

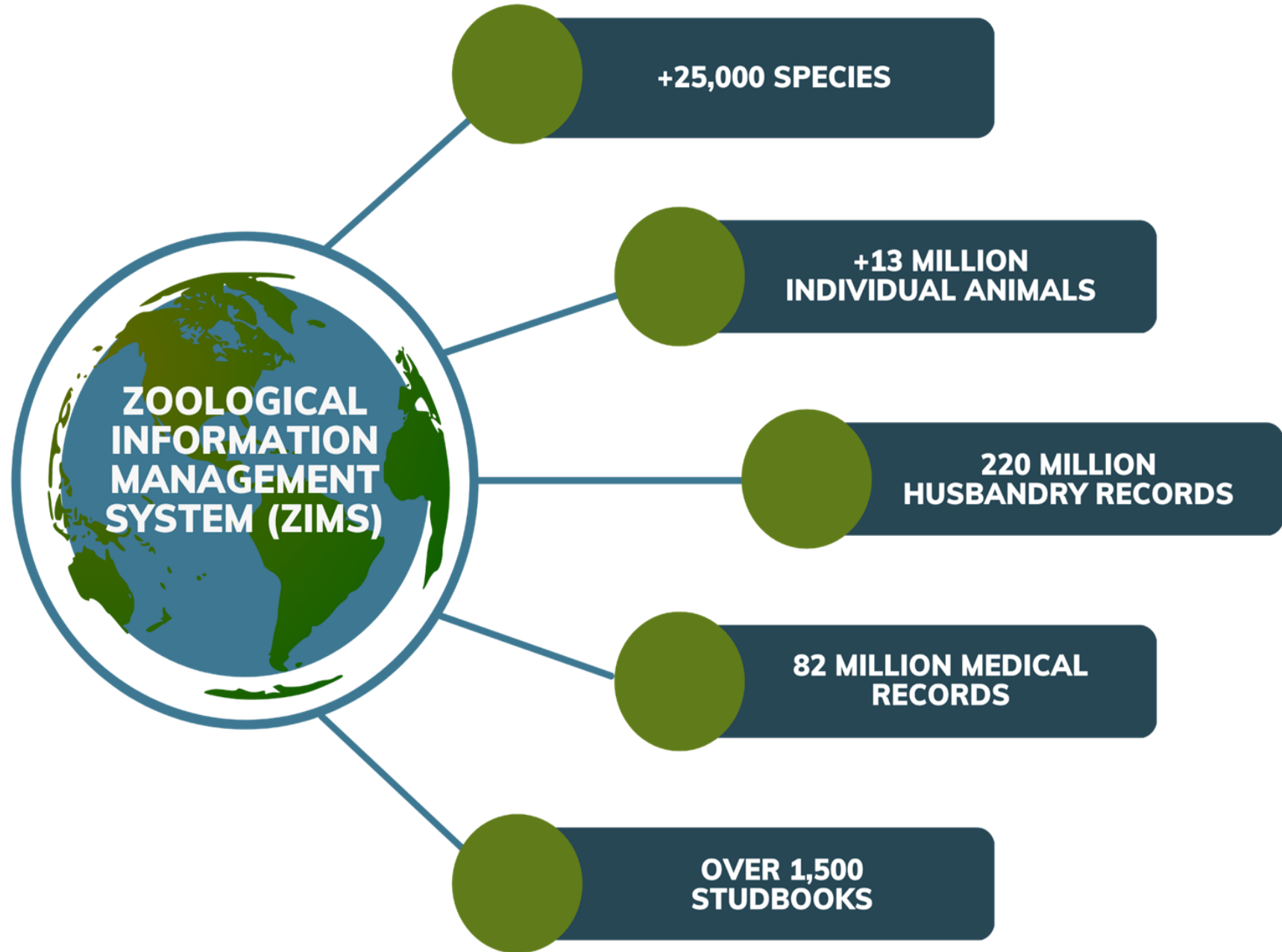


Global information  
serving conservation.

## Applying Demographic Global Data to Inform Ungulate Management

Katelyn Mucha, Product Owner of Population Management, Species360

Foster international collaboration in the collection and sharing of data to improve plant and animal care and species conservation.



Data from  
Species360's  
1,300 members  
worldwide



Aggregated &  
anonymized  
data



SPECIES  
360  
Conservation  
Science  
Alliance



Tools and  
analytics for  
data-informed  
decisions on  
animal  
management



# GLOBAL HUSBANDRY, MEDICAL, AND STUDBOOK RESOURCES

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**Analytics turns ZIMS Data into essential resources not found anywhere else.**

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- Species holdings
- Age Distribution Pyramid
- Weight Comparison Report
- TAG export with IUCN Status
- Population Overview
- Global Studbook Search
- Survival, Reproduction and Growth reports
- Anesthesia Protocols
- Drug usage details
- Common clinical problems
- Relevant death information
- Expected laboratory test results for species



# Survival, Reproduction and Growth (SRG) Reports

## Species360 Conservation Science Alliance

### 1.2 Remaining life expectancy

**Description:** The plots below show the average number of years a female (left) or male (right) of a given age can still live.

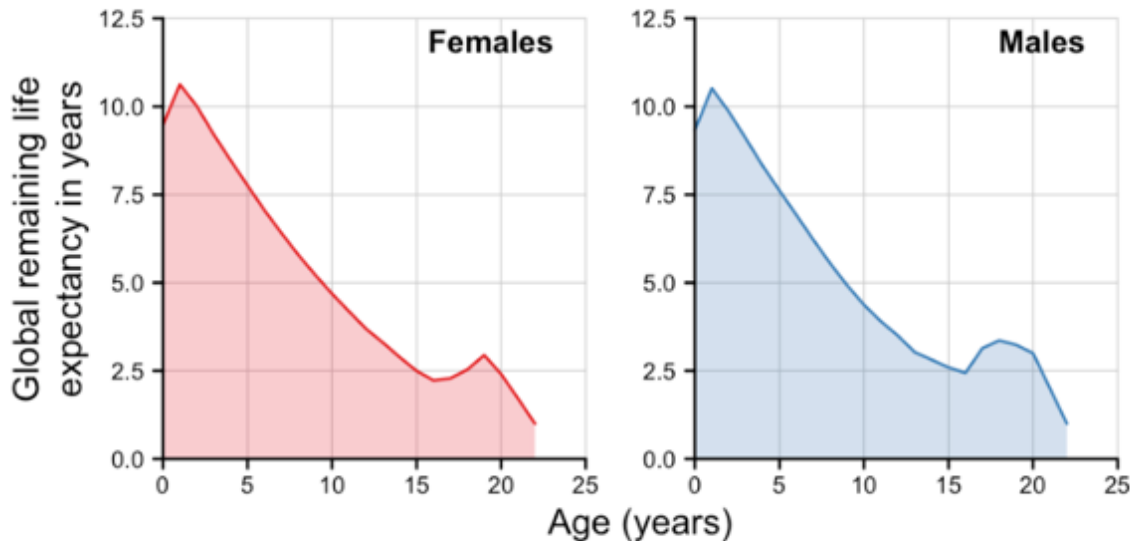


Figure 1.2: Remaining life expectancy (average remaining life at a given age) for all individuals in ZIMS with records available after 1 January 1980.

