists - Ordinary Member
- South African Institute of Ecologists & Environmental Scientists - Professional Member
- Zoological Society of Southern Africa - Life Member
- IUCN Species Survival Commission Fish Specialist Group - Ordinary Member
- Consortium for Estuarine Research and Management - Founder Member
- Institute for Estuarine & Coastal Studies (IECS) - Research Associate
- Associate Editor - Estuarine, Coastal & Shelf Science, African Journal of Aquatic Science
- Editorial Board Member - Fisheries Management and Ecology Journal, African Journal of Marine Science, African Journal of Zoology

Employment Record

- Research Assistant - Natal University (January 1975 - December 1977)
- Part-time Lecturer - Natal University (January 1978 - December 1978)
- Research Officer - Rhodes University (January 1979 - December 1984)
- Senior Research Officer - Rhodes University (January 1985 - June 1987)
- Senior Ichthyologist - JLB Smith Institute of Ichthyology (July 1987 - September 1995)
- Assistant Director/Principal Ichthyologist - JLB Smith Institute of Ichthyology (October 1995 - September 1998)
- Deputy Director/Principal Ichthyologist - JLB Smith Institute of Ichthyology (October 1998 - December 2001)
- Research & Collections Division Manager/Principal Aquatic Biologist - South African Institute for Aquatic Biodiversity (January 2002 - December 2009)
- Chief Scientist - South African Institute for Aquatic Biodiversity (January 2010 – July 2018)

Past Service Record

- Eastern Cape Representative for the Southern African Society for Aquatic Scientists
- Executive Committee of the Southern African Society for Aquatic Scientists
- Conference Organising Committee and Scientific Advisory Committee for numerous symposia
- South African Convenor of the 2011 Estuarine and Coastal Sciences Association Conference
- Served on the Department of Science & Technology Foresight Group
- Served on numerous Water Research Commission Steering Committees
- Served on the SANBI NSBA Technical Reference Group
- Served on the Rhodes University Institute for Water Research Board
- Served on the SAEON Elwandle Node Liaison Committee

Biographical Sketch

My scientific interests have centred around aquatic ecological research, with particular emphasis on the importance of estuaries in the life cycles of individual fish species and understanding the impact of human developments on various fish communities. Early research during the 1970s covered the feeding biology of fishes in KwaZulu-Natal estuaries and this was later extended to the Western Cape where I also embarked on a series of larval fish studies in the 1980s, a hitherto poorly studied research field within South African estuaries.

The use of fishes as indicators of ecological and environmental change within estuaries became a focus of some of my research in the 1990s and led to me being invited to participate in a European Sixth Framework Programme (2006-2009) on the use of the mullet *Mugil cephalus* as an indicator of environmental change in estuaries and coastal zones around the world. Throughout the 1990s and early 2000s I focused on the importance of river flow to the ecology of estuaries and fishes in particular. This interest has tied in very well with the global change theme that has developed over the past decade and I am now very involved in long-term studies on the influence of global warming on the distribution patterns and ecology of fishes in southern African estuaries.

In almost four decades working as a scientist in KwaZulu-Natal, Eastern and Western Cape estuaries, I have been fortunate to have been involved in both long-term ecological studies and short-term contract work for a variety of government departments and agencies. During this time I have participated in 15 Department of Water Affairs Estuarine Ecological Reserve studies and been Project Leader/Co-ordinator for three of these. I have also been Project Leader of a major Water Research Commission (WRC) sponsored multidisciplinary research programme (2005-2008) on intermittently open estuaries of the Eastern Cape Province and Project Leader of a multidisciplinary SANCOR SEACChange Project on the East Kleinmonde Estuary from 2008-2011.

In 2010 I was appointed Project Leader of a WRC workshop on the information required to relink the Mfolozi River to the St Lucia estuarine system and a report, with a formal scientific publication summarizing the outcomes of that workshop having also been produced. This initiative led to the convening of a natural sciences meeting of researchers at St Lucia, sponsored by the WRC, the result of which was a collaborative report detailing future research themes and priorities for this important system.

Much of my work over the past two decades would not have been possible without the support and collaboration of numerous MSc and PhD students. Over the past 15 years I have successfully supervised 13 MSc and seven PhD students, with three PhD students currently busy with their theses. I am regularly called upon to examine MSc and PhD theses from South African and overseas universities, and referee between 40 and 50 scientific manuscripts per annum for a wide spectrum of national and international journals. In addition, I sit on the editorial boards of two local and two international aquatic science journals.

I have served on the scientific committees of both national and international conferences and in 2011 was responsible for co-hosting the Estuarine and Coastal Sciences Association Conference in South Africa. I have been an invited plenary speaker at both national and international conferences, the most recent being the Zoological Society of Southern Africa Annual Conference in KwaZulu-Natal (July 2009), Coastal and Estuarine Research Federation Conference in the USA (November 2009), Annual Conference of the Southern African Society of Aquatic Scientists in the Eastern Cape (June 2012), Indo-Pacific Fish Conference in Japan (June 2013) International Conference on Fisheries, Aquaculture and Environment in the Indian Ocean (February 2015) and Estuarine and Coastal Sciences Association Conference in Australia (September 2018).

During my career I have published a book, more than 190 refereed scientific papers and book chapters, 60 reports, 70 popular articles and delivered more than 110 conference presentations. I have been the recipient of a FRD Special Merit Award for Museum Scientists and JLB Smith Institute of Ichthyology Council Award. In 2007 I was rated as a NRF Category 'A' rated scientist and in the same year was inducted as a Fellow of the Royal Society of South Africa. In the following year I became the recipient of the Gilchrist Memorial Medal for research contributions to South African marine science and in 2011 was awarded a Senior Doctorate by Rhodes University and became an Honorary Professor at the university. In 2015 I was the recipient of the Southern African Society of Aquatic Scientists (SASAqS) Gold Medal for contributions to aquatic research in Africa.

PUBLICATION LIST

(a) Scientific Papers in Specialist Journals and Books

1. Whitfield, A.K. & Blaber, S.J.M. 1976. The effects of temperature and salinity on *Tilapia rendalli* Boulenger 1896. *Journal of Fish Biology* 9, 99-104.
2. Blaber, S.J.M. & Whitfield, A.K. 1976. Large scale mortality of fish at St Lucia. *South African Journal of Science* 72, 218.
3. Blaber, S.J.M. & Whitfield, A.K. 1977. The biology of the burrowing goby *Croilia mossamica*. *Environmental Biology of Fishes* 1, 197-204.
4. Blaber, S.J.M. & Whitfield, A.K. 1977. The feeding ecology of juvenile mullet (*Mugilidae*) in south-east African estuaries. *Biological Journal of the Linnean Society* 9, 277-284.
5. Whitfield, A.K. & Heeg, J. 1977. On the life cycles of the cestode *Ptychobothrium belones* and nematodes of the genus *Contracaecum* from Lake St Lucia, Zululand. *South African Journal of Science* 73, 121-122.
6. Whitfield, A.K. 1978. Relationship between fish and piscivorous bird densities at Lake St Lucia. *South African Journal of Science* 74, 478.
7. Whitfield, A.K. & Blaber, S.J.M. 1978. Scale-eating habits of the marine teleost *Terapon jarbua* (Forsk.). *Journal of Fish Biology* 12, 61-70.
8. Whitfield, A.K. & Blaber, S.J.M. 1978. Food and feeding ecology of piscivorous fishes at Lake St Lucia, Zululand. *Journal of Fish Biology* 13, 675-691.
9. Whitfield, A.K. & Cyrus, D.P. 1978. Feeding succession and zonation of aquatic birds at False Bay, Lake St Lucia. *Ostrich* 49, 8-15.
10. Whitfield, A.K. & Blaber, S.J.M. 1978. Resource segregation among iliophagous fish in Lake St Lucia, Zululand. *Environmental Biology of Fishes* 3, 293-296.
11. Whitfield, A.K. & Blaber, S.J.M. 1978. Distribution, movements and fecundity of *Mugilidae* at Lake St Lucia. *Lammergeyer* 26, 53-63.
12. Whitfield, A.K. & Blaber, S.J.M. 1978. Feeding ecology of piscivorous birds at Lake St Lucia. Part 1: Diving birds. *Ostrich* 49, 185-198.
13. Whitfield, A.K. 1979. Field observations on the lepidophagous teleost *Terapon jarbua* (Forsk.). *Environmental Biology of Fishes* 4, 171-172.
14. Whitfield, A.K. & Blaber, S.J.M. 1979. Feeding ecology of piscivorous birds at Lake St Lucia. Part 2: Wading birds. *Ostrich* 50, 1-9.
15. Whitfield, A.K. & Blaber, S.J.M. 1979. Feeding ecology of piscivorous birds at Lake St Lucia. Part 3: Swimming birds. *Ostrich* 50, 10-20.
16. Whitfield, A.K. & Blaber, S.J.M. 1979. The distribution of the freshwater cichlid *Sarotherodon mossambicus* in estuarine systems. *Environmental Biology of Fishes* 4, 77-81.
17. Whitfield, A.K. & Blaber, S.J.M. 1979. Predation on striped mullet (*Mugil cephalus* L.) by *Crocodylus niloticus* at St Lucia, South Africa. *Copeia* 1979, 266-269.

