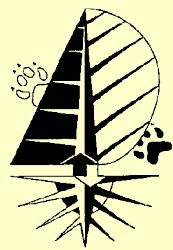


Effects of raccoon settlement in Germany



Wild Mustelid Conference
Oxford, march 2013

Berit Michler



Technische Universität Dresden (chair of forest zoology)
Working Group Wildlife Research (Tharandt)

Outline

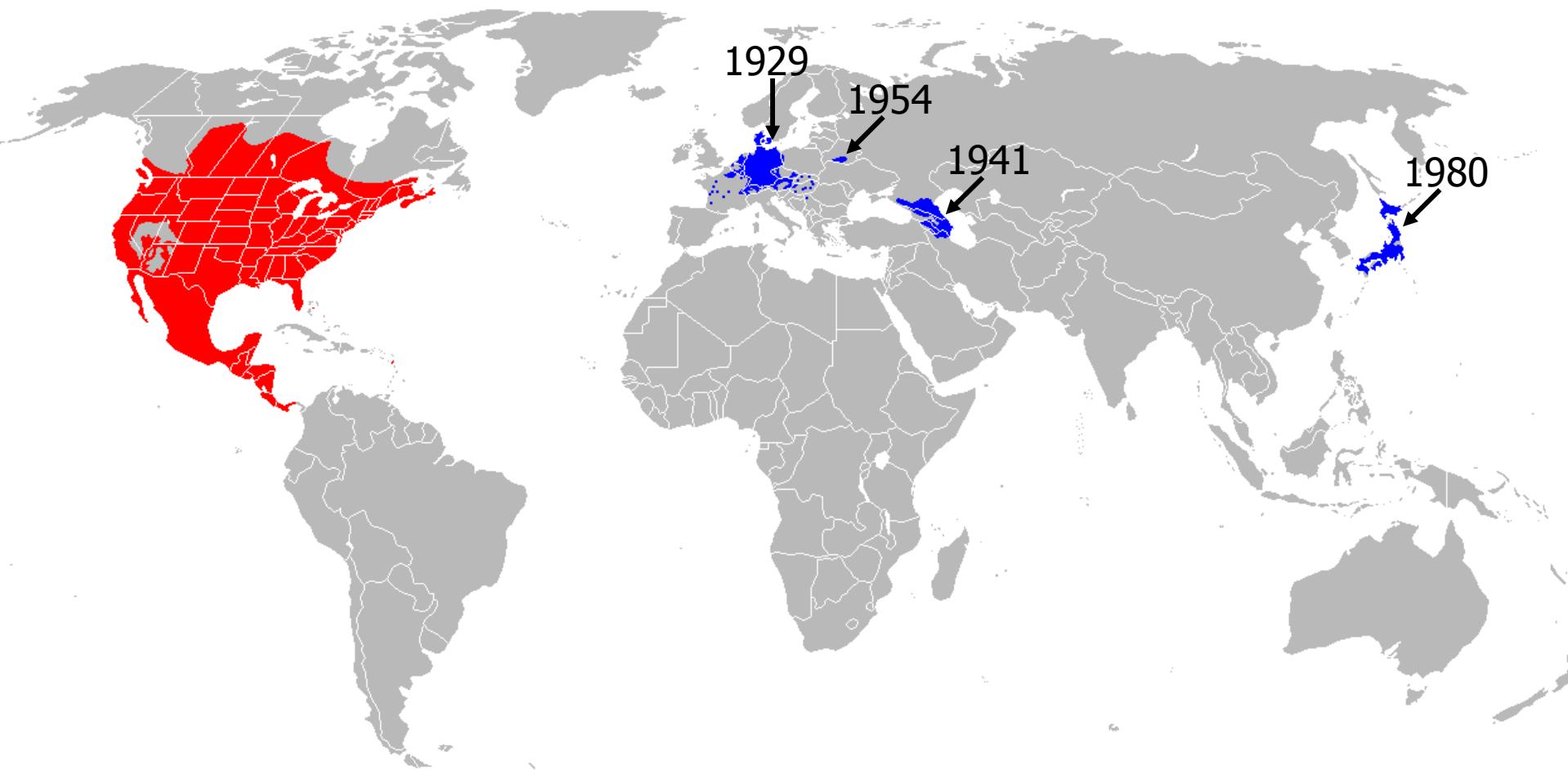


- Raccoon settlement in Germany
- Applied research on raccoons:

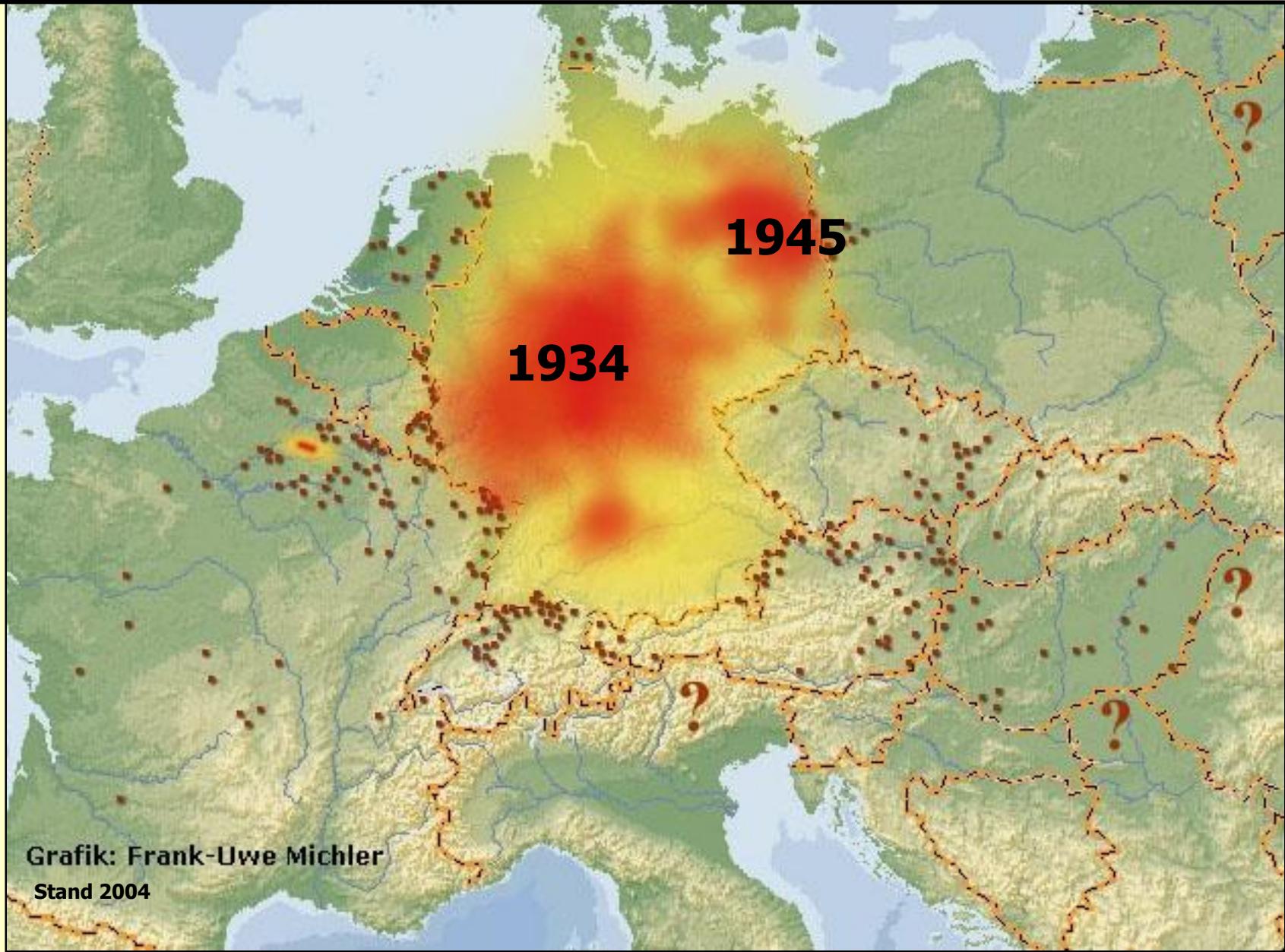
„Projekt Waschbär“

- topics of research
- selected results

Geographic range



Geographic range



Grafik: Frank-Uwe Michler
Stand 2004

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
- Hygienic relevance
- Ecological effects



