Sniffing for nature:

Detection dog training in real life environment

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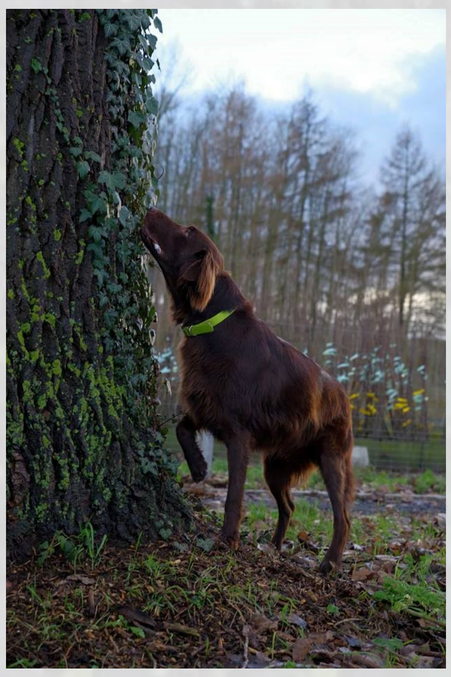


Scent detection dogs can provide a fast, reliable and non-invasive method for detection of a variety of target species for nature monitoring, offering a charismatic tool for communication. Therefore, it could be an ideal tool for the monitoring of N2000 species with a discrete lifestyle. However only limited experience is available in Europe. A volunteer program was set up where a professional scent dog trainer selected eight human-dog dyads and assisted them in scent training on different target species. We documented if the dogs could reliably detect the target species in a controlled as well as natural setting.

Material and methods: We interviewed the volunteers and trainer (Ellen Van Krunkelsven) to identify which problems were encountered when the training proceeded from a controlled setting to a natural environment. Each dog was trained on one or two target species. Training experience of the volunteers ranged from very restricted to professional level.

American bullfrog *(Lithobates catesbeianus)*

Scent Source: Living animal

Reason: Invasive exotic species → potential impact on native biodiversity

Name: Edgar
Breed: Basset Hound
Age: 2 years

Dog: No detection experience
Handler: Basic training experience

Name: Pippa
Breed: Belgian Malinois
Age: 3,5 years

Dog: Some detection experience
Handler: Professional detection instructor

Name: Niro
Breed: Belgian Malinois
Age: 4,5 years

Dog: Trained detection dog *(cash)*
Handler: Professional detection instructor

Bat fatalities at wind turbines

Scent Source: Carcass

Reason: Find out which species, how many, when and where → protective measures

Name: Lima
Breed: Crossbreed
Age: 3 years

Dog: No detection experience
Handler: Basic training experience

Name: Jules
Breed: Goldendoodle
Age: 5 years

Dog: No detection experience
Handler: Professional dog trainer

Stag Beetle *(Lucanus cervus)*

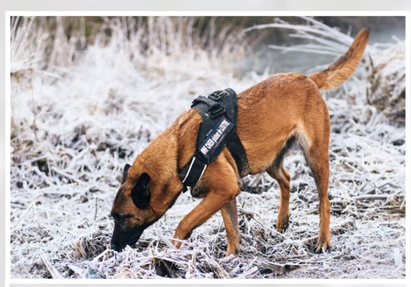
Scent Source: Larvae, living animal

Reason:
- Monitoring of N2000 species
- Endagered in Flanders
- Small scattered populations

Eurasian otter *(Lutra lutra)*

Scent Source: Scats

Reason:
- Monitoring of N2000 species
- Critically endangered in Flanders
- Discrete lifestyle → nocturnal



Name: Smokey
Breed: Belgian Malinois
Age: 3,5 years

Dog: Trained detection dog
Handler: Professional detection instructor

Hazel dormouse *(Muscardinus avellanarius)*

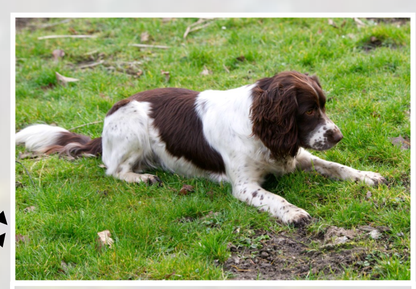
Scent Source: Nesting material

Reason:
- Monitoring of N2000 species
- Critically endangered in Flanders
- Distribution limited to one region

European hamster *(Cricetus cricetus)*

Scent Source: Nesting material

Reason:
- Monitoring of N2000 species
- Critically endangered in Flanders
- Protection program: habitat and reintroduction



Name: Kikki
Breed: English Springer Spaniël
Age: 1,5 years

Dog: Some detection experience
Handler: Detection training experience + dog trainer

Lion's mane mushroom *(Hericium erinaceus)*

Scent Source: Mycelia

Reason:
- Endangered in Flanders
- Indicator of quality of N2000 forest habitats

Name: Otte
Breed: Labrador Retriever
Age: 3,5 years

Dog: Mantrailing experience
Handler: Dog trainer + mantrailing experience

European pine marten *(Martes martes)*

Scent Source: Scats

Reason:
- Monitoring of N2000 species
- Critically endangered in Flanders
- Discrete lifestyle → nocturnal
- Scattered habitat in Flanders

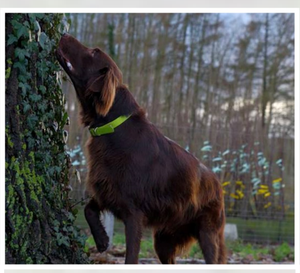
Name: Raya
Breed: French Water Dog
Age: 2,5 years

Dog: No detection experience
Handler: Animal behavioral therapist

Hermit beetle *(Osmoderma eremita)*

Scent Source: Larvae, scats

Reason:
- Monitoring of N2000 species
- Critically endangered in Flanders
- Highly specialised lifestyle → tree hollows



Name: Wietse
Breed: Flatcoated Retriever
Age: 5 years

Dog: Trained detection dog *(Boar taint)*
Handler: Detection training experience + dog trainer

Results: All dogs of varying breeds, sexes and ages, manage to correctly discriminate the target species, with inter-individual differences in learning speed and drive. Detection problems in the field relate to species-specific natural history traits of the target species such as depth of hiding under ground, seasonality of markings and ease of possible detection of the target by humans.

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