



# Monitoring of Invasive Alien Predators in Germany



## - Focus on the increasing raccoon population -

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### Background

The Wildtier-Informationssystem der Länder Deutschlands (WILD) together with the Wildlife Survey Schleswig-Holstein (Wildtier-Kataster Schleswig-Holstein, WTK-SH) are nation-wide monitoring programs which collect data on the sightings, frequency and populations of wild animals. WILD is a project of the Deutsche Jagdverband (German Hunting Association, DJV) and its regional hunting associations, and, since 2001 has been a permanent part of the ecological environment study. WTK-SH is a project in partnership with Landesjagdverband Schleswig-Holstein e.V. And the Institute for Natural Resource Conservation, University of Kiel since 1995. The most important goal is to develop strategies for conservation, regulation and sustainable use of wild animals. Data collection is based on wild animal numbers in selected areas or hunting districts, as well as on population estimates in as many of the German hunting districts as possible.

Data on racoon and racoon dog was collected by WILD in 2006, 2009 and 2011, and by WTK-SH in 1997, 2005 and 2010. Between 25,000 and 30,000 game tenants took part, corresponding to some 50% of the districts nation-wide.

### Game bag statistics

In Germany it is obligatory for each hunting district to report their game bag statistics at least yearly. For all German federal states we can give the number of animals hunted, figures for ungulate road mortality as well as death due to other causes. Since the 1980'ies most federal states can subdivide game bag statistics on the level of administrative districts (county/ Landkreis) although older data are more generalized.

We have nationwide data on the racoon dating back to 1994. That seems to be a short period of time as the species was introduced decades before. However, the neozotic racoon was concentrated in a quite small area and which centred around some urban or suburban ranges in central (Hessen) and eastern Germany (Brandenburg). While sightings of the racoon in Hessen can be traced back to a specific settlement on Lake Eder in 1934, the population in Brandenburg grew as a result of a farm break-out near Strausberg in 1945. This small geographical extension may be the reason for its negligible meaning in the game bag records regarding to the nationwide scale in the years before 1994

In the hunting season of 1994/95 there were 333 documented cases of raccoons killed by hunting in Germany. In the hunting season of 1995/6 there was a tenfold increase of the hunting bag (n = 3349), we do not have evidence to explain this early increase, however it may be a consequence of different hunting laws of several Federal States.

Racoon populations in Germany showed a logistic growth starting in the 1990's with hunting bag numbers reaching new record highs each year. More than 70.000 Raccoons were hunted in the season 2011/12, making this species is the most invasive alien mammal in Germany in the last 20 years and we are unable to predict the end of the population increase and dispersion (Fig. 3).

