STRAY DOG & FERAL CAT POPULATIONS IN EUROPE: FROM CULLING TO CARE

The importance of responsible dog and cat population management
Veterinary public health implications

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Head of Human-Animal Relationship and Animal Welfare Laboratory
The Istituto Zooprofilattico Sperimentale Abruzzo e Molise “G. Caporale” is a technical-scientific body of the Ministry of Health and Abruzzo e Molise Regions, founded in 1941.

Our mission is to ensure human-animal-environment safe interactions, providing appropriate response to public health needs, through scientific knowledge and expertise on food safety, animal health and welfare, control and prevention of transmittable animal diseases, including zoonoses.
Since 2004 - OIE collaborating centre for Veterinary Training, Epidemiology, Food Safety and Animal Welfare

Since 2013 - National Reference Centre for veterinary urban hygiene and non-epidemic emergencies of the Italian Ministry of Health
IUVENTE tasks:

• To set a **network of experts** among the Italian IIIZSS;

• To support and assist the Italian MoH in planning and implementing **surveillance, monitoring and control programs on stray dog and cat populations**, and to develop related protocols and operative procedures;

• To define plans for **surveillance and control of pests** of public health interest;
• To draw up **contingency plans** and related **operational procedures** in relation to **non-epidemic emergencies**;

• To put in place any other useful activity in the field of urban hygiene and non-epidemic emergencies.
Veterinary Public Health (VPH)

“The sum of all contributions to the physical, mental and social well-being of humans through an understanding and application of veterinary science”

WHO consultation on "future trends in veterinary public health”, 1999
European Convention for the Protection of Pet Animals
Council of Europe, Strasbourg - 13.XI.1987

- Pets have a special relationship with man
- Pets contribute to human QOL and therefore they are of value to the community
- Pet overpopulation must be considered a risk for hygiene, health and human and animal safety reasons

In 2003, a longitudinal study showed that the annual national health cost saving resulting from pet owners visiting the doctor less often was estimated to be €5.59 billions for Germany and $3.86 billion for Australia
The Economic Benefits of Pets

- **CALLISTO** (2014) estimated the **total size of the market** for pet care products at **19.7 billion Euros** for 12 Member States.

- According to **FECAVA** (2009) **289,000 people** were employed in the pet sector - trainers, groomers, veterinarians, nurses and breeders.

- Companion animals (mainly dogs & cats) made up **40% of the EU veterinary medicine market**, for a total value of **1.6 billion euros** (2011).
“the average time spent choosing a pet was often less than the time spent thinking about buying Christmas presents or a TV, and staggeringly, behind choosing a holiday”

• 42% of pet owners would consider buying a pet from the internet;

• 23% did no research at all before taking on their pet.

<table>
<thead>
<tr>
<th>Regions</th>
<th>Entry of dogs in sanitary shelters</th>
<th>Total number of facilities</th>
<th>Sanitary facilities</th>
<th>Shelters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abruzzo</td>
<td>1.984</td>
<td>31</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Basilicata</td>
<td>1.703</td>
<td>14</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Calabria</td>
<td>4.636</td>
<td>27</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>Campania</td>
<td>10.731</td>
<td>73</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Emilia Romagna</td>
<td>7.132</td>
<td>88</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Friuli Venezia Giulia</td>
<td>2.523</td>
<td>16</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Lazio</td>
<td>6.951</td>
<td>61</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Liguria</td>
<td>823</td>
<td>26</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>Lombardia</td>
<td>16.629</td>
<td>108</td>
<td>29</td>
<td>79</td>
</tr>
<tr>
<td>Marche</td>
<td>1.769</td>
<td>51</td>
<td>9</td>
<td>42</td>
</tr>
<tr>
<td>Molise</td>
<td>687</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Piemonte</td>
<td>8.006</td>
<td>83</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Provincia A. Trento</td>
<td>780</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Provincia A Bolzano</td>
<td>348</td>
<td>9</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Puglia</td>
<td>9.428</td>
<td>134</td>
<td>36</td>
<td>98</td>
</tr>
<tr>
<td>Sardegna</td>
<td>3.367</td>
<td>30</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Sicilia</td>
<td>7.469</td>
<td>34</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>Toscana</td>
<td>7.891</td>
<td>49</td>
<td>31</td>
<td>18</td>
</tr>
<tr>
<td>Umbria</td>
<td>1.958</td>
<td>25</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Valle d'Aosta</td>
<td>397</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Veneto</td>
<td>8.930</td>
<td>32</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td><strong>Totale</strong></td>
<td><strong>104.142</strong></td>
<td><strong>904</strong></td>
<td><strong>181</strong></td>
<td><strong>400</strong></td>
</tr>
</tbody>
</table>

Source: Italian Ministry of Health (2012)
To collect and analyse information on the breeding, keeping and trade of dogs and cats in the EU, focusing on the economic development of the pet sector, the welfare of dogs and cats and the protection of EU consumers (both from financial damage and health risks).

