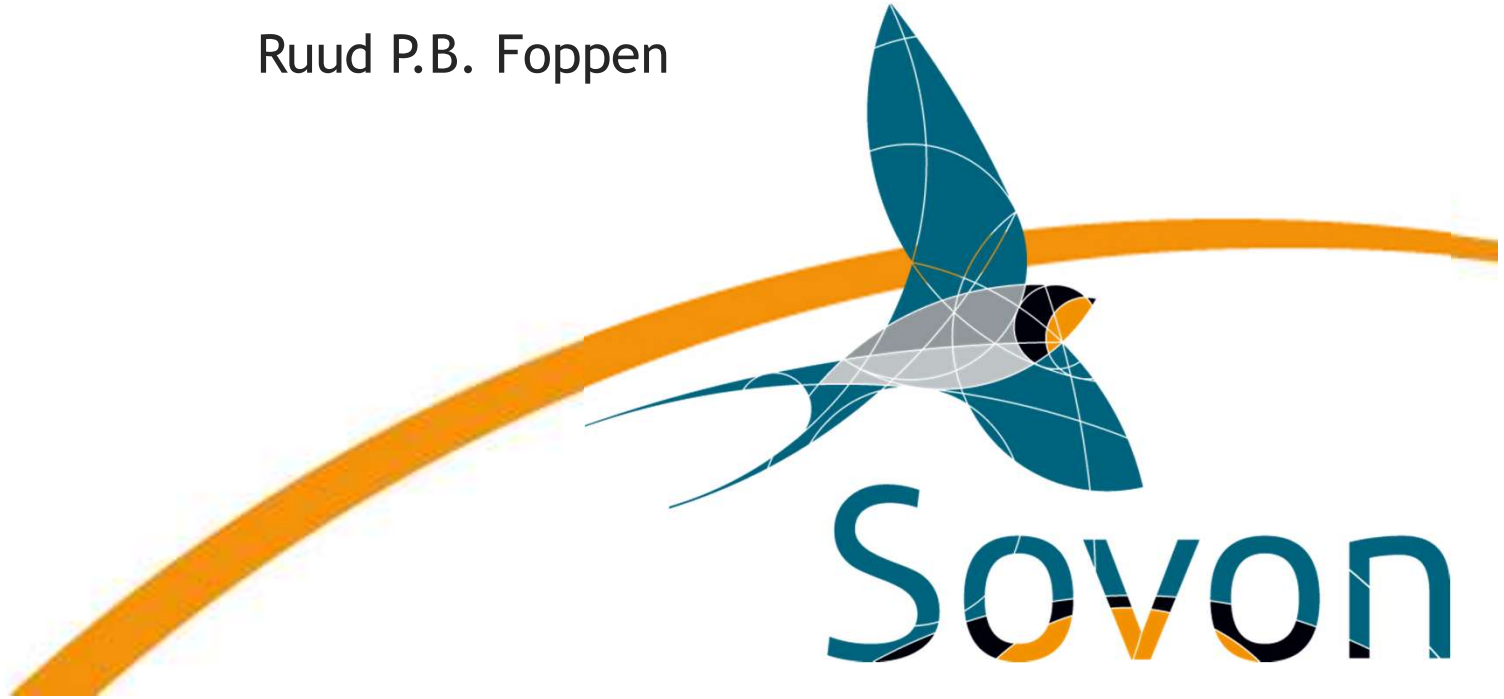
Wetenschappelijke benutting van meetnetgegevens: het mes snijdt aan 2 kanten

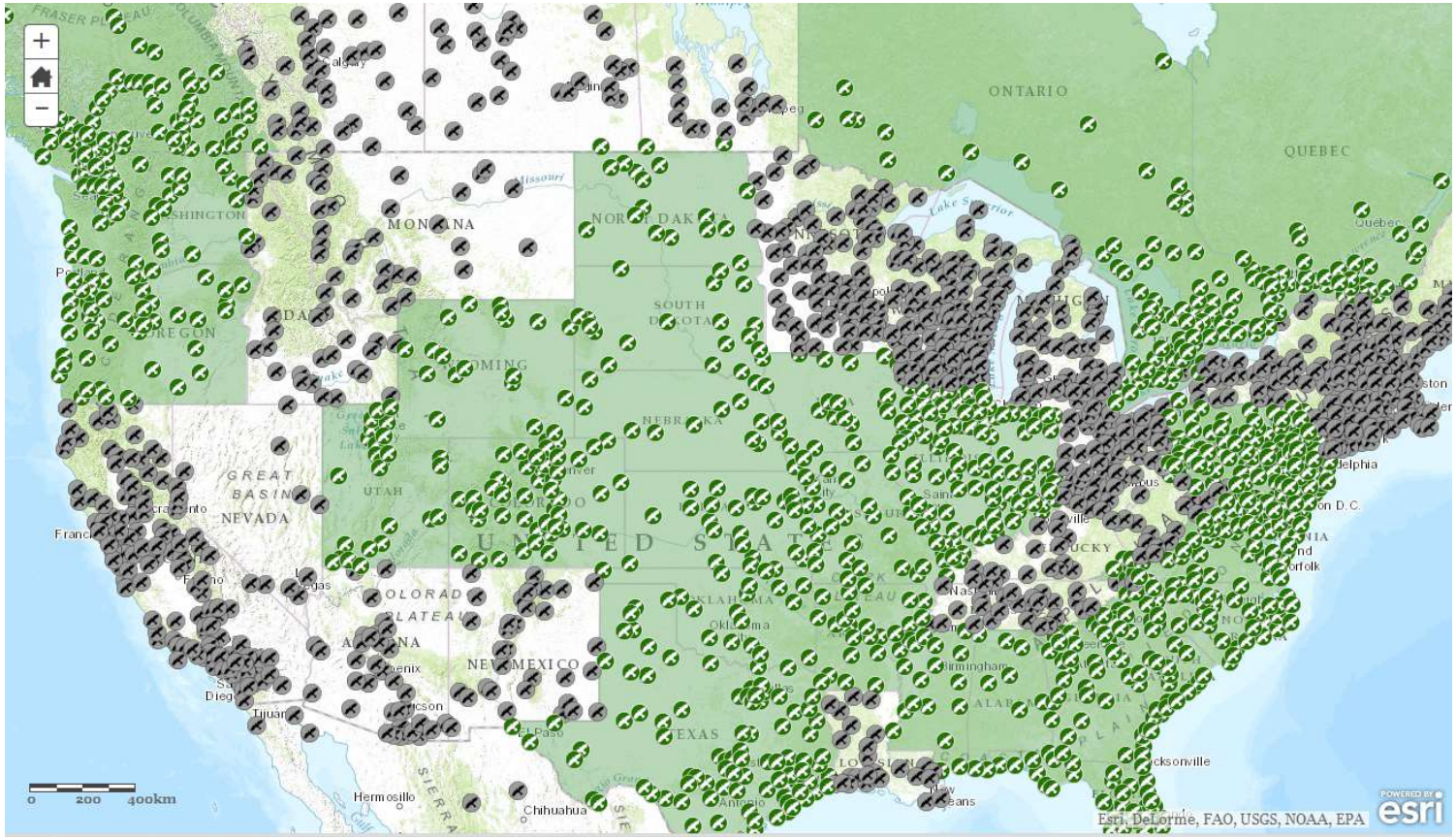
Ruud P.B. Foppen



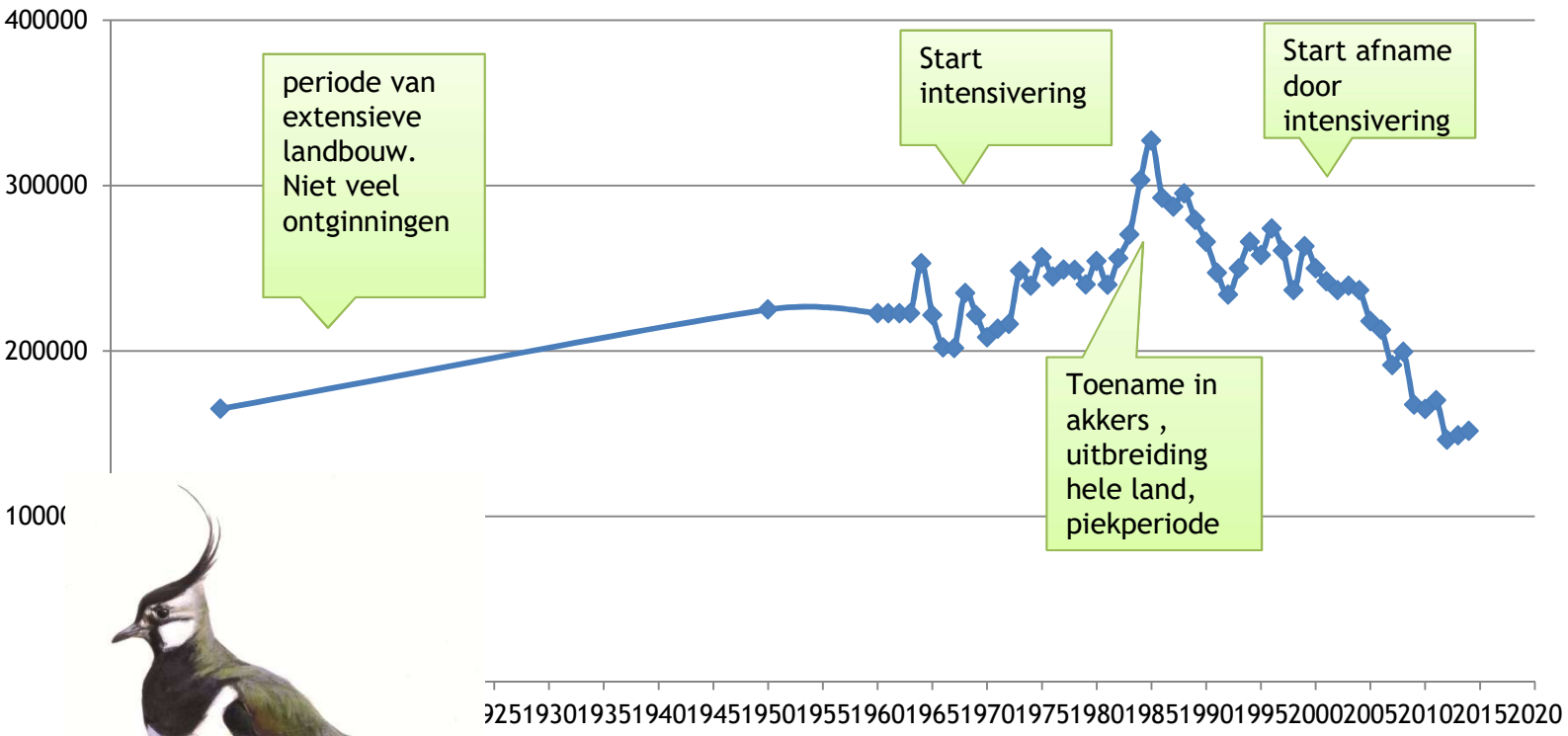
Meetnetten

- Eigenlijk een relatief oud fenomeen oudste meetnet voor vogels is uit USA, Christmas Bird Count (>100 jaar), maar in West-Europa dateren de oudste vogelmeetnetten uit UK en Finland (1960). Maar in meeste landen en voor de meeste soorten zijn we net begonnen

