



Monitoring Butterflies in Baden-Württemberg and Bavaria



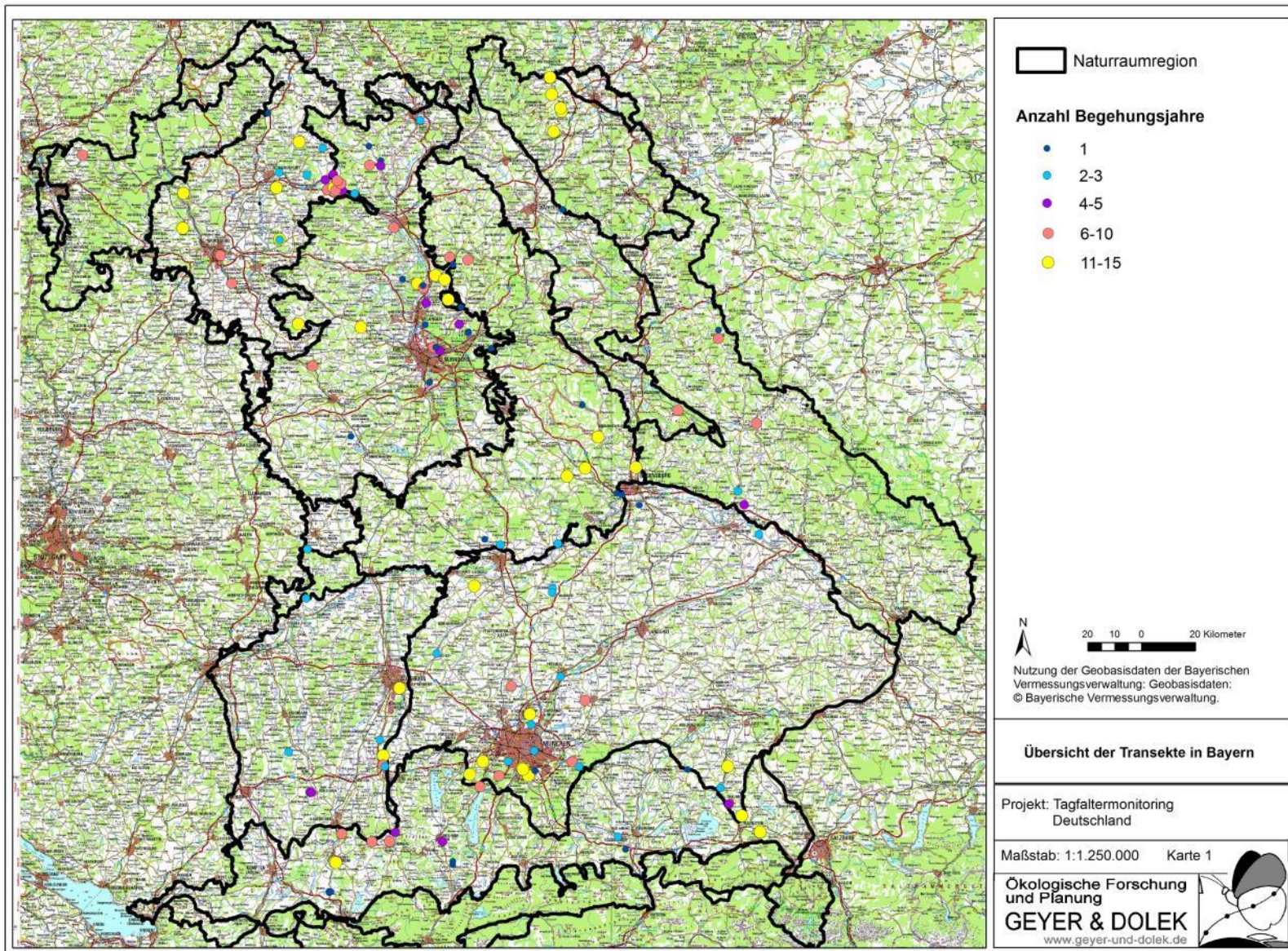
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Butterfly Monitoring Bavaria

