

# Where the Wild Things Are

## *A Study of Coyotes in your Neighborhood*



**The Narragansett Bay Coyote Study, The Conservation Agency's latest undertaking, involves the scientific study of coyotes in Rhode Island combined with educational programming and community outreach.**

**The study is designed to answer :**

- How many coyotes are there?
- Are the populations stable or growing?
- What resources are they using?
- What are the best management strategies for coyote populations?

**The novel approach of GPS satellite and radio tracking, tied to an accessible website, is an exciting way of involving the community in the daily activities of coyotes as they move through our neighborhoods.**

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### **The Conservation Agency**

The Conservation Agency is a scientific, non-profit, 501(c)(3) organization dedicated to the conservation of natural biodiversity through exploration and discovery as well as conservation and preservation.

*I.R.S. 05-0392995*



## The Coyote Study Staff:



Numi Mitchell, Ph.D. – Lead Scientist and Project Director

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Numi is a biologist specializing in the study of resource and habitat use by wildlife. She usually troubleshoots endangered species problems – this is her first project in which management issues concern a species that is too successful – an interesting challenge.



Spencer Tripp – Wildlife Trapping Expert

(503) 669-5040 [spencer@theconservationagency.org](mailto:spencer@theconservationagency.org)

Spencer is a professional trapper with over 50 years experience with the behavior and habits of furbearers. He is the National Trappers Association Director for the Rhode Island Trappers Association acting as the liaison between the State and National Agencies.



Rachelle Neiheiser – Education Coordinator

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Rachelle is pursuing her Masters of Education through Lesley University. She recently moved to Jamestown after teaching in Washington D.C. Rachelle is excited to study coyotes with teachers, students, and members of the community.



Ralph Pratt, D.V.M. – Project Veterinarian

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Ralph took his degree at Tuft's School of Veterinary Medicine and has his own practice, the West Greenwich Animal Hospital, which he runs with his wife Amy Pratt, D.V.M. He started his graduate career in wildlife ecology, moved on to veterinary medicine, and has now come full circle as he became Chief Veterinarian for the Narragansett Bay Coyote Study.

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## Science Objectives

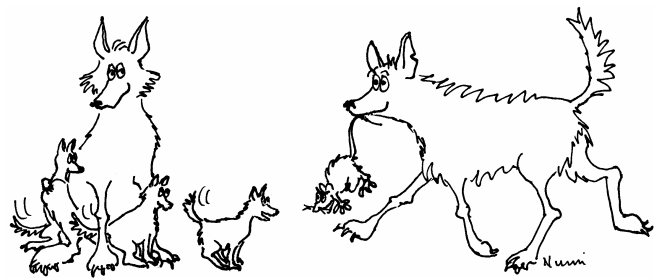
Recently, there has been much concern expressed both in local and regional press about what appears to be rapidly growing coyote populations. Some have strong opinions about management practices that should be implemented to control coyotes. Without regional scientific data, however, neither local legislators nor DEM have the tools needed to make decisions about coyote management. This is where our study begins.



We will improve the quality of available public information about Rhode Island's coyotes as well as the quality of public outreach through valid scientific sources. This will be accomplished with the cooperation of the local school systems and a Coyote page posted on The Conservation Agency's website. ([www.theconservationagency.org](http://www.theconservationagency.org)) The equipment required to track the coyotes will allow us to post the animals' location and movement in near real time. Through extensive cooperation with local school systems, data created by this study will be immediately incorporated into the schools' lesson plans. School children will be able, through the internet, to check the coyotes' movements daily and learn about their behavior and habits. In the final stage of the study, we will create Management Strategies for Coyotes on Conanicut and Aquidneck Islands. Local legislators and DEM will be able to use these recommendations to make informed management decisions.

### The study will increase scientific understanding by revealing:

- resource-use and factors contributing to abundance
- habitats and regions they occupy
- home range sizes and movements
- pack territory sizes
- areas used for den sites
- social structure
- population density



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*The Conservation Agency is coordinating all scientific aspects of the project.*

*An Educational Coordinator has developed the curriculum components tailoring lesson plans to the needs of more than a dozen participating local schools. In addition, the Potter League for Animals and the Jamestown Teen Center are adding coyote lessons and activities to their programs.*

## Educational Objectives



The Narragansett Bay Coyote Study is designed to teach a wide range of interdisciplinary principles by involving students in an in-depth ongoing scientific study of a single species. This study will address many curricular needs, including Science, Reading, Social Studies, Geography, Math, and Writing. The elementary, middle, and high school case-study curricula provided will be tailored to meet appropriate standards and thus satisfy core requirements for the science year. Five hours of professional development training in GIS mapping will be provided to educators from schools selected to participate in this project.

The coyote was chosen because its habits and population biology are of personal relevance to students in Rhode Island: coyotes are increasingly seen in backyards throughout the state. Few people are ambivalent about coyotes and we anticipate that, whether initially anxious or curious, students as stakeholders will be engaged by this study. Science educators can use the interest and momentum generated by the specific case study to segue to topics in the general Science curriculum.

