

# WellBeing International®

## Dog Populations and Benefits for Dogs & People

One Welfare, University of Sydney  
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**Humans-Dogs.  
One Health & One  
Welfare**



# Structure of Presentation

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- **Introductory Comments**
- **Global Dog Numbers**
- **Benefits of Dogs**
- **Health “Costs” of Dogs**
- **Conclusions**



# Introductory Comments

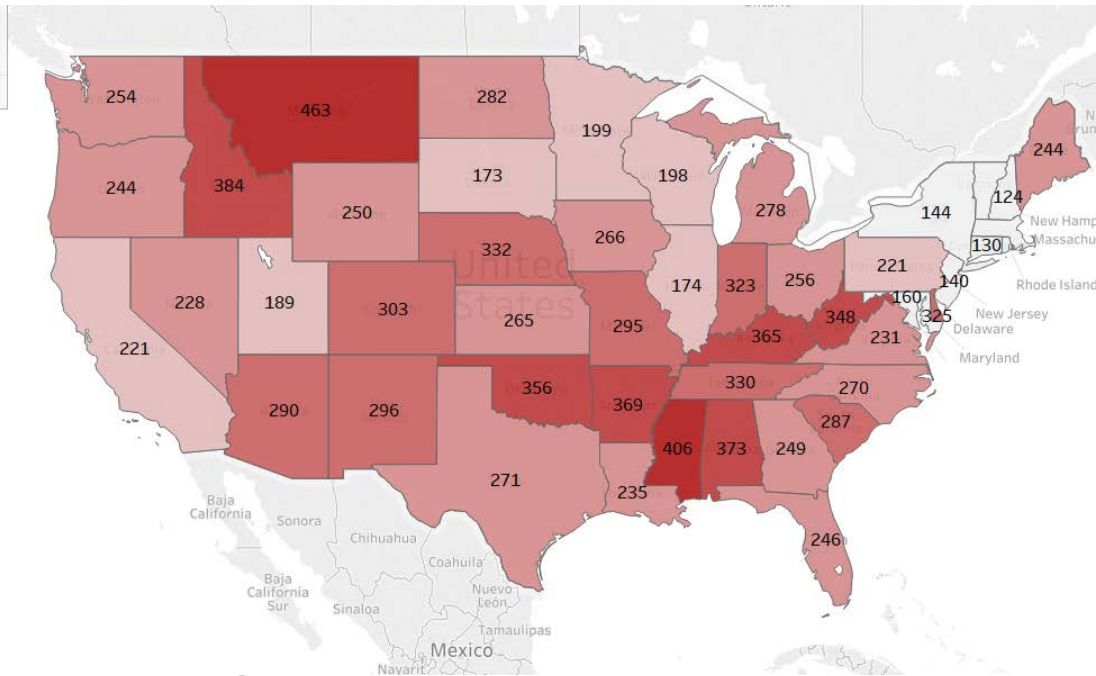
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- **Have been tracking dog populations and “overpopulation” since 1980**
- **Very surprised by lack of knowledge of dog demographics but, even more, by the apparent disinterest in accurate demographic data.**
- **USA estimates of dog ownership rates and dog numbers vary significantly according to survey and by state.**

