

Raccoons - a new threat to indigenous species?

- Feeding ecology investigations in a German National Park -



I. Bartussek



Mikulov, 5.3.2015

Berit Michler



- Raccoon settlement in Germany
- Applied research on raccoons:

„Projekt Waschbär“

- topics of research
- selected results

Taxonomy



- class: mammals
- order: carnivora
- superfamily: musteloidea
- family:

Ailuridae (red panda)

Mephitidae (skunks)

Mustelidae (weasel family)

Procyonidae (small bears) → 6 genus, 13 species



Taxonomy



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Working Group Wildlife Research (Tharandt)

Taxonomy



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Taxonomy



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raccoons → 1 genus (**Procyon**), 3 species



Procyon lotor

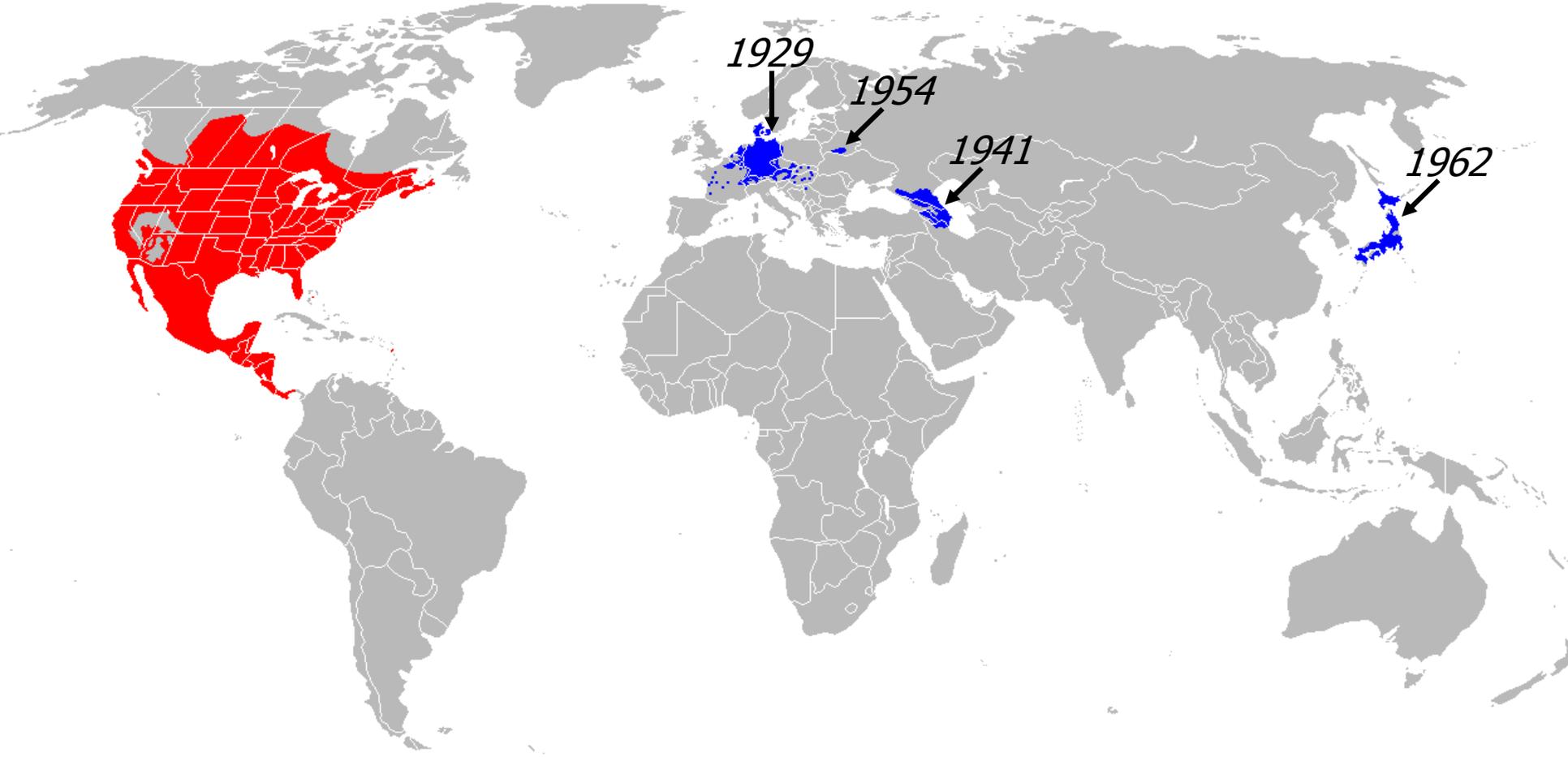


Procyon cancrivorus



Procyon pygmaeus

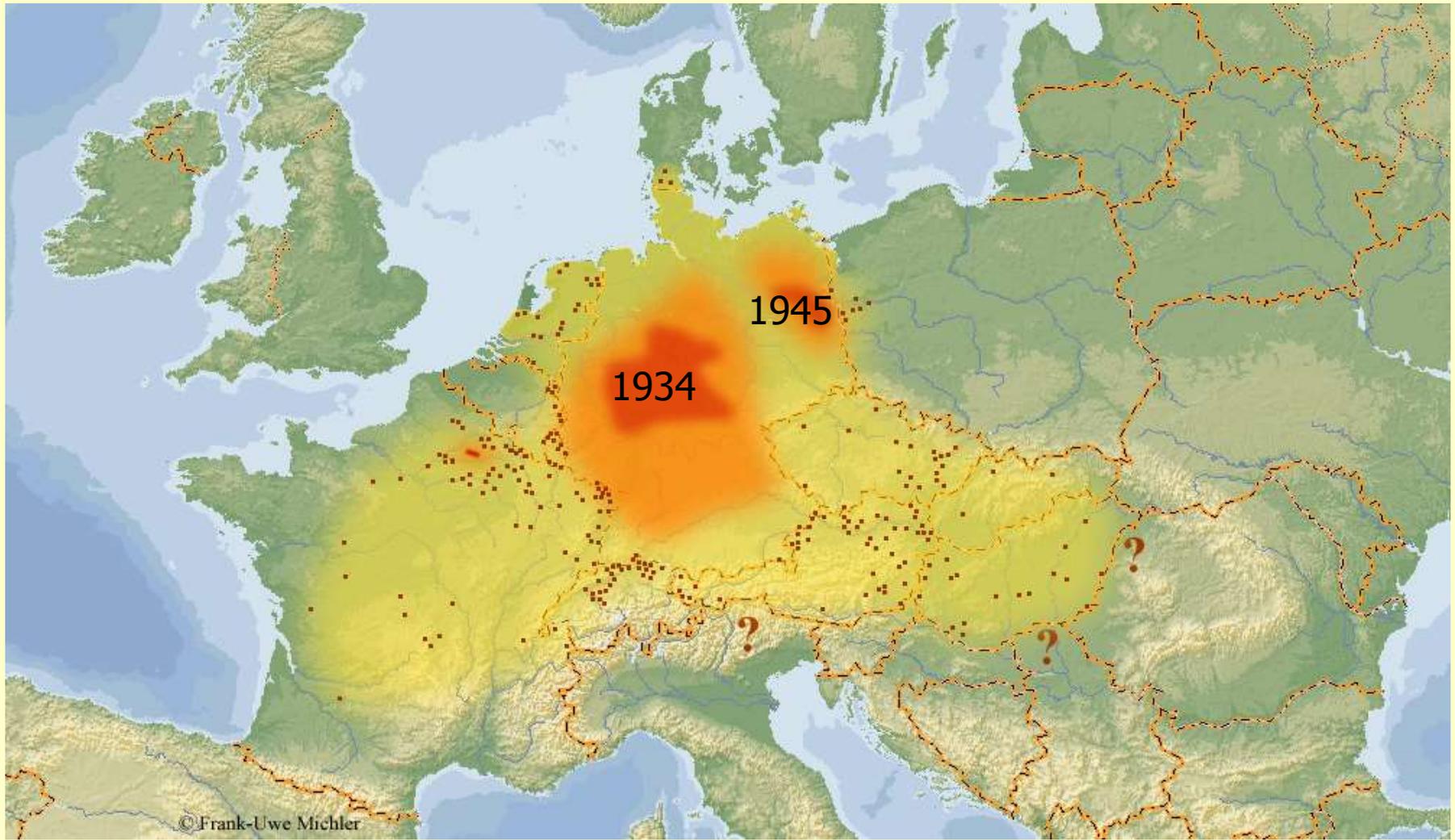
Geographic range



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Geographic range



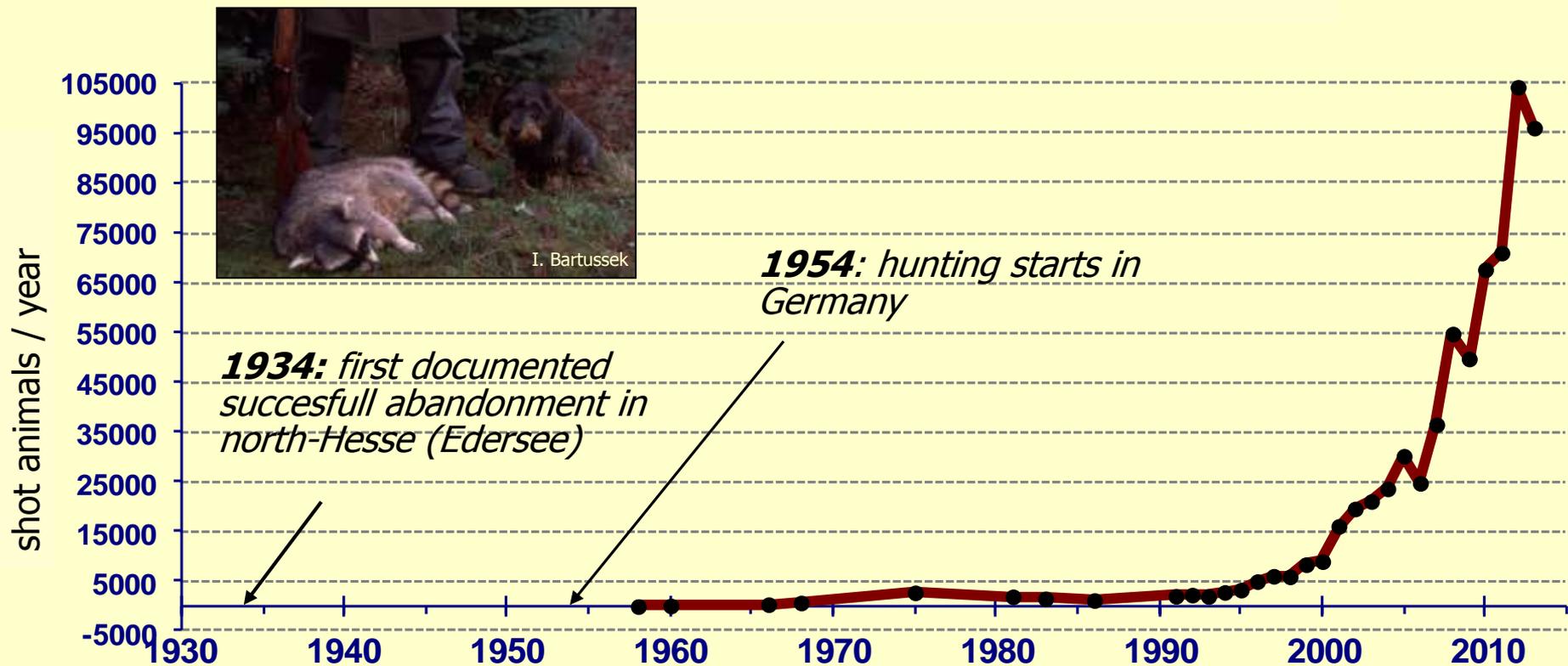
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Population development



Hunting bag development in Germany



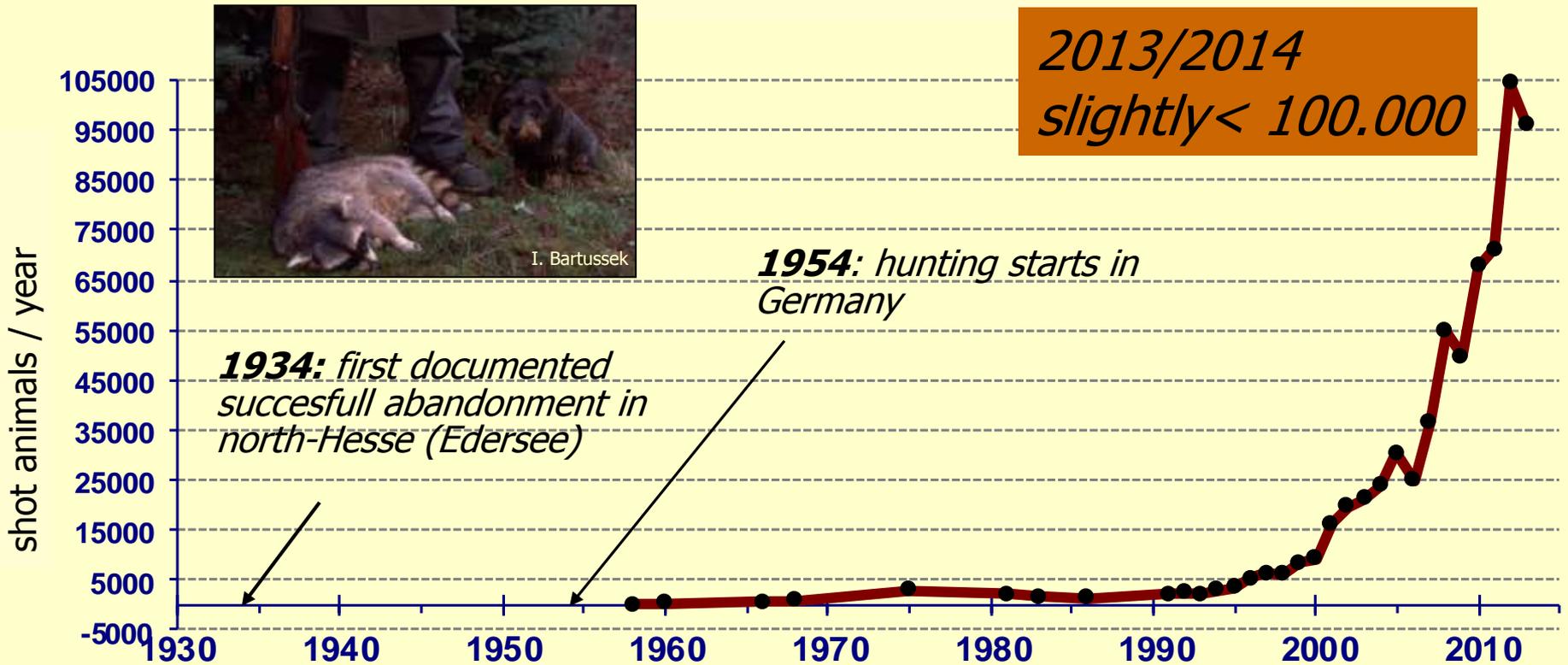
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Population development



