"Latrine Site Characteristics of Spottednecked Otters at Rubondo Island National Park, Tanzanian: Goals and Preliminary Assessments

Janice Reed-Smith and Thomas L. Serfass

Honor the scat....

...We smell them (yep, that's otter!)

...We argue about what they tell us

... They define many of us

Scat





River Otters in Pennsylvania: An Approach to Predator Reintroduction



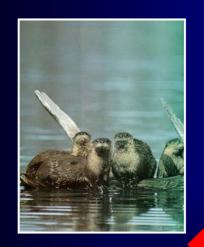
Post-translocation Monitoring & Evaluation

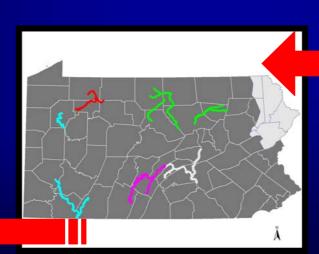
- ✓ Short-Term
- ✓ Long-Term
- **✓ Develop Standardized Protocols**













Spraint Site Surveys

Where to search ...

Logistic Regression and PATREC Models (latrine vs random sites)

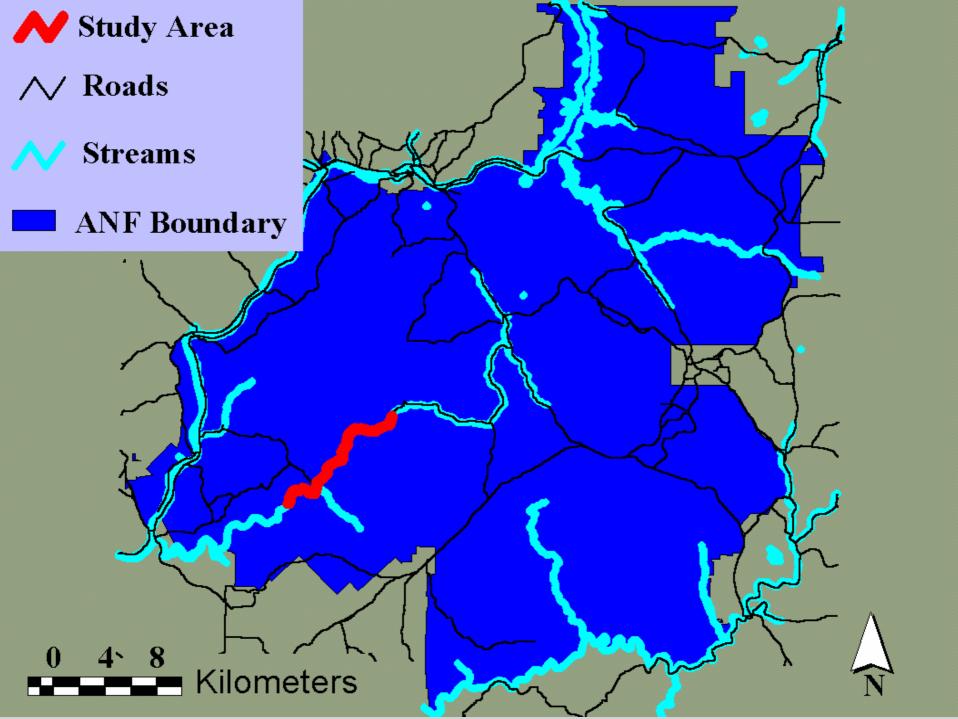
Latrine Site Characteristics

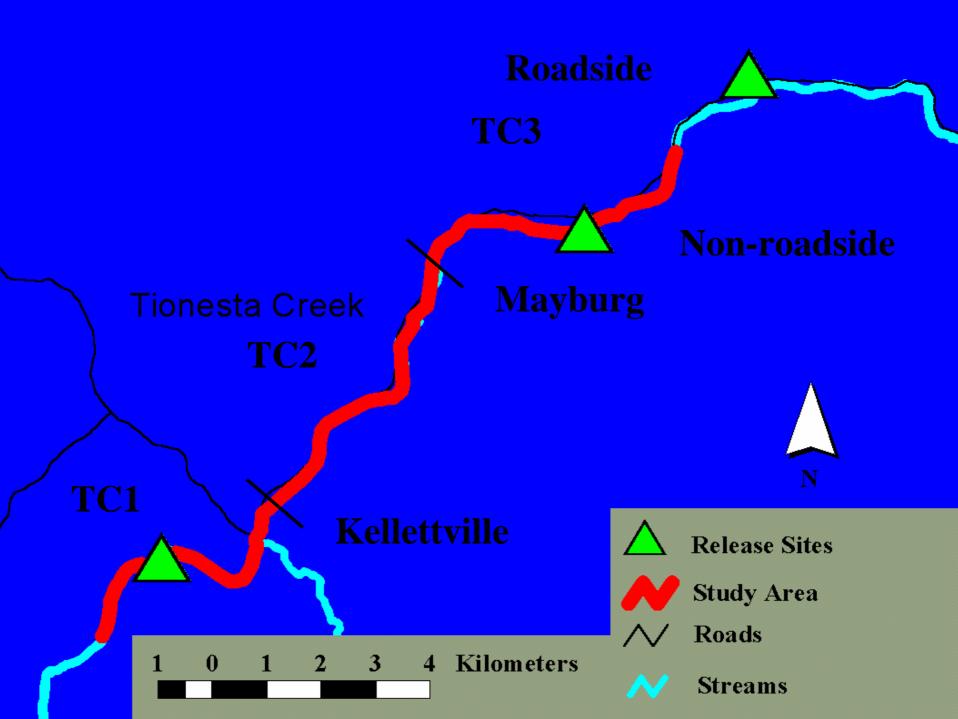
- <10 m from bank
- Associated with:
 - Large coniferous trees
 - Points of land
 - Rock formations
 - Beaver activity
 - Tributary Streams





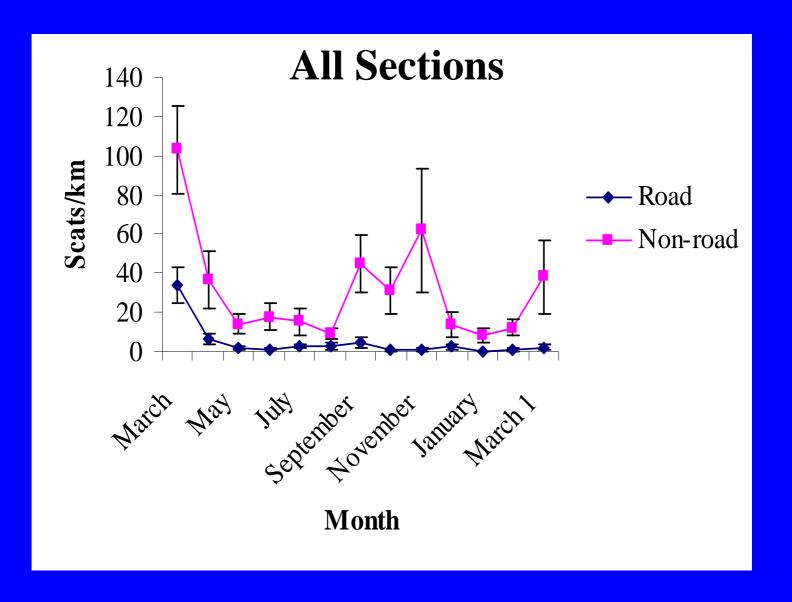
When to search ...