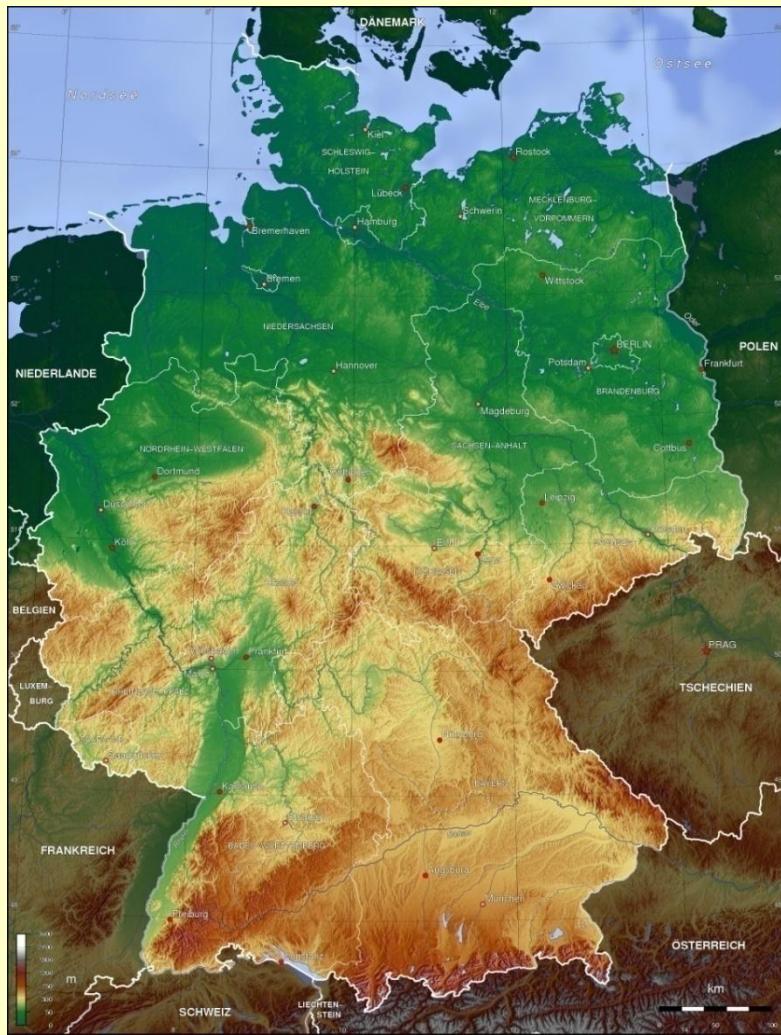
Research on raccoons in Germany

- 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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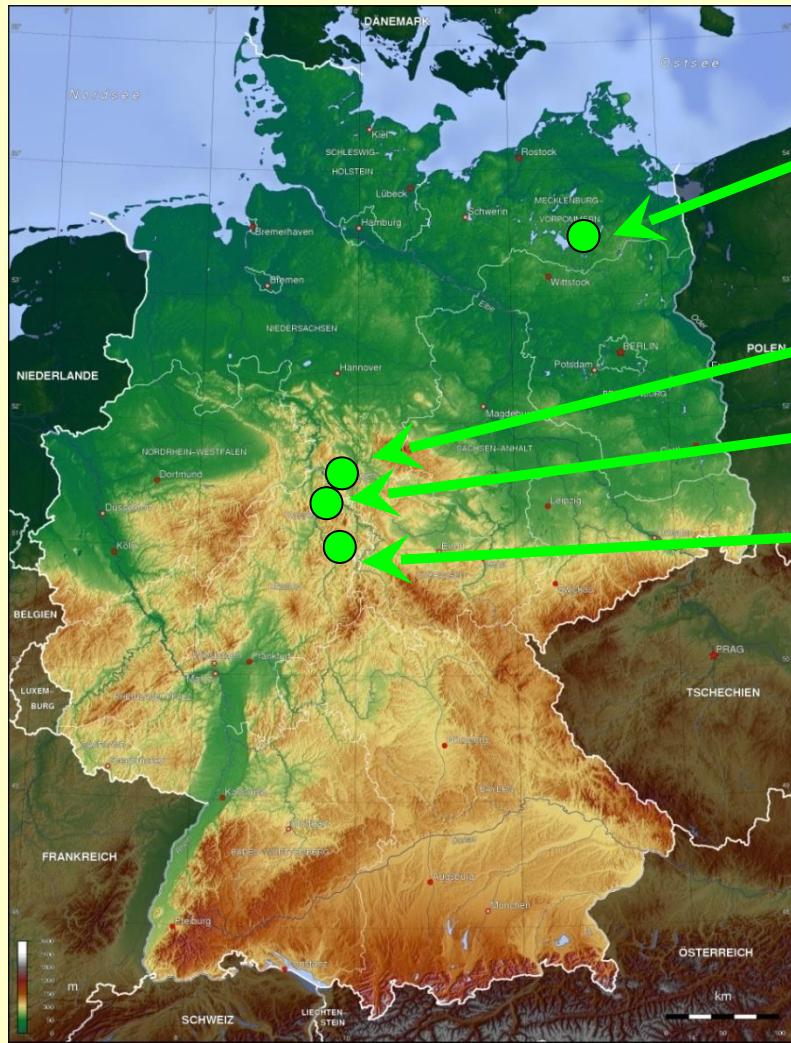
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Research on raccoons in Germany



Müritz-Nationalpark

Solling

Bad Karlshafen

Kassel

„Projekt Waschbär“



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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

„Projekt Waschbär“ – topics of research



1. spatial use

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



„Projekt Waschbär“ – topics of research



1. spatial use

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

2. feeding ecology/parasitology

(food spectrum, endoparasite infestation)



