

## 2014 Bowhunter Observation Survey Iowa Department of Natural Resources

Chris S. Jennelle, Ph.D., Biometrician, Iowa DNR  
William R. Clark, Ph.D., Professor, Iowa State University

The Iowa Department of Natural Resources (DNR) solicited responses from bow hunters for the annual Bowhunter Observation Survey from October 1 to December 6, 2014. This was the eleventh year of the survey, which was designed jointly with William R. Clark, emeritus Professor at Iowa State University. The two primary objectives for this survey are to: 1) provide an independent supplement to other deer data collected by the DNR; and 2) develop a long-term database of selected furbearer data for monitoring and evaluating an index of species activity (rate of species observation). Bowhunters are a logical choice for observational-type surveys because the methods used while bowhunting deer are also ideal for viewing most wildlife species in their natural environment. In addition, bowhunters typically spend a large amount of time in bow stands: more than 40 hours/season is not uncommon. We believe avid bowhunters (defined as those purchasing a license three years in a row prior to the survey year) are the best hunters to select for participation in this survey because they not only hunt often, but they also have the most experience in selecting good stand locations, controlling or masking human scent, using camouflage, identifying animals correctly, and returning surveys.

Participants for the 2014 survey were selected either from a core list of avid bowhunters that indicated interest in the survey from 2010, or from a list of avid bowhunters who had purchased a license for each of the 3 years prior to 2014. Our goal was to select approximately 999 bowhunters in each of Iowa's 9 climate regions. Each climate region contains approximately 11 counties, and approximately 91 bowhunters were selected per county in an effort to evenly distribute observations in each region. Selection of participants consisted of a 3-step process. In each county, participants were first randomly selected from a core group of avid bowhunters who had previously indicated an interest in participating in this survey. If fewer than 91 core group participants existed in a county, additional participants were randomly selected from a separate list of avid bowhunters who were not in the core group. Finally, if the number of "core group" and "randomly selected" participants in a county was less than 91, additional avid hunters were selected from other counties in the region to reach the regional goal of 999 participants. A total statewide sample of 8,991 bowhunters was selected for participation. Of surveys mailed, 129 were either returned due to USPS address issues or hunters indicated they did not hunt this year, making the final statewide sample 8862.

Responses were obtained from 1,560 bowhunters who recorded their observations during 20,545 hunting trips, yielding 67,308 hours of total observation time ( $3.28 \pm 0.057$  hours/trip; mean  $\pm$  95% CL). Bowhunters reported a median of 13 trips during the 67-day season. Regionally, the number of bow hunting trips (and hours hunted) ranged from 1,615 (4,736 hours) in northwest Iowa (Region 1) to 3,013 (11,168 hours) in east central Iowa (Region 6). The raw survey response rate was 17.6%.

Observations were standardized for each of the 12 species to reflect the number of observations per 1,000 hours hunted in each of the 9 regions. In addition, 95% confidence limits were calculated for each estimate. Precision among estimates for common species, such as deer, wild turkeys, and raccoons, was high: confidence limits were generally within  $\pm 15\%$  of the mean estimate. However, for less common species, such as badgers, bobcats, gray fox, and otters, precision was very low and there was considerable uncertainty in the mean estimate.

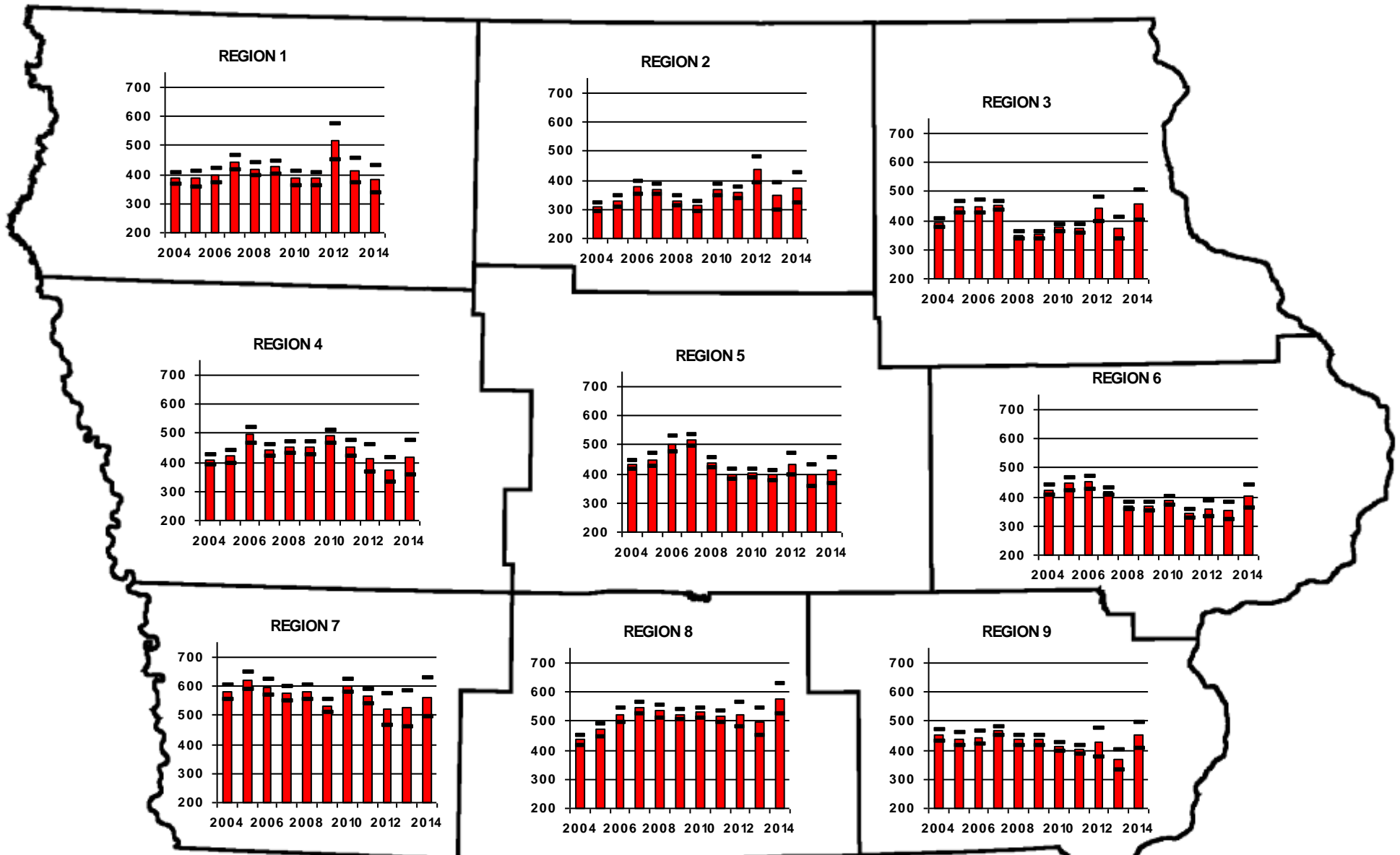
A comparison of results from 2013 and 2014 suggests that the number of total deer observed/1,000 hours increased or stayed the same across all nine regions of Iowa. Likewise, turkey observations generally increased or stayed the same across all regions of Iowa. Bobcat observations/1,000 hours remain very low in regions 1,2,3,5, and 6, while regions 4, 7, 8, and 9 appear to have a consistent observation rate with previous years.

We at the DNR thank all hunters who participated in the 2014 Bowhunter Observation Survey. The volume of information provided by bowhunters could never be duplicated by the staff of biologists, technicians, and conservation officers in the Iowa DNR. Iowa's bowhunters are the best group of hunters to provide this observational information, and their participation in this survey plays a critical role in the conservation of these and other wildlife species for the future.

