

# Unowned & Feral Dogs and Wildlife

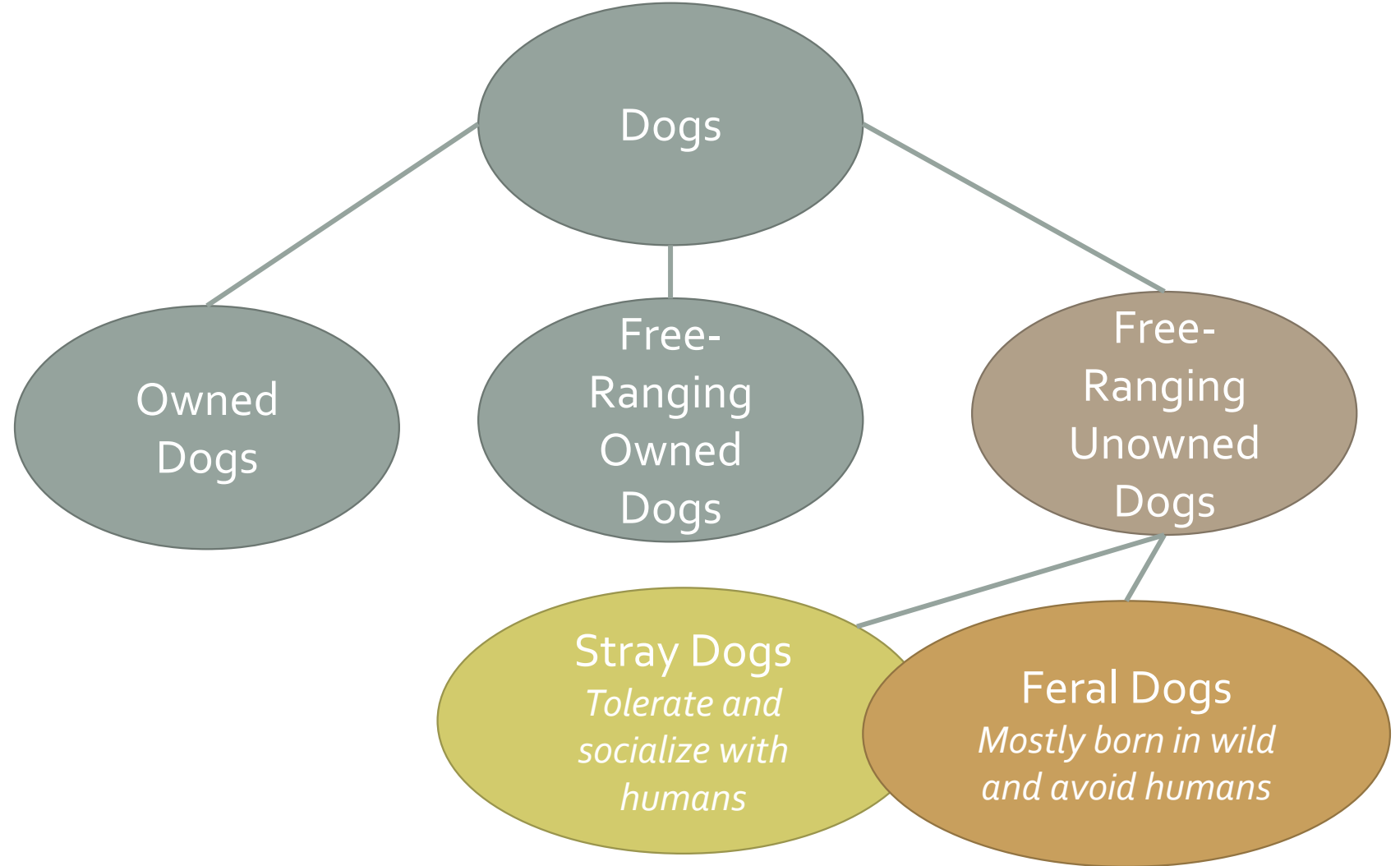
our «best friends» are becoming a treat to wild life



## The Difference Between

Dogs

Feral Dogs



**Feral Dogs** are «group of animals that have been together long enough that their innate behaviors, physiology, or anatomy have changed from the original domesticated version»

## Major Impacts of unowned & Feral Dogs on Biodiversity

- Studies suggest that **after cats and rats, unowned and feral dogs are the third most harmful** human-introduced species for the wild-life. Because:
  - They contributed to the **extinction of almost 12 animal species** including wild birds:



New Zealand Quail



Marcano's Solenodon



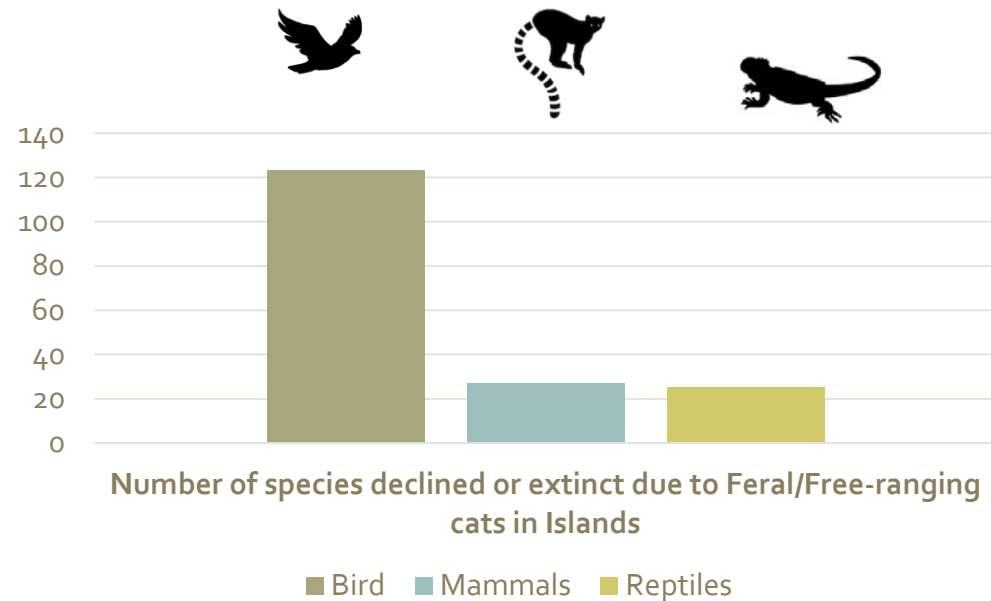
Thick-billed Ground-dove

- They **currently threaten nearly 200 species worldwide to extinction**, some of which are critically endangered.

# Feral and free-roaming Cats are actually a bigger problem



- Feral & free-roaming cats **cause of at least 63 species extinctions- 40 bird, 21 mammal, 2 reptile species** -according to a 2016 analysis of invasive species impacts
- A 2011 review of wildlife reveals that the impact of Feral/free-roaming cats is worse in Islands: **they cause the decline or extinction of 123 species of songbirds, parrots, seabirds and penguins; 25 species of reptiles and 27 species of mammals, including a lemur and a bat.**



Picture: <https://cernbilim.blogspot.com/2019/04/avustralya-2-milyon-kediyi-neden.html>

(2) Doherty, T. S. Et. Al. (2016). Invasive predators and global biodiversity loss, *113*(40), 11261–11265. <https://doi.org/10.1073/pnas.1602480113>

(3) Medina, F. M. Et al. (2011). A global review of the impacts of invasive cats on island endangered vertebrates. *Global Change Biology*, *17*(11), 3503–3510. <https://doi.org/10.1111/j.1365-2486.2011.02464.x>

# Why loosing species or biodiversity is a concern?

**Biodiversity is essential for ecosystem services and hence for human well-being.**

- **Biodiversity is variety of life on Earth**
- Biodiversity includes diversity within species (genetic diversity), between species (species diversity), and between ecosystems (ecosystem diversity)
- **Ecosystem services: benefits to humans by nature from healthy ecosystems.** For example: food (sea food, crops), energy (wind, biofuel), recreational services (ecotourism), climate regulation (flood control, C cycling)
- **Biodiversity loss disrupts the functioning of ecosystems,** making them more vulnerable to perturbations and less able to supply humans with needed services (ecosystem services)

