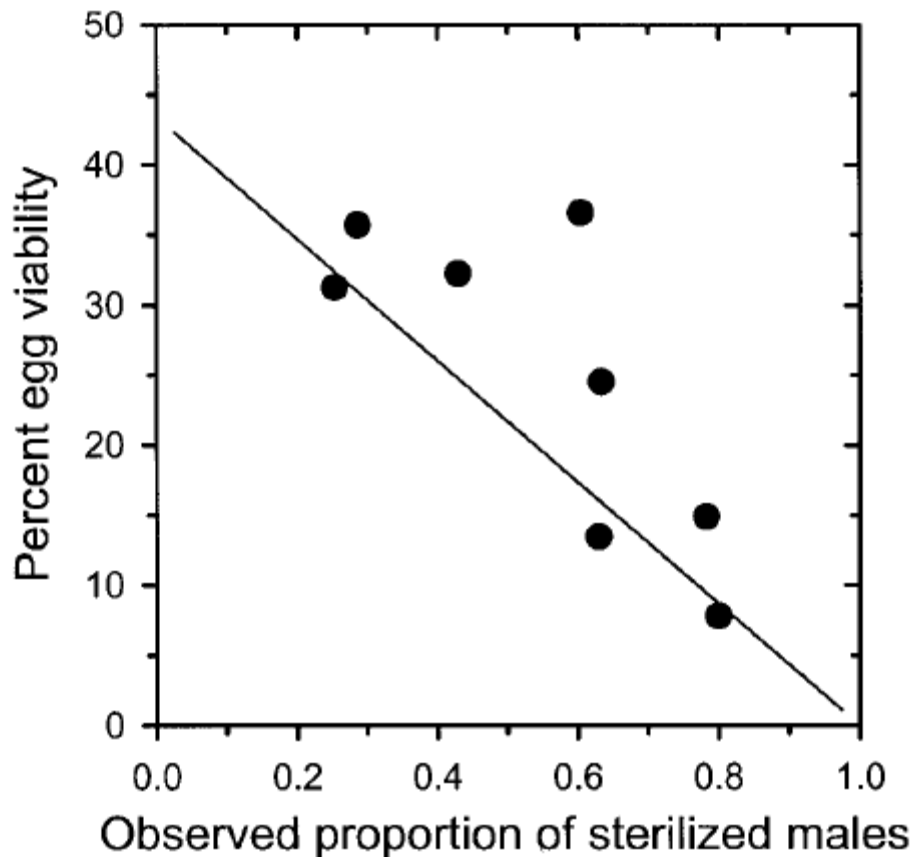
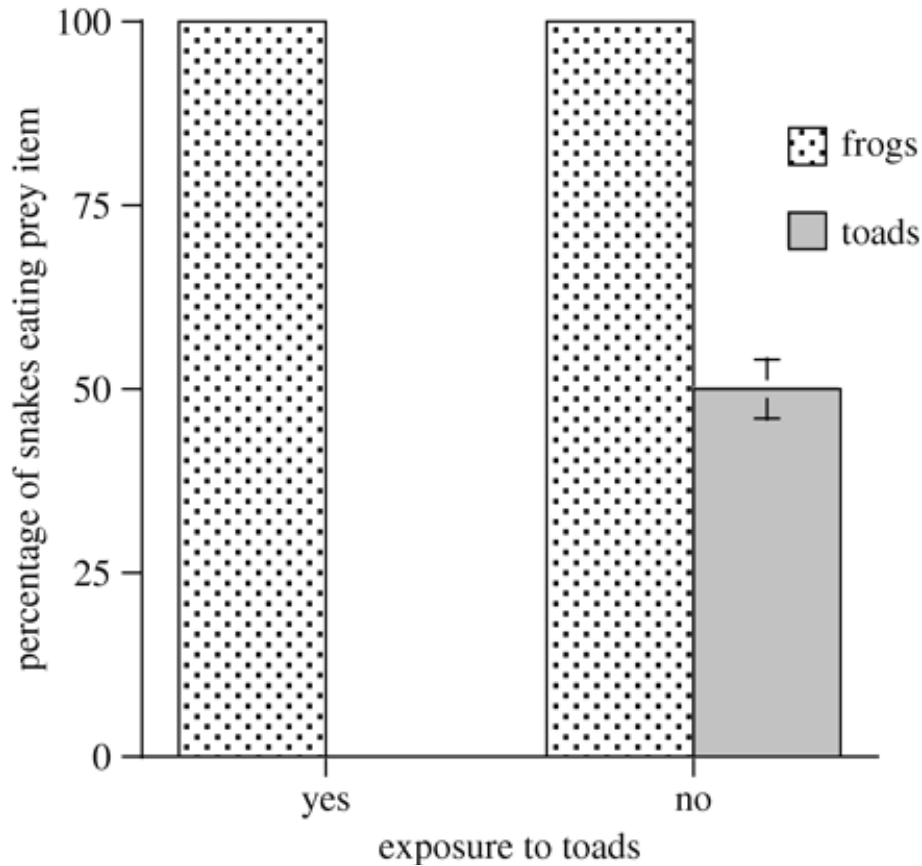


Sterilization of male sea lampreys is one method being used to try to reduce their populations. Sterile male lampreys still mate normally with females, causing the females to waste their eggs. The graph below shows how the chance of an egg hatching (Y-axis) changes depending on how many sterile males (X-axis) were seen at the nest site.



