Dr Trevor J. Willis July 2018

Institute of Marine Sciences School of Biological Sciences University of Portsmouth Ferry Road, Eastney Portsmouth PO4 9LY United Kingdom

Nationality:

New Zealander/Italian (dual)

Languages: English, Italian

Current position:

Senior Lecturer in Marine Biology, University of Portsmouth, UK

(Apr 2012-)

Previous positions:

Senior Scientist (Marine Ecology and Fisheries), National Institute of

Water and Atmospheric Research, Nelson, New Zealand (Jan 2007-

Apr 2012)

Research Fellow, Centro Interdipartimentale di Ricerca per le Scienze Ambientali in Ravenna (CIRSA), University of Bologna, Italy (Feb

2003 - Dec 2006)

Post-doctoral fellow, Department of Statistics, University of

Auckland, New Zealand (Jan 2001 - Jan 2003)

Education:

- 2001 Ph.D. Marine reserve effects on snapper (*Pagrus auratus*: Sparidae) in northern New Zealand. University of Auckland. 222 p.
- 1994 M.Sc. (Hons) The ecology and reproductive biology of *Ericentrus rubrus* (Clinidae), with an assessment of rockpool fish community structure. Victoria University of Wellington. 159 p.
- 1990 B.Sc. (Zoology) Victoria University of Wellington.

Other qualifications:

- 2007 Certificate of Competence, Occupational Diver (Scientific) No. 07148, New Zealand Department of Labour (renewed Aug 2012)
- 2002 SSI Speciality Diver Stress and Rescue (SSI #6082180)
- 1998 Occupational Divers Certificate of Competence Research Diver (Occupational Safety and Health Service (OSH), New Zealand Department of Labour)
- 1994 Restricted Radio Operators Certificate (Number AK25088 NZ Ministry of Commerce, Communications Division)
- 1994 N.Z. Coastguard Day Skipper Certificate
- 1989 NAUI Openwater SCUBA diver (NAUI Reg. AUQ44799)



Professional affiliations

Member New Zealand Marine Sciences Society (1991-), NZMSS Council member (2001-02)

Member New Zealand Ecological Society (1991-2004)

Contributor to Snapper Research Planning and Working Groups, New Zealand Ministry of Fisheries (1998-2000)

Member of Marine Ecology Progress Series review staff as "Anonymous referee" (2002-)

Member of the Fisheries Society of the British Isles (2003-2007, 2015-)

Associate Editor, Environmental Conservation (2006-), Acting Editor-in-chief (Jul-Aug 2010)

Member of Southern Inshore Working Group, NZ Ministry of Fisheries (2010-12)

Associate Editor Frontiers in Marine Science (2014-)

Visiting Researcher, National Research Council of Italy (2012-)

Member of the British Ecological Society (2015-)

Carnegie Trust Reviewer (2015)

British Council, Newton Fund Review Panel (2015-)

British Ecological Society, Peer Review College (2017-)

Journal publications

- 46. Van der Zee M, SJ Handley & TJ Willis (in prep) Does intraspecific aggression affect density estimates of fishes from baited underwater video?
- 45. Williams J, G Mills, RAR McGill & TJ Willis (in prep) The effect of lipid and urea extraction on stable isotope ratios from four shark tissue types.
- 44. Orejas C, WE Arntz, F Badalamenti, L Bramanti, C Cerrano, F Costantini, G Galli, A Gori, M Gristina, G Ingrosso, E Isla, S Piraino, M Ponti, A Ramsak, L Rizzo, G Santangelo, EA Serrão, D Stanković, RH. Thurstan, X Turon, TJ Willis, S Rossi (in prep) Who cares about animal forests?
- 43. Willis TJ, MJ Anderson, S Meek, RB Taylor (submitted) High temperature-driven variability but consistent marine reserve effects in a temperate reef fish assemblage
- 42. Dornelas M, LH Antão, F Moyes, AE Magurran ... TJ Willis, S Wipf, KD Woods, E Woehler & ML Zettler (2018) BioTIME: a database of biodiversity time series for the Anthropocene. *Global Ecology and Biogeography* 27: 760-786.
- 41. Willis TJ, KTL Berglöf, RAR McGill, L Musco, S Piraino, CM Rumsey, T Vega Fernández & F Badalamenti (2017) Kleptopredation: a mechanism to facilitate planktivory in a benthic mollusc. *Biology Letters* 13: 20170447.
- 40. Jaffry S, H Glenn, Y Ghulam, TJ Willis & C Delanbanque (2016) Are expectations being met? Consumer preferences and rewards for sustainably certified fisheries. *Marine Policy* 73: 77-91.
- 39. Soler GA, GJ Edgar RJ Thomson, SJ Kininmonth, SJ Campbell, TP Dawson, NS Barrett, ATF Bernard, DE Galván, TJ Willis, TJ Alexander & RD Stuart-Smith (2015) Reef fish at all trophic levels respond positively to effective marine protected areas. PLOS One 4: e0140270.
- 38. Stuart-Smith RD, AE Bates, JS Lefcheck, JE Duffy, SC Baker, RJ Thomson, JF Stuart-Smith, NA Hill, SJ Kininmonth, L Airoldi, MA Becerro, SJ Campbell, TP Dawson, SA Navarrete, GA Soler, EMA Strain, TJ Willis & GJ Edgar (2015) The potential of trait-based approaches to contribute to marine conservation. *Marine Policy* 51: 148-150.
- 37. Page MJ, TJ Willis & SJ Handley (2014) The colonial ascidian fauna of Fiordland, New Zealand, with a description of two new species. *Journal of Natural History* 48: 1653-1688.
- 36. Smith ANH, MJ Anderson, RB Millar & TJ Willis (2014) Effects of marine reserves in the context of spatial and temporal variation: an analysis using Bayesian mixed models. *Marine Ecology*

AN)

