



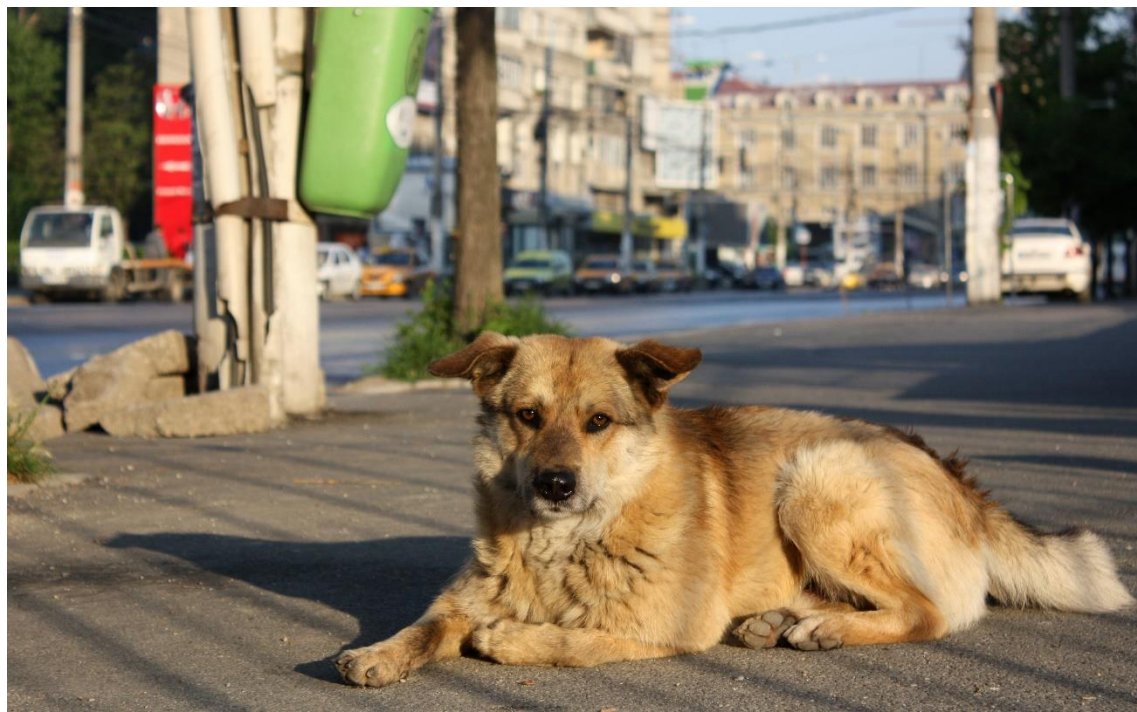
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# Establishing the baseline: dog surveys

Second OIE Regional  
Workshop on Stray Dog  
Population Management  
for Balkan Countries

Tirana/ Albania  
14 -16 June 2016



# OIE Guidelines on Stray Dog Population Control

Article 7.7.8. An overview of appropriate methods for estimating the size of dog populations

“Population estimates are necessary for making realistic plans for dog population management and zoonosis control, and for monitoring the success of such interventions.

However, for designing effective management plans, data on population sizes alone are insufficient. Additional information is required, such as degrees of supervision of owned dogs, the origin of ownerless dogs, accessibility, etc.”



# Survey tools

## Household surveys

- Household surveys may be the most accurate
- Can be labour intensive and time consuming

## Street surveys

- Street surveys are mainly used to count dogs dogs on a route that runs along streets.
- Can also be used to assess dog welfare
- Useful to estimate free-roaming dogs

## Dog registries

- Only cover the owned dog population
- Not in all countries and not always up-to-date







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## Dog surveys can include:

- Numbers
- Age (pup/ adults)
- Sex
- Breed
- Reproductive status
- Health, such as skin condition, lameness
- Body condition score
- Resources available (landfill, garbage containers, etc)





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# Available guidance

Guidelines for dog surveys can be found on the ICAM Coalition website:

- WSPA, Surveying roaming dog populations: guidelines on methodology
- Training on body condition assessment
- Explanation by the ICAM coordinator on how to use the OSM tracker:
  - <https://www.youtube.com/watch?v=PSWU0yYsrqE>
  - <http://www.conservationresearch.co.uk/DogDensity/UsageNotes.pdf>