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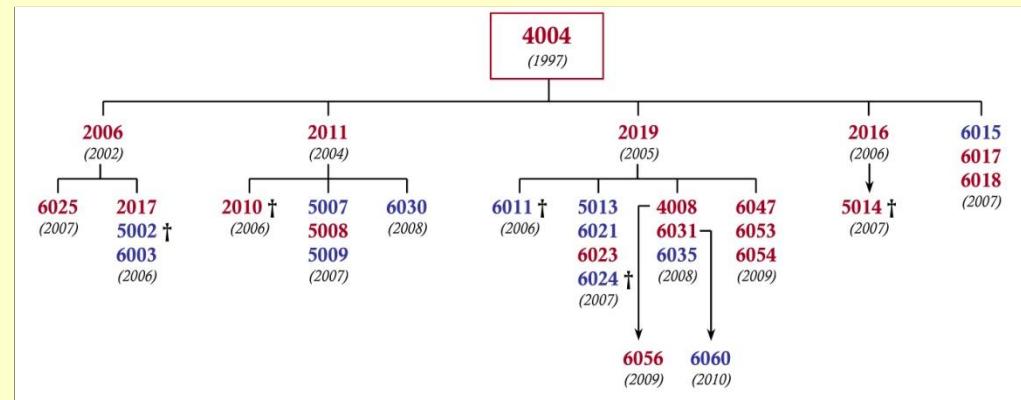
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(mating- and cubbing season, litter size, parentship, MHC-dependant mate selection)



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(structure of age groups, sex ratio, phenotypic characteristics)



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(histo-pathologic & serologic tests)



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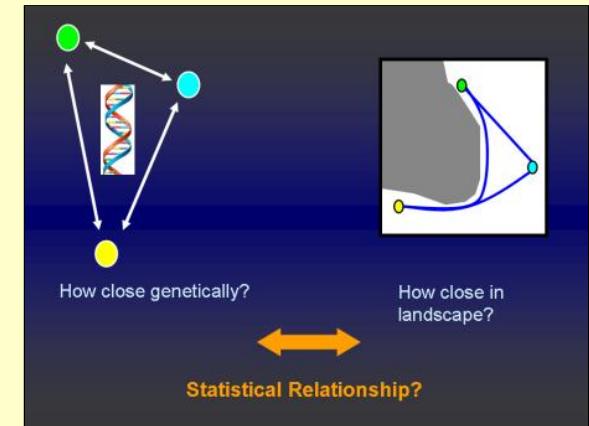
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7. epidemiology & death investigation

(histo-pathologic & serologic tests)

8. landscape genetics

(impacts of spacial movement patterns)



„Projekt Waschbär“ – basic methods



VHF- telemetry

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Arbeitsgruppe Wildtierforschung Tharandt

„Projekt Waschbär“ – basic methods

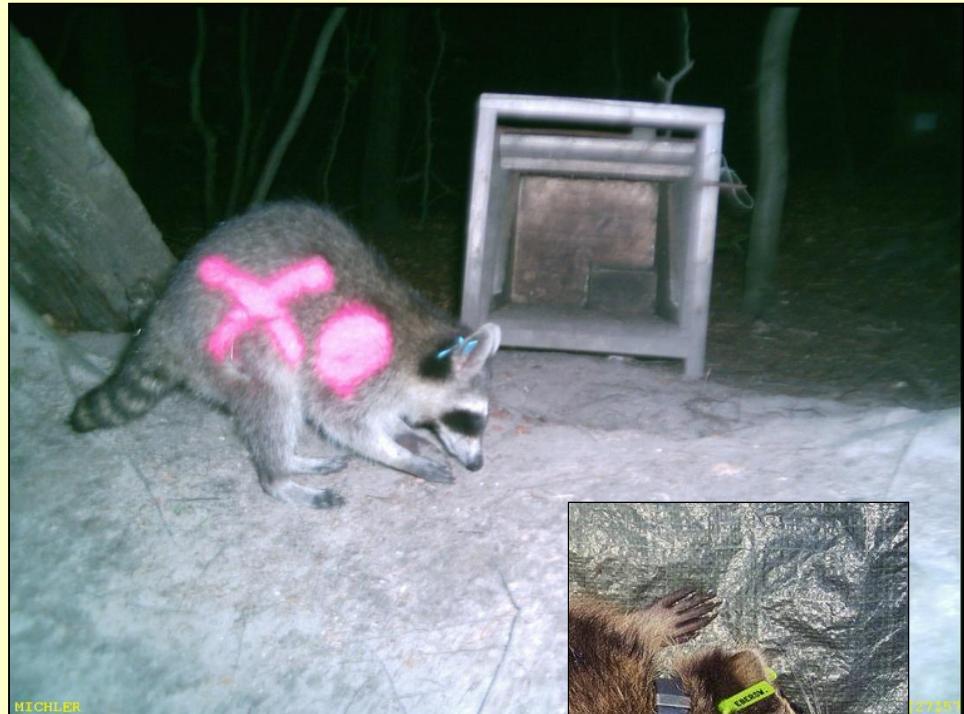


Expanding
radio-collars



R. Vitt

„Projekt Waschbär“ – basic methods



Individual marks



„Projekt Waschbär“ – data basis



march 2006 – november 2011:

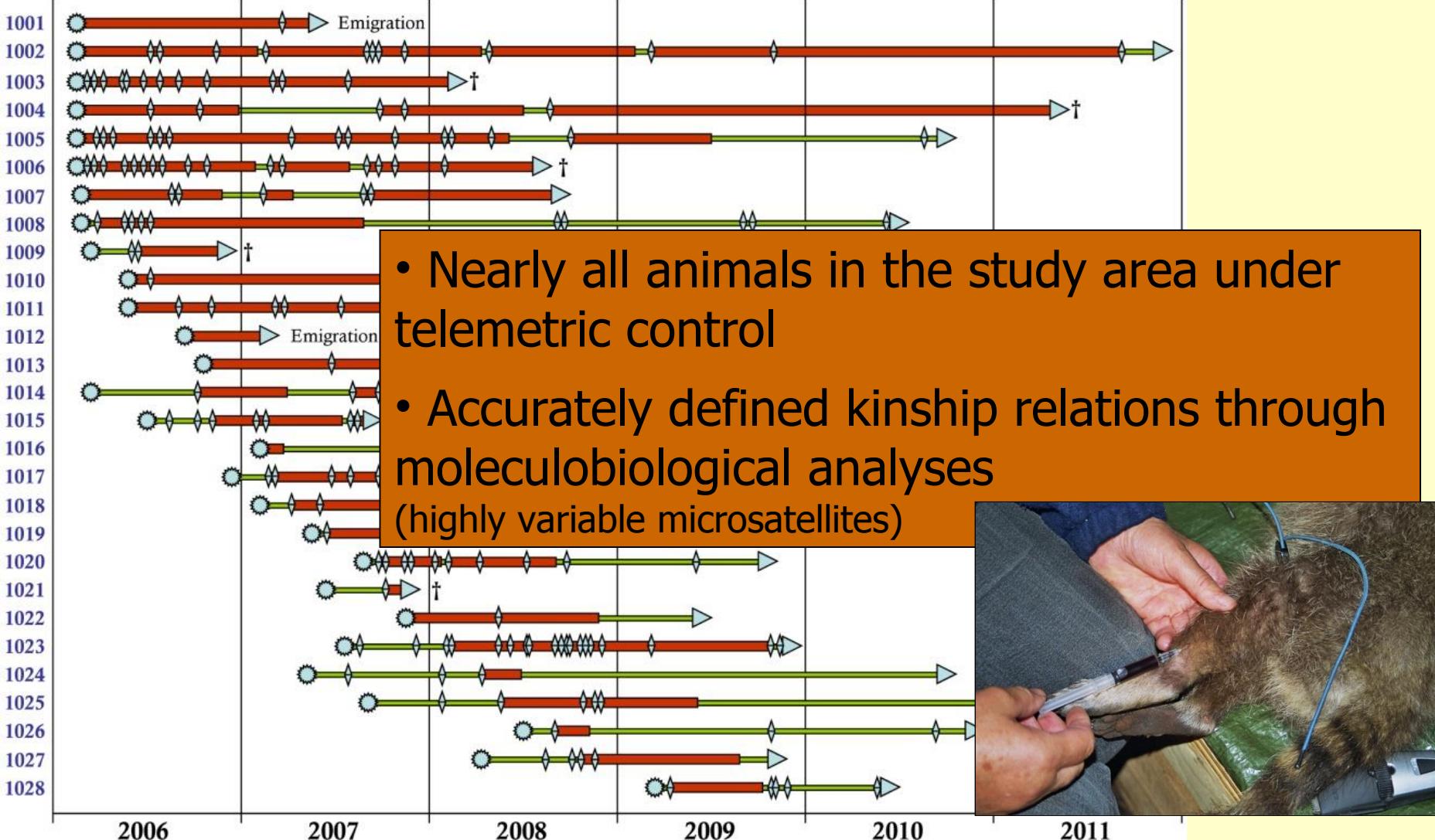
- **489** raccoon captures
 - **145** different individuals
 - **69** fitted with radio-collars (23 ad. ♂; 28 ad. ♀; 18 juveniles)

- **31.193** localizations (12.931 by day, 18.262 at night)
- **24.959** pictures from camera traps (5365 trap nights)





„Projekt Waschbär“ – data basis



„Projekt Waschbär“ – selected results

1. spatial use

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

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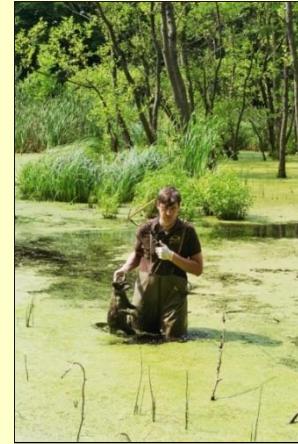
„Projekt Waschbär“ – causes of death