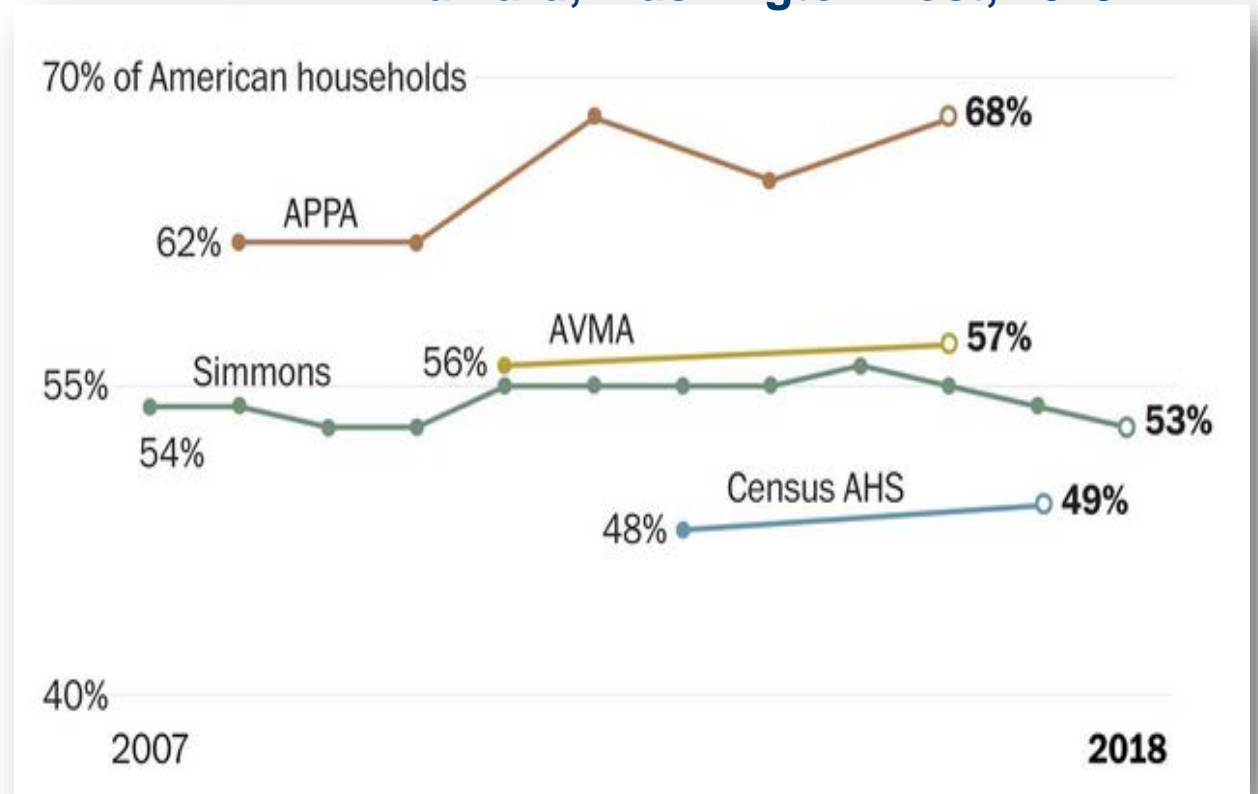


# US Dog Population Estimates

- Considerable variation among four National US surveys of Pet populations – Very little discussion of differences by anybody?



K Bruillard, Washington Post, 2019



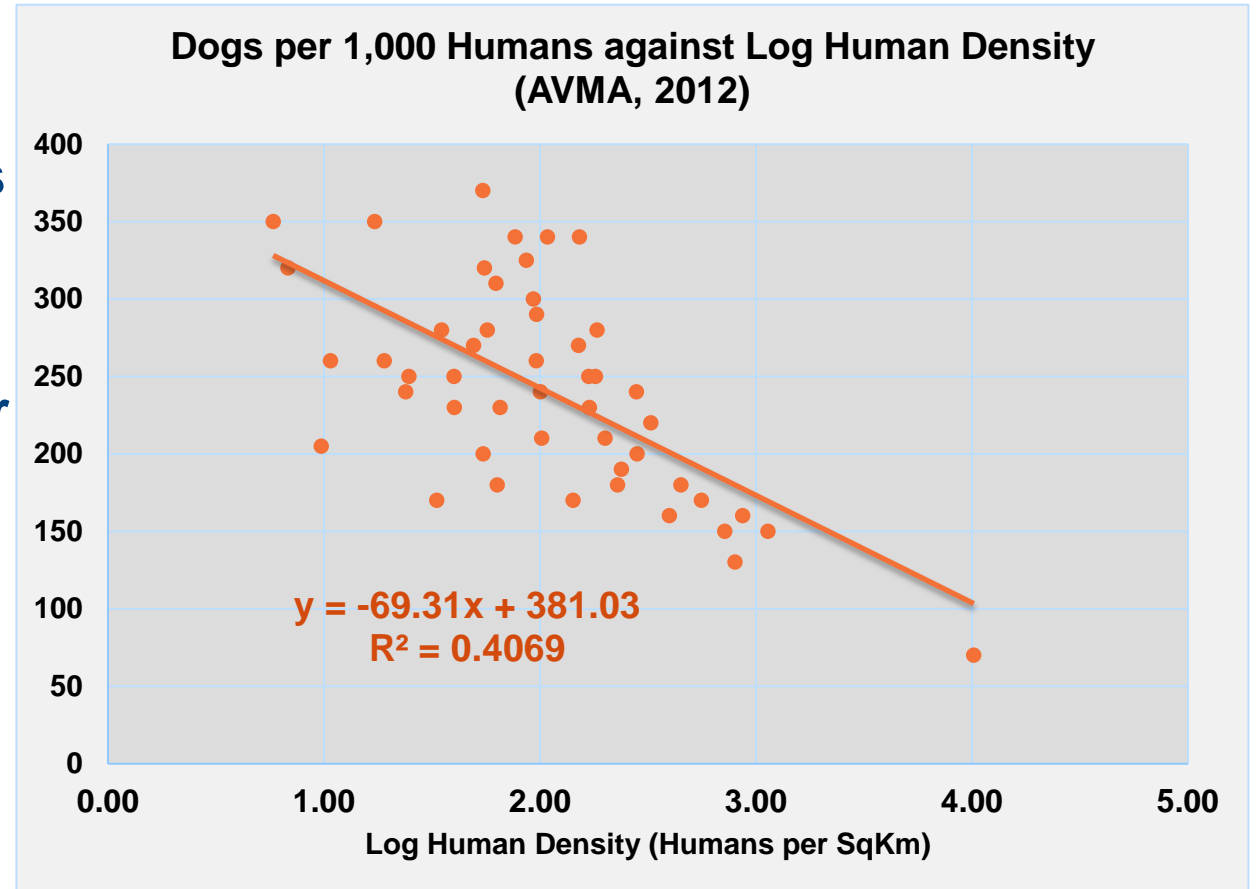
State-by state variation of dogs/1,000 humans ranges from 124-144 in Northeast to 406 in LA and 463 in MT.