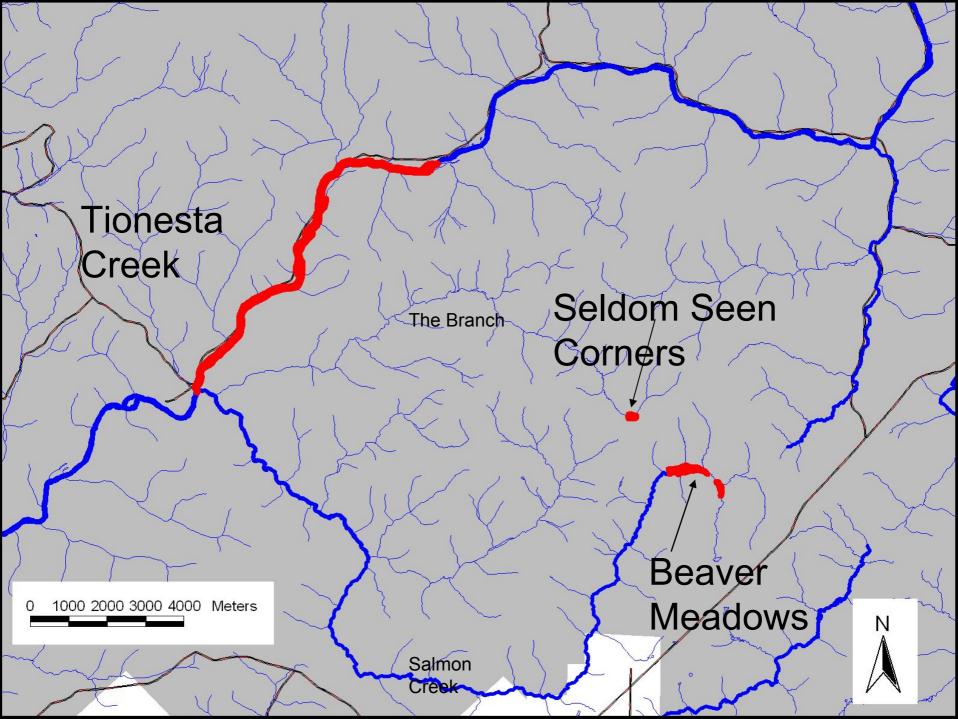






Scats/km





Remote Cameras

Little is known about otter behavior at latrine sites...

- Group composition during visits
- Number of otters marking
- Duration of visits
- Time of visits
- Behavior while at the site

Initial research as part of Sadie Steven's MS Research....

Seasonal Variation in Scent Marking by River Otters

Zach H. Olson

Frostburg State University, Dept. of Biology

Thomas L. Serfass

Frostburg State University, Dept. of Biology

Olin E. Rhodes, Jr.

Purdue University, Dept. of Forestry and Natural Resources

Common Scent Marks at Latrines



Scat





Anal Sac Secretions





Seasonal Variation

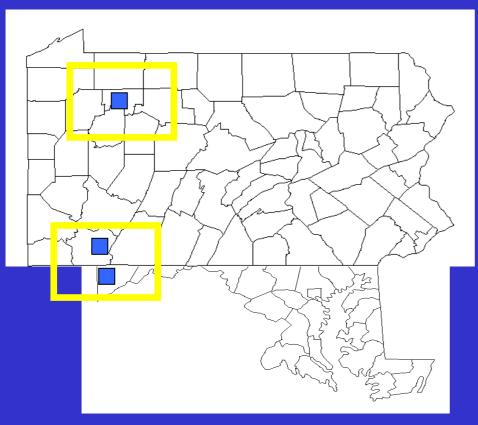
- Carpenter (2001) and Mills (2004)
 - Used Sign Surveys
 - Seasonal Variation
 - peaks in spring and fall
- Stevens (2005)
 - Used Remote Cameras at Latrine Sites
 - Seasonal Variation
 - Group Size and Visitation Intensity
- Hypothesized
 - spring peak = breeding season
 - fall peak = juveniles recruiting into marking pop.

Objectives

- Analyze visitation (remote cameras) <u>and</u> scent marking (sign surveys)
- Quantify:
 - Seasonal variation in river otter <u>Scent Marking</u>
 - Seasonal variation in <u>Visitation</u>
 - Variation in <u>Time of Visit</u> and <u>Group Size</u>
 - Temporal <u>Periodicity</u> of latrine visits

Methods – Study Areas

8 latrine sites in two drainages: 1 Aug 2004 – 31 Aug 2005



Tionesta Creek

Youghiogheny River







TrailMaster® Still

TrailMaster® Video Reconyx Silent Image™



- Seasonal Variation in Scent Marking
 - # Scats, Anal Slimes, & Scats with Slimes
 - Weins' Heterogeneity Index (Weins 1974)
 - Relative contribution compared with total
- Seasonal Variation in <u>Visitation</u>
 - Freidman ANOVA



