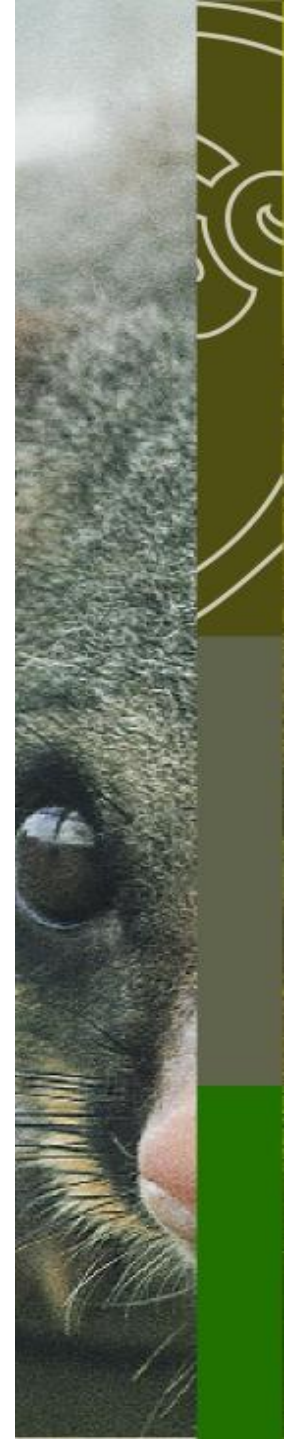




**Landcare Research**  
**Manaaki Whenua**

## Project C09X0505: Multi-species Pest Dynamics

*Interactions among pest species – consequences for management*



# Objectives



## Objective 1: Understanding multiple pest interactions.

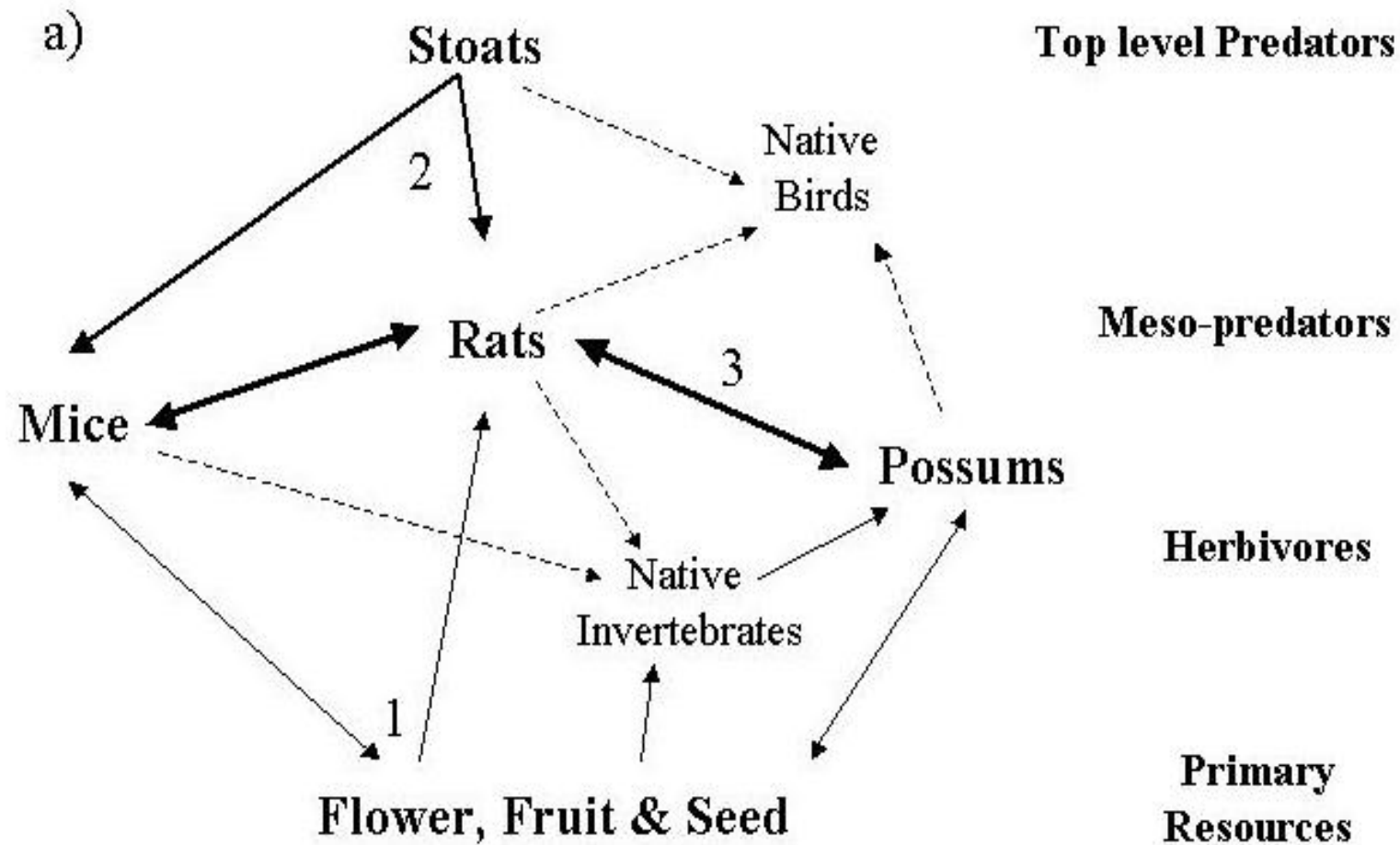
- (1) To determine what *drives* pest eruptions
- (2) To *quantify interactions* between pest species
- (3) To *understand how management* of one or more pest species affects the abundance of other pest species, and native biodiversity

## Objective 2: Prioritising control of multiple pests.

- (1) To optimise management strategies for multiple pest assemblages.

