CONSERVATION DETECTION DOGS
OPERATIONAL ADVANTAGES

HAR

Why We Use Conservation Detection Dogs

Efficiency

Efficiency: Dogs located **75%** of targets compared to just **20%** by humans in wind farm studies.

Speed: Surveys can be completed **4x faster** (40 mins vs 2 hrs 46 mins).
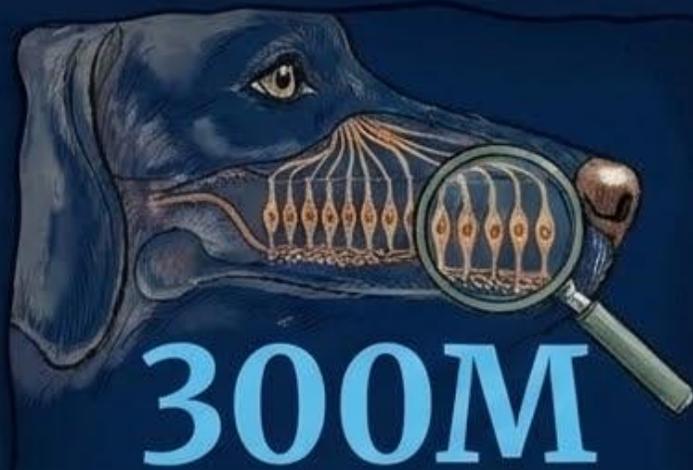
Non Visual: Capable of detecting newts up to **20cm underground**, where visual surveys fail entirely.

The Olfactory Advantage

The biological hardware of the dogs nose
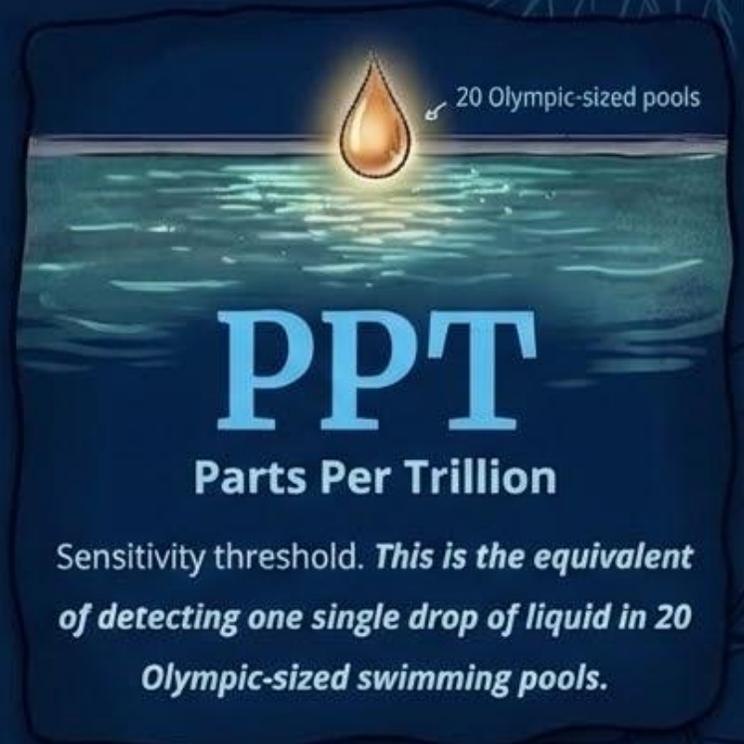
300M
Olfactory Receptors
Compared to 5 million in humans

40x
Brain Processing
In Dogs: *Their olfactory bulb* is massive relative to their *brain size—about 40 times larger than ours proportionally.*

PPT
Parts Per Trillion
20 Olympic-sized pools
Sensitivity threshold. *This is the equivalent of detecting one single drop of liquid in 20 Olympic-sized swimming pools.*

Quotes From Studies

88.7% of cases outperformed other monitoring methods.

Conservation detection dogs outperformed other monitoring methods, such as camera traps and experienced human surveyors. This was the key finding of a systematic review by Grimm-Seyfarth et al., which analysed 611 cases comparing the efficacy of detection dogs to traditional monitoring techniques.

- Grimm-Seyforth et al., Systematic Review

Comparative Success

"In this study a human searcher located six of 90 scats (6.7%) compared to the conservation detection dog thot located 89 of 90 bilby scats (98.9%)."

- Thompson et al., 2020

Efficiency Multiplier

"Detection dogs in wildlife searches are generally 4-12 times better than that of experienced human surveyors."

- PLOS One, 2023

Maximising Outcomes

"Dogs can maximise research and management outcomes... by reducing sampling bias and finding obscured samples."

- Cristescu et al., 2015

What Can We use CDD's For?

