# AGENDA ITEM 7

Detecting Ungulate Population Declines

# Detecting Change

- Follow-up from the October Meeting:
- Population Objectives
- Monitor Ungulate Populations
  - Population estimates
  - Indexes
  - Composition counts
  - Harvest trends
- Detecting a Change in a Population – Then What?

# Detecting a Change

- What are the clues???
- Obvious:
  - Hunting
  - Severe weather
  - Fire
  - Disease
- Not So Obvious:
  - Drought
  - Habitat Change –
    - succession
  - Vulnerability
  - Change in Predation Levels

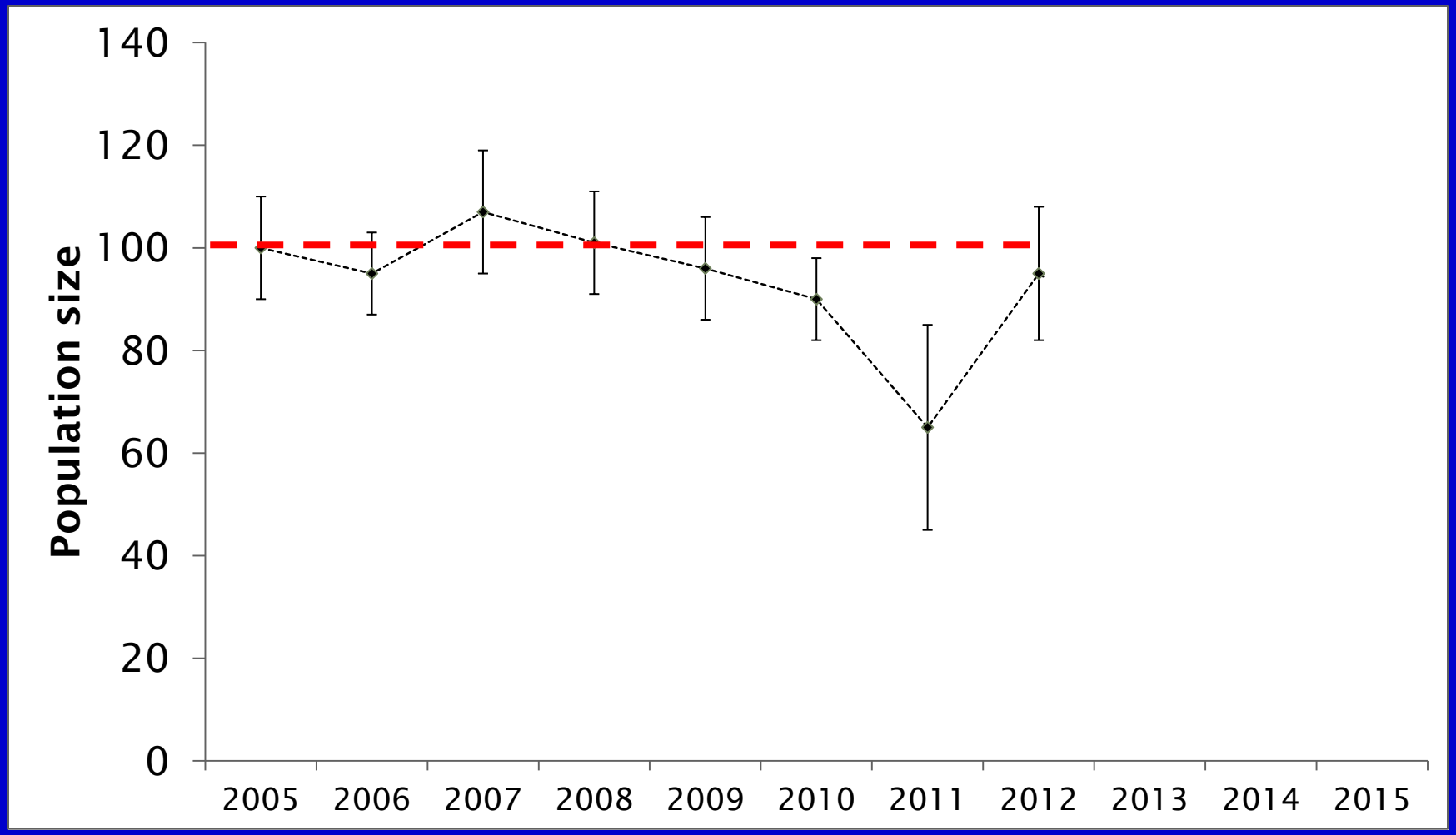
# Detecting a Change What are the Clues?

