

Harvest Summary 2013

or . . .

Everything you really didn't want to
know about the Duluth Bowhunt,
and were afraid to ask.

Submitted to ABA Board

By Bork

Part 2, Numbers and Graphs

Icky Stats

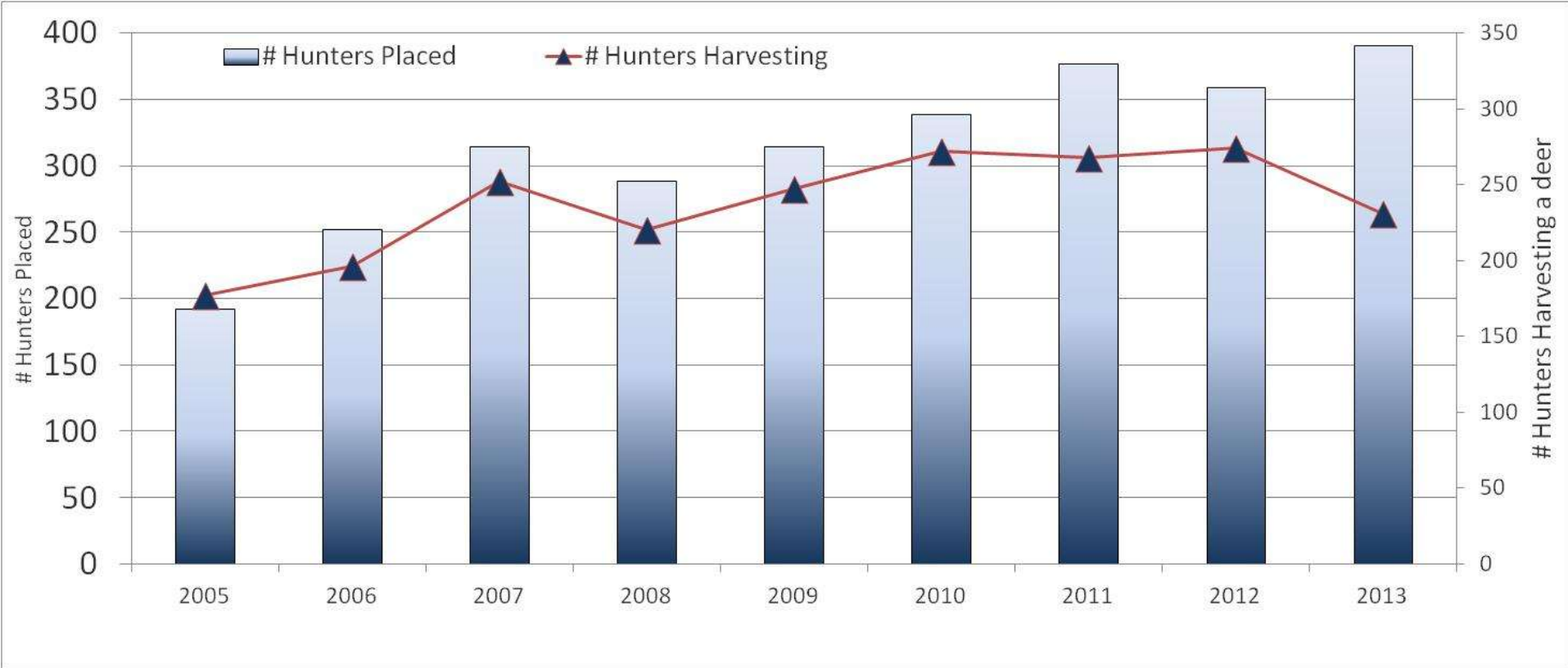


- If you don't care about statistics, skip this Chapter and instead look at the Year End Survey results. Unless you need to punish a misbehaving child, then make them read the next slides.
- But for those that eat this stuff up, viola'!
- These next slides have also been shown to cure insomnia in 86.7 ± 2.7 times out of 100.

