

# Status of Vultures in the Middle East with detailed studies of Lappet-faced and Griffon Vultures in Saudi Arabia



Mohammed Shobrak

Biology Department, Taif University,  
Saudi Wildlife Authority, Saudi Arabia



# Vulture Multi-species Action Plan

# Content of the Presentation



- Vultures in the Middle East and Arabian Peninsula
  - Status & Trend &
- Griffon Vultures
- Lappet-faced Vultures Studies in KSA
- Threats
- Conclusion and Recommendations



Vulture Multi-species Action Plan

# Vultures Recoded in the Middle East and the Arabian Peninsula

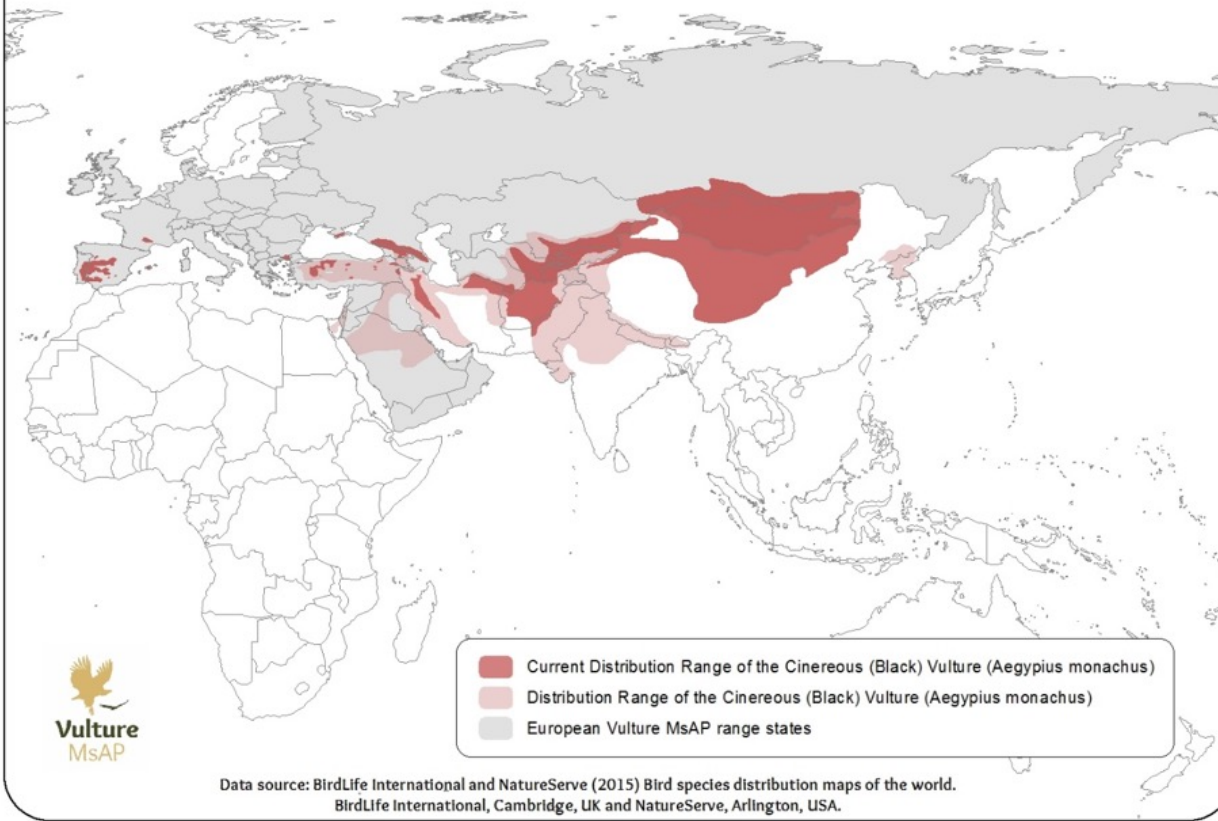
- Bearded Vulture *Gypaetus barbatus* (Rare Breeding)
- Egyptian Vulture *Neophron percnopterus* (Breeding)
- Griffon Vulture *Gyps fulvus* (Breeding)
- Lappet-faced Vulture *Torgos tracheliotus* (Breeding)
- Cinereous Vulture *Aegypius monachus* (the majority are Migratory)
- Rüppell's Vulture *Gyps rueppellii* (Meinertzhagen 1945)



The majority of the Middle Eastern populations are migratory (winter visitor and **passing** migrants), with small breeding populations in Iran and Turkey.



Global Distribution Range of the Cinereous (Black) Vulture (*Aegypius monachus*)