Large scale ecological experiments have been implemented in two priority ecosystems.

# Forest ecosystems



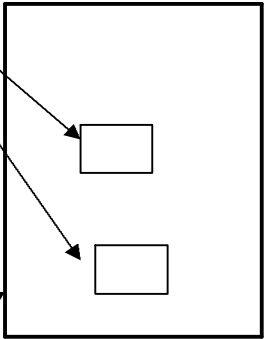
# Experimental setup

900 ha	900 ha	900 ha	900 ha
1080 Possum Control	1080 + Sustained Rat Control	Stoat Control	Experimental Control

x 2

# Experimental setup

Rat, mouse, possum, seed  
and invert monitoring (8 ha)

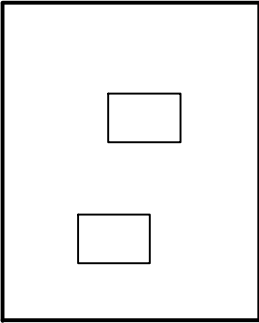


Stoat monitoring &  
diet samples (400ha)

900 ha

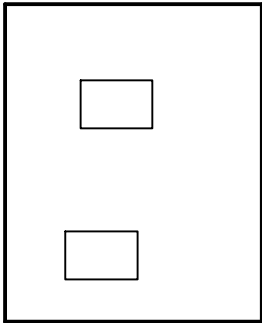