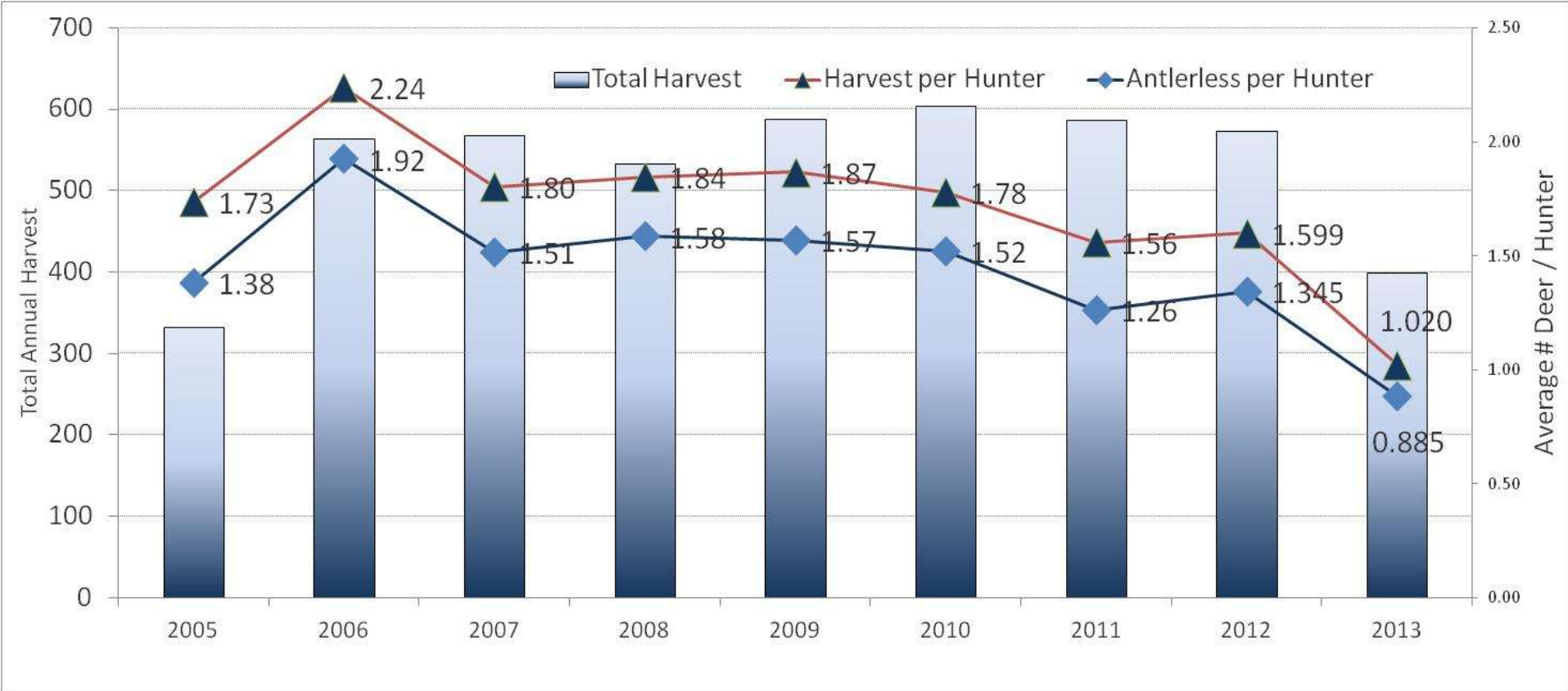
...and here's a chart that shows what you might see if you looked at a mountain range through a tennis racket.



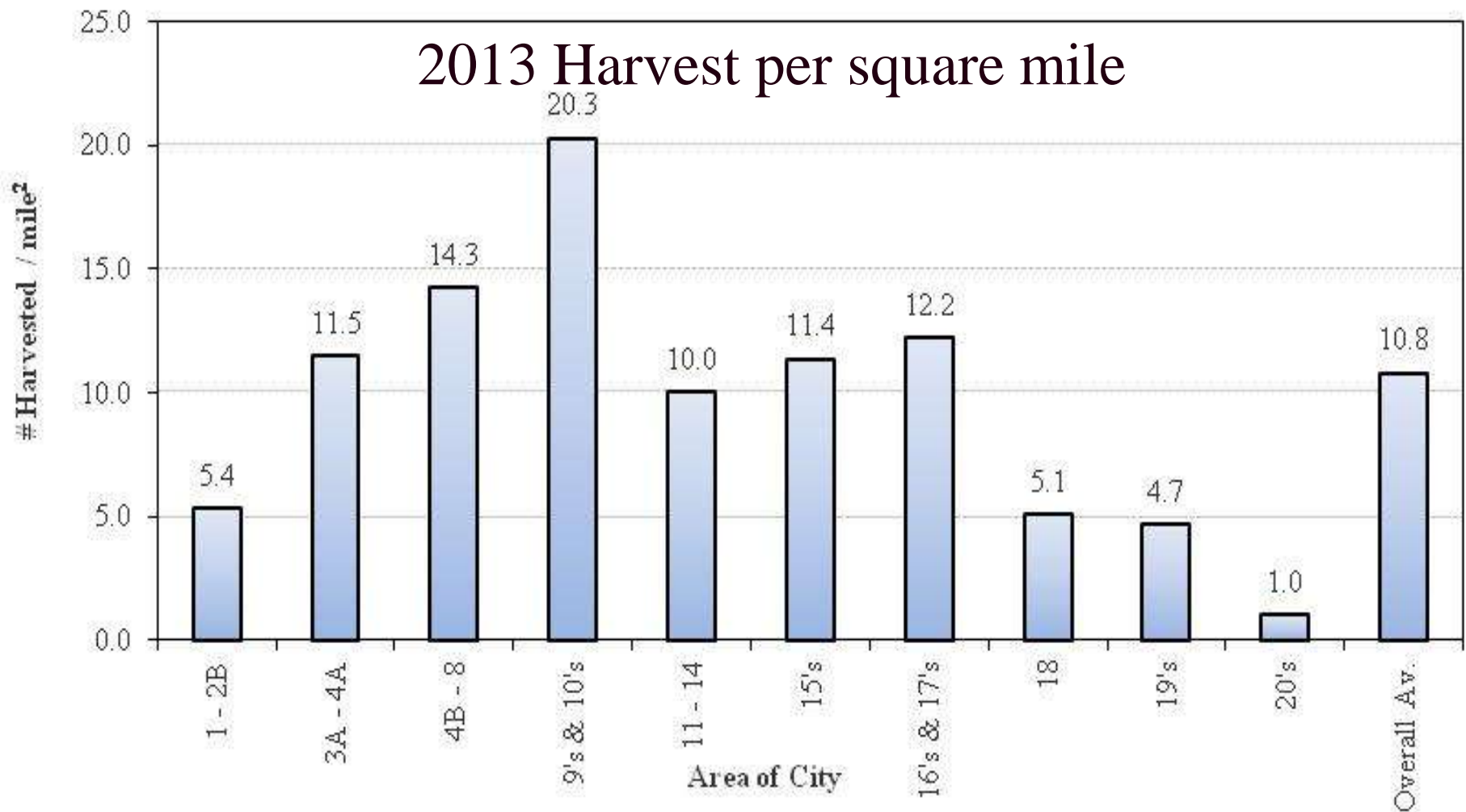
BIZARROCOMIC.BLOGSPOT.COM



The trend over the four years 2008 – 2011 had been an increase in participation, until 2012. But it jumped again in 2013 to the highest roster fielded for the Duluth Hunt, with 391 hunters placed. Hunter success appeared to have leveled off at just under 275 successful hunters thru 2012. In 2013, success dropped off considerably, the lowest percentage in the nine years of the hunt, with only 231 hunters, or 59%, harvesting a deer within Duluth.