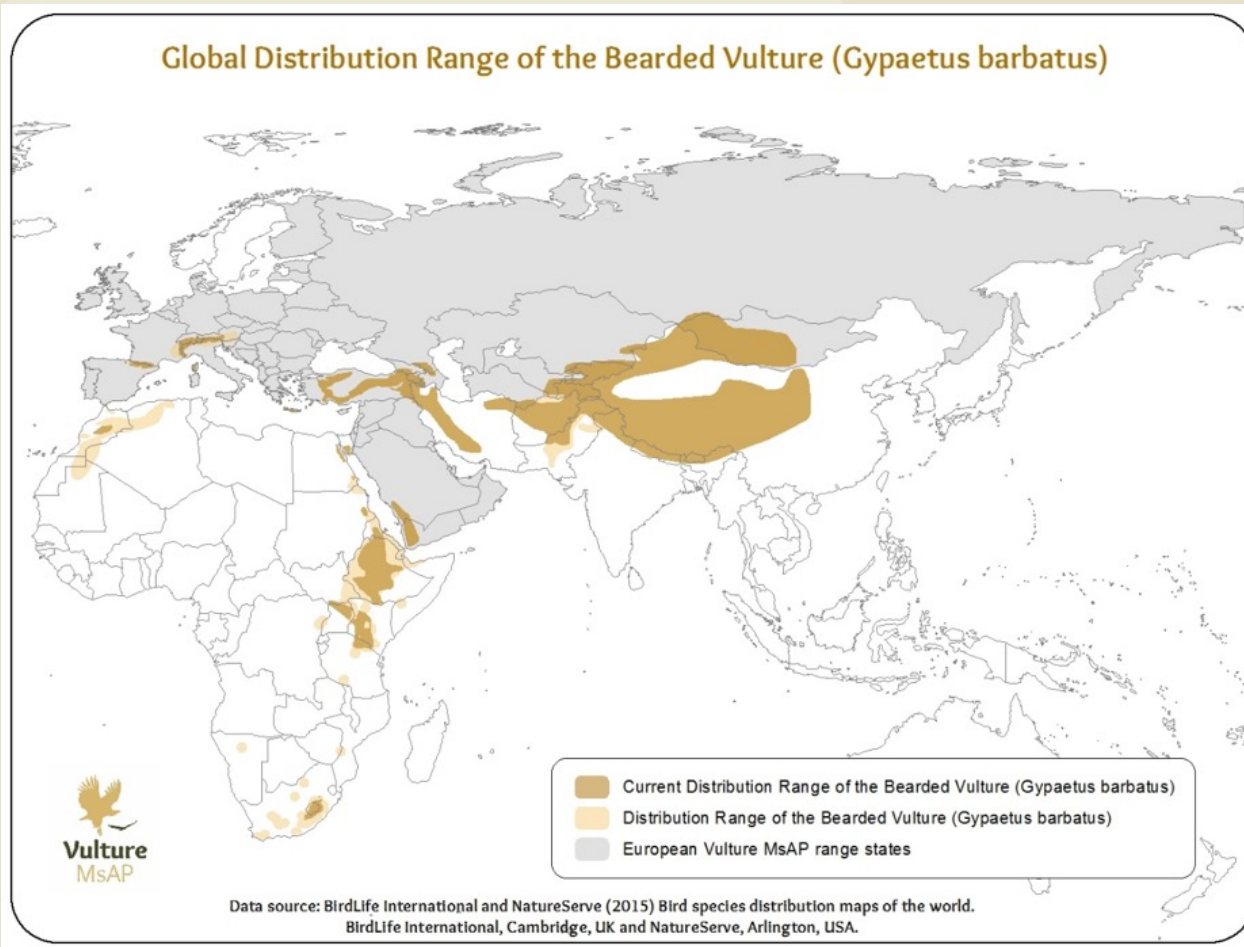




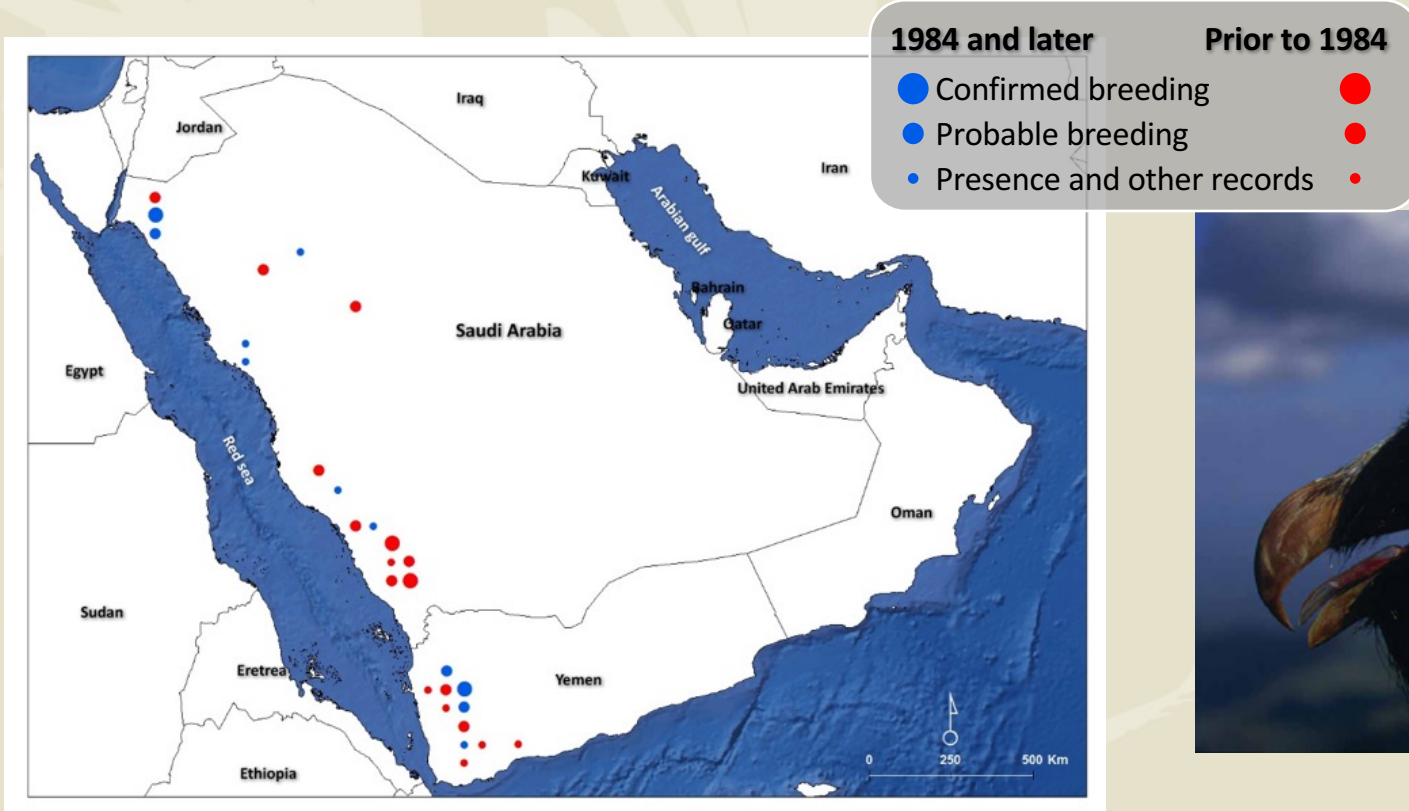
**Cinereous Vulture is a winter visitor to the Arabian Peninsula, concentrated at northern, central and eastern part of the Arabian Peninsula.**

Scientific Name	IUCN Red List Status Global / Regional	Species Status at the International Agreement	Population Status (Trend)
<i>Aegypius monachus</i> (Linnaeus, 1758)	NT/NT	CITES II, CMS II, EU WTR (A), Raptor MoU 1	WV Decreasing

# Middle Eastern populations extend from SW Iran into much of Turkey, with more isolated populations in Yemen and SW Saudi Arabia



The bearded vulture was a rare resident and now probably no longer breeds in Saudi Arabia, and probably in Yemen (50 breeding pairs were estimated)



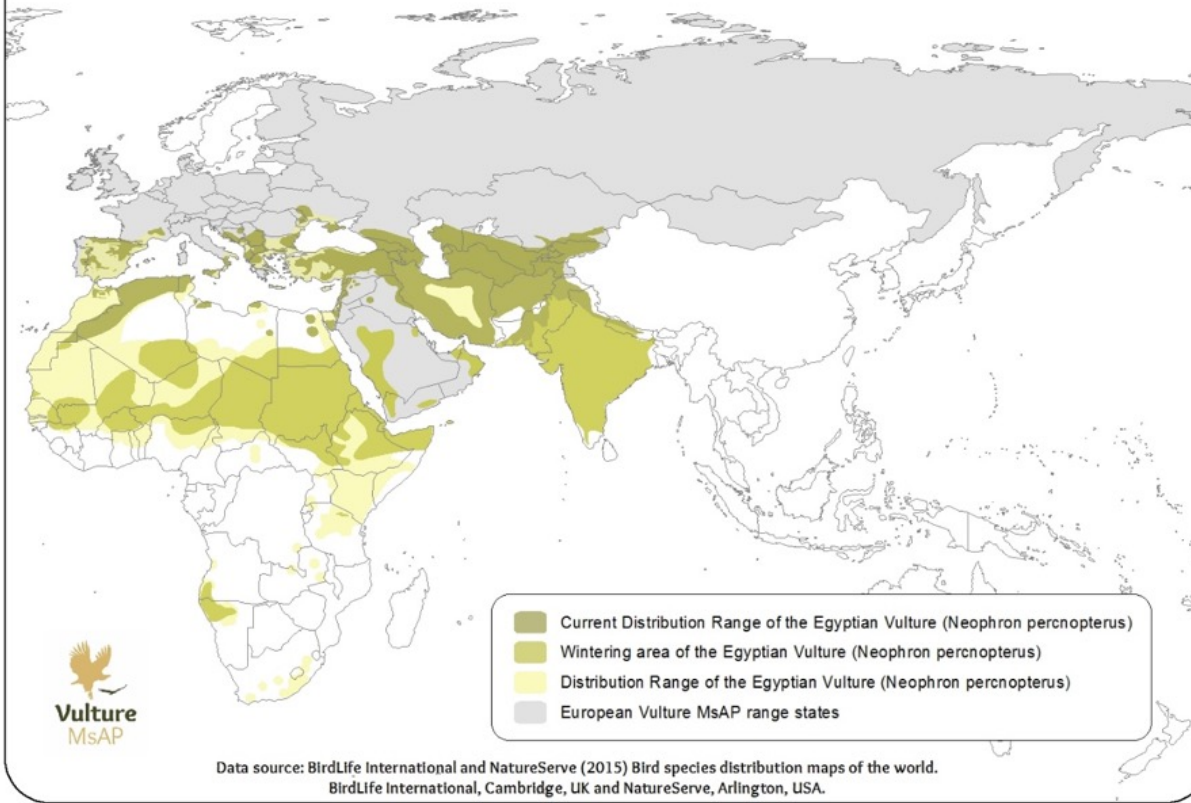
Jennings, M. (2010): Atlas of the breeding birds of Arabia. Fauna of Arabia. Vol. 25

Scientific Name	IUCN Red List Status Global / Regional	Species Status at the International Agreement	Population Status (Trend)
<i>Gypaetus barbatus</i> (Linnaeus 1758)	NT/VU	CITES I & II, EU BD A1, EU WTR (A), CMS-Raptor MoU 1	Rare br Decreasing