- Dead animals
- Hunter/landowner reports
- Harvest change:
  - Total harvest
  - Success rate
  - Days per kill
- Population surveys and trend
- Young to Adult Ratios
- Male to Female Ratios

# Detecting a Change Clues

- Population Estimates
  - Variability in the estimate?
  - Relative precision?
  - What is real?
  - When do we act?
- Research
  - Survival
  - Source of mortality
  - Effect on population growth

# Change - Is it Real???



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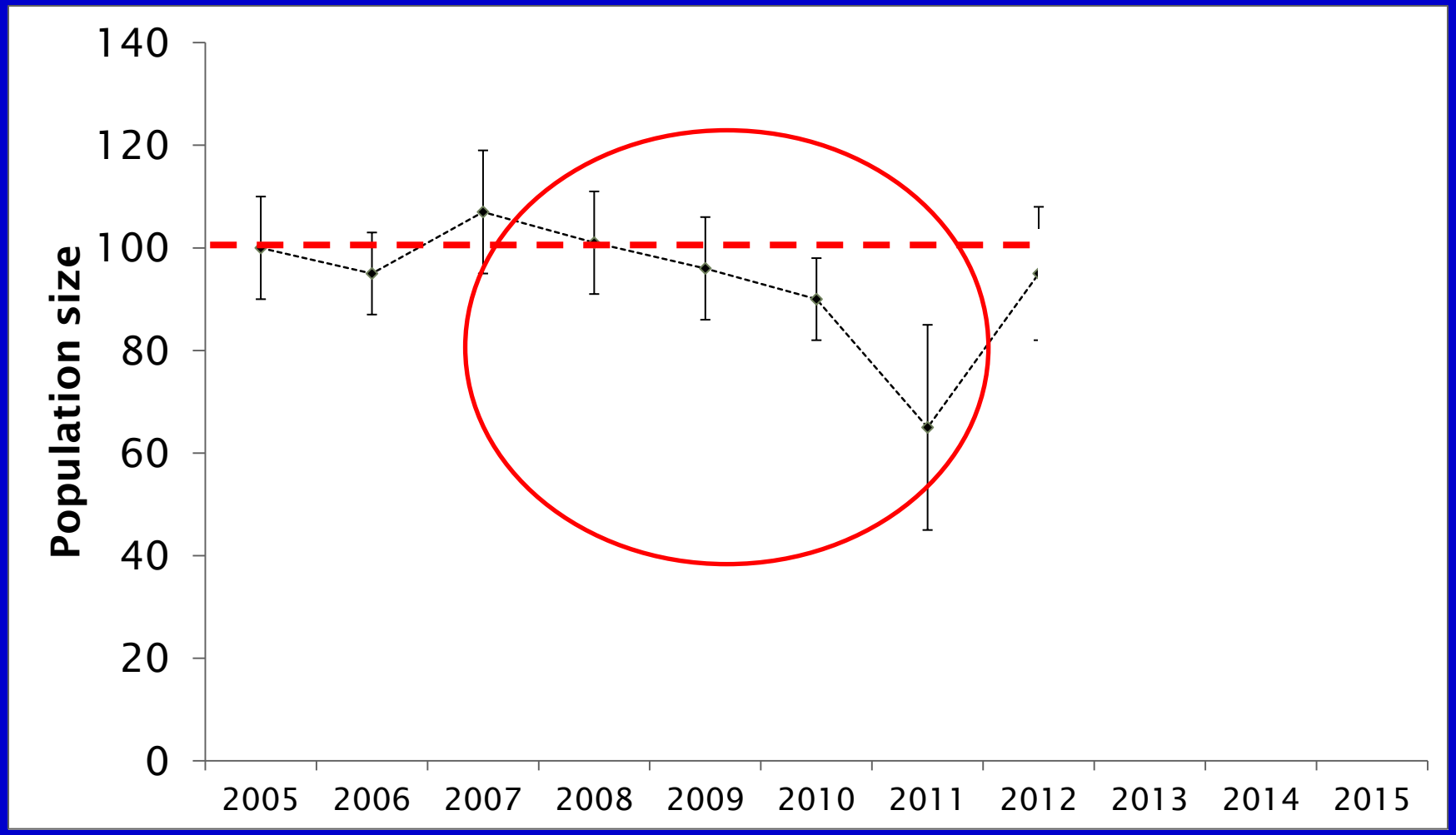

