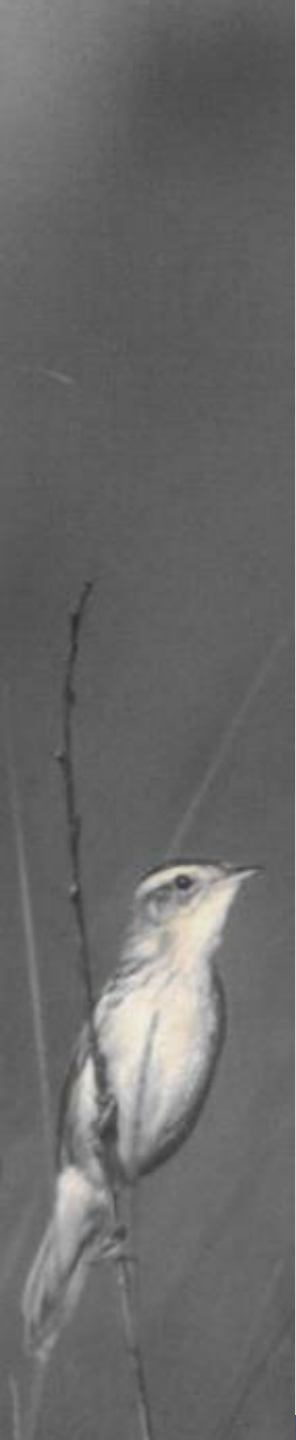# Status of the Pomeranian population 2011

Jochen Bellebaum, Franziska Tanneberger, Tobias Roth

NABU   Utop

Distribution

separate conservation management unit
   based on
   - distance/isolation
   - connectivity between breeding sites
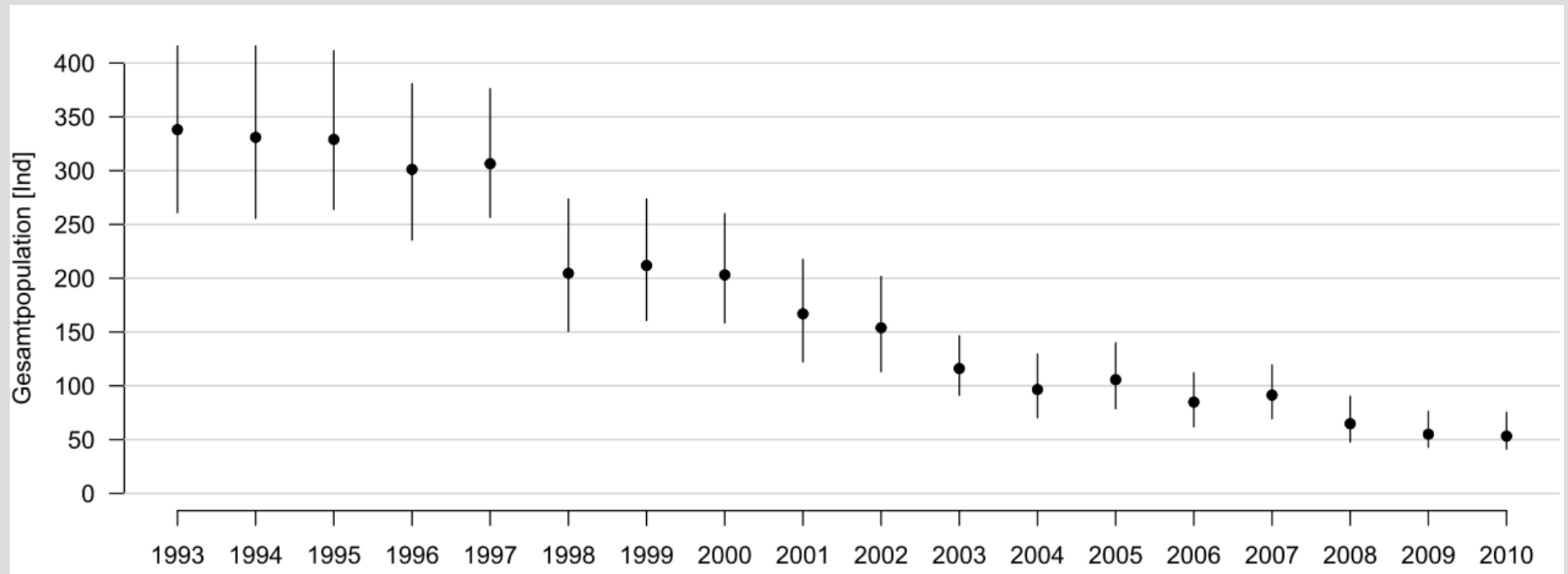   - ongoing decline