1080 Possum  
Control

900 ha



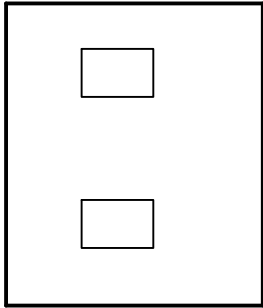
1080 + Sustained  
Rat Control

900 ha



Stoat  
Control

900 ha



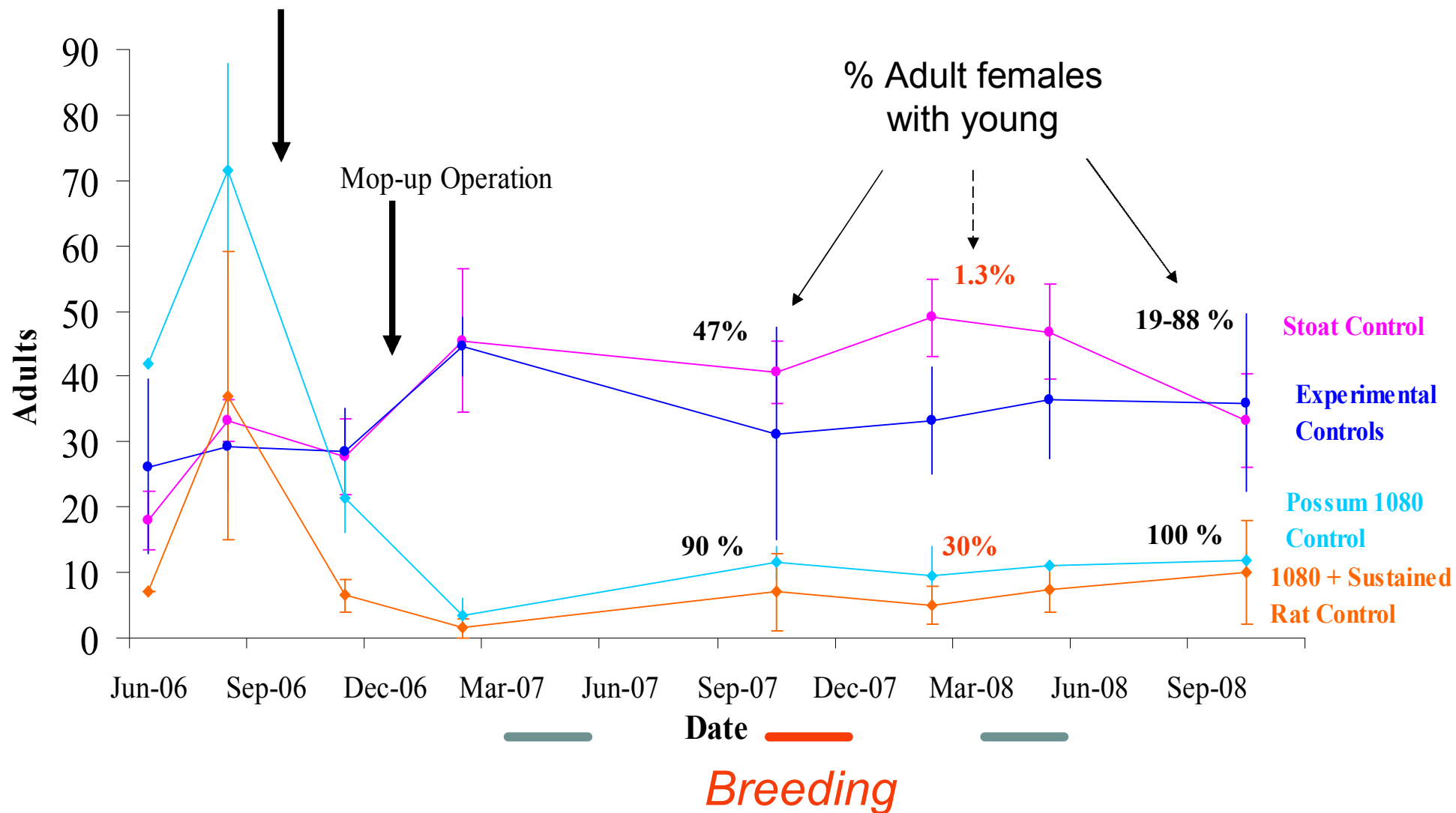
Experimental  
Control

x 2

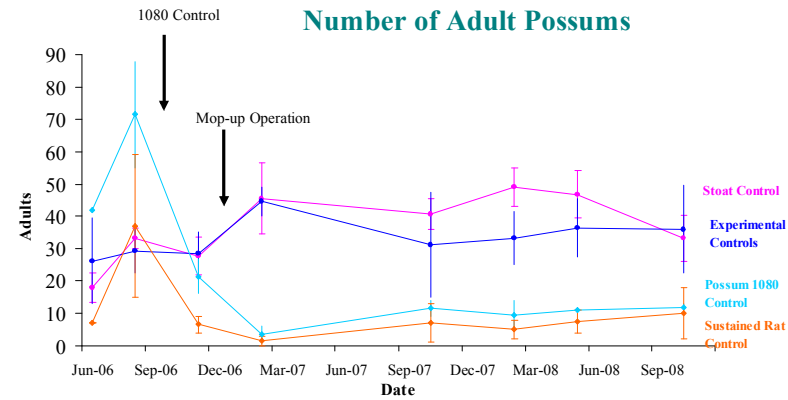