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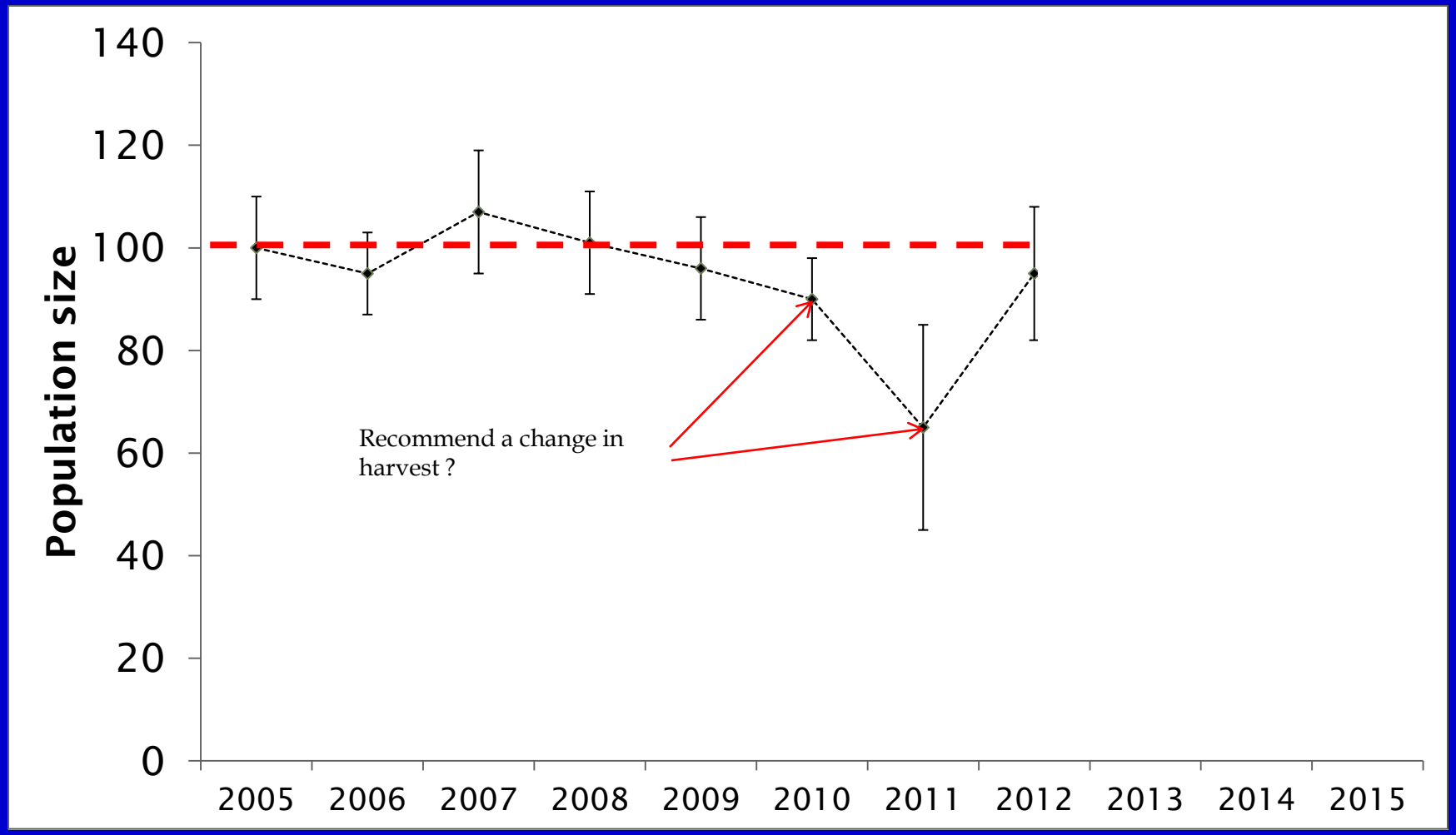

