RAPTORS MOU

Saker Falcon *Falco cherrug*

A Review of Available Biological Information

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SakerGAP Stakeholders' Workshop, 10 September 2013, Abu Dhabi, UAE

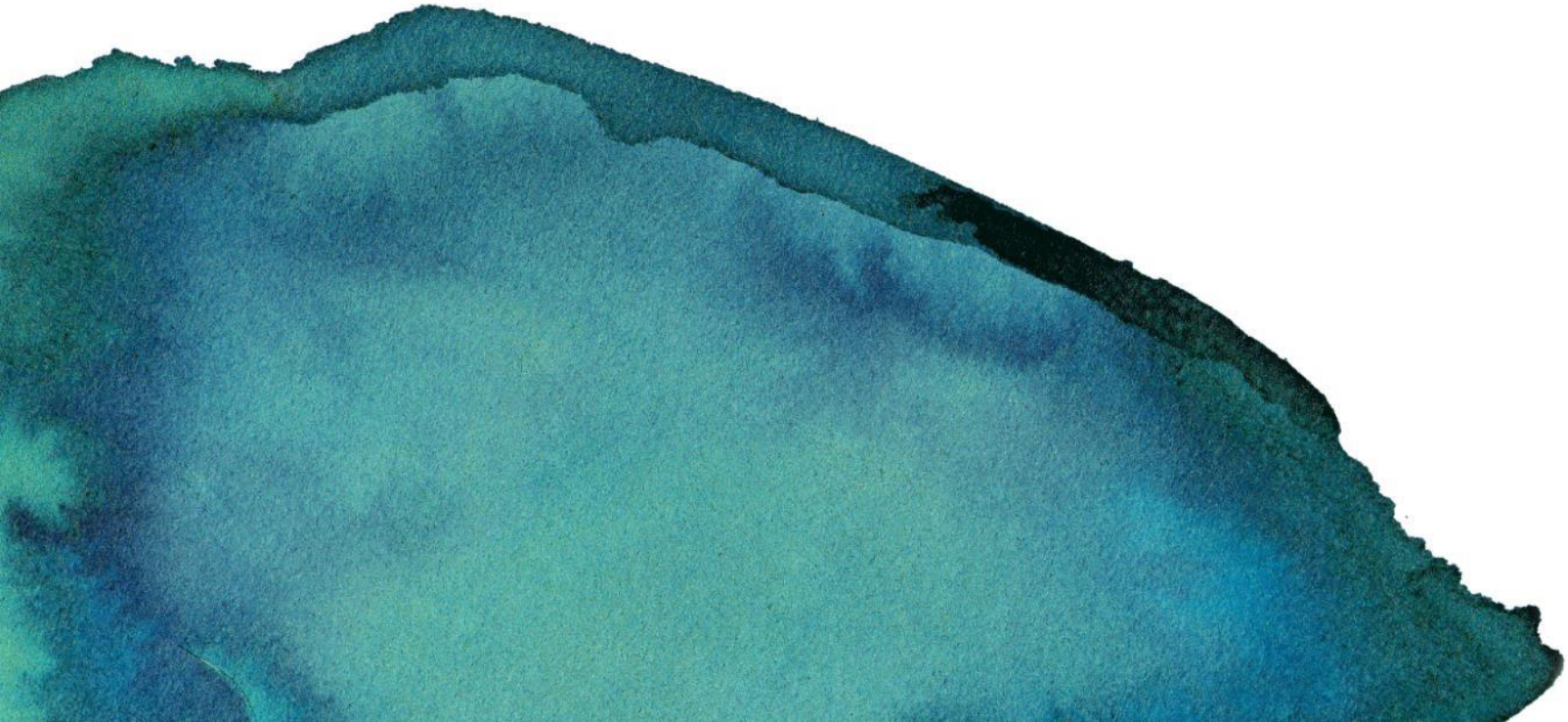
CMS UNEP

Introduction – Data Collection

SakerGAP - Data collection method and tasks

- Took International (European) Species Action Plan *(ISAP, Nagy & Demeter, 2006)* as a basis.
- Updated the ISAP. Corrected the facts if necessary. Summarised information.
- Extended the biological assessment to the range outside Europe.
- Distinguished the scale of data as 'international', 'regional', 'local'.
- Searched and analysed the literature in relation to the following three big areas of global range:
  - European breeding grounds
  - Asian breeding grounds
  - Migration routes and wintering areas – (Europe, Asia, Middle East, and Africa).
- Incorporated experts' knowledge.
- Referred to literature or other sources in the draft.
- Collected pieces of literature in digital format, renamed them and established a Saker Falcon Electronic Library.

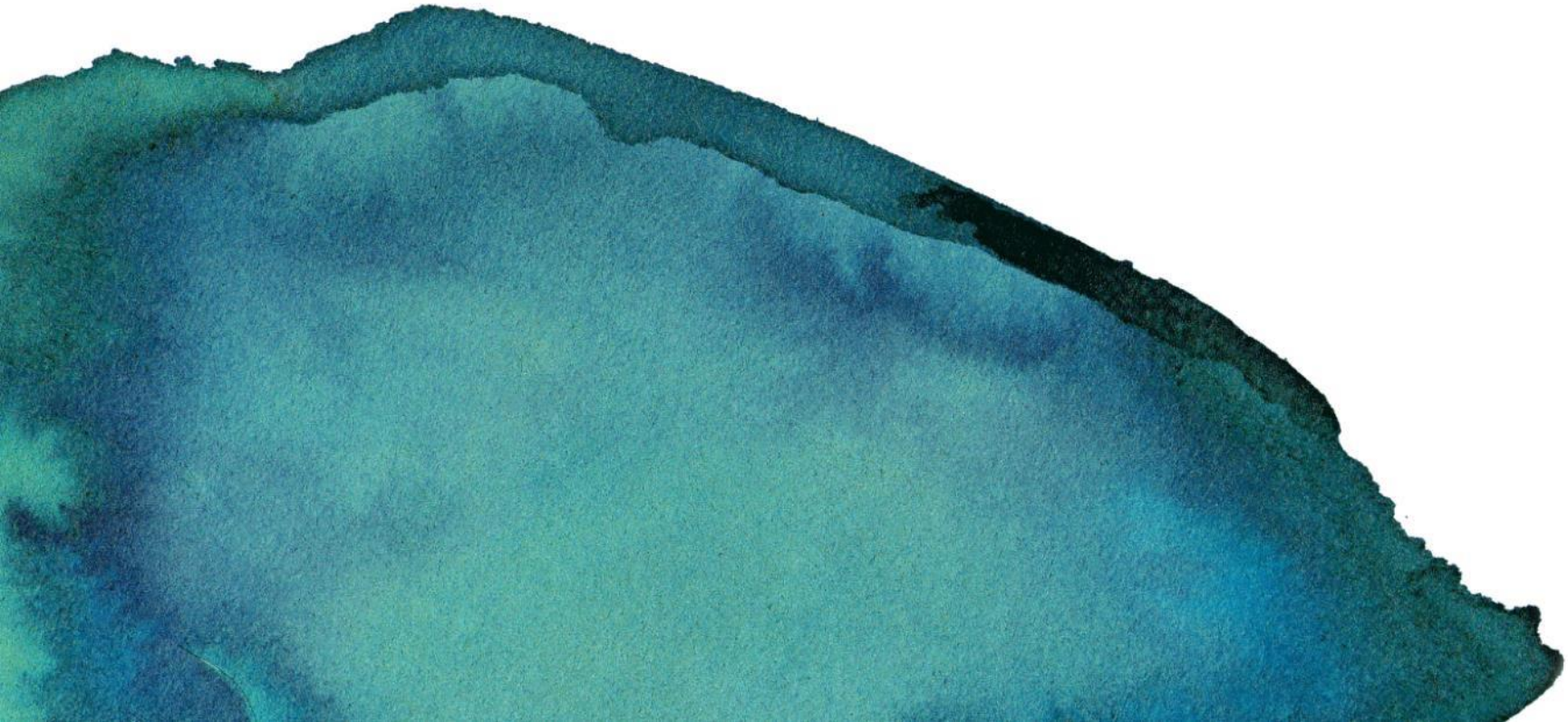
A Review of Available Biological Information



