

ENERGY TASK FORCE MEETING, CAPE TOWN, SOUTH AFRICA

# The Soaring Bird Sensitivity Mapping Tool

Pepe Clarke

# FORWARD PLANNING

Location  
scoping

Site  
evaluation

Planning &  
assessment

Construction

Operation

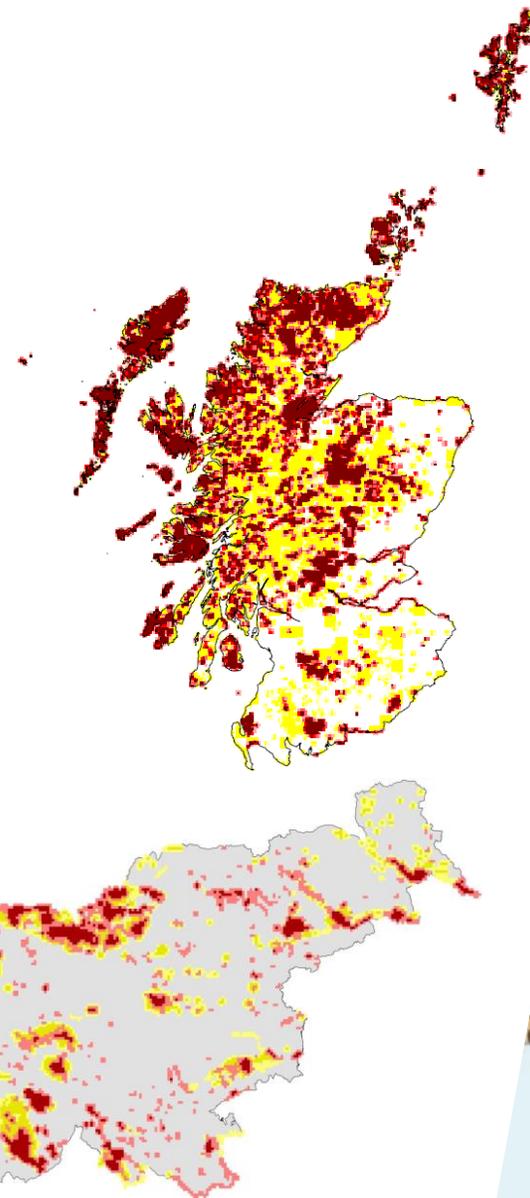
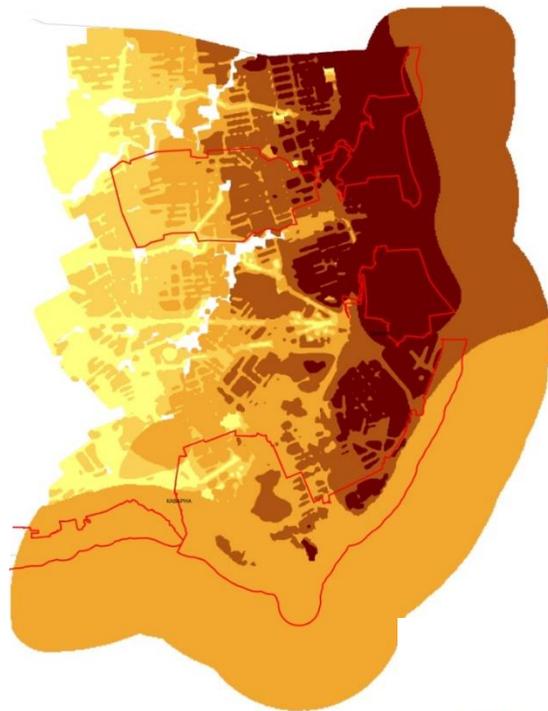
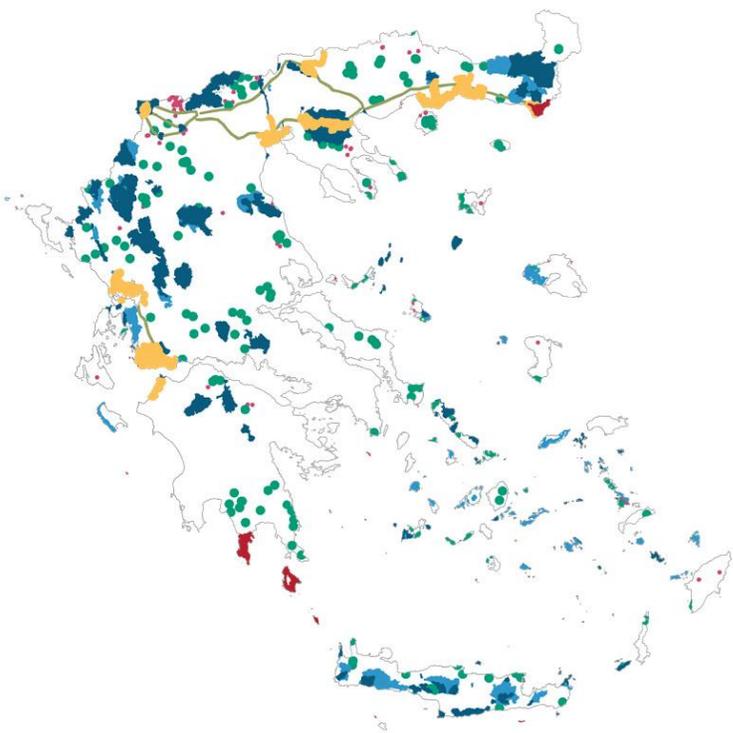


