

Steppe Eagle breeding population surveys in Turkey between 2015 and 2022

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Introduction

Kirwan et al. (2008): The Birds of Turkey

- Unclear breeding status
- 1 nest in Tuz Gölü
(1969, 1971-1973, 1975)
- 1 nest in Bolluk Gölü
(1975, 1980)
- 1 nest in Seyfe Gölü
(2003)



Béla Kalocsa & László Haraszthy (2003)



Introduction

Trakuş & eBird online database

- 176 observations
- 25 observations from potential breeding habitats in breeding season
- Only 2 adults with photos
- Some misidentifications with spotted eagles (*Clanga* sp.)





Methods



Field surveys

- 5 excursions by Hungarian teams by MME BirdLife Hungary
- once a year (2015, 2017-2019, 2022)
- **April 2015 & 2022:** searching active nest sites, checking incubation
- **June-July 2017-2019:** checking breeding success, tagging





„For a bird-friendly Hungary!”

www.mme.hu

Russian Raptor Research and Conservation Network (Igor Karyakin & co.): 2015





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Turkish Ministry of Agriculture and Forestry (Burak Tatar & co.): 2017-2022





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Cansu Özcan & OSME project: 2017-2022





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Süreyya Isfendiyaroglu,
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Dizdaroğlu & co.),
Agreco GEIE. (Borut Rubinić & co.): 2022





Survey effort (2007-2022)



2007-2013:
Eastern Imperial Eagle surveys
2015-2019:
Surveys for both species
2022:
Steppe Eagle survey

Ca. 60,000 km

Legend

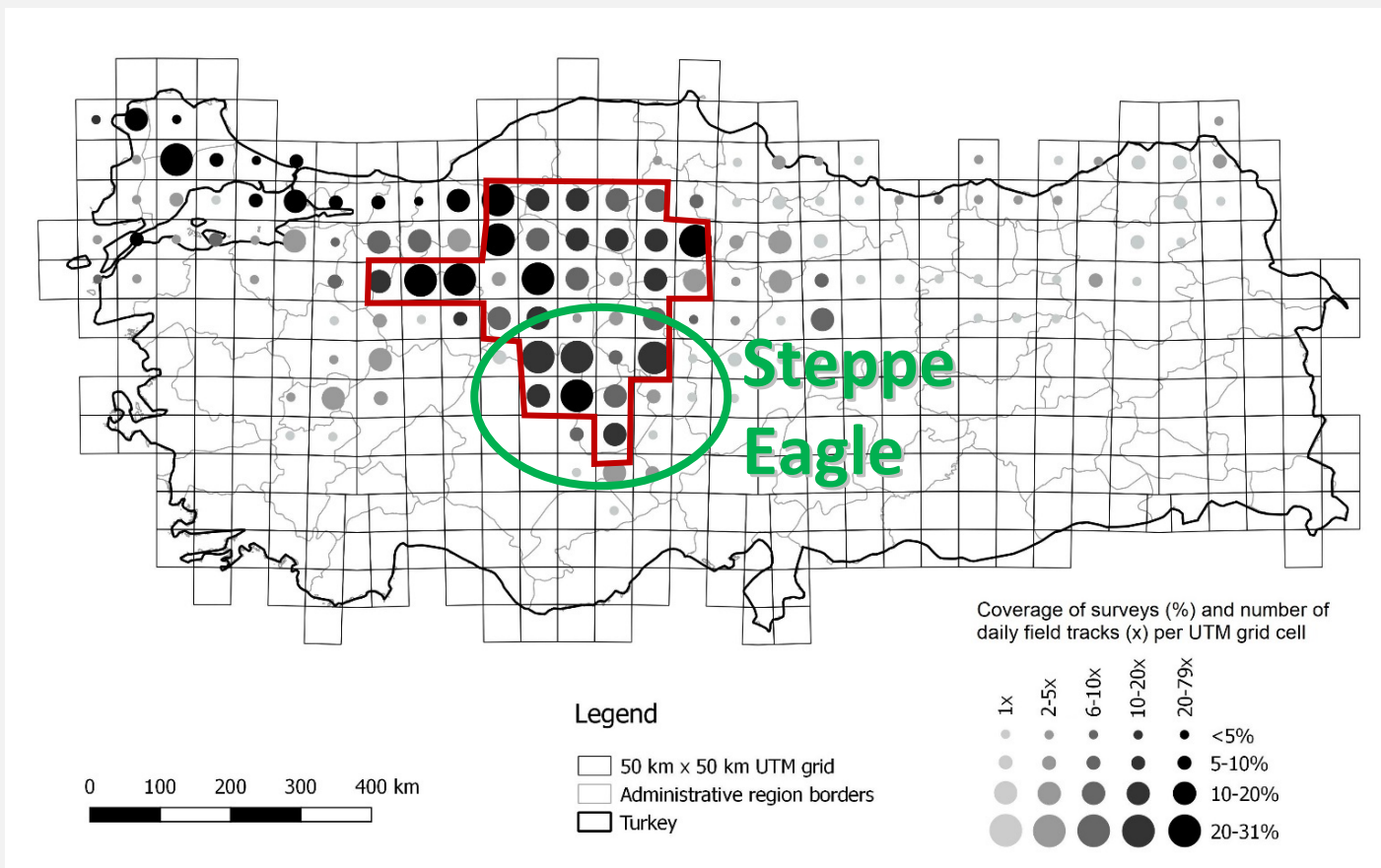
- Field tracks (2007-2019)
- Turkey
- Administrative region borders