***When looking at the following charts, we caution against making comparisons between regional estimates for any species. Any differences in observation rates between regions could be related to differences in many factors such as population size, habitat, topography, land use, or any other factor affecting the sightability of animals. For each of the selected species, any differences between regions are NOT entirely related to regional differences in population size.***

# Antlered Deer Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

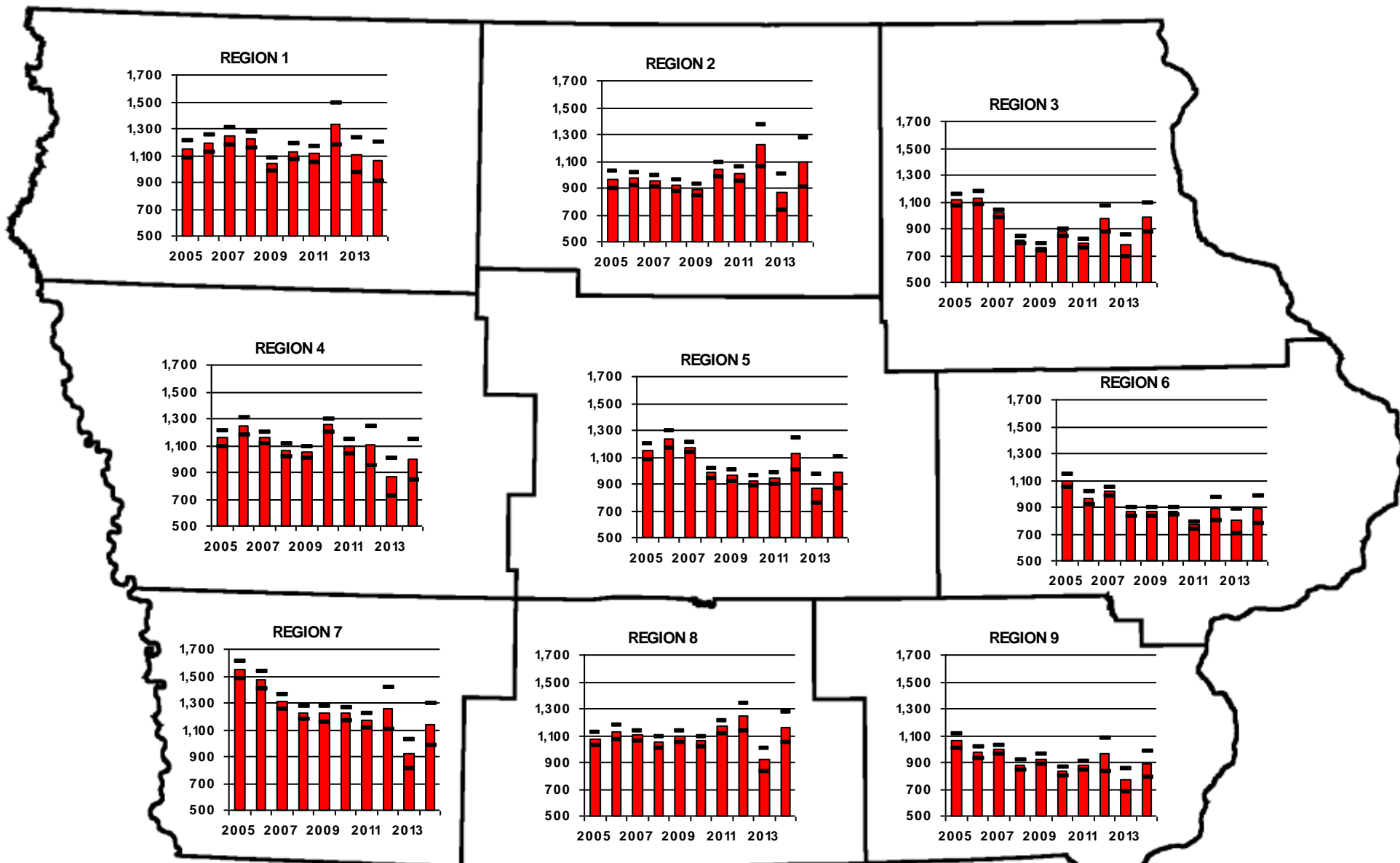


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Antlerless Deer Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

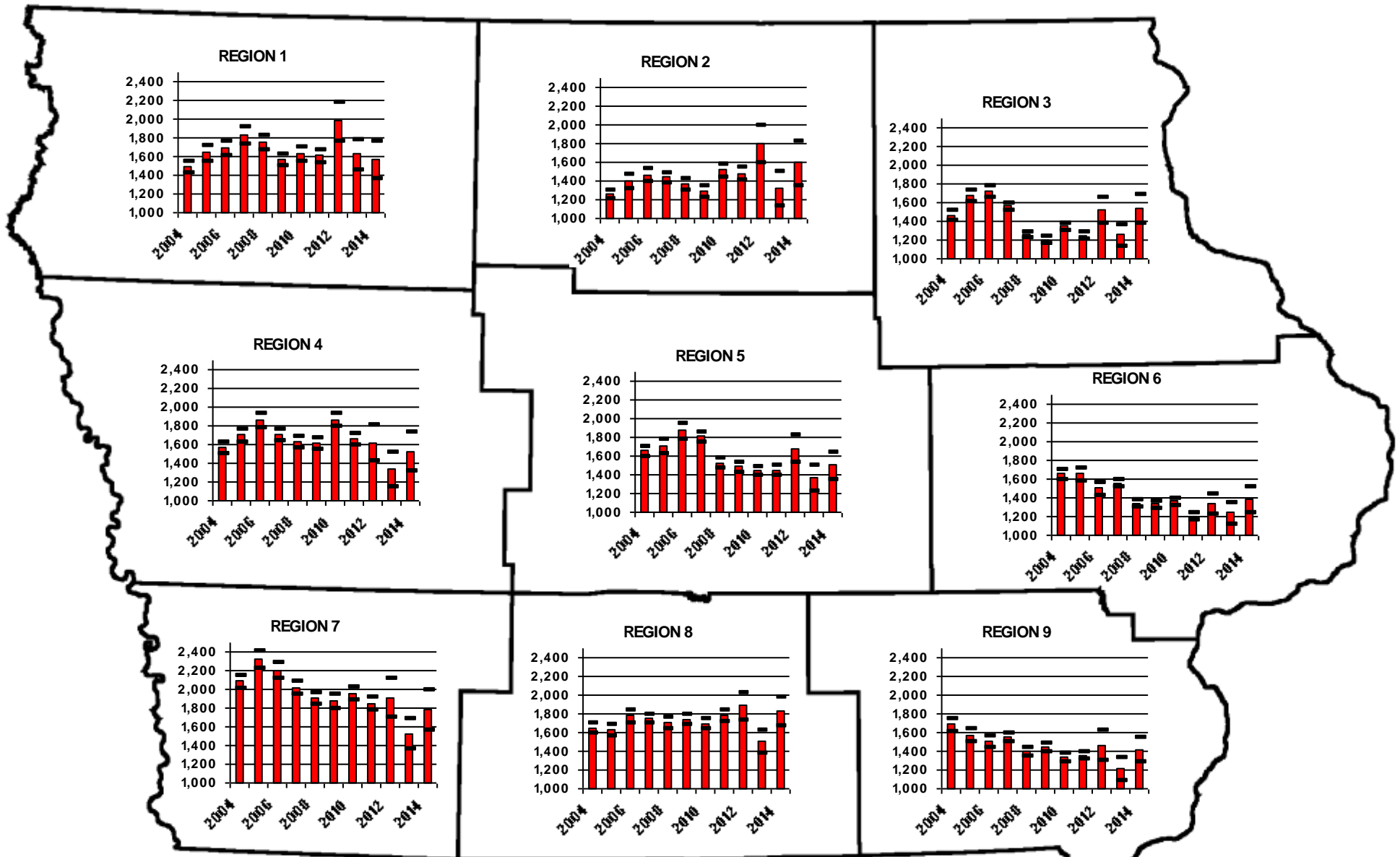


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Total Deer Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