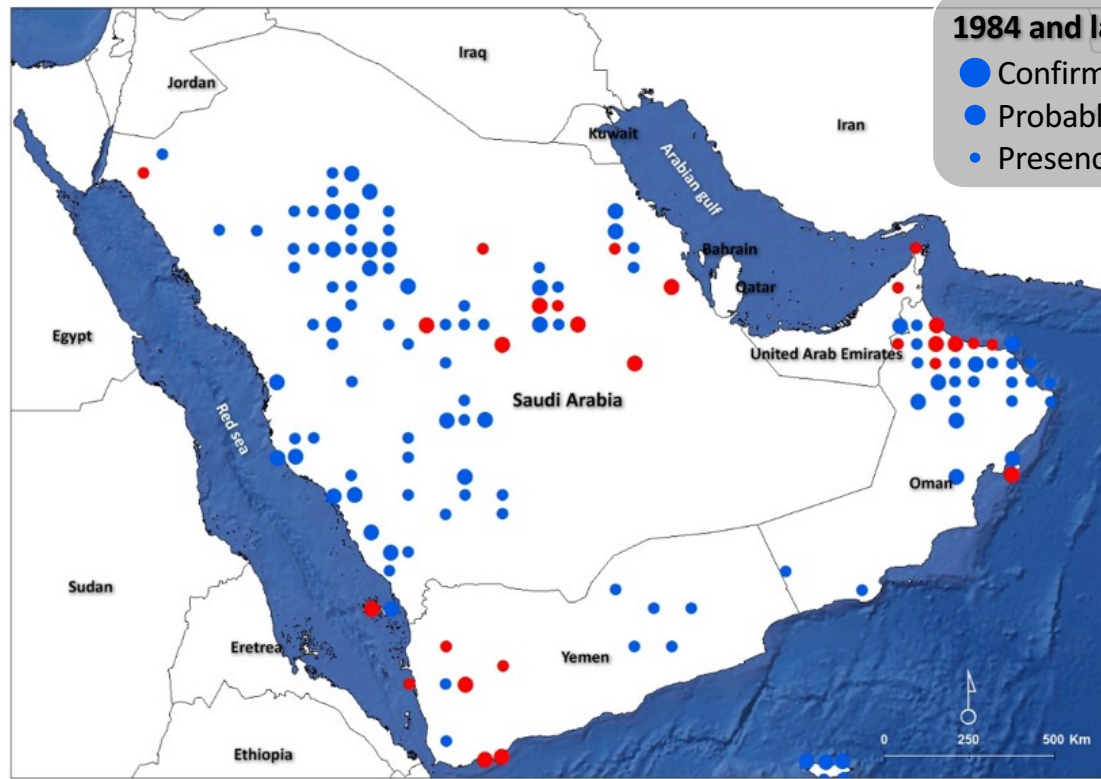


The Middle Eastern population are generally decreasing all over its range

Global Distribution Range of the Egyptian Vulture (*Neophron percnopterus*)



**Egyptian Vulture showed a population declining in recent years (2000 breeding pairs were estimated)**



**1984 and later**      **Prior to 1984**

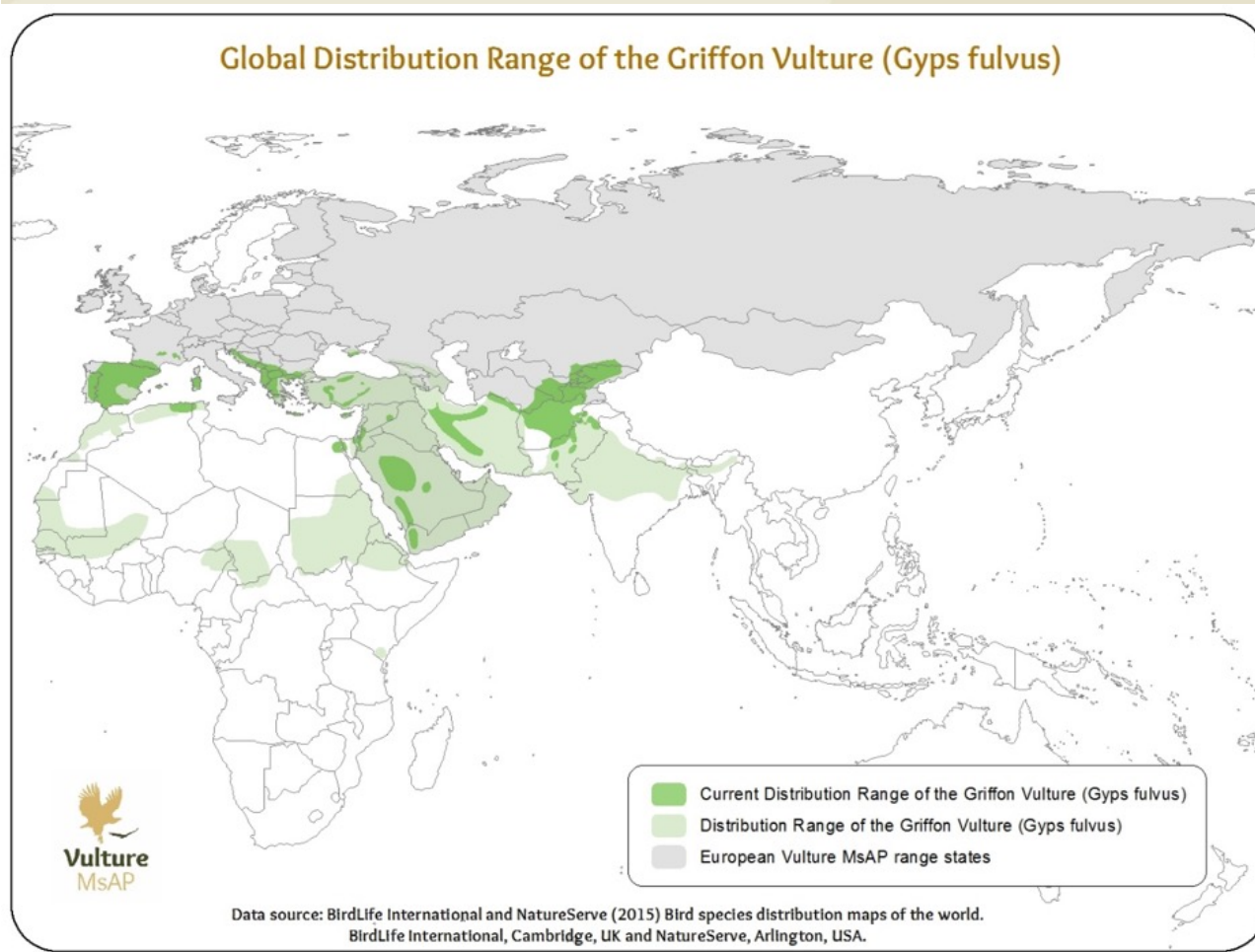
- Confirmed breeding
- Probable breeding
- Presence and other records



Jennings, M. (2010): Atlas of the breeding birds of Arabia. Fauna of Arabia. Vol. 25

Scientific Name	IUCN Red List Status Global / Reginal	Species Status at the International Agreement	Population Status (Trend)
<i>Neophron percnopterus</i> (Linnaeus, 1758)	EN/VU	CITES II, EU WTR (A), Raptor MoU 1	BR/WV/pm Decreasing

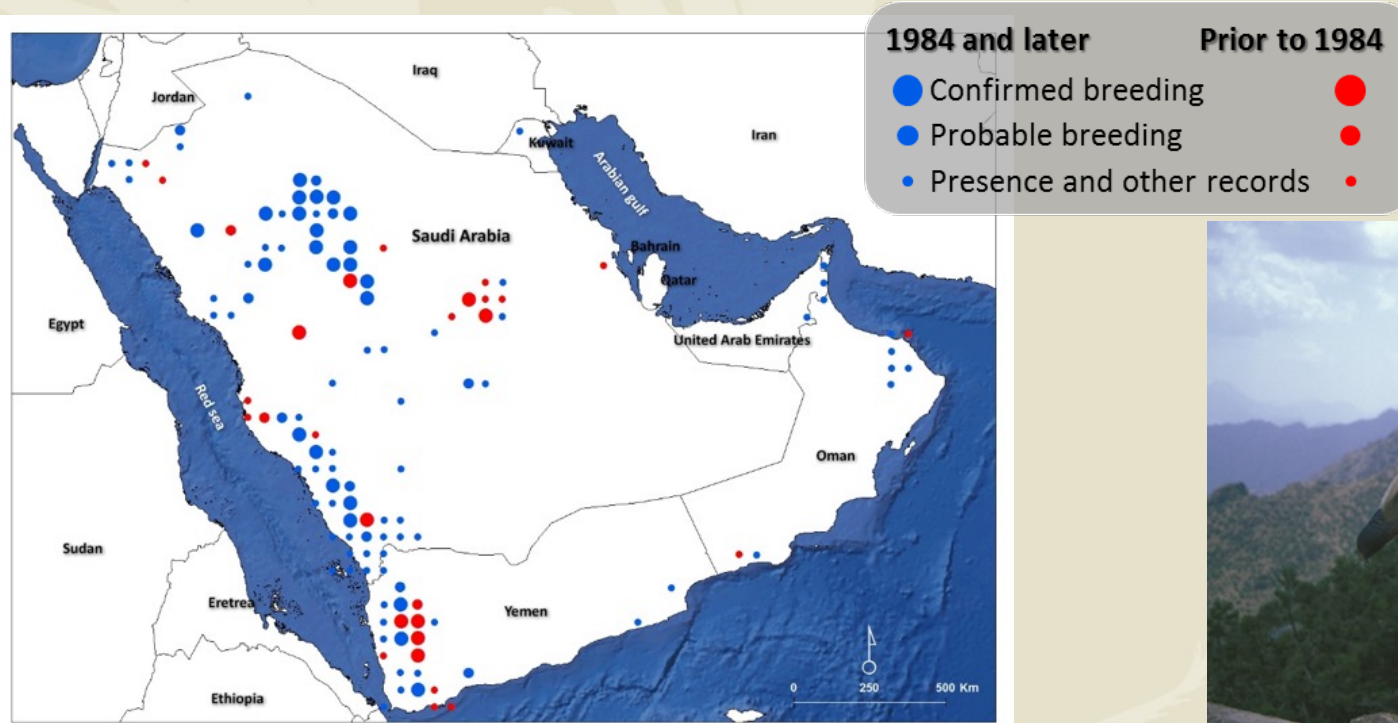
The Griffon Vultures were found in most countries in the Middle East, including Turkey, Iran and the Arabian Peninsula. Although the European population is increasing, the Middle Eastern population is decreasing.



