From: Bruno Díaz López
Subject: COURSE: INTRODUCTION TO GIS FOR ECOLOGY, BEHAVIOUR & CONSERVATION

COURSE: INTRODUCTION TO GIS FOR ECOLOGY, BEHAVIOUR & CONSERVATION

Training course for learning Geographic Information Systems (GIS) concepts, tools, and functionality in ecology, behaviour, and conservation.

To study Ecology, Behaviour and Conservation of animal species inherently concerns to understand the species distribution and habitat use. The Bottlenose Dolphin Research Institute (BDRI) is aware of the importance of using GIS in field research projects, and therefore has created this new training course to provide valious information about the use of GIS in biology and conservation.

Unlike most traditional GIS courses, which are exclusively desk-based, this course will include hands on collection of field data in a coastal environment (studying different species of marine birds and marine mammals). This means that trainees will not only learn how to use GIS, but also how to collect behavioural and ecological field data and how to import this information into a GIS. In addition, the course will include PowerPoint lectures with computer based practical sessions where participants work through real GIS field data collected from research projects that are ongoing at the course location illustrating the use of open-source GIS (Quantum GIS) for everyday mapping tasks. Quantum GIS (also known as QGIS) provides a user-friendly, open-source, free alternative to commercial GIS software packages, and it is becoming increasingly widely used in research centres and Universitites worlwide.

The course is aimed at students and researchers just starting to use GIS in their careers and who have little or no existing knowledge of this subject area. This is a great chance for students and professionals to boost their career skills using learning materials usually only available to students and staff at the Bottlenose Dolphin Research Institute (BDRI). Courses are participatory in nature and are designed to stimulate inquiry and active learning. The learning model helps students to connect the conceptual material presented in each course to case studies. Participants will only need to bring their own laptop. A total of 30 hours will be spent in lectures, field work, tutorials, and other class teaching.

This course also addressed to groups (scientists, university students) hence it is possible to arrange with the BDRI special requirements regarding language and dates to suit the different groups.

After completing this course, trainees will be able to:

• Create, save, and navigate around a GIS project
• Create, import, process, and display spatial data from field surveys and online data repositories
• Use GIS to display spatial data and to create and export maps
• Interpret the symbols, contours and scale on a map, and learn how to navigate using a GPS and a compass
• Collect ecological and behavioural field data and create a GIS compatible spreadsheet for use in GIS
• Review and understand how to error-check field data
• Import field data into a GIS from: GPS, hard-copy maps, digital imagery, shapefiles and XY coordinates
• Generate and edit your own vector data
• Symbolise and label vector features according to information in the attributes table
• Incorporate environmental and anthropogenic variables into a GIS
• Understand the use of appropiate spatial reference systems
• Distinguish and add raster and vector layers to your project and adjust the way they are drawn
• Use GIS to measure the spatial distribution of the observation effort
• Use GIS to map species distributions and calculate the number of encounters per unit of effort (SPUE)
• Use GIS to compute the slope gradient and slope aspect from a bathymetric chart data set
• Calculate minimum distances from a GPS position to the perimeter of a feature (i.e coastline) via spatial analyst tools
• Digitize map data with QGIS
• Link species presence/absence or abundance data to other spatial data in a GIS
• Encounter the power and versatility of QGIS to illustrate patterns, exploring bottlenose dolphins movement routes

in a wildlife case study

Lenght: 4 days (30 hours)

Dates: 1st group (September 4th to 7th) or 2nd group (September 11th to 14th)

Location: Bottlenose Dolphin Research Institute, Avenida Beiramar 192, O Grove, Pontevedra, Galicia (Spain). O Grove has very good transport links and is within two hours travel by car from the two main airports in Galicia (Santiago de Compostela and Vigo). These airports can be reached by direct flights from most European cities.

Course Fee: The total cost for this course (including housing) is 500 Euros.

The course fee includes:

• training and tuition fees
• housing at the BDRI facilities (shared room) from the night before the start of the course until the day after the end of the course (5 nights). The apartment has a full kitchen (gas and electricity are included) and a full set of cooking utensils. Foods of all kinds are available at the local supermarkets within walking distance at your own expense. Participants will be responsible for their transportation to and from the research centre in O Grove, Galicia, Spain.
• certificate of attendance
• all associated costs during the field activities.
Please note that all profits generated from this course will be used to support ongoing field research at the BDRI.

Application procedure

Places are limited to 10 participants to allow for individual support and feedback by the tutors.

To book a place, or for more information, email: info@thebdri.com

For first consideration, apply before August 27, 2017

Lastest scientific articles involving the use of GIS to study the use of habitat and species distribution modelling published by the BDRI:

- Diaz Lopez B., 2017. Temporal variability of predator presence around a fin fish farm in the North-western Mediterranean Sea. Marine Ecology 38(1), e12378.
- Diaz Lopez B. and Methion S., 2017. The impact of shellfish farming on common bottlenose dolphins' use of habitat. Marine Biology 164: 83.
- Díaz López, B., Grandcourt, E., Methion, S., Das, H., Bugla, I., Al Hameli, M., Al Hameri, H., Abdulla, M; Al Blooshi, A; Al Dhaheri, S.(2017). The distribution, abundance and group dynamics of Indian Ocean humpback dolphins (Sousa plumbea) in the Emirate of Abu Dhabi (UAE). Journal of the Marine Biological Association of the United Kingdom, 1-9.

Best regards,

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and the attachments (if any). Thank you for your cooperation.