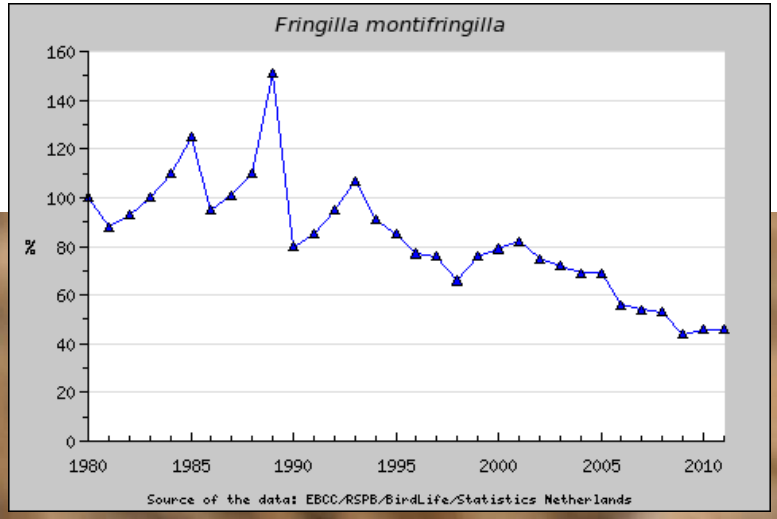
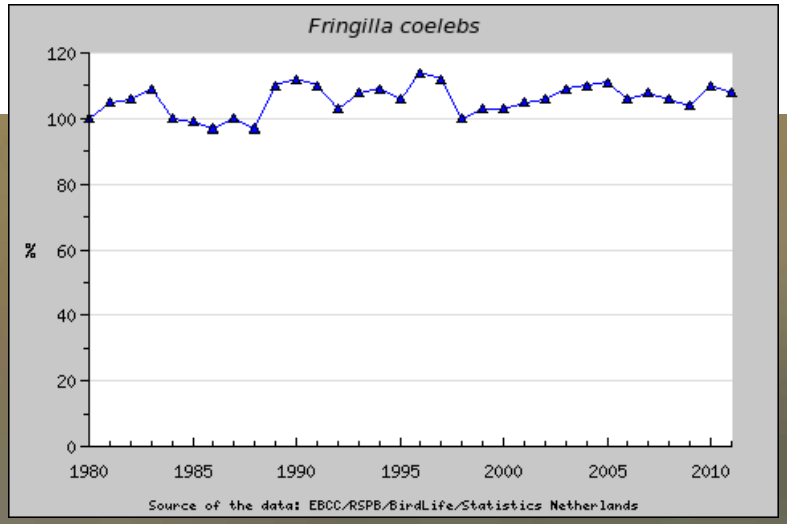
RENCONTRES ORNITHOLOGIQUES 2013
STOC & co, OÙ EN EST LA SCIENCE ?

-54% depuis 1980




Fringilla coelebs
120
100
80
60
40
20
0
%
1980
1985
1990
1995
2000
2005
2010
Source of the data: EBCC/RSPB/BirdLife/Statistics Netherlands

Projet anglais CHAINSPAN

- Données STOC françaises pour espèces Directive Oiseaux (Fauvette pitchou, Pipit rousseline, Pie-grièche écorcheur)
- Données BIROE, GISOM
- Prédire abondance dans sites Natura2000 en 2020, 2050, 2080 selon scénarios climatiques

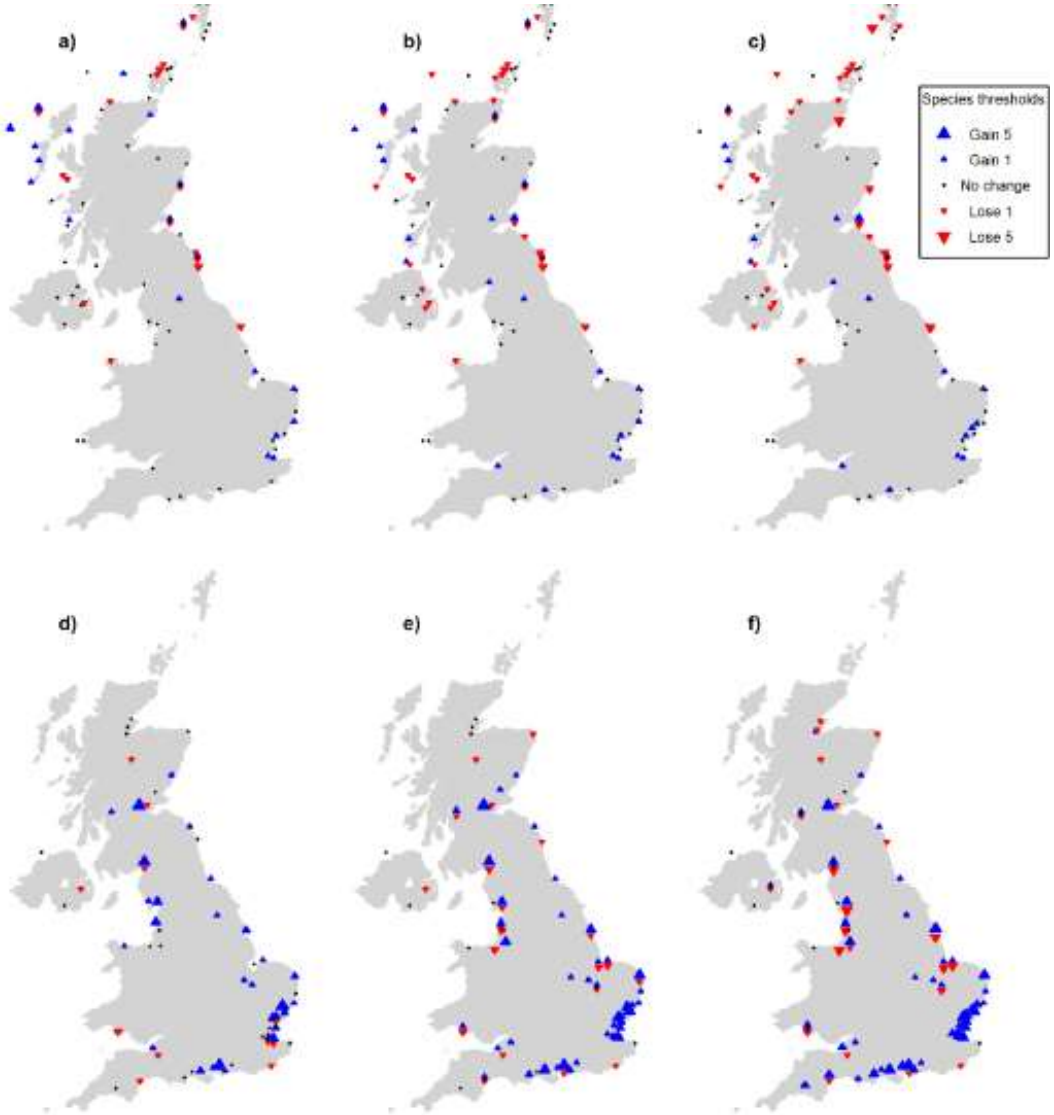


Figure S1: Maps indicating the location of SPAs which are projected to lose features classified by abundance thresholds (red triangles) and gain features classified by abundance thresholds (blue triangles). Sites with red and blue triangles are projected to have turnover in classifying features. Sites which don't lose or gain features are indicated by a small black dot. Projected changes to SPA features are shown for seabirds a) 2020; b) 2050 and c) 2080; and waterbirds d) 2020; e) 2050 and f) 2080. All projected abundances are based on the medium emissions scenario, and are the difference between modelled classification thresholds for the current 30-year mean. Model validation criteria were used to select the species contributing to these data.