- State-of-the-art methods for data curation, cleaning & analysis
- Anonymized and aggregated data
- Using Husbandry data
- Only mammals – birds, fish, reptiles, and amphibians in 2023

# Survival, Reproduction and Growth (SRG) Reports

## Species360 Conservation Science Alliance

### 1.2 Remaining life expectancy

**Description:** The plots below show the average number of years a female (left) or male (right) of a given age can still live.

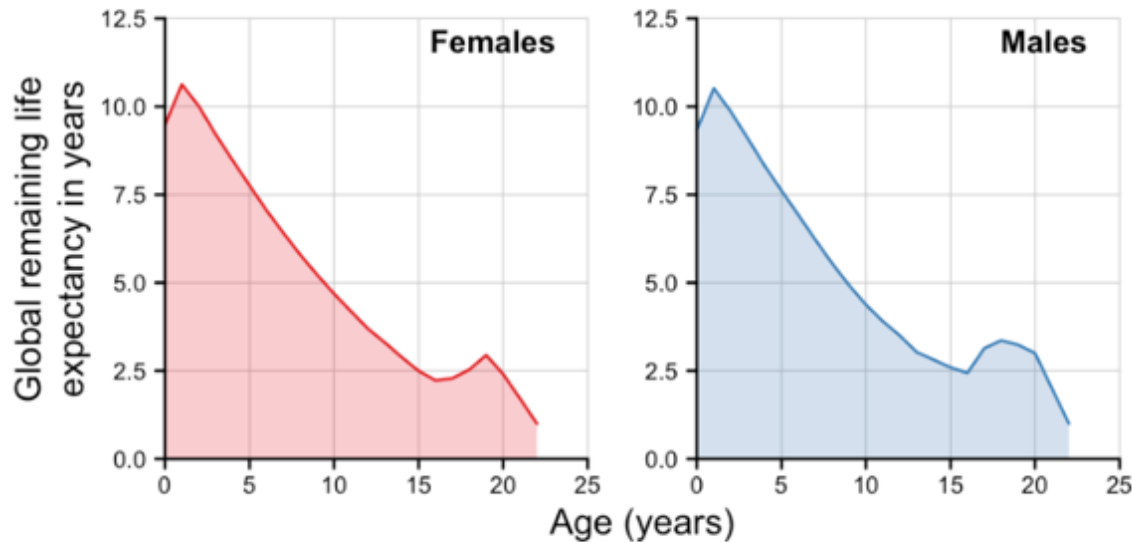


Figure 1.2: Remaining life expectancy (average remaining life at a given age) for all individuals in ZIMS with records available after 1 January 1980.

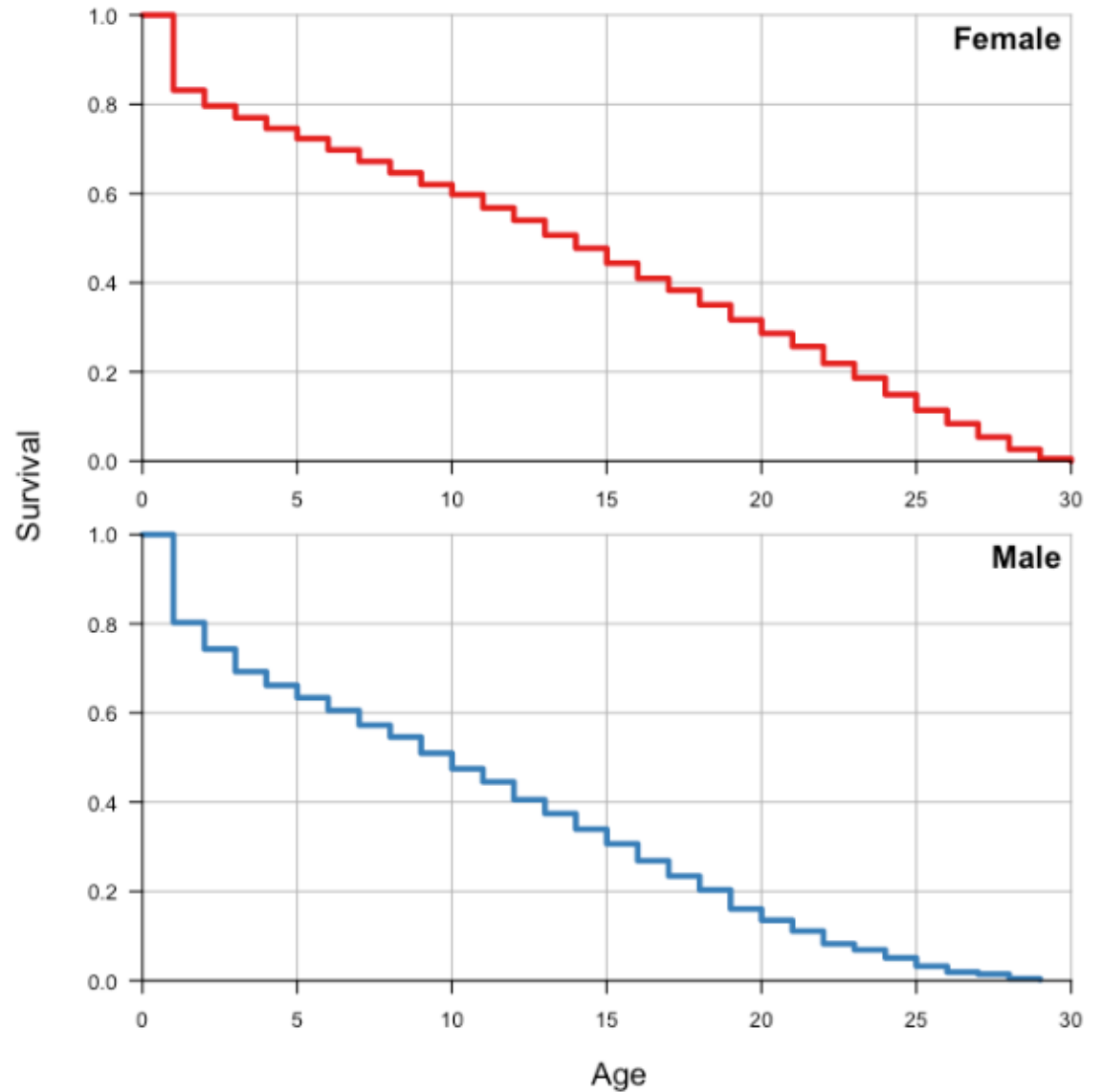
- 1 January 1980 (animals LTF of dead prior to this date not included)
- Global data
- Sample size of 100
- Global report & Institutional report

# Survival

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## Global reports

The probability that a female (top) or male (bottom) reaches a given age in years.