Through school fundraising, participating schools are encouraged to help by purchasing a collar (\$1,800) or fully supporting the costs of their school's involvement in the educational program (\$5,000).

### *Coyote kids will...*

- *Generate hypotheses*
- *Classify*
- *Sort*
- *Explore*
- *Examine*
- *Compare*
- *Contrast*
- *Gather data*
- *Observe*
- *Identify*



- *Analyze*
- *Interpret*
- *Evaluate*
- *Calculate*
- *Represent data*
- *Explain*
- *Define*
- *Make connections*
- *Problem solve*

# The Curriculum



Coyote Study Curricula will be offered for participating schools between Kindergarten and Twelfth grade. Depending on the level, they may include some or all of the following Science, Reading, Social Studies, Geography, Math, and Writing curriculum components:

## Evolutionary Biology:

- Classification
- Characteristics
- Evolution, natural selection
- Adaptations for survival
- Distributional expansion since 1900

Track coyote movement since 1900 and represent your findings on a map. What are some possible reasons for coyote expansion?

## Ecology:

- Habitat Use (by species, sex, age, season, time)
  - Hunting
  - Sleeping
  - Social
  - Denning
- Land Use (by species, sex, age, season, time)
  - Distances moved
  - Home range size
  - Territory size
- Behavior (by species, sex, age, season, time)
  - Activity
  - Social relationships
  - Social structure
  - Reproduction
  - Diet
  - Dispersal
  - Vocalization
- Role in the Biological Community
  - Predator-prey relationships
  - Competitive relationships
  - Effects of recent colonization

What are some characteristics of coyotes in our study? How do these coyote characteristics compare to coyote characteristics in children's literature, folktales, and the media?

Individualized lesson plans will be developed for participating schools to meet their curricular needs.

How are coyotes portrayed in folktales, legends, and myths from different cultures? What does this reveal about the culture and their view of coyotes and other animals in the story? Write your own folktale, legend, or myth about the coyote.

What do coyotes eat - from most to least? Graphically represent this in a chart showing the percentages of different foods in the coyote diet.

## Population Biology:

- Density
- Factors influencing population growth (limiting, increasing)
- Management strategies and management planning

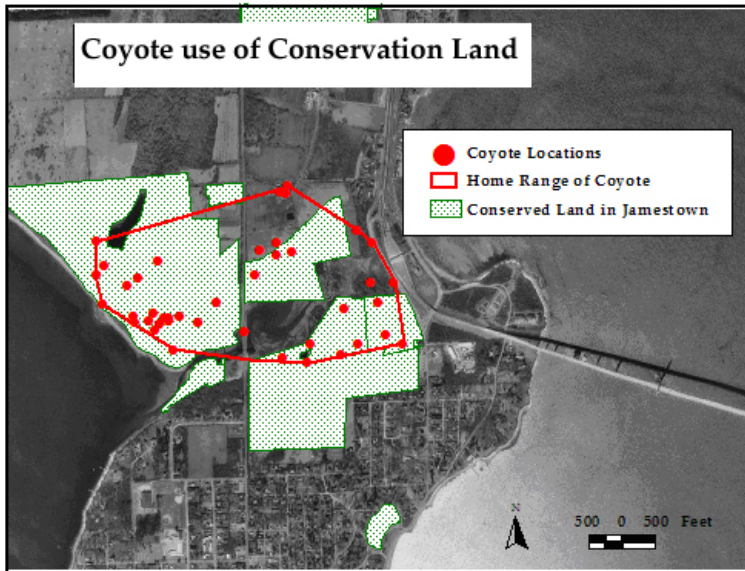
If there are X coyotes in a pack and each pack needs Y area to live - How many coyotes are in my town? How many coyotes are in my state?

## Additional Skills:

- Data collection and organization
- Data entry (spread sheets)
- Data analysis/math (frequency distributions, means, areas, statistical tests)
- GIS mapping (ESRI Arcview 3.x)
- Data presentation/reports: charts, figures, maps, tables, scientific writing

