

Dog Population Management

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World
Organisation
for Animal
Health

Organisation
mondiale
de la santé
animale

Organización
Mundial
de Sanidad
Animal





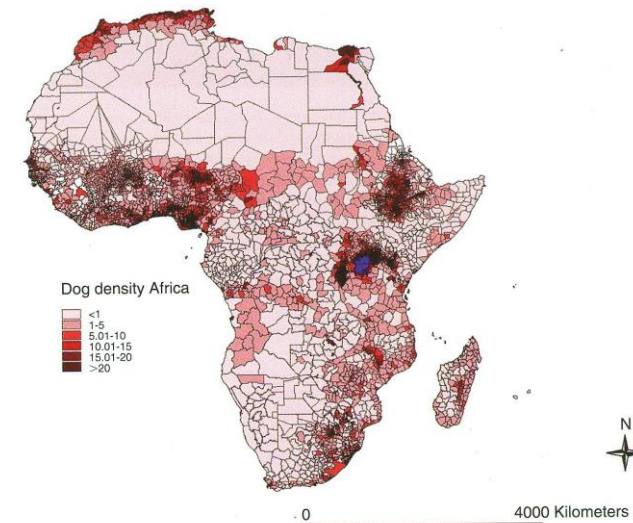
Background

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- Dog (*Canis lupus familiaris*) were domesticated between 16,000 – 34,000 years ago and live with humans
- Estimated 700 - 987 million dogs in the world
- In Africa, human: dog ratio = 12.3 (95% CI: 11.2 - 20.6)
= 121.95 million dogs?
 - Urban: 12.2 (95% CI: 12.5 - 37.1)
 - Rural: 7.4 (95% CI: 5.7 - 9.7)
- Ownership: Owned dogs Vs Unowned dogs
- Free-roaming dogs (75% of the dog population)

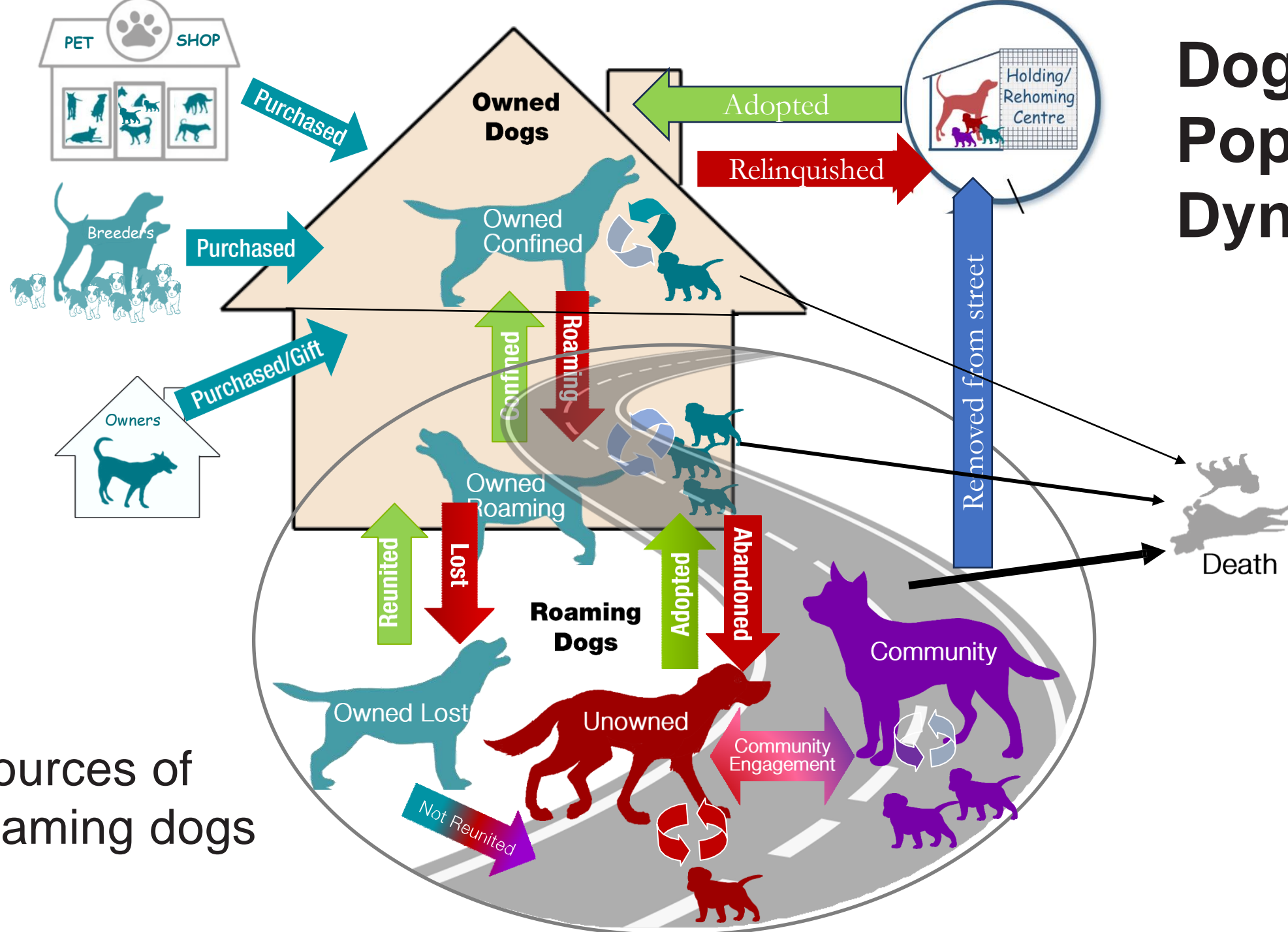


Dog density in Africa



Knobel et al., 2007

Dog Population Dynamics



- Sources of roaming dogs



Impact of *free-roaming dogs*

- *Free-roaming dogs* have impact on Public Health and Safety
 - Disease transmission (300 zoonotic diseases transmission from dogs to humans)
 - Dog bites and rabies – 59,000 human rabies deaths/year (29 million people receive PEP every year following dog bites)
 - Road traffic accidents
 - Environmental contamination
 - Dog barking and noise
 - Others ...
- *Free-roaming dogs* have impact on wildlife and livestock
 - Disease transmission
 - Predation and extinction of endangered species – extinct 11 vertebrate sp and threaten 188 more species
- Poor health and welfare conditions of dogs