- Part of the German Butterfly Monitoring (TMD) coordinated by UFZ
- Start in 2005
- In Bavaria 131 transects with data (1-15 years)



Transects in Bavaria



Summary Bavaria



- Ca. 133 species, 150 if species groups are included, multiple versions
- 36332 individuals
- Transect length 50-4000 m, most 200-500m
- 11 101 walks on transects, 4515 km
- Coordinates/positions of some transects doubtful

Insect Monitoring Baden-Württemberg Start: 2018

Dr. Florian Theves

Referat 25 – Artenschutz, Landschaftsplanung



Baden-Württemberg

Insektenmonitoring - Bioindikatoren

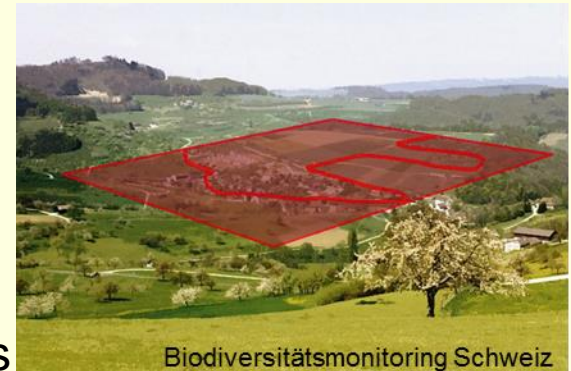
Different spatial and trophic levels

Landscape Level

- Butterflies (herbivor): alle Lebensräume
- Moths (s.o): alle Lebensräume
- Biomass - air: flight active insects of all habitats
- Wild bees (Pollinator), Syrphidae (carnivor, Pollinator): included in Biomass air

Biotope Level

- Carabidae (carnivor): Field
- Orthoptera (herbivor): Grassland
- Biomass - soil: Field surface