# Individual survival

## Institution report

the probability that a female (top) or male (bottom) in your collection reaches a given age in years

1 SURVIVAL
1.1 Individual information
1.2 Survival probability
1.3 Remaining life expectancy
2 REPRODUCTION
3 BODY WEIGHTS

## 1 SURVIVAL

### 1.1 Individual information

**Description:** The table below provides general information of the individuals kept at the institution and that were still alive at the date of data extraction. The information includes their GANS, sex, birth date, age at the date of data extraction, as well as the average probability of surviving one or five more years for an individual of that age and sex.

	GAN	Sex	Birth date	Age	Prob. to survive 1 year	Prob. to survive 5 years
	GAN 1	Female	2015-03-17	5.85	0.96	0.82
	GAN 2	Female	2006-11-17	14.18	0.93	0.69
	GAN 3	Male	2018-07-14	2.53	0.95	0.79
	GAN 4	Female	2013-11-14	7.19	0.96	0.81
	GAN 5	Male	2009-02-24	11.91	0.92	0.58

[Click to download CSV table](#)

[home](#)

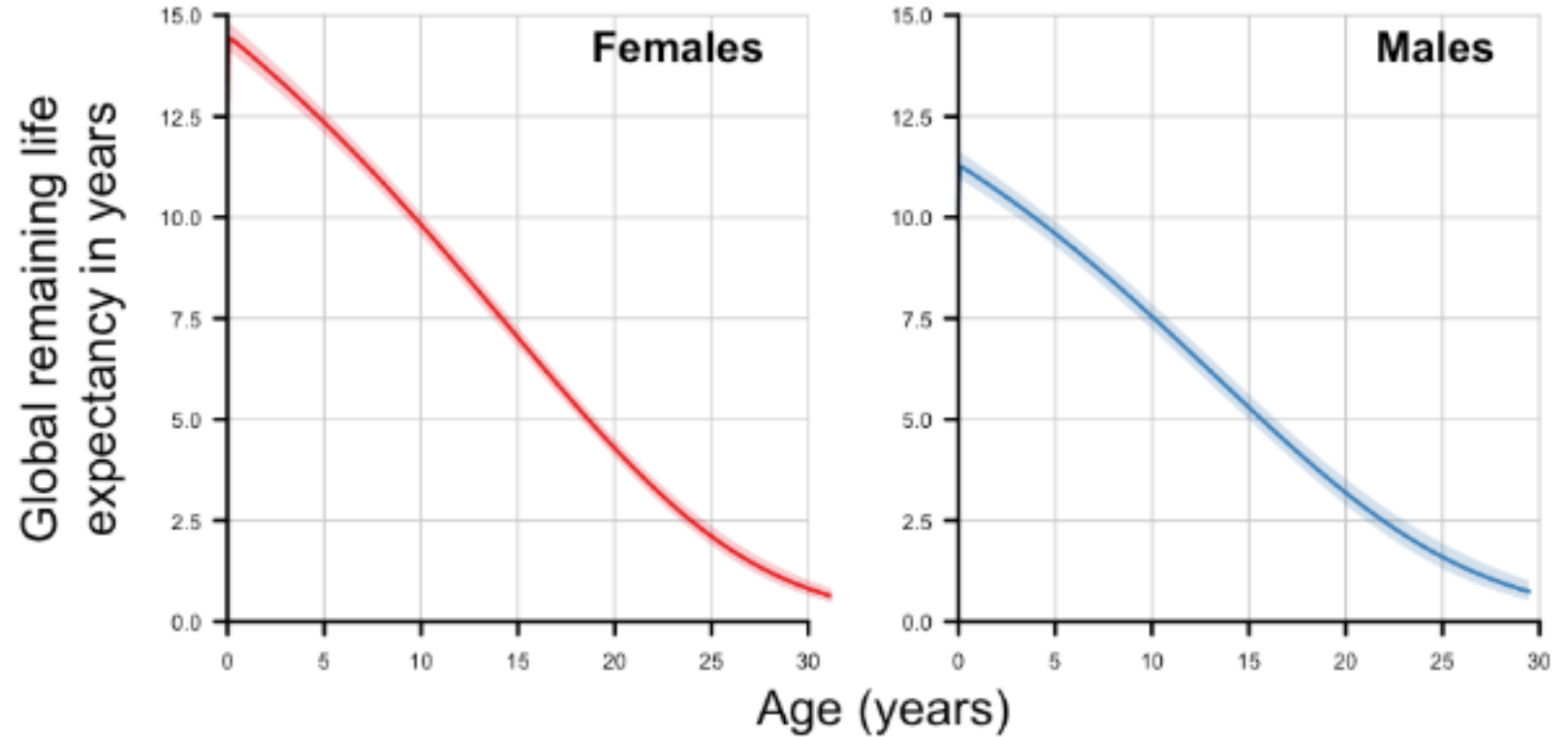


# Remaining life expectancy

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## Global Report

the average number of years a female (left) or male (right) of a given age can still live.