- Progress Series 499: 203-216.
- 35. Edgar GJ, RD Stuart-Smith, **TJ Willis**, SJ Kininmonth, SC Baker, S Banks, NS Barrett, MA Beccero, ATF Bernard, J Berkout, CD Buxton, SJ Campbell, AT Cooper, M Davey, SC Edgar, G Försterra, DE Galván, AJ Irigoyen, DJ Kushner, R Moura, PE Parnell, NT Shears, GA Soler, EMA Strain & RJ Thomson (2014) Global conservation outcomes depend on marine protected areas with five key features. *Nature* 506: 216-220.
- 34. Handley SJ, TJ Willis, RG Cole, A Bradley, DJ Cairney, SJ Brown & M Carter (2014) The importance of benchmarking habitat structure and composition for understanding the extent of fishing impacts in soft sediment ecosystems. *Journal of Sea Research* 86: 58-68.
- 33. Stuart-Smith RD, AE Bates, JS Lefcheck, JE Duffy, SC Baker, RJ Thomson, JF Stuart-Smith, NA Hill, SJ Kininmonth, L Airoldi, MA Becerro, SJ Campbell, TP Dawson, SA Navarrete, GA Soler, EMA Strain, TJ Willis & GJ Edgar (2013) Integrating abundance and functional traits reveals new global hotspots of fish diversity. *Nature* 501: 539-542.
- 32. Triossi F, **TJ Willis** & DS Pace (2013) Occurrence of bottlenose dolphins *Tursiops truncatus* in natural gas fields of the northwestern Adriatic Sea. *Marine Ecology* 34: 373-379.
- 31. Willis TJ, CJ Sweeting, SJ Bury, SJ Handley, JCS Brown, DJ Freeman, DJ Cairney & MJ Page (2013) Matching and mismatching stable isotope (δ^{15} N and δ^{13} C) ratios among fish species in fin and muscle tissue: a critical review. *Marine Biology* 160: 1633-1644.
- 30. Caveen AJ, CJ Sweeting, TJ Willis & NVC Polunin (2012) Are the scientific foundations of temperate MPAs too warm and hard? *Environmental Conservation* 39: 199-203.
- 29. Castellanos-Galindo GA, U Krumme & TJ Willis (2010) Tidal influences on fish distributions on tropical eastern Pacific rocky shores (Colombia). *Marine Ecology Progress Series* 416: 241-254.
- Shackleton CM, TJ Willis, K Brown, NVC Polunin (2010) Reflections on the next generation of models for community-based natural resource management. *Environmental Conservation* 37: 1-4.
- 27. Fontana G, KI Ugland, JS Gray, **TJ Willis** & M Abbiati (2008) Influence of rare species on beta diversity estimates in marine benthic assemblages. *Journal of Experimental Marine Biology and Ecology* 366: 104-108.
- 26. Santin S & TJ Willis (2007) Direct versus indirect effects of wave exposure as a structuring force on temperate cryptobenthic fish assemblages. *Marine Biology* 151: 1683-1694.
- 25. Milazzo M, I Anastasi & **TJ Willis** (2006) Recreational fish feeding affects coastal fish behavior and increases frequency of predation on damselfish (*Chromis chromis*) nests. *Marine Ecology Progress Series* 310: 165-172.
- 24. Willis TJ, F Badalamenti & M Milazzo (2006) Diel variability in counts of reef fishes and its implications for monitoring. *Journal of Experimental Marine Biology and Ecology* 331: 108-120.
- 23. Willis TJ & RB Millar (2005) Using marine reserves to estimate fishing mortality. *Ecology Letters* 8: 47-52.
- 22. Denny CM, TJ Willis & RC Babcock (2004) Rapid recolonisation of snapper (*Pagrus auratus*: Sparidae) within an offshore island marine reserve after implementation of no-take status. *Marine Ecology Progress Series* 272: 183-190.
- 21. Sharp NJ, BK Diggles, CW Poortenaar & **TJ Willis** (2004) Efficacy of Aqui-S, formalin and praziquantel against the monogeneans *Benedenia seriolae* and *Zeuxapta seriolae* infecting yellowtail kingfish (*Seriola lalandi*) in New Zealand. *Aquaculture* 236: 67-83.
- 20. Parsons DM, RC Babcock, RKS Hankin, **TJ Willis**, JP Aitken, RK O'Dor & GD Jackson (2003) Snapper (*Pagrus auratus*: Sparidae) home range dynamics: acoustic tagging studies in a marine

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- reserve. Marine Ecology Progress Series 262: 253-265.
- 19. Willis TJ & MJ Anderson (2003) Structure of cryptic reef fish assemblages: relationships with habitat characteristics and predator density. *Marine Ecology Progress Series* 257: 209-221.
- 18. Willis TJ, RB Millar, RC Babcock & N Tolimieri (2003) Burdens of evidence and the benefits of marine reserves: putting Descartes before des horse? *Environmental Conservation* 30: 97-103.
- 17. Sharp NJ, CW Poortenaar, BK Diggles & **TJ Willis** (2003) Metazoan parasites of yellowtail kingfish, *Seriola lalandi*, in New Zealand: prevalence, intensity and site preference. *New Zealand Journal of Marine and Freshwater Research* 37: 273-282.
- 16. Willis TJ, RB Millar & RC Babcock (2003) Protection of exploited fishes in temperate regions: high density and biomass of snapper *Pagrus auratus* (Sparidae) in northern New Zealand marine reserves. *Journal of Applied Ecology* 40: 214-227.
- 15. Anderson MJ & TJ Willis (2003) Canonical analysis of principal coordinates: a useful method of constrained ordination for ecology. *Ecology* 84: 511-525.
- 14. **Willis TJ** (2001) Visual census methods underestimate density and diversity of cryptic reef fishes. *Journal of Fish Biology* 59: 1408-1411.
- 13. Willis TJ, DM Parsons & RC Babcock (2001) Evidence for long-term site fidelity of snapper (Pagrus auratus) within a marine reserve. New Zealand Journal of Marine and Freshwater Research 35: 581-590.
- 12. Willis TJ & RB Millar (2001) Modified hooks reduce incidental mortality of snapper (*Pagrus auratus*: Sparidae) in the New Zealand commercial longline fishery. *ICES Journal of Marine Science* 58: 830-841
- 11. Willis TJ & RC Babcock (2000) A baited underwater video system for the determination of relative density of carnivorous reef fish. *Marine and Freshwater Research* 51: 755-763.
- 10. Willis TJ, RB Millar & RC Babcock (2000) Detection of spatial variability in relative density of fishes: comparison of visual census, angling, and baited underwater video. *Marine Ecology Progress Series* 198: 249-260.
- 9. Babcock RC, S Kelly, NT Shears, JW Walker & **TJ Willis** (1999) Changes in community structure in temperate marine reserves. *Marine Ecology Progress Series* 189: 125-134.
- 8. Millar RB & TJ Willis (1999) Estimating the relative density of snapper in and around a marine reserve using a log-linear mixed effects model. *Australian and New Zealand Journal of Statistics* 41: 383-394.
- 7. Willis TJ, JEH Saunders, DL Blackwood & JE Archer (1999) First New Zealand record of the Australian bridled goby, Arenigobius bifrenatus (Pisces: Gobiidae). New Zealand Journal of Marine and Freshwater Research 33: 189-192.
- 6. Taylor RB & TJ Willis (1998) Relationships amongst length, weight and growth of northeastern New Zealand reef fish. *Marine and Freshwater Research* 49: 255-260.
- 5. Willis TJ & RC Babcock (1998) Retention and in situ detectability of visible implant fluorescent elastomer (VIFE) tags in Pagrus auratus (Sparidae). New Zealand Journal of Marine and Freshwater Research 32: 247-254.
- 4. Willis TJ & CD Roberts (1996) Recolonisation and recruitment of fishes to intertidal rockpools at Wellington, New Zealand. *Environmental Biology of Fishes* 47: 329-343.
- 3. Haddon M, TJ Willis, RG Wear & VC Anderlini (1996) Biomass and distribution of five species of surf clam off an exposed west coast North Island beach, New Zealand. *Journal of Shellfish Research* 15: 331-339.

