

Wildlife monitoring in Cyprus

A large flock of pink flamingos is wading in shallow, calm water. The birds are mostly white with pink legs and long necks. They are scattered across the frame, with a dense group in the center-left and more birds towards the right. The water reflects the light, and there are some small, dark, rocky patches visible in the water.

Nicolaos Kassinis Game and Fauna Service (GFS)

Game and Fauna Service

The Game and Fauna Service (GFS) of the Ministry of Interior is responsible for wildlife conservation in Cyprus.

The GFS is specifically responsible for the protection and management of all game and wild birds. Also it is responsible for the conservation of the endemic Cyprus Mouflon *Ovis orientalis ophion*.

Why do we need wildlife monitoring?

- **1. To obtain a reliable estimate or index of the population size of a particular species and monitor its demographic parameters**
(breeding success, age-specific survival, movements)
- **2. To assess the conservation value of an area in order to receive legal protection**
- **3. To assess whether applied wildlife management is beneficial to target species**

- 4. Information on popn size of individual species can make us focus on those species in need of attention (rare, endangered, declining, etc).
- 5. Surveys combined with harvest estimates help wildlife conservation agencies monitor game species, set seasons, impose restrictions, quotas, etc.

Monitoring can help us estimate the popn trend of a particular species over time.

Monitoring can help identify and quantify threats



GFS surveys

- Annual island-wide counts
- Bird surveys in SPAs (Troodos mountains, Pafos forest, river valleys, etc)
- Resident raptor breeding surveys
- Water bird counts (monthly wetland monitoring)
- Xmas count (annual census of all wetlands on the same day)
- Water bird breeding surveys
- Species-specific surveys
- Game Harvest surveys
- Cy mouflon monitoring