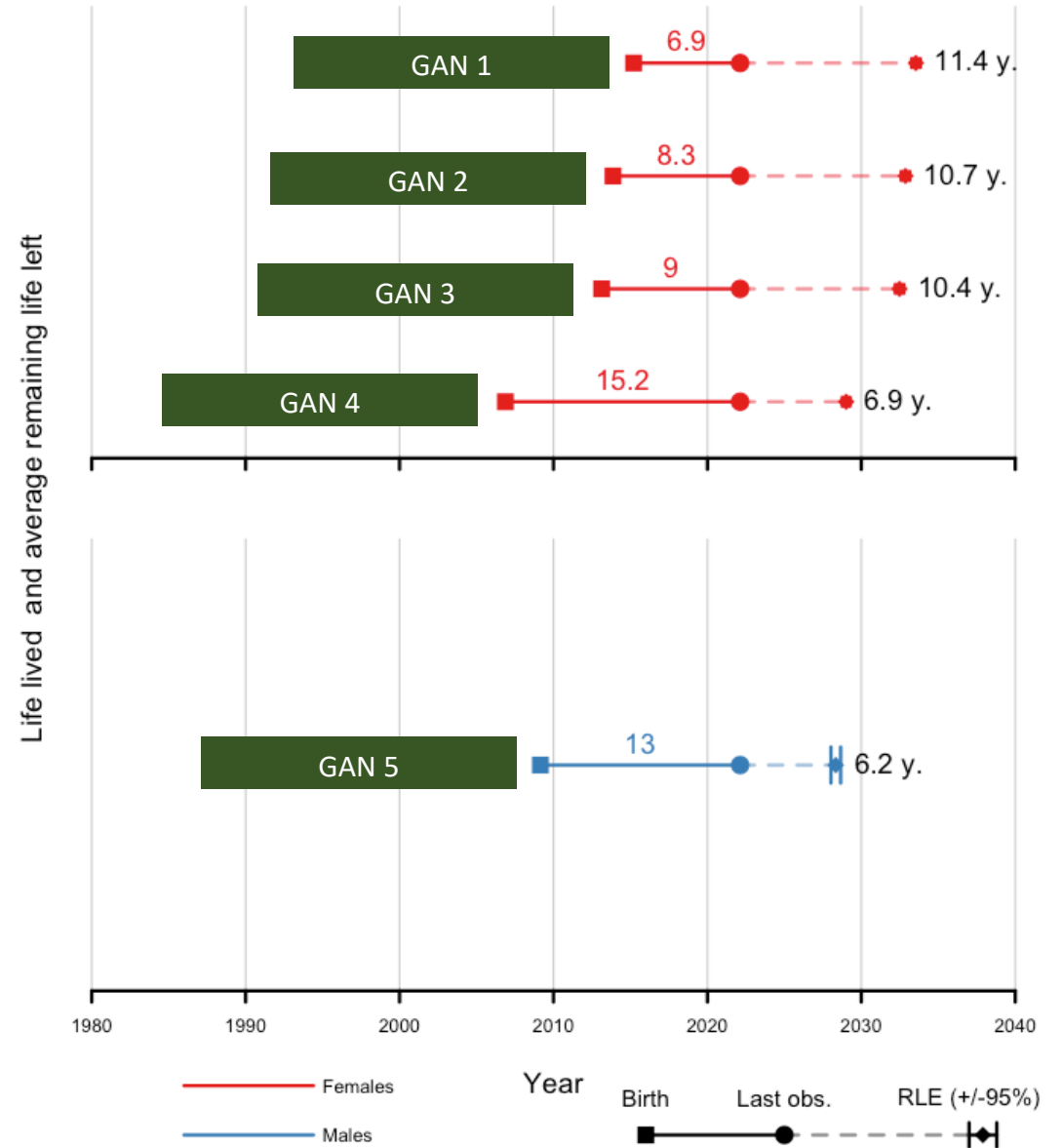
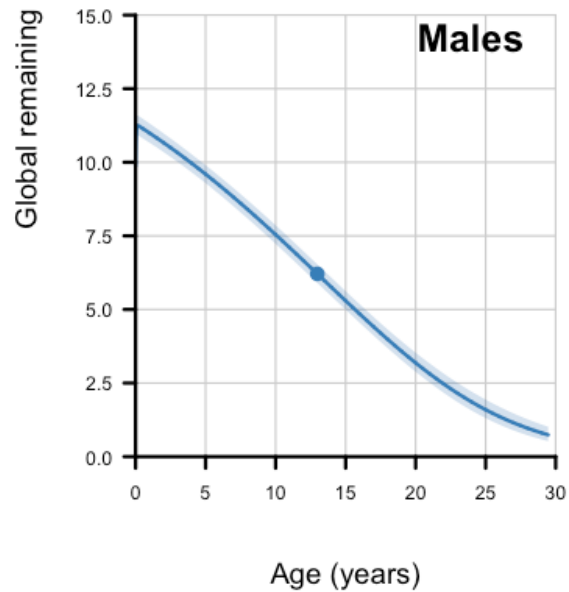
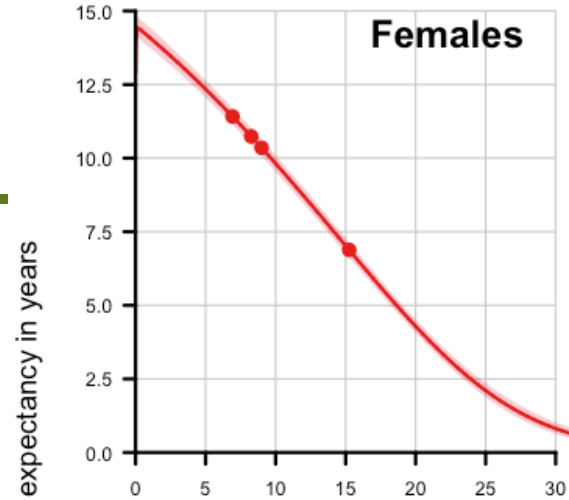


# Remaining life expectancy

## Institutional report

On the left, the average number of years a female (left) or male (right) of a given age can still live.