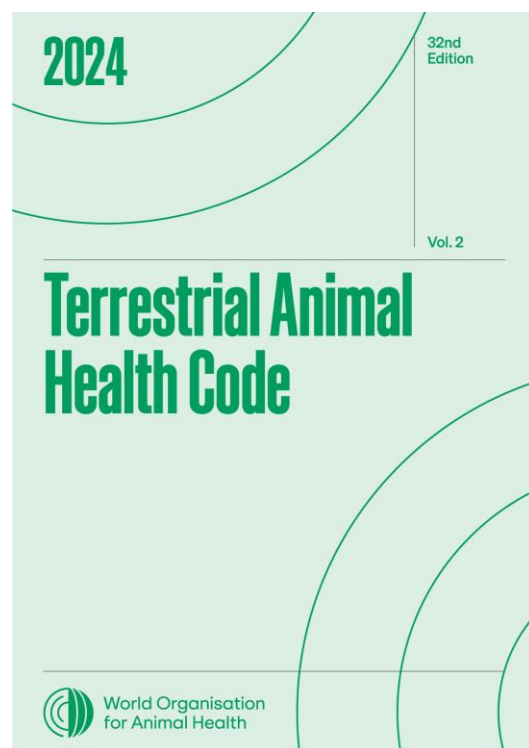
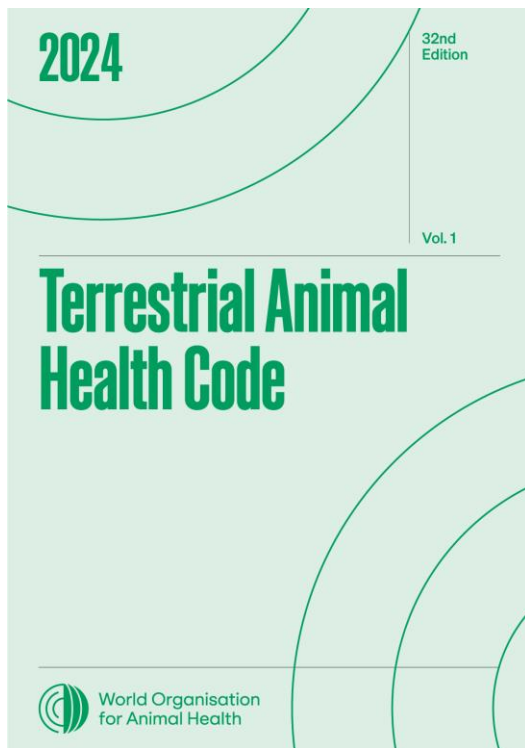
CHAPTER 7.7

STRAY DOG POPULATION CONTROL



CHAPTER 7.7.

DOG POPULATION MANAGEMENT

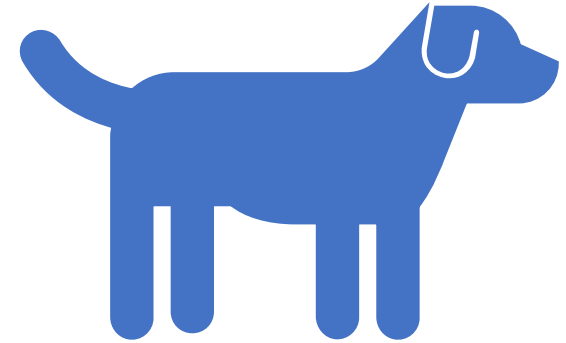


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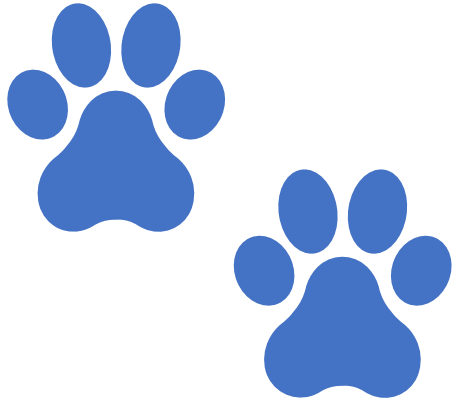
Article 7.7.2 Definition

- **Dog population Management (DPM)** means a combination of measures that enhance the ***care of dogs*** and influence ***dog population dynamics*** to sustainably ***improve dog health and welfare, public health and safety***, and the ***environment***, while taking into consideration related economic benefits and costs





Article 7.7.5 DPM objectives



- promote and establish responsible dog ownership;
- improve health and welfare of dog populations;
- reduce the number of free-roaming dogs;
- stabilise the dog population by reducing turnover;
- reduce risks to public health and safety - dog bites, traffic accidents, and zoonotic diseases
- contribute towards eradicating dog-mediated human rabies;
- reduce nuisance caused by free-roaming dogs;
- prevent harm to livestock and other animals;
- prevent illegal trade and trafficking of dogs



Article 7.7.7 Competent Authority for DPM

- DPM is everyone responsibility – multi-sectoral group
- DPM is the responsibility of a Competent authority
- Governance
 - Competent Authority
 - Develop a national action plan



Article 7.7.9 Regulatory framework

- Legislation that addresses DPM is a key for sustainable implementation of DPM

owners' obligations regarding the principles of *responsible dog ownership*, including *animal welfare*;

animal welfare obligations of authorities;

registration and identification of dogs in an *animal identification system*;

registration, or authorisation and licensing of dog breeders and sellers;

registration, or authorisation and licensing of dog shelters, rehoming centres and holding facilities;

licensing of *veterinarians*;

licensing preparation, use and sale of *veterinary medicinal products*;

preventive measures against rabies and other zoonotic diseases;

