

Engaging volunteers and Red list evaluation

Aleksi Lehikoinen
The Helsinki Lab of Ornithology, HelLO
Finnish Museum of Natural History
aleksi.lehikoinen@helsinki.fi


Outline

- Engaging volunteers
- International networks
- Red list evaluation (making science matter)

Online tools: reporting and feedback

- >80% of reports come through online systems
- Some automatic and manual control checking

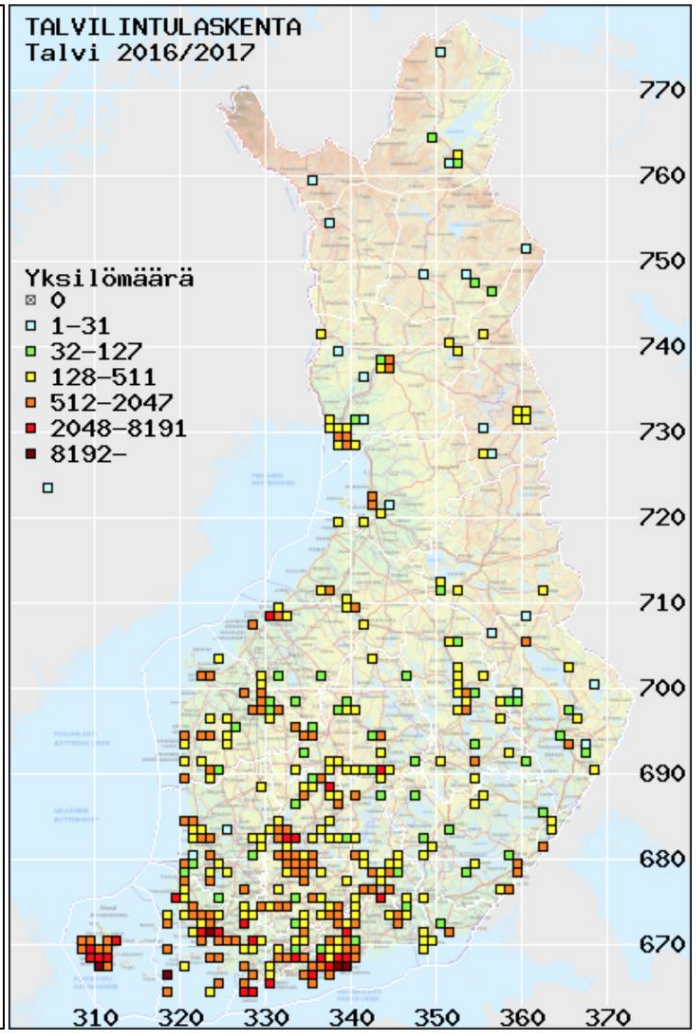
Online tools: reporting and feedback

- >80% of reports come through online systems
- Some automatic and manual control checking
- Directly to the databases
- Updates the feedback pages