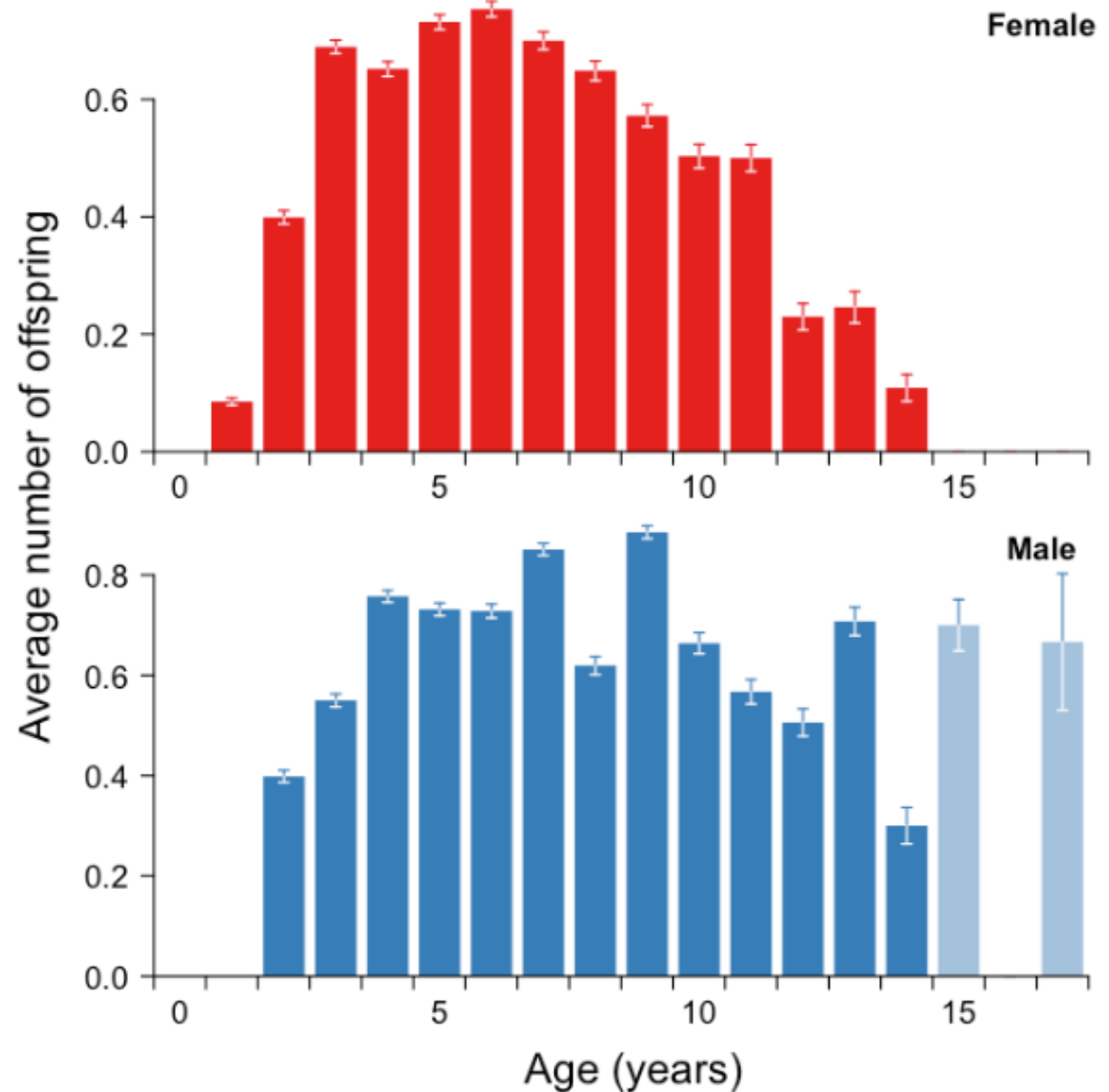
The right panels show the time from birth (squares) to the date of data extraction an individual has lived (i.e. age at date of data extraction), and the average number of years they can still live based on the global analysis



# Average number of offspring per age and sex

## Global reports

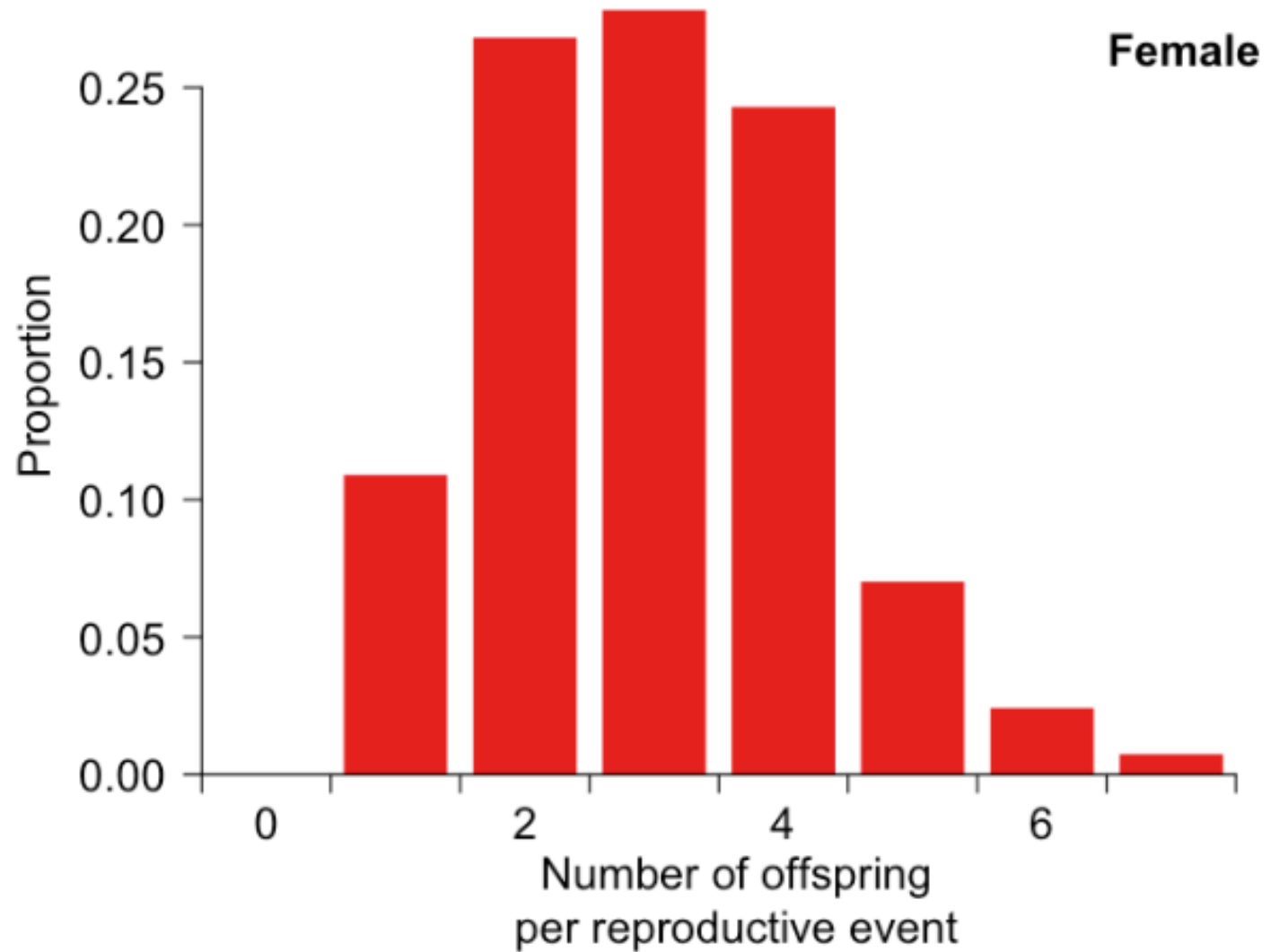
the average number of offspring produced by females (top) and males (bottom) per age (in year units)