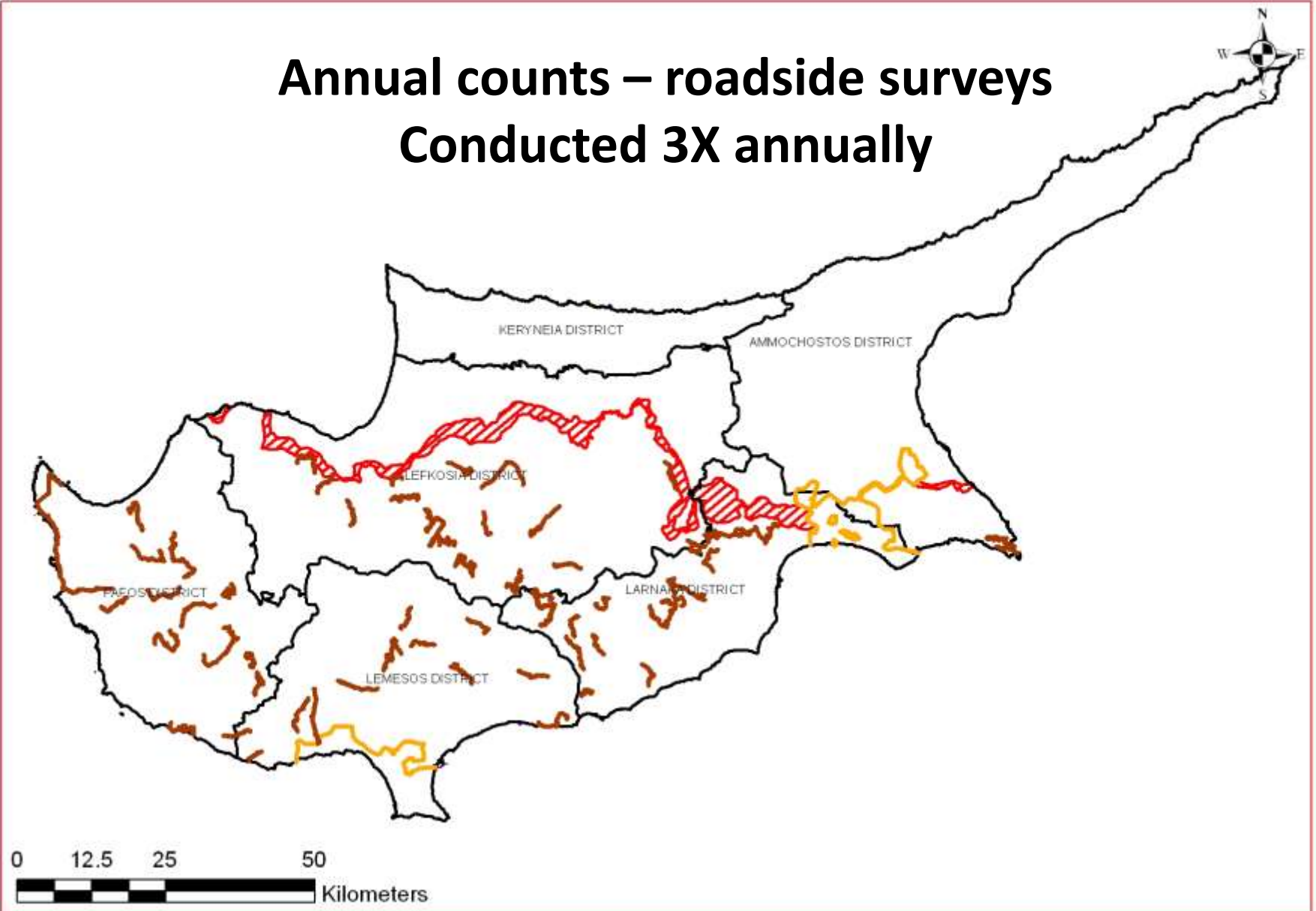


**2 diurnal : Winter (Jan-Feb) and summer (June-July)
surveys**

**All Species are counted: (Annex I sp., game, farmland
birds, raptors)**

Nicolaos Kassinis, Christos Mammides. Winter bird surveys in
Cyprus, 2007–2016. Analysis of the population trends. Bird
Census News 2015, 29/1–2: 37–45. Journal of the European Bird
Census Council

Annual counts – roadside surveys Conducted 3X annually



1 spotlight (night) survey:
Species counted: (owls,
stone curlew, nightjar)
hare and fox