Prédire le Farmland Bird Index selon les scénarios de la PAC

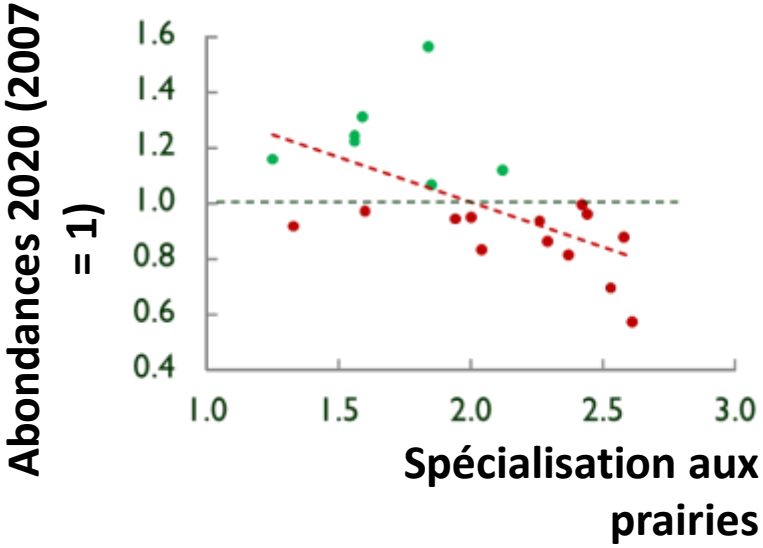
François Chiron – Muséum National d'Histoire Naturelle

with Simon Butler - University of East Anglia,
Petr Voříšek – European Bird Census Council
Romain Lorrillière - Muséum National d'Histoire Naturelle

Impact des politiques agricoles communes

En France

- **“Base”: on continue la politique actuelle**
- **“Pas de 1er pilier”: plus de soutien au marché**
- **“verdissement CAP”: augmenter % végétation semi-naturelle**
- **“Biocarburants” : cultures pour énergie**



Impact des politiques agricoles communes

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- **“verdissement CAP”: augmenter % végétation semi-naturelle**
- **“Biocarburants” : cultures pour énergie**

A l'échelle de l'Europe ?

Données et couverture géographique

Régions avec données

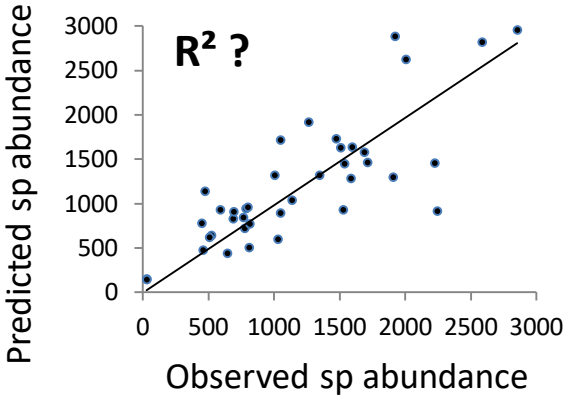
Variables agricoles :

- **Scénarios CAPRI (Britz 2005)**
- **36 types de cultures en 7 catégories**
- **Surface totale cultivée et assolement de 1990 à 2009 à l'échelle régionale**



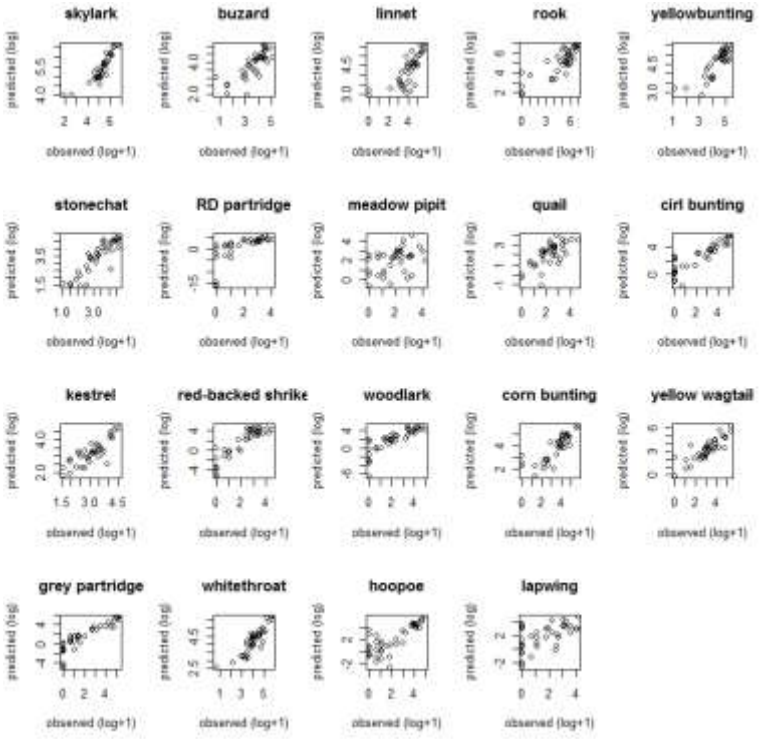



Validation des modèles



Species by species and country by country (x30 times)

Example for France

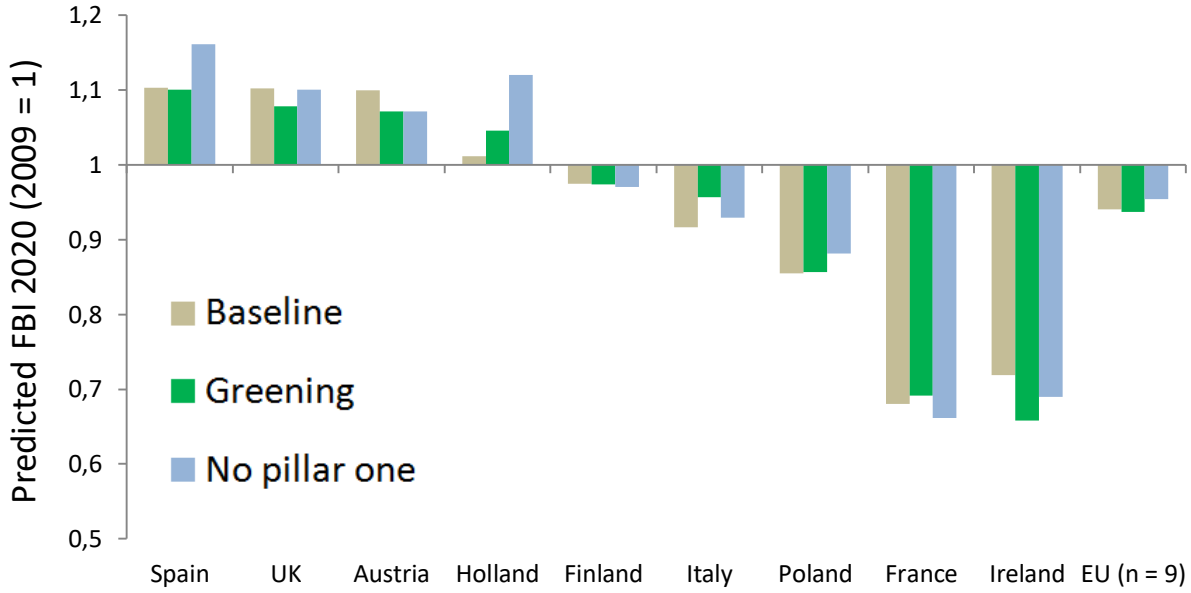


*(Regression model) Species abundance ~ $\alpha + \beta_1 \times$ Cereals + $\beta_2 \times$ Maize+ $\beta_3 \times$ Oilseeds + $\beta_4 \times$ Grasslands + $\beta_5 \times$ Other annual crops + $\beta_6 \times$ Permanent crops + $\beta_7 \times$ Fodder crops + $\beta_8 \times$ Utilized arable area + $\beta_x \times$ Control variables + random (year)