1080 Control

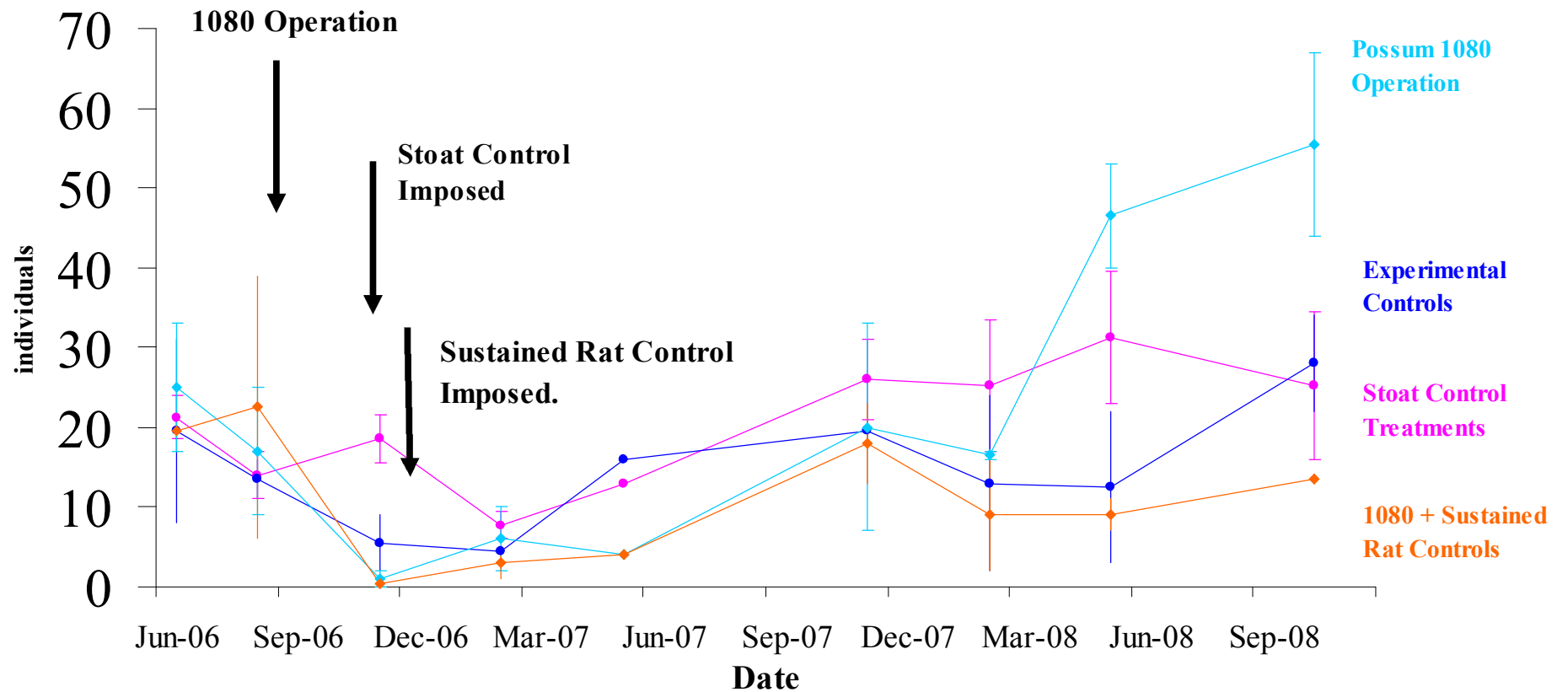
## Number of Adult Possums



## Number of Adult Possums

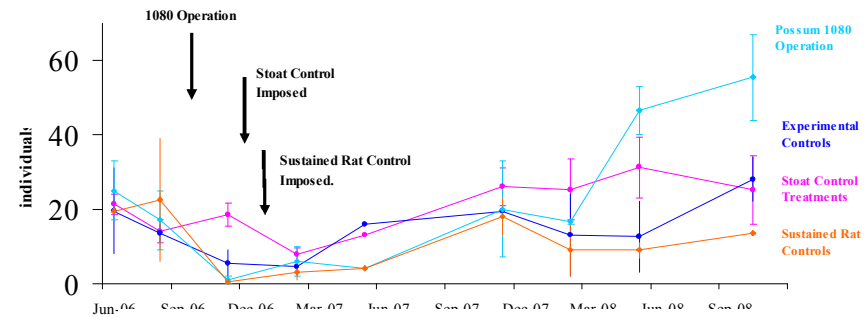


## Number of Ship Rats

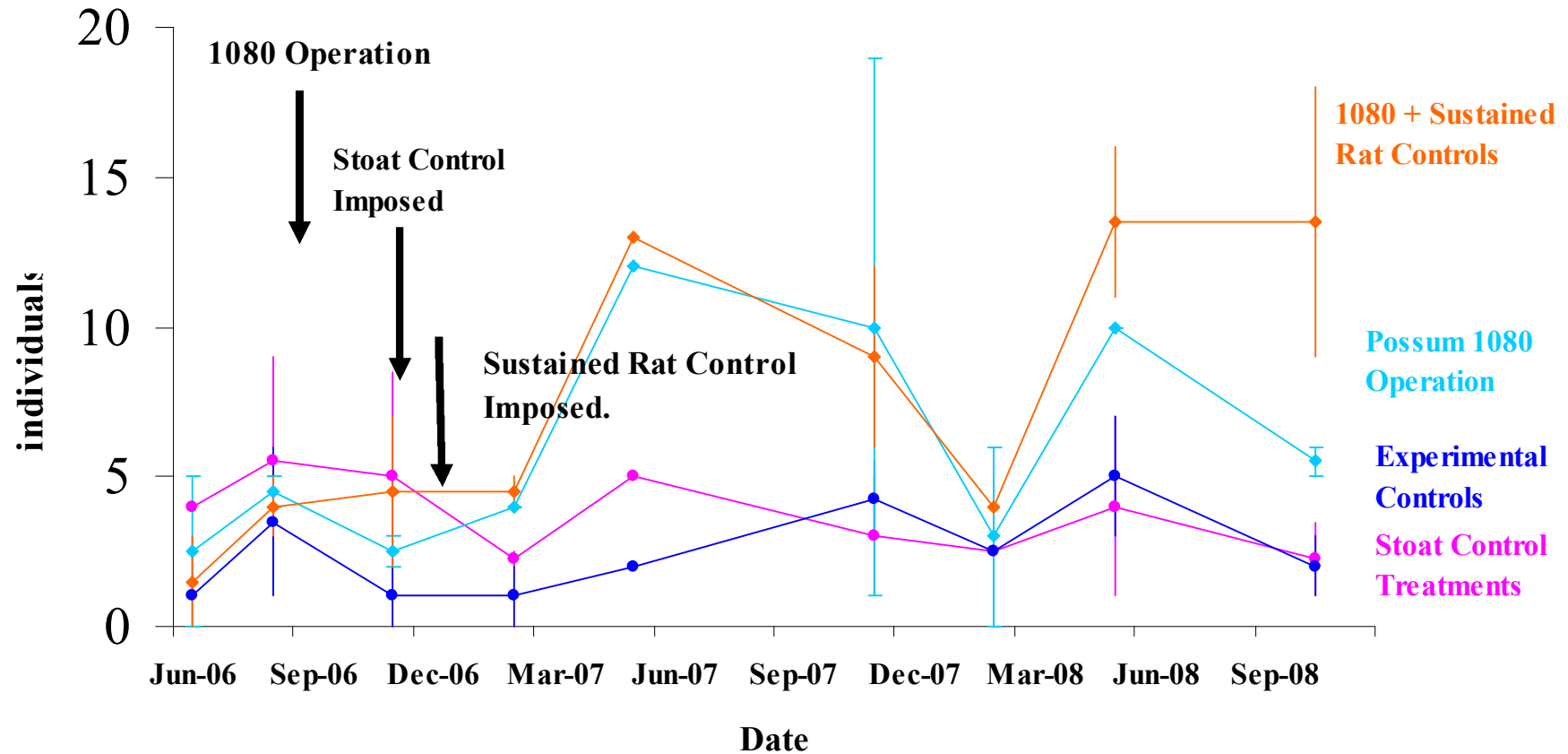




Number of Ship Rats



