

2017 Bow Hunter Observation Survey

Iowa Department of Natural Resources

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The Iowa Department of Natural Resources (DNR) solicited responses from bow hunters for the annual Bow Hunter Observation Survey conducted from October 1 to December 2, 2017. This was the fourteenth year of the survey, which was designed jointly by DNR research staff and 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 species data for monitoring and evaluating relative species abundance. Bow hunters are a logical choice for observational-type surveys because the methods used while bow hunting deer are also ideal for viewing most wildlife species in their natural environment. In addition, bow hunters typically spend a large amount of time in bow stands: more than 40 hours/season is not uncommon. We believe avid bow hunters (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 2017 survey were selected either from a list of avid bow hunters that indicated interest in participating based on a pre-survey and respondents from at least one of the past two years, or from a list of bow hunters who had purchased a license for each of the 3 years prior to 2017. Our goal was to select approximately 999 bow hunters in each of Iowa's 9 climate regions. Each climate region contains approximately 11 counties, and approximately 91 bow hunters 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 bow hunters 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 bow hunters 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 bow hunters was selected for participation. Of surveys mailed, 236 were either returned due to USPS address issues or hunters indicated they did not hunt this year, making the final statewide sample 8,755.

Responses were obtained from 1,902 bow hunters who recorded their observations during 24,573 hunting trips, yielding 82,530 hours of total observation time (3.35 ± 0.028 hours/trip; mean \pm 95% CL). Bow hunters reported a median of 13 trips during the 63-day season. Regionally, the number of bow hunting trips (and hours hunted) ranged from 1,673 (5,344 hours) in northwest Iowa (Region 1) to 3,695 (12,619 hours) in northeast Iowa (Region 3). The raw survey response rate was 21.7%, approximately 1% lower than last year. We are grateful to all bow hunters that participated in the survey efforts this year.

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. There was high precision for total deer estimates, and confidence limits were within $\pm 10\%$ of the mean estimate. Precision among estimates for other common species, such as wild turkeys, coyotes, and raccoons, was good: confidence limits were generally within ± 20 to 30% of the mean estimate. Precision was lower for less common or visible species such as bobcat, house cat, opossum, red fox, and skunk, but still adequate for inference about annual trends. Precision and sightability for badger, gray fox, and river otter was likely too low to provide reliable annual mean estimates at the regional scale. However, long-term (e.g., 10-year) temporal trends may be inferred at the region level for these species.

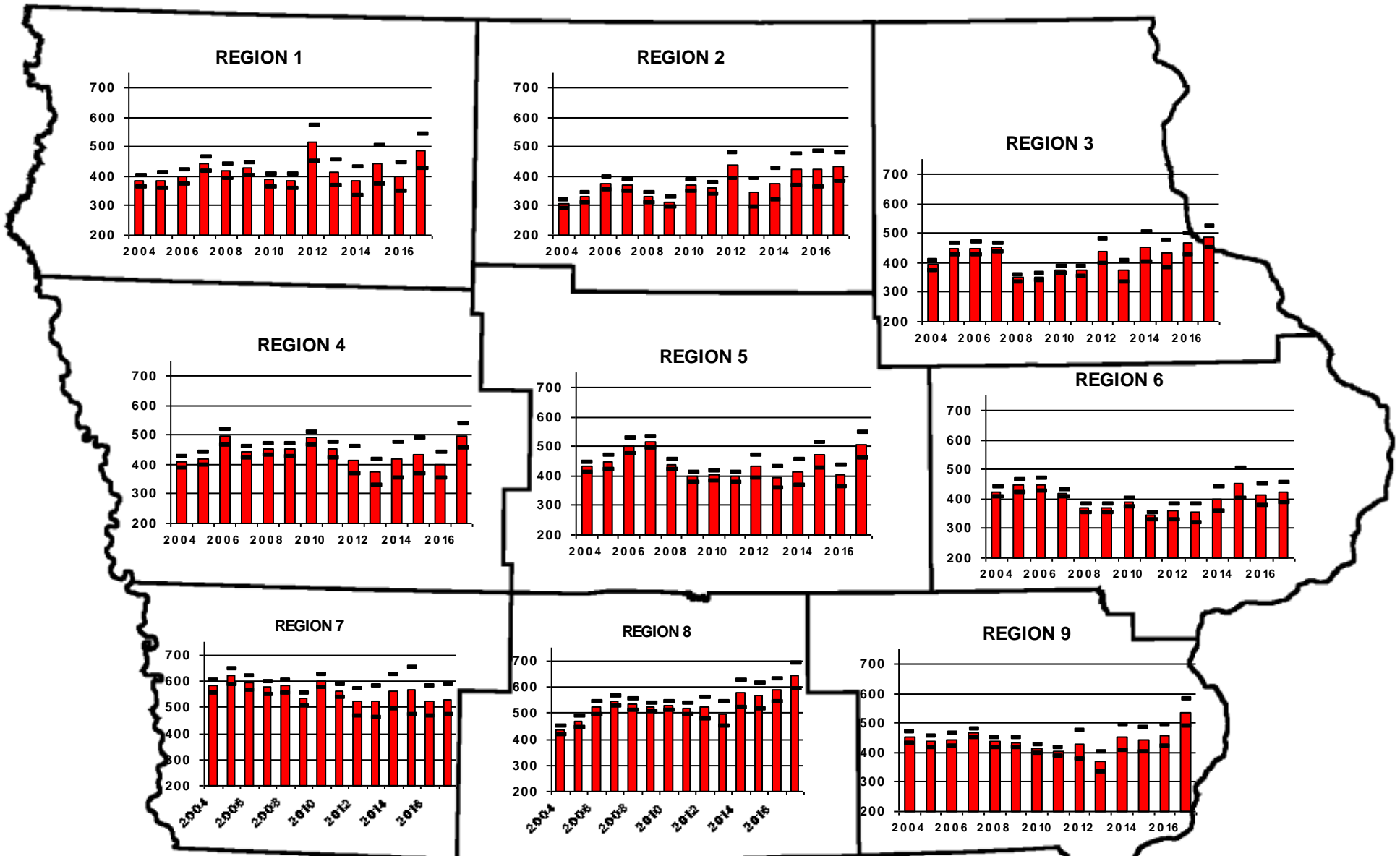
A comparison of results from 2005 to 2017 suggests that the number of total deer observed/1,000 hours has remained relatively stable across all nine regions of Iowa, except for the northcentral region where an increasing trend was observed and the southeast region where the trend appears to be increasing after a steady decrease from 2004 to 2013. Turkey observations from 2005 to 2017 generally decreased across all southern, west central, east central, and northeast regions, and stayed the same for northern and central regions. Bobcat observations/1,000 hours remain very low in the north central and northeast regions, are fairly stable in the southern regions, and are steadily increasing in the northwest and east central regions. Finally, Coyote observations appear to be relatively stable statewide.

Again, the DNR thanks all participants in the 2017 Bow Hunter Observation Survey. The information provided by dedicated Iowa bow hunters could never be duplicated by DNR staff and plays a critical role in the conservation of these and other wildlife species for the future.

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 example, deer densities are likely greater in the southeast and northeast regions of Iowa, however, regional differences from the bow hunter survey do not reflect a similar trend.