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- 2. Willis TJ (1995) A preliminary description of the fish fauna of Taranga (Hen) Island, north-eastern New Zealand. *Tane* 35: 57-68.
- 1. Haddon M & TJ Willis (1995) A morphometric and meristic comparison of orange roughy (*Hoplostethus atlanticus*) from the Lord Howe Rise and Puysegur Bank, New Zealand, and its implications for stock structure. *Marine Biology* 123: 19-27.

Refereed monographs and conference proceedings

- Willis TJ (2013) Scientific and biodiversity values of marine reserves. DOC Research and Development Series 340: 1-70.
- Santin S, TJ Willis & M Abbiati (2006) Relationships between habitat and cryptic fish assemblages on breakwaters in the northwestern Adriatic Sea. *Proceedings of the 15th Italian Ecological Society (SItE) 2005 Meeting.* URL: http://www.ecologia.it/congressi/XV/articles/Santin-317.pdf
- Denny CM, TJ Willis & RC Babcock (2003) Effects of Poor Knights Islands Marine Reserve on demersal fish populations. *DOC Science Internal Report Series* 142. Department of Conservation, Wellington. 34 p.
- Millar RB, & TJ Willis (1998) Estimating the abundance of snapper in and around a marine reserve using a log-linear mixed effects model. *Proceedings of the 13th International Workshop on Statistical Modelling*, New Orleans, USA, pp. 284-291.

Miscellaneous articles and book reviews

- Willis TJ (2018) Double helpings. *Biosphere* 29: 23-33. (online 11 January 2018) (http://www.biosphereonline.com/magazine/issue-29/)
- Willis TJ (2014) Marine conservation efforts are failing to take five key steps. *The Conversation* (online 5 February 2014): https://theconversation.com/marine-conservation-efforts-are-failing-to-take-five-key-steps-22728
- Willis TJ (2013) Novel method of measuring biodiversity reveals surprises. *The Conversation* (online 4 Oct 2013): http://theconversation.com/novel-method-of-measuring-biodiversity-reveals-surprises-18664
- Passaro R, TJ Willis & M Abbiati (2007) BIODIVADR: a reference dataset on biodiversity of soft bottom macrobenthos. *Rapp. Com. Int. Mer. Médit.* 38: 573.
- Willis TJ (2005) Lequesne, C.: "The politics of fisheries in the European Union" (Book review). Environmental Conservation 32: 372.
- Willis TJ (2005) Scientific opinion on promises of higher fishery yields. MPA News 6(9): 3.
- Willis TJ, RB Millar, RC Babcock & N Tolimieri (2003) The science of marine reserves how much of it is science? MPA News 5(6): 3-4.
- Willis TJ (2003) Hart, P.J.B. & Reynolds, J.D.: "Handbook of fish and fisheries, Vol I & II" (Book review). *Environmental Conservation* 30: 410-411.
- Willis TJ (2002) Editor, New Zealand Marine Sciences Society Review 43: 178 p. ISSN 1170-8352.
- Willis TJ (2001) Kitteridge, M.: "Hook up on snapper" (Book review). New Zealand Journal of Marine and Freshwater Research 35: 417-418.
- Willis T (1998) How effective are marine reserves for protecting snapper? Dive New Zealand 49: 21.
- Willis T & J Saunders (1998) Finning a lift the hitchhikers guide to the Tasman. *Dive New Zealand* 48: 80.
- Willis T (1996) Fluoro designer wear for snapper. Dive Log New Zealand 30: 18.
- Willis TJ (1991) Competing uses of the Wellington coastline: a critique of marine reserve proposals. New Zealand Professional Fisherman 5(8): 23-26.