- Variation in **Time of Visit**
 - Nocturnal, Diurnal, and Crepuscular
 - Contingency Tables (Chi Square)
 - Season, Group Size, and Study Area
 - Forage Model
 - "availability" of each time category
- Variation in **Group Size**
 - Average group size by month
 - Kruskal-Wallis ANOVA
 - Multiple Comparison of mean ranks (Z')



Periodicity

- # of days between visits at each latrine site within seasons
- All latrine sites were pooled within seasons
- 0 through 6 and ≥7
- Contingency Table (Chi Square) proportional differences in the pattern of visitation among seasons

Results



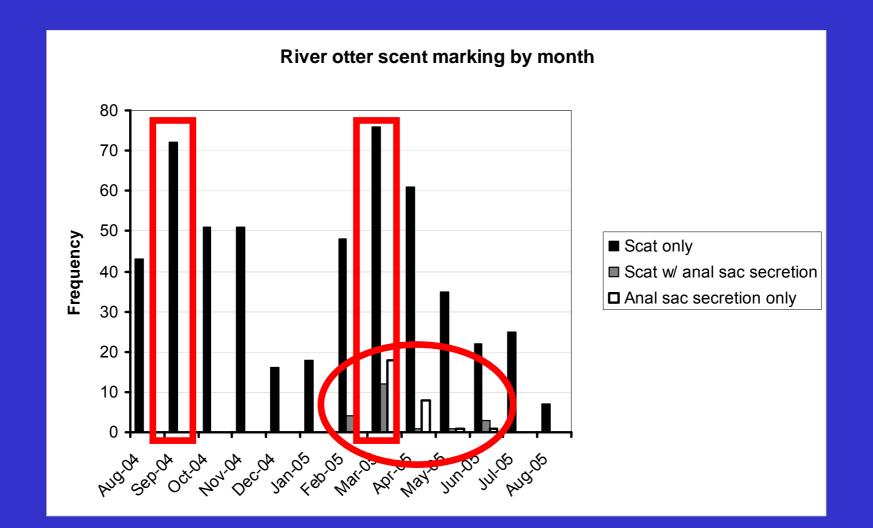
Results

• Latrine sites were monitored for 2,698 latrinenights

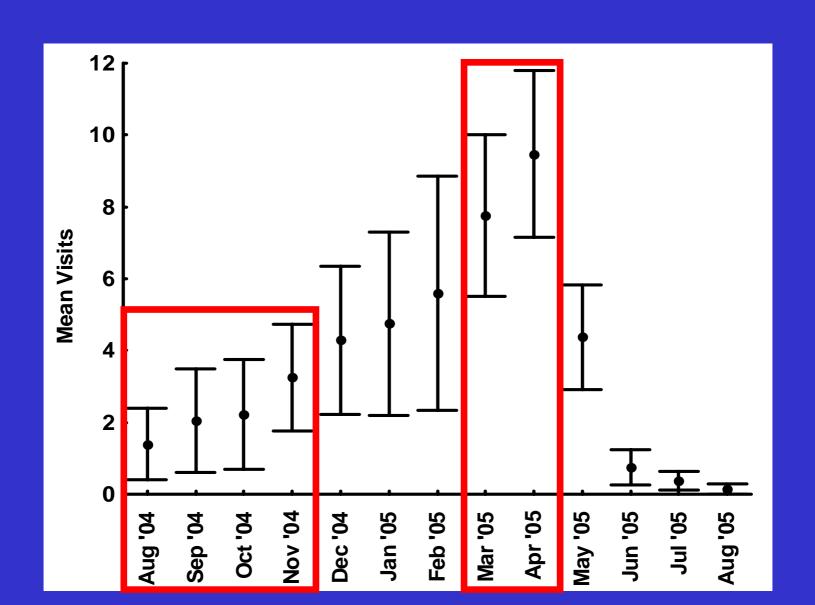
• River otters visited 327 times

Results – Scent Marks

• 561 scats, 28 anal slimes, and 21 scats w/ slimes

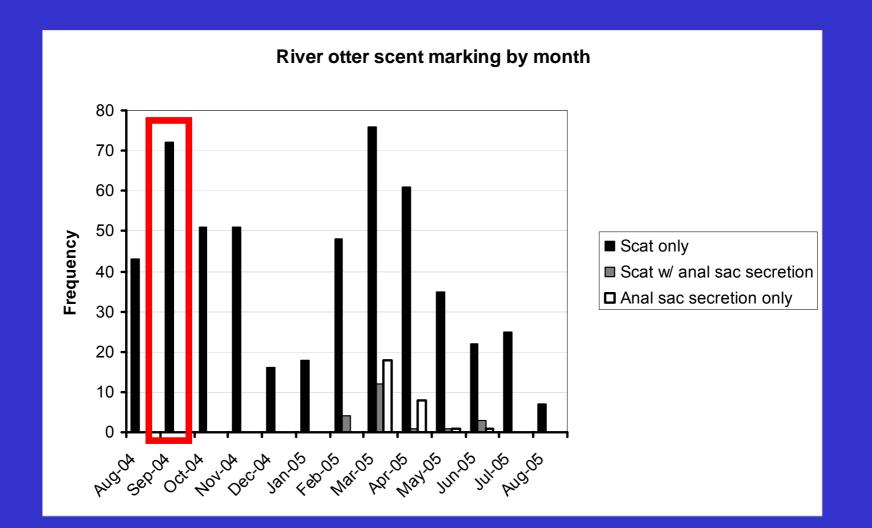


Results - Visits

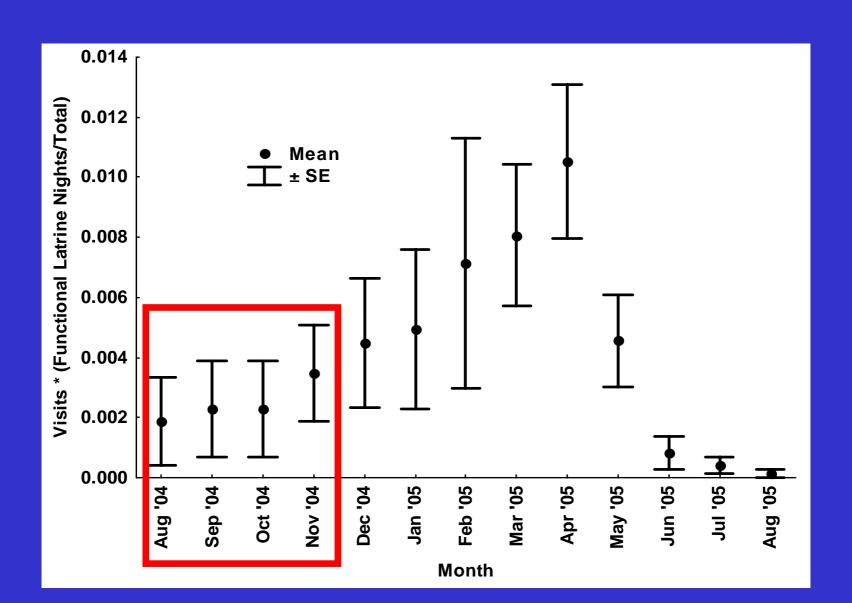


Results – Scent Marks

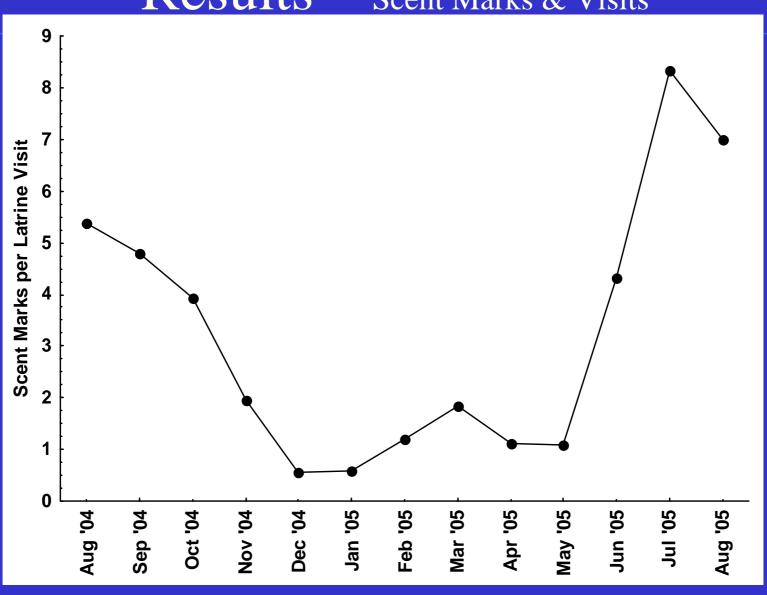
• 561 scats, 28 anal slimes, and 21 scats w/ slimes