# INFORMING SITE SELECTION

- **Site selection is the key issue.** Ensure wind farms are sited away from sensitive areas and risks and impacts will be substantially reduced.
- Robust, participatory and transparent Environmental Impact Assessment (EIA) protocols are essential.
- However, by the time that an EIA is underway plans for a wind farm may be at an advanced stage.
- Need for accurate, site-scale biodiversity data that can inform the earliest stages of the planning process when it is still relatively easy and inexpensive to make changes.
- Ideally, the expansion of the wind sector should be based on a strategic, landscape-scale planning approach employing sound spatial data.



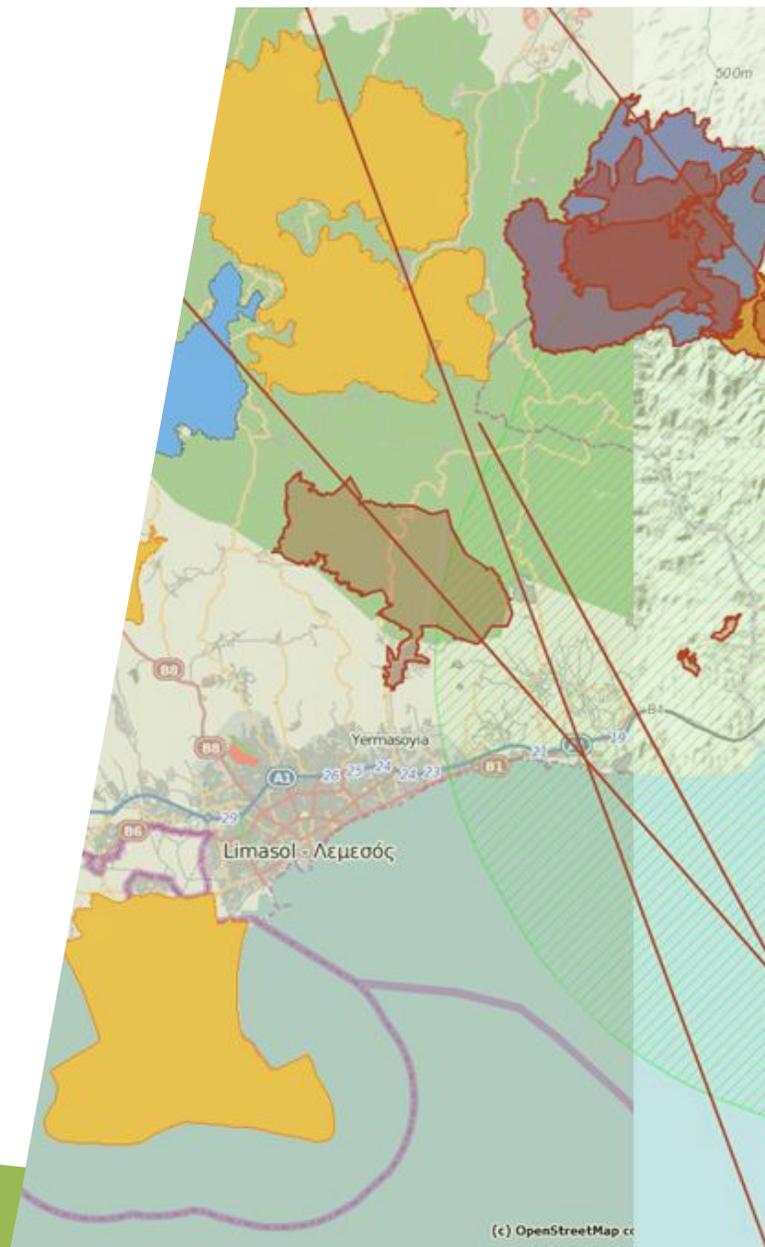
# SENSITIVITY MAPPING



	88 2	588 SB1	114 3	357 9
49 10	383 10	711 SB1	59 3	184 5
58 3	164 9	111 3	189 5	34 1
157 5	223 9	350 6	153 5	188 5
352 10	173 4	240 10	260 5	319 5
381 10	342 10	350 9	330 10	359 10
258 10	482 10	500 10	220 4	359 7
346 10	494 10	494 10	453 10	377 10
	372 10	296 10	116 4	207 4
				282 7
				137 6

# SENSITIVITY MAPPING

- Sensitivity mapping is a valuable tool for effective wind energy planning, helping developers and regulators steer wind energy development away from the most sensitive areas where conflict with wildlife is likely.