- 27 animals ($n = 69$) discovered perished
→ histo-pathologic investigations at the Leibniz Institute for Zoo and Wildlife Research Berlin



- documentation of progress of disease via telemetry and camera traps



Michler et al. 2009

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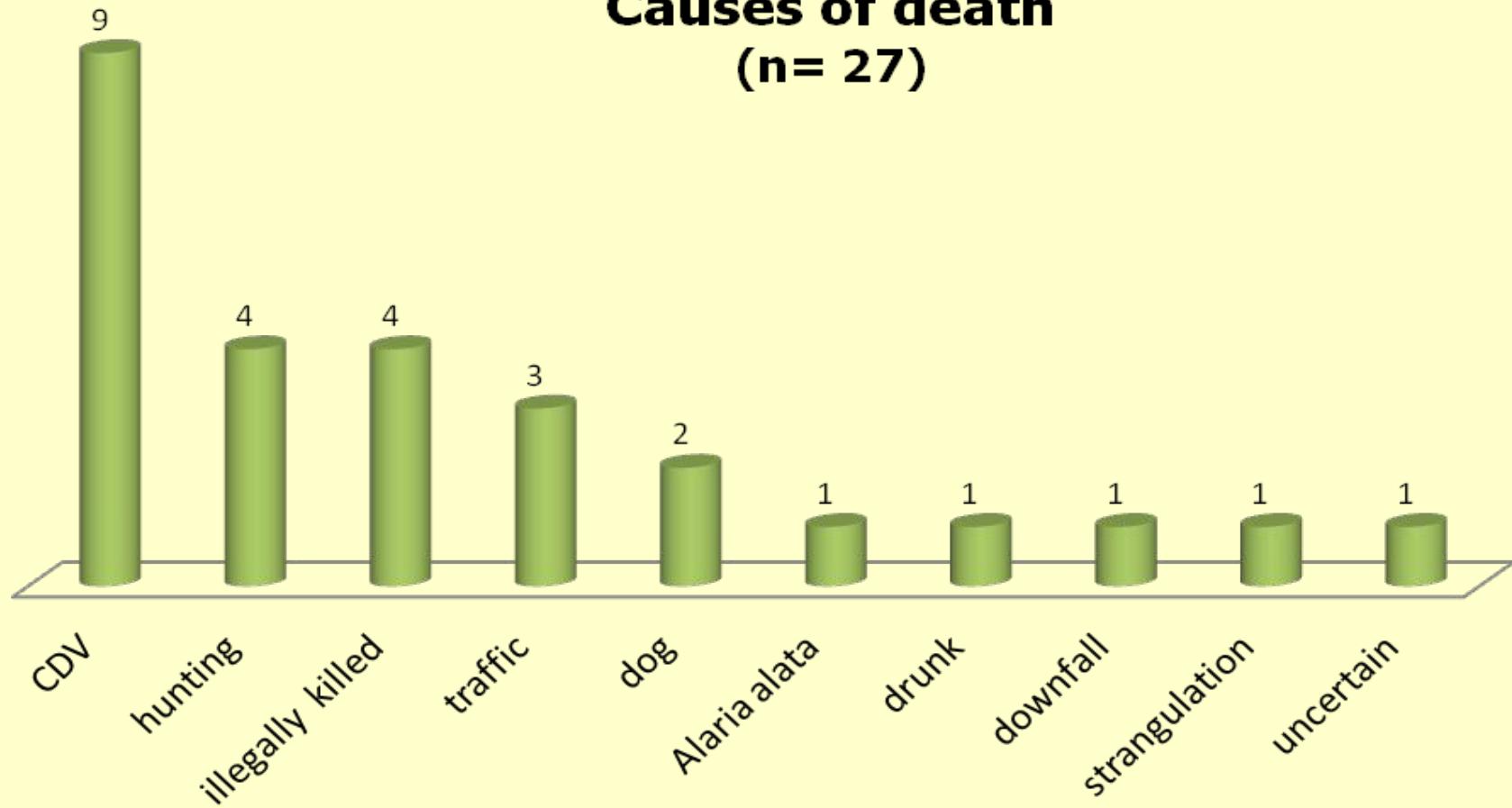


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„Projekt Waschbär“ – causes of death



**Causes of death
(n= 27)**



Michler et al. 2009;
Michler in prep.