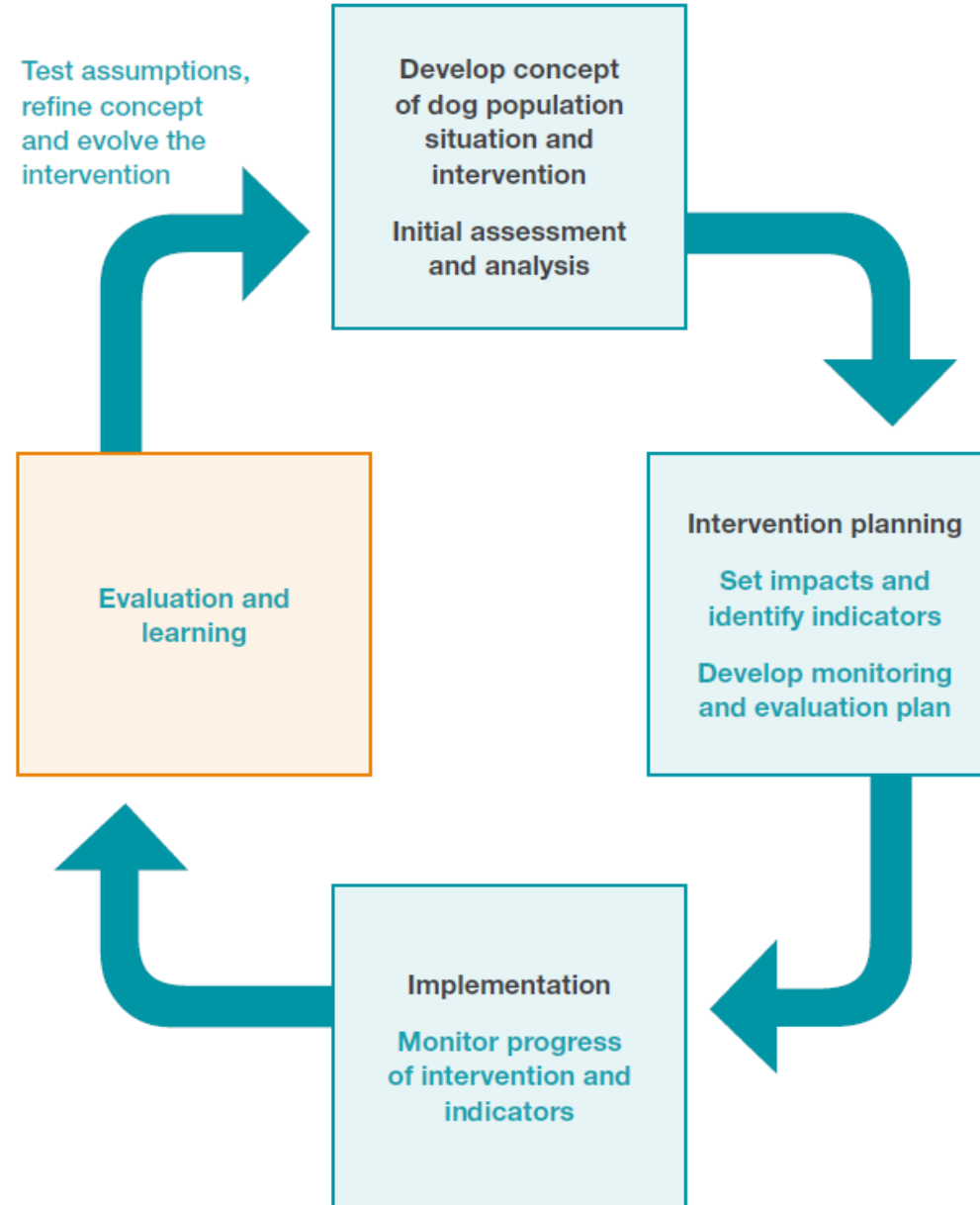
dog movements and trade at international and national levels;

waste management.



Article 7.7.10 Event-based DPM program development

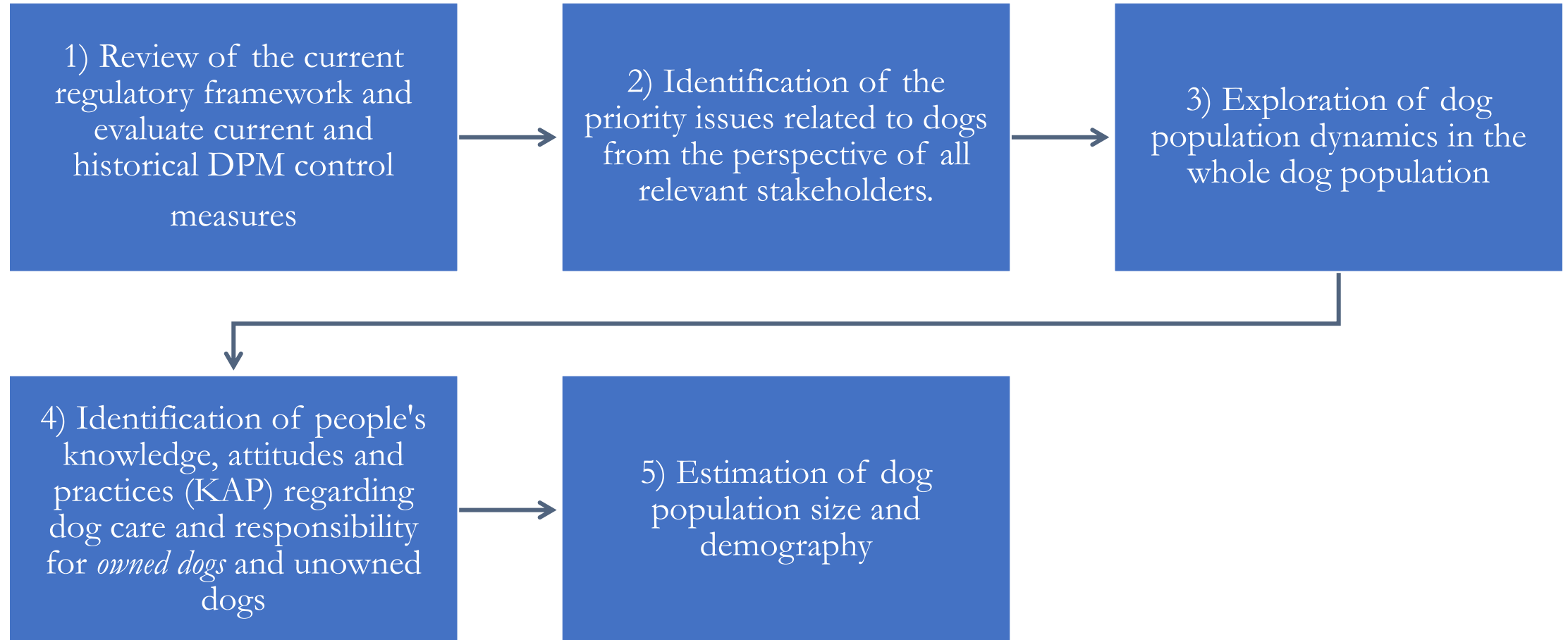
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Article 7.7.11 DPM programme assessment and planning