Insektenmonitoring - Stichprobensystem

Stratified sampling system ÖFS

Open land of „normal landscape“
represented by **161 sits**

➤ field sample 80 sites

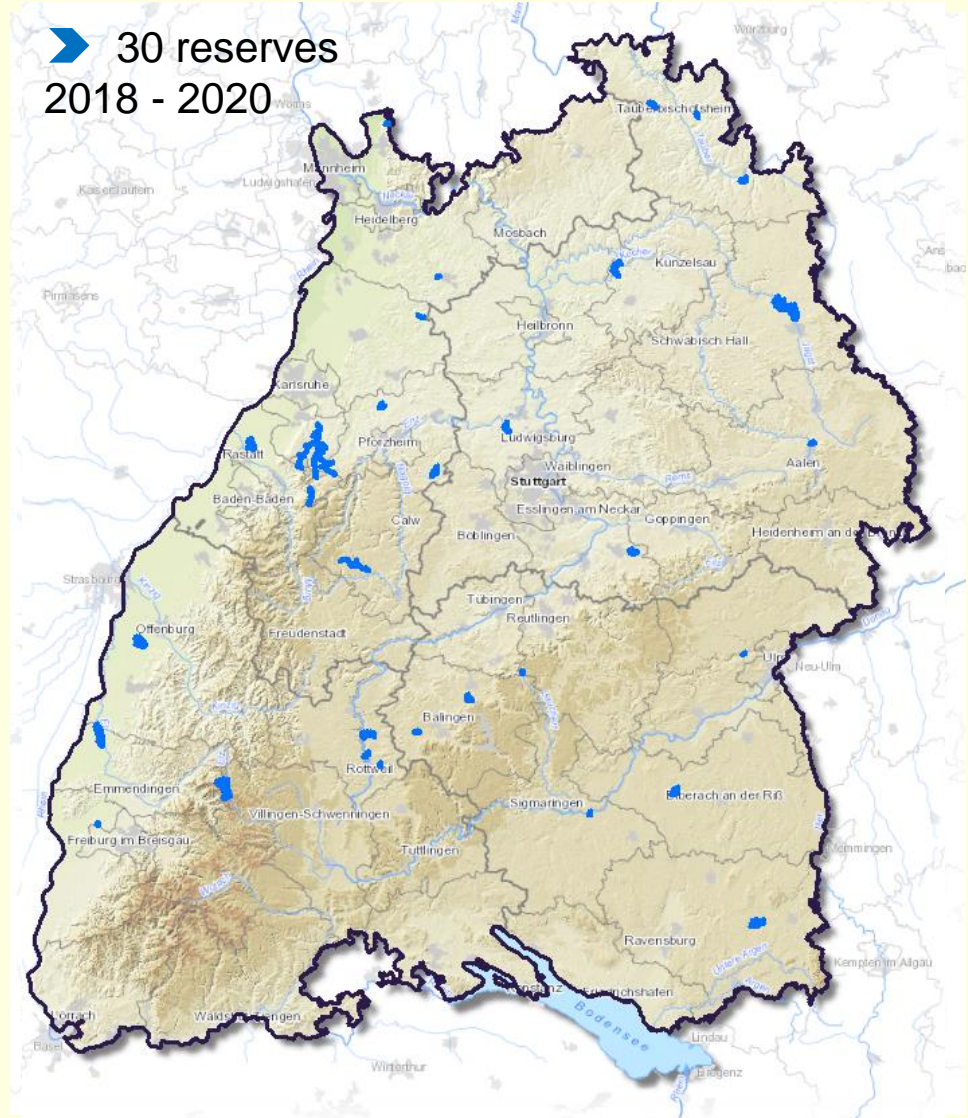
➤ grassland sample 81 sites

➤ 30 reserves

Frequency

- max. 50 sites/ Indikator and year
- 3 years: Orthoptera, Carabidae/
Biomass soil
- 4 years: butterflies
- 4 years reduced number of sites:
Biomass air, moths

➤ 30 reserves
2018 - 2020



Methodology butterflies

- 1500m; 5m right, left, front; Standard
- Count in 1 direction
- Description of habitats and land-use
- 4 visits per year
- Single specimen for inspection collected
- Important: Comparability to BDM, TMD, European Schemes
- Data collection by App (adapted from Swiss BDM, additionally: TourCount, TransectCount)

sites 2018 and 2019

- 2018:
 - 20 squares ÖFS-Grünland (1 excluded)
 - 20 squares ÖFS-field
 - 10 reserves (2x change)
- 2019:
 - 20 Quadrate ÖFS-grassland
 - 20 Quadrate ÖFS-field
 - 10 reserves (3x change)