Antlered Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources

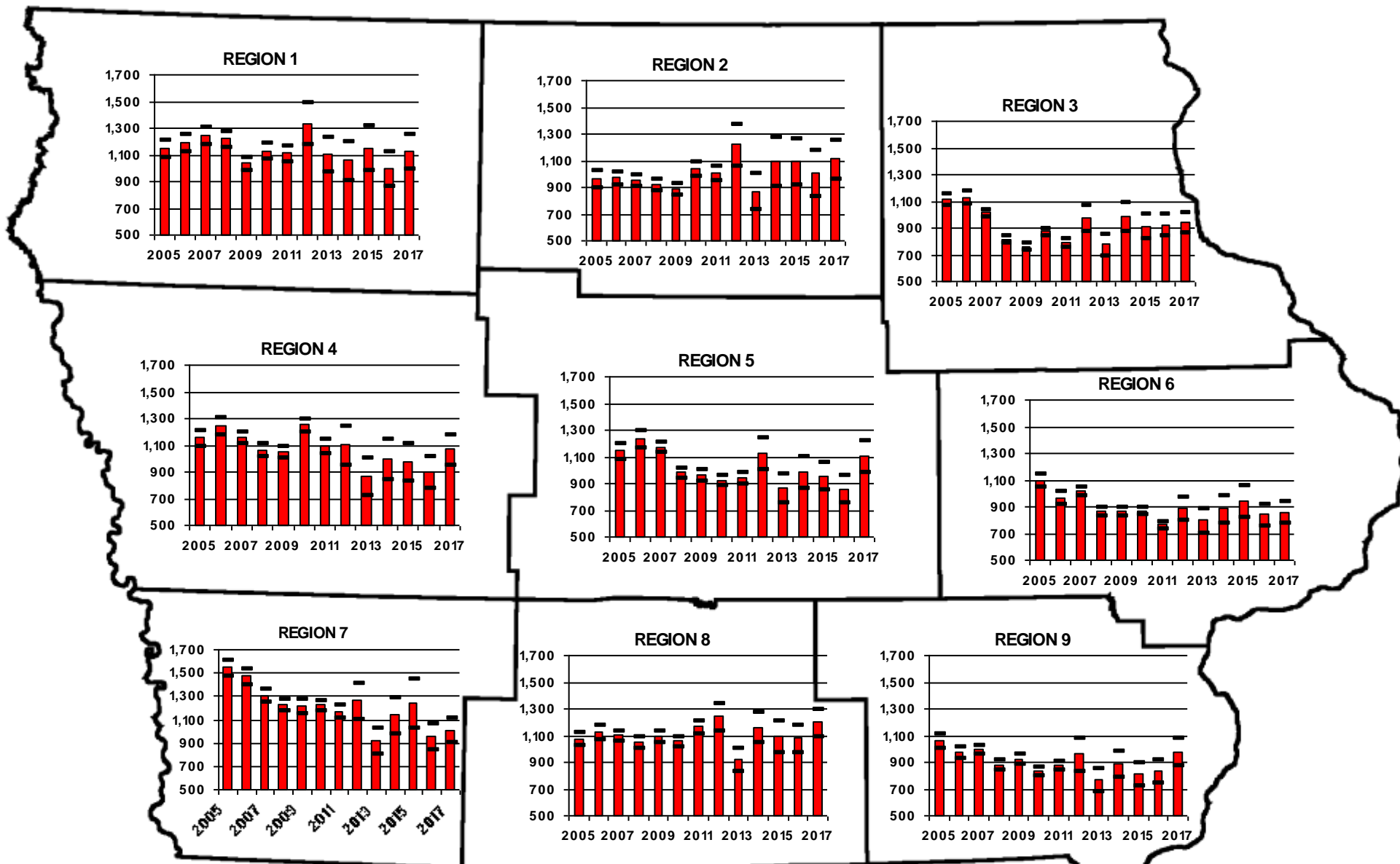


Many factors can influence the sightability of animals, such as population density, habitat characteristics, topography, land use, etc. As a result, differences between regions may NOT be attributed solely to population size/density.



Antlerless Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources

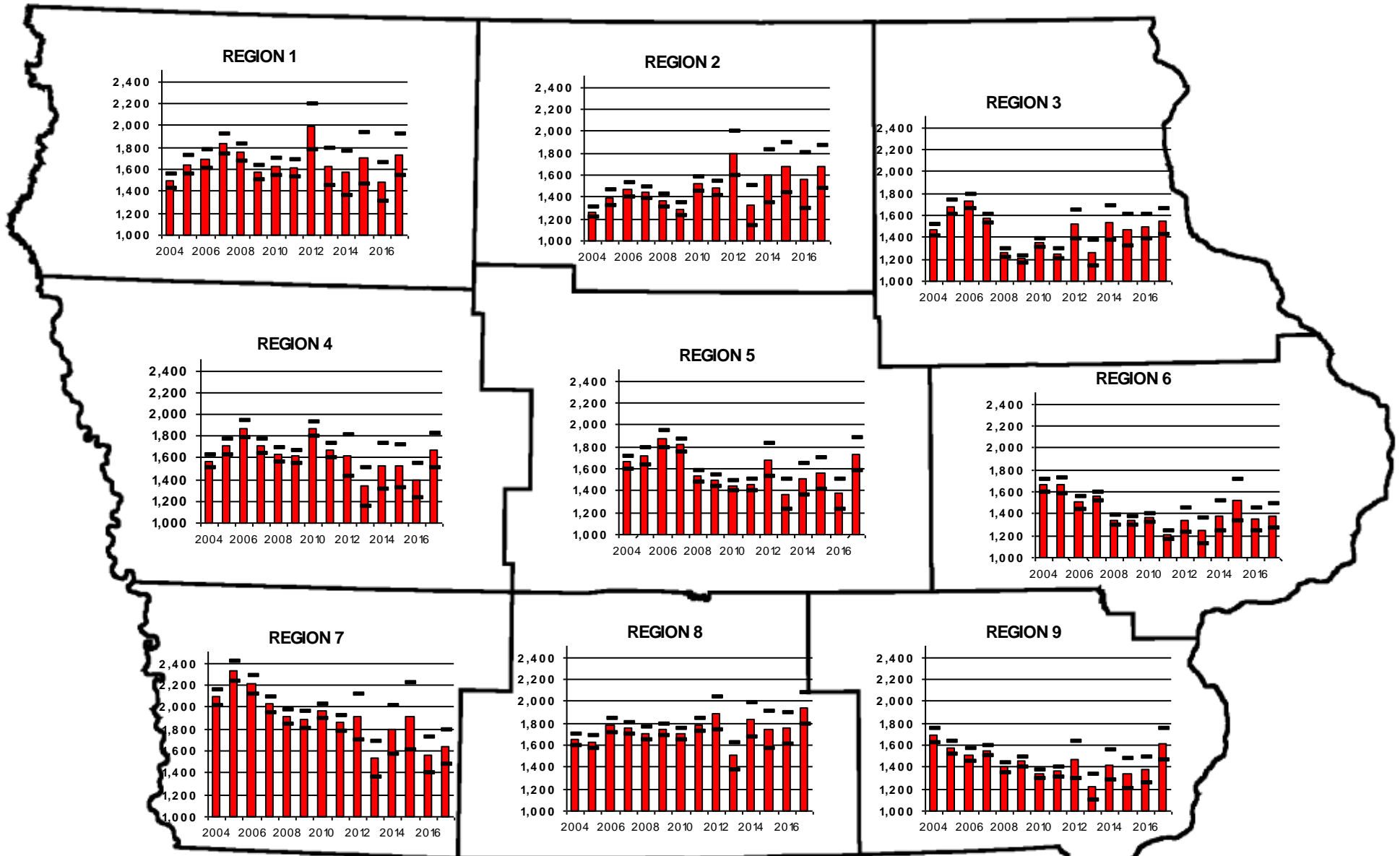


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Total Deer Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources

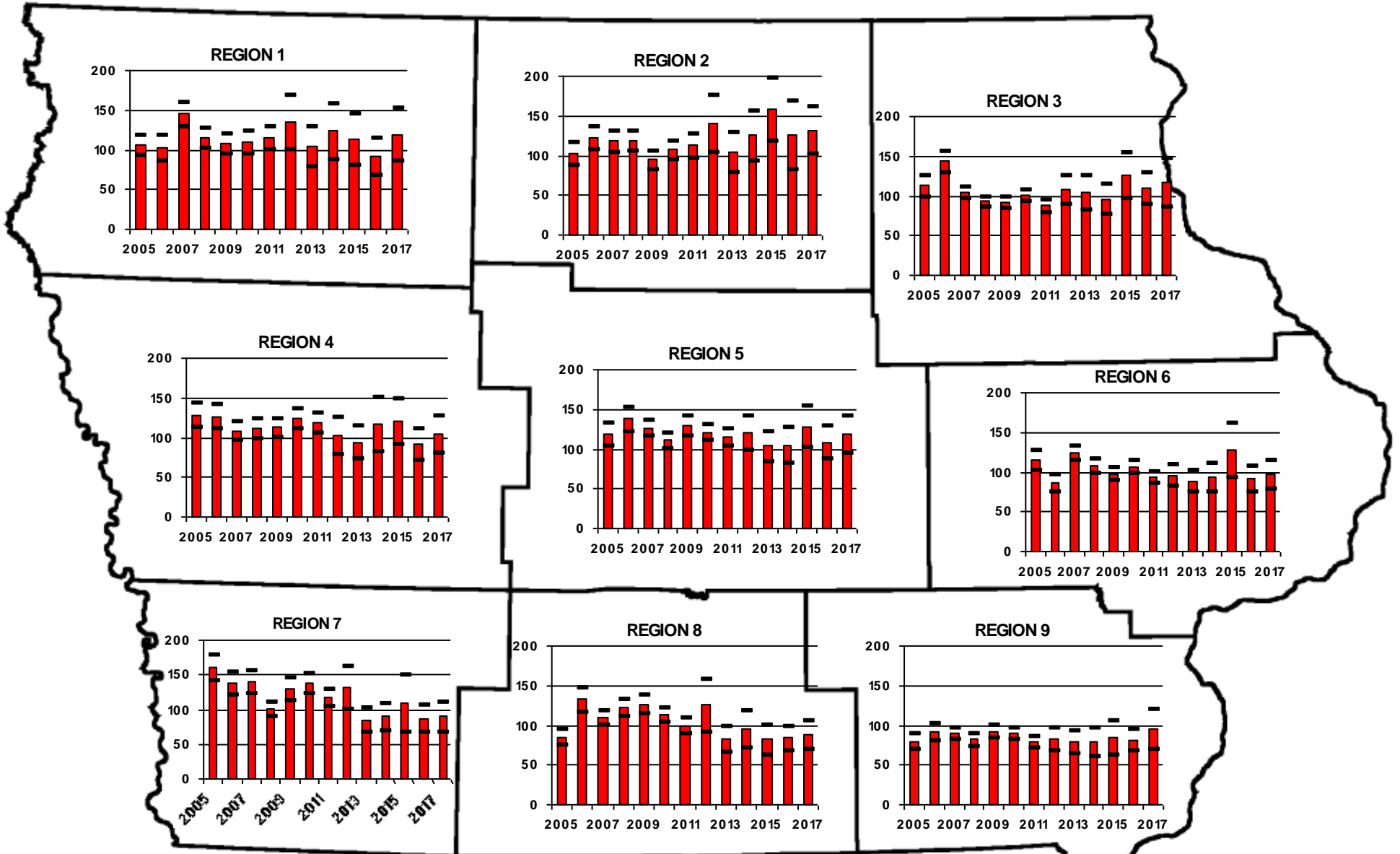


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Unknown Deer Observations Per 1,000 Hours Hunted

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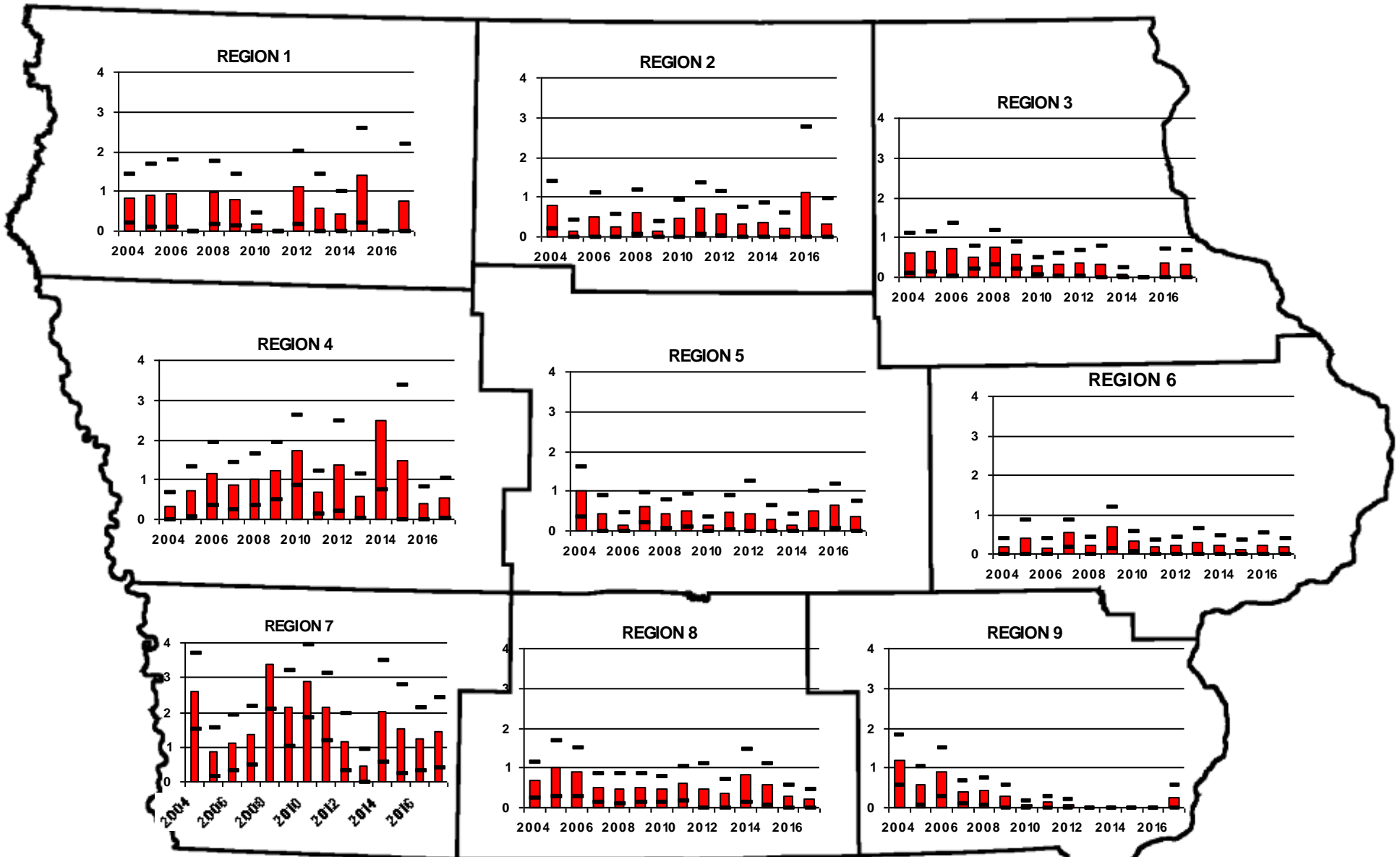


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Badger Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources

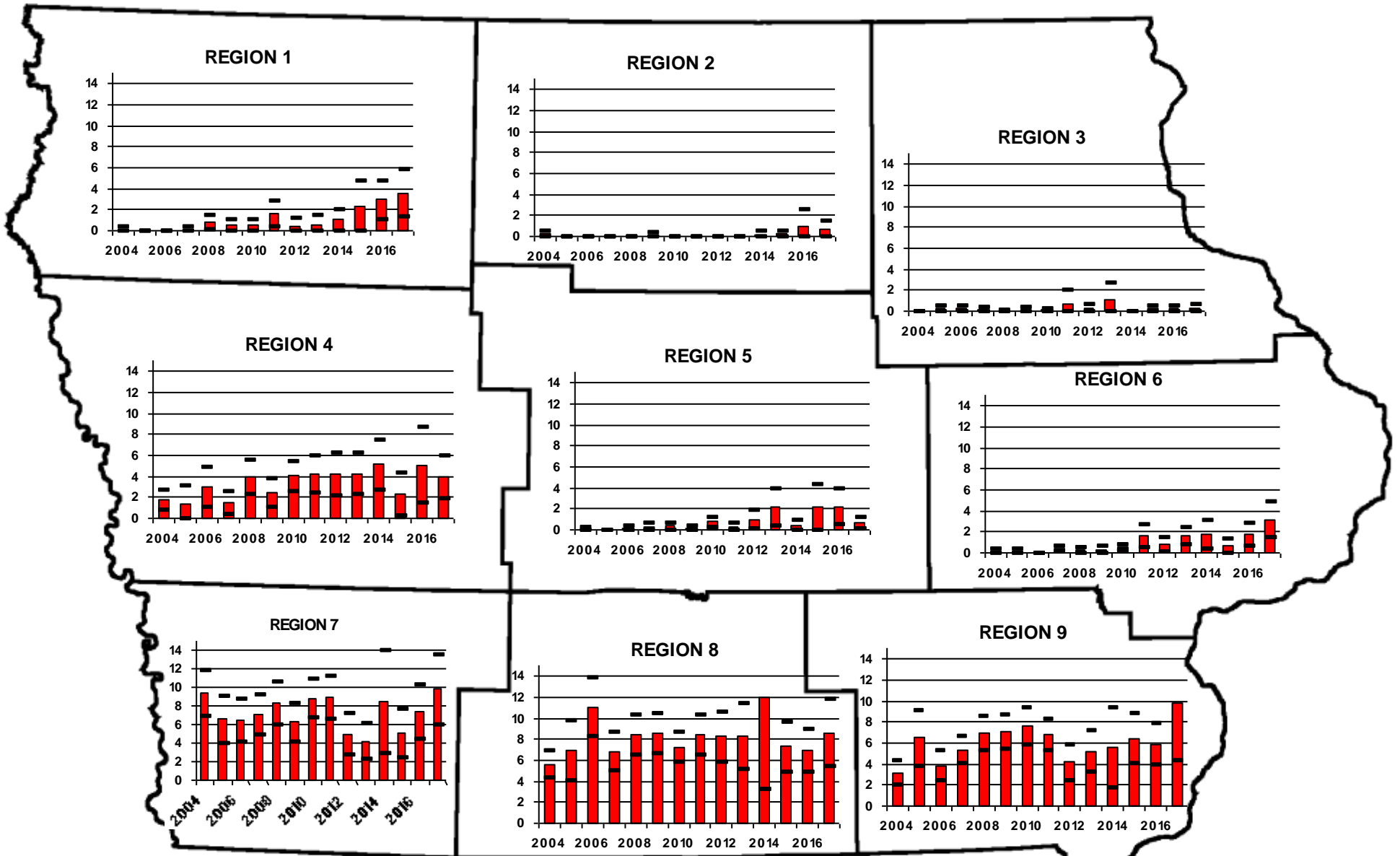


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Bobcat Observations Per 1,000 Hours Hunted