Unpublished reports

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- Willis TJ, SJ Handley (2012) Relative density of blue cod (*Parapercis colias*) in Milford and Dusky Sounds in response to spatial management. *New Zealand Fisheries Assessment Report 2012/36*. Ministry for Primary Industries, ISSN 1179-5352. 27p.
- Willis TJ (2010) Scientific and biodiversity values of marine reserves. Department of Conservation Investigation Number 4121. NIWA Client Report NEL2010-030, 89 p.
- Willis TJ, SJ Handley, MJ Page, A Bradley, DG Cairney (2010) Fiordland (Te Moana o te Atawhenua) China Shops survey 2008/2009 Contract Number FMA08/2. NIWA Client Report NEL2010-017. 64 p.
- Parsons D, T Willis, J Beaumont, D Cairney, C Middleton, R D'Archino, M Smith (2010) Bay of Islands OS20/20 survey report. Chapter 10: Shallow rocky reefs. NIWA Client Report WLG2010-38.
- Handley SJ, TJ Willis, D Cairney (2010) Fiordland (Te Moana o te Atawhenua) Marine Area deep reefs survey 2008/2009 -- Contract Number FMA08/1. NIWA Client Report NEL2010-003. 64 p.
- Sutton P, M Smith, C Stevens, T Willis (2009) Wave energy converter environmental impacts. NIWA Client Report WLG2009-078. 30 p.
- Willis TJ, SJ Handley, MJ Page, D.G. Cairney, R D'Archino (2009) Fiordland (Te Moana o te Atawhenua) Marine Area monitoring survey 2008/2009 – Contract Number FMA08/2. NIWA Client Report NEL2009-035. 48 p.
- Willis TJ, L Torres, SJ Handley (2008) Environmental impacts of marine energy devices. NIWA Client Report NEL2008-029. 22 p.
- Willis TJ, A Bradley, SJ Handley, B Paavo, MJ Page, M James (2008) Benthic offshore surveys of proposed dredge spoil disposal sites off Otago Peninsula. NIWA Client Report NEL2008-024, 59 p.
- Brown SN, TJ Willis, DG Cairney, A Bradley, P. van der Pol, J. Halliday (2008) Waimakariri District Council ocean outfall: second post-construction survey. NIWA Client Report NEL2008-017, 50 p.
- Willis TJ, F Triossi & L Meynier (2008) Diet of fur seals Arctocephalus forsteri at Tonga Island, Abel Tasman National Park. NIWA Client Report NEL2008-011. 12 p.
- Willis TJ & SJ Handley (2008) Projected effects of submarine turbines on marine fauna of Cook Strait. NIWA Client Report NEL2008-001.10 p.
- Willis TJ, SJ Handley, FH Chang, CS Law, DJ Morrisey, AB Mullan, M Pinkerton, KL Rodgers, PJH Sutton, A Tait (2007) Climate change and the New Zealand marine environment. NIWA Client Report NEL2007-025. 81 p.
- Willis TJ, DG Cairney, A Bradley & P Reid (2007) Waimakariri District Council ocean outfall: first post-construction survey. NIWA Client Report NEL2007-017, 49 p.
- Wing, S, K Rodgers & TJ Willis (2007) Ecological research strategy for the Fiordland marine area. Prepared for the Department of Conservation, 44 p.
- Willis TJ, D Fu & SM Hanchet (2007) Correlates of southern blue whiting (*Micromesistius australis*) year class strength on the Campbell Island Rise 1977-2002. New Zealand Fisheries Assessment Report 2007/40. 26 p.
- Willis TJ, S Bacchi, G Fontana, J van Etten & M Abbiati (2006) Progress report field work and sample analysis. Biodiversità Project, 2nd Report to AGIP. 12 p.
- Abbiati M, TJ Willis, L Airoldi, M Virgilio, C Borsini, F Colosio, R Passaro, S Santin (2005) Stato di avanzamento del progetto e realizzazione della campagna di campionomento per il benthos e dello studio pilota per la diversità genetica. *Progetto Biodiversità*, 1° *Relazione*. 42 p.
- Willis TJ, R Passaro, C Borsini, S Santin, S Tisselli, L Airoldi & M Abbiati (2005) A regional-scale approach to the assessment of impacts of gas extraction in the northern Adriatic Sea. *BIOMARE Project, Final Report to AGIP*. 102p.
- Taylor RB, MJ Anderson, D Egli, N Usmar & TJ Willis (2005) Cape Rodney to Okakari Point Marine Reserve fish monitoring 2005: Final report. Auckland Uniservices report to the Department of Conservation. 38 p.
- Willis TJ, C Borsini, R Passaro, S. Tisselli & M Abbiati (2005) Progress report further analysis of spatial pattern in Adriatic benthos in relation to environmental variability *BIOMARE Project, 5th Report to AGIP*. 46 p..
- Willis TJ, A Bjørgesæter & JS Gray (2004) Towards predicting effects of oil and gas exploration on marine benthic communities: what do we need from monitoring? *Report to AGIP Norske*. 25 p.
- Willis TJ, R Passaro, S Tisselli, C Borsini, S Santin, & M Abbiati (2004) Progress report preliminary analysis of spatial variability in Adriatic benthos. *BIOMARE Project, 4th Report to AGIP.* 33 p.
- Taylor RB, MJ Anderson, N Usmar & TJ Willis (2004) Te Whanganui a Hei Marine Reserve fish monitoring 2004: Final report. Auckland Uniservices report to the Department of Conservation. 39 p.
- Willis TJ, R Passaro, S Santin, S Tisselli & M Abbiati (2004) Progress report field work and sample analysis. BIOMARE Project, 3rd Report to AGIP. 24 p.
- Taylor RB, MJ Anderson, D Egli & TJ Willis (2003) Te Whanganui a Hei Marine Reserve fish monitoring 2003: Final report. Auckland Uniservices report to the Department of Conservation. 34 p.



- Taylor RB, MJ Anderson, D Egli & TJ Willis (2003) Cape Rodney to Okakari Point Marine Reserve fish monitoring 2003: Final report. Auckland Uniservices report to the Department of Conservation. 39 p.
- Willis TJ, R Passaro, MJ Anderson, M Abbiati, A Buscaroli, L Airoldi, G Gregorio, S Santin & JS Gray (2003) BIOMARE Objectives, survey design and sampling protocols. *BIOMARE Project, 2nd Report to AGIP*. 26 p.
- Willis TJ, MJ Anderson & RC Babcock (2003) Te Whanganui a Hei Marine Reserve fish monitoring program. Final report to the Department of Conservation, Investigation No. NRO/02/04. 41p.
- Willis TJ, MJ Anderson & RC Babcock (2003) Cape Rodney to Okakari Point Marine Reserve fish monitoring program. Final report to the Department of Conservation, Investigation No. NRO/02/04. 42p.
- Babcock RC, CG Attwood, DP Egli, DM Parsons & TJ Willis (2002) Optimising marine reserve design in New Zealand Part II: Individual-Based Models. Report to the Department of Conservation, Auckland Conservancy. 31 p.
- McClary DJ, SR Speed & TJ Willis (2001) Relative abundance of blue cod in Doubtful Sound.' Ministry of Fisheries Final Research Report BCO 1999-01. 30 p. plus Apps.
- Willis TJ (2000) Te Whanganui a Hei Marine Reserve fish monitoring program: II. Changes in snapper and blue cod density. Report to the Department of Conservation, Investigation No. NRO/02/04. 19p.
- Willis TJ (2000) Te Whanganui a Hei Marine Reserve fish monitoring program: I. Diver surveys. Report to the Department of Conservation, Investigation No. NRO/02/04. 20p.
- Willis TJ & RC Babcock (2000) Cape Rodney to Okakari Point Marine Reserve fish monitoring program. Report to the Department of Conservation, Investigation No. NRO/02/04. 27p.
- Parsons, D, R Babcock & T Willis (2000) Space utilization characteristics of snapper (Pagrus auratus) in a marine reserve. Report to the Department of Conservation. 31p.
- Willis TJ & CM Denny (2000) Effects of the Poor Knights Islands Marine Reserve on demersal fish populations.

 Report to the Department of Conservation, Science and Research, Research Grant 2519. Wellington.