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Ecology



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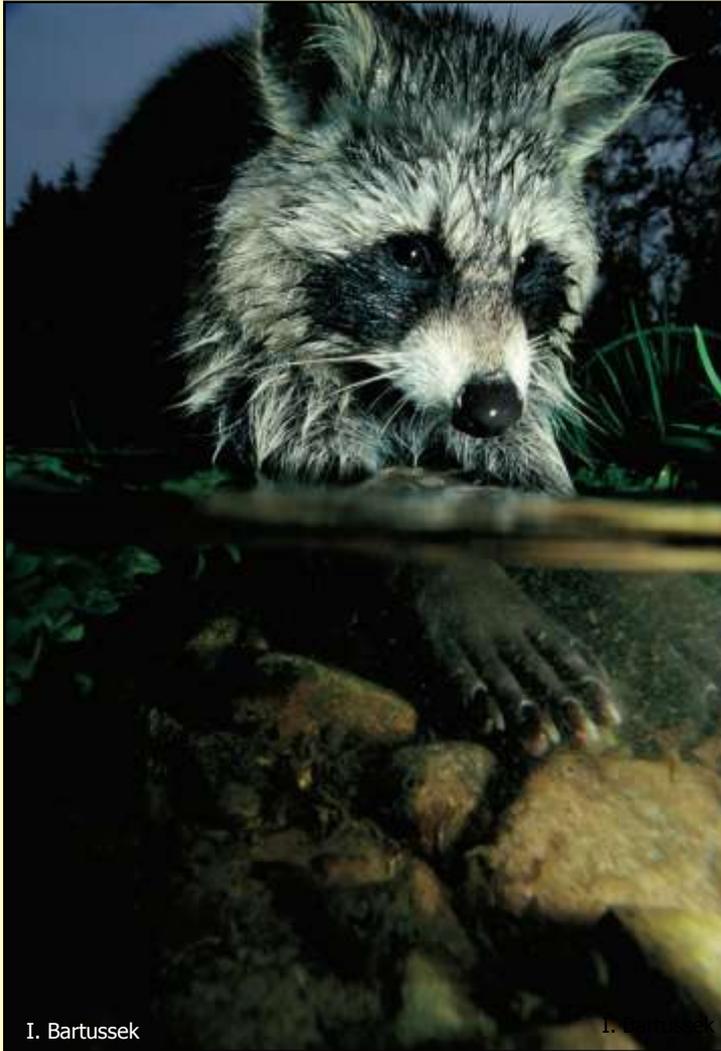


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Current situation



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Current situation



- controversial and highly emotional discussion concerning the impacts of raccoon settlement in Germany



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Current situation



- controversial and highly emotional discussion concerning the impacts of raccoon settlement in Germany
- raccoons are expected to be problematic:

3 levels of impact



Current situation



- Economic effects



Current situation



- Economic effects
- Hygienic relevance



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Current situation



- Economic effects
- Hygienic relevance
- Ecological effects



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Research on raccoons in Germany



- raccoons are still among the least investigated carnivores in Europe



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Research on raccoons in Germany



- raccoons are still among the least investigated carnivores in Europe
- better founded knowledge is essential in order to evaluate potential impacts

