

## **Converting seabird satellite tracking to marine IBAs**

A workshop to determine how to achieve this goal

Draft outline of the session

### ***Date and Location:***

1<sup>st</sup>-3<sup>rd</sup> July 2009, Chize, France

The Centre de Etudes Biologiques de Chizé (CEB Chizé) located in Central Western France is a laboratory of the Centre National de le Recherche Scientifique (CNRS).

### ***Theme:***

One of the key questions regarding high seas/pelagic IBAs that has not yet been answered is how to convert seabird tracking data into IBAs.

Based on work in Spain and Portugal some methodologies have been developed to determine IBA boundaries based on tracking data within territorial waters, and this process has also identified a number of potential high seas sites. However, some of the guidelines produced need further testing on a wider variety of datasets to determine if the thresholds proposed are appropriate at a global scale.

The idea of this workshop will be to bring together key people working with tracking data (from a variety of species) from around the globe to test some of these thresholds and confirm or otherwise their utility.

## Day 1

### AM: Introduction to the workshop

*Round table introductions (2-3 mins each)*

TALK: All

- Outline of species people have tracked
- Techniques used for data analysis,
- Which bits of this workshop will be useful and why

*Marine IBA*

TALK: Ben Lascelles – IBA criteria and its application at sea

- Background
- IBA criteria
- Their application at sea

*CBD and high seas criteria*

TALK: Ben Lascelles – BirdLife input to CBD

- IBA to PA links
- BL input to CBD
- Outline of steps of how this will progress

*Work in Spain and Portugal*

TALK: Ivan Ramirez – Example of how marine IBA were identified in Portugal

- Examples of treatment of tracking data
- process of marine IBA identification and delimitation using variety of data sources and techniques

*Marine IBA guidelines/toolkit*

TALK: Ben Lascelles – Creating the marine IBA toolkit

- Global applicability
- Standardised methods

*STAB example*

TALK: Ben Lascelles – exporting the SPEA/SEO experience, example of short-tailed albatross

- Walk through of the process
- Outline of where the issues lie

## **PM: Stability of Hotspots**

### *Defining what we mean by a hotspot*

TALK: Vitor Paiva – setting limits for IBA identification

Experience in Spain and Portugal has suggested that a hotspot identified solely on tracking data should be confined to the following conditions

- Areas visited by birds from more than one colony (provided that the colonies are representative)
- Areas visited by birds during different campaigns (seasons/years)

What implications does this have for the IBA criteria?

- A1 – regular use
- A4 – consistent congregations

### *Stability and IBAs*

TALK: Autumn-Lynne Harrison - What constitutes a hotspot spatially and temporally?

- Stable sites represent areas used in multiple seasons/years

### *Spatial stability*

TALK:

Discuss methods for identifying spatial stability

- Mobile IBAs?

### *Temporal stability*

TALK: Keith Hamer - Temporal variation in key foraging areas: lessons from the North Atlantic'

Discuss methods for identifying temporal stability

- Seasonal IBAs?

### *How much data do we need to confirm stability?*

TALK: All

Proposed that multiple seasons/years of data is required to show that a site is stable over time, but how much is enough?

## Day 2

### AM: Treatment of tracking data to identify IBAs

#### *Introduction to session*

TALK: Ben Lascelles -

- Can we identify IBAs based on tracking alone?

#### *Tracking devices*

TALK:

- Which tracking devices are suitable for hotspot identification?
  - GLS
  - GPS
  - PTT
  - Radio Tracking

#### *Sample size*

TALK: Pep Arcos – Setting thresholds for how much data is enough?

Discuss and test different sample size thresholds developed so far

- $\geq 20$  different birds tracked at a single site
- $\geq 30$  bird trips recorded at a single site (all individuals combined);
- $\geq 5$  birds tracked over an extended period (multiple seasons up to  $>1$  year)
- $\geq 2$  different tracking years of reproductive periods (i.e. incubation and/or chick rearing) for more than 10 different birds from the same site

#### *Pseudo-replication*

TALK:

How much of an issue is it for different species and/or different devices?

#### *Utilisation Distribution*

TALK: Phil Taylor – Which kernel is best to use for hotspot identification?

Discuss and test different density kernels

- 50% contour density kernel of foraging areas
- 100% contour density kernel of rafting locations

#### *Identification of feeding areas*

TALK: All

- Discuss if identification of foraging areas is necessary, and how this might be achieved
- Discussion of suitable speeds of travel to use for different species/families
  - $<10$ km/hr was used for Cory's Shearwater in Spain and Portugal
  - $<20$ km/hr for Wandering Albatross was used in TOW trials to remove commuting points and more easily identify foraging locations

### PM: Applying these thresholds to different datasets

## Day 3

### AM: Quantifying the number of birds using a site

#### *1% thresholds*

TALK: Ben Lascelles - The need for numbers, and how these might be achieved?

Outline of issues for applying A4

- To apply A4 criteria (1% thresholds) need to quantify the number of birds using a site

#### *Modelling*

TALK: Frances Taylor - Modelling distribution based on tracking data

- Possible to model at sea density based on tracking data?
- Need for suitable environmental variables to model with
- How to combine data on breeding, non-breeding and juvenile distribution into a single density grid for the species?

#### *Extrapolation*

TALK: All

- Possible to extrapolate from the number of birds tracked out to the whole colony?
- Issues of representative sample size
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#### *Need for other data?*

TALK: Ivan Ramirez - Usefulness of at sea surveys, integrating survey and tracking data, example from Portugal

- Integrating at-sea surveys and tracking data to quantify number of birds using a site

#### *Turnover at a site*

TALK: All

- Can we estimate rates of turn over of individuals at a site from tracking data?

### **PM: Field Trip?**

To see Little Bustard nr Poitiers?

Do you think there will be time for this?