No evidence for
   - separate wintering areas
   - genetic separation other than isolation
   by distance and/or potential drift effect
   - loss of genetic diversity
   and/or inbreeding (only microsatellites)

Anklam
Peene
Swinoujscie
GERMANY
POLAN
Szczecin
Prenzlau
Gryfino
Oder/Odra
Kostrzyn
Warta

SITES UNTIL 1993/1997
① Freesendorfer Wiesen/Struck
② Row Peninsula
③ Miedzywodzki Peninsula (until 1993)
④ Rega Meadows
⑤ Lower Oder Valley Lds. Park

SITES AFTER 1997
① Rozwarowo Marshes
② Wolin National Park
③ Karsiborska Kepa
④ Zajecze Legi s.l.
⑤ Miedwie Lake (until 2005)
⑥ Krajnik
⑦ Lower Oder Valley National Park (until 2008)
⑧ Stara Rudnica (only one record 2007)
⑨ Warta Mouth National Park

0   25

Trend since 1993

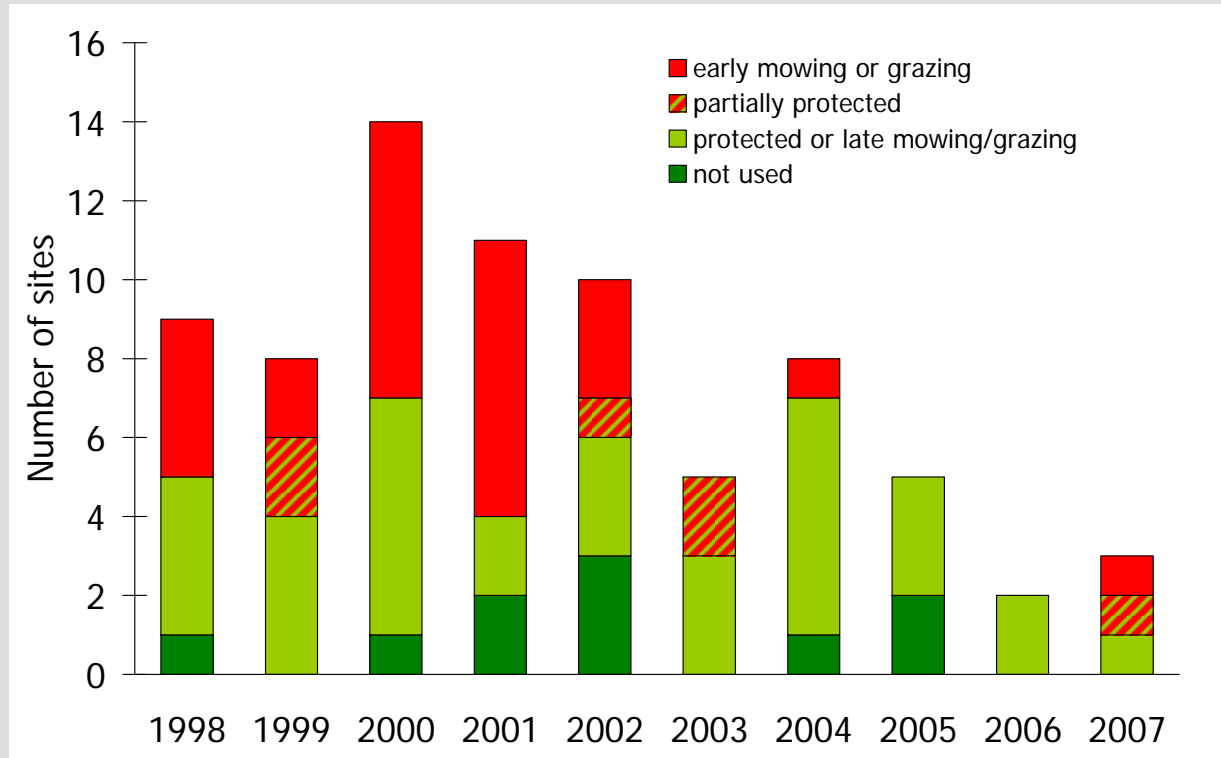Trend analysis of count data using first and second counts