18. Whitfield, A.K. & Blaber, S.J.M. 1980. The diet of *Atilax paludinosus* (water mongoose) at St Lucia, South Africa. *Mammalia* 44, 315-318.
19. Whitfield, A.K. 1980. A quantitative study of the trophic relationships within the fish community of the Mhlanga estuary, South Africa. *Estuarine and Coastal Marine Science* 10, 417-435.
20. Whitfield, A.K. 1980. Distribution of fishes in the Mhlanga estuary in relation to food resources. *South African Journal of Zoology* 15, 159-165.
21. Whitfield, A.K. 1980. Factors influencing the recruitment of juvenile fishes into the Mhlanga estuary. *South African Journal of Zoology* 15, 166-169.
22. Whitfield, A.K. 1980. Food chains in Lake St Lucia. In: *Studies on the Ecology of Maputaland* (ed. M.N. Bruton & K.H. Cooper), pp. 427-431. Rhodes University, Grahamstown and Wildlife Society, Durban.
23. Whitfield, A.K. 1980. A checklist of fish species recorded from Maputaland estuarine systems. In: *Studies on the Ecology of Maputaland* (ed. M.N. Bruton & K.H. Cooper), pp. 204-209. Rhodes University, Grahamstown and Wildlife Society, Durban.
24. Blaber, S.J.M., Cyrus D.P. & Whitfield, A.K. 1981. The influence of zooplankton food resources on the morphology of the estuarine clupeid *Gilchristella aestuarius* (Gilchrist, 1914). *Environmental Biology of Fishes* 6, 351-355.
25. Whitfield, A.K., Blaber, S.J.M. & Cyrus, D.P. 1981. Salinity ranges of some southern African fish species occurring in estuaries. *South African Journal of Zoology* 16, 151-155.
26. Whitfield, A.K. 1983. Factors influencing the utilization of southern African estuaries by fishes. *South African Journal of Science* 79, 362-365.
27. Whitfield, A.K. 1984. The effects of prolonged aquatic macrophyte senescence on the biology of the dominant fish species in a southern African coastal lake. *Estuarine, Coastal and Shelf Science* 18, 315-329.
28. Wallace, J.H., Kok, H.M., Beckley, L.E., Bennett, B., Blaber, S.J.M. & Whitfield, A.K. 1984. South African estuaries and their importance to fishes. *South African Journal of Science* 80, 203-207.
29. Whitfield, A.K. 1985. The role of zooplankton in the feeding ecology of fish fry from some southern African estuaries. *South African Journal of Zoology* 20, 166-171.
30. Whitfield, A.K. 1986. Fish community structure response to major habitat changes within the littoral zone of an estuarine coastal lake. *Environmental Biology of Fishes* 17, 41-51.
31. Whitfield, A.K. 1986. Predation by whitebreasted cormorants on fishes in a southern Cape estuarine system. *Ostrich* 57, 248-249.
32. Kok, H.M. & Whitfield, A.K. 1986. The influence of open and closed mouth phases on the marine fish fauna of the Swartvlei estuary. *South African Journal of Zoology* 21, 309-315.
33. Hall, C.M., Whitfield, A.K. & Allanson, B.R. 1987. Recruitment, diversity and the influence of constrictions on the distribution of fishes in the Wilderness lakes system, South Africa. *South African Journal of Zoology* 22, 163-169.
34. Whitfield, A.K. 1988. The role of tides in redistributing macrodetrital aggregates within the Swartvlei estuary. *Estuaries* 11, 152-159.
35. Whitfield, A.K. 1988. The Swartvlei estuary fish community and the influence of food availability on resource utilization. *Estuaries* 11, 160-170.

36. Neira, P., Beckley, L.E. & Whitfield, A.K. 1988. Larval development of the Cape silverside *Atherina breviceps* Cuv. & Val. 1875 (Teleostei, Atherinidae) from southern Africa. *South African Journal of Zoology* 23, 176-183.
37. Whitfield, A.K. 1989. Ichthyoplankton interchange in the mouth region of a southern African estuary. *Marine Ecology Progress Series* 54, 25-33.
38. Whitfield, A.K. 1989. Fish larval composition, abundance and seasonality in a southern African estuarine lake. *South African Journal of Zoology* 24, 217-224.
39. Whitfield, A.K. 1989. Ichthyoplankton in a southern African surf zone: nursery area for the postlarvae of estuarine associated fish species? *Estuarine, Coastal and Shelf Science* 29, 533-547.
40. Whitfield, A.K. 1989. The benthic invertebrate community of a southern Cape estuary: structure and possible food sources. *Transactions of the Royal Society of South Africa* 47, 159-179.
41. Read, G.H.L. & Whitfield, A.K. 1989. The response of *Grandidierella lignorum* (Barnard) (Crustacea: Amphipoda) to episodic flooding in three eastern Cape estuaries. *South African Journal of Zoology* 24, 99-105.
42. Skelton, P.H., Whitfield, A.K. & James, N.P.E. 1989. Distribution and diversity of Mkuze swamp fishes during a summer flood. *Southern African Journal of Aquatic Sciences* 15, 50-66.
43. Whitfield, A.K., Beckley, L.E., Bennett, B.A., Branch, G.M., Kok, H.M., Potter, I.C. & van der Elst, R.P. 1989. Composition, species richness and similarity of ichthyofaunas in eelgrass *Zostera capensis* beds of southern Africa. *South African Journal of Marine Science* 8, 251-259.
44. Whitfield, A.K. & Bruton, M.N. 1989. Some biological implications of reduced fresh water inflow into Eastern Cape estuaries: a preliminary assessment. *South African Journal of Science* 85, 691-695.
45. Potter, I.C., Beckley, L.E., Whitfield, A.K. & Lenanton, R.C.J. 1990. Comparisons between the role played by estuaries in the life cycles of fishes in temperate Western Australia and southern Africa. *Environmental Biology of Fishes* 28, 143-178.
46. Whitfield, A.K. 1990. Life-history styles of fishes in South African estuaries. *Environmental Biology of Fishes* 28, 295-308.
47. Harrison, T.D. & Whitfield, A.K. 1990. Composition, distribution and abundance of ichthyoplankton in the Sundays River estuary. *South African Journal of Zoology* 25, 161-168.
48. Whitfield, A.K. 1992. A characterization of southern African estuarine systems. *Southern African Journal of Aquatic Sciences* 18, 89-103.
49. Whitfield, A.K. & Kok, H.M. 1992. Recruitment of juvenile marine fishes into permanently open and seasonally open estuarine systems on the southern coast of South Africa. *Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology* No. 57, 1-39.
50. Weisser, P.J., Whitfield, A.K. & Hall, C.M. 1992. The recovery and dynamics of submerged aquatic macrophyte vegetation of the Wilderness lakes system, southern Cape. *Bothalia* 22, 283-288.
51. Haigh, E.H. & Whitfield, A.K. 1993. Larval development of *Gilchristella aestuaria* (Gilchrist, 1914) (Pisces: Clupeidae) from southern Africa. *South African Journal of Zoology* 28, 168-172.
52. Whitfield, A.K. 1993. Fish biomass estimates from the littoral zone of an estuarine coastal lake. *Estuaries* 16, 280-289.
53. Whitfield, A.K. 1994. Abundance of larval and 0+ juvenile marine fishes in the lower reaches of three southern African estuaries with differing freshwater inputs. *Marine Ecology Progress Series* 105, 257-267.