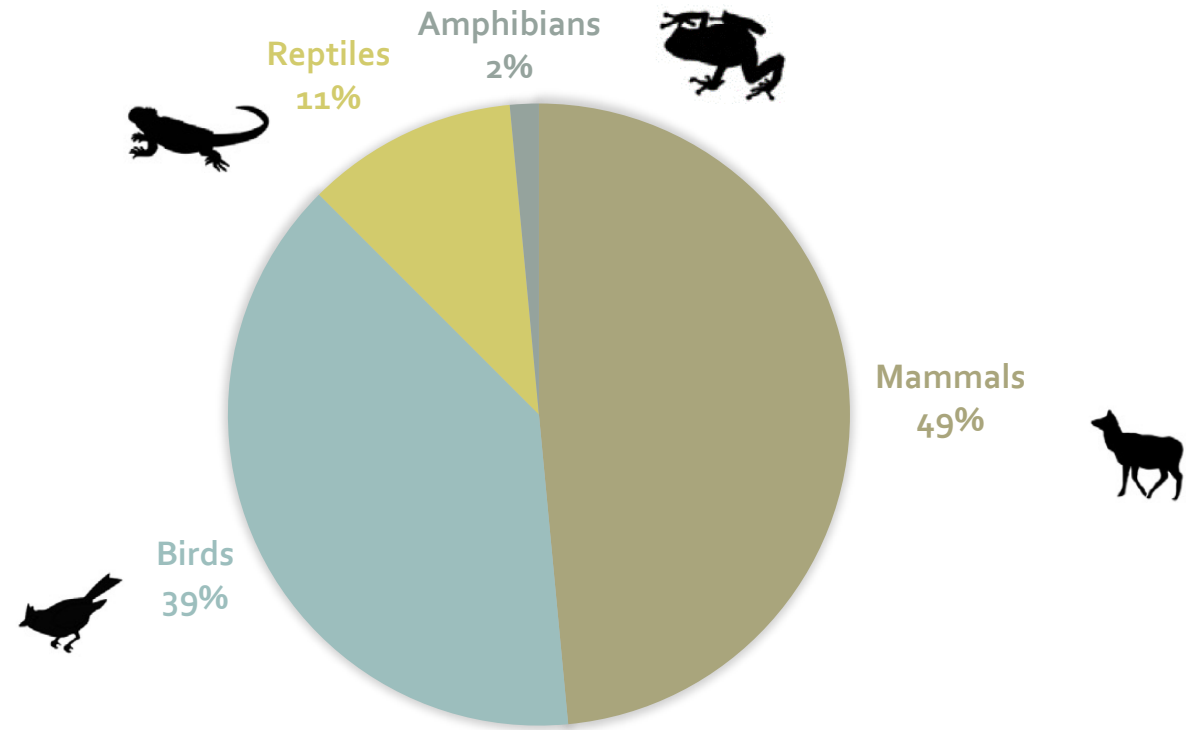


200 Species are under threat by Feral & unowned Dogs



Feral and free-ranging dogs threatens 200 species to extinction, 30 are classed as critically endangered, 71 endangered, and 87 vulnerable in the IUCN Red List of at-risk species.

IUCN : The International Union for Conservation of Nature



Percent of extinct or threatened vertebrate species (n:200) that are, or were, negatively impacted by domestic dogs *Canis familiaris*