→ **lack of knowledge**



Research on raccoons in Germany



4 research studies

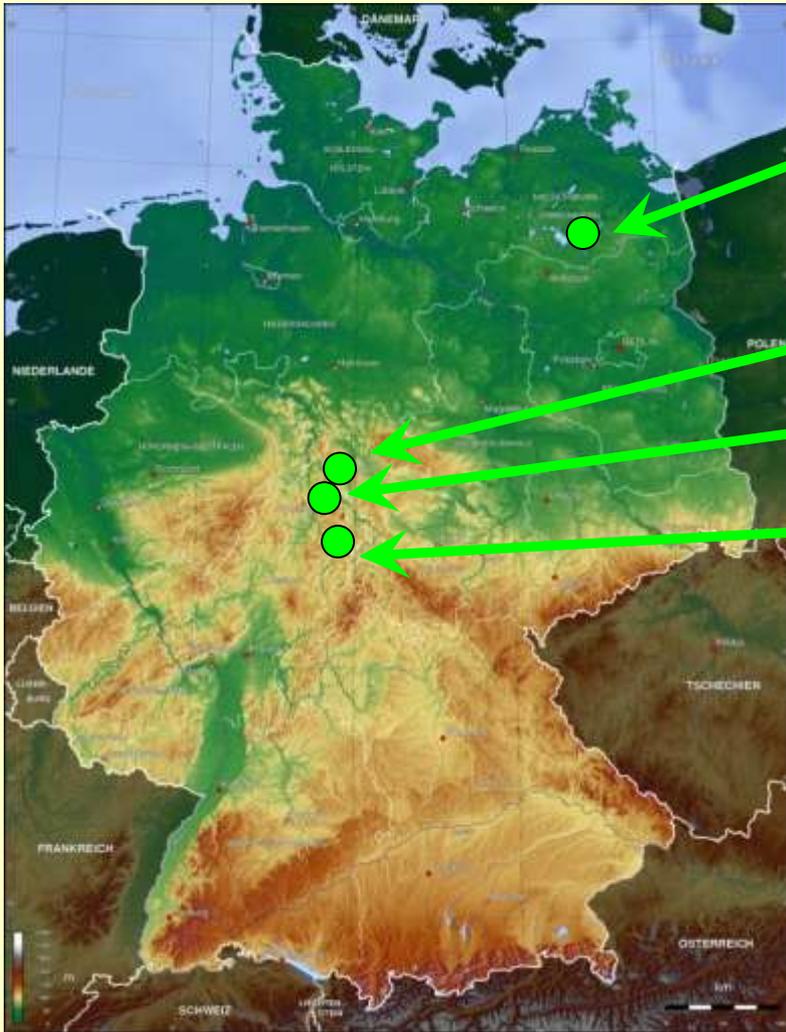
→ *Society for Wildlife and Nature Conservation (GWN)*



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Research on raccoons in Germany



Müritz-Nationalpark

Solling

Bad Karlshafen

Kassel



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„Projekt Waschbär“ – Müritz-Nationalpark



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„Projekt Waschbär“ – study area



- Ideal habitat for Central Europe
- highest density ever measured in Europe for a natural habitat until now (6-8 individuals/km²)



- area under investigation: 60 km²

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„Projekt Waschbär“ – study area



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„Projekt Waschbär“ – topics of research



1. spatial use

(home-range sizes, den sites, habitat use, dispersal behaviour)



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„Projekt Waschbär“ – topics of research



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(food spectrum, endoparasite infestation)



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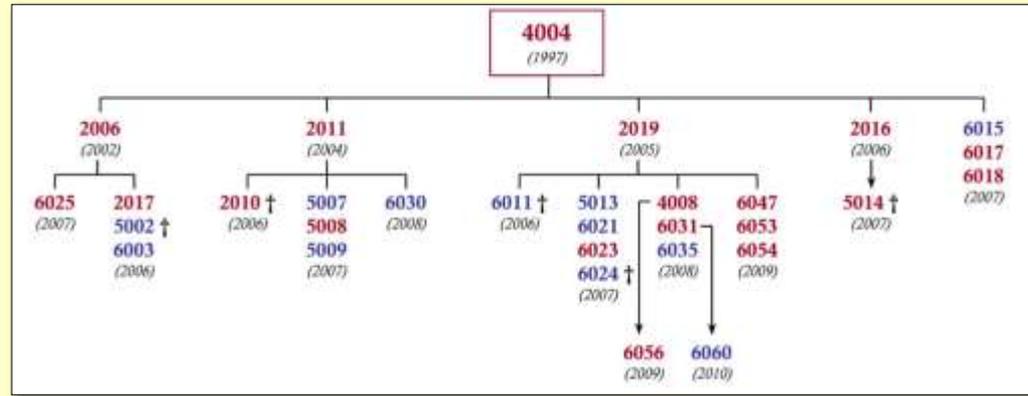
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(mating- and cubbing season, litter size, parentship, MHC-dependant mate selection)



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(capture-mark-recapture, camera traps)



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(histo-pathologic & serologic tests)



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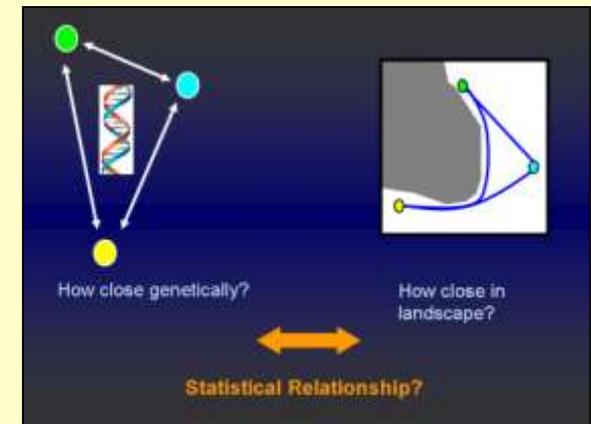
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8. landscape genetics

(impacts of spacial movement patterns)



„Projekt Waschbär“ – fieldwork



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„Projekt Waschbär“ – basic methods



VHF- telemetry

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Expanding
radio-collars



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„Projekt Waschbär“ – fieldwork



Telemetrie



Wallisellen, 1. Juli 2010



„Projekt Waschbär“

Berit Köhnemann

Eine wildbiologische Forschungsstudie im Müritz-Nationalpark

„Projekt Waschbär“ – basic methods



Camera trapping



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Individual marks

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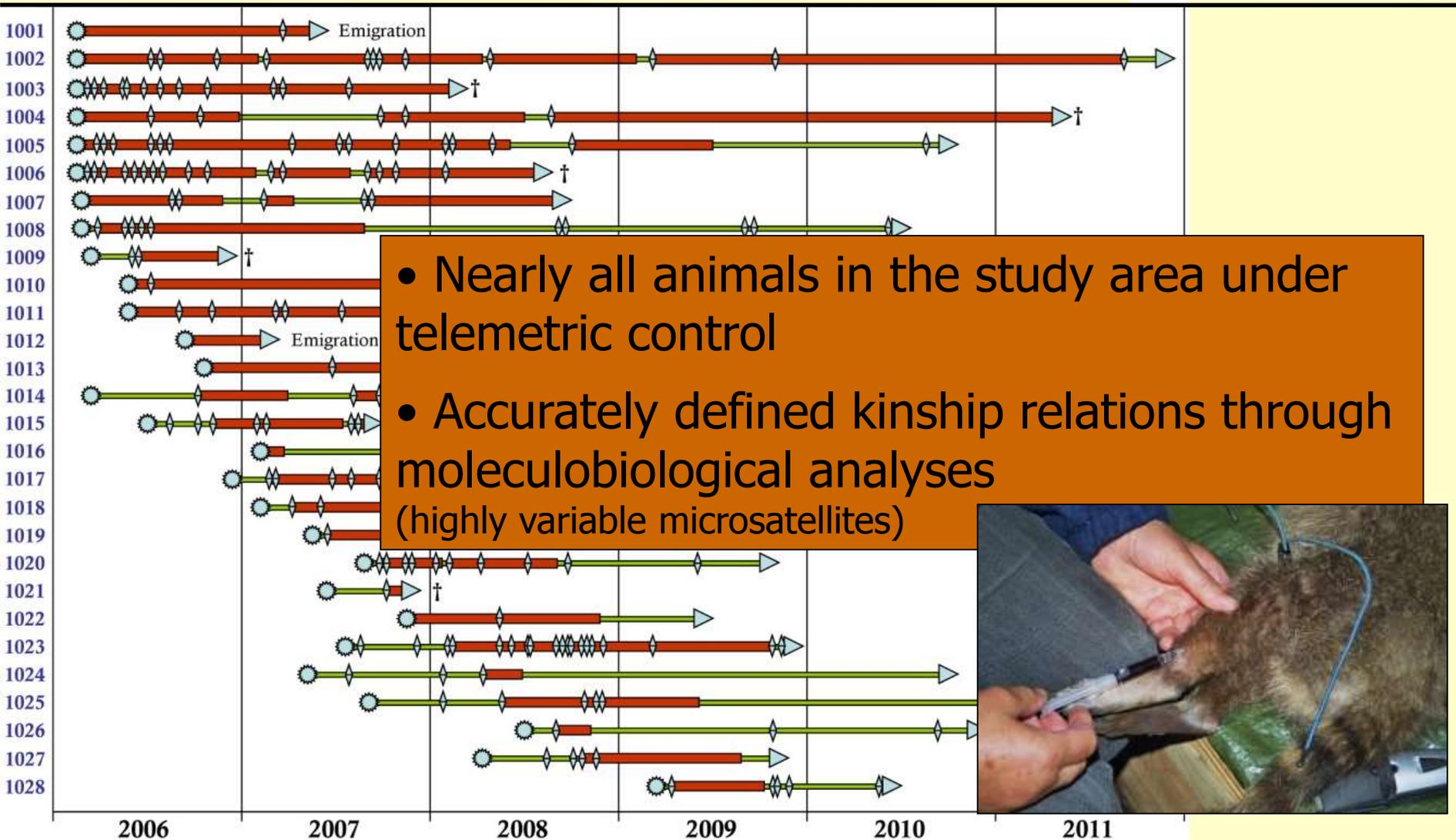
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march 2006 – november 2011:

- **489** raccoon captures
 - **145** different individuals
 - **69** fitted with radio-collars (23 ad. ♀; 28 ad. ♂; 18 juveniles)
- **31.193** localizations (12.931 by day, 18.262 at night)
- **24.959** pictures from camera traps (5365 trap nights)



„Projekt Waschbär“ – data basis



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- main area of interest: what do the animals live off and does this affect indigenous species?