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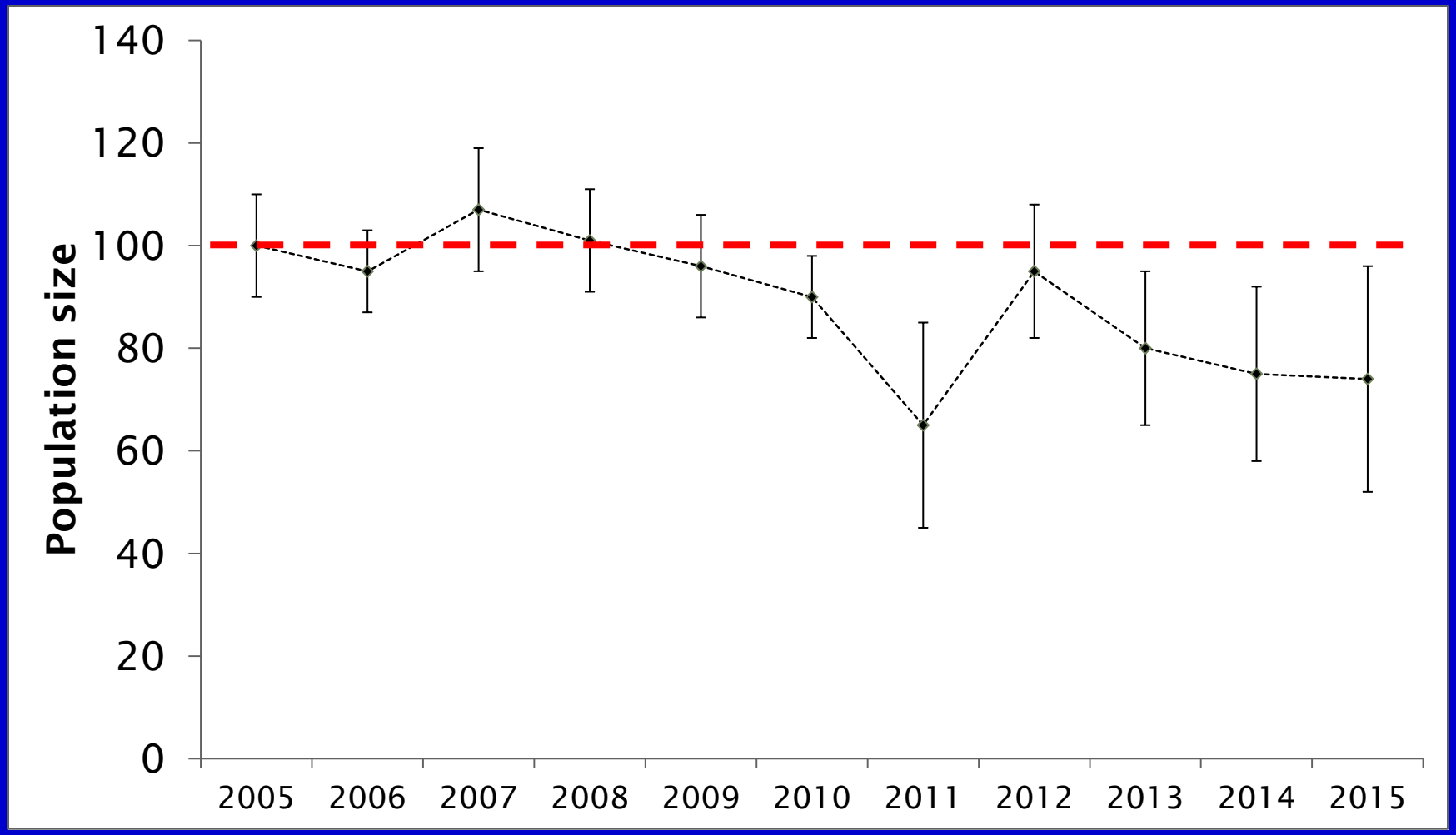