 57p.
- Willis TJ & RB Millar (1999) Effects of longline hook appendages on incidental mortality and catch rates of snapper (Pagrus auratus). Report to the Ministry of Fisheries, Contract SNA9802, objective 2. 18p.
- Willis TJ & RC Babcock (1998) Effects of marine reserves on exploited reef-associated fishes in northern New Zealand a multi-reserve comparison using underwater video. Report to the Department of Conservation, Science and Research, Wellington. 31p.
- Willis TJ & RC Babcock (1997) Investigation of methods for assessing reef fish populations and the effects of marine reserve protection. Report to the Department of Conservation, Science and Research, Wellington. 67p.
- Willis TJ (1997) Survey of fishes at Te Whanganui a Hei Marine Reserve Winter 1997. Report to the Department of Conservation, Waikato Conservancy. 9p.
- Ryan PA & TJ Willis (1994) Benthic macrofauna of Saltwater Lagoon, Westland an environmental impact assessment of timber treatment and stormwater discharge. Ryan Environmental Report 9/94 prepared for WORKS Environmental Management. 18p.
- Willis TJ, M Haddon & CD Paulin (1993) Morphometric and meristic variation in orange roughy Hoplostethus atlanticus: a stock comparison between Lord Howe Rise and Puysegur Bank, New Zealand. Unpublished report prepared for the Exploratory Fishing Company (ORH3B) Ltd. 37p.

Research funding

Proposals in progress

- Using stable isotopes to understand protein routing for aquaculture. (BBSRC). Submit June 2019.
- Inter-relations between climate change, biodiversity and ecosystem services. Horizon 2020 call LC-CLA-06-2019 (CO-I, WP leader €5 000 000). submit 19 Feb 2019
- Trophic relationships in marine specialists (NERC Life Sciences Mass Spectrometry Steering Committee, £25 000), submit Sept 18
- (submitted) Sources and pathways of productivity in impacted coastal marine ecosystems (NERC Global Partnerships Seed Corn Fund, £98 496).
 - The role of elasmobranch meso-predators in coastal UK food webs (CEFAS Seedcorn Project PhD Studentship £84 000).

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- Ecological specialisation the role of obligate relationships in evolution and ecosystem function (University of Portsmouth Faculty PhD Bursary 2018-2021, £74 000)
- Filling the trophic gaps in the dynamics of obligate predator-prey relationships (British Ecological Society SR17/1333, £5 000)
 - Density-dependence in counts of fishes from baited underwater video. (G & M Williams Fund, Queen's University Marine Laboratory, £2 000)
- Laboratory identification of sources of C, N and S for marine wood boring invertebrates (NERC Life Sciences Mass Spectrometry Steering Committee, £16 683).
- 2015 Biodiversity of re-laid oyster beds. (Southern Inshore Fisheries and Conservation Authority, £2 000)
- Spatial and temporal foraging histories of New Zealand fur seals (Arctocephalus forsteri) using archival tissues, Phase II. (NERC Life Sciences Mass Spectrometry Steering Committee, Phase II EK 219-13/13 £18 085)
- Spatial and temporal foraging histories of New Zealand fur seals (Arctocephalus forsteri)
 using archival tissues, Phase I. (NERC Life Sciences Mass Spectrometry Steering Committee,
 Phase I EK 194-4/12 £16 957)
- 2011 Correcting for the effects of lipid extraction on δ¹⁵N estimates. (NZ Department of Conservation, NZ\$7 000)
 - The trophic position of New Zealand fur seals at coastal breeding colonies. (Capability Fund/NZ Department of Conservation, NZ\$70 000)
 - Diet of King Shags in the Marlborough Sounds (NZ Department of Conservation, NZ\$11 000)
 - Effects of small-scale management on densities of blue cod *Parapercis colias* in Milford Sound and Doubtful Sound, New Zealand NZ Ministry of Fisheries contract BCO2010-09, NZ\$96 100)
- 2010 Foraging and feeding ecology of New Zealand fur seals (NZ Department of Conservation, NZ\$60 000)
 - Potting survey of blue cod in the Marlborough Sounds (NZ Ministry of Fisheries contract BCO2010-01, NZ\$427 200)
 - Fiordland (Te Moana o Atawhenua) Marine Area Biodiversity Monitoring 2010 (NZ Department of Conservation, Contract Number FMA 09/01
- Scientific and biodiversity values of marine reserves (NZ Department of Conservation, NZ\$47 550)
 - Using stable isotopes (δ^{13} C and δ^{15} N) to identify predator-prey links over gradients of fishing intensity (Capability Fund/NZ Department of Conservation, NZ\$80 000)
 - Oceans 2020 Bay of Islands survey (PI Reefs NZ\$145 000, project synthesis and overview team, overall project budget NZ\$4 000 000)



- 2008 Fiordland Deep Reefs Survey (NZ Department of Conservation, NZ\$72 900)
 - Fiordland China Shops Survey (NZ Department of Conservation, NZ\$125 000)
 - Benthic offshore surveys (Ports Otago Ltd, NZ\$95 000)
- 2007 Diet of fur seals at Tonga Island (NZ Department of Conservation, Nelson Conservancy, NZ\$7 600)
- 2001-02 University of Auckland Postdoctoral Fellowship (with M.J. Anderson, R.B. Millar, B.H. McArdle, R.C. Babcock, NZ\$105 000)
- Te-Whanganui-A-Hei Marine Reserve fish monitoring (with R.C. Babcock, NZ Department of Conservation Research Investigation MR15, NZ\$44 809)
 - Cape Rodney Okakari Point Marine Reserve fish monitoring (with R.C. Babcock, NZ Department of Conservation Research Investigation, NZ\$53 466)
- 2000 Ecology and distribution of *Arenigobius bifrenatus* in northern New Zealand estuaries. NZ Ministry of Fisheries grant-in-aid, NZ\$16 000)
- Te-Whanganui-A-Hei Marine Reserve fish monitoring (with R.C. Babcock, NZ Department of Conservation Research Investigation NRO/02/04, NZ\$16 034)
 - Cape Rodney Okakari Point Marine Reserve fish monitoring (with R.C. Babcock, NZ Department of Conservation Research Investigation NRO/02/02, NZ\$5 610)
- Effects of the Poor Knights Islands Marine Reserve on demersal fish populations. (NZ Department of Conservation Research Grant 2519, NZ\$55 977. 1998-1999, with R.C. Babcock)
 - Effects of hook modifications on gut-hooking rates in juvenile snapper in the commercial longline fishery. (NZ Ministry of Fisheries contract SNA9802, with R.B. Millar & R.C. Babcock, subcontracted to Akroyd-Walshe Ltd., NZ\$76 500)