Results - Visits



Results — Scent Marks & Visits



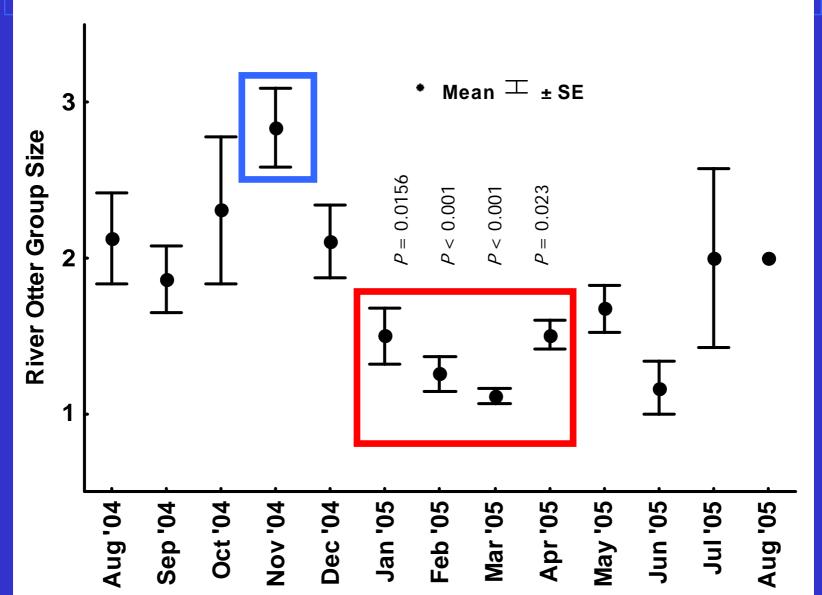
Results — Time of Visit

- Time of Visit did not differ by:
 - Season (P = 0.405)
 - Group Size (P = 0.166)
 - Study Area (*P*= 0.177)
- River otters visited at night (n = 231)
 - -4 times more often than during the day (n = 54)
 - 5 times more often than during crepuscular periods (n = 42)

		Standardized
		selection
Season	Time Category	index ^a (B _i)
Spring	Night	0.600
	Day	0.086
	Crepuscular	0.313
Summer	Night	0.361
'	Day	0.105
	Crepuscular	0.534
Fall	Night	0.388
	Day	0.056
	Crepuscular	0.557
Winter	Night	0.392
	Day	0.110
	Crepuscular	0.498

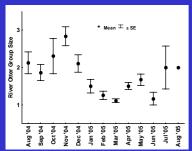


Results – Group Size

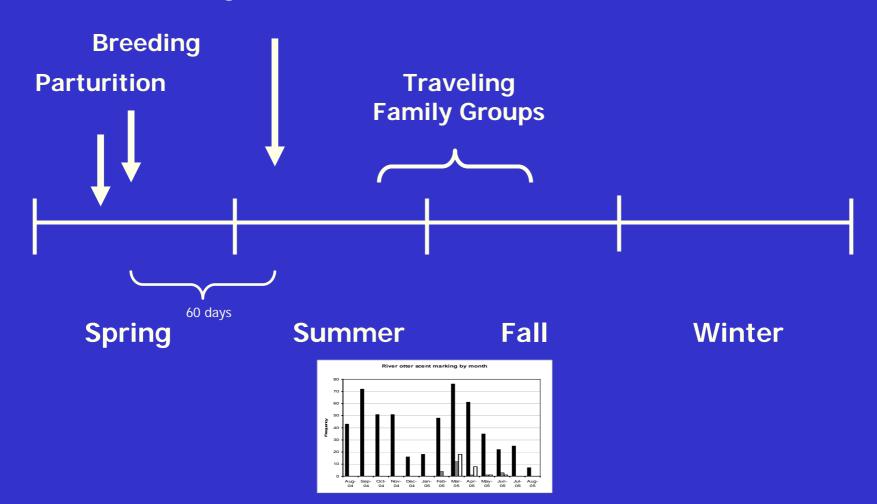


Discussion

- This study confirms:
 - River otters visit most frequently at night
 - Scent marking varies seasonally in Pennsylvania and Maryland
 - Group Size
 - Visitation Rate
- Combined remote cameras and traditional sign surveys



