

Montana Fish, Wildlife & Parks Harvest Survey Estimates and Trends

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Deer Harvest Surveys

- What information do we collect?
- What do we produce?
- How is the information used?
- How do we get the information?
- Effort and Harvest Trends



What information do we collect?

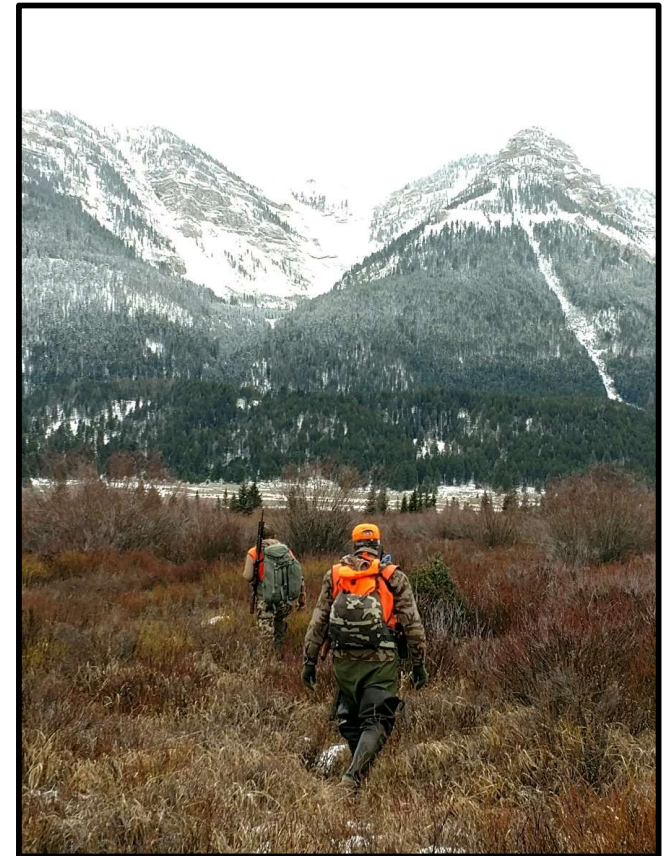


Deer Hunter Effort Information

- Hunter Participation
 - Rifle
 - Archery
 - Muzzleloader

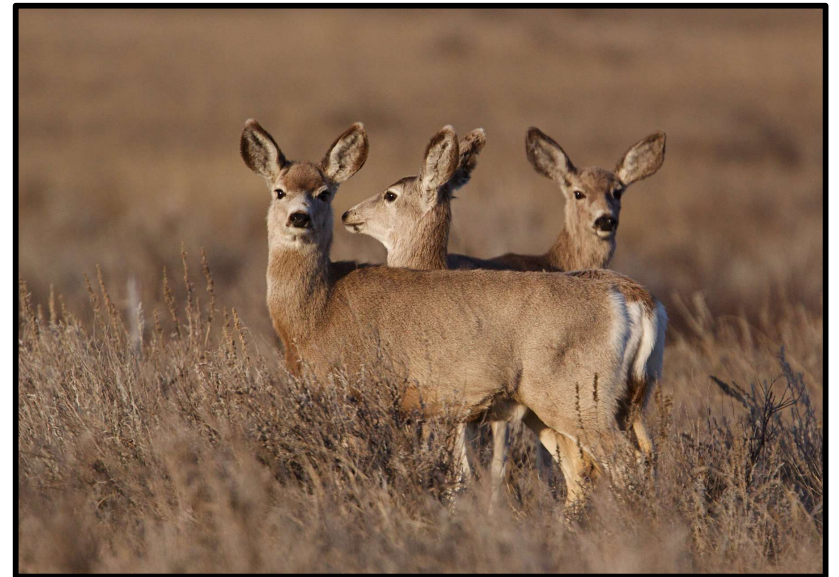
- Hunter Days

- Hunter Location
 - State/Region/Hunting District



Deer Hunter Harvest Information

- License or Permit Type
- Deer Species
- Deer Sex/Age
- Method of Harvest
- Antler Points
- Location of Kill
 - State/Region/Hunting District
- Time of Kill



What do we produce?



Deer Hunter Effort Estimates

- Deer Hunters
- Deer Hunter Days
- Days per Hunter
- All Estimates by Weapon Type (Rifle, Archery, Muzzleloader)
- All Estimates by Hunter Residency
- All Estimates at State/Region/Hunting District Level



Deer Hunter Harvest Estimates

- Number of Deer Harvested
 - By Deer Sex/Age
 - By Method of Kill (Archery, Rifle, or Muzzleloader)
 - By Location of Kill
 - By Time Period
- All Estimates by Hunter Residency
- All Estimates at State/Region/Hunting District/LPT Level



Deer Hunter Success Estimates

- Management Success (estimated) – Harvest/Issued LPT
- Hunter Success (derived) – Harvest/Hunter, Harvest/Hunter Day
- All Estimates by Hunter Residency
- All Estimates at State/Region/Hunting District Level



How is the information used?



Season Setting Recommendations

2018 **DEER • ELK • ANTELOPE**
Montana Hunting Regulations

Montana Fish, Wildlife & Parks



What's new? See page 13 for details and reminders

This document was printed at state expense.
Information on the date of publication may be obtained by contacting FWP.
Pronghorn, *Antilocapra americana* | Photo by Donald M. Jones

Apply for General Licenses, Special Licenses, and SuperTags Online: fwp.mt.gov



Hunter Expenditure Estimates

Statewide estimates of deer, elk, and antelope hunter expenditures in Montana (2016).

	Hunter Days ¹			Average Per Day Expenditures (2016 Adjusted Dollars)		Estimated Total Expenditures (in millions)		
	Residents	Nonresidents	Total	Residents	Nonresidents	Residents	Nonresidents	Total
	Deer Hunters	972,808	164,760	1,137,568	\$72.48	\$483.55	\$70.5	\$79.7
Elk Hunters	902,136	146,867	1,049,003	\$87.00	\$582.07	\$78.5	\$85.5	\$164.0
Antelope Hunters	51,341	7,338	58,679	\$103.30	\$661.04	\$5.3	\$4.9	\$10.2

¹ Estimates of hunters days for deer hunting were provided from FWP's 2013 Hunter Harvest Survey. Estimates of hunter days for elk and antelope hunting were provided from FWP's 2015 Hunter Harvest Survey.

Total (in millions)... \$324.3 The total is biased upwards to some unknown degree because it sums species-specific expenditures whereas a hunter could have hunted multiple species on any given day (e.g., a single day spent hunting elk and deer would count as both an elk hunter day and a deer hunter day in FWP's Hunter Harvest Survey).



Hunt Planning

The screenshot displays the Montana Fish, Wildlife & Parks website. The header features the organization's name in large, bold letters, a search bar, and a tiger head logo. A navigation menu includes links for Home, Hunting, FishMT, Recreation, Fish & Wildlife, Education, Enforcement, Regions, Doing Business, Recent News, MyFWP, and Parks. On the left, a 'FWP Menu' sidebar contains a link to 'Harvest Estimates Search'. The main content area is titled 'Harvest Estimates Search' and contains a form with the following fields: 'Species:' (a dropdown menu with a list including Moose, Sheep, Mountain Goat, Deer, Elk, and Antelope), 'Start Year:', 'End Year:', and 'District:'. Below the form are buttons for 'Generate CSV' and 'Reset'. The footer contains links for 'Related Websites', 'Site Index', 'Help', 'Employment', 'Contact FWP', and 'Privacy Policy'.

<https://myfwp.mt.gov/fwpPub/harvestReports>



How do we get the information?