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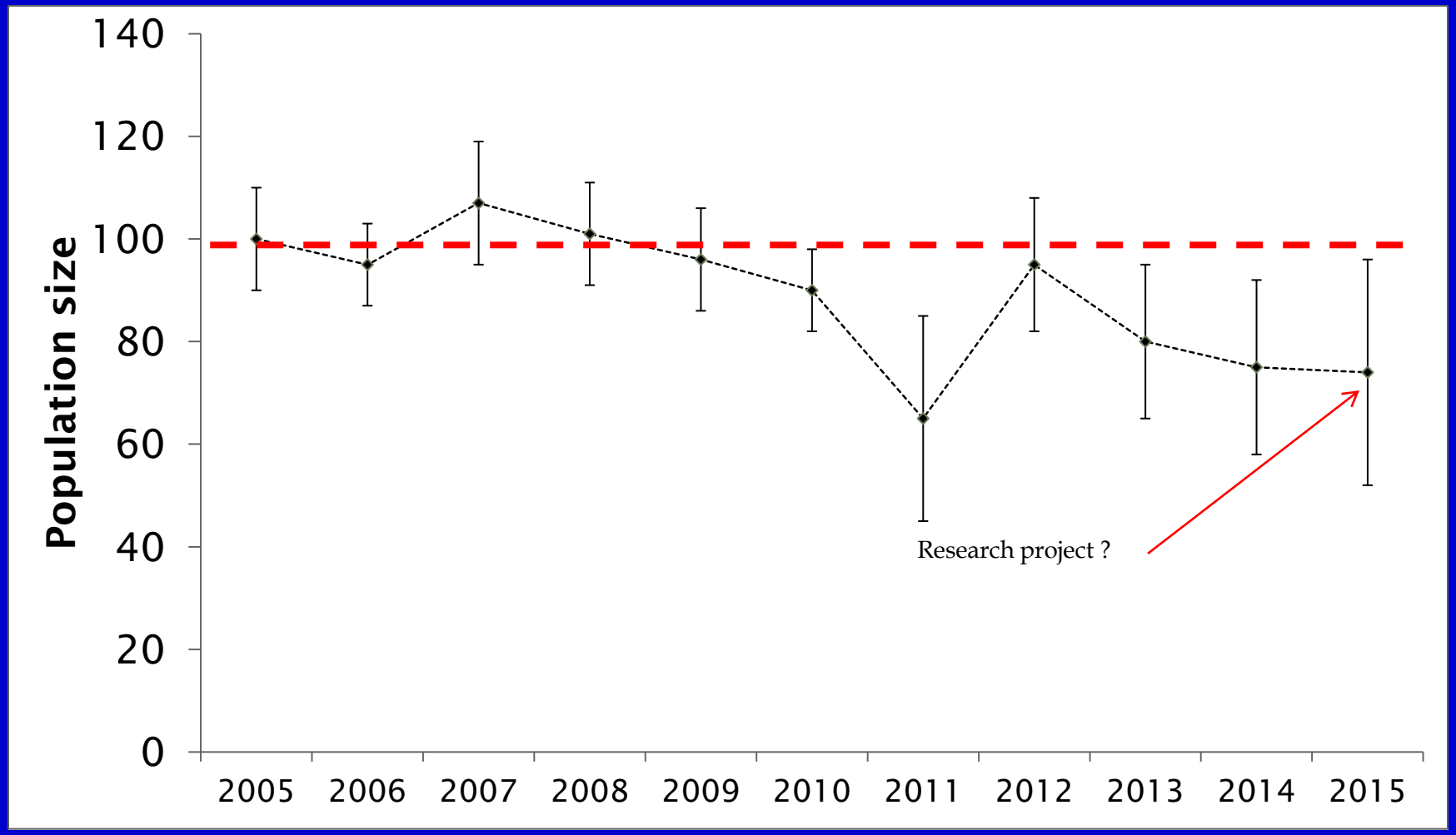