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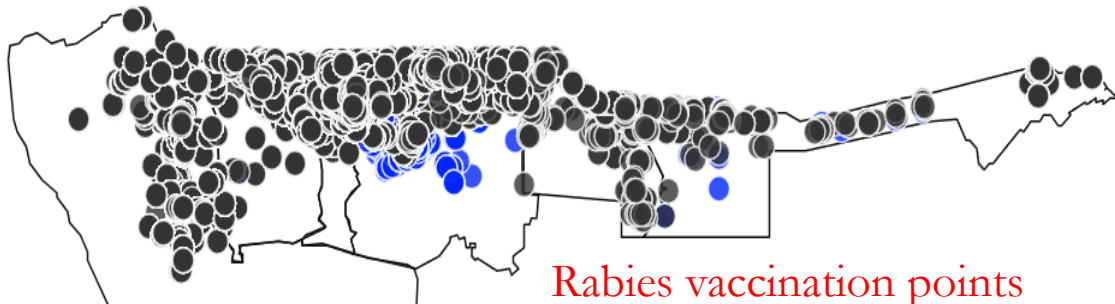
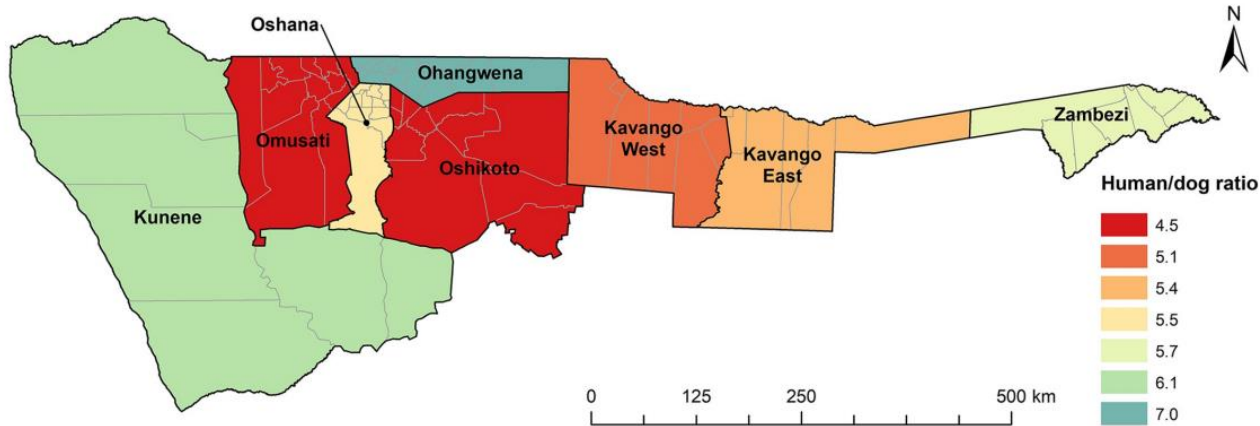


PLOS NEGLECTED TROPICAL DISEASES

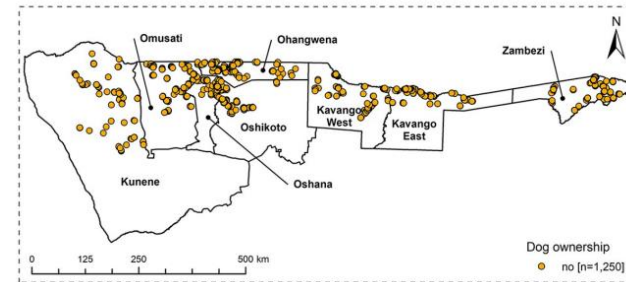
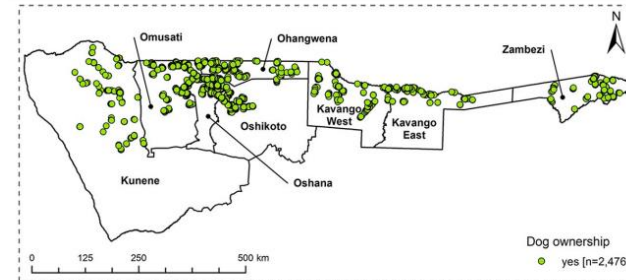
RESEARCH ARTICLE

Dog ecology and rabies knowledge, attitude and practice (KAP) in the Northern Communal Areas of Namibia

Tenzin Tenzin¹, Emmanuel H. Hikufe², Nehemia Hedimbi³, Rauna Athingo⁴, Mainelo Beatrice Shikongo⁵, Thompson Shuro⁶, Johannes Ipinge⁷, Nelson Herman⁷, Matias Naunyango⁸, Frenada Haufiku⁹, Josephat Peter¹⁰, Laina Hango¹⁰, Sara Gottlieb¹¹, Kenneth Shoombe⁴, Nicolai Denzin¹², Frank Busch¹³, Frederic Lohr¹⁴, Moetapele Letshwenyo¹, Gregorio Torres¹⁵, Conrad M. Freuling^{16*}, Thomas Müller¹⁶, Albertina Shilongo²



Rabies vaccination points

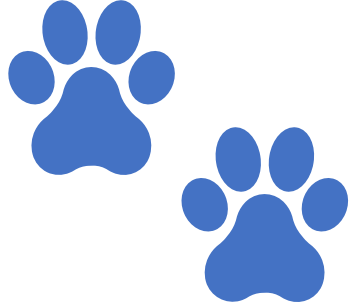


<https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0011631>



Key Indicators

- *Owned dog* population size, demographics and *responsible dog ownership*
 - *vaccination* status, sterilisation, *registration*, identification, level and method of confinement
- *Free-roaming dog*
 - population density,
 - demography (age, sex, sterilisation, lactating females and puppies)
 - welfare (e.g. body condition score, presence of a skin problem)
- *Prevalence* of zoonotic diseases in both the animal and human populations
- KAP of communities relating to the *free-roaming dog* population and *responsible dog ownership*
- Dog population movements from owned to unowned dogs or from confined to *free-roaming dogs*
- Adoption or reuniting facility performance including intake, adoption rates, welfare state of dogs in their care, mortality and *euthanasia* rates
- Dog bites reported to health centres or number of rabies PEP courses provided to dog bite victims
- Cost incurred by the public health authorities for PEP
- Number and nature of complaints about dogs to local government authorities
- Compensation costs relating to dog-related damage to people, livestock or property





Article 7.7.13 Recommendations for DPM measures

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- A combination of the following measures should be used for a successful DPM programme:
 - 1) registration and identification of dogs;
 - 2) regulation of commercial dog breeding and sale;
 - 3) control of national and international dog movements;
 - 4) promoting responsible dog ownership;
 - 5) reproductive control;
 - 6) Catch, Neuter, Vaccinate and Return;
 - 7) reuniting and adoption;
 - 8) access to veterinary care;
 - 9) environmental controls;
 - 10) education on safe dog-human interaction