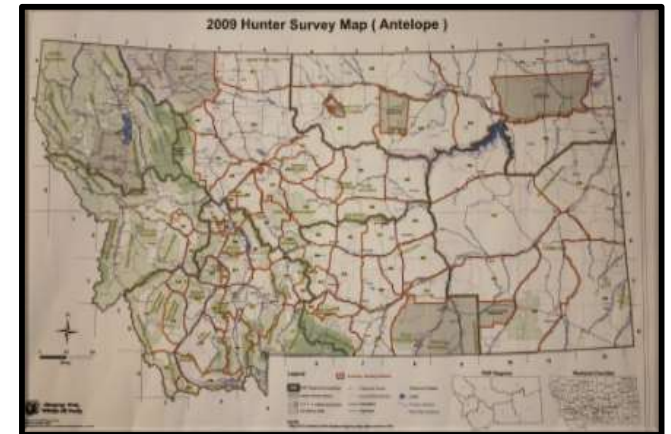
Telephone Survey



Telephone Survey

Harvest Survey Calling

- ❑ Helena call center & from homes
- ❑ 50 callers
- ❑ Training and supervision
- ❑ Direct data entry computer application



Telephone Survey

Random Survey Sampling

- ❑ Probability Sampling
 - ❑ Sample ~ 60% (up to 100% for limited licenses and permits)
 - ❑ Underlying theory dates to early 1900's
 - ❑ Makes population inference possible while balancing accuracy and costs



Telephone Survey

Random Survey Sampling

- ~253K Deer Licenses Issued
- ~141K Deer Licenses Sampled
- ~78K Deer Licenses Respond
- ~144K Hunters Estimated
- ~ 1.2M Hunter Days Estimated



Telephone Survey

Accuracy



A High Precision, High Accuracy



C Low Precision, High Accuracy



B High Precision, Low Accuracy

A
Mandatory Reporting with
Non-response Follow-up

B
Mandatory Reporting without
Non-response Follow-up

C
Survey Sampling



Telephone Survey

Accuracy

2023 Mule Deer Harvest Estimates				
State	Estimate	Upper 80% CI	Lower 80% CI	Precision
	41,377	41,038	41,716	0.8%
Region 1	1,197	1,130	1,264	5.6%
Region 2	1,868	1,788	1,948	4.3%
Region 3	7,013	6,858	7,168	2.2%
Region 4	9,557	9,376	9,738	1.9%
Region 5	4,249	4,126	4,373	2.9%
Region 6	9,986	9,812	10,160	1.7%
Region 7	7,475	7,319	7,632	2.1%



Telephone Survey

Financial Cost Benefit

State	Elk, Deer, Antelope Hunters	Elk, Deer, Antelope Issued Licenses	Data Collection Costs
Montana	286,315	455,885	~ \$210,000
Idaho	232,381	254,785	~ \$400,000



Telephone Survey

Regulatory Cost Benefit

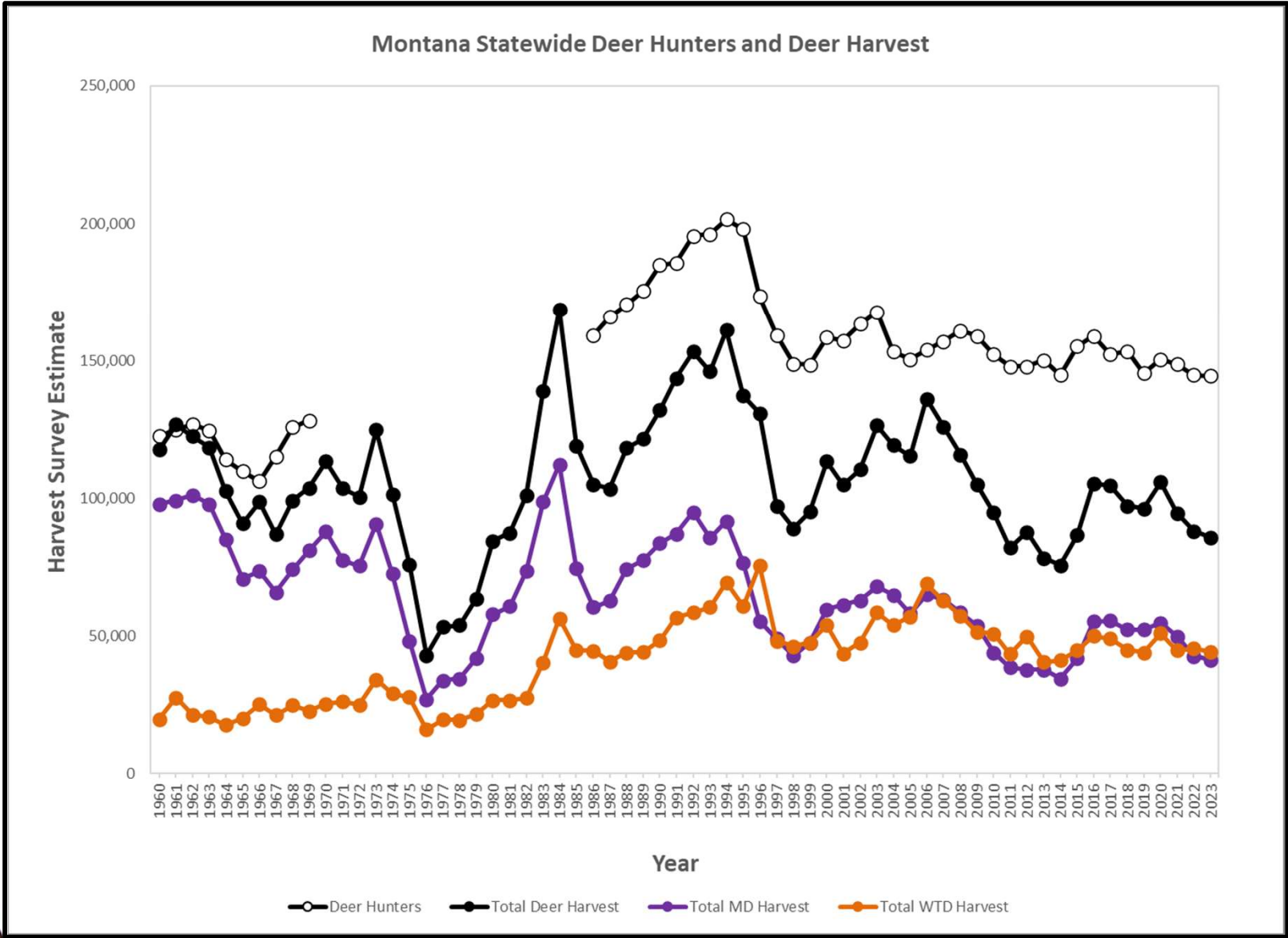
State	License Holders	Compliance Rate
Idaho	~ 230,000	62%
Washington	~280,000	70%
New Mexico	~50,000	83%
Utah	~6,000	80%



