



الأمانة العامة لصون  
المها العربي  
General Secretariat for  
the Conservation of the  
ARABIAN ORYX

## Proceedings of Arabian Oryx Records Keeping Workshop

9-11 October 2017, Abu Dhabi, UAE

[www.arabianoryx.org](http://www.arabianoryx.org)





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The General Secretariat for the Conservation of the Arabian Oryx (GSCAO) is a regional initiative with a key role of supporting all efforts to protect and conserve the Arabian Oryx, to agree regional criteria and standards, and to coordinate efforts between range states. GSCAO is hosted by the Environment Agency-Abu Dhabi.

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## Executive summary

A three-day technical workshop (9-11 October 2017) focusing on Arabian Oryx records keeping was organized by the General Secretariat for the Conservation of the Arabian Oryx (GSCAO) in partnership with Al Bustan Zoological Centre (ABZC). The workshop was held at Al Mamoura building A, Environment Agency- Abu Dhabi (EAD). The key objective of the workshop was to provide insight on the importance of basic wildlife records management as well as provide participants with basic user training on the Zoological Information Management System (ZIMS) a common animal record system developed by Species360 that is currently used by more than 1090 zoological institutions worldwide. The workshop was attended by 41 wildlife biologists, animal registrars, researchers, veterinarians and conservation managers of Arabian Oryx collections from UAE, Saudi Arabia, Bahrain, Jordan and USA. In addition to ZIMS hands-on training, participants addressed gaps and challenges in the current system of records keeping and identified possible directions to promote Arabian Oryx records in the Arabian Peninsula. The workshop concluded by recommending GSCAO to establish a working group for formulating guidelines on best practices for data capture and be the Hub for all Arabian Oryx data in the range states. Participants also urged Arabian Oryx institutions in the range states to collaborate more with GSCAO particularly in relation to data sharing and capacity building of conservation managers and technical staff of conservation departments.



## 1 Introduction

The Arabian Oryx (*Oryx leucoryx*) is a culturally significant species which has been celebrated in Arab art and literature for many generations. The disappearance of this magnificent animal from the wild represented a significant loss not only for the biodiversity of the Arabian Peninsula but also for its cultural heritage. The General Secretariat for the Conservation of the Arabian Oryx (GSCAO), hosted and supported by the Environment Agency- Abu Dhabi (EAD), has been committed to supporting Arabian Oryx conservation initiatives in partnership with other agencies. Specifically, GSCAO works to facilitate information sharing between Arabian Oryx collections at national and international levels, as well as support capacity building in the range states. In collaboration with its partners GSCAO has recently driven Arabian Oryx conservation efforts towards standardizing herd management practices. Having a good system of records keeping is a prerequisite for ensuring sound herd management practices. The Zoological Information Management System (ZIMS) is a common animal record system that is used by more than 1090 zoological institutions worldwide. It is the world standard software to manage the inventory, husbandry, medical care of 2.7 million living animals (10.2 million historic) and 15,000 living species. ZIMS Information analytics and research improve health care, delivery, animal inventory management, husbandry, enrichment, institutional planning, species management, and staff productivity. GSCAO has been recently urging Oryx institutions in the region to focus their management practices more on herd quality over quantity and meet minimum husbandry requirement as set out in international husbandry animal standards (EAD 2016). Depending on their management purposes, Oryx institutions in the region have different systems of records keeping but in general there is no consistency in the format of data capture. Records keeping provides an insight into the collection (i.e. how many animals, breeding, death etc) and helps investigate as well as evaluate the impact of changes in animal husbandry (EAZA Technical Assistance Committee, 2013). Having a good system of record keeping is the cornerstone for meeting the minimum requirements of standardizing herd management practices in the region. In response, GSCAO in collaboration with EAD and Al Bustan Zoological Centre (ABZC), organized this three-day workshop to discuss challenges and gaps of record keeping systems of Arabian Oryx in the region

## 2 Welcome speech

*Delivered by Dr. Shaikha Al Dhaheri (Executive Director of Terrestrial and Marine Biodiversity Sector, EAD)*

*Good Morning,*

*It is my pleasure and honor to welcome you today to the Training Workshop on Arabian Oryx Records Keeping. Special greetings to those traveled from outside the UAE to participate in this meeting and share their experience and challenges when it comes to Oryx conservation and management, in particular record keeping.*