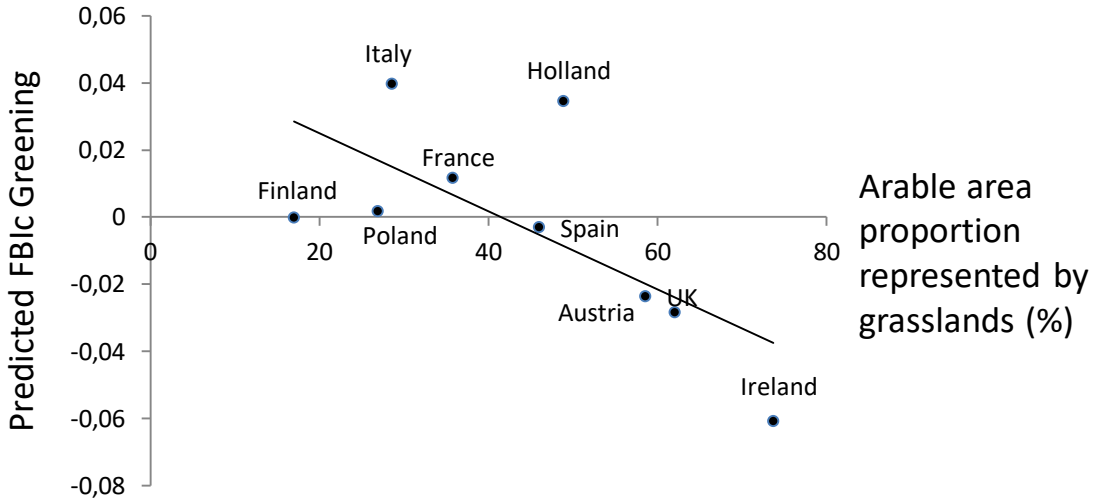



Prédictions de FBI



- **Grandes variations des valeurs prédites de FBI entre pays**
- **Moins de variations entre scénarios pour un même pays**
- **Le meilleur scénario n'est pas toujours le même…**

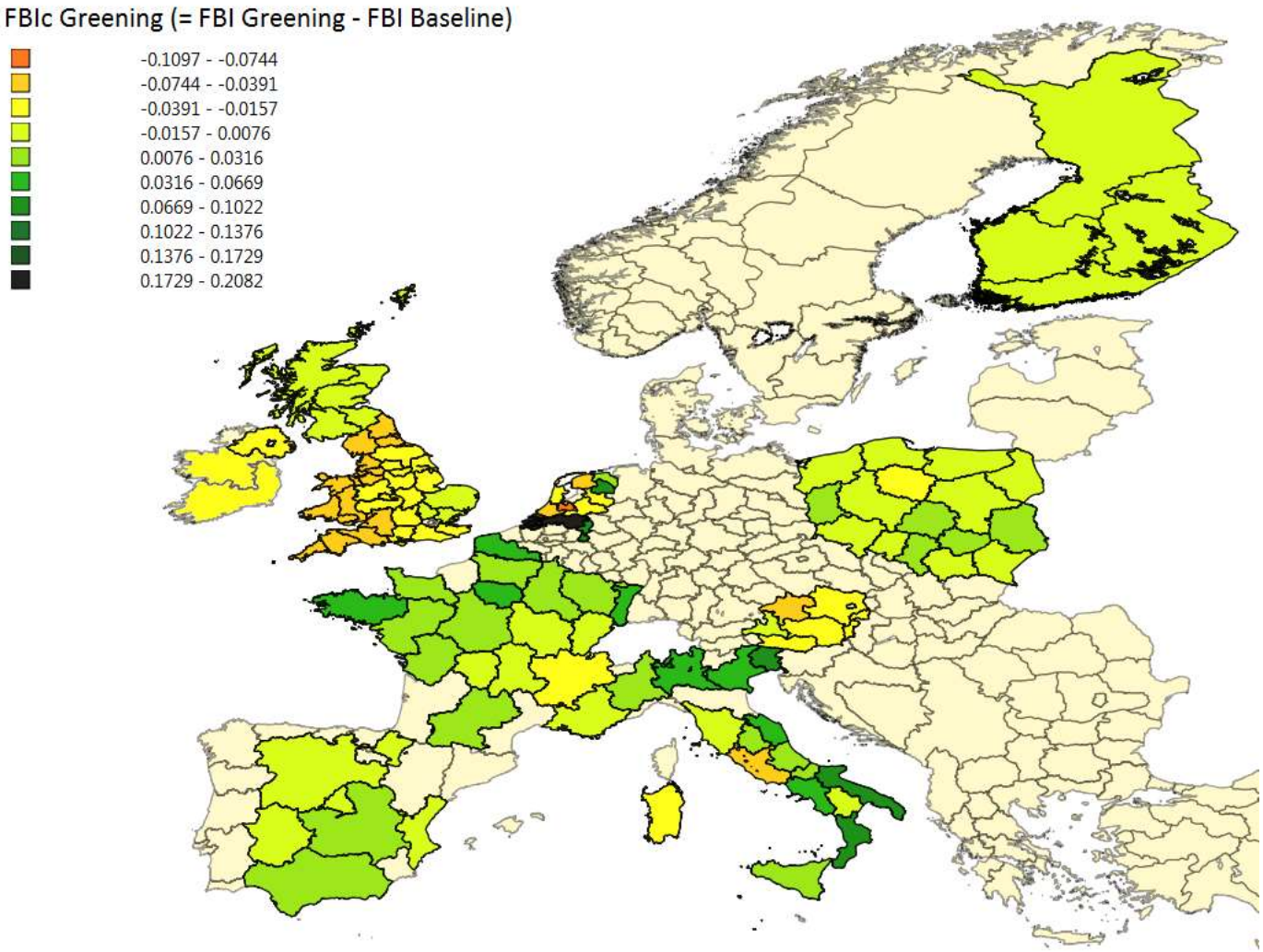
Greening CAP assessment



Le scénario 'Greening' favorise plus les oiseaux dans les pays avec plus de cultures et moins de prairies