# Why are there such differences?

- Human Density is one possible factor and there are ethnic differences in dog ownership (higher in white households than African-American, Latino or Asian households).

Ethnicity	Odds Ratio Dog Owner
White	1.00
African-American	0.39
Latin	0.32
Asian	0.30



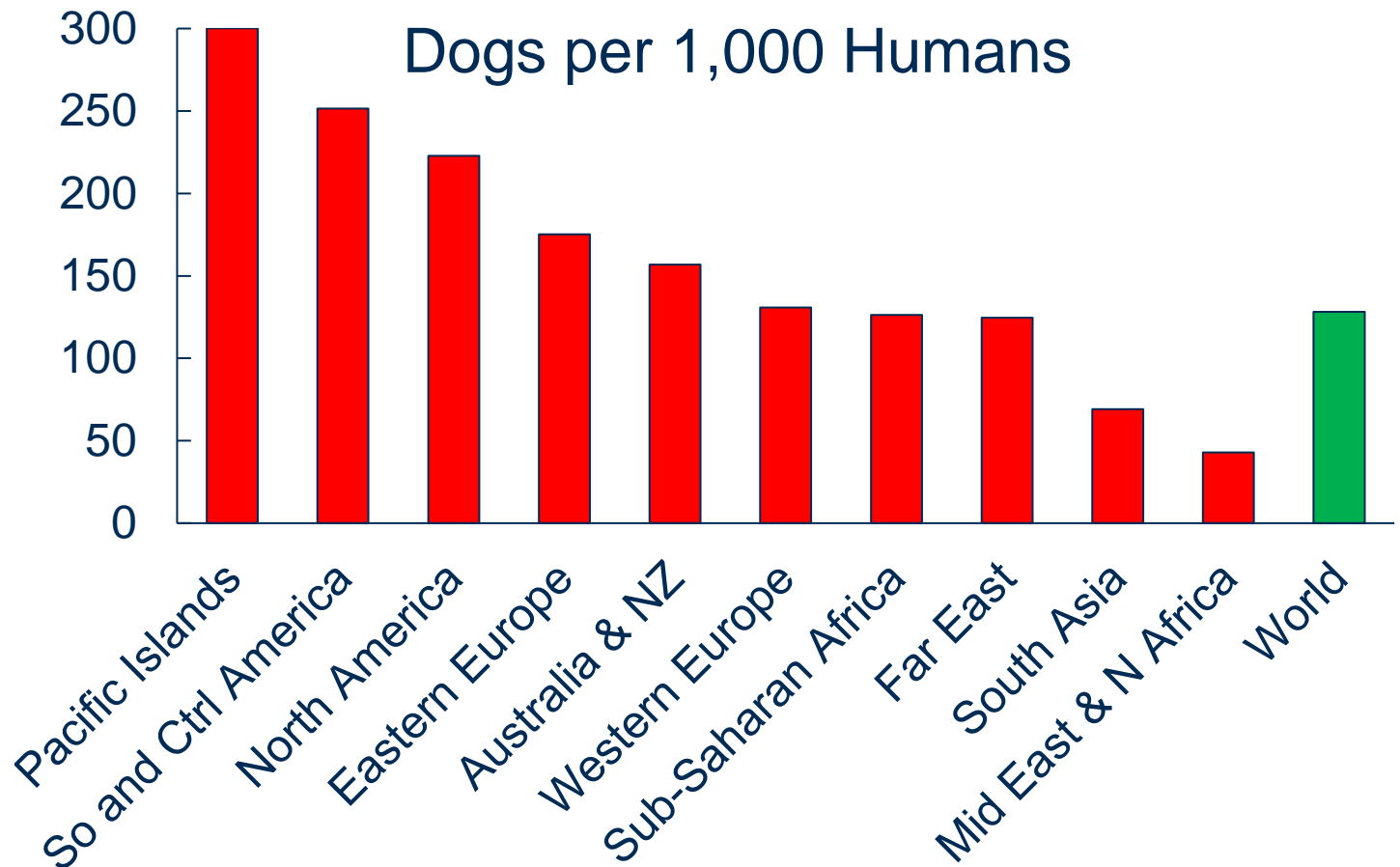