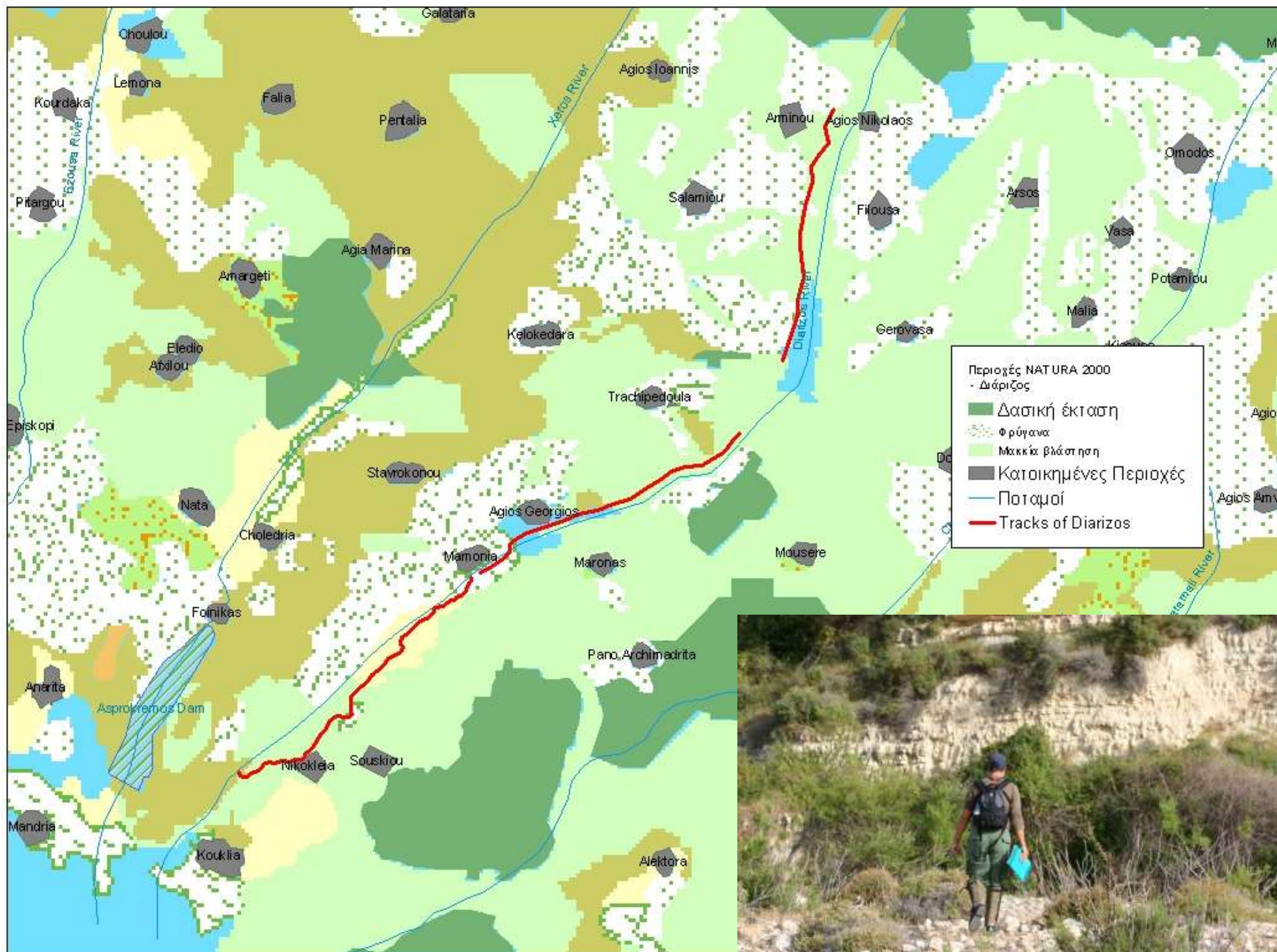


Breeding bird surveys in SPAs





- SPA bird monitoring is carried out for selected areas with special interest in the population status and trends of trigger species (Annex I) spp.



**"CONSERVATION MANAGEMENT IN NATURA 2000
SITES OF CYPRUS"
LIFE 04 NAT/CY/000013**

Παρακολούθηση ειδών ορνιθοπανίδας του Παραρτήματος Ι
της Οδηγίας 79/409/ΕΚ σε 5 περιοχές του Δικτύου ΦΥΣΗ
2000 της Κύπρου: Κάβο Γκρέκο, Αλυκές Λάρνακας,
Κοιλάδα Διαρίζου, Εθνικό Δασικό Πάρκο Τροόδους και
Βουνί Παναγιάς