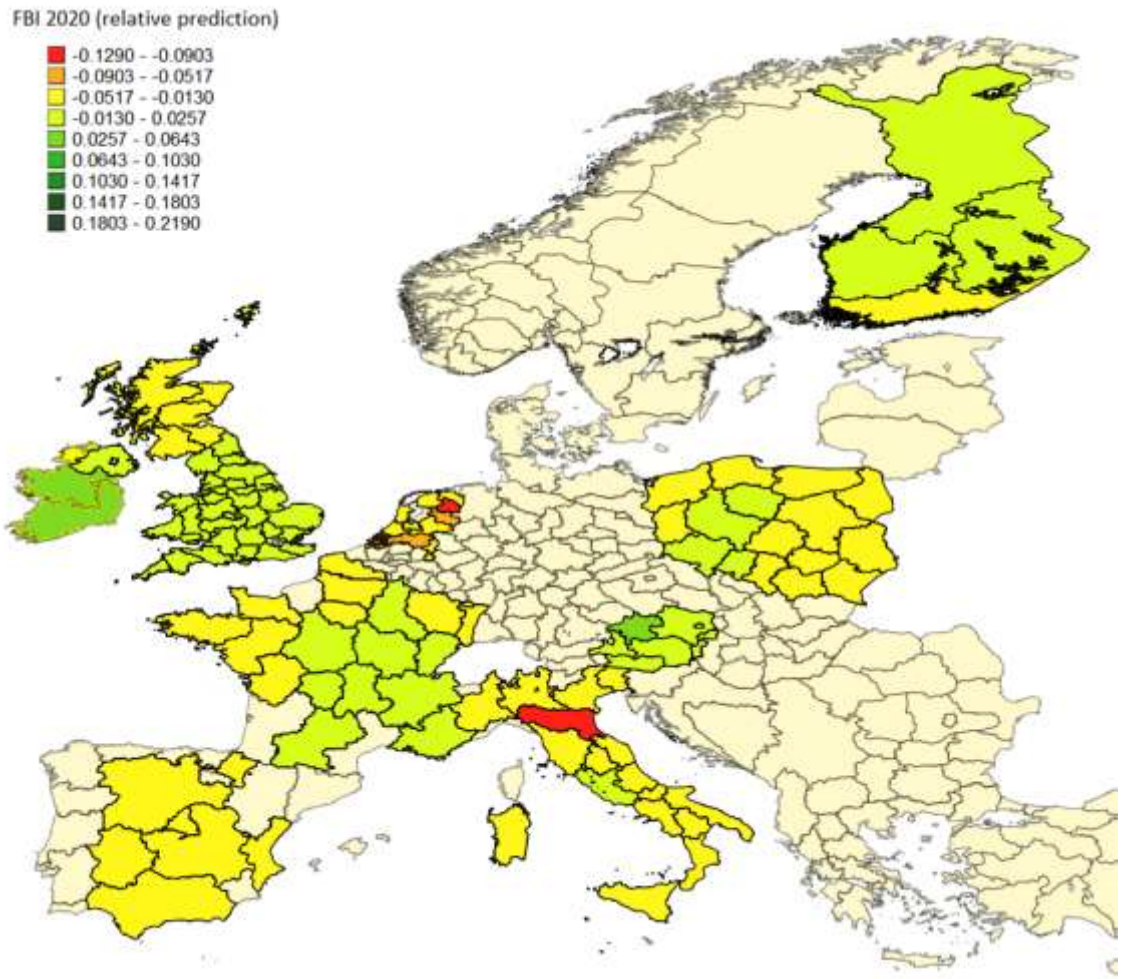
VISUALISATION REGIONALE

Greening CAP assessment



VISUALISATION REGIONALE

Baseline CAP assessment



Migration du Bruant ortolan en France

Le projet MORNING : Migration of the ORtolaN buntING

Origine des ortolans : les apports de 60 ans de baguage

<u>Baguage depuis 1950</u>

26 recaptures en France d'oiseaux bagués sur les lieux de reproduction
6 suédois, 9 norvégiens, 6 finlandais, 1 estonien, 1 polonais, 2 allemands
1 russe bagué fin août 1986 près de Saint Petersbourg
FDC40 transmet quelques bagues (6 contrôles et 2 reprises depuis 2000)
Baguage F. Ibanez: 1 seul contrôle

<u>Perspectives liées au baguage ?</u>

Récupérer un maximum de bagues 'historiques'
Sinon aucune, trop peu de recaptures d'oiseaux bagués (cf 0 sur 300)

Etude MORNING
Quelques principes d'organisation

- Un programme européen non focalisé sur les Landes
- Délocaliser les captures scientifiques pour éviter d'attiser les conflits (demande ONG et chercheurs étrangers)
- Capture et baguage par des bagueurs CRBPO
- Collaborations souhaitées avec acteurs locaux
- Un comité de pilotage de scientifiques
- Un comité de suivi financeurs / politiques

Origine des ortolans migrant par la France

Adultes : mue complète sur les sites de reproduction en juillet
Jeunes : plumes ont poussé sur le lieu de naissance

Isotopes stables

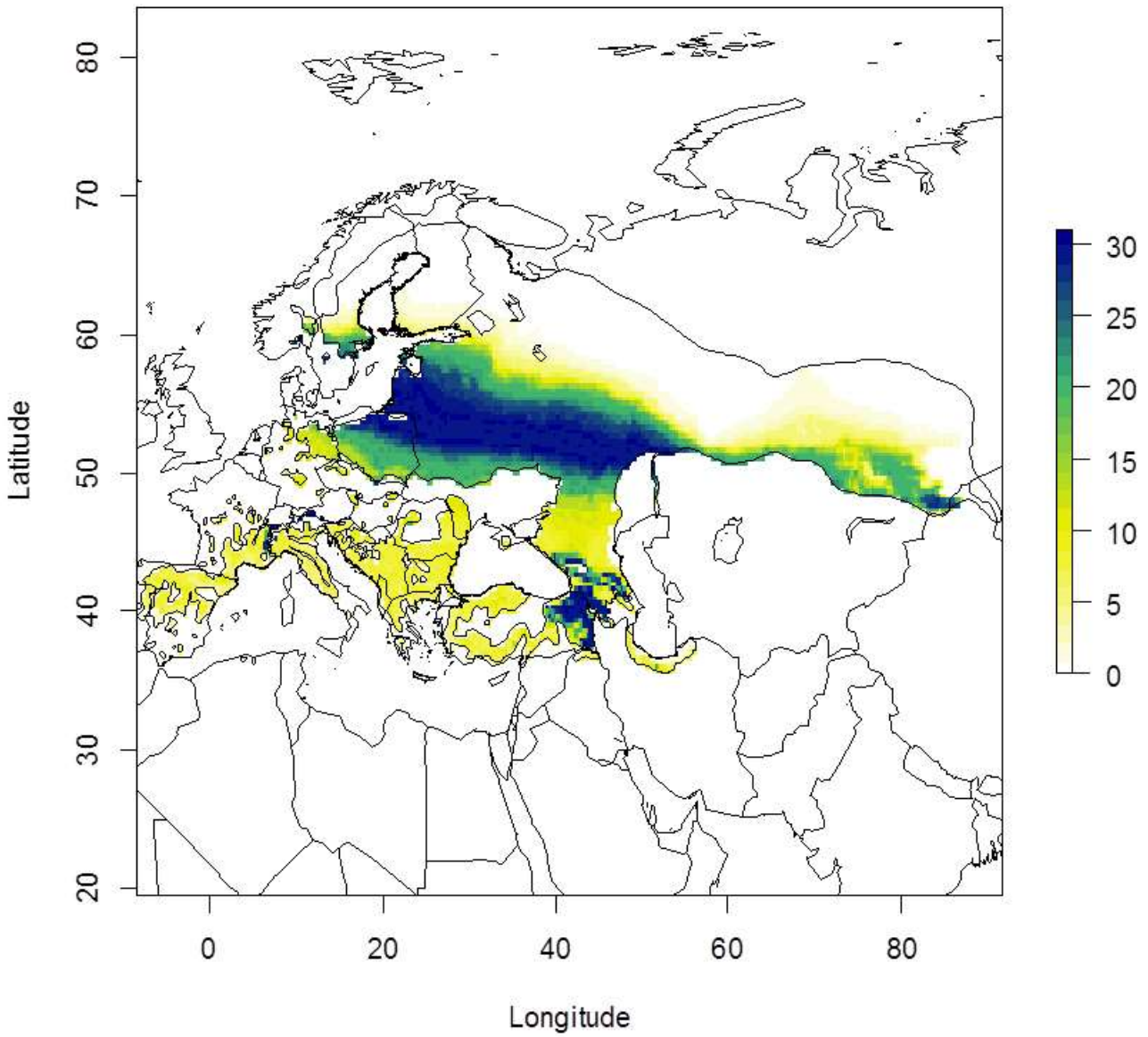
Deutérium OUI ; Oxygène ? Azote-Carbone : NON

Lieux

France (origine des migrateurs)
Sites de reproduction (calibration)

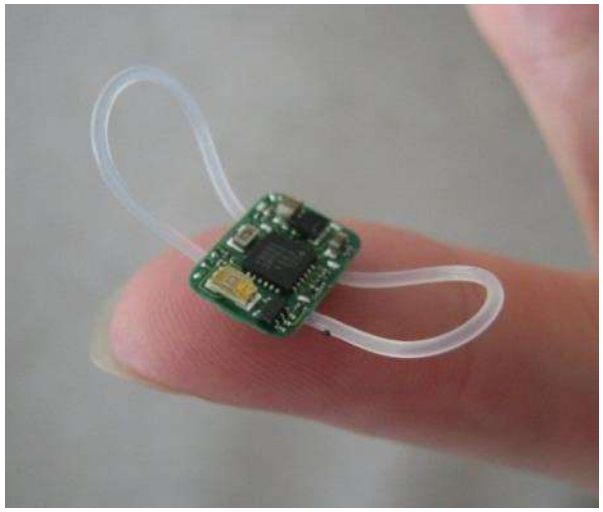
Laboratoires d'analyse :