Blocks to discuss during the session

- Description
- Taxonomy
- Distribution
- Breeding population size and trend
- Distribution throughout the annual cycle
- Habitat preference and use
- Feeding
- Breeding
- Survival and productivity
- Key knowledge gaps
- Threats

Description



The Saker Falcon *Falco cherrug* - Description

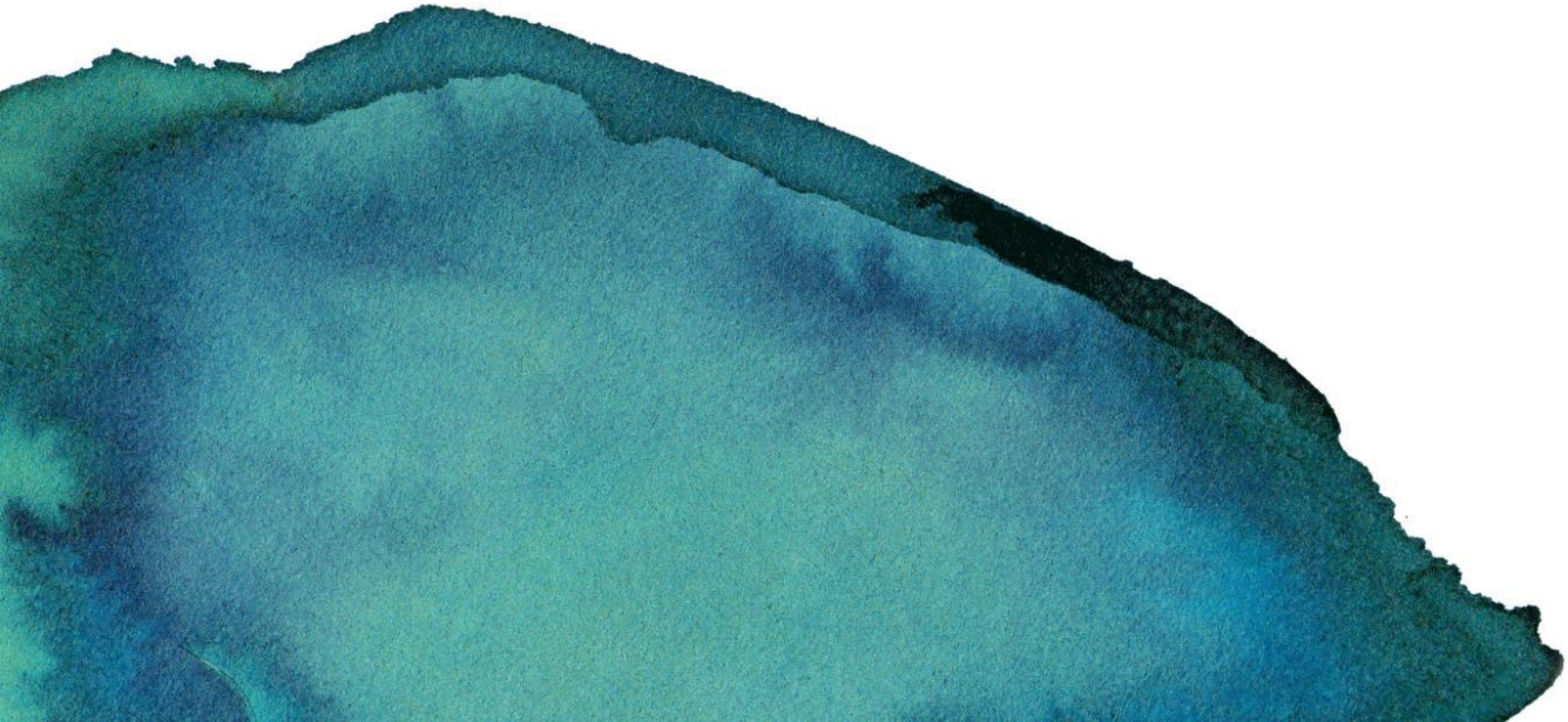
The Saker Falcon *Falco cherrug* - Description

- Sexes are similar, but females average ca. 15% larger and ca. 25-40% heavier than males.

- Its large size for a falcon and widespread use of drier environments have led over centuries to it being used as the foremost bird of prey by Arabian falconers.

- **Conservation and management considerations**: higher demands for females in falconry, sex-(female)-biased mortality by electrocution?