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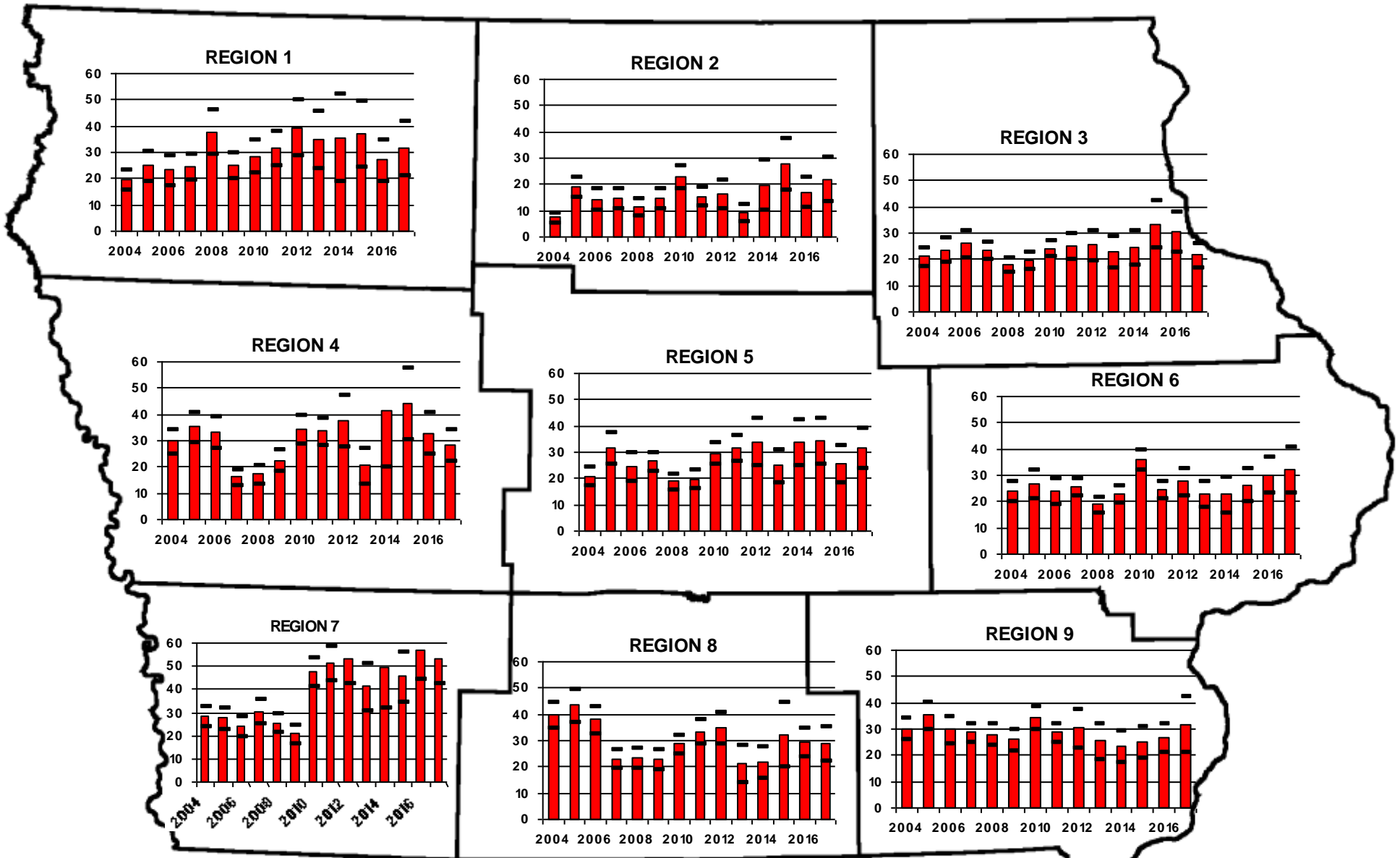


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Coyote Observations Per 1,000 Hours Hunted

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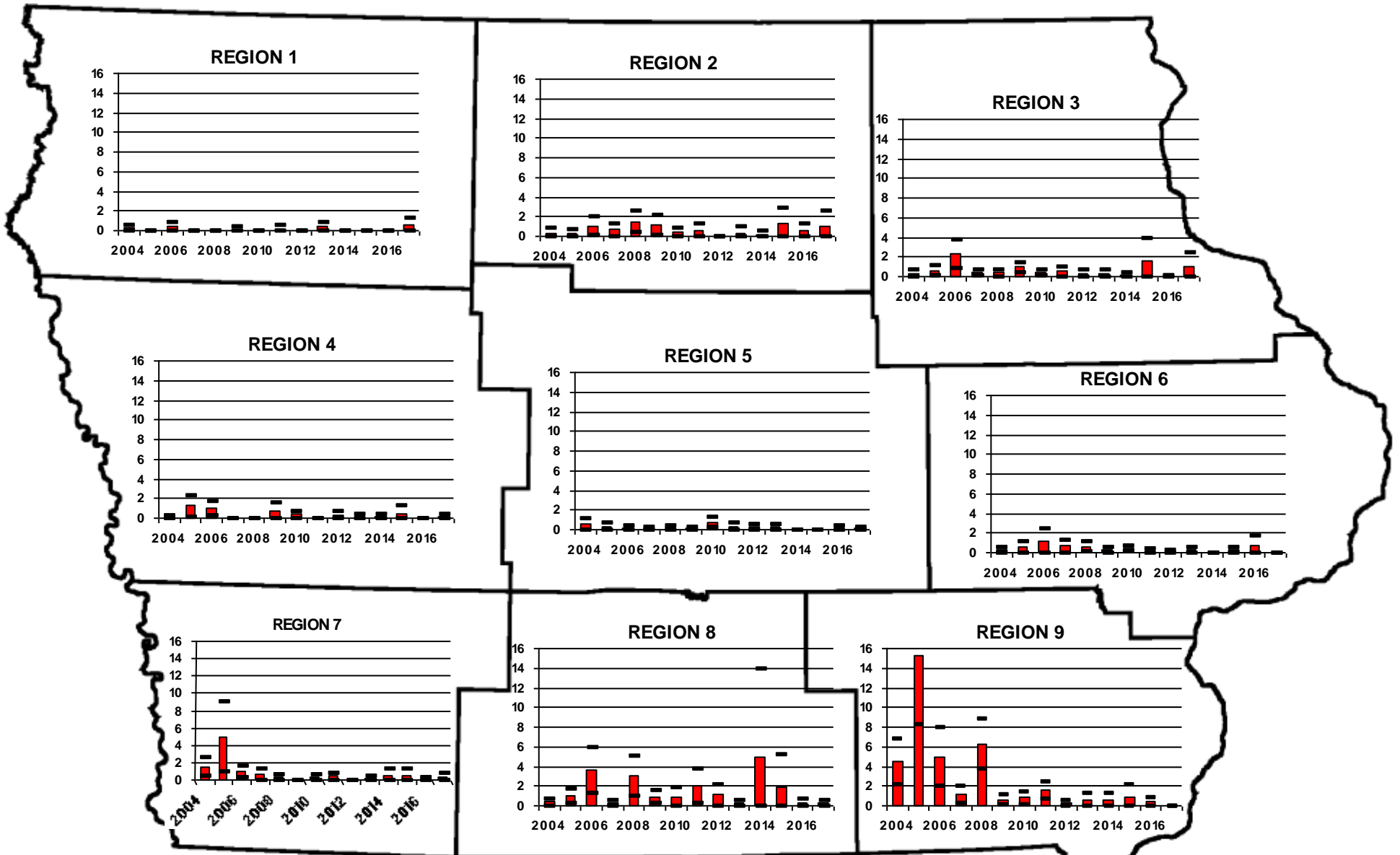


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Gray Fox Observations Per 1,000 Hours Hunted