Activities as reviewer

I am currently Associate Editor of the journals *Environmental Conservation* and *Frontiers in Marine Science*. I edited a special issue of *Environ Conserv* on Temperate Marine Protected Areas (Sept 2012 Vol. 39, issue 3) and act as referee for the following publications:

<u>Journals:</u>

Aquatic Conservation — Marine and Freshwater
Ecosystems
Aquaculture
Aquacultural Engineering
Aquatic Living Resources
Biology Letters
Canadian Journal of Fisheries and Aquatic
Sciences

Caribbean Journal of Science
Coastal Management
Conservation Biology
Coral Reefs
Ecology Letters
Ecological Applications
Environmental Conservation
Environmental Biology of Fishes
Environmental Management
Estuarine, Coastal and Shelf Science

JW

Fisheries Research Fishery Bulletin US

Global Environmental Change

Hydrobiologia

ICES Journal of Marine Science

Journal of Animal Ecology

Journal of Applied Ecology

Journal of Experimental Marine Biology and

Ecology

Journal of Fish Biology

Journal of the Marine Biological Association UK

Journal of Sea Research

Marine Biology

Marine Ecology Progress Series

Marine and Freshwater Research

Methods in Ecology and Evolution New Zealand Journal of Marine & Freshwater

Research

PLoS ONE Progress in Oceanography

Reviews in Fish Biology and Fisheries

Report series and book chapters:

Two chapters of 'Life in two worlds: the biology and behaviour of intertidal fish', M.H. Horn et

al. (eds), Academic Press. (1999)

Science for Conservation New Zealand Department of Conservation

Technical Report reviewer New Zealand Department of Conservation

Formal research proposals

Rufford Foundation (2017)

British Ecological Society (Peer Review College, 2017-present)

National Geographic Society (2017)

British Council Newton Fund (panel, 2015-present)

Carnegie Trust for the Universities of Scotland (2015)

National Environment Research Council standard grant review (2007, 2011)

California Sea Grant research proposal (2005)

Book proposal (statistics) for Wiley Europe (2003)

PhD examination

University of Portsmouth (internal: 2012, 2018)

University of Tasmania (2013)

Rhodes University (2015)

Southern Cross University (2015)

University of Malta (2018)

Queen's University Belfast (2018)

I am also External Examiner at the University of Aberdeen (2017-) for two postgraduate courses: MSc Applied Marine and Fisheries Ecology, and MSc Marine Conservation.

Invited seminar presentations

- 2017 Stazione Zoologica Anton Dohrn, Naples, Italy
- 2015 University of York, UK
- 2014 Universitá di Palermo, Italy
- 2013 School of Marine Sciences and Technology, University of Newcastle, UK
- 2012 Solent Forum, National Oceanography Centre, Southampton, UK IAMC-CNR, Capo Granitola Laboratory, Italy.

Te Korowai Partnership, Kaikoura, NZ

- 2008 School of Marine Sciences and Technology, University of Newcastle, UK
- 2006 School of Biological Sciences, Victoria University of Wellington, NZ School of Marine Sciences and Technology, University of Newcastle, UK
- 2004 SINAPSI Workshop, Stazione Zoologica, Napoli, Italy Chioggia Marine Lab, University of Padova, Italy
- 2003 CNR Marine Ecology Lab, Castellammare del Golfo, Sicily
- 2000 NSW Dept of Primary Industries, Port Stephens, Australia



Professional distinctions

- 2018 Invited workshop presenter and participant, Euromarine Marine Research Network, ANFORE, University of Salento, Italy
- 2015 Invited workshop participant, FAO Workshop on Impacts of Marine Protected Areas on Fisheries Yield, Fishing Communities and Ecosystems. Food & Agriculture Organisation of the United Nations. Rome, Italy.
- 2012 Invited working group member, Reef Life Survey analysis workshop, Maria Island, Tasmania, University of Tasmania, Australia
- 2000 University of Auckland Postdoctoral Fellowship (with M.J. Anderson, R.B. Millar, B.H. McArdle, R.C. Babcock)
- 1997 New Zealand Marine Sciences Society First Overseas Conference Award, to attend *The Design* and Monitoring of Marine Reserves, Vancouver, Canada, 18-20 February, 1997.
- 1996 Department of Conservation Prize for best oral presentation of research conducted in a marine reserve. New Zealand Marine Sciences Society Conference, Christchurch, New Zealand, 28-30 September 1996.

Conference presentations *denotes invited presentation

- Williams, J., T.J. Willis (2017) The effect of lipid and urea extraction on stable isotope ratios in coastal demersal shark tissues. 21st European Elasmobranch Association Meeting, Amsterdam, The Netherlands, 12-14 October 2017.
- Willis, TJ., K.T.L. Berglöf, R.A.R. McGill, L. Musco, S. Piraino, C. Rumsey, T. Vega Fernández, F Badalamenti (2016) Piracy on the hydroid. 11th International Temperate Reef Symposium, Pisa, Italy, 27-30 June 2016.
- Meynier, L., L. Chilvers, C. Muller, A. Virgili, R. McGill, S. Bury, T. Willis, P. Morel (2013) Combining biologging with stable isotope and fatty acid analyses to assess the foraging habits of New Zealand fur seals, west coast, New Zealand. 20th Biennial Conference on Marine Mammals, Otago University, Dunedin, New Zealand, 9-13 December
- Glenn, H., S. Jaffry, Y. Ghulan, C. Delanbanque, T. Willis (2013) A decade on and a test of criterion validity: willingness to pay for sustainably labelled seafood products. *PBS Research Conference*, University of Portsmouth, 19 June 2013.
- *Willis, T.J., 2012. Are marine reserves a better science tool than a management tool? 6th World Fisheries Congress, Edinburgh, UK, May 2012.
- Grange, K. T. Willis, S. Handley, D. Cairney, 2010. Deep reefs of Fiordland how much we don't know. New Zealand Marine Sciences Society Conference, Wellington, New Zealand, July 2010.
- Handley, S., M. Horrocks, T.J. Willis 2010. Cutting to the core of Tasman Bay primary energy capture. New Zealand Marine Sciences Society Conference, Wellington, New Zealand, July 2010.
- Willis, T.J, R. Passaro, S. Santin, G. Fontana, C. Borsini, S. Tisselli, M.J. Anderson, L. Airoldi, M.Ferraro, C.A. Di Catenaja, M. Abbiati, 2006. Analisi multiscala sull'effetto delle piattaforme offshore sui popolamenti macrobentonici di fondo molle nell'Adriatico nord occidentale. Congresso CoNISMa, Viareggio, Italy, 14-18 Nov 2006.
- Santin, S., T.J. Willis & M. Abbiati, 2005. Cryptobenthic fish and the importance of habitat on defence structures in the North Adriatic Sea. XV Congresso della Società Italiana di Ecologia, Torino, 2005.
- Passaro, R., T.J. Willis, S. Santin, S. Tisselli, M. Ferraro & M. Abbiati 2004. Spatial variability in soft-bottom macrobenthos in the Adriatic sea: a multi-scale approach. 39th European Marine Biology Symposium, Genova, Italy, 21-24 July 2004.
- Usmar, N. & T. Willis, 2002. The aussie invader Arenigobius bifrenatus (bridled goby), habitat requirements for successful establishment. New Zealand Marine Sciences Society Conference, Nelson, New Zealand, Sept 2002.
- *Willis, T.J. 2002. Marine reserves as scientific baselines: estimation of fishing mortality. American Society of Limnology and Oceanography Summer Meeting, Victoria, BC, Canada, 10-14 June 2002.
- Langlois, T.J. & T.J. Willis, 2001. The influence of carnivorous reef fish on structure of macro-invertebrate scavenging guilds in nearby soft sediments (poster). Changes in the Marine Environment (joint AMSA/NZMSS Conference), Townsville, Australia, 3-6 July 2001.