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- Common feeding analysis are not sufficient for statements concerning the local ecological impact of raccoons



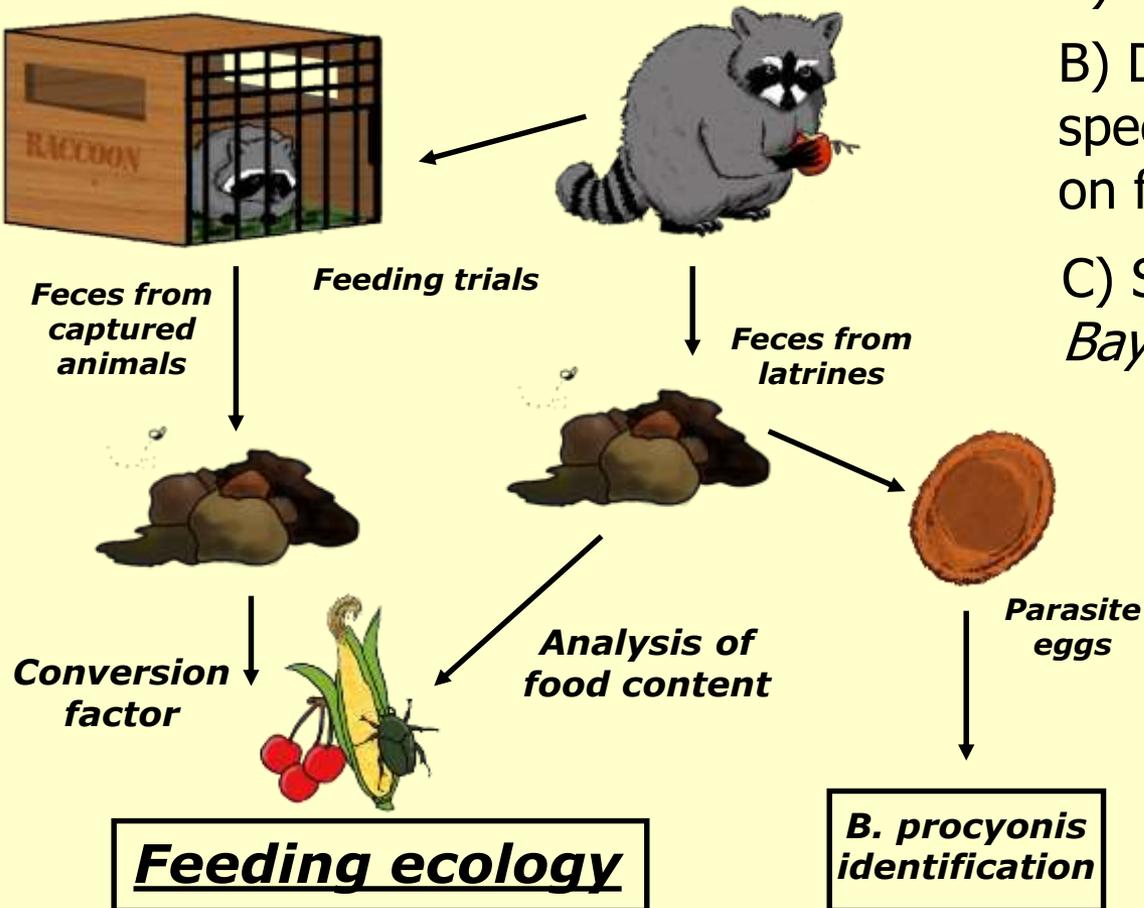
- Common feeding analysis are not sufficient for statements concerning the local ecological impact of raccoons
- Doctoral thesis: quantifying of data and intersection with local offer (n=1300 samples from the Müritz-Nationalpark)



„Projekt Waschbär“ – doctoral thesis



- A) Feeding ecology investigation
- B) Determination of a raccoon-specific conversion factor based on feeding trials
- C) Scat analysis in respect of *Baylisascaris procyonis*

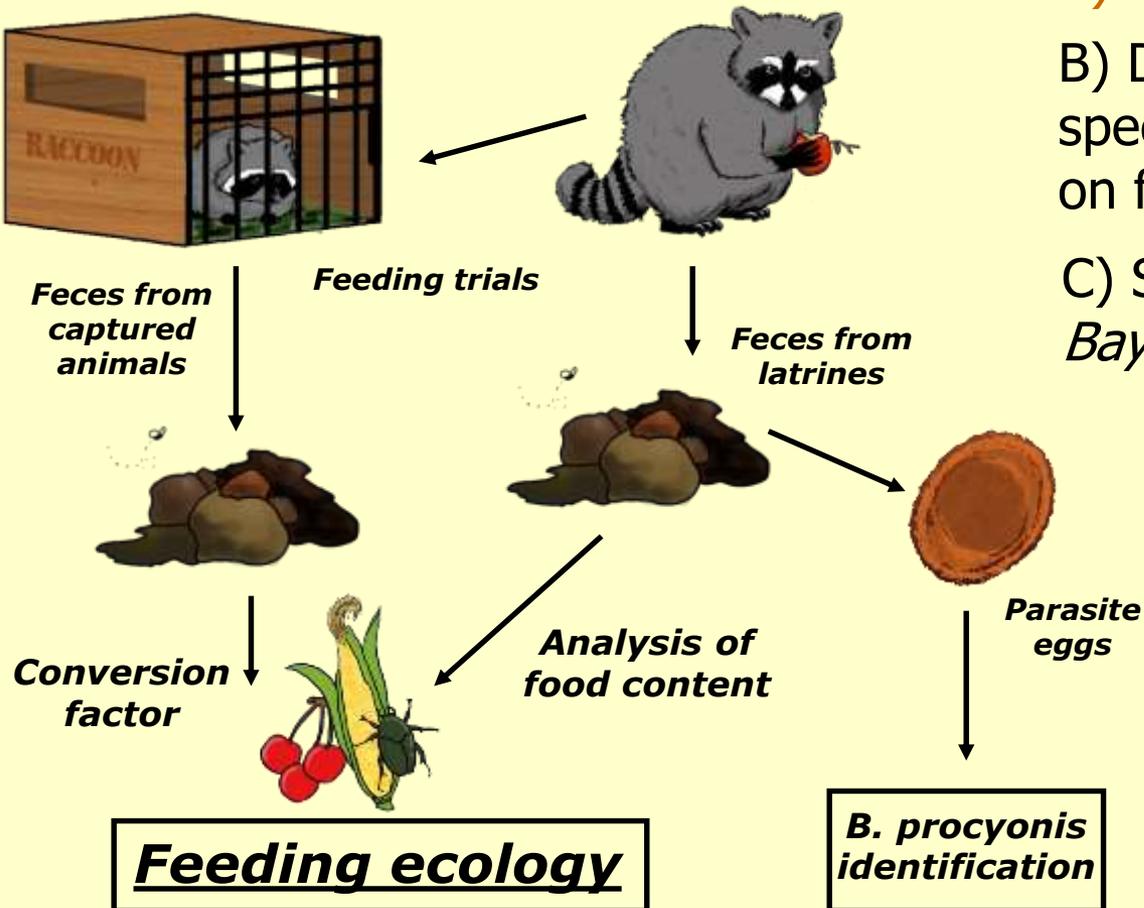


n=1285 fecal samples

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n=1285 fecal samples

„Projekt Waschbär“ – feeding ecology



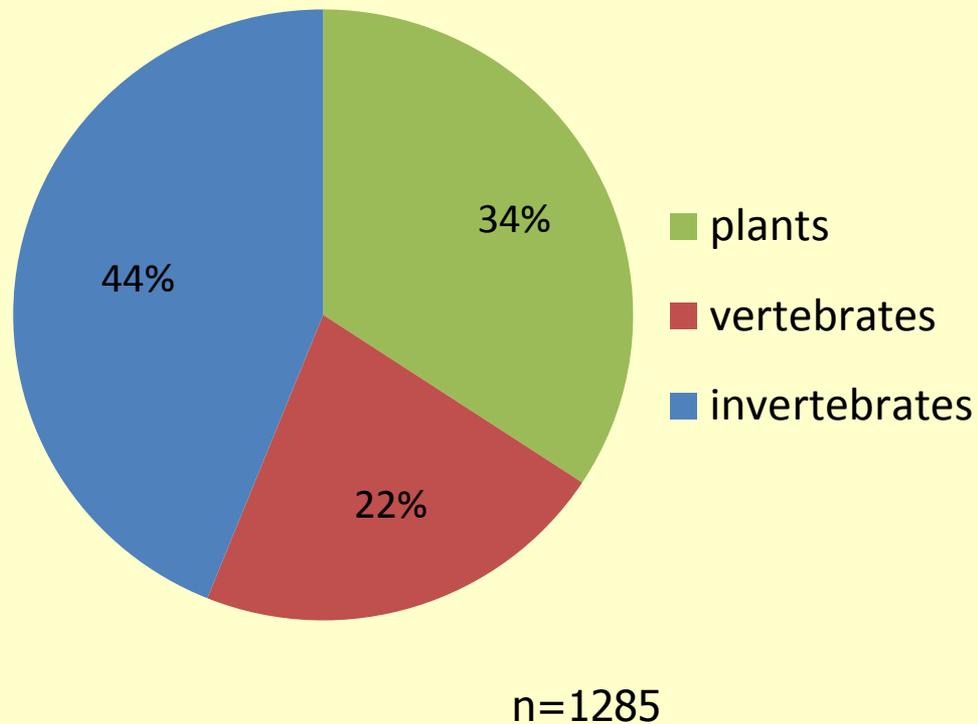
- fecal samples (n=1285) were collected from 90 different latrines between 2006-2011
- First results only relate to the rates of occurrence
→ biomass data remaining (even more informative)