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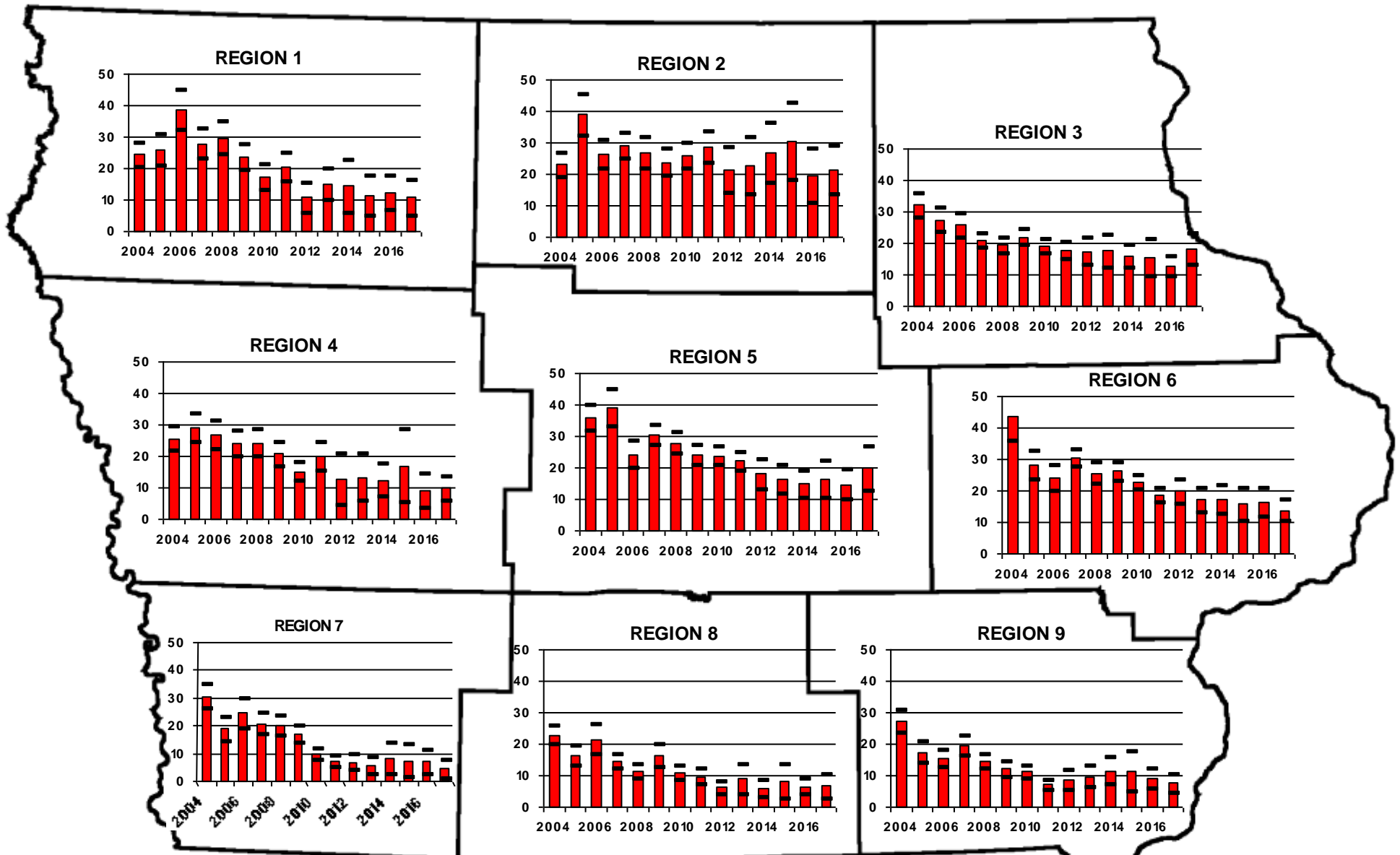


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House Cat Observations Per 1,000 Hours Hunted

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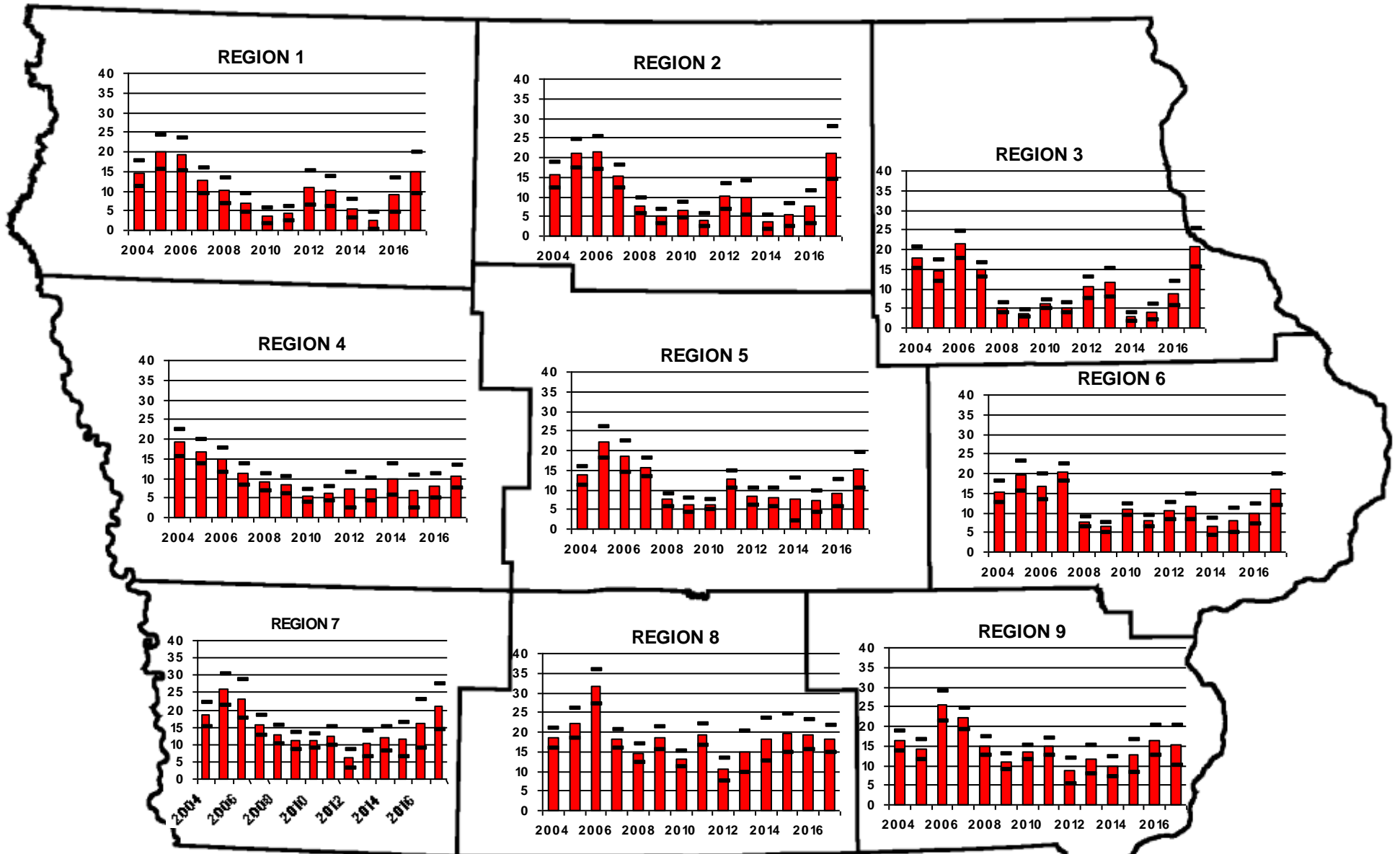


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Opossum Observations Per 1,000 Hours Hunted