54. Whitfield, A.K. 1994. Fish species diversity in southern African estuarine systems: an evolutionary perspective. *Environmental Biology of Fishes* 40, 37-48.
55. Whitfield, A.K. 1994. An estuary-association classification for the fishes of southern Africa. *South African Journal of Science* 90, 411-417.
56. Whitfield, A.K. 1994. A review of ichthyofaunal biodiversity in southern African estuarine systems. In: *Biological Diversity of African Fresh- and Brackish Water Fishes* (ed. G.G. Teugels, J.F. Guégan & J.J. Albaret). *Annales du Musée Royal de l'Afrique Centrale, Tervuren, Belgique* 275, 149-163.
57. Whitfield, A.K., Paterson, A.W., Bok, A.H. & Kok, H.M. 1994. A comparison of the ichthyofaunas in two permanently open eastern Cape estuaries. *South African Journal of Zoology* 29, 175-185.
58. Whitfield, A.K. & Wooldridge, T.H. 1994. Changes in freshwater supplies to southern African estuaries: some theoretical and practical considerations. In: *Changes in Fluxes in Estuaries* (ed. K.R. Dyer & R.J. Orth), pp. 41-50. Olsen & Olsen, Fredensborg, Denmark.
59. Ter Morshuizen, L.D. & Whitfield, A.K. 1994. The distribution of littoral fishes associated with eelgrass (*Zostera capensis*) beds in a southern African estuary with a reversed salinity gradient. *South African Journal of Marine Science* 14, 95-105.
60. Whitfield, A.K. 1995. Mass mortalities of fish in South African estuaries. *Southern African Journal Aquatic Sciences* 21, 29-34.
61. Whitfield, A.K. 1995. Threatened fishes of the world: *Syngnathus watermeyeri* Smith, 1963 (Syngnathidae). *Environmental Biology of Fishes* 43, 152.
62. Whitfield, A.K. 1995. Threatened fishes of the world: *Hippocampus capensis* Boulenger, 1900 (Syngnathidae). *Environmental Biology of Fishes* 44, 362.
63. Whitfield, A.K. & Paterson, A.W. 1995. Flood-associated mass mortality of fishes in the Sundays estuary. *Water SA* 21(4), 385-389.
64. Harrison, T.D. & Whitfield, A.K. 1995. Fish community structure in three temporarily open/closed estuaries on the Natal coast. *Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology* 64, 1-80.
65. Whitfield, A.K. 1996. Fishes and the environmental status of South African estuaries. *Fisheries Management and Ecology* 3, 45-58.
66. Whitfield, A.K. 1996. Threatened fishes of the world: *Clinus spatulatus* Bennett, 1983 (Clinidae). *Environmental Biology of Fishes* 46, 26.
67. Whitfield, A.K. 1996. A review of estuarine ichthyology in South Africa over the past 50 years. *Transactions of the Royal Society of South Africa* 51, 79-89.
68. Whitfield, A.K. 1996. A review of factors influencing fish utilization of South African estuaries. *Transactions of the Royal Society of South Africa* 51, 115-137.
69. Whitfield, A.K. & Bruton, M.N. 1996. Extinction of the river pipefish *Syngnathus watermeyeri* in the Eastern Cape Province, South Africa. *South African Journal of Science* 92, 59-60.
70. Whitfield, A.K. & Harrison, T.D. 1996. *Gilchristella aestuaria* (Pisces: Clupeidae) biomass and consumption of zooplankton in the Sundays Estuary. *South African Journal of Marine Science* 17, 49-53.
71. Paterson, A.W. & Whitfield, A.K. 1996. The fishes associated with an intertidal salt marsh creek in the Kariega Estuary, South Africa. *Transactions of the Royal Society of South Africa* 51, 195-218.

72. Ter Morshuizen, L.D., Whitfield, A.K. & Paterson, A.W. 1996. Distribution patterns of fishes in an Eastern Cape estuary and river with particular emphasis on the ebb and flow region. *Transactions of the Royal Society of South Africa* 51, 257-280.
73. Ter Morshuizen, L.D., Whitfield, A.K. & Paterson, A.W. 1996. Influence of freshwater flow regime on fish assemblages in the Great Fish River and estuary. *Southern African Journal of Aquatic Sciences* 22, 52-61.
74. Whitfield, A.K. 1997. Fish conservation in South African estuaries. *Aquatic Conservation: Marine and Freshwater Ecosystems* 7, 1-11.
75. Paterson, A.W. & Whitfield, A.K. 1997. A stable carbon isotope study of the food-web in a freshwater-deprived South African estuary, with particular emphasis on the ichthyofauna. *Estuarine, Coastal and Shelf Science* 45, 705-715.
76. Whitfield, A.K. 1998. Biology and ecology of fishes in southern African estuaries. *Ichthyological Monographs of the J.L.B. Smith Institute of Ichthyology*, No. 2, 1-223.
77. Whitfield, A.K. & Bok, A.H. 1998. Estuarine fishes. In: *Field Guide to the Eastern and Southern Cape Coasts* (ed. R.A. Lubke & I.J. de Moor), pp. 205-215. University of Cape Town Press, Cape Town.
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79. Quinn, N.W., Breen, C.M., Hearne, J.W. & Whitfield, A.K. 1998. Decision support systems for environmental management: A case study on estuary management. *Orion* 14(2), 17-35.
80. Whitfield, A.K. 1999. Ichthyofaunal assemblages in estuaries: A South African case study. *Reviews in Fish Biology and Fisheries* 9(2), 151-186.
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82. Quinn, N.W., Breen, C.M., Whitfield, A.K. & Hearne, J.W. 1999. An index for the management of South African estuaries for juvenile fish recruitment from the marine environment. *Fisheries Management and Ecology* 6, 421-436.
83. Grange, N., Whitfield, A.K., de Villiers, C.J. & Allanson, B.R. 2000. The response of two South African east coast estuaries to altered river flow regimes. *Aquatic Conservation: Marine and Freshwater Ecosystems* 10, 155-177.
84. Maree, R.C., Whitfield, A.K. & Booth, A.J. 2000. Effect of water temperature on the biogeography of South African estuarine fish species associated with the subtropical/warm temperate subtraction zone. *South African Journal of Science* 96, 184-188.
85. Paterson, A.W. & Whitfield, A.K. 2000. The ichthyofauna associated with an intertidal creek and adjacent eelgrass beds in the Kariega Estuary, South Africa. *Environmental Biology of Fishes* 58, 145-156.
86. Paterson, A.W. & Whitfield, A.K. 2000. Do shallow-water habitats function as refugia for juvenile fishes? *Estuarine, Coastal and Shelf Science* 51, 359-364.
87. Strydom, N.A. & Whitfield, A.K. 2000. The effects of a single artificial freshwater release into the Kromme Estuary. 4: Larval fish response. *Water SA* 26, 319-328.