# Detecting a Change Now What???

- Consider the Clues
  - Compare to other regions
  - Mortalities
  - Additional counts/surveys
  - Subtle weather patterns
  - Habitat changes
- Restrict harvest strategies
  - Depends on objective
    - Population
    - Male survival
- Monitor population and harvest

# Detecting a Change Now What???

- If no change after restricting harvest:
  - Initiate additional surveys
  - Expand harvest data collection
  - Initiate research

# Detecting a Change Clues and Responses

- Examples
  - Blue Mountains Elk Herd
  - Colockum Elk Herd
  - Selkirk White-tailed Deer Herd

# Blue Mountains

- Clues:
  - Evidence of Poaching over several years
  - Reports of tribal harvest
  - Below population objectives
- Response:
  - Reduced bull permits
  - Initiate Research
    - Source of mortality: hunting, predation, natural, poaching, etc
    - Independent measure of tribal harvest

# Blue Mountains

- Results of the Research (2003-06)
  - Hunters were the primary source of mortality (51%)
  - Tribal hunters were second (14%)
  - Predation was third (13%)
  - Natural (9%)
  - Poaching (5%)
- Implications:
  - Yearly bull escapement was considered good (40%)
  - Cow mortality was higher than expected
  - Adult bull survival was very good

# Blue Mountains

- Response:
  - Increased bull permit levels
  - Reduced cow harvest
    - Damage situations
    - Recreational Harvest
  - Recommended road closures
- Result:
  - Currently achieving population objectives based on annual population estimates
  - Expanded recreational harvest of adult bulls

# Colockum Elk Herd

- Clues:
  - Population estimates below objective
    - Total population
    - Adult bull ratios
    - Yearling escapement
  - Antlerless harvest rate was high (damage concerns)
  - Inconsistent calf ratios compared to yearling harvest
  - Reports of tribal harvest of branch bulls

# Colockum Elk Herd

- Response:
  - Reduced antlerless harvest
  - Added conflict specialist position
  - Adjusted branch bull permit levels
  - Initiated the "true spike" rule
  - Initiated road management planning
  - Initiated Research
    - Monitor effects of winter range closure
    - Body condition

# Colockum Elk Herd

- Results:
  - Damage complaints much reduced
  - Meeting population objective
  - Increasing yearling bull escapement
  - No improvement in adult bull to cow ratios
  - Elk appear to be using the winter range closure on public lands
  - Road management plan nearing completion (to reduce elk vulnerability)

# Selkirk White-tailed Deer

- Clues:
  - Back to back hard winters
  - Mortality widely reported
  - Hunter and landowner reports
  - Harvest decline (36% decline in buck harvest)
  - September fawn ratios down
  - Total deer classified on survey routes declined