Οκτώβριος 2008

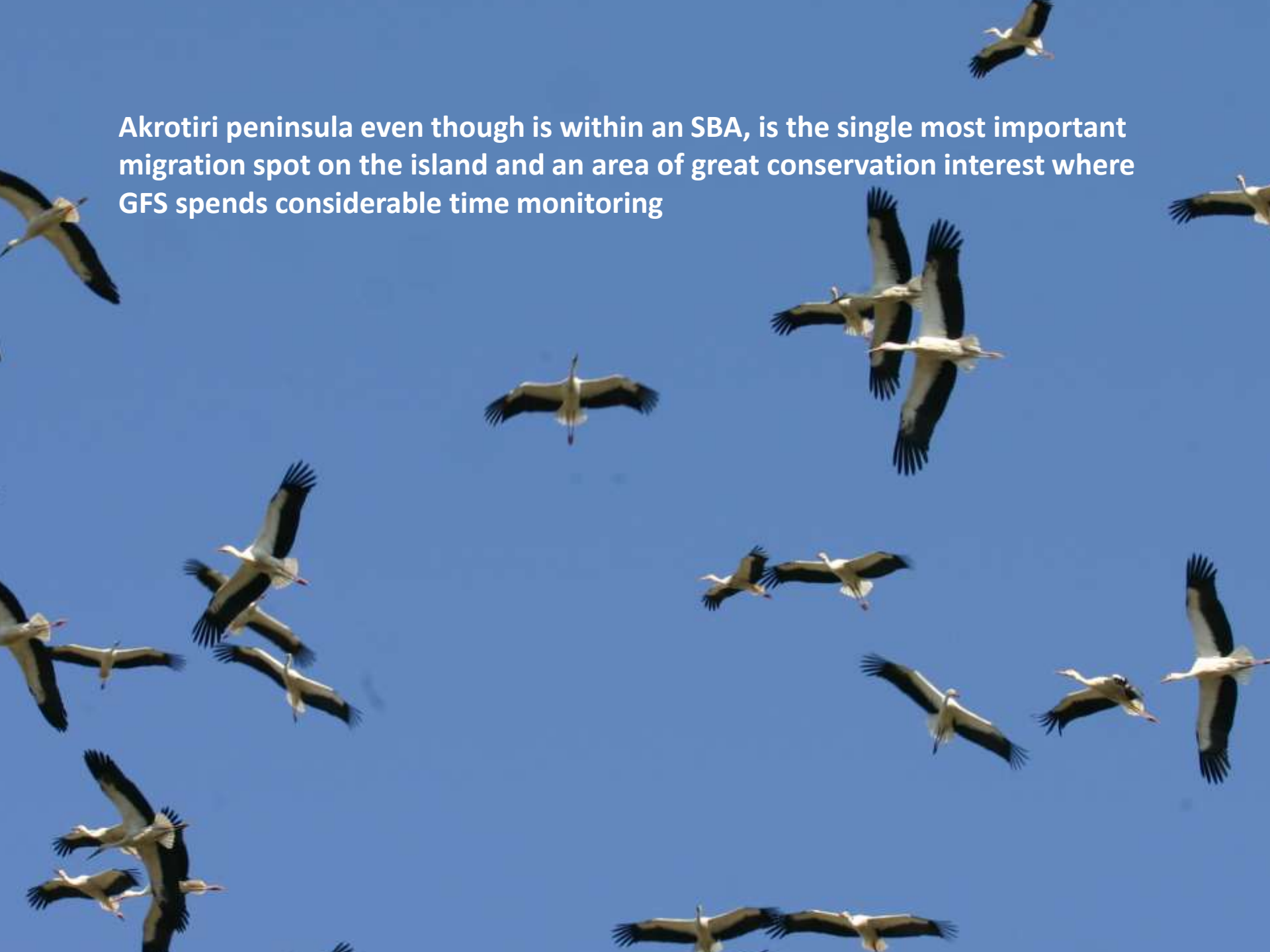


Bird Monitoring report LIFE 04 NAT/CY/000013 Conservation Management in NATURA 2000 Sites of Cyprus

SPA monitoring to assess changes
in trigger species status and
identify threats



Akrotiri peninsula even though is within an SBA, is the single most important migration spot on the island and an area of great conservation interest where GFS spends considerable time monitoring



Resident raptor breeding surveys



Raptors: Population census for occupied territories / nesting pairs for the larger, resident birds of prey such as Griffon Vulture *Gyps fulvus*, Bonelli's eagle *Hieraaetus fasciatus*, Long-legged Buzzard *Buteo rufinus* Goshawk *Accipiter gentilis* and Peregrine Falcon *Falco peregrinus*. Nesting and feeding ecology for the abovementioned species.