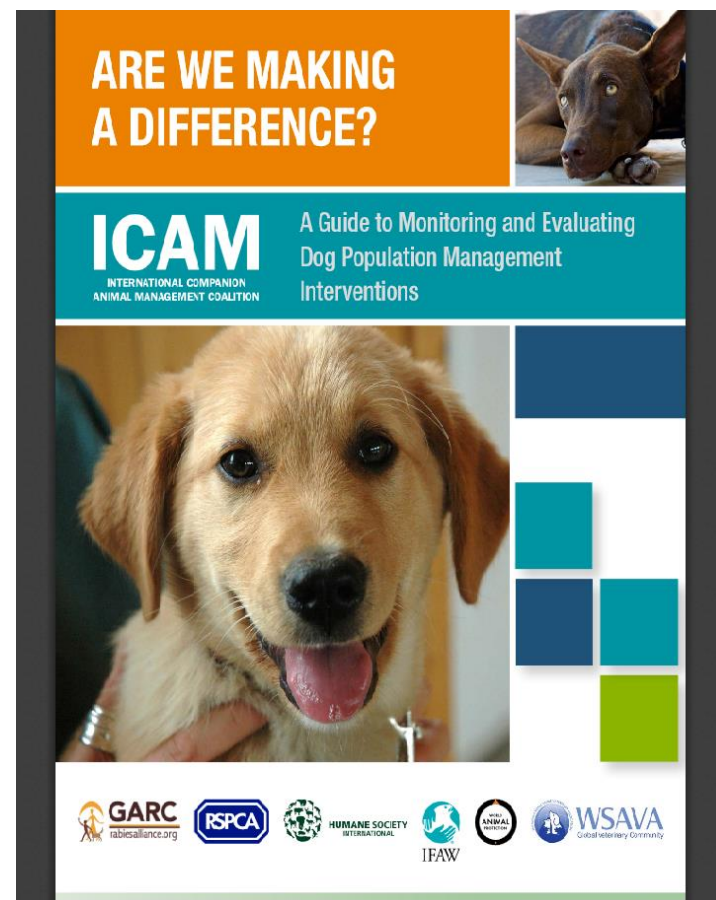
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## ICAM indicators project

- Explains different types of
- surveys with sample questionnaires
- Provides a free online tool to help you select what is relevant for your situation (Dog Population Management Impact Assessment Tool)

[http://www.icam-coalition.org/downloads/ICAM\\_Are\\_we\\_making\\_a\\_difference\\_Updated\\_Nov2015.pdf](http://www.icam-coalition.org/downloads/ICAM_Are_we_making_a_difference_Updated_Nov2015.pdf)







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# Open data collection tools

**EpiCollect.net**  
Home Instructions Create Project Handsets FAQ Developers About us

Mobile / Web Application for Smartphone data collection

EpiCollect.net provides a web and mobile app for the generation of forms (questionnaires) and freely hosted project websites for data collection. Data are collected (including GPS and media) using multiple phones and all data can be viewed centrally (using Google Maps / tables / charts).

**EpiCollect**  
For simple projects:

- Drag and Drop form Builder
- Define a single form for survey
- Any number of text questions
- Add a single GPS location + photo
- View / chart with Maps
- Download all data

**EpiCollect+ BETA**  
For complex projects:

- Drag and Drop form Builder
- Define multiple linked forms
- Any number of text questions
- Any number of media fields
- View / chart with Maps
- Download all data
- Greater Form Validation
- Define form logic (jump Q's)
- Upload excel form definitions

Developed at Imperial College London | Co

**KoBoToolbox**  
HOME FEATURES GET STARTED ABOUT US CONTACT SUPPORT

## FEATURES

**BUILD FORMS AND REUSE EXISTING QUESTIONS**  
Easily create survey forms through our intuitive and powerful tool. Store recurring questions in your library or share them with colleagues.

**COLLECT DATA**  
Quickly and reliably collect your survey data on Android, iOS, and many other devices, online or offline, in any language and with complex skip logic.

**ANALYZE AND SHARE DATA**  
Inspect your data collected - or download analysis in other formats like KML, and CSV.

read more

Track logger: #18  
Accuracy 10m (9/14)

Female collar	Female
Lactating collar	Lactating
Male collar	Male
Pup collar	Pup
Collar	No collar
details	record sighting

## Mobile Survey

Looking for an easy-to-use mobile app for data collection? Farmerline's mobile survey app allows users to create customized surveys and reach thousands at a fraction of the cost of traditional techniques.