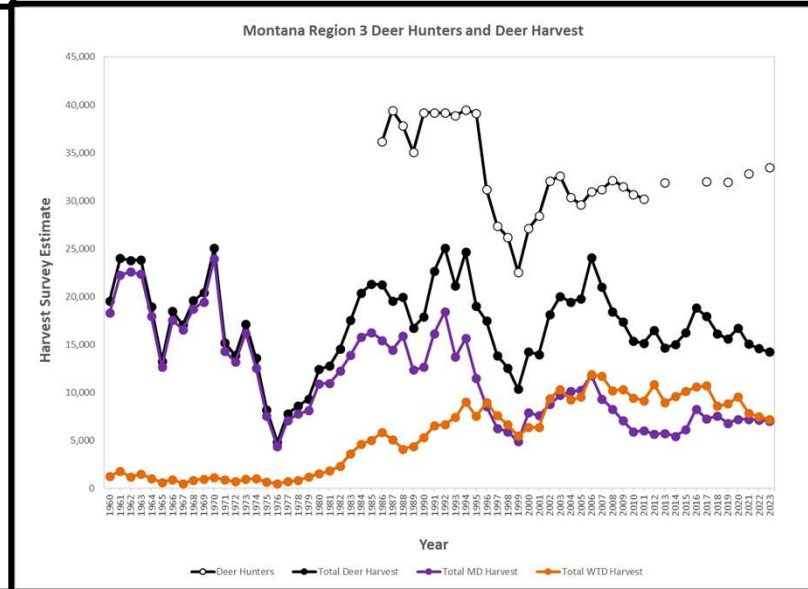
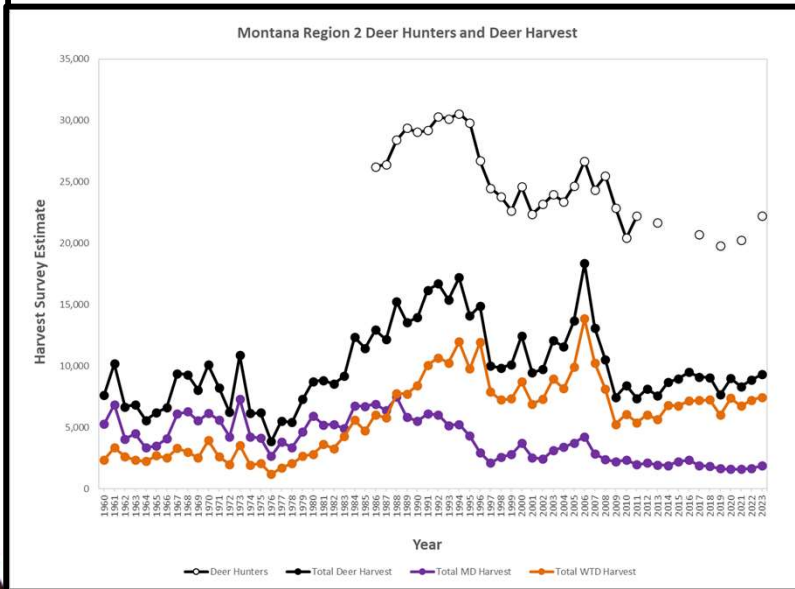
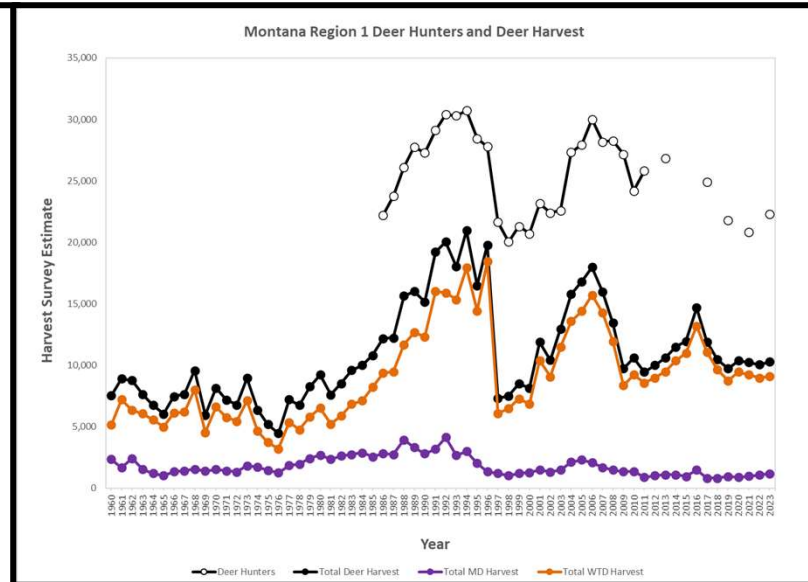
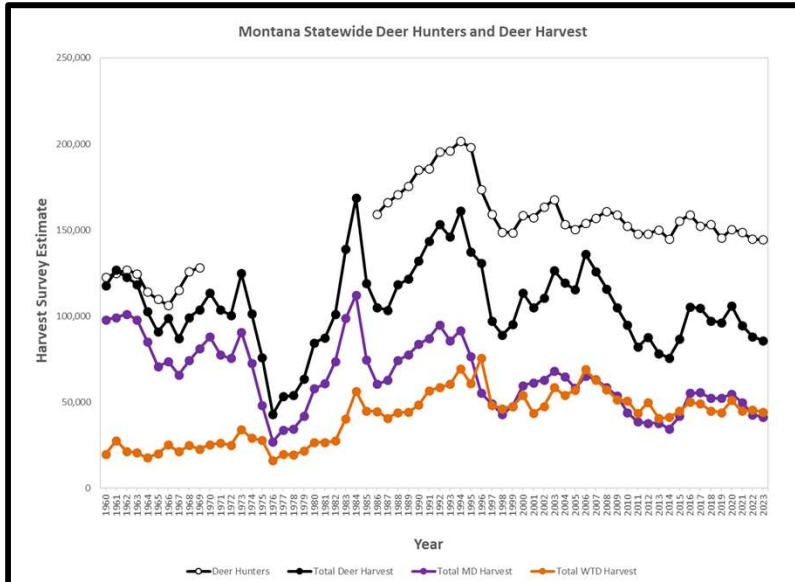
Historical Trends



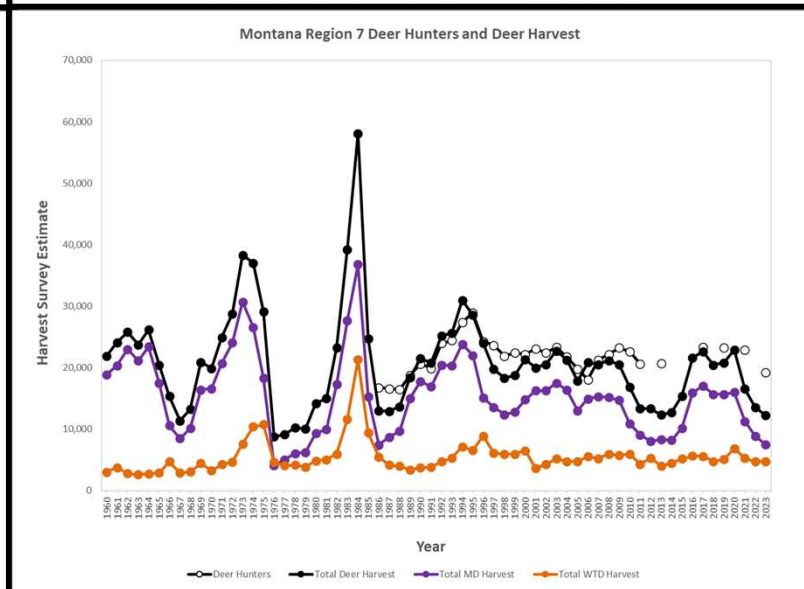
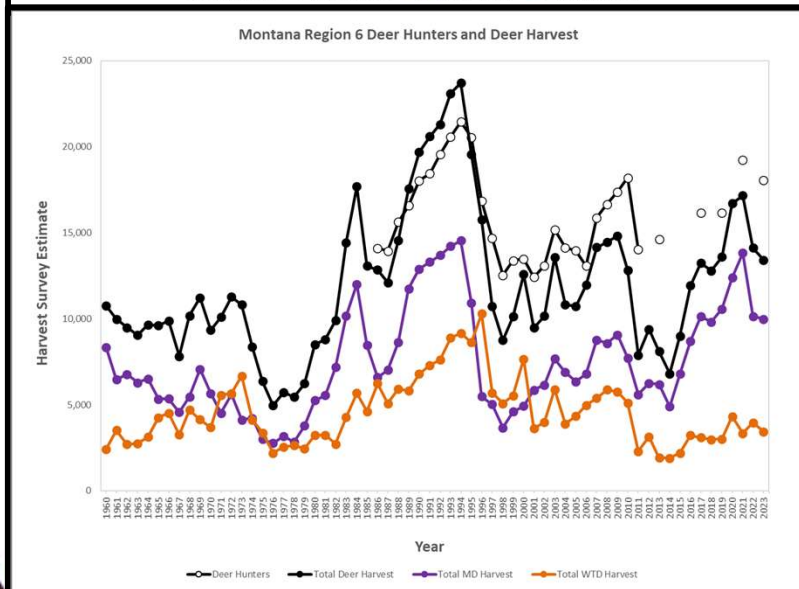
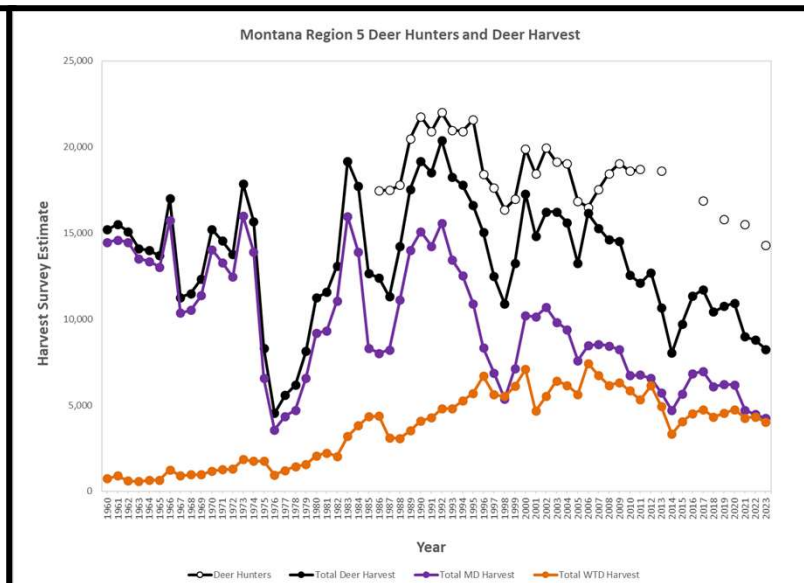
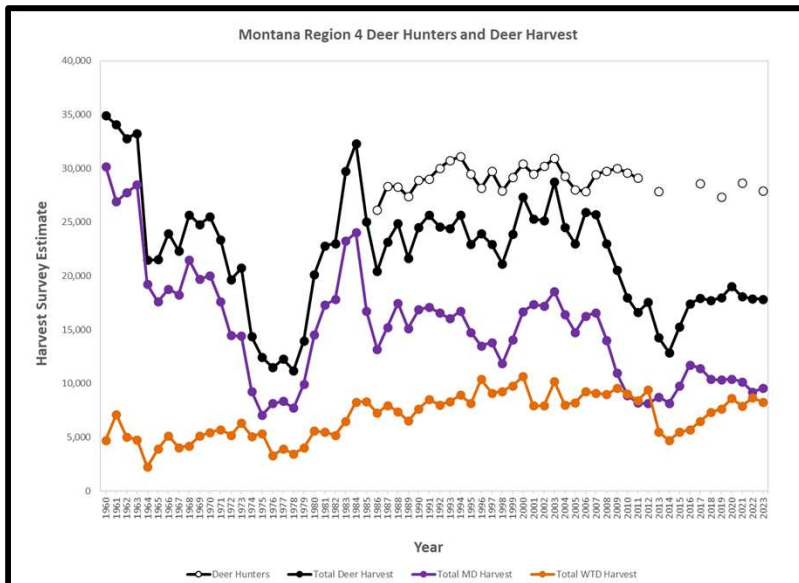
Deer Hunters and Harvest