- BirdLife International is the leading authority on the development of such tools.
- The first sensitivity maps were developed for Scotland and England by the RSPB. Subsequently, a number of other BirdLife Partners around the world developed similar national tools, including in Bulgaria, Greece, South Africa, Slovenia and Ireland.
- Working with its network of national partners across the Middle East and Northeast Africa, BirdLife has developed the first regional tool—the *Soaring Bird Sensitivity Mapping Tool*.



# RIFT VALLEY / RED SEA FLYWAY

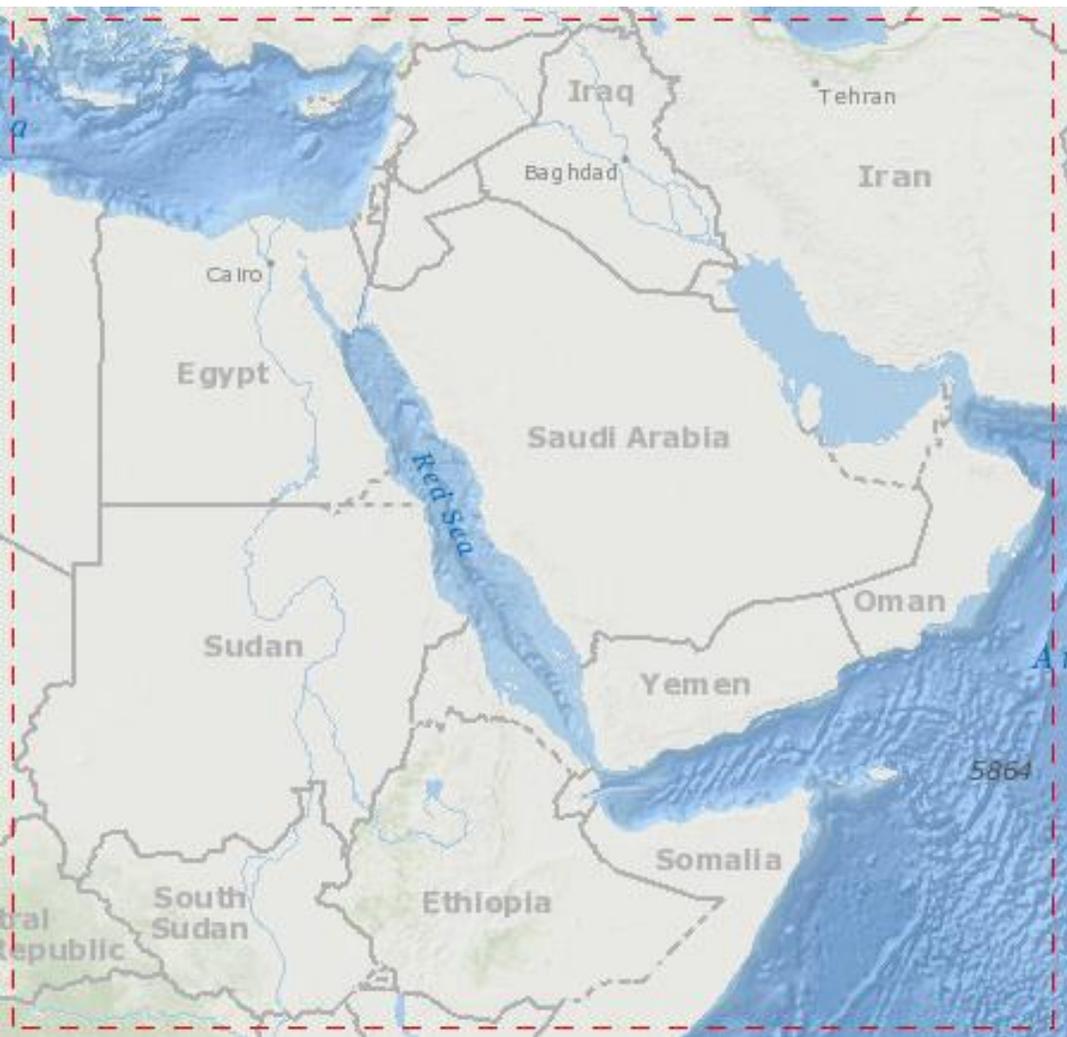
- One of the world's most important avian migration routes.
- Perhaps as many as two million large soaring birds pass through the region each year as they migrate between Africa and Eurasia.
- Already numerous and escalating threats including hunting, agricultural intensification and habitat loss and deterioration.
- To address these multiple threats, BirdLife launched the Migratory Soaring Bird (MSB) project, supported by GEF and UNDP and delivered in eleven countries: Djibouti, Egypt, Eritrea, Ethiopia, Jordan, Lebanon, Palestine, Saudi Arabia, Sudan, Syria and Yemen.