# Vulture Multi-species Action Plan



**Griffon Vulture: The resident population is apparently declining and no longer breeds at some former breeding sites (5000 breeding pairs were estimated)**



Jennings, M. (2010): Atlas of the breeding birds of Arabia. Fauna of Arabia. Vol. 25

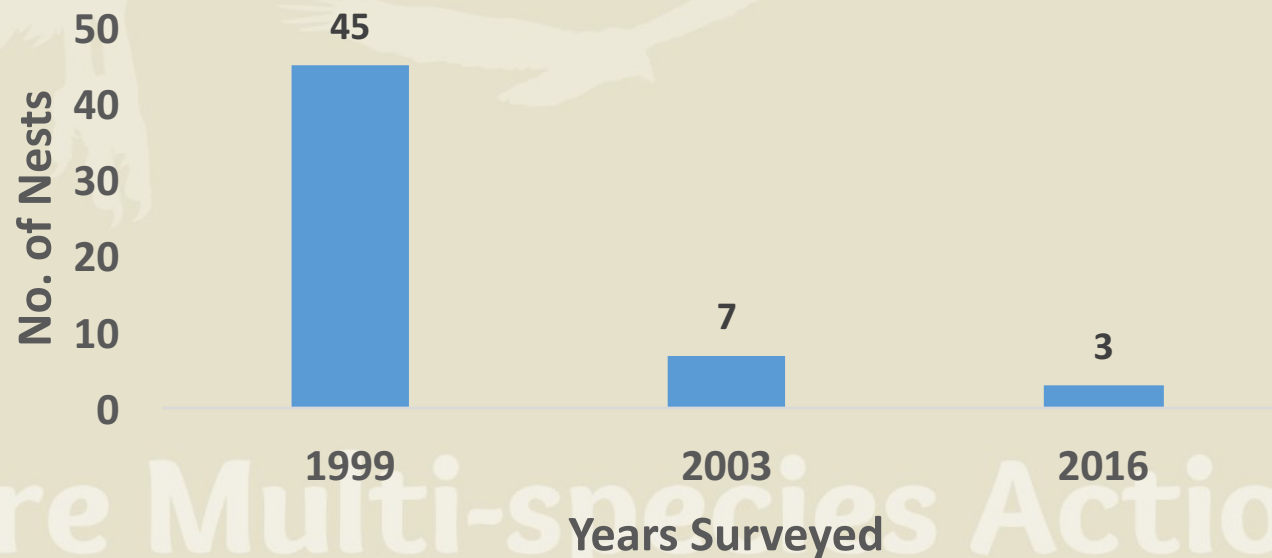
Scientific Name	IUCN Red List Status Global / Reginal	Species Status at the International Agreement	Population Status (Trend)
<i>Gyps fulvus</i> Hablizl, 1783	LC/EN	CMS II, CITES II, EU WTR (A), Raptor MoU 3*	br/WV/PM Globally Increase, Regionally Decreasing

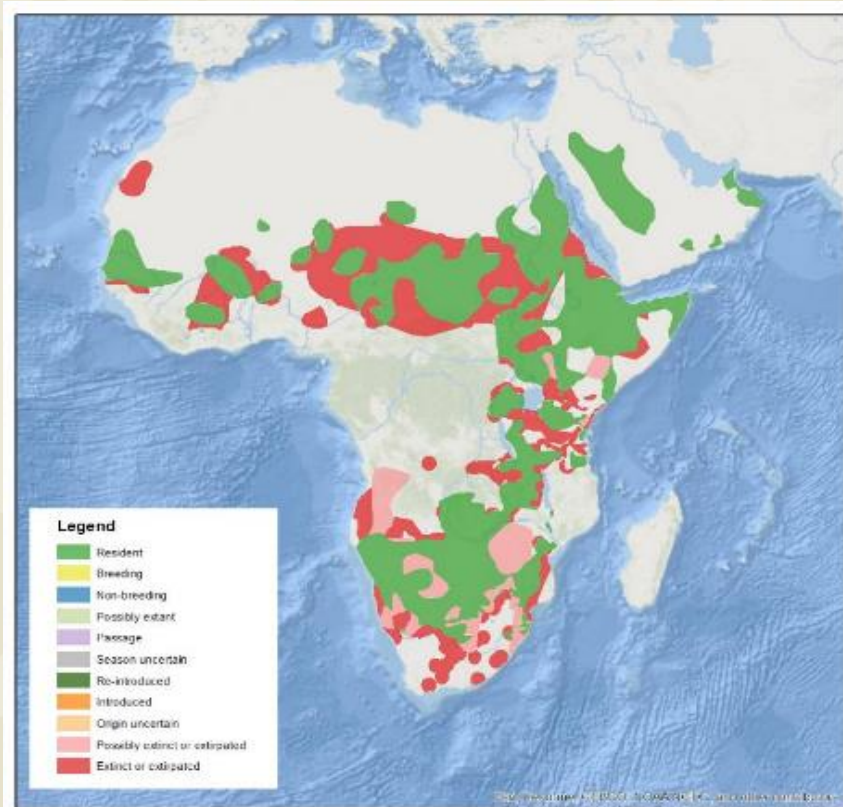
# Griffon Vulture

*Gyps fulvus*



No. of Griffon Vulture Nests at Tanumah escarpment (Saudi Arabia)

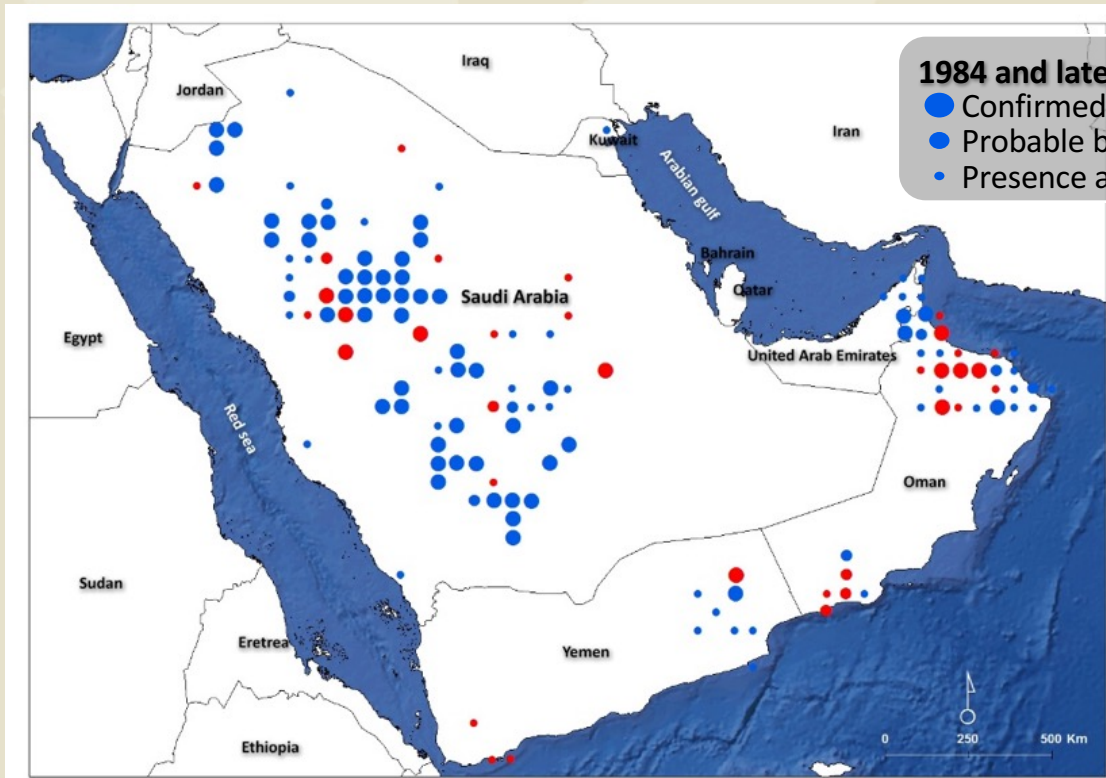




Scientific Name	IUCN Red List Status Global / Reginal	Species Status at the International Agreement	Population Status (Trend)
<i>Torgos tracheliotus</i> (Forster, 1791)	EN/EN	CITES II, EU WTR (B), Raptor MoU 1	BR (Bm) Decreasing