0 100 200 300 400 km





Survey effort (2007-2022)



> 80,000 km²

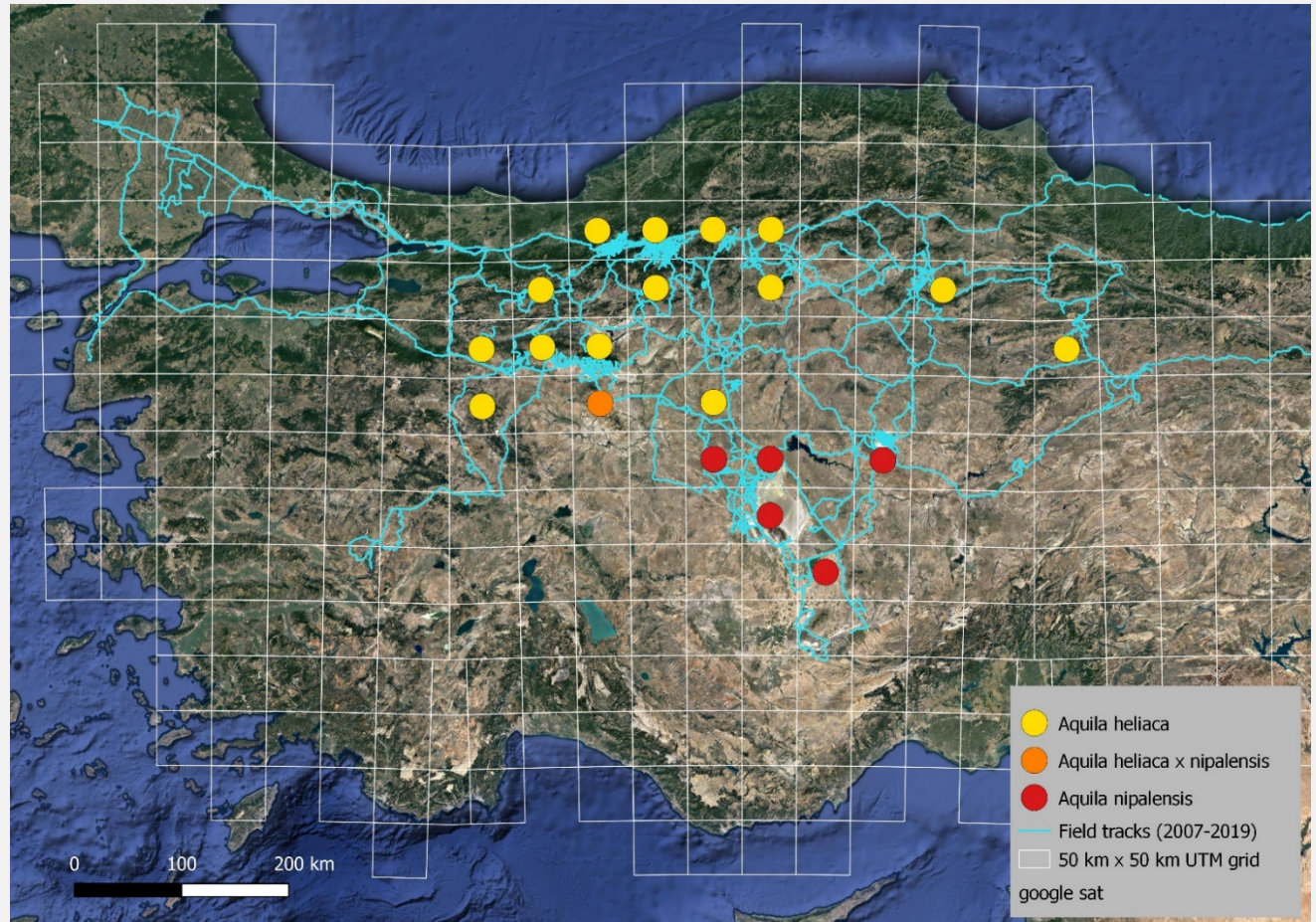


Results





Distribution



Nesting habitats – Seyfe Gölü steppes



Nesting habitats – Tuz Gölü steppes



Nest sites

Bushes

Small trees

Stone piles

Small cliffs, rocks

Ground

Nearest

neighbour

distance (NND):

3-15 km