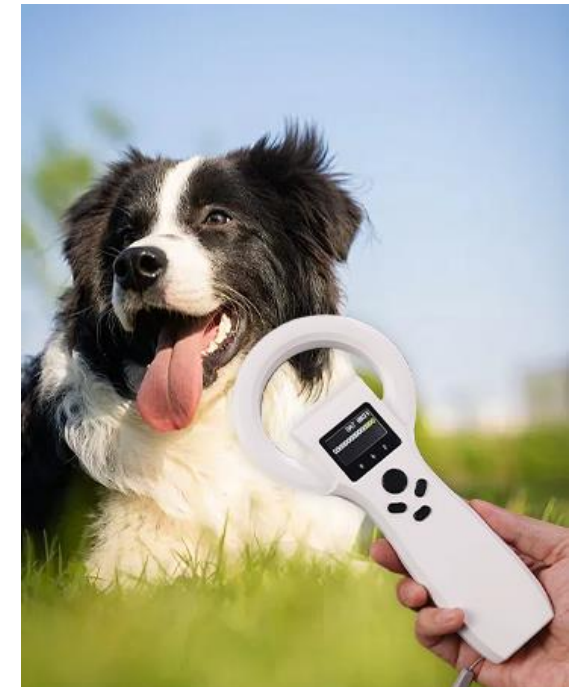
Articles 7.7.14. to 7.7.24. and should be implemented in accordance with the national context and local circumstances



Article 7.7.14 Registration and identification of dogs

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- *Competent Authorities* should ensure that an ***animal identification system*** is established for ***dog registration***
- **Outcomes of *registration* and *identification* of dogs include the following:**
 - ✓ support for the enforcement of legislation through proof of ownership;
 - ✓ improvement of the success rate in reuniting lost dogs with their owners;
 - ✓ enabling traceability in commercial breeding and sale;
 - ✓ encouragement of *responsible ownership* behaviours;
 - ✓ support for an animal health programme - rabies *vaccination* and traceability.





- *Competent Authorities* should require mandatory *registration* of all breeders and sellers
- ***Outcomes of regulating commercial breeding and sale as a DPM measure include:***
 - protection of dog health and welfare;
 - avoidance of abandonment;
 - transparency in dog breeding and sales

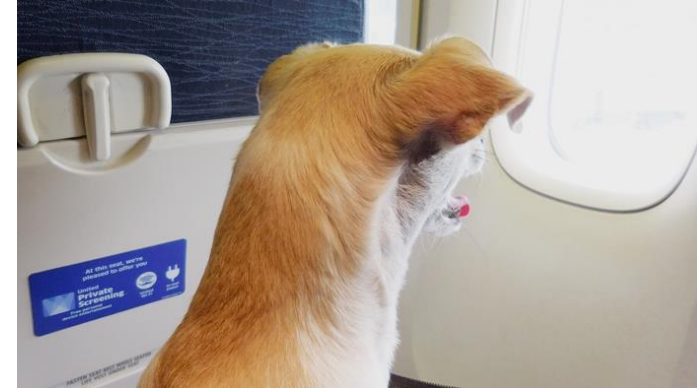




Article 7.7.16 Control of national and international dog movements

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- International movements of dogs (import and export) should comply with trade measures, import or export procedures and veterinary certification in accordance with Chapters 5.11., 7.2., 7.3., 7.4. and 1.1.
- Movement of dogs within a country should be under the responsibility of the owner, with the following outcomes:
 - reducing the *risk* of contagious diseases spread;
 - protecting public health and safety;
 - protecting *wildlife* and livestock;
 - protecting dog *welfare*.





Article 7.7.17 Promoting responsible dog ownership

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- *Owning a dog* is a choice and the benefits of *dog ownership* come with *responsibilities*
- Outcomes of promoting *responsible dog ownership* through education and enforcement of national and local regulations:
 - improving the health and welfare of dogs;
 - supporting the human-animal bond;
 - minimising the *risk* that dogs pose to household members and the community – reduce dog bites;
 - reducing the number of dogs allowed to roam.
 - prevent from rabies transmission





Article 7.7.18 Reproduction control

- Outcomes of reproduction control:
 - preventing the birth of unwanted puppies;
 - reducing the size of the *free-roaming dog* population
- Focus on controlling reproduction of females - source of unwanted and free-roaming dogs
- Methods of controlling reproduction.
 - surgical sterilization;
 - non-surgical fertility control - chemical and immunological approaches;
- Surgical sterilisation must be carried out by a veterinarian and must include good animal handling, good surgical technique
- Use of chemicals/drugs to have appropriate safety, quality efficacy





- Sterilization improved the overall welfare of the dogs, reduced disease incidences and reduced dog bite incidences in humans

Downloaded from <http://veterinaryrecord.bmj.com/> on May 10, 2015 - Published by group.bmj.com

Paper

Paper

Decline in human dog-bite cases during a street dog sterilisation programme in Jaipur, India

J. F. Reece, S. K. Chawla, A. R. Hiby

Human dog-bite injuries are a major public health problem, particularly where there are large populations of free-roaming or street dogs. Dog bites are also the major source of human rabies infections. There is little information on the means to reduce these injuries. Monthly human animal-bite injury records from January 2003 to June 2011 were obtained from the main government hospital in Jaipur, India. The data were analysed and compared with records of pregnancy in street dogs in Jaipur obtained from a street dog sterilisation programme. Human animal-bite injuries showed a seasonal pattern which followed by approximately 10 weeks the seasonal peak of street dog breeding. The number of human animal bites has declined significantly since 2003. It is concluded that a street dog sterilisation programme can reduce human dog-bite injuries by reducing the maternal protective behaviour of the street dogs, as well as reducing the total size of the roaming dog population.

Preventive Veterinary Medicine 113 (2014) 152–156



Contents lists available at ScienceDirect

Preventive Veterinary Medicine

journal homepage: www.elsevier.com/locate/prevetmed



Short communication

Disease control through fertility control: Secondary benefits of animal birth control in Indian street dogs



Andrew J. Yoak^{a,*}, John F. Reece^b, Stanley D. Gehrt^c, Ian M. Hamilton^{a,d}

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Preventive Veterinary Medicine 98 (2011) 215–220



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Stray dog population health in Jodhpur, India in the wake of an animal birth control (ABC) program

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^c University of Calgary, Department of Ecosystem and Public Health, Faculty of Veterinary Medicine, TRW 2D22, 3280 Hospital Drive NW, Calgary, Alberta T2N 2Z6, Canada

^d Ontario Ministry of Natural Resources, Wildlife Research and Development Section, Trent University, DNA Building, 2140 East Bank Drive, Peterborough, Ontario K9J 7B8, Canada



Article 7.7.19 Catch Neuter Vaccinate Return

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‘**Catch, Neuter, Vaccinate and Return**’ provides an approach to controlling the reproduction of unowned dogs as a source of *free-roaming dogs*



CATCH

- Dog are caught from the community in a humane way and transported to the clinic.