# Global Dog Populations Today



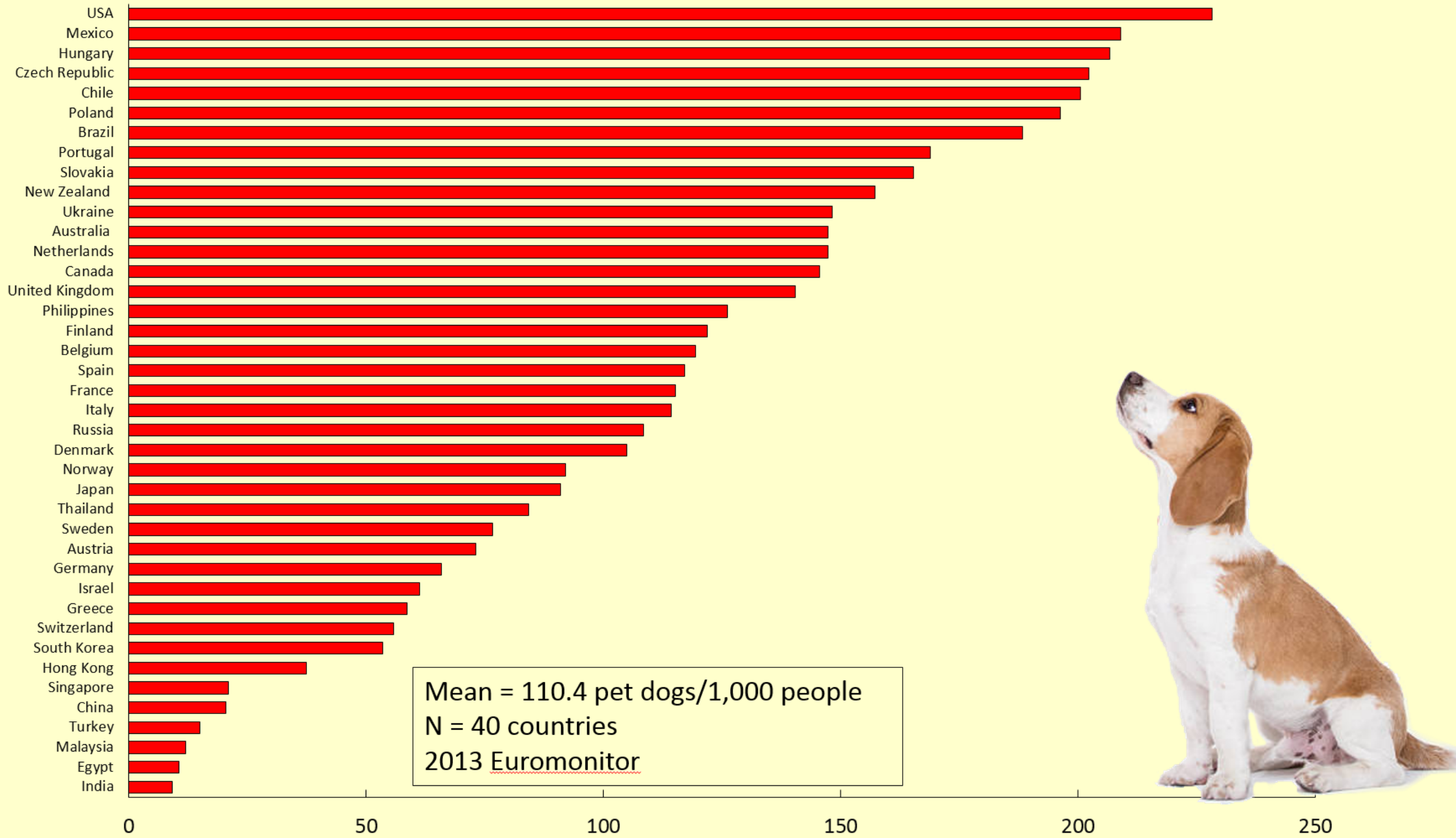
# Dog Populations

- Internationally, the number of dogs per 1,000 humans (not per sqkm) varies regionally over a ten-fold range & 30-fold by country.
- Muslim countries lower rates of dog ownership but unclear why Philippines & Latin America (300 dogs per 1,000 humans) so much higher than S. Asia (50-100 dogs per 1,000 humans)