Online tools: reporting and feedback

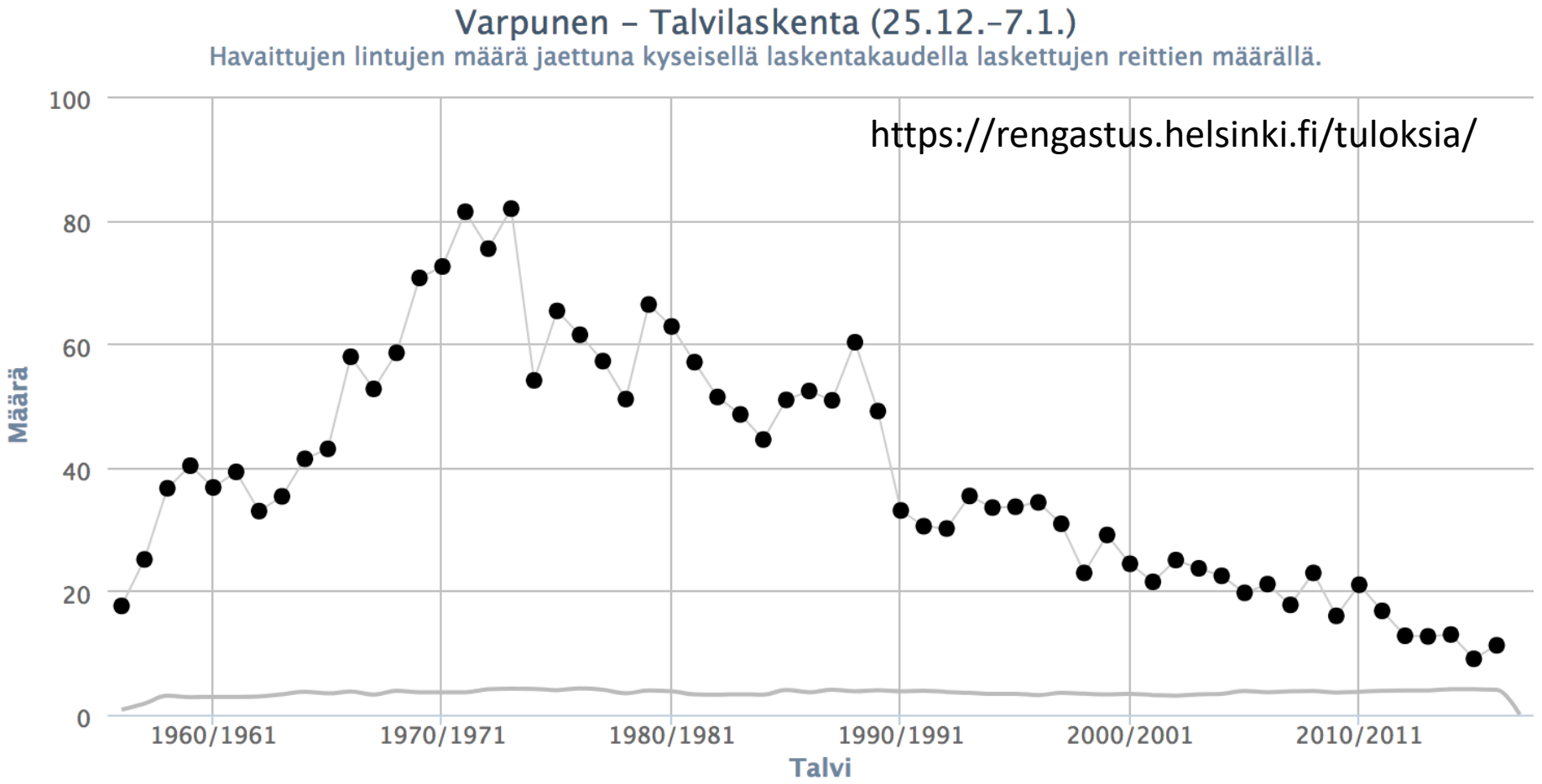
Talvi 2016/2017 Laskenta Talvi Näytä

Laji (suomi / tiet.)	Reittilkm	Ykslkm
Yhteensä	**604**	**304762**
kuikka	1	1
pikku-uikku	2	2
härkälintu	1	1
merimetso	14	288
harmaahaikara	12	38
kyhmyjoutsen	74	3725
laulujoutsen	53	756
metsähanhi	3	6
kanadanhanhi	2	2
valkoposkihanhi	4	8
tavi	3	11
sinisorsa	138	13415
jouhisorsa	1	1
lapasorsa	1	1
punasotka	1	1
tukkasotka	44	21593
lapasotka	8	40
haahka	1	1
alli	29	13158
mustalintu	10	475
pilkkasiipi	17	202
telkkä	83	7344
uivelo	22	275
tukkakoskelo	10	82
isokoskelo	102	8590
merikotka	109	472
varpushaukka	88	96
kanahaukka	101	140
hiirihaukka	20	32
piekana	8	9
maakotka	5	5



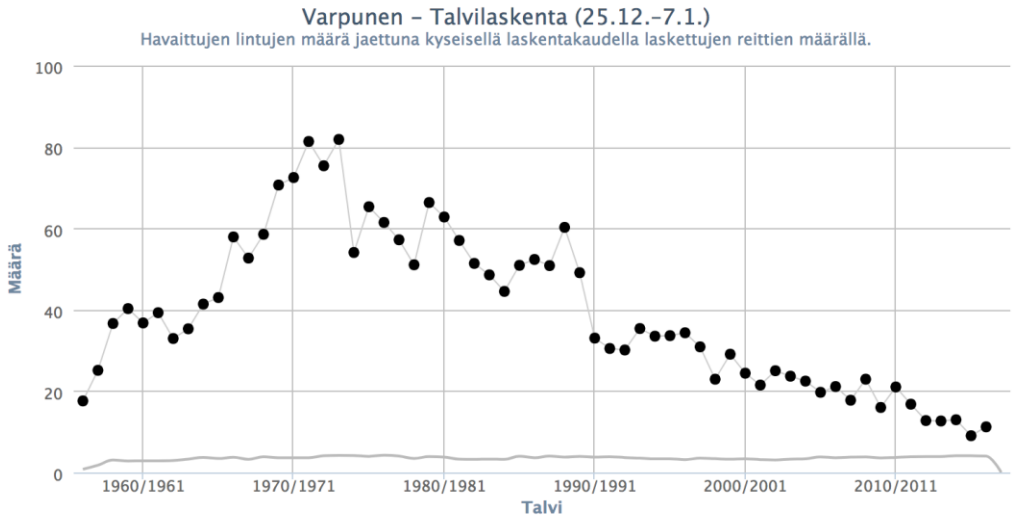
Feedpack (web-pages)

- General population trends
- Information of own route



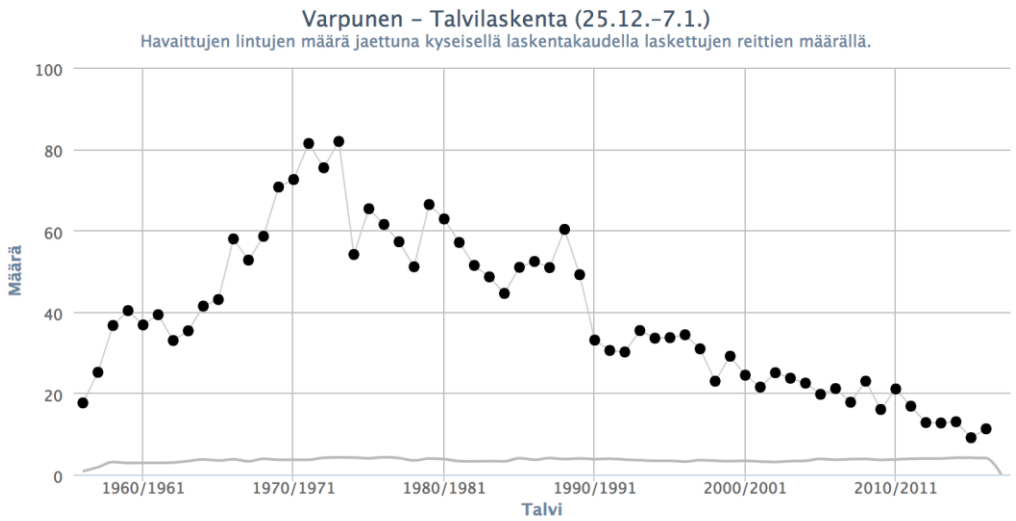
Feedpack

- General population trends
- Information of own route
- Press releases, articles