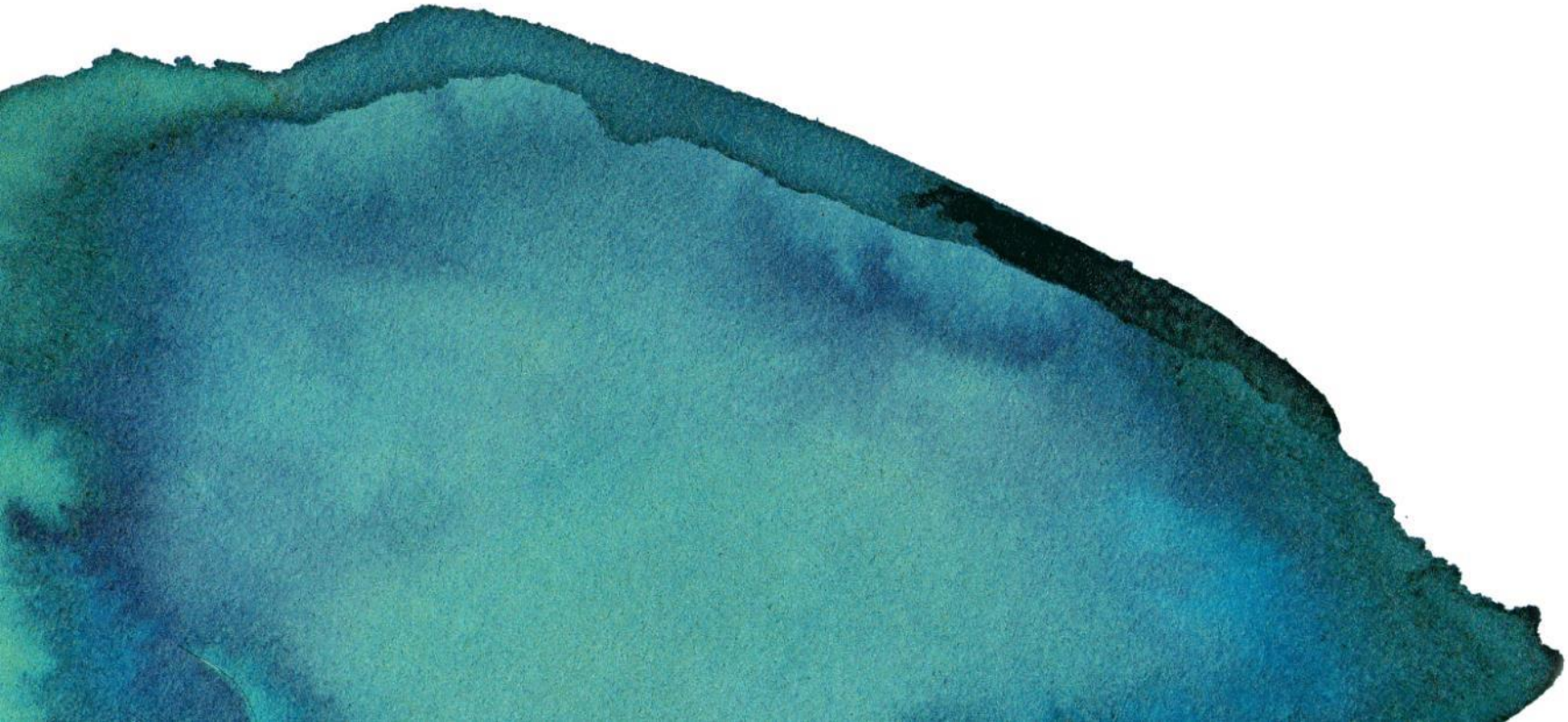
Taxonomy



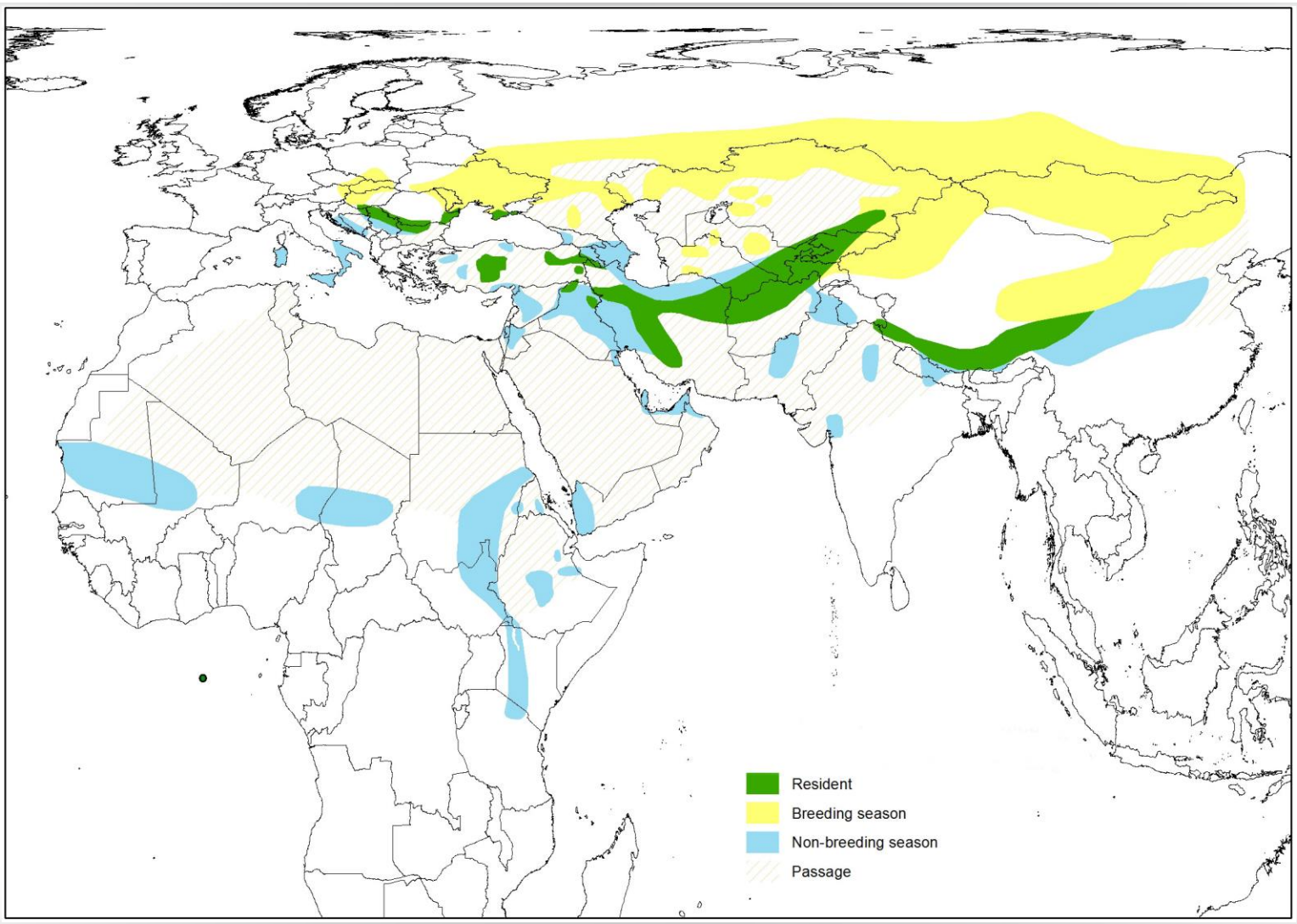
Taxonomy

- Classification: Class: Aves
  Order: *Falconiformes*
  Family: *Falconidae*
  Genus: *Falco*
  Species: *Falco cherrug (Gray, 1834)*
- Polytypic species: usually two subspecies are recognized:
  the nominate *F. c. cherrug* Gray, 1834 and *F. c. milvipes* Jerdon, 1871.
- Up to a total of 13 subspecies have been distinguished to date:
  - Five within the range of 'F. c. cherrug' and
  - Eight within the range of 'F. c. milvipes';
- The Saker Falcon together with Gyr Falcon *Falco rusticolus*, Lanner *Falco biarmicus* and Laggar Falcons *Falco jugger* belong to the Hierofalco complex
- **Conservation and management considerations**: interbreeding, genetic introgression of hybrids in wild populations, falcon release and reintroduction.

