A survey of spatial distribution and population size of feral cat colonies in RI

Summary of Findings

Anne Fleming, DVM/MPH Candidate 2013
Tufts Cummings School of Veterinary Medicine
December 3, 2012
How do we figure out how many feral cats we have in RI?

Anne Fleming, DVM/MPH Candidate 2013
Tufts Cummings School of Veterinary Medicine
December 3, 2012
Background

- The growth of feral cat populations continues to be of interest from animal welfare, public health and environmental/ecological perspectives.

- The number of outdoor cats in the U.S. is currently unknown, but estimates range from 70-100 million.
  - As with the U.S. as a whole, the number of feral cats in Rhode Island is unknown, but estimates range from **100,000 to 200,000 animals**.
A number of strategies have been developed to manage feral cats.
- Feed-only management, trap-neuter-release (both managed and unmanaged), and trap-remove.

There is a lack of consensus among various groups in RI as to how to best manage feral cat colonies.

A collaborative, cross-constituent group was established to examine the issue.
Background (3)

The Rhode Island Feral Cat Working Group (2010):

- The American Humane Society
- Animal Control Officers from: Cranston, Cumberland, Providence and Westerly
- The Conservation Agency
- PawsWatch
- The Potter League
- Providence Animal Rescue League
- Rhode Island Department of Fish and Wildlife
- Rhode Island Department of Public Health
- Rhode Island Society for the Prevention of Cruelty to Animals
- Rhode Island State Veterinarian
- Rhode Island Veterinary Management Association
- The Sanctuary Federation
- Tufts University
- University of Rhode Island
- Volunteer Services for Animals
Objective of Study

- The end goal is to develop a humane, comprehensive science-based plan to manage feral cat colonies in Rhode Island.

- Specific objectives for this study:
  - Quantify the spatial distribution and size of feral cat colonies in Rhode Island and,
  - Categorize the colonies by their population management strategies.

**NOT intended to be a comprehensive population survey!**
Methods

- Colony and management strategy identification
  - Locations and management strategies of feral cat colonies were identified by individuals with documented knowledge.
  - For the purposes of this study, a “colony” was defined as a group of four or more feral cats.
  - Management practices were categorized as Control, Food Only, Unmanaged TNR, Managed TNR and Trap and Remove.
Methods (2)

- **Colony location mapping**
  - Feral cat colonies were mapped using a Trimble GeoXT handheld GPS unit.
  - The data were used to create a statewide map of the spatial distribution of the identified feral cat colonies.
  - Colonies were identified as being located in urban or rural areas based on US Census designations.
Methods (3)

- **Colony size estimates**
  - Population estimates were obtained from those most familiar with the individual colony demographics (ACOs, colony managers, rescue groups).
  - Estimates were usually taken as a range.
  - Where possible, two data points were taken in an effort to increase the accuracy of the estimates.
What we found

- 302 feral cat colonies were identified, but:
  - 8 identified colonies were found to not exist
  - 9 identified colonies had an average count of < 4 cats
  - 22 colonies did not have confirmed population counts

- Descriptive and statistical analyses were conducted on the remaining 263 colonies:
  - Managed TNR: 149
  - Food Only: 70
  - Unmanaged TNR: 23
  - Trap and Remove: 13
  - Control: 8
What we found (2)

- The remaining 263 colonies contained an estimated 2,846 cats (max estimate)
  - Min 2,114
  - Avg 2,480

- The average number of cats per colony ranged from 8.0 - 10.8 (midpoint 9.4 cats)
  - The range of cat populations in all identified colonies was 2-100.
Managed TNR represented the most common management approach (56.7%), followed by Food Only (26.6%)

Unmanaged TNR had the largest mean (16.8) and median (11.0) colony size
  Unmanaged TNR median colony size was significantly larger than Food Only (6.0) and Trap and Remove (5.0) (p = 0.01)

83% (253/263) of the analyzed feral cat colonies are located in urban areas
Data Limitations

- Definition of colonies as “4 or more cats”
- Lack of full participation
  - Time, effort, privacy concerns
- Fragmentation of information due to number of groups/citizens involved
- Lack of sufficient true “control” groups
So, How Many Cats ARE There?

- There are more than 3,000 feral cats in RI!!

- However, despite the data limitations, the findings suggest that the true number of feral cats in RI is less than 200,000:
  - 200,000 cats / 11 cats per colony = ~18,200 colonies
  - 18,000 colonies / 39 communities = ~460 colonies per community!
  - 460 colonies * 11 cats/colony = ~5,100 cats per community
How many?

- Or let's take it from a different angle:
  - RI is \( \sim 1,034 \) sq miles
    - For reference, LA = 469 mi\(^2\); LA County = 4,083 mi\(^2\)
  - 200,000 cats = \( \sim 200 \text{ cats/ sq mile} \)
    - Assuming “equal distribution” of cats in the state
    - FYI 1,018 ppl per sq mile as of 2010 Census

- So…Providence is 18.5 sq miles (of land)
  - 18.5 sq mi * 200 cats/ sq mi = \( 3,700 \text{ feral cats} \)
  - We identified 386 cats in 32 colonies = \( \sim 12 \text{ cats/colony} \)
  - If there are actually 3,700 feral cats in Providence, we are missing \( \sim 3,300 \text{ cats (\sim 275 colonies!)} \)
  - In total, that would mean \( \sim 310 \text{ total colonies —almost 17 colonies in every square mile} \)
So what does this mean for RI?

- Having a smaller population than originally expected is great news:
  - Opens discussion for consideration of long-term, realistic population control solutions
    - I.e., not “shoveling against the tide”
  - Reduced public health impact
  - Reduced environmental and wildlife impact

- This study serves as a baseline for a multi-year effort to evaluate feral cat population trends.
Unexpected benefit…

- Mapping provides colony data in a visual format that can be used to identify trends in size and health status.
  - Rescue/TNR organizations
    - Map health and TNR status of existing colonies
    - Document population changes over time as programs take effect
    - Quickly identify new colonies needing attention
  - Public health
    - Identify individual colonies that may pose human health risks
  - Wildlife management agencies
    - Identify colonies of concern near at risk species populations
    - Evaluate impact of colony and feeding stations on other wildlife behavior (e.g., coyotes)
- Etc.
Google Map Images
Newport, RI
Google Map Images
<table>
<thead>
<tr>
<th><strong>JOHNSTON</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FID</strong></td>
<td>123</td>
</tr>
<tr>
<td><strong>Town</strong></td>
<td>JOHNSTON</td>
</tr>
<tr>
<td><strong>NewID</strong></td>
<td>JOHN4</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>339 Simmonsville Ave</td>
</tr>
<tr>
<td><strong>Identified by</strong></td>
<td>ACO</td>
</tr>
<tr>
<td><strong># Cats Low</strong></td>
<td>20</td>
</tr>
<tr>
<td><strong># Cats High</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Source_of_est</strong></td>
<td>ACO</td>
</tr>
<tr>
<td><strong>Mgt_Appproach</strong></td>
<td>Unmgd TNR</td>
</tr>
<tr>
<td><strong>Urban/Rural?</strong></td>
<td>Urban</td>
</tr>
<tr>
<td><strong>Lat</strong></td>
<td>41.802008</td>
</tr>
<tr>
<td><strong>Lon</strong></td>
<td>-71.494398</td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td>Residents report seeing birds, skunks eating food (feeding locations at bldg #341 and #349)</td>
</tr>
</tbody>
</table>
Thank you!