88. Bell, K.N.I., Cowley, P.D. & Whitfield, A.K. 2001. Seasonality in frequency of marine access to an intermittently open estuary: implications for recruitment strategies. *Estuarine, Coastal and Shelf Science* 52(3), 305-325.
89. Cowley, P.D. & Whitfield, A.K. 2001. Fish population size estimates from a small intermittently open estuary in South Africa, based on mark-recapture techniques. *Marine and Freshwater Research* 52, 283-290.
90. Cowley, P.D. & Whitfield, A.K. 2001. Ichthyofaunal characteristics of a typical temporarily open/closed estuary on the southeast coast of South Africa. *Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology* 71, 1-19.
91. Cowley, P.D., Whitfield, A.K. & Bell, K.N.I. 2001. The surf zone ichthyoplankton adjacent to an intermittently open estuary, with evidence of recruitment during marine overwash events. *Estuarine, Coastal and Shelf Science* 52(3), 339-348.
92. Vorwerk, P.D., Whitfield, A.K., Cowley, P.D. & Paterson, A.W. 2001. A survey of selected Eastern Cape estuaries with particular reference to the ichthyofauna. *Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology* 72, 1-52.
93. Adams, J.B., Bate, G.C., Harrison, T.D., Huizinga, P., Taljaard, S., van Niekerk, L., Plumstead, E.E., Whitfield, A.K. & Wooldridge, T.H. 2002. A method to assess the freshwater inflow requirements of estuaries and application to the Mtata Estuary, South Africa. *Estuaries* 25 (No. 6B), 1382-1393.
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95. Cowley, P.D. & Whitfield, A.K. 2002. Biomass and production estimates of a fish community in a small South African estuary. *Journal of Fish Biology* 61 (Supplement A), 74-89.
96. Strydom, N.A., Whitfield, A.K. & Paterson, A.W. 2002. The influence of altered freshwater flow regimes on larval and juvenile *Gilchristella aestuaria* (Pisces: Clupeidae) abundance in the upper reaches of two South African estuaries. *Marine and Freshwater Research* 53, 431-438.
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100. Strydom, N.A., Whitfield, A.K. & Wooldridge, T.H. 2003. The role of estuarine type in characterizing early stage fish assemblages in warm temperate estuaries, South Africa. *African Zoology* 38(1), 29-43.
101. Vorwerk, P.D., Whitfield, A.K., Cowley, P.D. & Paterson, A.W. 2003. The influence of selected environmental variables on fish assemblage structure in a range of southeast African estuaries. *Environmental Biology of Fishes* 66, 237-247.
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29(1), 61-67.

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(b) Popular Articles & Other Publications

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21. Paterson, A.W. & Whitfield, A.K. 1993. Fish population dynamics in three salt marsh creeks of the Kariega estuary, eastern Cape. 8th Southern African Marine Science Symposium, Saldanha Bay, Cape Province.
22. Whitfield, A.K. 1993. How dependent are southern African fishes on estuaries? 8th Southern African Marine Science Symposium, Saldanha Bay, Cape Province.
23. Whitfield, A.K. 1993. A preliminary assessment of the impact of reduced freshwater inflow into southern African estuaries. 8th Southern African Marine Science Symposium, Saldanha Bay, Cape Province.
24. Whitfield, A.K. 1993. How many estuarine dependent fish species are there in southern Africa? PARADI International Symposium, Dakar, Senegal.
25. Whitfield, A.K. 1993. Fish species diversity in southern African estuarine systems. PARADI International Symposium, Dakar, Senegal.
26. Whitfield, A.K. 1994. Factors influencing the abundance of juvenile marine fishes in three eastern Cape estuaries. Southern African Society of Aquatic Scientists Annual Conference, University of Port Elizabeth, Eastern Cape.

27. Paterson, A.W. & Whitfield, A.K. 1994. The population dynamics of fish in three salt marsh creeks and their adjacent eelgrass beds in the Kariega estuary, eastern Cape. Southern African Society of Aquatic Scientists Annual Conference, University of Port Elizabeth, Eastern Cape.
28. Whitfield, A.K. 1995. Are fish useful indicators of estuarine health? 25th Annual Symposium of the Estuarine and Coastal Sciences Association, University of Dublin, Ireland.
29. Whitfield, A.K. 1995. The first documented fish extinction in Africa this century. Joint Symposium of the Southern African Society of Aquatic Scientists and Zoological Society of Southern Africa, Rhodes University, Grahamstown.
30. Paterson, A.W. & Whitfield, A.K. 1995. The importance of salt marshes and eelgrass beds as food sources for components of the aquatic fauna in the Kariega estuary: a stable isotope approach. Joint Symposium of the Southern African Society of Aquatic Scientists and Zoological Society of Southern Africa, Rhodes University, Grahamstown.
31. Ter Morshuizen, L.D. & Whitfield, A.K. 1995. A survey of the fish assemblage at the head of the Great Fish River estuary. Joint Symposium of the Southern African Society of Aquatic Scientists and Zoological Society of Southern Africa, Rhodes University, Grahamstown.
32. Whitfield, A.K. 1996. Past perspectives and future challenges in ichthyological research within southern African estuaries. Southern African Marine Science Symposium, University of Cape Town, Rondebosch.
33. Paterson, A.W. & Whitfield, A.K. 1996. The use of stable carbon isotopes in establishing the importance of salt marshes and eelgrass beds as food sources for components of the aquatic fauna in a freshwater deprived estuary. Southern African Marine Science Symposium, University of Cape Town, Rondebosch.
34. Fijen, A.P.M., Bartels, A. & Whitfield, A.K. 1996. An estimate of virgin and future open mouth conditions of the Wilderness and Swartvlei estuaries. Joint Symposium of the Southern African Society of Aquatic Scientists, WISA and SAICE, Victoria Falls, Zimbabwe.
35. Whitfield, A.K. 1998. Factors influencing the utilization of southern African estuaries by fishes. 29th Annual Symposium of the Estuarine and Coastal Sciences Association, University of Port Elizabeth, South Africa.
36. Cowley, P.D. & Whitfield, A.K. 1998. Estimates of fish population sizes in a small South African estuary using mark-recapture techniques. 29th Annual Symposium of the Estuarine and Coastal Sciences Association, University of Port Elizabeth, South Africa.
37. Maree, R.C. & Whitfield, A.K. 1998. The effects of water temperature on the biogeography of estuarine fish associated with the subtropical/warm temperate subtraction zone. 29th Annual Symposium of the Estuarine and Coastal Sciences Association, University of Port Elizabeth, South Africa.
38. Paterson, A.W. & Whitfield, A.K. 1998. Fish utilization of salt marshes in a freshwater deprived southern African estuary. 29th Annual Symposium of the Estuarine and Coastal Sciences Association, University of Port Elizabeth, South Africa.
39. Whitfield, A.K. 1998. Utilization of southern African estuaries by fishes - an overview. African Fish and Fisheries Conference, Grahamstown.
40. Cowley, P.D. & Whitfield, A.K. 1998. Fish production estimates from a small temporarily closed estuary in South Africa. African Fish and Fisheries Conference, Grahamstown.
41. Maree, R.C. & Whitfield, A.K. 1998. Seawater temperatures and the biogeography of estuarine fishes associated with the subtropical/warm-temperate subtraction zone. African Fish and Fisheries Conference, Grahamstown.

