

Dr Andy South

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I am an experienced data analyst, software developer, researcher, ecologist, teacher and manager. I have worked in a diversity of settings developing useable data tools and communicating information in accessible and interesting ways. I work well collaboratively, have managed teams, and have the creativity and determination to complete personal projects.

Employment

May 2012 – present **Freelance**

- 12 months developing a spatial simulation of tsetse fly populations in R with user interface for the Liverpool School of Tropical Medicine : www.github.com/AndySouth/rtsetse
- Software development contracts (R) for Cefas & Worldfish
- Talks at Cambridge R user group (Nov 2014) and LondonR (Sep 2013 & Dec 2013)
- Tutorial, talk, and lightning talk at R user conference, Spain, July 2013
- Contributed to two NHS hackdays and won two weeks work mapping for a GP
- Developed a web interface for global species conservation priorities www.mapisco.org.uk for Defra and Newcastle University using R and Shiny
- Developed an R package for the Welsh Assembly Government to visualise survey data
- Ecological survey of Open Mosaic Urban Habitats for a Defra funded project
- Update, maintenance and user support for my R package – rworldmap. (unpaid)

Sep 2011 to Apr 2012 **Class teacher**, 7-8 year olds. Bosbury Primary School, Herefordshire.

Feb 2006 to Sep 2010 **Spatial analyst and team leader**

Centre for Environment, Fisheries and Aquaculture Science (Cefas), Lowestoft

- Leader of the Spatial analysis team of 6-10 staff using ArcGIS, MapInfo, R & SQL
- Responsible for staff management, recruitment and work allocation
- Analyses of fisheries data stored in complex relational databases
- Initiated and developed an R package to map global data (rworldmap) now used worldwide
- Received a performance bonus allocated to 5% of staff
- Won projects from NERC, EU and Defra

2000 to 2006 **Software developer, trainer and researcher**

Anatrack Ltd., University of Oxford.

- Designed and developed a software tool for viewing and analysing tracking data
- Tested application, wrote help files, supported users and gave training
- Completed application consisted of > 50,000 lines of code, still being sold today (www.anatrack.com)

1994 to 2000 **PhD student and Post-doctoral ecologist**

University of Newcastle.

Spatial ecology of badgers, red squirrels, and beavers.

- Scientific research, programming, fieldwork and writing papers
- Investigating the spatial distribution and spread of mammal species
- Linking C programs to GRASS GIS using UNIX scripts
- Teaching and demonstrating to undergraduate and masters students

Technical skills :

- R for data manipulation, display and analysis. Development of R packages
- Web user interfaces using R and Shiny
- Developing and maintaining large volumes of code, version control using Git & subversion
- Interrogation, analysis and visualisation of spatial data
- Automated document creation using Sweave, Latex, Beamer, Knitr and Markdown
- Query and design of relational databases using SQL, ODBC, Query Analyser and Access
- Object-oriented software design and exception handling
- Java for user interfaces and threading, C++ and C for fast code
- Reading and creation of ESRI shapefiles, ArcGIS, MapInfo, QGIS

Education

- 2010 - 11 **Postgraduate Certificate of Education**, Primary. Science specialism. Exeter Univ.
- 2008 - 09 **BTEC Level 7** certificate in Leadership and Management while working at Cefas.
- 1994 - 98 **PhD**, University of Newcastle upon Tyne. Modelling the Spatial Distribution of Mammals. <https://theses.ncl.ac.uk/dspace/bitstream/10443/175/1/south99.pdf>
- 1989 - 93 University of East Anglia, Norwich and University of California at San Diego, USA
BSc (Hons) Biological Sciences. First class.
- 1981 - 89 Bristol Grammar School. **A-Levels** : Biology (A), Chemistry (A), Geography (A)

Selected publications

- Stelzenmüller, V., Lee, J., **South, A.**, Foden, J. and Rogers, S.I. (2013). Practical tools to support marine spatial planning: A review and some prototype tools. **Marine Policy**. 38, 214–227.
- South, A.B.** (2012) Developing creativity and abstraction in representing data. **Primary Science**. 124. 17-20.
- Simelton, E., Fraser, E.D.G., Termansen, M., Benton, T.G., Gosling, S., **South, A.B.**, Arnell, N.W., Challinor, A.J., Dougill, A., Forster, P.M. (2012) The socioeconomics of food crop production and climate change vulnerability: a global scale quantitative analysis of how grain crops are sensitive to drought. **Food Security** 4, 2, 163-179.
- McNeeley, S. M. et al. (2012) Catalyzing Frontiers in Water-Climate-Society Research: A View from Early Career Scientists and Junior Faculty. **Bull. Amer. Meteor. Soc.**, 93, 477–484.
- South, A.B.** (2011) rworldmap A New R package for Mapping Global Data. **The R Journal** 3, 35-43.
- Ready, J., Kaschner, K., **South, A.B.**, Eastwood, P.D., Rees, T., Rius, J., Agbayani, E., Kullander, S. and Froese, R. (2010) Predicting the distributions of marine organisms at the global scale. **Ecological Modelling**, 221, 467-478.
- Lee, J., **South, A. B.**, and Jennings, S. (2010) Developing reliable, repeatable, and accessible methods to provide high-resolution estimates of fishing-effort distributions from vessel monitoring system (VMS) data. – **ICES Journal of Marine Science**, 67: 1260–1271.
- South, A.B.**, Kenward, R.E. & Walls, S.S. (2006) Ranges7 : For the analysis of biological location data. Online manual. ISBN 0-9546327-0-2.
- Shirley MDF, Rushton SP, Smith G, **South AB**, Lurz PWW. (2003) Investigating the spatial dynamics of bovine tuberculosis in badger populations: Evaluating an individual-based simulation model. **Ecological Modelling**, 167, 139-157.
- South, A.B.**, Rushton, S.P., Kenward, R.E. and Macdonald, D.W. (2002) Modelling vertebrate dispersal and demography in real landscapes : how does uncertainty regarding dispersal behaviour influence predictions of spatial population dynamics ? pp. 327 - 349 In: Bullock J M, Kenward R E and Hails R S. Dispersal. Blackwell Science, Oxford.
- South, A. B.** & Kenward, R. E. (2001) Mate finding dispersal distances and population growth in invading species: a spatially explicit model. **Oikos** 95, 53-58.
- South, A. B.**, Rushton, S. P. & Macdonald, D. W. (2000) Simulating the proposed reintroduction of the European beaver (*Castor fiber*) to Scotland. **Biological Conservation** 93, 103-116.
- South, A. B.** (1999). Dispersal in spatially explicit population models. **Conservation Biology** 13, 1039-1046.

Languages : Spanish (AS Level, Grade A, 2000. Intermediate & Advanced classes 2002-2010).