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Qualifications

Ph.D. August 2000 (Australian Postgraduate Scholarship)

Department of Zoology and Entomology, The University of Queensland

Title: "The behavioural ecology of predator avoidance in rainbowfish (*Melanotaenia spp.*)."

Class 1 Honours (Zoology) The University of Queensland 1995

Thesis: "The predator avoidance behaviour of the Lake Eacham rainbowfish (*Melanteania eachamensis*)."

Essay: "Climate change; modelling the effects of global warming on the distribution of freshwater fish in Australia using the rainbow trout as a model species."

Bachelor of Science The University of Melbourne. Major in Zoology. 1993

(marine ecology, conservation biology, animal behaviour, marine botany and animal physiology). Individual research projects included "Resource partitioning among three species of intertidal gobies", "Drift patterns of invertebrates in a stream containing trout predators" and "Parental care in rainbow cichlids".

Employment

Post Doctoral Research Associate, Institute of Cell, Animal and Population Biology, University of Edinburgh. Sponsored by National Environment Research Council. July 2002 – present. “Ecological correlates of cognition in Panamanian poeciliids.”

Post Doctoral Research Associate, Sub-Department of Animal Behaviour, University of Cambridge (Sep 2001-). Sponsored by Biotechnology and Biological Sciences Research Council “Social learning of prey recognition in Atlantic salmon.”

Tutor, Institute of Cell, Animal & Population Biology, University of Edinburgh (Sep 2000-).

Post Doctoral Research Assistant to Dr Kevin Laland, Sub-department of Animal Behaviour, University of Cambridge (Jan 2000-). “Social learning of foraging and anti-predator behaviour in the guppy.

Consultant: British Petroleum (2003). Freshwater fish fauna of the River Avon within the Grangemouth petrochemical facility.

Consultant: Queensland Department of Primary Industries, Freshwater Fisheries (1999). Modelling the potential geographic distribution of noxious and potentially noxious fish in Australia using climate matching software (CLIMEX).

Consultant: Brisbane City Council (1999). Surveys of the freshwater fish in suburban Brisbane streams.

Consultant: Queensland Commercial Fishers Organisation (1997). Preparation of reports on the distribution, abundance and conservation status of Dugong in Australia and the health of seagrass beds in Australian coastal waters.

Consultant: Queensland Department of Primary Industries, Fisheries Division, Walkamin Research Station (1995). Developing conservation management plans for Lake Eacham Rainbow Fish, *Melanotaenia eachamensis* and Lake Eacham World Heritage National Park.

Tutor/Supervisor: University of Queensland, Department of Zoology. (1996-2000).

Marine Education Officer: Australian Institute of Marine Science, Queenscliff Marine Station. (1992-1993). Duties included educating school groups as well as the general public about marine ecology and conservation. Settings ranged from taking formal practical sessions to supervising rock pool rambles and snorkelling trips.

Publications and Reports

I have published in a wide range of forums, from high impact, peer reviewed scientific journals to daily newspapers (e.g., The Courier mail, The Scotsman) and magazines (New Scientist, Australian Geographic). I have also written several reports for government departments and for private industry and recently edited a special edition of *Fish and Fisheries* dedicated to learning and memory in fishes.

Peer review:

