**Prof. Gordon H. COPP. C.V. (Resume)**

Gordon has over 32 years experience in the environmental biology of freshwater fishes, encompassing early fish development, fish life-history traits, otter-fish interactions, invasion biology and non-native risk analysis.

After completing a post-doctoral fellowship with the Freshwater Biological Association and ten years of teaching and research as Reader in Ichthyology at the University of Hertfordshire, Gordon joined **Cefas** in 2002 to undertake R&D, leading research contracts on freshwater fishes to assess the risks and impacts of non-native species, and the conservation biology of native fishes. Gordon’s R&D work in non-native species risk analysis, which informs policy and practice at both national and international levels, has attracted support from a number of UK customers, including Defra, NERC, British Council and the Environment Agency, as well as the EC, the USDA, and N.A.T.O. internationally. Framed with national and international collaborative networks, this work involves other teams within **Cefas** as well as universities and institutions in Europe and North America.

Gordon provides specialist advice to national and international organisations on various aspects of aquatic biological invasions (including Defra, the EC, CABI-International, ICES Working Group on Introductions and Transfers of Marine Organisms, UKXTAG Alien Species Group for Water Framework Directive implementation), he also co-coordinates native fish conservation initiatives, such as the Biodiversity Action Plan for the crucian carp in Norfolk and research on Eurasian otter diet and distributions.

Over the last 15 years, Gordon has expanded his research to include molecular and telemetry tools, such as assessments of non-native species impacts using stable isotopes, studies of non-native species impacts on the genetic character of crucian carp through hybridization, and the development of methods to detect non-native species using environmental DNA.

In addition to these activities, Gordon is a visiting professor and supervisor of PhD students at Bournemouth University (UK) and at Trent University (Canada) as well as external examiner of PhDs in the UK and overseas.

RELEVANT EXPERIENCE

Research and advice on the risks and impacts of non-native fishes

As an advisor to Defra and a member of the GB Non-Native Risk Analysis Panel (NNRAP), which undertakes peer-review of non-native species risk assessments, Gordon’s research focuses on the potential risks posed by non-native freshwater fishes and involves the development of risk analysis protocols for the screening and full assessment of non-native aquatic species.

Detection of non-native species from environmental DNA

Gordon is contract leader for a project to adapt and develop methods for the early detection of non-native species from the DNA found in water samples. The outcome of the project will provide a means of early forecasting of new species invasions, with potential applications in compliance (e.g. ballast water convention) and management (e.g. rapid response/eradication assessments).

Research and development of conservation tools for native crucian carp

Gordon coordinates research on the environmental biology of crucian carp, focussing on growth and life-history traits as well as the implications for conservation efforts (e.g. re-introductions and stocking) of crucian carp genetic integrity and threats posed by hybridization with introduced non-native fishes. This work contributes to conservation objectives outlined in the species’ Biodiversity Action Plan for Norfolk, an historical stronghold.

Research and advice on resurging populations of Eurasian otter

Having initiated investigations in 1992 on the diet and distribution re-introduced otters in Hertfordshire, Gordon has coordinated subsequent studies in the Somerset Levels and in Norfolk to assess dietary changes since the species resurgence from its near extinction in the 1970s, including the role of non-native species in the diet, so as to inform conservation efforts.

Selected publications:

Copp GH & 9 co-authors. 2016. A review of growth and life-history traits of native and non-native European populations of black bullhead *Ameiurus melas*. Rev Fish Bio Fish (early view) (doi: 10.1007/s11160X016X9436Xz)

Lehtiniemi M, Copp GH, Normant-Saremba M & Ojaveer H. 2016. EU list should stick to potential invasives. Nature 533, 321.

Davison PI, Créach V, Liang WXJ, Andreou D, Britton JR & Copp GH. 2016. Laboratory and field validation of a simple method for detecting four species of non-native freshwater fish using eDNA. J Fish Biol (in press)

Vilizzi L, Tarkan AS & Copp GH. 2015. Experimental evidence from causal criteria analysis for the effects of common carp on freshwater ecosystems: a global perspective. Rev Fish Sci Aquacult 23, 253–290.

Tarkan AS, six co-authors & Copp GH. 2015. A review and meta-analysis of growth and life-history traits of a declining European freshwater fish, crucian carp *Carassius carassius*. Aquat Conserv 26, 212–224.

Fox MG & Copp GH. 2014. Old world vs new world – Life history alterations in a successful invader introduced across Europe. Oecologia 174, 435–446.

Copp GH. 2013. The Fish Invasiveness Screening Kit (FISK) for non-native freshwater fishes – a summary of current applications. Risk Analy 33, 1394–1396.

Britton JR, Cucherousset J, Davies GD, Godard MJ, Copp GH. 2010. Non-native fishes and climate change: predicting species responses to warming temperatures in a temperate region. Freshwat Biol 55, 1130–1141.

Almeida D, Copp GH, Masson L, Miranda R, Murai M & Sayer CD. 2012. Changes in the diet of a recovering Eurasian otter population between the 1970s and the 2010s. Aquat Conserv 22, 26–35.

Sayer CD, Copp GH & 4 co-authors. 2011. Towards the conservation of crucian carp *Carassius carassius*: understanding the extent and causes of decline within part of its native English range. J Fish Biol 79, 1608–1624.

Copp GH & 21 co-authors. 2005. To be, or not to be, a non-native freshwater fish? J Appl Ichthyol 21, 242–262.

Copp GH. 1989. The habitat diversity and fish reproductive function of floodplain ecosystems. Environ Biol Fish 26, 1–26.