Trend since 1993

Habitat suitability in 8 sites where vegetation structure is monitored
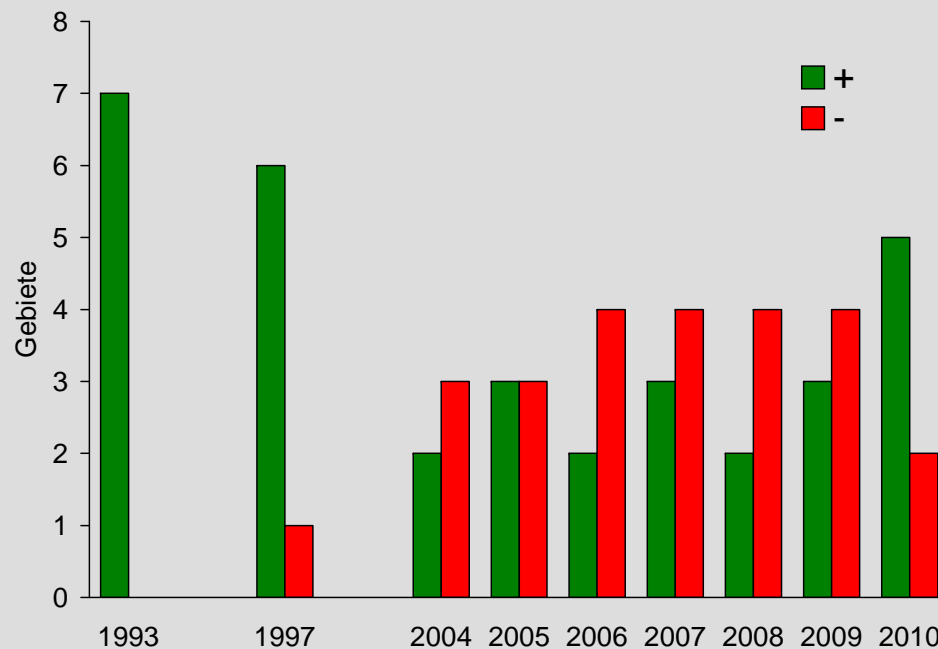
Reasons

Low breeding success – e.g. lack of protection in Germany

Reasons

Reasons for decline and underlying process needed to find the remedy

Possible processes:
   - **habitat loss – e.g. insufficient management (many sites)**
   - **low breeding success – e.g. lack of protection (Germany, Nemunas delta)**
   - low winter survival – e.g. habitat loss in Africa
   - fragmentation – unchanged for > 1 generation
   - low breeding success due to inbreeding – lack of data