A complete analysis of stray animals could not be undertaken within the scope of this study but since they have a potential effect on the health and welfare of animals and humans the problem has to be acknowledged.

Management of stray populations is a significant cost for competent authorities who are called upon to provide shelter, vaccination and sterilisation programmes but this does not fall within the remit of EU policy.
**Stray dog**: means any dog not under direct control or not prevented from roaming.

**Types of stray dogs:**

- **free roaming owned dog** not under direct control or restriction at a particular time;
- **free roaming dog with no owner**;
- **feral dog**: domestic that has reverted to the wild state and is no longer directly dependent upon humans.
**STRAY CAT**: a companion cat which is lost or abandoned and which is living as an individual or in a group (colony).

Stray cats are likely to interbreed with the unneutered companion cat population.

**FERAL CAT**: a cat which as none of its needs provided by humans.

Feral cat population size fluctuates largely independently of humans, is self-sustaining and is not dependent on input from the companion cat population.

Different ecosystems, complex interactions
**BIRTHS (??%)**
- Nr ?
- Pet Stores: ??
  - (? purebred)
- ? of Dog Owning HHs Breed/Yr

**CURRENT POPULATION**
- Nr ?
- HOME
- ?%

**DEATHS (??%)**
- Nr ?
- Deaths/Euthanasia
- (Veterinary hospitals, homes, running at large)

**Show Breeding:**
- ?
- Amateur Breeding ?
- Mixed Breeding ?

**Adopted**
- ?
- puppies

**SURRENDERED**
- ?
- ??%

**STRAYS**
- ?
- ??%

**SHELTER**
- ??
- ??
- ??%

**Shelter Euthanasia**
- ?

**RTO: Returned to Owners**
**ORE: Owner Requested Euthanasia**

*Anthrozoos, 1995 (Patronek & Rowan)*
"Companion animals are any domesticated, domestic-bred or wild-caught animals, permanently living in a community and kept by people for company, enjoyment, work (e.g. support for blind or deaf people, police or military dogs) or psychological support – including, but not limited to dogs, cats, horses, rabbits, ferrets, guinea pigs, reptiles, birds and ornamental fish"

www.callistoproject.eu
CALLISTO definition Responsible Pet Ownership (RPO)

“is a duty of care based on the principle that animals are sentient beings having intrinsic value, are dependent on humans for their health and welfare, and are part of the ecosystem.

RPO aims to maintain a good level of animal health and welfare, to maximize physical and psychological benefits to humans and to minimize the potential risk that pets may pose to the public, other animals, or the environment.

This duty starts with responsible acquisition and continues with providing appropriate care and protection for pets and their offspring”. 
TYPES OF KNOTS
Other factors as economic impoverishment, war or civil conflicts, migration and urban decay often results in the presence of high number of poorly supervised animals...”

(Matter and Daniels, 2000)
A 3 years EU research project launched in 2012 in order to:

- **provide an overview** with regard to the role of companion animals, as a *source of infectious diseases for people and food animals*;
- **propose targeted actions** to prevent, reduce and eliminate the health risks for humans and food animals associated with keeping companion animals.

www.callistopproject.eu
### Table 1

Scoring of analysed diseases for human health impact and economic impact

<table>
<thead>
<tr>
<th>Disease or pathogen</th>
<th>Overall score human health impact</th>
<th>Overall score economic impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EASITES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. monococccus</td>
<td>12.9</td>
<td>14.6</td>
</tr>
<tr>
<td>T. annulosus sensu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T. gondii</td>
<td>12.6</td>
<td>11.3</td>
</tr>
<tr>
<td><em>Toxoplasma gondii</em></td>
<td>12.4</td>
<td>13.8</td>
</tr>
<tr>
<td>T. gondii</td>
<td>12.1</td>
<td>10.6</td>
</tr>
<tr>
<td>Multilocularis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taenia species</td>
<td>9.5</td>
<td>14.6</td>
</tr>
</tbody>
</table>
Canine leishmaniosi in Europe (Pr. P. BOURDEAU Original)

(Courtesy Prof P. Bourdeau) shows the current broad epidemiological situation in Europe.

- **Strongly enzootic**
- **Enzootic**
- **Zone of enzootic extension**
- **Potential for extension due to presence of the vector**
- **Countries/zones where autochthonous cases have been described (non-enzootic)**
- **Imported cases**
  - Poorly documented situations:
    - Autochthonous cases?
    - Enzootic?
    - Imported cases?