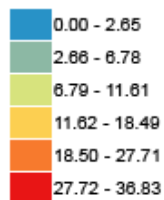
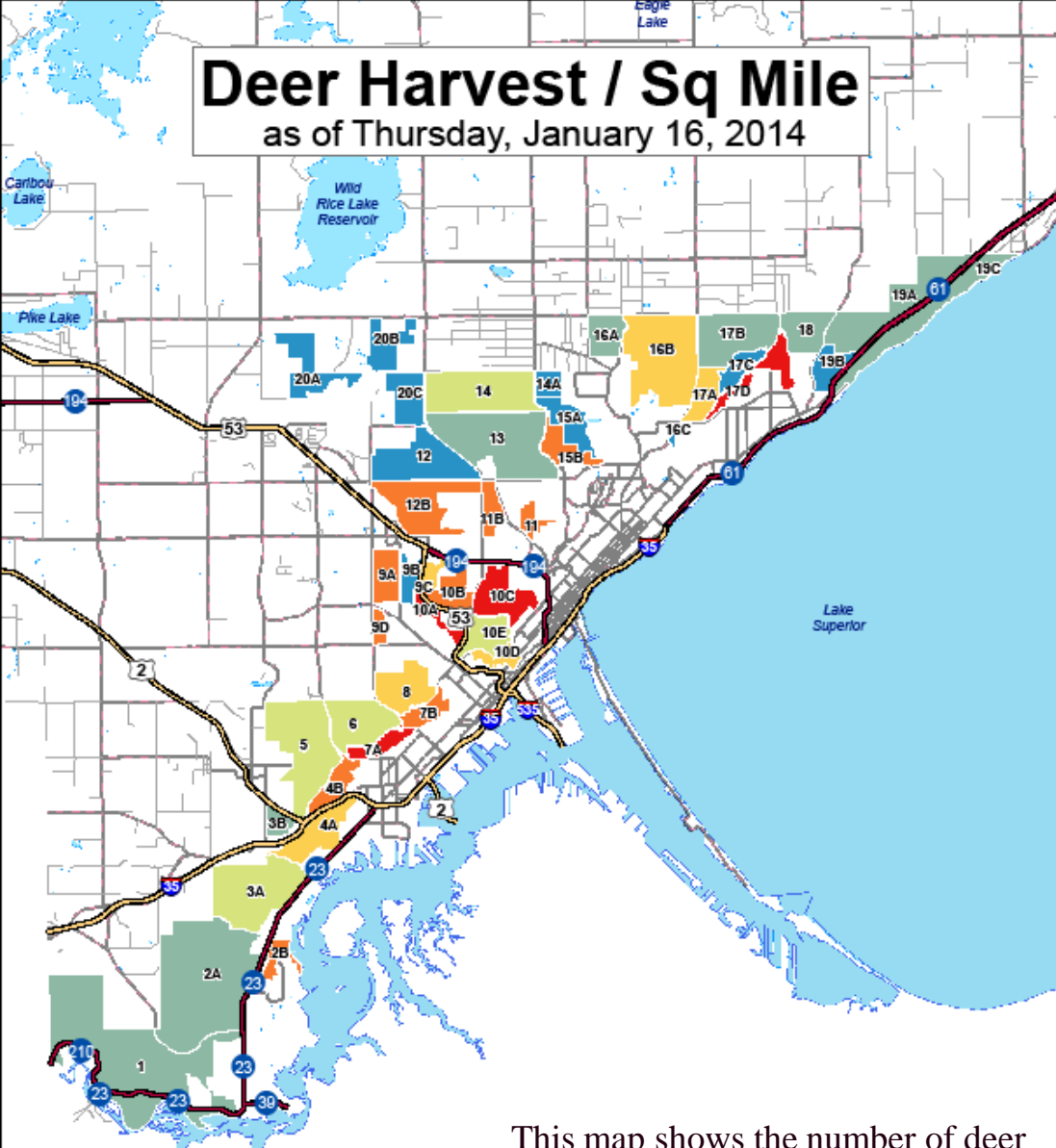
Total harvest was down again in 2013 for the third year in a row. With the increase in the number of hunters, the actual harvest per hunter was down significantly for both total harvest ($P<0.0001$) and antlerless harvest ($P<0.0001$).



The number of deer harvested per square mile in the various geographical areas of Duluth, during 2013, was down for all DHAs. Overall harvest in the City was 10.8 deer harvested / mile² of DHA land, down from 15.1 in 2012.