Distribution

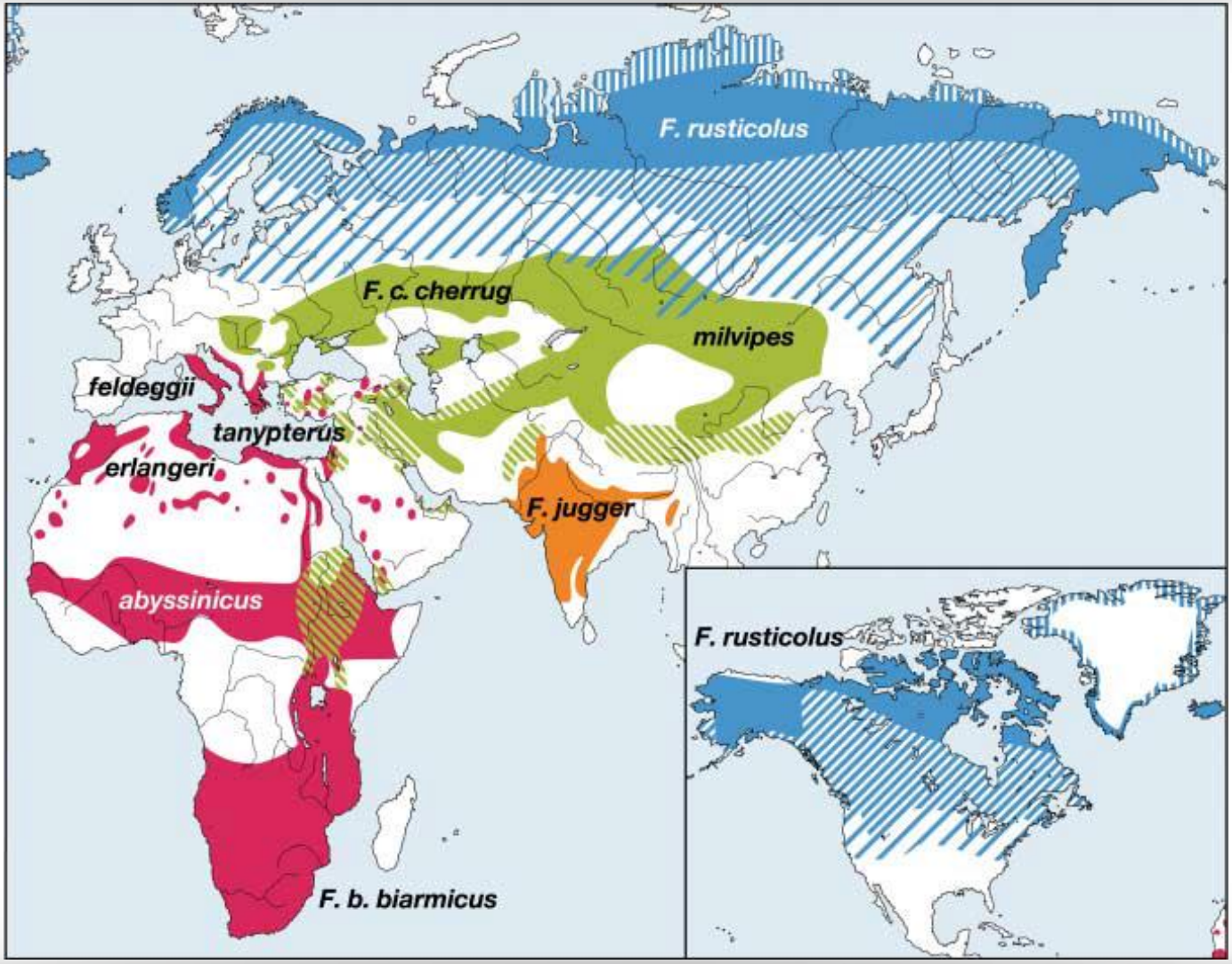


Distribution by BirdLife International 2013

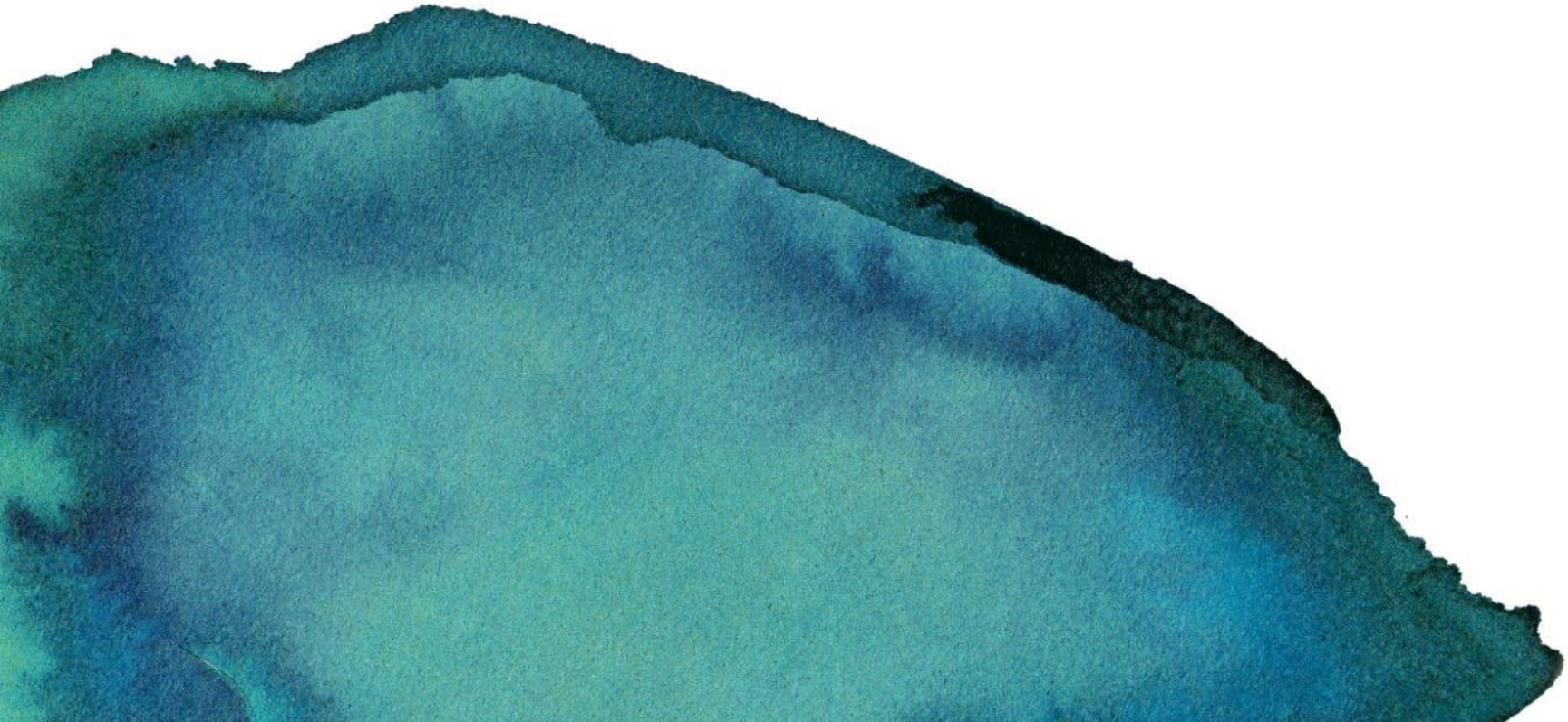


Distribution of *F. c. cherrug* and *F. c. milvipes*

by Nittinger *et al.*, 2007



Breeding population size and trend

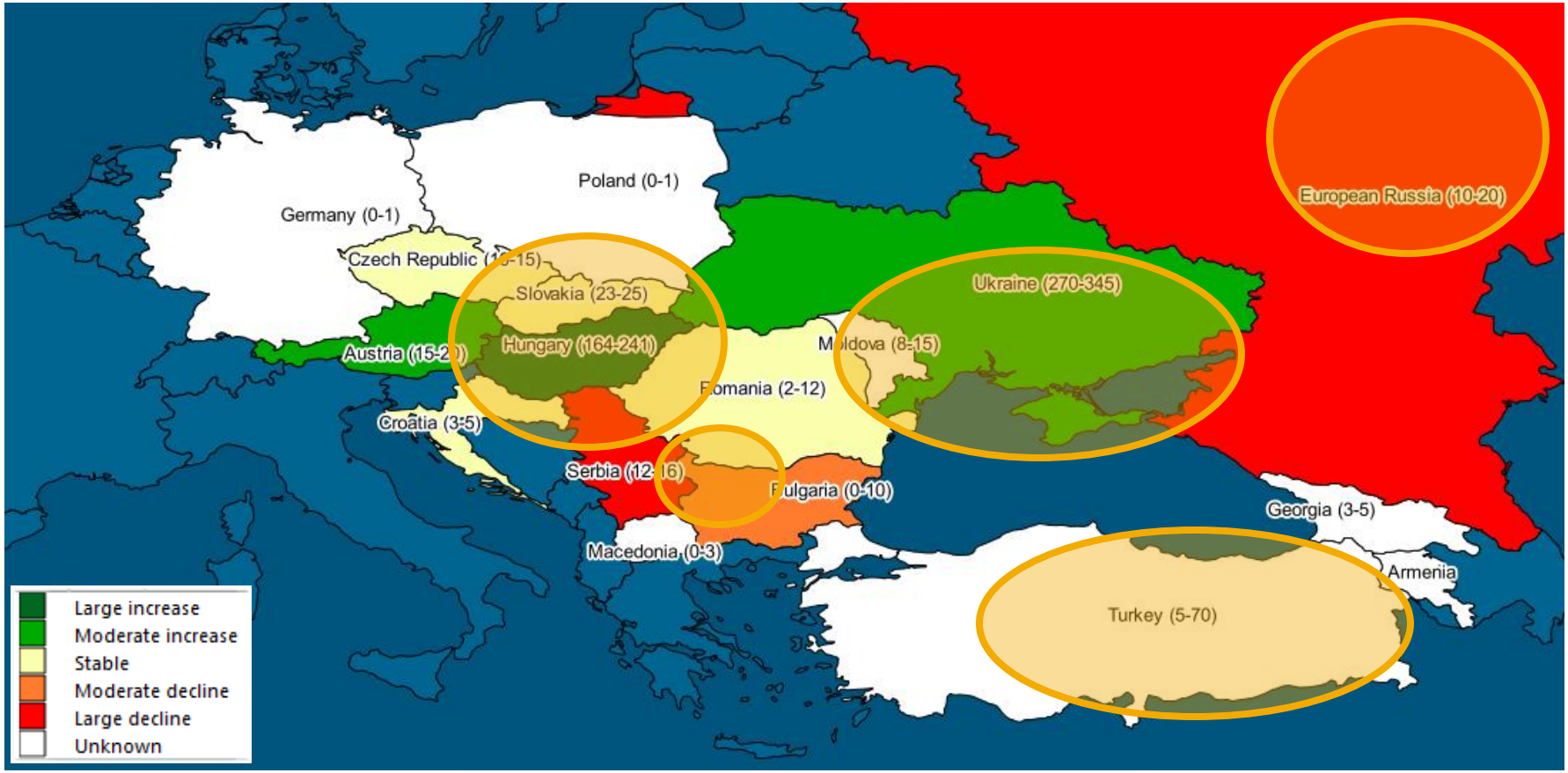


Breeding population sizes and trends – An overview

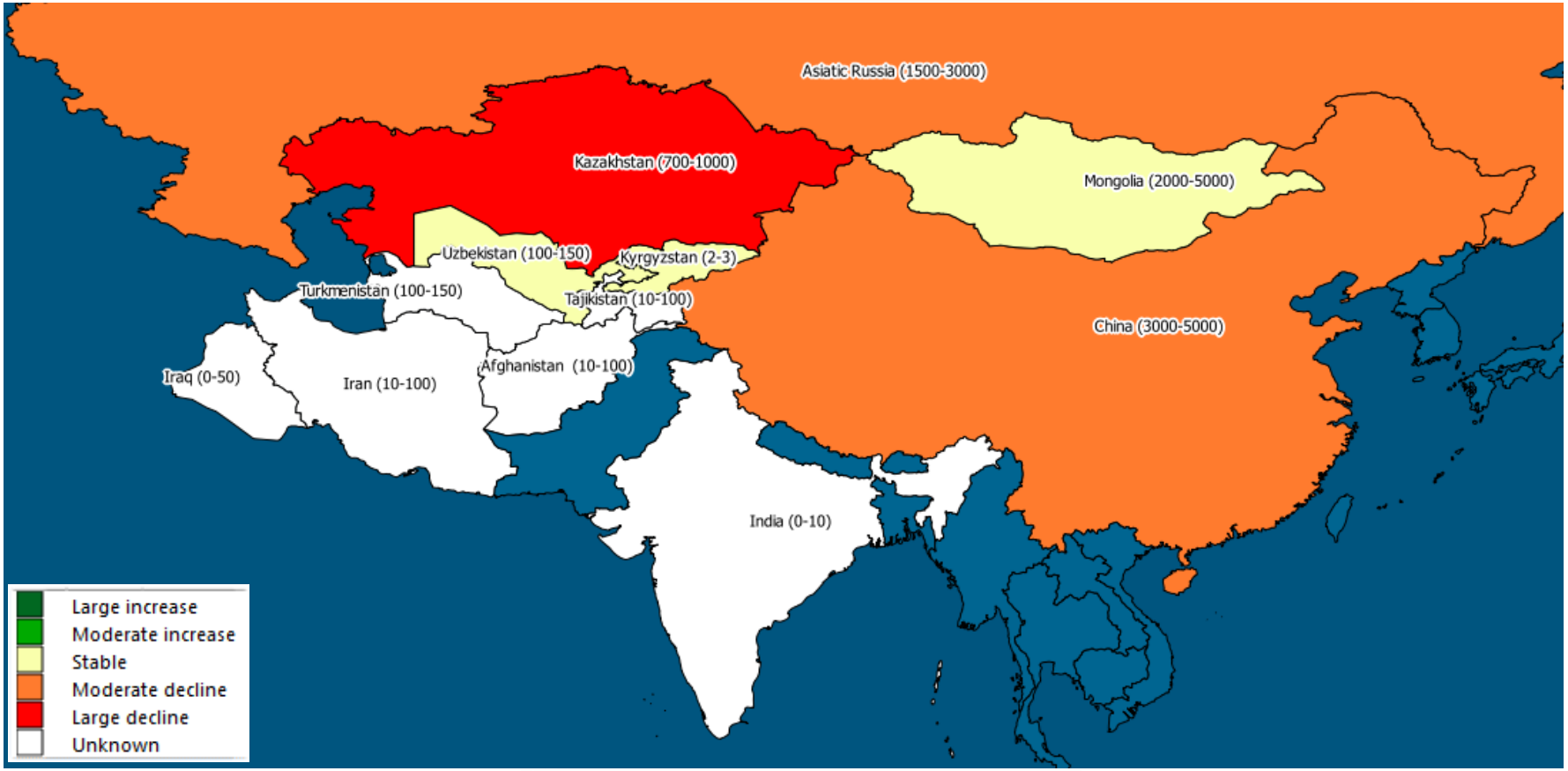
Global population estimates:

- The historical and present population sizes are highly uncertain.