42. Paterson, A.W. & Whitfield, A.K. 1998. Comparisons between the fish fauna of salt marsh and other aquatic habitats in the Kariega Estuary, South Africa. African Fish and Fisheries Conference, Grahamstown.
43. Whitfield, A.K. 1999. Possible use of fishes as indicators of biodiversity, environmental health and importance of estuaries. IRD/UNEP Biodiversity Workshop, Montpellier, France.
44. Strydom, N.A. & Whitfield, A.K. 1999. Larval fish response to a regulated freshwater release into the euhaline Kromme Estuary, South Africa. South African Marine Science Symposium, Wilderness.
45. Maree, R.C., Whitfield, A.K. & Quinn, N.W. 1999. Prioritization of South African estuaries based on their potential importance to estuarine-associated fish species. South African Marine Science Symposium, Wilderness.
46. Paterson, A.W., Whitfield, A.K. & Ter Morshuizen, L.D. 1999. The ichthyofauna associated with the upper reaches of a freshwater dominated and a freshwater deprived estuary in the Eastern Cape. South African Marine Science Symposium, Wilderness.
47. Vorwerk, P.D., Whitfield, A.K., Cowley, P.D. & Paterson, A.W. 1999. Ichthyofaunal assemblages in different types of Eastern Cape estuaries. South African Marine Science Symposium, Wilderness.
48. Schlacher, A.T., Paterson, A.W., Wooldridge, T.H. & Whitfield, A.K. 1999. Salinity gradients as covariates in the analysis of estuarine food webs. Australian Marine Sciences Association National Conference, Melbourne, Australia.
49. Schlacher, A.T., Wooldridge, T.H., Paterson, A.W. & Whitfield, A.K. 2000. Spatial scaling in the variability of estuarine trophic pathways. 31st Annual Symposium of the Estuarine and Coastal Sciences Association, Bilbao, Portugal.
50. Adams, J.B., Bate, G.C., Harrison, T.D., Huizinga, P., van Niekerk, L., Plumstead, E.E., Whitfield, A.K. & Wooldridge, T.H. 2001. A methodology to assess the freshwater inflow requirements of estuaries. Joint Estuarine Research Federation and Estuarine & Coastal Sciences Association Conference, St Petersburg, Florida, USA.
51. Whitfield, A.K. 2001. Fishes as possible indicators of aquatic biodiversity, environmental health and importance of estuaries - some South African experiences. 6th Indo-Pacific Fish Conference, Durban.
52. Cowley, P.D. & Whitfield, A.K. 2001. Population and production estimates of marine fish species from a small South African estuary. 6th Indo-Pacific Fish Conference, Durban.
53. Klopper, A.W., Whitfield, A.K. & Bloomer, P. 2001. Genetic stock assessment of an exploited estuarine dependent marine fish species. Southern African Society of Aquatic Scientists Conference, Avontura Eiland.
54. Strydom, N.A. & Whitfield, A.K. 2001. Larval fish in Eastern Cape estuaries with altered freshwater flow regimes: some new perspectives. 6th Indo-Pacific Fish Conference, Durban.
55. Whitfield, A.K. & Elliott, M. 2002. Fishes as indicators of environmental and ecological changes within estuaries – a review of progress and some suggestions for the future. Estuarine and Lagoon Fish and Fisheries International Symposium, Hull, UK.
56. Cowley, P.D. & Whitfield, A.K. 2002. Biomass and production estimates of a fish community in a small South African estuary. Estuarine and Lagoon Fish and Fisheries International Symposium, Hull, UK.
57. Harrison, T.D. & Whitfield, A.K. 2002. A fish index to assess the state of South Africa's estuaries.

58. Adams, J.B., Bate, G.C., Huizinga, P., Taljaard, S., Turpie, J., van Niekerk, L., Whitfield, A.K. & Wooldridge, T.H. 2002. Development of reserve methodology for estuaries: the Nahoon Estuary as a case study. Environmental Flows Conference, Cape Town.
59. Harrison, T.D. & Whitfield, A.K. 2003. A multi-metric fish index for assessing the 'health' of South African estuaries. Joint Congress of the Zoological Society of Southern Africa and Southern African Society of Aquatic Scientists, Cape Town.
60. Harrison, T.D. & Whitfield, A.K. 2003. Monitoring the recovery of the Sezela Estuary using a multi-metric fish index. 3rd International Conference on African Fish and Fisheries, Cotonou, Benin.
61. Klopper, A.W., Whitfield, A.K. & Bloomer, P. 2003. Population genetic structure within two exploited estuarine dependent marine fish species. Joint Congress of the Zoological Society of Southern Africa and Southern African Society of Aquatic Scientists, Cape Town.
62. Mbande, S., Froneman, W. & Whitfield, A. 2003. A preliminary assessment of the primary carbon sources utilized by fishes in the Mngazi and Mngazana estuaries. Joint Congress of the Zoological Society of Southern Africa and Southern African Society of Aquatic Scientists, Cape Town.
63. Whitfield, A.K. 2003. A preliminary documentation of fish diversity in African estuaries. 3rd International Conference on African Fish and Fisheries, Cotonou, Benin.
64. Harrison, T.D. & Whitfield, A.K. 2004. Fish assemblages and the interpretation of environmental conditions in South African estuaries. ECSA 37 – ERF 2004 International Conference on Estuaries and Change, New South Wales, Australia.
65. Whitfield, A.K. 2004. Fish and freshwater in southern African estuaries. Invited Keynote Address: National Symposium on Ecosystem Research and Management of Fisheries, Adelaide, South Australia.
66. Whitfield, A.K. & Harrison, T.D. 2004. Can knowledge of fish assemblages assist with the monitoring of environmental change in estuaries? Australian Society for Fish Biology Annual Conference, Adelaide, South Australia.
67. James, N.C., Cowley, P.D., Whitfield, A.K., Kaiser, H & Strydom, N.A. 2005. Attraction of post-flexion *Rhabdosargus holubi* larvae to estuarine and freshwater in a choice chamber. 12th Southern African Marine Science Symposium, Durban.
68. James, N.C., Whitfield, A.K. & Cowley, P.D., 2005. A long-term study of the fish community of the East Kleinemonde Estuary: Evidence for global warming? 12th Southern African Marine Science Symposium, Durban.
69. Klopper, A.W., Whitfield, A.K. & Bloomer, P. 2005. *Argyrosomus japonicus* and *Pomadourus commersonii* – What are the genes telling us about their populations. 12th Southern African Marine Science Symposium, Durban.
70. Mbande, S., Whitfield, A.K. & Cowley, P.D. 2005. Fish community structures within the Mngazi and Mngazana estuaries: a comparative study. 12th Southern African Marine Science Symposium, Durban.
71. Richardson, N., Whitfield, A.K. & Paterson, A.W. 2005. The influence of selected environmental parameters on the distribution of the dominant benthic fishes in the Kariega Estuary channel, South Africa. 12th Southern African Marine Science Symposium, Durban.
72. Whitfield, A.K., Taylor, R.H. & Fox, C. 2005. Fish, freshwater and the future of the St Lucia system. 12th Southern African Marine Science Symposium, Durban.