*The Environment Agency-Abu Dhabi (EAD) has hosted the General Secretariat for the Conservation of the Arabian Oryx (GSCAO) for the past 16 years. EAD is honored to support this regional initiative, which aims to facilitate the sharing of information on Arabian Oryx conservation and support capacity building in the range states. The Secretariat has been actively working on several regional and national initiatives to achieve this goal - we have hosted the first UAE national workshop in 2015 for Oryx collections to discuss issues and challenges, and in 2016 we held a forum to initiate the development of standardized best practice guidelines in herd management. Today's training helps take these efforts one step further, in order to streamline the management of Oryx collections across the region and hear from you about your experiences and common approaches to record keeping. The Secretariat, together with its national and regional partners, has implemented several initiatives in the past to bring together efforts to conserve and rehabilitate the Arabian Oryx in order to achieve our common goal of having viable, free ranging populations roaming through the Arabian Peninsula once again. Examples of these efforts include:*

- *Establishing the Secretariat website, the only website dedicated to the Arabian Oryx with up to date information from around the region*
- *Carrying out regional disease surveys of Arabian Oryx every two years since 2011*
- *Bringing forth the issues of Arabian Oryx wilderness and overpopulations and developing a regional position on these issues*

- *Developing a Five Year Strategic Work Plan (2015-2019) which focuses on priority actions for the management of the Arabian Oryx in the range states.*

*Today's training workshop aims to address one of the key challenges that face many Arabian Oryx conservation managers in the UAE and the region, which is to have a good system for records keeping of individual Oryx in their collections and using those records to support better decision-making in wildlife management.*

*During this workshop, with the guidance and support of our expert trainers from GSCAO, Al Bustan, and Species360, you will explore best practices for records keeping with hands-on training on using the Zoological Information Management System (ZIMS).*

*Most of all, this workshop is an opportunity to learn from each other and learn together. It is also a chance to remind ourselves of the Regional strategy we developed together back in 2010, and continue to cooperate to implement the strategy for our common objective of seeing this species thrive once again throughout the Arabian desert.*

*I would like to thank Al Bustan Zoological Centre for their generous financial support of this workshop. Sincere thanks go as well to the Species360 team for allocating their valuable time to travel to Abu Dhabi and share with us their knowledge and experience on wildlife records keeping and management.*

*Once again, I would like to thank you all for attending this training workshop and I hope you will enjoy, benefit and continue to be active participants in this regional initiative, helping achieve our common conservation goals for this iconic species.*

*Thank you*

### 3 Overview talk about the workshop

*(Nessrine Alzahlawi, Terrestrial Biodiversity Policy, EAD)*

In this session, the workshop agenda (Tables 1, 2 &3), GSCAO's vision (*to achieve viable, sustainable and free-ranging populations of Arabian Oryx in natural habitats across their historic range and in harmony with local communities*) and its strategic role (*to act as an "Information Hub" facilitating the exchange of information between Arabian Oryx collections in the range states and promoting capacity building of researchers and conservation managers in the Arabian Peninsula*) were presented to participants. The 2015-2019 GSCAO's work plan was also presented, to show where this workshop fits in the context of the five year work plan adopted by Range States at the 5<sup>th</sup> Meeting of Member States in May 2015. The work plan was developed in consultation with range states and addresses four priority issues facing conservation management of Arabian Oryx collections. These issues include herd management, small population and genetic management, veterinary management as well as reintroduction and rehabilitation (Fig 1).

Table 1. Day 1 agenda of the workshop

Day 1	Agenda	Time
	Registration	09:00-09:30
	Welcome speech Dr. Shaikha Al Dhaheri (Executive Director of TMBS- EAD)	09:30-09:45
	Overview talk about the workshop, objectives, expected outputs and forward actions Nessrine Alzahlawi, Terrestrial Biodiversity Policy, EAD	09:45-10:00
	Coffee Break	10:00-10:15
	Where we are (Talks from institutions focus on record keeping only)	10:15-12:15
	Lunch	12:15-13:15
	Where we want to be (Talks on "why do we keep good records" Species360)	13:15-13:40
	Discussing best practices on record keeping as a basis for Arabian Oryx herd management (part 1) (facilitated by Meyer de Kock) <i>Define gaps in current records keeping systems. Ex: Animal ID standards</i>	13:40-14:20
	Discussing best practices on record keeping as a basis for Arabian Oryx herd management (part 2) (facilitated by Josh Courteau/ Sander Cozijn of Species360) Identify solutions for the ID gaps in current record keeping systems	14:20-15:00