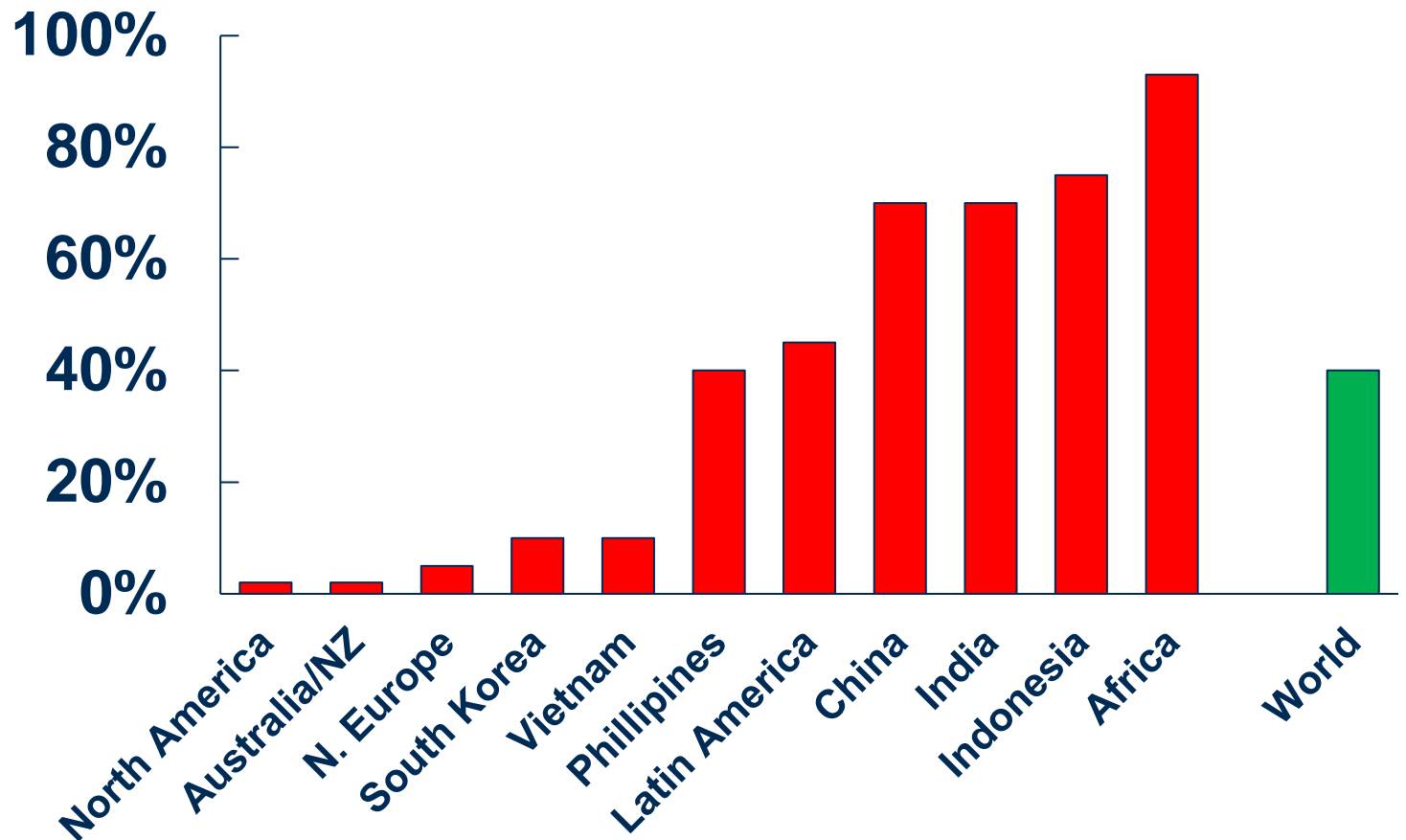
# "Pet" Dogs Per 1,000 People





# Roaming Dog Populations - %

- % of street dogs varies from close to zero in N America & W Europe to over 90% in Africa.
- Very basically – dog welfare organizations are seeking to move the bars on the right to be similar to the bars on the left.
- Very few roaming dogs in developed countries