73. Whitfield, A.K. 2007. Fishes, freshwater and a tale of two estuaries. 21st Annual Meeting of the Society for Conservation Biology, Port Elizabeth.
74. James, N.C., Cowley, P.D. & Whitfield, A.K. 2008. Abundance, recruitment and residency of two sparid fishes in an intermittently open estuary in South Africa. South African Marine Science Symposium, Cape Town.
75. James, N.C., Cowley, P.D. & Whitfield, A.K. 2008. The value of long-term monitoring for estuarine management. Southern African Wildlife Management Association Symposium, Mpekwini.
76. Richardson, N. & Whitfield, A.K. 2008. Fish biomarkers and community health indices – some preliminary insights from selected South African estuaries. MUGIL Workshop 6, Athens, Greece.
77. Whitfield, A.K. 2008. A tale of two lakes. Amy Jacot-Guillarmod Memorial Lecture, Grahamstown.
78. Whitfield, A.K., Adams, J.B., Bate, G.C., Bezuidenhout, K., Bornman, T.G., Cowley, P.D., Froneman, P.W., Gama, P.T., James, N.C., Mackenzie, B., Riddin, T., Snow, G.C., Strydom, N.A., Taljaard, S., Terörde, A.I., Theron, A.K., Turpie, J.K., van Niekerk, L., Vorwerk, P.D. & Wooldridge, T.H. 2008. A multidisciplinary study of a small, intermittently open South African estuary, with particular emphasis on the influence of mouth state on the ecology of the system. South African Marine Science Symposium, Cape Town.
79. Cowley, P.D., Whitfield, A.K. & James, N.C. 2009. Invited presentation: Ecology of temporarily open/closed estuaries in South Africa, with particular emphasis on the ichthyofauna. Coastal and Estuarine Research Federation Conference, Portland, USA.
80. Paterson, A.W. & Whitfield, A.K. 2009. Fish zonation and trophic functioning in warm temperate South African salt marshes. Coastal and Estuarine Research Federation Conference, Portland, USA.
81. Whitfield, A.K. & Taylor, R.H. 2009. Lake St Lucia – World Heritage Site in urgent need of environmental water delivery. International Conference on Implementing Environmental Water Allocations, Port Elizabeth.
82. Whitfield, A.K. 2009. Science and surprises in African estuaries. Invited keynote address: Zoological Society of Southern Africa Annual Conference, Illovo Beach, KwaZulu-Natal.
83. Whitfield, A.K. & Elliott, M. 2009. Classification and characterization of estuaries and transitional waters – are the waters becoming any clearer? 10th International Congress of the International Association for Ecology (INTECOL), Brisbane, Australia.
84. Whitfield, A.K. & Taylor, R.H. 2009. Lake St Lucia – Estuarine World Heritage Site at the crossroads. Coastal and Estuarine Research Federation Conference, Portland, USA.
85. Elliott, M., Basset, A., Blaber, S., West, R. & Whitfield, A. 2010. Paradigms in estuarine ecology – the Remane diagram revisited. 47th International Conference of the Estuarine & Coastal Sciences Association, Figueira da Foz, Portugal.
86. Becker, A., Cowley, P.D., Whitfield, A.K., Järnegren, J. & Næsje, T.F. 2011. Use of a dual frequency identification sonar (DIDSON) to examine the size structure and distribution of fish within a small closed estuary. 14th South African Marine Science Symposium and 49th Estuarine and Coastal Sciences Association Conference, Grahamstown, South Africa.
87. Becker, A., Cowley, P.D., Whitfield, A.K., Järnegren, J. & Næsje, T.F. 2011. Observations of fine scale diel movements of fish onto a shallow littoral flood zone within a closed South African estuary using a dual frequency identification sonar (DIDSON). Annual International Conference of the Fisheries Society of the British Isles, Bournemouth, UK.

88. Coppinger, C., Becker, A. & Whitfield, A. 2011. Ichthyofaunal abundance, composition and behaviour associated with sand and seagrass habitats within the Bushmans Estuary, Eastern Cape Province, South Africa. 7th WIOMSA Symposium, Mombasa, Kenya.
89. Lamberth, S.J., James, N.C., van Niekerk, L. & Whitfield, A.K. 2011. The effects of climate change on fish and fisheries in the cool/warm temperate and warm temperate/subtropical biogeographical region transition zones. 17th Conference of the Parties to the United Nations Framework Convention on Climate Change, Durban.
90. Midgley, C., James, N.C., Whitfield, A.K. & Lamberth, S.J. 2011. Possible climate-related changes in the estuarine fish assemblages in the Mbashe and Mbhanyana Estuaries. 14th South African Marine Science Symposium and 49th Estuarine and Coastal Sciences Association Conference, Grahamstown, South Africa.
91. Sheppard, J., Whitfield, A., Cowley, P., Hill, J. 2011. Stable carbon isotopes and the possible role of aquatic macrophytes in the diet of estuary-associated fish species. 14th South African Marine Science Symposium and 49th Estuarine and Coastal Sciences Association Conference, Grahamstown, South Africa.
92. Whitfield, A.K. & Cowley, P.D. 2011. Conservation of fishes in South African estuaries at a crossroad. 14th South African Marine Science Symposium and 49th Estuarine and Coastal Sciences Association Conference, Grahamstown, South Africa.
93. Whitfield, A.K. & Cowley, P.D. 2011. Diversity and conservation of fishes in South African estuaries. Annual International Conference of the Fisheries Society of the British Isles, Bournemouth, UK.
94. Lamberth, S.J., James, N.C., van Niekerk, L. & Whitfield, A.K. 2012. The effects of climate change on fish and fisheries in the cool/warm temperate and warm temperate/ subtropical biogeographical transition zones. Southern African Society of Aquatic Scientists Conference, Cape St Francis, Eastern Cape Province.
95. Whitfield, A.K. 2012. Conservation and connectivity of the globally distributed flathead mullet *Mugil cephalus* Linnaeus 1758. Invited keynote paper: Southern African Society of Aquatic Scientists Conference, Cape St Francis, Eastern Cape Province.
96. Carassou, L., Whitfield, A.K. & Richoux, N.B. 2013. Contribution of the Cape stumpnose (*Rhabdosargus holubi*, Sparidae) to trophic connectivity between adjacent aquatic habitats in the Eastern Cape Province, South Africa. 48th Annual European Marine Biology Symposium, Galway, Ireland.
97. Whitfield, A.K. 2013. Flexibility and diversity of estuary-associated fishes under extreme salinity regimes. Invited presentation at the 9th Indo-Pacific Fish Conference, Okinawa, Japan.
98. Grant, G.N., Cowley, P.D. & Whitfield, A.K. 2014. Movement patterns of Cape stumpnose, *Rhabdosargus holubi*, in the Kowie Estuary. 15th South African Marine Science Symposium, Stellenbosch.
99. Ortega-Cisneros, K., Scharler, U.M. & Whitfield, A.K. 2014. Comparative analysis of carbon and nitrogen dynamics of three estuaries on the east coast of South Africa using ecological network analysis. 15th South African Marine Science Symposium, Stellenbosch.
100. Whitfield, A.K. 2014. Is the sun rising or setting on science in South African estuaries? 15th South African Marine Science Symposium, Stellenbosch.
101. Whitfield, A.K. 2015. Why the conservation of estuarine environments are vital to coastal fisheries in the Indian Ocean. Invited keynote address: 2nd International Conference of Fisheries, Aquaculture and Environment in the Indian Ocean, Muscat, Oman.
102. Whitfield, A.K. 2015. Impediments and imperatives around fish conservation in South African

estuaries. Invited keynote address: Southern African Society of Aquatic Scientists Annual Conference, Drakensberg, KwaZulu-Natal.