- 1990: c.17,400-28,800 breeding pairs (median c.22,100)
- 2010: c.6,400-15,400 pairs (median c.10,900)
- Overall global population trend: 47% decline (based on median estimates)
- A very significant degree of uncertainty and speculation therefore accompanies population estimates for almost the whole range, especially in Asia.
- The overall population trend is estimated to be negative.

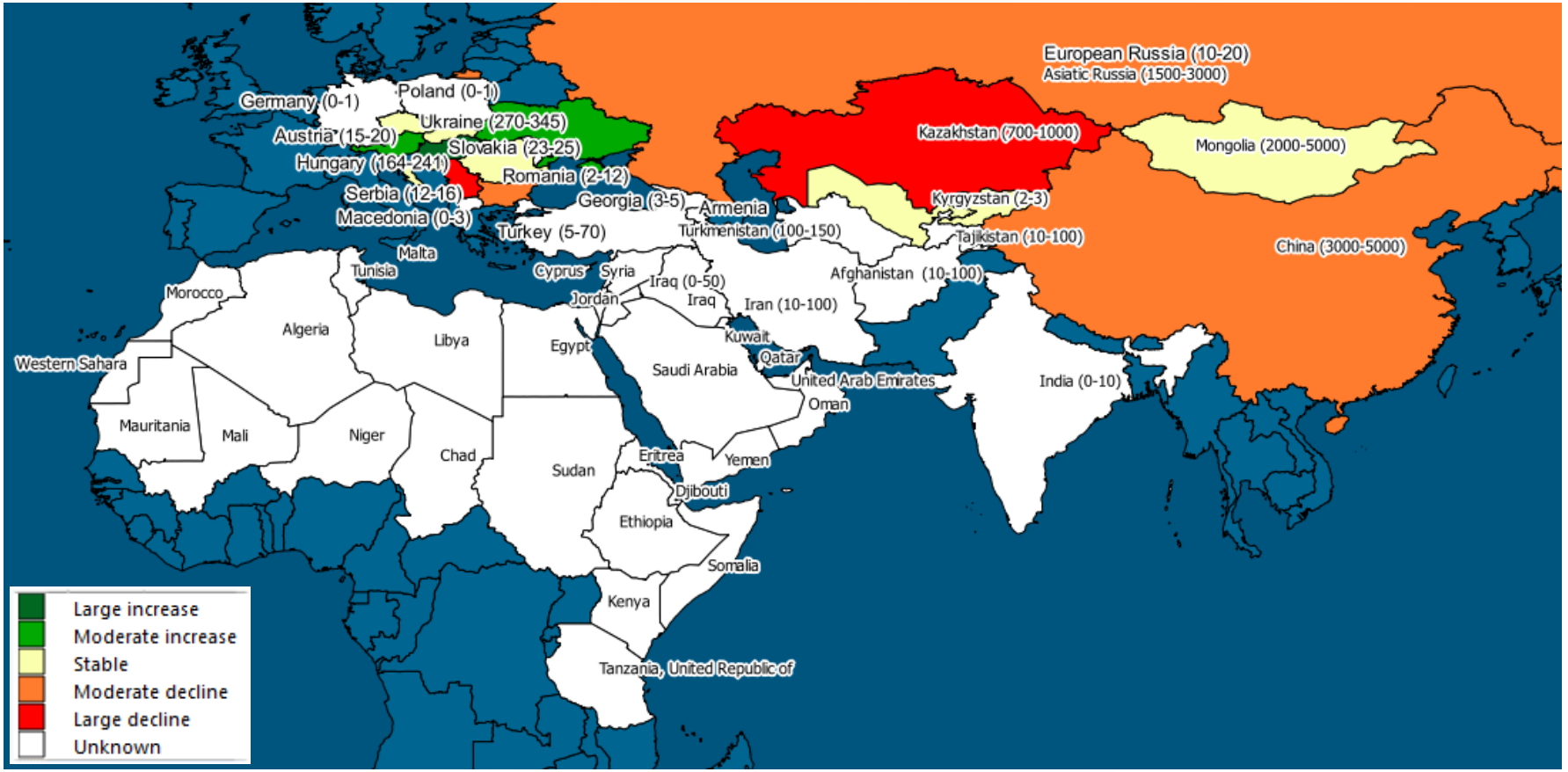
Breeding population sizes and trends – EUROPE