NEUTER (Sterilize, spay, castrate)

- The dog is then sterilized so they are no longer able to reproduce.
- The surgery is performed by highly skilled veterinarians.
- Castration in males, and ovario-hysterectomy in females.

VACCINATE

- Each dog is vaccinated against rabies, making them healthier and protecting the community.

RETURN

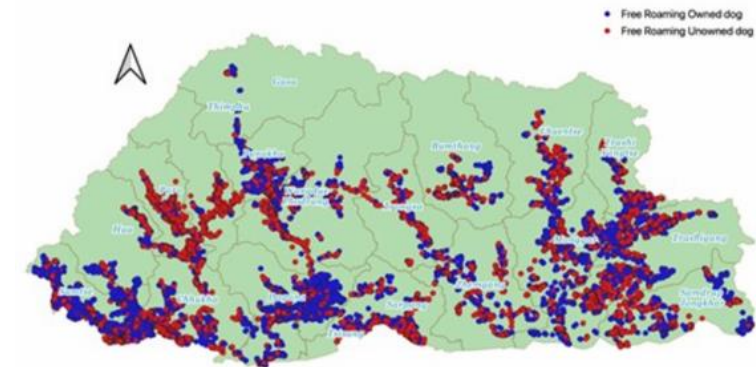
- Once recovered, fully awake and able to fend for itself on the streets again, the dog is then released back to the same location where it was caught.

Bhutan achieves 100 percent sterilization of all free-roaming dogs in the country

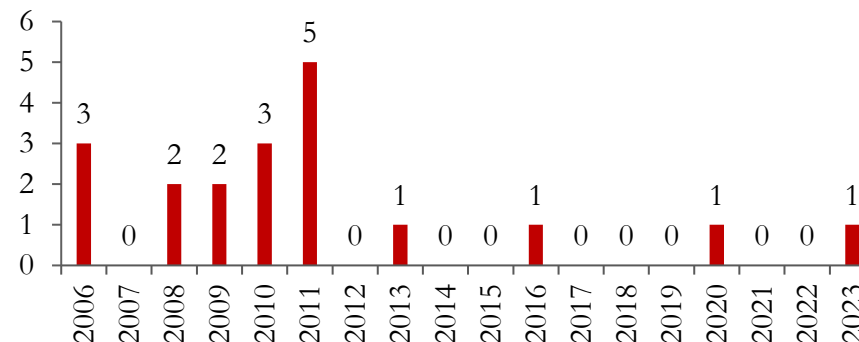
- CVNR approach adopted in 2009 and continued until 2018
 - Over 92,000 dogs sterilized and vaccinated against rabies
 - 71.606 million BTN spent (USD 0.853 million) 50:50 between BTN and HSI
- Nationwide Accelerated Dog Population Management and Rabies Control Programme” (NADPM & RCP) –a flagship programme 2021-2023
 - 61,680 dogs sterilized (91.2% unowned and 8.8% owned).
 - 32,544 pet dogs registered and microchipped
 - 61,331 dogs vaccinated against rabies (91.1% unowned and 8.9% owned).
 - Cost 295 million BTN (USD 3.514 million); 100 percent government financing

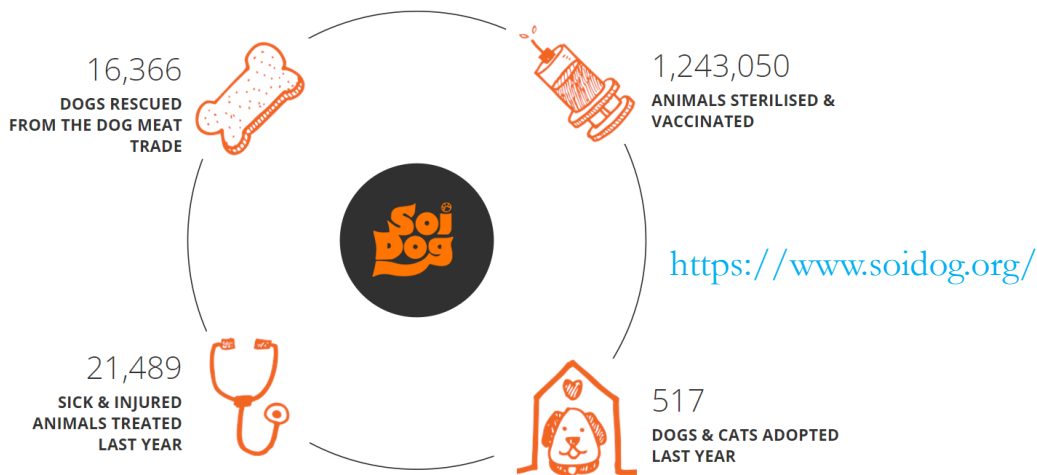


Nationwide Free-Roaming Dog Survey 2021







human rabies deaths





Article

Impact Assessment of Free-Roaming Dog Population Management by CNVR in Greater Bangkok

Elly Hiby ^{1,*} , Tuntikorn Rungpatana ² , Alicja Izydorczyk ², Craig Rooney ³, Mike Harfoot ⁴  and Robert Christley ⁵ 

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² Soi Dog Foundation, Phuket 83110, Thailand

³ Dogs Trust Worldwide, London EC1V 7RQ, UK

⁴ Vizzuality, Madrid 28010, Spain

⁵ Dogs Trust, London EC1V 7RQ, UK

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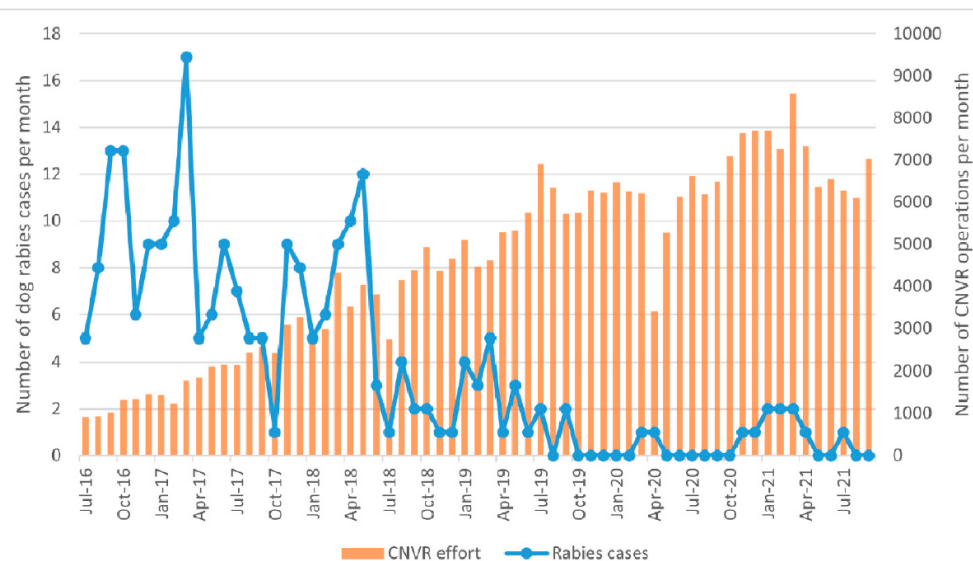


