

**The British & Irish Association of Zoos and Aquariums**



**BIAZA**

**Joint Management of Species Programmes**

**Annual Report**

**2004**

**Recording the contributions of the BIAZA to British Isles, European and Global species management initiatives.**

**The British & Irish Association of Zoos & Aquariums**



**Joint Management of Species Programmes**

**Annual Report**

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**Compiled and edited by**

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**and**

**Neil Bemment - Chair, Joint Management of Species Committee**

**Recording the contributions of the BIAZA to British Isles, European and Global species management initiatives.**

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### **British and Irish Taxon Advisory Group (TAG) 2004 Annual Reports.**

*NB These are in alphabetical order by TAG name. Some TAGs are not included in this report because if that TAG is superseded by an EEP, the Chair may submit a report to EAZA instead to be included in the EEP Yearbook. Any other missing reports are due to non-production of a report by that TAG.*

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## Species Management in British and Irish Collections

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By participating in co-operative programmes for species management, responsible collection managers hope to maintain genetically and demographically healthy, self-sustaining populations of captive animals for the future. Since the beginning of 1992, Species Management programmes for animals held in B&I collections have come under the organisational umbrella of the Federation of Zoological Gardens of Great Britain and Ireland which also embraces the Channel Islands and the Isle of Man.

The **Federation of Zoos** officially changed its name to **BIAZA, British & Irish Association of Zoos & Aquariums**, in November 2004.

### *Structure within the BIAZA region*

BIAZA's Conservation and Animal Management Committee (CAMC) has a sub-committee, the Joint Management of Species Committee (JMSC), which oversees the work of a number of Taxon Advisory Groups (TAGs). These TAGs oversee management programmes for individual species, called Joint Management of Species Programmes (JMSPs). These are subordinate to the European Endangered species Programmes (EEPs) and mirror the organisation of such programmes in other regions e.g. North America (SSPs), Australia (ASMPs).

TAGs follow taxonomic groupings. Each TAG has a Chairperson who co-ordinates the activities of a working group, comprising of species co-ordinators, studbook keepers, taxonomic experts, and veterinary and other advisors.

The TAG covers all taxa that come under the taxonomic heading; the role of the working group is to assess those species currently held in, or available to, British and Irish collections, and to decide which of those will contribute most effectively to the broad-based conservation, education and research goals. In order to make these decisions, the working group will draw information and advice from a variety of sources, including the IUCN/SSC Conservation Breeding Specialist Group (CBSG) and relevant Taxon Specialist Groups, TAGs in other regions and, most importantly, the individual zoos involved. The working document that results is known as a Regional Collection Plan. The TAG is responsible for assigning a level of management to the species prioritised, and for appointing and subsequently monitoring the progress of species managers, all of whom are directly responsible to the TAG chair.

Participating institutions and collections are expected to follow the recommendations made by species co-ordinators and support TAG initiatives.

### *Relationship with Europe*

Great Britain and Ireland are part of Europe and, as such, BIAZA is an institutional member of the European Association of Zoos and Aquaria (EAZA), the umbrella organisation for European Endangered species Programmes (EEPs). British and Irish collections are included within the scope of these EEPs and European Stud Books (ESBs). The chairperson of the JMSC holds one of two BIAZA zoos' positions on the EEP committee that formulates policy and development plans pertaining to

cooperative animal management, in collaboration with the EAZA Executive Office based in Amsterdam.

BIAZA TAGs are subordinate to their EAZA counterparts with much of the policy making regarding species management being done at European level. To avoid any duplication of effort, the JMSC continually reviews the status of BIAZA programmes (JMSPs) in the context of those managed across Europe and where appropriate, they have either been expanded to become ESBs or EEPs or dropped once EEPs run from other European countries have successfully assimilated the British and Irish collections.

However, the species management infrastructure within BIAZA collections continues to pursue the following objectives:

***Institutional Collection Planning.***

To direct the development of the plans of individual institutions so as to:

- Optimise the contribution made by the collective British and Irish animal collections to the broad-based conservation goals of zoos.
- Make the most effective use of the conditions, facilities and resources available.
- Balance conservation needs with the additional British and Irish specific education, research and visitor attraction requirements.
- Liaise with the appropriate British and Irish licensing authorities and wildlife agencies to achieve this.

***To support JMSPs***

Continuing to support internal species management programmes for taxa where European-wide interest and resources would not be forthcoming or appropriate, for example for British native fauna, or for non-threatened taxa.

***To provide training***

Formally - ensuring that a core of proficient species managers conversant with current management methods and tools is maintained, by monitoring training needs and addressing them through specifically tailored courses.

Informally - through providing a structure for professional development; the regularity of meetings encourages substantial involvement of zoo staff below curatorial level who would not otherwise attend European or global meetings. This provides important opportunities for gaining experience, contacts and knowledge of wider zoo issues, helping to build a solid base of skills within the British and Irish zoo industry.

***To maintain an effective communication network***

With the move towards greater European integration, more decisions are being taken and more priorities set at European meetings. In addition, collections may be directly affected by recommendations made by global bodies. Finite resources allow only a small number of British and Irish collections to be represented at these external meetings. Regular regional meetings provide a forum for presentation and discussion of recent developments at all levels, ensuring that decision-makers remain informed and that their views are recorded and can therefore be represented, by those attending

external meetings. This system should encourage full JMSP participation in European and global co-operative species management initiatives.

***To provide husbandry guidelines and to direct research***

To provide husbandry guidelines tailored specifically to the needs of the British and Irish zoos with regard to climate, facilities and legislation, to liaise with other regions to avoid duplication of effort and to facilitate the sharing of expertise, and to identify gaps in knowledge and taxon specific problems requiring research.

***To support in-situ conservation***

To identify and target field projects which would benefit from zoo involvement and support.

***International connections***

To make the best use of resources in the world's zoos, regional programmes need to form an international network of captive conservation programmes that liaise closely with field programmes. This is achieved through:

**1) Direct communication between regions**

One of the roles of the JMSP is to maintain communication and exchange of publications between regional programmes. TAG chairs also have, as part of their responsibilities, to communicate with appropriate TAG chairs in other regions.

**2) Communication through the Committee on Inter-Regional Conservation Co-operation (CIRCC)**

CIRCC is a sub-committee of the World Association of Zoos and Aquariums (WAZA; formerly IUDZG). Committee members are representatives of those national or regional associations that oversee a species management programme; the BIAZA Zoo Programmes Co-ordinator is the British and Irish representative. The role of CIRCC is to support and promote the work of WAZA member institutions (both regional/national zoo associations and individual zoos) in wildlife and habitat conservation. It aims to achieve this through producing standards and guidelines to facilitate captive species management across member regions and institutions, encouraging the scientific planning and management of zoological collections, supporting inter-regional training and technology transfer, encouraging the contribution of members to in-situ projects, and making recommendations as necessary to the WAZA Executive Council.

**3) Liaison with the IUCN/SSC Conservation Breeding Specialist Group**

Through a process of intensive workshops that take place world-wide, the CBSG draws together taxon specialists from both the wild and captive conservation communities. One of the results of each workshop is a taxon specific (e.g. for equids or felids) Conservation Assessment and Management Plan (CAMP), which reviews the conservation status of each taxon objectively and recommends conservation action. One of the conservation tools considered during the process is captive breeding, and recommendations concerning the need for a captive programme, and the level of management required are included. Another recommendation that may arise from the CAMP process is that individual species may need more intensive assessment. This is achieved through a second workshop process in which as much data as is available is compiled for the taxon involved, and computer modelling techniques (VORTEX) are used to assess the scale and

direction of effects that different management approaches might have on population viability, in order to formulate an appropriate strategy for the future. This process is called a Population and Habitat Viability Analysis (PHVA).

The CBSG therefore behaves essentially as the liaison between wild and captive initiatives at the global level. Global Captive Action Plans (GCAPs) resulting from the considered integration of several regions' Regional Collection Plans, and also global plans for the conservation of individual species are produced under the aegis of the CBSG. Close collaboration between the CBSG and WAZA is facilitated by the annual meetings of both organisations held jointly each year.

## Species Management Categories

The following categories are used throughout this report to indicate the level of management applied to taxa:

### **JMSP1** - BIAZA Co-operative Conservation Programme

High level management within the BIAZA region with species covered by multi-agency conservation programmes with the captive population directly linked to on-site conservation work e.g. reintroduction to the wild.

### **JMSP2** - BIAZA Co-ordinated Species

High level management within the BIAZA region, with a designated BIAZA co-ordinator providing recommendations to participating institutions.

### **JMSP3** - BIAZA Studbook Species

Medium level management within the BIAZA region with species covered by a studbook to which TAGs and participating institutions may refer in order to make decisions.

### **JMSP4** - BIAZA Monitored Species

Low level management within the BIAZA region with species monitored by designated members of the TAGs through a register or census.

Note: An annual census of all species excluding fish and invertebrates is provided by BIAZA's Bird, Mammal and Reptile and Amphibian, Fish and Invertebrate Inventories.

### **EEP** - European Endangered species Programme

High level of European regional management with a designated co-ordinator and (usually) a species committee who provide recommendations to participating institutions.

### **ESB** - European Stud Book

Medium level of European regional management with species covered by a studbook to which TAGs and participating institutions may refer in order to make decisions.

### **ISB** - International Stud Book

Highest level of global monitoring/management (approved by CIRCC).

### ***Species in more than one category***

Where more than one category applies, this is denoted by a slash, e.g. an EEP which retains a BIAZA co-ordinator to assist the smooth running of the programme would be listed as EEP/JMSP2.

### ***Category change***

The intention to change the JMSP category of a species is indicated by the new category being given in brackets, e.g. a JMSP2 species being elevated to an EEP species would be listed as JMSP2 (EEP).



## Joint Management of Species Committee Terms of Reference

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**The primary role of the JMSC is to oversee the activities of the BIAZA TAGs (Taxon Advisory Groups).**

The main focus of BIAZA TAGs includes:

- managing the JMSPs (Joint Management of Species Programmes)
- collection planning
- identifying research needs
- encouraging advances in husbandry and producing and updating guidelines
- identifying and supporting *in situ* conservation
- disseminating information from WAZA, EAZA TAGs and TAGs of other regions.

The JMSC will also:

- assist in developing BIAZA TAG policy.
- oversee regional studbook petitions and collate reports produced by the BIAZA TAGs.
- approve changes in BIAZA TAG chair/JMSP studbook keeper/TAG remit.
- propose recommendations for ratification by CAMC/BIAZA Council.
- ensure that BIAZA TAGs work closely with their EAZA counterparts and where appropriate liaise with species management programmes in other regions, the CBSG (Conservation Breeding Specialist Group) and other IUCN Specialist Groups.
- review annually the progress and development of each TAG.
- discuss and endeavour to resolve problem issues within the TAGs.

*Updated: June 2005 ( N.Bemment )*

## **Joint Management of Species Committee 2004 Report**

### ***Chair***

Neil Bemment (Paignton Zoo Environmental Park)

The committee met three times in 2004 (February, June and October), each meeting taking place the day before the Conservation & Animal Management Committee (CAMC) meetings.

### ***TAG/JMSP Development***

During 2004 the following changes in TAG chair occurred:

<u>BIAZA TAG</u>	<u>Change</u>
Bat & Insectivore	Simon Eyre resigned as Co-chair (not being replaced)
Elephant	Chris West replaced by David Field as Co-chair
Falconiform	Campbell Murn resigned as Chair (vacant)
Galliform	Gary Robbins resigned as Chair (see below)
Parrot	Andrew Bagnall replaced by Mike Jordan as temporary Chair

- A Large Carnivore TAG was established to embrace Felids, Canids, Ursids and Pinnepeds; Jeremy Usher-Smith (Highland Wildlife Park) was appointed as chairman.
- The Bovid TAG was renamed Hoofstock TAG.
- The Galliform TAG was disbanded; an EAZA TAG still exists for this taxon group

Several issues were reviewed by the TAG chairs at the three meetings and feedback duly forwarded to CAMC for consideration where appropriate. These included changes to the Balai Directive, Animal By Products order, various DEFRA Customer Information Notes and CIRCC discussion papers.

### ***JMSP Studbooks / Husbandry Guidelines***

Only one JMSP Studbook was initiated in 2004 namely that for Striated caracara (Lee Howell, Chessington World of Adventures) and a change of JMSP studbook keeper for the Capybara (Sue Woodgate, Drusillas Zoo), and Red Squirrel (Sarah Lawrence, Welsh Mountain Zoo). Fregate Beetle husbandry guidelines were produced along with a revision of the management guidelines on Poisonous or Venomous Reptiles, Amphibians, Fish and Invertebrates in Captivity.

### ***JMSP Annual Report***

The 2003 JMSP Report was duly collated and produced by Olivia Walter with editorial assistance from the Chair of JMSP.

### ***Publications***

A bibliography citing 600+ publications concerned with husbandry is available from the BIAZA Office along with several guidelines covering a diverse range of taxa.

### ***Annual Conference***

This year's conference and General Meeting was hosted by Marwell Zoo (19th - 21st May) and included plenary sessions on the World Zoo Conservation Strategy and various in-situ and ex-situ conservation initiatives.

### ***Training programmes***

Three two-day ARKS4/CMS workshops were held at Sparsholt College during 2004, one for new users of ARKS4 on 17/18 February and two in September (1/2 & 8/9), the former for more advanced users and the latter to promote the data 'clean-up' initiative in readiness for ZIMS.

### ***Liaison with EEPs***

As one of the two nominated BIAZA representatives, the Chair of JMSP attended the mid-year EEP Committee meeting held at Amsterdam Zoo on 5<sup>th</sup> March. Several BIAZA TAG chairs/EEP co-ordinators/ESB keepers were present at the 2004 EAZA annual conference, hosted this year by Kolmarden Zoo, Sweden thus reflecting the BIAZA region's continuing support for the development of EAZA conservation programmes within the framework of Regional Collection Planning.

### ***Conclusion***

BIAZA TAGs are all fully integrated with their EAZA counterparts and continue to be a valuable forum for addressing fundamental husbandry issues as well as disseminating information to JMSP participants who are unable to attend international conferences.

**British and Irish Taxon Advisory Group Chairs**  
(31 12 2004)

<b>B&amp;I TAG</b>	<b>Chair/co-chair person</b>	<b>Institution</b>
Bat & Insectivore	John Partridge	Bristol Zoo
Falconiform	Vacant	
Bovid	Gary Batters Terry Hornsey	Banham Zoo Suffolk Wildlife Park
Crane	Debra Bourne Gordon Campbell	Wildlife Information Network Marwell Zoo
Elephant	David Field Mark Pilgrim Anthony Tropéano	Zoological Society of London Chester Zoo Colchester Zoo
Fish & Aquatic Invertebrate	Heather Koldewey	London Zoo
Flamingo & Waterfowl	Nigel Jarrett	WWT Slimbridge
Hornbill, Toucan & Touraco	John Ellis	Zoological Society of London
Monotreme & Marsupial	Peter Dillingham	Blackpool Zoo
Owl	Tony Warburton	Owl Centre
Parrot	Mike Jordan (temp)	Chester Zoo
Passerine	David Jeggo	Jersey Zoo
Primate	Neil Bemment	Paignton Zoo
Reptile & Amphibian	Douglas Sherriff Kevin Buley	Chester Zoo Chester Zoo
Rodent & Lagomorph	Mike Jordan	Chester Zoo
Small Carnivore	Lesley Dickie	Zoological Society of London
Stork, Ibis & Spoonbill	David Jeggo John Ray	Jersey Zoo Twycross Zoo
Terrestrial Invertebrate	Paul Pearce-Kelly Warren Spencer	London Zoo Bristol Zoo

## **Bat and Insectivore TAG**

### ***Chair***

John Partridge (Bristol); Simon Eyre (Bristol-resigned during 2004)

### ***Members***

Elizabeth Barratt, Gary Batters (Banham), Neil Bemment (Paignton), Mark Brayshaw (Jersey), Caroline Brown (Bristol), John Collier (WildWood); Derek Curtis & Kath Bright (Amazon World), Graham Catlow (Edinburgh), David Field (ZSL), David Fowler (Cotswold), Simon Garrett (Bristol), David Gill (South Lakes), Paul Howse (Chester), Tony Hutson, Mike Jordan (Chester), Judith Layzell (Tropical World) Peter Litherland (Welsh Mountain); Will Masefield (Jersey), Wendy Winstanley (Newquay), Tracey Moore (Shaldon); Stewart Muir (Newquay), Mark Pilgrim (Chester), Peter Small (Marwell), Frank Wheeler (London), Sue Woodgate (Drusillas), Dominic Wormell (Jersey).

### ***Aims for 2004***

- To produce a key to confirm identity of fruit bats held in British & Irish zoos.
- To liaise with the European and North American TAGs.
- To continue to work on husbandry guidelines for Rodrigues and Livingstone's fruit bats.
- To work with the European Studbook Keeper for sloths on a way of positively identifying Linne's *Choloepus didactylus* and Hoffmann's *Choloepus hoffmanni* sloths.
- Continue to provide advice to DEFRA on matters of bat health within zoos.
- To establish a short husbandry workshop at this year's TAG meeting. (Elephant shrews, armadillos and anteaters have all been suggested as possible topics).
- In conjunction with the BIAZA Research group, to identify and implement at least two research projects. Possible topics under discussion are:
  1. To conduct a dietary review of captive two-toed sloths.
  2. Research the activity patterns of the captive Livingstone's fruit bat colonies at Bristol and Jersey with the intention of identifying ways of increasing their activity levels.
  3. Survey & implement pro-active conservation measures for native insectivore populations within the site of Bristol Zoo Gardens with the intention of improving habitat and establishing additional breeding sites.
  4. Produce hand rearing data for sloths based on the success achieved during 2002 at Newquay Zoo.
  5. Pangolins & Aardvarks. Stewart Muir, Cath Bright (Amazon World) and the BIAZA Research Group are going to do some research on captive diets of pangolins for Couc Phong National Park in Vietnam, where confiscated animals are regularly received.

### ***Progress***

- A useful key has not been produced. Work continues although several keys for regions exist.
- Liaison continued with the North American and European TAG.
- No significant developments were reported during the year regarding bat viruses.

### ***Data***

#### ***Managed Species.***

Species	Level of Management	Species Manager	Studbook Status/Date last Published
Rodrigues fruit bat <i>Pteropus rodricensis</i>	EEP	Mark Brayshaw (Jersey, Channel Islands)	ESB 2000
Two-toed sloth <i>Choloepus didactylus</i>	ESB	Jutta Heuer (Halle, Germany)	ESB 2000
Hoffman's sloth <i>Choloepus hoffmanni</i>	ESB	Jutta Heuer (Halle, Germany)	ESB 2000
Aardvark <i>Orycteropus afer</i>	ESB	Marc Damen (Arnhem, The Netherlands)	
Livingstone's fruit bat <i>Pteropus livingstonii</i>	ESB	Will Masefield (Jersey, Channel Islands)	

### ***Meetings***

- A meeting was held at Paignton Environmental Park in October.

### ***Special Concerns***

Rodrigues fruit bat population management needs to be maintained to reduce population growth to zero.

Livingstone's fruit bat population management. A species manager has been appointed. Currently two institutions hold this species. One new holder to initially hold an all male group is urgently needed.

The Bat Shadow Group continues to monitor reports of the incidence of Lyssa viruses.

That DEFRA is considering implementing permanent rabies quarantine on fruit bats entering the UK and Ireland.

There is a continuing need to monitor the sloth population in the UK and to identify which species are being held. Confusion continues relating to *C. hoffmanni* and *C. didactylus*.

### ***Husbandry Guidelines***

Sloth Husbandry Guidelines are being prepared by the European Studbook Keeper.

### *Aims for 2005*

- To appoint a new co-chair. The proposal will be to appoint Chris Kibbey the head keeper of small mammals at Bristol Zoo Gardens.
- Paul Howse from Chester Zoo will replace Mark Brayshaw as the EEP co-ordinator for the Rodrigue's fruit bat.
- To produce a key to confirm identity of fruit bats held in British & Irish zoos.
- To liaise with the European and North American TAGs.
- To continue to work on husbandry guidelines for Rodrigues and Livingstone's fruit bats.
- To work with the European Studbook Keeper for sloths on a way of positively identifying Linne's *Choloepus didactylus* and Hoffmann's *Choloepus hoffmanni* sloths.
- Continue to provide advice to DEFRA on matters of bat health within zoos.
- In conjunction with the BIAZA Research group, to identify and implement at least two research projects to be started in 2003. Possible topics under discussion are:
  1. To conduct a dietary review of captive two-toed sloths.
  2. Research the activity patterns of the captive Livingstone's fruit bat colonies at Bristol and Jersey with the intention of identifying ways of increasing their activity levels.
  3. Survey & implement pro-active conservation measures for native insectivore populations within the site of Bristol Zoo Gardens with the intention of improving habitat and establishing additional breeding sites.
  4. Produce hand rearing data for sloths based on the success achieved during 2002 at Newquay Zoo.
  5. Pangolins & Aardvarks. Stewart Muir, Cath Bright (Amazon World) and the BIAZA Research Group Research Group are going to do some research on captive diets of pangolins for Couc Phong National Park in Vietnam, where confiscated animals are regularly received.

## **Bovid TAG**

### ***Chairs***

Terry Hornsey and Gary Batters (Suffolk Wildlife Park)

### ***Research Coordinator***

Tania Gilbert (Marwell)

### ***Members***

Darren Webster (Blackpool), Iain Valentine (Edinburgh), David Field (Whipsnade), Edmund Flach (Whipsnade), Graham Catlow (Edinburgh), Jake Veasey (Woburn), Neil Bemment (Paignton), Derek Grove (Dudley), Mark Pilgrim (Chester), Allan Reid (Chester), Nick Lindsay (ZSL), Tania Gilbert (Marwell), Peter Bircher (Marwell), Clive Barwick (Colchester), Glenn Sullivan (Blackpool), Tim Rowlands (Chester), John Ray (Twycross), Andrew Kitchener (National Museum of Scotland), James Burton (University of Edinburgh), Darren McGarry (Edinburgh), Andrew Hope (Belfast), Ian Goodwin (Marwell), Sam de Belle (Flamingoland), Anne Stewart (Flamingoland), John Partridge (Bristol), Dave Edgington (Cotswolds), Ghislaine Sayers (Paignton), David Fowler (Cotswolds), Roger Williams (Newquay), Mike Winstanley (Newquay), Della Golding (Whipsnade), Tracey Let (London), Jackie Ossowski (London), Brian Harman (London), Anna Humberside (London), John Frost (Chester), Craig Lymm (Twycross), Nick Rowley (Twycross), Natalie Quinton (Blackpool), Andrew Bagnall (Twycross), Kathleen Standen (Edinburgh), Cliff Tack (Whipsnade), Tim Wachter (ZSL), Chas MacKenzie (Chester).

### ***Corresponding members***

Neil Stronach (Fota), Jeremy Usher Smith (Highland), Mark Challis (Belfast), Nick Ellerton (Knowsley), Gerald Asher (ZSL).

### ***Advisors***

Edmund Flach (Whipsnade), Andy Williamson (Suffolk), Andrew Kitchener (Royal Museum of Scotland).

### ***Aims for 2004***

- Production of a bibliography of relevant husbandry and management documents.
- Improving animal nutrition.
- Consider starting up a listserve for the TAG.
- Encourage zoos to carry out opportunistic testing for TB and brucellosis. ('Balai' monitoring).
- Continue to support work to monitor the effects of ageing.
- Continue to monitor the UK BSE situation and proactively encourage members to test high risk species at every opportunity.
- Arrange a one day giraffe husbandry workshop.
- Collate information on mixed hoof stock exhibits.
- Collate information from post mortem results and anaesthesia/sedation data.
- Investigate the possibility of incorporating an Equid Sub-Group and a Hippo/Pig/Peccary Sub-Group to bring all hoofstock under one meeting.
- Production of research ideas for the BIAZA Research Group.



- Obtain clarification of the DEFRA position with regard to Zoo stock in the event of another FMD outbreak.

### **Progress**

- Production of a bibliography of relevant husbandry and management documents was abandoned, as it was felt a duplication of effort as much of the work was being carried out at EAZA level.
- Improving animal nutrition – Edmund Flach gave a presentation on giraffe nutrition at the TAG meeting. The proposed 2005 Giraffe Husbandry workshop will cover this topic in greater detail.
- Information on mixed hoofstock exhibits was provided at the TAG meeting.
- No progress was made with starting up a listserve for the TAG.
- Dr Andrew Kitchener gave an updated presentation at the TAG meeting on the effects of ageing.
- Through BIAZA the TAG promoted the need to monitor the UK BSE situation and proactively encouraged members to test high risk species at every opportunity.
- Very little progress was made on collating information from post mortem results and anaesthesia/sedation data. The type of information and communication route was clarified at the TAG meeting.
- The possibility of incorporating Equid, Rhino, Tapir Sub-Groups and a Hippo/Pig/Peccary Sub-Group to bring all hoofstock under one meeting was discussed and agreed at the JMSP and approved by the TAG meeting. The majority of sub group monitor vacancies have been filled.
- Very little progress was made in producing research ideas for the BIAZA Research Group.
- Clarification of the DEFRA position with regard to Zoo stock in the event of another FMD outbreak was received.