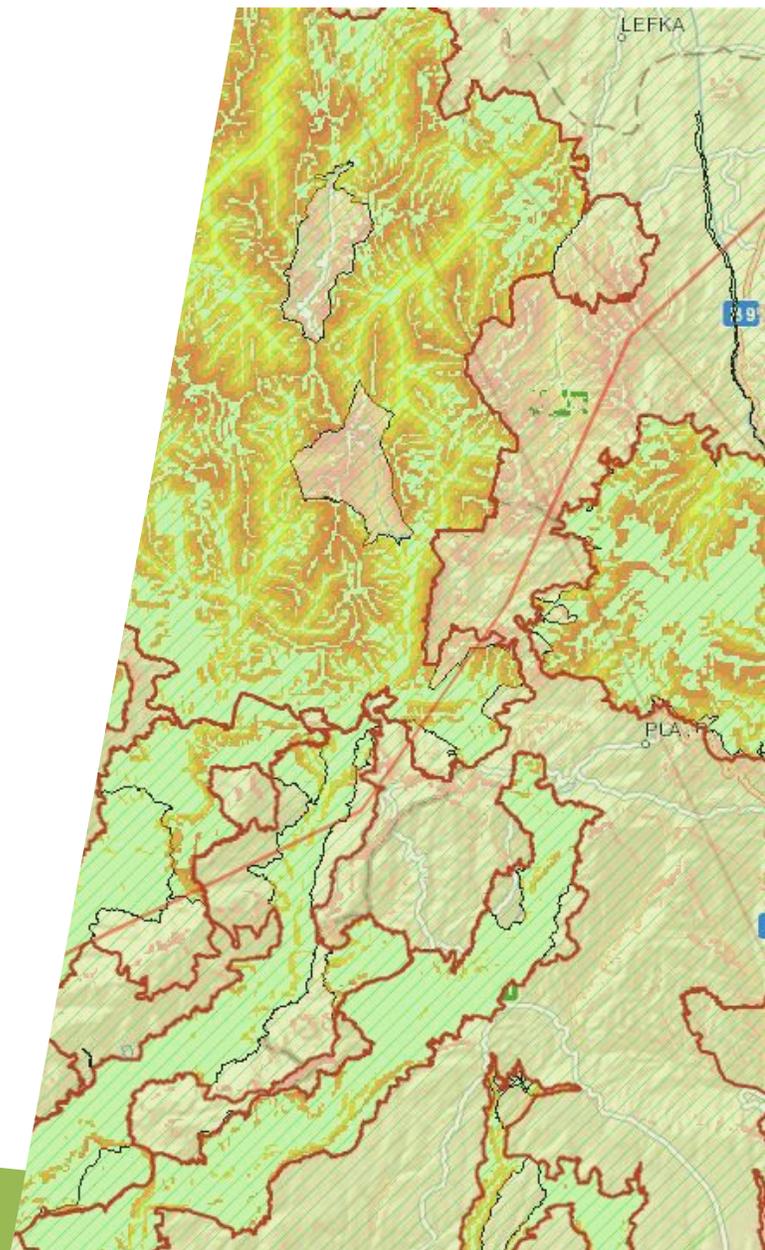
Empowered lives.  
Resilient nations.