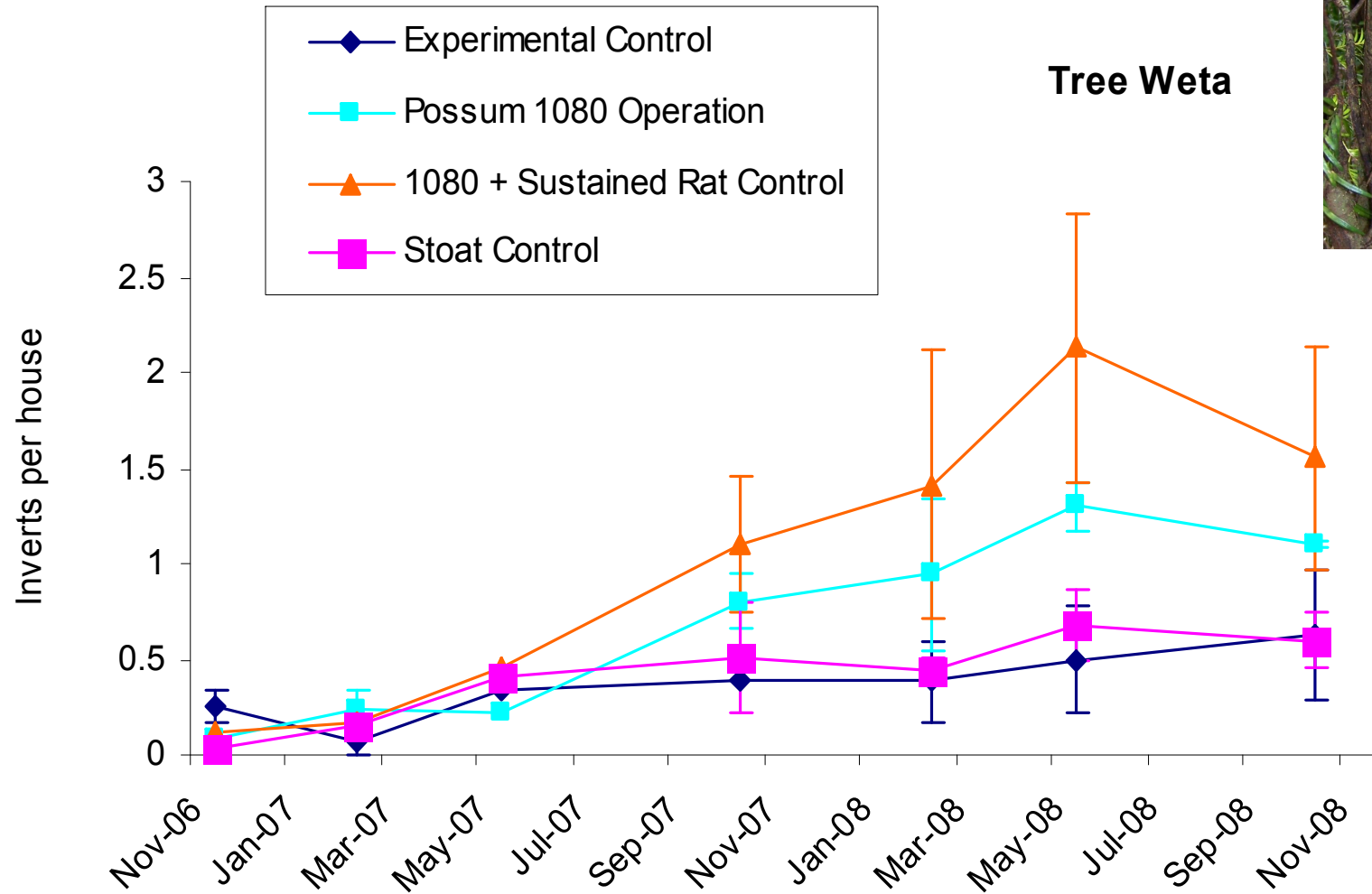
Number of Mice



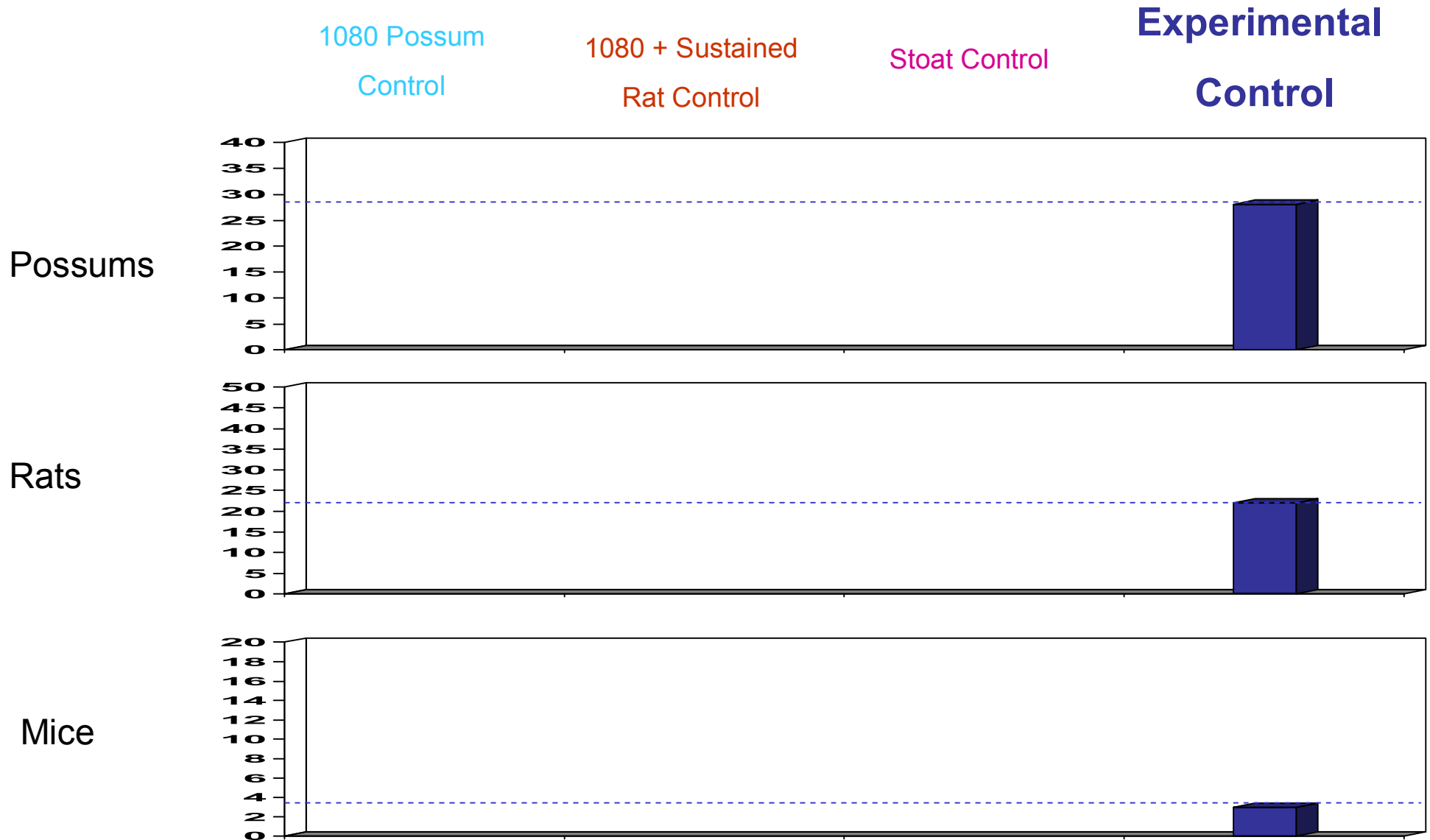


# Non- pest responses

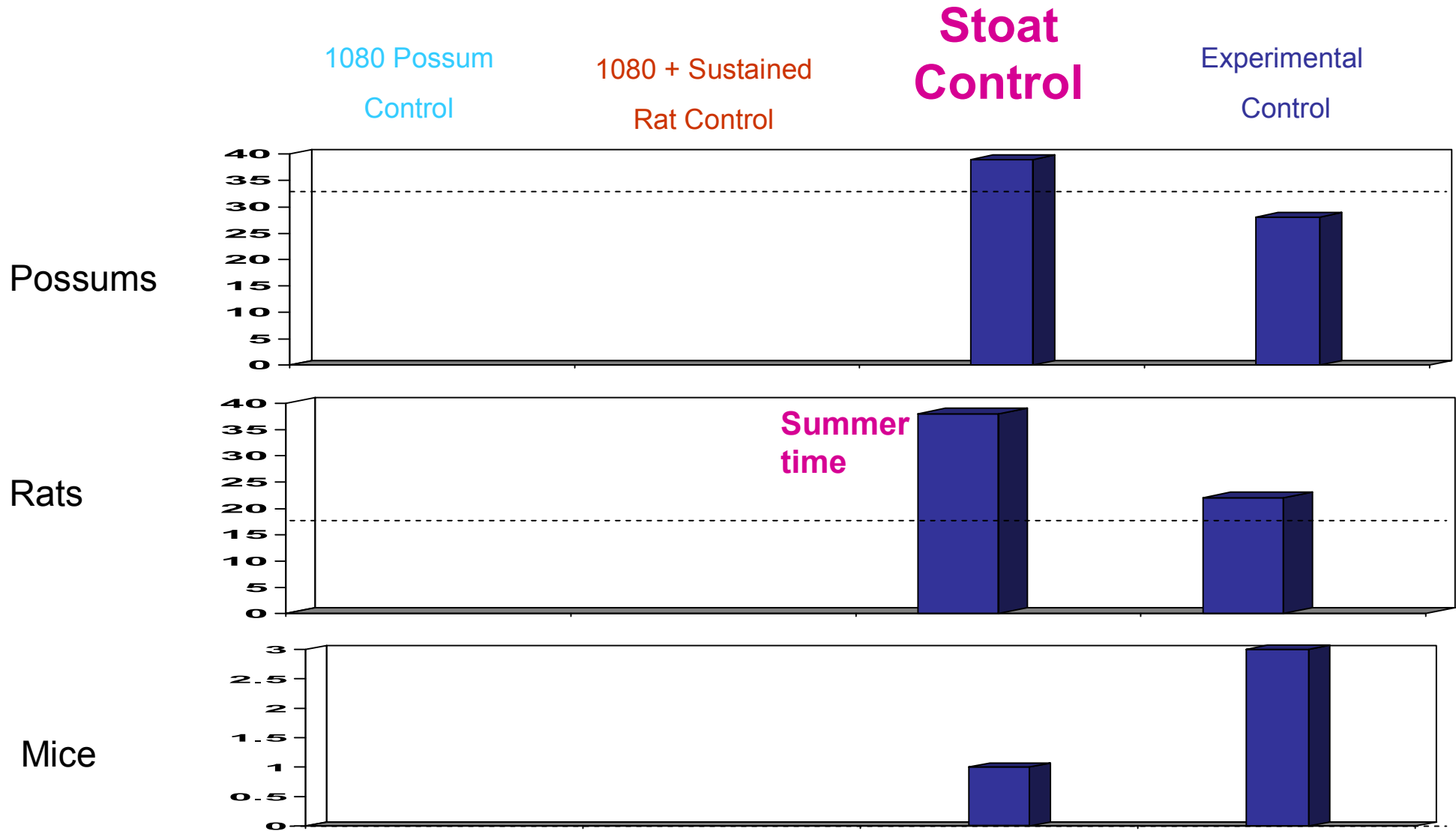
- 50% rat diet is invertebrate: Tree Weta and Stick insects main items



