

Monitoring and Conservation: Some Visions

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Overall vision: bird conservation across Europe will be underpinned by:-

- 1 Objective criteria being used to choose species for multispecies indicators
- 2 Full demographic monitoring using sound fieldwork and best statistical methods
- 3 Effective communication between scientists and conservation decision-makers
- 4 Decisions based on clear principles and rational use of evidence

Vision 1

Choice of species for multispecies indicators based on objective criteria

Renwick et al. (2012) Ecol. Indicators 18: 200–207

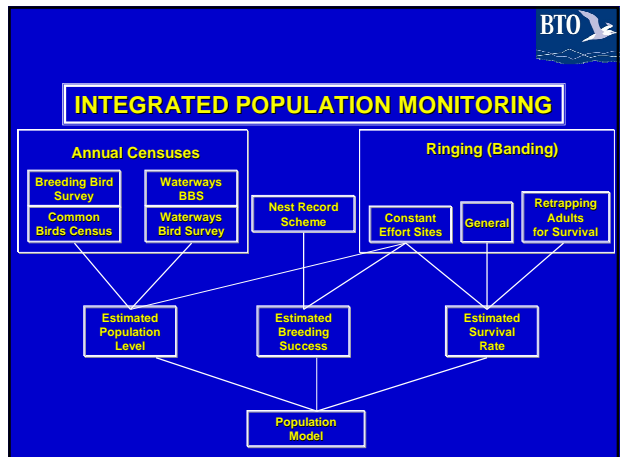
Simon Butler – talk and papers

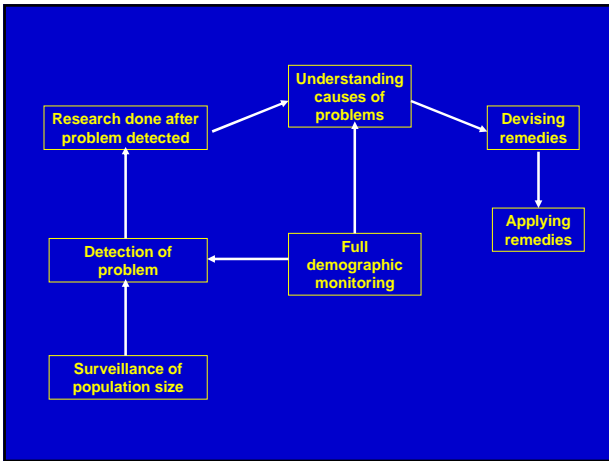
Leaving out scarce species may lead to bias

Vision 2:

Full demographic monitoring across Europe

Not just indicators





Euring
Co-ordinating bird ringing throughout Europe

About Euring Data and Codes Meetings Research National Schemes

1978 Some volunteer sites
1983 British & Irish CES
1999 8 European countries
2003 12 European countries
470 sites

Dark: established before 1990
Light: established after 1990

What CES ringing provides

Adult and juvenile abundance

Productivity
(proportion of young birds caught each year)

Adult survival rates
(from between-year recaptures)

European Nest Record Schemes – ancient information!

	<u>Started</u>	<u>Contributors</u>	<u>Cards per year</u>
Britain & Ireland	1939	570	39,000
Netherlands	1948		6,000
Switzerland	1948		1,500
Germany	1948		
Iceland	1949	30	
Sweden	1951		
Italy	1954		
Finland	1956	400	6,000
Spain	1956		
Czech(oslovakia)	1958		
Poland	1978	150	3,000
USSR	1990		

Nest Record Card Number: 1

Species: BLAB1: Blackbird Year: 2003 Help

Place: NUNGAR: Nunnery Gardens, BTO, Thetford Grid Reference: TL873822

Subsite: NUNWOOD Box: Altitude (m): 15

Project Code: Initials: DIL

Nest Finding Info:

Nest Site Details:

Type: Unenclosed In: Bush

Exposure: In 2: In: In 3: In 4:

Near: Margin of Wood On: Under: Over:

Habitats:

1: F2: Human sites - Subst All Lvls

2: A3: Woodland (more th All Lvls

3: G7: Water bodies (fresh All Lvls

4: All Lvls

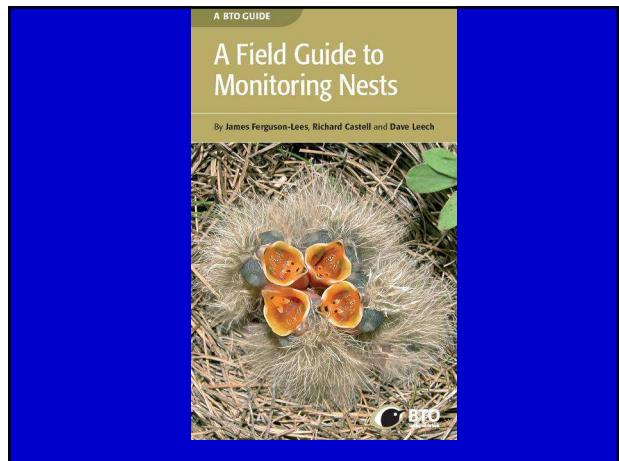
Comments on Nest Site:

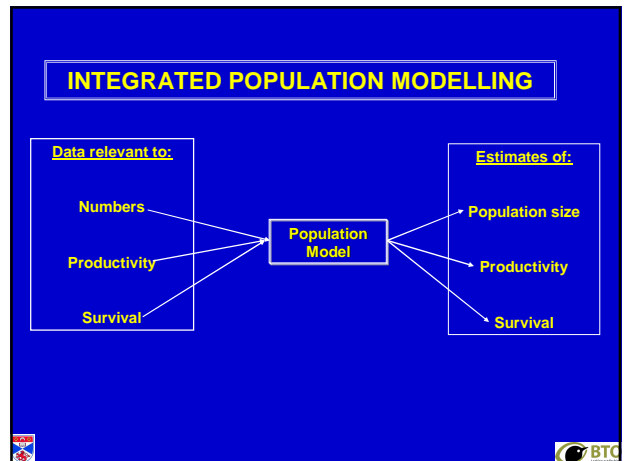
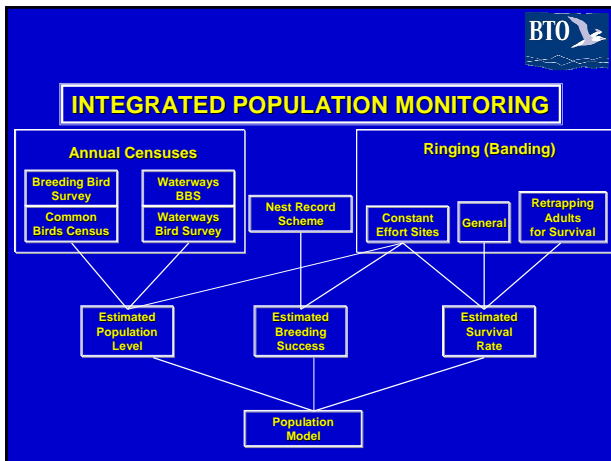
Orientation: Nest height (m): Shared Nest Link

Pair code: Clutch number:

User field 1 (c:50): User field 2 (c:10): User field 3 (Num): Subm: NOT

Go to Nest Record... Visits Captures Prey Card Next Card Save & Exit





INTEGRATED POPULATION MODELLING:

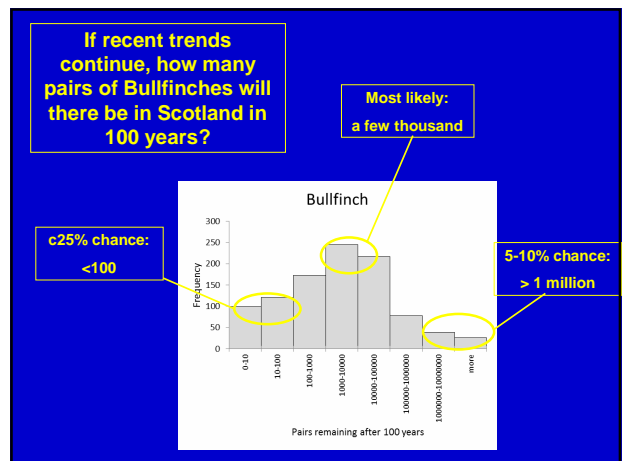
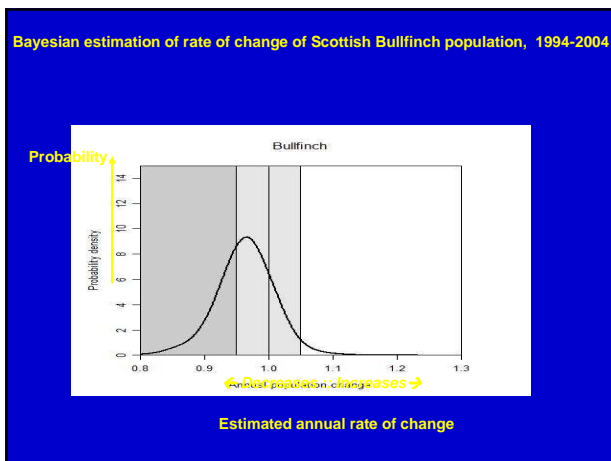
Advantages

- Estimates more precise
- Estimates are coherent
- Alternative models
- Model averaging

Bayesian methods

Advantages over "classical" methods

- Easier to fit complex models
- Avoid need to make unrealistic assumptions (e.g. Normal distributions)
- Model-averaging is straightforward
- Produce posterior probability distributions for the estimates



Vision 3

Decisions about conservation priorities take uncertainty into account and are based on clear and rational methods, using good data