Emergence of Cubs

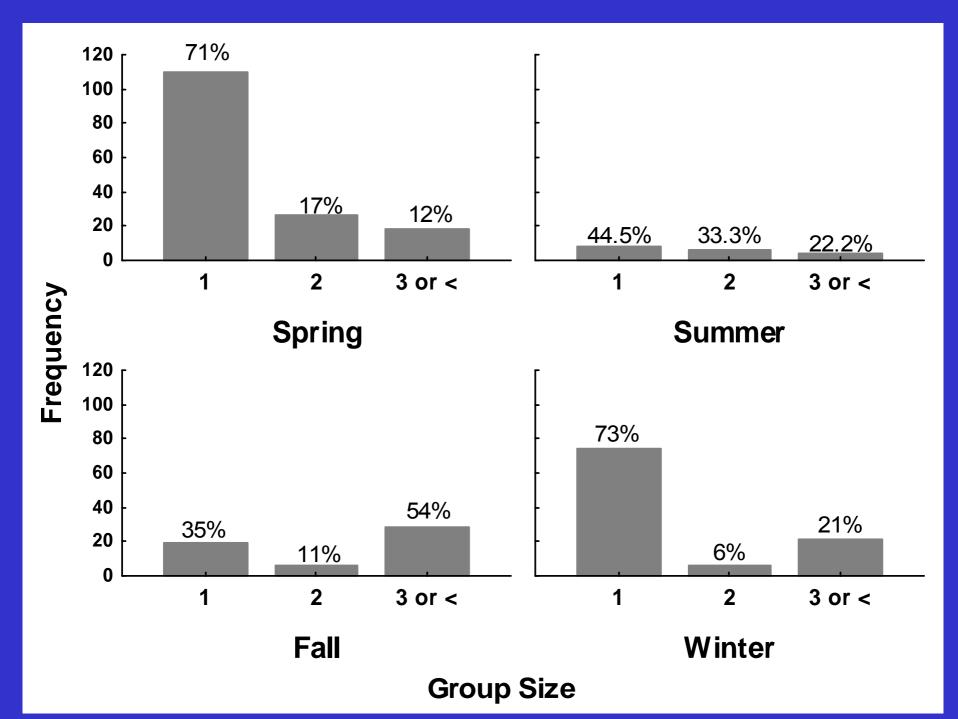


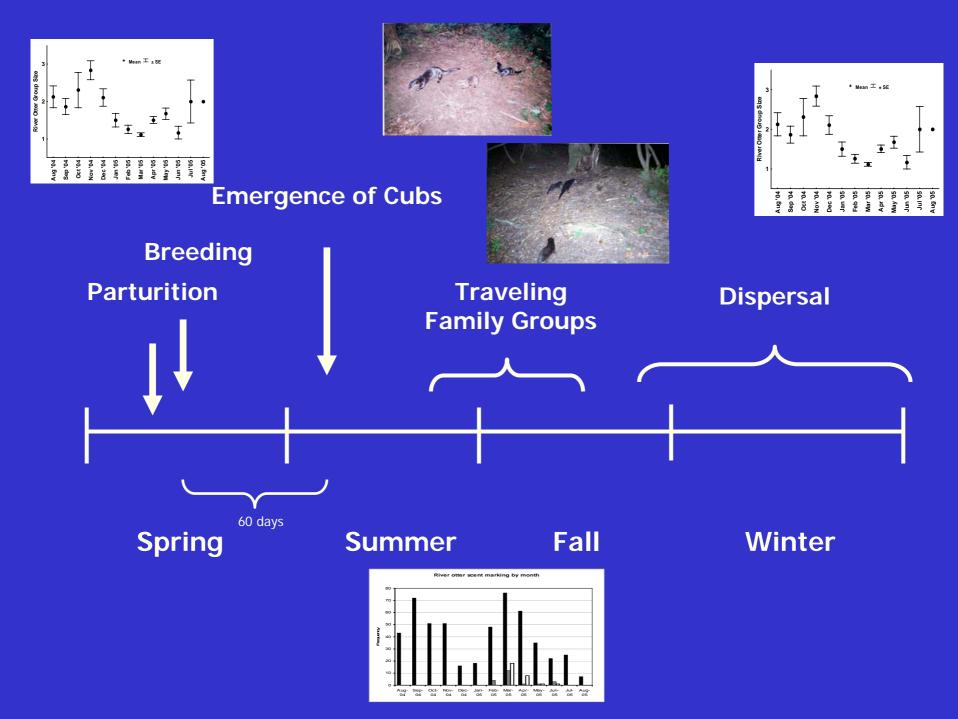


Tionesta Creek
Late Summer '05



Sang Run
Late Summer '04





Management Implications

- How does this apply?
 - Best season for detecting rive



Spring



Fall



EAST AFRICAN OTTER PROJECT

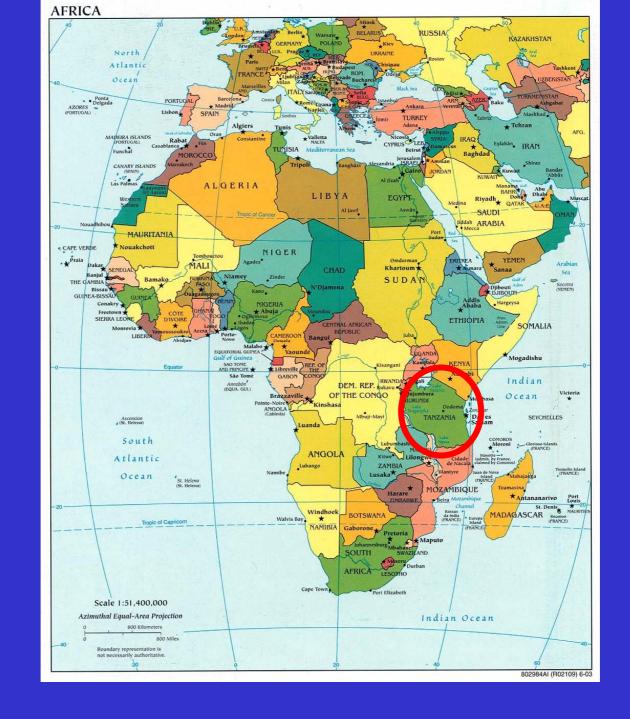
A 2-5 YEAR PROJECT WITH INTENT OF USING OTTERS AS A "FLAGSHIP" FOR PROMOTING:

- ENVIRONMENTAL EDUCATION
 - GRADUATE TRAINING
- FOSTERING AN AWARENESS OF PROTECTING AQUATIC ECOSYSTEMS
 - DEVELOPMENT OF CONSERVATION STRATEGIES FOR OTTERS













RUBONDO ISLAND NATIONAL PARK

- Large Island in Lake Victoria (about 240 sq km);
- CITIZENS REMOVED TO ESTABLISH PARK;
- MANY INTRODUCTIONS FOR CONSERVATION PURPOSES (e.g., CHIMPS, ELEPHANTS, GIRAFFE);
- ACCESS IS DIFFICULT, LIMITING TOURISM----BUT GREAT POTENTIAL;
- FOCUS OF OUR OTTER RESEARCH;
- INTRODUCTION OF NILE PERCH;
- POACHING.



























EAST AFRICAN OTTER PROJECT

A 2-5 YEAR PROJECT WITH INTENT OF USING OTTERS AS A "FLAGSHIP" FOR PROMOTING:

ENVIRONMENTAL EDUCATION











Acknowledgements

- -Frankfurt Zoological Society
- -University of Maryland Wilson H. Elkins Award
- -Columbus Zoo
- -John Ball Zoo
- -Houston Zoo



Wild Resource Conservation Fund