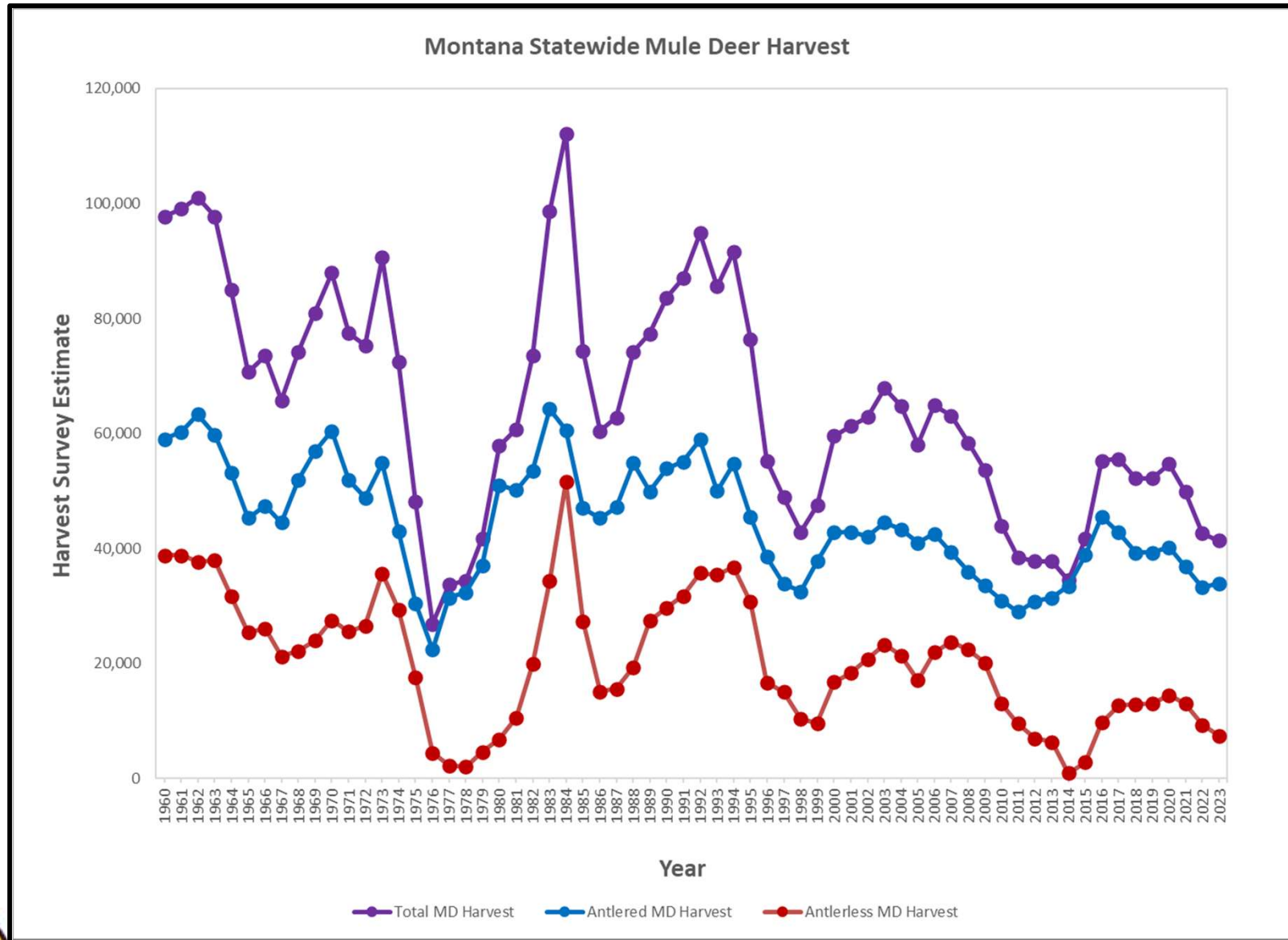
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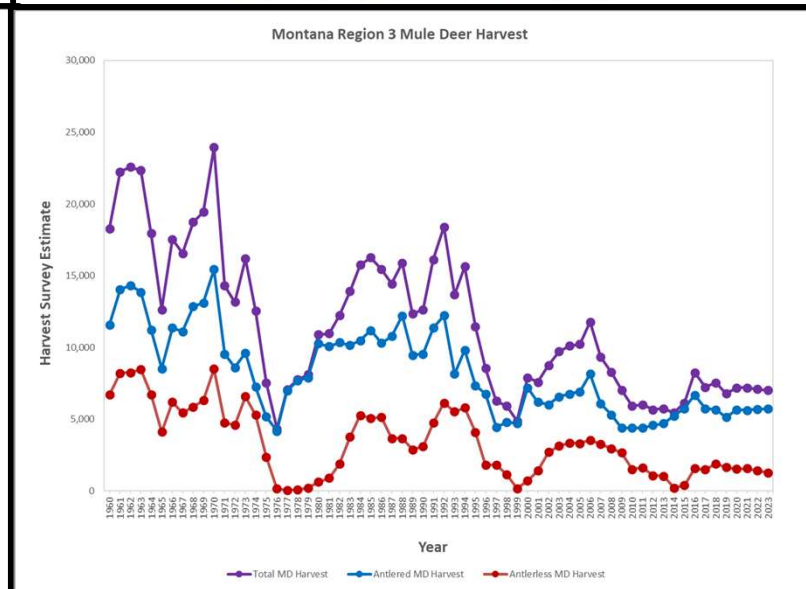
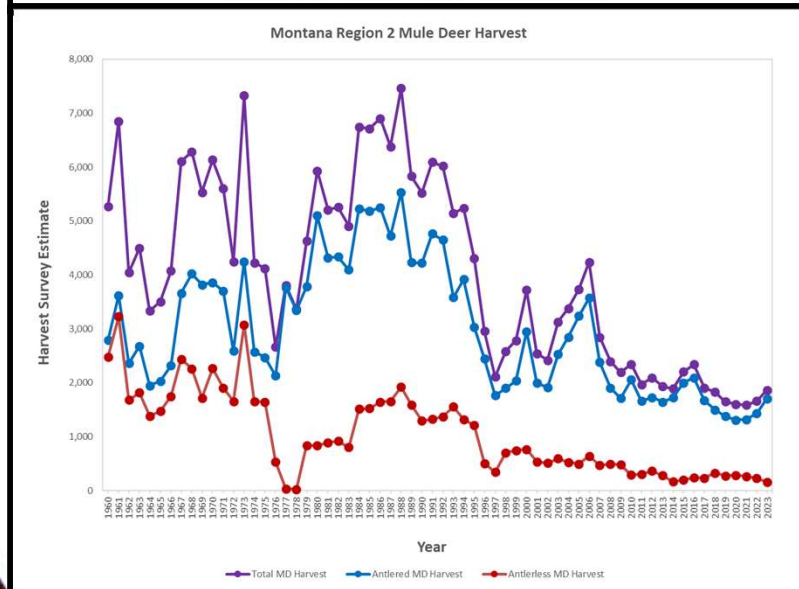
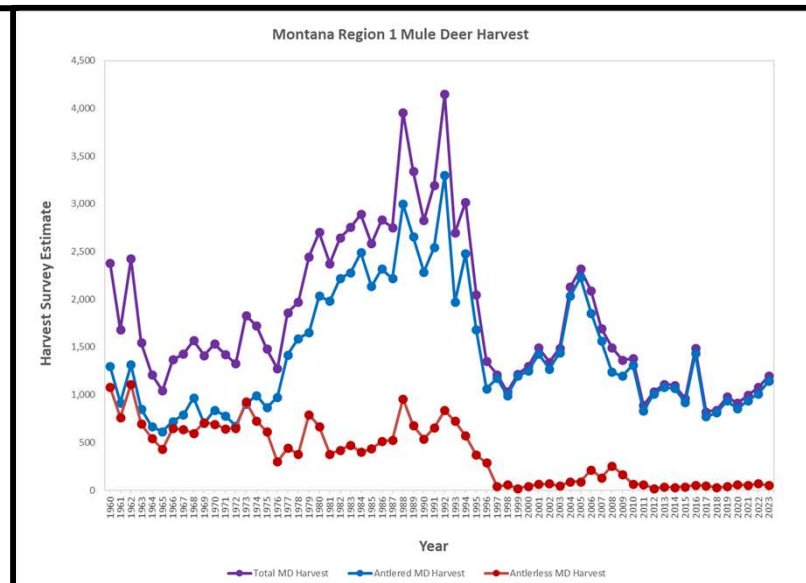
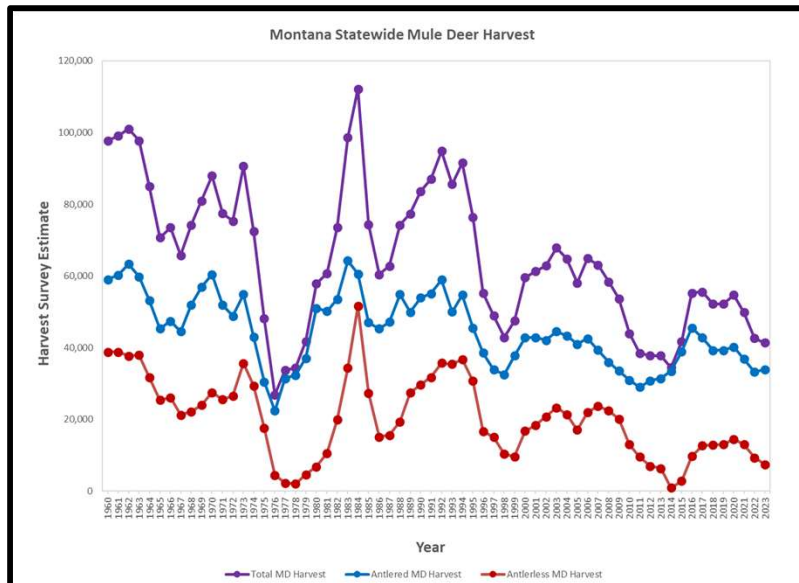