Problem: vital rates (breeding success, survival) unknown

Actions

natural habitats

drainage, eutrophication
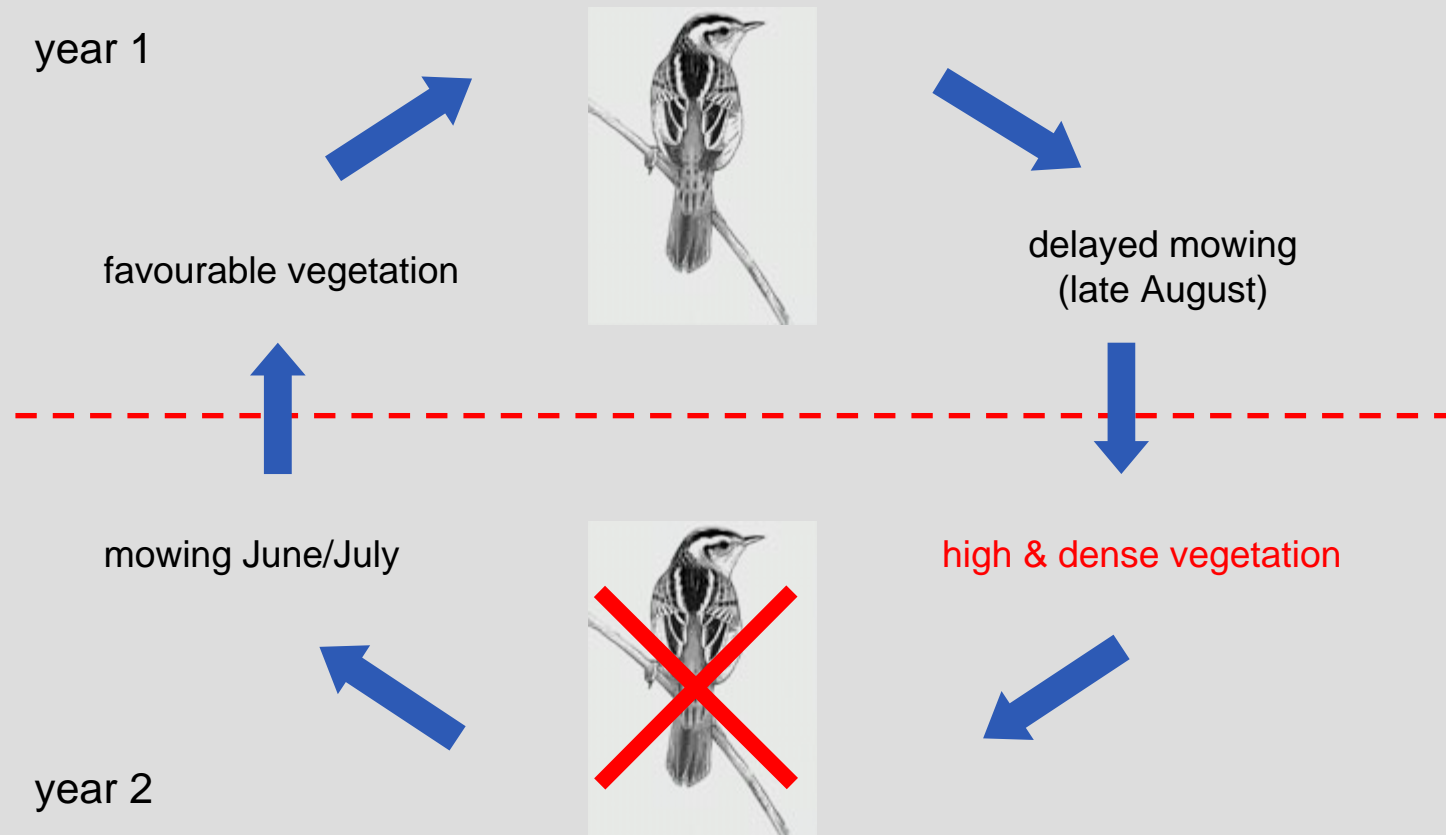
secondary habitats, management dependent

irregular mowing/burning

regular late mowing, (low int. grazing)

early mowing

Actions

Adaptive management: mowing regime for eutrophic AW sites

year 1

favourable vegetation

delayed mowing
(late August)