Keith Hobson (Canada)


LIKELY ORIGINS OF SAMPLE
Latitude
80
70
60
50
40
30
20
0
20
40
60
80
Longitude
30
25
20
15
10
5
0

Photomètres géo-localisateurs (GLS)

Poids < 5% poids de l'oiseau
Localisation à 50-100km près



- Station ornithologique de Sempach (Suisse)
  - 1g déjà utilisés / publiés
  - 0.6g fonctionnent
  - 0.5g en test

- British Antarctic Survey, Migrate Technology (UK)
  - 0.8g, plus chers, pas de dépouillage des données

Photomètres sur ortolans

Il faut re-capturer l'oiseau pour récupérer les données
DONC maximiser la probabilité de recapture
= mâle adulte territorial (survie 0.7, fidélité 0.7, capturabilité) = 3 ou 4 sur 10 posés

Photomètres sur ortolans

Mâles chanteurs, mai-juin
20-25g : 2 à 5% du poids

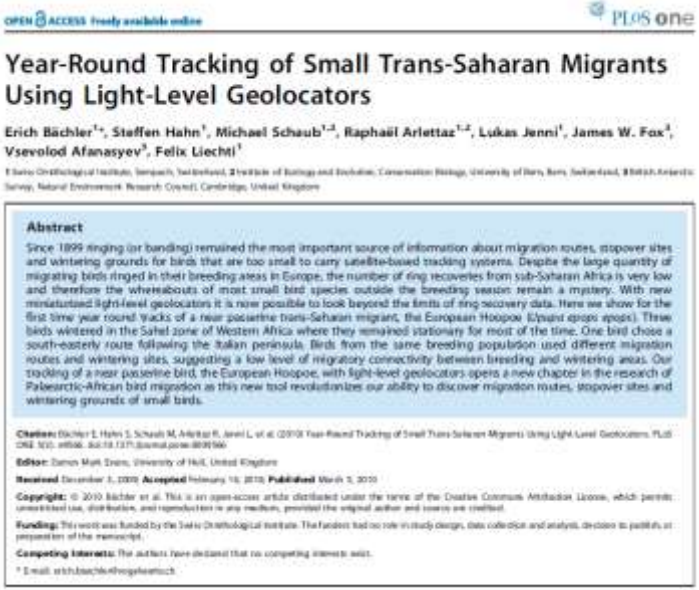
Mai 2012 :
10 en Norvège (Svein Dale)
19 en Suède (Gunnar Selstam, Jan Sondell)

2013 : Suède (35)
Finlande (40)
France (11)
Espagne (10)

2014: 150, Russie, Ukraine, Turquie, Biélorussie, …

Photomètres géo-localisateurs

- Voies migratoires automne et printemps
- Sites et durées de halte(s) migratoire(s) automne et printemps
- Zones d'hivernage



OPEN ACCESS Freely available online

PLoS one

Year-Round Tracking of Small Trans-Saharan Migrants Using Light-Level Geolocators

Erich Bächler[1]*, Steffen Hahn[1], Michael Schaub[1,2], Raphaël Arlettaz[1,2], Lukas Jenni[1], James W. Fox[3], Vsevolod Afanasyev[3], Felix Liechti[1]

[1] Swiss Ornithological Institute, Sempach, Switzerland, [2] Institute of Ecology and Evolution, Conservation Biology, University of Bern, Bern, Switzerland, [3] British Antarctic Survey, Natural Environment Research Council, Cambridge, United Kingdom

Abstract

Since 1899 ringing (or banding) remained the most important source of information about migration routes, stopover sites and wintering grounds for birds that are too small to carry satellite-based tracking systems. Despite the large quantity of migrating birds ringed in their breeding areas in Europe, the number of ring recoveries from sub-Saharan Africa is very low and therefore the whereabouts of most small bird species outside the breeding season remain a mystery. With new miniaturised light-level geolocators it is now possible to look beyond the limits of ring recovery data. Here we show for the first time year round tracks of a near passerine trans-Saharan migrant, the European Hoopoe (*Upupa epops epops*). Three birds wintered in the Sahel zone of Western Africa where they remained stationary for most of the time. One bird chose a south-easterly route following the Italian peninsula. Birds from the same breeding population used different migration routes and wintering sites, suggesting a low level of migratory connectivity between breeding and wintering areas. Our tracking of a near passerine bird, the European Hoopoe, with light-level geolocators opens a new chapter in the research of Palaearctic-African bird migration as this new tool revolutionizes our ability to discover migration routes, stopover sites and wintering grounds of small birds.

Citation: Bächler E, Hahn S, Schaub M, Arlettaz R, Jenni L, et al. (2010) Year-Round Tracking of Small Trans-Saharan Migrants Using Light-Level Geolocators. PLoS ONE 5(5): e9566. doi:10.1371/journal.pone.0009566

Editor: Darren Mark Evans, University of Hull, United Kingdom

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Competing Interests: The authors have declared that no competing interests exist.