„Projekt Waschbär“ – causes of death



- CDV was of limited duration (april – july 2007) and localized
- nearly all positive diagnosed animals were females (80 % of all females in the infected area died)
- all males in the study area showed definite antibody titer against CDV (1:72 to 1:575; NPLA)
- Premortal behavioral disorders: grave central nervous disfunctions



Hind foot parakeratosis

→ first record of CDV in
european raccoons

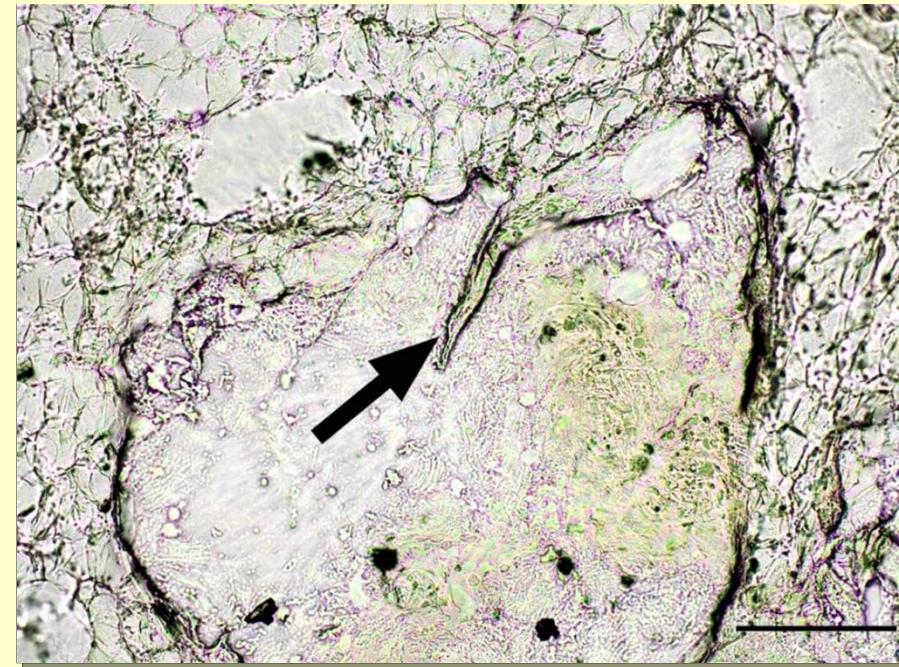
Wibbelt et al. 2008
Michler et al. 2009



„Projekt Waschbär“ – causes of death



Light microscope image of an isolated *A. alata* mesocercariae .
Bar = 200 m, 188 x 140mm (300 x 300 DPI)



Raccoon tongue, unstained cryotome section of a parasite cyst with an intraluminal *Alaria alata* mesocercaria (arrow). Bar = 200 m, 128 x 95 mm (300 x 300 DPI)

→ first record of *Alaria alata* in european raccoons

Rentería-Solís et al. (in review)

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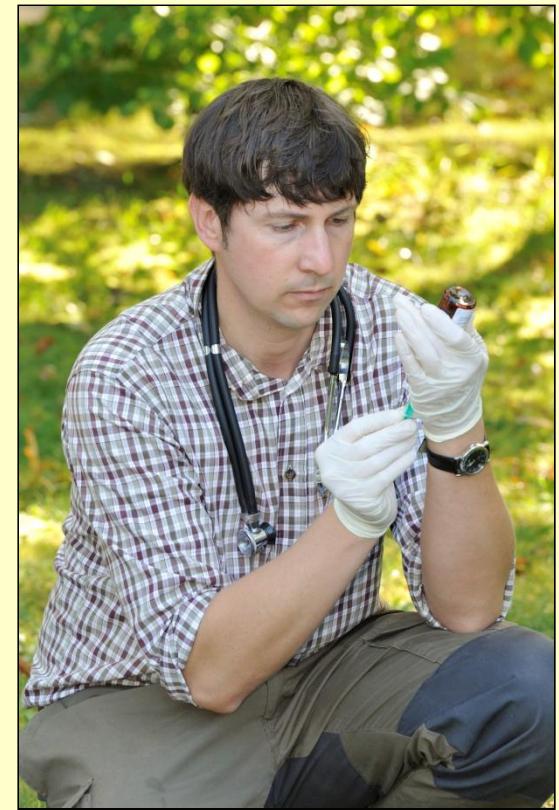
8. landscape genetics

(impacts of spacial movement patterns)

„Projekt Waschbär“ – dispersal behaviour



- marking of 79 juvenile raccoons (39 ♂, 40 ♀; 2006-2010)
- to date records of 18 ♂ and 31 ♀ (62 %)



Michler & Köhnemann (2010);
Michler (in prep.)

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„Projekt Waschbär“ – dispersal behaviour



- all male raccoons dispersed at the age of 6-14 months
(between october and june)



Michler & Köhnemann (2010);
Michler (in prep.)