Breeding population sizes and trends – Asia



Range summary – Europe, Asia, the Middle East and Africa

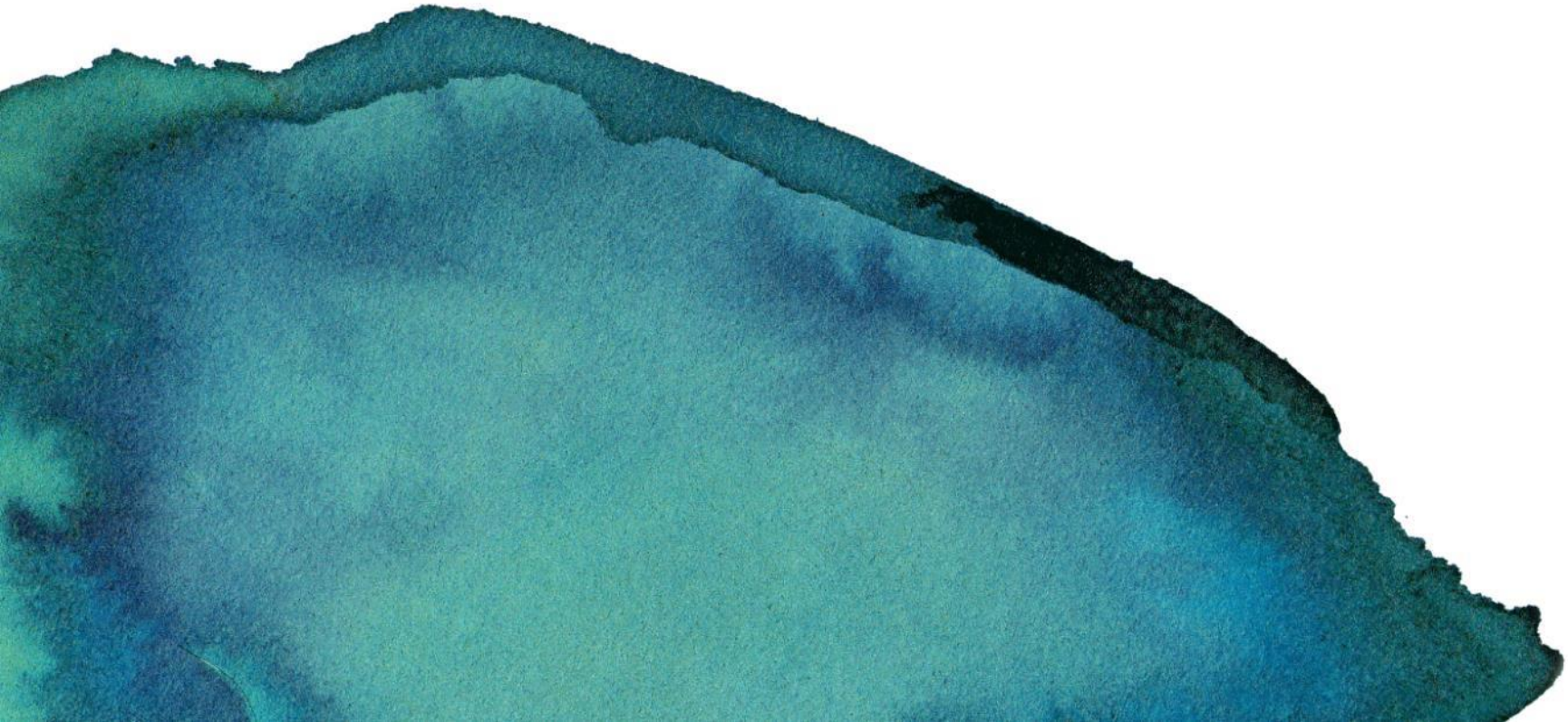


Global distribution and population size

Conservation and management considerations:

- The Saker Falcon requires the conservation status assessment to extrapolate from relatively incomplete datasets.
- Data from few studies and surveys using different methods, covering different time periods. As a consequence, comparisons are fundamentally very problematic. There is a high need of harmonised population monitoring ever the range of the Saker Falcon.
- A very significant degree of uncertainty and speculation therefore accompanies population estimates for almost the whole range, especially in Asia.

Distribution throughout the annual cycle



Distribution throughout the annual cycle

Europe & Asia:

January			February			March			April			May			June			July			August			September			October			November			December		
1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Wintering						Occupation			Incubation			Chick rearing			Fledging						Post flegding dispersal						Migration and wintering										

- Europe: adults are sedentary, nomadic, part- or fully migratory; juveniles are part- or fully migratory. Migratory 1cy birds show uniform parallel migration to the south-west.
- Asia: nomadic or migratory. Birds migrate to the south-west or the south-east.

Conservation and management considerations: species protection and habitat conservation & management

Distribution throughout the annual cycle

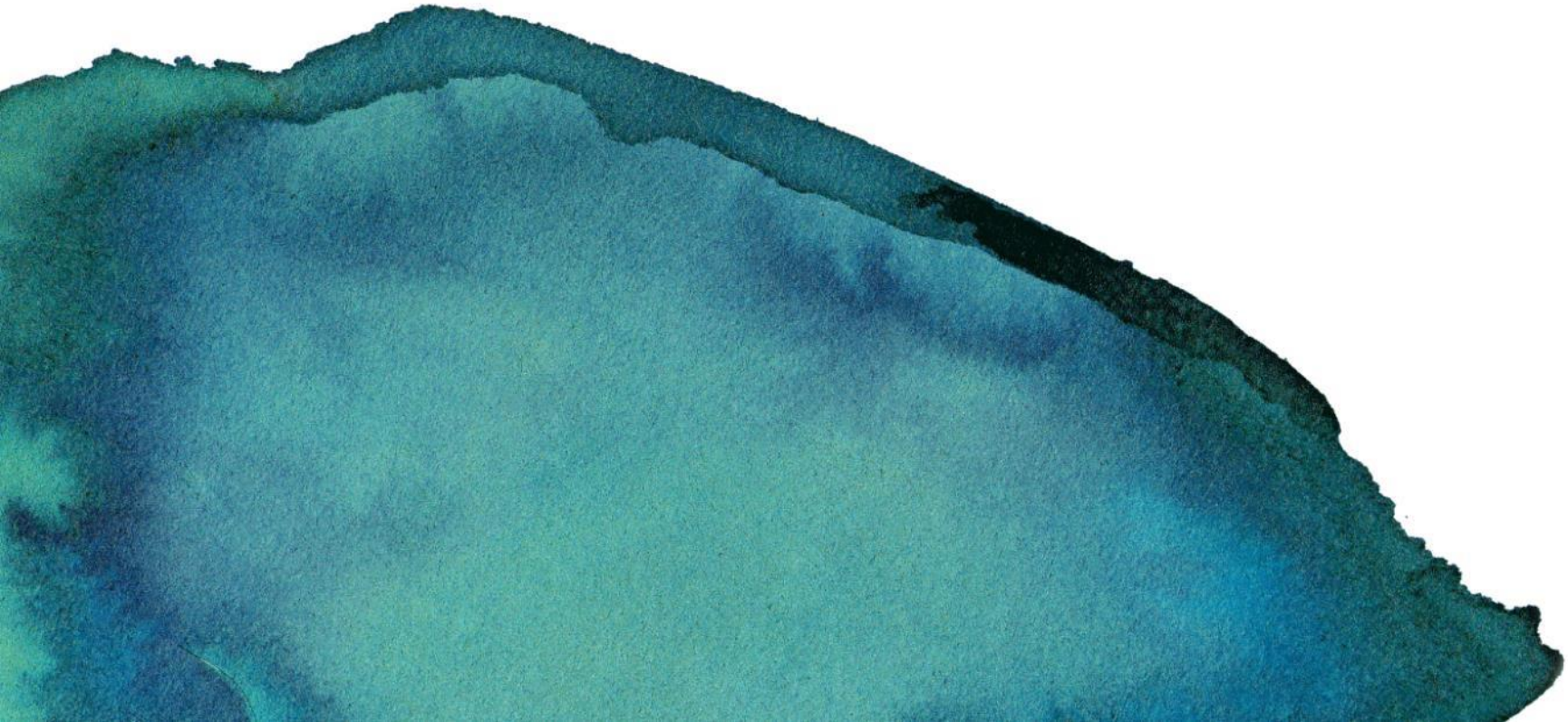
Middle East & Africa

January			February			March			April			May			June			July			August			September			October			November			December		
1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Wintering			Return to breeding areas																		Passage												Wintering			

- Migratory Sakers leave their breeding areas in September - October and return in March - April.
- Numbers are largely unknown in the wintering areas.