mowing June/July

high & dense vegetation

year 2

Actions

Threat 1: Restore sites, fight overgrowing reeds/bushes

Easy when funding is guaranteed

Threat 2: Recurring adaptive management of eutrophic AW sites
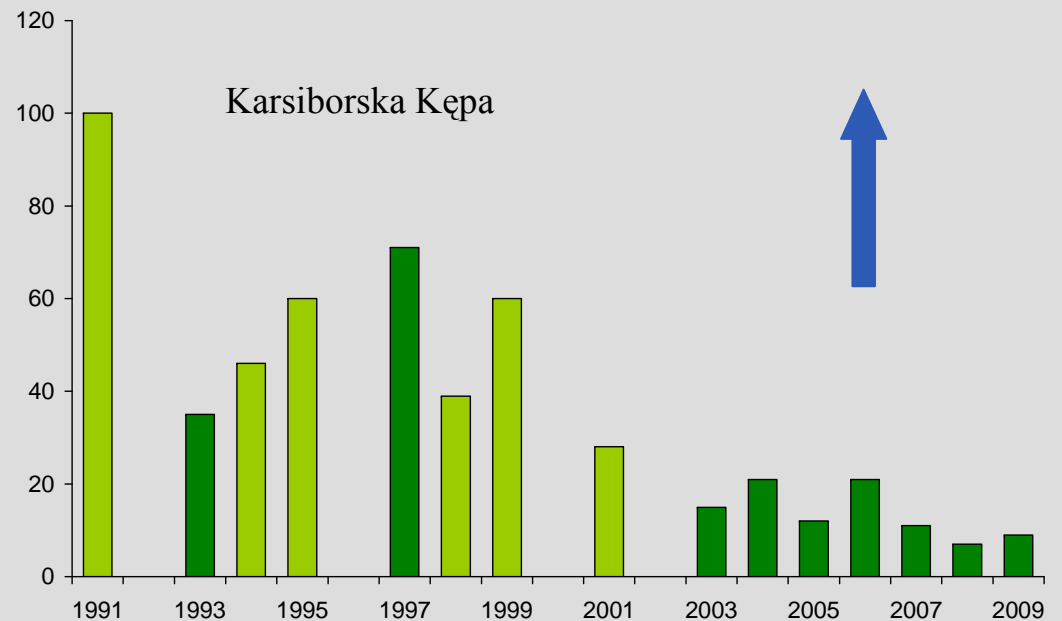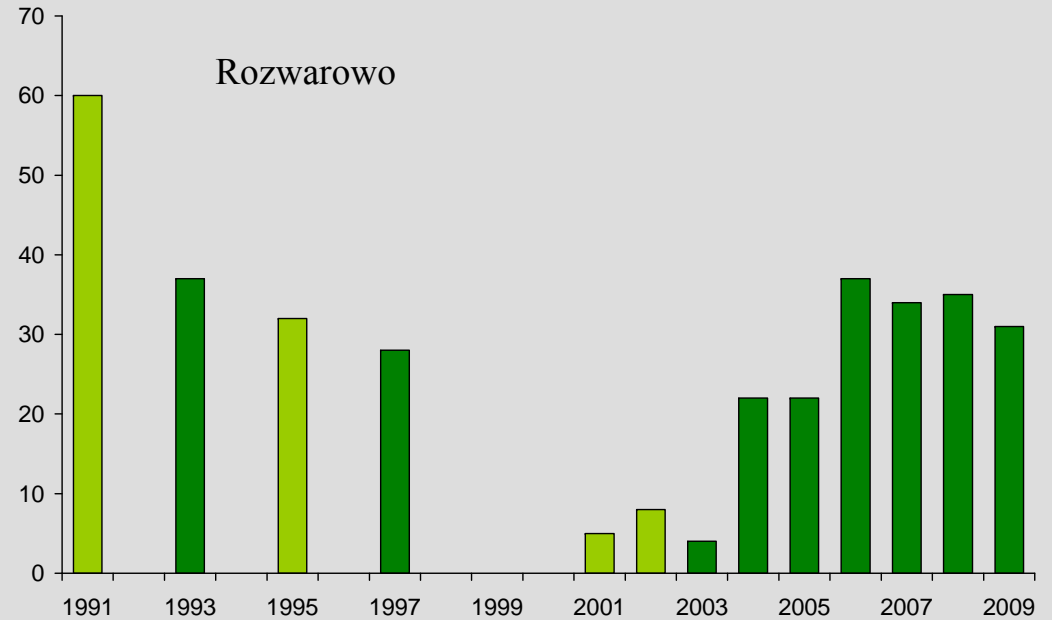