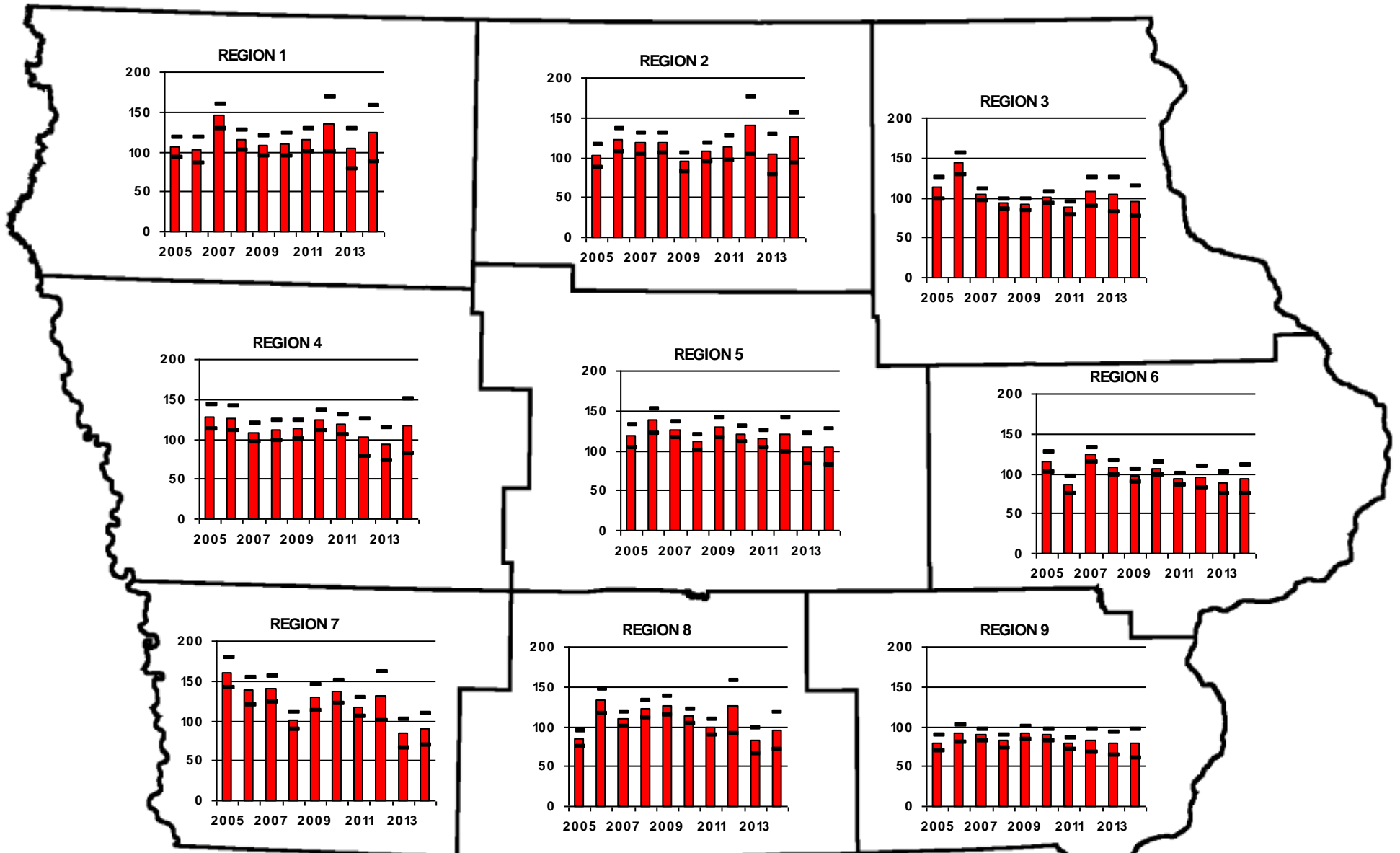


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Unknown Deer Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

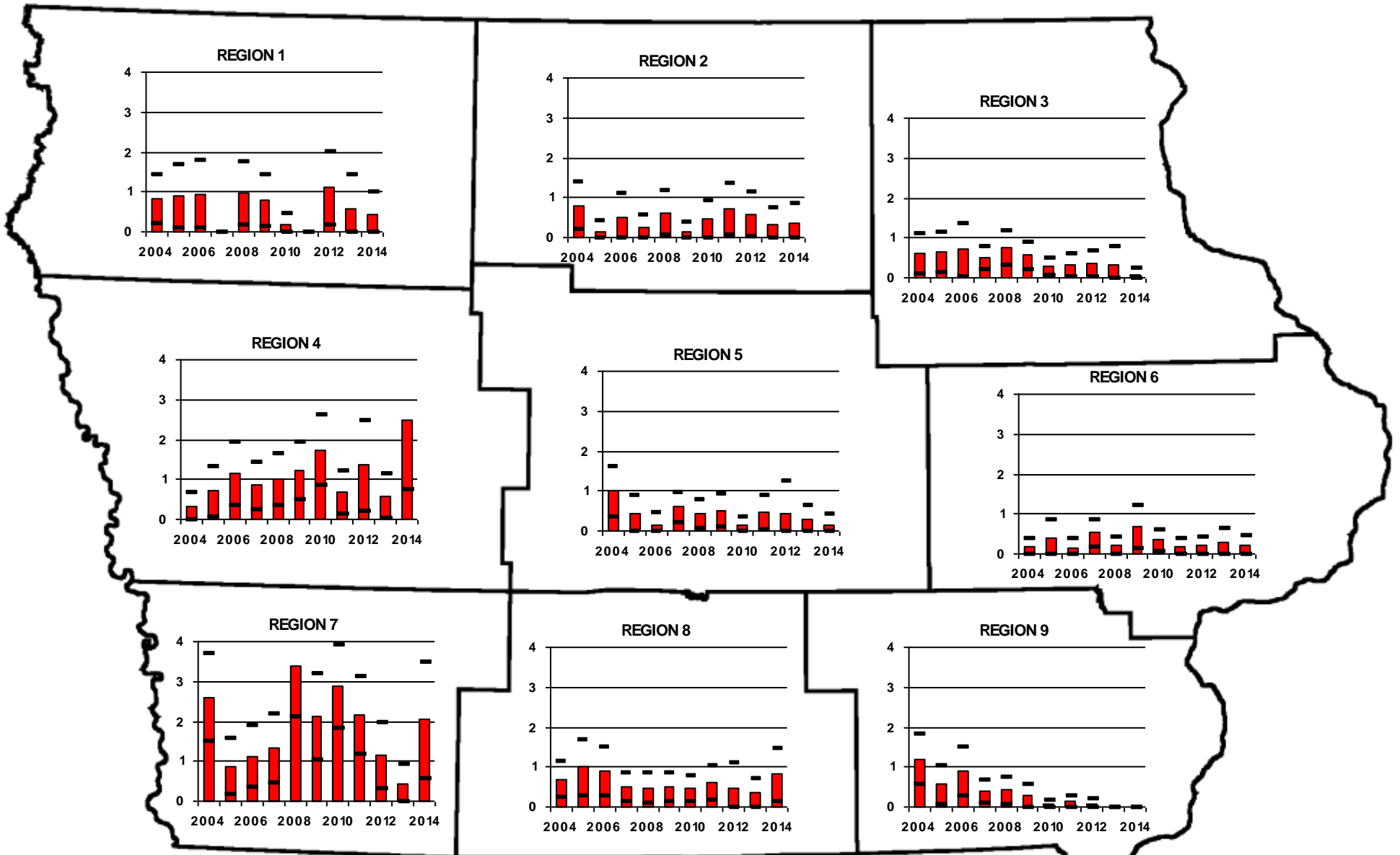


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Badger Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

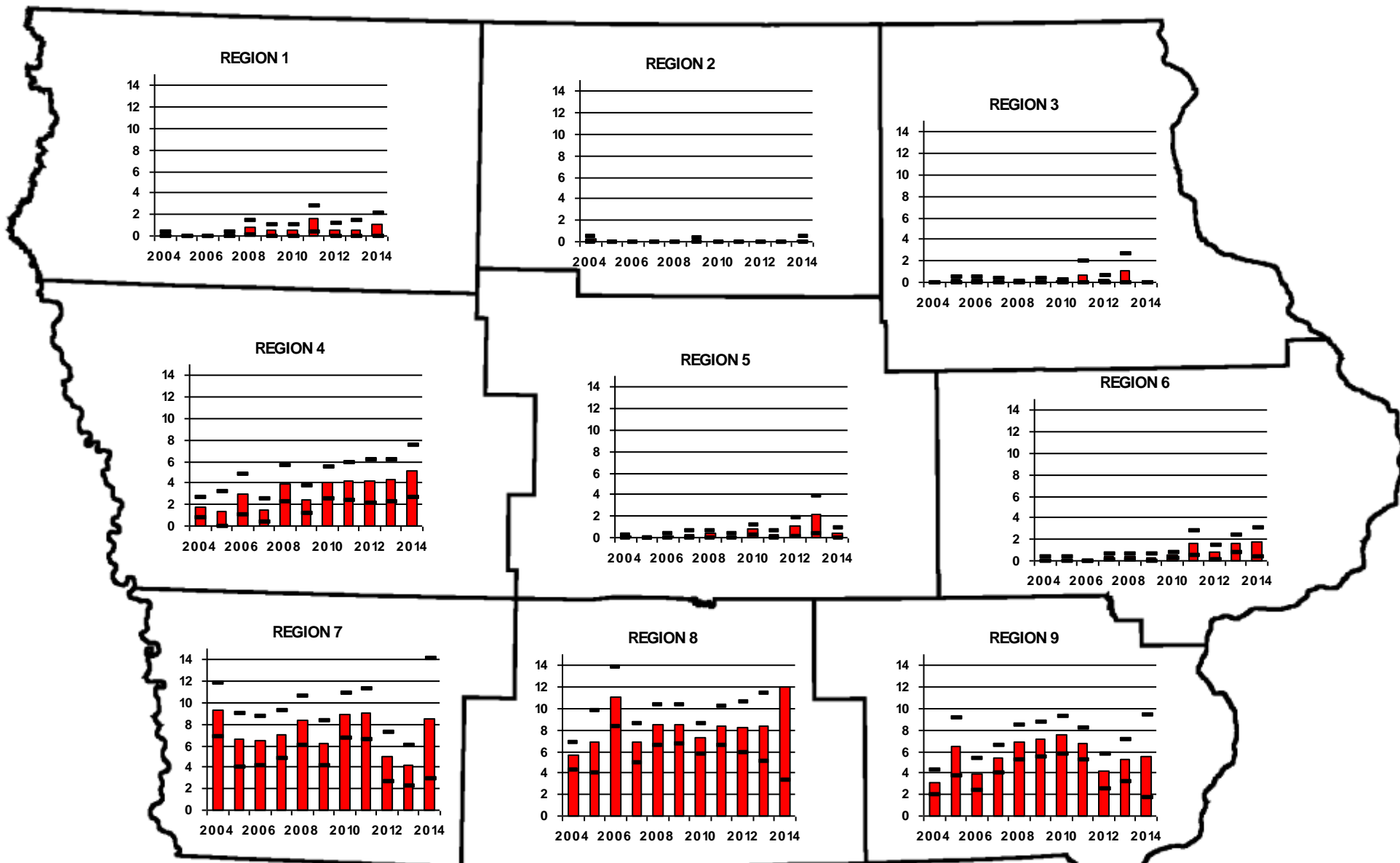


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Bobcat Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