### **Data**

Species	Level of management.	Species Manager	Studbook Status/Date last published.
Bactrian camel <i>Camelus bactrianus. dom</i>	JMSP3	Glenn Sullivan (Blackpool)	
Vicuna <i>Lama vicugna</i>	EEP	Christian Schmidt (Frankfurt)	ESB 2001
Reticulated & Masai giraffe <i>Giraffa camelopardalis reticulata &amp; Tippelskirchi</i>	EEP	Gunther Schleussner (Stuttgart)	ESB 2001
Baringo giraffe <i>Giraffa camelopardalis rothchildi</i> Including <i>Peralta Antiquorum</i>	EEP	Marc Damen (Arnhem)	

<i>Angolensis</i> <i>Giraffa</i> & hybrids			
Okapi <i>Okapai johnstoni</i>	EEP	Bruno Van Puijenbroeck (Antwerp)	ISB 2000 Bruno Van Puijenbroeck (Antwerp)
European bison <i>Bison bonasus</i>	EEP	Wanda Olech-Piasecka (Brwinow)	ESB 2003
Gaur <i>Bos gaurus</i>	EEP	Andreas Ochs Berlin Zoo	ESB 2003
Banteng <i>Bos javanicus</i>	EEP	Beatrix Rau Munich	ESB 2003
Anoa <i>Bubalus depressicornis</i>	EEP	Gerd Notzold Leipzig	ESB 2000
Dwarf forest buffalo <i>Synceros caffer nanus</i>	ESB	Dave Brunger (Chester)	
Four-horned antelope <i>Tetracerus quadricornis</i>	EAZA MON	Jean-Luc Berthier Paris, Menagerie berthier@mnhn.fr	
Lowland nyala <i>Tragelaphus angasii</i>	ESB	Cristiane Silveira (Lisbon)	ESB 2003
Eastern bongo <i>Tragelaphus eurycerus isaaci</i>	EEP	Lutz Plasa (Stuttgart)	ISB 2003
Lesser kudu <i>Tragelaphus imberbis</i>	ESB	Pavel Moucha (Dvur Kralove)	ESB 2003
West African sitatunga <i>Tragelaphus spekkii gratus</i>	ESB	Peter Zwanzger (Koln)	ESB 2003
Greater kudu <i>Tragelaphus strepsiceros</i>	ESB	Marc Daman (Arnhem)	ESB 2001 (updated annually)
Blue duiker <i>Cephalophus monticola</i>	ESB	Marc Daman (Arnhem)	ESB 2002
Yellow-backed duiker <i>Cephalophus sylvicultor</i>	EAZA MON	Ullrich Schürer Wuppertal Zoo direktion@zoo-wuppertal.de	
Addax <i>Addax nasomaculatus</i>	EEP	Heiner Engel (Hannover)	ESB 2003 ISB 1998
Bontebok <i>Damaliscus dorcass</i> <i>dorcass</i> & Blesbok <i>D.d. phillipsi</i>	ESB	Hanny Verberkmoes (Hilvarenbeek)	ESB 2003
Roan antelope <i>Hippotragus equinus</i>	JMSP3 /ESB	Klaus Bruning (Hannover)	<b>ESB 2003</b>
Sable antelope <i>Hippotragus niger</i>	JMSP3 / ESB	JMSP –Vacant EAZA – Richard Osterballe,	

		(Givskud)	
Black-faced impala <i>Aepyceros melampus petersi</i>	ISB	Eric Bairrão Ruivo Lisbon Zoo eric@zoolisboa.pt	
Kafue flats lechwe <i>Kobus leche kafuensis</i>	JMSP3	Neil Bemment (Paignton)	<b>Compiling</b>
Nile lechwe <i>Kobus megaceros</i>	EEP	Nick Lindsay (ZSL)	<b>ESB 2001</b>
Scimitar-horned oryx <i>Oryx dammah</i>	EEP	Tania Gilbert (Marwell)	<b>ESB 2002</b>
Gemsbok <i>Oryx gazelle gazella</i>	Monitored		
Arabian oryx <i>Oryx leucoryx</i>	EEP	Vacant	<b>ESB 2001</b>
Cuvier's gazelle <i>Gazella cuvieri</i>	ISB	Teresa Abaigar EEZA Almería abaigar@eeza.csic.es	
Dama gazelle <i>Gazella dama</i>	EEP	Mar Cano Perez (Almeria)	
Mhorr gazelle <i>Gazella dama mhorror</i>	EEP		
Saharawi dorcas gazelle <i>Gazella dorcas neglecta</i>	EEP	Teresa Abaigar (Almeria)	
Slender-horned gazelle <i>Gazella leptoceros</i>	ISB	Elliot Handrus San Diego Zoo	
Persian goitred gazelle <i>Gazella subgutturosa subgutturosa</i>	EAZA MON	Clemens Becker Karlsruhe Zoo becker@zoo.karlsruhe.de	
Arabian gazelle <i>Gazella g. cora</i>	JMSP2	(Dudley)	<b>JMSP 1997</b>
Kirk's dikdik <i>Madoqua kirki</i>	ESB	Klaus Muller Schilling (Hannover)	<b>ESB 2003</b>
Klipspringer <i>Oreotragus oreotragus</i>	EAZA MON	Christian Schmidt Frankfurt Zoo	Current population all Ethiopian klipspringer <i>O.o.saltatrixoides</i>
Russian saiga <i>Saiga tatarica tatarica</i>	EAZA MON	Waltraut Zimmermann Cologne Zoo wazi@zoo-koeln.de	
Mishmi takin	ESB		

<i>Budorcas t. taxicolor</i>			
Turkmenian markhor <i>Capra falconeri heptneri</i>	ESB	Paula Holma (Helsinki)	
Eastern Caucasian tur <i>Capra ibex cylindricornis</i>	ESB	Vladimir Fainstein (Tallinn)	ESB 2000
Western Caucasian tur <i>Capra ibex caucasica</i>	ESB	Jitka Vokurkova (Olomouc)	ESB 2001
Nubian ibex <i>Capra nubiana</i>	ESB	Hanakova Lenka (Bratislava)	
Musk ox <i>Ovibos moschatus</i>	EEP	Bengst Holst (Copenhagen)	ESB 2003
Mouflon <i>Ovis musimon</i>	ESB		
Blue sheep <i>Pseudois nayaur</i>	ESB	Jean-Luc Berthier (Paris Men.)	ESB 2002
Barbary sheep <i>Ammotragus lervia</i>	JMSP3	Dublin Zoo	

### **Meetings**

A TAG meeting was held at Twycross Zoo on 16<sup>th</sup> November 2004.

### **Special Concerns**

None

### **Aims for 2005**

- Giraffe husbandry workshop proposed for May at Chester.
- 'Hoofstock' Tag established and vacancies filled for rhino and equid monitors.
- Monitor, influence and inform on the situation with regard to import from third countries.
- Continue to monitor the UK BSE situation.
- Promote the surveillance of deer for Transmissible Spongiform Encephalopathies
- Promote Defra's request for tissues samples from deer in zoological collections (TSE monitoring).
- Encourage the karyotyping of Red v Kafue Flats lechwe.
- Develop data collection systems for Post mortem, anaesthesia and sedations.
- Promote the sending of bone samples from pudu, lechwe, and giraffe to Dr Andrew Kitchener for ageing in animal's research.
- Promote more research activities within the TAG.
- Promote the testing of TB and Brucellosis on an opportunistic basis.

## Crane TAG

### *Chairs*

Debra Bourne (Wildlife Information Network)

Gordon Campbell (Marwell Zoological Park)

### *Members*

All British & Irish holders of cranes have been welcome at meetings. A total of 52 people attended the combined Bird TAGs meeting at Newquay Zoo 24<sup>th</sup>-25<sup>th</sup> November 2004; most people attending both days.

### *Species co-ordinators*

Joe Blossom	Calthorpe	- Grey-necked (East-African/SouthAfrican) Crowned crane <i>Balearica regulorum</i>
Dave Coles	Beale Park	- Demoiselle crane <i>Anthropoides virgo</i>
Malcolm Mycock	Blackbrook	- Common/ Lilford's crane <i>Grus grus</i>
Malcolm Mycock	Blackbrook	- Wattled crane <i>Buggeranus carunculatus</i>
Malcolm Mycock	Blackbrook	- Sandhill crane <i>Grus canadensis</i>
John Ray	Twycross	- Sarus crane <i>Grus antigone</i>
Roger Wilkinson	Chester	- Black-necked (West African) crowned crane <i>Balearica pavonina</i>

### *Aims for 2004:*

- Monitor non-crane gruiformes, as in the European Gruiformes TAG.
- Further work on AI, including emphasis on the importance on record keeping, and the use of commercially-available semen extenders.
- Continue consideration of factors affecting breeding, including the possible effects of pinioning and nutrition.
- Further consideration of diets.
- Survey for UK data on species which are managed at the European level.
- Increase communication with the European Gruiformes TAG.

### *Progress:*

- Monitor non-crane gruiformes, as in the European Gruiformes TAG. This has still not been carried out however presentations on Great Bustard *Otis tarda* reintroduction and Corn Crane *Crex crex* were given at the combined bird TAGs meeting.
- Further work on AI. AI continues to be used in several collections.
- Continue consideration of factors affecting breeding. No further work has been carried out on the factors affecting breeding.
- Further consideration of diets. No further work has been carried out.
- Survey for UK data on species which are managed at the European level. A survey was carried out and the results were provided at the TAG meeting.
- Increase communication with the European Gruiformes TAG. Unfortunately there has been no progress on communication with the European Gruiformes TAG; there was no Gruiformes TAG meeting at the last EAZA conference.

### *Data:*

Species data (numbers from survey carried out prior to Joint Bird TAGs Meeting; these numbers should be taken as minimum numbers, since data was not received from all collections prior to the meeting.)

Species	Level of Management	UK Status:- Individuals (Collections)	Species Manager	Studbook status / date last published
Stanley (Blue) crane <i>Anthropoides paradiseae</i>	European Studbook/JMSP 4	13.15.0 (9) (24th November 2004)	Gordon Campbell	
Wattled crane <i>Bugeranus carunculatus</i>	JMSP2	6.4.0 (2) (24th November 2004)	Malcolm Mycock (UK)	
Red-crowned crane <i>Grus japonensis</i>	EEP/JMSP4	9.4.0 (5) (24th November 2004)	Rob Belterman	
White-naped crane <i>Grus vipio</i>	EEP/JMSP4 (European studbook)	10.10.0 (9) (24th November 2004)	Helmut Magdefrau	
W. African crowned crane <i>Balearica pavonina</i>	ESB/JMSP2	1.5 (3) (24th November 2004)	Roger Wilkinson (UK only)	
Sarus Crane <i>Grus antigone</i>	Monitored	12.11.0 (10) (24th November 2004)	John Ray (UK)	
Grey-necked crowned crane <i>Balearica regulorum</i>	Monitored	31.23.5 (17) (24th November 2004)	Joe Blossom (UK)	
Demoiselle crane <i>Anthropoides virgo</i>	Monitored	13.15.1 (10) (24 <sup>th</sup> November 2004)	Dave Coles (UK) *	
Sandhill crane <i>Grus canadensis</i>	Monitored	~2.2.0 (2) (12 <sup>th</sup> November 2003)	Malcolm Mycock (UK)	
Common/ Lilford's crane <i>Grus grus</i>	Monitored	4.5.0 (2) (24th November 2004)	Malcolm Mycock (UK)	
Brolga <i>Grus rubicunda</i>	--	2.1 (1) (24th November 2004)	--	

\* It was noted by David Coles that many more Demoiselle cranes are held in private collections than in zoos. ~ There was no new data for Sandhill cranes.

### Meetings:

The Crane TAG meeting was, for the second year, held as part of the Combined Birds TAGs meeting. This took place at Newquay Zoo, 24-25<sup>th</sup> November 2004 and was well attended. The Chairs of the bird TAGs had been asked if they could make time at the combined meeting to consider those bird groups presently lacking a B&I TAG. The crane TAG took a lead in this: penguins, specifically those oiled in South Africa in the “Treasure” spill of 2000, were the subject of a presentation by Debra Bourne, while many different bird groups were also mentioned in Debra Bourne’s presentation on developmental limb deformities in birds. Non-crane gruiformes were considered in a presentation by John Chitty on the reintroduction of Great Bustards *Otis tarda* to Salisbury Plain, and one by Rebecca Cooper & Andrew Reeve on the Corn Crane *Crex crex* release project.

***Special Concerns:***

At the meeting, a lively discussion indicated that several TAG members were concerned about the potential negative impact of BIAZA’s new policy regarding TAG membership, particularly that the requirement for all private individuals holding birds to become Affiliated Associates might have a detrimental effect. Reasons for this concern were set out in the minutes of the meeting.

Continuing lack of breeding in many species, including lack of offspring from wild-caught founders and species in which only a few pairs are producing chicks, continues to be of concern. It should be noted that white-naped cranes were deliberately not bred by DWCT in 2004 due to concerns about finding collections to take the offspring of this prolific pair.

***Aims for 2005:***

- Increase communication with the European Gruiformes TAG. It is hoped this will be possible at the EAZA meeting in Bristol this year.
- Further work on AI.
- Improve monitoring/surveying of species at the Britain & Ireland level.
- Monitor non-crane Gruiformes, as in the European Gruiformes TAG.

## **Elephant TAG 2003**

### **(No Report Received for 2004)**

#### ***Chair***

David Field (Zoological Society of London)

#### ***Co-chairs***

Mark Pilgrim (Chester Zoo)

Anthony Tropéano (Colchester Zoo)

#### ***Members***

All collections holding elephants are TAG members, including the four non-BIAZA collections; West Midland Safari Park, Blair Drummond, Howletts and Port Lympne.

#### ***The core working group :***

The chairs and co-vice chairs

Lee Sambrook (Whipsnade, ZSL)

Jake Veasey (Woburn Safari Park)

Lynne Thompson (Woburn Safari Park)

Chris Webster (Woburn Safari Park)

Gary Hampson (Blackpool Zoo Park)

John Ray (Twycross Zoo Park)

Mick Jones (Chester Zoo, NEZS)

#### ***Advisors***

John Lewis - Veterinary Advisor

Miranda Stevenson – Research Advisor

Georgia Mason and Ros Clubb – Behaviour Advisors

Andrea Fidgett – Nutrition Advisor

Tony Williams – PR Advisor

Scott Wilson – Conservation Advisor

#### ***Aims for 2003***

- Publication of 'In Safe Hands', a marketing document that was sent to all MPs. Done March 2003
- First review of the Management Guidelines. Initiated in November 2003
- Priorities continue to be
- Staff training standards. Carried forward
- Research, field support. Ongoing
- Defining welfare standards. Ongoing
- Breeding success. See report by Miranda Stevenson
- Wider consultation, particularly with keepers. Done and ongoing
- Development of collective approach to staff-training, safe and humane management standards, breeding, research and field support. Done and ongoing

#### ***Progress***

- TAG active with a working group formulated made up of Miranda Stevenson (editor of guidelines), Olivia Walter (Fed Office), the Chair and co-vice chairs,



CWebster, JV IV and JR. Iain Valentine ceased to be on this working group when he moved to Edinburgh and four keepers were invited to be on the group. Composition above. This group are in regular email contact.

- Adoption of the Federation guidelines as EAZA guidelines.
- A few research projects were investigated, none of which have been started yet due to funding opportunities.

#### *Data*

<b>Collection</b>	<b>Management Level</b>	<b>Species manager</b>	<b>Status</b>
<b>African elephants</b> <i>Loxodonta africana</i>	EEP	Amelia Terkel (Tel-Aviv)	
Blair Drummond (non-BIAZA)			0.3
Colchester			2.4
Knowsley			2.10
Longleat (non-BIAZA)			0.0
Paignton			0.1
West Midland (non-BIAZA)			2.2
<b>Asian elephants</b> <i>Elephas maximus</i>	EEP	Ton Dorresteijn (Rotterdam)	
Belfast			0.4
Blackpool			0.4
Chester			4.5
Port Lympne (non-BIAZA)			3.6
Paignton			0.1
Twycross			0.5
Whipsnade			1.5
Woburn			1.2

#### *Meetings*

Along with continuous communication throughout the year, a core working group meeting was held in April at Twycross and a full TAG meeting was held in October at Chester. The emphasis of the TAG meeting was research with presentations from Clubb and Mason on their research, Mark Pilgrim on a recent trip round elephant facilities in the States and John Ray's update on the keeper/elephant incidents. The second phase of the core working group (including four keeper representatives) met in December at Whipsnade to bring together all the comments on the guidelines and instigate a large amount of the rewrite.

#### *Special Concerns*

Safety Management, keeper training, auditing, PR, lobbying government

#### *Husbandry Guidelines/publications*

Zoo Federation (2003) In Safe Hands

#### *Aims for 2004*

- Hold one, if not two full TAG meetings
- Finish and publish the first edit of the Management Guidelines.
- Wider consultation with keepers and advisors.
- Management survey/audit conducted.
- Development of collective approach to staff-training, safe and humane management standards, breeding, research and field support.
- Instigate a staff training school
- Parliamentary lobbying
- Support (incl. funding) for TAG wide research projects.

## Falconiformes TAG 2003

### (No Report Received for 2004)

#### ***Chair***

Jemima Parry Jones MBE (National Birds of Prey Centre)

#### ***Co-Chair***

Campbell Murn (Hawk Conservancy)

#### ***Working Group Members***

Becki Cooper (Whipsnade), John Ellis (London), Chris Elsey (Colchester), Ian Grant (Paignton), Mark Pilgrim (Chester Zoo), Andy Reeve (Whipsnade), Peter Smallbones (Paignton), Jez Smith (Colchester)

#### ***Advisors***

John Chitty (Veterinary), Nick Fox (Middle East Falcon Research Group)

#### ***Aims in 2003***

- Complete management guidelines for Andean Condor
- Conduct Old World vulture husbandry survey
- Begin data collection on diet and nutrition of raptors
- Continue development of research areas identified in 2002
- Continue RCP process in conjunction with EAZA Falconiformes TAG

#### ***Progress***

- Draft condor management guidelines are being reviewed
- Completion of vulture survey (analysis pending)
- Collection planning will be pursued at European level

#### ***Data***

<b>Species</b>	<b>Management Level</b>	<b>Species Manager</b>	<b>Studbook status/ date last publ.</b>
Andean condor <i>Vultur gryphus</i>	EEP	Peter Dickinson (Welsh Mountain)	1999
Bearded vulture <i>Gypaetus barbatus</i>	EEP	Hans Frey (Vienna breeding Unit)	2002
Egyptian vulture <i>Neophron percnopterus</i>	ESB	Karel Pithart (Prague Zoo)	In prep.
Eurasian griffon vulture <i>Gyps fulvus</i>	ESB	Inigo Sanchez (Zoo Jerez)	
European black vulture <i>Aegypius monachus</i>	EEP	Marleen Huyghe (Planckendael)	2003
Indian white-backed vulture <i>Gyps bengalensis</i>	EEP	Campbell Murn (Hawk Conservancy)	2003
King vulture	ESB	Wineke Schoo	2003

<i>Sarcorhamphus papa</i>		(Burger's Zoo)	
Steller's sea eagle <i>Haliaeetus pelagicus</i>	ESB	Lubov Kurilovic (Moscow Zoo)	2003
Striated caracara <i>Phalcoboenus australis</i>	JMSP2	Campbell Murn (Hawk Conservancy)	In prep.
White-tailed sea eagle <i>Haliaeetus albicilla</i>	EEP	Smulik Yebvab (Jerusalem)	In prep.

### ***Meetings***

One meeting was held as part of the Combined Bird TAG. The TAG working group did not hold a meeting.

### ***Husbandry Guidelines***

- Guidelines for Birds of Prey used in Flying Demonstrations are in circulation.
- Husbandry guidelines for Falconiformes are also in circulation, but are still due for review. This will be done in conjunction with the development of the European Regional Collection Plan.
- Andean Condor guidelines are in production.

### ***Aims for 2004***

- TAG Leaflet and Membership
- Begin circulation of leaflet and recruitment of member collections. Zoo Federation collections are automatically members – recruitment is aimed at non-Federation zoological collections that hold raptors and are obligated by the SSSMZP to participate in research, education and conservation programmes.

### ***Research and information retrieval:***

- Develop a central information resource on Old World Vultures using survey results.
- Survey dietary differences between Falconiformes used for flying demonstrations and breeding.
- Complete management guidelines for Andean Condors.

## Fish and Aquatic Invertebrate TAG

### *Chair*

Dr Heather Koldewey, (Zoological Society of London)

### *Members*

<b>Programme</b>	<b>Co-ordinator</b>	<b>Subgroup</b>	<b>Organisation Representative</b>
<b>Elasmobranchs</b>	Juan Romero (NMA) Dave Gibson (The Deep)		Zahra d'Aronville (Blue Reef) Oliver Buttlng (Bournemouth) Robin James (SeaLife) Hayley (Hastings) Alex Cliffe (ZSL) Sue Thornton (IZVG) George Ablett (Blue Planet)
<b>Seahorses</b>	Heather Koldewey (ZSL)		Mike Crumpler (Chester) Colin Wells (NMA) Zahra d'Aronville (Blue Reef) Marie Orchard (@Bristol) Peter Beasley (Horniman) Chris Brown (SeaLife) Alex Cliffe (ZSL) Ben Glover (The Deep) Jen Nightingale (Bristol) Dan Davis (Hastings) Sue Thornton (IZVG) Sian Ward-Davies (Anglesey Sea Zoo) Neil Garrick-Maidment (Seahorse Trust) George Ablett (Blue Planet)
<b>Corals</b>	Rachel Jones (ZSL) Joe Pecorelli (ZSL)	Coldwater	Katy Rigby (The Deep) Zahra d'Aronville (Blue Reef)
		Tropical	Dan Davis (Hastings) Mike Crumpler (Chester) Oliver Buttlng (Bournemouth) Marie Oliver (@Bristol) Peter Beasley (Horniman) Andrew Mcleod (The Deep) Jen Nightingale (Bristol)
		Both	Rob Wick/James Wright (NMA) Matt Slater (Blue Reef Newquay) Rob Hicks (SeaLife)
<b>Cephalopods</b>	Zahra d'Aronville (Blue Reef) Matt Slater (Blue Reef Newquay)		Karen Tuson (Anglesey Sea Zoo)
<b>Mexican Fishes</b>	Jen Nightingale (Bristol) Brian Zimmerman (ZSL)		Kevin Buley (Chester)
<b>European freshwater</b>	Brian Zimmerman	Killifish	Kevin Buley (Chester) Peter Beasley (Horniman) Jen Nightingale (Bristol)
	Jen Nightingale (Bristol)	Natives	Marcus Williams (NMA) Scott Davidson (Aqm of the Lakes) Robin James (SeaLife)
<b>African freshwater</b>	Brian Zimmerman (ZSL)	Madagascar	Andy Wolfenden (Chester) Sonia Guinane/Dave Tourle
		Barombi	Mike Crumpler (Chester)

			Ben Spinks (ZSL) Jen Nightingale (Bristol)
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### ***General overview***

The FAITAG has had another active year with good progress made for many of the programmes. Reviews of the activities for each programme are presented below, with an action plan for 2005. Many of the programmes work in close collaboration with our AZA colleagues in the Marine and Freshwater Fishes TAG and the European level programmes of EUAC and EAZA.

FAITAG members were represented at the Lower Vertebrate and Invertebrate TAG meeting in Riga, Latvia in March 2004. The chairs of the respective TAGs prepared a report of this meeting which proposes an approach to Regional Collection Planning that clarifies the definition and purpose of our TAG programmes. This ensures that the species programmes have clearly defined goals for conservation, education and/or research. This approach was tested in several of the FAITAG programmes in 2004 and proved an effective means of re-defining priority species and clarifying the goals and activities of our programmes. The document has been circulated within EUAC and EAZA for comment and will be finalised in 2005.

FAITAG meetings were held in June at The Deep, Hull and at the annual National Aquarium Workshop conference in November, hosted by Galway Atlantaquaria in Ireland.

One of the priorities for 2005 is to assess the involvement and commitment of aquariums across Europe for each of the FAITAG programmes. Each aquarium must sign up to the programmes they plan to be involved in and appoint an institutional representative. These representatives will act as the contact point for FAITAG information and will be responsible for the institution's active engagement in the programme e.g. completing questionnaires, submitting data. The final list of participants for 2004 is listed at the beginning of this report.

FAITAG members were also active in global initiatives that have direct relevance to aquatic programmes, including ZIMS [www.zims.org](http://www.zims.org), the Marine Aquarium Council [www.aquariumcouncil.org](http://www.aquariumcouncil.org), and CITES [www.cites.org](http://www.cites.org).

### ***Programme Reports for 2004 and Action Plans for 2005***

#### ***Species Programmes***

##### ***Elasmobranch***

David Gibson (The Deep, Hull [david.gibson@thedeep.co.uk](mailto:david.gibson@thedeep.co.uk)) and Juan Romero (National Marine Aquarium Plymouth, [jar@national-aquarium.co.uk](mailto:jar@national-aquarium.co.uk))

##### ***2004 Activities***

As in previous years, this programme continues to work in close co-operation with the AZA Marine Fishes TAG.

One of the most significant outputs of the year was the publication of the Elasmobranch Husbandry Manual. In 2001, the first Elasmobranch husbandry

symposium was held. This engaged 180 individuals from 16 countries and provided an opportunity to exchange information and ideas about elasmobranch husbandry. This resulted in the publication in 2004 of a comprehensive single reference handbook as a guide to the captive care of elasmobranchs, assisting in the development of new exhibits, and answering specific husbandry questions about this important taxonomic group:

Smith, M., D. Warmolts, D. Thoney, and R. Hueter (2004). The Elasmobranch Husbandry Manual: Captive care of sharks, rays and their relatives. Special publication of the Ohio Biological Survey. Xv+589p.

A free copy of the manual is available to all aquariums and a low cost for other organisations. The publication of the above manual will allow us to appraise which species of shark currently held in European aquariums require husbandry guidelines to be written.

Cheryl Nicholson, a PhD student in captive reproduction in Sand Tigers (The Deep and University of Hull) attended International meetings such as American Elasmobranch Association, IUCN SSG, Regional Aquatics Workshop in order to further links with other organisations and improve the flow of cooperation. Behavioural studies were carried out in three different UK aquariums looking at hierarchical structure of captive Sand Tiger populations and also looking at mating behaviours. DNA samples were obtained from several sources for comparative genetics section of the project. Publication of the Elasmobranch Husbandry manual will allow us to appraise where the PhD needs to go in the future to fill the gaps in our knowledge.

European legislative control on Shark Finning in European waters was monitored.

### **2005 Action Plan**

1. Re-combine European Taxonomic Database and IUCN Red List to confirm European focus species.

This was originally done in 2003 but it is now time to re-examine the species held in Europe with a view to re-appraising which species should be the focus of concerted conservation and breeding efforts. Species that could be of interest are *Carcharhinus plumbeus* and *Stegostoma fasciatum*, which are both, bred in Europe and both are becoming more commonly held in aquariums.

2. Appraise Elasmobranch Husbandry Manual and establish which species of European held sharks require husbandry guidelines.

We need to ensure that all of the key species of shark held in European Aquariums have husbandry guidelines written for them. We aim to identify authors for these guidelines and have first drafts prepared during 2005.

3. Publish guidelines on correct management of European native sharks in regard to captive population control.
4. Following the adoption of the IUCN guidelines on not releasing sharks held or bred in captivity to the wild there is a requirement for guidelines on the correct management of populations of native sharks. The first draft of these will be prepared in 2005.
5. Establish Captive Management plan for *Squatina squatina* (Angel Shark).

6. Several institutions have asked for a coordinated conservation project to be set up in relation to this species. We aim to establish this project in 2005.
7. Create an elasmobranch blood databank within Europe.
8. Increase collaboration in elasmobranch research.

### **Seahorses**

Heather Koldewey (ZSL, [heather.koldewey@zsl.org](mailto:heather.koldewey@zsl.org))

### **2004 Activities**

As in previous years, this programme continues to work in close co-operation with the AZA Marine Fishes TAG.

The implications of the CITES II listing of all seahorses species was a key focus of the year. While the listing was agreed by the CITES signatories in 2002, the listing was deferred until May 2004 to allow countries to set the systems in place to be able to manage the new legislation. Consultation was held within the aquarium community on the proposed 10cm minimum size limit as one management option for the non-detriment findings required by CITES (for more information see [www.projectseahorse.org](http://www.projectseahorse.org), [www.cites.org](http://www.cites.org)).