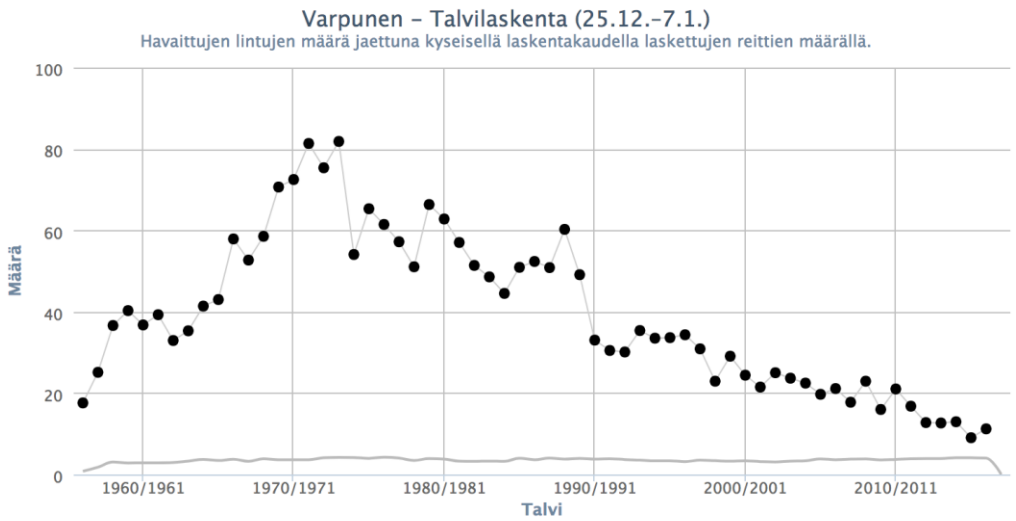
Feedpack

- General population trends
- Information of own route
- Press releases, articles
- Social media



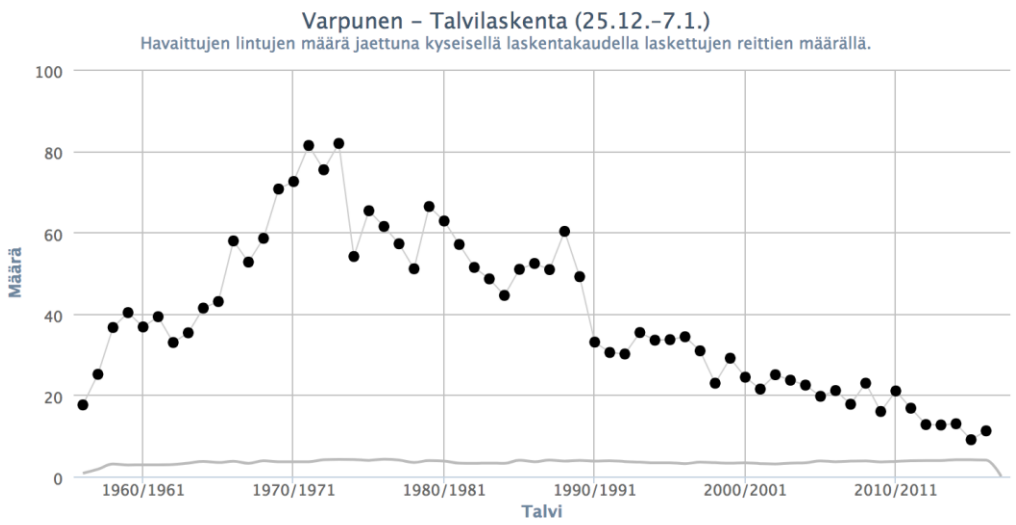
Feedpack

- General population trends
- Information of own route
- Press releases, articles
- Social media
- Monitoring news, birding societies



Feedpack

- General population trends
- Information of own route
- Press releases, articles
- Social media
- Monitoring news, birding societies
- Meetings for observers
- Personal feedback



Observer training:

Observer training: Birdid.no

Birds

News	
40 000 media!	21.11.2017
Server Problems:FIXED	06.11.2017
Server upgrade	14.02.2017

Mammals

News	
1000 new photos!	18.11.2016
Improved mammal quiz	15.10.2015
Mammal identification	17.04.2013

Tracks

News	
Software updates	23.02.2017
Track identification	17.04.2013

International monitoring networks

- Finnish winter bird counts are part of the International Waterbird Counts (IWC)
- Wetlands INTERNATIONAL

International monitoring networks

- Finnish winter bird counts are part of the International Waterbird Counts (IWC)
- Wetlands INTERNATIONAL
- IWC are conducted >140 countries
- Largest BD monitoring scheme in globe

International monitoring networks

- Finnish winter bird counts are part of the International Waterbird Counts (IWC)
- Wetlands INTERNATIONAL
- IWC are conducted >140 countries
- Largest BD monitoring scheme in globe
- National and local coordinators (NGOs, Universities, research centres etc)
- WI coordination team