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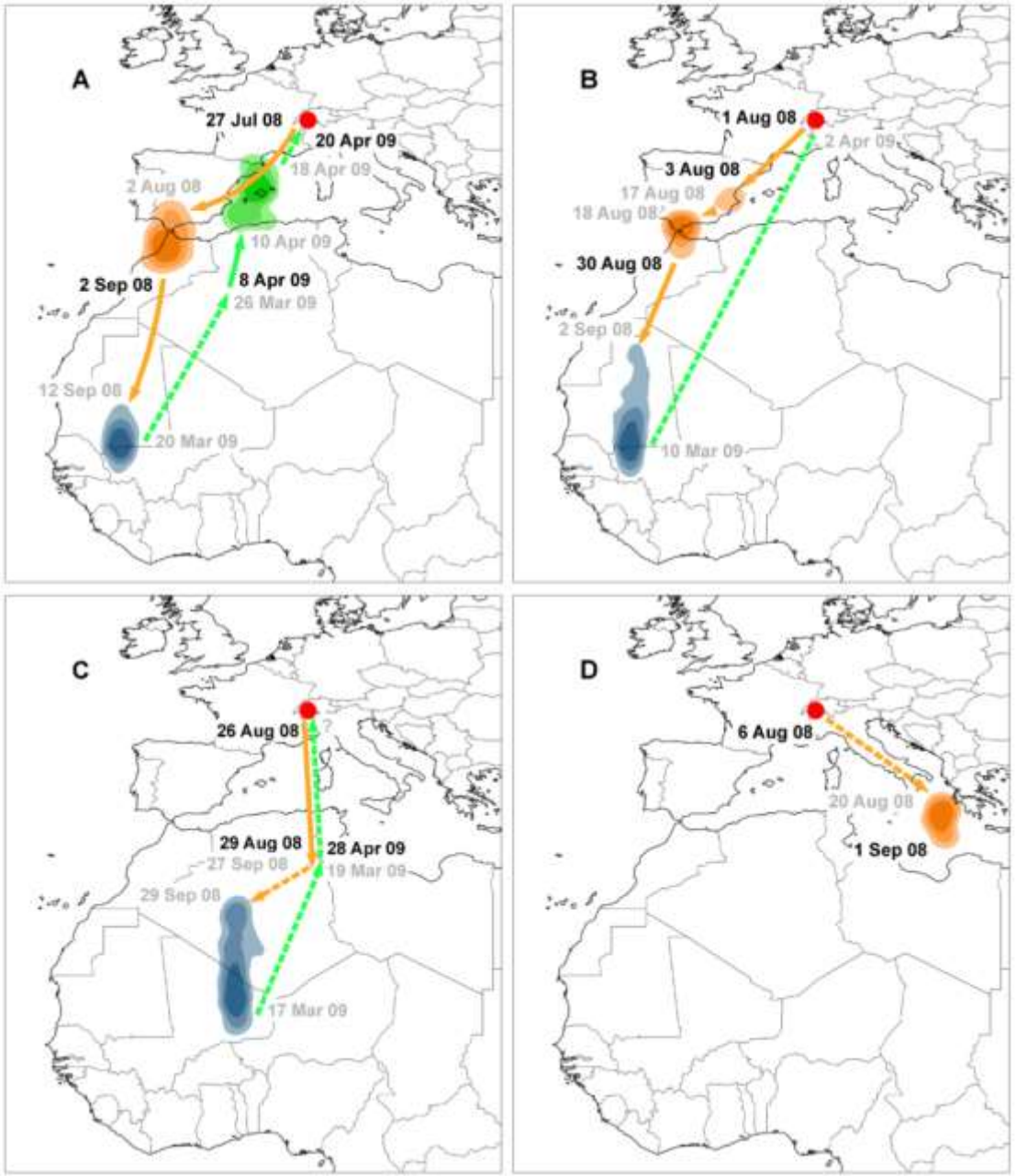
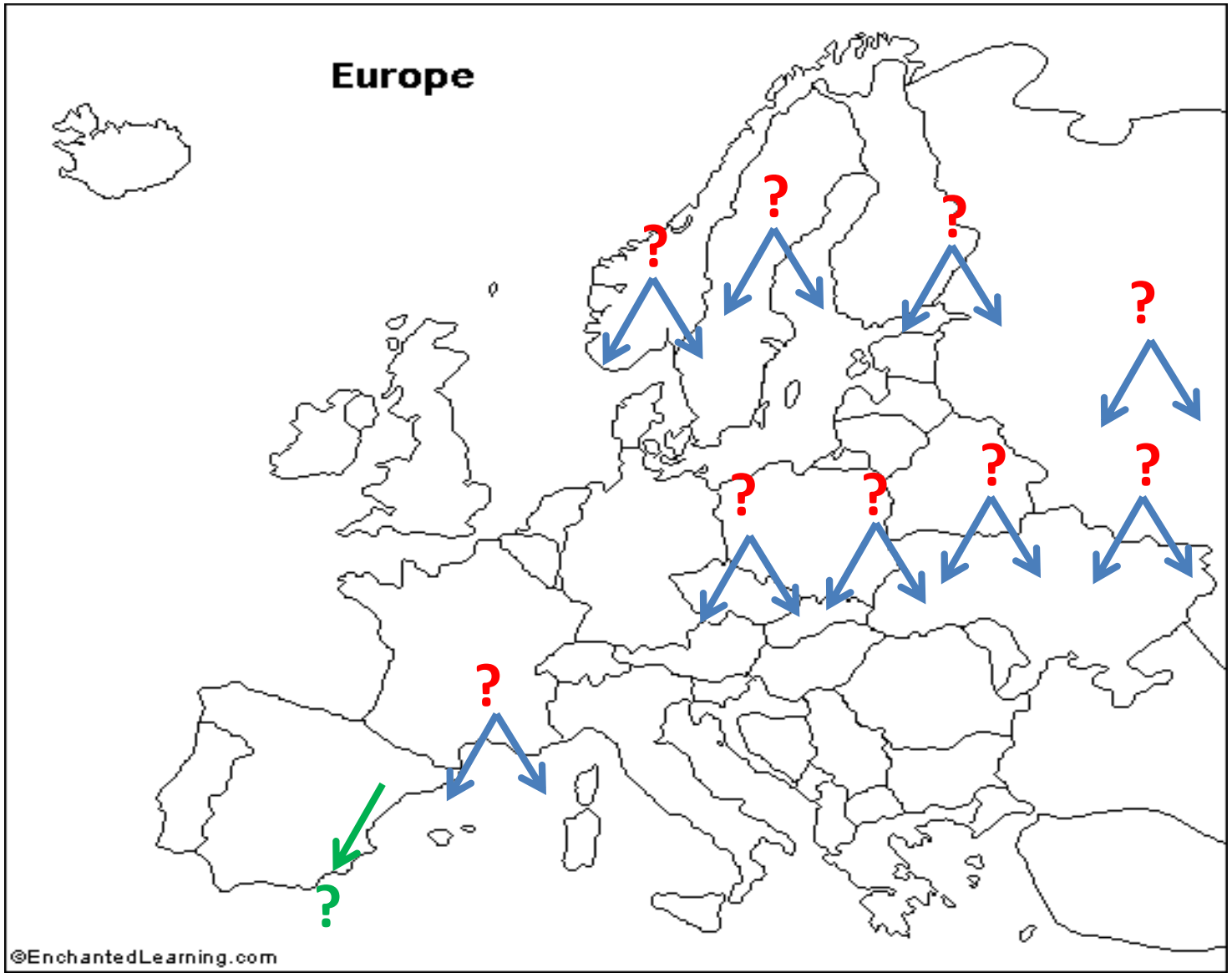
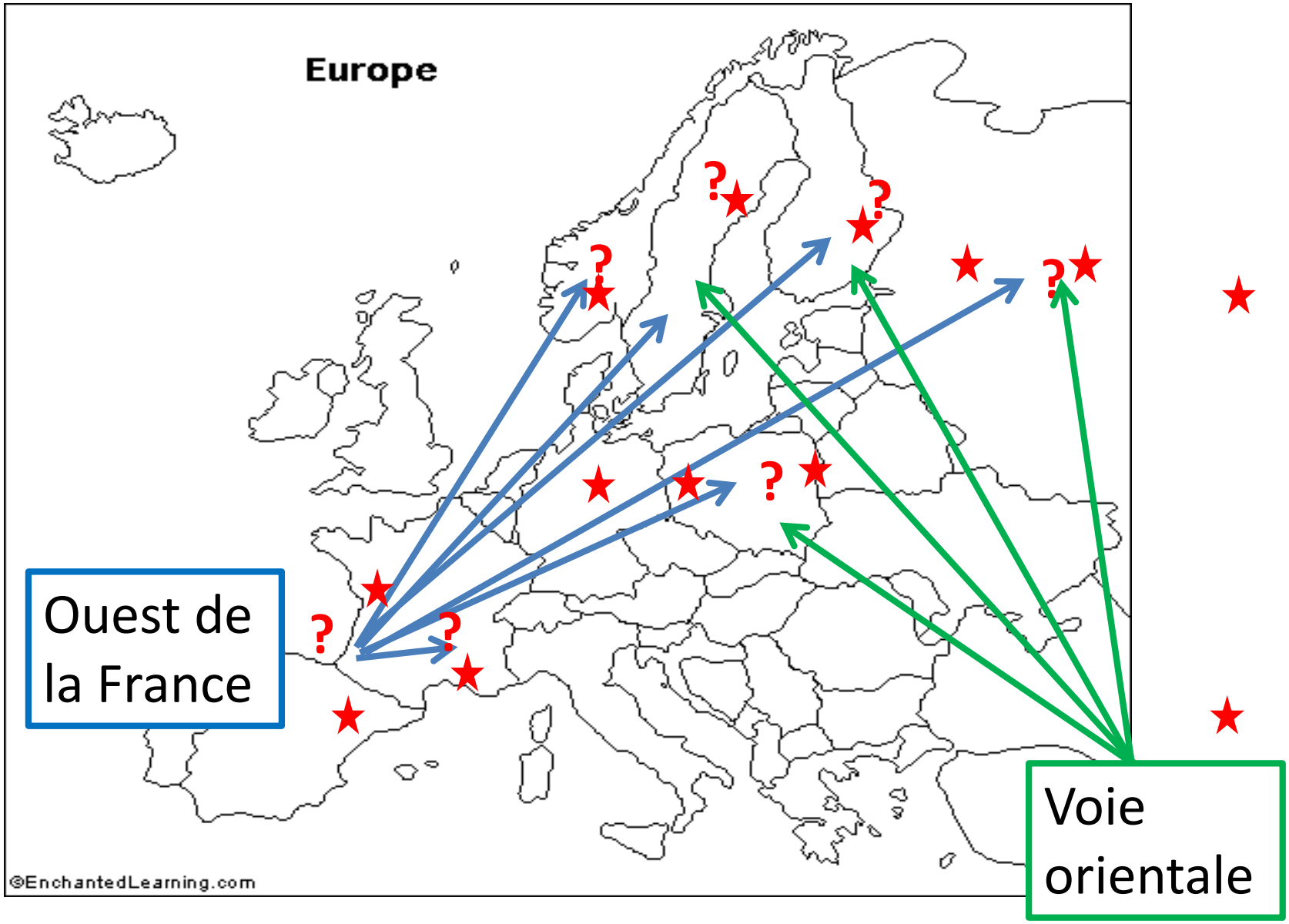


