



Optimizing Outdoor Cat Management to Minimize Preventable Deaths

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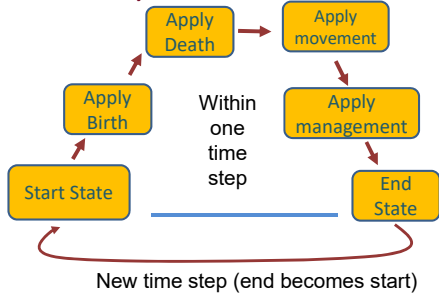


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Cat simulation model (Miller et al. 2014)


Parameters

- Age-specific birth rates, survival rates, dispersal rates, etc.



New time step (end becomes start)





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Alliance for Contraception in CATS & DOGS

Population Dynamics Modeling and Field Studies to Improve Development of Technologies for Non-Surgical Sterilization of Cats and Dogs

Scientific Think Tank
June 8-10, 2011
Upperville, VA






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FRC Initiative

- Dr. Phil Miller, CPSP
- Dr. Aaron Anderson, NWRC
- Dr. John Boone, ACC&D, GBBO, HSUS
- Joyce Briggs, ACC&D
- Val Benka, ACC&D
- Dr. Julie Levy, U. Flor. Maddie's Shelter Med. Prog., ACC&D Sci. Adv.,
- Dr. Margaret Slater, ASPCA, ACC&D Sci. Adv.
- Dr. Steve Zawistowski, ASPCA, ACC&D Sci. Adv.
- Dr. Dennis Lawler, Univ. of Illinois
- Dr. Felicia Nutter, Tufts Univ.













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PLOS ONE

RESEARCH ARTICLE

Simulating Free-Roaming Cat Population Management Options in Open Demographic Environments

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frontiers in Veterinary Science


ORIGINAL RESEARCH
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A Long-Term Lens: Cumulative Impacts of Free-Roaming Cat Management Strategy and Intensity on Preventable Cat Mortalities


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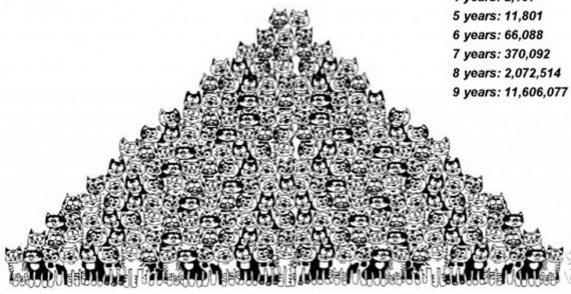
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RTF



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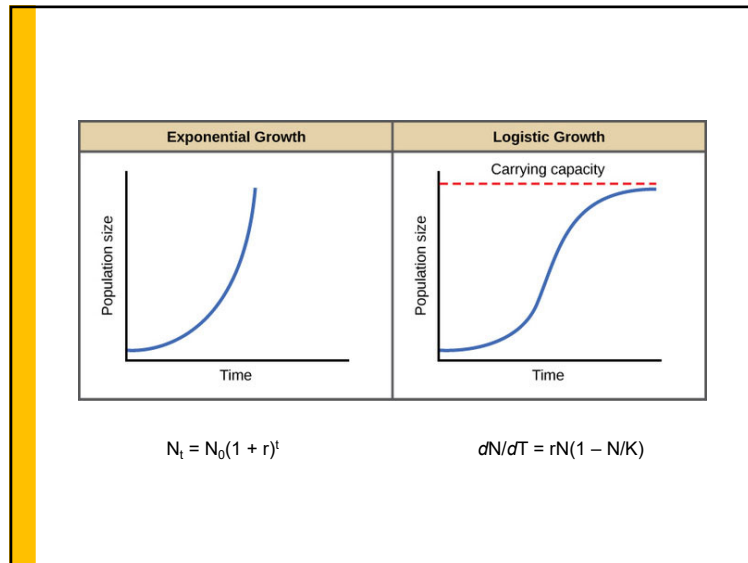


An unspayed female cat, her mate and all of their offspring, producing 2 litters per year, with 2.8 surviving kittens per litter can total:

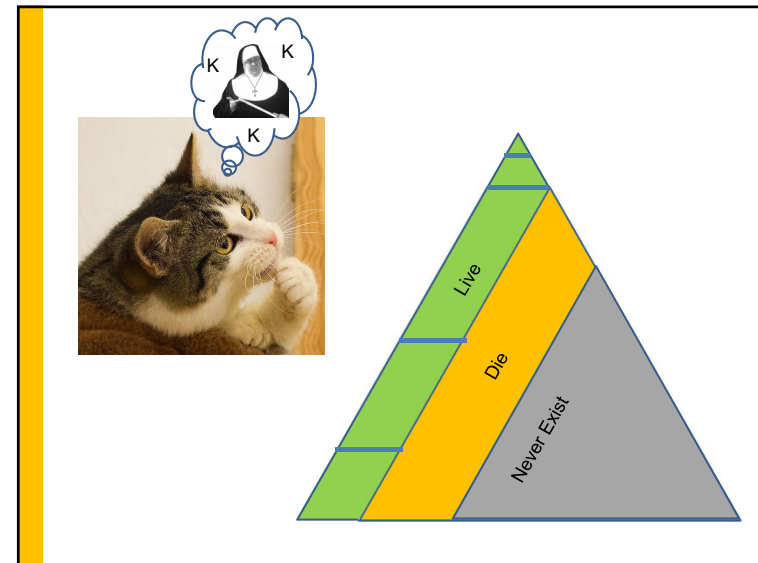
- 1 year: 12
- 2 years: 67
- 3 years: 376
- 4 years: 2,107
- 5 years: 11,801
- 6 years: 66,088
- 7 years: 370,092
- 8 years: 2,072,514
- 9 years: 11,606,077

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Scenarios

- No Action (Baseline)
- Light Removal (Remove 25%)
- Heavy Removal (Remove 50%)
- Light Culling (Remove 25%, return to K, repeat)
- Heavy Culling (Remove 50%, return to K, repeat)
- Light Sterilization (Sterilize 25%)
- Heavy Sterilization (Sterilize 75%)

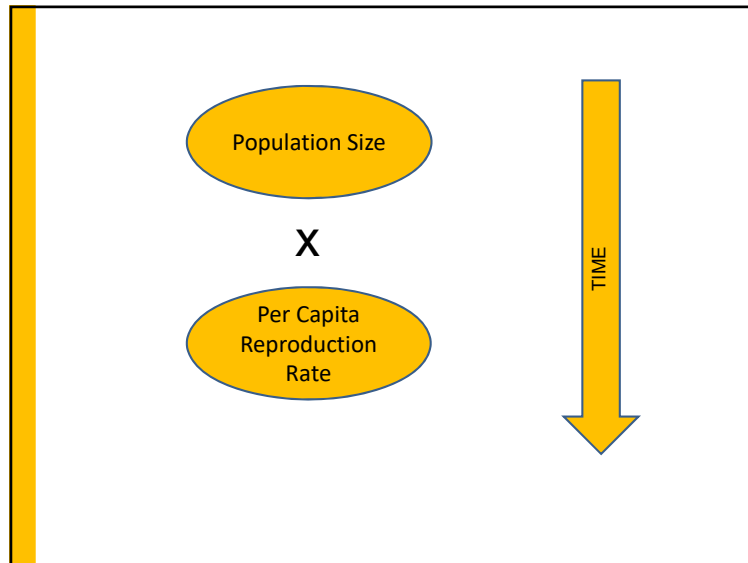
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Cumulative Preventable Deaths over 10 Years

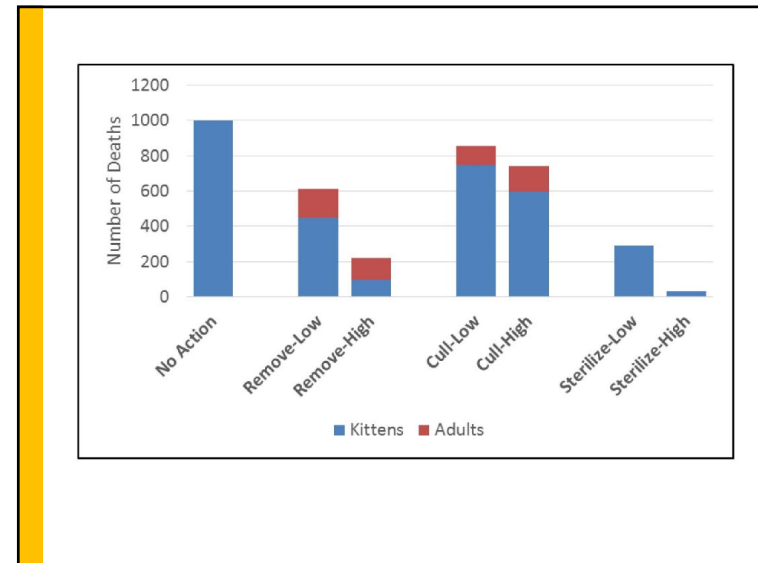
- Kittens that die before 6 mo.
- Adults removed and killed