# SENSITIVITY MAPPING TOOL



- Through the *Soaring Bird Sensitivity Mapping Tool* ([tinyurl.com/MSBmap](https://tinyurl.com/MSBmap)) users have unrestricted access to extensive spatial datasets relating to soaring birds.
- The tool uses a simple, explicit formula to assign sensitivity categories, allowing for an objective assessment and comparison of prospective locations.



# DATA SOURCES

- Important Bird and Biodiversity Areas (IBAs).
- Soaring bird observation records
- Satellite tracking data
- Species range maps
- Protected area data
- Ridgelines



# CALCULATING SENSITIVITY

$$SI = SSS^1 + SSS^2 + SSS^3 \dots SSS^n$$

$$SSS = SSI \times \text{Peak Count} / \text{Global Population}$$

$$SSI = SVI \times RL$$

**SI** Sensitivity Index

**SSS** Species Sensitivity at Site

**SSI** Species Sensitivity Index

**SVI** Species Vulnerability Index

**RL** Red List Index

Outstanding

Very high

High

Medium

Potential

Unknown



# SENSITIVITY CATEGORIES

<b>Unknown</b>	No SI value
<b>Potential</b>	SI $\leq$ 0.001 and all non-soaring bird IBAs
<b>Medium</b>	SI $>$ 0.001 and $\leq$ 0.010
<b>High</b>	SI $>$ 0.010 and $\leq$ 0.250
<b>Very high</b>	SI $>$ 0.250 and $\leq$ 2.000
<b>Outstanding</b>	SI $>$ 2.000



# CALCULATING SENSITIVITY

## Observation point

4,500 White Stork  
300 Black Stork  
30 White-backed Vulture  
10 Egyptian Vulture