Christmas Bird Count sinds 1900



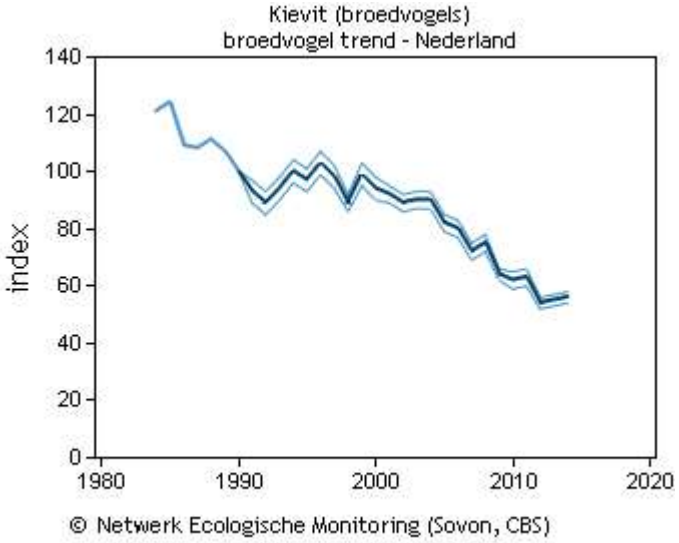
We meten ook in Nederland al heel lang

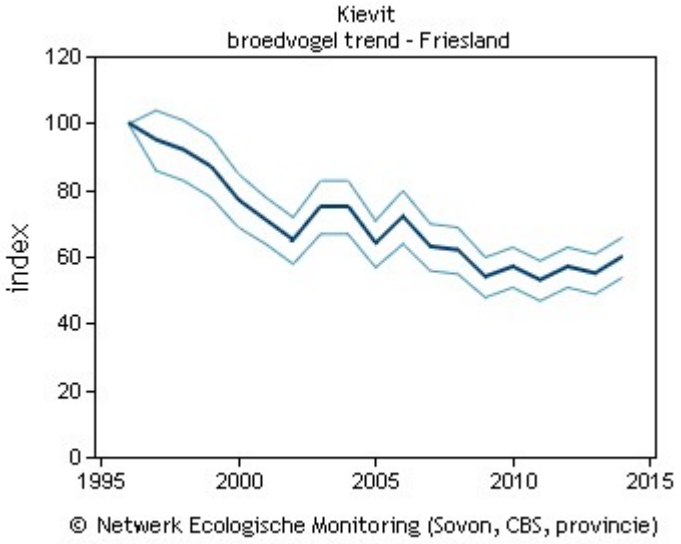


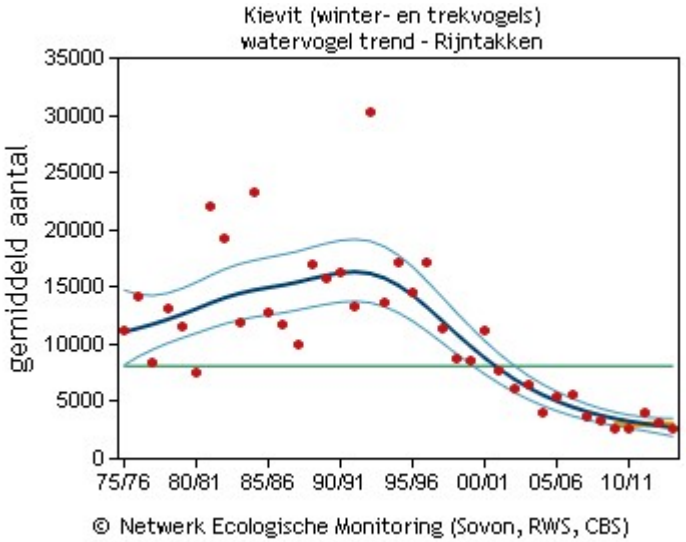
Reguliere toepassing meetnetgegevens

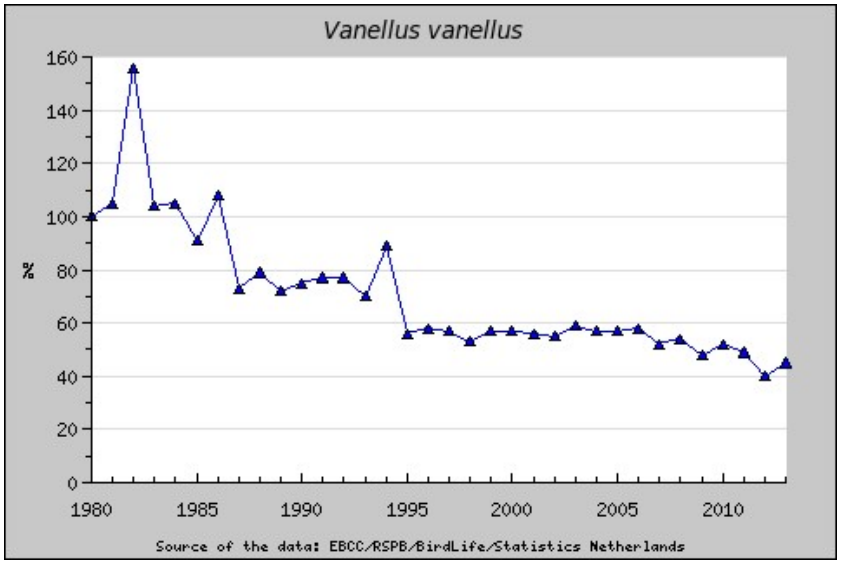
- Het beschrijven van voornamelijk nationale populatietrends, maar ook in toenemende mate lokaal, regionaal en internationaal
- ‘klanten’ en doelgroepen: overheden, achterban