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„Projekt Waschbär“ – dispersal behaviour



- all male raccoons dispersed at the age of 6-14 months (between october and june)
- dispersion in all directions at linear distances between min. 2 km and **max. 285 km** (mean value 52 km)
- longest distance ever measured for raccoons worldwide

Michler & Köhnemann (2010)



„Projekt Waschbär“ – dispersal behaviour



- female raccoons did not leave the investigation area at all
 - minimal shift of home range center (min. 100 m; **max. 2,9 km**)
 - distinct philopatric behaviour (matrilineal inheritance)

Michler & Köhnemann (2010)

„Projekt Waschbär“ – dispersal behaviour



- female raccoons did not leave the investigation area at all
 - minimal shift of home range center (min. 100 m; max. 2,9 km)
 - distinct philopatric behaviour (matrilineal inheritance)

→ Different dispersal behaviour is considered to be one of the main factors contributing to the conservative expansion of raccoons in Germany

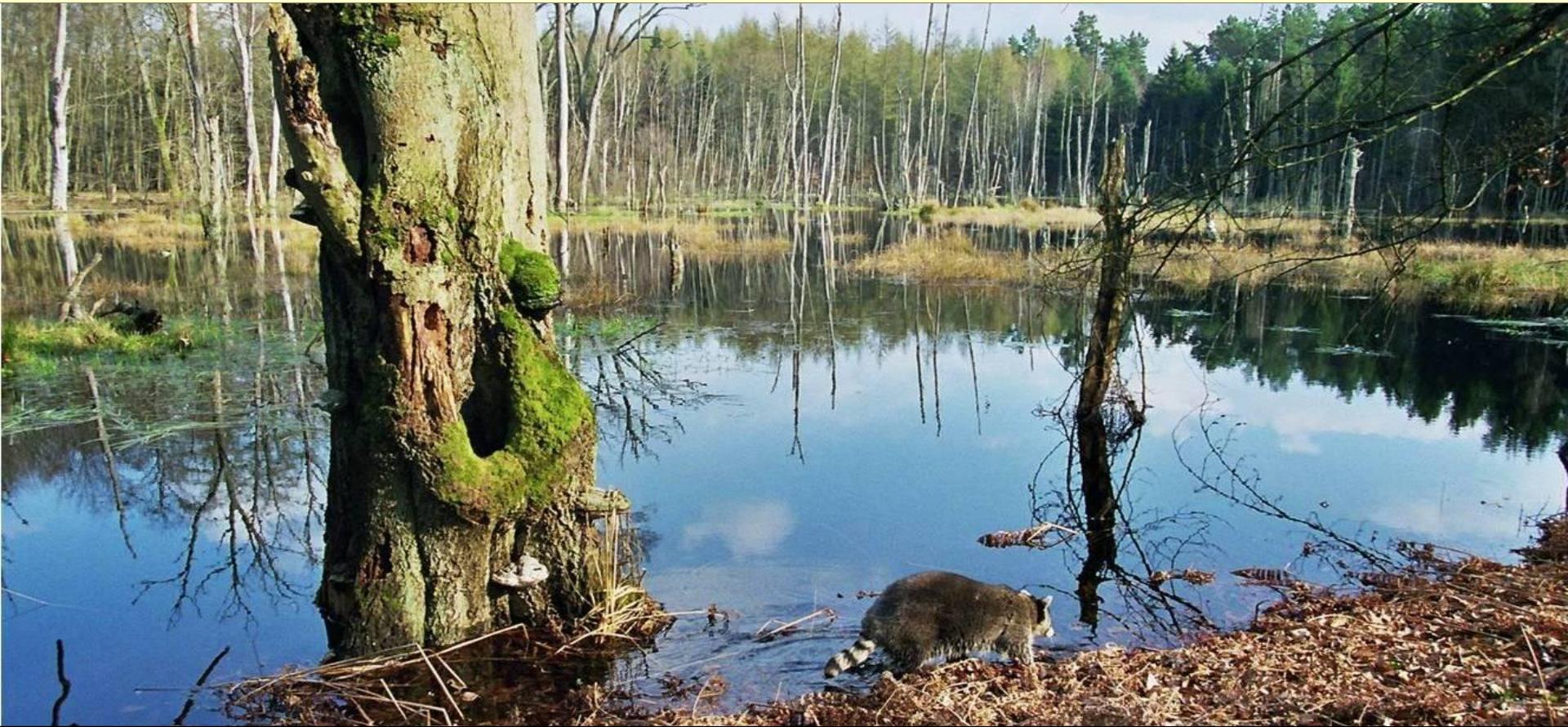
→ extensive movements of males require a new evaluation of the raccoon as a transmitter of diseases and parasites

Michler & Köhnemann (2010)



„Projekt Waschbär“ – prospects

- research will be finished at the end of 2015
- currently 5 sub-projects in process



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www.projekt-waschbaer.de

Projekt Waschbär im Müritz-Nationalpark » „Projekt Waschbär“ » Waschbär-Forschung

Waschbärenforschung im Müritz-Nationalpark

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Projekt Waschbär -
Eine wildbiologische Forschungsstudie im Müritz-Nationalpark



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!

[www.projekt-waschbaer.de](#)

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I. Bartussek

Thank you
for your attention