# How did Feral & unowned Dogs become such a strong stressor?

There are **1.000.000.000** dogs world-wide and their population is increasing

Free-roaming dogs account for about **75%** of the global dog population

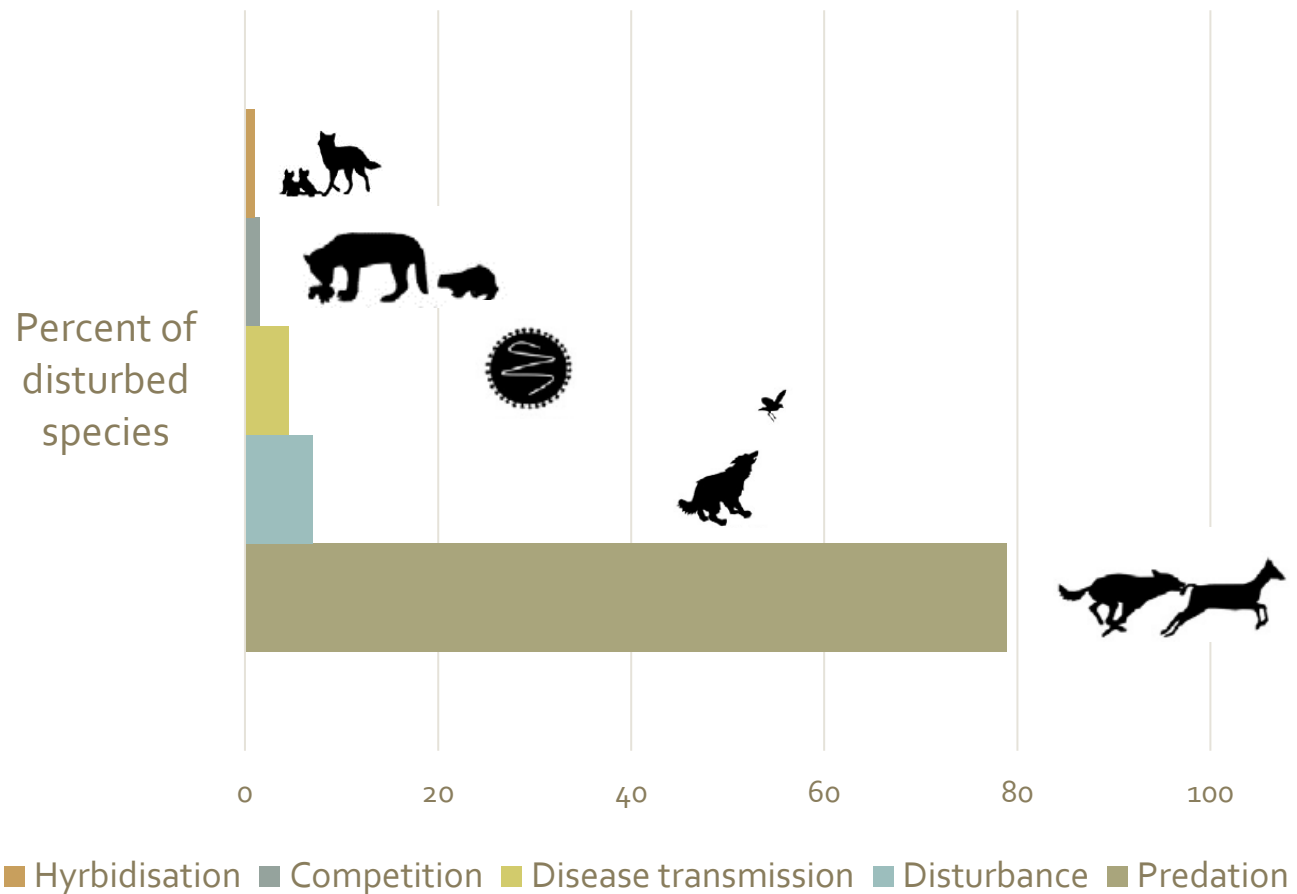
**Feral & Unowned Dogs as agents of disturbance:**

Frequency of dog encounters with wild-life stems from **3 factors:**

- (1) Human commensals:** Feral dogs benefits from humans and we are everywhere.
- (2) Roam large areas:** Feral dogs can inhabit large areas and they are mobile. Therefore, they encounter with many habitats and species.
- (3) Year-around residents:** Feral dogs are present during whole year time. So, their disturbance is continuous.

# Means of Feral & unowned Dogs disturbance

- As predators feral & unowned dogs **kill wild animals, disturb wildlife, transmit diseases, compete** with other predators for prey, and also **interbreed** with closely related species.





# Feral & unowned Dog Predation Case Studies



**Predation by the feral & unowned dogs is the main issue for the threatened species** (IUCN Red List categories, Vulnerable to Critically Endangered).

- One dog potentially **killed 500 of an estimated population of 900** kiwi in Waitangi Forest in New Zealand since they are defenseless.
- Studies have shown that **dogs contributed to the extinction of at least eight species of birds**, including the New Zealand quail.
- In an Australian woodland park, **there was a 35% reduction in bird diversity and 41% reduction in abundance** due to the presence of leashed dogs.
- **Dogs recorded harassing Mongolian ungulates:** gazelle, saiga and argali.

# Feral Dog Disturbance Case Studies



- Birds show high-energetic response to dogs; they flee by flying, climbing, swimming or diving. Studies recorded vigilance, absence of nest/young, **distraction, reduction/cessation of foraging, aggression in Magpies and lapwings.**

# Feral & unowned Dogs Disease Transmission Case Studies



- **Highly endangered Ethiopian wolf** (*Canis simensis*) has suffered a number of **rabies** epidemics transmitted from dogs over the last 20 years **that reduced the population by around 75%**
- **Canine distemper virus** was transmitted from domestic dogs to threatened Lake Baikal seals (*Phoca sibirica*), resulting in further population declines of the seals
- **Rabies and canine distemper** in the Serengeti caused the loss of all African wild dog packs and 30% of lions, as well as affecting many other species

References: (1) Randall, D.A et al. 2006. An integrated disease management strategy for the control of rabies in Ethiopian wolves. *Biol. Conserv.* 131, 151–162.