Trends op diverse schaalniveau's



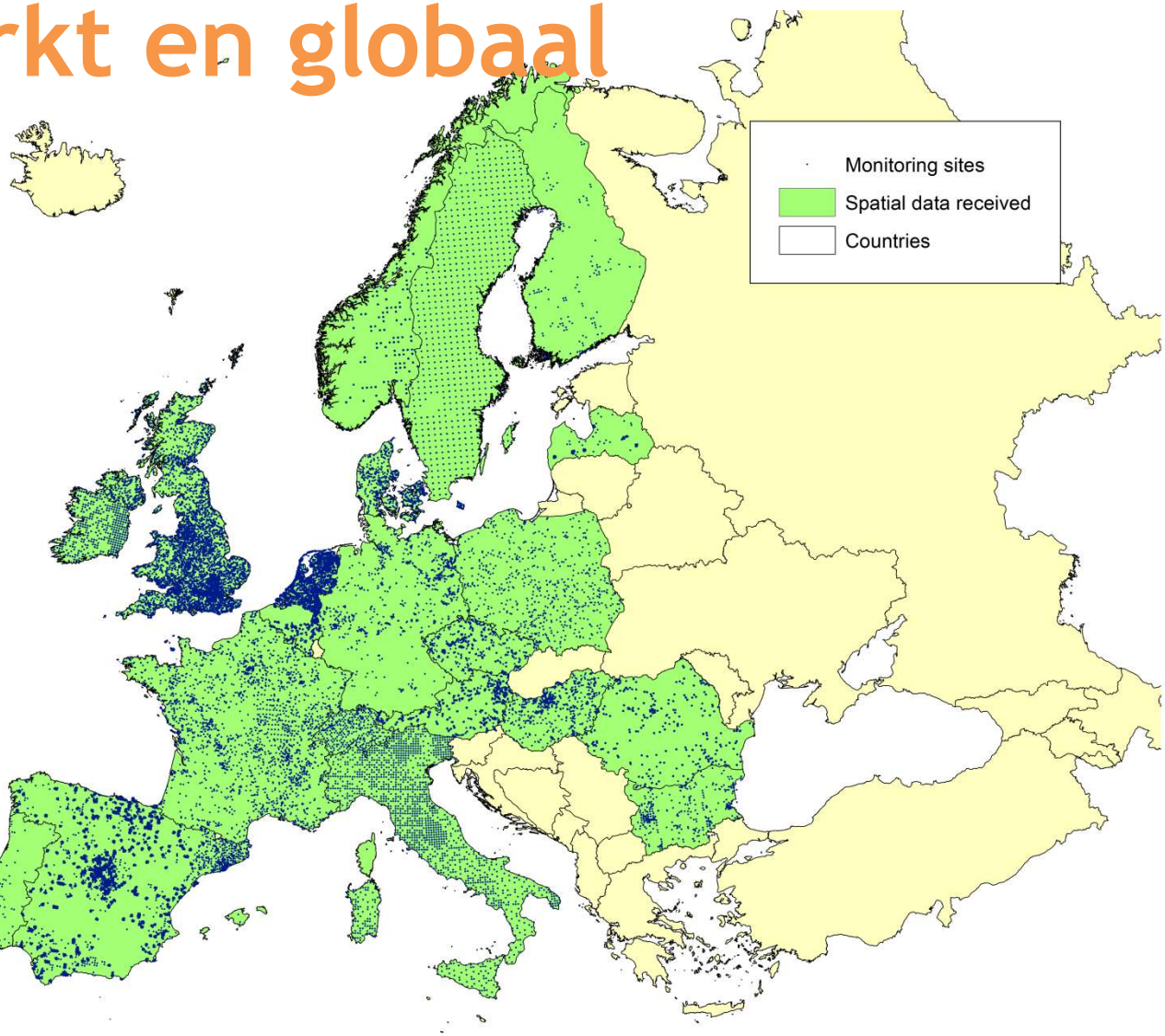






Sovon

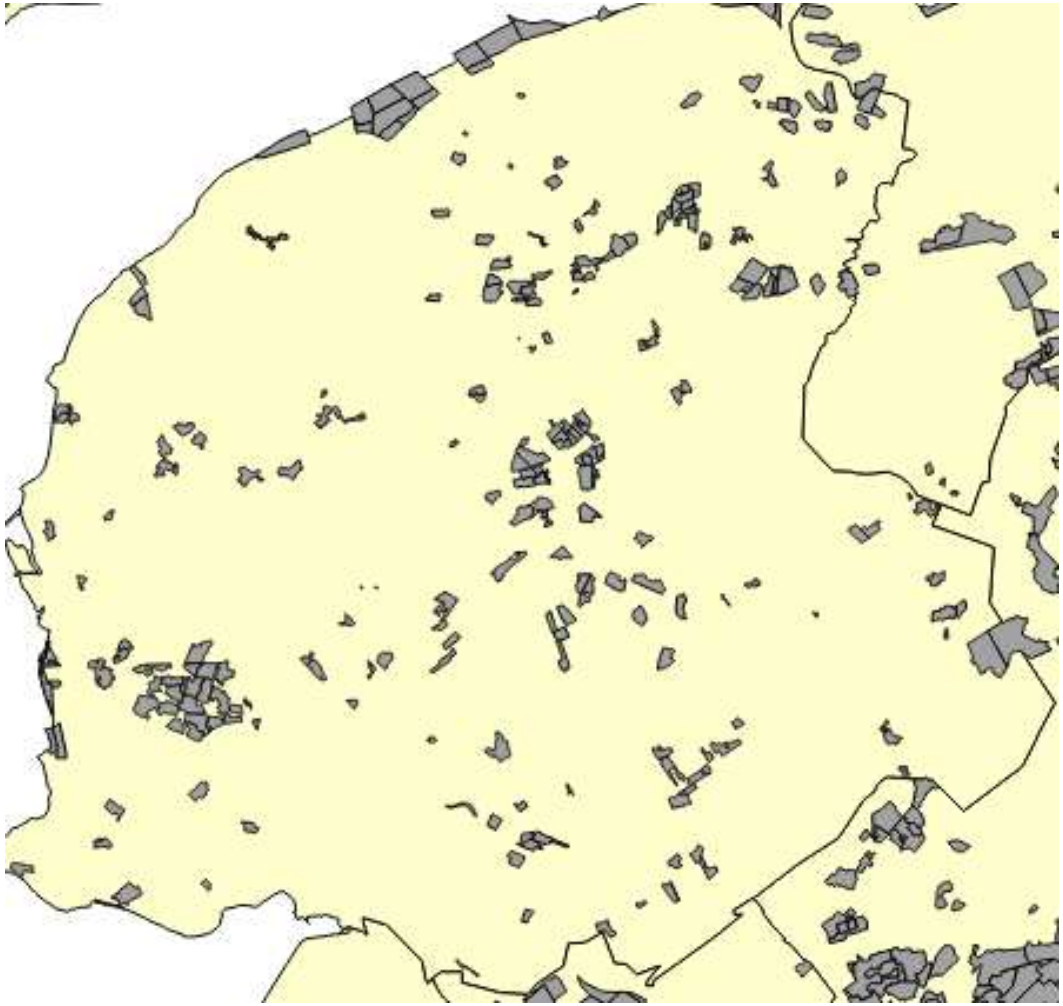
Info op internationaal niveau beperkt en globaal



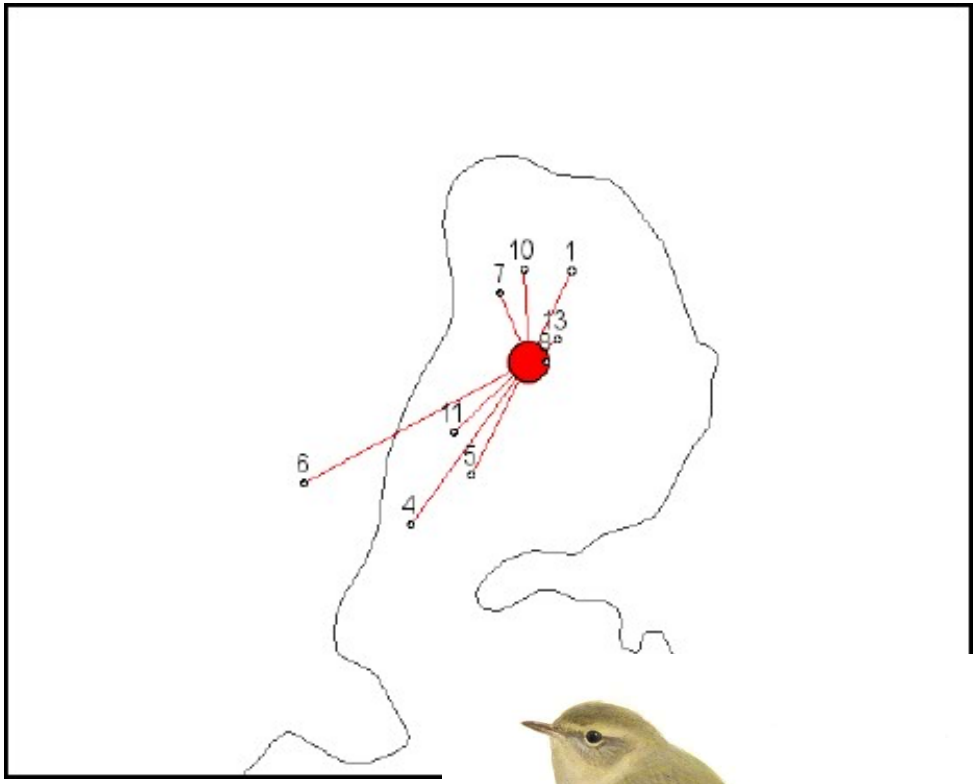
Op nationaal niveau al wat beter

- alleen 2014
- 2014 en andere jaren

Op regionaal niveau behoorlijk gedetailleerd

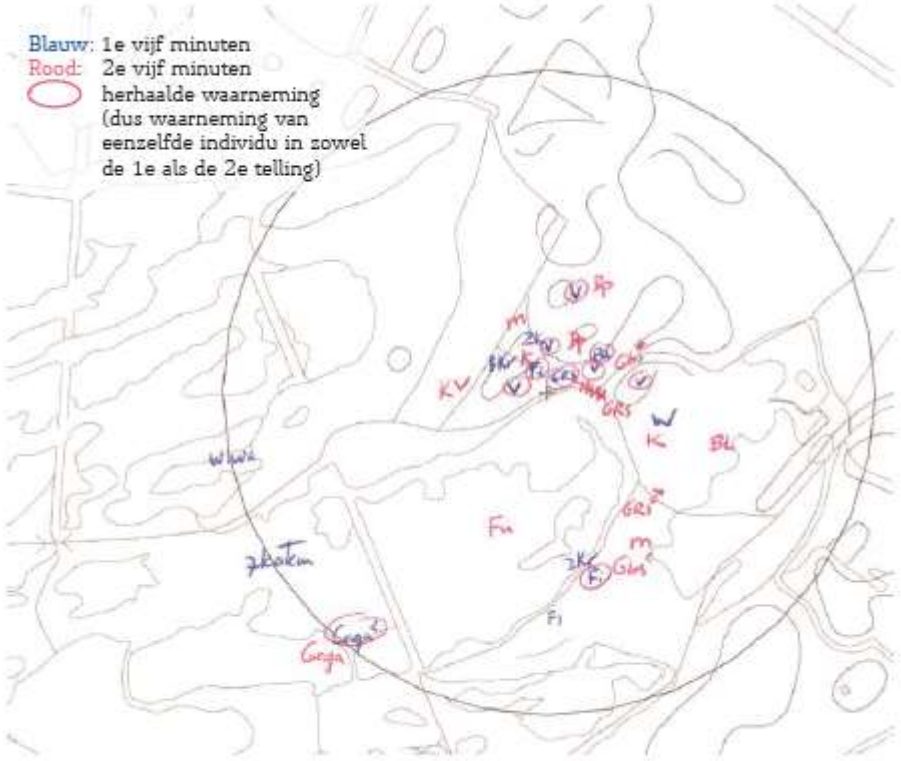


Op lokaal niveau heel nauwkeurig vastgelegd (en steeds beter)



Sovon

We kunnen dus steeds meer met de basisdata

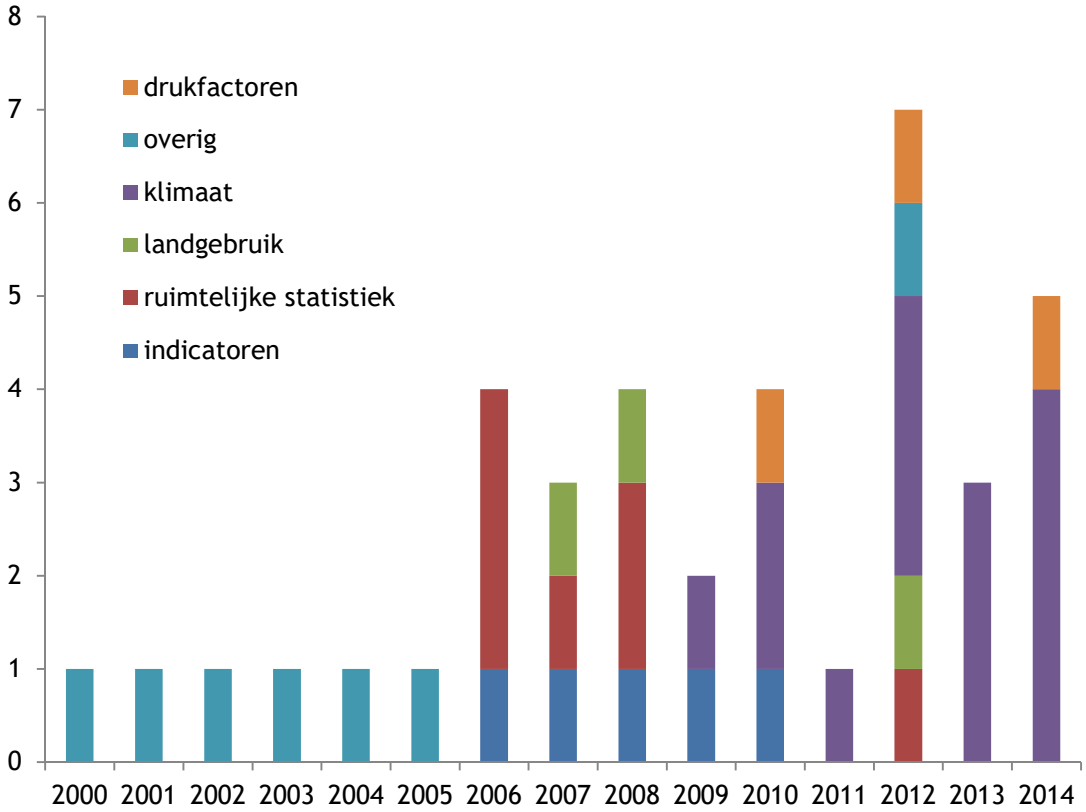


Toenemend gebruik van meetnetgegevens als onderzoeksdata:

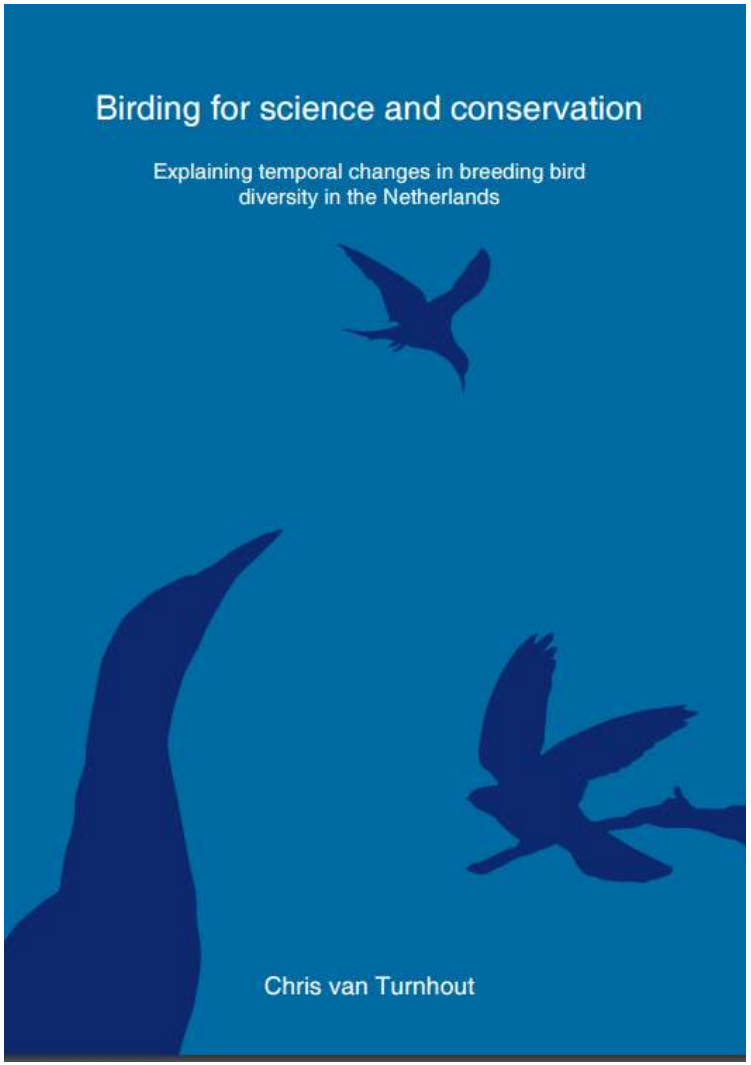
- Illustratatie a.h.v. vogelmeetnetdata
- Te illustreren a.h.v. aantal publicaties
- Tot 2006: behoorlijk veel (>10) artikelen in ‘vogelbladen’ en engelstalige rapporten
- Na 2006 toename van peer-reviewed publicaties

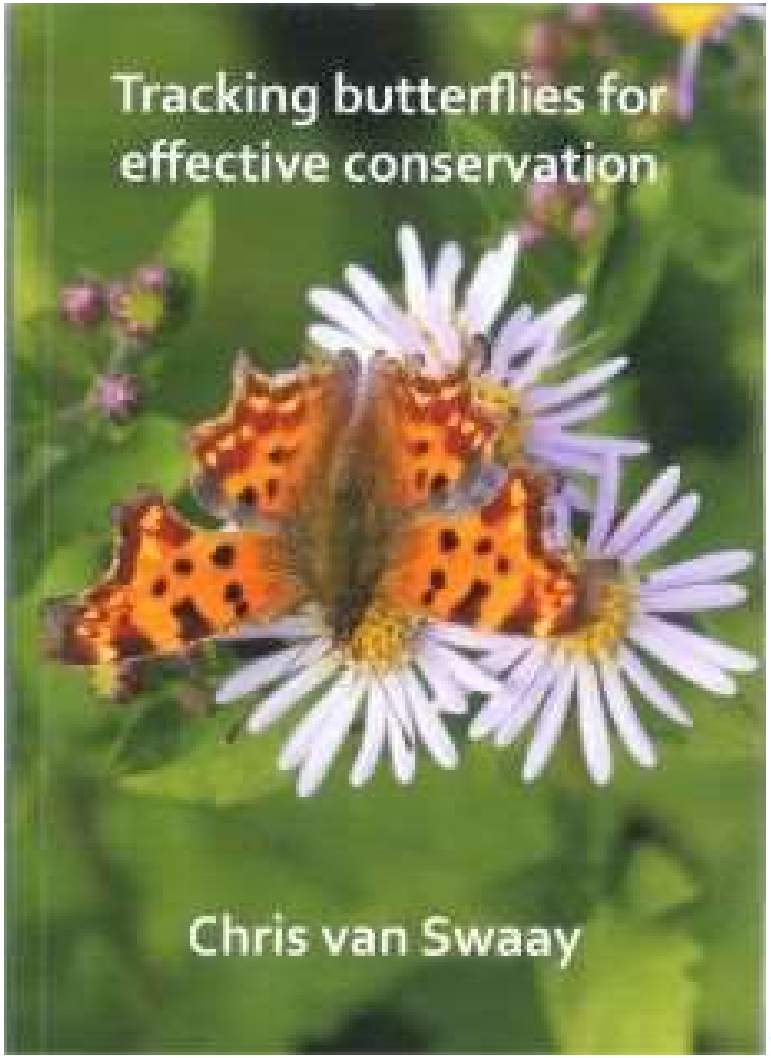
Sovon

Het aantal artikelen neemt gestaag toe



De twee Chrissen





Sovon

Trends soorten lopen achter de temperatuurtrends aan

Differences in the climatic debts of birds and butterflies at a continental scale

Vincent Devictor[1*], Chris van Swaay[2], Tom Brereton[3], Lluís Brotons[4,5], Dan Chamberlain[6], Janne Heliölä[7], Sergi Herrando[4], Romain Julliard[8], Mikko Kuussaari[7], Åke Lindström[9], Jiří Reif[10], David B. Roy[11], Oliver Schweiger[12], Josef Settele[12], Constantí Stefanescu[13], Arco Van Strien[14], Chris Van Turnhout[15,16], Zdeněk Vermouzek[17], Michiel WallisDeVries[2,18], Irma Wynhoff[2] and Frédéric Jiguet[8]

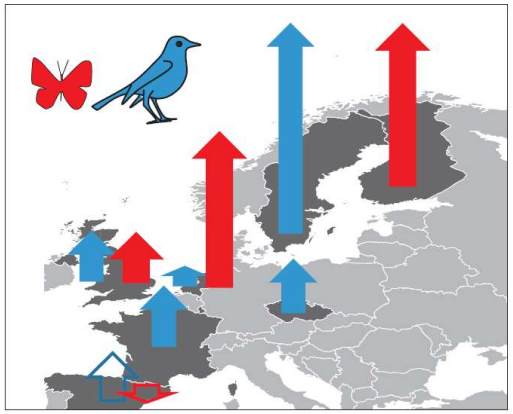


Figure 3 | European variations in the temporal trend of bird and butterfly CTI. The map shows the temporal trend of bird and butterfly CTI for each country. The height of a given arrow is proportional to the temporal trend and its direction corresponds to the sign of the slope (from south to north for positive slopes). The arrow is opaque if the trend is significant.

Sovon

Biological Conservation 143 (2010) 173–181

Contents lists available at ScienceDirect

Biological Conservation

journal homepage: www.elsevier.com/locate/biocon

Life-history and ecological correlates of population change in Dutch breeding birds

Chris A.M. Van Turnhout [a,b,c,*], Ruud P.B. Foppen [a,d], Rob S.E.W. Leuven [b], Arco Van Strien [e], Henk Siepel [c,f]

[a] SOVON Dutch Centre for Field Ornithology, Rijksstraatweg 178, 6573 DG, Beek-Ubbergen, The Netherlands
[b] Department of Environmental Science, Institute for Water and Wetland Research, Radboud University Nijmegen, P.O. Box 9010, 6500 GL, Nijmegen, The Netherlands
[c] Department of Animal Ecology and Ecophysiology, Institute for Water and Wetland Research, Radboud University Nijmegen, P.O. Box 9010, 6500 GL, Nijmegen, The Netherlands
[d] European Bird Census Council, The Lodge, Sandy, Bedfordshire SG19 2DL, United Kingdom
[e] Statistics Netherlands, P.O. Box 24500, 2490 HA, The Hague, The Netherlands
[f] Centre for Ecosystem Studies, Alterra, Wageningen University and Research Centre, P.O. Box 47, 6700 AA, Wageningen, The Netherlands

Table 2
The 10 best-fitting models predicting national population trends of 170 breeding birds in The Netherlands in 1990–2005 from life-history and ecological traits (multivariate analysis). For all models, sorted by AIC, the slopes of the regression lines of the variables are presented (for continuous variables only). These estimates account for the effects of other variables in the model. Significant effects ($p < 0.05$) of continuous variables are indicated with an asterisk. Trend estimates of categorical variables (indicated with 'x') are presented in Table 3. Also, the % variance explained by the 10 best models is given (R^2_{adj}). In the last three columns the number of times that every variable is included in one of the 10 best-fitting models is presented, as well as the average slope and its standard error (calculated by model averaging, see Section 2.4). All traits that were significant or nearly significant in the univariate analysis are included in the table. Results of the complementary analysis of two-way interactions and variables containing many missing values are presented separately.

Multivariate models	1	2	3	4	5	6	7	8	9	10	Top 10	Slope	Error
Body mass													
Male					0.007	0.006	0.008	0.003	0.001		5	0.005	0.005
Rarity													
European range	−0.061*	−0.063*	−0.065*	−0.068*	−0.063*	−0.059*	−0.057*	−0.059*	−0.060*	−0.064*	10	−0.062	0.010
Parental care													
Eggs											0		
Sociality													
Breeding season											0		
Migration behaviour													
Migration strategy	x		x	x	x	x			x	x	7		
Main diet	x	x						x	x	x	5		
Foraging location				x	x						2		
Nest location	x	x	x	x	x	x	x	x	x	x	10		
AIC	177.4	177.8	177.9	178.1	178.4	178.8	178.9	179.3	179.4	179.4			
R^2_{adj}	34.5	33.4	32.0	33.6	32.7	31.0	30.3	31.9	32.8	34.1			
Complementary analysis													
Main diet × body mass											0		
Main diet × foraging loc.											0		
Rarity × body mass					−0.017*	−0.018*	−0.018*	−0.017*	−0.017*		5	−0.017	0.005
Nest location × body mass								x	x		2		
Dispersal capacity													
Natal				0.024							1	0.024	0.012
Timing of arrival of migr.		−0.094*		−0.091*	−0.094*		−0.084*	−0.107*	−0.115*	0.092*	7	−0.096	0.041
Timing of breeding											0		

Gebruik indicatoren

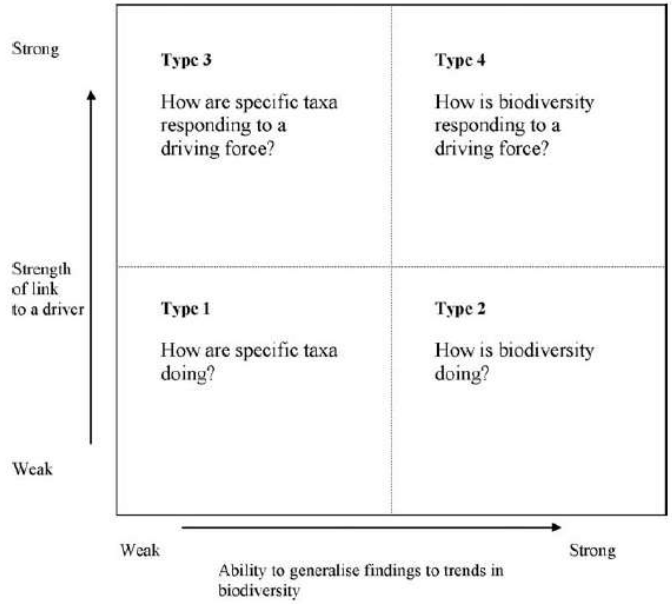


Fig. 1. Typology of indicators. See text for explanation.