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- Willis, T.J. & R.B. Millar, 2001. Using marine reserves to estimate inshore fishing mortality. Changes in the Marine Environment (joint AMSA/NZMSS Conference), Townsville, Australia, 3-6 July 2001.
- Millar R.B. & T.J. Willis, 2001. As few as 3 in 100 snapper survive fishing over the summer. Unpublished abstract. Australasian Biometrics and New Zealand Statistical Association Joint Conference, Christchurch. http://at.york.ca/cgi-bin/amca/cahg-69.
- Willis, T.J. 2001. Responses of an exploited reef fish, Pagrus auratus (Sparidae) to marine reserve protection in northern New Zealand. Second Symposium on Marine Conservation Biology, San Francisco State University, California, USA, 22-25 June 2001.
- Willis, T.J., M.J. Anderson & C.M. Denny, 2000. Comparing apples and oranges: can we detect fishing-related changes in the Poor Knights Islands reef fish fauna? New Zealand Marine Sciences Society Conference, Hamilton, New Zealand, 30 Aug-1 Sept 2000.
- Parsons, D.M., R.C. Babcock & T.J. Willis, 2000. Safe havens: ins and outs of snapper movement in marine reserves. New Zealand Marine Sciences Society Conference, Hamilton, New Zealand, 30 Aug-1 Sept 2000.
- Willis, T.J. & R.B. Millar, 1999. Effects of longline hook modifications on snapper mortality and catch rate. New Zealand Marine Sciences Society Conference, Wellington, New Zealand, 1-3 September 1999.
- Willis, T.J., 1997. How to count fish who won't behave: survey bias in the examination of marine reserve effects on snapper. *Integrated Approaches to Marine Science* (joint AMSA/NZMSS Conference), Auckland, New Zealand, 8-11 July, 1997.
- Fisher, C.J. & T.J. Willis, 1997. Tattooed triplefins: movement patterns and site fidelity on intertidal reefs. Integrated Approaches to Marine Science (joint AMSA/NZMSS Conference), Auckland, New Zealand, 8-11 July, 1997.
- Willis, T.J., 1997. Alteration of behaviour of an exploited reef fish (*Pagrus auratus*: Sparidae) due to marine reserve protection. *The Design and Monitoring of Marine Reserves*, University of British Columbia, Vancouver, Canada, 18-20 February, 1997.
- Willis, T.J. & R.C. Babcock, 1996. One fish, two fish, red fish, blue fish: marine reserve effects on snapper and blue cod. New Zealand Marine Sciences Society Conference, Christchurch, New Zealand, 28-30 September 1996.
- Willis, T.J., 1996. Visible implant tags for reef fish ecology (poster). New Zealand Marine Sciences Society Conference, Christchurch, New Zealand, 28-30 September 1996.
- Anderlini, V.C., T.J. Willis & R.G. Wear, 1995. An estimate of the biomass of five surf clam species between the Manawatu and Rangitikei Rivers - Wellington west coast. New Zealand Marine Sciences Society Conference, Wellington, New Zealand, 30 Aug - 1 Sept 1995.
- Willis, T.J., 1995. Recolonisation and recruitment of fishes to intertidal rockpools: hypotheses and hindrances to experimental design. *Third International Temperate Reef Symposium*, Sydney, Australia, 4-8 February 1995.
- Willis, T.J. & C.D. Roberts, 1994. Recolonisation and recruitment of fishes into rockpools following repeated defaunation. New Zealand Marine Sciences Society Conference, Hamilton, New Zealand, 31 Aug 2 Sept 1994.
- Willis, T.J., 1992. Reproductive biology of *Ericentrus rubrus* (Perciformes: Clinidae). New Zealand Marine Sciences Society Conference, Dunedin, New Zealand, 1-3 Sept 1992.

Research experience

- April 2012 present: Senior lecturer, University of Portsmouth.
- Jan 2007-March 2012: Senior Scientist, Marine Ecology, National Institute of Water and Atmospheric Research, New Zealand. I led programmes in fiord ecosystems dealing with biodiversity assessment as well as the effects of local spatial management (including marine reserve protection). I was also a senior member of a team overseeing a NZ\$4 million programme to assess marine biodiversity of coastal and shelf waters of north-eastern New Zealand. Other projects included an investigation into the trophic relationships of reef fauna in a marine reserve using stable isotopes, foraging ecology of New Zealand fur seals, and fishery surveys of a high exploited reef fish in the Marlborough Sounds (northern South Island).
- Feb 2003-Dec 2006: Research fellow, University of Bologna. I led a team working on large-scale



impacts of gas platforms on macrobenthos in the northern Adriatic Sea. During this period I supervised or co-supervised 3 PhD theses and 3 laurea (UK MSc equivalent) theses. Concurrently, I collaborated with the University of Oslo (Profs John Gray and Karl Ugland) to develop multivariate models to predict the recovery time of benthic assemblages from oildrilling. I continued to work on reef fish ecology with Drs Fabio Badalamenti (CNR), Carlotta Mazzoldi (University of Padova) and Marco Milazzo (University of Palermo).