## Satellite tracks

3 White Stork (Autumn)

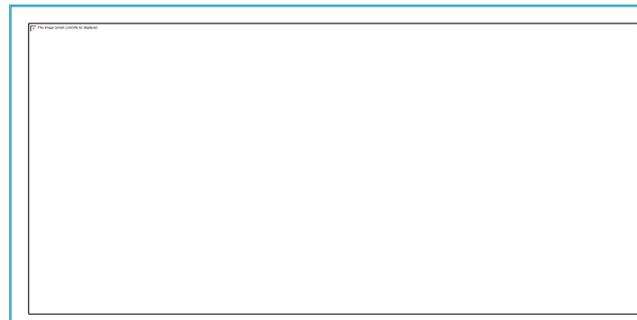
## IBA 2

26 Griffon Vulture

## IBA 1

8 Common Kestrel  
5 Common Buzzard

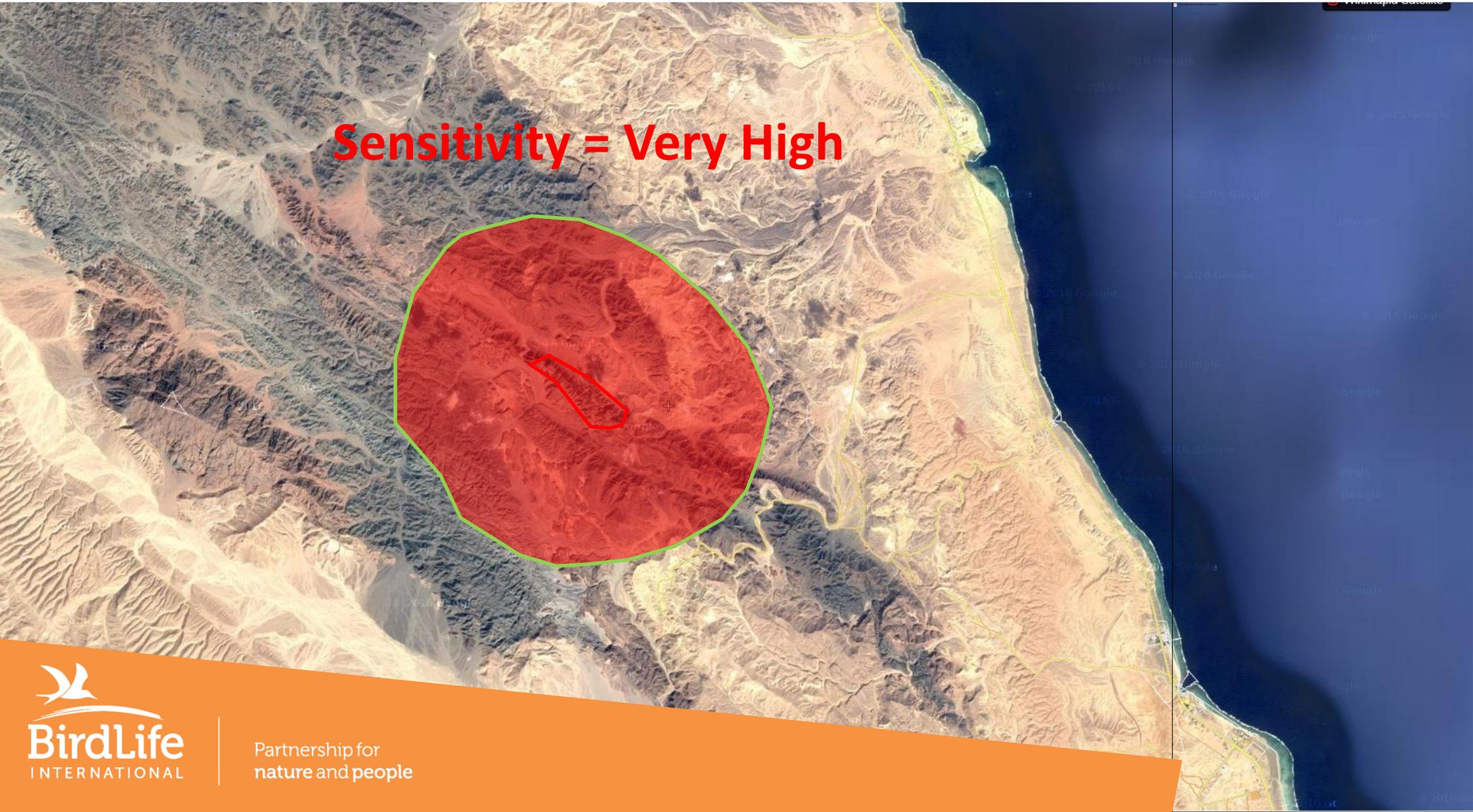
# CALCULATING SENSITIVITY



IBA 1	SVI	×	RL	SSI	×	Count	/	Global popn	SSS
Common Kestrel	6		1	6		8		5,000,000	0.0000096
Common Buzzard	8		1	8		5		6,000,000	0.0000067
<b>TOTAL</b>									<b>0.0000163</b>
<b>IBA 2</b>									
Griffon Vulture	10		1	10		26		100,000	0.0026
<b>TOTAL</b>									<b>0.0026</b>
<b>Observation Point</b>									
White Stork	10		1	10		4,500		500,000	0.09
Black Stork	10		1	10		300		24,000	0.125
White-backed Vulture	10		10	100		30		270,000	0.0111
Egyptian Vulture	10		8	80		10		20,000	0.04
<b>TOTAL</b>									<b>0.2661</b>
<b>SITE TOTAL</b>									<b>0.2687</b>

# CALCULATING SENSITIVITY

**Sensitivity = Very High**



# CALCULATING SENSITIVITY

## Observation point

4,500 White Stork  
300 Black Stork  
30 White-backed Vulture  
10 Egyptian Vulture

## Satellite tracks

3 White Stork (Autumn)

## IBA 2

26 Griffon Vulture

## IBA 1

8 Common Kestrel  
5 Common Buzzard

# DEMONSTRATION

**Soaring Bird Sensitivity Mapping Tool:**  
A planning aid for wind energy and other sectors

Instructions • Guidance • Project • Flyway • Contact • Acknowledgments

**SENSITIVITY SEARCH**

**MSB Sensitivity Map - report options**

Map Title:

Sub-Title:

Species (32)       Soaring bird observation locations (2)  
 Soaring bird IBAs (2)       Protected areas (3)  
 Other IBAs (0)       Satellite tracks (100)  
 Locations by species       Species by location