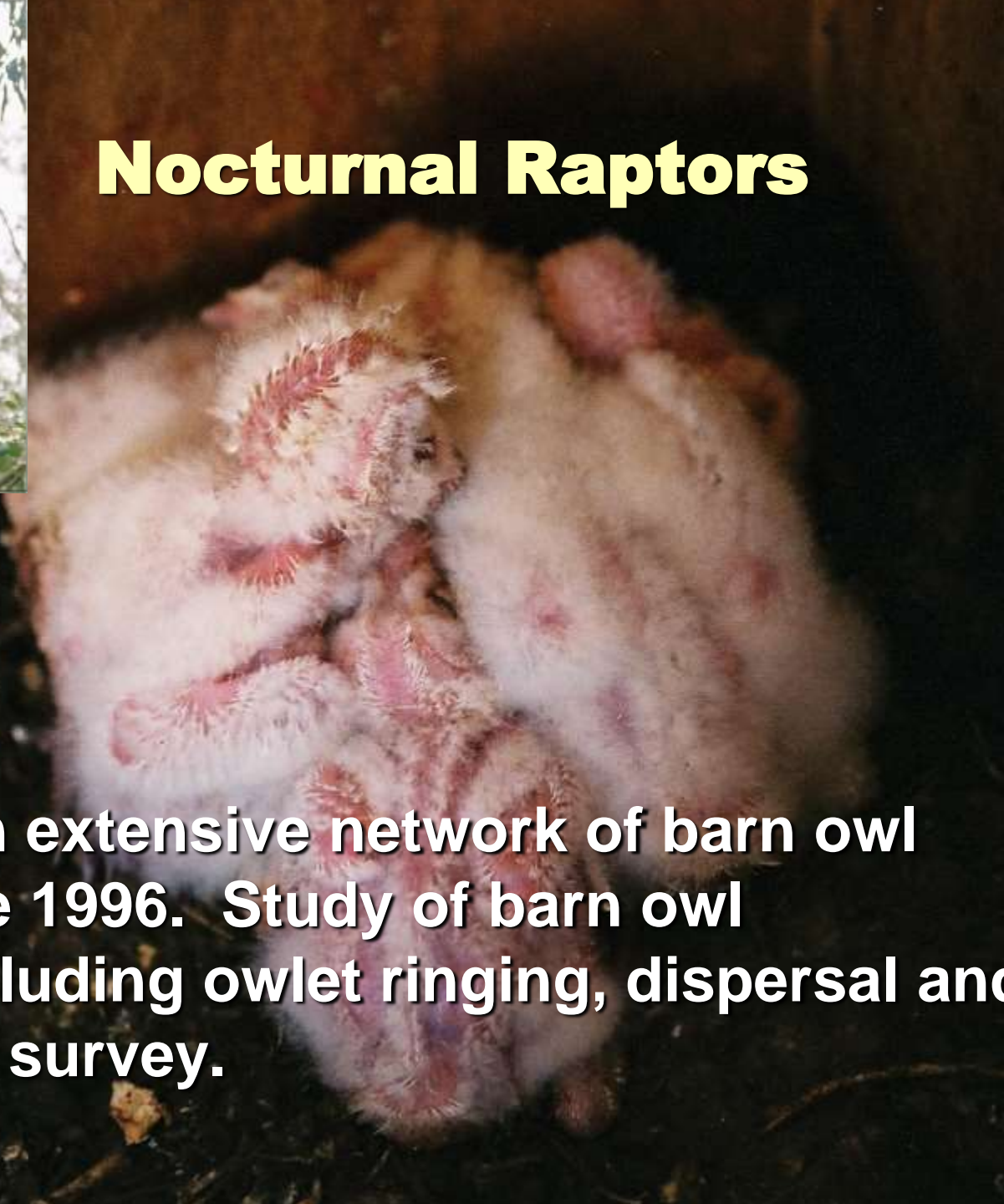
**Radio tracking for Griffon
Vulture, Bonelli's eagle,
Goshawk and Long-legged
Buzzard.**





**Tracking with GPS/ GSM Loggers
released Griffon Vultures**

Nocturnal Raptors

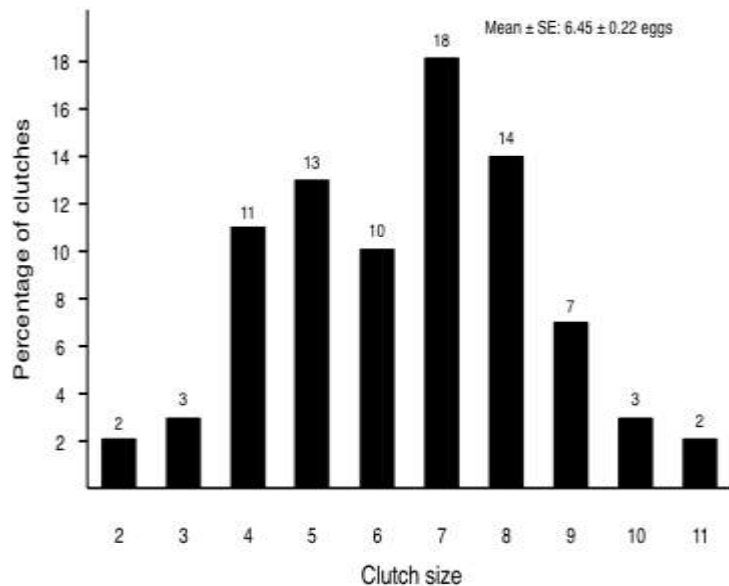


Establishment of an extensive network of barn owl nesting boxes since 1996. Study of barn owl nesting ecology including owlet ringing, dispersal and mortality, prey item survey.