Figure 7. Dog rabies cases and the number of CNVR operations (sterilisation and vaccination) per month over the 5 years of the CNVR project.

> 5-year CNVR intervention in Greater Bangkok found:

- reduction in free-roaming dog density,
- reduction in dog rabies cases
- improvement in dog-human relationships.
- free-roaming dogs are coming from other sources, presumably from abandoned or lost owned dogs. \
- Effective DPM require interventions that target abandonment and loss of owned dogs in addition to CNVR.

- *Free-roaming dogs* can be removed to housing facilities for **reuniting with their owners**, or **adopted**
- Have to confirm that reuniting and adoption are probable and achievable before developing reuniting and adoption facilities – will overwhelm the facilities
- If acceptable to the local community, 'CNVR' may provide an alternative approach.
- If *euthanasia* of these unwanted animals is the only option, the procedure should be conducted in accordance with Article 7.7.27.





Article 7.7.21. Access to veterinary care

- Access to veterinary care positively impacts animal health, *animal welfare* and public health
- Preventive veterinary care is central to zoonotic disease control and *surveillance*, rabies *vaccination*, deworming (e.g. for *Echinococcus granulosus*) and prevention and control of other pathogens.

Article 7.7.22. Environmental controls

- Waste management to control free roaming dog population

Article 7.7.23. Education on safe dog-human interaction

- Dog bites in humans (40% of dog bites in children)
- Dog bites responsible for 99% of rabies transmission in humans
- Awareness education on safe interaction with dogs



Article 7.7.24 Specific conditions for DPM

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- **Article 7.7.25. Dog capture and handling**
- Humane capture and handling aim to prevent animal suffering and *distress*
- *Competent Authorities* should develop appropriate legislation and training to promote humane handling and enforce regulations against cruel methods, such as the use of tongs and uncovered wire loops
- Handlers should use minimum *restraint* to provide the dog with opportunities to exert choice and control, so that they cope better with the handling.
- **Article 7.7.27. Euthanasia**
- *Euthanasia* of dogs, used alone, is not effective for DPM