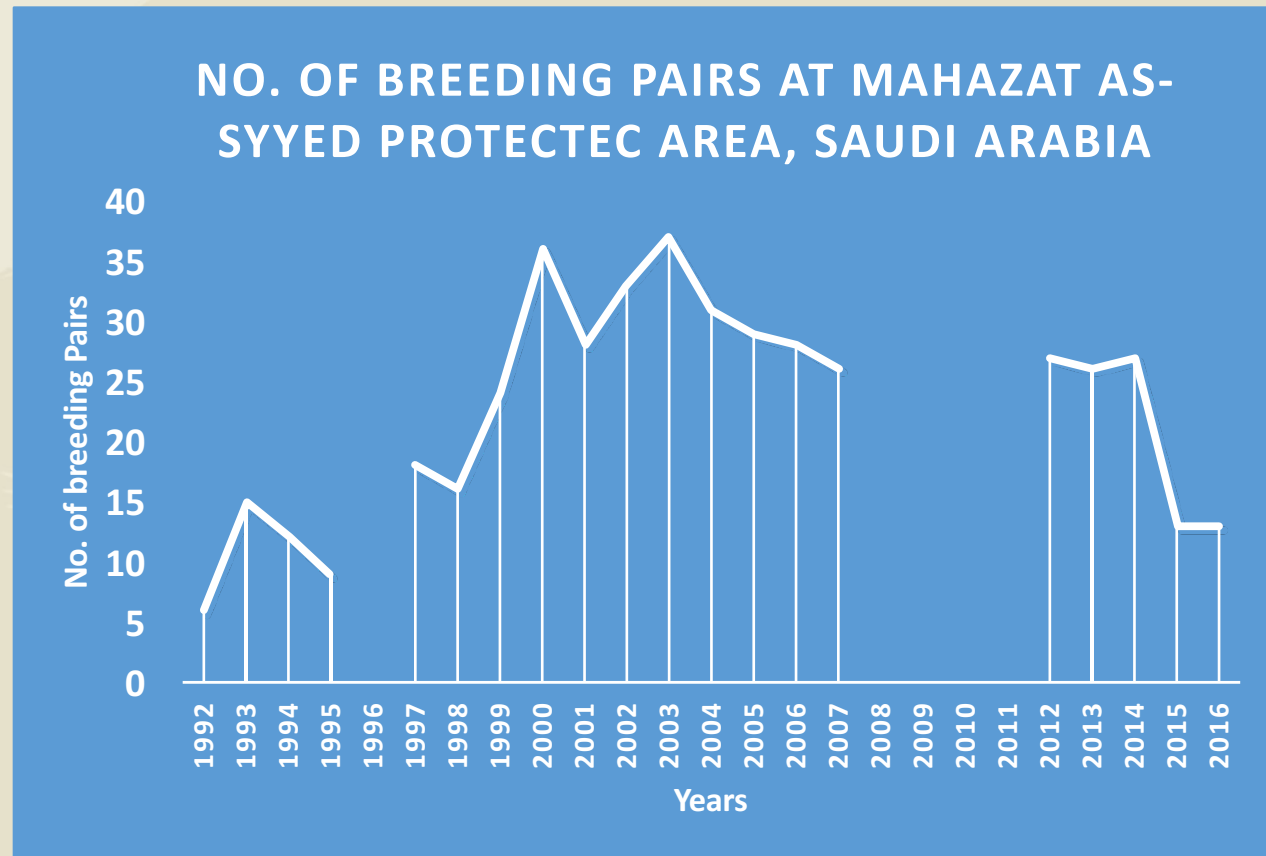
Saudi Arabia probably has the only viable population of the subspecies *T. t. negevensis*, which occur in the Middle East



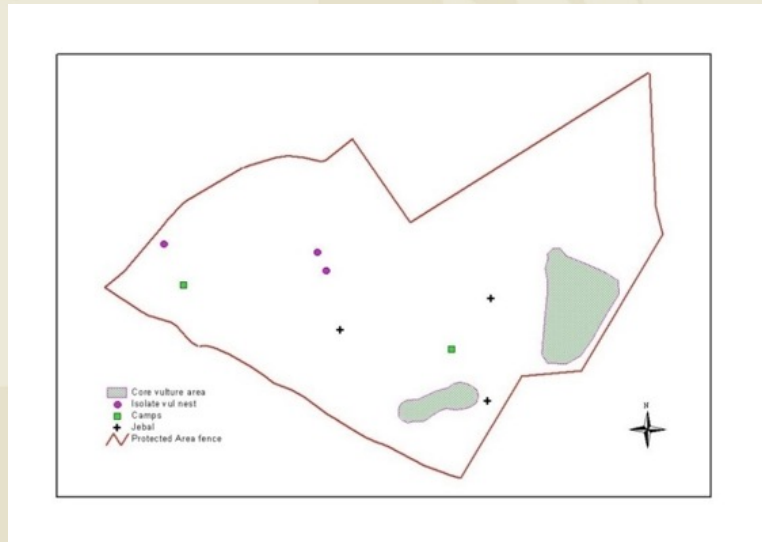
Jennings, M. (2010): Atlas of the breeding birds of Arabia. Fauna of Arabia. Vol. 25

The number of breeding pairs were estimated as 600 pairs in the Arabian Peninsula (Jennings 2010).

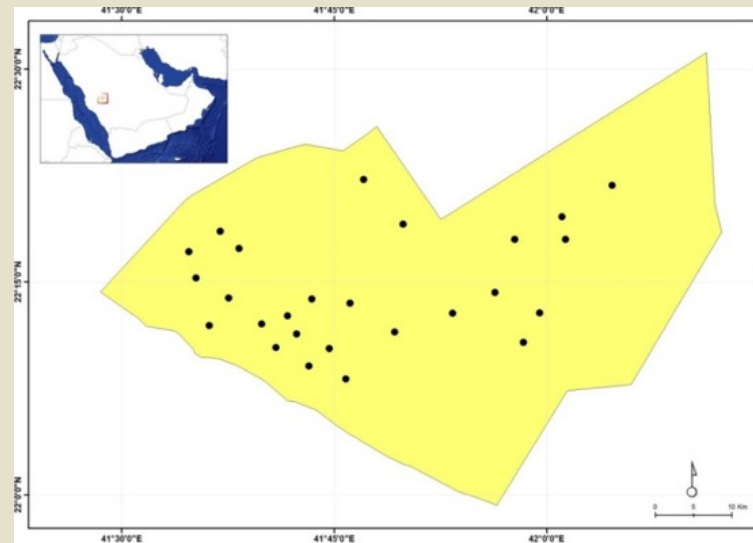
# Number of breeding Pairs at Mahazat as-Sayd Protected Area



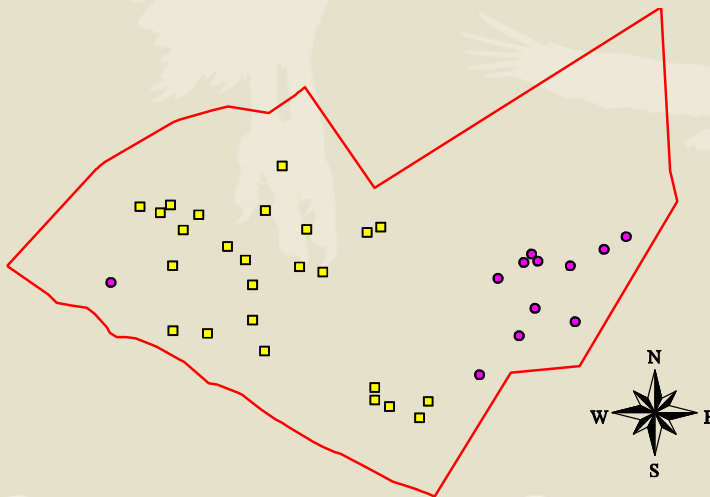
## The distribution of vultures nests between 1992-1995