Deer Harvest / Sq Mile

as of Thursday, January 16, 2014



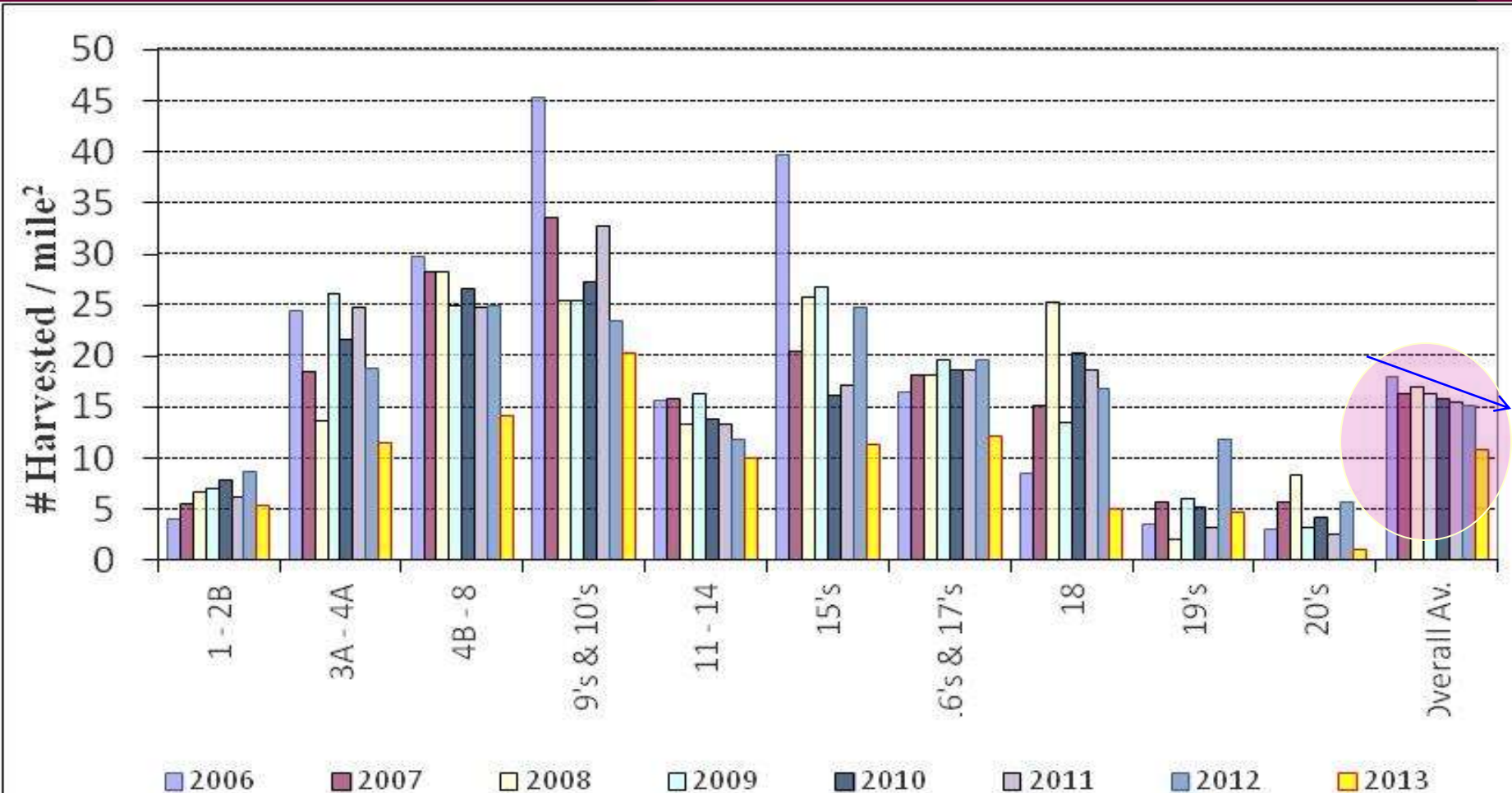
This map shows the number of deer harvested per square mile, within each of the DHAs during 2013.