- Brown, C., & Braithwaite, V. (2004). Size matters: A test of boldness in eight populations of bishop, *Brachyraphis episcopi*. *Animal Behaviour*, In Press.
- Brown, C., Anna Markula and Laland, K. (2003) Social learning of prey location in Atlantic salmon, *Salmo salar*. *Journal of Fish Biology*, 63 (3), 738-745.
- Brown, C., Davidson, T. and Laland K. (2003) Environmental enrichment and prior experience improve foraging behaviour in hatchery-reared Atlantic salmon. *Journal of Fish Biology*, 63 (s1), 187-196.
- Brown, C. and Laland, K. (2003) Social learning in fishes: A review. *Fish and Fisheries*, 4 (3), 280-288
- Laland, K., Brown, C. and Krause J. (2003) Learning in Fishes: An introduction. *Fish and Fisheries*, 4 (3), 199-202
- Brown, C. (2003) Habitat-predator association and avoidance in rainbowfish (*Melanotaenia spp.*). *Ecology of Freshwater Fishes*, 12(2), 118-126.
- Brown, C. and Laland, K. (2002) Social learning and social inhibition in a novel foraging task in Atlantic salmon (*Salmo salar*). *Journal of Fish Biology*, 61(4), 987-998.
- Brown, C. and Laland, K. (2002) Social learning of a novel avoidance task in the guppy, *P. reticulata*: Conformity and social release. *Animal Behaviour*, 64(1) 41-47.
- Brown, C. and Day, R. (2002) The future of stock enhancements: Bridging the gap between hatchery practice and conservation biology. *Fish and Fisheries*, 3(2), 79-94.
- Brown, C. (2002) Do female rainbowfish (*Melanotaenia spp.*) prefer to shoal with familiar individuals under predation pressure? *Journal of Ethology*, 20 (2), 89-94.
- Brown, C. (2001) Familiarity with the test environment improves escape responses in the crimson spotted rainbowfish, *Melanotaenia duboulayi*. *Animal Cognition*, 4: 109-113.
- Brown, C. and Laland, K. (2001) Social learning and life skills training for hatchery reared fish. *Journal of Fish Biology*, 59, 471-493.
- Day, R. MacDonald, T., Brown, C., Laland, K., and Reader, S.M. (2001) Interactions between shoal size and conformity in guppy social foraging. *Animal Behaviour*, 62, 917-925.
- Swaney, W., Kendal, J., Capon, H., Brown, C. and Laland, K. (2001) Familiarity facilitates social learning of foraging behaviour in the guppy. *Animal Behaviour*, 62, 591-598.
- Brown, C. and Warburton, K. (1999) Differences in timidity and escape responses between predator-naïve and predator-sympatric rainbowfish populations. *Ethology*, 105(6) 491-502
- Brown, C. and Warburton, K. (1999) Social mechanisms enhance escape responses in the rainbowfish *Melanotaenia duboulayi*. *Environmental Biology of Fishes*, 56(4), 455-459.

Brown, C. and Warburton, K. (1997) Predator recognition and anti-predator responses in the rainbowfish, *Melanoteania eachamensis*. Behavioural Ecology and Sociobiology 41(1), 61-68.

Brown, C. (1997) Predator evasion behaviour in the rainbowfish, *Melanoteania eachamensis*. Advances in Ethology 32 (b), 163

Submitted:

Brown, C., Jones, F. & Braithwaite, V. (2004). Boldness in the face of adversity and the confidence of youth. American Naturalist, submitted

Brown, C. & Braithwaite, V. (2004). Effects of predation pressure on the evolution of cognition in the poeciliid *Brachyrhaphis episcopi*. Behavioural Ecology, Submitted.

Brown, C., Gardner, C. & Braithwaite, V. (2004). Population variation in lateralised behaviour in the poeciliid *Brachyrhaphis episcopi*. Biological Letters, Submitted.

Brown, C. & Morgan, T. (2004) Time-place learning in a tropical freshwater fish, *Brachyrhaphis episcopi*. Animal Cognition, Submitted.

Edited volumes:

Fish and Fisheries Volume 4 No.3 2003 – Special Edition on Learning in Fishes. Edited by Culum Brown, Kevin Laland and Jens Krause.

Reports:

Brown, C. & Jones, F. (2004) Freshwater fauna survey of the River Avon. British Petroleum Internal Report.

Brown, C. (1999) Modelling the potential distribution of noxious and potentially noxious fish in Australia. DPI/QFMA internal Report.

Brown, C. (1999) The distribution of freshwater fishes in four suburban streams. Report to Brisbane City Council

Brown, C. (1997) A review of the conservation status of the Dugong in Australia. QCFO Internal Report.

Brown, C. (1997) A global review of the health of sea-grass beds. QCFO Internal Report.

Brown, C. (1995) Rehabilitation of Lake Eacham and the reintroduction of the Lake Eacham Rainbowfish, *Melanoteania eachamensis*. DPI/WTMA Internal Report.