<b>Coffee Break</b>	15:00-15:15
Develop a regional record keeping strategy for the Arabian Oryx (facilitated by: Yassir Hamdan Al Kharusi, Meyer De Kock, Species360)	15:15-15:45
<b>Closing remarks</b> Dr. Shaikha Al Dhaheri	15:45-16:00

Table 2. Day 2 agenda of the workshop

<b>Day 2 Agenda</b>	<b>Time</b>
<b>Introduction</b> Ensure participants can access internet and ZIMS training	09:00-10:00
1000 Introduction to ZIMS	10:00-11:30
<b>Coffee Break</b>	11:30-11:45
1002 Individual Animal Transactions (Interactive exercise period)	11:45-13:00
<b>Lunch</b>	13:00-14:00
1003 Group management (Interactive exercise period)	14:00-15:00
<b>Coffee Break</b>	15:00-15:15
1005 Additional animal information (Interactive exercise period)	15:15-15:45
<b>Session close- Questions from the day</b>	15:45-16:00

Table 3. Day 3 agenda of the workshop

Day 3 Agenda	Time
Questions and answers	09:00-09:30
1007-2010 Introduction to ZIMS	09:30-11:30
Coffee Break	11:30-11:45
1002 Individual Animal Transactions(Interactive exercise period)	11:45-13:00
Lunch	13:00-14:00
1003 Group management (Interactive exercise period)	14:00-15:00
Coffee Break	15:00-15:15
1005 Additional animal information(Interactive exercise period)	15:15-15:45
Session close- Questions from the day	15:45-16:00

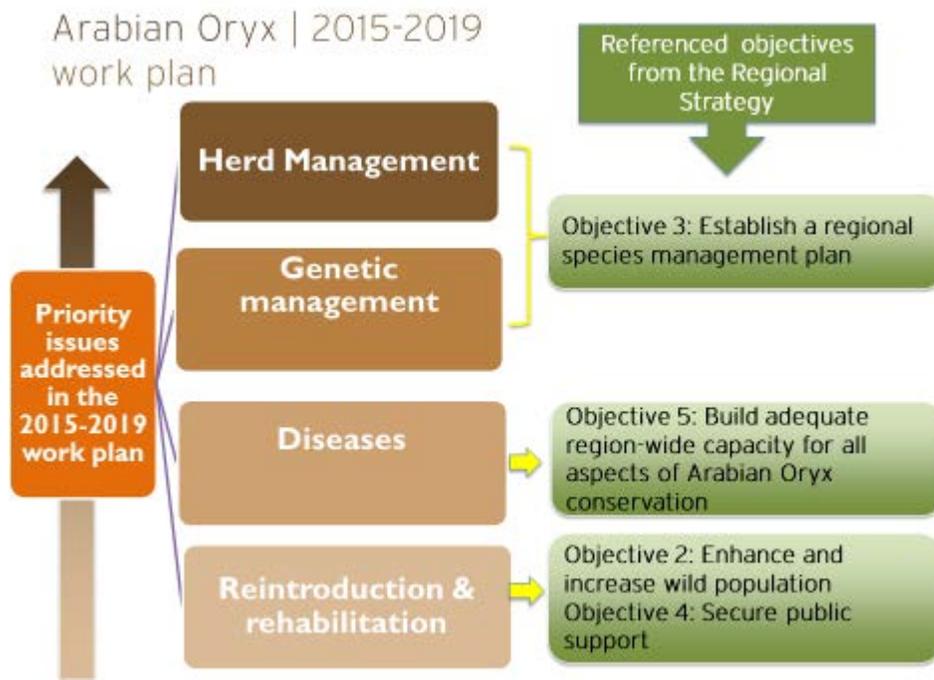


Figure 1. The five year work plan of GSCOA addresses priority issues in Arabian Oryx conservation including herd management, small population and genetic management, disease and reintroductions.

## 4 Workshop objectives

The workshop was attended by 41 wildlife experts, veterinarians, conservation managers and wildlife researchers from UAE, Saudi Arabia, Bahrain, Jordan and USA (Appendix I) The objectives of the three - day technical meeting were to:

- Provide insight on the importance of basic wildlife records management
- Review current systems for Arabian Oryx records keeping in the participating institutions
- Demonstrate best practices for records keeping, with an additional focus on standards and data quality, as well as how good records are the basis of decision-making process in population management
- Provide basic user training on Zoological Information Management System (ZIMS), with hands-on ZIMS exposure.