Grassland transect excluded



ÖFS 88
Remchingen, 2018



50 0 50 100 m



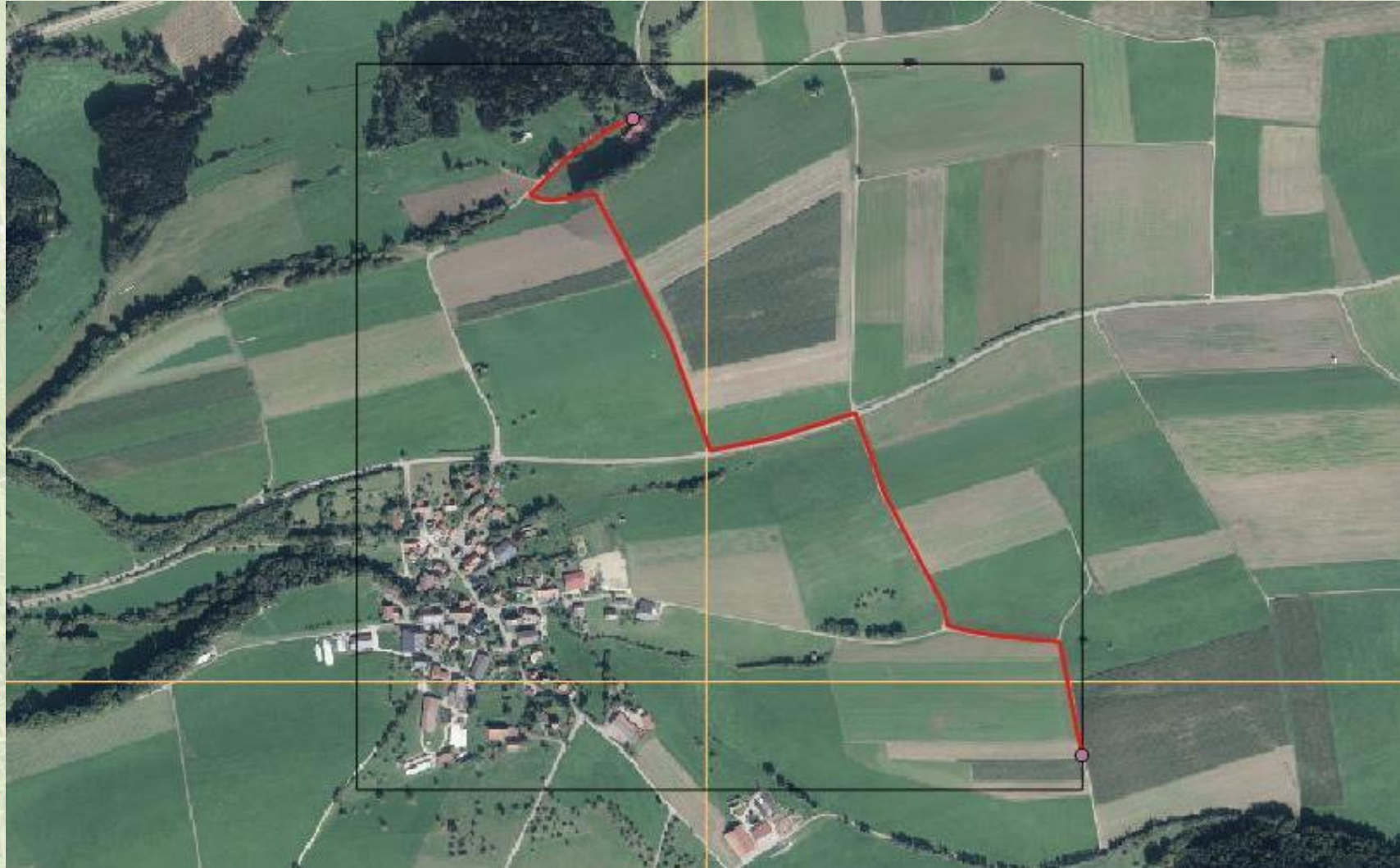
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Grassland transect 146