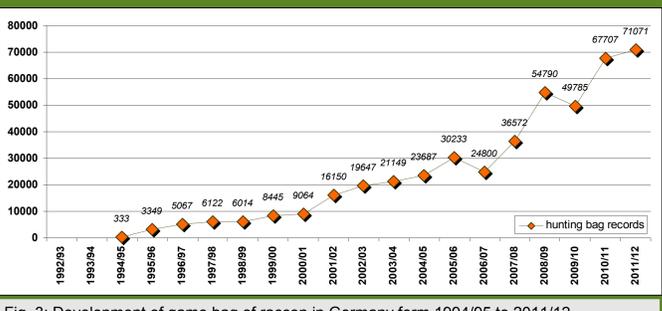


Fig. 3: Development of game bag of raccon in Germany from 1994/95 to 2011/12

### Alien invasive predator – Trend in core areas

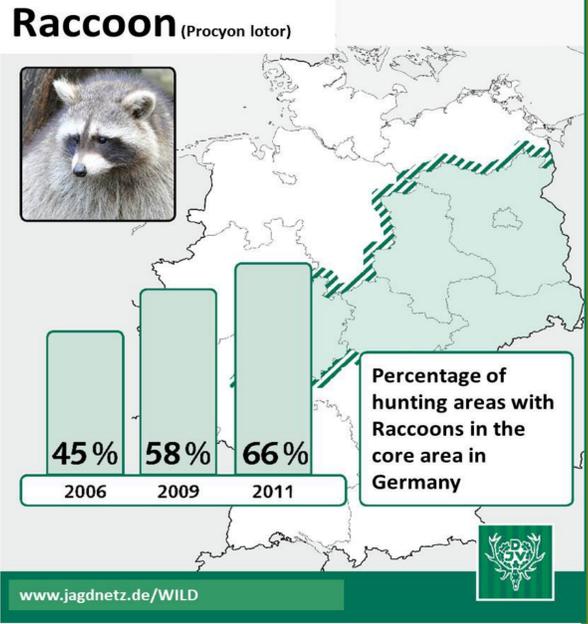


Fig. 1: Development of dispersal of racoon in central and east Germany (DJV 2012)

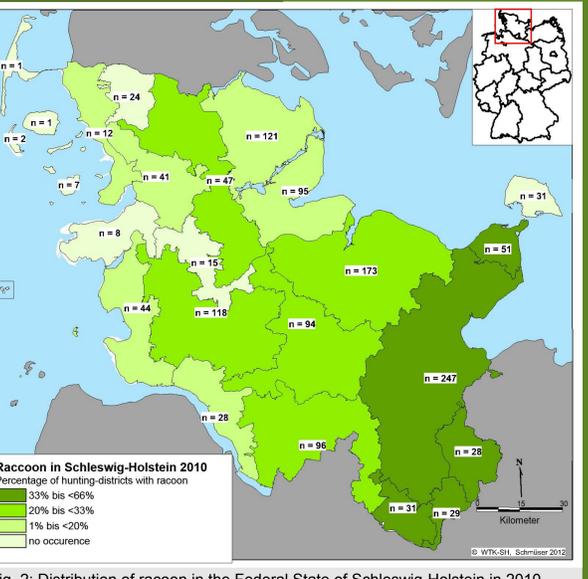


Fig. 2: Distribution of racoon in the Federal State of Schleswig-Holstein in 2010

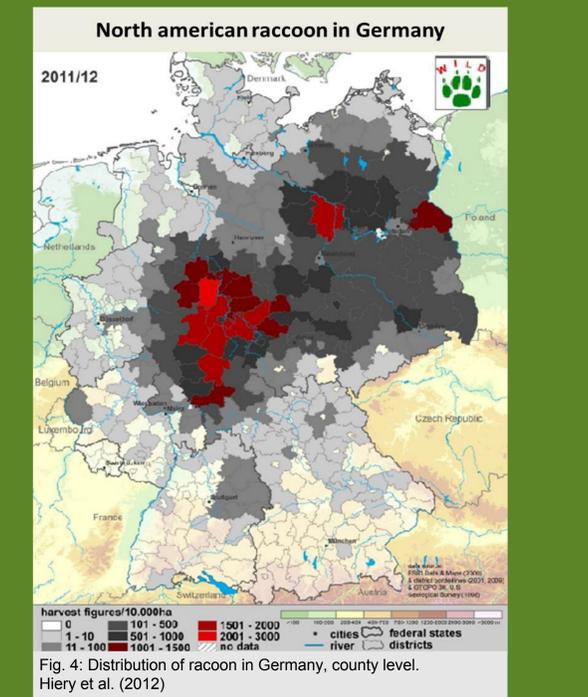


Fig. 4: Distribution of racoon in Germany, county level. Hiery et al. (2012)

**Literature**

Hiery, M., Keuling, O. & R. Klein (2013): Distribution of alien mammals in Germany - hunting bag of raccoon, raccoon dog and mink – Poster at the Wild Musteloid Conference (WildCRU in association with IUCN/SSC Otter and Small Carnivore Specialist Groups) at the Oxford University (UK), 18th -21st March 2013.

Schmitz, J., M. Richter & A. Nuy (2012): DJV-Handbuch Jagd 2013. Deutscher Jagdschutzverband e.V., Berlin.