## 5 Current systems of records keeping in Arabian Oryx collections

*(Facilitated by Yassir Al Kharusi, Terrestrial Biodiversity Policy, EAD)*

To determine where Arabian Oryx collections are in terms of records keeping, participants were asked about the current systems used in their institutions and reasons for using these systems. Participants' responses show that 6 out of 16 institutions representing 38% of those participating in the workshop use ZIMS as their primary system of records keeping (Table 4). While Excel (used by 62% of participating institutions) remains the common system of record keeping in the range states. According to participants' responses, Oryx institutions in the region prefer Excel mainly because it is easy to use for conservation managers and animal keepers, and has zero cost compared to ZIMS which requires membership fees. ZIMS membership requirements include:

- Payment of membership fee
- Sharing of current, accurate, comprehensive data about the collection and data must be recorded at least every three months to remain in good standing (see [www.species360.org](http://www.species360.org)).

Table 4. Systems of records keeping used by Arabian Oryx institutions in the range states as reported by workshop participants.

Institution / Collection	Primary record keeping system	Other record keeping system	Why this primary system?
Al Ain Zoo	ZIMS	Excel Veterinary database (medical reports)	ARKS was used before ZIMS- began with traditional record keeping Using ZIMS as it is becoming common language  Excel = cheap
Sheikha Fatima bint Mubarak's private collection	Excel	Paper	Easy to use
Sheikh Mansour bin Zayed's private collection	Paper records and Excel		Easy to use
Tourism Development Investment Company (TDIC)- Sir Bani Yas Island	ZIMS	Excel as a backup (manual)	Easy to generate reports- backup system
Al Bustan Zoological Centre	ZIMS + medical	Excel (might stop)	Easy to exchange of information and has other specifications
Dubai Protected areas- Dubai Municipality	Excel		Easy and familiar with excel- monitoring many spp
Al Areen Wildlife Park- Bahrain	Excel	Paper	Easy to use
Shumari Wildlife Reserve- Jordan	Excel	Paper- daily record and observation forms	Easy to use- collaboration with Phoenix Zoo.  Has studbook for monitoring percentage within the site. Conducting genetic profiling in Shumari reserve.
Wadi Al Safa Wildlife Centre	ZIMS + medical	Access database for records not related to ZIMS - monitoring movements internally	Best way of managing animals + sharing information, many tools within ZIMS
<i>Ex situ</i> EAD	Excel	ZIMS	Large collection, little data for ZIMS -ZIMS online (presents challenges) no Wi-Fi in some places
Dubai Desert Conservation Reserve (DDCR)	Excel	Paper	Not looking at individual animal details, rather herd - number of births/deaths

Institution / Collection	Primary record keeping system	Other record keeping system	Why this primary system?
Al Ajban Wildlife and Desert Safari	Excel	Paper	Easy to use - more targeted towards herd management
Breeding Centre of Endangered Arabian Wildlife- Sharjah	ZIMS + medical	Excel (might stop)	Easy for exchange of information + have other specifications
King Khalid Wildlife Research Centre- Saudi Arabia	ZIMS	Excel as backup	Multiple features
Prince Saoud Al Faisal Wildlife Research Centre- Saudi Arabia	Excel	Paper in the field	Easy to use
Al Warsan Wildlife Centre	Excel	Paper as backup	Easy for staff to handle

In summary, Excel and ZIMS are the two common systems of records keeping that are used by Arabian Oryx institutions in the range states (Fig 2).