# Distribution of litter sizes

## Global reports

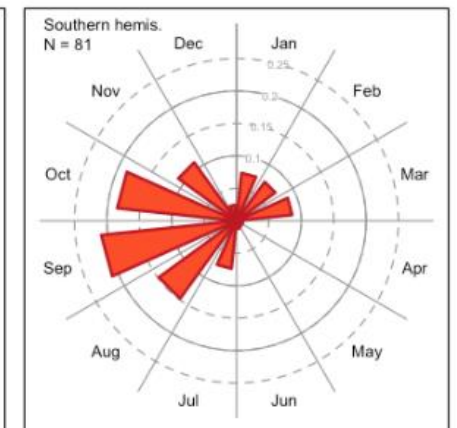
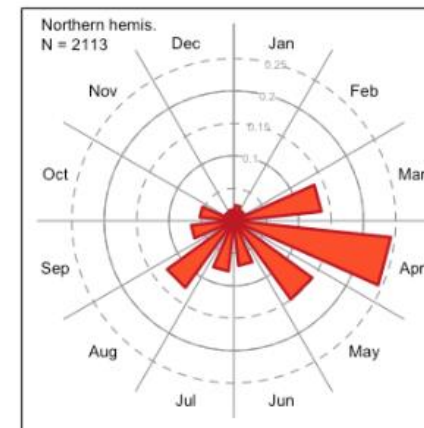
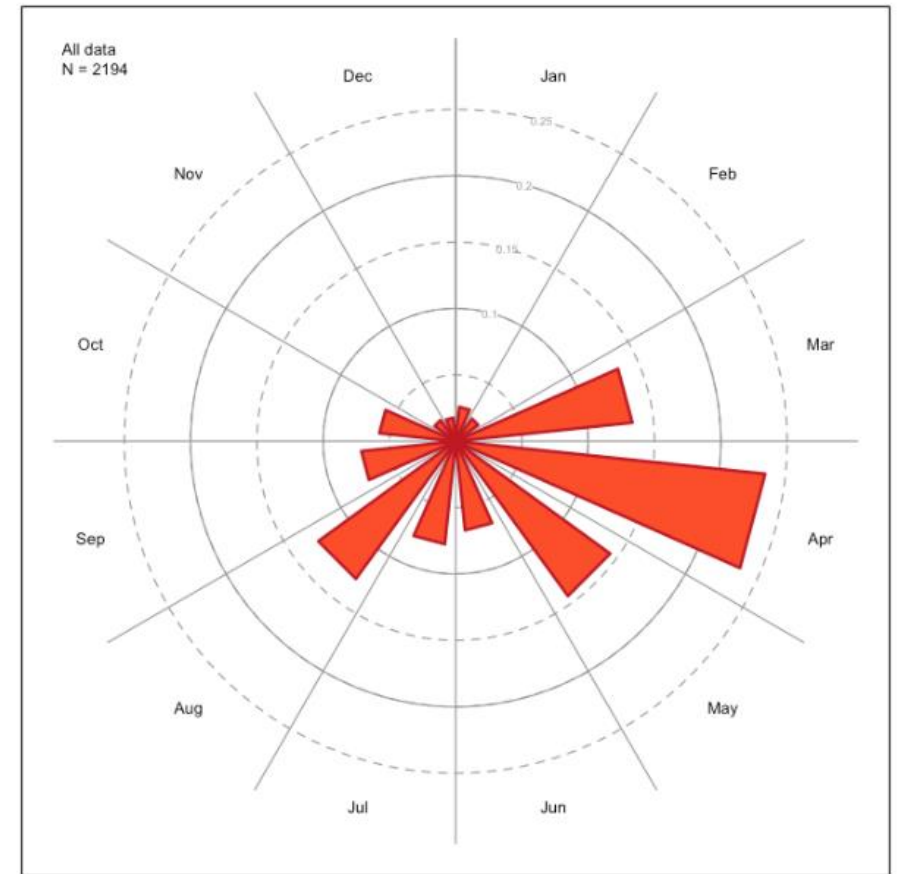
the proportion of times a specific number of offspring was born per reproductive event for females



# Distribution of litter sizes

## Global reports

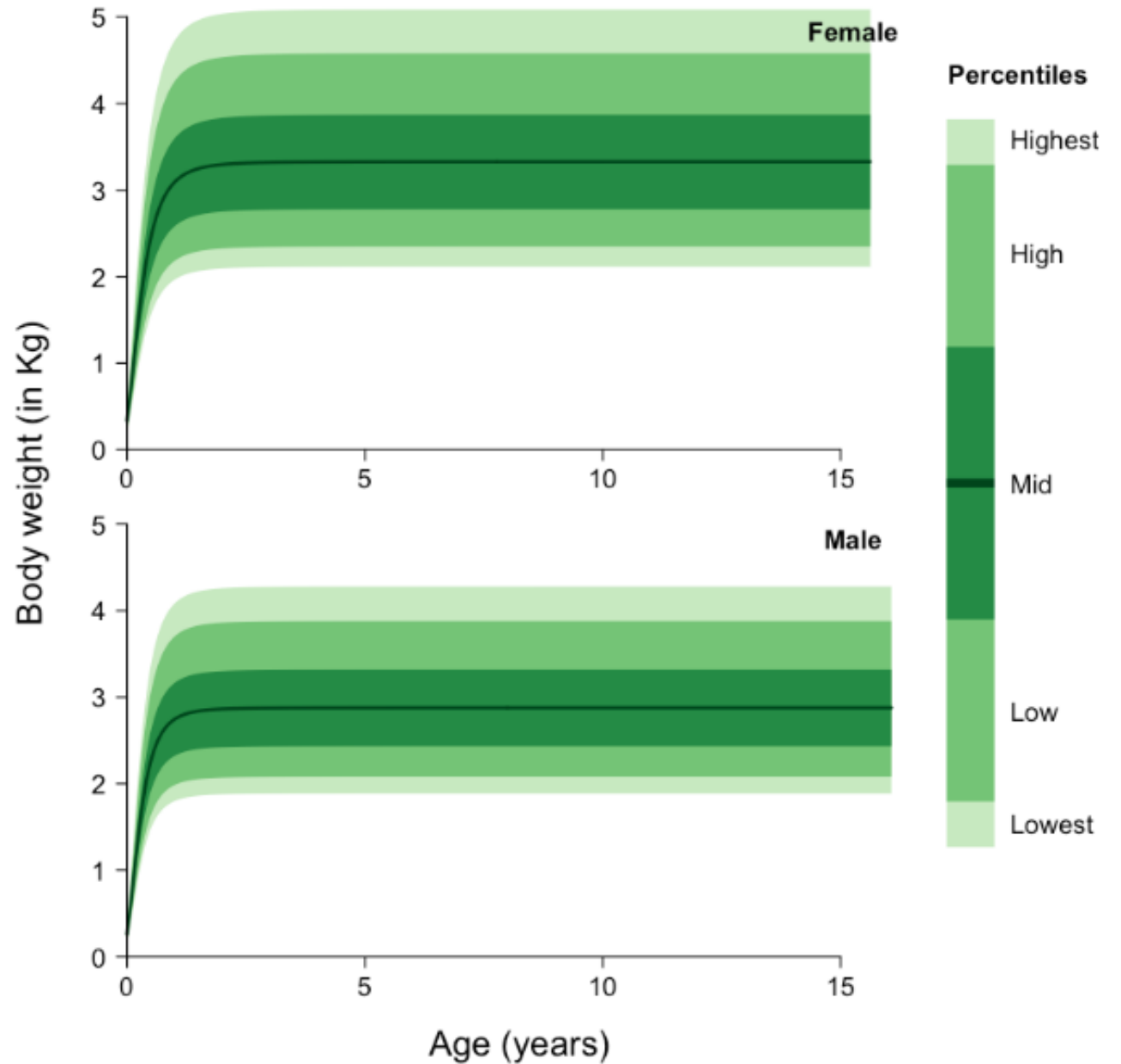
the proportion of births occurring in each month, depicted by the height of the red triangular shapes