Data from variety of sources



# Human Health Benefits and Dog Ownership



# Claims of Health Benefits & Dogs

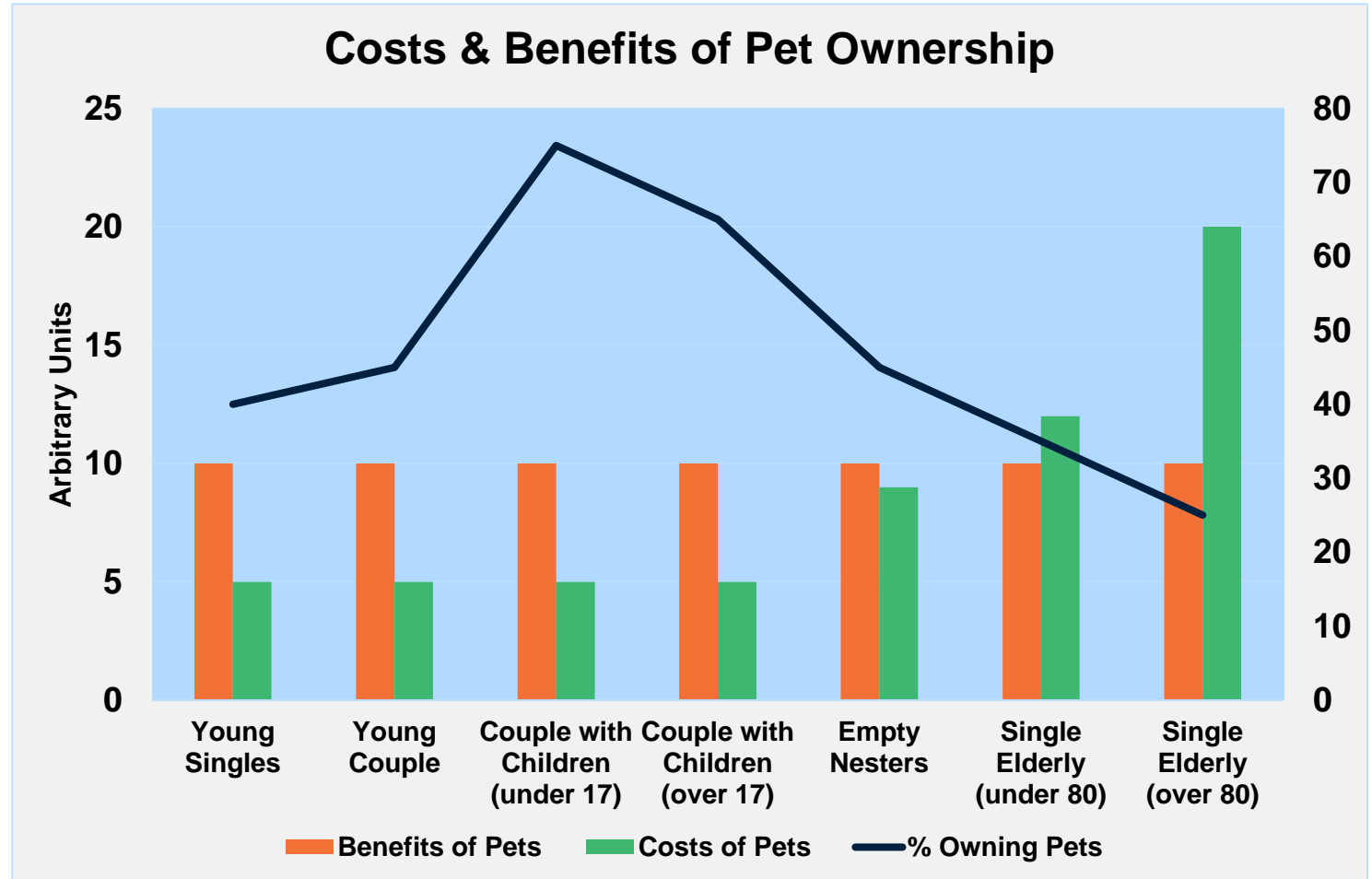
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- Many publications touting benefits but sample sizes tend to be small and few long-term analyses.
- Saunders et al (2017) PLoS ONE 12(6): e0179494 report large sociodemographic differences between pet owners and non-owners (differences known to influence health outcomes).
- Herzog (Feb 15, 2018; Psychology Today), generally very cautious about claiming health benefits from pets, lauded a recent study indicating that PTSD sufferers may benefit from having a pet and there are other tantalizing studies.
- And a recent Swedish study (Mubanga et al, 2019. Circ. Card. Qual & Outcomes 12:e005342) reports on CV outcomes for 150,000+ plus patients - dog owners had a lower risk of death after hospitalization for myocardial Infarction (adjusted hazard ratios of 0.67 if living alone or 0.85 if living with someone) & ischemic stroke (0.73 and 0.88 respectively).



# US Pet Ownership & Life Stage

**Benefits stay the same over the different Life Stages but costs go up towards the end of life – leads to reduced rate of pet ownership**





# “Costs” of Dogs in Household & Community



# Rabies & Dog Bites

- Rabies threat is the most obvious cost – largely eliminated in the Americas and Western Europe (and not in Australasia) but still a major problem in Africa & Asia. Estimated \$ p.a. around \$8 bn with \$2 bn being direct costs.
- 95+% of rabies is transmitted by Dog Bites. Other common costs are Barking & Roaming Dog behaviors & other zoonoses. In Canada, more people died from dog-bite injuries (43) from 1980-2002 than died from rabies (24 1924 – 2002)! Dog bite resources in Canada a fraction of those to rabies control (Rock et al, 2017).
- We are too lax re dog aggression and could do MUCH better to protect citizens from dog bites.



# Dog Bite Data

- Very different numbers obtained depending on data collection
- In USA, around 300,000 dog bites treated annually in ERs. \$675m in insurance claims.
- ER numbers per 100,000 range from a low of less than 10 (Calgary) to over 1,000 in India.