The implementation of the CITES II listing of seahorses had an impact on the aquarium trade. Information on CITES and the listing of seahorses was provided on the aquarium listserve ([syngnathidae@yahoogroups.com](mailto:syngnathidae@yahoogroups.com)). Presentations on this topic were given at the North American annual aquarium meeting and at the EUAC meeting. Articles were also published in the aquarium hobby magazines.

London Zoo Aquarium set up an agreement with HM Customs and Excise at London Heathrow airport to take all live seahorse seizures. A quarantine protocol was developed with ZSL vet staff and modified based on experience. Five species were received in 2004 (*Hippocampus barbouri*, *H.comes*, *H.kuda*, *H.spinossissimus*, *H.trimaculatus*) all of which were misidentified in the paperwork accompanying the shipments. Shipping conditions for the animals were generally poor and only *H.kuda* survived the quarantine period. These are now reproducing. Only one seizure of 10 *H.kuda* was received since the CITES listing on May 15<sup>th</sup>. The Birch Aquarium at Scripps, San Diego, USA, has agreed to work in conjunction with us to collect similar data on USA seizures in conjunction with US Customs.

Information on the optimal methods to transport seahorses, developed with input from a number of aquariums, was provided to IATA (International Air Transport Association) and CITES.

Progress on updating the Seahorse Husbandry Manual has been slower than hoped and it is anticipated the revised version will be complete and distributed in early 2005.

Much of the correspondence and activity for the program is conducted via the Syngnathidae listserve, which grew to over 200 members. The majority of the discussions related to disease treatments, exchanges of captive bred animals, other husbandry issues and information dissemination on seahorse-related issues.



A status report for the Knysna seahorse, *Hippocampus capensis* was compiled by a masters student working with the National Marine Aquarium in Plymouth, UK.

London Zoo Aquarium hosted a collaborative research project with Boris Dzyuba (Institute of Cryobiology, Ukraine) and Bill Holt (Institute of Zoology, ZSL) through a Royal Society/NATO Fellowship. The aim was to investigate the reproductive biology of seahorses and compare reproductive output with seahorses of different ages. Seahorse sperm was isolated for the first time and the survival and growth of seahorse fry was shown to be closely correlated with the age of the parents.

Lucy Woodall started as a new PhD student with the University of London (Royal Holloway) and ZSL. Her research will be conducted on genetic variability and gene flow among populations of Short-snouted seahorse (*Hippocampus hippocampus*) and long-snouted seahorse (*H. guttulatus*), the two European species. A number of aquariums are involved in providing samples for this research.

### **2005 Action Plan**

1. Complete revision of Syngnathidae husbandry manual and disseminate to members.
2. Update inventory of species held in European aquariums.
3. Review member participation and priority species for breeding programmes.
4. Engage aquariums in gathering data from Customs confiscations of seahorses to review the impact of CITES legislation.
5. Co-ordinate research on seahorses, particularly with priorities set in Foster and Vincent 2004 research paper on seahorse life history (Journal of Fish Biology, 65, 1-61).

### **African cichlids**

Brian Zimmerman (ZSL, [brian.zimmerman@zsl.org](mailto:brian.zimmerman@zsl.org))

### **2004 Activities**

Brian Zimmerman participated in the Lake Victoria Species Survival Programme workshop at Columbus Zoo and Aquarium, USA, in January 2004.

Educational videos were received from New England Aquarium and disseminated to interested aquariums.

### **2005 Action Plan**

It was decided in 2004 that this programme only involved a few institutions and that did not justify being a full European programme. Those participating in conservation efforts for these fishes will continue to periodically update the FAITAG.

### **Mexican fishes**

Jen Nightingale (Bristol Zoo, [Jnightingale@bristolzoo.org.uk](mailto:Jnightingale@bristolzoo.org.uk)) and Brian Zimmerman (ZSL, [brian.zimmerman@zsl.org](mailto:brian.zimmerman@zsl.org))

### **2004 Activities**

A meeting was held Bristol Zoo in May 2004 that included researchers from Mexico. This was used to review the programme and assess the involvement of European aquariums in Mexican fish conservation. The definitions developed at the EAZA Invertebrate and Lower Vertebrate TAG meeting in Riga were used to review species

and identify the roles of aquariums in their conservation. This proved an extremely useful tool and on the basis of this, *Allotoca goslinei* and *A. polylepis* were identified the priority 'rescue' species for FAITAG. *A. maculata* may also be included dependent on results of genetic research.

### **2005 Action Plan**

1. Identify reasons for decline for each species to determine the feasibility of recovery *in situ*.
2. FAITAG plan to keep well managed populations of *A. goslinei* and *A. polylepis* until 2006 and review at conservation symposium in Morelia, Mexico.
3. Develop species management protocol for two priority species, including genetic management.
4. Develop husbandry guidelines for two priority species. Include information on wild habitat, water temperature and quality parameters. Ivan to provide summary of wild data on the two priority species in table form.
5. Develop record sheet (ZIMS compatible).
6. Import 20.20 of each priority species and disseminate to member collections.
7. Identify potential other holders, including appropriate hobbyists.
8. Review priorities for Mexican Cyprinodontidae and determine role of aquariums in their conservation.

### **European Endangered Freshwater Fishes (Killifish)**

Brian Zimmerman (ZSL, [brian.zimmerman@zsl.org](mailto:brian.zimmerman@zsl.org))

### **2004 Activities**

The programme held a European workshop at ZSL on the 8<sup>th</sup>-9<sup>th</sup> May 2004. This was used to establish the mission, goals and activities of the programme. The definitions developed at the EAZA Invertebrate and Lower Vertebrate TAG meeting in Riga were used to review species and identify the roles of aquariums in their conservation. This proved an extremely useful tool.

A subsequent meeting was held in October at the Hellenic Center for Marine Research (HCMR), Institute of Inland Waters, Anavyssos, Greece to discuss the potential for on the conservation of *Valencia letourneuxi* in Greece and Albania.

#### **Mission:**

To prevent the extinction of the genus *Aphanius* and *Valencia* through *in situ* and *ex situ* conservation, education, and research initiatives.

#### **Programme Goals:**

1. Maintain and reproduce populations of *Aphanius* and *Valencia* that are either extinct in the wild or in imminent danger of extinction (and where being managed in captivity is the recommended means to save them).
2. Develop *in situ* conservation activities through collaborations or direct action.
3. Engage in research which will help secure the survival of the species in its natural habitat.
4. Educate people in range countries about the status and threats to *Aphanius* and *Valencia* and their habitats and encourage their conservation.
5. Produce reference list on all publications on *Aphanius* and *Valencia*.

6. Establish database of the current status of all *Aphanius* and *Valencia* species in the wild and in aquariums.
7. Submit conservation assessment of *Aphanius* and *Valencia* to IUCN Red List.
8. Complete species profiles for all *Aphanius* and *Valencia* species.
9. Translate current species profiles into English.
10. Write husbandry guidelines for *A.apodus* and *Valencia letourneuxi*.
11. Set up captive populations of *A.apodus* and *Valencia letourneuxi* in public aquariums and with hobbyists, according to management guidelines.
12. Publish standardised sampling method for *Aphanius* and *Valencia*.
13. Establish a field contact in all range countries for *Aphanius* and *Valencia*. Priorities for Iran, Algeria, Greece, Turkey.
14. Contact MedWet to determine whether or not they are working (or planning to work) with fish. If they are not then get really angry. And make them.
15. Write an action plan with field contact for in country conservation of the four recommended species.
16. Complete a field survey of *Valencia letourneuxi*.
17. Set up exhibit in public aquariums in range countries with educational information.
18. Set up a school pond with *Valencia letourneuxi* in Greece as a model education programme.
19. Write research proposal for the interactions between *Aphanius* and *Gambusia affinis*.
20. Complete research project on the effects of temperature on breeding and sex ratios in *A.sirhani*, *A.apodus*, *A.sophiae*.

A full species review was conducted on all *Aphanius* and *Valencia* species. From discussions, two lists were prepared.

1. Species where more information was required before an action plan could be developed.
2. Priority species for Action Plan for programme.

The other species were not considered priority, either because they are widely distributed and relatively secure e.g. *A.dispar dispar* or because they are being managed by organisations in country e.g. *Valencia hispanica*.

### **2005 Action Plan**

1. *Valencia letourneuxi*
  - a) Explore further funding routes for Rapid Assessment of populations in Greece and apply for appropriate sources. (By March 2005).
  - b) Conduct survey (pending funding) in Northwest Greece with HCMR (June/July).
  - c) Report writeup from survey (November).
  - d) ZSL acquire stocks of *V. letourneuxi* from German Killifish Association to establish population within aquarium community. (Spring 2005).
2. *Aphanius apodus*
  - a) ZSL acquire stocks of *A. apodus* from German Killifish Association to establish population within aquarium community. (Spring 2005).
  - b) Follow up report on species existence in the wild. (end of 2005).
3. *Aphanius fasciatus*

- a) Continue write up of site localities and collation of reports (on-going).
  - b) Write husbandry guidelines (DKE) by mid-2005.
4. *Aphanius sirhani*
- a) Write husbandry guidelines (DKE) by mid-2005.
  - b) Review progress of programme in Jordan with input from Chester Zoo and Vienna Haus des Meres. (end of 2005).
  - c) Progress study of interaction with *Gambusia affinis* at Vienna Zoo (on-going).

#### Other species

Maintain and initiate contact with biologists in Turkey, Iraq, Iran and elsewhere, working with other *Aphanius* species to determine need for conservation or research work (on-going).

### ***Vendace (sub-group of European Endangered Freshwater Fishes)***

Jen Nightingale (Bristol Zoo, [Jnightingale@bristolzoo.org.uk](mailto:Jnightingale@bristolzoo.org.uk))

#### **2004 Activities**

This programme is currently focused on UK activities but may be expanded to a wider European level following the initial phase. The vendace, *Coregonus albula*, belongs to the salmonid family (sub family Coregoninae) and is one of the UK's native endemic freshwater white fish. In fact the vendace within the UK may be genetically distinct from the European vendace that recent studies show may perhaps be a hybrid species. Therefore this fish is of great importance.

A preliminary meeting was held towards the end of 2004 at the Aquarium of the Lakes, Windermere, UK. This was used to set an action plan for the role of aquariums in the conservation of this species.

#### **2005 Action Plan**

1. To take on 2000 eggs and hatch out at various aquariums
2. To rear on vendace using similar husbandry methods at different institutions
3. To run research projects with the fry, food trials etc
4. To record all data and complete husbandry guidelines
5. To display to public with associated standardised interpretation
6. To actively disseminate all knowledge and information.

#### Longer term Goal

7. To identify hatcheries for vendace incubation and to incubate and rear fish from Loch Skeen to repopulate Bassenthwaite Lake.

### ***Coral***

Rachel Jones (ZSL [rachel.jones@zsl.org](mailto:rachel.jones@zsl.org)) and Joe Pecorelli (ZSL, [joe.pecorelli@zsl.org](mailto:joe.pecorelli@zsl.org))

#### **2004 Activities**

The emphasis was placed in developing a programme for coldwater native corals in 2004:

- English Nature has given a £3000 grant to ZSL and the Deep for research on the pink sea fan in 2005.
- The Deep held 'Project Coral Rescue' month for native corals that raised over £2,400 through talks and badge making.

- The group liaised with the Marine Conservation Society and arranged for their display panels on pink sea fans to visit a number of aquariums in the UK.
- The National Marine Aquarium have a student who will do her project on pink sea fans.
- Blue Reef set up an exhibit of pink sea fans and conducted research in conjunction with Cornwall College students.
- The Deep are still involved in the *Lophelia* project and this will be a feature of their new expansion project, The Twilight Zone.

At the other end of the spectrum, members were also involved in international activities. FAITAG members participated in a stakeholders meeting of the International Coral Reef Initiative. The Deep put a proposal to the meeting that aquariums should be more involved in promoting the work of ICRI to the public. There was some support for this from the people present (not all), and the secretariat have asked them to prepare a briefing document outlining this proposal. Go to [www.icriforum.org](http://www.icriforum.org) for links, documents and resources.

### Research

Several aquariums actively participated in the SECORE project. This project involved the collection and settlement of larvae of different species of stony corals and shipping of the young colonies to study their capacity to adapt to new conditions. The results of this project were presented at the International Aquarium Congress in Monterey (December 2004) and are being submitted as a scientific paper.

Coral Zoo: This is a Europe wide coral husbandry research programme that is co coordinated by Wageningen University in the Netherlands and includes Rotterdam Zoo, Burgers Zoo, Lisbon Oceanarium, The Deep, Nausicaa and others as its partners.

ZSL is also developing a research programme on coral diseases.

A listserve ([EUACCoralASP@yahoogroups.com](mailto:EUACCoralASP@yahoogroups.com)) is used to disseminate information and activities of the programme and the European level Coral programme. During 2004, the listserve covered topics including: status of corals and coral reefs, exchange of technical information regarding the maintenance of corals and related organisms such as gorgonians, even coral reef invertebrates (e.g. giant clams); pathologies and associated treatments; the control of pests/predators of corals. Other issues covered included the different ways of labelling colonies, filtration systems, etc.

### **2005 Action Plan**

#### 1. Husbandry

- To start compiling coral disease data from UK aquariums
- Compile a list of aquariums who successfully propagate corals.

#### 2. Propagation

- SECORE: workshop at Rotterdam Zoo to develop breeding centres: Arnhem, Brest, Lisboa, London, Monaco (+ 4-5 US aquariums) in May/June
- Develop potential for acquiring coral larvae of various species:
  - (1) *In-situ* sources (research institutions, coral farms, etc.) on a non-commercial basis:
    - check Mozambique and Philippines by ZSL

- check options to receive additional species from Okinawa by Rotterdam Zoo
- shipment trial of *Acropora palmata* larvae from USA to Europe by Rotterdam Zoo

(2) *Ex-situ* sources - check use of captive brood stock of the centres mentioned above – outcome of workshop above.

### 3. Research

- Projects in 2005:
  - Coral Zoo: upcoming research initiative of EUAC/EAZA; start 1<sup>st</sup> April 2005, duration: 4 years; research topics: disease, fragmentation, abiotic factors, bioassays, growth and growth morphology, sexual reproduction, husbandry protocol formation.
  - SECORE Project: monitoring of larvae/primary polyp transports and post-transport development of juveniles of *Acropora tenuis* (origin: field collected gametes, Okinawa, Japan).
  - ZSL: disease research planned; recently applied for funding; time schedule available pending results of grant application.
  - ZSL/The Deep: *Eunicella verrucosa* – research on husbandry, asexual and sexual reproduction; from Feb/March.
- Co-operation with taxonomists: start building up contacts with taxonomists and with experts in population genetics towards the establishment of an ID network (and to be able to co-ordinate future breeding activities).

### 4. Education

- International Coral Conference planned for spring 2006; organized by Burgers' Zoo.
- Possible identification workshop to be organised.

### 5. Legislation

- Continued co-operation with national customs authorities to provide facilities for receiving coral colonies confiscated under CITES legislation.

### ***Cephalopods***

Zahra d'Aronville (Blue Reef), Matt Slater (Blue Reef Newquay  
[newquay@bluereefaquarium.co.uk](mailto:newquay@bluereefaquarium.co.uk))

Blue Reef established a new programme for cephalopods in 2004.

### ***2005 Action Plan***

Conduct a questionnaire to establish the following information:

- What species are being kept and how?
- What species are being bred and how?
- Development of animal exchange
- Development of husbandry guidelines
- Status of wild cephalopods

## **Flamingo and Waterfowl TAG**

### ***Chair***

Nigel Jarrett (Wildfowl and Wetlands Trust, Slimbridge)

### ***Membership***

To be reviewed. Up to 2003, membership included John Baines (WWAP), Martin Brown (WWT Slimbridge), Ruth Cromie (WWT Slimbridge), Olivia Walter (Zoo Federation), Dianne Holloway (British Waterfowl Association & Blackbrook), Barrie Hughes (Private Keeper), Baz Hughes (WWT Slimbridge), David Jeggo (Jersey), Catherine King (Rotterdam Zoo), Tony Martin (British Antarctic Survey - Private Keeper), Mark Roberts (WWT Slimbridge), Tony Richardson (WWT Slimbridge), Phil Shepherd (WWT Slimbridge), Simon Tonge (Paignton), Roger Wilkinson (Chester), Pat Wisniewski (WWT Martin Mere), Nick Worth (Aviornis UK), Glyn Young (Jersey).

The Joint Bird TAG meeting held at Newquay Zoo on 24<sup>th</sup> & 25<sup>th</sup> November 2004 provided an opportunity to present the work of the UK Wildfowl & Flamingo TAG to an audience of approximately 40 bird keepers from various institutions. At the 2004 meeting, Nigel Jarrett delivered a presentation on the work of the IUCN-SSC/Wetlands International Threatened Waterfowl Specialist Group. This is summarised below.

Threatened Waterfowl Specialist Group activities, 2001-2004

The IUCN-SSC/Wetlands International Threatened Waterfowl Specialist Group (TWSG) aims:

- To identify which Anatidae taxa are globally threatened and to monitor their status and distribution (in collaboration with the Red List Authority for birds, BirdLife International).
- To produce international action plans, and to carry out conservation and research projects on globally threatened Anatidae.
- To maintain an effective communications network between threatened waterfowl conservationists.

Over the last three years, TWSG membership has grown by 7% from 880 in 2001 to 938 in 141 countries in 2004. We now have 498 Core Members, 126 of whom are actively engaged in threatened waterfowl conservation. We have expert members for 58 of the 59 threatened waterfowl taxa. Information dissemination remains a core activity for the TWSG. The group maintains a website with our recent bulletins online ([www.wwt.org.uk/threatsp/twsg](http://www.wwt.org.uk/threatsp/twsg)), and we run seven list servers with a total of 522 members. During the triennium, we also published over 100 scientific papers, reports and popular articles plus the 13<sup>th</sup> and 14<sup>th</sup> editions of the TWSG News bulletin, which is circulated to all members free-of-charge.

We have conducted or provided support to over 40 individual conservation and research projects including:

- Production of global action plans for Ferruginous Duck, White-headed Duck and the critically endangered Brazilian Merganser.
- Organisation of conservation planning workshops for Ferruginous Duck and Brazilian Merganser.
- Publication of the proceedings from the Ferruginous Duck conservation planning workshop (25 papers on status, distribution, biology and conservation).
- Surveys which discovered new populations of Brazilian Merganser in central Brazil and Argentina.
- A successful pilot nest box programme for the Scaly-sided Merganser in Far-East Russia (over 140 nest boxes have now been erected, with the help of local people and schoolchildren, in areas where the merganser's breeding habitat has been destroyed through logging).
- Three surveys for White-winged Ducks in North Sumatra province, Sumatra. Unfortunately these located very few birds and reported widespread deforestation.
- Research and education work on White-winged Duck in Way Kambas National Park, Sumatra.
- Surveys of Blue-winged Goose in Ethiopia.
- Surveys of West Indian Whistling-Ducks in the Turks and Caicos Islands, and St. Kitts-Nevis.
- Studies modelling Ruddy Duck impact on White-headed Duck. The spatially-explicit model simulates the life histories of individual Ruddy Ducks in real landscapes using habitat information held within a Geographical Information System. Model predictions suggest that Ruddy Ducks numbers in the UK can be reduced to less than 175 birds in approximately 10 years and eradicated in 20 years. Egg control is unlikely to be a practical alternative to culling on a national scale, but could be considered on sites where culling in the breeding season is not possible.
- A European Ruddy Duck survey.
- Circulation of the European Ruddy Duck eradication strategy to 350 contacts in 70 countries.
- Trials of a new design of nasal marker for White-headed Ducks.
- Studies of the ecology of the Marbled Teal in Spain.
- A detailed study of the population genetics of White-headed Ducks and Ruddy Ducks, and of their hybridisation, and a study comparing hybrid morphology with their genetic makeup.
- A study of lead contamination in Laguna Medina and other Andalusian key sites for White-headed Ducks.
- Publication of seven papers on Marbled Teal and four on White-headed Duck.

Two recent projects have been especially notable. Since the 2003/2004 winter, the TWSG has been supporting a Red-breasted Goose winter monitoring programme being conducted by the Bulgarian Society for the Protection of Birds (BSPB). The Red-breasted Goose is globally endangered due mainly to its reliance on only five main winter roost sites that are threatened by habitat loss and disturbance from



hunting activities. The global population may have declined from around 90,000 birds in 1999-2000 to only 50,000 birds in 2003-2004, probably due to extremes of weather and low food availability on the wintering grounds and poor breeding conditions on the tundra. The winter monitoring programme is focused on the two main roost sites for the Red-breasted Goose - Shabla and Durankulak Lakes in north-east Bulgaria, but as part of this work coordinated monthly counts are being conducted in Bulgaria, Romania and Ukraine. Funding has already been secured to extend the surveys in 2004/2005. The TWSG will now work with BSPB to formulate a costed plan for Red-breasted Goose conservation. As well as the production of an updated global action plan, priority projects are likely to include: the introduction of hunting patrols; a study to identify preferred inland feeding sites during conditions of high hunting disturbance (to feed into BSPB's land-purchase programme); the formulation of a crop rotation plan for feeding areas alongside Shabla and Durankulak Lakes to ensure availability of preferred food crops; and an integrated public awareness programme focusing on hunters, farmers and local schoolchildren. The TWSG also plan to assist BSPB in raising funds for various capital items required to ensure the future of the long-term monitoring programme (e.g. four wheel drive vehicle, field station, and observation posts).

The Secretariat for the TWSG is based at the headquarters of the Wildfowl & Wetlands Trust (WWT) at Slimbridge in the UK. WWT maintains nine visitor centres throughout the UK designed to bring people and wildlife closer together for the benefit of both. As part of these activities, WWT maintains waterbird collections totalling over 7,000 birds at five centres. Over the last four years, the TWSG has been receiving increased support from waterfowl keepers who wish to help conserve threatened waterfowl in their natural habitats. A good example of linking *ex situ* and *in situ* conservation activities involves a deal struck between WWT and the Durrell Wildlife Conservation Trust (DWCT). In return for 30 Greater Flamingos from WWT, DWCT will provide the TWSG with a number of places on their world-renowned International Training Programme's Summer School. The aims of the Summer School are to provide an introduction to practical aspects of animal management *in situ* and *ex situ*, and to encourage a critical understanding of biodiversity conservation. Over the next three years, young up-and-coming TWSG members from developing countries will attend the summer school, starting in 2004 with Nicky Petkov from Bulgaria.

### ***Flamingos***

#### ***In situ* conservation - update on Lesser Flamingo Migration Research Project, Lake Bogoria, Kenya, 2002 – 2004**

##### **Introduction**

For the past year, WWT Threatened Species Research Associate Dr Brooks Childress has been using satellite transmitters to track the movements of Lesser Flamingos in East Africa. This is a multi-year study sponsored by the University of Leicester and the Earthwatch Institute, supported by WWT, to discover which wetlands are the most critical to the survival in the Great Rift Valley, so that these sites can be given added protection. We also hope to determine if there is any genetic interchange among the large East African population of Lesser Flamingos and the two smaller populations in southern and western Africa.

The first three birds (Bahati, Imara and Safari) received their transmitters in October 2002. In May 2003, WWT launched a special section of its website ([www.wwt.org.uk/flamingo](http://www.wwt.org.uk/flamingo)) to enable WWT members and the public to adopt these birds and follow their movements as they were tracked by the transmitters. Four new birds (Hekima, Kisa, Kito and Zima) were added to the study in July 2003, and these are also available for adoption on the website.

Since being tagged in October 2002, Bahati has made 23 interlake flights, visited eight different sites, spent a mean duration of 21.5 days at each stop and flown 3,198 kilometres. Safari has made 26 interlake flights, visited six different lakes, spent a mean duration of 18.5 days at each stop and flown 3,532 kilometres, while Imara has made 107 interlake flights, visited 12 different sites, spent a mean duration of only 4.7 days at each stop and flown an incredible 10,725 kilometres! Each flamingo appears to have its own preferred sites. Safari has spent 86% of his time on lakes Bogoria, Logipi and Nakuru in Kenya, while Bahati has spent 68% of his time on Bahi Swamp, and lakes Bogoria and Logipi. Imara has spent 76% of his time on lakes Manyara, Nakuru and Natron.

Brooks visited Lake Bogoria in June 2004 and found the number of Lesser Flamingos on the lake was the lowest in four years – only 30-40,000. The reason for these low numbers of Lesser Flamingos appeared to be a die-off of *Arthrospira*, the flamingo's main food source. The low numbers of birds resulted in only 12 birds being captured, all of which were measured (length of wing, total tarsus, skull, and mandible), weighed, and ringed (metal rings and orange Darvics).

## **Results**

Based on the first year's results, Brooks has discovered that the key site network for Lesser Flamingos in East Africa so far consists of seven alkaline lakes in the Great Rift Valley of Kenya and Tanzania (from north to south: Logipi, Bogoria, Nakuru and Elmenteita in Kenya, along with Natron, Manyara and Eyasi in Tanzania), and an ephemeral fresh water wetland (Bahi Swamp) in central Tanzania. Except for minor exploratory visits to other wetlands, all seven birds spent 100% of their time during the first year on these eight wetland sites. The conservation status of these sites varies from fully protected (Bogoria, Nakuru and Manyara) to totally unprotected (Logipi, Natron, Eyasi and Bahi Swamp), with Lake Elmenteita being partially protected as part of a private game reserve. Prior to this research, it was not known that the ephemeral Bahi Swamp was a critical site for Lesser Flamingos.

Within the space of a week in August, three of the remaining five transmitters failed, leaving only two birds transmitting. In spite of the disappointment of having lost contact this year with five of the seven birds we've been following, the satellite tracking study has yielded important results for Lesser Flamingo conservation. We've been able for the first time to describe the itinerant movements of the birds amongst the alkaline lakes in the East African Rift Valley, and document the relative importance of the various lakes to the species' survival. This documentation will enable us to include recommendations for protection of these lakes in the flamingo conservation action plan.

## **Outputs**

A presentation on the project was given at the Waterbirds around the World Conference in Edinburgh in April 2004. For more information on the study see [www.wwt.org.uk/flamingo](http://www.wwt.org.uk/flamingo).

### **Flamingo Conservation Action Plan**

At the 'Waterbirds around the World' Conference, WWT and the Wetlands International / IUCN-SSC Flamingo Specialist Group convened a meeting to discuss the production of a global flamingo action plan. This was attended by representatives from WWT, the Flamingo Specialist Group, IUCN-SSC, Wetlands International, AEWA, the Bonn Convention and a number of experts from flamingo Range States. WWT will now work with the Flamingo Specialist Group to produce a detailed project proposal and budget. The first step in the plan's production will be a conservation planning workshop. Offers of financial assistance for this workshop have already been pledged by a number of conservation organisations and a private donor.