***Always use confidence limits
– more important than the
estimates!***

Plot a band, not a line



To decide on which species it is best to spend scarce resources

or

To decide whether it is worth taking action to save a species

Use

Decision Theory

What is needed for Decision Theory

Probability that species will go extinct if no action is taken

Probability that action will be successful

Cost of the conservation action

Value of the species: economic
 non-economic
 intrinsic

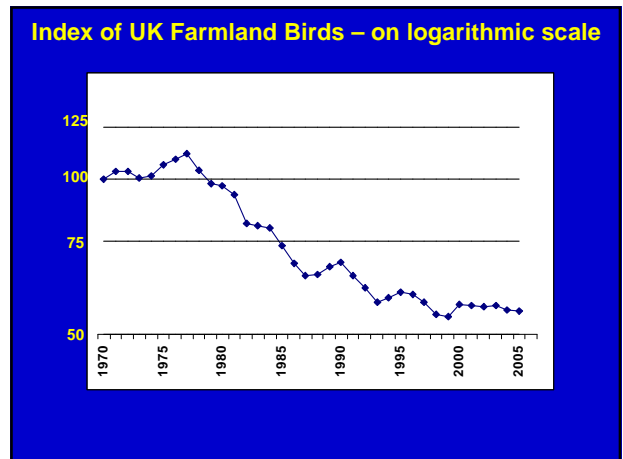
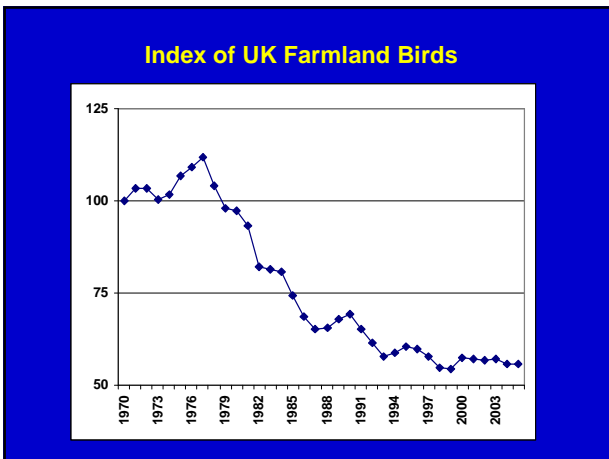
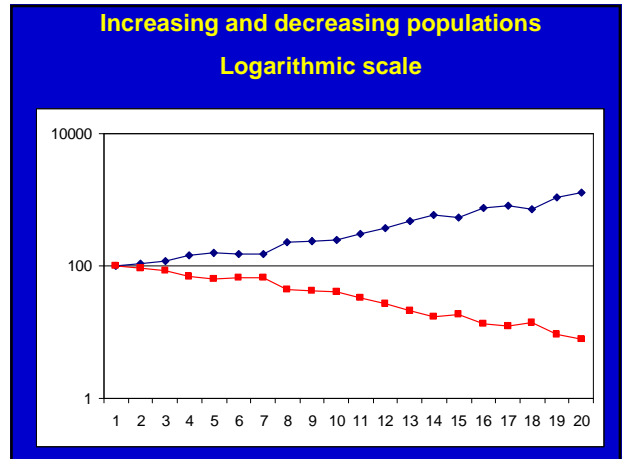
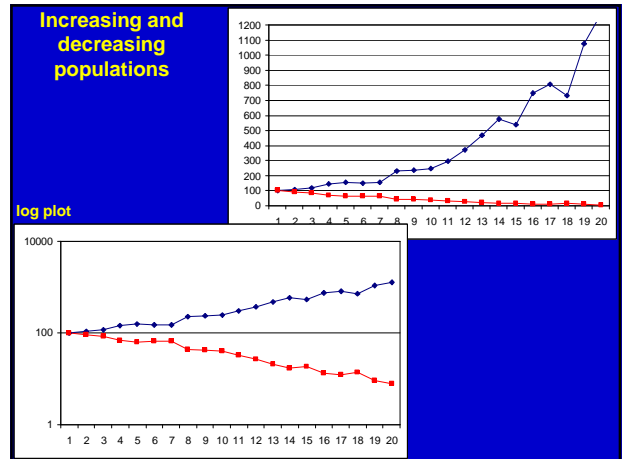
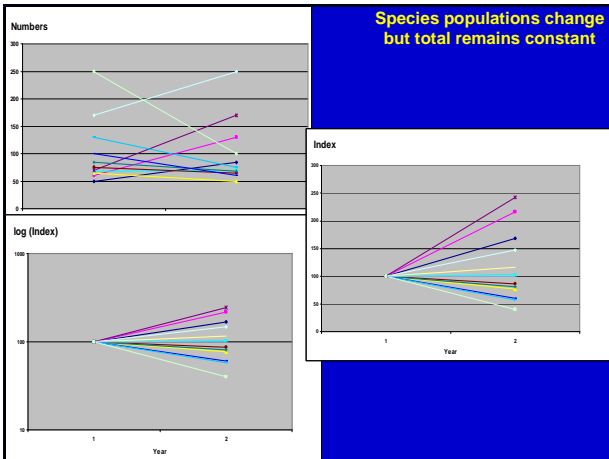


Vision 4

Better communication of our results

**For Indicators of Change,
geometric mean is best**

- though we may need other indices to complement Geo Mean





Thanks:

PECBMS for inviting me to the workshop

BTO for giving me the opportunity to be involved in monitoring

BTO for data (esp. Anna Renwick)

University of St Andrews for current working facilities

Sophie Smout and Ruth King for educating me about Bayesian methods