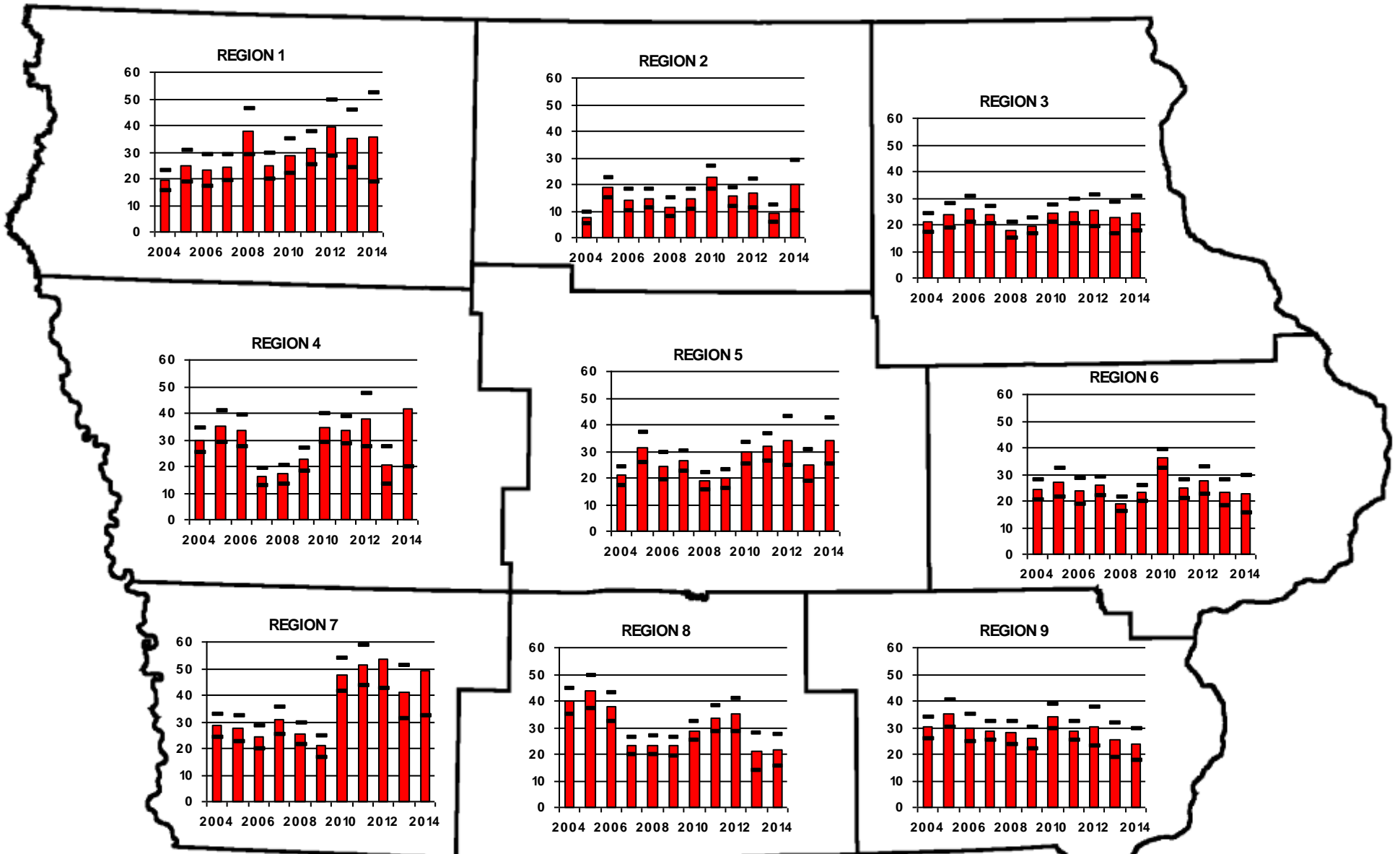


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Coyote Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources



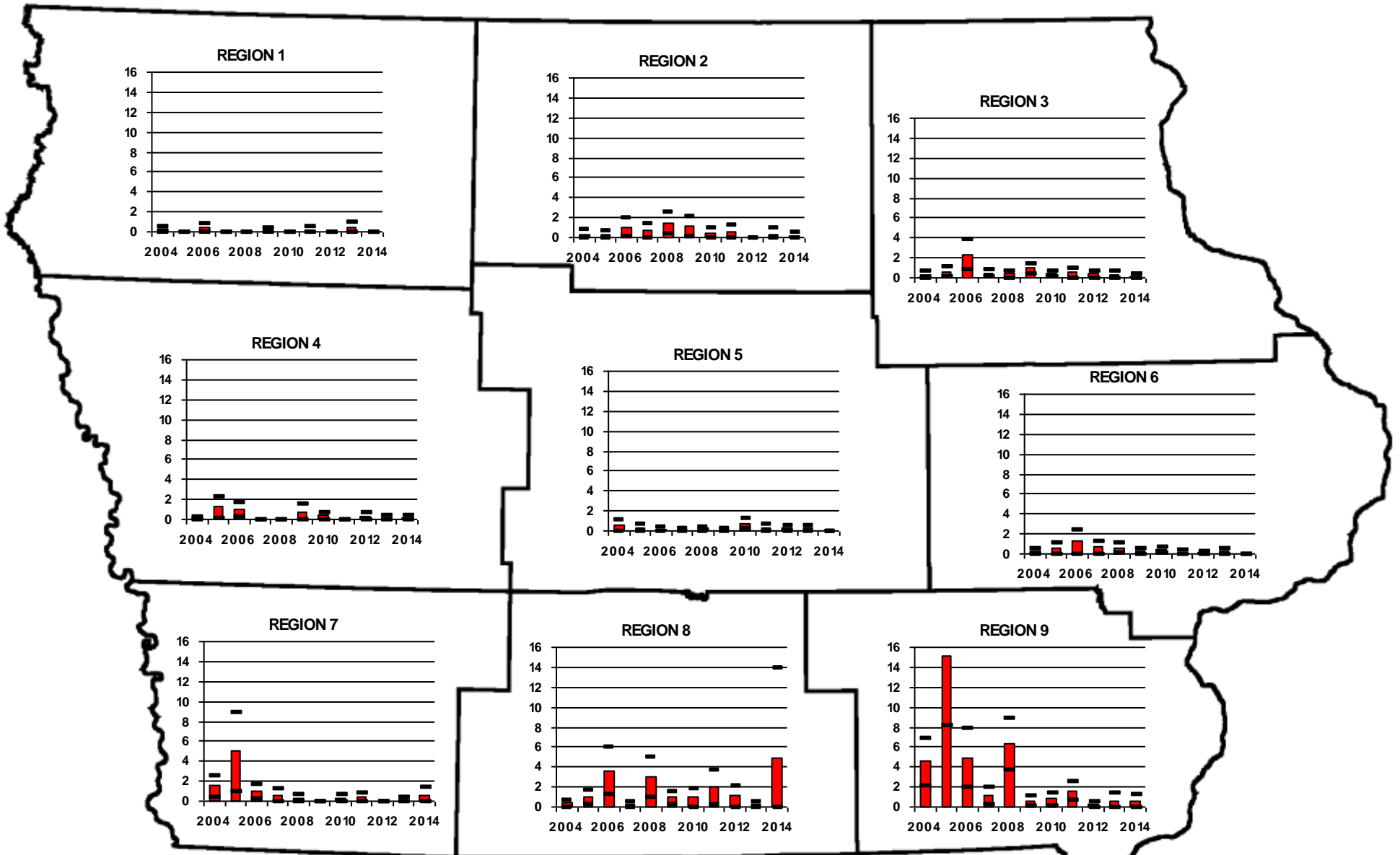
Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.