# Body weights

## Global report

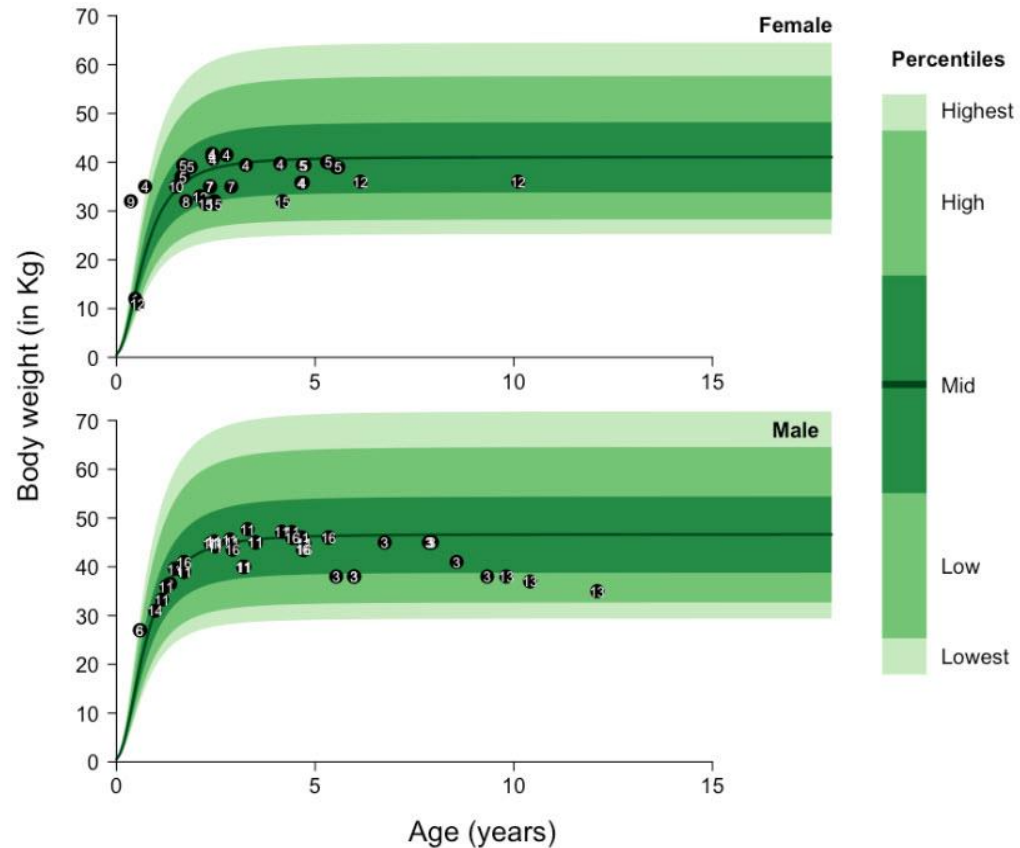
lower and upper percentile intervals of weights per age in years for females (top) or males (bottom)



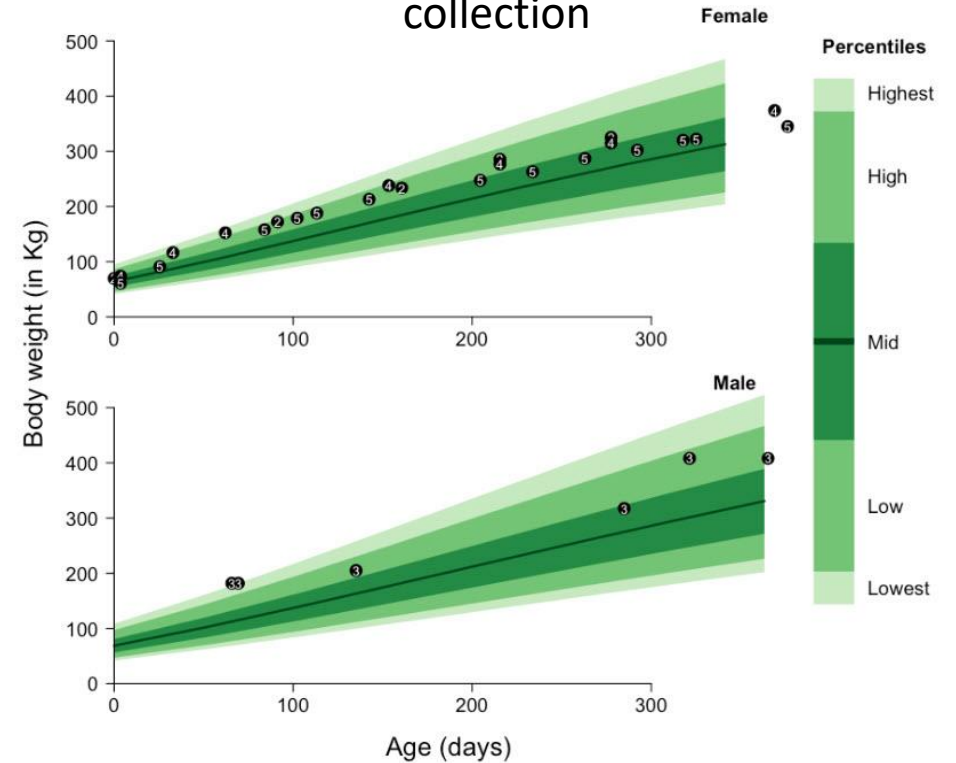
# Body weight

## Institutional report

lower and upper percentile intervals of weights per age in years for females (top) or males (bottom), with indicators for individual animals in your collection



lower and upper percentile intervals of weights for the 1<sup>st</sup> year of life for females (top) or males (bottom), with indicators for individual animals in your collection