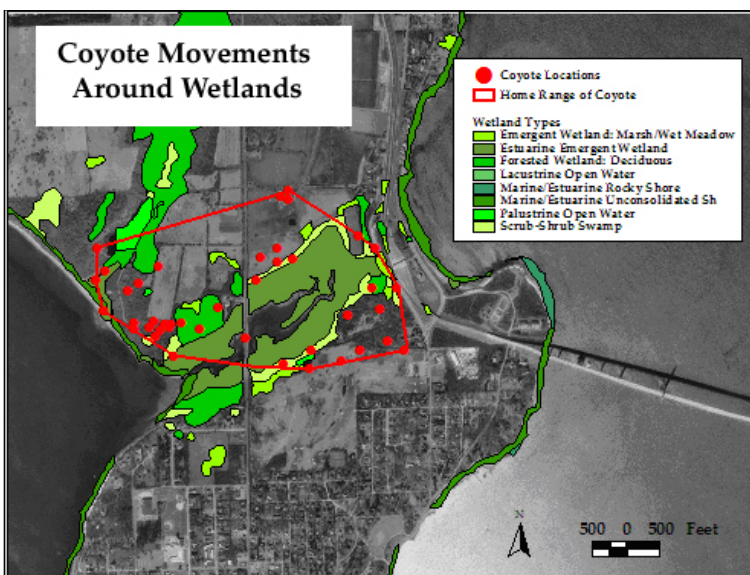
## Using Technology

A website will be dedicated to the Narragansett Bay Coyote Study. The website will allow area school children and the general public to follow the progress of the study. Coordinates reported by the satellite collars of coyotes will be posted to the website (with a 24 h delay) so that patterns of behavior, home range size, habitat use, will be revealed. The site will have a section containing lesson plan ideas for teachers as well as general information about coyotes for individual student research projects. Student projects will be published on the web! Check it out at [www.theconservationagency.org](http://www.theconservationagency.org).

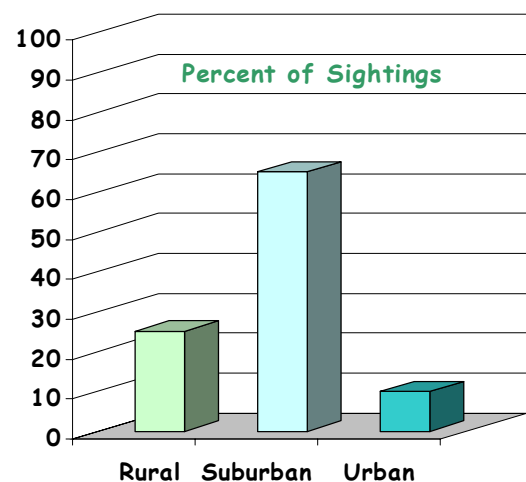


Students can download coyote location points daily from the Coyote Webpage at [www.theconservationagency.org](http://www.theconservationagency.org). Connect the dots to discover where, when, and how far they traveled throughout the day. Coyote kids will learn how to use the GIS computer program ArcView. Math and Science skills come into play as they generate hypotheses and make discoveries by analyzing real data.

Independent and class projects will be published on the Coyote website – our site for gathering information and sharing new discoveries!



Coyote Activity by Eli Mitchell (Age 8)



Participating educators will receive five hours of professional development training in GIS mapping with Lyn Malone, an authorized ESRI instructor and GIS Educational Training Specialist.

## Fundraising Efforts



### **Charter Contributor \$ 25,000**

Larger contributions help to underwrite costs of the overall study including the trapping and tagging of ten coyotes, as well as data on their pack members, in 2005-6; collection of information such as population density, resource use, diet; analysis of data and research for a peer reviewed technical study of Aquidneck and Conanicut Island coyotes; development of region-specific management strategies for Rhode Island.



### **Cyberspace Coyotes \$ 10,000**

Covers the costs associated with developing a web site dedicated to the Narragansett Bay Coyote Study. The website will allow area school children and the general public to follow the progress of the study. Coordinates reported by the satellite collars of each coyote will be posted to the web site weekly (with a 24 h delay) so that patterns of behavior, home range size, habitat use, will be revealed. The site will have a section containing lesson plan ideas for teachers as well as general information about coyotes for individual student research projects. Student projects will be published on the web!



### **Wiley Coyotes: School Sponsorship \$ 5,000**

The Narragansett Bay Coyote Study will partner a number of area classrooms with a coyote. The idea is a modification of a program created by CSIRO Australia which managed to increase awareness about great white sharks using satellite locations reported on a government web site. Reportedly, school children loved tracking where sharks "Neale" and "Heather" were. Schools from each of the Aquidneck Island communities, Jamestown, as well as off-island schools can participate in the study. A \$5,000 donation will cover the costs of setting up the program at one school including lesson plan assistance for teachers, presentation by program team and educational materials. Name the school's coyote!



### **Coyote Collars \$ 2,000**

The Conservation Agency will be using specialized combination GPS-radio collars which transmit each collared coyote's hourly location. The real-world coordinates transmitted will be used for GIS mapping and analysis. The radio signal component will allow scientists to directly approach the collared coyote and observe accompanying members of the pack.

## Sponsors and Contacts

Prince Charitable Trusts  
ESRI, GIS software leader  
The Bafflin Foundation  
West Greenwich Animal Hospital  
The Newport Community Schools  
The Potter League for Animals  
Conanicut Marine Services

Ali's Run  
Trattoria Sympatico  
HABIT locator systems  
St. Georges Academy  
Rhode Island College  
Newport Veterinary Clinic  
And many generous private individuals



*For more information contact:*

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