Demanding task, requires
AES including incentives for late **and early** mowing
Permanent advice to farmers from trained staff
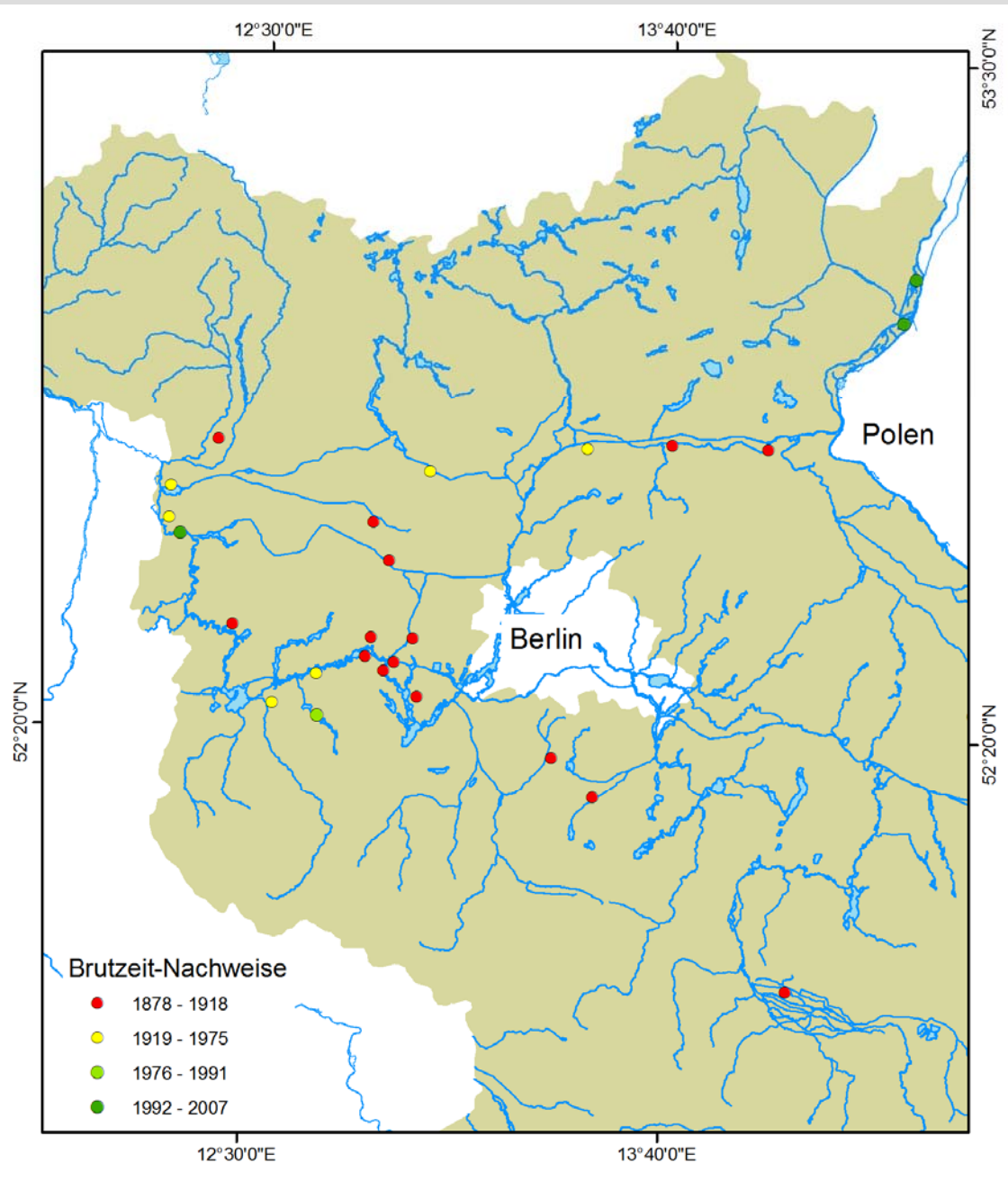On a population scale: sufficient (mandatory ?) participation of farmers