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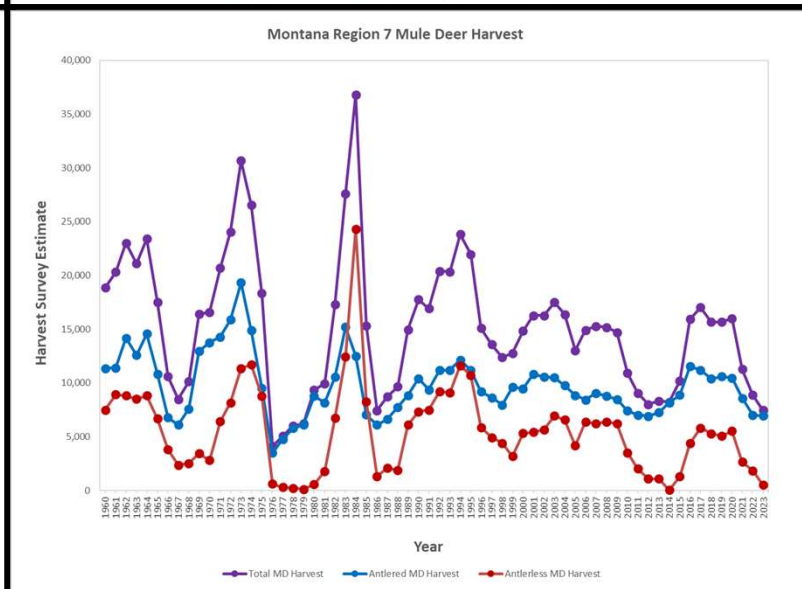
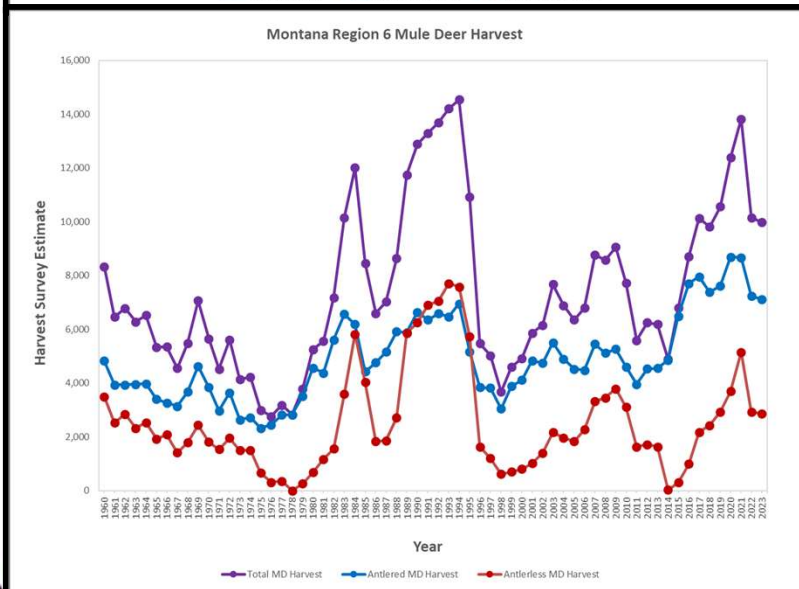
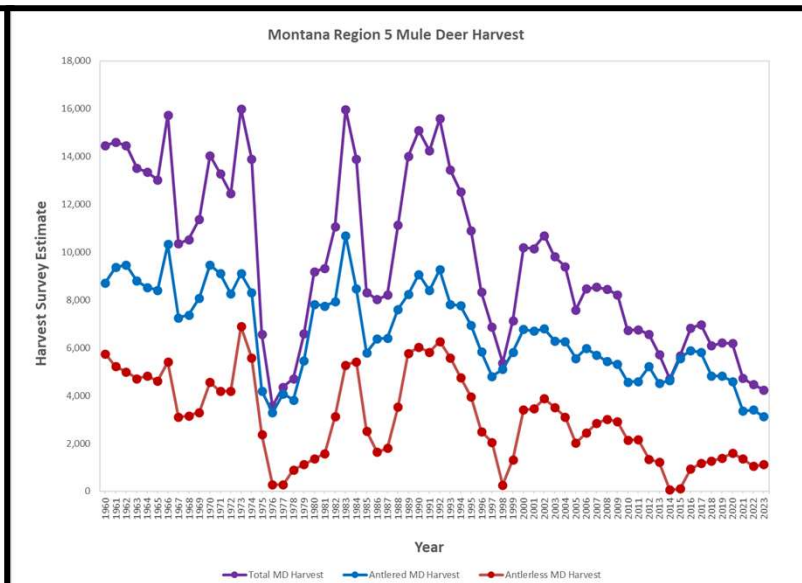
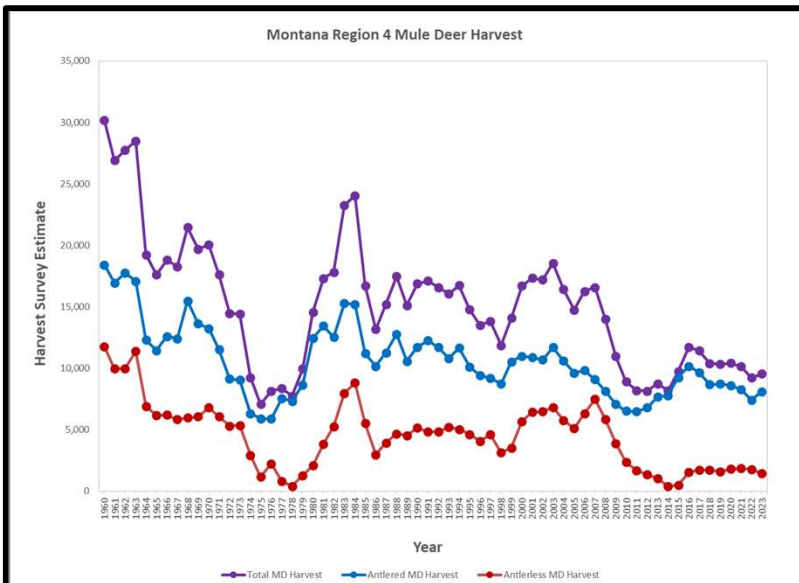
Mule Deer Harvest by Antlers