### ***Ex situ Conservation***

### **WWT Flamingo Breeding Programme**

#### **Background**

The WWT flamingo breeding programme aims to enhance the conservation status of flamingos world-wide by maintaining *ex situ* populations of flamingos in WWT collections in order to raise funds for *in situ* conservation and to supply reputable collections with flamingos to seek to reduce the demand for wild-caught birds. In the period 2000-2003, WWT has reared a total of 206 flamingos, provided 174 birds to 13 institutions and raised £130,000 for *in situ* conservation.

At the beginning of 2004 WWT held 732 flamingos of six taxa (168 Caribbeans, 267 Greaters, 207 Chileans, 55 Lessers, 31 Andean and 4 James').

The results of the 2004 breeding season are 20 Caribbean, 30 Greater and 30 Chilean Flamingos chicks reared. Eight Chilean Flamingos eggs have been given to a private breeder for hand-rearing.

#### **2004 Translocations: Full-grown birds**

Groups of 11 and 19 Chilean Flamingos (hatched in 2002 and 2003) were translocated from WWT Slimbridge (on 24 January 2004) and from WWT Washington (on 9 March 2004), respectively, to Longleat Safari Park.

#### **2004 Translocations: Eggs**

In 2004, there were 15 flamingo egg translocations between WWT centres and from WWT centres to private breeders (see table 1).

Since 2001, there have been 11 Chilean flamingo egg translocations following 2-26 days' incubation. Seven chicks (64%) have been hatched and foster-reared from these translocated eggs. One translocated egg hatched, but the chick died shortly after hatch, 1 egg disappeared after being put under a foster parent and two eggs addled. The eggs which addled had been translocated after less than one week's incubation.

Since 2001, seven Caribbean Flamingo have been translocated following 15-25 days' incubation. Five chicks (71%) have been hatched and foster-reared from these eggs,

one egg hatched but the chick died shortly after hatch, and one egg addled. The egg which addled had been moved after 15 days' incubation.

Since 2001, three Greater Flamingo eggs have been translocated following 19-22 days' incubation. One chick (33%) was hatched and foster-reared, one egg hatched but the chick died shortly after hatch, and one embryo died in shell. The eggs which hatched were translocated after 22 days' incubation; the other two were moved after 19 and 20 days' incubation.

These data suggest that flamingo eggs can be most successfully moved after three weeks' incubation.

**Table 1: Flamingo egg translocations from WWT centres 2001-2004 (key; I: Still-air Incubator; PI: PI; P: foster-parent; H: hatch; D: died; A: added; DIS: embryo died in shell; Dis: disappeared; HB: Hot-Box; PI: Portable incubator; HWB: Hot-water bottle)**

Species	Egg code	Date laid	Date moved	Days incubated	How incubated		From	To	How moved	Outcome
					Before move	After move				
Chilean	39	30.7.01	21.8.01	22	I	FP (Chilean)	Slimbridge	Washington	PI	H 28.8.01
Chilean	38	30.7.01	21.8.01	22	I	FP (Chilean)	Slimbridge	Washington	PI	H 02.9.01
Chilean	37	28.7.01	21.8.01	24	I	FP (Chilean)	Slimbridge	Washington	PI	H&D 28.8.01
Caribbean	6	06.6.03	01.7.03	25	I	FP (Caribbean)	Slimbridge	Llanelli	PI	H need date
Caribbean	10	14.6.03	01.7.03	17	I	FP (Caribbean)	Slimbridge	Llanelli	PI	H need date
Chilean	44	26.8.03	27.9.04	30	I	I	Slimbridge	Verl, Germany	PI	H 27.9.03
Chilean	47	26.8.03	27.9.04	25	I	I	Slimbridge	Verl, Germany	PI	H 2.10.03
Chilean	50	25.9.03	27.9.04	26	I	I	Slimbridge	Verl, Germany	PI	H 2.10.03
Chilean	58	25.9.03	27.9.04	2	I	I	Slimbridge	Verl, Germany	PI	A 15.10.03
Chilean	63	26.9.03	27.9.04	2	I	I	Slimbridge	Verl, Germany	PI	A 15.10.03
Greater	BH	19.5.04	10.6.04	22	I	I, FP (Greater)	Martin Mere	Slimbridge	HB (Down)	H 16.6.04
Greater	?	21.5.04	10.6.04	20	I	I, FP (Greater)	Martin Mere	Slimbridge	HB (Down)	H&D 18.6.04
Greater	AJX	22.5.04	10.6.04	19	I	I, FP (Greater)	Martin Mere	Slimbridge	HB (Down)	DIS 18.7.04
Caribbean	23/5A		18.6.04	19	I	I, FP (Caribbean)	Slimbridge	Llanelli	HB (Down)	H need date
		30.5.04								
Caribbean	25		18.6.04	19	I	I, FP (Caribbean)	Slimbridge	Llanelli	HB (Down)	H need date
		30.5.04								
Caribbean			18.6.04	17	I	I, FP (Caribbean)	Slimbridge	Llanelli	HB (Down)	H&D need date
	26/2B	01.6.04								
Caribbean	27/4 A		18.6.04	15	I	I, FP (Caribbean)	Slimbridge	Llanelli	HB (Down)	A - need date
		03.6.04								
Chilean	BIB	12.8.04	15.8.04	3	I	I, FP (Chilean)	Washington	Slimbridge	HB (HWB)	H 09.9.04
Chilean	AFA 1	02.8.04	15.8.04	13	I	I, FP (Chilean)	Washington	Slimbridge	HB (HWB)	H 31.8.04
Chilean	AFA 2	07.8.04	15.8.04	8	I	I, FP (Chilean)	Washington	Slimbridge	HB (HWB)	Dis 09.8.04
Caribbean	LL	Await info	26.8.04		I	I, FP (Chilean)	Llanelli	Slimbridge	HB (Down)	H 27.8.04
Chilean	50	20.8.04	14.9.04	25	I	FP (Chilean)	Slimbridge	Raymond Sawyer	PI	Awaiting news
Chilean	52	22.8.04	14.9.04	23	I	FP (Chilean)	Slimbridge	Raymond Sawyer	PI	Awaiting news
Chilean	53	22.8.04	14.9.04	23	I	FP (Caribbean)	Slimbridge	Raymond Sawyer	PI	Awaiting news

## **Flamingo catches**

### **Chileans**

On 2 December 2003 all Chilean Flamingos in the South American Pen flock at WWT Slimbridge (146 birds) were caught, measured and leg-banded as part of a training session for WWT aviculturalists attending the annual Avicultural Practitioner's meeting.

On 9 March 2004 all Chilean Flamingos at WWT Washington (65 birds) were caught measured and leg-banded.

### **Andean & James'**

On 11 May 2004 all Andean Flamingos at WWT Slimbridge (30 birds) and James' Flamingos (4 birds) were caught, measured and re-ringed (leg-banded). Feather samples from 16 Andean flamingos and single Greater, Caribbean and Chilean flamingos (convalescing in the Andean Flamingo House and Pen) were sent to Professor Michael Wink at the Institute for Molecular Biology in Heidelberg for feather pulp DNA gender determination. Prof. Wink will determine gender of these birds free of charge. An early analysis of morphometric data from known sex Andean Flamingos indicates that this data may be used to determine the birds' gender.

## **Publications**

### **Published**

#### ***In situ***

Childress, B., Harper, D., Hughes, B., Van den Bossche, W., Berthold, P. & Querner, U. 2004. Satellite tracking Lesser Flamingo movements in the Rift Valley, East Africa: Pilot Study Report. *Ostrich* 75: 57-65.

#### ***Ex situ***

Jarrett, N. Mason, V., Wright, L. & V. Levassor. 2004. Using egg density and egg mass techniques for incubation stage assessment to predict hatch dates of Greater Flamingo *Phoenicopterus ruber roseus* eggs. *Wildfowl* 54:131-142

### **Work in progress**

Work has begun on data analyses for papers to be published on:

- The use of dummy eggs to prevent Greater Flamingo egg loss during incubation. As WWT seeks to maximise flamingo productivity by reducing egg loss after egg-laying (eggs are often accidentally kicked off nest turrets by parents), egg loss is reduced by replacing real eggs with dummy eggs. Analyses will investigate whether or not egg replacement has an effect on productivity.
- The effects of incubation time on re-laying in Greater Flamingos. As WWT seeks to maximise flamingo productivity by double-clutching, analyses will investigate whether or not the amount of time a flamingo incubates before egg removal affects re-laying interval.

- Using morphometrics to sex Andean Flamingos. Discriminant Function Analyses indicate that head and tarsus measurements can be used by fieldworkers catching Andean Flamingos to ascertain the sex of birds.

### ***Aims for 2005***

1. Baz Hughes to keep the TAG informed on legislation concerning alien species and on any legislation or Government recommendations relevant to captive management of stifftailed ducks.
2. Baz Hughes in his capacity as chair of IUCN/Wetlands international Threatened Waterfowl Specialist Group to keep the TAG informed of work being conducted on threatened wildfowl.
3. WWT to sponsor at least one *in situ* flamingo research project.
4. To continue the AI programme for Blue Ducks (*Hymenolaimus malacorhynchos*) at WWT.
5. Durrell Wildlife Conservation Trust (DWCT) to continue to coordinate the *ex situ* population management of Madagascar Teal (*Anas bernieri*).
6. Durrell Wildlife Conservation Trust (DWCT) to continue to coordinate the *ex situ* population management of Meller's Duck (*Anas melleri*).
7. To continue to develop techniques to increase Flamingo productivity at WWT.
8. To begin the production of a generic husbandry manual for wildfowl.
9. To continue with Avian TB and botulism research at WWT.
10. To review TAG membership, structure, mission and objectives

### ***Data***

Species	Level of Management	Species Manager Status:- Individuals (Collections)
Freckled Duck <i>Stictonetta naevosa</i>	JMSP4 (3)	WWT Slimbridge
Hawaiian Goose <i>Branta sandvicensis</i>	JMSP4	WWT Slimbridge
White-winged Duck <i>Carina scutulata</i>	JMSP4 (3)	WWT Slimbridge
New Zealand Blue Duck <i>Hymenolaimus</i>	JMSP4	WWT Slimbridge
Meller's Duck <i>Anas melleri</i>	EEP	D. Jeggo
New Zealand Brown Teal <i>Anas aucklandica</i>	JMSP4	N. Worth
South Georgian Pintail <i>Anas g. georgica</i>	JMSP4 (3)	T. Martin

### ***Meetings***

- On 24 & 25 November 2004, Nigel Jarrett attended the Joint Bird TAG meeting held at Newquay Zoo (see above).
- On 7 & 8 November 2004, the 3<sup>rd</sup> WWT Avicultural Practitioners' Meeting of the Millennium was held at WWT Slimbridge centre. The meeting was attended by 27 staff members from six WWT centres holding captive birds. Training was delivered in best practice techniques and information on pinioning wildfowl and flamingos, wildfowl conservation strategies and communicating with the public to all attendees.



## Hornbill, Toucan & Touraco TAG

### Chair

John A. Ellis (Zoological Society of London)

### Members

Membership of the TAG is open to all collections holding relevant taxa.

### Advisers

John Lewis (IZVG), Koen Brouwer (EEP Hornbill TAG Chair).

### Data

#### *Species managed and studbooks held by B&I institutions*

Species	Level of Management	Species Manager
Blue-crowned motmot <i>Momotus momota</i>	JMSP4	J. Gregson (Paignton)
Lilac-breasted roller <i>Coracias caudata</i>	JMSP4	L. Broome (Chessington)
Hoopoe <i>Upupa epops</i>	JMSP3 (ESB)	Vacant
Red-crested Touraco <i>Tauraco erythrolophus</i>	ESB	DWCT (Jersey)
Trumpeter hornbill <i>Bycanistes bucinator</i>	JMSP4	Vacant
Southern pied hornbill <i>Anthracoceros albirostris convexus</i>	ESB	J Ellis (ZSL)
Northern pied hornbill <i>Anthracoceros a. albirostris</i>	ESB	J. Ellis (ZSL)
Asian pied hornbill <i>Anthracoceros albirostris spp.</i>	ESB	J. Ellis (ZSL)
Malayan black hornbill <i>Anthracoceros malayanus</i>	ESB	J. Ellis (ZSL)
Tarictic hornbill <i>Penelopides spp.</i>	ESB	D. Bolton (ESB)

Most of the remaining managed programmes listed above will become European level studbooks. B&I collections are participating fully in the great Indian hornbill, *Buceros bicornis*, EEP (Amsterdam, The Netherlands), the wrinkled hornbill, *Aceros corrugatus*, EEP (Aalborg, Denmark) and the studbooks for wreathed hornbills *Aceros spp.* (Ljubljana, Slovenia) and Fischer's turaco, *Tauraco fisheri*. (Antwerp, Belgium), toco toucan *Ramphastos toco* (London) and Rhinoceros Hornbill (*Buceros rhinoceros*)

### ***Special Concerns***

Highlighted low numbers in many species that are monitored, this is especially true in respect of the pied hornbills as there are so few birds now in the UK and Europe generally. Species may be more readily kept in European collection but there is cause for concern in the very small numbers in some programmes and the low numbers of breeding successes.

### ***Achievements for 2005***

- As the evolution of the TAG meetings continues the individual TAG's now hold a two-day meeting that covers all aspects of interest to the BIAZA bird community. This year's meeting was hosted by Newquay Zoo and at that meeting, though no report was given from the TAG, a presentation was given on the difficulties of working with small captive populations and the relevance and importance of collection planning.

## **Monotreme and Marsupial TAG**

### ***Chairperson***

Peter Dillingham (Blackpool Zoo).

### ***Committee Members***

Debra Bourne, Veterinary Advisor (Wildlife Information Network), Lesley Dickie (London), John Partridge (Bristol), Frank Wheeler (London).

### ***Research Officer***

Marianne Smuga (Blackpool Zoo).

### ***Nutritionist***

Dr. Sue Baddeley (Sparsholt College).

### ***Scientific Advisor***

Andrew Kitchener (Royal Museum of Scotland).

### ***Aims***

- To effectively function as a sub-group of the European Monotreme and Marsupial TAG.
- To ensure full British and Irish participation and stimulate the development of the European TAG.
- To actively participate in EEPs and ESBs where they exist.
- To identify those taxa under risk for which captive breeding programmes may be best initiated in Britain and Ireland.
- To initiate and oversee JMSC captive breeding programmes where appropriate.
- To identify and maximise cage space for species at risk, balancing the needs of the individual programmes.
- To work to improve the husbandry of all monotremes and marsupials.
- To act as an information service for holders of monotremes and marsupials.

### ***Aims for 2004***

- To start up a programme to look at the nutritional requirement for captive monotremes and marsupials.
- To produce a hand-rearing sheet for macropod marsupials

### ***Progress in 2004***

All aims achieved.

### ***Meetings***

The annual meeting was hosted by Paignton Zoo, as part of the two-day Small Mammal Meeting in October 2004.

### ***Special Concerns***

#### Lack of collections holding marsupials

Out of the 66 BIAZA collections only 37 hold marsupials and 13 of those only hold Red-necked Wallabies *Macropus rufogriseus*. Some of the major zoos in BIAZA hold no marsupials at all.

#### ***Aims for 2005***

- To produce husbandry guidelines for the Long-nosed potoroo, *Potorous tridactylus*.
- To continue the programme to look at the nutritional requirement for captive monotremes and marsupials.
- To produce a questionnaire on the subject of keeping monotremes and marsupials in B.I.A.Z.A. collections.

#### ***Data***

No programmes are managed at British and Irish level. Collections are participating in European programmes as follows:

#### EEPs

Kowari, *Dasyuroides byrnei*.

Bettong, *Bettongia penicillata*.

#### Also ESBs for:

Western grey kangaroo, *Macropus fuliginosus*.

Eastern grey kangaroo, *Macropus giganteus*.

Red kangaroo, *Macropus rufus*.

Swamp wallaby, *Wallabia bicolor*.

Agile wallaby, *Macropus agilis*.

Tammar wallaby, *Macropus eugenii*.

Brush tailed rock wallaby, *Petrogale penicillata*.

Plus unofficial European studbooks for Ground cuscus, *Phalanger gymnotis*, and Long-nosed potoroos, *Potorous tridactylus*.

## Owl TAG 2003

### (No Report Received for 2004)

#### *Chair*

Tony Warburton (World Owl Trust)

Due to difficulties experienced throughout 2001 – 2002 the OTAG was ‘functionally extinct’ from January 2001 – March 2003, though contact between Working Group Members and bird exchanges and monitoring continued in both years.

#### *Working Group*

David Armitage (Linton Zoo), John Crooks (New Forest Otter, Owl and Wildlife Park), Dave Coles (Beale Wildlife Park), Amanda Ferguson (London Zoo), Frank Keens (Private), Campbell Murn (Hawk Conservancy), Robin Roberts (Drayton Manor Zoo), Peter Stocks (Private), Mike Woolham (Banham Zoo).

#### *Advisors*

Kevan Palmer (Research), Chris Sperring (Hawk & Owl Trust – Native Species).

#### **Aims in 2003**

- Restore and re-assess functions of the Group
- Continue management of the Philippine Owl Conservation Programme (POCP)
- Article on over-production of certain species – for publication in appropriate journals
- Re-assessment of co-operating members’ list
- Publishing of the Owl Management Guidelines
- Re-appraisal of owl studbooks

#### *Progress*

- ‘Normal service’ was resumed in 2003!
- The owl breeding recommendations had not materialised
- Article on over-production not sent out due to a rethink by the Working Group
- Re-assessment of membership list due in Spring 2004
- Owl Management Guidelines published
- Owl studbooks re-appraised

#### *Data*

Species	Level of Management	Species Manager	Status
Spectacled owl <i>Pulsatrix perspicillata</i>	JMSP 2 It is hoped that a Manager can be found to continue this programme at a lower level of Management, e.g. JMSP4	Campbell Murn	Discontinued due to unsatisfactory taxonomic status of birds currently held in UK – of no ‘conservation value’

Verreaux's eagle owl <i>Bubo lacteus</i>	JMSP 2	Campbell Murn	Abandoned due to unviable population size plus inbreeding depression in UK population
Southern white-faced scops owl <i>Ptilopsis granti</i>	JMSP 2	Amanda Ferguson	Abandoned due to lack of conservation value and current size of UK populations
European scops owl <i>Otus scops scops</i>	JMSP 4	Peter Stocks	Current population being re-assessed
Ural owl <i>Strix uralensis</i>	JMSP 2	Amanda Ferguson	Abandoned due to unviable UK population – inbreeding
Great grey owl <i>Strix nebulosa lapponica</i>	JMSP 2	Amanda Ferguson	Abandoned due to inbreeding depression

### ***Special concerns***

- Continued lack of interest/space for small species within Zoo collections. Most of these are still being maintained and bred by Private collections.
- Difficulty in raising sufficient funding to maintain Philippine Owl Conservation Programme.
- Lack of liaison between Zoos working in same geographical regions (much improvement in Philippines however).

### ***Meetings***

Two meetings were held, the first hosted by Beale Wildlife Park on 20<sup>th</sup> March, the second hosted by the World Owl Trust, Cumbria on 6<sup>th</sup> November.

### ***Aims for 2004***

- Involve local participating members in Working Group meetings held in their home areas – to increase sense of involvement and express views
- Produce report on taxonomic changes for publication in appropriate journals, and persuade ISIS to drop outdated Sibley & Monroe taxonomy
- Attempt to recruit greater participation/fundraising for Philippine Owl Conservation Programme (new MOA needed after December 2003)
- Assess membership of TAG – who has participated as per MOP etc.
- Support and advise Biodiversity Conservation Breeding Center on island of Negros re. breeding of the three pairs of Philippine Eagle Owls (*Bubo philippensis*) we installed there in January 2003 – in the hope of producing young which can be imported to the UK

- Carry out owl survey of UK OTAG collections
- Petition for studbook for Ashy-faced owl (*Tyto glaucops*)

## Parrot TAG 2003

(No Report Received for 2004)

### *Temporary Chair*

Mike Jordan (Chester Zoo)

### *Members*

BIAZA collections and representatives from the various parrot societies invited to attend.

### *Aims in 2003*

To trial a revised format for the B&I Parrot TAG through a combined autumn bird TAG meeting.

### *Progress in 2003*

A combined bird TAG meeting was held on the 12<sup>th</sup> and 13<sup>th</sup> of November 2003 at Colchester Zoo. Seven bird TAGs took up the offer of a reporting slot, including the Parrot TAG.

The two day session also included a workshop on starting and running a studbook, organised by the Parrot TAG chair, a presentation on beak repair and correction techniques, an introduction to bird nutrition, a presentation on pinioning and the results of a survey into its effects and a discussion on parasite control.

It was widely expressed that the format of the meeting was an improvement and seemed to suit everyone well.

### *Aims for 2004*

A two-day meeting will be held at Newquay zoo in the latter part of the year. Other bird TAGs not represented at the Colchester meeting will be invited to report on their activities and it is hoped to include some presentations linking conservation in zoos with *in-situ* conservation.

### *Data*

Species	Management Level	Status: Individuals (Collections)	Species Manager	Studbook status/date last publ.
Blue-streaked lory <i>Eos reticulata</i>	JMSP3	19.10.12(12) at 31.12.96	Vacant	New coordinator sought
Scarlet macaw <i>Ara macao</i>	JMSP2	27.22.0(20) at 31.12.99	Vacant	New coordinator sought
Blue-throated conure <i>Pyrrhura cruentata</i>	JMSP2	17.10.3(6) at 23.05.2003	D Webster	Compiling
Cuban amazon <i>Amazona leucocephala</i>	JMSP2	7.8(6) at 10.11.2003	Marcia Dorey	(June 1995 M.Pilgrim)
Black-cheeked lovebird <i>Agapornis nigrigensis</i>	JMSP3	5.13.72(8) at 01.01.2000	Calvin Bradley Nigel Simpson	Monitoring population



Note: to avoid duplication, only data for JMSP programmes has been included this year. Data on EEP and ESB species are published by EAZA in their yearbook and on their website.

## Passerine TAG

### *Chair*

David Jeggo (Durrell Wildlife Conservation Trust)

### *Members*

The TAG now has no formal membership as the majority of business is conducted at a European (EAZA) level.

### *Advisors*

Nigel Collar (BirdLife International), Andrew Greenwood (International Zoo Veterinary Group).

### *Aims for 2004*

- Continue to advertise and encourage the development of the EAZA Regional Collection Plan for Passeriformes within the Federation.
- Produce a Master plan for the Bali starling JMSP
- Continue to develop the annual meeting within the evolving combined JMSP bird TAGs meeting/conference.
- Publish outstanding studbooks.
- Continue to develop insitu support for threatened Passerines
- Continue with the development and production of husbandry guidelines.

### *Progress in 2004*

- The EAZA Regional Collection Plan for Passeriformes still needs to be promoted more within BIAZA.
- The effectiveness of the plan still needs to be assessed and ways of developing interest in Passerines and implementing the plan need to be developed.
- Pairing and breeding recommendations for the Bali Starling JMSP are still outstanding pending completion of the overhaul and analysis of the studbook.
- The TAG held a session during the combined JMSP Bird TAGs meeting where Laura Gardner gave a presentation on a recent trip to China to study yellow-throated laughingthrush in the wild.
- Studbook No 2 for the Yellow-throated laughingthrush was published. Those for the Omei Shan *Liocichla* and Chough still remain in preparation.
- Insitu support for threatened Passerines is developing and includes that for Yellow-throated laughingthrush (Chester and Leeds Castle) and Mauritius Fody (Chester and Jersey).
- A number of husbandry guidelines are in production.

### *Meetings*

The annual meeting was held with other JMSP bird TAGs at Newquay Zoo.

### *Data*

Species	Level of Management	Species Manager	Studbook status/date last published

Chinese Yellow-throated laughingthrush <i>Garrulax galbanus</i>	JMSP2 (ESB pending)	L. Gardner	Published March 2004.
Omei Shah Liocichla <i>Liocichla omeiensis</i>	JMSP2 (ESB pending)	N.Hewston	In prep. (due out 2005)
Bali starling <i>Leucopsar rothschildi</i>	EEP/JMSP2	D. Jeggo (UK coordinator) A. Ferguson (UK Studbook Holder)	UK 1997 (due out 2005)
Chough <i>Pyrrhocorax pyrrhocorax</i>	JMSP 2	D.Woolcock	Draft 2002 (due out 2004)

With the development of the EAZA Passerine Collection Plan other species are no longer monitored in Britain and Ireland.

There is a European EAZA TAG for Passerines, co-Chaired by David Jeggo and Theo Pagel (Cologne, Germany).

### ***Special Concerns***

The concerns remain largely the same and with the exception of the Bali Starling which is now breeding well, JSMP Passerine species are still only making at best slow progress. Attention needs to be given to these in order to develop more sustainable populations. Where surpluses are produced these need to be carefully placed and managed, species such as white-rumped shame, white-crowned robin-chat and Montserrat oriole are available. There is a need to encourage and develop a skills base amongst keepers and provide improved facilities for the breeding of Passerines in BIAZA institutions, in particular where free flights and tropical houses are developed, sufficient back-up, holding and breeding facilities should be provided. There is still a considerable trade in wild-caught Passerines and to a large extent zoos remain dependant upon these to maintain their stocks. There is increasing evidence that the trapping of Passerines for national and international trade is unsustainable and in some cases putting even quite common species, at least regionally, at risk. Zoos need to be aware of this and decrease their reliance on wild-caught Passerines as soon as possible.

### ***Aims for 2005***

- Continue to advertise and encourage the development of the EAZA Regional Collection Plan for Passeriformes within BIAZA.
- Encourage BIAZA institutions to improve facilities for Passerines and develop the skills base among their staff to manage this group of birds.
- Finish the Master plan for the Bali starling JMSP.
- Publish updated studbooks
- Continue to develop insitu support for threatened Passerines.
- Continue with the development and production of husbandry guidelines.

## **Primate TAG**

### ***Chair***

Neil Bemment (Paignton Zoo Environmental Park)

### ***Members***

There was one change in the number of signatories to the Primate TAG Memorandum of Participation during 2004 (37) with the departure of Cotswolds Wildlife Park from BIAZA. All studbook keepers and species co-ordinators of JMSPs, ESBs or EEPs are automatic members.

### ***Advisors***

Dr Simon Bearder (Oxford Brookes University), Dr John Lewis (IZVG), Dr Rod Howell (SW Cytogenetics Centre, Bristol), Dr Andrew Kitchener (Royal Museum of Scotland), Dr Anthony Rylands (University of Minas Gerais, Brazil).

### ***Meetings***

Annual meeting hosted by Twycross Zoo on 17 November 2004.

### ***Progress in 2004***

- identified research projects in conjunction with the BIAZA Research Group.
- review of mixed and free range callitrichid exhibits initiated.
- review of mixed and walkthrough/free range lemur exhibits initiated.

### ***Aims for 2005***

- complete the census of orang utan and gorilla diets in B&I collections.
- to produce (draft) nocturnal primate husbandry guidelines
- identify research projects in conjunction with the BIAZA Research Group.
- assist in researching taxa 'under review' for the EAZA Old World Monkey and Gibbon Regional Collection Plans (RCPs).