- 2001-Jan 2003: Post-doctoral research fellow, Department of Statistics, University of Auckland. I
 worked with Dr Marti Anderson on the ecology of reef fish assemblages; specifically their
 interactions with habitat characteristics and predators, and the use of new quantitative
 multivariate methods for analysing these relationships.
- 1998-2002: Consultant. I successfully tendered for contract work for the NZ Ministry of Fisheries. This involved field tests of hook modifications designed to reduce incidental mortality on commercial longline gear. I also was contracted to Kingett Mitchell Ltd to analyse fish survey data on a separate Ministry of Fisheries project, and conducted marine reserve surveys for the NZ Department of Conservation.
- 1994-2000: My PhD work was directed at the rigorous and quantitative estimation of the effects of marine reserves on exploited reef fishes. This programme included: 1) the development, testing and application of new methods for reducing bias in sampling carnivorous fishes, 2) multiscale, replicated surveys of fishes at three marine reserves, 3) assessment of the statistical power of fish sampling designs in a log-linear model framework, and 4) use of various tagging techniques for assessment of fish movement, including elastomer implants, PIT tags and acoustic telemetry.
- 1992-1994: Research technician, Coastal Marine Research Unit, Victoria University of Wellington. Surf clam resource surveys (Drs Malcolm Haddon, Victor Anderlini, and Bob Wear): estimation of biomass of unexploited clam populations to assess the potential for establishing a fishery. I assisted with the field (hydraulic dredging) and lab work for this project, as well as assisting with the analysis.
- 1993: Research technician, Museum of New Zealand Te Papa Tongarewa (Natural History Unit). I was employed by Dr Clive Roberts as a research diver (survey and collecting trips in Fiordland, Nelson and Kaikoura (South Island), and the East Cape region of the North Island). In the lab, I was responsible for radiography of specimens, and assisted with cataloguing and inventory of the museum collection.
- 1992-1993: Research technician, MAF Fisheries (now NIWA), Shellfish group. I was employed by Dr John Booth to assist with field sampling of rock lobster puerulus, and construction of sampling equipment.

Graduate and postdoctoral supervision

University of Portsmouth

- MSc (2018-2019) Summer-Anne Kiernan
- MSc (2018-2019) Jacob Neville
- PhD (2018-) Eléa Giraud
- MSc (2017-2018) Özlem Yazıcıoğlu
- MSc (2017-2018) Auriel Sumner-Hempel
- PhD (2017-) Richard Nembhard (2nd supervisor)

- MSc (2016-2017) Margaux Monfared
- MSc (2016-2017) Edward Bignell
- MSc (2016-2017) Thomas Kendal
- MRes (2016-2017) Joshua Williams
- MRes (2015-2016) Sarah Meek (now PhD student at University of the West of England/Operation Wallacea)
- PhD (2012-2015) Lauren Hartney-Mills (now Science Officer at Hebridean Whale & Dolphin
- PhD (2014-2015) Lucia Privitera
- MSc (2014-2015) Edward Taylor (now tech staff at British Antarctic Survey)
- MSc (2014-2015) Steven Rowe
- PhD (2013-) Matt Jasinski (2nd supervisor)
- MSc (2012-2013) Mijke van der Zee (now PhD student at University of Surrey)
- MSc (2012-2013) Simona Noè (completed PhD at University of Palermo)

Massey University

Postdoctoral advisor: Dr Laureline Meynier (2010-2014) Combining bio-logging with stable isotope and fatty acid analyses to assess the foraging habits of New Zealand fur seals

University of Bologna

- PhD (2006-2008). Università di Bologna. Giovanni Fontana (co-supervisor with Prof. Karl Ugland, University of Oslo).
- Laurea II (MSc equivalent) (2004-2006). Università di Bologna. Giovanni Garraffa (graduated
- Laurea II (MSc equivalent) (2004-2005). Università di Bologna. Giovanni Fontana (graduated Sept 27 2005, cum laude).
- PhD (2004-2007) Università di Bologna. Selvaggia Santin
- Laurea II (2003-2004) Università di Bologna. Simona Tisselli
- PhD (2003-2006) Università di Bologna. Romina Passaro

University of Auckland

- MSc (2001-2003). University of Auckland. Natalie Usmar. Ecology of an adventive goby in New Zealand estuaries.
- Co-supervisor MSc (1997-98). I acted as an unofficial co-supervisor for Cameron Fisher's MSc work on the dynamics of intertidal fishes.

Teaching

Portsmouth:

Undergraduate courses:

- Coastal Ecosystems
- Applied Marine Biology (unit coordinator from 2014)
- Marine Organisms and Ecosystems
- Community Ecology and Residential Field Course
- Biodiversity and Evolution
- **Experimental Biology**



Postgraduate courses:

- MSc in Applied Aquatic Biology course leader
- MSc Research Project unit coordinator and tutor
- MSc Subtidal Marine Ecology unit coordinator and tutor

Lecture and tutorial for project students (2012-17) – Introduction to multivariate analysis

Elsewhere:

- Guest Lecturer, University of Palermo (2014). Logic and experimental design.
- Guest Lecturer, University of Padova (2005). Undergraduate lecture on marine reserve function.
- Guest Lecturer, University of Bologna, Biometry (2004). I co-presented a seminar on the use of multivariate statistics in ecological studies.
- Lecturer, University of Auckland, Fisheries and Aquaculture (2002). Co-taught 3rd year course as part of the fisheries component. Designed, ran, and assessed residential field course.
- Lecturer, University of Auckland, Marine Ecology (2001, 2002). Lectures on logic and experimental design for 3rd year marine ecology course.
- Lecturer, University of Auckland, Marine reserves (1999-2002). Seminar/lectures for MSc course.
- Lecturer and field course tutor, University of Auckland, Principles of Marine Reserves (1998-2000). Lectures on fisheries perspectives in marine conservation for 2nd year course. Responsible for assessment of field course.
- Graduate Teaching Assistant, Victoria University of Wellington (1991-1994). Introduction to Zoology, Animal diversity, form and function, Biodiversity of New Zealand, Population biology, Marine biology and aquaculture.

Dichiaro che tutto questo curriculum corresponde a verita' ai sensi degli art. 46 e47 del D.P.R 28 dicembre 2000, n. 445 e successive modificazioni e integrazioni.

Trevor J. Willis, Portsmouth, 22 luglio 2018