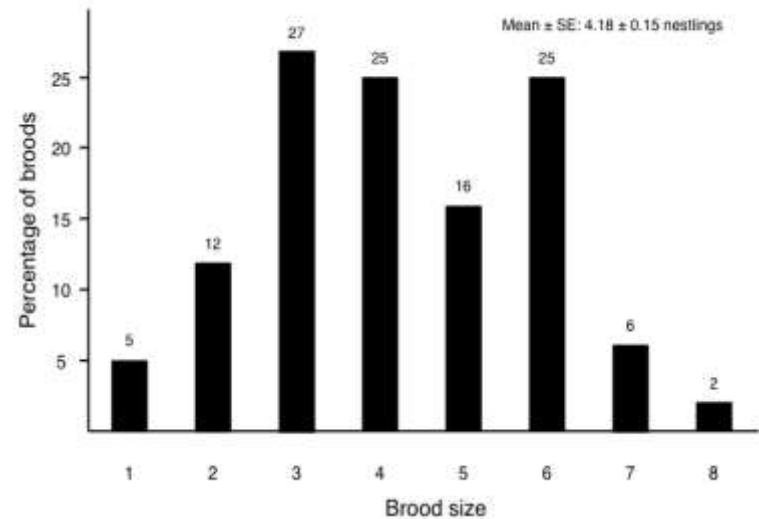
Barn owl reproduction in Cyprus

Frequency distribution of clutch sizes (a) and brood sizes (b) in Cyprus barn owls.

a)



b)



From: Nicolaos Kassinis & Alexandre Roulin (2017): Reproduction of the Barn Owl (*Tyto alba*) in Cyprus (Aves: Strigiformes), Zoology in the Middle East.



Water bird counts (monthly monitoring of all major wetlands)

Xmas count (annual census of all wetlands at the end of each year)

Breeding surveys

A Black-bellied Plover (Himantopus mexicanus) stands in the foreground, facing left. It has a black cap, a white neck, and a black body with white underparts. In the background, a person wearing a hat and dark clothing stands in a field of tall grass. The background is slightly blurred, showing a body of water and a clear sky.

Carried out each year (May – July) for breeding species such as *Charadrius alexandrinus*, *Vanellus spinosus*, *Himantopus himantopus*, *Aythya nyroca*.

species-specific monitoring
Migration of *Falco vespertinus* through
the Akrotiri peninsula