### ***Ongoing Aims***

- To liaise with TAGs in other regions worldwide and with a view to establishing a Global Collection Plan for all Primates, taking into account the findings of field research carried out by the IUCN/SSC Primate Specialist Group and other informed individuals/bodies.
- To encourage greater participation in the karyotyping process for certain taxa through the provision of blood samples e.g. *Ateles spp.*.
- To focus on husbandry issues at TAG meetings.
- To encourage B&I zoos holding primates to be more proactive in screening for primate diseases in their animals and to adopt appropriate precautionary measures for primate keepers.
- To raise awareness of the effects of the bushmeat trade on wild primate populations.
- To encourage the support of appropriately managed in-situ conservation projects.

### ***Managed taxa in British & Irish collections***

Species	Level of Management	Species Manager	Studbook Status/Date last Published
Slow loris <i>Nycticebus coucang</i>	JMSP2	VACANT	U. Richardson 1999
Slender loris <i>Loris tardigradus</i>	ESB	Helga Schulze (Frankfurt Zoo / Bochum University)	JMSP/U. Richardson 1999 ESB Compiling
Pygmy slow loris <i>Nycticebus pygmaeus</i>	EEP/ISB	R. Ratajczak (Poznan) Helena Fitch-Snyder (San Diego WAP)	ESB Compiling ISB 2001
Cheirogalids spp. <i>Cheirogaleus/Microcebus sp</i>	ESB	A. Glatson (Rotterdam)	ESB 1998 (31 Dec)
Aloatran gentle lemur <i>Hapalemur g. aloatrensis</i>	EEP/ISB	A. Feistner (Jersey)	ISB 1998 (31 Dec)
Grey gentle lemur <i>Hapalemur griseus</i>	ESB	C-A.Gauthier (Paris)	ESB 2000 (31 Dec).
Crowned lemur <i>Eulemur coronatus</i>	ESB/ISB	P. Moisson (Mulhouse)	ESB 1998 (31 Dec)
Red-bellied lemur <i>Eulemur rubriventer</i>	ESB/ISB	P. Moisson (Mulhouse)	ESB 1998 (31 Dec)
Brown lemur spp. <i>Eulemur fulvus</i>	JMSP2	D. Webster (Blackpool)	RSB 1998 (31 Dec)
Red-fronted lemur <i>Eulemur fulvus rufus</i>	ESB	D. Webster (Blackpool)	RSB 1998 (31 Dec) ESB 2002 (31 Dec)
Black lemur <i>Eulemur m. macaco</i> <i>Eulemur m. flavifrons</i>	EEP/ISB	D. Grove (Dudley)	ISB 1997 (31 Dec) (St. Louis, USA)
Mongoose lemur <i>Eulemur mongoz</i>	EEP	D. Armitage (Linton)	ISB 2001 (31 Dec) (Cleveland, USA)
Ruffed lemur <i>Varecia variegata</i>	EEP/ISB	W. Kaumanns (Koln)	ISB 1999 (31 Dec)
Ring-tailed lemur <i>Lemur catta</i>	ESB	VACANT	Published 1995; data to December 1994
Silvery marmoset <i>Callithrix argentata</i>	JMSP4	T. Moore (Shaldon)	ESB in preparation
Geoffroy's marmoset <i>Callithrix geoffroyi</i>	EEP	G. Gosi (Szeged)	ESB 2001 (31 Dec)
Golden lion tamarin <i>Leontopithecus rosalia</i>	EEP/ISB	D. Field (ZSL)	ISB 1999 (31 Dec) (Washington)
Golden-headed lion tamarin <i>Leontopithecus chrysomelas</i>	EEP/ISB	K. Leus (Antwerp)	ISB 1999 (31 Dec)
Pied tamarin <i>Saguinus bicolor</i>	EEP/ISB	L. de Boer (Apenheul)	ISB 1999 (31 Dec) (Philadelphia, USA)

<i>bicolor</i>			
Emperor tamarin <i>Saguinus imperator</i>	EEP	E. Bairrao Ruivo (Lisbon)	ESB 2001 (31 Dec)
Cotton-top tamarin <i>Saguinus oedipus</i>	EEP/ISB	Bernard Holdijk (Wissel )	ISB 1997 (31 Dec No.4)
Goeldis monkey <i>Callimico goeldi</i>	EEP/ISB	G. Anzenberger (Zurich University)	ISB 2000 (31 Dec)
Black howler monkey <i>Alouatta caraya</i>	ESB/ISB	J. Partridge (Bristol)	ESB 2002 (31 Dec)
White-faced saki <i>Pithecia pithecia</i>	EEP	K.Pullen (Paignton)	ESB 2002 (31 Dec)
Douroucoul <i>Aotus trivirgatus</i>	ESB	O. Walter (ZSL)	ESB 1998 (August)
Spider monkey spp. <i>Ateles belzebuth</i> <i>Ateles geoffroyi</i> <i>Ateles paniscus</i>	ESB	P. Gay (Doue)	ESB 2001 (31 Dec) (Doue, France)  RSB 1995 (Bemment)
Colombian spider monkey <i>Ateles fusciceps</i> <i>robustus</i>	EEP	P.Gay (Doue)	ESB 2001 (31 Dec)
Woolly monkey <i>Lagothrix lagotricha</i>	EEP	L. de Boer (Apeneul)	ISB 1999 (31 Dec)
Allens swamp monkey <i>Allenopithecus</i> <i>nigroviridis</i>	ESB	J-L. Berthier (J des P, Paris)	ESB 1997 (31 Dec) ISB (Sandiego)
Diana monkey <i>Cercopithecus d. diana</i>	EEP/ISB	G.Catlow (Edinburgh)	ESB 1999 (31 Dec) ISB 1999 (31 Dec)
L'Hoest's monkey <i>Cercopithecus lhoesti</i>	ESB	G. Catlow (Edinburgh)	ESB 1999 (31 Dec)
Hamlyn's monkey <i>Cercopithecus hamlyni</i>	ESB	G. Catlow (Edinburgh)	ESB 1999 (31 Dec)
De Brazza monkey <i>Cercopithecus</i> <i>neglectus</i>	ESB	M. Janiszewska (Lodz)	ESB 2001 (321 Dec) RSB 1997 (31 Dec) (D.Brunger, Chester)
Lion-tailed macaque <i>Macaca silenus</i>	EEP/ISB	W.Kaumanns (Cologne)	ISB 1997 (31 Dec) ESB 2002 (31 Dec)
Sulawesi crested macaque <i>Macaca nigra</i>	EEP	V.Melfi (Paignton)	RSB 1994 (Carman) ESB 2002 (31 Dec)
Mandrill <i>Mandrillus sphinx</i>	ESB	I. Vidakovits (Budapest)	RSB 1995 (Bemment) ESB 2002 (31 Dec)
Gelada <i>Theropithecus gelada</i>	ISB	A.Johann (Rheine)	ISB 2002 (31 Dec)
Sooty mangabey <i>Cercocebus atys atys</i>	ESB	T. Abello (Barcelona)	ESB 2002 (31 Dec)
White-crowned	ESB	T. Abello	ESB 2002 (31 Dec)

mangabey <i>Cercocebus atys lunulatus</i>		(Barcelona)	
Black mangabey <i>Lophocebus albigena aterrimus</i>	ESB	J-L Berthier (Jardin des Plantes, Paris)	ESB 2002 (31 Dec)
King colobus <i>Colobus polykomos</i>	EEP	A. Winkler (Duisberg)	RSB Published 1994 EEP 1998 (31 Dec)
Guereza colobus <i>Colobus guereza</i>	ESB	VACANT	ESB 1998 (31Dec) (C.Moultrie, Emmen)
Javan leaf monkey <i>Trachypithecus a. auratus</i>	ESB	W. Jens (Apenheul)	ESB 1999 (31 Dec)
Hanuman langur <i>Semnopithecus entellus</i>	ESB	K Ebersback (Hannover)	ESB in prep
Siamang <i>Hylobates syndactylus</i>	ESB	J. Ray (Twycross)	ESB 1998 (31 Dec) (L. Mason)
Lar gibbon <i>Hylobates lar</i>	ESB	D. Gill (South Lakes WAP)	ESB in preparation
Concolor gibbon <i>Hylobates concolor</i>	EEP/ISB	P.Moisson (Mulhouse)	ISB 1999
Javan grey gibbon <i>Hylobates moloch</i>	EEP	Beatrix Rau (Munich)	ISB unpublished
Orang utan <i>Pongo pygmaeus</i> spp.	EEP/ISB	C. Becker (Karlsruhe) N. Bemment (Paignton)	ESB 2002 (Karlsruhe) ISB 2002 (Atlanta USA)
Bonobo <i>Pan paniscus</i>	EEP	Bruno Van Puijenbroeck (Antwerp)	ISB 2002 (31 Dec)
Chimpanzee <i>Pan troglodytes</i>	JMSP2	Frands Hjordt Carlsen (Copenhagen)	ESB in preparation RSB 1995 (Twycross)
Gorilla <i>Gorilla gorilla gorilla</i>	EEP/ISB	Christian Schmidt (Frankfurt)	ISB 2002 (31 Dec) RSB 1995 (Jersey)

## **Reptile and Amphibian TAG (HerpTAG)**

### ***Chairs***

Kevin Buley (Chester Zoo)

Douglas Sherriff (Chester Zoo)

### ***Membership***

#### ***Active HerpTAG members***

Les Basford (Birmingham), Lee Beach (Newquay), Gareth Bennett (Edinburgh), Richard Berridge (ESF), Kevin Buley (Chester), Kate Clegg (Paignton), Jamie Craig (Blackpool), Glenn Fairweather (Colchester), Richard Gibson (ZSL), Matthias Goetz (Jersey), Rod Keen (Paignton), Isolde McGeorge (Chester), Steve Nash (Sparsholt), Douglas Sherriff (Chester), Tim Skelton (Bristol), Sue Thornton (IZVG), Craig Walker (ZSL)

#### ***Attending HerpTAG members***

Andy Bubbins (Blackpool Zoo), Graham Chilton (Dudley), John Collier (Wildwood), Mark Dainty (Drayton Manor), Peter Dillingham (Blackpool), Mark Ellis (Tropiquaria), Sonia Freeman (Chessington), Mark Jones (Dudley), Melvin Lear (ZSL), Shaun Lord (Blackpool Zoo), Trevor Moxey (ZSL), Stewart Muir (Newquay), Adam Murray (Marwell), Newton Pellatt (ZSL), Geoff Read (Marwell Zoo), Stephen Smith (Tropiquaria), Paula Smith (Colchester), Ryan Stephens (Chessington), Jenny Wellsted (Bristol), Anthony White (Shaldon), Jamie Wood (Colchester)

#### ***HerpTAG Observers***

Jon Coote (T-Rex), Andrew Gray (Manchester), Michael Kelly (Manchester), Marc Ormond (Cotswold), Paul Rowley (Liv. Sch. Trop.), Darren Smy (Manchester), Louisa Sullivan (Wildwalk @ Bristol)

### ***Progress***

#### **New HerpTAG Categories of Membership**

In order to help promote a more active membership in this BIAZA Taxon Advisory Group, the HerpTAG have introduced four clearly defined categories of membership. Members will be decided by the HerpTAG co-chairs and will be published each year in this Annual Report. These categories of membership were also adopted by the BIAZA FAITAG and TITAG during 2004.

##### ***1) Active HerpTAG member***

This category of membership is reserved for those individuals that *may or may not belong to BIAZA member institutions*, but are actively participating and contributing to the work of the HerpTAG and have attended a HerpTAG meeting in the last 24 months.

Active participation/contribution to the work of the HerpTAG can include:

- Chairing a BIAZA HerpTAG meeting (in the previous 12 month period)
- Coordinating a reptile or amphibian studbook (BIAZA JMSP, or EAZA ESB/EEP),



- Actively monitoring a reptile or amphibian species or group for BIAZA or EAZA,
- Active involvement as an official HerpTAG advisor,
- Involvement, in the previous 24 months, of the production of a HerpTAG publication (guidelines, protocols, reports etc.)
- Organising a HerpTAG or EAZA ARTAG meeting (in the previous 12 month period),
- Taking and/or producing of minutes for a HerpTAG meeting (in the previous 12 month period),
- Giving a presentation at a BIAZA HerpTAG meeting (in the previous 24 month period),
- Officially representing HerpTAG at a BIAZA, EAZA or other meeting - at the request of a HerpTAG co-chair (in the previous 12 months).

#### *2) Attending HerpTAG member*

This lower category of membership applies to individuals who have attended a HerpTAG meeting in the last 24 months and represented a BIAZA member institution, but that have not actively contributed or participated in the work of the HerpTAG in any of the categories detailed above.

#### *3) HerpTAG Observer*

This category lists those individuals who have attended a HerpTAG meeting in the last 24 months, are not representing a BIAZA member institution and have not actively contributed or participated in the work of the HerpTAG in any of the categories detailed above. They are observing at the invitation of the HerpTAG.

#### *4) Commercial HerpTAG member*

This category is reserved for commercial members of BIAZA or EAZA who have attended a HerpTAG meeting in the last 24 months. Commercial members of BIAZA and/or EAZA can also be 'Active HerpTAG members' if they have participated/contributed to the work of the TAG in one of the categories specified above.

### **HerpTAG Nutrition Workshop 29<sup>th</sup> April 2004, Paignton Zoo**

The objectives of this HerpTAG workshop were:

- to record and share excellent working practice in reptile and amphibian feeding, culminating in a product – the BIAZA HerpTAG Feeding Guidelines
- to be informative, not prescriptive – intended as a living document, evolving as our knowledge & understanding improves

Dr. Andrea Fidgett (Nutritionist at Chester Zoo) led the workshop, commencing with a short presentation on the "Science of Zoo Nutrition" which introduced basic nutrition principles, the process of moving from ingredient lists to nutrient composition of diets, and asked whether species demonstrate nutritional wisdom in captivity.

Participants then formed three groups to discuss what makes a good diet, both in terms of nutritional objectives (e.g. fibre, vitamin/mineral balance) and ingredients, for herbivorous and carnivorous reptiles. Herbivorous ingredients were categorised as

staple, occasional, rare or never. Information gathered forms the basis of a herbivorous browse database. For carnivorous food ingredients (both invertebrate and vertebrate), participants listed all the possible items for use, describing the pros and cons relating to in house production if it was feasible and mentioned special concerns (e.g. disease transfer risks, nutritional degradation, supplementation requirements).

Other topics were given very brief attention during the workshop and require further attention at subsequent workshops during HerpTAG meetings:

- Neonate nutrition – tadpoles!!
- Oral supplements: What products are used? Why? How is it stored...?
- Lighting: What products are used? Why? Measuring efficacy?

### **HerpTAG presentations during 2004**

The following presentations were given at HerpTAG meetings by HerpTAG members:

- Gareth Bennett (Edinburgh) – Turtle Conservation at Kadoorie Farm & Botanical Gardens, Hong Kong.
- Richard Gibson (ZSL) – The Herpetofauna of Mauritius and its offshore islands including Round Island.
- Matthias Goetz (DWCT) - The snail eating snake *Pareus carinatus*.
- Tim Skelton (Bristol) – Captive reproduction of *Liasis fuscus* at Bristol Zoo in 2003.
- Rod Keen (Paignton) – Reptiles & Amphibians at Paignton Zoo
- Kevin Buley (Chester) – The EAZA Shellshock Campaign
- Kevin Buley (Chester) – The EAZA ARTAG Regional Collection Planning Process
- Lee Beech (Newquay) – Breeding of Dendrobatid frogs at Newquay Zoo

### **Shellshock Campaign**

BIAZA institutions have been encouraged during 2004 to take an active part in the new EAZA conservation campaign. The Shellshock turtle and tortoise campaign has been organised by Chester Zoo and will have three main aims:

- 1) Raising awareness of one of the biggest vertebrate taxon extinction events since the disappearance of the dinosaurs.
- 2) Promoting and supporting further participation in Turtle Arks – in the managed captive safety-net populations set up for priority species.
- 3) Fundraising initiatives for specific *insitu* turtle & tortoise conservation projects.

This campaign has already seen collaboration between the BIAZA HerpTAG and FAITAG, with the FAITAG and National Aquarium Workshop through Jodie LeCheminant (ZSL) organising the Leatherback Turtle Tour 2005.

### **Data**

#### **1. Species managed and studbooks held by British and Irish institutions**

<i>Species</i>	<i>Level of management</i>	<i>Co-ordinator</i>	<i>Studbook status/date last published/updated</i>	<i>Husbandry guidelines</i>
<i>Mantella aurantiaca</i>	JMSP4	C.Walker (ZSL)	Monitoring	yes
<i>Phelsuma standingi</i>	JMSP2	N.Pellatt (ZSL)	1998	

<i>Phelsuma klemmeri</i>	JMSP2	T.Skelton (Bristol)	2004	yes
<i>Hydrosaurus pustulatus</i>	JMSP2	I.McGeorge (Chester)	2003	yes
<i>Corucia zebrata</i>	JMSP2	L.Basford (Birm)	2000	
<i>Malacochersus tornieri</i>	ESB	T.Skelton (Bristol)	2004	yes
<i>S.madagascariensis</i>	ESB	K.Buley (Chester)	2004	yes
<i>C.bakeri</i>	ESB	M.Goetz (DWCT)	2004.	yes

## 2. Species managed and studbooks held by institutions outside the region

Species	Program since	Co-ordinator	Last studbook	Husbandry guidelines
<b>EEPs</b>				
<i>Alligator sinensis</i>	1999	Henrik Herold	In Prep.	
<i>Testudo kleimanni/weneri</i>	2000	Henk Zwartepoorte	2004.	yes
<i>Heloderma suspectum/horridum</i>	1995	Klaus Draeby	2001	yes
<i>Varanus komodoensis</i>	2000	Gerard Visser	2000	yes
<i>Epicrates angulifer</i>	1993	Ivan Rehak	2001	yes
<i>Epicrates subflavus</i>	2002	Christophe Remy	2003	yes
<b>ESBs</b>				
<i>Heosemys spinosa</i>	2002	Eric Ruivo	2004	yes
<i>Orlitia borneensis</i>	2002	Ivan Rehak	In Prep.	
<i>Cyclura nubila</i>	2003	Ivan Rehak	In Prep.	
<i>Heosemys grandis</i>	2002	Ivan Rehak	In Prep.	
<i>Varanus prasinus</i>	2003	Markus Juschka	In Prep.	
<i>Geochelone nigra</i>	2004	Sam Furrer	In Prep.	
<i>Siebenrockiella crassicollis</i>	2002	A.Niwelinski	In Prep.	
<i>Cuora amboinensis</i>	2002	A.Niwelinski	In Prep.	
<i>Cyclura cornuta</i>	1995	Fabian Schmidt	In Prep.	

### Meetings

- The two-day meeting was held at Paignton Zoo on the 28<sup>th</sup> and 29<sup>th</sup> April 2004.
- The one-day meeting was held at Colchester Zoo on the 28<sup>th</sup> October 2004.
- The next HerpTAG meeting will be a two-day meeting at Blackpool Zoo on the 4<sup>th</sup> and 5<sup>th</sup> May 2005.
- The one-day 2005 meeting will be held at Sparsholt College in Oct/Nov 2005.

### Aims for 2005

1. Amphibian workshop to be held at Blackpool Zoo meeting..
2. An increase In the number of Active HerpTAG members.
3. Published update of *P.standingi* and *C.zebrata* studbooks.
4. Review and possible endorsement/adoption of EAZA ARTAG Regional Collection Planning categories
5. Publication of BIAZA HerpTAG Feeding Guidelines
6. Promotion of the EAZA Shellshock Campaign in BIAZA member institutions.

## **Rodent and Lagomorph TAG 2003**

### **(No Report Received for 2004)**

#### ***Chair***

Mike Jordan (Chester Zoo)

#### ***Members***

David Armitage (Linton Zoo), Gary Batters (Banham Zoo Ltd.), Neil Bemment (Paignton Zoo) Quentin Bloxam (Jersey Zoo), Debra Bourne (Wildlife Information Network), Caroline Brown (private), Bill Buchan (Camperdown Wildlife Centre), Gary Clarke (Tilgate Nature Centre), Paul Coffey (Birmingham Nature Centre), Simon Eyre (Bristol Zoo Gardens), Rick Green (Walford College), Andrew Greenwood (IZVG), Colin Hill (Dudley Zoo), Andrew Kitchener (National Museum of Scotland), Jo Limmer (private), Charles Mason (private), David Mills (British Wildlife Centre), Anna Meredith (Edinburgh Zoo), Stuart Muir (Shaldon Wildlife Trust), John Needle (Birmingham Nature Centre), John Partridge (Bristol Zoo Gardens), Bob Price (private), Danny Reynolds (Exmoor Zoological Park), Lynn Reynolds (Exmoor Zoological Park), Peter Small (Marwell Zoological Park), David Stapleford (private), Rosalin Talbot (Edinburgh Zoo), Russel Tofts (private), Anthony Tropeano (Colchester Zoo), Dominique Tropeano (Colchester Zoo), Tony Turk (private), Chris West (Zoological Society of London).

#### ***Aims for 2003***

- To continue to co-ordinate and support the conservation breeding of rodents and lagomorphs particularly British native species and those species occurring within the EAZA region.
- To continue and promote professional reintroduction as a research and conservation tool for small mammals.
- To maintain the close collaboration and cooperation that exists between the British & Irish TAG and the EAZA Small Mammal TAG, also to initiate closer links to TAGs in other regions.
- To encourage and facilitate the integration of recommendations of the EAZA Rodentia and Lagomorpha Regional Collection Plans into British and Irish collections.
- To encourage increased commitment to the captive husbandry and conservation of rodents by both encouraging new collections to become involved in the keeping and display of rodents and by expanding the involvement of existing collections.
- To investigate support for suitable field projects.
- To facilitate and support research on rodents and lagomorphs.
- To continue to support the importation of appropriate species for conservation breeding programmes, display and research.
- To encourage and support the production of management guidelines.
- To continue and encourage further links between the TAG and the IUCN SSC.
- To work toward implementation of the new 'IUCN *ex situ* guidelines' within the framework of the British and Irish TAG.

#### ***Progress***

- Reintroductions of dormouse (*Muscardinus avellanarius*) continued as part of English Nature's Species Recovery Programme.
- Further reintroductions of water vole (*Arvicola terrestris*) were carried out as part of on-going research into the effectiveness of captive breeding and reintroduction for the species.
- A number of member institutions were involved in the temporary holding and re-release of water voles as part of mitigation work and translocation for planning and development.
- Further large-scale reintroduction of Harvest Mouse (*Micromys minutus*) was carried out to research the effectiveness of conservation breeding and reintroduction for the species.
- Conservation and reintroduction support was given to the European hamster (*Cricetus cricetus*) programme in the Netherlands, Germany and France and Belgium and a presentation was given at the IUCN hamster meeting in Hungary during 2003.
- TAG membership is represented on the IUCN SSC Rodent/ Insectivore/ Chiroptera/ Reintroduction/ and Conservation Breeding Specialist Groups.
- The TAG was involved in IUCN red petitioning to change the status of several rodent species in the 2003 IUCN list of threatened animals.
- Several members from the B&I TAG attended the EAZA Small Mammal TAG meeting held in Paris, France, in April 2003.
- Members of the B&I TAG made several presentations at the 2003 EEP meeting in Leipzig, Germany.
- The profile of rodents continues to be raised with collections increasingly making long-term commitments to increasing space available for keeping rodents.
- Substantial progress was made toward the completion of husbandry guidelines for *Hystrix* porcupines.
- TAG members continue to be involved in both field research and conservation programmes for a number of rodent species and during 2003 TAG members published a number of articles/scientific papers to report upon and raise the profile of work being undertaken.

#### Data

Species	Management Level	Species Manager	Studbook / Register Status
Red squirrel <i>Sciurus vulgaris</i>	JMSP 1	Peter Dickinson	Complete
Hazel dormouse <i>Muscardinus avellanarius</i>	JMSP 1	Dormouse Captive Breeding Group	Compiling
Water vole <i>Arvicola terrestris</i>	JMSP1	Mike Jordan	Compiling
Malagasy giant jumping rat <i>Hypogeomys antimena</i>	JMSP 2	Tim Wright	Complete
Green acouchy <i>Myoprocta acouchy</i>	JMSP 3	Bob Price	Compiling
Capybara <i>Hydrochaeris hydrochaeris</i>	JMSP 3	Sue Woodgate (TBC)	Compiling

<b>Prevost squirrel</b> <i>Callosciurus prevostii borneoensis</i>	<b>JMSP 3</b>	<b>Stuart Muir</b>	<b>Compiling</b>
European hamster <i>Cricetus cricetus</i>	JMSP 3	Mike Jordan	Complete

### ***Meetings***

A two-day meeting was held at Blackpool Zoo in October, in combination with three other TAGs (Bat and Insectivore, Small Carnivore, Marsupial and Monotreme). The meeting was well attended and a number of presentations were given reflecting the scope of work of the TAG and the new EAZA TAG 'IUCN ex situ guidelines' were presented.

### ***Husbandry Guidelines***

Progress was made with the husbandry guidelines for the crested porcupines (*Hystrix* spp.), which are now planned to be completed during 2004.

### ***Aims for 2004***

- To continue to co-ordinate and support the conservation breeding of rodents and lagomorphs particularly British native species and those species occurring within the EAZA region.
- To maintain the close collaboration and co-operation that exists between the British & Irish TAG and the EAZA Small Mammal TAG.
- To maintain and enhance further links between the TAG and the IUCN SSC.
- To encourage and facilitate the integration of recommendations of the 'EAZA regional collection plan for the Rodentia 2000-2005' and the EAZA TAG 'IUCN ex situ guidelines' into British and Irish collections
- To encourage increased commitment to the captive husbandry and conservation of rodents by both encouraging new collections to become involved in the keeping and display of rodents and by expanding the involvement of existing collections.
- To investigate support for suitable field projects.
- To facilitate and support research on rodents and lagomorphs.
- To encourage and support the production of management guidelines.

## **Small Carnivore TAG**

### ***Chair***

Lesley Dickie (Zoological Society of London)

### ***Members***

Peter Bircher (Marwell), Angela Glatston (Rotterdam Zoo), Derek Gow (Private), Mike Jordan (Chester Zoo), Andrew Kitchener (Royal Museum of Scotland), John Partridge (Bristol Zoo), Arnd Schreiber (Heidelberg University), Frank Wheeler (London), Harry Van Rompaey (Viverrid taxonomy, MVSPG), Sharron Redrobe (Veterinary Officer Bristol Zoo), Sue Woodgate (Drusillas), Stuart Muir (Newquay), Tracey Moore (Shaldon)

**MVPSG = IUCN/SSC Mustelid, Viverrid and Procyonid Specialist Group**

### ***Advisors***

Koen Brouwer (EAZA Executive Office), John Carnio (AAZPA/SCTAG Chair: MVPSG: Metro Toronto Zoo)

### ***Aims for 2005***

Further development of those for 2004

To pursue the development of the resource manual for small carnivores and to increase the awareness of collections to this wide-ranging group of under represented animals.