## Vultures nests in 2013

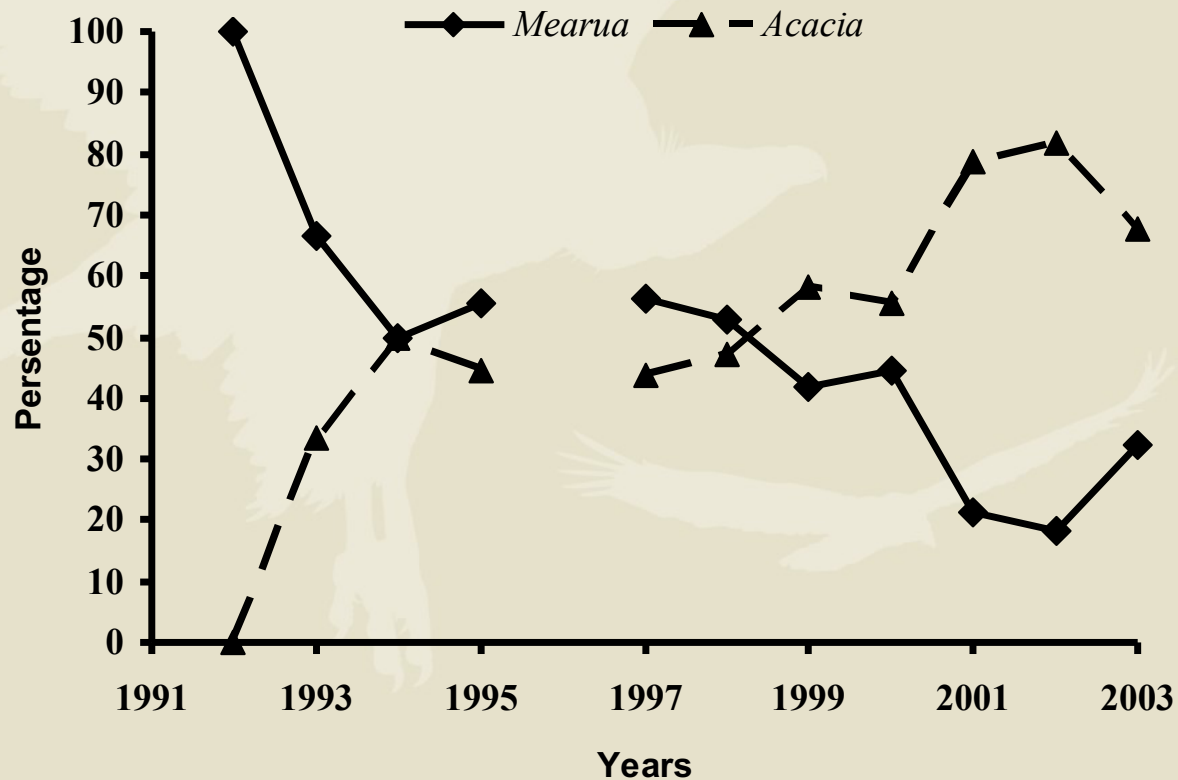


## Distribution of vultures nests in Mahazat as Sayd Protected Area (2003)

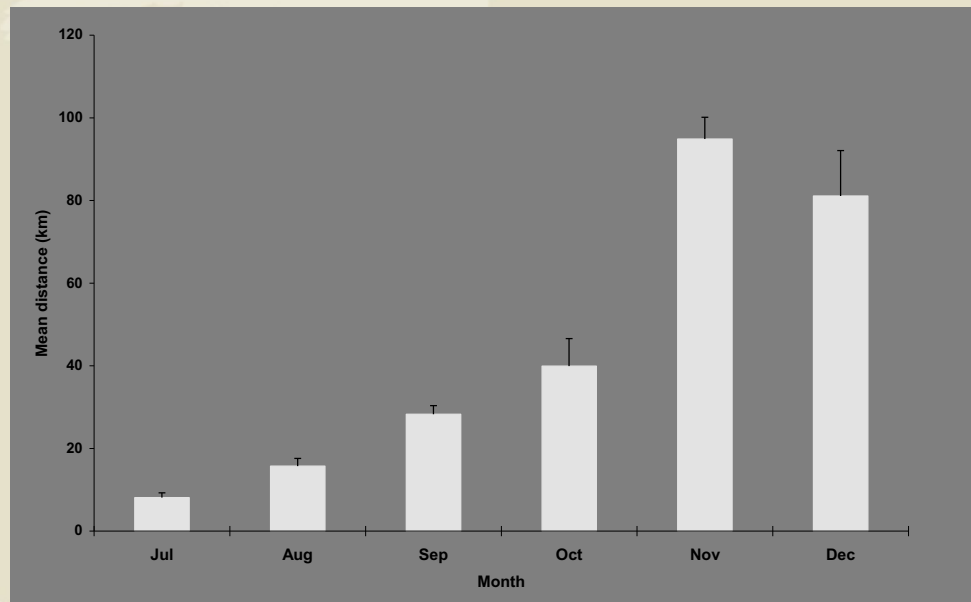
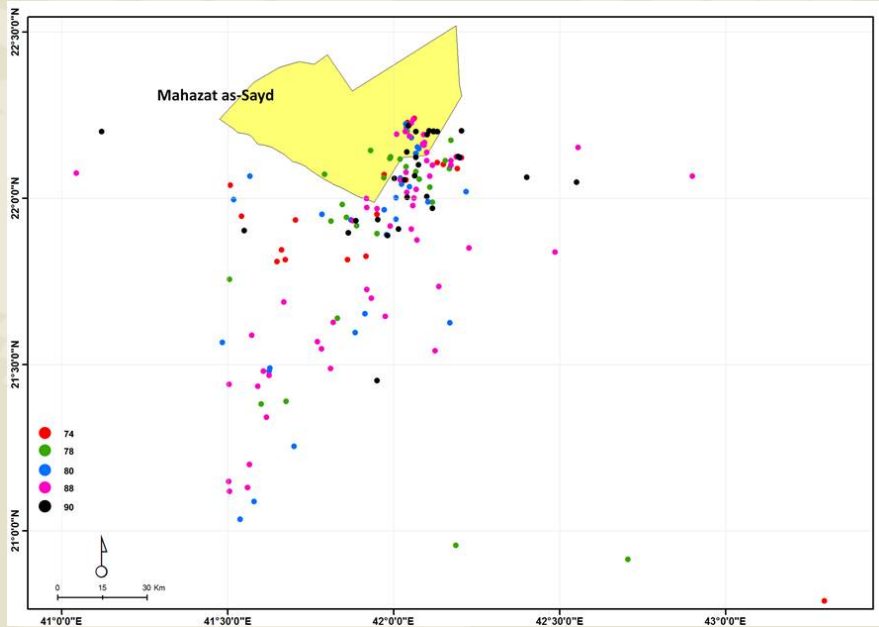




The proportion annual variation in two tree species used by nesting Lappet-faced Vultures in the Mahazat as-Sayd Protected Area.



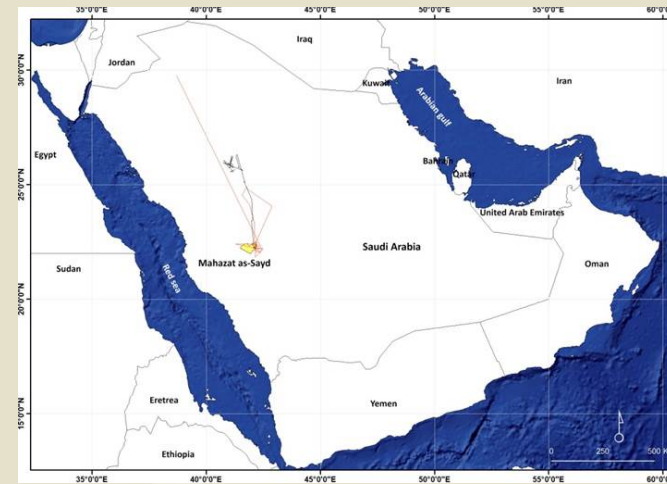
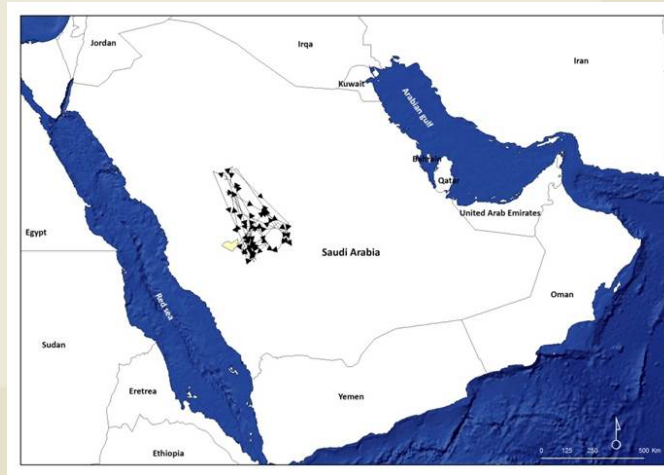
# Movement of Lapped-faced Vulture nestlings