Conservation and management considerations: sustainable trapping and trade during migration and in the winter grounds

Habitat preference and use

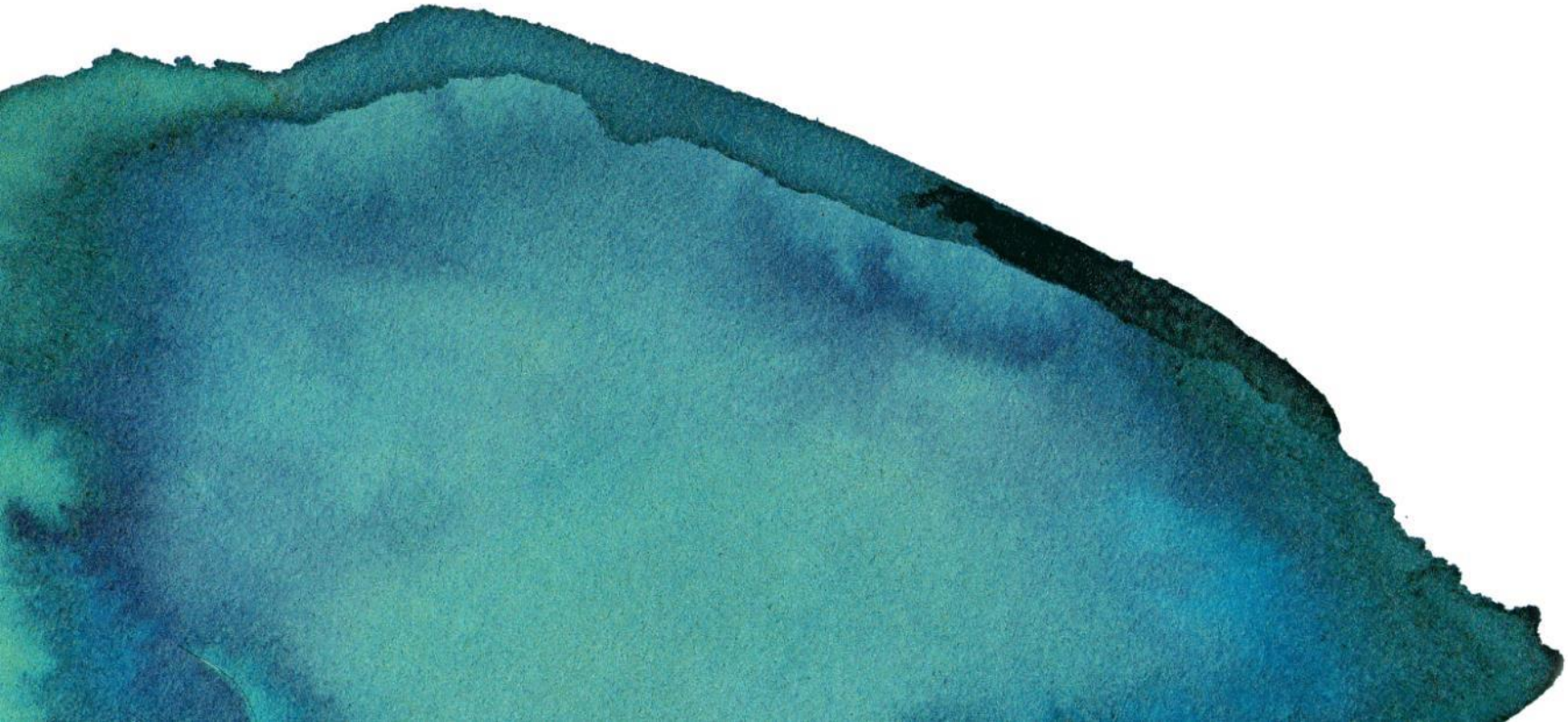


Saker Falcon – Habitat preference and use

- From sea level up to 4,600m a.s.l. depending on prey availability.
- Lowlands, hills, mountain ranges, upland plateaux.
- Prefers open areas but also breed in forests.
- Adapted to drier environment: deserts, semi-deserts, steppes.
- Also forest steppes, wetlands, low-vegetation grazed grasslands and agricultural fields.

Conservation and management considerations: habitat management in favour of the Saker Falcon

Feeding

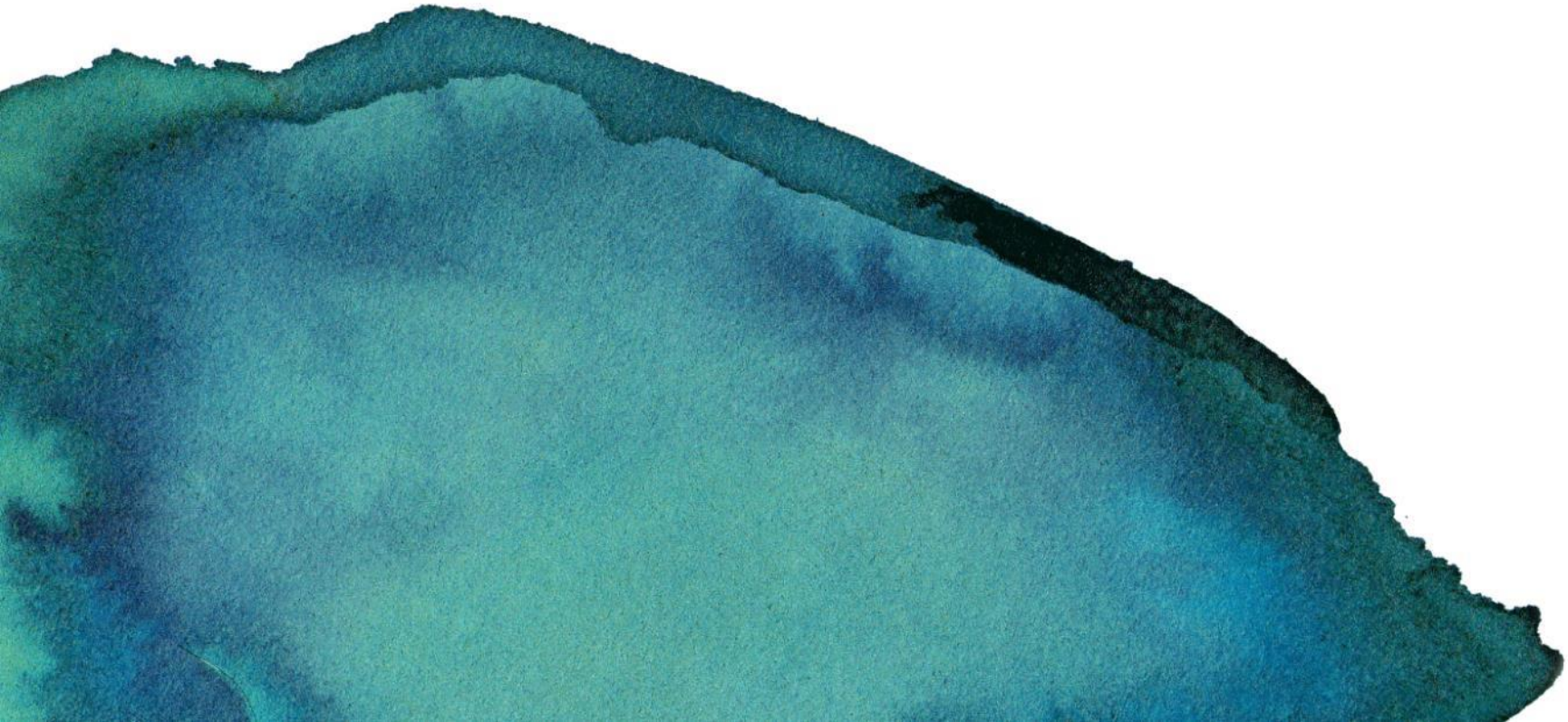


Saker Falcon – Feeding

- Sakers' hunting strategy depends on their prey.
- Adapted to high speed hunting low over the ground in open areas.
- Highly manoeuvrable and agile in the air.
- Interspecific kleptoparatism could be a significant behaviour character.
- Main component of diet: wide range of small and mid-sized diurnal terrestrial rodents and lagomorphs (susliks, voles, hamsters, gerbils, pikas, marmots, mice, rats and jerboas).
- Birds are usually subordinate but significant: sandgrouses, game birds, larks, starlings, pigeons and corvids.