103. Pollard, M., Hodgson, A.N. & Whitfield, A.K. 2015. Does underwater video monitoring provide an accurate account of large mobile fish species in estuarine eelgrass environments? Zoological Society of Southern African Annual Conference, Grahamstown.
104. Magoro, M., Whitfield, A.K., Carassou, L., Murray, T.S. & Cowley, P.D. 2016. The impact of introduced largemouth bass *Micropterus salmoides* on indigenous estuary-associated fish in the lower Kowie River, South Africa. Southern African Society of Aquatic Scientists Annual Conference, Skukuza, Mpumalanga.
105. Mbandzi, N., Whitfield, A.K. & Wasserman, R.J. 2016. The feeding ecology of *Gilchristella aestuaria* and *Atherina breviceps*, with emphasis on potential competition in the Kariega Estuary, South Africa. Southern African Society of Aquatic Scientists Annual Conference, Skukuza, Mpumalanga.
106. Whitfield, A.K., Elliott, M., Mander, L., Mazik, K., Simenstad, C., Valesini, F. & Wolanski, E. 2016. Ecoengineering successes and failures in estuaries – Have we learnt any management lessons? Southern African Society of Aquatic Scientists Annual Conference, Skukuza, Mpumalanga.
107. James, N.C., Cowley, P.D. & Whitfield, A.K. 2016. Revisiting the East Kleinemonde Estuary marine fish community after 20 years of monitoring. International Long-term Ecological Research Network Conference, Skukuza, Mpumalanga.
108. Whitfield, A.K. 2016. The role of pioneers as indicators of biogeographic range expansion caused by global change in southern African coastal waters. Global Change Conference, Durban.
109. James, N.C., Nodo, P., Harrison, T.D., Lamberth, S.J. & Whitfield, A.K. 2016. Effects of flood events on estuarine fish communities. Global Change Conference, Durban.
110. Carassou, L., Magoro, M.L., Whitfield, A.K. & Richoux, N. 2017. Impact of an introduced predator (*Micropterus salmoides*, Centrarchidae) on native estuarine fish elucidated through fatty acid analyses. European Marine Biology Symposium, Piran, Slovenia.
111. Dalu, T., Magoro, M. & Whitfield, A. 2017. Diversity and distribution of phytoplankton communities across micro-estuaries and micro-outlets along a section of the Austral temperate South African coast. South African Marine Science Symposium, Port Elizabeth.
112. Human, L., Magoro, M., Dalu, T., Perissinotto, R., Whitfield, A. & Adams J. 2017. Natural eutrophication in pristine micro-estuaries and micro-outlets along a section of the South African coast. South African Marine Science Symposium, Port Elizabeth.
113. James, N., Nodo, P., Childs, A., Whitfield, A. & Lamberth, S. 2017. Effects of flood events on estuarine fish communities. South African Marine Science Symposium, Port Elizabeth.
114. Magoro, M.L., Whitfield, A.K., Perissinotto, R. & Wooldridge, T.H. 2017. Invertebrate and ichthyofaunal communities in selected micro-estuaries and micro-outlets of the Eastern Cape Province. South African Marine Science Symposium, Port Elizabeth.
115. Mbandzi, N., Wasserman R.J., Deyzel, S.H.P., Vine, N. & Whitfield, A.K. 2017. Possible links between river flow, zooplankton dynamics and dominant zooplanktivorous fish species in a warm-temperate estuary. South African Marine Science Symposium, Port Elizabeth.
116. Whitfield, A.K. 2017. Estuarine Ecohydrology and Ecoengineering – Vital steps in support of a Blue Economy. South African Marine Science Symposium, Port Elizabeth.
117. Magoro, M.L., Whitfield, A.K. & Perissinotto, R. 2018. Characterisation of micro-estuaries and micro-

outlets in the Eastern Cape Province. Southern African Society of Aquatic Scientists Annual Conference, St Francis Bay, Eastern Cape.

118. Wasserman, R.J., Whitfield, A.K., Deyzel, S.H.P., James, N.C. & Hugo, S. 2018. Role of eelgrass (*Zostera capensis*) availability in determining size-structured abundance of Cape stumprnose (*Rhabdosargus holubi*) at the Kariega Estuary. Southern African Society of Aquatic Scientists Annual Conference, St Francis Bay, Eastern Cape.
119. Whitfield, A.K., Weerts, S.P. & Weyl, O.L.F. 2018. Fishes in South African estuarine and coastal lakes – from the Holocene to the Anthropocene. Southern African Society of Aquatic Scientists Annual Conference, St Francis Bay, Eastern Cape.
120. Whitfield, A.K. 2018. Estuarine and Coastal Ecology: Changing climates and connectivity in the Anthropocene. Invited keynote address: Estuarine and Coastal Sciences Association Conference, Perth, Australia.

SEMINAR AND WORKSHOP PRESENTATIONS

1. Whitfield, A.K. 2003. Fish diversity in sub-Saharan African estuaries – a preliminary analysis. Invited keynote presentation: Marine Biodiversity in Africa Workshop, Cape Town.
2. Whitfield, A.K. & Harrison, T.D. 2003. A new fish index for assessing the state of South African estuaries. SAIAB/DIFS Research Seminar Series, Grahamstown.
3. Whitfield, A.K. 2004. River flow - the primary driver for fishes in estuaries? SAIAB/DIFS Research Seminar, Grahamstown.
4. Whitfield, A.K. 2004. Using fish assemblages as an indicator of estuarine 'health'. Rhodes University Zoology Department Seminar Series, Grahamstown.
5. Whitfield, A.K. 2004. If fishes could talk, what would they tell us about environmental conditions in estuaries? Research Seminar, Murdoch University, Western Australia.
6. Whitfield, A.K. 2006. Past and present mugilid research in South Africa. MUGIL Seminar 1, Dakar, Senegal.
7. James, N.C., Whitfield, A.K. & Cowley, P.D. 2006. A long-term study of the fish community of the East Kleinemonde Estuary, South Africa, with implications for global warming. SAEON Summit, Centurion, Gauteng.
8. Whitfield, A.K., Mbande, S. & Cowley, P.D. 2006. Global warming and fish signals from the Mngazana Estuary. SAEON Summit, Centurion, Gauteng.
9. Whitfield, A.K. 2005. Fish and freshwater – Lessons from St Lucia. SAIAB/DIFS Research Seminar, Grahamstown.
10. Whitfield, A.K. 2005. Fishes of the Kromme Estuary. Presentation at the Kromme Estuary RDM Workshop, Port Elizabeth.
11. Whitfield, A.K. 2007. Historical movements and migrations of *Mugil cephalus* in the St Lucia Lake system, South Africa. MUGIL Workshop 3, Montpellier, France.
12. Whitfield, A.K. 2009. *Mugil cephalus* in the St Lucia system – past, present and future. MUGIL Seminar, Taipei, Taiwan.

13. James, N.C., Cowley, P.D. & Whitfield, A.K. 2010. Using a long-term monitoring dataset to determine trends in abundance, recruitment and residency of two sparid fishes in South African estuary. SAEON Summit, Cape Town, South Africa.
14. James, N.C., Whitfield, A.K. & Cowley, P.D. 2009. Extension of the distributional range of coastal fish species along the East Coast of South Africa: an effect of climate change? International Workshop of Experts on Global Environmental Change in sub-Saharan Africa, Pretoria.
15. Whitfield, A.K. 2011. Building a research pyramid around estuarine fishes and looking into the future using new technologies. Science for the 21st Century, Science Faculty Seminar Series, Rhodes University, Grahamstown.
16. Whitfield, A.K. 2011. Estuaries – ecosystems or simply catchment conduits? Water Circle Seminar to the Catchment Research Group, Rhodes University, Grahamstown.
17. Bate, G., Whitfield, A. & Taylor, R. 2010. The CERM Mfolozi-Msunduzi Estuary indaba. Ezemvelo KwaZulu-Natal Wildlife Conservation Conference, Pietermaritzburg.
18. Whitfield, A.K. 2012. Past, present and future fish research in South African estuaries. Seminar presented in the Zoology Department, Fort Hare University, Alice.
19. Elliott, M. & Whitfield, A.K. 2013. Challenges of estuarine management - is the science fit for purpose? ECSA Symposium on “Problems of small estuaries”, Swansea, UK.
20. Whitfield, A.K. 2013. Salinity extremes – a driving force in estuarine fish species composition and diversity. Seminar Presentation, Department of Zoology & Entomology, Rhodes University, Grahamstown.
21. Whitfield, A.K. 2014. Estuarine fish bio-assessments and research. Workshop dialogue titled: Fish bioassessments of inland waters in South Africa, WRC, Pretoria
22. Whitfield, A.K. 2016. Pioneers and propagules as indicators of global change in South African waters. Invited keynote presentation at a CMR Global Change Workshop, Port Elizabeth.
23. Whitfield, A.K. 2017. Micro-estuaries and Micro-inlets. Workshop on Science, Policy and Management for Estuaries, Port Elizabeth.