It is foreseen that the B&I SCTAG will develop into a collection point for any information with regard to matters small carnivores.

Concerning conservation and collection planning issues the B&I Tag will follow the lead and directive of the EAZA SCTAG.

To continue the development of the Owston's Palm Civet program and monitor the establishment of a population in European collections.

### ***Progress***

There has been little development of the Resource Manual due to personal commitments of the new chair (L. Dickie took over as Chair from P. Small) but this should be resolved in 2005/2006. This, however, will require a great deal of input from the members of the TAG if it is to be successful.

The Binturong situation has been resolved to some extent, with a subspecies monitoring program being instigated through the EAZA TAG and also a change of studbook holder. Clive Barwick (Colchester Zoo) is now monitoring the species in Europe and is in touch with European colleagues.

Six Owston's Palm civets arrived in the UK in November 2004 and are being quarantined at Paradise Wildlife Park before some are allocated to their collections in the UK.

### ***Data***

**Species managed and studbooks held by British and Ireland institutions**

Species	Level of Management	Status:- individuals (Collections)	Species Manager	Studbook status/ date last published
Dwarf Mongoose <i>Helogale parvulus</i>	JMSP4	No Current data	Bristol\ Caroline Brown	Monitored
Oriental small-clawed otter <i>Aonyx cinerea</i>	JMSP2	No current data	Z.S.L F. Wheeler	Monitored
European otter <i>Lutra lutra</i>	JMSP1 (EEP-INT)	No current data	P. Dickinson B&I only	B&I to Dec ,96 EEP (Netherlands) 1998 Annually on ISIS disk.
European Polecat <i>Mustela putorius</i>	JMSP3	No current data	L Harmer (Private participant in TAG – to be reviewed)	Monitored This arrangement will be subject to review.
Kinkajou <i>Potos flavus spp</i>	JMSP4	No current data	Newquay W. Winstanley	Monitored
Binturong <i>Arctictis binturong</i>	ESB	No current data	Colchester. C Barwick	
Red Panda <i>Ailurus fulgens</i>	EEP/JMSP2		P. Bircher	Studbook, Angela Glatston Rotterdam Annual
Owston's Palm civet <i>Chrotogale owstoni</i>	Pending application to EEP/ISB	Unpublished data	ZSL L. Dickie	Unpublished studbook has been produced

- Fossa, *Cryptoprocta ferox*, EEP/ISB (Duisburg, Germany)
- Owston's Palm Civet, *Chrotogale owstoni* studbook being informally kept and possible application being made for both an EEP and ISB.

### Meetings

One meeting was held in 2004, on Oct. 21<sup>st</sup> at Paignton Environmental Park.

### Husbandry Guidelines

Guidelines for Owston's Palm civets have been completed by S. Robertson (Cuc Phoung) and S. Muir (Newquay).

### Aims for 2005

- Continue the aims of 2004
- After an extremely quiet year due to the personal circumstances of both the former Chair (Peter Small) and Co-Chair (Lesley Dickie) little forward development of the Small Carnivore TAG has occurred. It is hoped that this will be resolved in 2005/06.



- Continue the development of the resource manual
- Review the membership of the TAG.
- Review the advisors to the TAG.
- To review the JMSP category levels relating to the SCTAG.
- To facilitate and support research on small carnivores.
- To investigate support for suitable field projects (in regard to the development of the links between the Owston's project and the EAZA SCTAG) in conjunction with the EAZA SCTAG.
- Bristol (John Partridge and Caroline Brown) are aiming to update the Meerkat notes previously produced.
- Bristol (John Partridge and Caroline Brown) have collected information on husbandry (via a survey) for the Dwarf mongoose and hope to produce husbandry notes by October 2005.
- To maintain the close collaboration and cooperation between the UK and EAZA SCTAG.
- The Chair of the UKSCTAG to continue in their role as Scientific Advisor to the EAZA SCTAG
- The EAZA SCTAG Collection Plan is due to be reviewed this coming year and the Chair of the UK SCTAG will provide input into this process.

## Spoonbill, Ibis & Stork TAG

### *Chairs*

David Jeggo (Durrell Wildlife Conservation Trust)

John Ray (Twycross Zoo)

### *Members*

The TAG has no formal membership.

### *Advisors*

Koen Brouwer (Co-Chair, BirdLife/SSC, Stork, Ibis and Spoonbill Specialist Group)

Catherine King (EAZA Ciconiiformes and Phoenicopteriformes TAG Chair)

Andrew Greenwood (International ZooVeterinary Group)

### *Aims*

- To follow and implement EAZA Ciconiiformes and Phoenicopteriformes TAG recommendations.
- To encourage the maintenance of Storks, Ibis and Spoonbills in Britain and Ireland, develop a high level of expertise in their captive management and generate support for their conservation in the wild.

### *Aims for 2004:*

- To continue to work under the umbrella of the EAZA Ciconiiformes and Phoenicopteriformes TAG, encouraging participation in and implementing its recommendations, which include the collection plan for Herons, Egrets and Bitterns as well as Storks, Ibis and Spoonbills.
- To continue to monitor the status of Storks in captivity in Britain and Ireland and to encourage improved husbandry and the sexing, pairing and concentration of available stocks with particular emphasis on the Marabou stork *Leptoptilos crumeniferus*.
- To continue to monitor the status of Ibis and Spoonbills in captivity in Britain and Ireland and work toward improving husbandry.
- To continue to manage the population of Northern bald ibis *Geronticus eremita* in Britain and Ireland restricting breeding to stabilise the population.
- To include the monitoring of captive Herons, Egrets and Bitterns in Britain and Ireland.
- To investigate support for *in situ* conservation for Ciconiiformes in general (including Herons, Egrets and Bitterns).

### *Progress in 2004:*

- Activities of the TAG are largely those carried out as tasks undertaken for the EAZA Ciconiiformes and Phoenicopteriformes TAG.
- Herons, Egrets and Bitterns in captivity in Britain and Ireland are now being monitored as part of the TAGs activities.
- Populations of captive Storks in Britain and Ireland continue to be monitored.
- Populations of captive Ibis and Spoonbills in Britain and Ireland continue to be monitored.

- The population of Northern Bald Ibis *Geronticus eremita* in Britain and Ireland is now largely stable due to restricting breeding.
- Unless at a native species level support for *insitu* conservation is likely to be led by the EAZA Ciconiiformes and Phoenicopteriformes TAG.

### **Meetings**

Meetings are now held during the annual BIAZA joint bird TAGs conference, in 2004 this was hosted by Newquay Zoo.

### **Special Concerns**

The same concerns continue as most Stork species and several Ibis species as well as Herons and Egrets continue to be held within Britain and Ireland in extremely low numbers. There is a need to achieve breeding success and improve breeding results if these species are to persist in Britain and Ireland. This is particularly the case for species included in the Regional European Collection Plan. The exception is the Northern Bald Ibis for which breeding must be restricted to prevent the population outgrowing the available accommodation. European white stork also needs to be monitored closely to ensure numbers do not exceed available space. Only in exceptional circumstances does the TAG recommend the further importation of wild-caught birds.

### **Aims for 2005**

- To continue to work under the umbrella of the EAZA Ciconiiformes TAG, encouraging participation in and implementing its recommendations, which include the collection plan for Herons, Egrets and Bitterns as well as Storks, Ibis and Spoonbills.
- To continue to monitor the status of Storks in captivity in Britain and Ireland and to encourage improved husbandry and the sexing, pairing and concentration of available stocks with particular emphasis on the Marabou stork *Leptoptilos crumeniferus*.
- To continue to monitor the status of Ibis and Spoonbills in captivity in Britain and Ireland and work toward improving husbandry.
- To continue to manage the population of Northern bald ibis *Geronticus eremita* in Britain and Ireland restricting breeding to stabilise the population..
- To continue the monitoring of captive Herons, Egrets and Bitterns in Britain and Ireland.
- To work with the EAZA Ciconiiformes and Phoenicopteriformes TAG on *insitu* conservation for Ciconiiformes.

## Terrestrial Invertebrate TAG

### *Chairs*

Paul Pearce-Kelly (Zoological Society of London)

Warren Spencer (Bristol Zoo)

### *Members*

Kevin Buley (Chester Zoo), Edwin Blake (Edinburgh Zoo), Dave Clarke (ZSL) John Collier (Wildwood), Amanda Ferguson (ZSL), Donald McFarlane (ZSL), Trevor Moxey (ZSL) Ian Hughes (English Nature/Zoo Fed Liaison), David Sheppard (English Nature), Danny Tainton (@Bristol), Ross Snipp, Olivia Walter (Federation of Zoos), Jan Beccaloni (NHM), Pat Wisniewski (Martin Mere WWT), David Stradling Paignton/Whitley trust, Ko Veltman Artis Zoo.

### *TAG Advisors*

Nutrition advisor - Andy Beer (Sparsholt College)

Veterinary advisor - John Chitty (Veterinary Invertebrate Society).

### **Progress**

### **Meetings**

Two one-day TAG meetings were held at London Zoo and Chester Zoo respectively. TAG co-chairs attended the EAZA Lower Vertebrate/Invertebrate TAG meeting in Riga (March), WS & AF attended the EAZA annual TITAG meeting in Kolmarden (Sept). WS attended the ICBES meeting at Stratford Butterfly Farm (November). Co-chairs attended JAD 4 ZIMS workshop. An International Meeting of the Partulid Programme was held at Bristol in December.

### **Data**

1. Managed species and studbooks held by British and Irish institutions

<i>Species</i>	<i>Level of management</i>	<i>Studbook keeper/monitor</i>	<i>Studbook/report status</i>
<i>Partula</i> tree snails (22 taxa)	EEP	Donald McFarlane	31/12/03 studbook
Fregate Island palm beetle <i>Polposipus herculeanus</i>	EEP	Amanda Ferguson	2004 Programme report produced
Field cricket <i>Gryllus campestris</i>	Monitored	Paul Pearce-Kelly	2004 Programme report produced
Barberry carpet moth <i>Pareulype berberata</i>	Monitored	Ian Hughes	2004 programme report produced
Mole cricket <i>Gryllotalpa gryllotalpa</i>	Monitored	Paula Donnelly (BZG)	2004 SRP report produced.
New Forest cicada <i>Cicadetta montana</i>	Monitored	Paula Donnelly (BZG)	2004 SRP report produced

## **Molluscs**

### **Partulid EEP**

#### ***Ex situ* programme developments**

The 2003 Partulidae EEP studbook was produced and records 22 taxa (12 of which are extinct in the wild) in 14 participating institutions. Taxa performing well are: *P. clara*, *P. dentifera*, *P. gibba*, *P. hyalina*, *P. mirabilis*, *P. mooreana*, *P. nodosa*, *P. radiolata*, *P. rosea*, *P. suturalis strigosa*, *P. suturalis vexillum*, *P. taeniata simulans*, *P. tohiveana*, *P. tristis*, *P. varia* and an 'unknown taxa' (the taxonomy of which is currently being investigated). This success is largely attributable to the husbandry refinements that were instigated over 2003. Further development of the husbandry guidelines is in progress. Further development of the Partulid Species Management System (PSMS) computer database allowed most EEP programme members to update their own institution data at source. An analysis of these datasets has resulted in a significant number of transfers within the UK collections over the course of the year to improve taxa distribution.

#### ***In situ* developments**

Dr Trevor Coote has been in region all year carrying out the agreed work plan with the French Polynesian Government for developing and implementing a conservation strategy for the region's endemic tree snails and their forest habitats. Survey work has focused on extensive surveys of the numerous Tahitian valleys and ridges. A priority Programme Coordinator action was to establish a consortium of Partula institutions to support Trevor's salary needs. This was sufficiently achieved to enable this major field initiative to proceed but is an ongoing development action.

#### ***Monitored species***

##### **Enid Snails *Pachnodus freatensis*.**

The snails (endemic to Fregate Island) have had good survivorship rates with in excess of 100 adults and 150 young. Because of its conservation significance this species is on the EAZA Terrestrial & Freshwater Invertebrate Regional Collection Plan as a recommended species and as such it is envisaged that the number of participating collections will grow.

#### **Mud snails**

The species continues to thrive in 6 aquaria. Because of the nature of the maintenance conditions, small size of juveniles and short lifespan it is impossible to census the captive colony but at any one time there may be 600 adults/sub-adults. IH also holds a thriving colony but no others are known to exist. Animals continue to be released at WWT Martin Mere as was suggested by EN. The Regional Development Agency have approached Chester Zoo to take animals from a development site at Rochdale and hold them for a period of 2 years during which time substitute habitat is to be created.

**Bermudian snail *Poecilozonites cumfirmatus***

ZSL has had several breeding successes with the colony of endangered Bermudian land snails that arrived in February 2003 as part of a collaborative conservation initiative with the Bermuda Natural History Museum. This species is now thought to be the sole survivor of a once diverse range of endemic Bermuda snails that the evolutionary palaeontologist Stephen J Gould described as undergoing an adaptive radiation comparable in scope with that of the spectacular Darwin's finches on the Galapagos Islands. Many species were driven to extinction by the onslaught of non-native species introduced by man from the 16<sup>th</sup> century onwards and this latest threat is thought to be result of the predatory snail *Euglandina rosea*, an unidentified flatworm and Argentine ants.

**Kerry spotted slug *Geomalacus maculosus*.**

During 2004 159 young were hatched. Ian Hughes reports another 8 offspring in his small colony. As usual one would anticipate high juvenile mortality due to cannibalism and possibly disease. The Irish agency Duchas have no requirement for captive bred animals and as far as is known there is no specific recovery programme for this formerly Red listed species.

**Orthoptera & Homoptera.****Field Cricket (*Gryllus campestris*).**

The breeding and rearing programme was carried out over 2004 as part of the EN SRP. 3 pairs of crickets were collected from the original wild colony in April, but one pair failed to produce eggs and a further female died early. A total of 1601 crickets were hatched, with nymphal mortality at just over 10%. Screening was negative for parasites and 1,110 crickets were released into two sites in early September, the majority to a new site in West Sussex and a few to strengthen numbers at a previous site on the Isle of Wight. 48 crickets were retained, 40 for behavioural studies at Cambridge University and the remaining 8 released into the outdoor enclosure at London Zoo.

With the exception of the Isle of Wight population, the field cricket colonies fall within the boundary of the future South Downs National Park. A follow up project is intended to encompass field cricket programme requirements (and other significant species) which would need to include:

1. **Habitat creation**
2. **Habitat management**
3. **Landowner/RDS liaison.**
4. **Identification of new sites for field cricket establishment**
5. **Identification of site linkages**
6. **Monitoring of populations.**
7. **Ex situ breeding and rearing**
8. **Pathogen screening**
9. **Release and monitoring requirements**

**Mole Cricket *Gryllotalpa gryllotalpa*** – at present 5 Pairs in both interior & exterior set up regimes. 2 egg nests at present. 3 emerging 2 BZG Nymphs surviving from 1<sup>st</sup> egg nest. B. Pinchen to include captive trials in end of year report.

### *Monitored species*

**New Forest Cicada *Cicadetta montana*** – No livestock held at present. Only colonies were in the New Forest. Current status uncertain. Russia has large colonies and scientists willing to co-operate.

1. Visits to Russia to examine sites.
2. Russians to visit UK to liaise with scientists here.
3. Experimental captive breeding. (BZG)
4. Re-survey of New Forest using new information from Russia.

**Large Marsh Grasshopper *Stethophyma grossum*** – This SRP has now been closed and no livestock remains in captivity.

**Wartbiter Cricket *Decticus verrucivorus*** – It has been agreed with English Nature that any surviving egg fields are no longer required for the field programme but that the analysis of the overall hatching data of the egg fields would provide a valuable contribution to the development knowledge of the species.

**Poor Knight's Giant Weta *Deinacrida fallai*** – the populations at Bristol and London Zoos have continued at low numbers.

### **Coleoptera.**

#### **Fregate beetle EEP**

- EEP population at 31.12.03 was 980 adults in 5 institutions (ZSL, Bristol, Poznan, Artis & Riga).
- London population at 31.12.03 was 619 adults. F6 generation emerged.
- Husbandry guidelines have been published.
- In September 2004 the Fregate Islands ecologist Beate Sache visited ZSL for a few days. She was shown the beetles; husbandry and post mortem protocols and discussed the beetle's ecology, situation in the field and potential future research and conservation measures.

### *Monitored species*

**Rhinoceros beetle *Dynastes hercules hercules*** – is planned to be proposed for ESB status in 2005 with Jean-yves Robert as the Studbook keeper. The associated studbook is planned for spring 06.

**Hazel Pot beetle *Cryptocephalus coryli*** - The original Lincolnshire stock of *C. coryli* has died out; most were sent back to N. Hewson at Leeds Univ. for reintroduction trials. PW currently holds 34 pupae of the Surrey stock.

**6 spotted pot beetle *Cryptocephalus nitidulus*** - 5 pupae of *C. nitidulus* with the intention of hoping to breed from both in 2005.

### **Arachnida & Myriapoda.**

**Ladybird Spider *Eresus sandaliatus*** - Actions include the translocation of 30 spiders from the original (donor) site to the introduction site. The monitoring of the progress of these spiders and spiders translocated in previous years. Records of micro-climate data have been taken at both sites. Clearing of alien vegetation from both sites has been undertaken. There are now 20 clearly established webs at the introduction site in the positions they were placed. It can be safely assumed that a number of others survive having migrated a small distance from the holes in which they were placed.

**Fregate scorpion *Chiromachus ochropus*** – The captive culture protocols are now very successful with the species doing well over 2004.

**Seychelles giant millipede *Seychelleptus seychellarum*** – Part of the Fregate Island species group & doing well in all participating collections.

### **Lepidoptera.**

#### **Barberry Carpet Moth *Pareulype berberata***

2004 was a comparatively excellent year for the breeding programme, however no larvae were released due to the lack of funding for the release project. EN has clarified that no-one had permission to release any livestock and this is to be maintained until further notice. Any requests for potential institutional on-site releases (i.e. land managed by participating zoos etc) must have formal English Nature authorization in order to proceed.

### **Freshwater Invertebrates.**

**Tadpole Shrimp *Triops cancriformis*** - Captive population of *Triops* and an incidental population of *Chirocephalus diaphanus* continues to be maintained with good hatchings being recorded in 2004. *Triops* and *Chirocephalus* hatched from 6 year old stored eggs in dry mud. An estimated 25,000 eggs are in dry storage. Talks have begun with RSPB (in 2002) to reintroduce *Triops* to their reserve at Mersehead in Dumfries and Galloway but no further developments have taken place in this RSPB led initiative. Cassandra Extavour (working on arthropod embryology) at the University of Cambridge has joined the project and received eggs in April 2004. Patrick Wisniewski reports that Larry Griffin found *Triops* on 30.9.2004 in natterjack toad breeding ponds at the Wildfowl and Wetlands Trust Reserve at Caerlaverock in August 2004, supporting the theory that *Triops* eggs arrive in Britain on the feet of migrating birds (in Britain, *Triops* is discovered sporadically and always in pools frequented by migratory birds).

**White-Clawed Crayfish *Austropotamobius pallipes*** - General liaison by IH was maintained over 2004 with plans underway to re-establish crayfish at Dudley Zoo. There are also plans to survey the pools at Chester Zoo in the spring of 2005. More intensive captive husbandry research is also planned.



**Other potential new programme species for which briefing notes are to be compiled are as follows:**

Fen raft spider *Dolomedes plantarius* - **Action IH.**

Italian ground beetle *Crysacarabus olympiae* - **Action PPK.**

Tansy beetle *Chrysolina graminis* – **Action IH**

Scarlet malachite beetle *Malachius aeneus* – **Action IH**

Bumblebee *Bombus subterraneus* - **Action IH, JC,EB**

Wood Ant *Formica rufibarbis* - **PPK**

Wood Ant *Formica exsecta* – **DS, WS, EB**

Marsh Fritillary butterfly in Cumbria - **IH**

### **Frozen Ark initiative**

Approximately 20 TITAG programme species were incorporated into the Frozen Ark genetic database over 2004. Discussions are also conducted with the NHM genetic banking project.

### **Regional collection planning.**

The RCP focused mid-year meeting in Riga Zoo (April 04) was further reviewed over the year at TITAG meetings to provide feedback for the follow up 2005 Mid Year RCP review session.

### **JMSC**

Venomous guidelines have been published and are now available from either of the Co-chairs or from the EAZA website in the TITAG members area.

### **Zims**

TITAG members contributed to the EADISC (European Animal Data Information Systems Committee) ZIMS User Case and Data Standards review process and the co/chairs participated in the JAD 4 workshop.

### **TAG research developments.**

ZIMS related research is being conducted using the Partulid programme to develop the mathematical modelling and implementation software for determining genetic relatedness of group managed species programmes.

### ***In situ* developments**

#### ***Actions for 2005***

- Continue development of Partulid field programme consortium.

- Continue Regional Collection Planning development and review.
- Continue input to ZIMS development effort.
- Review and produce summaries of current and potential SRPs and other programmes.

# **Appendix I**

## **Members of the Joint Management of Species Committee (JMSC)**

## Appendix I:

### Members of the Joint Management of Species Committee (31.12.04)

**Chair:** Neil Bemment (Paignton Zoo Environmental Park)

Mr G. Batters	Hoofstock, BIAZA TAG Co-chair (Banham Zoo)
Mr N. Bemment	JMSC Chair; Primate, BIAZA TAG Chair (Paignton Zoo EP)
Mr P. Bircher	Pig & Peccary, EAZA Co-chair (Marwell Zoo)
Mr D. Bolton	Pigeon & Dove, EAZA Chair (Bristol Zoo)
Dr D. Bourne	Crane, BIAZA TAG Co-chair (WIN)
Mr K. Buley	Amphibian & Reptile, BIAZA TAG Co-chair (Chester Zoo)
Mr G. Campbell	Crane, BIAZA TAG Co-chair (Marwell Zoo)
Ms S. Christie	Felid, EAZA Co-chair (London Zoo)
Dr L. Dickie	Small Carnivore, BIAZA TAG Co-chair (ZSL)
Mr P. Dillingham	Monotreme & Marsupial, BIAZA TAG Chair (Blackpool Zoo)
Mr J. Ellis	Hornbill, Toucan & Touraco, BIAZA TAG Chair (ZSL)
Mr D. Field	Elephant, BIAZA TAG Chair (ZSL)
Mr T. Hornsey	Hoofstock, BIAZA TAG Co-chair (Suffolk Wildlife Park)
Dr H. Koldewey	Fish & Aquatic Invertebrate, BIAZA TAG Co-chair (ZSL)
Mr N. Jarrett	Flamingo & Waterfowl, BIAZA TAG Chair (WWTSlimbridge)
Mr D. Jeggo	Passerine/Stork, Ibis & Spoonbill, BIAZA TAG Chair (JerseyZoo)
Mr M. Jordan	Rodent & Lagomorph, BIAZA TAG Chair (Chester Zoo)
Mr N. Lindsay	Rhino, EAZA TAG Co-chair (ZSL)
Dr A. Macdonald	Pig & Peccary, EAZA Co-chair (University of Edinburgh)
Mr E. Mole	Plant Group, BIAZA Co-chair (Bristol Zoo)
Mr S. Muir	Small Carnivore, EAZA TAG Co-chair (Newquay Zoo)
Mr J. Partridge	Bat & Insectivore, BIAZA TAG Co-chair (Bristol Zoo)
Mr P. Pearce-Kelly	Terrestrial Invertebrate, BIAZA TAG Co-chair (London Zoo)
Mr M. Pilgrim	Elephant, BIAZA TAG Co-chair (Chester Zoo)
Mr J. Ray	Stork, Ibis & Spoonbill, BIAZA TAG Co-Chair (Twycross Zoo)
Mr D. Sherriff	Amphibian & Reptile, BIAZA TAG Co-chair (Chester Zoo)
Mr P. Small	Small Carnivore, BIAZA TAG Chair (Marwell Zoo)
Mr W. Spencer	Terrestrial Invertebrate, BIAZA TAG Co-chair (Bristol Zoo)
Mr A. Tropéano	Elephant, BIAZA TAG Co-chair (Colchester Zoo)
Mr I. Turner	Plant Group, BIAZA Co-chair (Paignton Zoo EP)
Mr J. Usher-Smith	Large Carnivore, BIAZA TAG Chair (Highland Wildlife Park)
Mr T. Warburton	Owl, BIAZA TAG Chair (Owl Centre)
VACANT	Parrot, BIAZA TAG Chair (Mike Jordan, temporary Chair)
VACANT	Falconiforme, BIAZA TAG Chair

**Note:** EAZA TAGs chaired by B&I representatives listed where no BIAZA TAG exists.

## **Appendix II**

### **List of BIAZA Members**

## BIAZA - Collection Report

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*WWW* [www.amazonworld.co.uk](http://www.amazonworld.co.uk)

### Banham Zoo

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### Battersea Park Childrens Zoo

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**Durrell Wildlife Conservation Trust - Jersey Zoo**

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**New Forest Otter and Wildlife Conservation Park**

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*Telephone* 02380 293367  
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*Email* enquiries@ottersando  
*WWW* www.ottersandowls.co.uk

