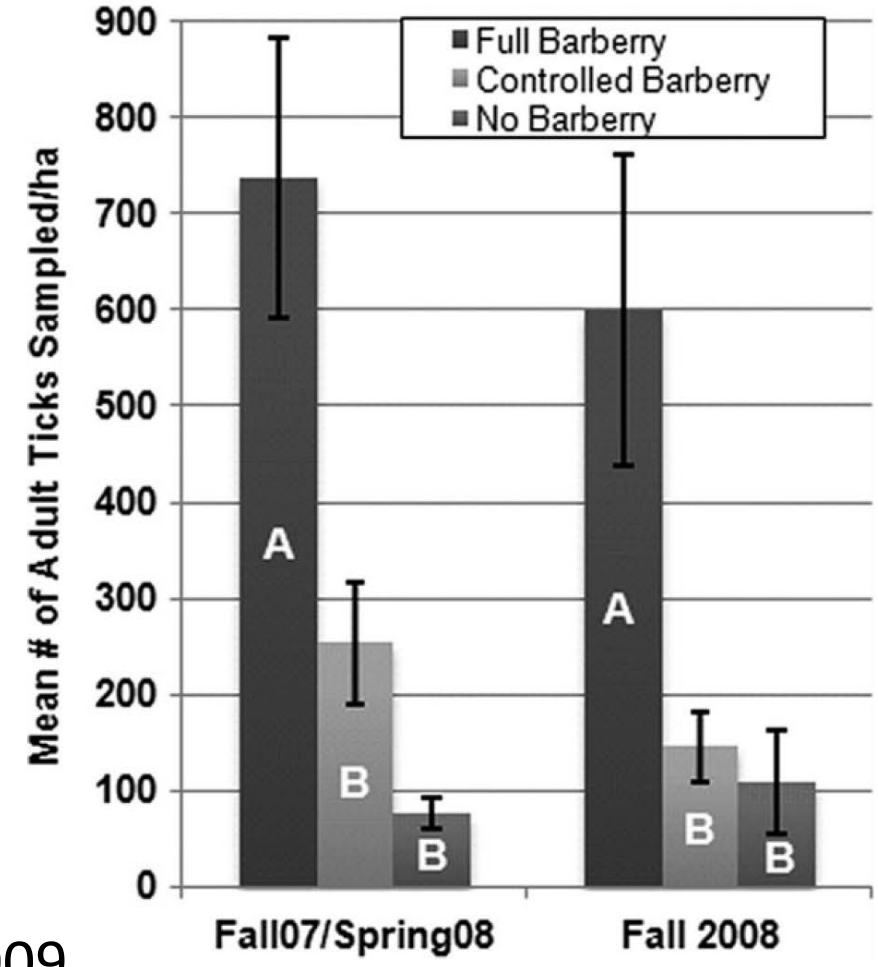
Tick and relationship to Japanese Barberry

- Japanese barberry can become the dominant understory shrub
  - Not browsed by deer
  - Highly competitive
- Japanese barberry likely provides habitat for mice and other rodents
  - Believed to provide protection from predators
- Japanese barberry likely provides habitat for ticks
  - Increased humidity in understory benefits ticks

= more tick density and increased presence of Lyme disease

Tick numbers and their relationship to Japanese barberry presence/control

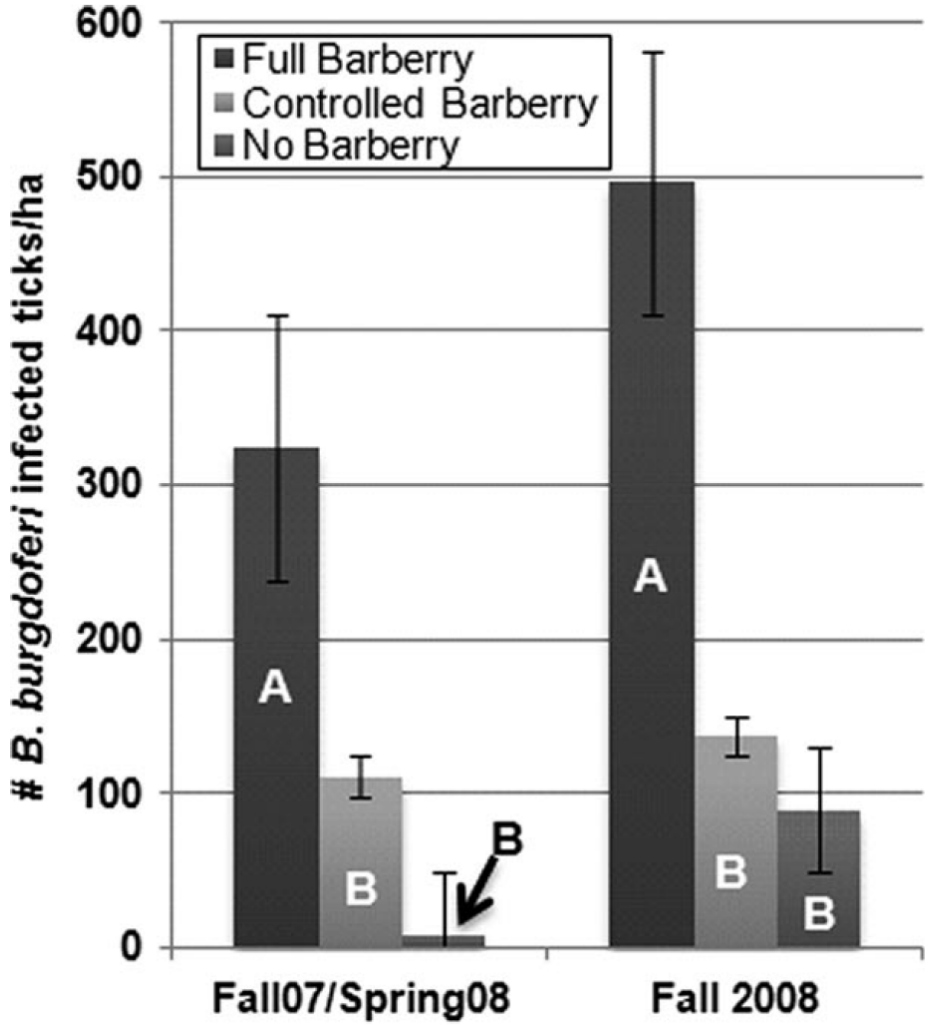
- 2 locations
  - High J. Barberry populations (>60% cover)
  - Controlled J barberry (3% cover)
  - No J. barberry (3% cover)
- Sampled over two years



Williams et al. 2009

And how many were infected with Lyme disease

- Fall07/Spring 2008 (1 year after control)
  - 44% were infected in full/controlled barberry areas
  - 10% were infected in no barberry areas
- Fall 2008 (2 years after control)
  - 63% were infected in full barberry areas
  - 47% in controlled barberry areas
  - 39% were infected in no barberry areas



Williams et al. 2009

What can you do to reduce tick populations and Lyme disease?

- Reduce deer density
- Reduce source of Lyme disease
  - mice
- Manage forest understory to reduce tick habitat
  - Eliminate invasive shrubs that benefit tick populations
    - Japanese barberry, bush honeysuckle

Details of Japanese barberry management

- Control invaded areas
  - Range of options can be effective, but best control typically involves herbicides
  - If feasible eliminate dead stems
- Reduced tick populations within 1-2 years
- Tick populations increase when cover > 10%

Other invasive shrubs have also shown increased tick populations, but not all

Bush honeysuckles = YES

Multiflora rose = NO