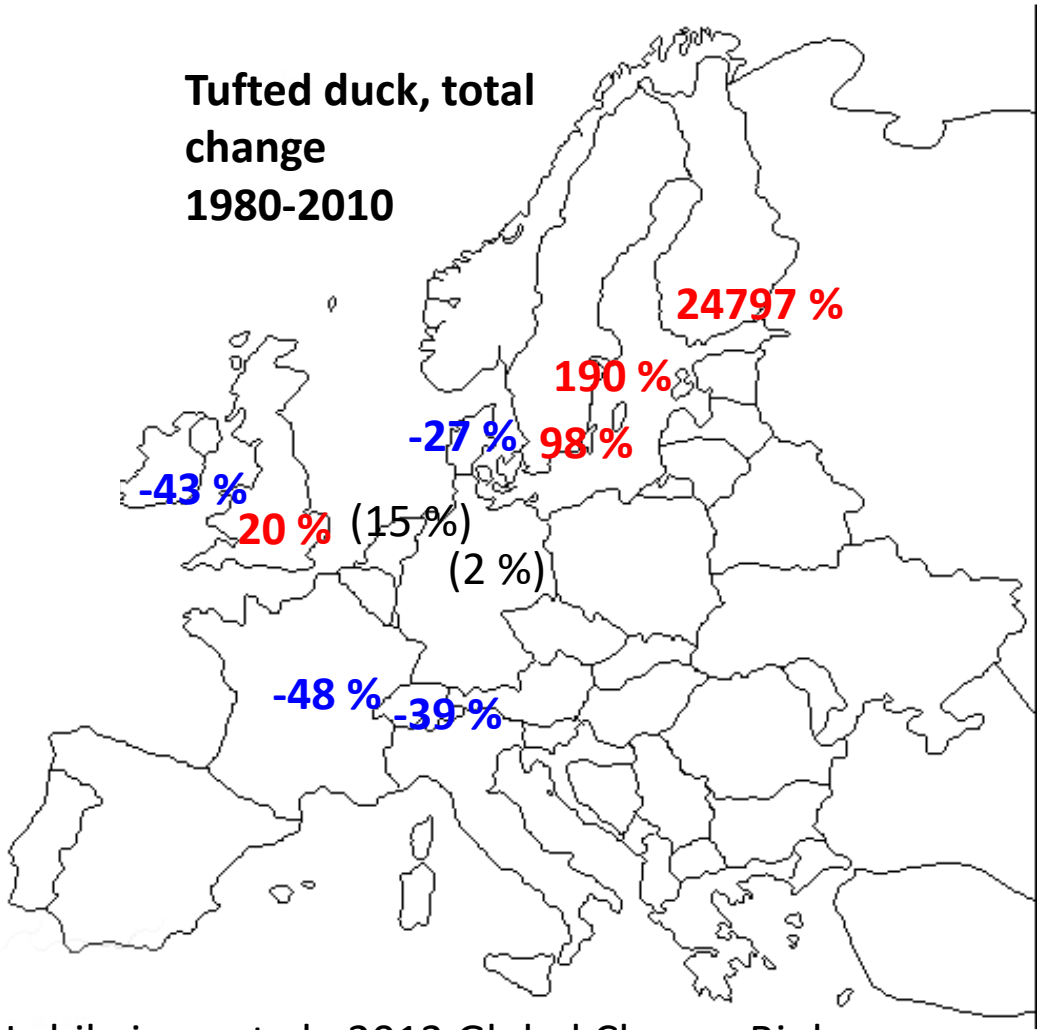
International monitoring networks

- Coordinators meet regularly

Wetlands INTERNATIONAL

International monitoring networks

- Coordinators meet regularly
- Enables large scale studies



Lehikoinen et al., 2013 Global Change Biol

Wetlands INTERNATIONAL

International monitoring networks

- European Bird Census Council, ebcc.info
- Gathers European census information

International monitoring networks

- European Bird Census Council, ebcc.info
- Gathers European census information
- Provide guidance for monitoring schemes, including softwares
- Capacity building in developing countries

International monitoring networks

- European Bird Census Council, ebcc.info
- Gathers European census information
- Provide guidance for monitoring schemes, including softwares
- Capacity building in developing countries
- 2nd European Breeding Bird Atlas

International monitoring networks

- European Bird Census Council, ebcc.info
- Gathers European census information
- Provide guidance for monitoring schemes, including softwares
- Capacity building in developing countries
- 2nd European Breeding Bird Atlas
- Pan-European Common Bird Monitoring Scheme

International monitoring networks

- European Bird Census Council, ebcc.info
- Gathers European census information
- Provide guidance for monitoring schemes, including softwares
- Capacity building in developing countries
- 2nd European Breeding Bird Atlas
- Pan-European Common Bird Monitoring Scheme
- Tens of thousands of volunteers

International monitoring networks

- Breeding evidence in 50x50 km grids

EBCC
European Bird Census Council
every bird counts

International monitoring networks

- Breeding evidence in 50x50 km grids
- Aggregation of national atlases

International monitoring networks

- Breeding evidence in 50x50 km grids
- Aggregation of national atlases
- 2013-2017
- EU 2020 BD targets

International monitoring networks

- Breeding evidence in 50x50 km grids
- Aggregation of national atlases
- 2013-2017
- EU 2020 BD targets