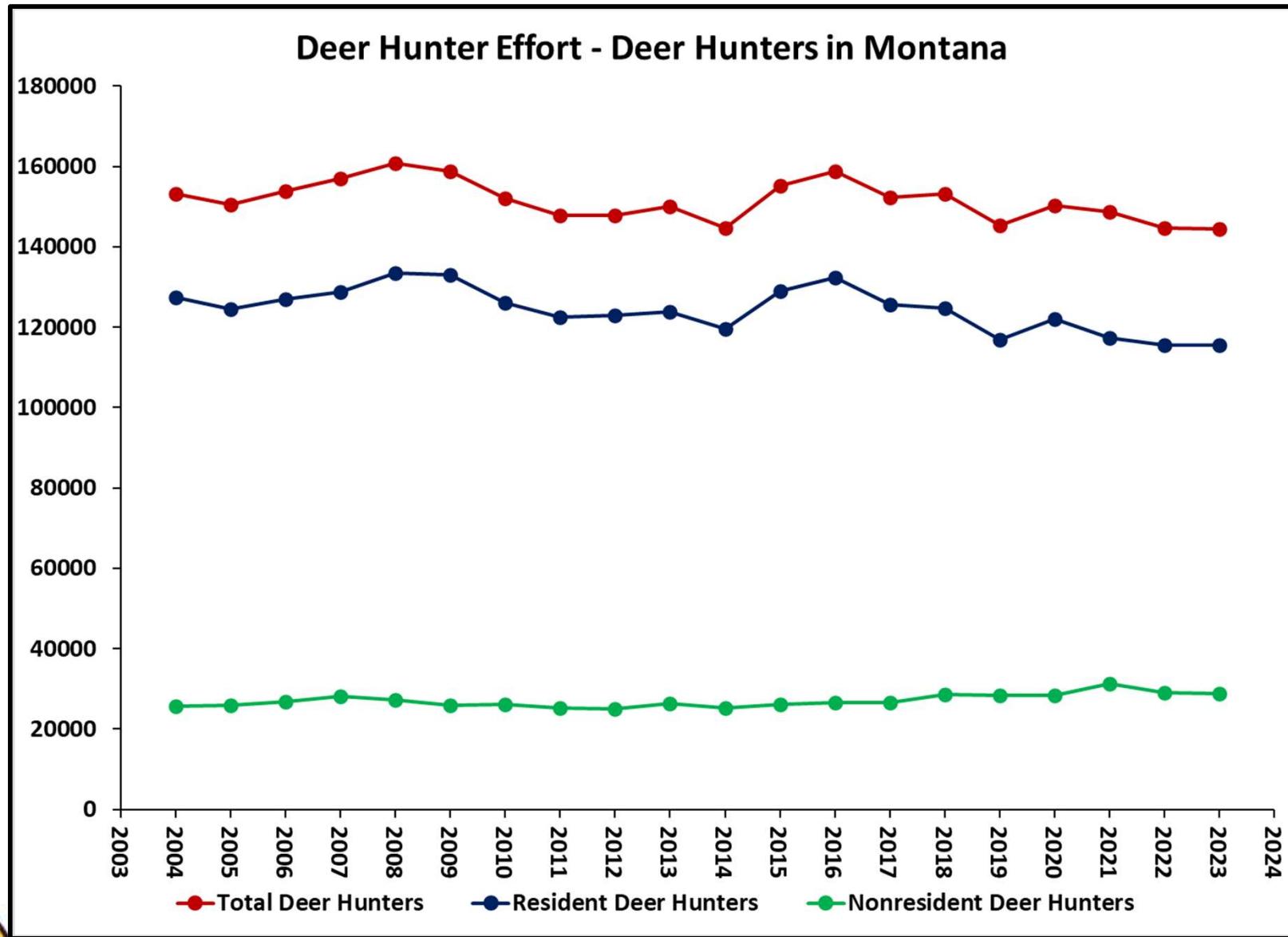
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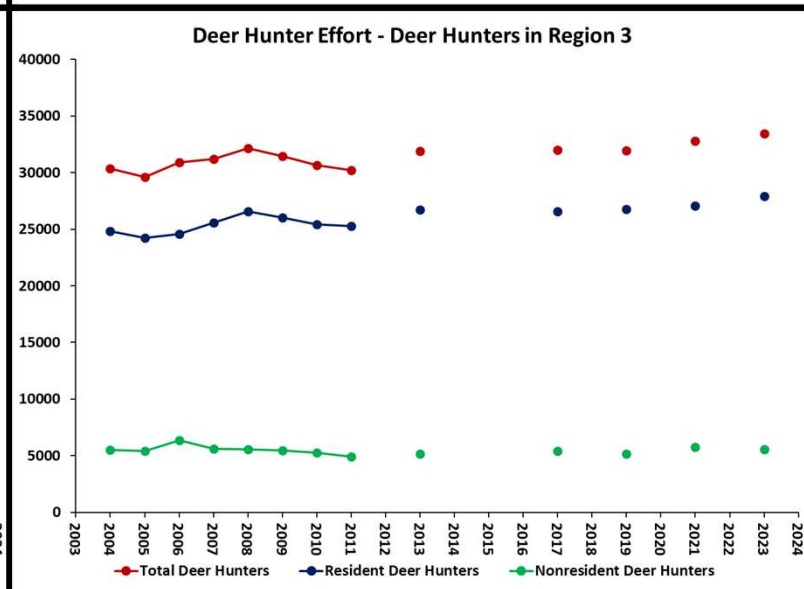
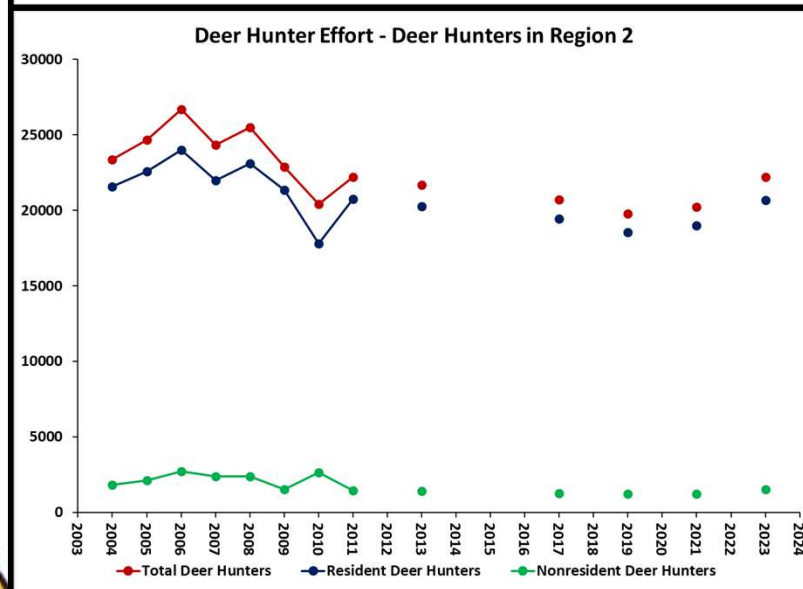
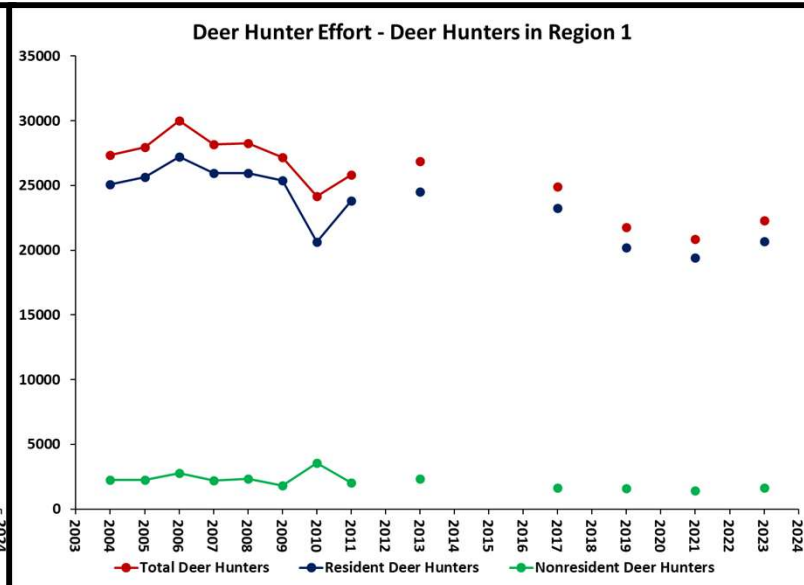
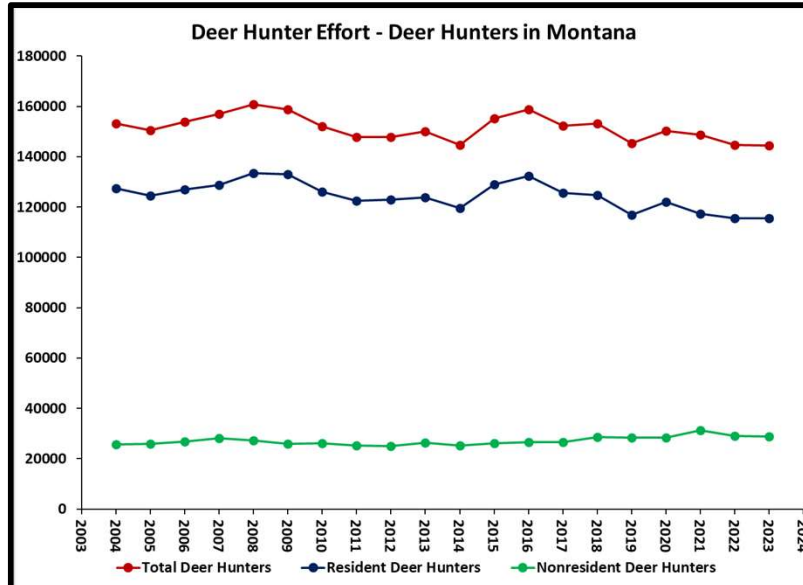