The bird ID	No. of locations	Home rang (km <sup>2</sup> )
<b>U 74</b>	<b>34</b>	<b>7659</b>
<b>N 78</b>	<b>38</b>	<b>11346</b>
<b>Gamma 80</b>	<b>46</b>	<b>6395</b>
<b>Beta 88</b>	<b>70</b>	<b>12115</b>
<b>O 90</b>	<b>38</b>	<b>6431</b>



## Movement of vultures fitted with Satellite transmitters



Variable	Bird with PTT No. 23628	Bird with PTT No. 23629
Distance covered	5500 km (10 months)	1325 km (3.5 months)
Distance covered per month	724 km	361 km
Maximum distance moved per day	198 km	193 km
Maximum Altitude	8825 feet	5322 feet
Maximum Speed	47 km/h	45 km/h

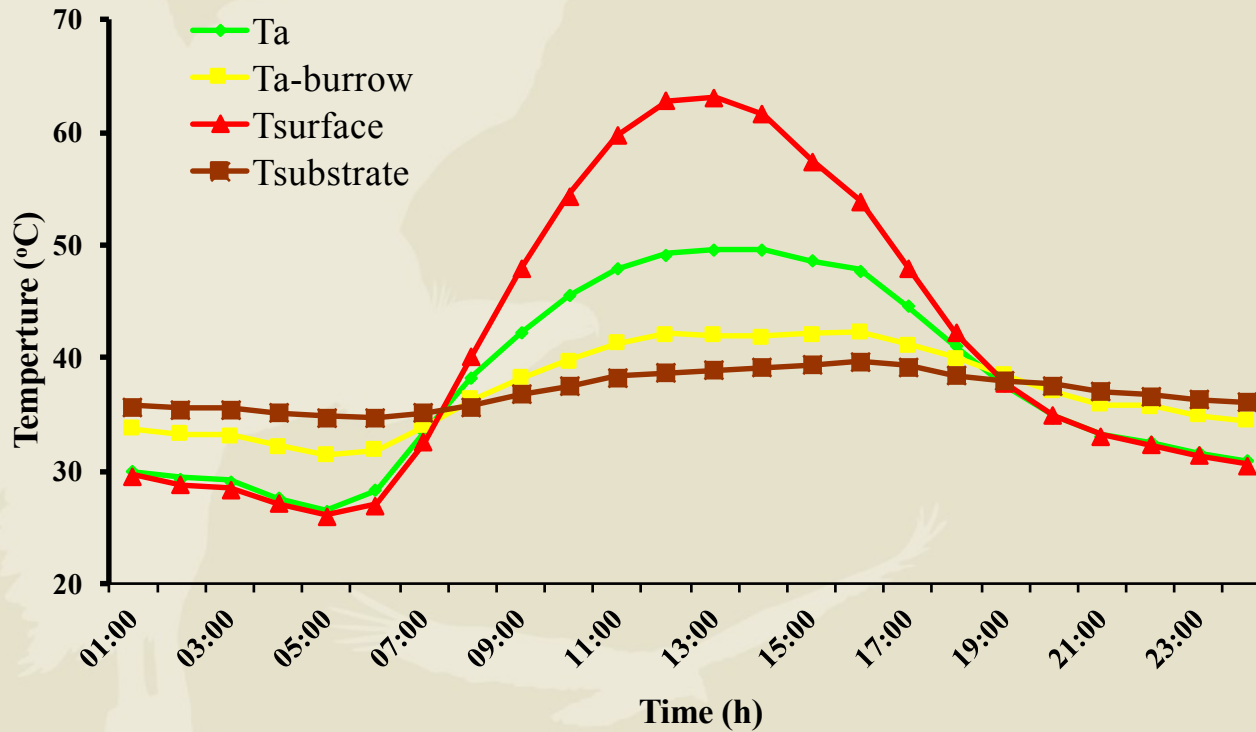


# Lappet-faced Vulture



# Vulture Multi-species Action Plan

# Temperatures recorded inside and outside the *Uromastix* burrows in different time of the day (Williams *et al.* 1999)





- ❖ **The chick always facing the opposite direction of the sun (94%)**
- ❖ **Keeping unfeathered areas always in the shade, head and legs.**
  - head was in the shade of the body more significant than the other posture  $\chi^2 = 240.12$ ,  $df=2$   $p < 0.001$ ,
  - holding the wings away from the body probably to allow air to pass to bare skin area.
- ❖ **The majority of time the chicks in the nest were sleeping (continues observations  $X^2 = 143.028$ ,  $df=2$ ,  $P < 0.001$ ; scanning observation,  $X^2 = 14.144$ ,  $df=2$ ,  $P < 0.001$ ). This probably important for reducing energy expenditure and survival of the chicks**





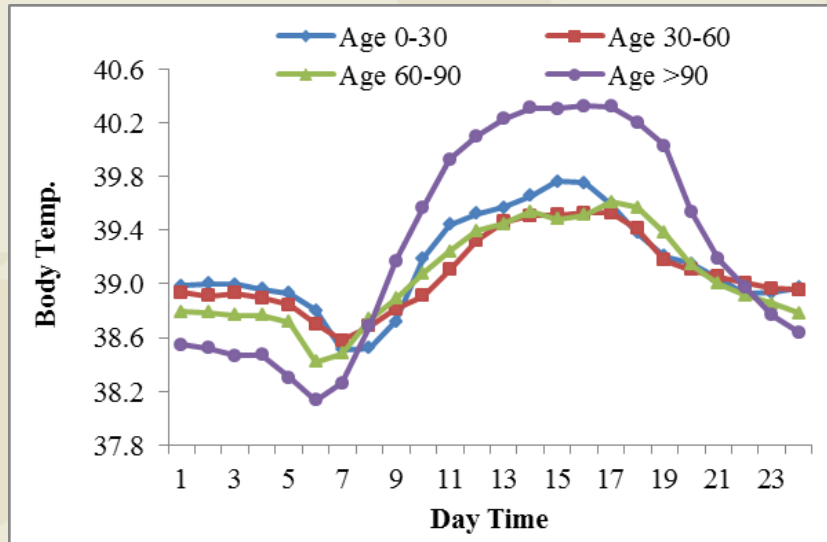
# Adaptation



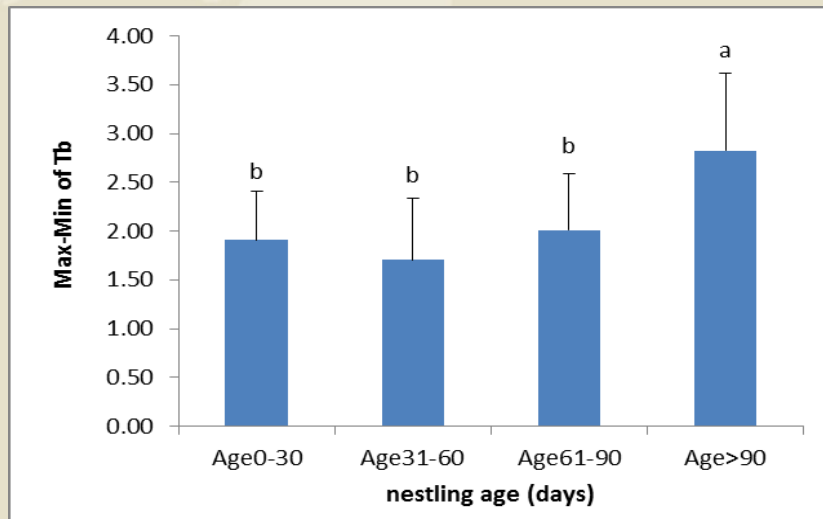
Five Temperature-sensitive radios BD-2 (17 x 8.5 x 5.5mm, "1.8g"), three with external whip antennas and two with a helix antenna manufactured from Holohil Systems Ltd, Ontario, Canada and three UTBI-001 temperatures TidbiT v2 data loggers manufactured from Onset computer corporation, (Bourne, MA, USA) were implanted in the abdominal cavity of the nestlings, aged from 7 to 25 days.