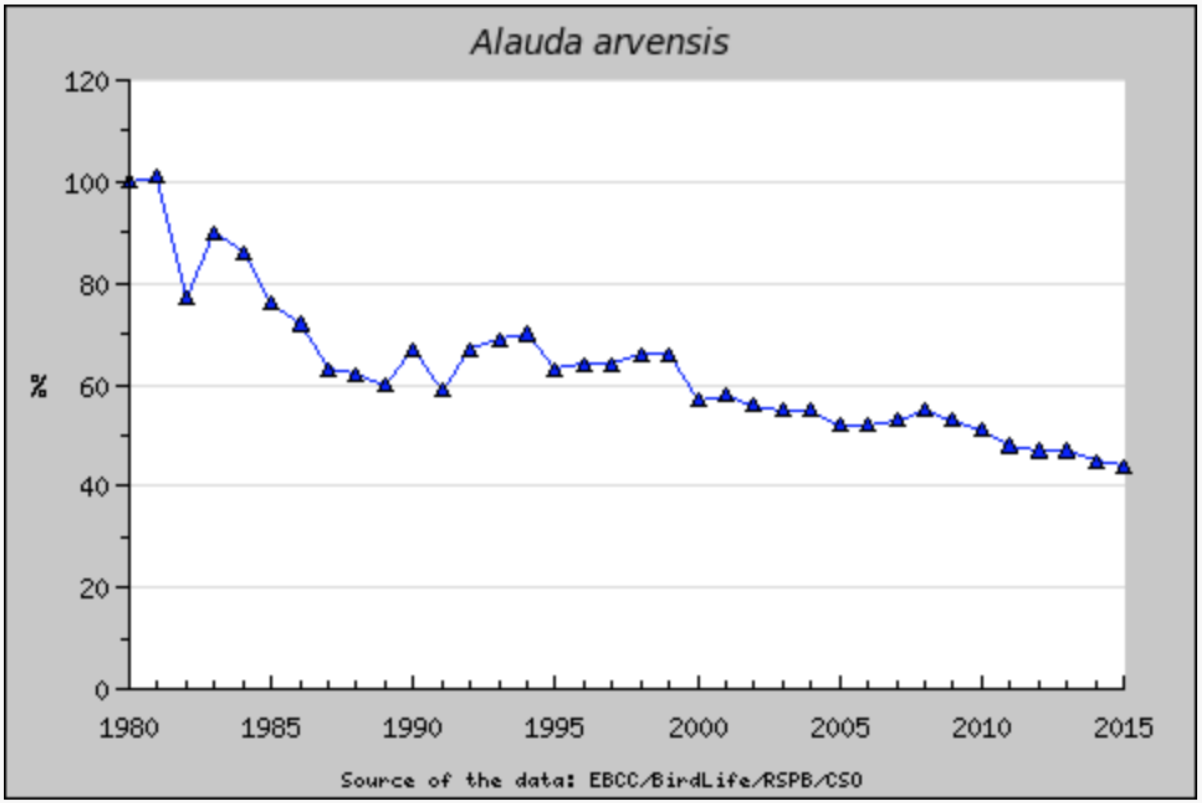
Making citizen science matter

Eurasian Skylark (*Alauda arvensis*)

Population index (%) 1980 - 2015, Europe.
Trend classification: *Moderate decline* (explanation)

List of Countries

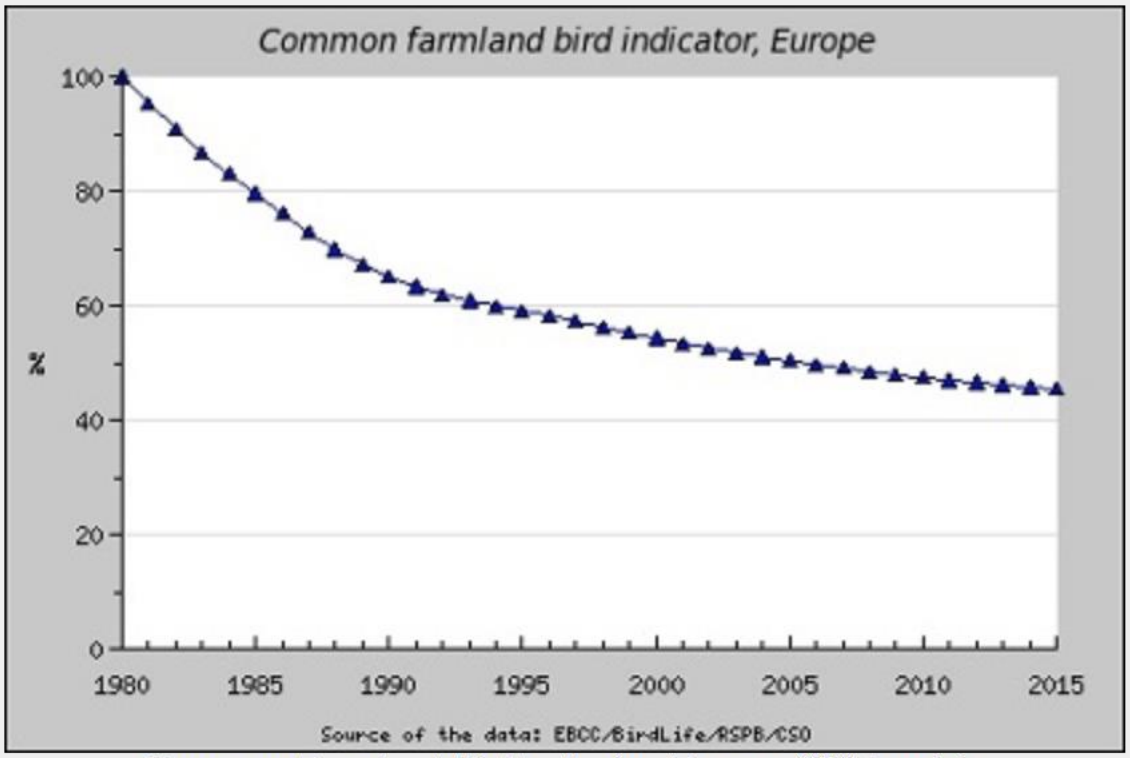
Source of the data: EBCC/BirdLife/RSPB/CSO