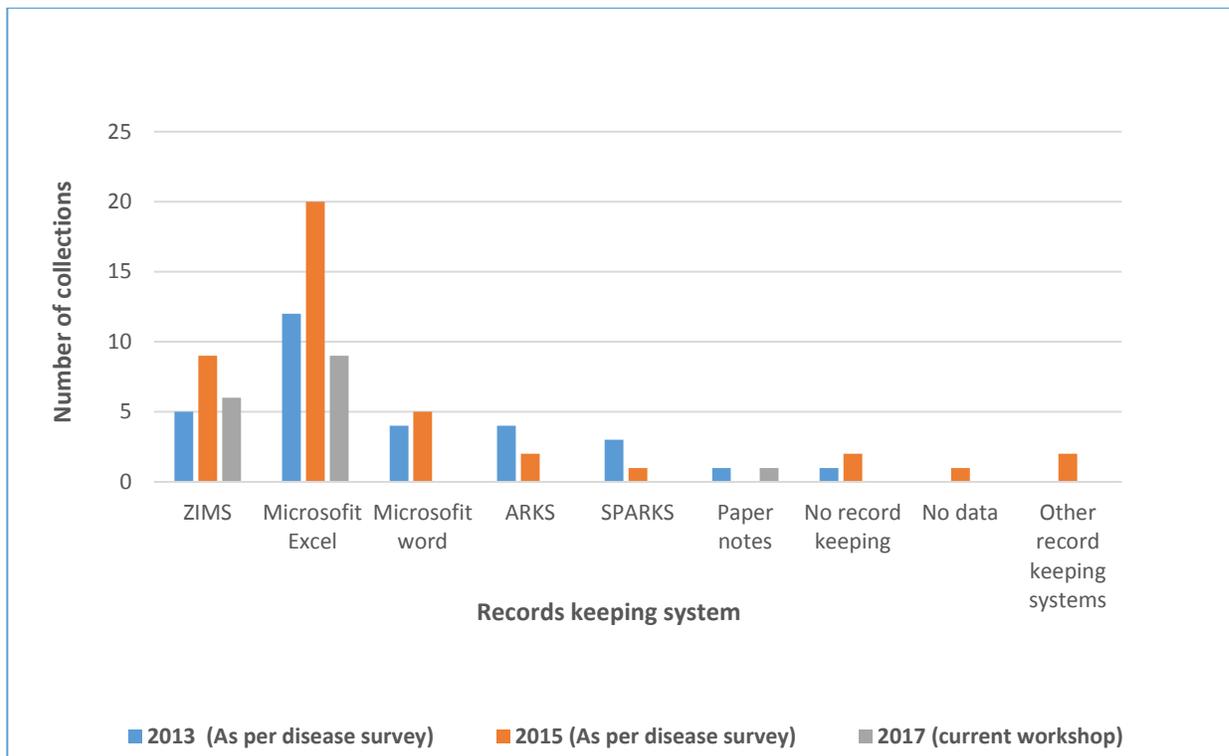


Figure 2. Records keeping systems of Arabian Oryx collections in the range states for the years 2013, 2015 & 2017 (current workshop). Data source: Lignereux & AlKharusi, 2015; GSCAO's data of Arabian Oryx disease survey for the year 2015 and from current workshop.

## **6 Abstracts of oral presentations by participating institutions**

### **Al Bustan Zoological Centre.**

*Delivered by Kate Burns, Assistant manager, Al Bustan Zoological Centre, Sharjah, UAE.*

Al Bustan Zoological Centre (ABZC) is a privately owned collection focused on the conservation breeding of endangered animals, and is based in Sharjah, UAE. ABZC currently house a relatively small population of Arabian oryx. Species360 Zoological Information Management System (ZIMS) and the predecessor programmes have been used for over 15 years as the basis for the zoological data management. ABZC data capture system consists of a range of in-house designed data sheets, such as Treatment forms, Animal transfer forms, Curator books, etc. and are used to assist in capturing daily information, by keepers and curators, on all animal species in the collection. ABZC's designated registrar enters this information following a standard operating procedure to ensure that all captured data entries submit to a standardized format. ABZC have found that the ZIMS software is assisting in information management and therefore management can make more informed decisions.

### **An overview of Arabian Oryx records management at Al Ain Zoo.**

*Delivered by Mohammed Yousef Al Fageer, Curator Ungulates, Al Ain Zoo, UAE*

This presentation provided some information about wildlife records in Al Ain Zoo and why keeping records is essential to wildlife population management. One of the key requirements for a good system of record keeping is to have identifiable individuals in the animal collection. There are several marking techniques for identifying individuals ranging from natural marks (e.g. shape of the horns) to more advanced ones that are technology-based such as transponders and microchips. To determine the appropriate marking systems for wildlife collections, several factors need to be considered including type of the animal, collection size, objective of the marking process as well as resources available to apply the marking system. In 2013, Al Ain Zoo migrated its wildlife records to Zoological Information Management System (ZIMS) which enables curators to manage individuals efficiently.