Map courtesy of Eric McPhee, GIS Guru Extraordinaire



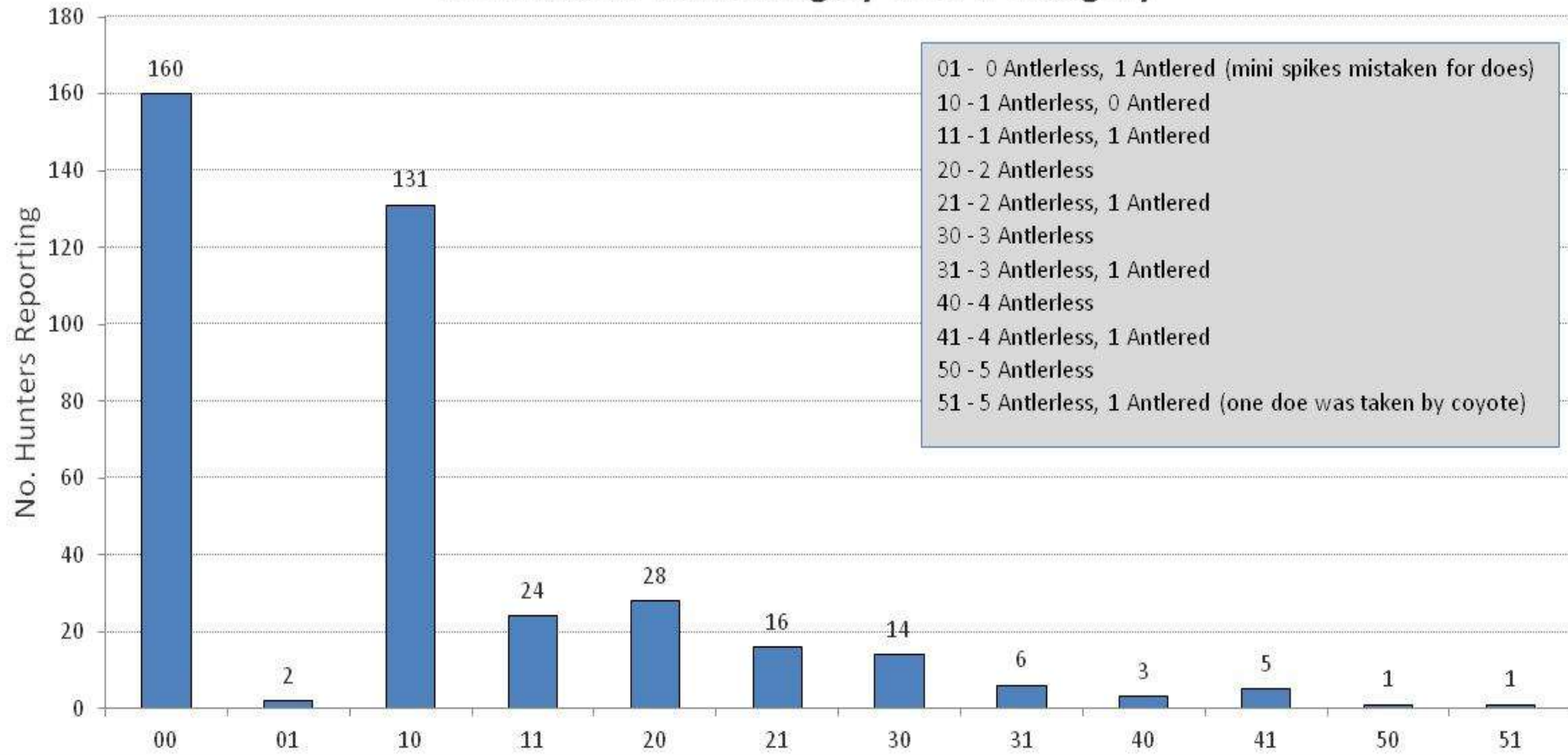
Courtesy of A. Frieland

Harvest / mile² Last Eight Seasons

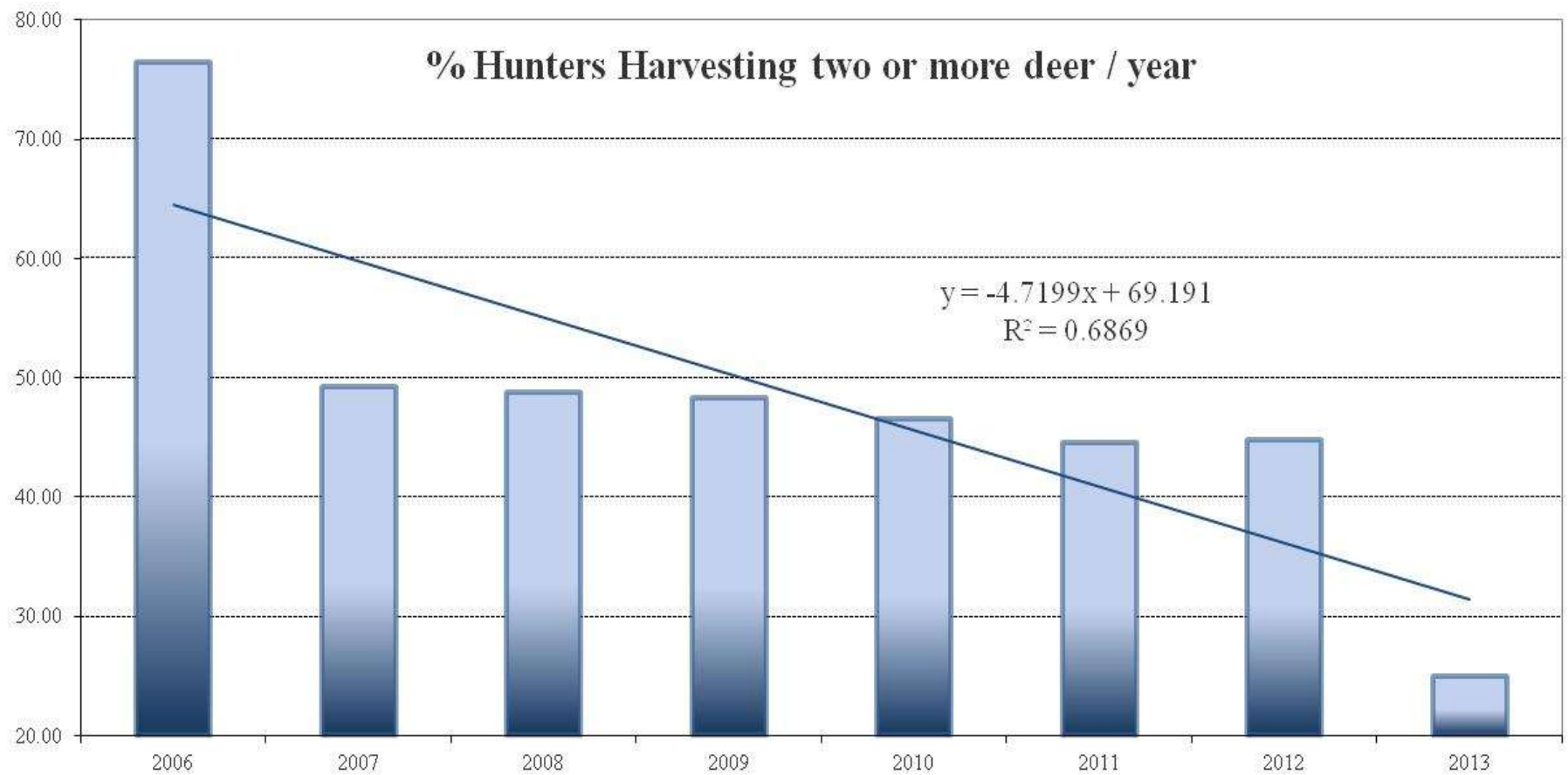


Harvest / mile² since 2006, showing a gradual decline in the overall harvest. 2005 data, the first year of the hunt, had slightly different DHAs, so this data is not presented. 2013 data is the yellow bars on the right of each DHA grouping.