Conservation and management considerations: habitat management in favour of the key prey species

Breeding

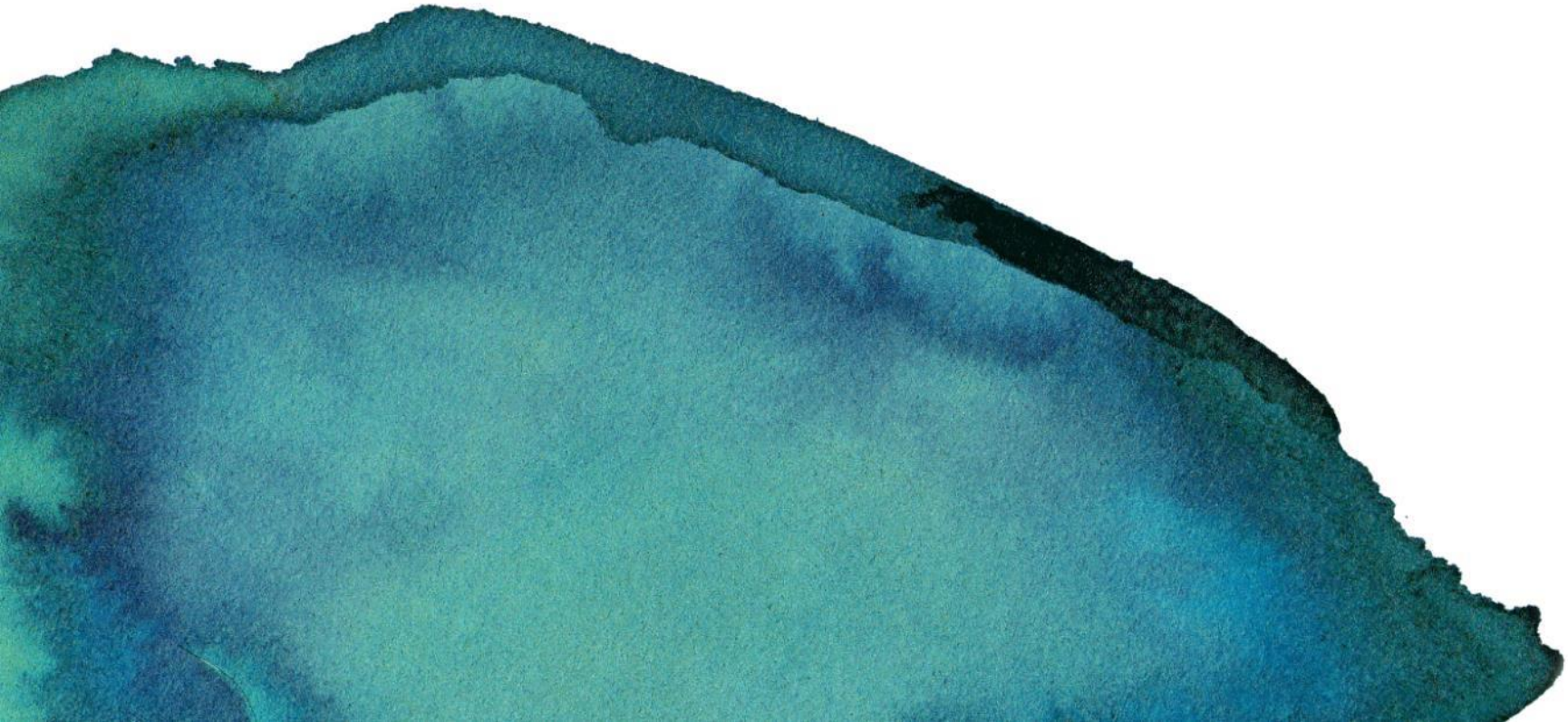


Saker Falcon – Breeding

- The Saker Falcon does not build a nest but occupies nests of other birds.
- It also uses scrapes on cliff ledges or rock crags for nesting.
- Most Sakers start breeding at 21 months post-fledging (3 calendar year).
- Sakers are prolific, they lay 3-5 (6) eggs in early March – mid-April.
- Incubation 30-32 days, fledging 45-50 days, post-fledging 28-45 period days.
- Fluctuations in nesting density.

Conservation and management considerations: Provision of artificial nest platforms where safe natural nests are not available

Survival and productivity



Saker Falcon – Survival and productivity

- Estimated generation length: 6.4 years *(BirdLife International, 2013)*
- Minimal survival estimations *(Kenward et al., 2013)*:
  0-9 months: 50%, 10-21 months:65%, >21months post fledging: 80%

Parameter	Europe	Central Asia
Expected breeding rate (for single adult)	57%	42%
Avarage brood size (nestling/fledged brood)	2.59	3.61
Nest succes (clutches that fledged young)	0.64	0.85
Productivity (nestlings per clutch)	2.21	3.04

Conservation and management considerations: sustainable harvest rates and Adaptive Management Framework

Key Knowledge Gaps

Saker Falcon – Key knowledge gaps *(Collar et al., 2013)*

Extensive knowledge gaps in the following areas:

1) Distribution (Turkey, Russian Federation, Central Asia);
2) Population sizes and trends (Russian Federation, Central Asia);
3) Ecological issues (migration routes and wintering grounds, age-specific survival rates, breeding performance in relation to food supply);
4) Trapping and trade effects (harvest levels, proportion of sexes & age-classes affected, the impact of trapping on the breeding performance, long-term impacts on dispersal);
5) Anthropogenic impacts (positive and negative) other than trade (habitat conversion, alteration, degradation, he effect of powerlines, climate change effects, effects of hybrid falcons on the populations);
6) Adaptive management (funding needs, socio-economic cost and benefits, target population figures, effectiveness of the protection regimes, artificial nest provision and related harvesting, Stakeholders' engagement in conservation).

Threats

Threat Prioritization

- Scoring of threats by their importance (critical, high impact):

  Critical: a factor causing or likely to cause very rapid declines (>30% over 10 years)

  High: a factor causing or likely to cause rapid declines (20-30% over 10 years)

  Threats sometimes judged by much speculation and less data!

- Scale of the threats: Global, Regional, Local

  Local treats can be critical in the case of a very low national population!

- Range-specific treats: breeding range vs. passage and wintering states

Important (critical, high impact) threats in ISAP and in SakerGAP Questionnaires + in literature

In range states with <u>50< known breeding pairs & P & W Countries:</u>

- Electrocution
- Unsustainable trapping and trade
- Conversion of grasslands into arable land
- Decrease in grazing animal stock
- Overgrazing
- Pesticides/primary and secondary poisoning
- Infrastructure development (electricity, road networks)
- Collision with man-made structures (windfarms, overhead cables)
- Extreme weather

In range states with <u>50>known breeding pairs & P & W Countries</u> :

- Tree cutting
- Illegal shooting
- Illegal taking of eggs or chicks
- Collapsing nests
- Disturbance
- Climate change and desertification
- Urbanization

Thank you for your attention!