

# AN INTRODUCTION TO GIS FOR CONSERVATION USING QGIS

JERSEY



## COURSE OVERVIEW

Spatial analysis has become a vital practice in the field of ecology. It allows scientists to model and explore Geographic Information Systems (GIS) to answer important research questions and guide conservation management decisions. In this course we use QGIS, an open-source programme, to address more challenging questions in ecology, learning how species, habitats and landscapes can be described, analysed, and graphically represented.

Whether identifying biodiversity hotspots, delineating the most inclusive protected area network, understanding how species interact with features of the environment, or measuring the extent of habitat loss, conservationists need to understand how organisms are distributed across landscapes and are impacted at different spatial scales. GIS plays a central role in doing so.

Using your own data, and learning how to incorporate a range of freely available data, GIS is a powerful computing tool that can practically help you address a concept, question or issue you wish to develop, making it an invaluable skill to integrate within your career.

## WHO IS IT FOR?

Whether you are an absolute beginner to GIS, or have already grasped the fundamentals and wish to refresh upon your knowledge, this introductory course progresses at a suitable pace to ensure you get to grips with the basic use of QGIS and feel successful. Although the content is taught within the framework of environmental conservation, the basic principles mean this is suitable to anyone considering the use of GIS in business or science.

No prior knowledge of GIS is required, but participants should be comfortable working with computers, managing files and installing software. It is not essential to bring a lap top, but advantageous.

Fantastic course that goes beyond 'simple maps', it covers analysis and techniques essential for conservation professionals.

**GIS course participant**

## WHAT IS THE COURSE CONTENT?

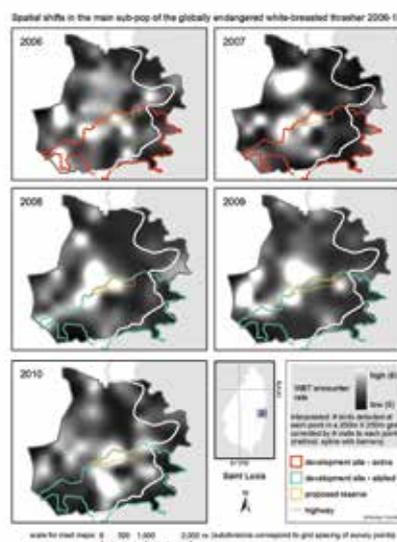
Predominantly computer based, we work both individually and as a group to progress through a series of lectures and practical workshops to slowly build upon your skill set. Staff will always be available for close support and provide further self-led tutorials for more advanced participants wishing to be challenged further. Learning and practising essential data management skills, you will also cover the following:

- How GIS can be used as an analytical tool to represent real-world spatial relationships.
- Data to be entered into a GIS can be derived from traditional field work, but context and depth can be added through remotely sensed data, or accessing freely available data from research institutes and citizen science. Whatever the source, GIS data can be manipulated to provide in-depth understanding of the interactions between organisms and different elements of their environments which works as an excellent aid in supporting conservation planning.
- GIS can also allow us to derive information (e.g. distance between features, estimate sea floor depth), that can be exported for use in standard statistical analysis and modelling techniques.
- Advances in GIS and satellite imagery allow research to be conducted very efficiently and cheaply, often over previously unachievable scales, and in areas inaccessible by conventional methods.
- Given the power of GIS to underpin conservation action, it is essential that practitioners understand the ways in which GIS can support the development of conservation solutions, the opportunities it provides as well as its limitations.

## COURSE LEARNING OBJECTIVES

By the end of this course you will be able to:

- ✓ Setup a project within QGIS to visualise and interpret a range of geospatial data, representing the real world in two dimensions.
- ✓ Learn how to generate high quality maps suitable for reporting and publication.
- ✓ Manipulate and manage data to visualise and analyse spatial patterns, learning to source freely downloadable data to set context to your work and advance your research.
- ✓ Be able to associate a range of data types with appropriate GIS tools.
- ✓ Develop an appreciation for using GIS to communicate complex information, and to direct and answer questions relevant to conservation research, developing the technical skills to then apply this within your own work place or study.
- ✓ Learn how to use a new piece of software whilst practicing research evaluation and critical thinking.
- ✓ Obtain insight into the rapid growth is GIS and its widespread possibilities for use in your own work.





## COURSE LEADER



### DR HELEN GATH

#### CONSERVATION TRAINING OFFICER

Helen joined Durrell early in 2020, delivering conservation training through lectures and bespoke mentoring programmes. Educated at Cardiff University (BSc Zoology), Helen went on to develop her field research skills in Mauritius as a nature reserve warden for three years, before going on to obtain her PhD in conservation biology through University College London. Beyond academia, Helen has experience in species monitoring to inform policy and practice, both through work with DEFRA and in the environmental consultancy sector. Deeply rooted within these roles has been her joy for training others, and with diverse experience in teaching and communication, Helen is passionate about expanding the quality and global reach of Durrell's training programmes.



## VENUE AND ACCOMMODATION

The course will be held at Durrell Conservation Academy in Jersey, Channel Islands.

Durrell Wildlife Conservation Trust (Durrell) was established by the world renowned naturalist and author Gerald Durrell in 1963 with the primary aim of saving species from extinction. We now run 46 projects in 14 countries worldwide and have played a pivotal role in the recovery efforts for several species. Durrell Conservation Academy is located at the Trust's headquarters, Jersey Zoo.

In 1984 Gerald Durrell formally established the International Training Centre (now known as Durrell Conservation Academy) on Jersey as a form of "mini university" designed to equip conservationists from across the world with the animal management and critical

thinking skills required to bring species back from imminent demise. Since this time the academy has taught around 6,000 people (both conservation practitioners and conservation students) from 151 countries.

Our facilities include a 54 seat purpose built lecture theatre, two libraries, a computer lab and a classroom. There is 24 hour access to our computers and free Wi-Fi is available throughout. Most course participants choose to stay at our YHA accredited hostel, which is immediately adjacent to Durrell Conservation Academy.

You will stay in shared rooms in our hostel-style residence right next to the Zoo. The residence includes a TV lounge and dining room, where meals are served for course participants.



# COST AND BOOKING INFORMATION

The course fee is £575.

Optional full board accommodation is available in our on-site hostel.

Optional lunches are available for non-residents at £8.

**For further information or to book a place, please contact +44 (0)1534 860037 or email [academy@durrell.org](mailto:academy@durrell.org)**



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**SAVING SPECIES FROM EXTINCTION**