These are some examples of their use, though it is certainly not limited to these applications. They are, however, the most common.
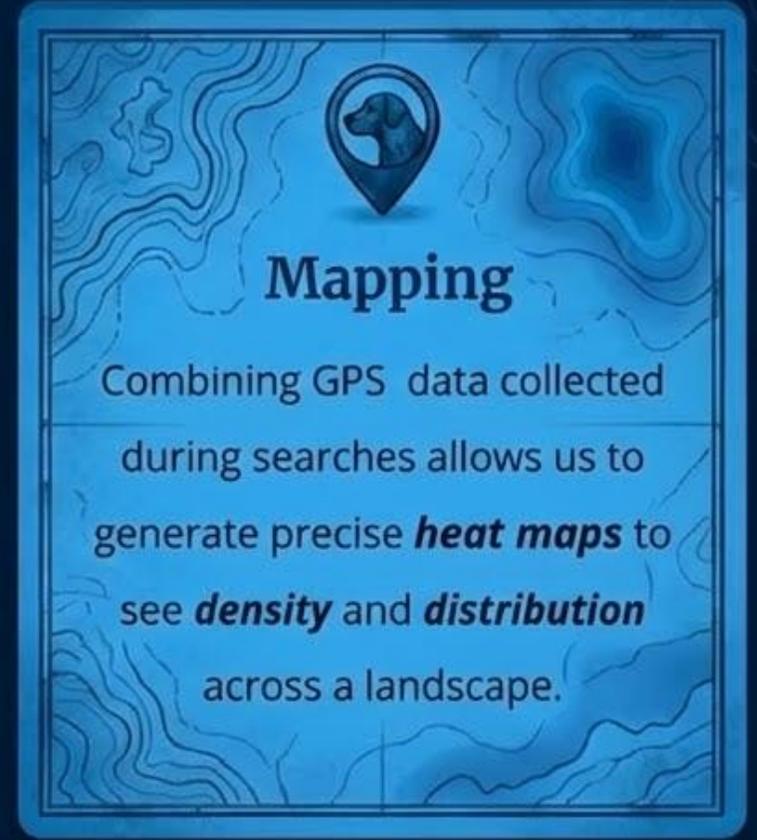
Scat Detection

- It confirms a species' *recent presence*.
- This data is great for *targeted trapping*.
- It is one of the most common way to *prove presence or absence*.

Tracking & Trailing

Following fresh scent trails to

- locate *live animals* ie rats.
- Identify *active dens*.
- map *movement corridors*.

Mapping

Combining GPS data collected during searches allows us to generate precise *heat maps* to see *density* and *distribution* across a landscape.

DETECTION DOGS: UNLOCKING CONSERVATION INSIGHTS

PRESENCE & ABSENCE

Declaring Presence
Dogs can find rare or elusive species' signs (scat, hair, nests) over large areas, confirming their presence when visual surveys fail.

Declaring Absence
When dogs consistently fail to find signs in a suitable habitat after a thorough search, it provides strong evidence of a species' absence.

ABSENT   PRESENT

EARLY DETECTION

Invasive Species
Dogs can detect low densities of invasive species before they become established, allowing for rapid response and eradication.

Disease Outbreaks
Dogs can be trained to detect the scent of diseases in wildlife (e.g., in scat or carcasses), enabling early intervention.

EARLY STAGE   LATE STAGE
                   (Harder to Manage)
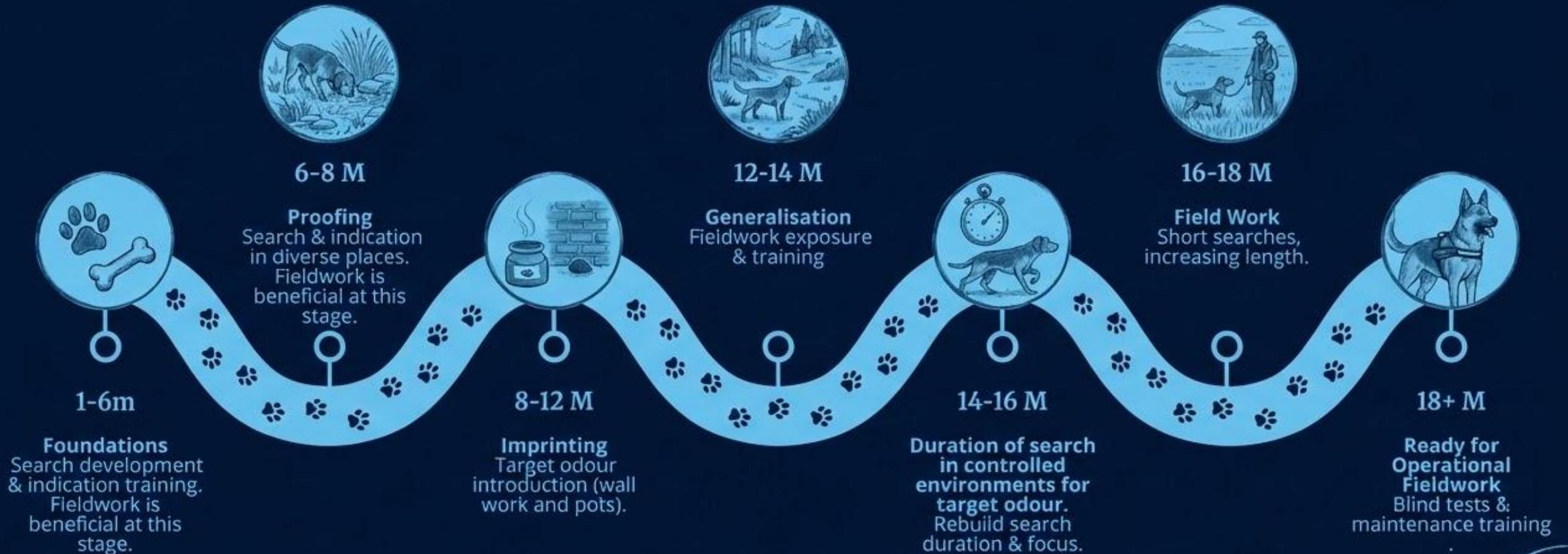
NON-INVASIVE APPROACH