## **Animal records keeping at the Shumari Wildlife Reserve of Jordan.**

*Delivered by Ashraf Al Halah, Manager, Shumari Wildlife Reserve, Jordan.*

The Shaumari wildlife reserve was established in 1975 by the Royal Society of Nature (RSCN) in collaboration with the World Wildlife Fund (WWF). The main purpose of the 22-square kilometer reserve is to reintroduce Arabian Oryx in Jordan. The reserve is classified under the Saharo-Arabian biogeographical region, which is characterized by low rainfall in winter, hot and dry in summer. As far as record keeping is concerned, Excel has been used for this purpose and ear notching is the main marking technique to identify individual Oryx in the reserve. Key monitoring parameters of the Arabian Oryx population in the reserve include birth, death, acquisition, disposition, transfer events, breeding, medical records, diet and enrichment.

## **Wildlife Records Keeping at *Ex-situ* Terrestrial conservation programmes, Environment Agency- Abu Dhabi (EAD). *Delivered by Justin Chuyen, Unit Head, Ex-situ Terrestrial conservation programmes, EAD, UAE.***

The Environment Agency Abu Dhabi (EAD) is dedicated to the conservation of the Arabian Oryx and a variety of other endangered species under its care. Animal record keeping is an important part of any comprehensive husbandry protocol. Therefore, EAD has recently begun transitioning from a more traditional record keeping system to the Zoological Information Management System (ZIMS) by Species360. This system allows the institution to adhere to the highest animal welfare standards and maintain vital medical and breeding records thereby increasing efficiency and facilitating genetic management.

## **7 Discussions**

Participants discussed the gaps and challenges in the current systems of record keeping in the Arabian Peninsula and how these challenges can be resolved. Participants also discussed the requirements for improving record keeping. Maintaining good data records implies that institutions need to develop a mechanism by which data quality can be ensured. The following table summarizes the gaps and challenges as addressed by workshop participants and proposed solutions to overcome them.

Table 5. Challenges and gaps of records keeping systems in Arabian Oryx collections in the range states and recommended solutions to overcome them as per workshop participants.

Gaps and challenges	Specific issues	Recommended solutions
<p>Poor data records</p>	<p>No records of data</p>	<p>Start to establish records of data for your collections. To have poor records of data is much better than have no records at all.</p>
	<p>Poor data for some institutions</p>	<p>Store institutional data in a single database; define early on the minimum data and data units to capture (e.g. birth, death, parentage, ID, gender, weight, founders, disease, herd size, location, release type (hard or soft) ...etc)</p>
	<p>Poor quality of records in many institutions</p>	<p>Only enter true data. As an animal record keeper, you need to ensure the quality of the data being entered into the system. One way to do this is through verifying the computerized data with the original field records as well as with rangers or animal keepers who collected the data.</p>
	<p>Data loss overtime (e.g. in cases of change of staff and location of institutions)</p>	<p>Joining ZIMS is a good option to ensure that your data are permanently preserved; always have a backup system for data keeping</p>
	<p>Parentage / Pedigree is missing in most Oryx collections in the region</p>	<p>Collections are to invest more on genetic management of their animals</p>
	<p>Founder information in most cases is missing</p>	<p>Institutions are urged to use genetic analysis (DNA testing) to identify the origins of their animals</p>

	No accurate identification of individuals	Apply individual marking for your animals for identification and monitoring
Issues related to data handling	Difficulty in transferring Excel data to ZIMS  Lack of staff training in ZIMS	Species360 is to design a standardized format for the initial transfer of a database into ZIMS. This format can capture minimum data of zoological institutions  Train registrar staff on all aspects of data collection and handling including ZIMS
Poor institutional coordination	Difficulty in obtaining data about Oryx individuals from other institutions  Uncoordinated transfer of individuals	Continue to keep frequent communication with other institutions to obtain data  Plan your animal transfer in advance to ensure the success of transfer



## Roles of GSCAO vs. Oryx institutions in relation to promoting records keeping

### ***GSCAO:***

- Facilitate communication between Arabian Oryx institutions in the range states
- Develop guidelines on standardization of records keeping and data capture
- Collect data from Oryx institutions and be the hub for Arabian Oryx information in the region