Brown, C. (1995) Recovery plan for the Lake Eacham Rainbowfish, *Melanoteania eachamensis*. DPI/WTMA Internal Report.

Successful Grant Applications

National Environment Research Council - Three year research grant "Ecological correlates of cognition". £356,000; Ahead of schedule.

Fisheries Society of British Isles – Small research project grant "Phenotypic plasticity and foraging ecology in Arctic charr." £5,000; Completed.

Biotechnology and Biological Sciences Research Council – One year research grant "Social learning and lifeskills training in hatchery fish." £100,000; Completed.

Teaching Experience

Brain and Behaviour, Quantitative Biology, Behavioural Ecology, Environmental and Community Biology, Fish and Fisheries, Comparative Physiology, Marine Biology and Ecology.

Society Membership

Association for the Study of Animal Behaviour (ASAB UK)
Australian Society for the Study of Animal Behaviour (ASSAB)
Australia and New Guinea Fishes Association (ANGFA)
Fisheries Society of the British Isles (FSBI)
American Fisheries Society (AFS)
Australian Geographic Society (AGSoc)
National Geographic Society (NGS)
The Centre for Conservation Biology (CCB)
Queensland Conservation Council (QCC)
The Australasian Evolution Society (AES)

Science Communication, Media and Public Relations

My excellent communication skills are exemplified by the great diversity of audiences whom I have addressed and interacted with. From management meetings, school groups, local community groups to large international conferences. As part of my honours research I liaised with the traditional owners of the land surrounding Lake Eacham World Heritage National Park and officers from the Department of Environment.

I have been invited to speak at ANGFA meetings, and to attend the management meeting to discuss the conservation status of the Lake Eacham rainbowfish. I have tutored at all levels at a number of universities on a variety of subjects and supervised third year and honours projects. I was the organiser of the Fish and Fisheries discussion group at U.Q. and have worked as a consultant for government departments (e.g. QDPI, Fisheries) and private industry, the Queensland Commercial Fishers Organisation. My ability to work with the public is demonstrated by two years spent as an education officer teaching the general public and school groups about the marine environment. I have conducted an extensive number of interviews with journalists from around the world and am currently the media liaison officer for ICAPB. Furthermore, I have been scientific advisor to the BBC on a number of occasions and have recently been invited to talk at the 2004 Cheltenham Science Festival sponsored by New Scientist.

Community Involvement

Scientific Advisor for the British Broadcasting Commission
Media Liaisons Officer for the Institute of Cell Animal and Population Biology

Member of the Community Consultative Committee for the Control of Noxious Fish Species in Queensland.

Public Liaison Officer – Seaweek, Museum of Victoria.

Advisor to the Red Hill Community Group, Brisbane on the reintroduction of native fish as effective mosquito control.

List of conferences attended

Fisheries Society of British Isles (Norwich 2003) "Learning in fishes: Applications to conservation and fisheries reintroductions".

American Fisheries Society (Quebec 2003)"Learning in fishes: Applications to conservation and fisheries reintroductions".

European congress of Poeciliid biology (Switzerland 2003) "Shyness boldness traits in the poeciliid, *Brachyraphis empsicopi*."

ASSAB conference (1999 Armidale). Preference for familiar fish in the rainbowfish *Melanotaenia duboulayi*.

World Ethology Congress (Vienna '97) "Predator evasion behaviour of the Lake Eacham Rainbowfish."

Department of Zoology (U.Q.) Post Graduate Conference 1996 "Habitat selection and anti-predator responses", 1997 "Predator inspection behaviour" and 1999 "Social transmission of escape responses".

ASSAB conference (1996 Brisbane) "Predator recognition in the Lake Eacham rainbowfish."

Lake Eacham rainbowfish management meeting; "The Lake Eacham rainbowfish : Where to now", WTMA, 1995, Cairns.

Attended the International Behavioural Ecology Congress (Canberra 1996).

Attended the Learning and Memory workshop (Switzerland 2003).

Hobbies and Other Interests

Hiking, rock climbing, SCUBA diving, canoeing, rowing, cycling and aquariums.

Referees

Dr Kevin Warburton
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