

Key points:

- The vast majority of dogs and cats on Earth live in poorer, undeveloped countries
- At least 75% of dogs and even higher levels of the world's cats are feral
- The majority of dogs and cats live in cultures that do not share western values regarding animals
- TNR is not a realistic possibility outside of rich nations, and the failure to produce a solution will continue to lead to large numbers of deaths

From the journal *Theriogenology*, "about 75% of the worldwide dogs, often referred to as stray, are free to roam and reproduce. This creates locally overabundant populations of animals that are often in poor health and have a high turnover because of low survival rates... Roaming dogs in many parts of the world do not live beyond 2 or 3 years because of malnutrition, disease, and poor health" (61).

Studies of free-roaming dogs in places as divergent as rural Bali, Indonesia, and urban Johannesburg, South Africa have demonstrated that dog populations are human dependent and are "regulated by human demand....growth of dog populations is not a general phenomenon" (62) The study authors "observed either no population growth or a progressive decline in population size" during the 3 year study period. Simply put, free-roaming dog populations are fixed in size based on food provided by humans.

If feral animal populations maintain carrying capacity, with regular turnover every 2-3 years, this creates enormous numbers of animals that live and die during a given timeframe. Once again, although

animal welfare advocates frequently look at the total population, it may be even more important how many animals actually live and die over a decade or other chosen timeframe. Considering the quality of life that the world's street animals live, this is problematic.

To add insult to injury, the future will only get worse as the world's human population shifts from rural to urban. In the Western world, urbanization and cultural shifts have improved the quality of life for animals, but this is decidedly not the case in the urban Third World. From a study in the journal *Nature*, "rapidly growing dog population is strongly associated with poor urbanization and household waste disposal" (19). I.e. Increasing access to garbage dumps fuels population growth, and the situation on the reservation reflects this very clearly with larger numbers of dogs at dumps, both because that is where the food is, and from humans abandoning unwanted dogs there.

Is the answer TNR?

TNR clearly has not been shown to work outside of the United States, with examples provided in the previous chapters. Importantly, the articles promoting spay / neuter for population reduction in free-roaming animals confound their results via adopting out many animals, up to 80% of the original study population and as many as 7 times the original number in long term studies (given continual population replacement) (34, 63). Even if one were to disregard this as a major source of bias interpreting any results, this "science" operates within a vacuum. Rescue and animal advocacy groups that have established a network of adoption and foster programs are providing an outlet for excess animals on reservations that does not exist in the real world outside of the USA. Culturally, this network does not exist in Latin America, the Middle East, etc. There are few homes available for any street animals, and studies on these populations that do not involve adoption always find the same answers, namely that high spay percentages are needed far beyond the number of vets or resources available. For every stray dog in the USA, there are 100 others somewhere else who will never have a

home, so any data manipulation will delay finding real answers to the problems faced by animals outside of the rescue bubble in the USA, or even on the reservations today.

There are many places where dogs are regarded as a nuisance by the majority of the public, and pet ownership is not a cultural phenomenon. In many parts of the Middle East for example, dogs are perceived as "dirty", dangerous for human bites, predators on livestock for which poor families depend on their livelihood, etc. As one Iranian paper put it, "dog ownership is not encouraged in the country"(19). In many places, many people have no moral opposition to euthanasia of street dogs, and it is common to find half-starved street dogs constantly searching for human food thrown out in the garbage. In colder, higher elevations, the dogs are in a constant state of semi freezing, and in hot climates are on the search for water. Cats hold a special place in the Muslim world and are often fed by locals, yet consistently display signs of respiratory disease owing to the young age of most cats given the short lifespans of street animals, and the concentration of cats in colonies where disease spreads continuously.

In sub-Saharan Africa, street animals live equally poor lives, left to fend for themselves in poor but expanding urban areas. Like most animals on Earth, there will never be any home nor permanent shelter, let alone veterinary care of any kind. The rare injured or sick animal presented for euthanasia will likely receive an oral dose of strychnine, and an incalculably horrible death.

In parts of Southeast Asia, dogs remain a food source and are part of a larger wet market system in which cages are filled with as many animals as can be physically crammed in, the cages stacked on top of each other as vendors sell their product. Wet markets include live animals of many types, including rare and endangered species sold for food and "medicinal" purposes. Purchased animals are killed on site, and in many cases are quartered and fileted while still alive. This occurs even in the United States in Asian communities in places such as San Francisco's Chinatown, in which reptiles such as turtles

imported from mainland China are purchased and then the shells removed and the animal cut into pieces while still alive.

Life for dogs, cats, and most animals on Earth is rough and far beyond anything most animal welfare advocates in the western world have ever seen. In the face of an ever increasing human population and in which urbanization is happening on a massive scale, the burgeoning populations of street animals have resulted in some nations electing mass euthanasia in order to try and reduce numbers (64, 65). As a result, surgical spay/neuter programs are presented by financially driven animal welfare organizations as the humane alternative to euthanasia for mass overpopulation of street dogs and cats, despite university studies demonstrating that euthanasia is more effective than spay / neuter if population reduction is the desired goal of animal control agencies. Understandably, for those in the animal welfare community at large, mass euthanasia is not the desired outcome, but presenting agenda driven fake science to counter legitimate, peer reviewed studies is not the answer.

If surgical spay is presented as the answer, but as on Native reservations no actual reduction in free-roaming dogs populations occurs within a few years, euthanasia will be the end result. The same applies even in cultures in Africa, Asia, and Latin America where for many animal control agencies, if no real solution is provided, euthanasia is the result. The dog population in the United States is minimal compared to the entire rest of the world, and >70+% surgical spay rates in one to two heat cycles cannot be achieved and repeated annually, indefinitely. False studies that suggest that each and every spay is a reduction in population numbers will lead to far more ongoing euthanasia deaths overseas than has ever occurred within the United States.

Even if overpopulation is not addressable in free-roaming populations using <70% levels of spaying, slowing population turnover in face of euthanasia by animal control agencies or shelters (tasked with this burden) is a valid goal since our true fundamental goal is animal welfare. In this case, spaying may not reduce population in any way,

but may reduce total individual death. This may be especially important in the many countries where euthanasia is performed in ways that would not be accepted by Western standards. Electrocutation is common, as is the use of strychnine and other slow poisons. Considering this, spaying can be seen as a means of reducing total population turnover but still fundamentally will not reduce population numbers. Further, parvo, distemper, etc. will kill far higher numbers and in equally merciless fashion, and thus with limited time and money, vaccination remains the highest priority until such time that an overall >70% spay rate can be achieved using oral or injectable agents.