



AVIAN EGG INCUBATION WORKSHOP

6 - 10 DECEMBER 2021, JERSEY



DURRELL
CONSERVATION
ACADEMY



RIVERBANKS
ZOO & GARDEN
columbia south carolina

COURSE OVERVIEW

The Avian Egg Incubation Workshop is a five-day, intensive course designed for those working with breeding birds and especially those involved in artificial incubation of eggs.

WHO IS IT FOR?

The workshop is aimed at curators, keepers, veterinarians, serious private breeders and field biologists involved in managing breeding birds, both in captivity and in the wild. Whether new to egg incubation or experienced with managing eggs, participants gain a broad range of skills necessary to ensure optimal hatchability both in the incubator and in the nest.

WHAT IS THE COURSE CONTENT?

During the course you will cover the following topics:

- egg formation and structure
- embryo development and extraembryonic membranes
- factors affecting hatchability
- hatchery design and management (including equipment selection and operation)
- candling
- egg weight loss management
- egg repair
- in ovo embryo sexing
- hatching assistance
- managing eggs in the nest
- egg necropsy and hatchability analysis

Participants will break out embryos at all stages of development (older embryos are euthanized first) and gain hands-on experience with candling eggs, egg repair, egg necropsy and other techniques.

COURSE LEARNING OBJECTIVES

By the end of this course you will have:

- ✓ a thorough understanding of normal avian embryo development
- ✓ ability to accurately assess normal and abnormal embryos by candling
- ✓ proficiency with managing egg weight loss to achieve optimal hatchability
- ✓ protocols and checklists to set up or improve hatchery operation in your unique facility
- ✓ methods of salvaging valuable but damaged or compromised eggs
- ✓ techniques to determine if, when and how to assist an embryo to hatch
- ✓ means of determining possible causes of hatching failures and evaluating overall hatchability
- ✓ confidence to manage eggs in the nest as well as in the incubator
- ✓ a new network of colleagues with whom to share information and experience

COURSE OUTLINE

Mornings will be spent in the classroom for lecture and discussion. After lunch conservation talks and visits to the Zoo will illustrate how egg management is applied to endangered species management and recovery. Afternoons in the lab will provide hands-on practice and individual instruction.

DAY 1

Day one you will have a chance to get to know each other, your instructors and the Durrell staff, then jump right into the course material. We will explore the formation and structure of the egg, and the development of the early embryo and its extraembryonic membranes. Our midday presentation will discuss the use of incubation and rearing techniques at Durrell.

DAY 2

On day two we will explore the many factors affecting hatchability and start examining the middle stages of embryo development. After lunch we will review the progress made to date and some of the problems faced in establishing a captive breeding program for the Galapagos mangrove finch. In lab, in addition to candling and egg breakouts, we will practice repairing broken eggs.

DAY 3

Day three concentrates on hatchery management, including facility design, equipment, sanitation and egg weight loss management, and we will continue looking at the middle stages of embryo development. After lunch there will be a lecture about breeding the rarest duck in the world: the Madagascar pochard.

DAY 4

On day four we will continue practicing egg weight loss management tracking along with a discussion of record keeping. We will explore late stages of embryo development, with a detailed focus on the hatching process including whether, when and how to provide hatching assistance. Midday there will be time to explore the Zoo, meet Durrell's specialist bird staff and view the various incubation rooms and bird facilities. In lab there will be a demonstration of drawing a minute blood sample from an egg for DNA gender determination.

DAY 5

Day five will include a discussion of managing eggs in the nest, along with egg necropsy protocols, hatchability analysis and egg euthanasia. After lunch the presentation will cover sustainability indices and you will consider how sustainable our captive populations are and how we can evaluate this. You will also learn the role of egg manipulation, incubation and rearing techniques in the recovery of the California condor. We will wrap up the week with a review and open discussion of all that we've covered.

PLEASE NOTE THAT, BECAUSE THE COURSE IS AN INTERACTIVE PROCESS TAILORED TO OUR SPECIFIC GROUP, THE ABOVE OUTLINE MAY BE SUBJECT TO MINOR CHANGES.

COURSE LEADERS



Susie Kasielke

TOLEDO ZOO AND AQUARIUM

Susie started her career as Animal Keeper at the Los Angeles Zoo where she worked for nearly 40 years, most recently as Curator of Birds from 2001-2016. She is now the Avian Biologist for the Toledo Zoo and Aquarium. Through her involvement with the California Condor Recovery Program, she worked with the staff at the Los Angeles Zoo and other facilities to develop and refine propagation, incubation and rearing methods for condors and many other species. She has been teaching workshops on avian egg incubation for zoo groups in North America and around the world for over 25 years.



Colleen Lynch

RIVERBANKS ZOO AND GARDEN

Colleen has been the Curator of Birds at Riverbanks Zoo and Garden since early 2013. She has been working with birds in AZA zoos since 1991 and with the AZA population Management Centre since 2000. Colleen served as the Primary Incubation Keeper at the San Diego Zoo's Avian Propagation Centre 1997-2000 and has developed incubation and hand rearing programs and protocols as the Curator of Birds at the Lincoln Park and Riverbanks Zoos. Having interests in both aviculture and population biology, Colleen is especially interested in evaluating the sustainability of our avian collections.



Harriet Whitford

DEPUTY HEAD OF BIRD DEPARTMENT, DURRELL

Harri first joined Durrell's Bird department in 1999. Originally trained on all routines, she has spent most of her time to date working on the Wetland section. She is responsible for both the Meller's duck and Madagascar teal studbook and has a keen interest in avian incubation. While developing and applying her incubation skills here, she has also applied her knowledge in-situ; incubating and hand rearing both the Madagascar fody and olive white-eye in Mauritius.

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 over 6,000 people (both conservation practitioners and conservation students) from 142 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 £650.

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

Optional lunches are available for non-residents.

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



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SAVING SPECIES FROM EXTINCTION