[GO TO MERGDATA](#)

**MerqData**  
Home About Services Create Survey App Aggregators

Survey Statistics

Questions More Statistics

Which of the following can be identified as a research method?

Interviews that this information is collected whether they administered the questions of the programme?

What steps do you give?



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## Some general principles

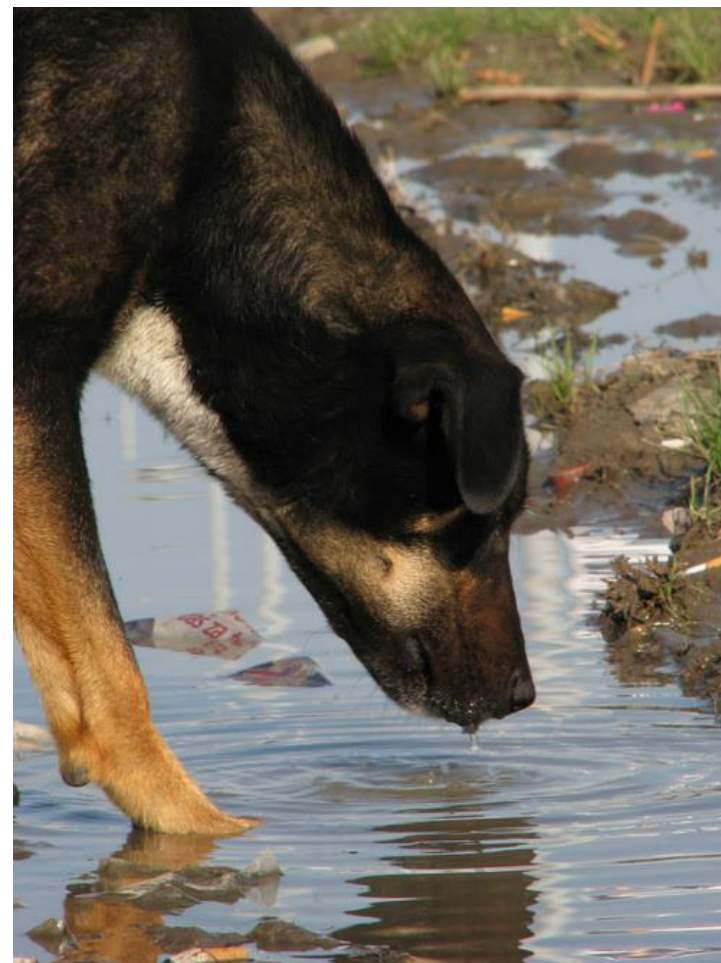
- Repeat surveys always under similar circumstances: same time of the year, same time of the day, etc.
- Select representative areas to ensure you have covered all the differences (e.g. open areas, quiet/ big streets)
- Use a consistent methodology: which dogs to count and where to look e.g. under cars.
- Don't conduct a survey too far in advance of your activities as birth, death and migration rates are often quite high.
- Train everyone involved in the process using the same protocol.





## Dog surveys in practice

- Different methodologies that can be applied depending on a number of factors (type of environment, available resources, whether dogs are mostly owned or unowned)
- The most challenging part is selecting the methodology that can best suit the particular environment we are working in.
- ICAM documents offer detailed guidance on conducting dog surveys.
- Two main types:
  - counts leading to a population estimate – more comprehensive
  - indicator counts – do not lead to a population estimate, but can be used for monitoring purposes