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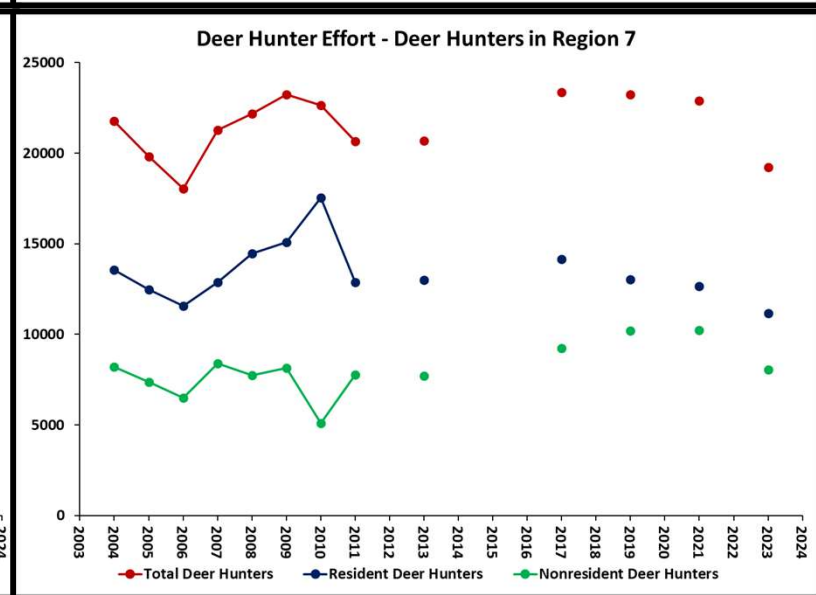
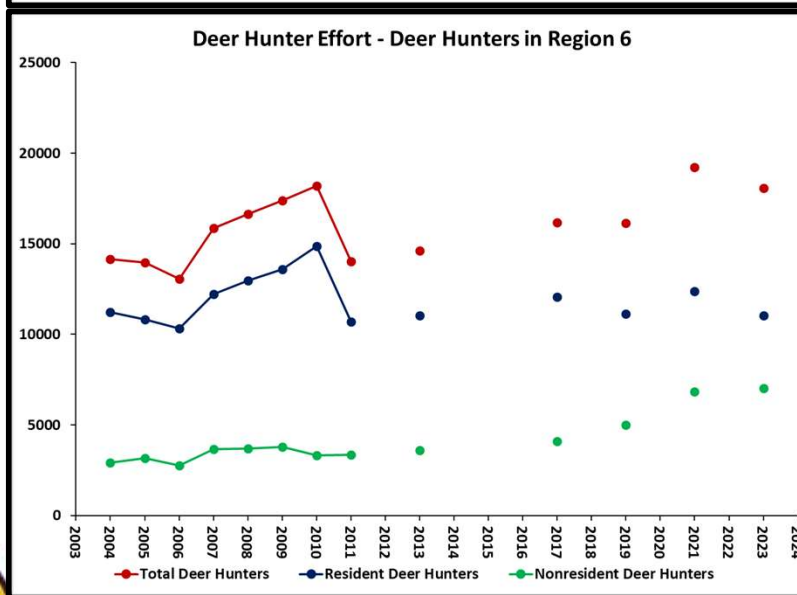
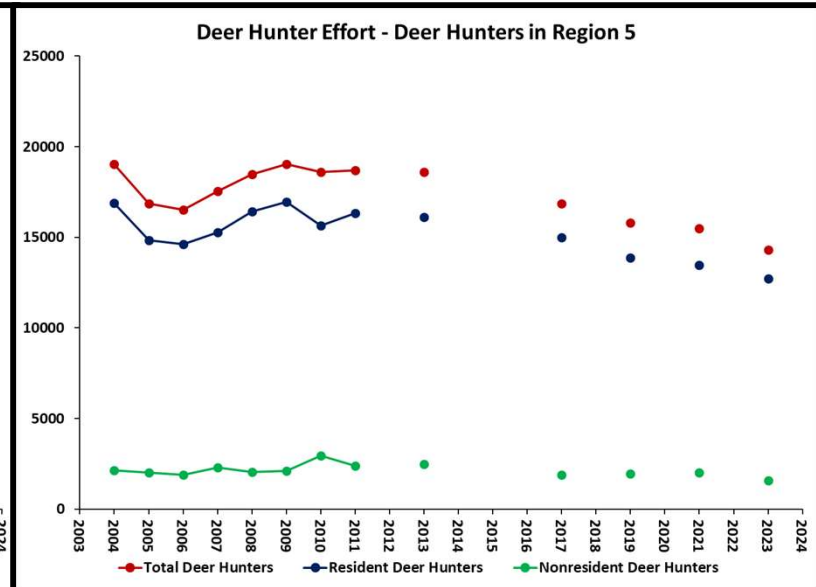
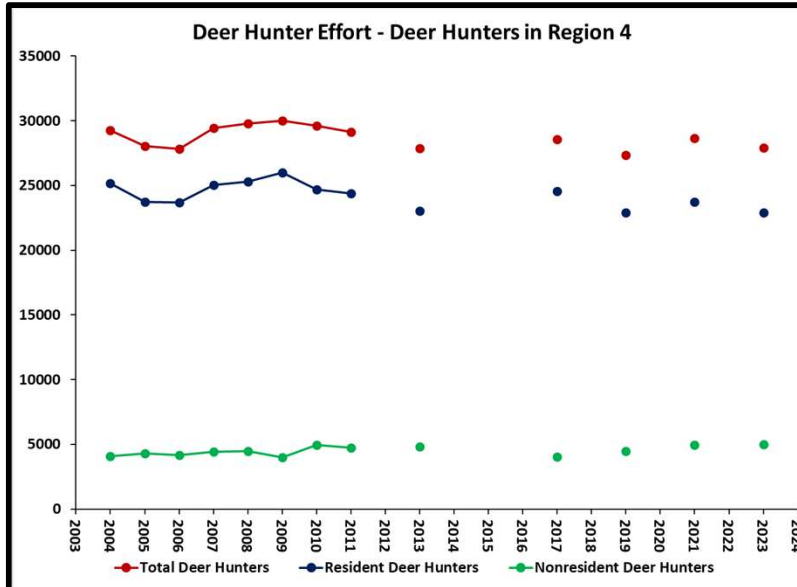
Deer Hunters by Residency