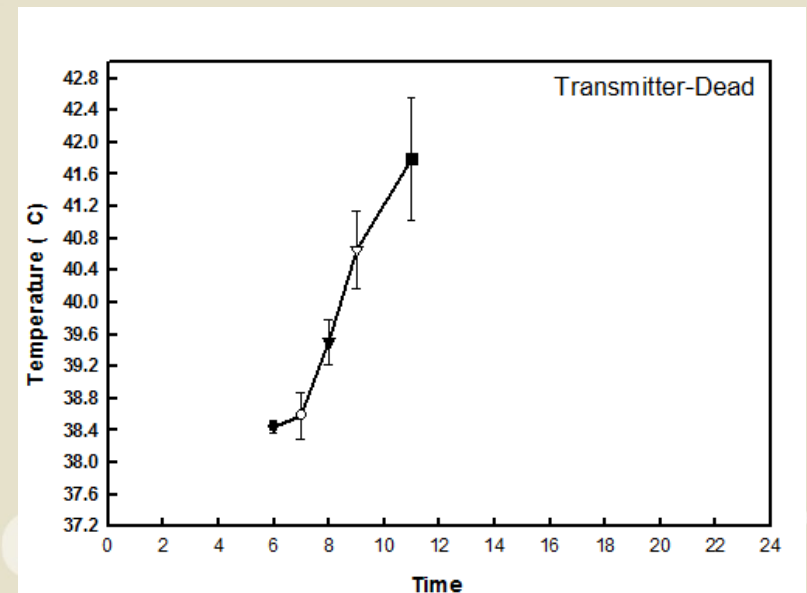
## The mean $T_b$ in different age at different time of the day



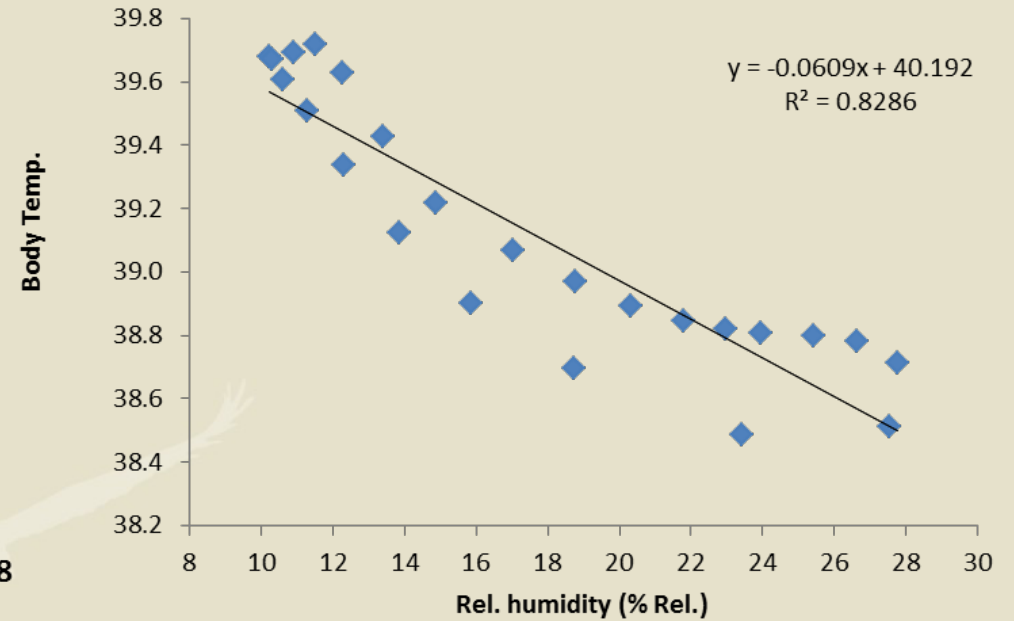
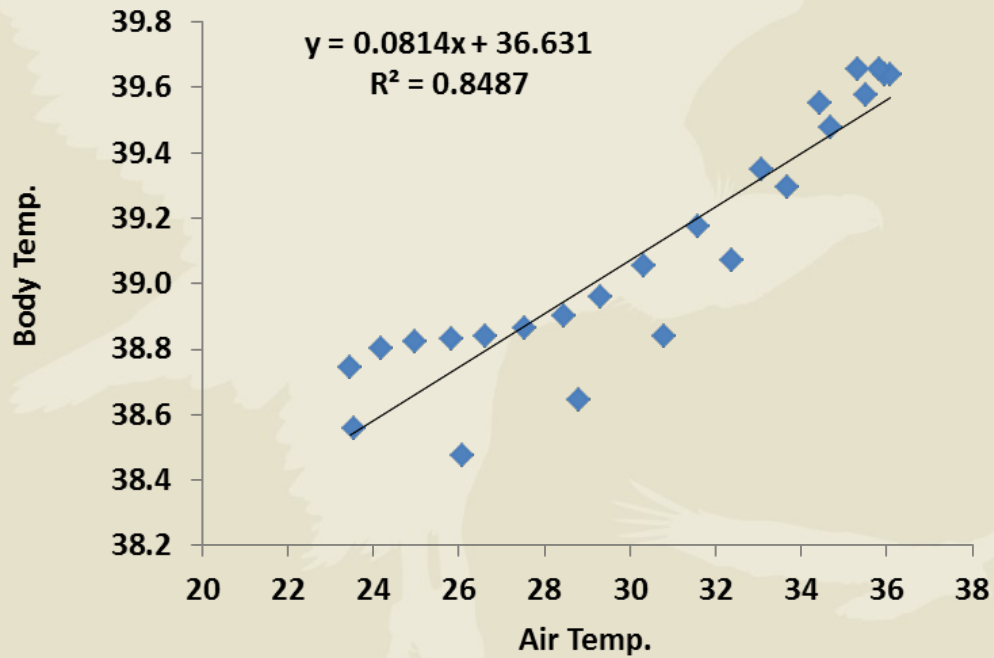
Nestling died with approximate  $T_b$  42.6°C, at age nearly 7 to 10 days old.



The mean daily changes in the  $T_b$  for the lappet-faced vulture nestlings at different ages (days).



# Correlation between the $T_b$ and the different environmental factors





# Factors Effecting the vultures population



Nature Causes



Predation



# Vulture Multi-species Action Plan

# Threats



**Unintentional (secondary) poisoning**

**Insecticide (locust control + Garg dump control)**

**Human Disturbance**

**Habitat Lost or degradation (Nesting site & over Grazing + tree cutting)**

**Electrocution on energy infrastructure**

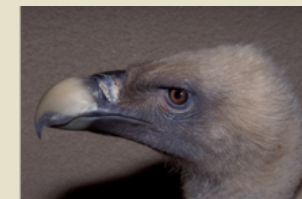
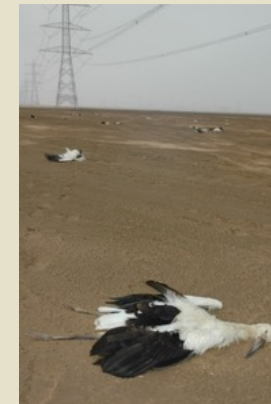
**Collision on energy infrastructure**

**Lost of mammalian Predators (carnivores)**

**Food Availability and suitability**

**Roads accidents & man made structure**

**Trade**



**Species Action Plan**



## Table indicating priority threats for the Vulture in the Middle East.

Threats	Scores	
Unintentional (secondary) poisoning	++++	<b>Critical</b>
Insecticide (locust control + Garg dump control)	++++	<b>Critical</b>
Human Disturbance	++++	<b>Critical</b>
Habitat Lost or degradation (Nesting site & over Grazing + tree cutting)	+++	<b>High</b>
Electrocution on energy infrastructure	++	<b>Medium</b>
Collision on energy infrastructure	++	<b>Medium</b>
Lost of mammalian Predators (carnivores)	++	<b>Medium</b>
Food Availability and suitability	++	<b>Medium</b>
Roads accidents & man made structure	+	<b>Low</b>
Trade	+	<b>Low</b>



## International convention & MoU sign by Middle Eastern countries in the Middle East



Country	CBD	CITES	CMS	Ramsar	AEWA	Raptor (MoU)	Jeddah Agreement	ROBME	GCC Wildlife Agreement
Bahrain	√	√	√	√	√			√	√
Jordan	√	√	√	√	√		√		
Kuwait	√	√		√				√	√
Oman	√	√		√				√	√
Qatar	√	√						√	√
Saudi Arabia	√	√	√				√	√	√
UAE	√	√	√	√		√		√	√
Yemen	√	√	√	√	√		√		
Iraq	√	√	√	√				√	
Turkey	√	√							
Lebanon	√	√	√	√	√				
Syria	√	√	√	√	√	√			
Iran	√	√	√	√	√			√	

# Conclusion and Recommendation

- Although there are gaps on the knowledge on the vultures biology available from the region, but the available shown that Vultures are declining in the ME and they need a sort of protection of nesting areas.
- Poising and disturbance are probably presenting the main cause of decline.
- Monitoring the movement of lappet-faced vulture showed the species could cross prodder and fit with category (1) of Raptor MoU, specially it is considered as Endangered under the threaten species.
- Long term conservation program is important for all vultures species to understand the causes of declining.



# Thank you



# Vulture Multi-species Action Plan