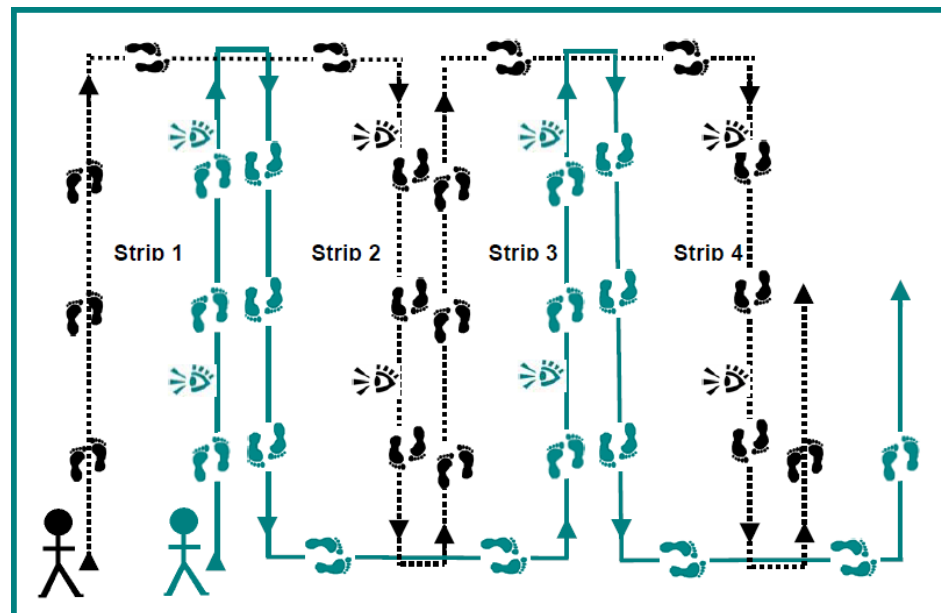
# Counts leading to an estimate – an example in urban environment

- Conducted in Belgrade in a small pilot area on a sample of blocks /wards
- Highly populated and urbanized area
- Rows of buildings with green areas in between
- Conducted in August 2003
- Part of the project related to dog population control in local community.
- Goal was to conduct a census and count all roaming dogs in public property on the selected territory.
- Results were used to propose a CNR initiative in the local community.



# Counts leading to an estimate – method used

- 2 teams, during 4 days
- Followed agreed protocol
- Count performed at dawn starting at the same time each day
- Travelled on foot every day along the same route following a street map
- Open public areas such as parks scanned from a vantage point or walked across
- This method was very thorough: slower progress, searching for dogs in hiding places (e.g. under cars, under stairs, in the bushes...), approaching each dog





# Counts leading to an estimate – table for individual identification

- Dogs were approached, assessed and their identifying characteristic were recorded – breed, colour, size
- Age and sex were recorded in an effort to assess female:male ratio and age structure
- Two animal-based welfare measures used – BCS and injuries
- Table was filled in for each dog and each dog was photographed
- Temperament of each dog was assessed
- Estimate of the total number of dogs calculated by entering data into a graph to predict a point where there is no new dogs to record

**ORCA**

ISTRAŽIVANJE POPULACIJE PASA  
TABELA ZA POJEDINAČNU IDENTIFIKACIJU

Mesto: \_\_\_\_\_

Datum: \_\_\_\_\_

Obeležiti kućicu ispred koje je osobina koja najpribližnije opisuje psa.

Tip: Mešanac  Rasan pas  Rasa: \_\_\_\_\_

Boja: Crna  Bela  Crno/Bela  Riđa  Pegav

Ostalo: \_\_\_\_\_

Veličina: Mali  Srednji  Veliki  Ogroman

Dlaka: Duga  Kratka  Srednja  Kovrdžava


Starost: Mlađi od 3 meseca  Mlađi od 12 meseci  Odrastao pas  Star

Pol: Muški  Ženski  Nepoznat

Stanje: Veoma dobro  Dobro  Loše  Pothranjen

Temperament: Agresivan  Dominantan  Plašljiv   
Miran  Družaljubiv

Rane/Povrede: Ne  Da  Mesto rane/povrede: \_\_\_\_\_



## Indicator count – an example in urban environment

- Conducted in Belgrade in a same area as previous example on 2 occasions (autumn 2006 and 2007)
- Info centre project in Belgrade, conducted by ORCA and funded by the City of Belgrade
- Aim of the project was to support the City of Belgrade in implementing the “Strategy for solving the problem of stray dogs in Belgrade”
- Goal of the count was to measure the impact of the intervention on an area in which we worked before







# Dog count – an example in rural environment

- Conducted in Bogatić in May 2016
- Part of the more comprehensive research under the project aimed to develop evidence-based dog population control programme for the Municipality.
- Rural municipality, assumption that certain % of dogs are owned but allowed to roam
- Combination of methods – street count and questionnaire based study with addition of two mark-resight experiments to get the population estimate
- Methods in line with ICAM document 'Are we making the difference'



# Dog count in rural environment - method used

- Sampling villages within the municipality and selecting routes that run along streets
- Setting starting and ending point in a route, using Locus mobile app for navigation
- Entering homes and conducting household questionnaire
- Assessing quality of fencing, dog confinement.
- After conducting questionnaire dogs that were unconfined but allowed to roam were marked with a collar.
- While traveling along the route roaming dogs were photographed.