Ecological Indicators 9 (2009) 1041–1048

Contents lists available at ScienceDirect

Ecological Indicators

journal homepage: www.elsevier.com/locate/ecolind

A typology of indicators of biodiversity change as a tool to make better indicators

A.J. van Strien [a], L. van Duuren [a,*], R.P.B. Foppen [b], L.L. Soldaat [a]

[a] Statistics Netherlands, P.O. Box 24500, 2490 HA The Hague, The Netherlands
[b] SOVON Dutch Centre for Field Ornithology, Rijksstraatweg 178, 6573 DG Beek-Ubbergen, The Netherlands

Lange-afstandstrekkers in bossen zijn de pineut: de mismatch hypothese

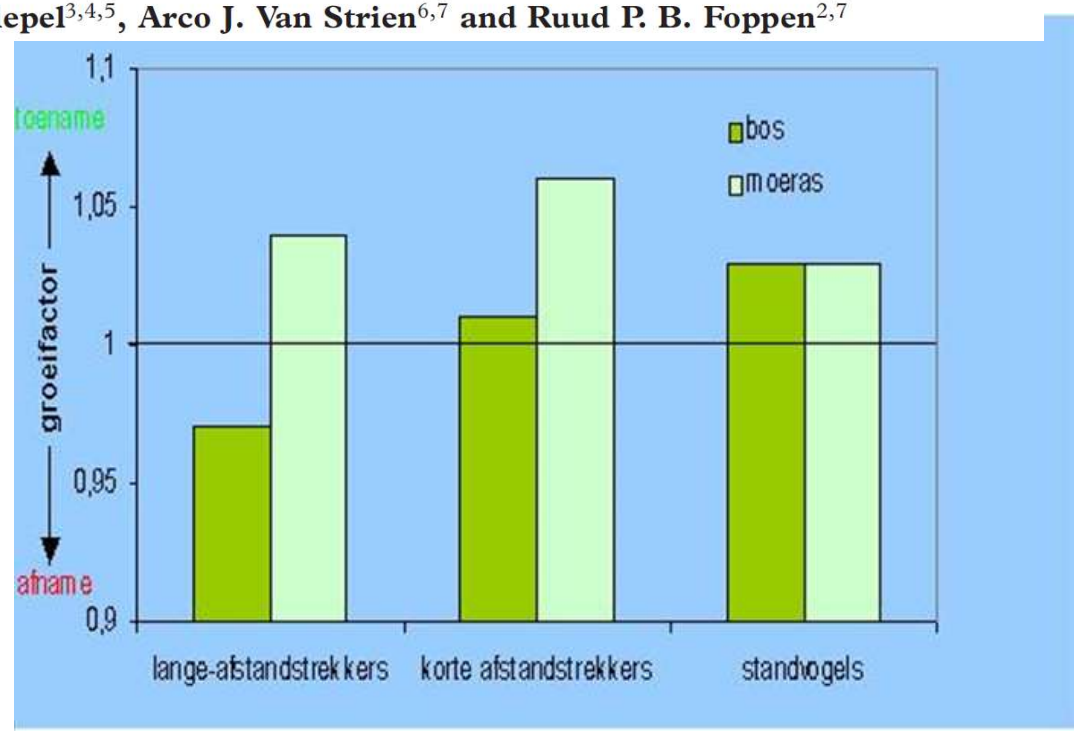
PROCEEDINGS OF THE ROYAL SOCIETY B

FirstCite® e-publishing

Proc. R. Soc. B
doi:10.1098/rspb.2009.1525
Published online

Avian population consequences of climate change are most severe for long-distance migrants in seasonal habitats

Christiaan Both[1,*], Chris A. M. Van Turnhout[2,3,4], Rob G. Bijlsma[1], Henk Siepel[3,4,5], Arco J. Van Strien[6,7] and Ruud P. B. Foppen[2,7]



Sovon

Mate van voorkomen is gerelateerd aan populatietrend

ECOLOGY LETTERS

Ecology Letters, (2014) doi: 10.1111/ele.12387

LETTER

Common European birds are declining rapidly while less abundant species' numbers are rising

Richard Inger,[1]* Richard Gregory,[2] James P. Duffy,[1] Iain Stott,[1] Petr Voříšek[3,4] and Kevin J. Gaston[1]

Abstract

Biodiversity is undergoing unprecedented global decline. Efforts to slow this rate have focused foremost on rarer species, which are at most risk of extinction. Less interest has been paid to more common species, despite their greater importance in terms of ecosystem function and service provision. How rates of decline are partitioned between common and less abundant species remains unclear. Using a 30-year data set of 144 bird species, we examined Europe-wide trends in avian abundance and biomass. Overall, avian abundance and biomass are both declining with most of this decline being attributed to more common species, while less abundant species showed an overall increase in both abundance and biomass. If overall avian declines are mainly due to reductions in a small number of common species, conservation efforts targeted at rarer species must be better matched with efforts to increase overall bird numbers, if ecological impacts of birds are to be maintained.

Keywords

Abundance, avian, biomass, birds, common, conservation, declines, ecosystem services, rare, rarity.

Ecology Letters (2014)

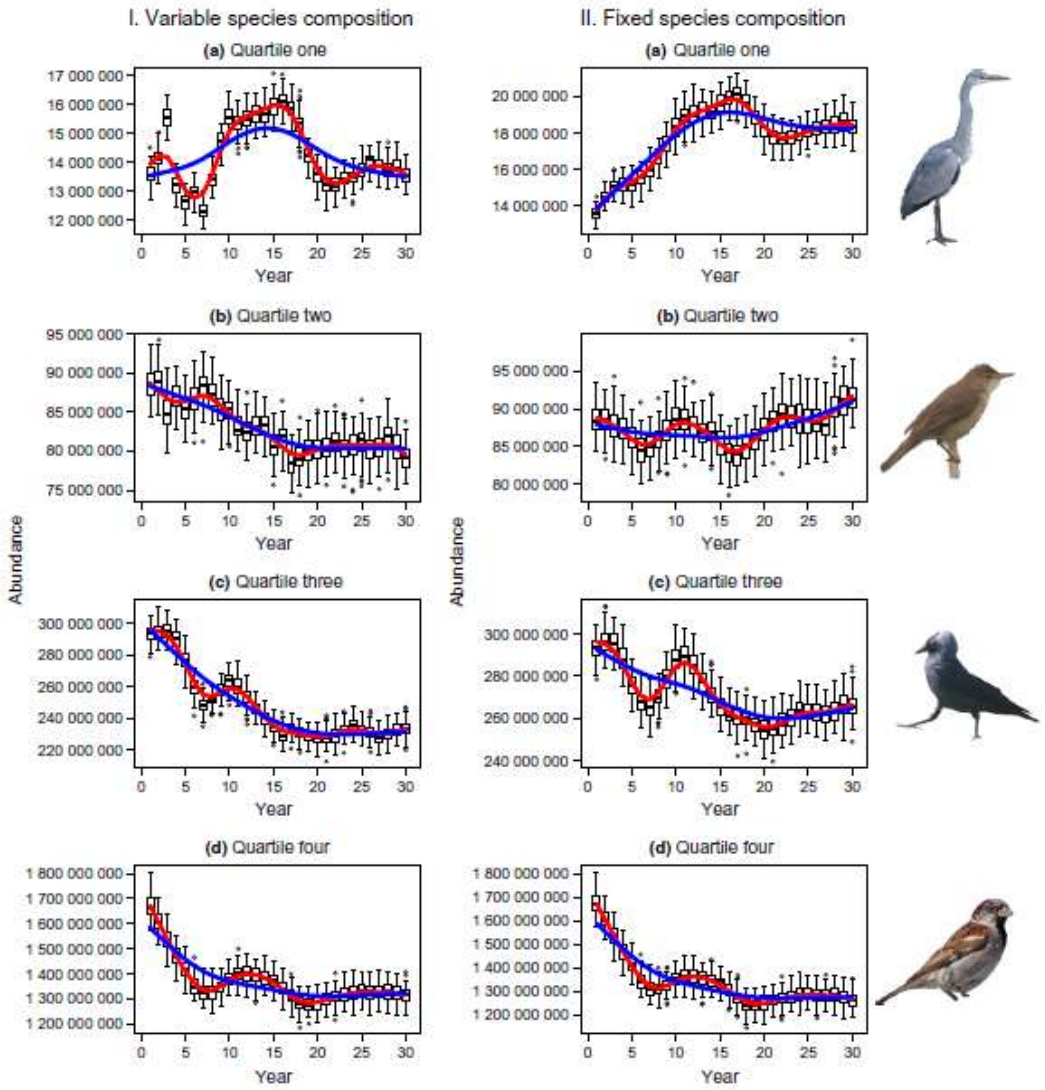
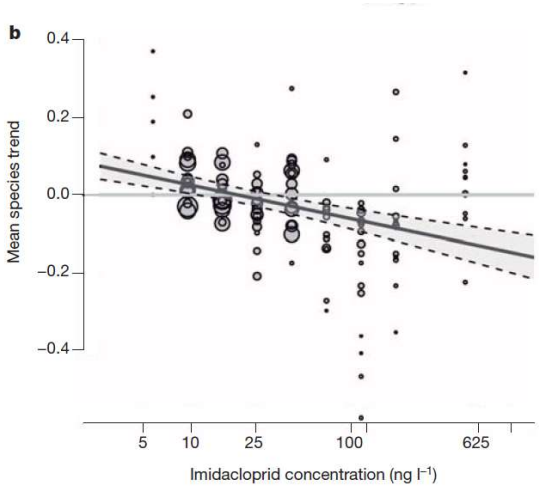
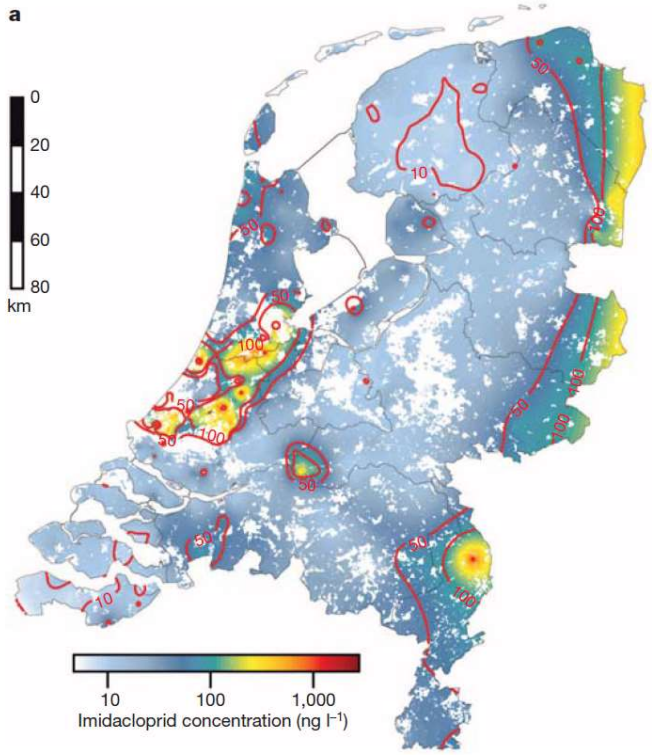