# Selkirk Deer Harvest GMUs 105-121

| GMUs 105-121 | | |
|---|---|---|
| Years | Bucks | Antlerless |
| 2010 | 3511 | 487 |
| 2009 | 3298 | 955 |
| 2008 | 3843 | 1526 |
| 2007 | 4165 | 1567 |
| 2006 | 4600 | 1659 |
| 2005 | 4611 | 1176 |

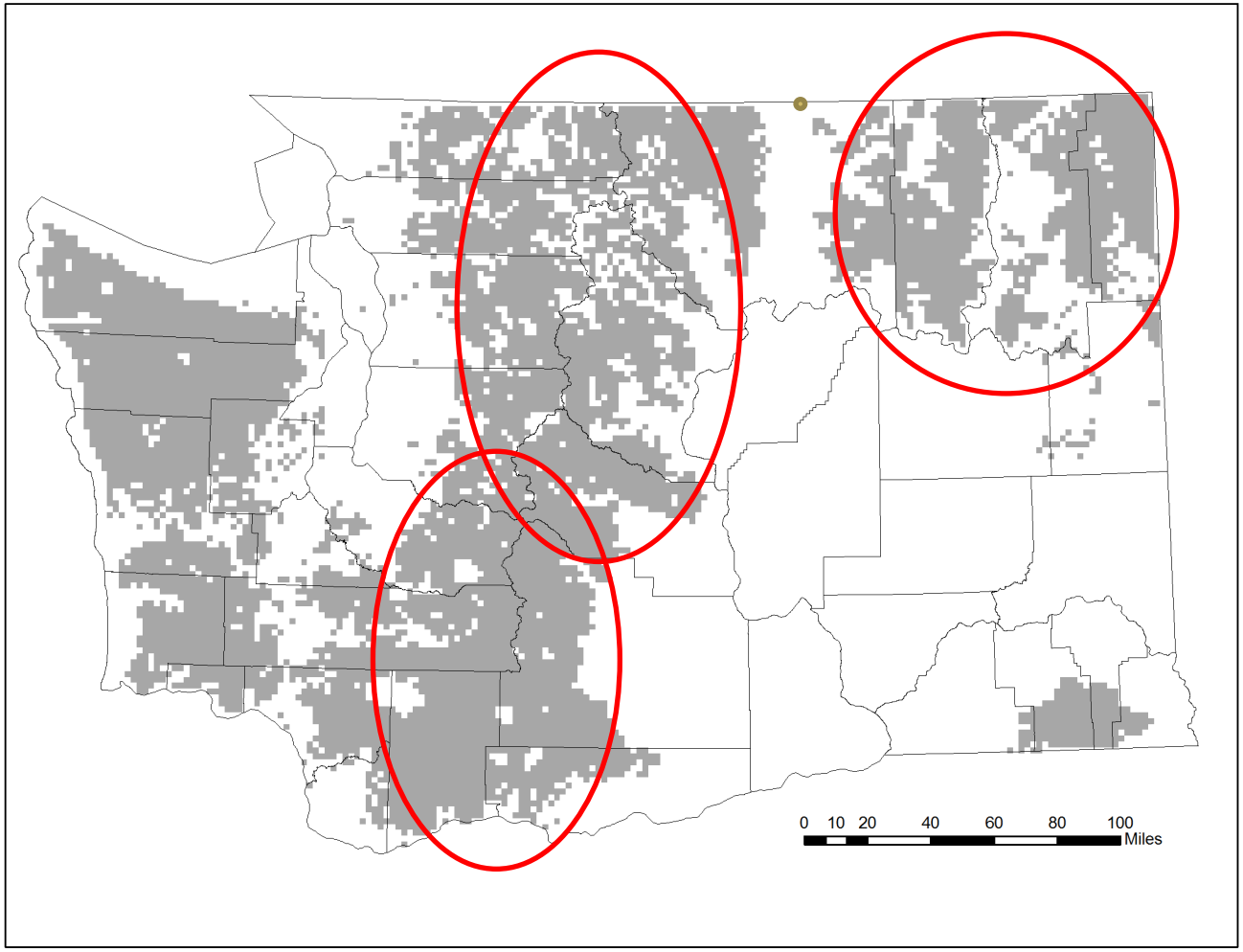
# Selkirk White-tailed Deer

- Response:
- Significantly reduced antlerless harvest
- Expanded survey routes
- Initiated private landowner habitat enhancement program
- Antler point restriction adopted
- Developing a coyote control feasibility assessment (USDA Wildlife Services)
- Planning multiple research projects
  - Survival, movement, and habitat selection
  - Experimental population estimate using DNA

# Selkirk White-tailed Deer

- Results to Date:
  - Hunter participation is declining as expected
  - Harvest is declining
  - Survey data indicates:
    - Fewer deer sighted per mile;
    - Relatively stable buck and fawn to doe ratios over the past ten years
  - Its been two years since the bad winters
- Summary:
  - With the difficulty in counting whitetails, we are really counting on the research to help us understand what is happening here

# Wolves and Ungulates



# Wolves and Ungulates
# How will we know the impacts?

- Northeast Washington:
  - Increasing our survey intensity for moose and elk
  - White-tailed deer research projects
    - Survival
    - Population estimation

# Wolves and Ungulates
# How will we know the impacts?

- North Central Cascades
  - Already implemented a population estimate for Colockum Elk Herd
  - We plan to expand the elk research project to help understand survival rates
  - Recently initiated a population estimate for Chelan mule deer population
  - Plan to implement an Okanogan population estimate

# Wolves and Ungulates
# How will we know the impacts?

- South Central Cascades
  - Recently completed Yakima Elk Herd Study
    - Good understanding of population levels
    - Use of feeding stations
    - Habitat use
    - Tie to carrying capacity
  - Close to developing a Mt Saint Helens population estimate (west side of St Helens)

# Wolves and Ungulates Predator – Prey Relationships

- Low numbers (T&E levels) of wolves are not likely to measurably impact ungulate populations (PMU level)