Grassland transect 146



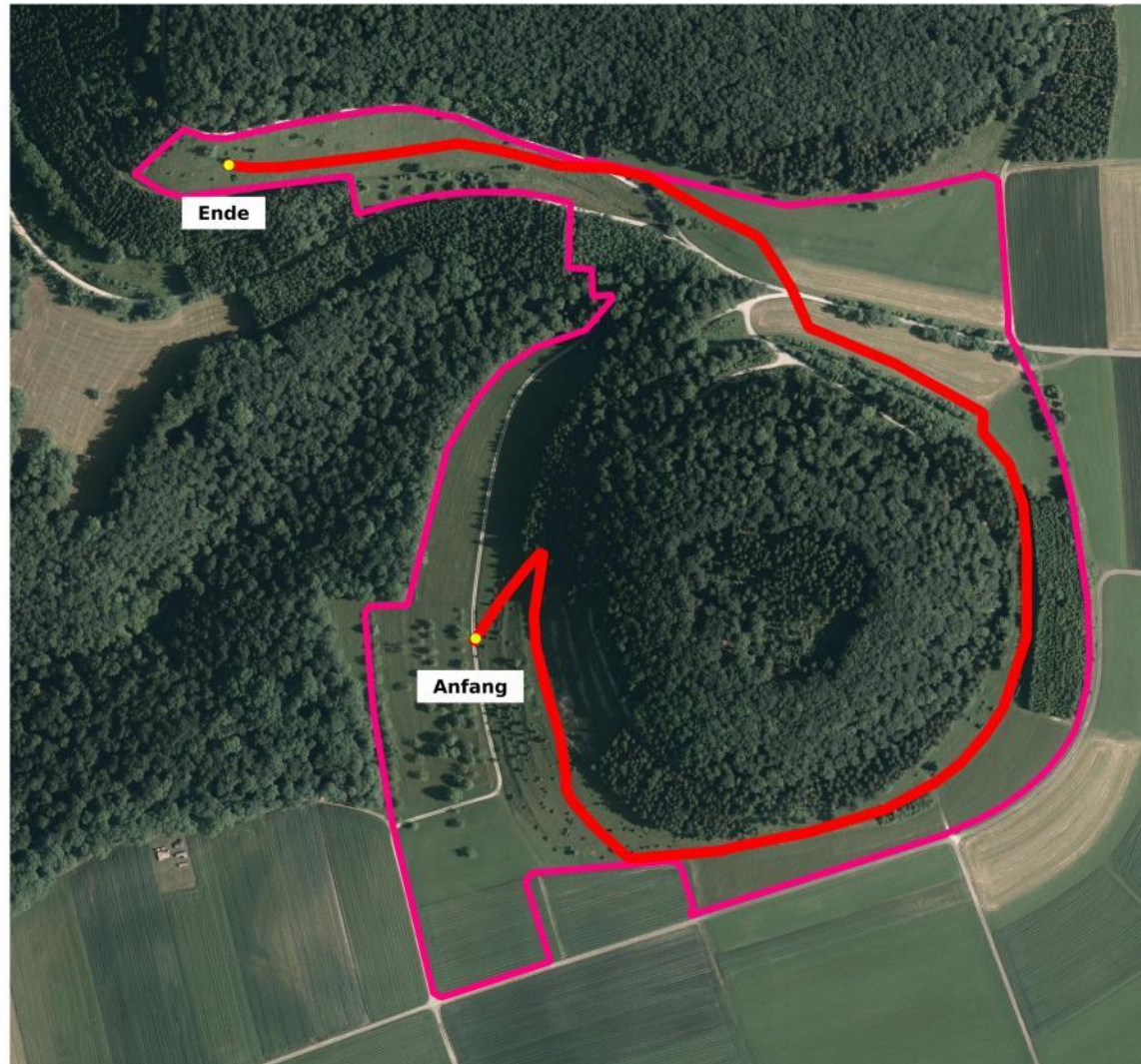
Grassland transect 146



Visit on 26.5.2018



reserve Ruchberg transect



NSG 4.201
Ruchberg, 2018



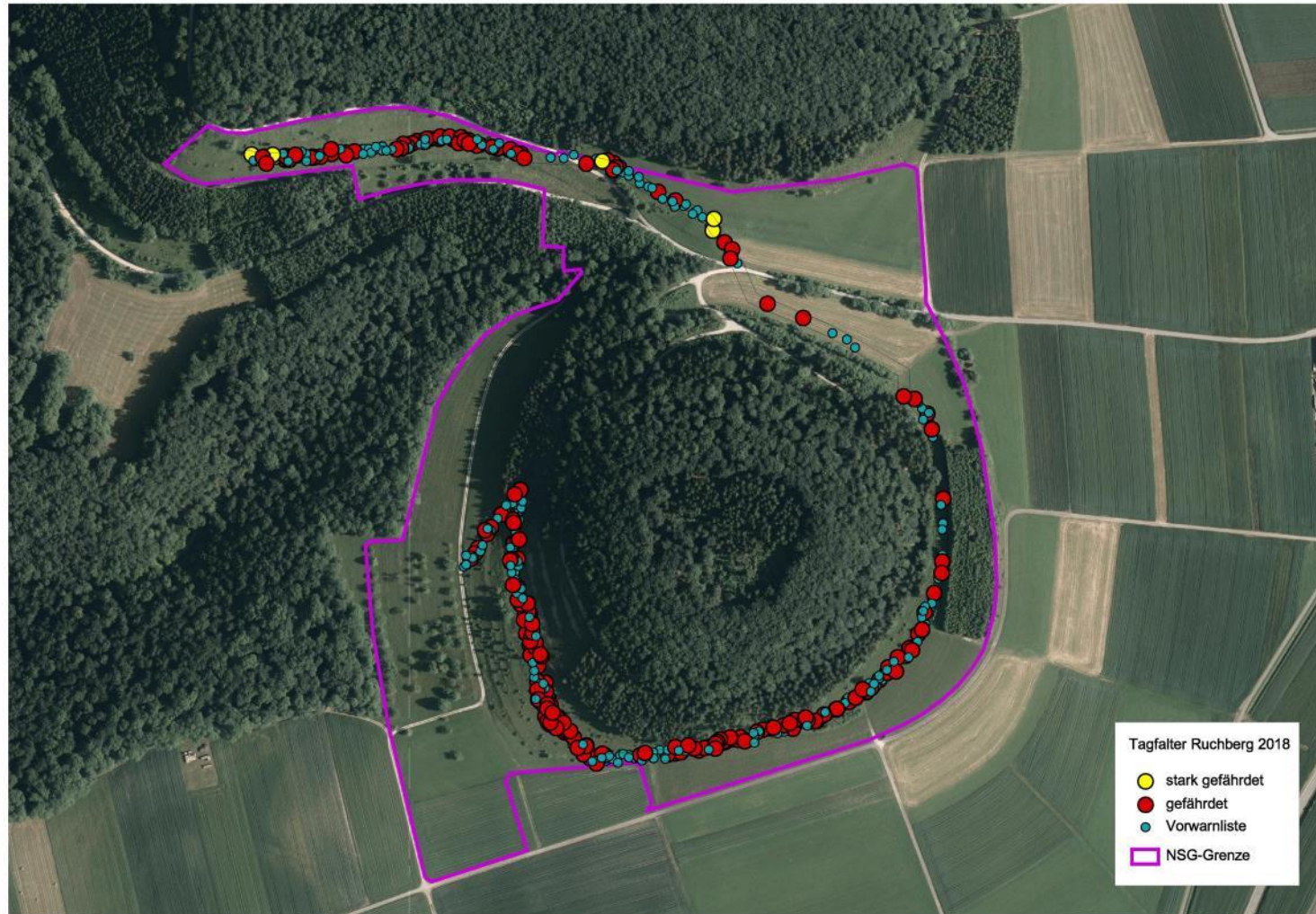
50 0 50 100 m



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reserve Ruchberg results



Field site ÖFS 007