Species-specific surveys

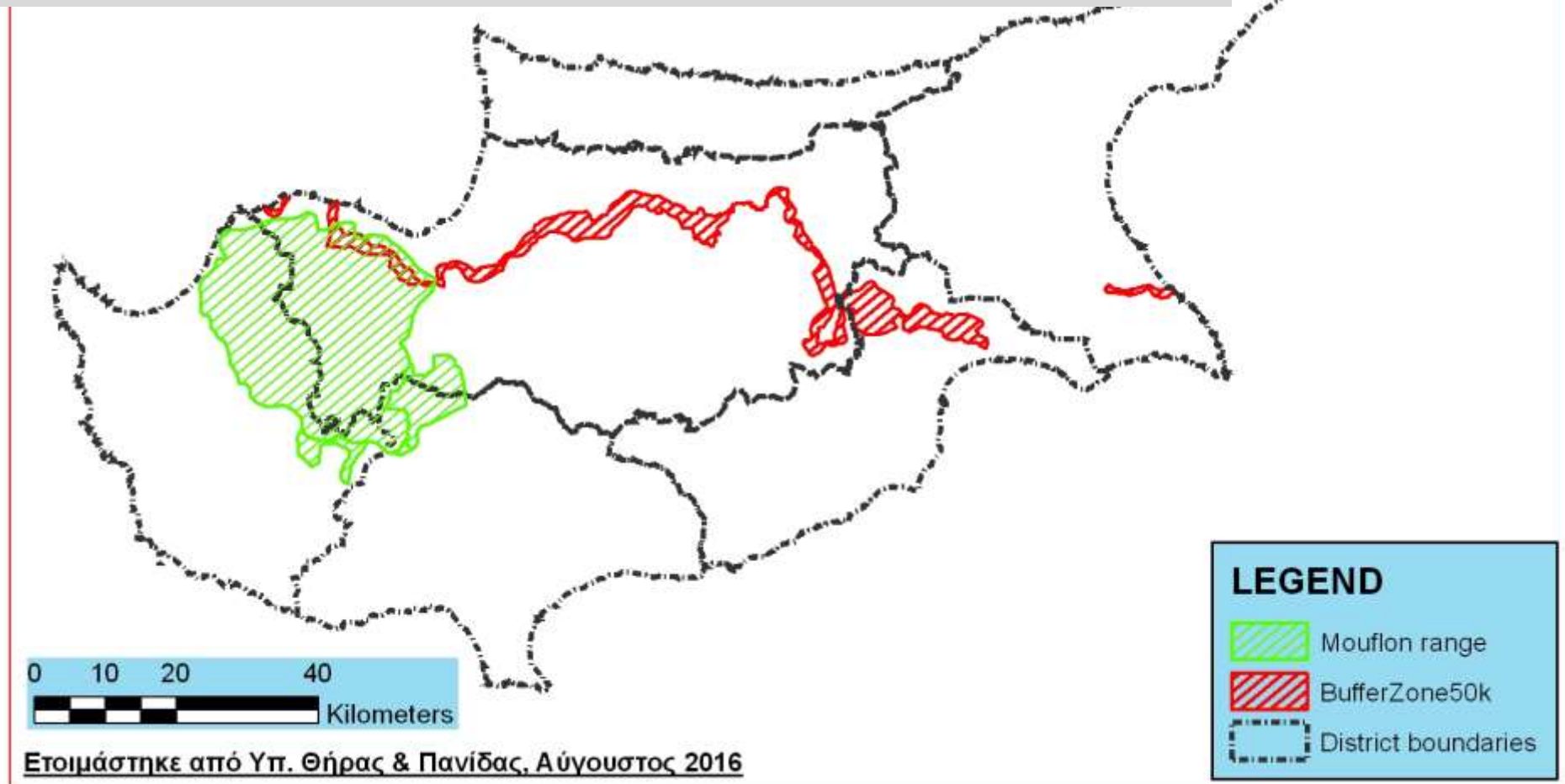
Falco eleonora coastal colonies annual
monitoring August-September
Lapwing / golden plover January counts