Demography

Colour ringing confirms
immigration from
Karsiborska Kępa in 2006

Z. Kajzer

Rozwarowo

Karsiborska Kępa

Future

Historical distribution
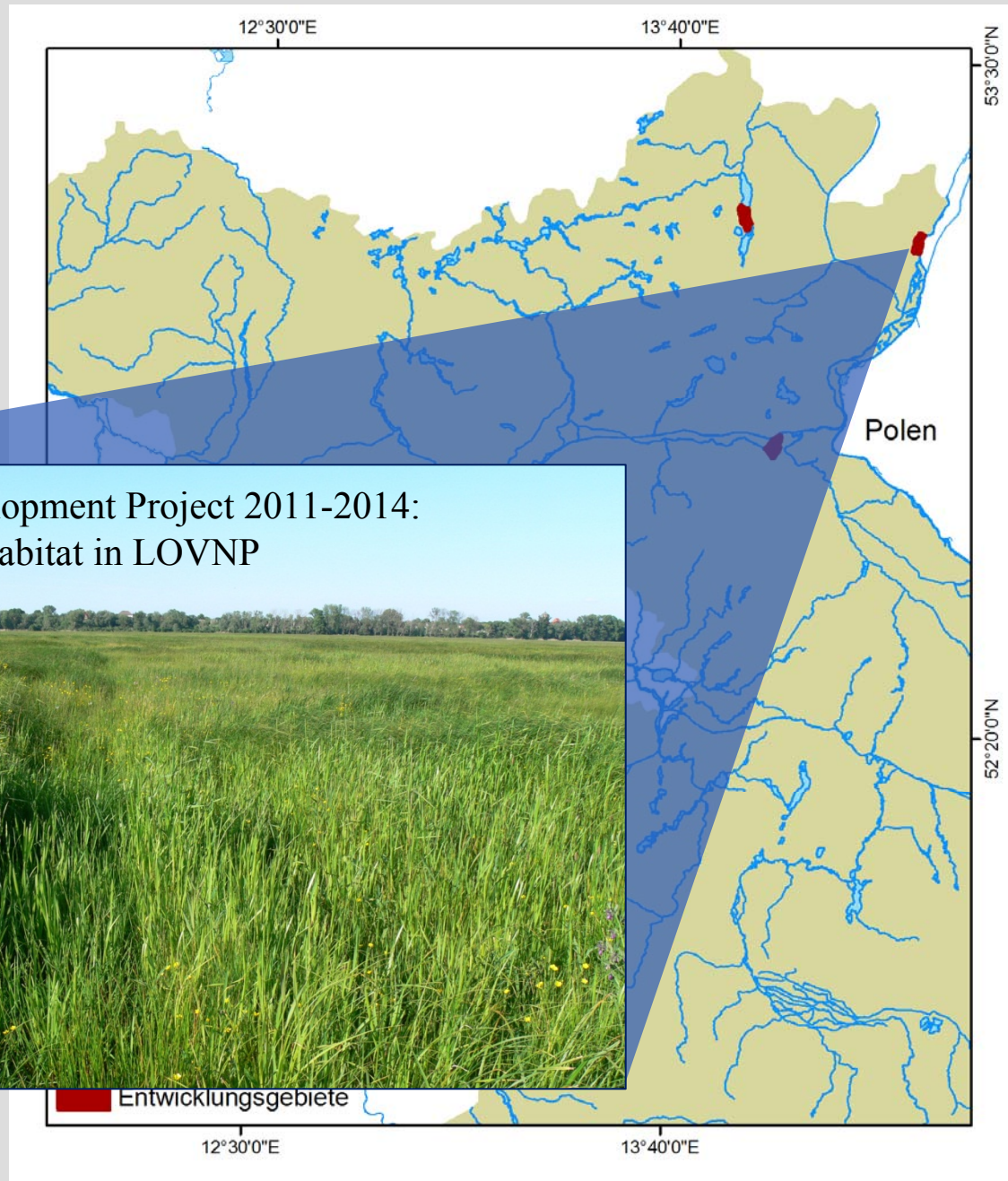 in Brandenburg (Germany)