PUBLIC PRESENTATIONS

- 1 Strydom, N.A. & Whitfield, A.K. 2002. Baby fish, so what! Sasol SciFest, Grahamstown.
- 2 Whitfield, A.K. 2002. Are we strangling our estuaries? Sasol SciFest, Grahamstown.
- 3 Whitfield, A.K. 2003-2018 Exploring Eastern Cape estuaries. Sasol SciFest, Grahamstown.
- 4 Whitfield, A.K. & Mwale, M. 2007. Unique research and employment opportunities in marine and coastal science in South Africa. SAASTA/MRC, Grahamstown.
- 5 Whitfield, A.K. 2011. Fish research in South African estuaries – a century down the line. Gilchrist Memorial Lecture, uShaka Marine World, Durban.
- 6 Whitfield, A.K. 2011. Fish research in South African estuaries – past, present, future. Royal Society of South Africa Lecture, Nelson Mandela Metropolitan University, Port Elizabeth.
- 7 Whitfield, A.K. 2016. Can conservation of Eastern Cape estuaries counteract collapsed coastal fisheries? Sustainable Seas Trust Public Lecture, Kenton-on-Sea, Eastern Cape.

- 8 Whitfield, A.K. 2017. A tale of two pipefishes. Sustainable Seas Trust Public Lecture, Kenton-on-Sea, Eastern Cape.

POSTGRADUATE STUDENTS (1990-2018)

Details of MSc and PhD students who have obtained their degrees under my supervision or co-supervision since 1990 include the following:

- Harrison, T.D. (MSc part-time) 1992-1993. Thesis title: Ecology of the ichthyofauna in three temporarily open/closed estuaries on the Natal coast. Awarded degree by Rhodes University in 1994.
- Ter Morshuizen, L.D. (MSc part-time) 1995-1996. Thesis title: Distribution patterns of fishes in the head region of a turbid Eastern Cape estuary. Awarded degree by Rhodes University in 1996.
- Paterson, A.W. (PhD full-time) 1992-1998. Thesis title: Aspects of the ecology of fishes associated with salt marshes and adjacent habitats in a temperate South African estuary. Awarded degree by Rhodes University in 1999.
- Cowley, P.D. (PhD full-time) 1994-1998. Thesis title: Fish population dynamics in a temporarily open/closed South African estuary. Awarded degree by Rhodes University in 1999.
- Vorwerk, P.D. (MSc full-time) 1999-2000. Thesis title: Ichthyofaunal community structures in different types of Eastern Cape estuaries. Awarded degree (*cum laude*) by Rhodes University in 2001.
- Strydom, N.A. (PhD full-time) 1998-2001. Thesis title: Dynamics of early stage fishes associated with selected warm temperate estuaries of South Africa. Awarded degree by Rhodes University in 2002.
- Harrison, T.D. (PhD part-time) 1999-2003. Thesis title: Biogeography and community structure of fishes in South African estuaries. Awarded degree by Rhodes University in 2003.
- Mbande, S. (MSc full-time) 2001-2004. Thesis title: Fishes of the Mngazi and Mngazana estuaries, with particular emphasis on the community structure and primary carbon sources. Awarded degree by Rhodes University in 2004.
- Klopper, A. (MSc part-time) 2001-2005. Thesis title: Intraspecific genetic variation in the percoid teleosts *Argyrosomus japonicus* (Temminck & Schlegel, 1843) and *Pomadasys commersonnii* (Lacepède, 1801), as inferred from the mitochondrial control region. Awarded degree by Pretoria University in 2005.
- James, N.C. (PhD full-time) 2004-2007. Thesis title: Trends in fish community structure and recruitment in a temporarily open/closed South African estuary. Awarded degree by Rhodes University in 2007.
- Richardson, N. (MSc full-time) 2005-2008. Thesis title: A preliminary investigation into the use of biomarkers and a fish community index to assess estuarine health in selected Eastern Cape estuaries. Awarded degree by Rhodes University in 2008.
- Sheppard, J.N. (MSc full-time) 2008-2010. Thesis title: Structure and functioning of fish assemblages in two South African estuaries, with emphasis on the presence and absence of aquatic macrophyte beds. Awarded degree (*cum laude*) by Rhodes University in 2010.
- Ortega-Cisneros, K. (PhD full-time) 2010-2013. Ecosystem functioning of selected permanently open and temporarily open/closed estuaries on the east coast of South Africa. Awarded degree by the University of KwaZulu-Natal in 2014.
- Midgley, C. (MSc full-time) 2010-2013. Estuarine fish assemblages in the subtropical/warm-temperate and warm-temperate/cool-temperate transition-zones of South Africa. Awarded degree by Rhodes University in 2014.
- Masefield, V. (MSc full-time) 2011-2013. Integration of catchment development information and estuarine health using GIS. Awarded degree by Rhodes University in 2014.
- Magoro, M.L. (MSc full-time) 2012-2013. Predation by alien largemouth bass on indigenous marine fish species in the Kowie River. Awarded degree by Rhodes University in 2014.
- Grant, G. (MSc full-time) 2014-2015. Movement patterns of Cape stumpnose, *Rhabdosargus holubi* (Sparidae), in the Kowie Estuary, South Africa. Awarded degree by Rhodes University in 2016.
- Pollard, M. (MSc full-time) 2014-2017: Occurrence of mugilid and sparid fishes in eelgrass and bare sediment habitats from the Knysna Estuary. Awarded degree by Rhodes University in 2017.
- Mbandzi, N. (MSc full-time) 2015-2016. The importance of river flow to the ecology of two zooplanktivorous fish species in the Kariega Estuary, Eastern Cape, South Africa. Awarded degree by Fort Hare University in 2017.

Details of PhD research students currently working under my supervision include the following:

- Weerts, S. (PhD part-time) 2005-2018. Fish recruitment and the connectivity of selected estuarine systems in KwaZulu-Natal. Prof D. Cyrus is a co-supervisor of this study.
- Mackay, F. (PhD part-time) 2005-2018. The ecology of benthic invertebrate communities in KwaZulu-Natal estuaries. Prof D. Cyrus is a co-supervisor of this study.
- Magoro, M.L. (PhD full-time) 2015-2018. Fish assemblages of Eastern Cape micro-estuaries and micro-outlets. Prof R. Perissinotto is a co-supervisor of this study.

Details of Post-doc researchers working in collaboration with me include the following:

- Becker, A. (post-PhD) 2009-2011. Use of underwater video and DIDSON techniques to investigate the abundance, size composition, movements and behaviour of fishes in the East Kleinemonde and Bushmans estuaries. Dr P. Cowley was a co-supervisor of these studies.
- Carassou, L. (post-PhD) 2012-2013. Investigate aquatic ecosystem connectivity using stable isotope and fatty acid analyses on selected fish species in the Kowie system. Dr N. Richoux was a co-supervisor of these studies.
- Wasserman, R. (post-PhD) 2015-2016. Microhabitat use by 0+ juvenile sparids in the Kariega Estuary, with particular emphasis on eelgrass beds. Prof A. Whitfield was a collaborator on this study.