MELUR (1995-2012): Jagd- & Artenschutzbericht Schleswig-Holstein; Ministerium f. Energiewende, Landwirtschaft und ländliche Räume Schleswig-Holstein; Kiel

Internet sources: [www.jagdnetz.de/wild](http://www.jagdnetz.de/wild); [www.wtk-sh.de](http://www.wtk-sh.de)

### Current distribution

The current results of area assessment show that both historic settlement areas of concentration can no longer be clearly distinguished from each other. According to this, the current main sightings of raccoons are located in central and eastern Germany but today the raccoon is found almost all over Germany. Our questionnaires used in the WILD and WTK-SH projects were used to compare the distribution of raccoon in whole of Germany in 2005/06 with the more actual survey in 2010/11. Concentrating on the core area of distribution in Germany our monitoring shows the raccoon becoming more and more common. While in 2005/06 the species was recorded in 45% of the hunting sites in 2010/11 about 66% confirm its regular occurrence (Fig. 1 & Fig. 4).

In the most northern Federal State of Germany, Schleswig-Holstein, the first raccoon occurrence was registered in the year 1956. Until the year 2002 the number of individual raccoons killed was less than 10 each hunting season, however, in the last decade an obvious increase to 65 raccoons registered yearly were documented in the game bag data. The population level of the raccoon in Schleswig-Holstein is still quite low in comparison to whole Germany but its distribution is becoming more and more widespread. This was shown in a special survey of martens and neozoics of the Wildlife Survey Schleswig-Holstein (Wildtier-Kataster Schleswig-Holstein) in 2010 (Fig 2).

### Future Dispersal

Racoon can be expected to occur in the future nearly all over Germany. On examination of the current hints resulting from our monitoring data, game bag statistics and several random sightings, a strong increase may be expected, including in the for the most northern part of Germany. Schleswig-Holstein may be seen as the most important land bridge for terrestrial animals to Scandinavia, so the growth of populations such as raccoon in northern Germany is a forerunner for the future trend in Denmark and other Scandinavian countries.

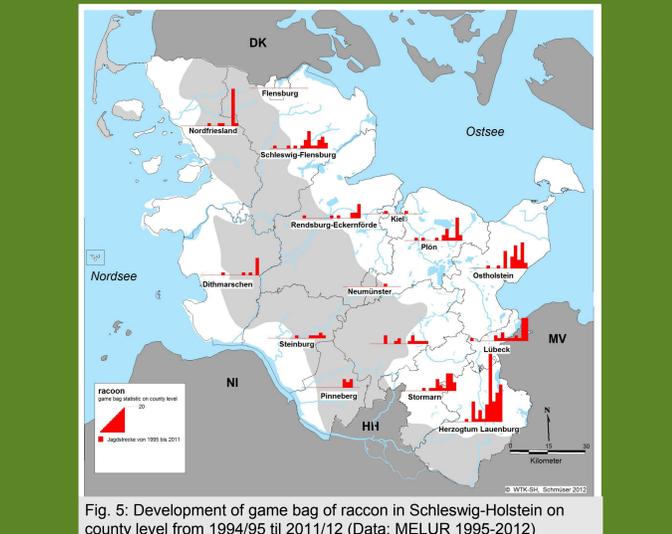


Fig. 5: Development of game bag of raccon in Schleswig-Holstein on county level from 1994/95 til 2011/12 (Data: MELUR 1995-2012)

### Management of IAS in Germany

Like most European states Germany ratified the Bern convention and other international treaties on biodiversity. International nature conservation conventions provide management and if possible regulation of invasive alien species but in reality the nature protection legislation is divided in 16 Federal States each with their own regulations. The same situation exists for hunting laws. Generally there is no clear responsibility for IAS. Furthermore the necessary cooperation between actors of hunting and nature protection is quite difficult. As a result of this the raccoon population has, in some areas, reached an almost unmanageable level.



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