# Gray Fox Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

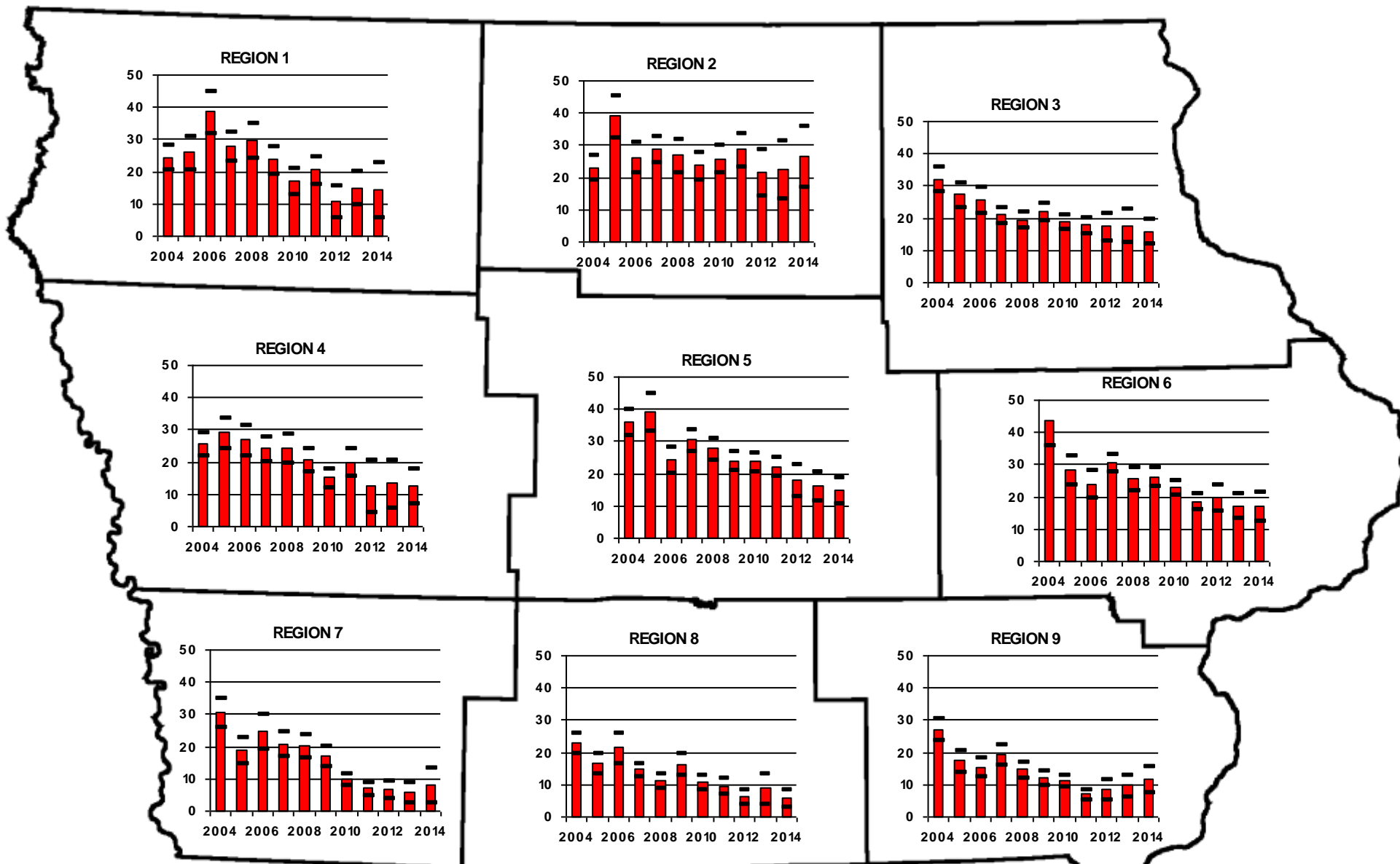


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# House Cat Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

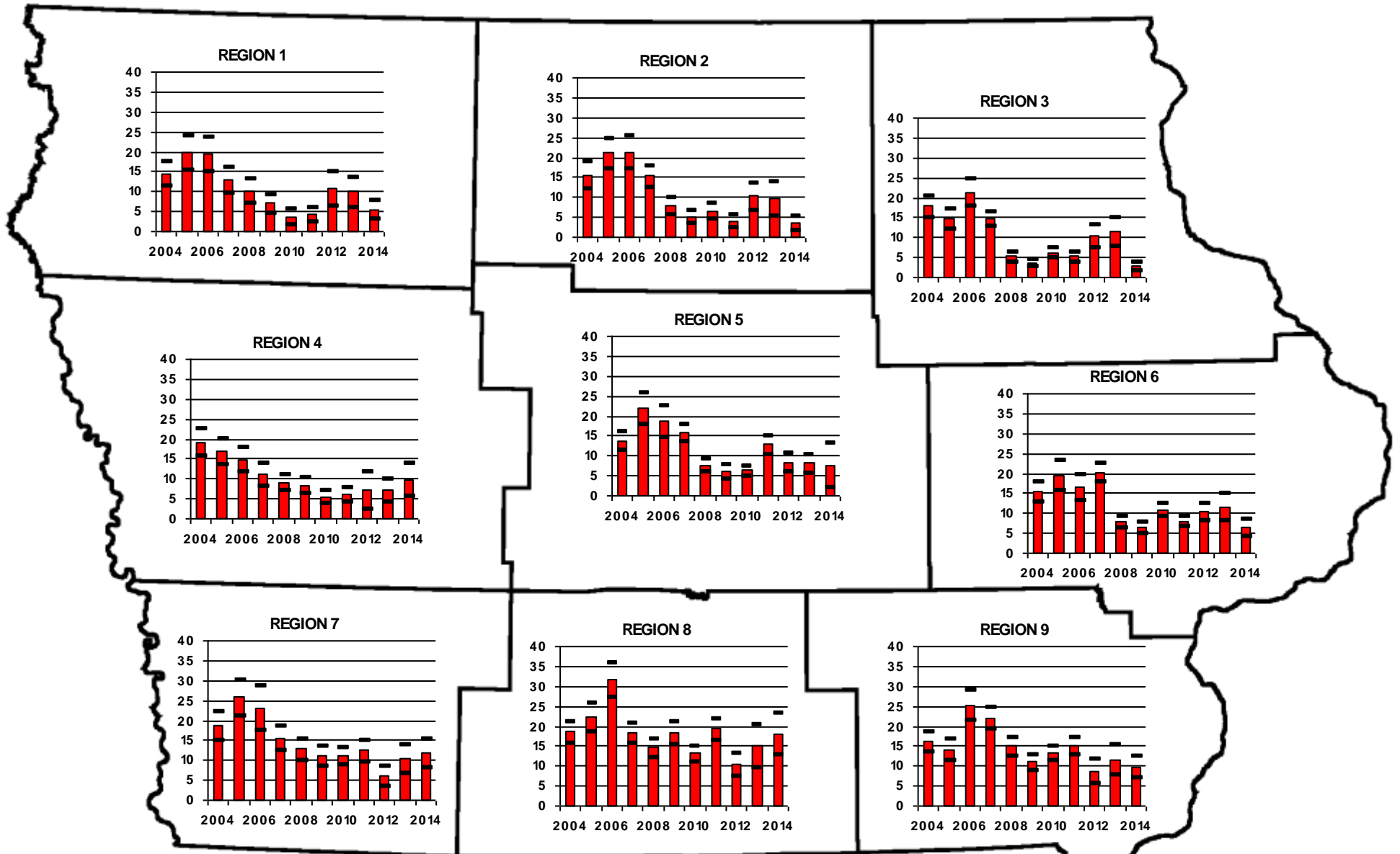


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Opossum Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