Future

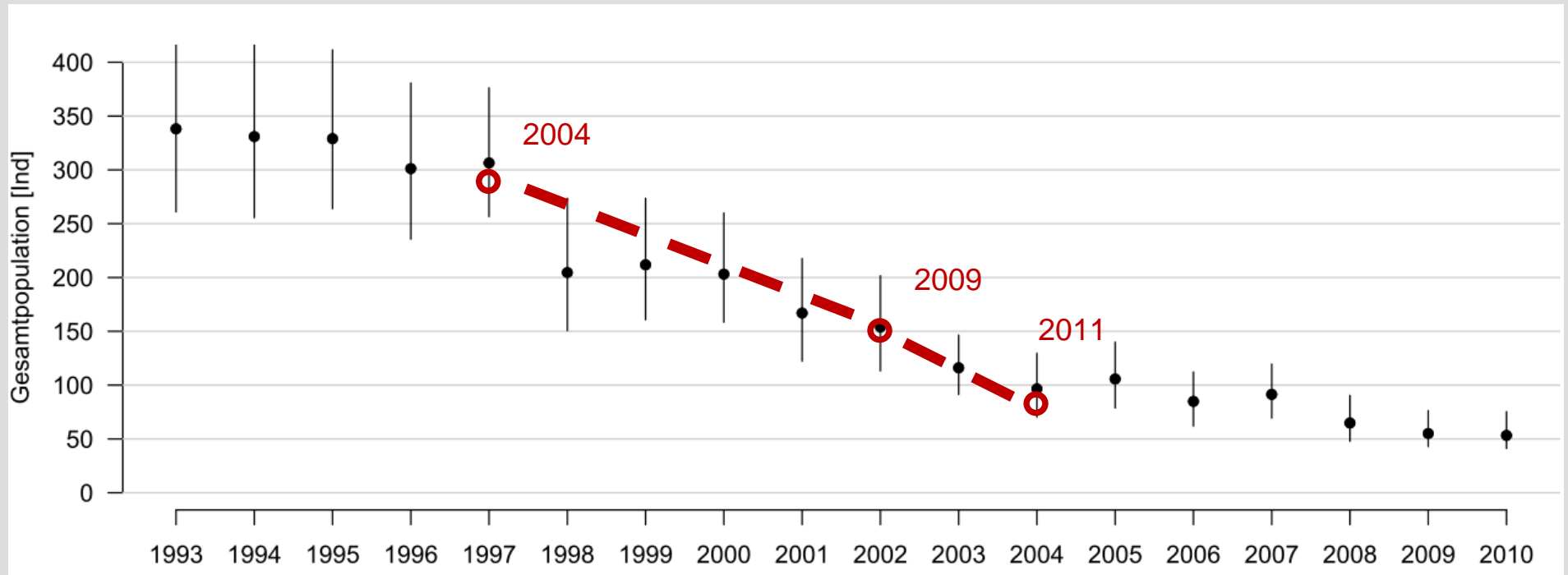Proposed sites for restoration
  (from regional AP)

Testing and Development Project 2011-2014:
200 ha new AW habitat in LOVNP

Implications

Trends in the Pomeranian and Baltic populations

Conclusions

The Pomeranian population is close to extinction, the decline is not yet reversed.

Conservation efforts should continue and perhaps increase – uncertainty is no excuse.

A comprehensive strategy to rescue the Pomeranian population is needed based on the best available information. A strategy might include
- increase size and quality of remaining breeding sites
- close gaps in knowledge
- conservation work in Africa

This seems equally true for the Baltic population!

Thank you!

Demography

Can we explain observed trends only by local breeding success?

Relationship between population change λ, survival and breeding productivity
  P – number of fledged young per female

$$P = 2\frac{\lambda - S_{ad}}{S_{juv}}$$

Demography

Adult male (local) survival from colour ringing data, BPN 1987-1995:
Φ_{ad} = 0.67 (95% CI: 0.537-0.785)

Model assumption for survival
S_{ad} = 0.57   (reasonable for females)
S_{juv} = 0.37   (acc. to British Sedge Warblers)

P = 2.32 needed for stable population (λ = 1.0)

Caution – preliminary figures, still waiting for final results...

Demography

	observed λ	model P
Pomeranian population		
1997-2004	0.85	1.54

Demography

	observed λ	model P
Pomeranian population		
1997-2004	0.85	1.54

Possible reasons
  - low breeding success
  - less females than expected due to habitat quality

Demography

Observations on breeding grounds suggest skewed adult sex ratios
   Karsiborska Kępa: 46 males, 20 females – ASR = 0.70
   Dikoe: 32 males, 18 nests – ASR = 0.64
   Rietzer See: before decline ASR = 0.55, during decline ASR = 0.69

Molecular sex determination of birds caught in Senegal:
   32 males, 27 females – SR = 0.54
   but: age and breeding populations unknown

(G. Kiljan , B. Giessing, A.L. Vogel; G. Sohns & H. Wawrzyniak)