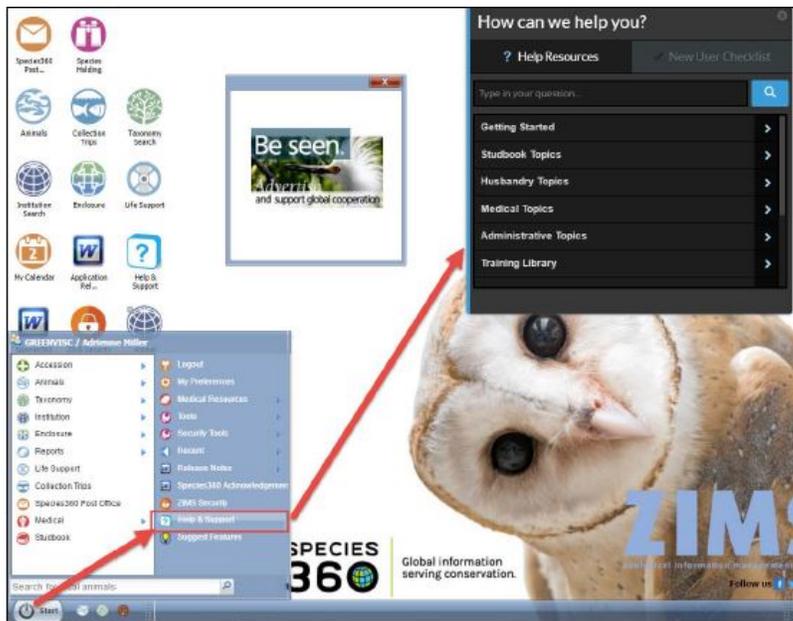
### ***Oryx institutions***

- Create a capture form system originating from the GSCAO's guidelines on animal records keeping
- Data gathering
- Communicating and coordinating with GSCAO
- Local management of animals
- Invest in training their staff on data collecting and management to have a qualified team in record keeping



## 8 Hands-on exercises

During the 2<sup>nd</sup> and last day of the workshop, participants were exposed to the use of ZIMS through interactive hands-on exercises. Participants were taken by the Species360 team through a hands-on journey into ZIMS different tasks and fields. Participants used their own computers to log on into ZIMS and were guided by the Species360 team to explore step-by-step the different ZIMS facilities and functions



Key topics covered in the practical sessions include:

- Introduction to ZIMS
- Individual animal transactions (Accessions, dispositions and transactions of animals)
- Group management. In this exercise, participants were trained on how to establish groups in ZIMS and manage individuals that are maintained as a group record.
- Additional animal information
- Reporting
- Clinical notes and diagnosis & procedures
- Samples, tests and results
- Prescription, tests and results
- Prescription and anesthesia and
- IMLS- pooled medical resources

## 9 Workshop Outcomes & Recommendations

Recommendations were gathered through the open discussions and practical exercises. Table 6 below highlights the key agreed recommendations for the way forward to enable the implementation of standardized record keeping across regional collections.

**Table 6: Participant recommendations and workshop outcomes**

Recommendations	Tentative time frame for completion
Modify template of national reports sent to range states	March 2018
GSCAO is to establish a working group for developing guidelines on best practices for data capture and be the Hub for all Arabian Oryx data in the range states	June 2018
Arabian Oryx institutions that use Excel as a primary system for records keeping are urged to share with GSCAO a sample of their data gathering forms to be sent to Species360 experts who in turn will work to design an Excel template for data recording that can be used by Arabian Oryx conservation institutions in the range states. Once any of these institutions joins ZIMS in the future, the Excel-based forms can be smoothly migrated to ZIMS.	April 2018
Integration of record keeping into the regional strategy of Arabian Oryx conservation	April 2019