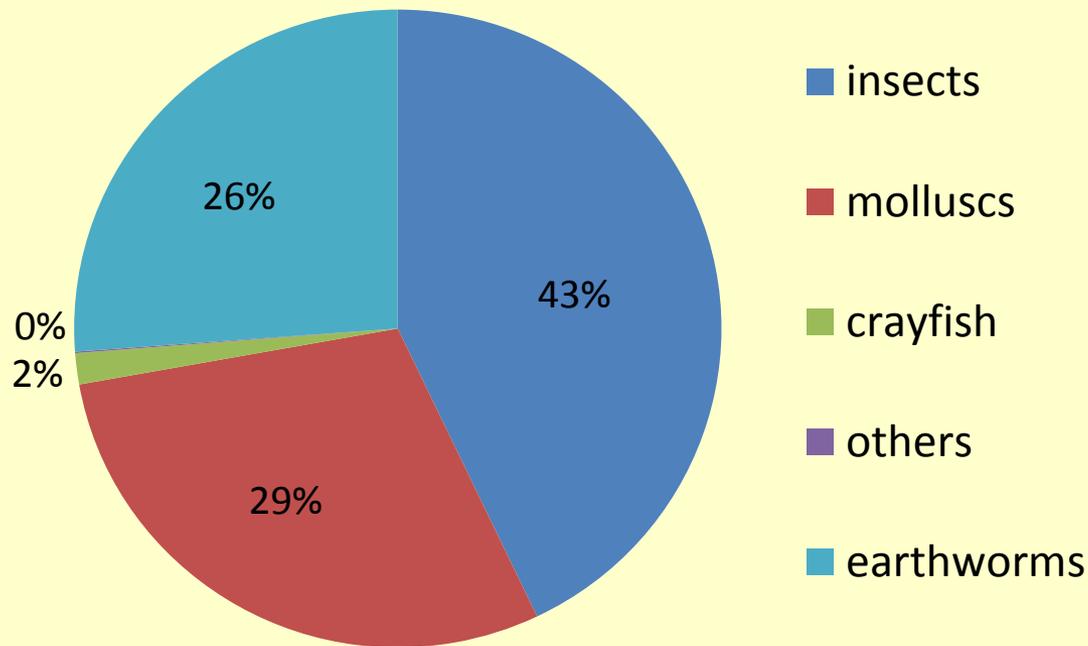
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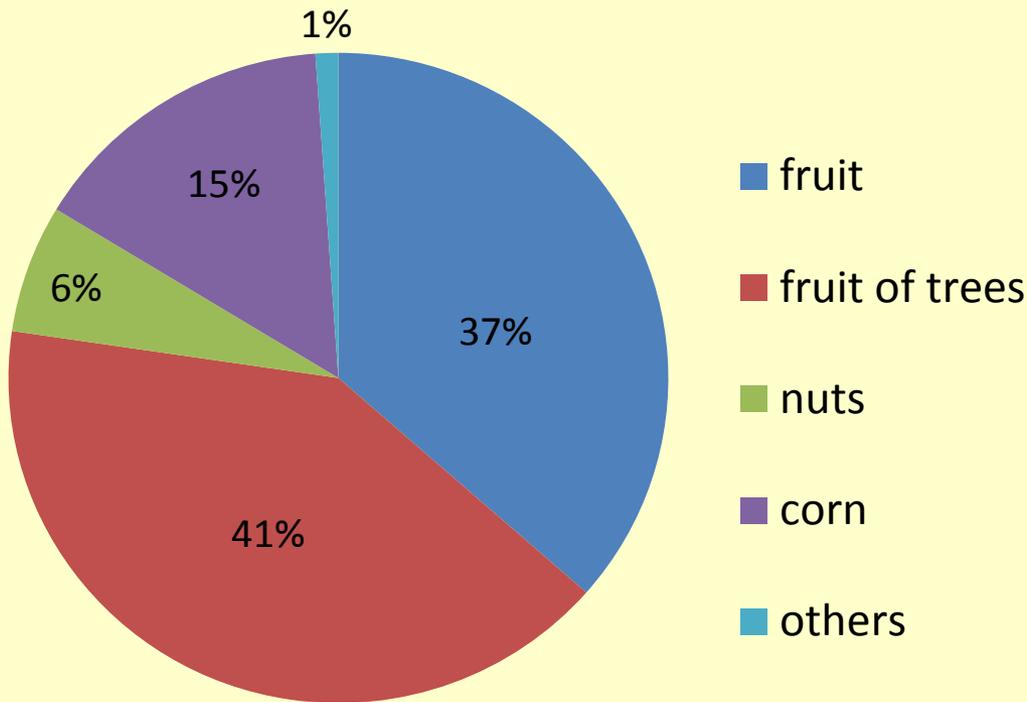
Müritz National Park



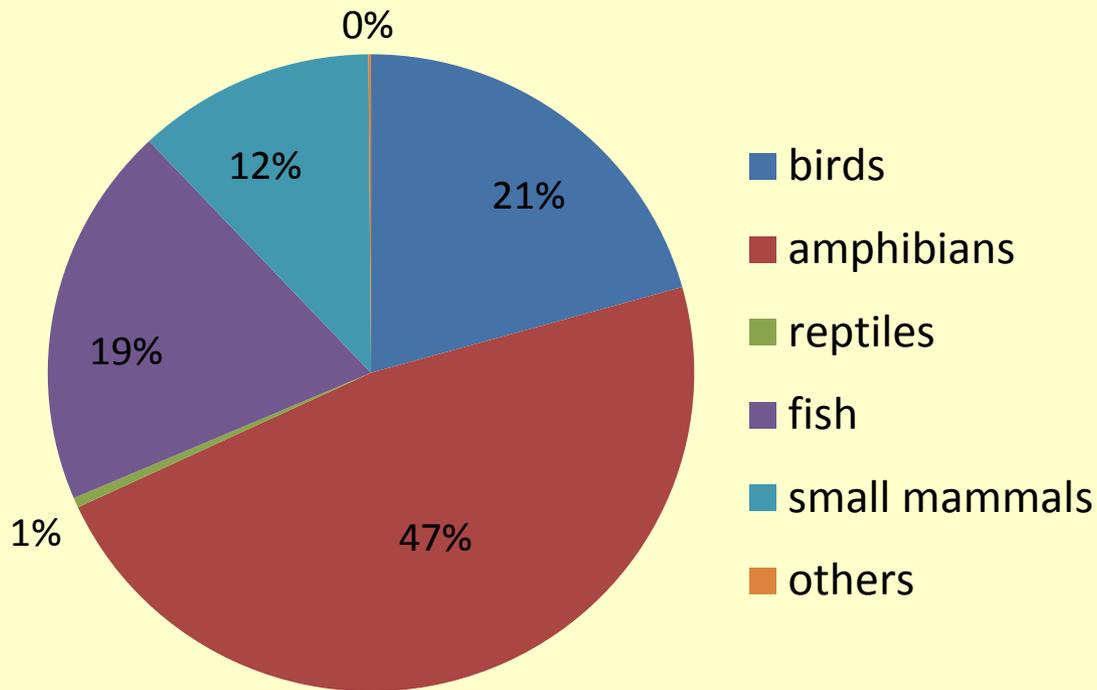
invertebrates (n = 1232; 44 %)



plants (n = 961; 34 %)



vertebrates (n = 613; 22 %)



„Projekt Waschbär“ – feeding ecology



- raccoons are omnivorous and have an opportunistic dietary behaviour

→ *they can easily adapt to the local range of available food*



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„Projekt Waschbär“ – feeding ecology

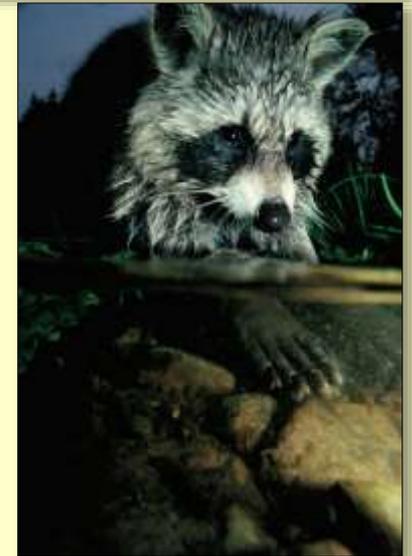


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→ *they can easily adapt to the local range of available food*



- raccoons are very variable in their diet but prefer food within wetland habitats and food which is easily available in large amounts