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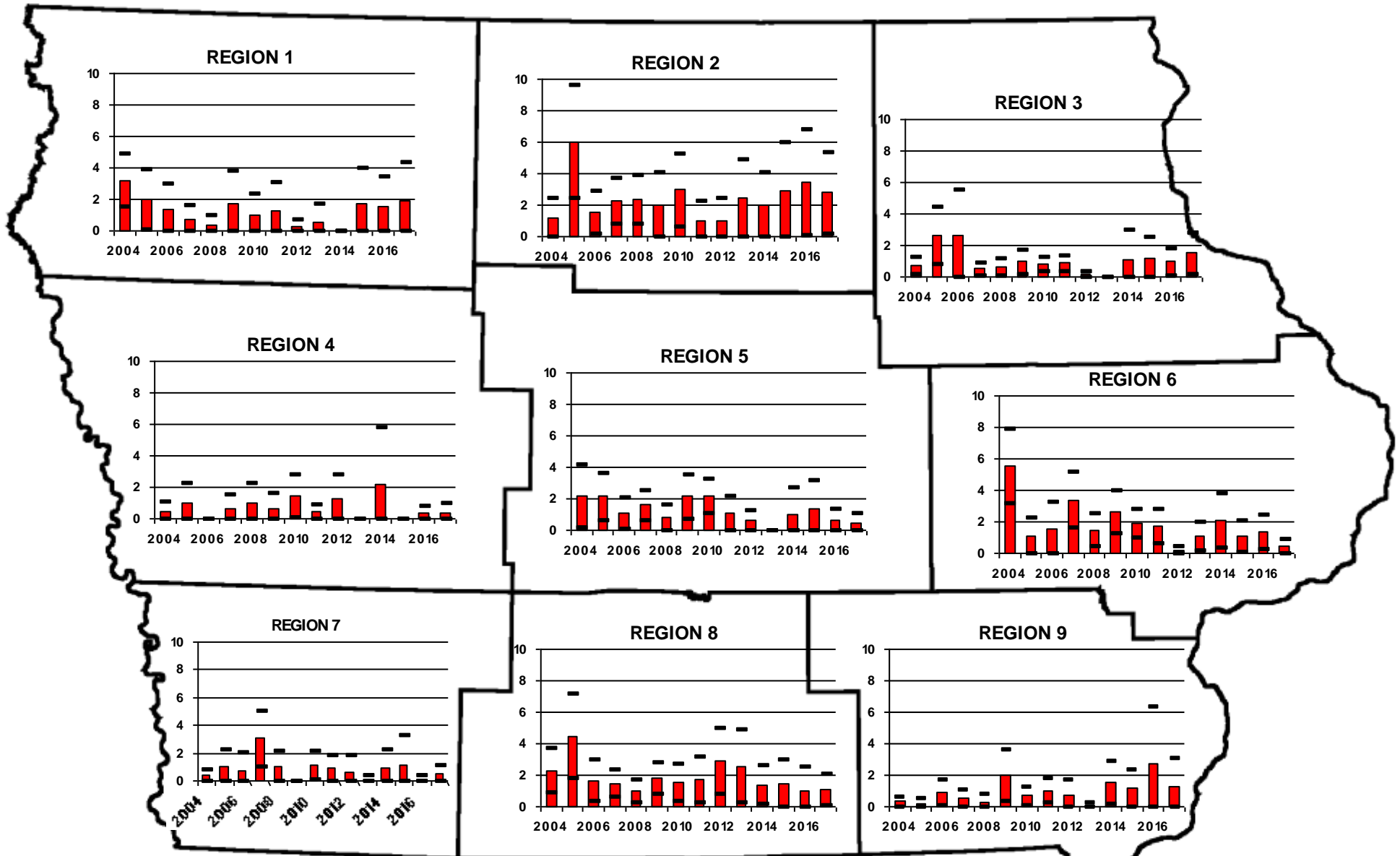


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River Otter Observations Per 1,000 Hours Hunted

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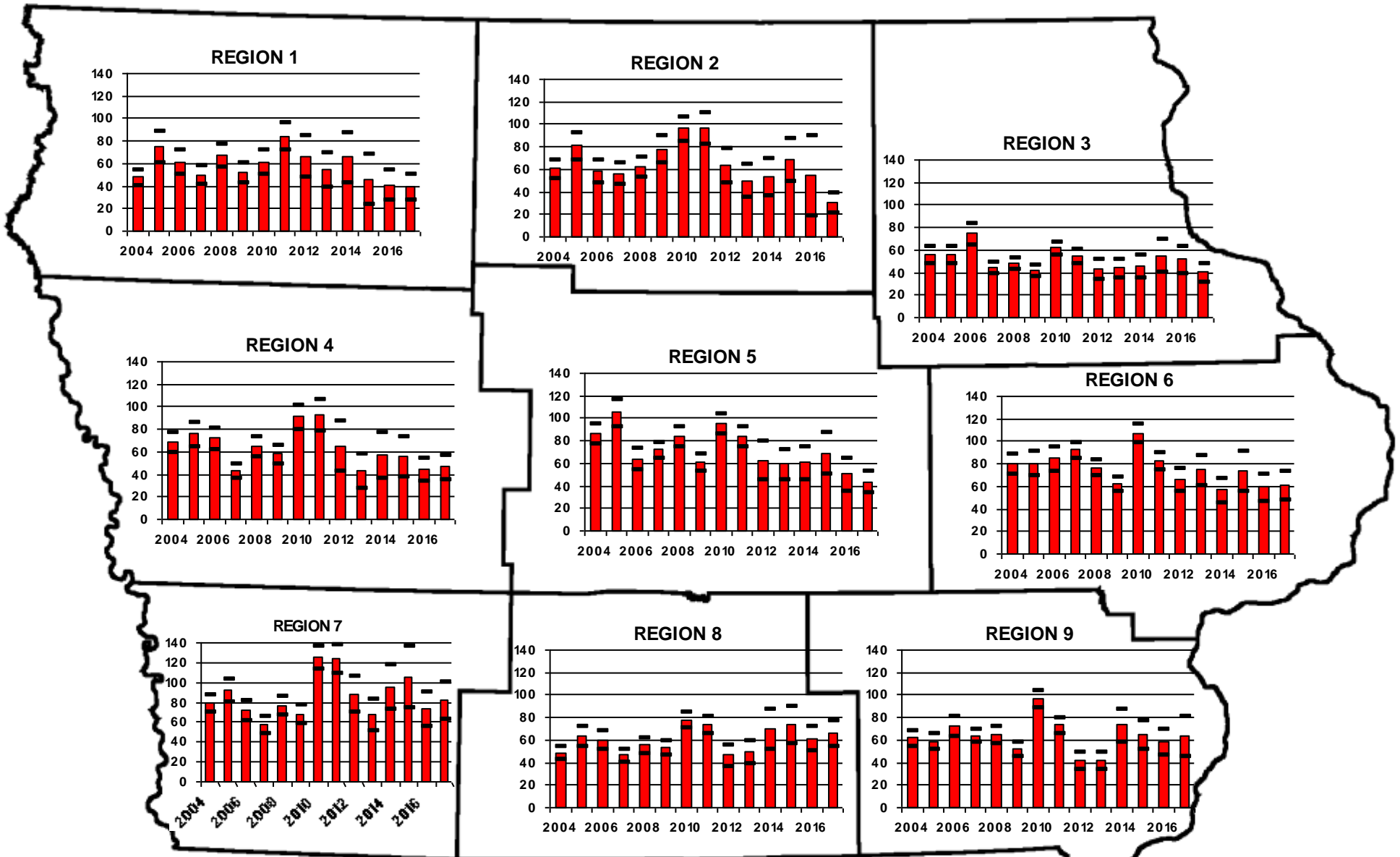


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Raccoon Observations Per 1,000 Hours Hunted

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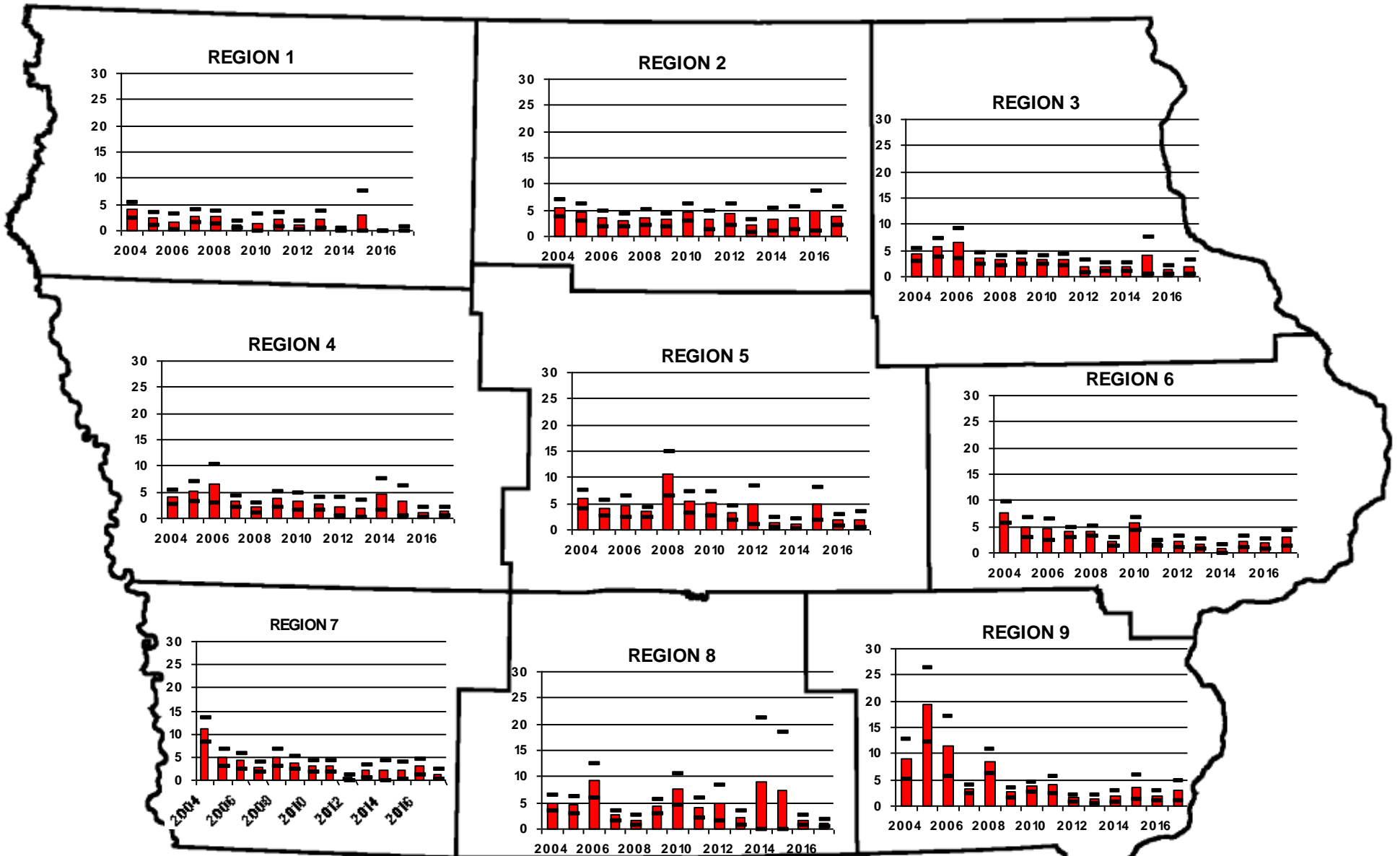