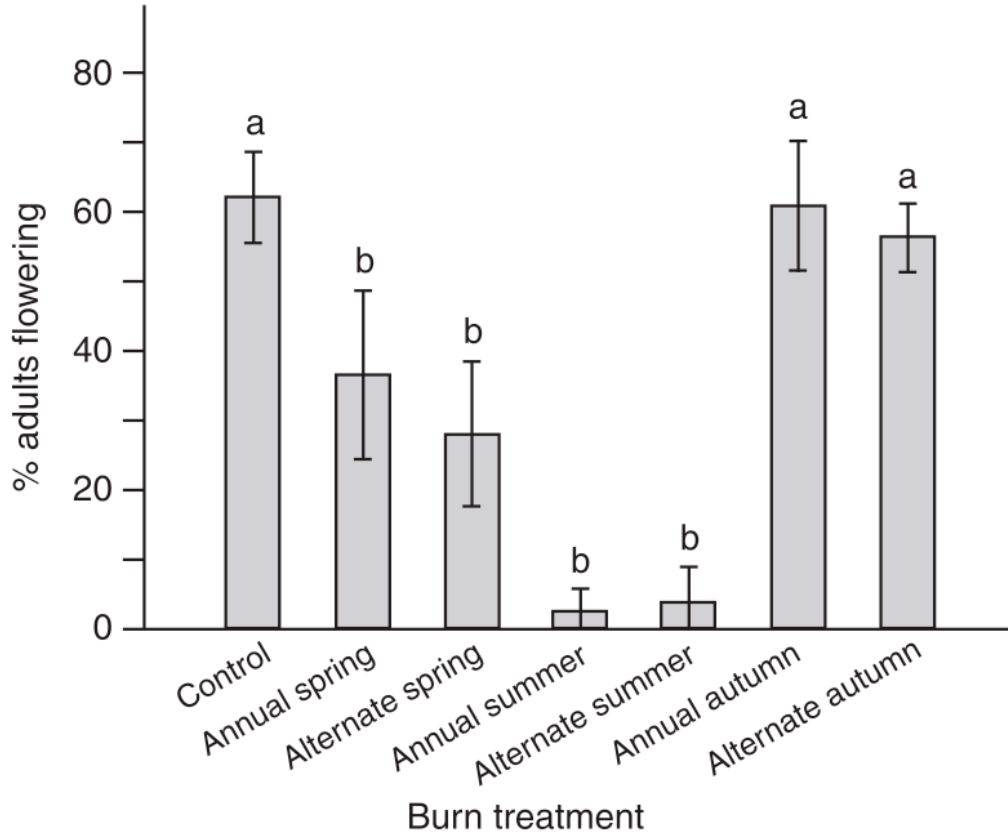
1. Based on this graph, what effect does sterilization have on egg hatching success?
2. If half of the male lampreys in a population are sterilized, about what percent of the eggs in that population would hatch?
3. What are the chances that lamprey eggs will hatch when humans aren't sterilizing any males in the population?
4. What are the chances that eggs will hatch when all of the males are sterilized

The Australian black snake feeds on native frogs. After the introduction of the invasive cane toad, Australian black snake populations suffered, because the cane toad is lethally toxic. Some black snake populations have never been exposed to cane toads. Scientists compared feeding behavior between snakes from populations that had been exposed to cane toads, and snakes from populations that were never exposed to cane toads. Snakes from each group were offered meals of native frogs and cane toads. The data below show the percent of time that snakes from each group ate frogs vs. toads.



5. What effect does exposure to cane toads have on feeding preferences in Australian black snake populations?
6. How many of the snakes that were from toad-exposed populations ate the cane toads?
7. If a snake has never been exposed to cane toads, what are the chances that it would eat one, if offered?
8. What process might have caused the toad-exposed snakes to avoid eating cane toads

Burning is one method that has been used to control spotted knapweed, an invasive in Michigan's prairie ecosystem. The data below show the effects of burning every year (annual) and every 2 years (alternate) at different times of the year. Scientists measured the percentage of adults flowering as an indicator of how successful the knapweed was after a burning treatment.



9. Based on this graph, if you had to choose just one season to burn knapweed populations, which season would you choose?

10. Do you think there is any difference between burning every year (annually) versus burning every 2 years (alternately)?