Fig. 2 Total estimates of abundance separated into quartiles. (I) Quartiles based on abundance on a yearly basis hence quartiles have a variable species composition. (II) Quartiles based on abundance in year 1 of the study (1980) hence quartiles have a fixed species composition. Lines represent the fitted values from a general additive model (red – degrees of freedom = 10, blue – degrees of freedom = 3). Species representing each quartile are; Q1 Grey Heron (*Ardea cinerea*), Q2 Reed Warbler (*Acrocephalus scirpaceus*), Q3 Jackdaw (*Corvus monedula*) & Q4 House Sparrow (*Passer domesticus*). Box and whisker plots represent the variation generated by randomly altering each abundance estimate ± 1 & 20% for 100 iterations.

Vogeltrends negatiever in gebieden met veel imidacloprid



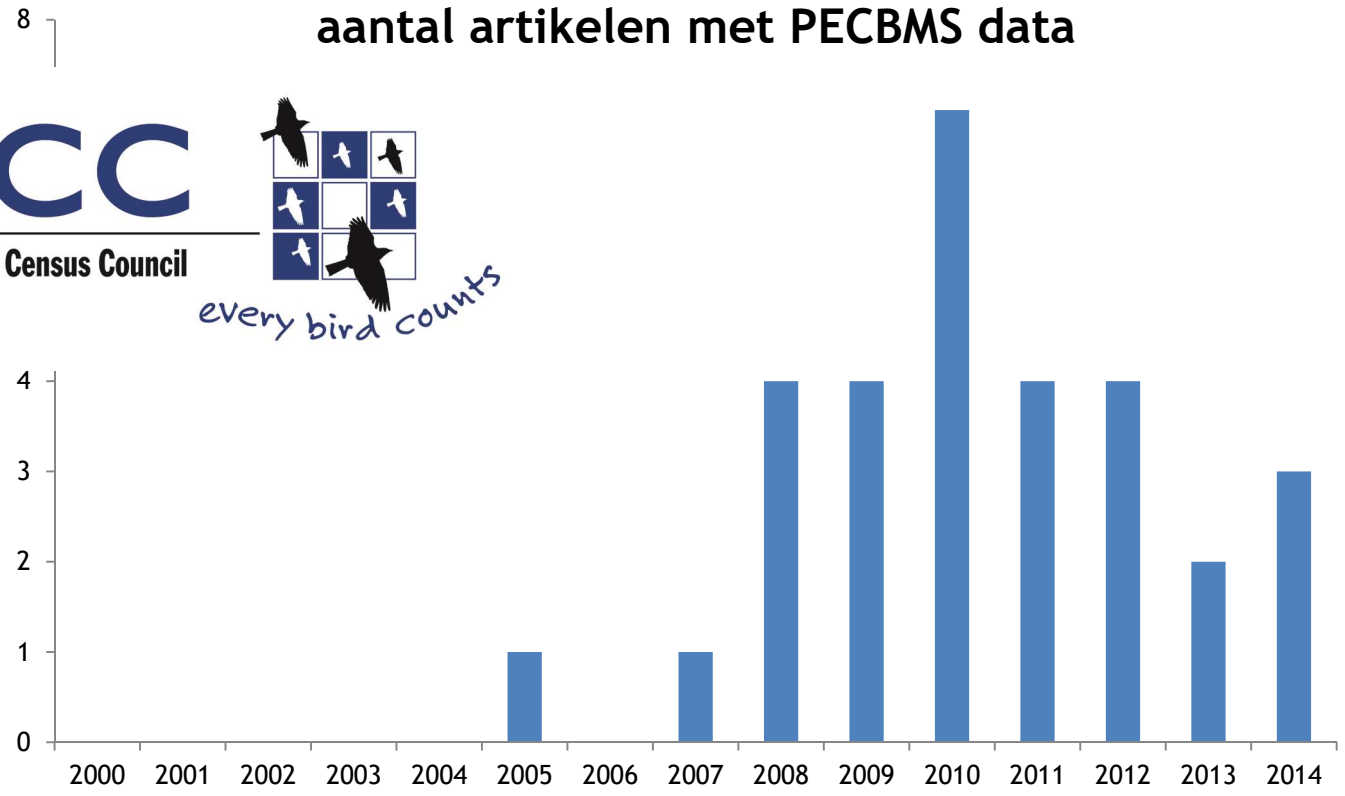


LETTER

Declines in insectivorous birds are associated with high neonicotinoid concentrations

Caspar A. Hallmann[1,2], Ruud P. B. Foppen[2,3], Chris A. M. van Turnhout[2], Hans de Kroon[1] & Eelke Jongejans[1]

Ook internationaal dezelfde trend

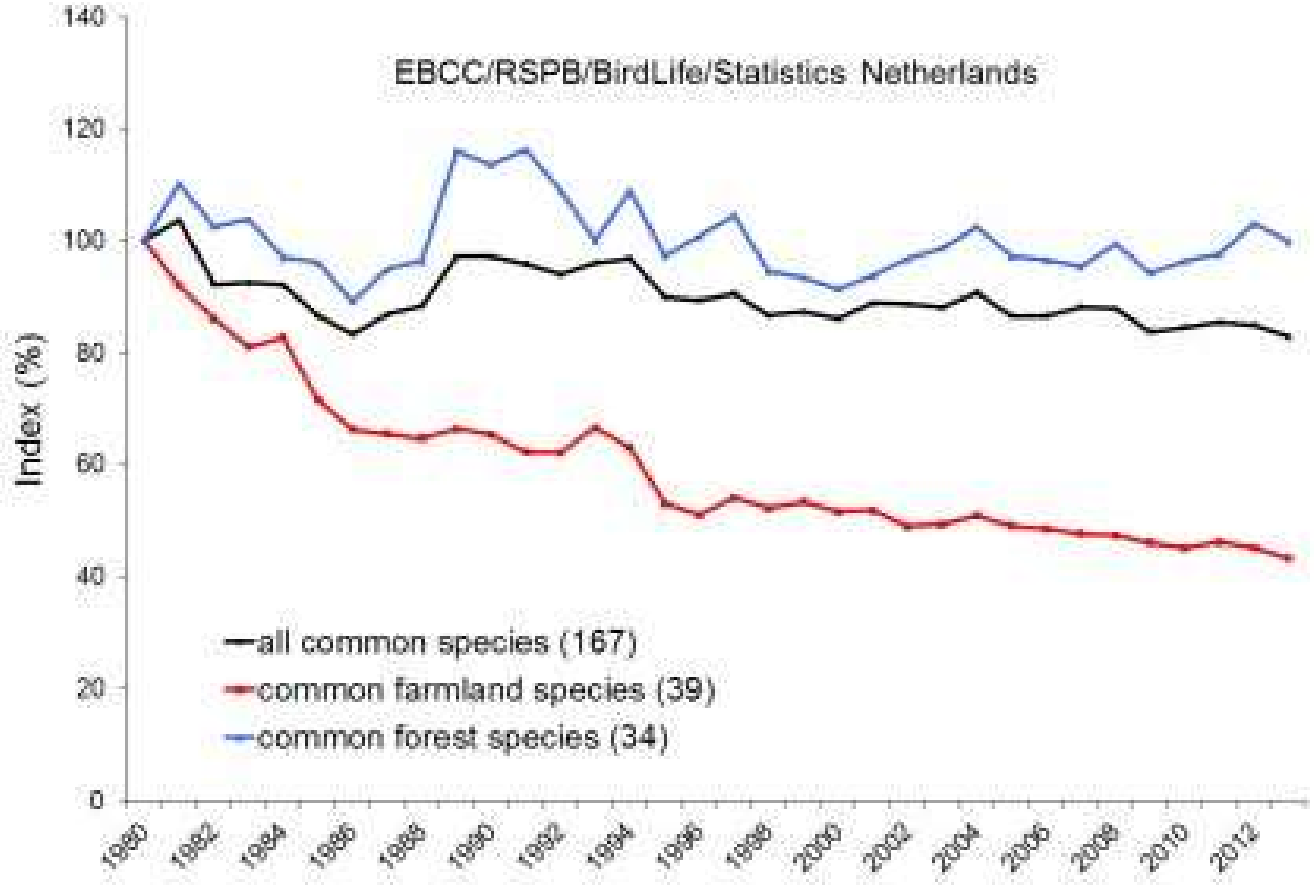


EBCC
European Bird Census Council
every bird counts

Sovon

Voorbeelden

Pan-European Common Bird Monitoring Scheme



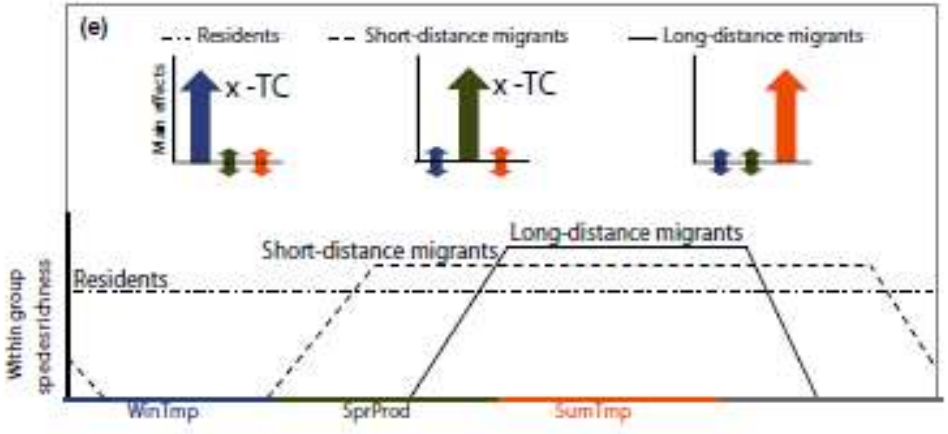
Trends lange-afstandstrekkers worden voornamelijk door klimaatfactoren bepaald