(2) Mamaev LV, et al. 1995. Characterization of morbilliviruses isolated from Lake Baikal seals (*Phoca sibirica*). *Veterinary Microbiology* 44: 251–259.

(3) Cleaveland, S. et al., 2007. The conservation relevance of epidemiological research into carnivore viral diseases in the Serengeti. *Conserv. Biol.* 21, 612–622

(4) Picture: Endangered Ethiopian wolf by A.L. Harrington from: <https://www.iucnredlist.org/species/3748/10051312>

# Hybridization Case-Studies



- **Hybridization between dogs and grey wolves** has been investigated due to species conservation concerns
- Hybridization between dogs and coyotes has been frequently recorded
- **Hybridization is especially a concern for endangered species such as Ethiopian wolf**

References: (1) Vilā, C., Wayne, R.K., 1999. Hybridization between wolves and dogs. *Conserv. Biol.* 13, 195–198.

(2) Picture from: <https://www.ranker.com/list/new-species-coywolf/eric-vega> (3) Freeman, C.R., Shaw, J.H., 1979. Hybridization in canis (Canidae) in Oklahoma. *Southwestern Nat.* 24, 485–499

(4) Gipson, P.S., Sealander, J.A., Dunn, J.E., 1974. The taxonomic status of wild canis in Arkansas. *Syst. Zool.* 23, 1–11. (5) Sillero-Zubiri, C., Gottelli, D., 1994. *Canis simensis*. *Mamm. Species* 0, 1–6.

# Competition Case Studies



- Camera traps from a polish study found that dogs enter caves used by lynx to take their preys
- A 2016 study suggested competition between grey wolves and dogs.

## Feral & unowned dogs also affect humans



- **Economic cost** due to feral dogs :
  - **United States: \$620 million annually.** Includes the treatment for rabies infection and livestock depredation.
  - **Asia: \$52 million** for rabies vaccine program, **\$10.6 million** for livestock depredation, **\$179.8 million** and **\$251.7 million** for treating human infections
- **Direct bites/Kills: Six children killed** by packs of feral dogs in Sitapur, India in 2018. At least two dozen more youngsters have been injured.
- **Attacking livestock:** On average, over 33,000 wild animals and 280 livestock are killed by free-ranging dogs on Polish hunting grounds annually.
- **Transmission of diseases, particularly rabies.**

**Feral dogs are the cause for 99% of the 59,000 annual human fatalities due to rabies** reported worldwide, predominantly in Asia and Africa.

References: (1) World Health Organization , Health Topics, Rabies [https://www.who.int/health-topics/rabies#tab=tab\\_1](https://www.who.int/health-topics/rabies#tab=tab_1); Picture: J. Jordan

(2) Hughes and Macdonald, 2013, A review of the interactions between free-roaming domestic dogs and wildlife, *Biological Conservation* 157 (2013) 341–351

(3) Pimentel, D., Zuniga, R., Morrison, D., 2005. Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecol. Econ.* 52, 273–288

(4) Wierzbowska A.I. et al., 2016, Predation of wildlife by free-ranging domestic dogs in Polish hunting grounds and potential competition with the grey wolf, *Biological Conservation* 201 (2016) 1–9

(5) <https://news.sky.com/story/six-children-killed-by-packs-of-feral-dogs-in-sitapur-india-11362736>

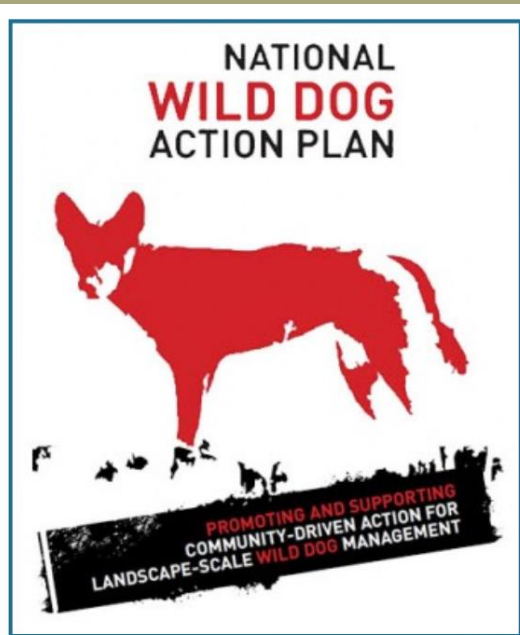
# Management Measures for Stray and Feral Dogs In Europe