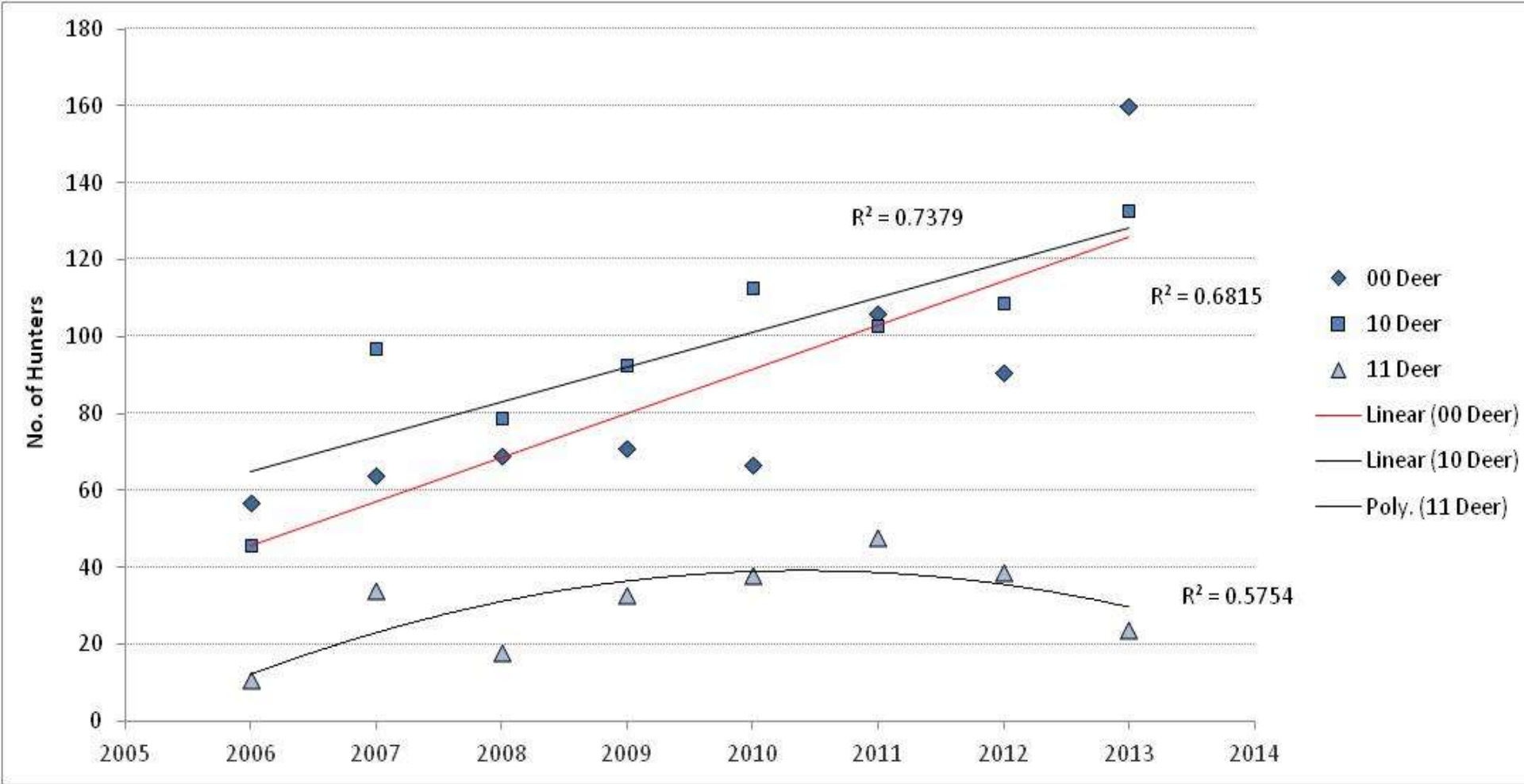
No. Hunters Harvesting by Deer # Category