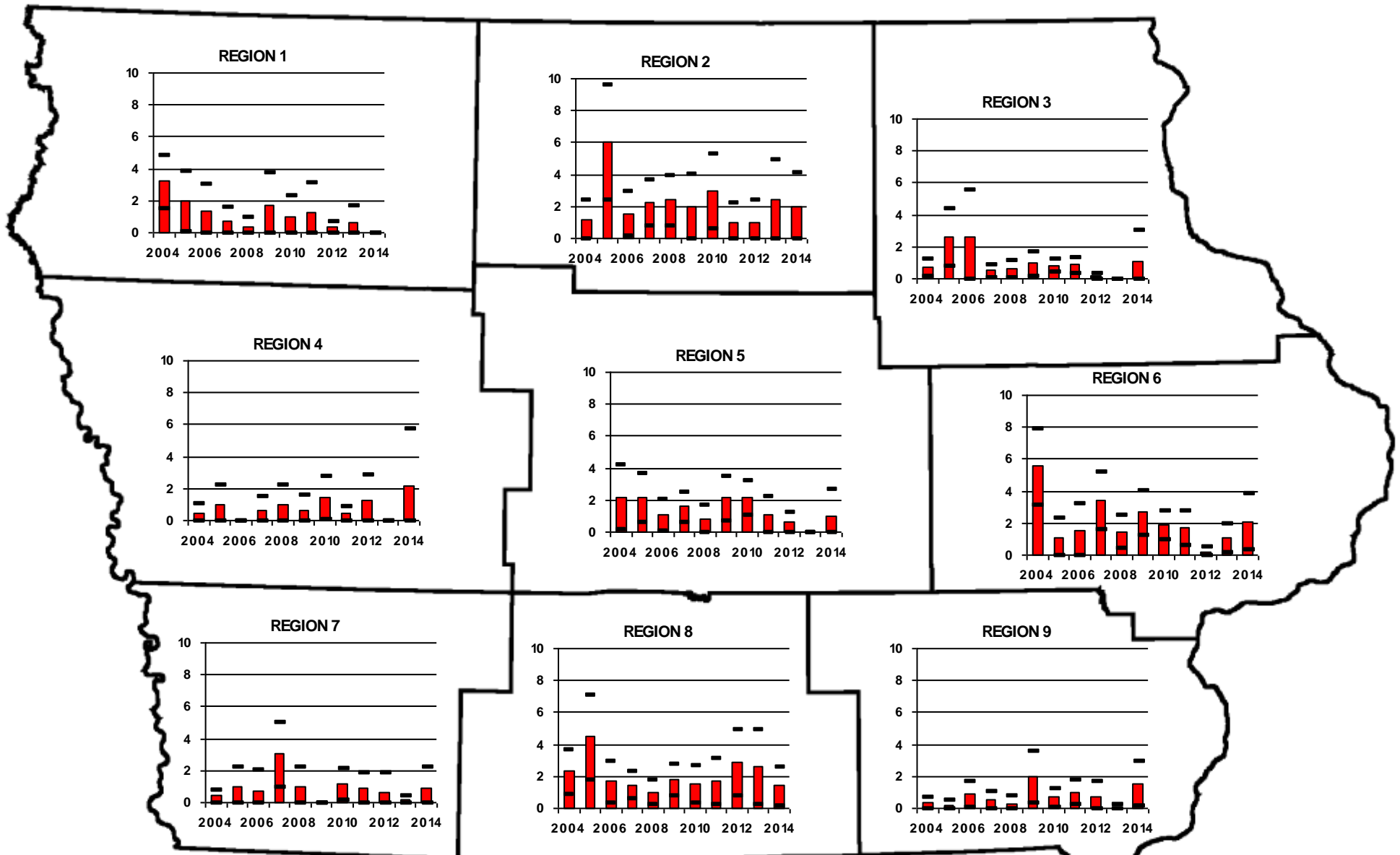


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# River Otter Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

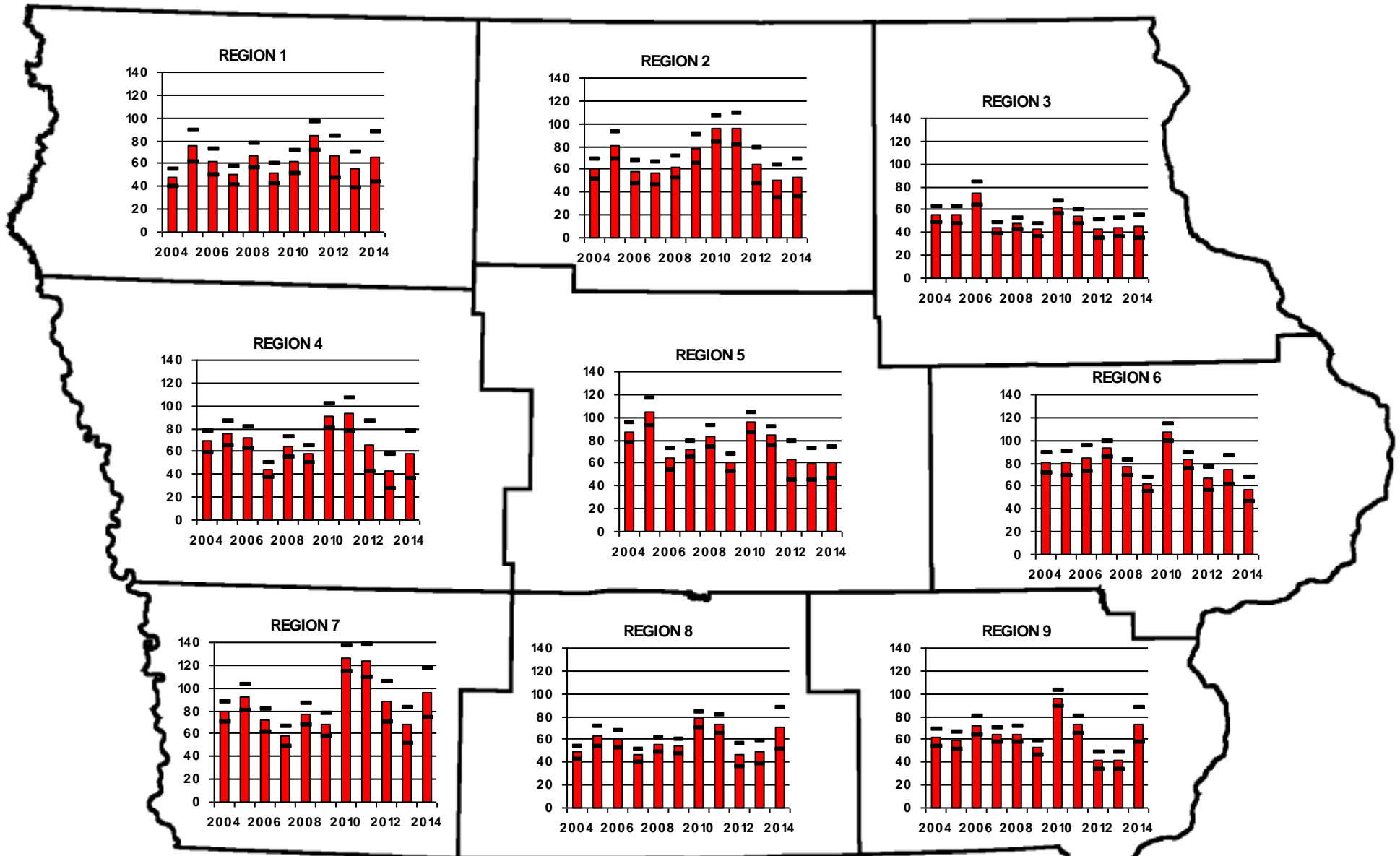


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Raccoon Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