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Red Fox Observations Per 1,000 Hours Hunted

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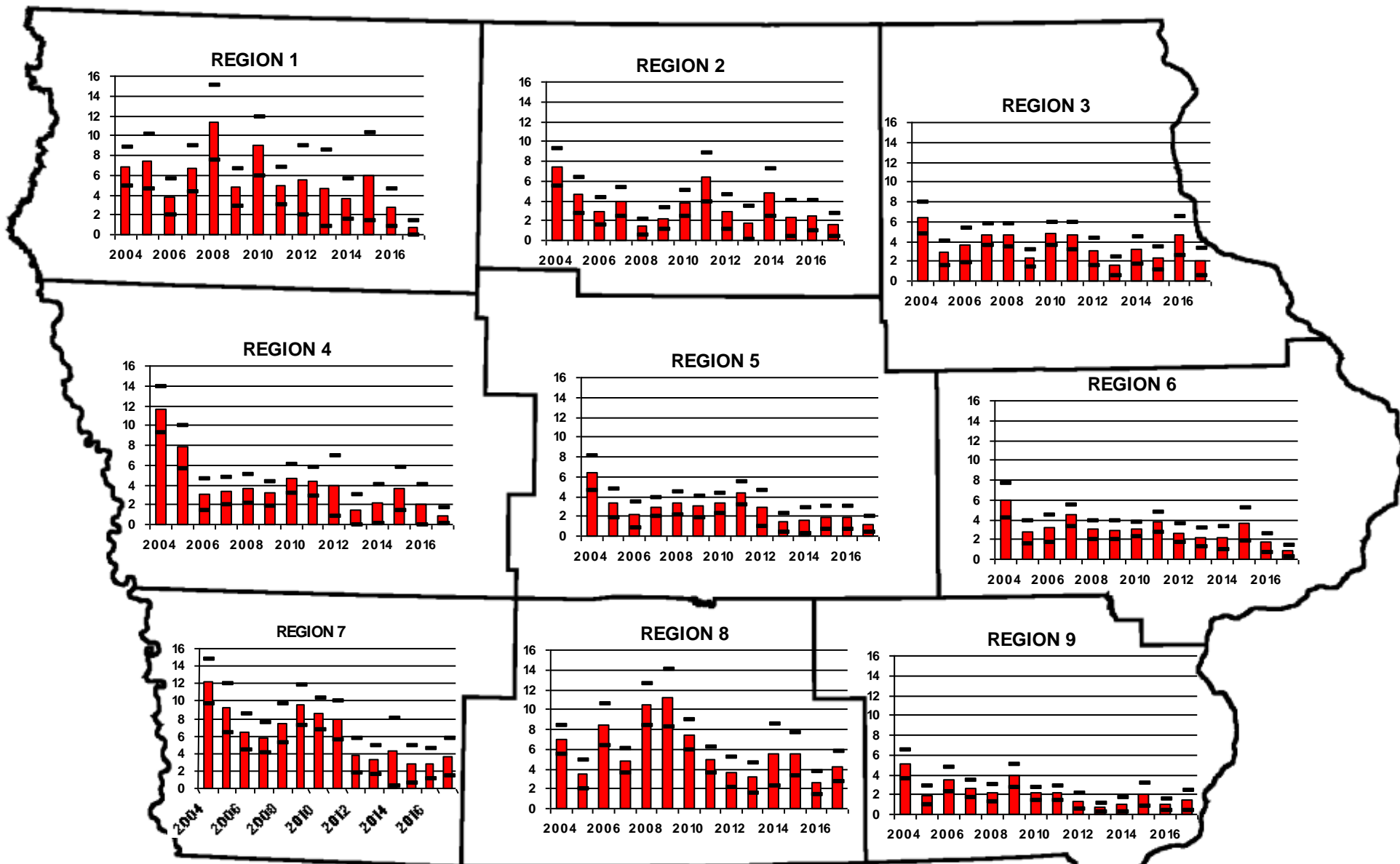


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Striped Skunk Observations Per 1,000 Hours Hunted

Bowhunter Observation Survey, Iowa Dept. of Natural Resources

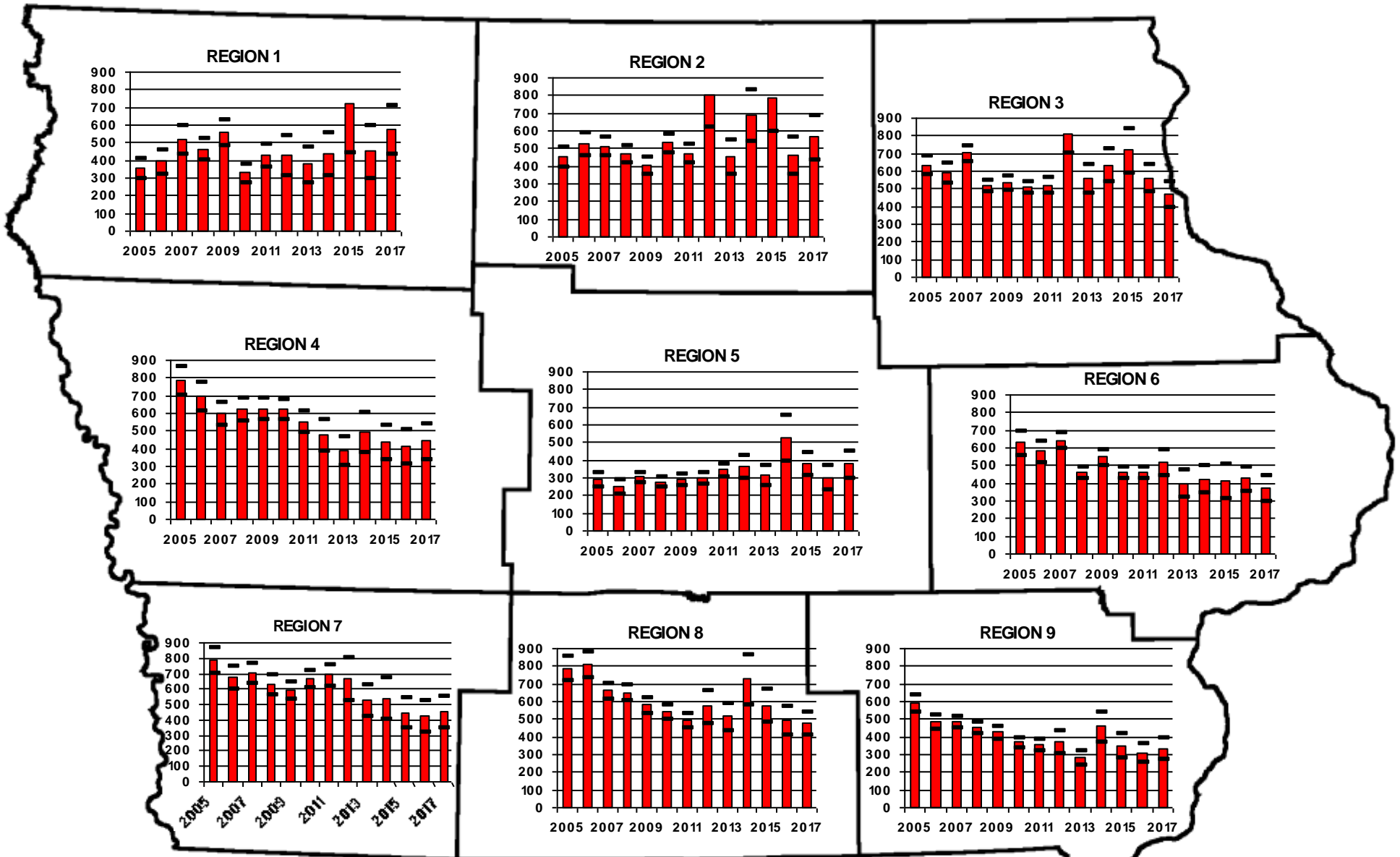


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Wild Turkey Observations Per 1,000 Hours Hunted