# Observed Outcomes



# Observed Outcomes (18 months)



# Observed Outcomes (18months)

1080 Possum

1080 + Sustained

Stoat control

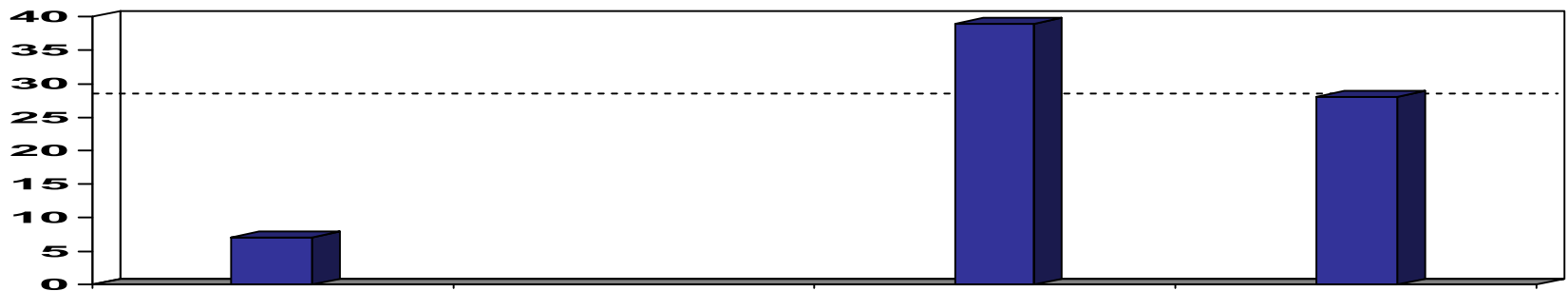
Experimental

Control

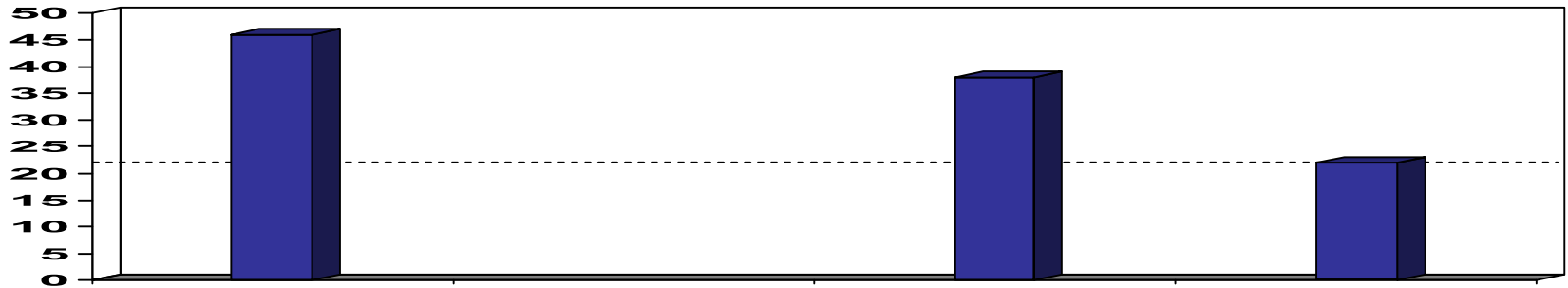
Rat Control

Control

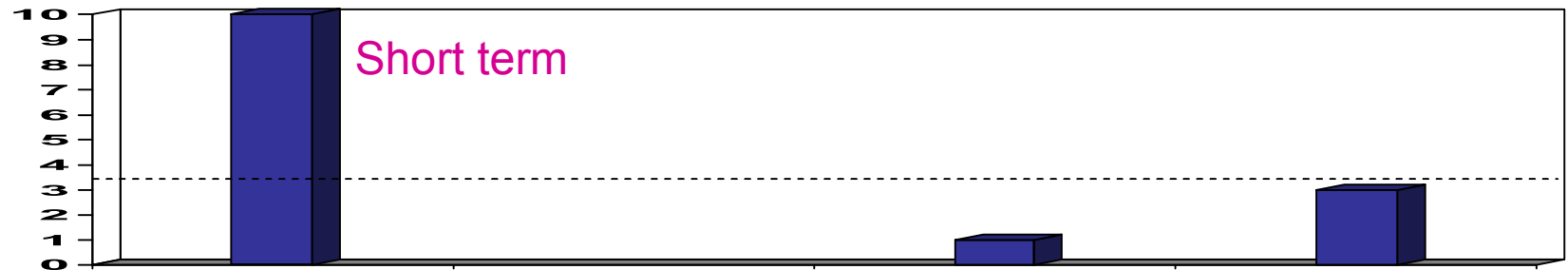
Possums



Rats



Mice



# Observed Outcomes (18months)

**1080 +**

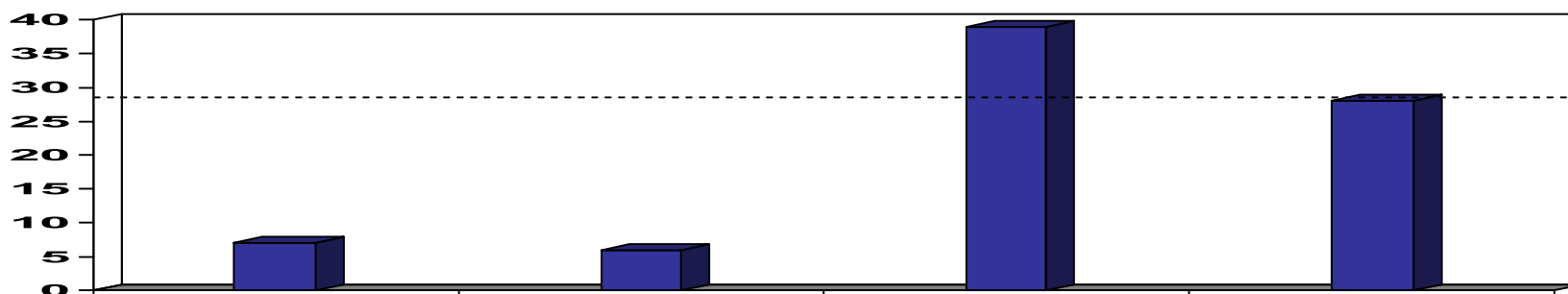
**Sustained Rat  
Control**

1080 Possum  
Control

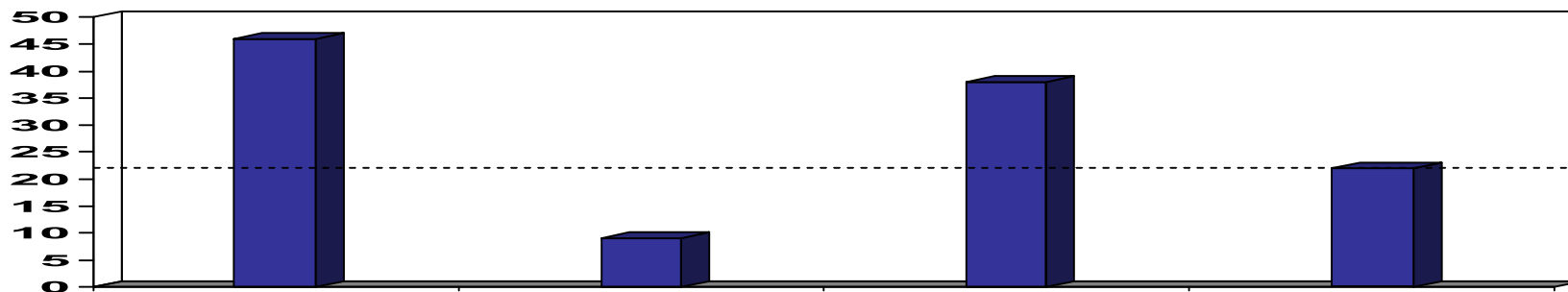
Stoat Control

Experimental  
Control

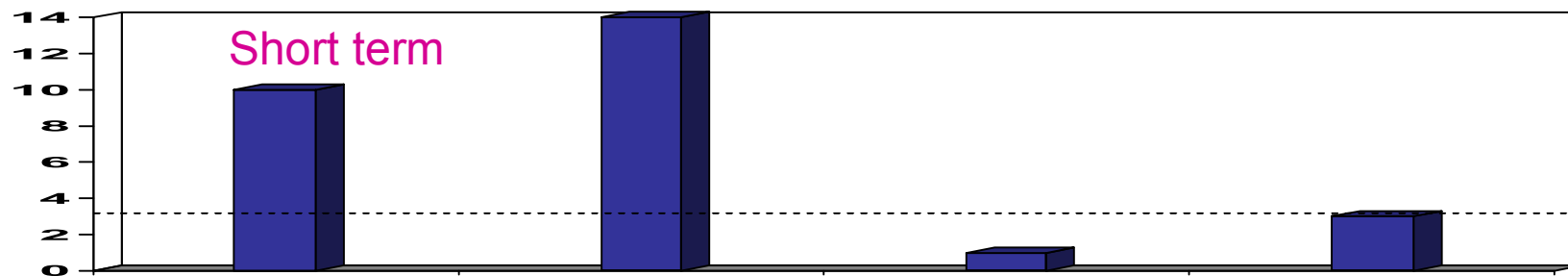
Possums



Rats



Mice

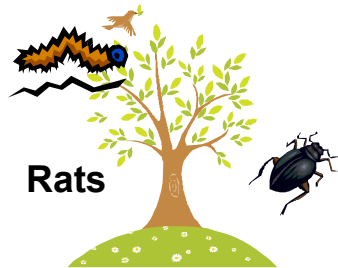


# Consequences of pest control for biodiversity

## What do we most want to protect??

1080 Possum

Control



1080 + Sustained

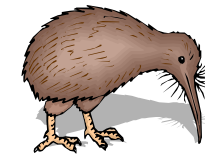
Rat Control



Mice



Stoat control



? Mice

Rats



Mice

Possums



Rats



Possums

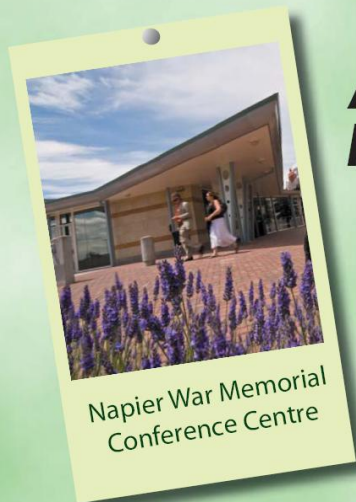
Stoats

\$\$\$



MORE

LESS



Napier War Memorial  
Conference Centre