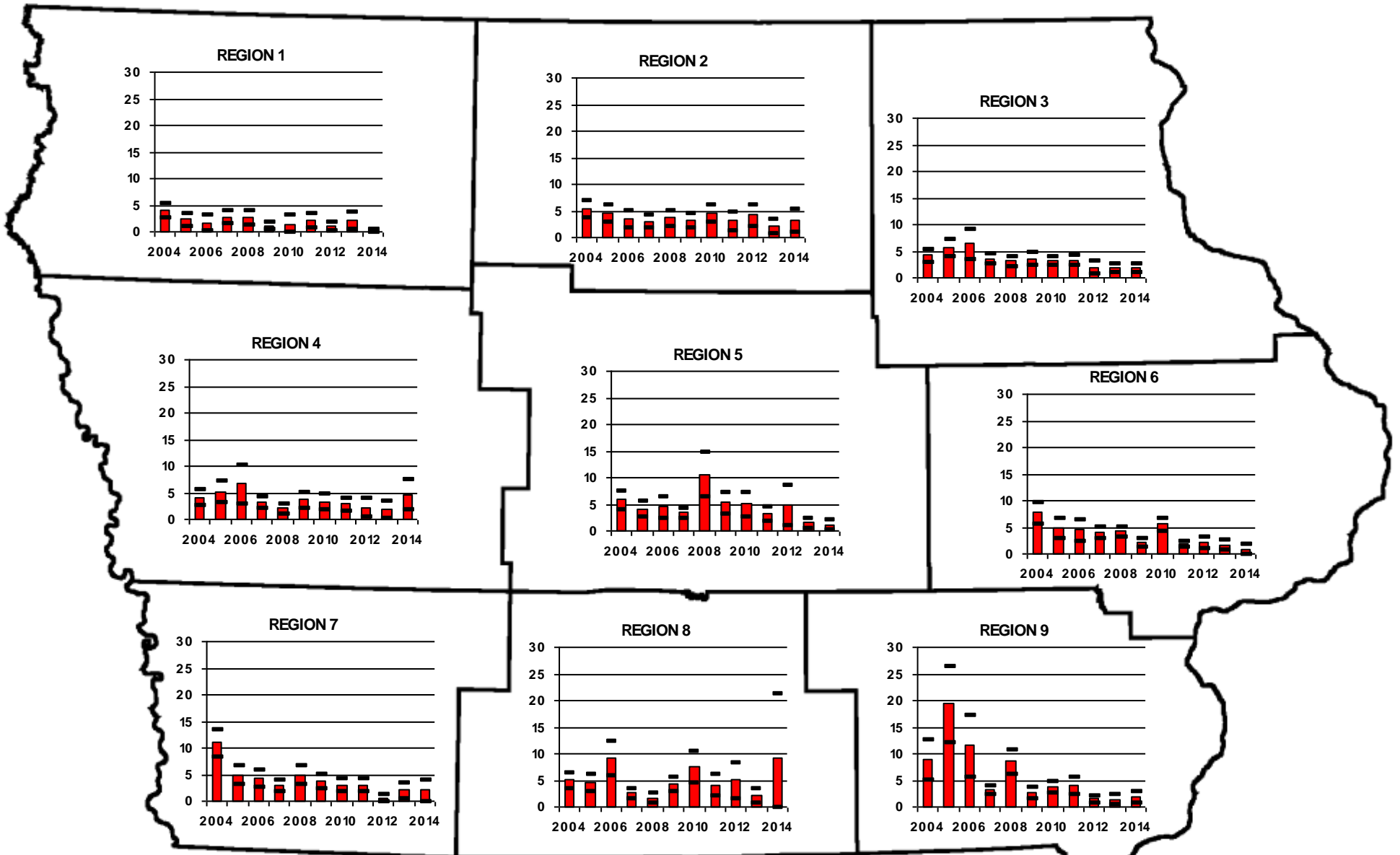


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Red Fox Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

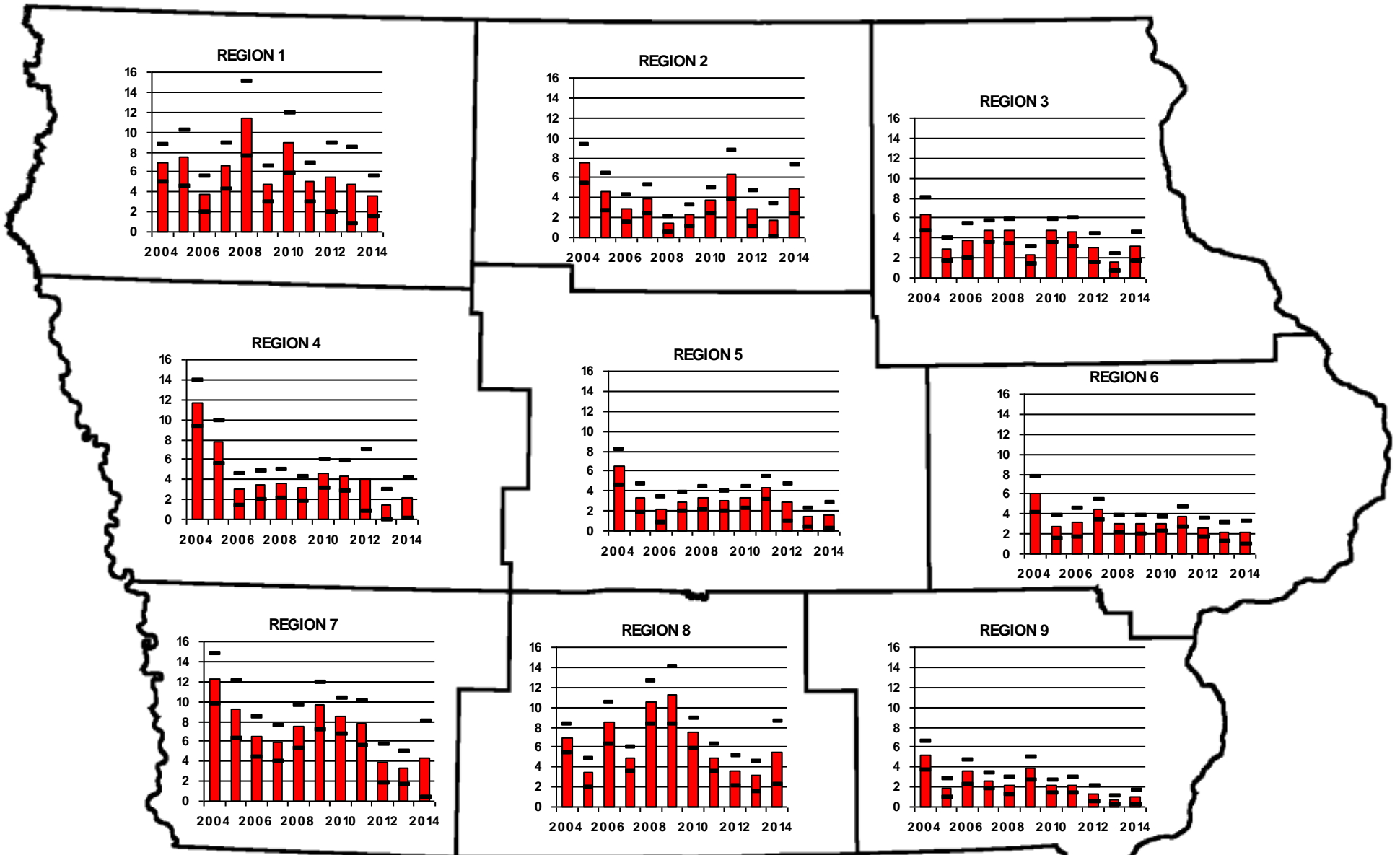


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Striped Skunk Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

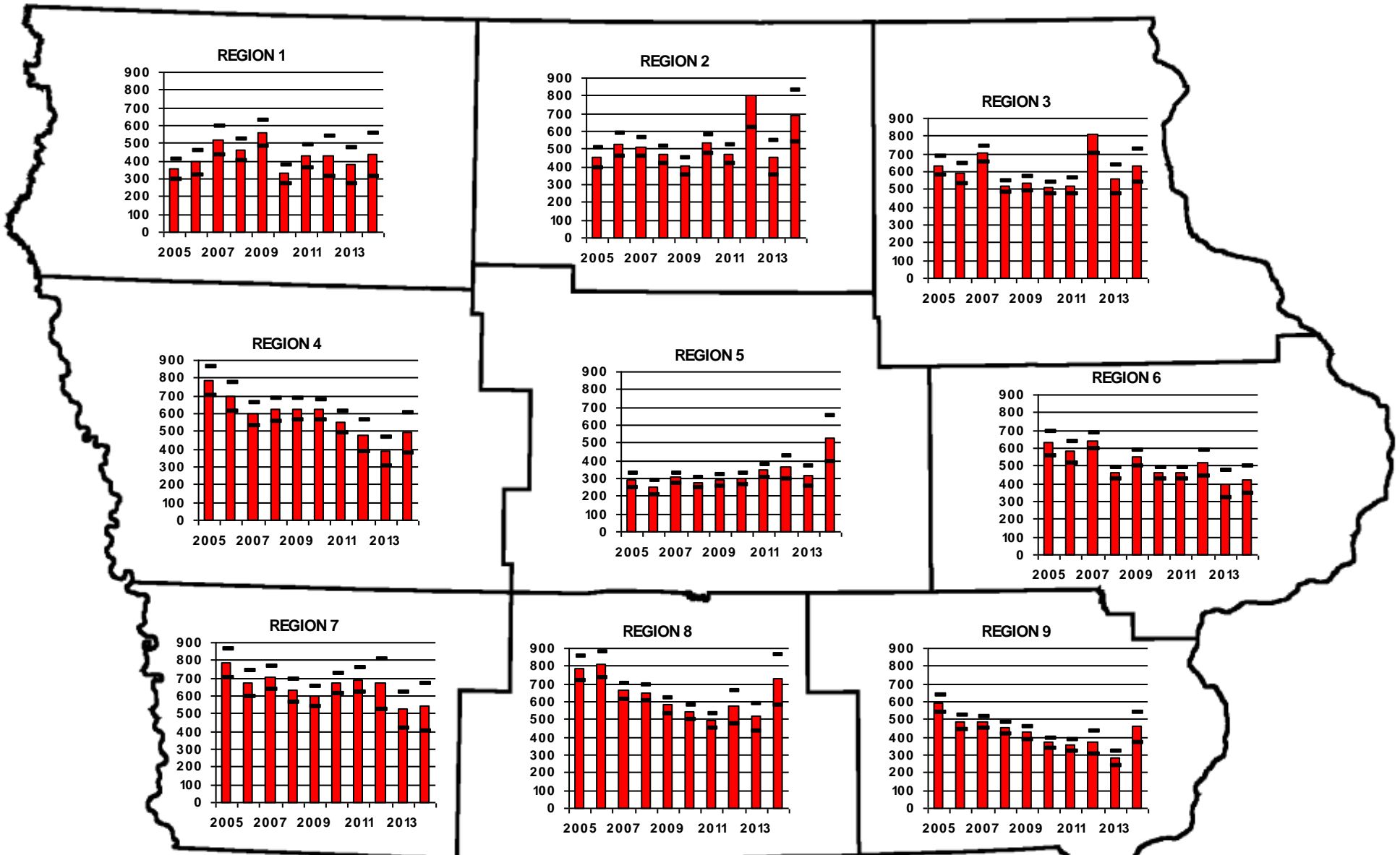


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.