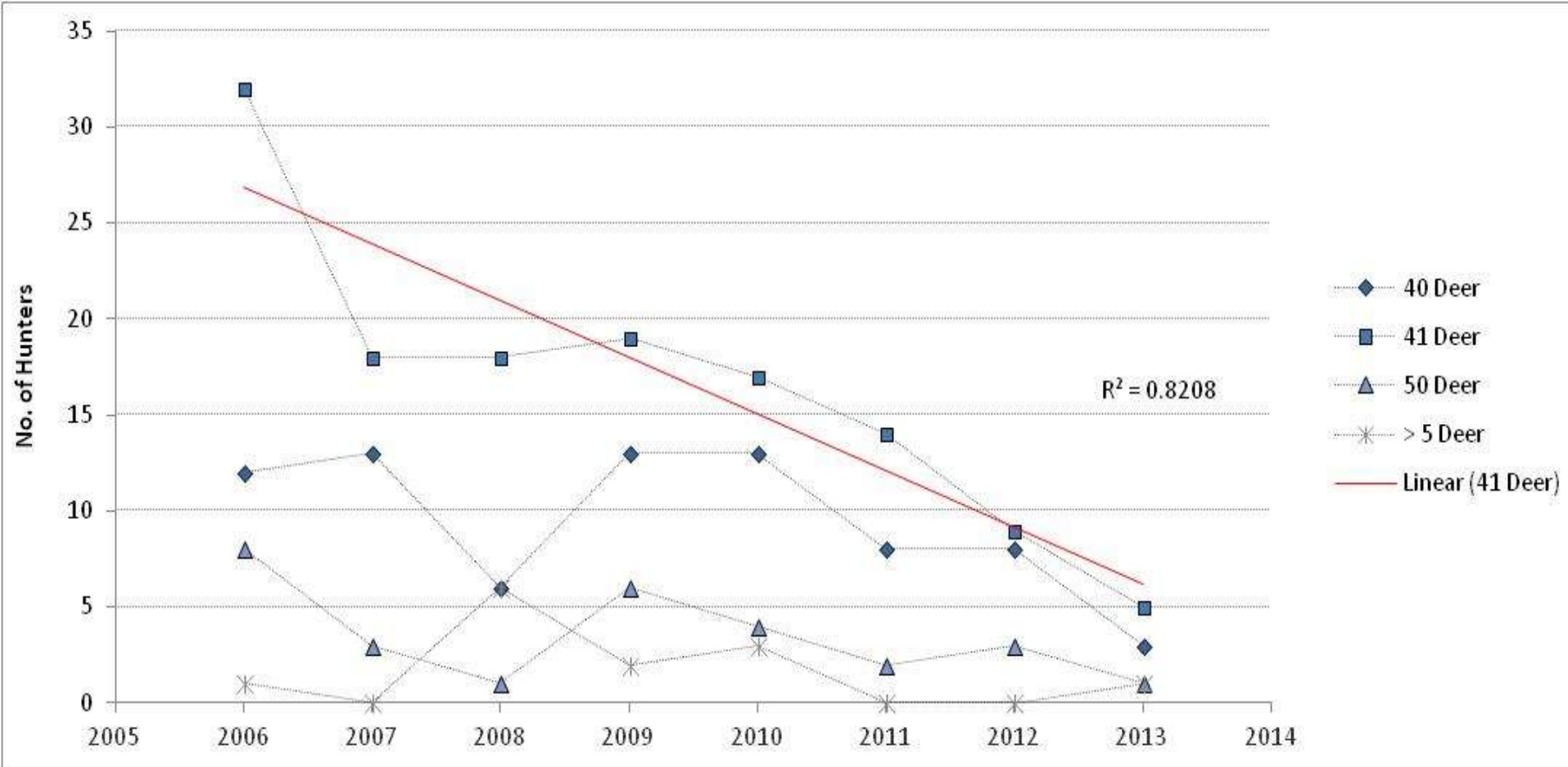
131 hunters registered one antlerless deer during the 2013 season, whereas 160 hunters failed to harvest a single deer. Only seven hunters harvested all five (or six) deer in Duluth, either four does and a buck (41), or five does (50). The 51 hunter had one of his antlerless consumed by coyotes. Of the two 01 hunters, one accidentally shot a spike, and the second failed to shoot an antlerless first.



For the last eight seasons, the number of hunters harvesting two or more deer has been on the decline, but this is largely influenced by the 2006 season. The decline in 2013 is the sharpest drop we've seen, and is the lowest percentage of hunters to harvest more than one deer .



This graph shows that the number of hunters harvesting 0 deer (00, blue diamonds), and one antlerless (10, blue squares) has been increasing since 2006. Hunters harvesting one doe / one buck (11, blue triangles) appears to have peaked in 2011, and has been on a decline since. The two different regression lines show the significant increase in the number of hunters that have harvested 00 and 01 deer since 2006. It appears as if hunting is getting more difficult, as 00 and 01 harvest is below the average for every year, except 2013.



There appears to be a significant decline in the number of hunters harvesting > 4 deer (41 and 50). As these hunters fail to harvest more than 4 deer, they fall into the lower categories, leading to the observed increase in hunters within those categories. Note that the red regression line shows a significant decline in those hunters harvesting four does and a buck, which is ultimately probably every hunters' goal.

- 
- This year's 10.8 deer / mi² harvest rate was the lowest ever observed.
 - Only 18.9 % of hunters harvested 2 or more deer.
 - 46.6% in 2010
 - 44.5% in 2011
 - 45.1% in 2012
 - Have we stabilized at harvest levels, and are the good old days of 2006 – 2008 over?