Minimal Disturbance
Dogs detect scent traces without needing to capture, handle, or observe the animals directly, reducing stress on wildlife.

Genetic Sampling
The samples found (like scat) can provide DNA for population genetics, health, and diet studies without invasive procedures.

INVASIVE METHOD   NON-INVASIVE METHOD

The Training Journey

6-8 M

Proofing
Search & indication in diverse places. Fieldwork is beneficial at this stage.

12-14 M

Generalisation
Fieldwork exposure & training

16-18 M

Field Work
Short searches, increasing length.

1-6m

Foundations
Search development & indication training. Fieldwork is beneficial at this stage.

8-12 M

Imprinting
Target odour introduction (wall work and pots).

14-16 M

Duration of search in controlled environments for target odour. Rebuild search duration & focus.

18+ M

Ready for Operational Fieldwork
Blind tests & maintenance training.

When we start the imprinting stage, we must decide on the target odour the dog will work with, choosing one that plays to its specific strengths. Until this point, however, all dogs are trained and prepared in the exact same way, regardless of their future target odour.

Statistic Examples Of Efficiency And Value

Japanese Knotweed
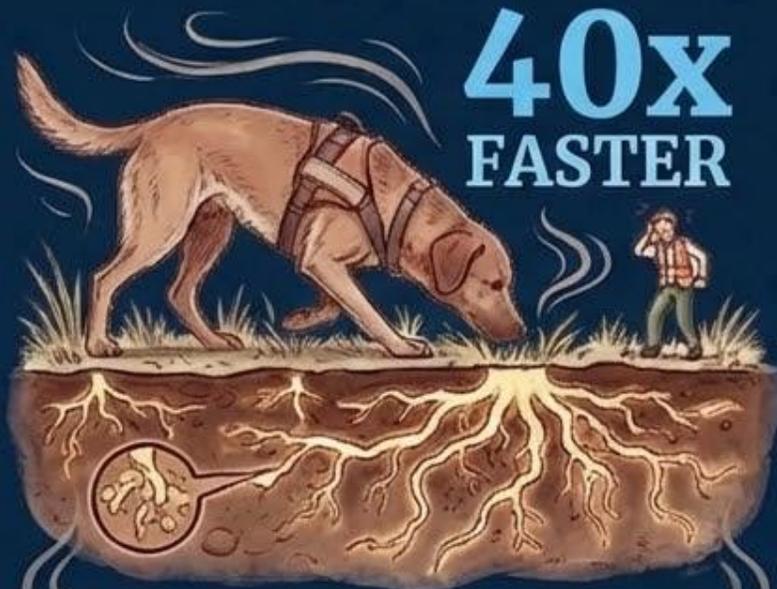
40x FASTER

40x FASTER than human surveyors

Dogs can detect underground rhizomes (roots) before the plant breaks the surface.

Water Leak Detection

£44,000 SAVED

£SAVED SAVED per year

Dogs like 'Snipe' detect minute traces of chlorine in treated water, locating costly leaks.

Species ID

Pine Marten   Fox

6 MONTHS vs 2 DAYS

Humans struggle to distinguish scats visually. Dogs do it instantly, providing rapid, accurate species identification.

UK Success Stories

Great Crested Newts

87% ✓
Accuracy Rate

20cm Deep

The Challenge: Detecting cryptic newts hidden underground or in stone walls.

The Result: Wessex Water's dog 'Freya' achieved an **87% accuracy rate**, detecting newts up to 20cm deep in soil—a feat impossible for human surveyors relying on sight alone.

Water Voles

Critical Data for Habitat Protection

The Challenge: Surveying dense, overgrown riparian zones in the North York Moors.

The Result: Detection dog 'Reid' successfully located water vole latrines in vegetation so thick that human surveyors struggled to even access the bank, providing critical data for habitat protection.