*The boundaries of the zones are not given precisely*

*The map is derived from work on European studies and congresses (Bourdeau: EMOP 2004; WorldLeish4 2009; ECVD 2009; RESFIZ 2009)*

- Cyprus
BT in the mediterranean basin from 1980 to 1999
BT viral circulation from 2000 to 2010
<table>
<thead>
<tr>
<th>Disease or pathogen</th>
<th>Overall score human health impact</th>
<th>Overall score economic impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIRUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crimean-Congo haemorrhagic fever</td>
<td>20.4</td>
<td></td>
</tr>
<tr>
<td>West-Nile virus</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Foot and mouth disease virus</td>
<td>8.7</td>
<td></td>
</tr>
<tr>
<td>Rabies virus</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>Bluetongue virus</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
FACTORS INFLUENCING EMERGENCE AND RE-EMERGENCE OF ANIMAL DISEASES(*)

- International travel and commerce: 77%
- Globalization of agriculture and trade: 70%
- Microbial adaptation: 66%
- Climate and weather: 57%
- Changing ecosystems: 49%
- Changing host susceptibility: 43%
- Poverty: 38%
- Economic development: 32%
- Technology: 20%
- Intent to harm: 18%

(*) Data from a worldwide OIE survey among Chief Veterinary Officers in 2004
“In Germany, more people are taking older dogs from shelters, stray animals or picking up dogs from abroad”*

*DG SANTE Study on the welfare of dogs and cats involved in commercial practices

“the movement of adult stray dogs poses a greater risk of introducing diseases in disease-free countries than that of puppies” (Boyden, 2015)
<table>
<thead>
<tr>
<th>Year</th>
<th>Adopted animals</th>
<th>Italy</th>
<th>Switzerland</th>
<th>Sweden</th>
<th>Finland</th>
<th>Germany</th>
<th>Romania</th>
<th>Austria</th>
<th>NL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>602</td>
<td>304</td>
<td>61</td>
<td>135</td>
<td>55</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>47</td>
</tr>
<tr>
<td>2011</td>
<td>561</td>
<td>305</td>
<td>45</td>
<td>148</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>2012</td>
<td>646</td>
<td>277</td>
<td>73</td>
<td>254</td>
<td>42</td>
<td>0</td>
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<td>2013</td>
<td>588</td>
<td>295</td>
<td>50</td>
<td>166</td>
<td>38</td>
<td>1</td>
<td>37</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2014</td>
<td>573</td>
<td>233</td>
<td>88</td>
<td>157</td>
<td>21</td>
<td>12</td>
<td>59</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2015</td>
<td>542</td>
<td>141</td>
<td>112</td>
<td>236</td>
<td>11</td>
<td>3</td>
<td>39</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2016</td>
<td>534</td>
<td>115</td>
<td>100</td>
<td>240</td>
<td>16</td>
<td>23</td>
<td>37</td>
<td>3</td>
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</tr>
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</table>
DPCP

Abruzzo Regional Law 47/13

Ordinances/ Decrees

Veterinary Services
- Information/education
- Catching and health checks
- I&R
- Spay/neuter
- Epidemiological surveillance
- Dangerous dogs
- Authorization and control over breeders/sellers/shelters/kennels

Municipalities
- Financial resources
- Direct responsibility over free roaming and «community dogs»
- Sanctions
- Information/education
- I&R
- Adoptons

Private vets
- Information/education
- I&R
- Spay/neuter
- Epidemiological surveillance
- Dangerous dogs

NGOs
- Information/education
- Spay/neuter
- Long term shelters
- Monitoring «community dogs» welfare
- Sanctions
- Incentize adoptions

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“Stray dogs can pose serious risks for animal health and animal welfare as for public health and welfare”

“Authorities should guarantee the health of the public and other domestic animals through the implementation of health plans for stray dogs appropriate to the disease situation in the area”

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1 Stray dog: There is no statutory definition of a stray dog. The definition used by the OIE is: stray dogs means any dog not under direct control by a person or not prevented from roaming. There are three types of stray dog: free-ranging owned dog; under direct control or restriction at a particular time; free-ranging dog with no owner; feral dog: domestic dog that has reverted to the wild state and is no longer directly dependent upon humans for successful reproduction.
Public health, environmental and animal protection advocates share an interest in improving companion animals’ health and welfare, controlling and reducing stray dogs and cats population, and increasing responsible animal ownership at individual and community level;

However, many influences that shape dogs and cats populations are located outside the public health sector;

This convergence reinforces the «One health» concept and requires a multi-stakeholder approach to be successful;

New alliances and forms of interdisciplinary, multiprofessional and intersectoral collaboration are needed.

Veterinarians must play a leadership role in the promotion of companion animal responsible ownership