### Participants also recommended the following actions:

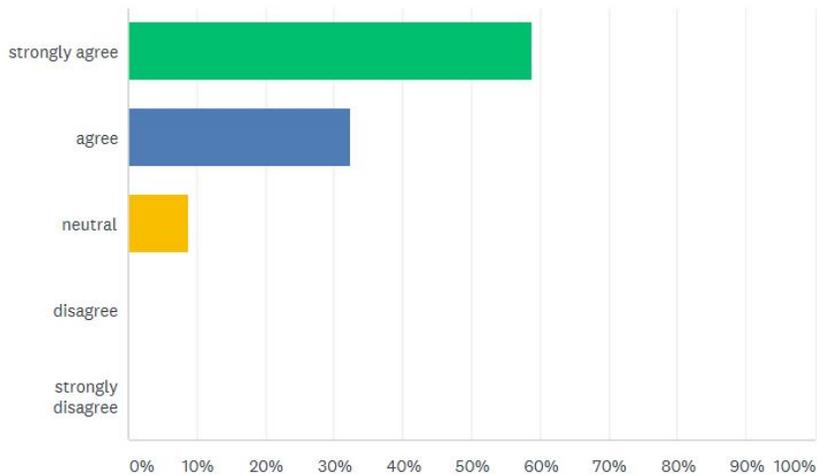
- Institutions are encouraged to participate in the effort of developing a unified format for record keeping based on best practices
- Institutional data are captured in a standardized and systematic way
- Institutions are urged to share information relating to their collections and their record keeping systems consistently and regularly, such as on an annual basis, to develop a common approach in the region
- Individual institutions and GSCAO are to consider organizing further trainings for record keeping staff on ZIMS
- To encourage wildlife institutions in the Arabian Peninsula to join ZIMS, Species360 is willing to work with organizations on a case to case approach for an institutional basis structured membership while still maintaining the location basis approach of the data. Many wildlife institutions in the region have their animal collections distributed into several locations and hence it would be costly for these institutions to join ZIMS and pay membership fees per institution and not per location.

## 10 Workshop feedback

At the end of the workshop, participants were requested to have their feedback on the workshop. Overall, the feedback from participants was very positive and the majority of them agreed that the training workshop was relevant to their conservation work. The following statements are a summary of the participant feedback:

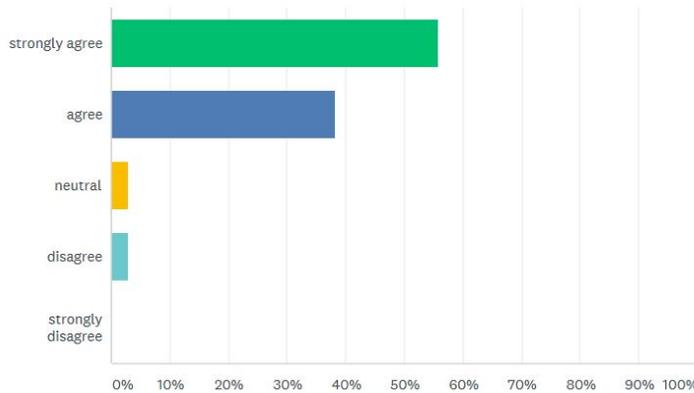
**Workshop objectives were stated and related to my job**

(Responses= 34)



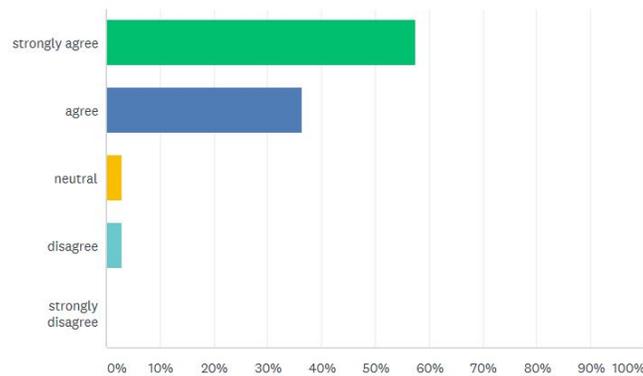
I will be able to transfer the workshop information to my job

(Resposes= 34)



Overall, I would rate the workshop as excellent and beneficial

(Response=33)



What did you learn most from the workshop?

- *ZIMS and data management*
- *ZIMS medical*
- *There is a lot of work to maintain accurate records*
- *Gaining stronger believe in the importance of keeping records*
- *Potentials of ZIMS as a very useful tool to share knowledge and experience*

**Additional comments and suggestions:**

- *Workshop days were not enough to learn ZIMS*
- *Conduct a detailed and comprehensive training programme for Oryx collections which adopt ZIMS*
- *The ZIMS database is too enormous, to understand it better we need more training courses on ZIMS with assistance from the Species360 team.*

## 11 References

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## Appendix I: List of workshop participants

	Name	Institution	E-mail
1	Dr. Jamal Dashti	Kuwait, Science Institute	Bahhar20@yahoo.com
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