Country	Bites/100,000, Pub. Surveys	Bites/100,000 in Hosp. ERs	Hospitaliztns / 100,000	Reference
USA	1,650	103.9	2.1	Holmquist & Elixhauser, 2010
UK	1,875	150		Westgarth et al, 2018, & Ozanne-Smith et al 2001
Nthlands	830	70	1.6	Cornelissen & Hopster, 2010
Australia	630	31	7-13	McBean et al, 2007, Thompson, 1997; Bruce et al 2015
India		400-1,200		Various – Help in Suffering, AMC, J Reece
Canada		<10		Calgary Animal Services
Brazil		83-544		

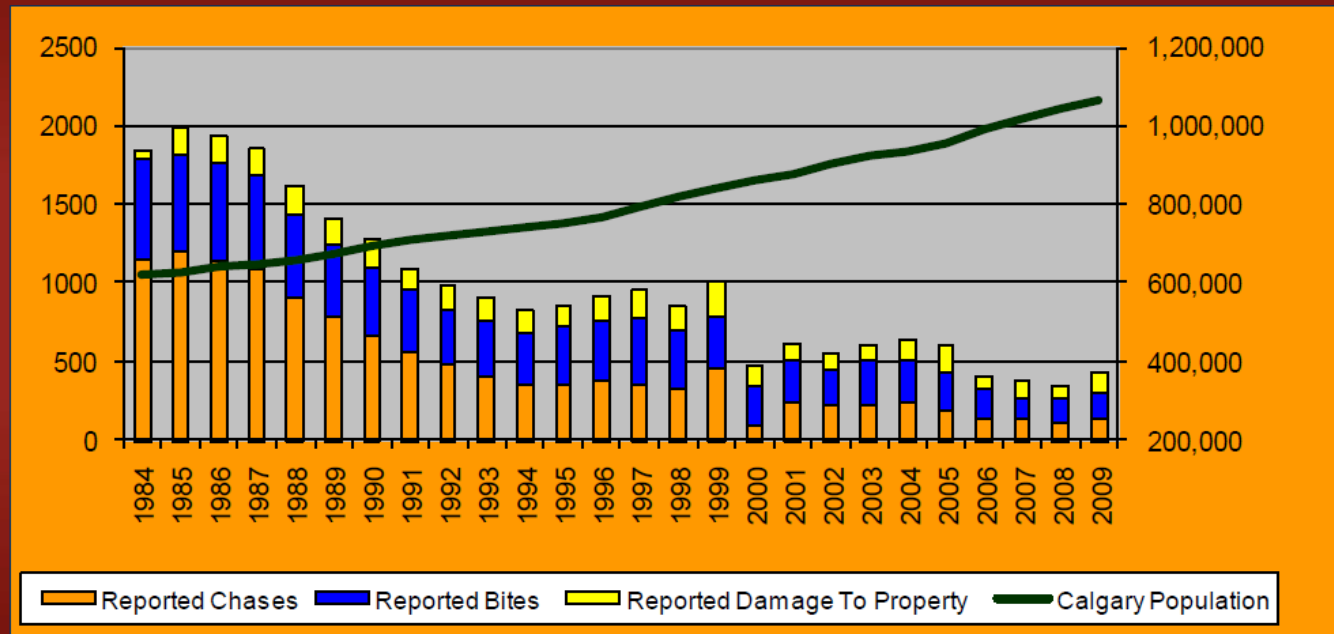




# Calgary Animal Services

- Calgary has probably the best dog management program in the world
- 90+% of dogs are licensed and owners are fined if their dog is aggressive.
- Bites treated in ERs probably around 5/100,000 per annum.