## Stray/ Feral Dog Management Across Europe (World Society for the Protection of Animals Member Countries-31 European Country)

- 1. Protecting Owned Dogs to become Stray/Feral:**
  - 1. Licensing and Registration:** In 22 countries it is compulsory for dogs to either be licensed or registered
  - 2. Identification: the implantation of a microchip** or microchip collar in 24 countries, tattooing in 18 countries
- 2. Stray/Feral Control:**
  - 1. Shooting:** 5 countries use municipal hired contractors to shoot stray/feral dogs (Albania, Armenia, Azerbaijan Republic, Moldova and Ukraine)
  - 2. Catch, neuter, release:** 6 countries catch stray/feral dogs and release after neutralization (Greece, Bosnia-Herzegovina, Bulgaria, Italy, Malta, Serbia and Spain)
  - 3. Catch, provide shelter for definite time, find owner or euthanize:** 22 counties catch feral/stray dogs and hold them in shelters for certain time (range 3 – 60 days). Then stray/feral dogs **find new home or euthanized**. Countries vary in their adoption of euthanasia protocols .

# Strict Measures in Australia



## Wild dogs are considered as pests and killed in Australia.

- On 7 June 2017 the National Biosecurity Committee endorsed the Australian Pest Animal Strategy 2017–2027
- A five year National Wild Dog Action Plan was developed through the former Vertebrate Pests Committee (now the Environment and Invasives Committee) and currently implemented throughout Australia
- There are laws in every state and territory that address the need to treat all animals humanely, whether they are considered pests or not.
- People managing wild dogs are obligated to use control methods that minimise any potential pain, fear or distress.
- These obligations encompass a wide range of activities from the capture and relocation of animals, **through to poisoning, shooting or trapping.**



# Feral Dogs Attack Cases From Turkey



2010- A women attacked by 15-20 feral dogs at METU Forest and hospitalized



2015- A woman (Erinç Pütün) killed by the feral dogs while she was feeding them at Eskişehir



2018- 30 sheep killed by feral dogs at Muş

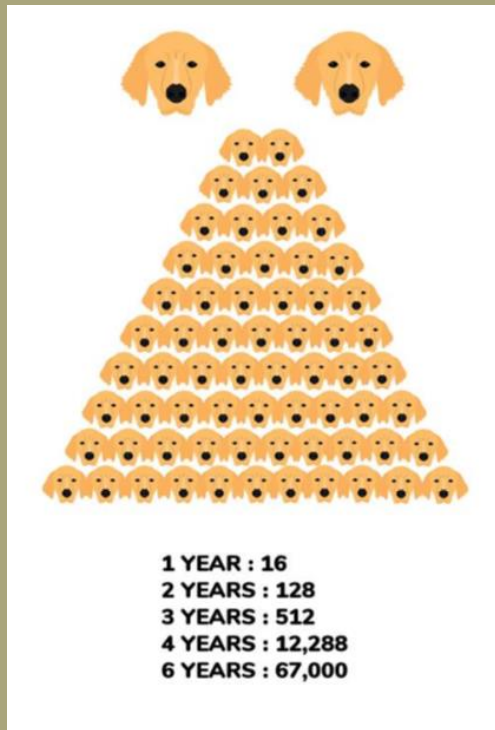


2020- 6 children is attacked by feral dogs and a 2 year old boy died at Şanlıurfa

What is the solution for this canine conundrum?

- **Killing compains are not advised by World Health Organisation (WHO) and World Society for the Protection of Animals (WSPA) if there is efficient management organisation with time, budget and workforce.**
- **Because they** create an empty habitable area that is quickly filled by an influx of new dogs from other areas.

# The Solution: Managing Dog Population



- Current guidelines for dog population management recommend a combination of vaccination and sterilisation
- **Humane dog management programmes :**
  - **requires time, budget and workforce**
  - gradually reduce dog populations
  - involves the spaying and neutering of dogs to restrain the current population, and mass vaccination to prevent diseases and disease transformation

References: (1) WHO, WSPA, 1990. Guidelines for dog population management. World Health Organisation, Geneva. World Society for the Protection of Animals, London.

(2) OIE, 2011. Stray dog population control, In: OIE Terrestrial Animal Health Code., World Organisation for Animal Health.

(3) Picture: <https://www.resqct.org/resq-updates/sterilising-your-pet>