(mean 6 km)

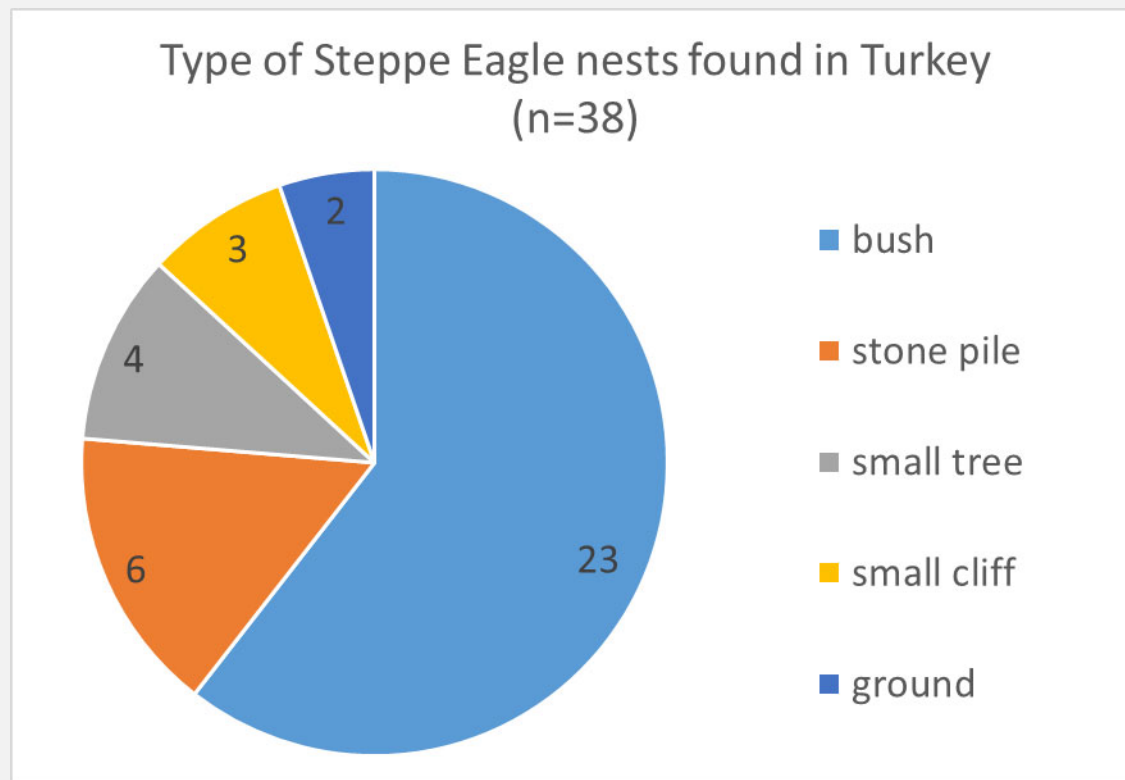




Nest sites

38 nests found

- 21 nests with active breeding attempts
- 16 inactive (used in previous year or rudimentary base only)
- 1 unknown





Breeding territories

Observations in the same breeding habitat in different years are clustered in „territories”

23 potential territories:

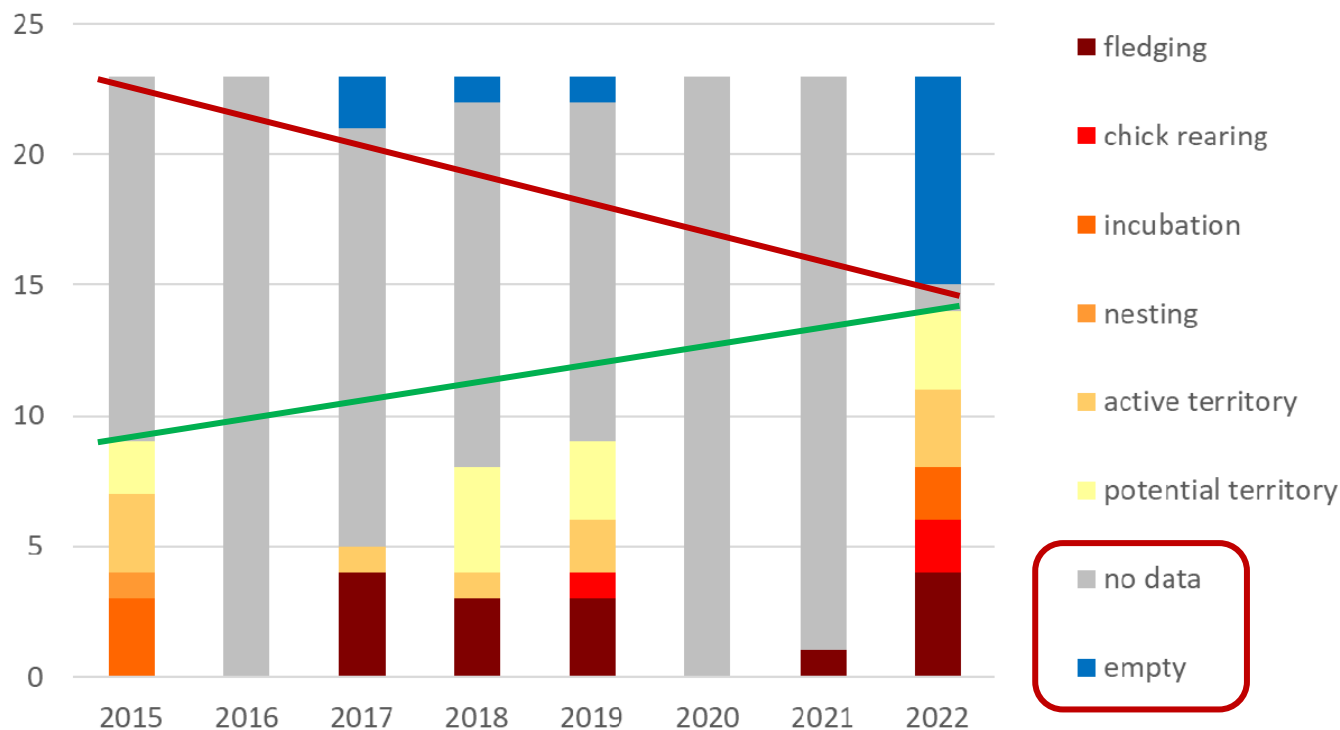
- 10 territories with detected breeding attempts
- 5 territories with detected occupancy
- 6 potential territories
- 2 empty ancient territories

CODE	2015	2016	2017	2018	2019	2020	2021	2022
AN-TR-AKS-01	nest	na	na	na	empty	na	na	empty
AN-TR-KAY-01	na	na	na	na	pot	na	na	empty
AN-TR-KIR-01	inc	na	na	na	fled	na	na	fled
AN-TR-KIR-02	pot	na	fled	na	chick	na	na	pot
AN-TR-KIR-03	pot	na	ter	na	ter	na	na	fled
AN-TR-KIR-04	inc	na	fled	na	ter	na	na	fled
AN-TR-KIR-05	na	na	na	na	na	na	fled	chick
AN-TR-KIR-06	na	na	na	na	na	na	na	inc
AN-TR-KON-01	ter	na	fled	ter	na	na	na	ter
AN-TR-KON-02	na	na	fled	fled	na	na	na	fled
AN-TR-KON-03	ter	na	na	pot	na	na	na	pot
AN-TR-KON-04	inc	na	na	fled	fled	na	na	inc
AN-TR-KON-05	ter	na	empty	na	na	na	na	empty
AN-TR-KON-06	na	na	na	fled	fled	na	na	chick
AN-TR-KON-07	na	na	na	pot	pot	na	na	empty
AN-TR-KON-08	na	na	empty	na	na	na	na	na
AN-TR-KON-09	na	na	na	pot	na	na	na	empty
AN-TR-KON-10	na	na	na	pot	na	na	na	empty
AN-TR-KON-11	na	na	na	na	pot	na	na	empty
AN-TR-KON-12	na	na	na	na	na	na	na	ter
AN-TR-KON-13	na	na	na	na	na	na	na	ter
AN-TR-KON-14	na	na	na	na	na	na	na	pot
AN-TR-KON-15	na	na	na	empty	na	na	na	empty