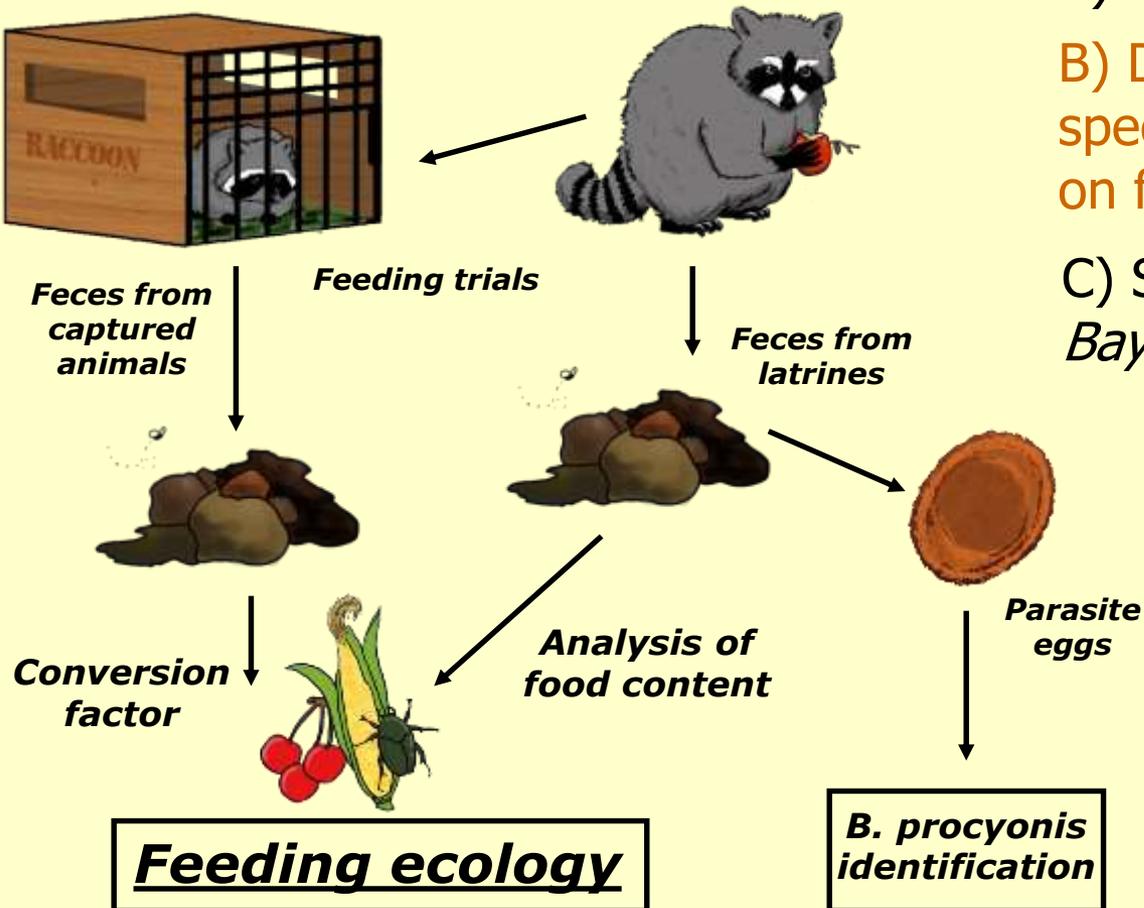
„Projekt Waschbär“ – doctoral thesis



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n=1285 fecal samples

Conversion factor: proportion of fresh weight of food and the dry weight of the faeces



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→ how much of the food is finally defecated?

→ specific value will be a factor in the calculation of the biomass



Feeding trials with encountered animals

Conversion factor: proportion of fresh weight of food and the dry weight of the faeces

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→ specific value will be a factor in the calculation of the biomass



Feeding trials with encountered animals

- 2 periods: summer & autumn – feeding of 15 different components (concurrent with the food in the wild)

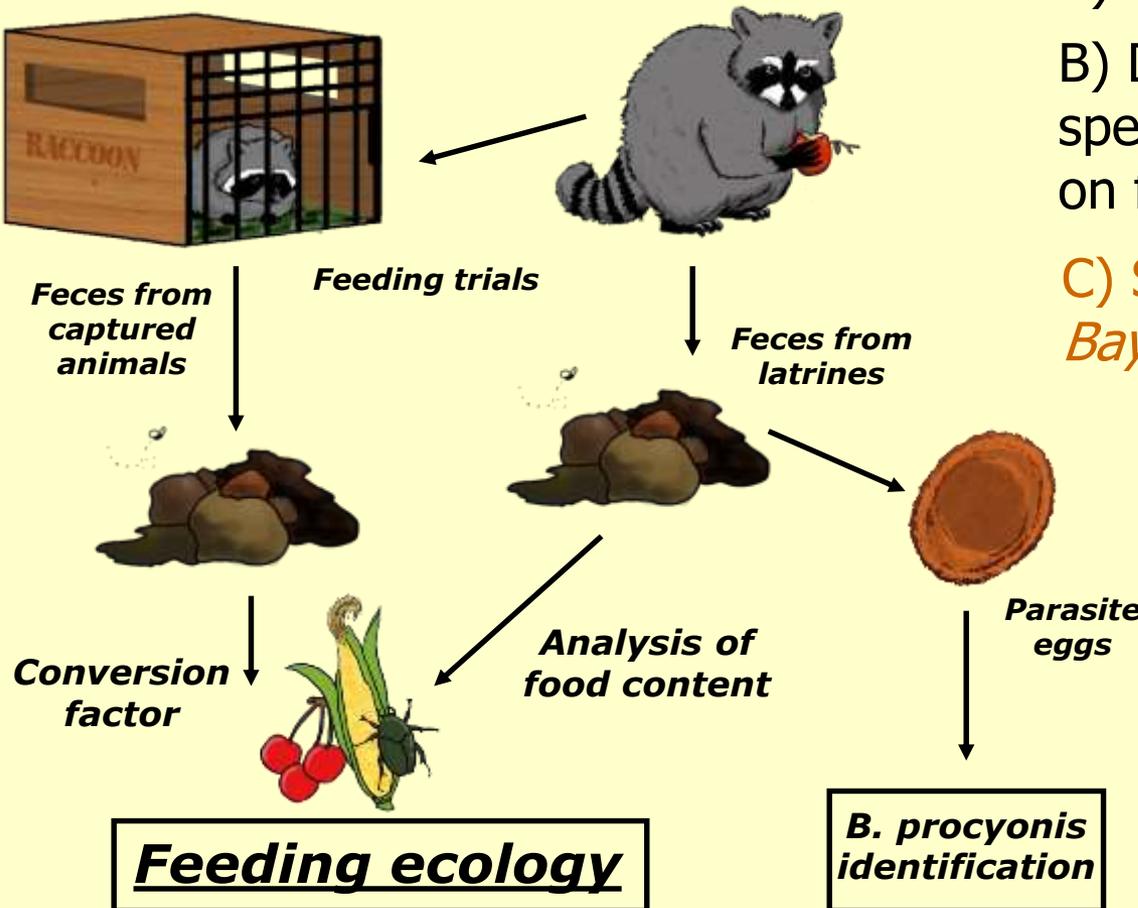
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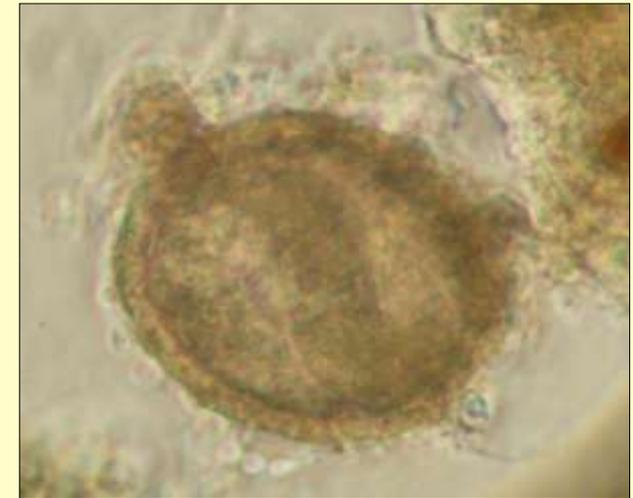
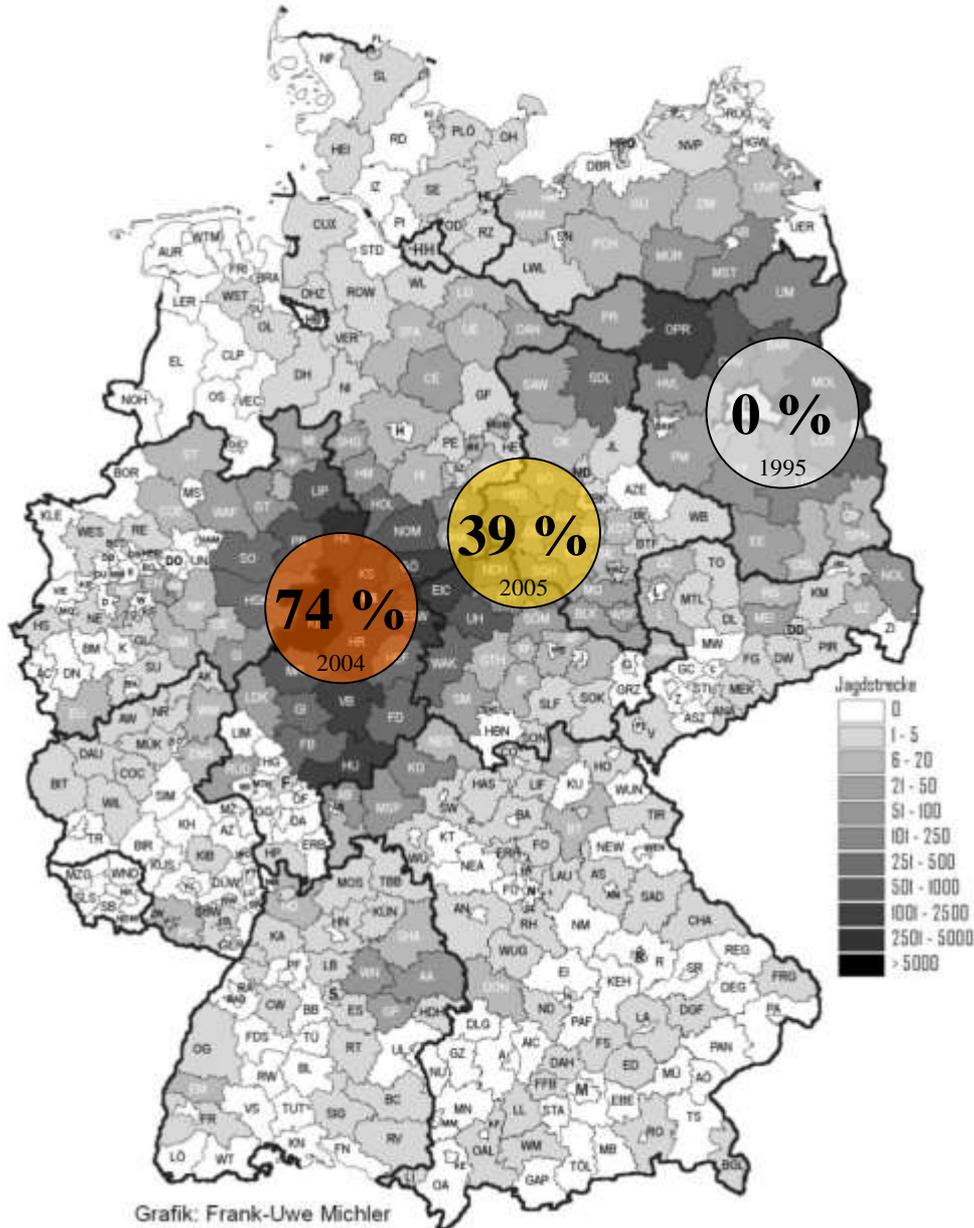
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„Projekt Waschbär“ – *Baylisascaris procyonis*