Photomètres sur ortolans



Isotopes & microsatellites



Isotopes et zones d'hivernage

Mue partielle en hiver (corps)

Travaux peu concluants sur l'Hirondelle de fenêtre, le Phragmite aquatique (identifient les grands biomes africains)

OPEN ACCESS Freely available online PLoS one

Stable Isotope Analysis Provides New Information on Winter Habitat Use of Declining Avian Migrants That Is Relevant to Their Conservation

Karl L. Evans[1*], Jason Newton[2], John W. Mallord[3], Shai Markman[4]

Abstract

Winter habitat use and the magnitude of migratory connectivity are important parameters when assessing drivers of the marked declines in avian migrants. Such information is unavailable for most species. We use a stable isotope approach to assess these factors for three declining African-Eurasian migrants whose winter ecology is poorly known: wood warbler *Phylloscopus sibilatrix*, house martin *Delichon urbicum* and common swift *Apus apus*. Spatially segregated breeding wood warbler populations (sampled across a 800 km transect), house martins and common swifts (sampled across a 3,500 km transect) exhibited statistically identical intra-specific carbon and nitrogen isotope ratios in winter grown feathers. Such patterns are compatible with a high degree of migratory connectivity, but could arise if species use isotopically similar resources at different locations. Wood warbler carbon isotope ratios are more depleted than typical for African-Eurasian migrants and are compatible with use of moist lowland forest. The very limited variance in these ratios indicates specialisation on isotopically restricted resources, which may drive the similarity in wood warbler populations' stable isotope ratios and increase susceptibility to environmental change within its wintering grounds. House martins were previously considered to primarily use moist montane forest during the winter, but this seems unlikely given the enriched nature of their carbon isotope ratios. House martins use a narrower isotopic range of resources than the common swift, indicative of increased specialisation or a relatively limited wintering range; both factors could increase house martins' vulnerability to environmental change. The marked variance in isotope ratios within each common swift population contributes to the lack of population specific signatures and indicates that the species is less vulnerable to environmental change in sub-Saharan Africa than our other focal species. Our findings demonstrate how stable isotope research can contribute to understanding avian migrants' winter ecology and conservation status.

Huppe fasciée

Reichlin *et al.* Oecologia (sous presse)

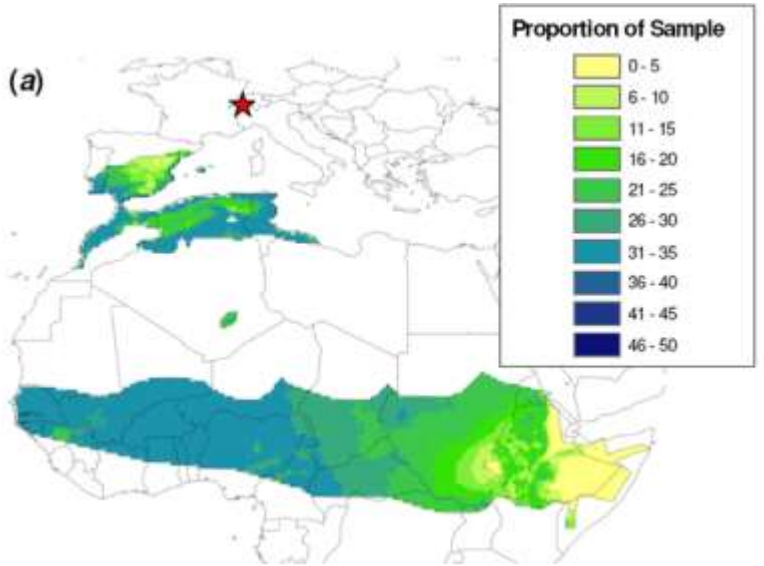
Oecologia
DOI 10.1007/s00442-012-2418-5

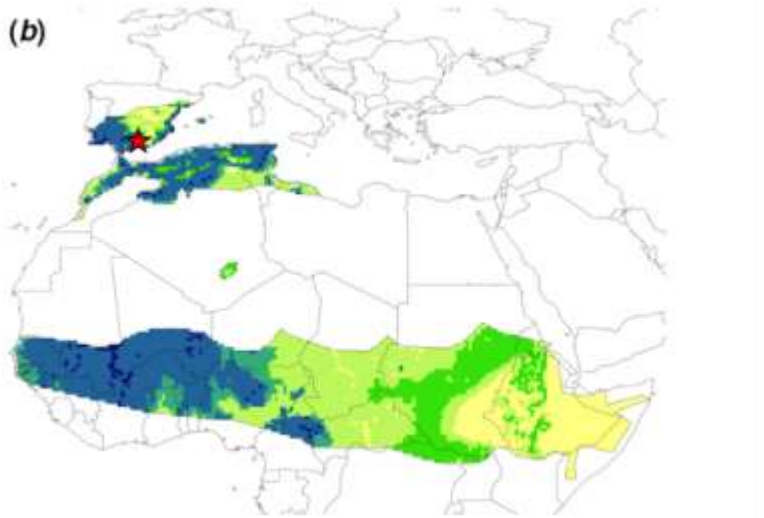
CONSERVATION ECOLOGY - ORIGINAL RESEARCH

Conservation through connectivity: can isotopic gradients in Africa reveal winter quarters of a migratory bird?

Thomas S. Reichlin · Keith A. Hobson · Steven L. Van Wilgenburg · Michael Schaub · Leonard I. Wassenaar · Manuel Martín-Vivaldi · Raphaël Arlettaz · Lukas Jenni

Huppes suisses





Huppes espagnoles

Captures d'espèces protégées & prélèvements de tissus

CADRE LEGAL NATIONAL ET EUROPEEN

- Ministère de l'Ecologie: Avis CNPN
- Ministère de la Recherche : Saisine comité d'éthique (captures, prélèvements de tissus)