**Newquay Zoo**

Trenance Park  
Newquay  
Cornwall TR7 2LZ  
United Kingdom

*Telephone* 01637 873342  
*Fax* 01637 851318/5  
  
*Email* info@newquayzoo.org  
*WWW* www.newquayzoo.org.uk

**Paignton Zoo Environmental Park**

Totnes Road  
Paignton  
Devon TQ4 7EU  
United Kingdom

*Telephone* 01803 697 500  
*Fax* 01803 523 457  
  
*Email* info@paigntonzoo.org.  
*WWW* www.paigntonzoo.org.uk

**Paradise Wildlife Park**

White Stubbs Lane  
Broxbourne  
Hertfordshire EN10 7QA  
United Kingdom

*Telephone* 01992 470490  
*Fax* 01992 440525  
  
*Email* info@pwpark.com  
*WWW* www.pwpark.com

**Pensthorpe**

Fakenham Road  
Fakenham  
Norfolk NR21 0LN

*Telephone* 01328 851465  
*Fax* 01328 855905  
  
*Email* info@pensthorpe.com  
*WWW*

**Shaldon Wildlife Trust**

Ness Drive  
Shaldon  
Devon TQ14 0HP  
United Kingdom

*Telephone* 01626 872234  
*Fax* 01626 872234  
  
*Email* tracey@shaldonwildlif  
*WWW* www.shaldonwildlifetrust.org.uk

**Suffolk Wildlife Park**

Whites Lane  
Kessingland  
nr Lowestoft  
Suffolk NR33 7TF  
United Kingdom

*Telephone* 01502 740291  
*Fax* 01953 888427  
  
*Email* reception.swp@virgin.  
*WWW* www.suffolkwildlifepark.co.uk

**Thrigby Hall Wildlife Gardens**

Filby  
Great Yarmouth  
Norfolk NR29 3DR  
United Kingdom

*Telephone* 01493 369477  
*Fax* 01493 368256  
  
*Email* mail@thrigbyhall.co.u  
*WWW* www.thrigbyhall.co.uk

**Tilgate Nature Centre**

Tilgate Park  
Crawley  
West Sussex RH10 5PQ  
United Kingdom

*Telephone* 01293 521168  
*Fax*  
  
*Email* Tilgate@crawley.gov.  
*WWW*

**Tropical World**

1 Park Cottages  
Roundhay Park  
Leeds LS8 2ER  
United Kingdom

*Telephone* 0113 266 1850  
*Fax* 0113 237 0077  
  
*Email*  
*WWW* www.leeds.gov.uk

**Tropiquaria Wildlife Park**

Washford Close  
Watchet  
Somerset TA23 0QB

*Telephone* 01984 641 105  
*Fax*  
  
*Email* info@tropiquaria.co.uk  
*WWW* www.tropiquaria.co.uk

**Trotters World of Animals**

Coalbeck Farm,  
Bassenthwaite  
Keswick  
Cumbria CA 12 4RD

*Telephone* 01768 776 239  
*Fax* 01768 776 220  
  
*Email* info@trottersworld.co  
*WWW* www.trottersworld.com

**Twycross Zoo - East Midland Zoological Society**

Norton-juxta-Twycross  
Atherstone  
Warwickshire CV9 3PX  
United Kingdom

*Telephone* 01827 880250  
*Fax* 01827 880700  
  
*Email* twycross.zoo@btinter  
*WWW* www.twycrosszoo.com

**Welsh Mountain Zoo - ZSW**

Colwyn Bay  
Conwy  
LL28 5UY  
Wales / UK

*Telephone* 01492 532938  
*Fax* 01492 530498  
  
*Email* info@welshmountainz  
*WWW* www.welshmountain.org

**Wildwood Trust**

Herne Common  
Herne Bay  
Kent CT6 7LQ  
United Kingdom

*Telephone* 01227 711 900  
*Fax* 01227 719035  
  
*Email* info@wildwoodtrust.or  
*WWW* www.wildwoodtrust.org

**Woburn Safari Park**

Woburn  
Bedfordshire MK17 9QN  
United Kingdom

*Telephone* 01525 290 407 (+2 for  
*Fax* 01525 290 489  
  
*Email* office@woburnsafari.  
*WWW* www.woburnsafari.co.uk

**World Owl Trust**

World Owl Centre  
Muncaster Castle  
Ravenglass  
Cumbria CR18 1RQ  
United Kingdom

*Telephone* 01229 717 393  
*Fax* 01229 717508  
  
*Email* wot@btconnect.com  
*WWW* www.owls.org

**WWT Arundel**

Mill Road  
Arundel  
West Sussex BN18 9PB  
United Kingdom

*Telephone* 01903 883355  
*Fax* 01903 884834  
  
*Email* info.arundel@wwt.org.  
*WWW*

**WWT Castle Espie**

Castle Espie  
Ballydrain Road  
Comber  
Co. Down BT23 6EA  
Ireland, UK

*Telephone* 028 91 874146  
*Fax* 028 91 873857  
  
*Email* james.orr@wwt.org.uk  
*WWW*

**WWT Llanelli - National Wtlands Centre Wales**

Penclacwydd  
Llwynhendy  
Llanelli  
Carmarthenshire SA14 9SH  
Wales, UK

*Telephone* 01554 741087  
*Fax* 01554 744101  
  
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**WWT Martin Mere**

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*Email* patrick.wisniewski@w  
*WWW* www.wwt.org.uk

**WWT Slimbridge (Centre)**

Slimbridge  
Gloucestershire GL2 7BT  
United Kingdom

*Telephone* 01453 891900  
*Fax* 01453 891134  
  
*Email* 1st  
*WWW* www.wwt.org.uk

**WWT Washington**

Pattinson  
Washington  
Tyne & Wear NE38 8LE  
United Kingdom

*Telephone* 0191 416 5454  
*Fax* 0191 416 5801  
  
*Email* info.washington@wwt.  
*WWW* www.wwt.org.uk

**ZSL - London Zoo**

Zoological Gardens  
Regent's Park  
London  
NW1 4RY

*Telephone* 020 7722 3333  
*Fax*

*Email* info@zsl.org  
*WWW* www.zsl.org

**ZSL - Whipsnade Wild Animal Park**

Dunstable  
Bedfordshire LU6 2LF  
United Kingdom

*Telephone* 01582 872171  
*Fax* 01582 872649

*Email* marketing@zsl.org  
*WWW* www.zsl.org

# **Appendix III**

## **EAZA, EEP and ESB Information**

## List of Approved EAZA Taxon Advisory Groups (TAGs), EEP and ESB programmes

*As of end of June 2005*

### Terrestrial Invertebrate TAG

TAG Chairs: Mr Paul Pearce-Kelly, Zoological Society of London, London Zoo  
Mr Ko Veltman: Amsterdam Zoo

Taxon	Coordinator/ Studbook keeper
<b>Partula snails</b> <sup>EEP</sup> <b>Partula spp.</b>	<b>Paul Pearce-Kelly, London</b>
<b>Fregate Island beetle</b> <sup>EEP</sup> <i>Polposipus herculeanus</i>	<b>Amanda Furguson, London</b>

### Fish and Aquatic TAG

TAG Chair: Dr Heather Koldewey, Zoological Society of London, London Zoo

### Amphibian and Reptile TAG

TAG Chairs: Ivan Rehak, Prague  
Gerard Visser, Rotterdam

Taxon	Coordinator/ Studbook keeper
<b>Egyptian tortoise</b> <sup>EEP</sup> <i>Testudo kleinmanni</i>	<b>Henk Zwartepoorte, Rotterdam</b> <b>Esther Wenman, Roma</b>
<b>Radiated tortoise</b> <sup>ESB</sup> <i>Geochelone radiata</i>	<b>Vacancy, Amneville</b>
<b>Spiny hill turtle</b> <sup>ESB</sup> <b>Heosemys spinosa</b>	<b>Eric Ruivo, Lisboa Zoo</b>
<b>Pancake tortoise</b> <sup>ESB</sup> <i>Malacochersus tornieri</i>	<b>Tim Skelton, Bristol</b>
<b>Malaysian giant turtle</b> <sup>ESB</sup> <i>Orlitia borneensis</i>	<b>Ivan Rehak, Praha</b>
<b>Giant Asian pond turtle</b> <sup>ESB</sup> <i>Heosemys grandis</i>	<b>Ivan Rehak, Praha</b>
<b>Malayan box turtle</b> <sup>ESB</sup> <i>Cuora amboinensis</i>	<b>Aleksander Niwelinski, Plock</b>
<b>Black marsh turtle</b> <sup>ESB</sup> <i>Siebenrockiella crassicollis</i>	<b>Aleksander Niwelinski, Plock</b>
<b>Chinese alligator</b> <sup>EEP</sup> <i>Alligator chinensis</i>	<b>Henrik Herold, Randers</b>
<b>Beaded lizard and Gila monster</b> <sup>EEP</sup> <i>Heloderma suspectum</i> and <i>H. horridum</i>	<b>Klaus Draeby, Vissenbjerg</b>
<b>Rhinoceros iguana</b> <sup>ESB</sup> <i>Cyclura cornuta</i>	<b>Rudolf Wicker, Frankfurt</b>
<b>Komodo monitor</b> <sup>EEP</sup> <i>Varanus komodoensis</i>	<b>Gerard Visser, Rotterdam</b>
<b>Green tree monitor</b> <sup>ESB</sup> <i>Varanus prasinus</i>	<b>Markus Juschka, Dusseldorf</b>
<b>Cuban boa</b> <sup>EEP</sup> <i>Epicratus angulifer</i>	<b>Ivan Rehak, Praha</b>

<b>Jamaican boa</b> <sup>EEP</sup> <i>Epicratus subflavus</i>	<b>Christophe Remy, Tournai</b>
<b>Madagascar tree boa</b> <sup>ESB</sup> <i>Sanzinia madagascariensis</i>	<b>Kevin Buley, Chester Zoo</b>

### Penguin TAG

TAG Chair: Rob Thomas, Edinburgh

Taxon	Coordinator/ Studbook keeper
<b>King penguin</b> <sup>ESB</sup> <i>Aptenodytes patagonica</i>	<b>Robert Thomas, Edinburgh</b>
<b>Gentoo penguin</b> <sup>ESB</sup> <i>Pygoscelis papua</i>	<b>Alison Maclean, Edinburgh</b>
<b>Rockhopper penguin</b> <sup>ESB</sup> <i>Eudyptes chrysocome</i>	<b>Sue Woodgate, Alfriston</b>
<b>Black-footed penguin</b> <sup>EEP</sup> <i>Spheniscus demersus</i>	<b>Jaap Govers, Amsterdam</b>
<b>Humboldt penguin</b> <sup>EEP</sup> <i>Spheniscus humboldti</i>	<b>Pierre de Wit, Emmen</b>

### Pelecaniformes TAG

Chair TAG: Bart Hiddinga, NFRZG, Amsterdam

Taxon	Coordinator/ Studbook keeper
<b>Dalmatian pelican</b> <sup>EEP</sup> <i>Pelecanus crispus</i>	<b>Piotr Cwiertnia, Poznan</b>
<b>Bank cormorant</b> <sup>EEP</sup> <i>Phalacrocorax neglectus</i>	<b>Bart Hiddinga, NFRZG, Amsterdam</b>

### Ciconiiformes/Phoenicopteriformes TAG

TAG Chair: Catherine King, Rotterdam

Taxon	Coordinator/ Studbook keeper
<b>Black stork</b> <sup>ESB</sup> <i>Ciconia nigra</i>	<b>Ryszard Topola, Lodz</b>
<b>Saddle-billed Stork</b> <sup>ESB</sup> <i>Ephippiorhynchus senegalensis</i>	<b>John Ray, Twycross</b>
<b>Oriental white stork</b> <sup>EEP</sup> <i>Ciconia boyciana</i>	<b>Radoslaw Ratajszczak, Poznan</b>
<b>Abdim's stork</b> <sup>ESB</sup> <i>Ciconia abdimii</i>	<b>John Ellis, London</b>
<b>Marabou stork</b> <sup>ESB</sup> <i>Leptoptilos crumeniferus</i>	<b>Cathy King, Rotterdam Zoo</b>
<b>Yellow-billed stork</b> <sup>ESB</sup> <i>Mycteria ibis</i>	<b>Anthony Tropeano, Colchester</b>
<b>Hamerkop</b> <sup>ESB</sup> <i>Scopus umbretta</i>	<b>Anthony Tropeano, Colchester</b>
<b>Waldrapp ibis</b> <sup>EEP</sup> <i>Geronticus eremita</i>	<b>Christiane Böhm, Innsbruck</b>



### Waterfowl TAG

TAG Chair: Theo Pagel, Köln

Taxon	Coordinator/ Studbook keeper
<b>Meller's duck</b> <sup>EEP</sup> <i>Anas melleri</i>	<b>David Jeggo, Jersey</b>

### Falconiformes TAG

TAG Chair: Campbell Murn, Andover

Taxon	Coordinator/ Studbook keeper
<b>King vulture</b> <sup>ESB</sup> <i>Sarcorhamphus papa</i>	<b>Wineke Schoo, Arnhem</b>
<b>Andean condor</b> <sup>EEP</sup> <i>Vultur gryphus</i>	<b>Peter Litherland, Colwyn Bay</b>
<b>European Black vulture</b> <sup>EEP</sup> <i>Aegypius monachus</i>	<b>Marleen Huyghe, Mechelen</b> <b>Evelyn Tewes, Baleares</b>
<b>Bearded vulture</b> <sup>EEP</sup> <i>Gypaetus barbatus aureus</i>	<b>Hans Frey, Wien University</b>
<b>Eurasian griffon vulture</b> <sup>ESB</sup> <i>Gyps fulvus</i>	<b>Iñigo Sanchez, Jerez</b>
<b>Indian white-backed vulture</b> <sup>EEP</sup> <i>Gyps bengalensis</i>	<b>Campbell Murn, Andover</b>
<b>Egyptian vulture</b> <sup>ESB</sup> <i>Neophron percnopterus</i>	<b>Karel Pithart, Praha</b>
<b>White-tailed sea eagle</b> <sup>EEP</sup> <i>Haliaeetus albicilla</i>	<b>Shmulik Yedvab, Jerusalem</b>
<b>Steller's sea eagle</b> <sup>ESB</sup> <i>Haliaeetus pelagicus</i>	<b>Lubov Kurilovich, Moskva</b>

### Cracid TAG

TAG Chair: Geer Scheres, Zutendaal

Taxon	Coordinator/ Studbook keeper
<b>Red-billed curassow</b> <sup>EEP</sup> <i>Crax blumenbachii</i>	<b>Geer Scheres, Zutendaal</b>

### Galliformes TAG (excl. cracid)

TAG Chair: Alain Hennache, Clères

Taxon	Coordinator/ Studbook keeper
<b>Cabot's tragopan</b> <sup>ESB</sup> <i>Tragopan caboti</i>	<b>Michel Saint Jalme, Clères</b>
<b>Blyth's tragopan</b> <sup>ESB</sup> <i>Tragopan blythii</i>	<b>Michel Saint Jalme, Clères</b>
<b>Congo peafowl</b> <sup>EEP</sup> <i>Afropavo congensis</i>	<b>Steven Vansteenkiste, Antwerpen</b>
<b>Edward's pheasant</b> <sup>EEP</sup> <i>Lophura edwardsi</i>	<b>Alain Hennache, Clères</b>
<b>Malayan crestless fireback</b> <sup>ESB</sup> <i>Lophura e. erythroptalma</i>	<b>Alain Hennache, Clères</b>
<b>Palawan peacock-pheasant</b> <sup>EEP</sup> <i>Polyplectron emphanum</i>	<b>David Jeggo, Jersey</b>

<b>Mountain peacock-pheasant</b> <sup>ESB</sup> <i>Polyplectron inopinatum</i>	<b>Gary Robbins, World Pheasant Association (WPA)</b>
<b>Malaysian peacock-pheasant</b> <sup>ESB</sup> <i>Polyplectron malacense</i>	<b>Gary Robbins, World Pheasant Association (WPA)</b>
<b>Greater argus pheasant</b> <sup>ESB</sup> <i>Argusianus argus</i>	<b>Gary Robbins, World Pheasant Association (WPA)</b>

### Gruiformes TAG

TAG Chair: Geer Sheres, Zutendaal

Taxon	Coordinator/ Studbook keeper
<b>Blue crane</b> <sup>ESB</sup> <i>Anthropoides paradisea</i>	<b>Ryszard Topola, Lodz</b>
<b>Siberian crane</b> <sup>EEP</sup> <i>Grus leucogeranus</i>	<b>Rob Belterman, Rotterdam</b>
<b>Hooded crane</b> <sup>ESB</sup> <i>Grus monacha</i>	<b>Geer Scheres, Zutendaal</b>
<b>Red-crowned crane</b> <sup>EEP</sup> <i>Grus japonensis</i>	<b>Rob Belterman, Rotterdam</b>
<b>White-naped crane</b> <sup>EEP</sup> <i>Grus vipio</i>	<b>Helmut Mägdefrau, Nürnberg</b>
<b>Western crowned crane</b> <sup>ESB</sup> <i>Balearica pavonina</i>	<b>Dieter Rinke, Walsrode</b>
<b>Sunbittern</b> <sup>ESB</sup> <i>Eurypyga helias</i>	<b>Stefan Stadler, Frankfurt</b>

### Charadriiformes TAG

TAG Chair: Kirsi Pynonen-Oudman, Helsinki

### Pigeon and Dove TAG

TAG Chair: Duncan Bolton, Bristol

Taxon	Coordinator/ Studbook keeper
<b>Pink pigeon</b> <sup>EEP</sup> <i>Columba mayeri</i>	<b>David Jeggo, Jersey</b>
<b>Bleeding-heart pigeons</b> <sup>ESB</sup> <i>Gallicolumba luzonica and G. criniger</i>	<b>Nigel Simpson, Bristol</b>
<b>White-naped pheasant pigeon</b> <sup>ESB</sup> <i>Otidiphaps nobilis aruensis</i>	<b>Dieter Rinke, Walsrode</b>
<b>Crowned pigeons</b> <sup>ESB</sup> <i>Goura spp.</i>	<b>Rob Belterman, Rotterdam</b>
<b>Socorro dove</b> <sup>EEP</sup> <i>Zenaida graysoni</i>	<b>Stefan Stadler, Frankfurt</b>

### Parrot TAG

TAG Chair: Roger Wilkinson, Chester

Taxon	Coordinator/ Studbook keeper
<b>Black-winged lory</b> <sup>ESB</sup> <i>Eos cyanogenia</i>	<b>Vacancy, Chester</b>
<b>Red and blue lory</b> <sup>ESB</sup> <i>Eos histrio</i>	<b>Mathias Rheinschmidt, Puerto de la Cruz</b>

<b>Purple-naped lory</b> <sup>ESB</sup> <i>Lorius domicellus</i>	Theo Pagel, Cologne
<b>Yellow-backed chattering lory</b> <sup>ESB</sup> <i>Lorius garrulus flavopalliat</i>	Vacancy, Chester
<b>Mount Apo lorikeet</b> <sup>ESB</sup> <i>Trichoglossus johnstoniae</i>	Mathias Rheinschmidt, Puerto de la Cruz
<b>Kea</b> <sup>ESB</sup> <i>Nestor notabilis</i>	Duncan Bolton, Bristol
<b>Red-vented cockatoo</b> <sup>EEP</sup> <i>Cacatua haematuropygia</i>	Vacancy, Villars les Dombes
<b>Moluccan cockatoo</b> <sup>EEP</sup> <i>Cacatua moluccensis</i>	Ron Willis, Dublin
<b>Blue-eyed cockatoo</b> <sup>ESB</sup> <i>Cacatua ophthalmica</i>	Roger Wilkinson, Chester
<b>Citron-crested cockatoo</b> <sup>EEP</sup> <i>Cacatua sulphurea citrinocristata</i>	Ron Willis, Dublin
<b>Black cockatoos</b> <sup>ESB</sup> <i>Calyptrorhynchus spp.</i>	Martina Müller, Walsrode
<b>Palm cockatoo</b> <sup>EEP</sup> <i>Probosciger aterrimus</i>	Roger Wilkinson, Chester
<b>Red-tailed amazon</b> <sup>EEP</sup> <i>Amazona brasiliensis</i>	Colin Bath, Paignton
<b>Ecuadorian amazon</b> <sup>EEP</sup> <i>Amazona [autumnalis] lilacina</i>	Mark Pilgrim, Chester
<b>Red-spectacled amazon</b> <sup>ESB</sup> <i>Amazona pretrei</i>	Mathias Rheinschmidt, Puerto de la Cruz
<b>Red-browed amazon</b> <sup>EEP</sup> <i>Amazona rhodocorytha</i>	Matthias Reinschmidt, Puerto de la Cruz
<b>Green-cheeked amazon</b> <sup>EEP</sup> <i>Amazona viridigenalis</i>	Raymond van der Meer, Amersfoort
<b>Yellow-faced amazon</b> <sup>ESB</sup> <i>Amazona xantops</i>	Mike Woolham, Banham
<b>St. Lucia parrot</b> <sup>ESB</sup> <i>Amazona versicolor</i>	David Jeggo, Jersey
<b>Hyacinth macaw</b> <sup>EEP</sup> <i>Anodorhynchus hyacinthinus</i>	Steffen Patzwahl, Cambron
<b>Buffon's macaw</b> <sup>EEP</sup> <i>Ara ambigua</i>	Sandrine Silhol, Sables d'Olonne
<b>Blue-throated macaw</b> <sup>EEP</sup> <i>Ara glaucogularis</i>	Matthias Reinschmidt, Puerto de la Cruz
<b>Mexican military macaw</b> <sup>ESB</sup> <i>Ara militaris mexicana</i>	Steven Vansteenkiste, Antwerp
<b>Red-fronted macaw</b> <sup>EEP</sup> <i>Ara rubrogenys</i>	John Ray, Twycross
<b>Golden conure</b> <sup>ESB</sup> <i>Aratinga guarouba</i>	Bengt Holst, Copenhagen Zoo
<b>Thick-billed parrot</b> <sup>ESB</sup> <i>Rhynchopsitta pachyrhyncha</i>	David Jeggo, Jersey

### Owl TAG

TAG Chair: Klaus Wünnemann, Heidleberg

### Toucan and Turaco TAG

TAG Chair: John Ellis, ZSL

Taxon	Coordinator/ Studbook keeper
<b>Fischer's turaco</b> <sup>ESB</sup> <i>Tauraco fischeri</i>	<b>Frédéric Verstappen, Antwerp</b>
<b>Violet turaco</b> <sup>ESB</sup> <i>Musophaga violacea</i>	<b>Andrzej Kruszewicz, Warsaw</b>
<b>Hoopoe</b> <sup>ESB</sup> <i>Upupa epops</i>	<b>Vacancy</b>
<b>Toco toucan</b> <sup>ESB</sup> <i>Ramphastos toco</i>	<b>John A Ellis, London</b>

### Hornbill TAG

TAG Chair: Koen Brouwer, NFRGZ, Amsterdam

Taxon	Coordinator/ Studbook keeper
<b>Wrinkled hornbill</b> <sup>EEP</sup> <i>Aceros corrugatus</i>	<b>Jens Lilleør, Aalborg</b>
<b>Von Der Decken's Hornbill</b> <sup>ESB</sup> <i>Tockus deckeni</i>	<b>Cathy King, Rotterdam Zoo</b>
<b>Mindanao writhed-billed hornbill</b> <sup>EEP</sup> <i>Aceros leucocephalus</i>	<b>Roger Wilkinson, Chester</b>
<b>Bar-pouched and Papuan wreathed hornbill</b> <sup>ESB</sup> <i>Aceros undulatus</i> and <i>A. plicatus</i>	<b>Irena Pavlin-Bitenc, Ljubljana</b>
<b>Asian pied hornbills</b> <sup>ESB</sup> <i>Anthracoceros spp.</i>	<b>John Ellis, London</b>
<b>Great hornbill</b> <sup>EEP</sup> <i>Buceros bicornis</i>	<b>Joost Lammers, Alphen a/d Rijn</b>
<b>Rhinoceros hornbill</b> <sup>ESB</sup> <i>Buceros rhinoceros</i>	<b>Stephan Hübner, Frankfurt am Main</b>
<b>Ground hornbills</b> <sup>ESB</sup> <i>Bucorvus spp.</i>	<b>Stéphanie Bidaux, St. Aignan</b>
<b>Tarictic hornbills</b> <sup>ESB</sup> <i>Penelopides spp.</i>	<b>Duncan Bolton, Bristol</b>

### Passeriformes TAG

TAG Chair: David Jeggo, Jersey

Taxon	Coordinator/ Studbook keeper
<b>Bali starling</b> <sup>EEP</sup> <i>Leucopsar rothschildi</i>	<b>Theo Pagel, Cologne</b>

## Marsupial and Monotreme TAG

TAG Chair: Udo Glanslöber, Erlangen

Taxon	Coordinator/ Studbook keeper
<b>Kowari</b> <sup>EEP</sup> <i>Dasyuroides burnei</i>	<b>Birgit Neberle, Univ. Erlangen</b>
<b>Brush-tailed bettong</b> <sup>EEP</sup> <i>Bettongia penicillata</i>	<b>Mascha Lissowsky, Univ. Erlangen</b>
<b>Goodfellow's tree kangaroo</b> <sup>EEP</sup> <i>Dendrolagus goodfellowi</i>	<b>Wolfgang Dressen, Krefeld</b>
<b>Matschie's tree kangaroo</b> <sup>EEP</sup> <i>Dendrolagus matschiei</i>	<b>Wolfgang Dressen, Krefeld</b>
<b>Agile wallaby</b> <sup>ESB</sup> <i>Macropus agilis</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Tammar wallaby</b> <sup>ESB</sup> <i>Macropus eugenii</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Red kangaroo</b> <sup>ESB</sup> <i>Macropus rufus</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Western grey kangaroo</b> <sup>ESB</sup> <i>Macropus fuliginosus</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Great grey kangaroo</b> <sup>ESB</sup> <i>Macropus giganteus</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Swamp wallaby</b> <sup>ESB</sup> <i>Wallabia bicolor</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Brush-tailed rock wallaby</b> <sup>ESB</sup> <i>Petrogale penicillata</i>	<b>David Gill, Dalton-in-Furness</b>

## Prosimian TAG

TAG Chair: Achim Johann, Rheine

Taxon	Coordinator/ Studbook keeper
<b>Fat-tailed dwarf lemur</b> <sup>ESB</sup> <i>Cheirogaleus medius</i>	<b>Tomas Pes, Plzen</b>
<b>Lesser mouse lemur</b> <sup>ESB</sup> <i>Microcebus murinus</i>	<b>Tomas Pes, Plzen</b>
<b>Coquerel's mouse lemur</b> <sup>ESB</sup> <i>Mirza coquereli</i>	<b>Tomas Pes, Plzen</b>
<b>Red-fronted lemur</b> <sup>ESB</sup> <i>Eulemur fulvus rufus</i>	<b>Darren Webster, Blackpool</b>
<b>Crowned lemur</b> <sup>ESB</sup> <i>Eulemur coronatus</i>	<b>Pierre Moisson, Mulhouse</b>
<b>Black lemur</b> <sup>EEP</sup> <i>Eulemur macaco macaco</i> and <i>E. m. flavifrons</i>	<b>Derek Grove, Dudley</b> <b>Pierre Moisson, Mulhouse</b>
<b>Mongoose Lemur</b> <sup>EEP</sup> <i>Eulemur mongoz</i>	<b>David Armitage, Linton</b>
<b>Red bellied lemur</b> <sup>ESB</sup> <i>Eulemur rubriventer</i>	<b>Pierre Moisson, Mulhouse</b>
<b>Alaotran gentle lemur</b> <sup>EEP</sup> <i>Hapalemur griseus alaotrensis</i>	<b>Tim Wright, Jersey</b>
<b>Gentle lemurs</b> <sup>ESB</sup> <i>Hapalemur spp.</i>	<b>Claude-Anne Gauthier, Paris Zoo</b>

<b>Ring-tailed lemur</b> <sup>ESB</sup> <i>Lemur catta</i>	<b>Elena Baistrocchi, Bussolengo</b>
<b>Ruffed lemur</b> <sup>EEP</sup> <i>Varecia variegata</i>	<b>Werner Kaumanns, Cologne</b>
<b>Pygmy slow loris</b> <sup>EEP</sup> <i>Nycticebus pygmaeus</i>	<b>Radoslaw Ratajszczak, Poznan</b>
<b>Slender loris</b> <sup>EEP</sup> <i>Loris tardigradus nordicus</i>	<b>Rüdiger Dmoch, Frankfurt</b>