Create Report    Cancel

**Sensitivity Search Results**    new clear hide

SEARCH SUMMARY (26km buffer)

Combined Sensitivity: Outstanding(9.237516829554988)

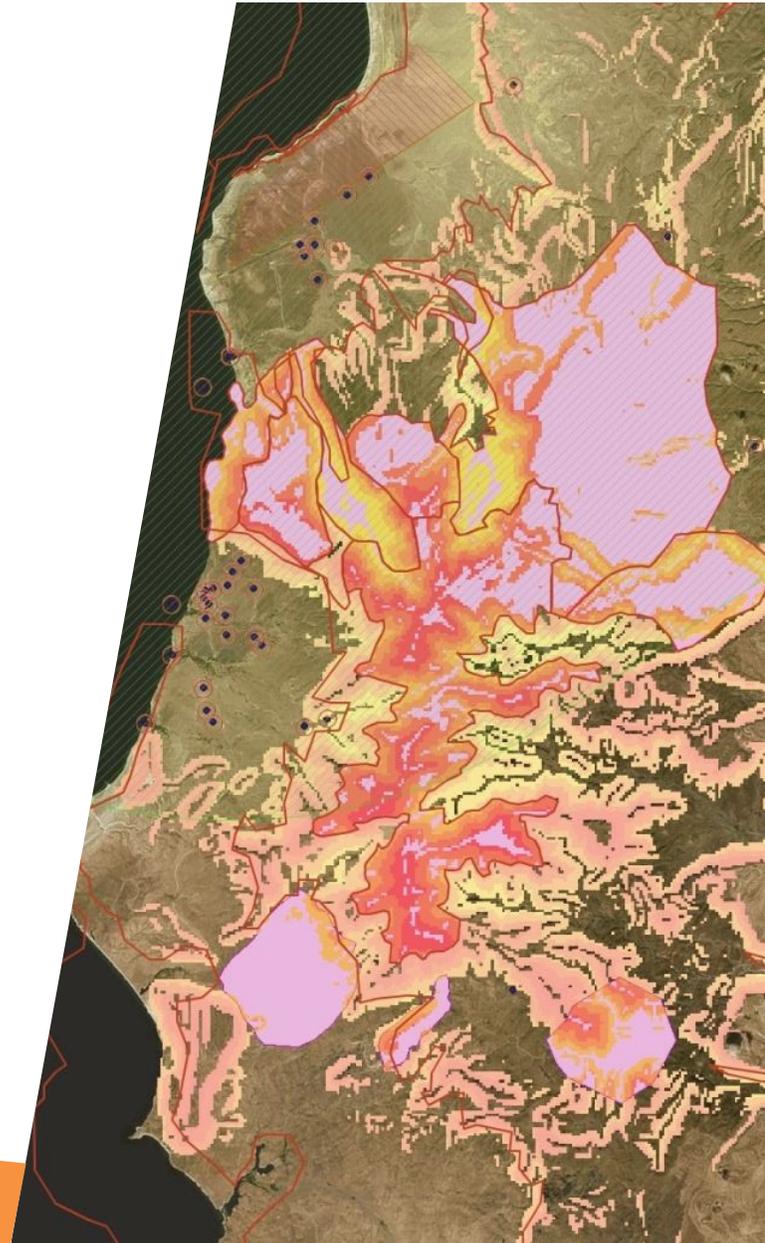
Species: 30(32)    Observation locations: 2