# 213 Ungulate Species SRG

Naemorhedus caudatus	Ovis vignei	Catagonus wagneri	Capricornis crispus	Gazella leptoceros	Tragelaphus spekii	Alcelaphus buselaphus	Mazama rufina	Cervus elaphus
Phacochoerus africanus	Philantomba monticola	Naemorhedus griseus	Sus verrucosus	Moschus moschiferus	Tragelaphus strepsiceros	Alces americanus	Muntiacus crinifrons	Bubalus bubalis
Ammotragus lervia	Phacochoerus aethiopicus	Muntiacus reevesi	Madoqua kirkii	Tapirus terrestris	Syncerus caffer	Ammodorcas clarkei	Muntiacus gongshanensis	Bubalus quarlesi
Kobus ellipsiprymnus	Equus kiang	Capricornis sumatraensis	Oreotragus oreotragus	Pudu puda	Sus bucculentus	Ourebia ourebi	Kobus kob	Beatragus hunteri
Axis porcinus	Capreolus pygargus	Gazella bennettii	Tragelaphus imberbis	Ceratotherium simum	Sus celebensis	Oryx beisa	Kobus vardonii	Moschus chrysogaster
Cervus nippon	Equus africanus	Sylvicapra grimmia	Tapirus indicus	Capra pyrenaica	Addax nasomaculatus	Oryx dammah	Hippocamelus antisensis	Hylochoerus meinertzhageni
Bos javanicus	Rusa alfredi	Gazella cuvieri	Budorcas taxicolor	Gazella spekei	Aepyceros melampus	Oreamnos americanus	Hipposideros armiger	Hyemoschus aquaticus
Mazama temama	Vicugna pacos	Equus asinus	Ovis gmelini	Bos mutus	Rucervus eldii	Odocoileus virginianus	Hipposideros pomona	Hydropotes inermis
Capra falconeri	Rupicapra rupicapra	Bos frontalis	Redunca fulvorufula	Cervus albirostris	Rupicapra pyrenaica	Nanger dama	Gazella arabica	Eudorcas albonotata
Tragelaphus eurycerus	Bubalus depressicornis	Gazella dorcas	Tapirus pinchaque	Tayassu pecari	Rusa marianna	Naemorhedus baileyi	Gazella gazella	Blastocerus dichotomus
Oryx gazella	Arabitragus jayakari	Diceros bicornis	Ovibos moschatus	Bubalus arnee	Rusa timorensis	Bison bison	Gazella marica	Boselaphus tragocamelus
Alces alces	Ovis ammon	Tragelaphus derbianus	Sus cebifrons	Raphicerus campestris	Rusa unicolor	Bos grunniens	Gazella saudiya	Elaphurus davidianus
Kobus megaceros	Bos primigenius	Muntiacus feae	Hemitragus hylacrius	Dicerorhinus sumatrensis	Redunca redunca	Camelus bactrianus	Gazella subgutturosa	Damaliscus lunatus
Damaliscus korrigum	Tapirus bairdii	Tetracerus quadricornis	Babyrousa celebensis	Neotragus moschatus	Raphicerus melanotis	Camelus dromedarius	Equus burchellii	
Equus mule	Rucervus duvaucelii	Bos gaurus	Muntiacus vaginalis	Capricornis swinhoei	Raphicerus sharpei	Camelus ferus	Equus draft mule	
Damaliscus pygargus	Axis kuhlii	Jaculus orientalis	Okapia johnstoni	Eudorcas thomsonii	Pudu mephistophiles	Capra ibex	Equus hemionus,	
Hemitragus jemlahicus	Cephalophus dorsalis	Tragulius napu	Rhinoceros unicornis	Elaphodus cephalophus	Procapra gutturosa	Capra nubiana	Equus hinny	
Nanger soemmerringii	Sus barbatus	Equus grevyi	Ozotoceros bezoarticus	Equus hemionus	Porcula salvania	Capra sibirica	Cephalopachus bancanus	
Hippotragus niger	Dorcatragus megalotis	Madoqua guentheri	Cephalophus natalensis	Tragulius nigricans	Potamochoerus larvatus	Capra walie	Cephalophus jentinki	
Pecari tajacu	Pseudois nayaur	Equus zebra	Cephalophus rufilatus	Madoqua saltiana	Potamochoerus porcus	Capra caucasica	Cephalophus nigrifrons	
Antidorcas marsupialis	Cephalophus niger	Choeropsis liberiensis	Eudorcas rufifrons	Mazama americana	Philantomba maxwellii	Capricornis milneedwardsii	Cephalophus silvicultor	
Bison bonasus	Connochaetes gnou	Naemorhedus goral	Redunca arundinum	Tragulius versicolor	Ovis canadensis	Capricornis thar	Cephalophus zebra	
Capra aegagrus	Mazama gouazoubira	Hippopotamus amphibius	Hippotragus equinus	Tragulius kanchil	Ovis nivicola	Capreolus capreolus	Dama dama	
Ovis dalli	Babyrousa babyrussa	Muntiacus muntjak	Neotragus pygmaeus	Tragulius javanicus	Ovis orientalis	Mazama nana	Dama mesopotamica	
Antilocapra americana	Axis calamianensis	Moschiola meminna	Saiga tatarica	Tragelaphus angasii	Pelea capreolus	Mazama pandora	Cervus canadensis	





**SPECIES 360** Global resources

[← Back to search](#) Previous Chinese goral [←](#) 2 of 8 [→](#) Next Markhor

## Nubian ibex

*Capra nubiana*

▼ Taxonomy

**75**  
Living ex situ

**23**  
Institutions

**4**  
Regions

[Species holding](#)

IUCN  
Vulnerable

CITES  
II

EU reg  
B

Range  
Egypt, Israel, Jordan, Oman, Saudi Arabia, Sudan, Yemen

Habitat  
Shrubland, desert

Studbooks  
[AZA](#) [SEAZA](#) [WAZA](#)

SurvivalReproductionGrowth

Age-specific fertilityDistribution of litter sizesBirth seasonality

### Age-specific fertility plot ⓘ

Average number of offspring produced per age by individuals of the given sex.

Sex  
 Male  
 Female

Age range  
0 to 100

[Download report](#)

Age	Average number of offspring
2	0.075
3	0.105
4	0.090
5	0.100
6	0.090
7	0.085
8	0.090
9	0.085
10	0.080
11	0.080
12	0.105
13	0.105
14	0.070
15	0.070
16	0.070
17	0.050
18	0.040
19	0.025
20	0.030
21	0.025
22	0.040
23	0.010
24	0.015
25	0.020
28	0.045



# THANK YOU!

Our work is possible because of our members and the data they've contributed over **49 years**.

[Katelyn.mucha@species360.org](mailto:Katelyn.mucha@species360.org)

For more information, visit  
<https://species360.org/2021/10/12773/>