### Cebid TAG

TAG Chair: Frank Reitkerk, Apeldoorn

Taxon	Coordinator/ Studbook keeper
<b>Douroucoulis</b> <sup>ESB</sup> <i>Aotus spp.</i>	<b>Olivia Walter, BIAZA</b>
<b>Red titi</b> <sup>EEP</sup> <i>Callicebus cupreus</i>	<b>Darren Webster, Blackpool</b>
<b>Black-capped squirrel monkey</b> <sup>EEP</sup> <i>Saimiri boliviensis</i>	<b>Jan Vermeer, Romagne</b>
<b>Black howler monkey</b> <sup>ESB</sup> <i>Alouatta caraya</i>	<b>John Partridge, Bristol</b>
<b>Variegated Spider monkey</b> <sup>EEP</sup> <i>Ateles belzebuth hybridicus</i>	<b>Pierre Gay, Doué la Fontaine</b>
<b>Colombian spider monkey</b> <sup>EEP</sup> <i>Ateles fusciceps robustus</i>	<b>Pierre Gay, Doué la Fontaine</b>
<b>Red-faced black spider monkey</b> <sup>EEP</sup> <i>Ateles paniscus</i>	<b>Brice Lefaux, Doué la Fontaine</b>
<b>Woolly monkey</b> <sup>EEP</sup> <i>Lagothrix lagotricha</i>	<b>Frank Rietkerk, Apeldoorn</b>
<b>Yellow-breasted capuchin</b> <sup>EEP</sup> <i>Cebus apella xantosternus</i>	<b>Jean-Marc Lernould, Mulhouse</b>
<b>White-throated capuchin</b> <sup>ESB</sup> <i>Cebus capucinus</i>	<b>Stephan Perrier, Romagne</b>
<b>White-faced saki</b> <sup>EEP</sup> <i>Pithecia pithecia pithecia</i>	<b>Kirsten Pullen, Paignton</b>

### Callitrichid TAG

TAG Chair: Bryan Carroll, Bristol

Taxon	Coordinator/ Studbook keeper
<b>Goeldi's monkey</b> <sup>EEP</sup> <i>Callimico goeldii</i>	<b>Gustl Anzenberger, Univ. Zürich</b>
<b>White-fronted marmoset</b> <sup>EEP</sup> <i>Callithrix geoffroyi</i>	<b>Gábor Gösi, Szeged</b>
<b>Silvery marmoset</b> <sup>ESB</sup> <i>Callithrix a. argentata</i> <i>Callithrix a. melanura</i>	<b>Tracey Moore, Shaldon</b>
<b>Black-eared marmoset</b> <sup>ESB</sup> <i>Callithrix penicillata</i>	<b>Sabine Boucherie, Overloon</b>
<b>Golden-headed lion tamarin</b> <sup>EEP</sup> <i>Leontopithecus chrysomelas</i>	<b>Kristin Leus, Antwerp</b>

<b>Golden lion tamarin</b> <sup>EEP</sup> <i>Leontopithecus rosalia</i>	<b>David Field, Whipsnade</b>
<b>Pied tamarin</b> <sup>EEP</sup> <i>Saguinus bicolor bicolor</i>	<b>Dominic Wormell, Jersey</b>
<b>Emperor tamarin</b> <sup>EEP</sup> <i>Saguinus imperator</i>	<b>Eric Bairrão Ruivo, Lisbon</b>
<b>Red bellied tamarin</b> <sup>ESB</sup> <i>Saguinus labiatus</i>	<b>Manfred Tanner, Magdeburg</b>
<b>Red-handed tamarin</b> <sup>ESB</sup> <i>Saguinus midas</i>	<b>Aude Desmoulins, Lille</b>
<b>Cotton-topped tamarin</b> <sup>EEP</sup> <i>Saguinus oedipus oedipus</i>	<b>Bernard Holdijk, Epe</b>

### Old World Monkey TAG

TAG Chair: Neil Bemment, Paignton

Taxon	Coordinator/ Studbook keeper
<b>Allen's swamp monkey</b> <sup>EEP</sup> <i>Allenopithecus nigroviridis</i>	<b>Geraldine Pothet, Paris-Jardin</b>
<b>White-crowned mangabey</b> <sup>EEP</sup> <i>Cercocebus atys lunulatus</i>	<b>Teresa Abelló, Barcelona</b>
<b>Cherry-crowned and Sooty mangabeys</b> <sup>ESB</sup> <i>Cercocebus atys atys</i>	<b>Teresa Abelló, Barcelona</b>
<b>Agile mangabeys</b> <sup>ESB</sup> <i>Cercocebus agilis</i>	<b>Geraldine Pothet, Paris-Jardin</b>
<b>White-cheeked mangabeys</b> <sup>ESB</sup> <i>Lophocebus albigena</i>	<b>Geraldine Pothet, Paris-Jardin</b>
<b>De Brazza guenon</b> <sup>ESB</sup> <i>Cercopithecus neglectus</i>	<b>Magdalena Janiszewska, Lodz</b>
<b>Guenons</b> <sup>EEP</sup> <i>Cercopithecus diana, C. l'hoesti, C. hamlyni</i>	<b>Graham Catlow, Edinburgh</b>
<b>Sulawesi crested macaque</b> <sup>EEP</sup> <i>Macaca nigra</i>	<b>Vicky Melfi, Paignton</b>
<b>Lion-tailed macaque</b> <sup>EEP</sup> <i>Macaca silenus</i>	<b>Werner Kaumanns, Cologne</b>
<b>Drill</b> <sup>EEP</sup> <i>Mandrillus leucophaeus</i>	<b>Andreas Knieriem, Hannover</b>
<b>Mandrill</b> <sup>ESB</sup> <i>Mandrillus sphinx</i>	<b>István Vidákovits, Budapest</b>
<b>Gelada baboon</b> <sup>EEP</sup> <i>Theropithecus gelada</i>	<b>Achim Johann, Rheine</b>
<b>Douc langur</b> <sup>EEP</sup> <i>Pygathrix nemaeus</i>	<b>Werner Kaumanns, Cologne</b>
<b>Western black and white colobus</b> <sup>EEP</sup> <i>Colobus polykomos</i>	<b>Achim Winkler, Duisburg</b>
<b>Javan langur</b> <sup>ESB</sup> <i>Trachypithecus auratus auratus</i>	<b>Warner Jens, Apeldoorn</b>
<b>Francois' langur</b> <sup>ESB</sup> <i>Trachypithecus francoisi</i>	<b>Andrew Hope, Belfast</b>

<b>Hanuman langur</b> <sup>ESB</sup> <i>Semnopithecus entellus</i>	<b>Katja Ebersbach, Hannover</b>
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### Gibbon TAG

TAG Chair: Vicky Melfi, Paignton Zoo Environmental Park

Taxon	Coordinator/ Studbook keeper
<b>Northern white-cheeked gibbon</b> <sup>EEP</sup> <i>Hylobates leucogenys</i>	<b>Pierre Moisson, Mulhouse</b>
<b>Gabriella's gibbon</b> <sup>EEP</sup> <i>Hylobates gabriellae</i>	<b>Pierre Moisson, Mulhouse</b>
<b>Southern white-cheeked gibbon</b> <sup>EEP</sup> <i>Hylobates siki</i>	<b>Pierre Moisson, Mulhouse</b>
<b>Lar gibbon</b> <sup>ESB</sup> <i>Hylobates lar</i>	<b>David Gill, Dalton-in-Furness</b>
<b>Javan grey gibbon</b> <sup>EEP</sup> <i>Hylobates moloch</i>	<b>Beatrix Rau, München</b>
<b>Pileated gibbon</b> <sup>EEP</sup> <i>Hylobates pileatus</i>	<b>Robert Zingg, Zürich</b>
<b>Siamang</b> <sup>ESB</sup> <i>Hylobates syndactylus</i>	<b>John Ray, Twycross</b>

### Great Ape TAG

TAG Chair: Bengt Holst, Copenhagen

Taxon	Coordinator/ Studbook keeper
<b>Orang utan</b> <sup>EEP</sup> <i>Pongo pygmaeus</i>	<b>Clemens Becker, Karlsruhe</b> <b>Neil Bemment, Paignton</b>
<b>Bonobo</b> <sup>EEP</sup> <i>Pan paniscus</i>	<b>Bruno Van Puijenbroeck, Antwerp</b>
<b>West African chimpanzee</b> <sup>EEP</sup> <i>Pan troglodytes verus</i>	<b>Frands Carlsen, Copenhagen Zoo</b>
<b>Western lowland gorilla</b> <sup>EEP</sup> <i>Gorilla gorilla gorilla</i>	<b>Christian Schmidt, Frankfurt</b>

### Small Mammal TAG

TAG Chair: Klaus Rudloff, Tierpark Berlin

Taxon	Coordinator/ Studbook keeper
<b>Rodriguez fruit bat</b> <sup>EEP</sup> <i>Pteropus rodricensis</i>	<b>Mark Brayshaw, Jersey</b>
<b>Livingstone's fruit bat</b> <sup>ESB</sup> <i>Pteropus livingstonii</i>	<b>Will Masefield, Jersey</b>
<b>Two-toed and Hoffmann's sloths</b> <sup>ESB</sup> <i>Choloepus didactylus</i> and <i>C. hoffmanni</i>	<b>Jutta Heuer, Halle</b>
<b>Giant anteater</b> <sup>EEP</sup> <i>Myrmecophaga tridactyla</i>	<b>Iiona Schappert, Dortmund</b>
<b>Tamandua</b> <sup>ESB</sup> <i>Tamandua tetradactyla</i>	<b>Wolfgang Dressen, Krefeld</b>
<b>Mountain paca</b> <sup>ESB</sup> <i>Agouti taczanowskii</i>	<b>Ronald Lorentsen, Antwerp</b>
<b>Aardvark</b> <sup>ESB</sup>	<b>Marc Damen, Arnhem</b>



<i>Orycteropus afer</i>
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## Canid TAG

TAG Chair: Conrad Ensenat, Barcelona-zoo

Taxon	Coordinator/ Studbook keeper
<b>Iberian wolf</b> <sup>EEP</sup> <i>Canus lupus signatus</i>	<b>Conrad Enseñat, Barcelona</b>
<b>Maned wolf</b> <sup>EEP</sup> <i>Chrysocyon brachyurus</i>	<b>Sabine Hilsberg, Frankfurt</b>
<b>African wild dog</b> <sup>EEP</sup> <i>Lycaon pictus</i>	<b>Wim Verberkmoes, Hilvarenbeek</b>
<b>Bush dog</b> <sup>EEP</sup> <i>Speothos venaticus</i>	<b>Rüdiger Dmoch, Frankfurt</b>
<b>Fennec fox</b> <sup>ESB</sup> <i>Fennecus zerda</i>	<b>Anna Mekarska, Kraków</b>
<b>Hyaenas</b> <sup>ESB</sup> <i>Crocuta crocuta</i> , <i>Hyaena hyaena</i> and <i>Parahyaena brunnea</i>	<b>Raymond van der Meer, Amersfoort</b>

## Bear TAG

TAG Chair: José Kok, Rhenen

Taxon	Coordinator/ Studbook keeper
<b>Sun bear</b> <sup>ESB</sup> <i>Helarctos malayanus</i>	<b>Lydia Kolter, Cologne</b>
<b>Sloth bear</b> <sup>EEP</sup> <i>Melursus ursinus</i>	<b>Hans van Weerd, Amsterdam</b>
<b>Spectacled bear</b> <sup>EEP</sup> <i>Tremarctos ornatus</i>	<b>Lydia Kolter, Cologne</b>
<b>Brown bear</b> <sup>ESB</sup> <i>Ursus arctos</i>	<b>José Kok, Rhenen</b>
<b>Asiatic black bear</b> <sup>ESB</sup> <i>Ursus (Selenarctos) thibetanus</i>	<b>Maria Krakowiak, Warsaw</b> <b>Alla Nikitina, Kyiv</b>

## Small Carnivore TAG

TAG Chair: Stewart Muir, Newquay

Taxon	Coordinator/ Studbook keeper
<b>European otter</b> <sup>EEP</sup> <i>Lutra lutra</i>	<b>Alfred Melissen, Hilvarenbeek</b>
<b>Giant otter</b> <sup>EEP</sup> <i>Pteronura brasiliensis</i>	<b>Frank Brandstätter, Dortmund</b>
<b>Wolverine</b> <sup>EEP</sup> <i>Gulo gulo</i>	<b>Leif Blomqvist, Nordens Ark</b>
<b>European mink</b> <sup>EEP</sup> <i>Mustela lutreola</i>	<b>Tiit Maran, Tallinn</b> <b>Jaana Mikola, Helsinki</b>
<b>Red panda</b> <sup>EEP</sup> <i>Ailurus fulgens fulgens</i>	<b>Martin van Wees, Rotterdam</b>
<b>Fossa</b> <sup>EEP</sup> <i>Cryptoprocta ferox</i>	<b>Achim Winkler, Duisburg</b>
<b>Binturong</b> <sup>ESB</sup>	<b>Clive Barwick, Colchester</b>

<i>Arctictis binturong</i>	
<b>Kinkajou</b> <sup>ESB</sup> <i>Potos flavus</i>	Aude Desmoulins, Lille Zoo

## Felid TAG

TAG Chair: Alex Sliwa, Wuppertal

Taxon	Coordinator/ Studbook keeper
<b>Cheetah</b> <sup>EEP</sup> <i>Acinonyx jubatus</i>	Sean McKeown, Dubai
<b>Asian golden cat</b> <sup>EEP</sup> <i>Catopuma temminckii</i>	Sandra Reichler, Heidelberg
<b>Black-footed cat</b> <sup>EEP</sup> <i>Felis nigripes</i>	Alexander Sliwa, Wuppertal
<b>Margay</b> <sup>EEP</sup> <i>Leopardus wiedii</i>	Stewart Muir, Newquay
<b>Oncilla</b> <sup>ESB</sup> <i>Leopardus tigrinus</i>	Pavel Brandl, Praha
<b>Geoffroy's cat</b> <sup>EEP</sup> <i>Oncifelis geoffroyi</i>	David Gill, Dalton-in-Furness
<b>Fishing cat</b> <sup>EEP</sup> <i>Prionailurus viverrinus</i>	Zuzana Slouková, Decin
<b>Pallas' cat</b> <sup>ESB</sup> <i>Otocolobus manul</i>	Anne Godfrey, Edinburgh
<b>Rusty-spotted cat</b> <sup>ESB</sup> <i>Felis rubiginosus</i>	Rüdiger Dmoch, Frankfurt
<b>Sand cat</b> <sup>EEP</sup> <i>Felis margarita</i>	Ute Magiera, Osnabruck
<b>Eurasian lynx</b> <sup>ESB</sup> <i>Lynx lynx</i>	Lars Versteeg, Hilvarenbeek
<b>Clouded leopard</b> <sup>EEP</sup> <i>Neofelis nebulosa</i>	Peter James, Welwyn_NE
<b>Asian lion</b> <sup>EEP</sup> <i>Panthera leo persica</i>	Stefan Jonsson, Eskilstuna
<b>Sri Lanka leopard</b> <sup>EEP</sup> <i>Panthera pardus kotiya</i>	Thierry Jardin, Lisieux
<b>Amur leopard</b> <sup>EEP</sup> <i>Panthera pardus orientalis</i>	Sarah Christie, London Tanya Arzhanova, Moscow
<b>Persian leopard</b> <sup>EEP</sup> <i>Panthera pardus saxicolor</i>	Martina Raffel, Münster
<b>Chinese leopard</b> <sup>EEP</sup> <i>Panthera pardus japonensis</i>	Michael Flügger, Hamburg
<b>Jaguar</b> <sup>ESB</sup> <i>Panthera onca</i>	Mark Pilgrim, Chester Zoo
<b>Tigers</b> <sup>EEP</sup> <i>Panthera tigris altaica and P. t. sumatrae</i>	Sarah Christie, London
<b>Snow leopard</b> <sup>EEP</sup> <i>Uncia uncia</i>	Leif Blomqvist, Helsinki

### Marine Mammal TAG

TAG Chair: Gerard Meijer, Rhenen

Taxon	Coordinator/ Studbook keeper
<b>South American fur seal</b> <sup>ESB</sup> <i>Arctocephalus australis</i>	<b>Volker Gatz, Dortmund</b>
<b>Patagonian sealion</b> <sup>ESB</sup> <i>Otaria flavescens</i>	<b>John Ray, Twycross</b>
<b>Californian sealion</b> <sup>ESB</sup> <i>Zalophus californianus</i>	<b>Gerard Meijer, Rhenen</b>
<b>Grey seal</b> <sup>ESB</sup> <i>Halichoerus grypus</i>	<b>Maria Krakowiak, Warsaw</b>
<b>Bottle-nosed dolphin</b> <sup>EEP</sup> <i>Tursiops truncatus</i>	<b>Mats Amundin, Kolmarden</b>
<b>Carribean manatee</b> <sup>EEP</sup> <i>Trichechus manatus</i>	<b>Bernhard Neurohr, Nurnberg</b>

### Elephant TAG

TAG Chair: Amelia Terkel, Ramat-Gan

Taxon	Coordinator/ Studbook keeper
<b>Asian elephant</b> <sup>EEP</sup> <i>Elephas maximus</i>	<b>Ton Dorresteyn, Rotterdam</b>
<b>African elephant</b> <sup>EEP</sup> <i>Loxodonta africana</i>	<b>Amelia Terkel, Ramat-Gan</b>

### Equid TAG

TAG Chair: Achim Winkler, Duisburg

Taxon	Coordinator/ Studbook keeper
<b>Somali wild ass</b> <sup>EEP</sup> <i>Equus africanus somalicus</i>	<b>Olivier Pagan, Basel</b>
<b>Przewalski's horse</b> <sup>EEP</sup> <i>Equus ferus przewalskii</i>	<b>Waltraut Zimmermann, Cologne</b>
<b>Grevy's zebra</b> <sup>EEP</sup> <i>Equus grevyi</i>	<b>Tanya Langenhorst, Marwell</b>
<b>Persian onager</b> <sup>EEP</sup> <i>Equus hemionus onager</i>	<b>Stephan Hering-Hagenbeck, Hamburg</b>
<b>Turkmenian kulan</b> <sup>EEP</sup> <i>Equus hemionus kulan</i>	<b>Anna Mekarska, Krakow</b>
<b>Hartmann's mountain zebra</b> <sup>EEP</sup> <i>Equus zebra hartmannae</i>	<b>Erich Kocner, Usti-nad-Labem</b>

### Rhinoceros TAG

TAG Chair: Nick Lindsay, Whipsnade

Taxon	Coordinator/ Studbook keeper
<b>White rhinoceros</b> <sup>EEP</sup> <i>Ceratotherium simum</i>	<b>Kristina Tomášová, Dvur Kralove</b>
<b>Black rhinoceros</b> <sup>EEP</sup> <i>Diceros bicornis</i>	<b>Andreas Ochs, Berlin Zoo</b>
<b>Indian rhinoceros</b> <sup>EEP</sup> <i>Rhinoceros unicornis</i>	<b>Vacancy</b>

### Tapir and Hippo TAG

TAG Chair: Bengt Holst, Copenhagen

Taxon	Coordinator/ Studbook keeper
<b>Malayan tapir</b> <sup>EEP</sup> <i>Tapirus indicus</i>	<b>Helmut Mägdefrau, Nürnberg</b>
<b>South American tapir</b> <sup>ESB</sup> <i>Tapirus terrestris</i>	<b>Franck Haelewijn, Lille</b>
<b>Pygmy hippopotamus</b> <sup>EEP</sup> <i>Hexaprotodon liberiensis</i>	<b>Vacancy, Basel</b>

### Pig and Peccary TAG

TAG Chair: Alastair Macdonald, Edinburgh

Taxon	Coordinator/ Studbook keeper
<b>Babirusa</b> <sup>EEP</sup> <i>Babyrussa babyrussa</i>	<b>Thomas Kauffels, Kronberg</b>
<b>Warthog</b> <sup>ESB</sup> <i>Phacochoerus africanus</i>	<b>Paul Vercammen, Sharjah</b>
<b>Red river hog</b> <sup>ESB</sup> <i>Potamochoerus porcus pictus</i>	<b>Achim Winkler, Duisburg</b>

### Camelid TAG

TAG Chair: Vacancy

Taxon	Coordinator/ Studbook keeper
<b>Vicuna</b> <sup>EEP</sup> <i>Lama vicugna</i>	<b>Christian Schmidt, Frankfurt</b>

### Deer TAG

TAG Chair: Klaus Rudloff, Tierpark Berlin

Taxon	Coordinator/ Studbook keeper
<b>Lesser Malayan mousedeer</b> <sup>EEP</sup> <i>Tragulus javanicus</i>	<b>Jaap Govers, Amsterdam</b>
<b>Bactrian wapiti</b> <sup>ESB</sup> <i>Cervus elaphus bactrianus</i>	<b>Waltraut Zimmermann, Cologne</b>
<b>Vietnamese sika deer</b> <sup>EEP</sup> <i>Cervus nippon pseudaxis</i>	<b>Klaus Rudloff, Tierpark Berlin</b>
<b>Mesopotamian fallow deer</b> <sup>EEP</sup> <i>Dama mesopotamica</i>	<b>Klaus Rudloff, Tierpark Berlin</b>
<b>Forest reindeer</b> <sup>ESB</sup> <i>Rangifer tarandus fennicus</i>	<b>Leif Blomqvist, Helsinki</b>
<b>Southern pudu</b> <sup>EEP</sup> <i>Pudu pudu</i>	<b>Ulrich Schürer, Wuppertal</b>

### Cattle TAG

TAG Chair: Douglas Richardson

Taxon	Coordinator/ Studbook keeper
<b>European bison</b> <sup>EEP</sup> <i>Bison bonasus</i>	<b>Wanda Olech-Piasecka, Brwinow</b>
<b>Gaur</b> <sup>EEP</sup>	<b>Andreas Ochs, Berlin Zoo</b>

<i>Bos gaurus</i>	
<b>Banteng</b> <sup>EEP</sup> <i>Bos javanicus</i>	Beatrix Rau, Munich
<b>Dwarf forest buffalo</b> <sup>ESB</sup> <i>Syncerus caffer nanus</i>	Dave Brunger, Chester
<b>Anoa</b> <sup>EEP</sup> <i>Bubalus [=Anoa] depressicornis</i>	Gerd Nötzold, Leipzig

### Antelope and Giraffe TAG

TAG Chair: Frank Reitkerk, Apeldoorn

Taxon	Coordinator/ Studbook keeper
<b>Reticulated giraffe</b> <sup>EEP</sup> <i>Giraffa camelopardalis reticulata</i> including: Masai giraffe <i>G. c. tippelskirchi</i>	Günther Schleußner, Stuttgart
<b>Baringo giraffe</b> <sup>EEP</sup> <i>Giraffa camelopardalis rothschildi</i> including: Nigerian giraffe <i>G. c. peralta</i> Kordofan giraffe <i>G. c. antiquorum</i> Angolan giraffe <i>G. c. angolensis</i> Cape giraffe <i>G. c. giraffa</i> Unknown origin giraffes Hybrid giraffes	Marc Damen, Arnhem
<b>Okapi</b> <sup>EEP</sup> <i>Okapia johnstoni</i>	Bruno Van Puijenbroeck, Antwerp
<b>Bontebok and Blesbok</b> <sup>ESB</sup> <i>Damaliscus dorcas dorcas</i> and <i>D. d. phillipsi</i>	Hanny Verberkmoes, Hilvarenbeek
<b>Kirk's dikdik</b> <sup>ESB</sup> <i>Madoqua kirkii</i>	Klaus Müller-Schilling, Hannover
<b>Lowland nyala</b> <sup>ESB</sup> <i>Tragelaphus angassii</i>	Lucilia Tibério, Lisboa-zoo
<b>Eastern bongo</b> <sup>EEP</sup> <i>Tragelaphus euryceros isaacii</i>	Jake Veasey, Woburn
<b>Lesser kudu</b> <sup>ESB</sup> <i>Tragelaphus imberbis</i>	Pavel Moucha, Dvur Kralove
<b>West African sitatunga</b> <sup>ESB</sup> <i>Tragelaphus spekei gratus</i>	Peter Zwanzger, Cologne
<b>Greater kudu</b> <sup>ESB</sup> <i>Tragelaphus strepsiceros</i>	Marc Damen, Arnhem
<b>Nile lechwe</b> <sup>EEP</sup> <i>Kobus megaceros</i>	Nick Lindsay, Whipsnade
<b>Blue duiker</b> <sup>ESB</sup> <i>Cephalophus monticola</i>	Marc Damen, Arnhem
<b>Scimitar-horned oryx</b> <sup>EEP</sup> <i>Oryx dammah</i>	Tania Gilbert, Marwell
<b>Arabian oryx</b> <sup>EEP</sup> <i>Oryx leucoryx</i>	David Field, Whipsnade
<b>Addax</b> <sup>EEP</sup> <i>Addax nasomaculatus</i>	Heiner Engel, Hannover

<b>Dama gazelle</b> <sup>EEP</sup> <i>Gazella dama</i>	<b>Andres Barbosa, Almeria</b>
<b>Saharawi dorcas gazelle</b> <sup>EEP</sup> <i>Gazella dorcas neglecta</i>	<b>Teresa Abaigar, Almeria</b>
<b>Roan antelope</b> <sup>ESB</sup> <i>Hippotragus equinus</i>	<b>Klaus Brunsing, Hannover</b>
<b>Sable antelope</b> <sup>ESB</sup> <i>Hippotragus niger niger</i>	<b>Richard Osterballe, Givskud</b>

### Sheep and Goat TAG

TAG Chair: Jean-Luc Berthier, Paris Menagerie

Taxon	Coordinator/ Studbook keeper
<b>East Caucasian tur</b> <sup>ESB</sup> <i>Capra cylindricornis</i>	<b>Vladimir Fainstein, Tallinn</b>
<b>Turkmenian markhor</b> <sup>ESB</sup> <i>Capra falconeri heptneri</i>	<b>Paula Holma, Helsinki</b>
<b>West Caucasian tur</b> <sup>ESB</sup> <i>Capra ibex caucasica</i>	<b>Jitka Vokurková, Olomouc</b>
<b>Nubian ibex</b> <sup>ESB</sup> <i>Capra nubiana</i>	<b>Hanáková Lenka, Bratislava</b>
<b>Blue sheep</b> <sup>ESB</sup> <i>Pseudois nayaur</i>	<b>Jean-Luc Berthier, Paris Ménagerie</b>
<b>Muskox</b> <sup>EEP</sup> <i>Ovibos moschatus</i>	<b>Bengt Holst, Copenhagen Zoo</b>