- Population trends of >170 bird species in Europe

EBCC
European Bird Census Council
every bird counts

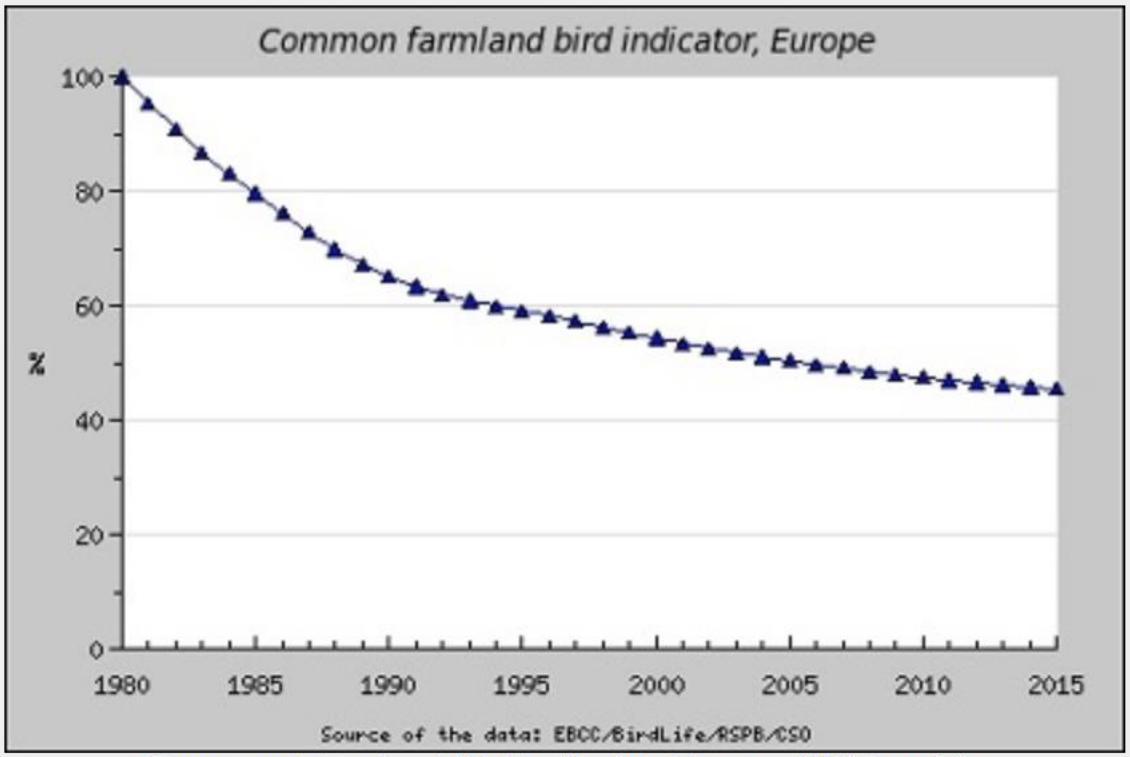
Making citizen science matter



Common Farmland Bird Indicator, Europe, 2017 update

- Biodiversity indicators

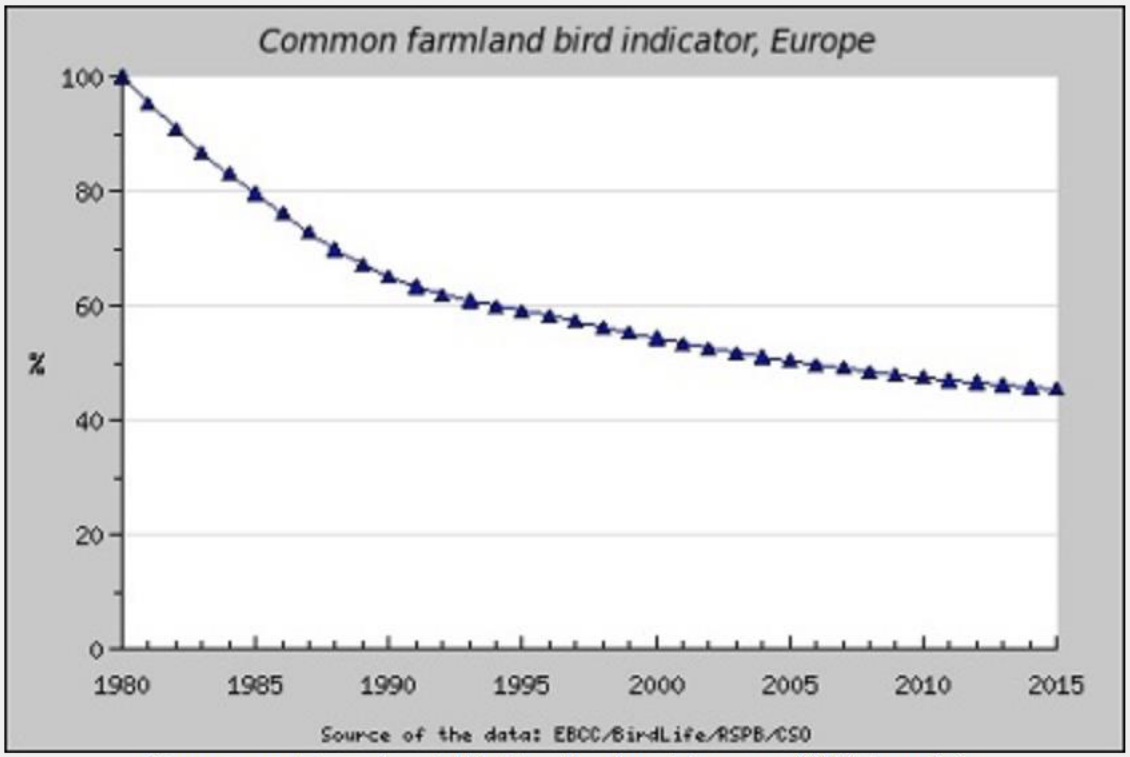
Making citizen science matter



Common Farmland Bird Indicator, Europe, 2017 update

- Biodiversity indicators
- Efficiency of EU farmland policy

Making citizen science matter



Common Farmland Bird Indicator, Europe, 2017 update

- Biodiversity indicators
- Efficiency of EU farmland policy
- National indicators