Population trend

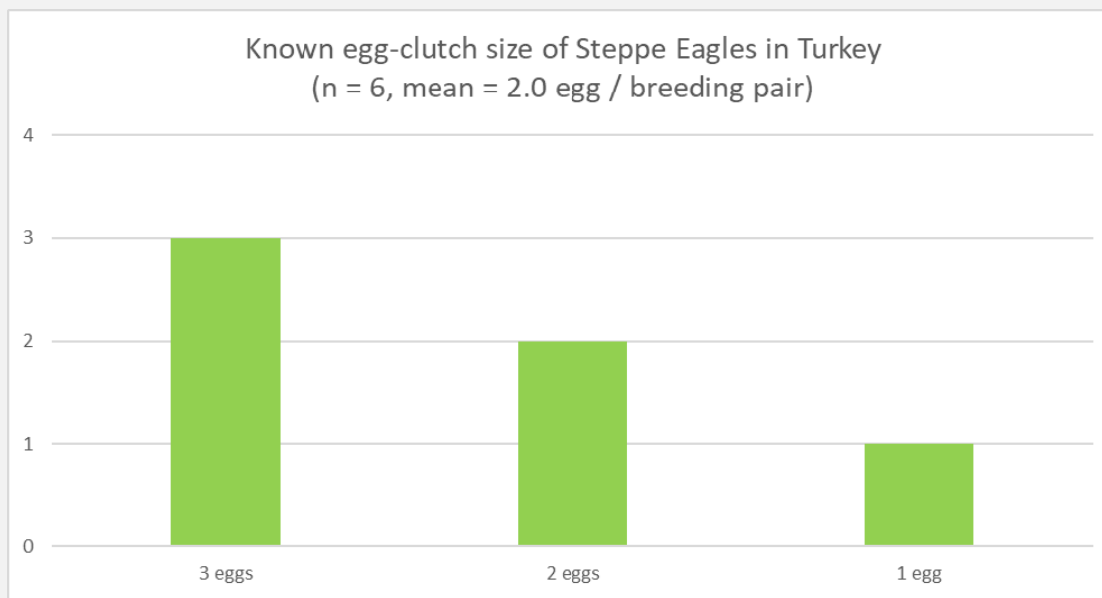
Confirmed breeding stages in potential Steppe Eagle territories in Turkey (2015-2022)