**HOUSEHOLD QUESTIONNAIRE**

Date: \_\_\_\_\_ Interviewer: \_\_\_\_\_ Interview no: \_\_\_\_\_

Settlement: \_\_\_\_\_ Street: \_\_\_\_\_ House no/name: \_\_\_\_\_

Household GPS reading, Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Type of structure:

Single house (one household living in one house with its own yard, with or without fence)

Double house (separate yards)

Double house (shared yards)

Flat (more than one household in one building, no yard or shared yard)

Hut/Shanty (improvised structure)

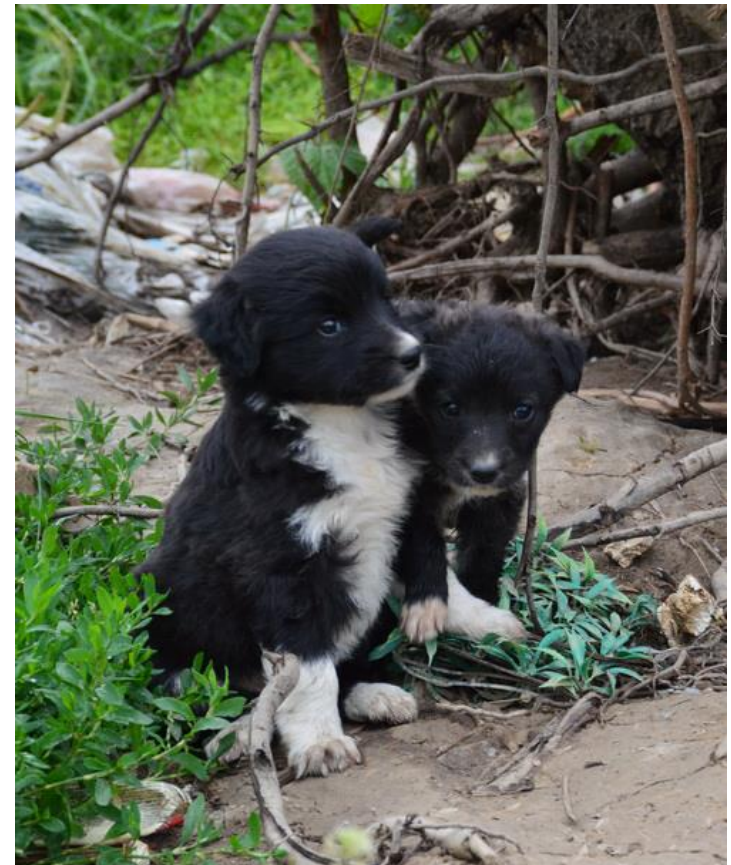
Outdoor dog confinement options:

No yard

Yard with fencing but dog can roam, either because fencing is not dog proof or dog is not fenced

# Dog count in rural environment - method used

- After finishing with questionnaires, a street survey was conducted along the same routes.
- Counting protocol was strictly followed to ensure survey is consistently conducted
- Traveling by car with the average speed of 15 km/h, starting at dawn
- Every dog recorded by using OSM tracker mobile app - allocated to one of the categories according to sex, age, welfare status and whether it is a 'collar' or 'photo' dog.
- Dogs confined within properties, walking on lead or 'close to heel' were excluded from the survey.
- Count was repeated the next day.





# Conclusion on methods

- The choice of methods depends on different factors such as the resources available or whether the territory is urban or rural.
- For populations with a large proportion of owned dogs it may be sufficient to conduct household surveys.
- If the proportion of unowned dogs is high or difficult to assess, other methods can be employed such as strip transects, line transects, mark-resight, or mark-recapture.
- Counts leading to an estimate represent a more precise way of estimating population size but take a lot of time and resources. They are difficult to conduct in large cities where sampling is required.
- Benefit of an indicator count is that it requires fewer resources and are useful for monitoring the intervention, but not that much for intervention planning.
- Combination of different methods to suit the needs of a particular territory may be the best option.



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A large background image showing the silhouette of a dog's head on the left side, looking towards a sunset sky. The sky is filled with dark, textured clouds, and the horizon is lit with a mix of orange, red, and yellow light.

**Thank you for your attention!**