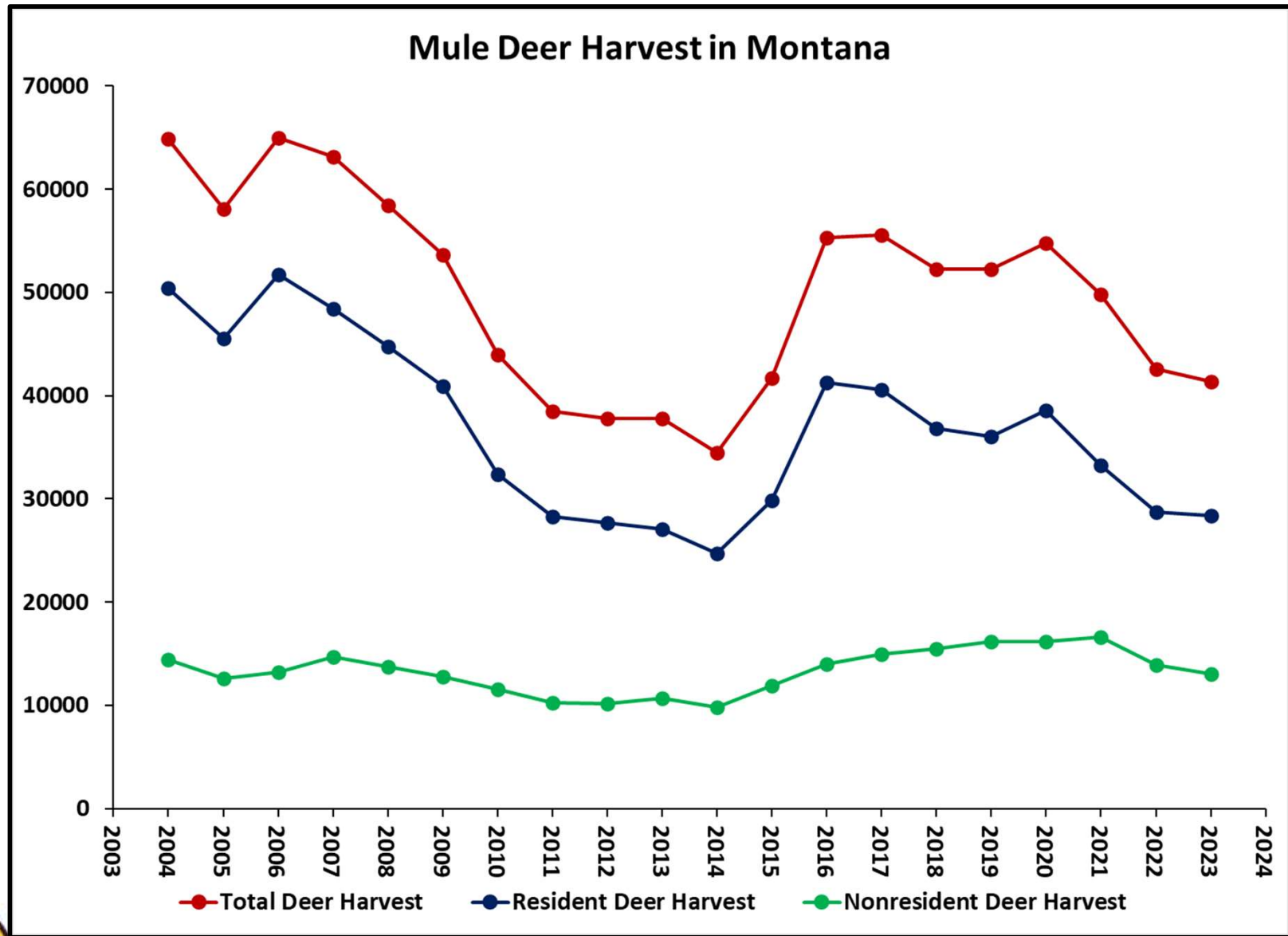
Deer Hunters by Residency



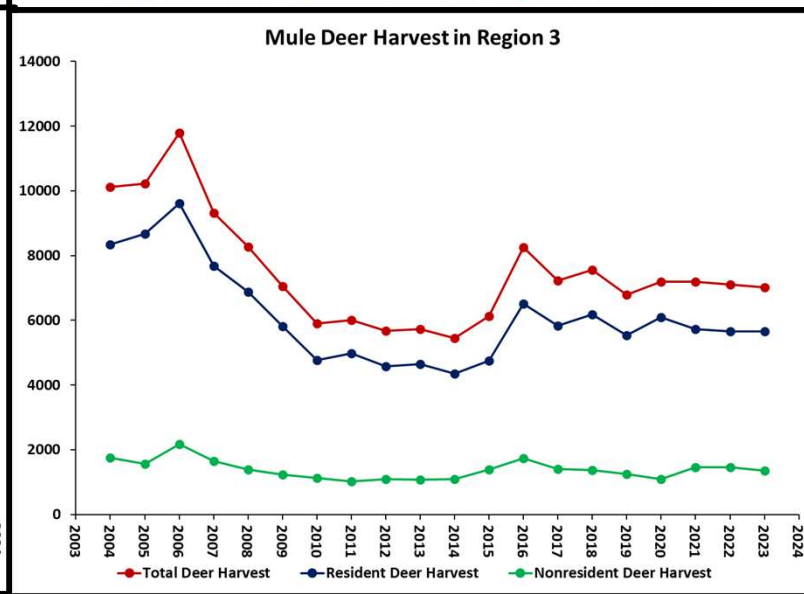
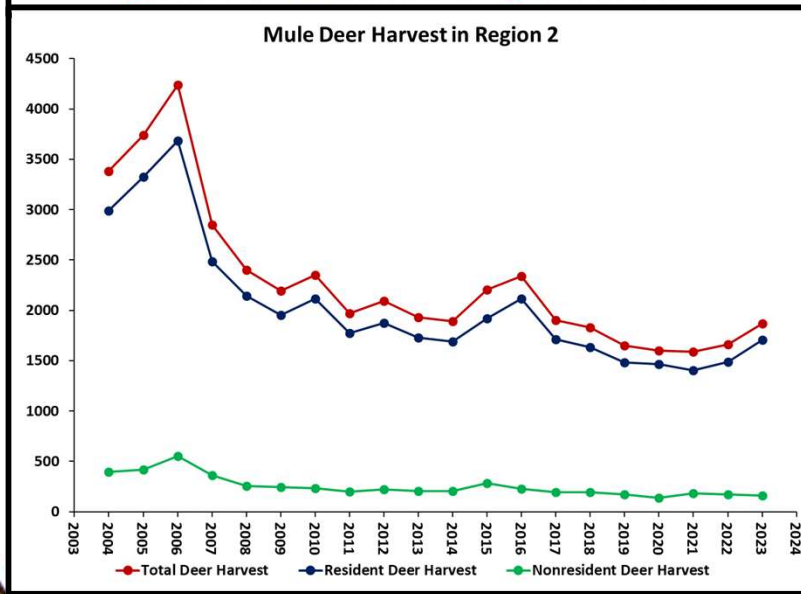
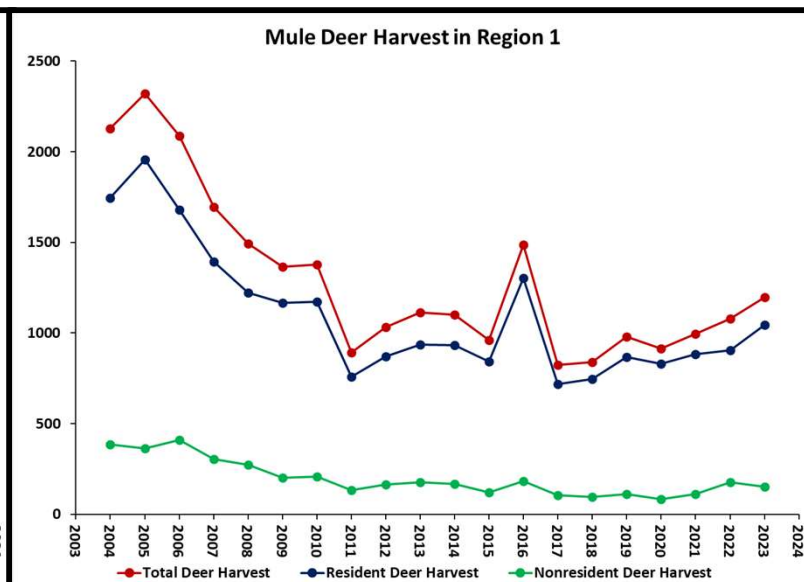
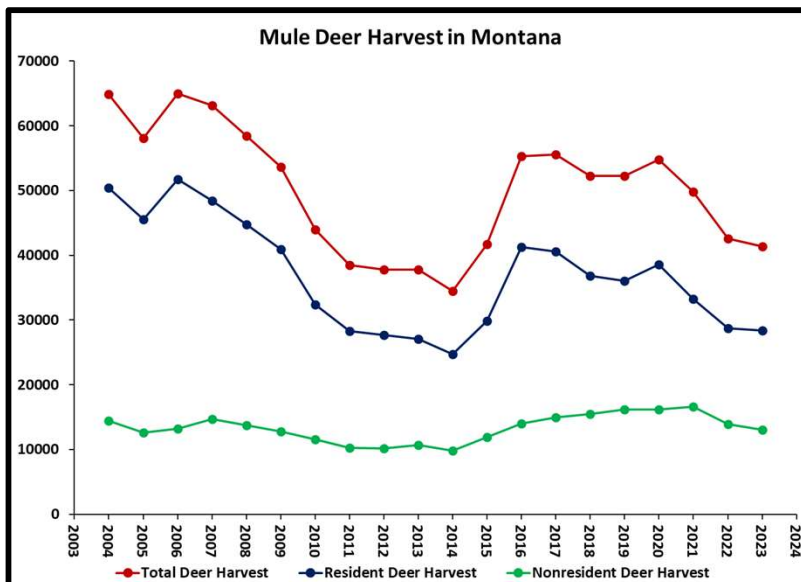
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