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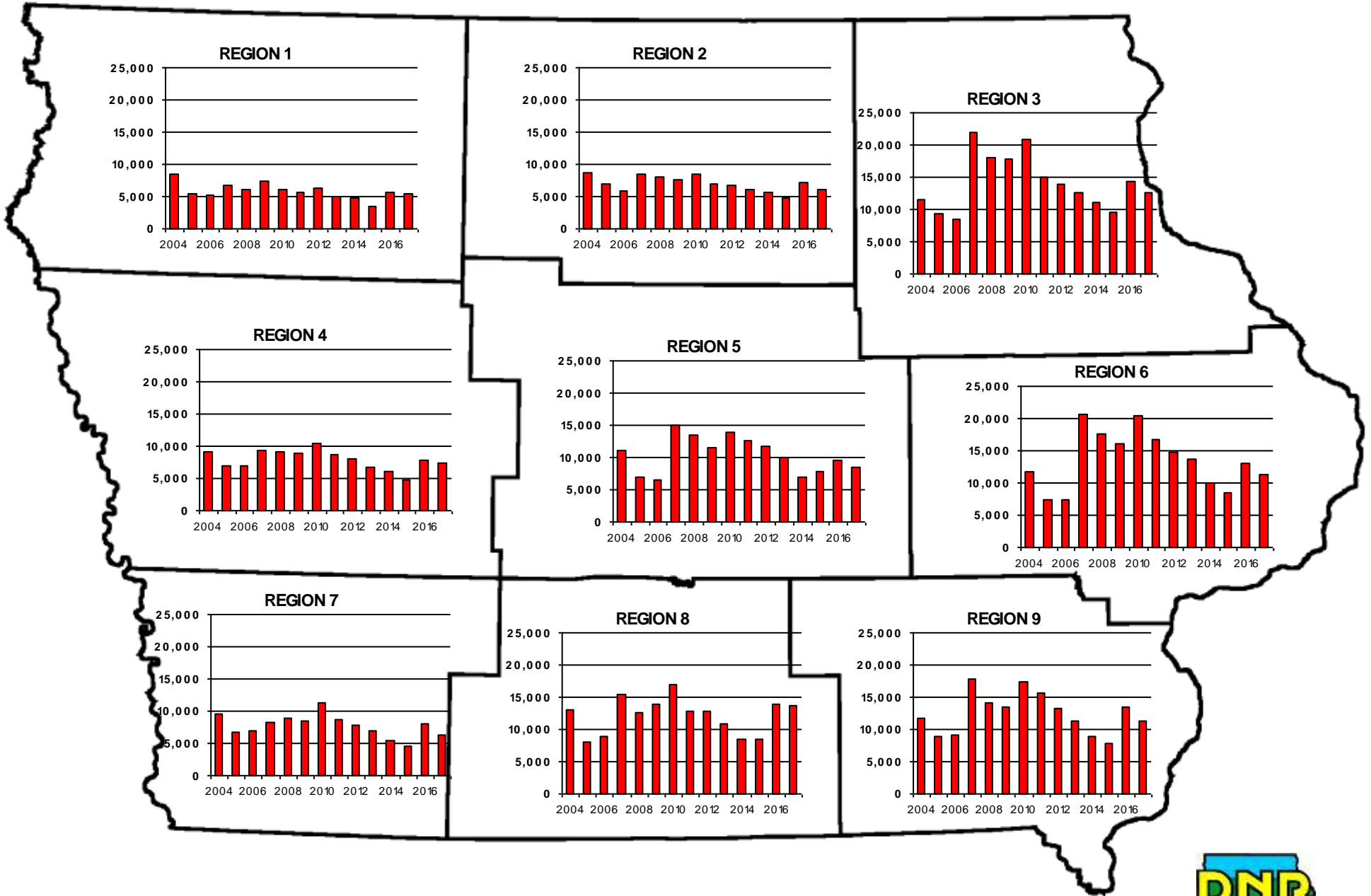


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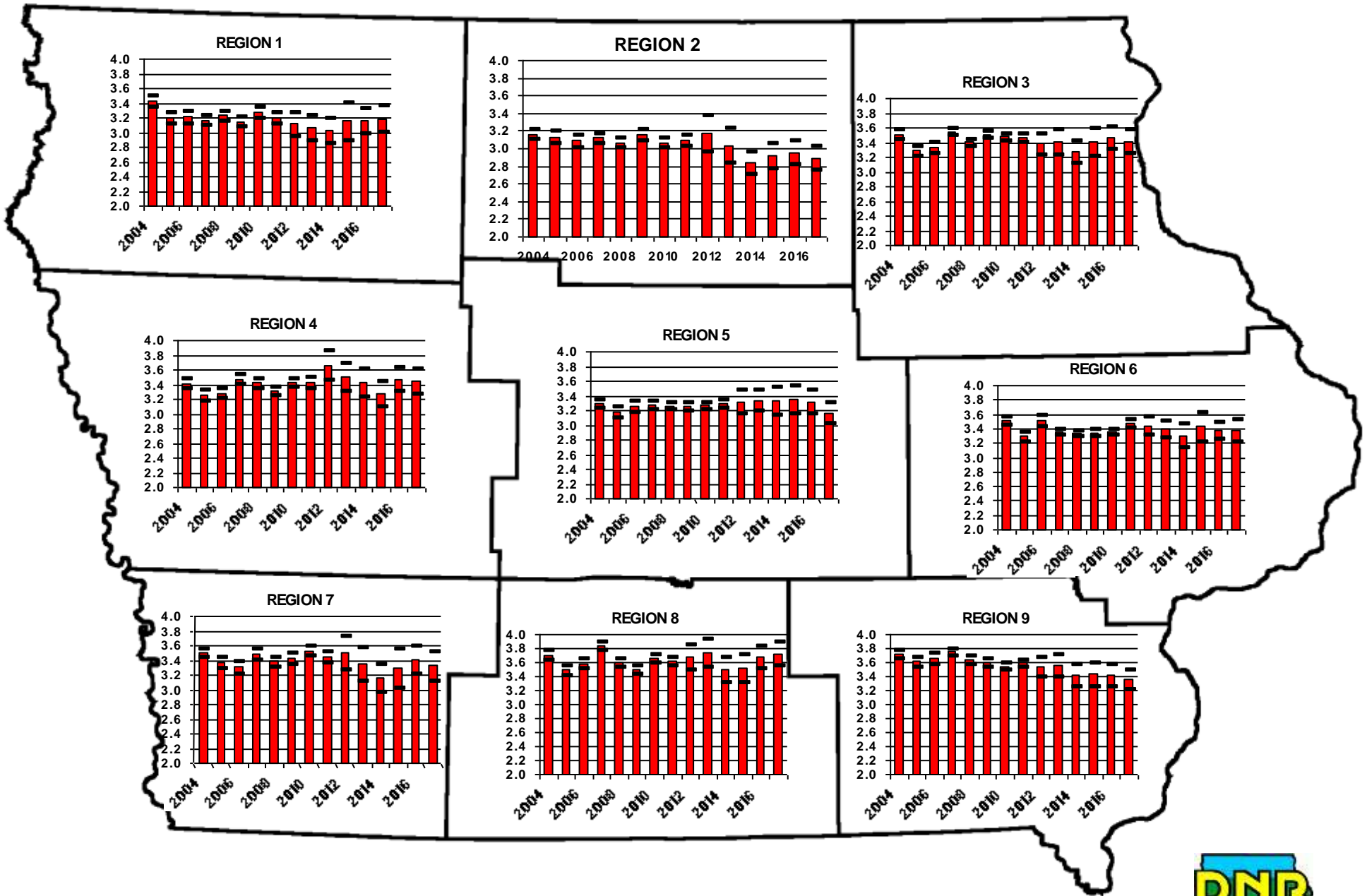
Hours Hunted by Survey Participants

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