Red listing of Finnish birds

IUCN criteria (vol. 3.1)

- Species listed in categories:

i) Extinct (EX)
ii) Extinct in the wild (EW)
iii) Critically endangered (CR)
iv) Endangered (EN)
v) Vulnerable (VU)
vi) Nearly threatened (NT)
vii) Least concern (LC)
viii) Data deficient (DD) (no data)
ix) Not evaluated (NE) (non-native)

IUCN criteria (vol. 3.1)

- Species listed in categories:

i) Extinct (EX)
ii) Extinct in the wild (EW)
iii) Critically endangered (CR)
iv) Endangered (EN)
v) Vulnerable (VU)
vi) Nearly threatened (NT)
vii) Least concern (LC)
viii) Data deficient (DD) (no data)
ix) Not evaluated (NE) (non-native)

IUCN criteria (vol. 3.1)

- Species listed in categories:

i) Extinct (EX)
ii) Extinct in the wild (EW)
iii) Critically endangered (CR)
iv) Endangered (EN)
v) Vulnerable (VU)
vi) Nearly threatened (NT)
vii) Least concern (LC)
viii) Data deficient (DD) (no data)
ix) Not evaluated (NE) (non-native)

IUCN criteria (vol. 3.1)

- Five main criteria:

A) Decline in population size

B) Small geographical range and fragmented or declining population

C) Small population size and decline

D) Very small population size

E) Quantitative analysis showing probability of extinction

http://www.iucnredlist.org/technical-documents/categories-and-criteria

IUCN criteria (vol. 3.1)

- Five main criteria:

A) Decline in population size

B) Small geographical range and fragmented or declining population

C) Small population size and decline

D) Very small population size

E) Quantitative analysis showing probability of extinction

http://www.iucnredlist.org/technical-documents/categories-and-criteria

A. Decline in population size

- An observed, estimated, inferred or suspected population size reduction of

  i) ≥80% in CR,

  ii) ≥50% in EN,

  iii) ≥30% in VU over the last 10 years or three generations, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible

A. Decline in population size

- An observed, estimated, inferred or suspected population size reduction of

  i) ≥80% in CR,

  ii) ≥50% in EN,

  iii) ≥30% in VU over **the last 10 years or three generations**, where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible

A. Decline in population size

- An observed, estimated, inferred or suspected population size reduction of

  i) ≥80% in CR,

  ii) ≥50% in EN,

  iii) ≥30% in VU over the last 10 years or three generations, **where the reduction or its causes may not have ceased OR may not be understood OR may not be reversible**

A. Decline in population size

- based on (and specifying) any of the following:

(a) direct observation

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced

A. Decline in population size

- based on (and specifying) any of the following:

(a) direct observation

(b) an index of abundance appropriate to the taxon

(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat

(d) actual or potential levels of exploitation

(e) the effects of introduced

A. Decline in population size

Examples

Ortolan bunting:

Generation length 3.6 years * 3 = 11 years, e.g. 2006-2017

Decline in breeding counts -80%

=>

≥80% in CR
≥50% in EN
≥30% in VU

A. Decline in population size

Examples

Ortolan bunting:

Generation length 3.6 years * 3 = 11 years, e.g. 2006-2017

Decline in breeding counts -80%

=> CR

≥80% in CR
≥50% in EN
≥30% in VU

A. Decline in population size

Examples

Curlew: Generation length 10.4 years*3 = 31 years, e.g. 1986-2017

Decline in breeding counts -22%

=>

≥80% in CR
≥50% in EN
≥30% in VU

A. Decline in population size

Examples

Curlew: Generation length 10.4 years*3 = 31 years, e.g. 1986-2017

Decline in breeding counts -22%

=> NT

≥80% in CR
≥50% in EN
≥30% in VU

A. Decline in population size

Examples

Willow tit: Generation length 4.6 years * 3 = 14 years, e.g. 2003-2017

Decline in breeding counts -53%, winter counts -68%

=>

≥80% in CR
≥50% in EN
≥30% in VU

A. Decline in population size

Examples

Willow tit: Generation length 4.6 years * 3 = 14 years, e.g. 2003-2017

Decline in breeding counts -53%, winter counts -68%

=> EN

≥80% in CR
≥50% in EN
≥30% in VU

B. Geographic range

1. Extent of occurrence estimated to be less than 1000 km2 (CR), 5,000 km2 (EN), 20,000 km2 (VU), and estimates indicating at least two of a-c:

a. Severely fragmented or known to exist at no more than five locations.

b. Continuing decline, observed, inferred or projected,

c. Extreme fluctuations

2. Area of occupancy estimated to be less than 10 km2 (CR), 500 km2 (EN), 2000 km2 (VU) and estimates indicating at least two of a-c:

a. Severely fragmented or known to exist at no more than five locations.

b. Continuing decline, observed, inferred or projected

c. Extreme fluctuations

B. Geographic range

1. **Extent of occurrence** estimated to be less than 1000 km2 (CR), 5,000 km2 (EN), 20,000 km2 (VU), and estimates indicating at least two of a-c:

a. Severely fragmented or known to exist at no more than five locations.

b. Continuing decline, observed, inferred or projected,

c. Extreme fluctuations

2. **Area of occupancy** estimated to be less than 10 km2 (CR), 500 km2 (EN), 2000 km2 (VU) and estimates indicating at least two of a-c:

a. Severely fragmented or known to exist at no more than five locations.