Decreasing?!
MAYBE
But low
coverage

Increasing?!
NO!
Just low
coverage

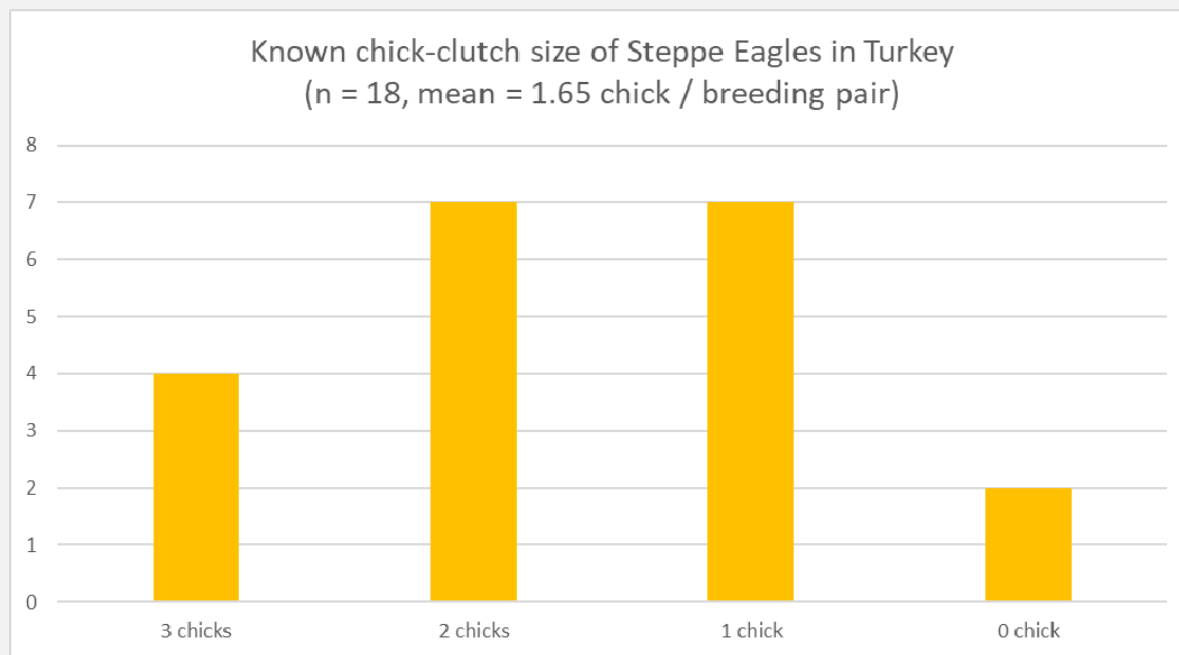
Breeding success



Clutches with eggs are not controlled due to sensitivity for disturbance

Only 6 accidental data, when birds flew away from unnoticed nests

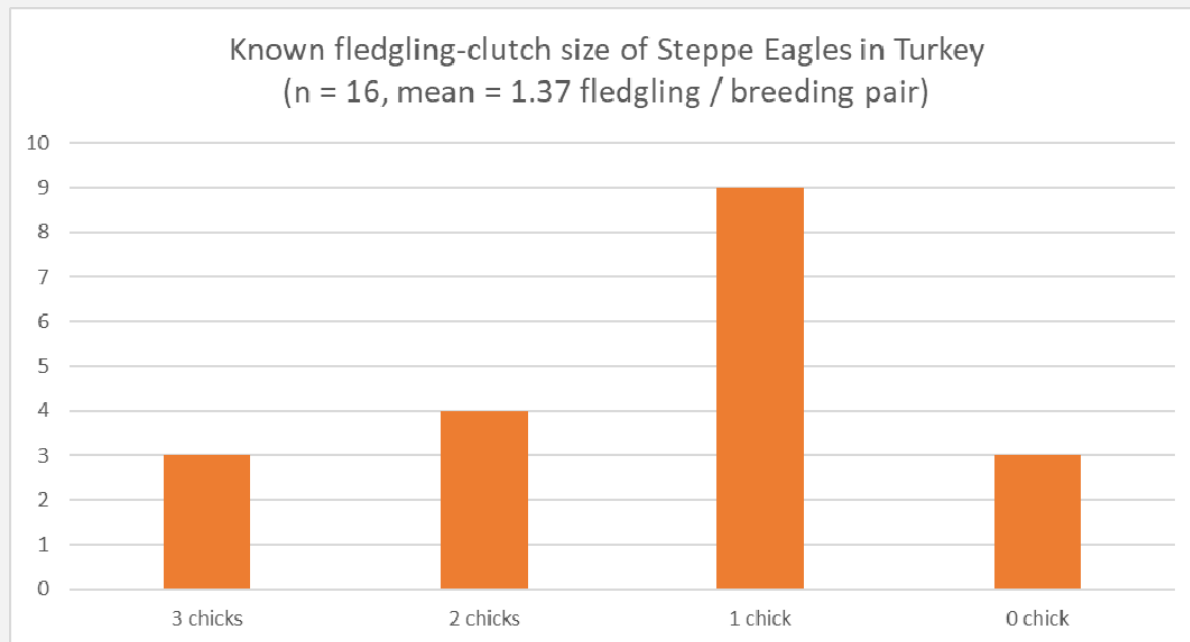
Breeding success



Clutches with chicks are controlled in June or July (4-8 weeks old chicks)
due to sensitivity for disturbance

No data on hatched chicks – minimum estimation

Breeding success



No. of fledglings are rarely controlled

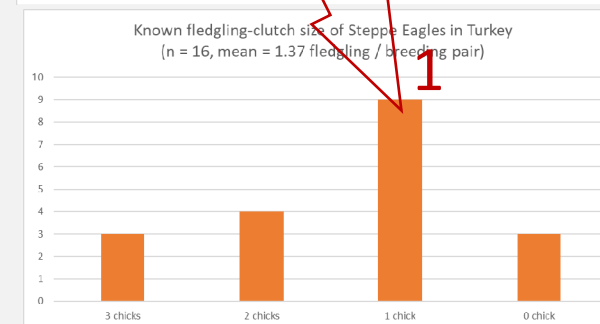
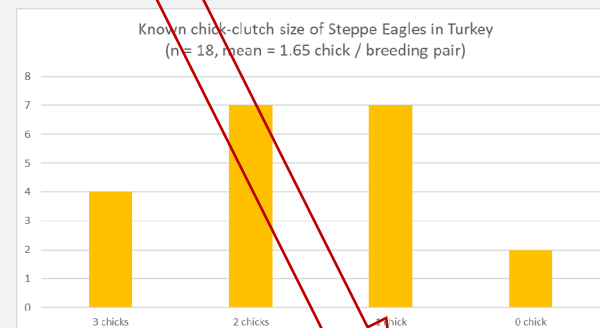
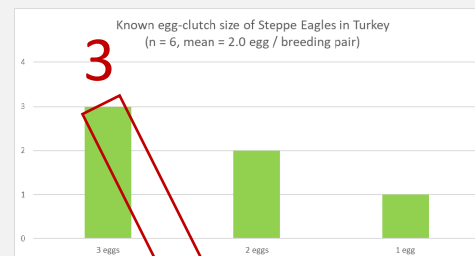
Significant chick and fledging mortality – maximum estimation