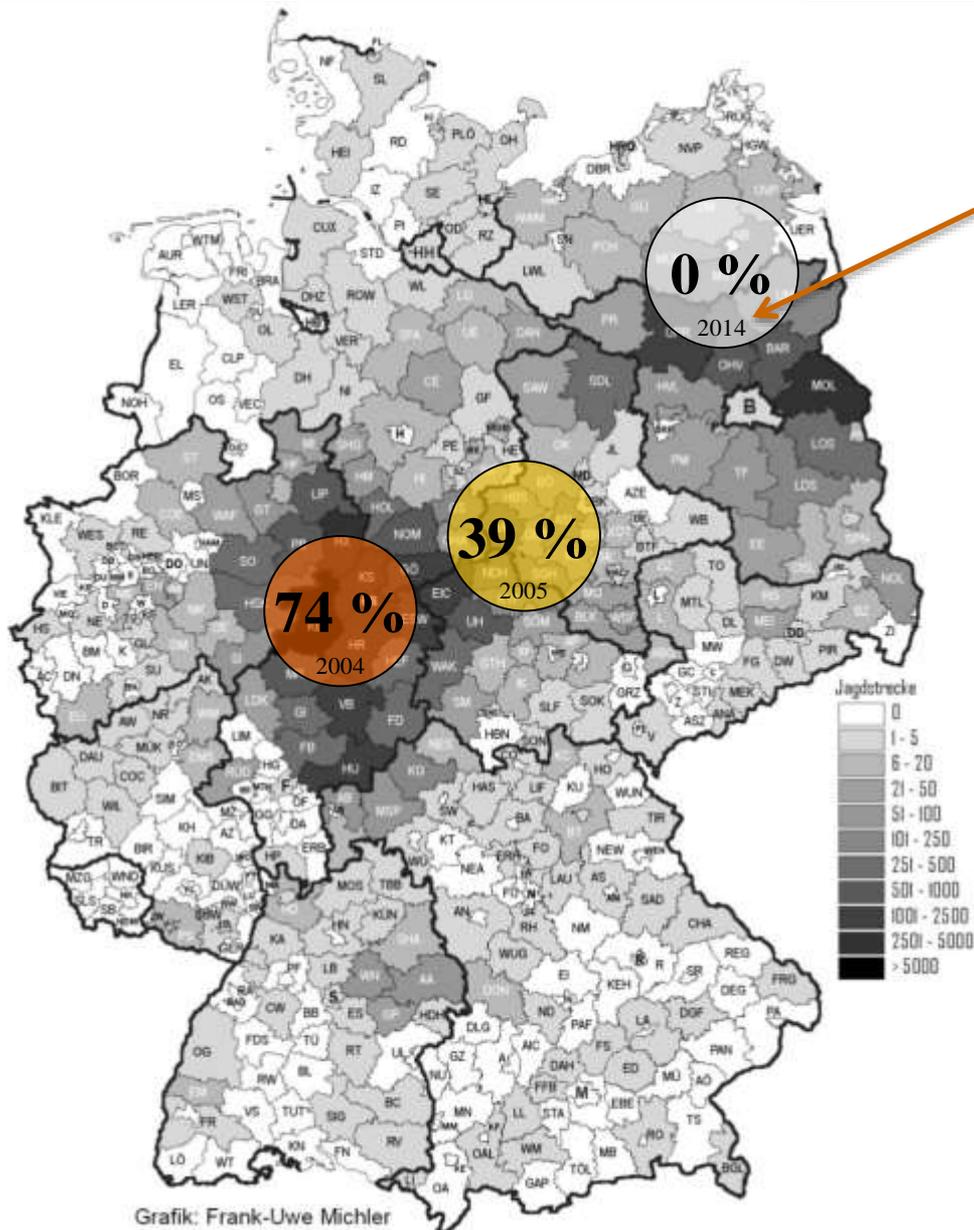


Microscope image of an infectious *Baylisascaris procyonis* egg (size 50 µm)

Quellen:

- Lux & Priemer 1995
- Gey 1998
- Gunnesch 2004
- Winter 2005

„Projekt Waschbär“ – *Baylisascaris procyonis*



Current investigation from n=400 faeces samples from the Müritz-Nationalpark



Quellen:

- Lux & Priemer 1995
- Gey 1998
- Gunnesch 2004
- Winter 2005

Current situation



- Economic effects
- Hygienic relevance
- Ecological effects



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Current situation



Epidemiological status in Europe:

- no host animal for *fox tapeworm*
- no carrier of *trichina*
- does not play a major role in the european epidemiology of *rabies*
- no important vector of *scabies*
- can be a carrier of canine distemper viruses
- only known considerable zoonosis: raccoon roundworm



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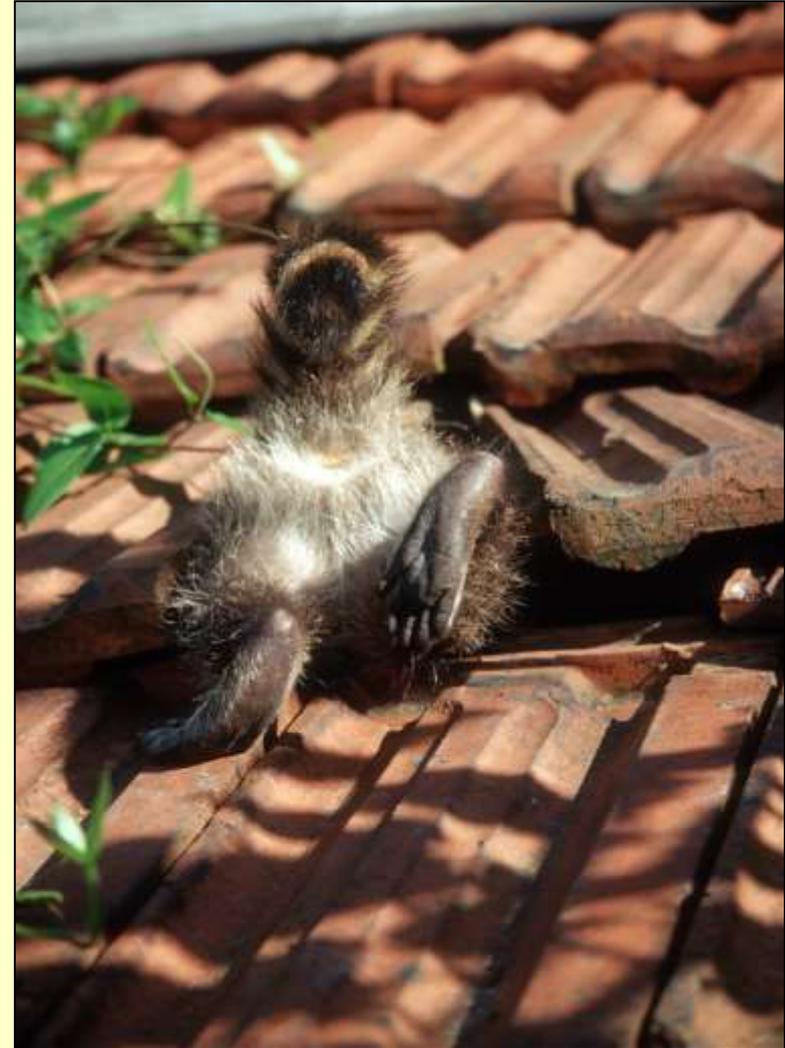