ÖFS 7
Melchingen, 2018



50 0 50 100 m



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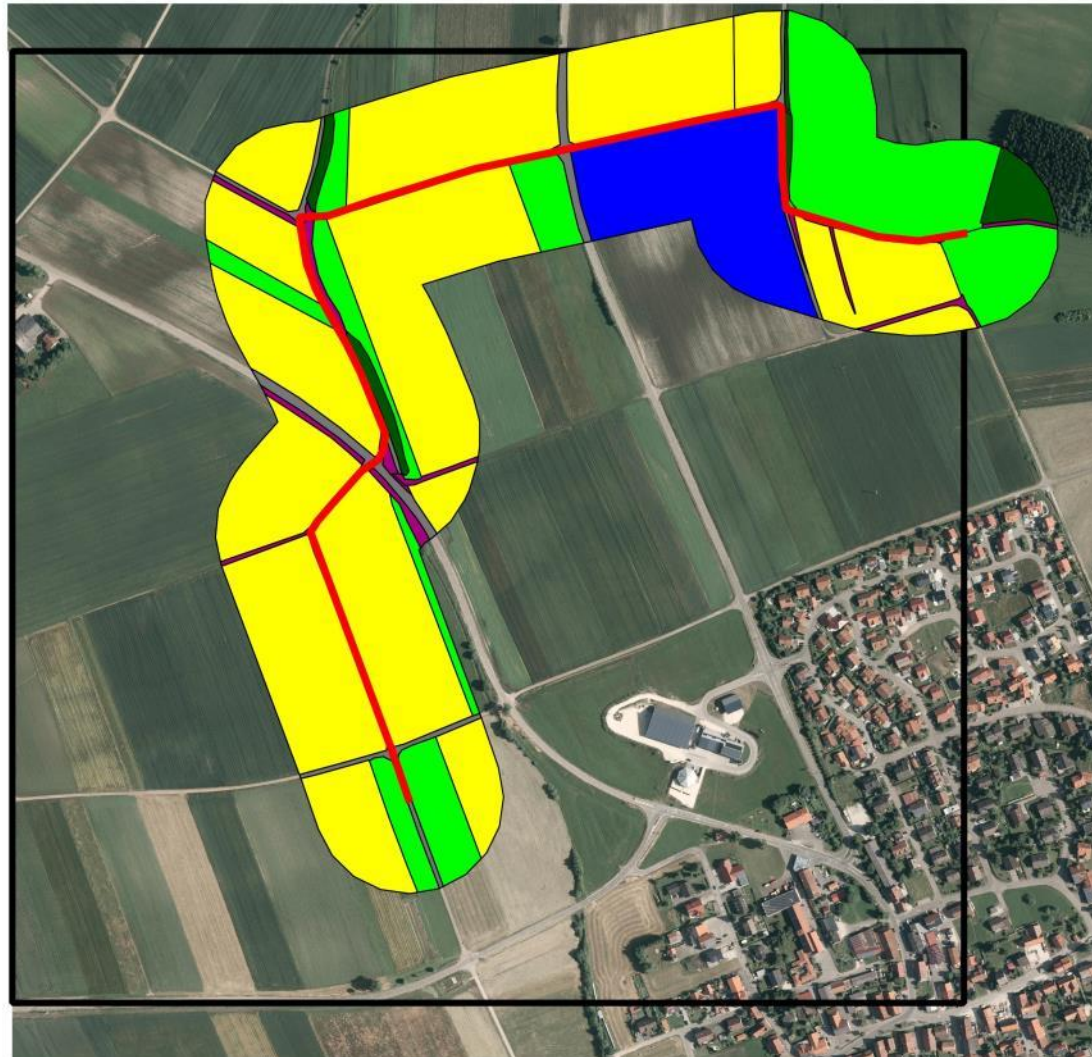
ÖFS 007 results



Habitats and land-use

- Recording biotopes and land-use in 2 varieties:
 - 100m buffer around transect (large scale)
 - Along transect line (observation area)
- Classification according to code plan:
 - Simple categories
 - Record during count possible

habitats



ÖFS 7 Melchingen, 2018

Biotop im 100m Umkreis
um den Transekt

- Ackerland
- Grünland
- Intensivgrünland
- Saumvegetation
- Siedlungen und Straßen
- Sonstige und Unbekannt
- Wald und Gehölze
- Tagfalter Transekt
- Probefläche-Grenze