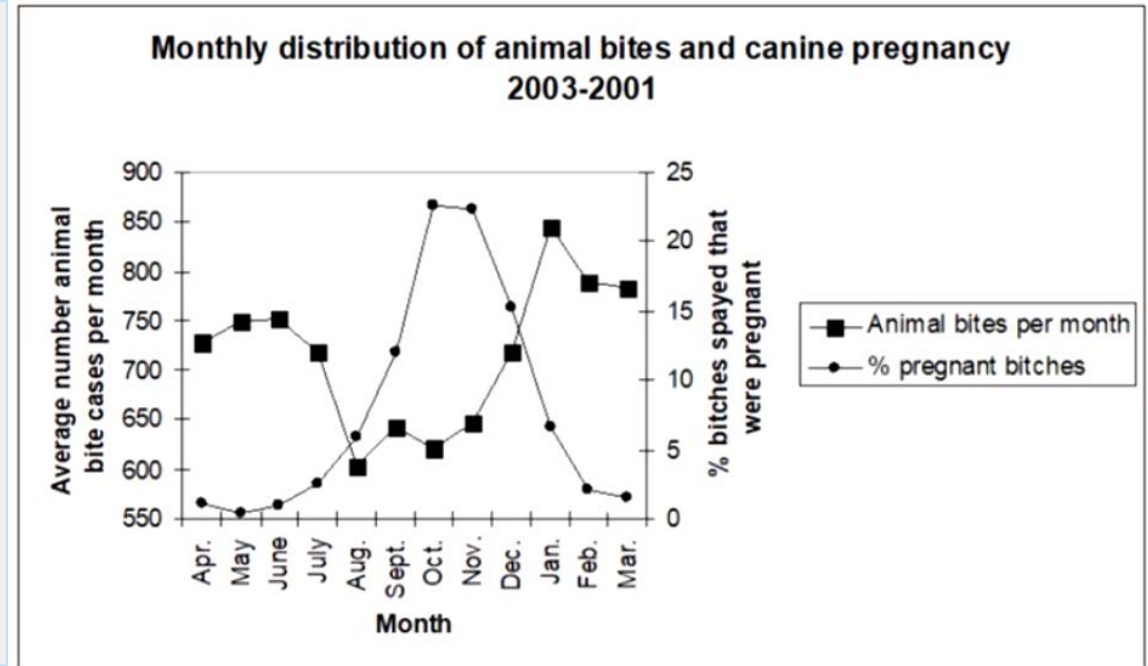
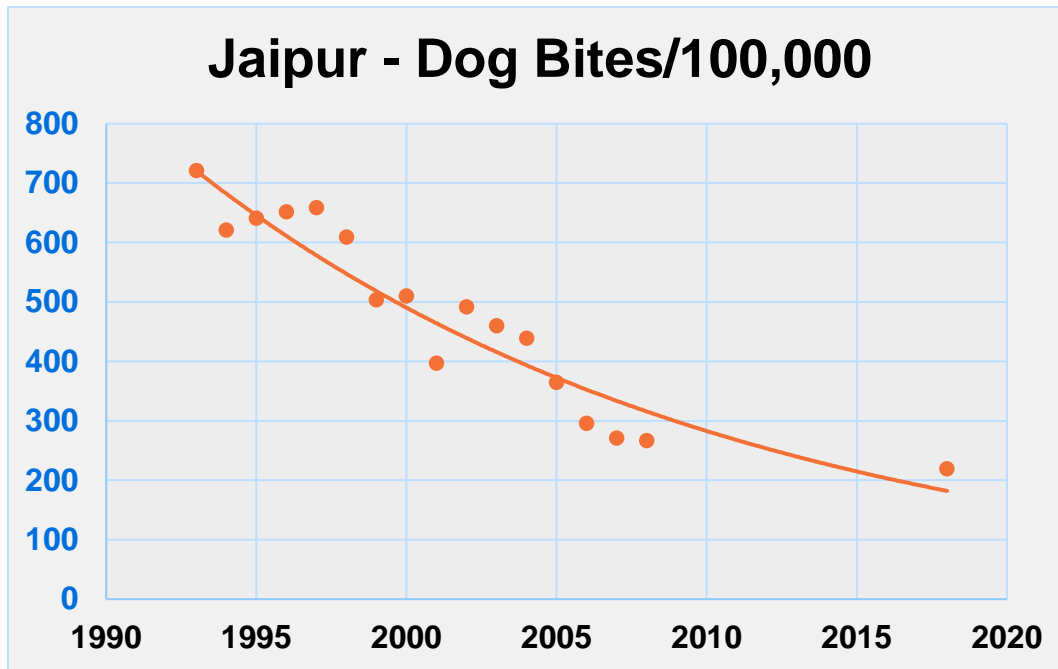
## Aggressive Dog Incidents 1984-2009





# Jaipur – Dog Bite Statistics

Help in Suffering has been sterilizing around 2,500 street dogs in Jaipur every year since 1995. Approx. 75% of females are sterilized (female defensive bites down) and street dog population has fallen by 50% from 1995 to 2018. (Data from J Reece, HIS)





# Why Put Up With Such High Dog Bite Rates?

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- **Several approaches have demonstrated success**
  - **Calgary – Establish aggression criteria, fine owners.**
  - **Multnomah County, Oregon – establish aggression criteria, require owners to take appropriate measures**
  - **Jaipur – Sterilize street dogs, change human-dog interactions**
- **And yet, most municipalities in developed countries are debating BSL approaches while municipalities in developing countries continue to rely on culling.**



# And Other Zoonoses & Costs

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- **Hydatidosis**
- **Leishmaniasis**
- **Roundworms**
- **Dog harassment and predation on wildlife**
- **Roaming dog nuisance behaviors (e.g. night-time barking)**



**Conclusions**



# CONCLUSIONS

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- **Dogs provide great rewards (maybe not so much in better health but certainly in unquestioning companionship/love). Majority of world likes/loves dogs (90+% in NA & EU).**
- **But big differences in dog populations per human in different nations – can explain some of variation but much not yet understood.**
- **On “cost” side of the ledger, humans do a lousy job of attenuating the “costs” and typically opt for short-term measures that do not work.**