- Once delisted, wolf management options, particularly related to hunting, would be greater
- The nearly completed predator – prey guidelines for game species can also provide guidance for how we might address wolf predation issues

# Wolves and Ungulates Predator – Prey Relationships

- Idaho, Montana, and Wyoming Lessons:
  - Wolves can impact ungulate numbers at a population management level
  - These scenarios have generally occurred well after "recovery" objectives have been achieved
  - "Problem" areas for ungulates are seldom associated with areas where livestock densities are high
  - The documented ungulate population issues are mainly related to elk
  - Moose population impacts are beginning to be a concern in some areas

# Wolves and Ungulates Predator – Prey Relationships

- Idaho, Montana, and Wyoming Lessons:
  - Management of wolf numbers through hunting may be challenging, but possible
  - Harvest management principles are similar to other carnivores/predators
  - Hunter harvest strategies can be targeted to help address predator – prey management objectives
  - We will be able to learn from the experiences of these states over the next several years
  - Washington has some time, based on the growth rate experienced in the Rocky Mtn DPS

# Wolves and Ungulates Predator – Prey Relationships

- Recent findings:
  - Predator regulation of ungulate populations is generally experienced in areas where multiple predators co-occur (and bear predation appears to be most influential under these conditions)
  - Wolf impacts generally occur where their numbers are more difficult to manage and other factors are in play
  - Recent predator removal experiments continue to demonstrate that it isn't a simple relationship

# Summary

- Ungulate population changes can be detected in a variety of ways
  - Long term changes may be most challenging
  - The time period necessary and relative measure of a change depend on multiple factors
- Once changes in population levels are suspected, additional efforts can be employed to verify the cause
- Washington is fairly well positioned to understand potential impacts to ungulate populations from wolves

# QUESTIONS???