b. Continuing decline, observed, inferred or projected

c. Extreme fluctuations

B. Geographic range

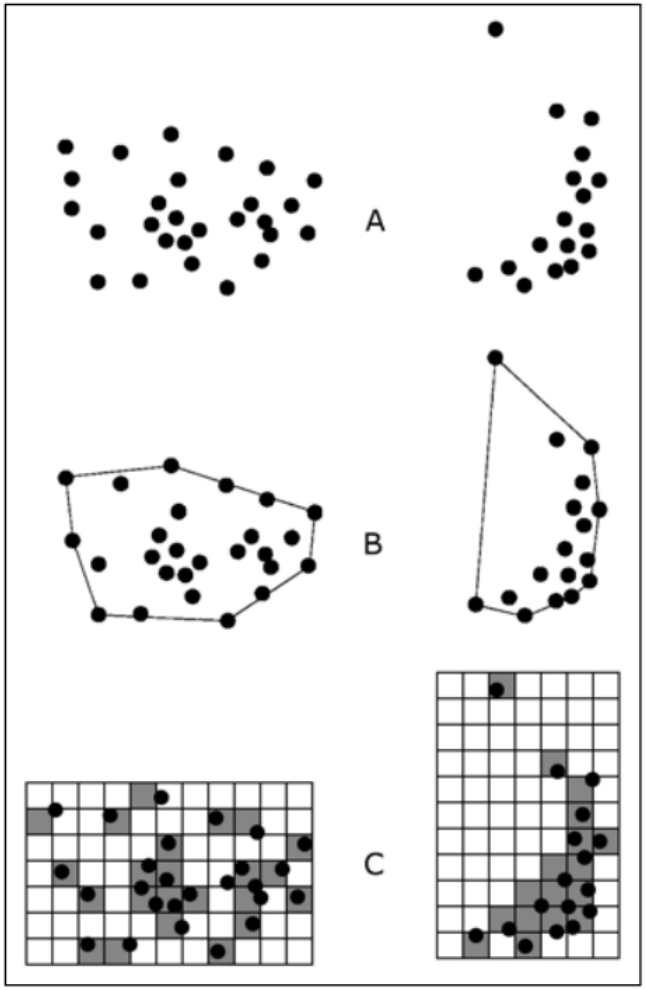


Figure 2. Two examples of the distinction between extent of occurrence and area of occupancy. (A) is the spatial distribution of known, inferred or projected sites of present occurrence. (B) shows one possible boundary to the extent of occurrence, which is the measured area within this boundary. (C) shows one measure of area of occupancy which can be achieved by the sum of the occupied grid squares.

C. Population size and decline

- C. Population size estimated to number fewer than 250 (CR), 2500 (EN) or 10000 (VU) mature individuals and either:

1. An estimated continuing decline

i) 25% in 3 years/1 generation (CR)

ii) 20% in 5 years/2 generations (EN)

iii) 10 % within certain 10 years/ 3 generations (VU)

OR

2. A continuing decline, observed, projected, or inferred, in numbers of mature individuals AND at least one of the following (a-b):

   a. Population structure in the form of one of the following: (i) no subpopulation estimated to contain more than 50 mature individuals, OR (ii) at least 90% of mature individuals in one subpopulation.

   b. Extreme fluctuations in number of mature individuals.

D. Small population size

- Population size estimated to number fewer than

i) 50 mature individuals (CR)

ii) 250 mature individuals (EN)

iii) 1000 mature individuals (VU)

D. Small population size, **examples**

- Population size estimated to number fewer than

i) 50 mature individuals (CR)

Breeding population less than 25 pairs: very rare breeding species, which have had breeding population for some time:

Greater spotted eagle, snowy owl, black tern, turtle dove, kingfisher

D. Small population size, **examples**

- Population size estimated to number fewer than

i) 50 mature individuals (CR)

Populations recently colonized (edge populations) are upgraded: e.g.

Citril wagtail (->EN), Savi's warbler (->EN)

D. Small population size

- Population size estimated to number fewer than

iii) 1000 mature individuals (VU)

Relatively rare species: quail, eagles, moorhen, white-backed woodpecker, great reed warbler, barred warbler, bearded tit

E. Quantitative analysis

- Quantitative analysis showing the probability of extinction in the wild is

i) at least 50% within 10 years or three generations (CR)

ii) at least 20% within 20 years or five generations (EN)

iii) at least 10% within 100 years (VU)

Problematic species

- Uncommon species with poor monitoring data: bean goose (VU in 2019), little ringed plover (NT)
- Borderline species e.g. decline 29-31%
- Contrasting data: one shows clear decline other not.

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science
- Important to measure survey effort

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science
- Important to measure survey effort
- Importance of national coordinators

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science
- Important to measure survey effort
- Importance of national coordinators
- Feedback on multiple levels important

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science
- Important to measure survey effort
- Importance of national coordinators
- Feedback on multiple levels important
- Strength of international networks

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science
- Important to measure survey effort
- Importance of national coordinators
- Feedback on multiple levels important
- Strength of international networks
- Base of an objective Red List evaluation

Take home messages

- Common Bird Monitoring is a key example of long-term citizen science
- Important to measure survey effort
- Importance of national coordinators
- Feedback on multiple levels important
- Strength of international networks
- Base of an objective Red List evaluation
- Every bird counts!

Thank you!

LUOMUS

LUONNONTIETEELLINEN KESKUSMUSEO
NATURHISTORISKA CENTRALMUSEET
FINNISH MUSEUM OF NATURAL HISTORY

HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI

Wetlands
INTERNATIONAL

EBCC
European Bird Census Council
every bird counts