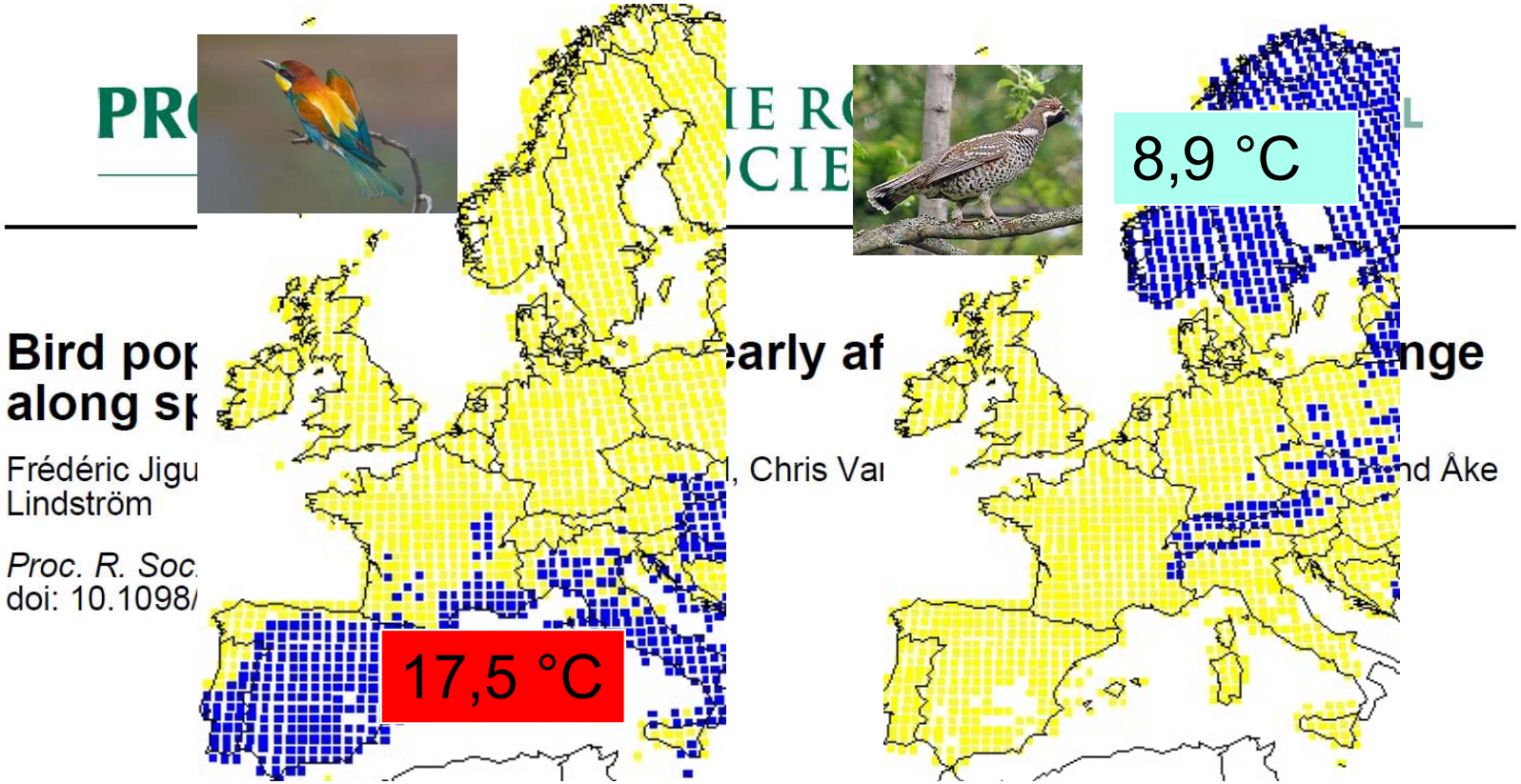
Global Change Biology

Global Change Biology (2015), doi: 10.1111/gcb.13097

Continent-scale global change attribution in European birds - combining annual and decadal time scales

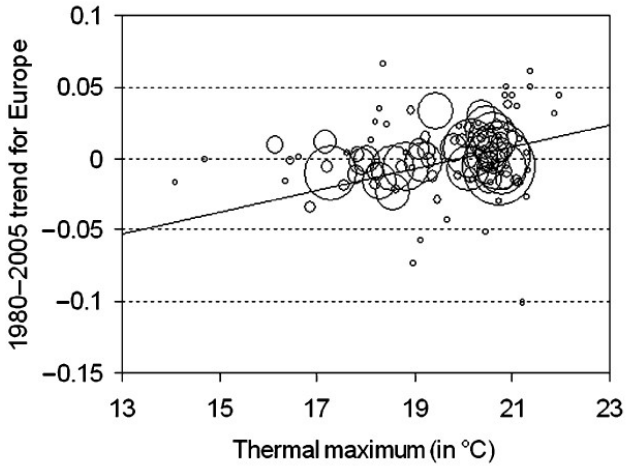
PETER SØGAARD JØRGENSEN[1], KATRIN BÖHNING-GAESE[2,3], KASPER THORUP[4], ANDERS P. TØTTRUP[4], PRZEMYSŁAW CHYLARECKI[5], FRÉDÉRIC JIGUET[6], ALEKSI LEHIKOINEN[7], DAVID G. NOBLE[8], JIRI REIF[9], HANS SCHMID[10], CHRIS VAN TURNHOUT[11,12], IAN J. BURFIELD[13], RUUD FOPPEN[12,14,15], PETR VORÍŠEK[9,16], ARCO VAN STRIEN[17], RICHARD D. GREGORY[18] and CARSTEN RAHBEK[4]





Warmteminnende soort Koudeminnende soort

‘Warme’ soorten doen het beter in Europa



Global Change Biology

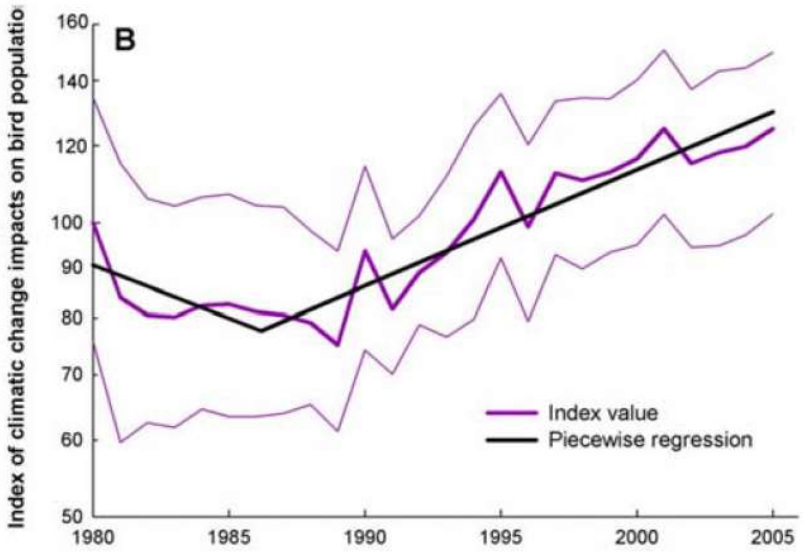
Global Change Biology (2010) **16**, 497–505, doi: 10.1111/j.1365-2486.2009.01963.x

Population trends of European common birds are predicted by characteristics of their climatic niche

FRÉDÉRIC JIGUET*, RICHARD D. GREGORY†, VINCENT DEVICTOR‡§, RHYS E. GREEN¶, PETR VOŘÍŠEK‖, ARCO VAN STRIEN** and DENIS COUVET*

Sovon

Klimaat(veranderings)indicator



OPEN ACCESS Freely available online

PLoS one

An Indicator of the Impact of Climatic Change on European Bird Populations

Richard D. Gregory[1]*, Stephen G. Willis[2], Frédéric Jiguet[3], Petr Voříšek[4], Alena Klvaňová[4], Arco van Strien[5], Brian Huntley[2], Yvonne C. Collingham[2], Denis Couvet[3], Rhys E. Green[6,7]

1 The Royal Society for the Protection of Birds & European Bird Census Council, The Lodge, Sandy, Bedfordshire, United Kingdom, **2** Institute of Ecosystem Science, School of Biological and Biomedical Sciences, Durham University, Durham, United Kingdom, **3** Muséum National d'Histoire Naturelle, UMR 5173 MNHN-CNRS-UPMC, CRBPO, Paris, France, **4** Czech Society for Ornithology, Prague, Czech Republic, **5** Statistics Netherlands, Voorburg, the Netherlands, **6** The Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire, United Kingdom, **7** Conservation Science Group, Department of Zoology, University of Cambridge, Cambridge, United Kingdom

Sovon

Europees landbouwbeleid faalt

INSIGHTS | *PERSPECTIVES*

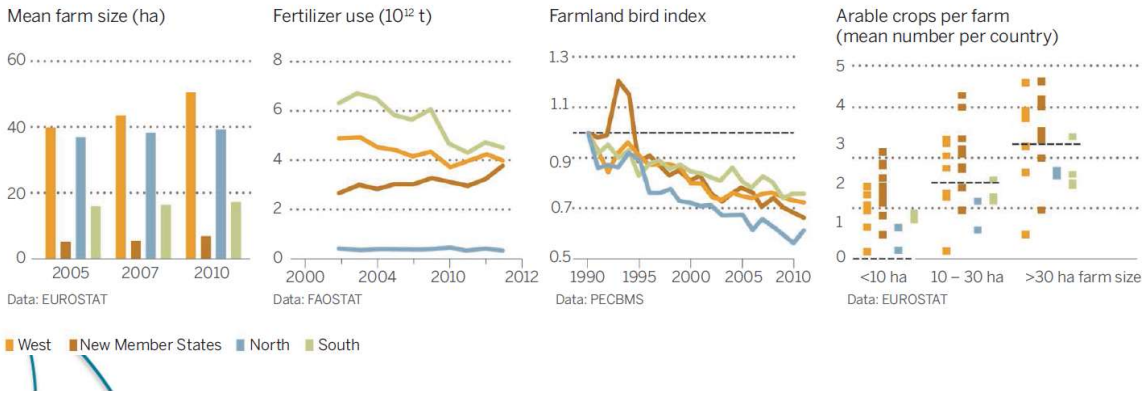
AGRICULTURE POLICY

EU agricultural reform fails on biodiversity

Extra steps by Member States are needed to protect farmed and grassland ecosystems

By **G. Pe'er*†, L. V. Dicks, P. Visconti, R. Arlettaz, A. Báldi, T. G. Benton, S. Collins, M. Dieterich, R. D. Gregory, F. Hartig, K. Henle, P. R. Hobson, D. Kleijn, R. K. Neumann, T. Robijns, J. Schmidt, A. Shwartz, W. J. Sutherland, A. Turbé, F. Wulf, A. V. Scott**

declining species and pro
ecosystem services, yet have
servation status among all
Declines in species richnes
slowed for a few taxa in
western Europe (*3*), albeit a
impoverished status quo.