IBAs: 2(2)    Protected sites: 3    Tracks: 100

Country: Egypt

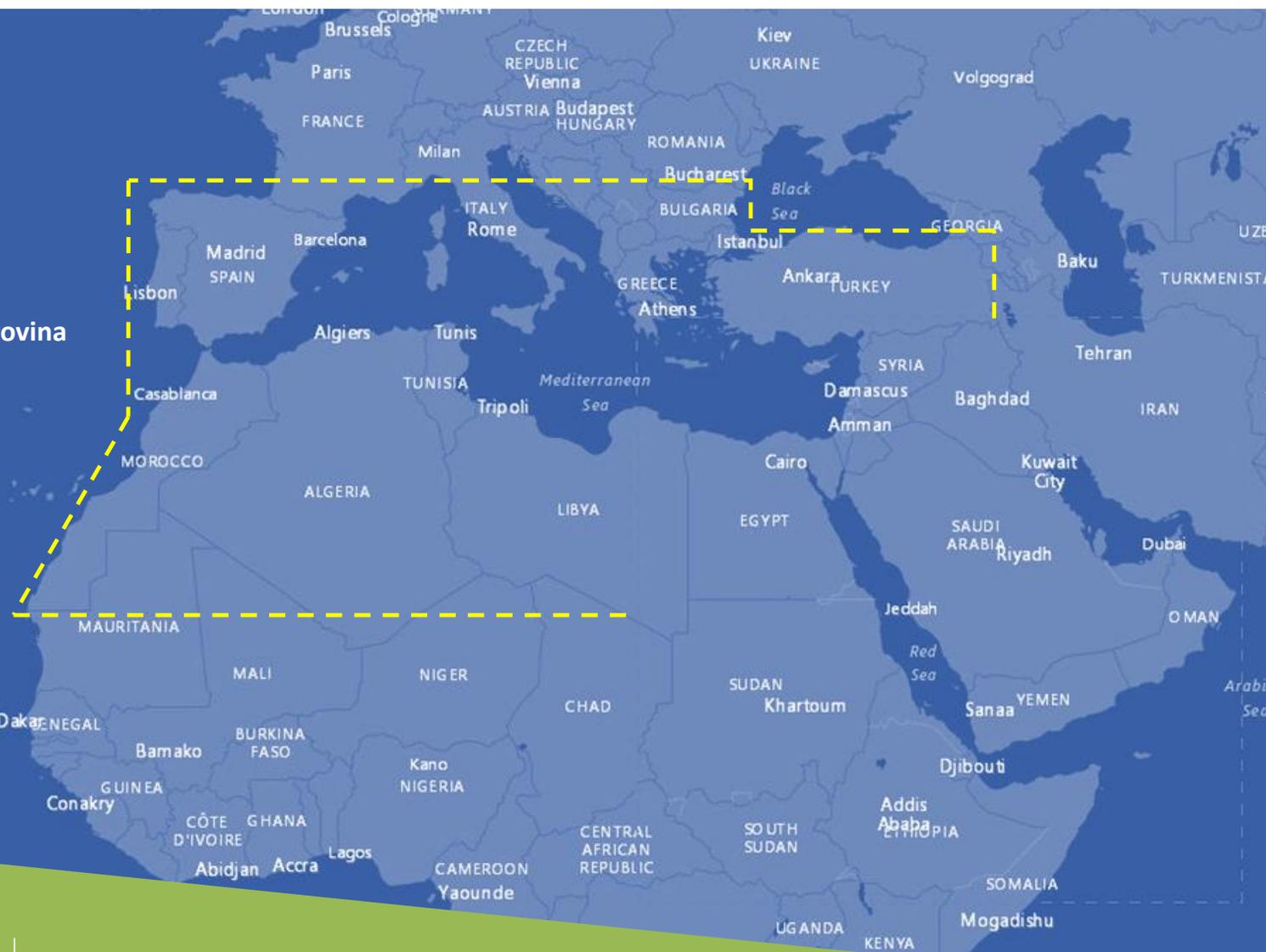
Species(32)	Soaring bird IBAs(2)	Other IBAs(0)	Soaring bird observation locations(2)	Protected areas(3)	Satellite tracks(100)
Common Name	Peak Count	Presence	Source		
Black Stork	290 - 1709	observed	IBA Population Data		
Common Crane	3923 - 15906	observed	IBA Population Data		
Steppe Eagle	186 - 3159	observed	IBA Population Data		
Sooty Falcon	1 - 132	observed	IBA Population Data		
Egyptian Vulture	11 - 64	observed	IBA Population Data		
Eastern Imperial Eagle	1 - 19	observed	IBA Population Data		
Pallid Harrier	2 - 100	observed	IBA Population Data		
European Honey-buzzard	687 - 8339	observed	IBA Population Data		

Auto hide    Create PDF Report



# MEDITERRANEAN EXTENSION

- Portugal
- Spain
- Gibraltar
- France
- Monaco
- Malta
- Slovenia
- Croatia
- Bosnia & Herzegovina
- Serbia
- Montenegro
- Macedonia
- Albania
- Greece
- Bulgaria
- Turkey
- Cyprus
- Libya
- Tunisia
- Algeria
- Morocco



Partnership for  
nature and people