→ *low estimated epidemiologically risk in Germany*

Current situation



→ *no appreciable economic effects* besides occasionally costly damages to private house and garden



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Current situation



- so far no serious predation pressure verifiable
- a threat of autochthonous species is not looming ahead
- local negative effects, especially in suboptimal habitats can not be ruled out



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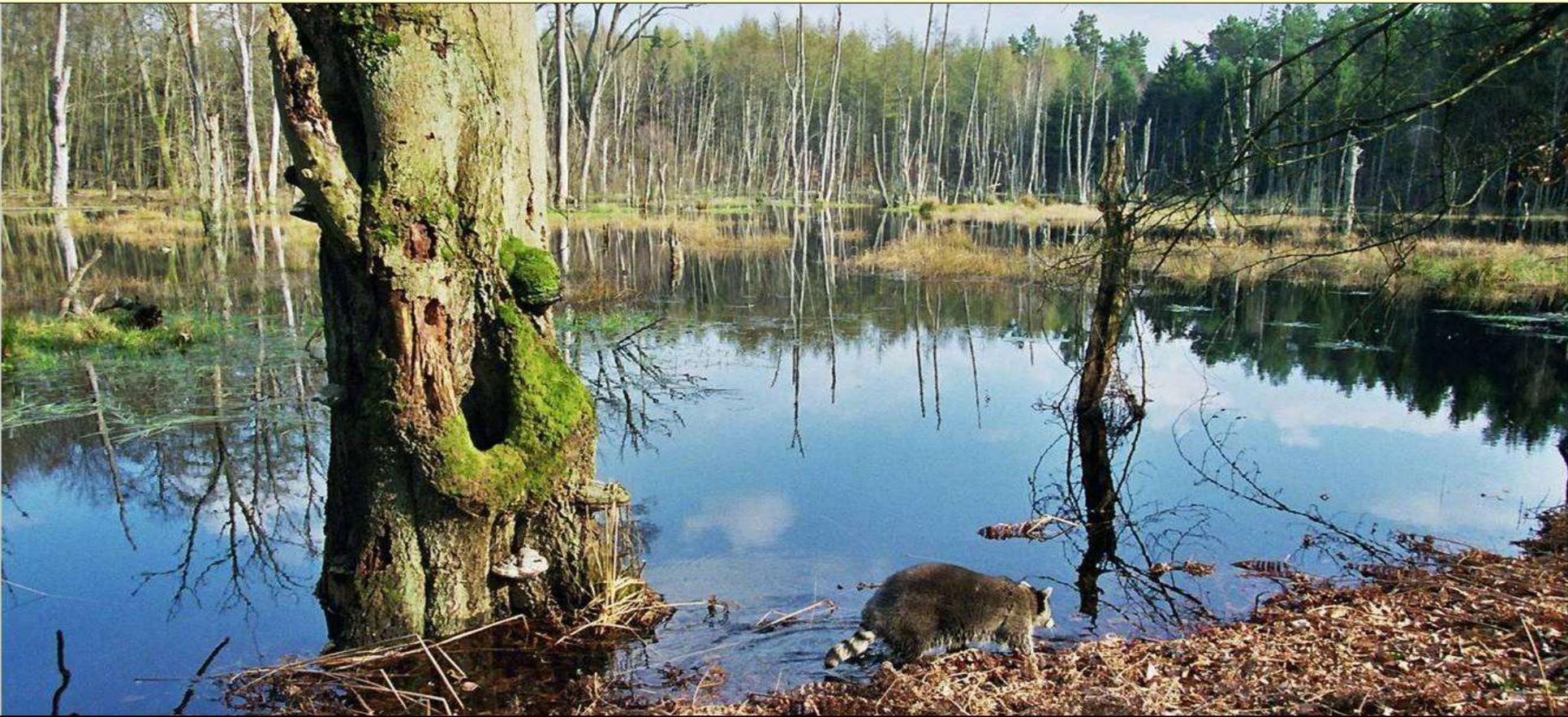
→ *all current scientific studies indicate no serious ecological impact for close to nature habitat*



„Projekt Waschbär“ – prospects

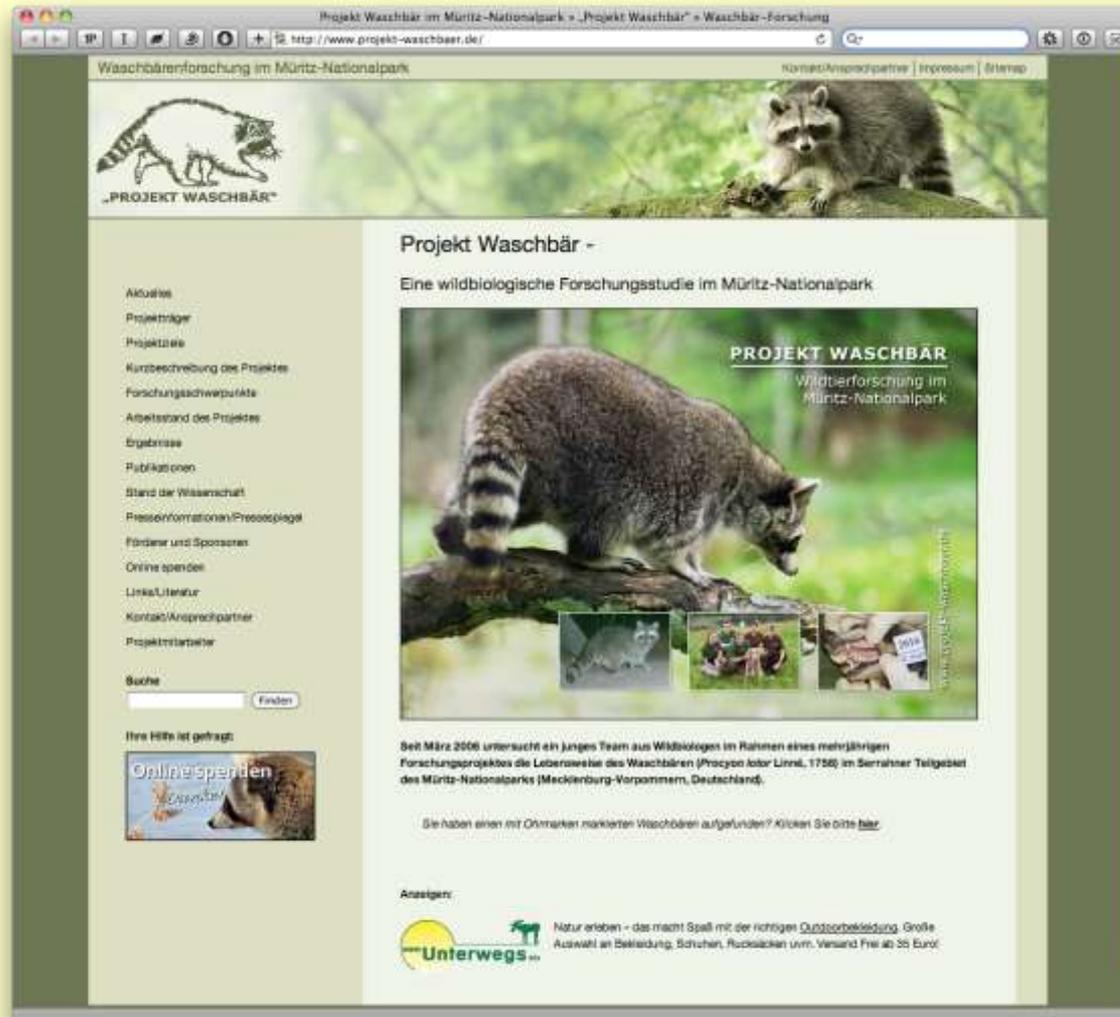


- research will be finished at the end of 2015
- currently 4 sub-projects in process



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Projekt Waschbär -
Eine wildbiologische Forschungsstudie im Müritz-Nationalpark

PROJEKT WASCHBÄR
Wildberforschung im Müritz-Nationalpark

Seit März 2006 untersucht ein junges Team aus Wildbiologen im Rahmen eines mehrjährigen Forschungsprojektes die Lebensweise des Waschbären (*Procyon lotor* Linné, 1758) im Sennarher Teilgebiet des Müritz-Nationalparks (Mecklenburg-Vorpommern, Deutschland).

Sie haben einen mit Ohrmarken markierten Waschbären aufgefunden? Klicken Sie bitte [hier](#).

Anzeigen:
 Natur erleben - das macht Spaß mit der richtigen **Outdoorbekleidung**. Große Auswahl an Bekleidung, Schuhen, Rucksäcken uvm. Versand Frei ab 35 Euro!



I. Bartussek

Thank you
for your attention

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Conflict management



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Conflict management *(Dealing with raccoons in urban areas)*



decrease of basic food resource



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Conflict management *(Dealing with raccoons in urban areas)*



decrease of basic food resource



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Conflict management *(Dealing with raccoons in urban areas)*



safeguards against the entrance



effective



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„Projekt Waschbär“ – fieldwork



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„Projekt Waschbär“ – fieldwork



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„Projekt Waschbär“ – basic methods



public relations

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