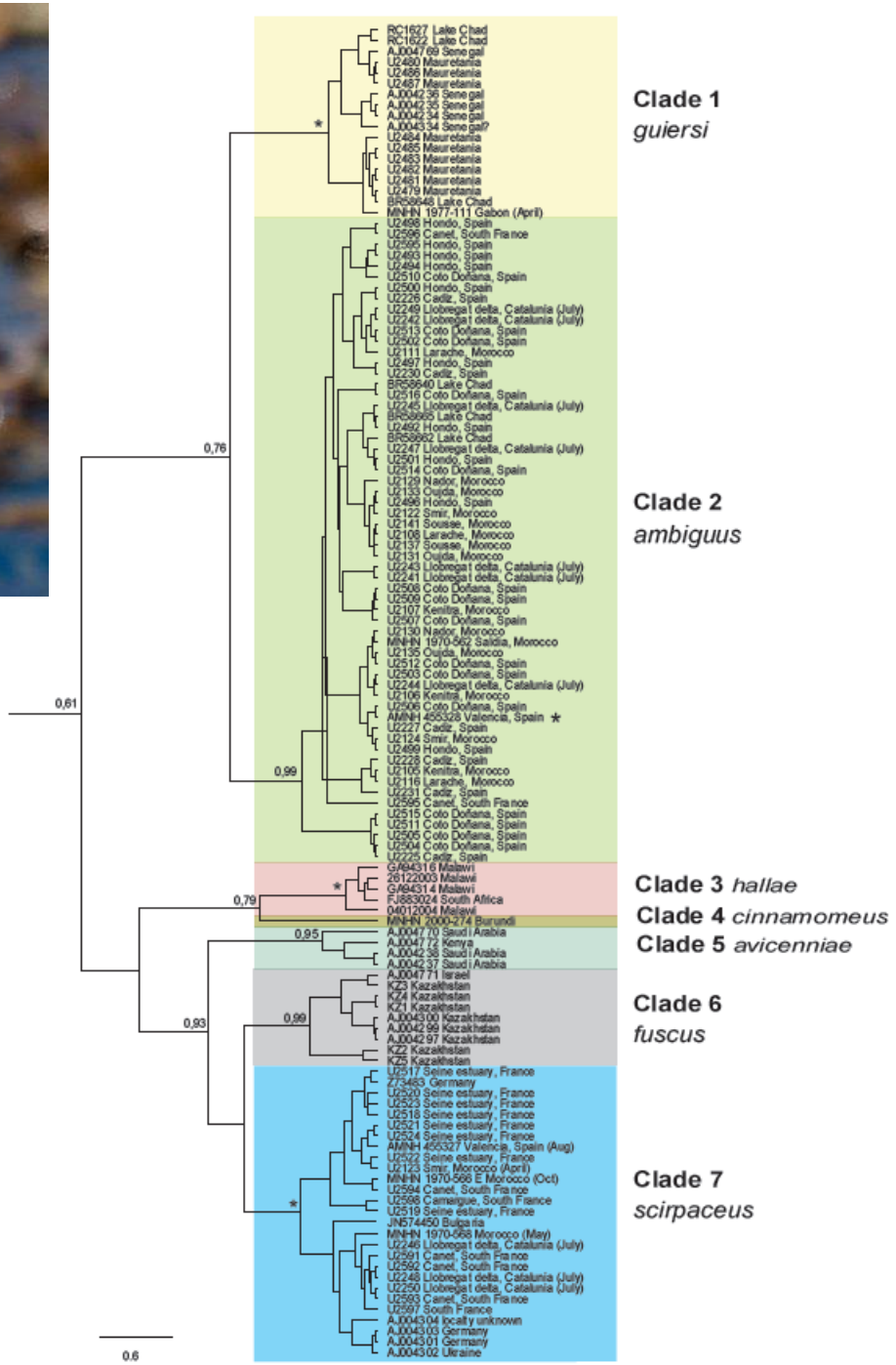
- Bagueurs CRBPO :

- Arrêté ministériel après avis favorable CNPN
- Avis favorable Comité d'Ethique Cuvier (déc. 2012)

Comité de pilotage : une équipe internationale de chercheurs

- Frédéric JIGUET, CRBPO, MNHN Paris
- Raphael ARLETTAZ, Université de Bern, Suisse
- Jean-Marie BOUTIN, ONCFS
- Michel-Alexandre CZAJKOWSKI, OMPO
- Svein DALE, Norvège
- Gunnar SELSTAM, Umea, Suède
- Michal SKIERCZYNSKI, Univ. de Poznan, Pologne
- Markus PIHA, Finlande

+ 2 observateurs : FDC40 et LPO Aquitaine


RC1627 Lake Chad
RC1622 Lake Chad
AJ004769 Senegal
U2480 Mauretania
U2486 Mauretania
U2487 Mauretania
AJ004236 Senegal
AJ004235 Senegal
AJ004234 Senegal
AJ004334 Senegal?
U2484 Mauretania
U2485 Mauretania
U2483 Mauretania
U2482 Mauretania
U2481 Mauretania
U2479 Mauretania
BR58648 Lake Chad
MNHN 1977-111 Gabon (April)
U2498 Hondo, Spain
U2596 Canet, South France
U2495 Hondo, Spain
U2493 Hondo, Spain
U2494 Hondo, Spain
U2510 Coto Doñana, Spain
U2500 Hondo, Spain
U2225 Cadiz, Spain
U2249 Llobregat delta, Catalunia (July)
U2242 Llobregat delta, Catalunia (July)
U2513 Coto Doñana, Spain
U2502 Coto Doñana, Spain
U2111 Larache, Morocco
U2497 Hondo, Spain
U2230 Cadiz, Spain
BR58640 Lake Chad
U2516 Coto Doñana, Spain
U2245 Llobregat delta, Catalunia (July)
BR58665 Lake Chad
U2492 Hondo, Spain
BR58662 Lake Chad
U2247 Llobregat delta, Catalunia (July)
U2501 Hondo, Spain
U2514 Coto Doñana, Spain
U2129 Nador, Morocco
U2133 Oujda, Morocco
U2496 Hondo, Spain
U2122 Smir, Morocco
U2141 Sousse, Morocco
U2108 Larache, Morocco
U2137 Sousse, Morocco
U2131 Oujda, Morocco
U2243 Llobregat delta, Catalunia (July)
U2241 Llobregat delta, Catalunia (July)
U2508 Coto Doñana, Spain
U2509 Coto Doñana, Spain
U2107 Kenitra, Morocco
U2507 Coto Doñana, Spain
U2130 Nador, Morocco
MNHN 1970-562 Saïdia, Morocco
U2135 Oujda, Morocco
U2512 Coto Doñana, Spain
U2503 Coto Doñana, Spain
U2244 Llobregat delta, Catalunia (July)
U2106 Kenitra, Morocco
U2506 Coto Doñana, Spain
AMNH 455328 Valencia, Spain ★
U2227 Cadiz, Spain
U2124 Smir, Morocco
U2499 Hondo, Spain
U2228 Cadiz, Spain
U2105 Kenitra, Morocco
U2116 Larache, Morocco
U2231 Cadiz, Spain
U2595 Canet, South France
U2515 Coto Doñana, Spain
U2511 Coto Doñana, Spain
U2505 Coto Doñana, Spain
U2504 Coto Doñana, Spain
U2225 Cadiz, Spain
GA94316 Malawi
26122003 Malawi
GA94314 Malawi
FJ583024 South Africa
04012004 Malawi
MNHN 2000-274 Burundi
AJ004770 Saudi Arabia
AJ004772 Kenya
AJ004238 Saudi Arabia
AJ004237 Saudi Arabia
AJ004771 Israel
KZ3 Kazakhstan
KZ4 Kazakhstan
KZ1 Kazakhstan
AJ004300 Kazakhstan
AJ004299 Kazakhstan
AJ004297 Kazakhstan
KZ2 Kazakhstan
KZ5 Kazakhstan
U2517 Seine estuary, France
273463 Germany
U2520 Seine estuary, France
U2523 Seine estuary, France
U2518 Seine estuary, France
U2521 Seine estuary, France
U2524 Seine estuary, France
AMNH 455327 Valencia, Spain (Aug)
U2522 Seine estuary, France
U2123 Smir, Morocco (April)
MNHN 1970-566 E Morocco (Oct)
U2594 Canet, South France
U2598 Camargue, South France
U2519 Seine estuary, France
JN574450 Bulgaria
MNHN 1970-568 Morocco (May)
U2246 Llobregat delta, Catalunia (July)
U2591 Canet, South France
U2592 Canet, South France
U2248 Llobregat delta, Catalunia (July)
U2250 Llobregat delta, Catalunia (July)
U2593 Canet, South France
U2597 South France
AJ004304 locality unknown
AJ004303 Germany
AJ004301 Germany
AJ004302 Ukraine
0,76
0,61
0,99
0,79
0,95
0,93
0,99
0.6
Clade 1
guiersi
Clade 2
ambiguus
Clade 3 hallae
Clade 4 cinnamomeus
Clade 5 avicenniae
Clade 6
fuscus
Clade 7
scirpaceus