# Wild Turkey Observations Per 1,000 Hours Hunted

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources



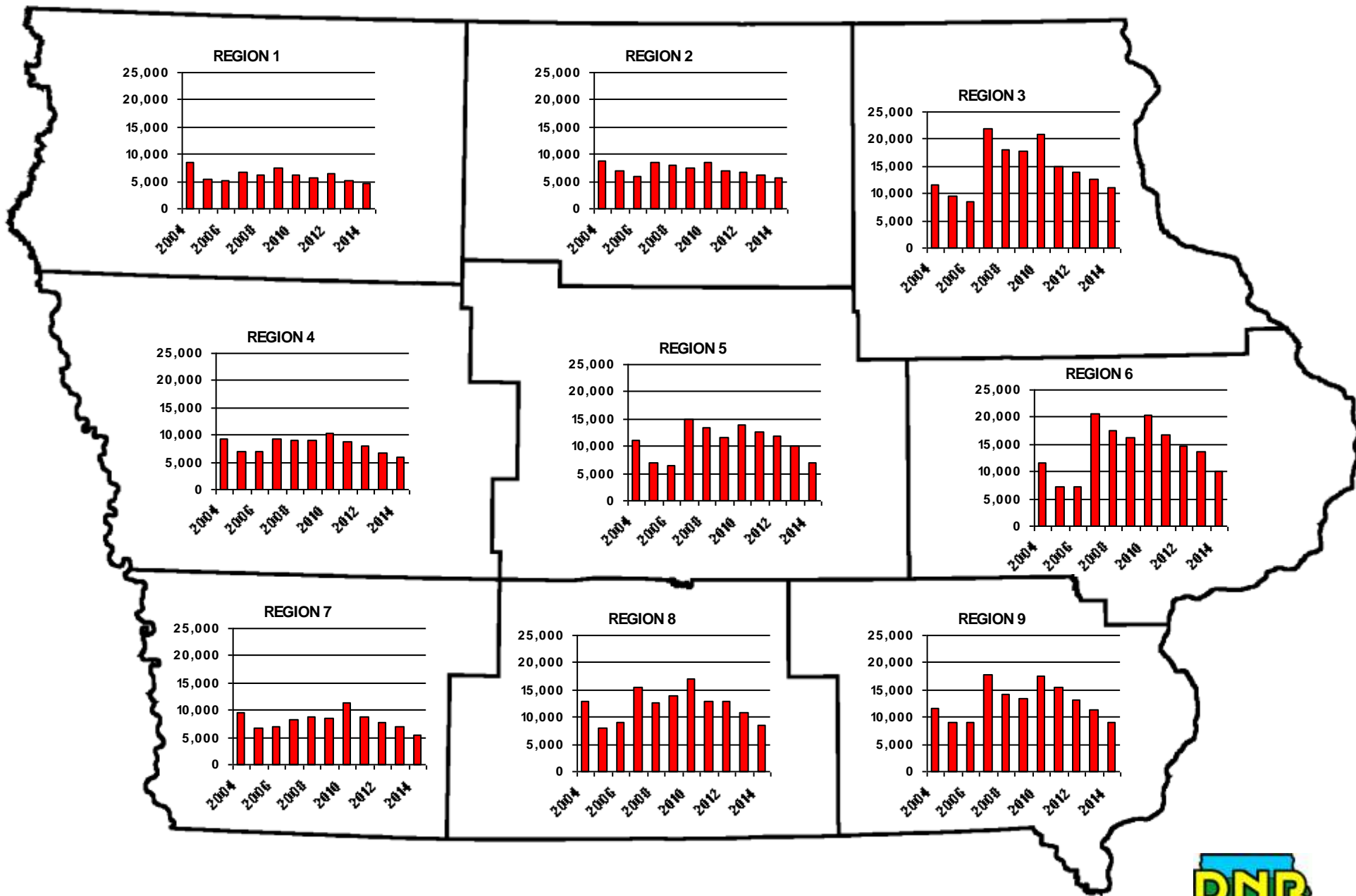
Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions can NOT be attributed solely to population size/density.





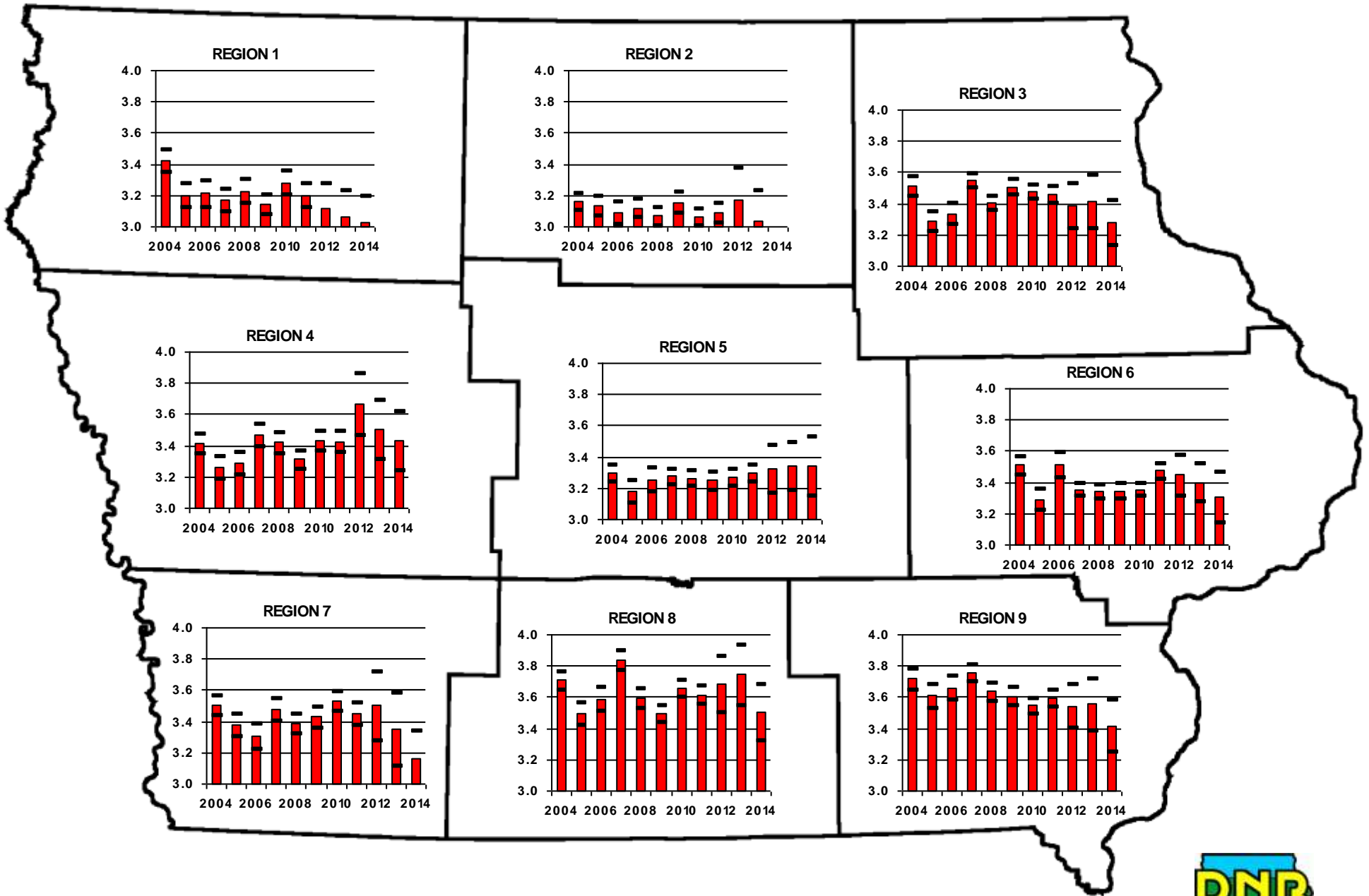
# Hours Hunted by Survey Participants

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources



# Average Hours Hunted/Bowhunting Trip

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources



# Bowhunting Trips by Survey Participants

## Bowhunter Observation Survey, Iowa Dept. of Natural Resources