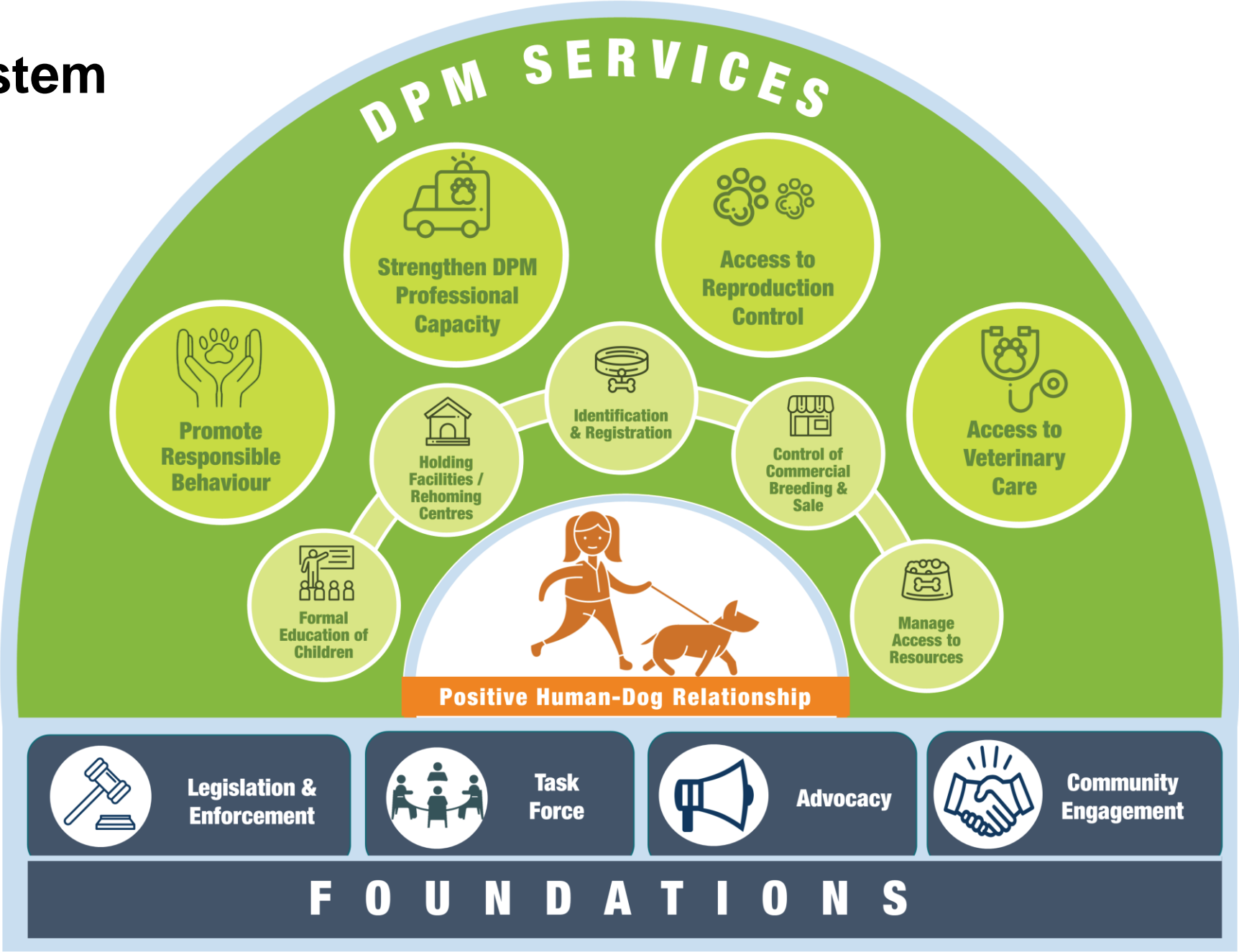


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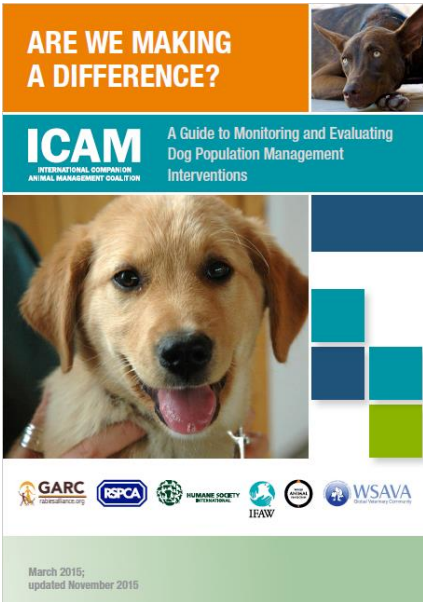
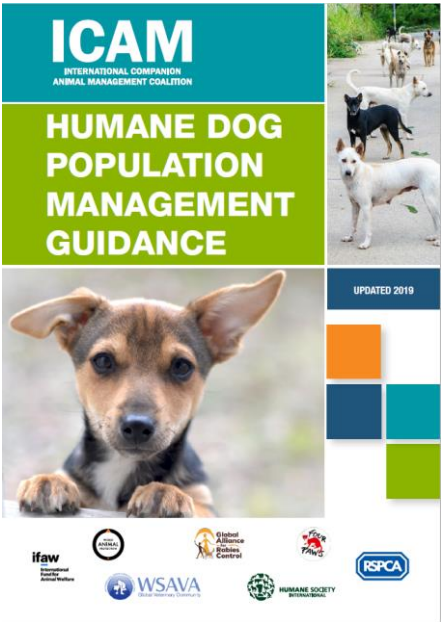
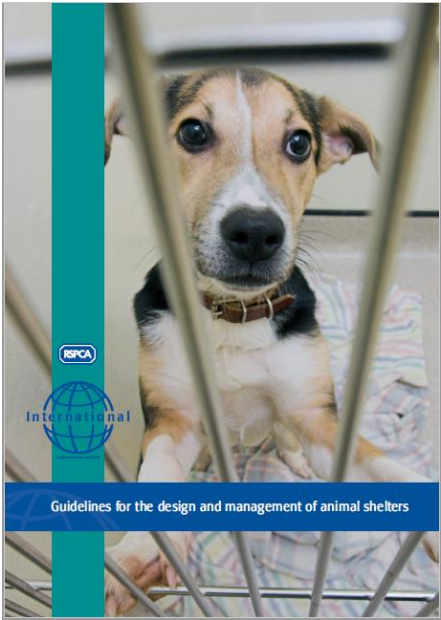
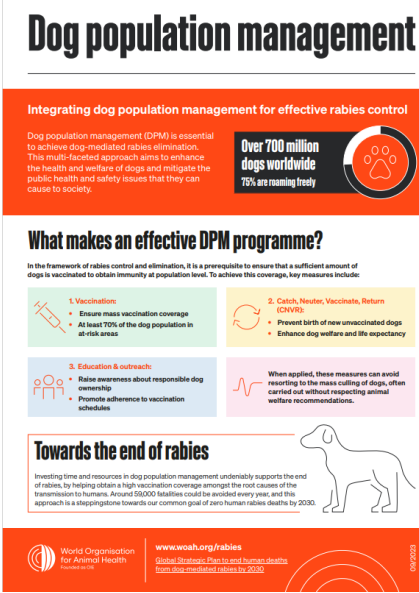
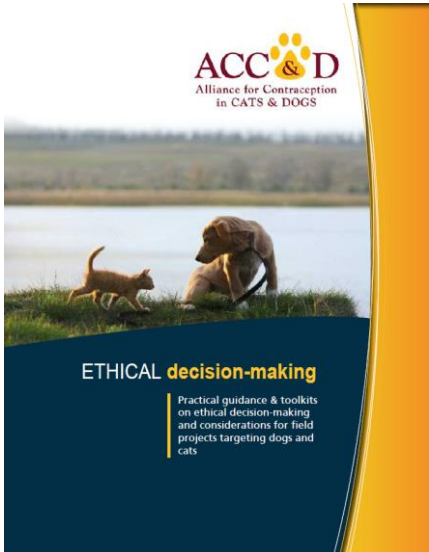
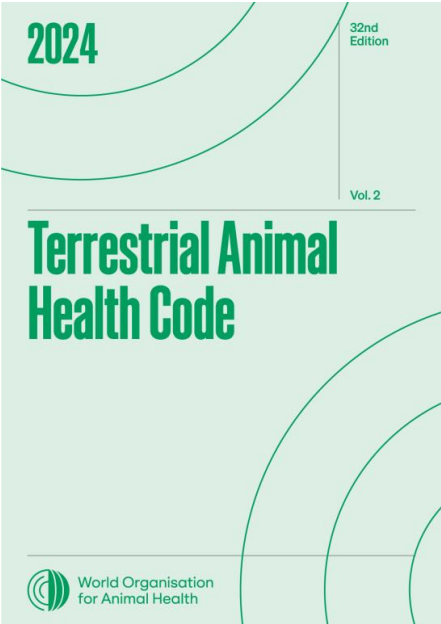
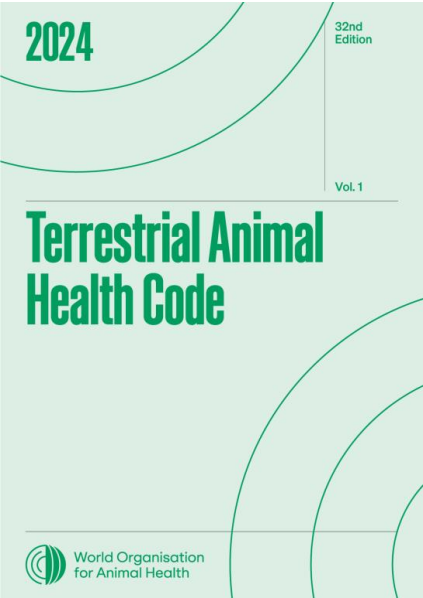
Article 7.7.26. Dog housing

- *Competent Authorities* should develop minimum standards for the housing
 - Facilities
 - Management
 - Assessment

DPM system



Some useful guidelines on DPM



Thank you!

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