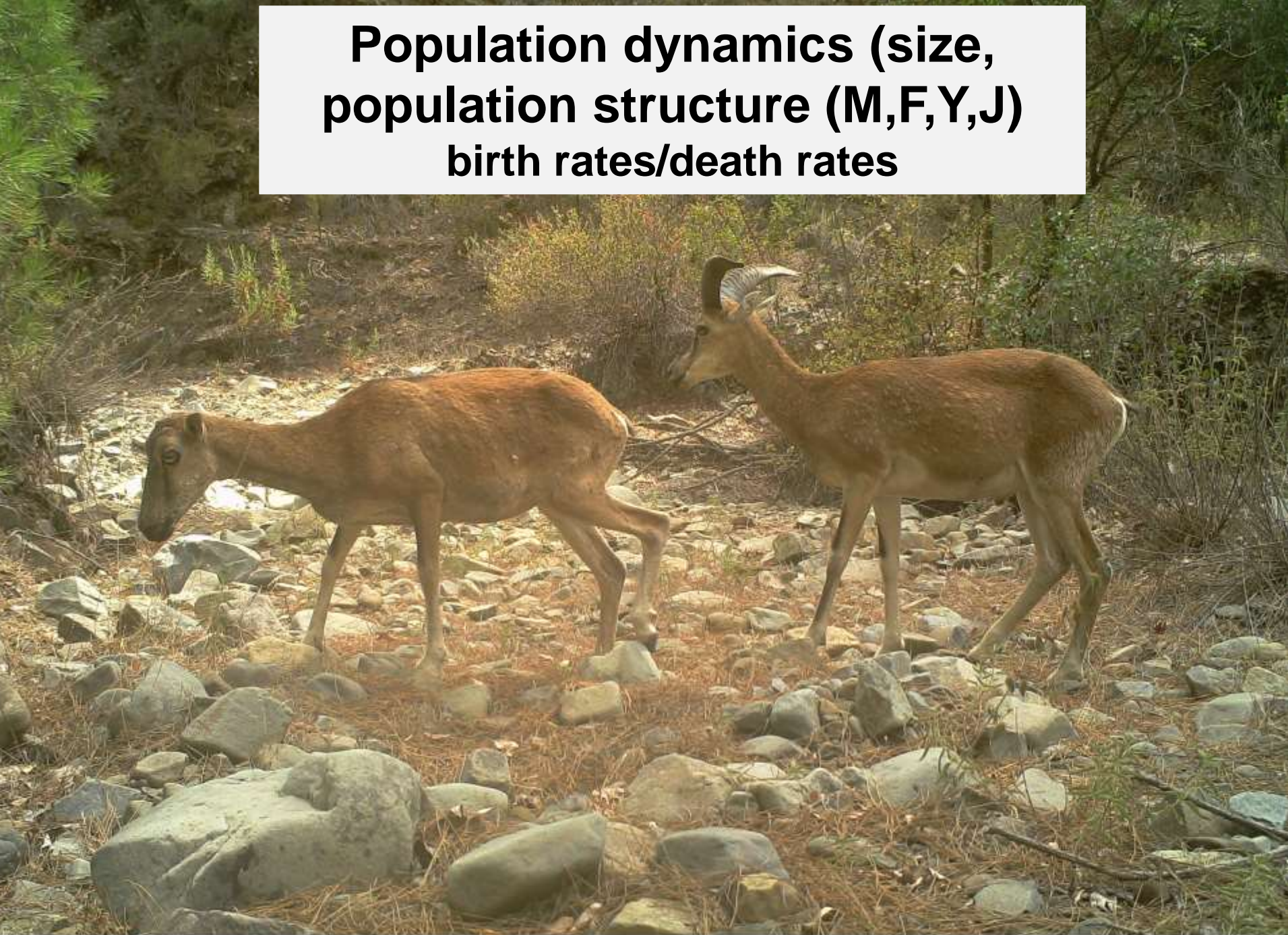
The mouflon of Cyprus *Ovis orientalis ophion* or Agrino, is an endemic subspecies of wild sheep restricted to the island, with a strict protection status given through its inclusion in the European Union Habitats Directive 92/43/EEC (Annexes II and IV) but also through the national legislation.



Mouflon has expanded their range from their Pafos forest stronghold eastwards to areas of Troodos National Forest during the last decade. Also small bands estimated at a few hundred are found in areas not controlled by the Cyprus Government, north of the Pafos forest. Its current geographical coverage of the island exceeds 700 km².



**Population dynamics (size,
population structure (M,F,Y,J)
birth rates/death rates**



Mean Group Size (MGS) = 2.9 άτομα (%CV = 4.2)

Δασικές παρυφές – MGS = 3.5 (%CV = 5.1)

Κλειστές Δασικές περιοχές- MGS = 2.1 (%CV = 5.7)

Fall counts are carried out since 1997 to have an estimate of mouflon numbers and distribution. Latest surveys indicate a relatively stable mouflon population of 2574 ± 599 individuals. The ratio of rams: ewes: yearlings: lamb for fall counts was 96:100:35:13 για το 2014, 90:100:52:29 για το 2015 και 74:100:31:19 για το 2016



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Threats

**Livestock increase within mouflon range
(disease transmission, competition for
forage and scarce water resources)**





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Predation





IAS in Cyprus...



Illegal release of wild boar in Troodos mtns late 1990s. Animals bred in the wild and spread in most of Troodos NP. All animals were removed by trapping and shooting.



03/30/11 09:57 PM DACOR1



03/31/11 09:12 PM DACOR1

A photograph of a sandy beach with several sets of animal tracks. In the upper left, there is a dense patch of low-lying coastal plants with small pinkish flowers. The tracks are imprinted in the sand, showing various patterns of paws and claws. The text is overlaid on the right side of the image.

**Wildlife monitoring is
an obligation for every
Conservation agency
and an on-going,
challenging process.**