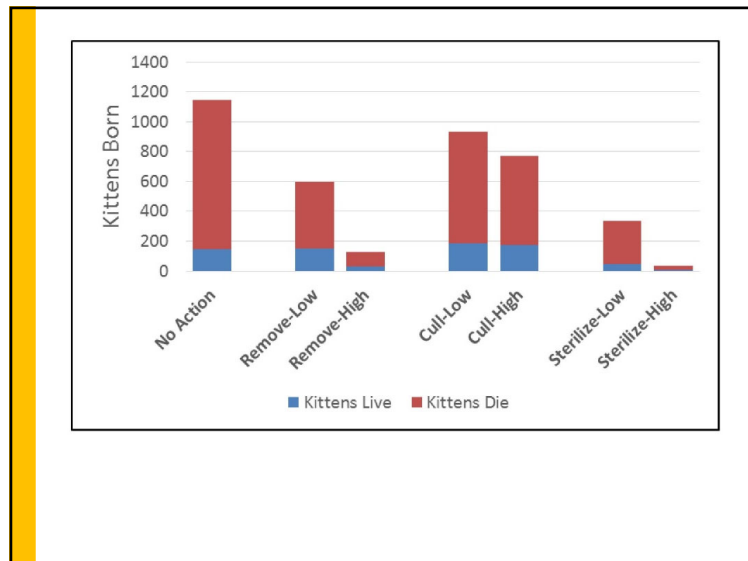
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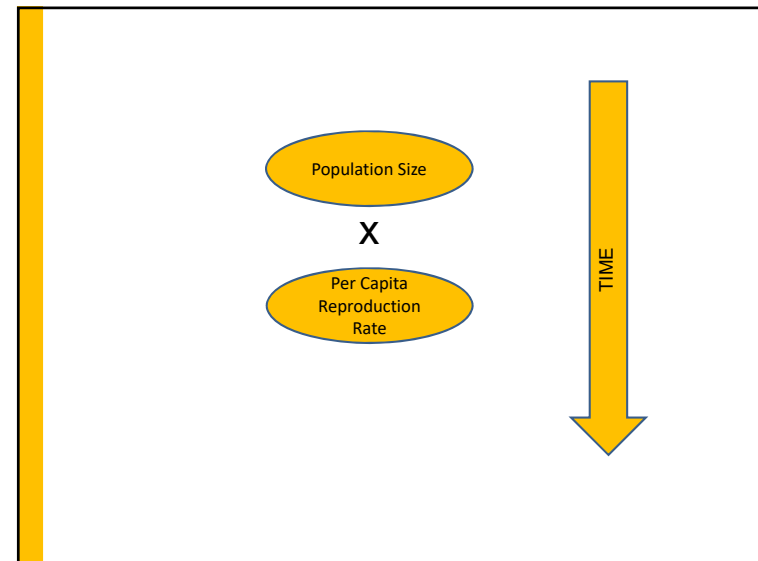
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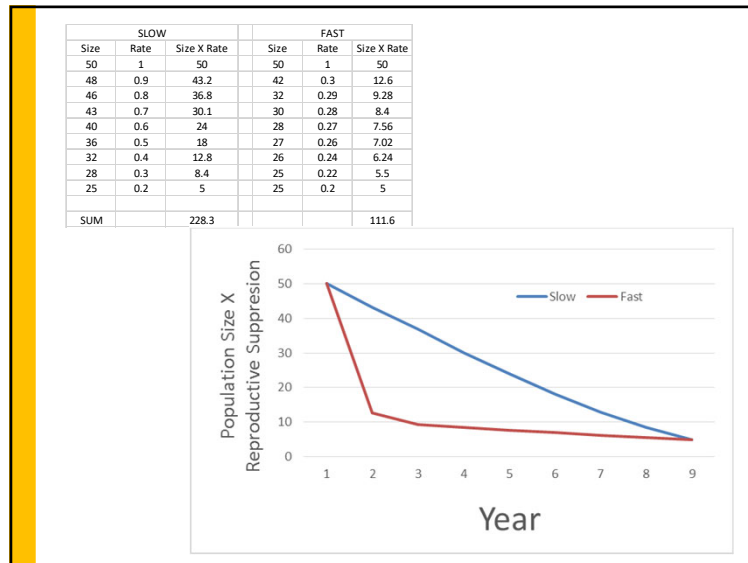
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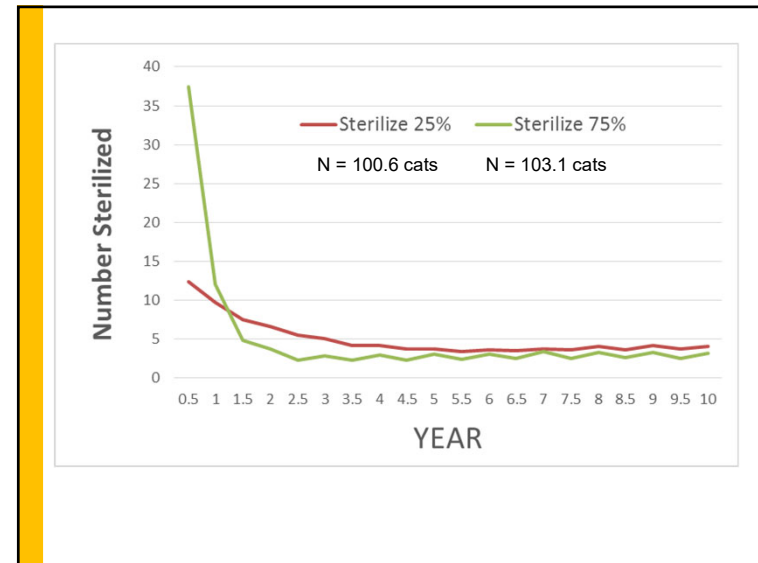
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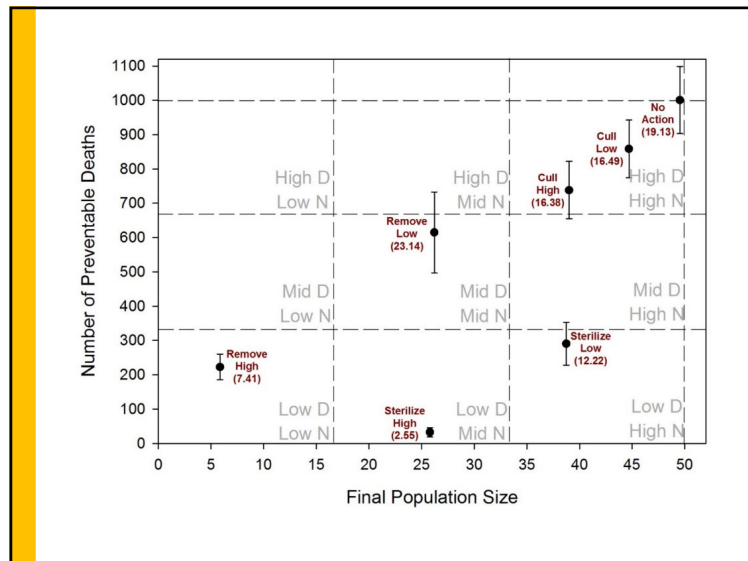
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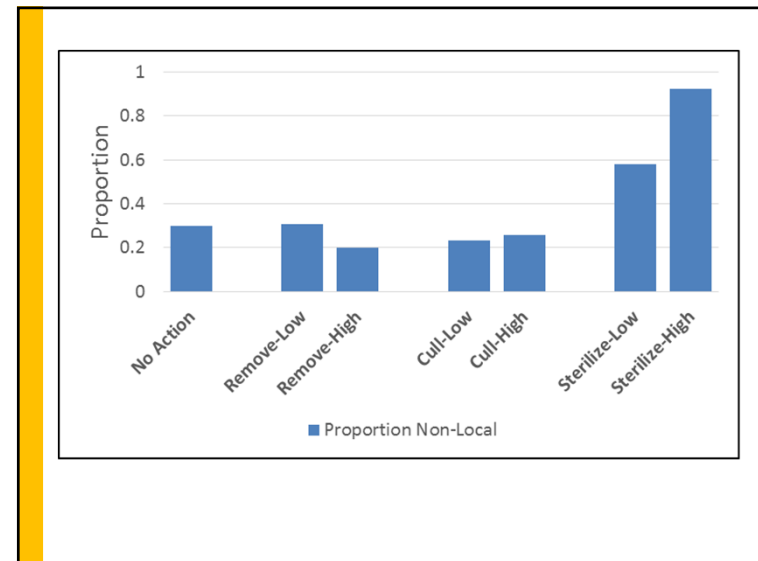
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Conclusion for TNR

- Intensity →
 - Far fewer preventable deaths
 - Better population reduction
- Project planning and funding

YEAR	Sterilize 25%	Sterilize 75%
0.5	12	38
1	8	10
1.5	7	5
2	6	4
2.5	5.5	3.5
3	5	3
3.5	4.8	3
4	4.5	3
4.5	4.5	3
5	4.5	3
5.5	4.5	3
6	4.5	3
6.5	4.5	3
7	4.5	3
7.5	4.5	3
8	4.5	3
8.5	4.5	3
9	4.5	3
9.5	4.5	3
10	4.5	3

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Next... Economics

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