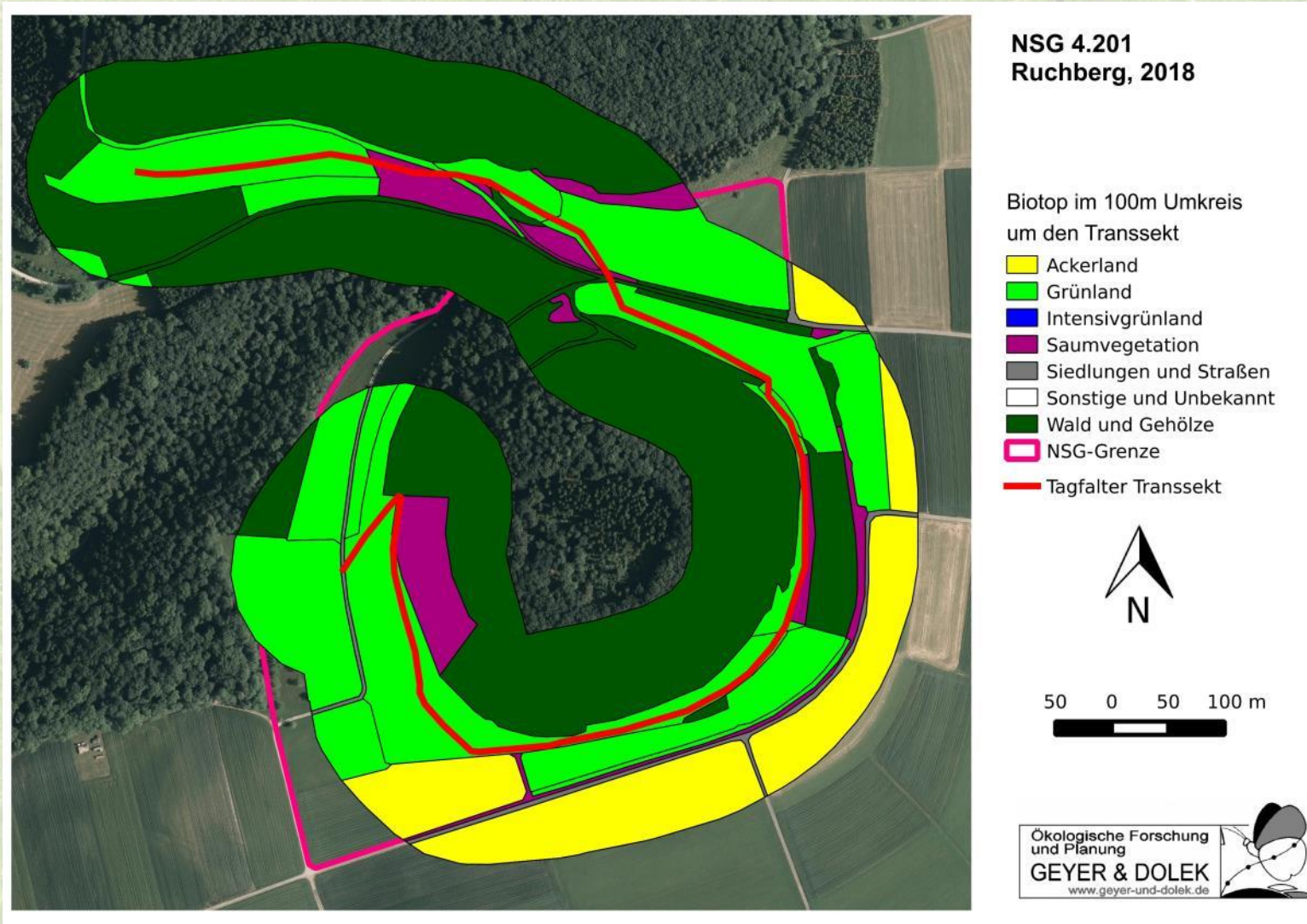
100 0 100 200 m



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Ruchberg habitats



Recommendations

- Use app for recording: potential recorders usually have smartphones, no additional effort, data handling much easier (for recorder and coordinator)
- Include coordinates for each point and track log (walked route)
- Use convenient summary categories (e.g. Leptidea sp., Argynnis sp., Lycaeninae...)
- Coordinators & recorders should put some effort into biotope recording (at least simple categories)



Thank you!