Sovon

Verkenning scenario's voor impact van agrarisch natuurbeheer

Succesfactoren

- Lange-termijndata
- Beschikbaar voor grote geografische regio's
- Enorme hoeveelheid data en soorten
- Goede en valide statistische technieken (TRIM)
- Professionalisering monitoringorganisaties
- SAMENWERKING (EBCC-EBMS)

Waarom van belang?

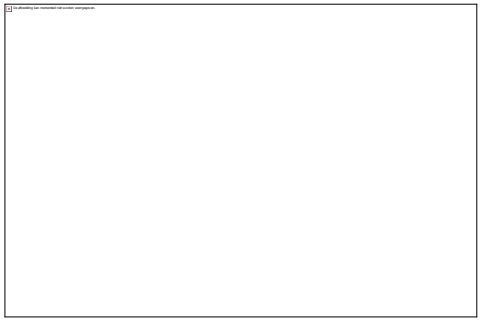
- Voor ‘credibility’ van onze meetnetten

EUROSTAT: in principe géén data verzameld door vrijwilligers of belangengroepen

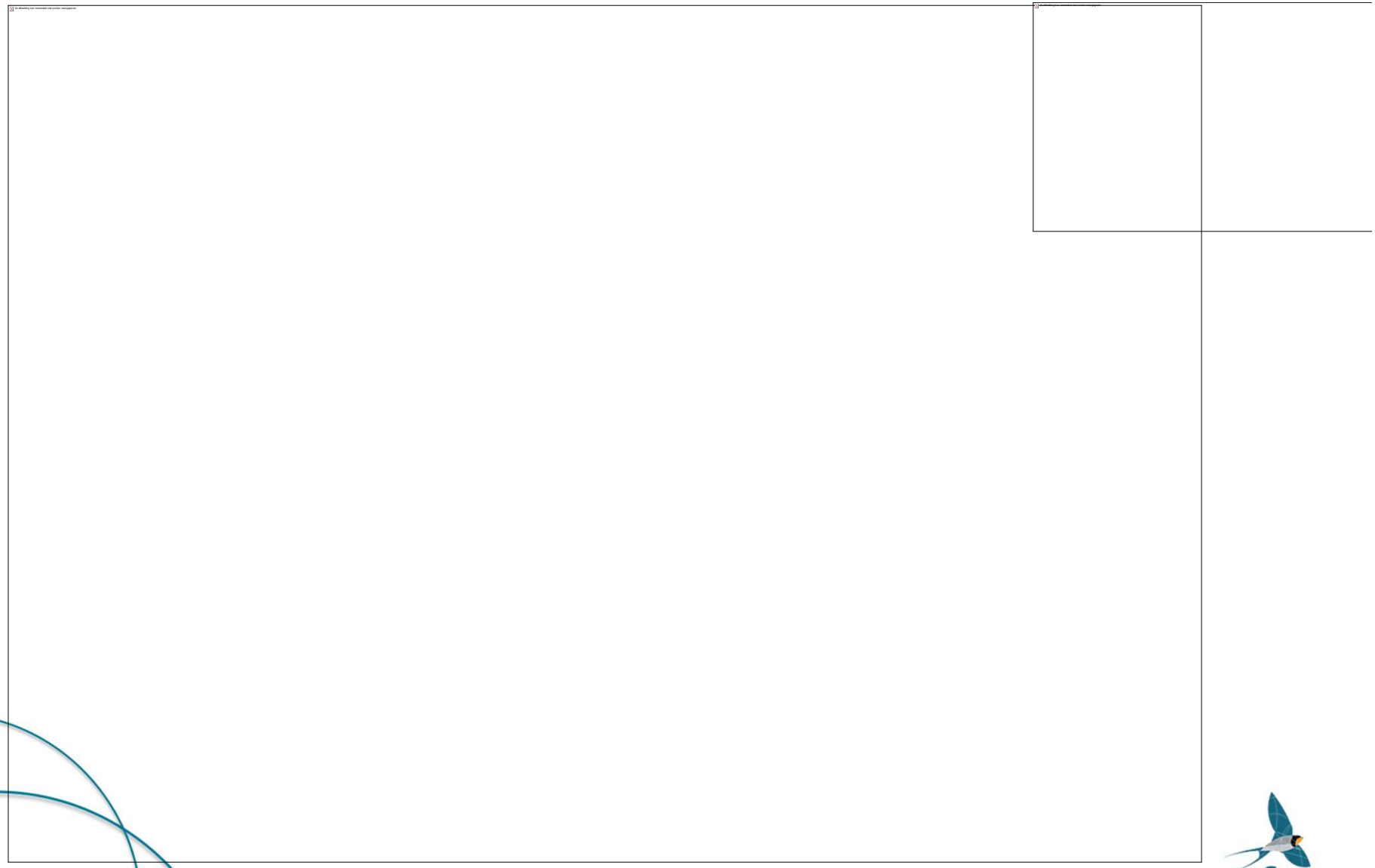
- Prachtig materiaal, meer inzicht in relatieve rol van drukfactoren!

Wat gaat toekomst brengen?

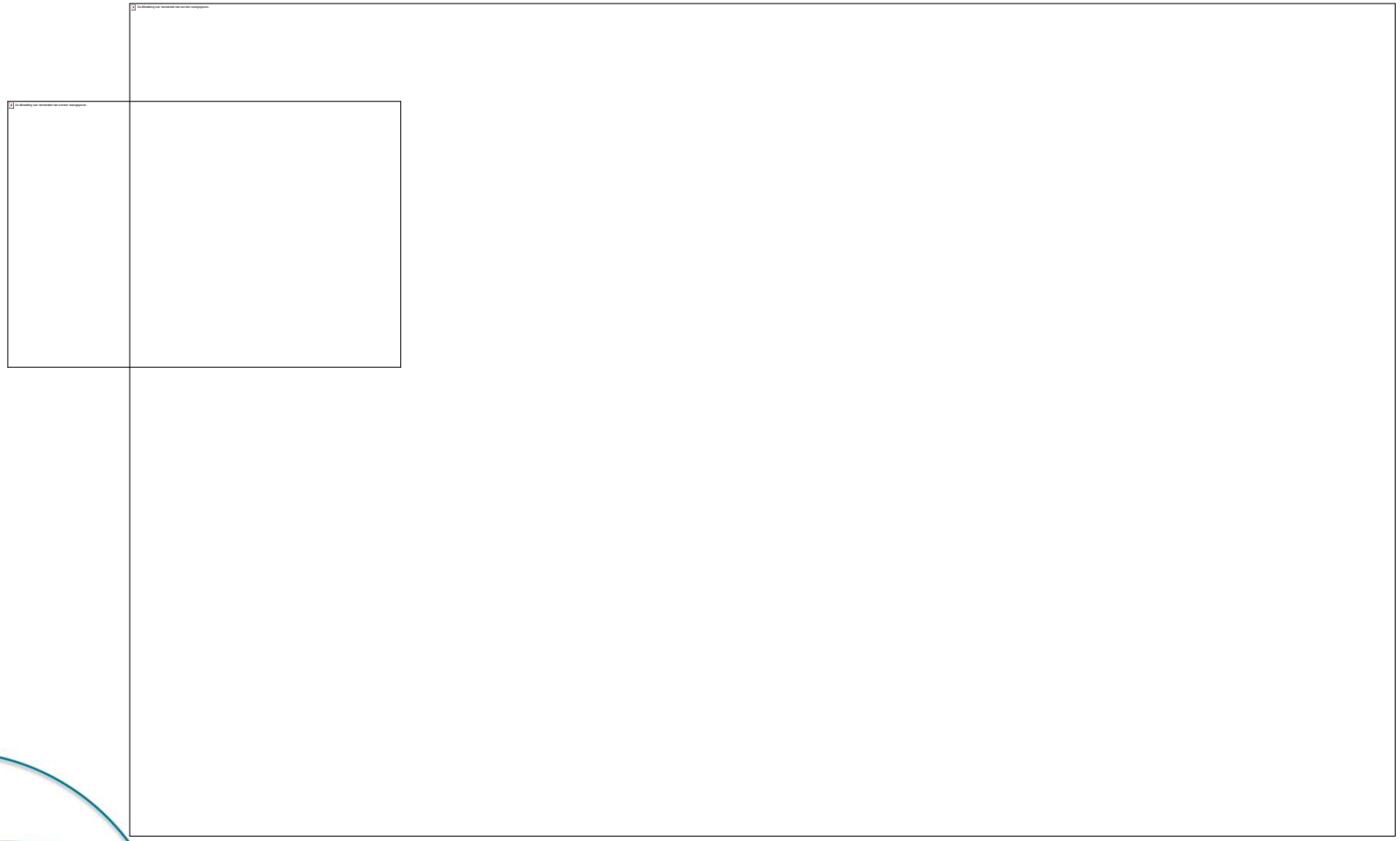
- Toenemende vraag naar de gegevens voor wetenschappelijke analyses
- Toenemende vraag naar meer gedetailleerde basisgegevens
- Toenemende benutting van de ruimtelijke informatie van meetnetten



Relatieve dichtheid veldleeuwerik

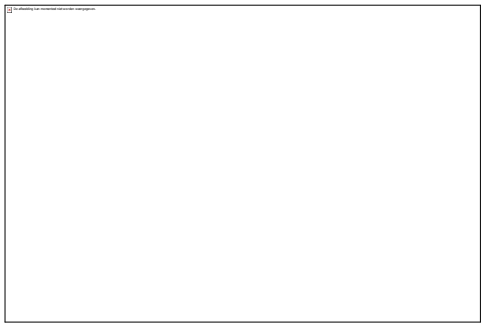


En daarbij de trendkaart



Aandachtspunten

- Goed geregeld databeheer (easy access)
- Goede data provision policy <-> open data access
- Blijvende en structurele ondersteuning van de meetnetten (en dus coördinatie)



Tenslotte

- Waarde van meetnetdata neemt alleen maar toe
- Structurele contacten met onderzoekers zoeken
- We hebben goud in onze handen!