# Australasian Wildlife Management Society Annual Conference

November 30 – December 2, 2009  
Napier, New Zealand

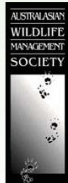
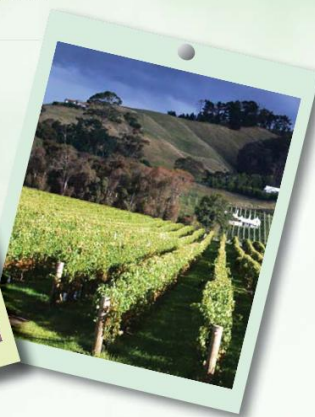


**Come to Napier** in the Hawke's Bay of New Zealand, to participate in the premier gathering of wildlife professionals, researchers and students.

The Australasian Wildlife Management Society (AWMS) will hold its 22nd Annual Conference in Napier, November 30-December 2.

**Mark these dates in your diary** so you don't miss this leading edge forum on wildlife management in Australasia. Keynote speakers, invited papers and posters will encompass all facets of wildlife conservation, control and harvesting; along with a full social programme designed to help participants enjoy New Zealand's Hawke's Bay region. Assistance for post-graduate students will be available.

Keep accessing the website [www.awms.org.nz](http://www.awms.org.nz) for more details.



Landcare Research  
Manaaki Whenua

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[www.awms.org.nz](http://www.awms.org.nz)