Breeding success

Rough estimate:

- Eggs: 2.00 / nest
- Chicks: 1.65 / nest
(probably more)
- Fledglings: 1.37 / nest
(probably less)





Diet

No survey, just accidental data

Anyway, the

Anatolian ground squirrel
(*Spermophilus xanthoprymnus*)

is definitely the key prey

Only simultaneous conservation is possible





Hybridization

2012 (Eskişehir):

Female Imperial Eagle paired with a male Steppe (?) Eagle





Morphology & genetics from shed feathers



Female:
Eastern imperial eagle



Male: Eastern imperial x steppe
eagle hybrid (presumed F1 hybrid)

Presumed
F2 hybrid
chicks (3/4
heliaca, 1/4
nipalensis)



Satellite tracking

- 2017-2019:
6 SEs and 2 hybrids were tagged
in cooperation of MME and
Turkish MAF
- 2021-2022:
2 SEs tagged by MAF (Tatar et al.)





Migration

Aquila heliaca:

resident

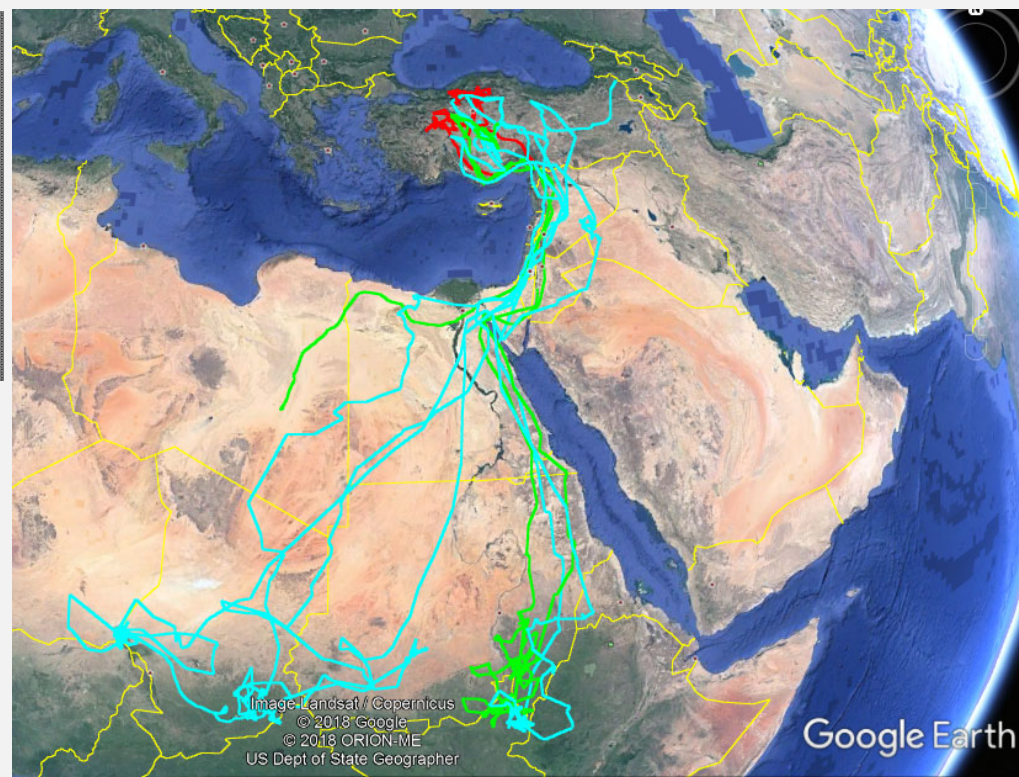
Aquila nipalensis:

migratory

A. heliaca x nipalensis:

migratory

Wintering areas of Anatolian
SEs:
Chad, Nigeria, Sudan, Ethiopia

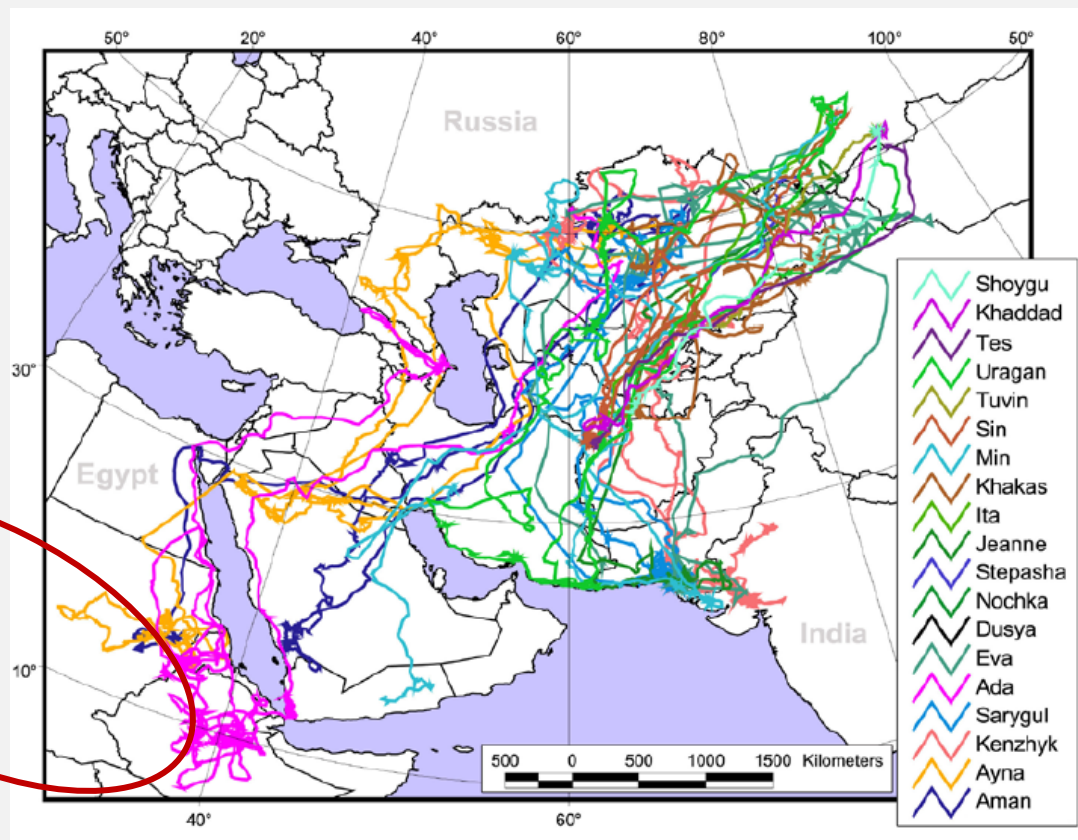
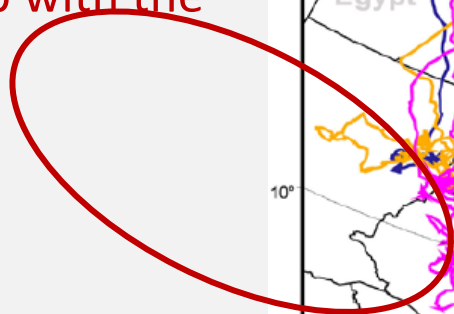




Migration

Wintering areas of Anatolian
SEs:
Chad, Nigeria, Sudan, Ethiopia

Only marginal overlap with the
other populations!



Conclusions for conservation

- Brink of extinction?
- Significant threats occur:
 - Electrocution, shooting
 - Infrastructural development
 - **Agricultural intensification (plowing of steppes, overgrazing, irrigation)**
- Limited data and limited local capacity: networking and capacity building is highly needed
- National Action Plan prepared (2022)
- Capacity for implementation and revision?





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Yeni Bir Metodoloji Kapsamında Türkiye'deki Nesli Tehlike Altındaki Türler için Eylem Planlarının Hazırlanması, Uygulanması ve İzlenmesi Projesi

Preparation, Implementation and Monitoring of Species Action Plans for Endangered Species In Turkey within the Concept of a New Methodology Project

Bozkır Kartalı Eylem Planı

Çalıştayı

Steppe Eagle Action Plan

Workshop

20-21 Ekim / October 2022

Konya / Türkiye



See the poster:
Özbahar et al.
**Species action plan
for conservation of
an isolated steppe
eagle (*Aquila
nipalensis*)
population in Türkiye**



Tehlikedeki Türler
Endangered Species

Electrocution





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