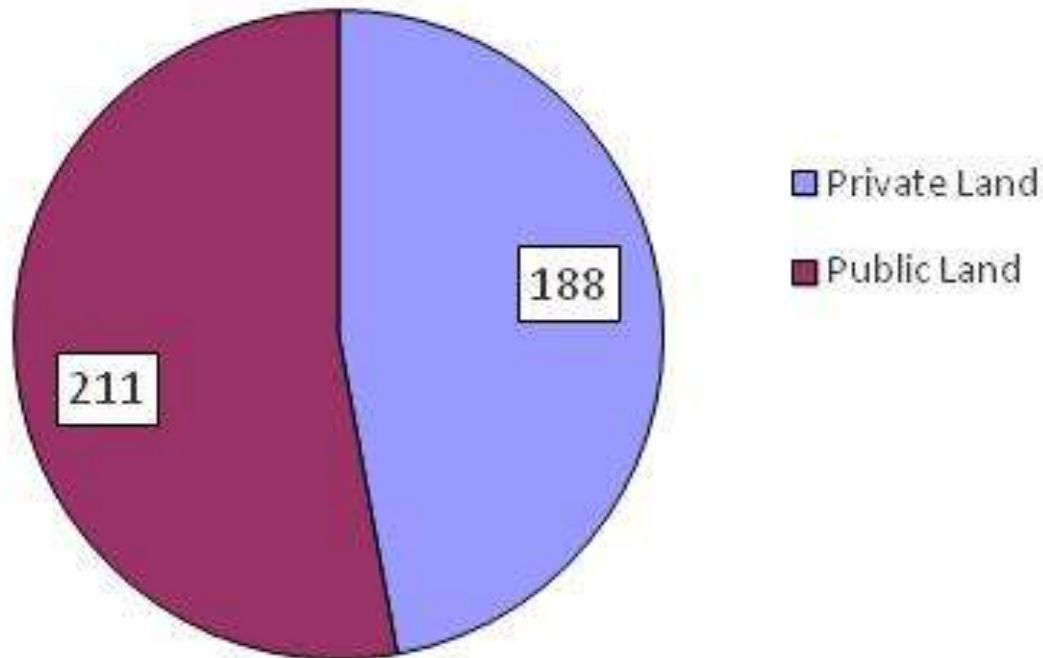
Photo Credit: T. Warfield

Public vs. Private Lands

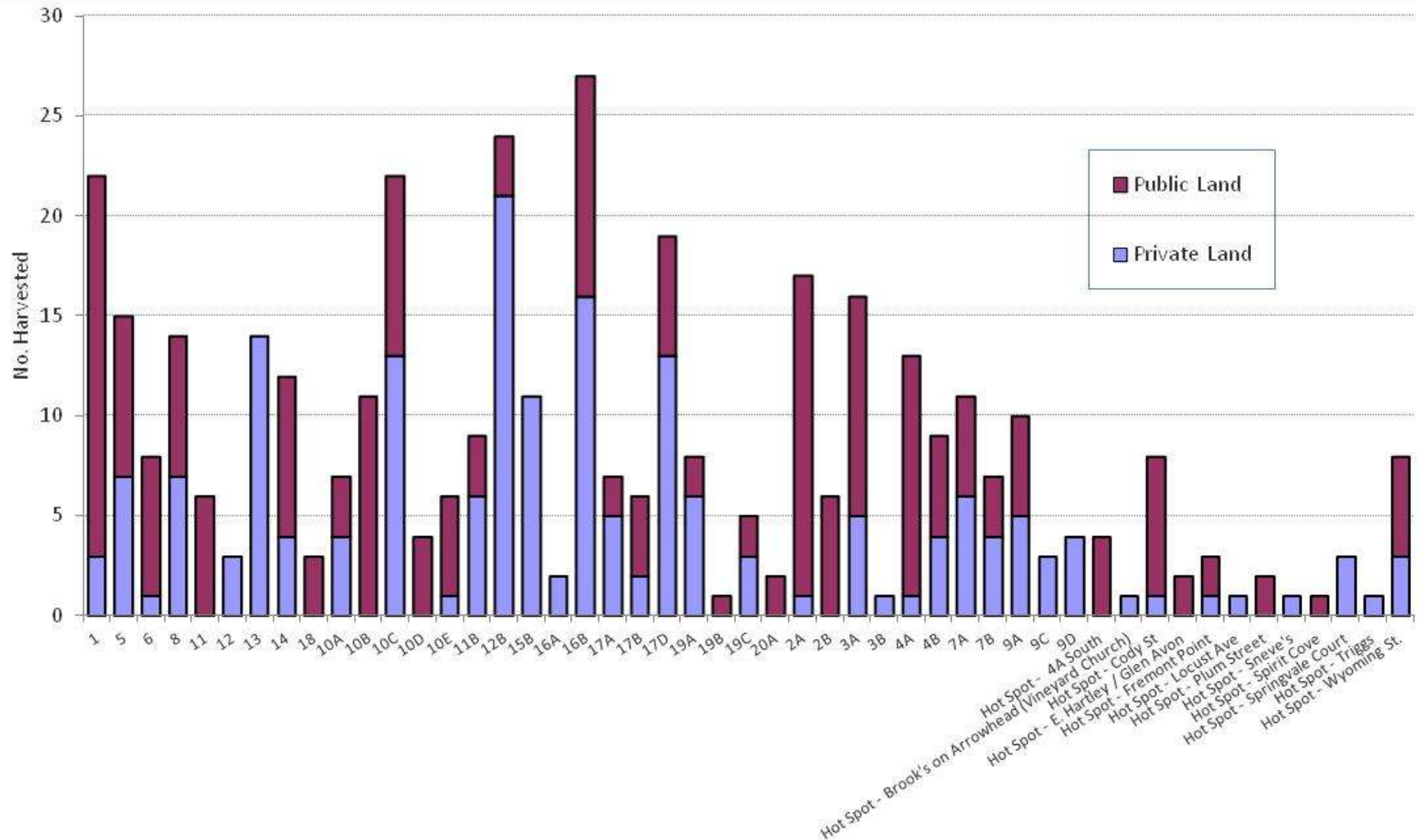
- 52.9% of harvest from Public Lands
- 47.1% of harvest from Private Land
- Demonstrates importance of forging positive relationships with Duluth property owners!
- 367 Different properties registered in 2013
- 184 Hunters turned in LOPs
 - Several Warnings were issued to hunters that failed to register private lands with the City.

Photo Credit: L. Birnbaum

Public vs. Private Land Harvest Total No. Deer



188 of the 399 registered deer in 2013 were harvested because Duluth landowners allowed our hunters access to their private property.



The number of deer harvested on public and private lands within each DHA in 2013.

Private Properties

- 2013 saw the highest participation by private landowners, allowing Duluth hunters access to their properties.
- We might be seeing fewer hunters locking up more private lands. The ABA Board strongly encourages you to share your lands with other hunters **IF** you have more than you can reasonably hunt. If you can't devote enough time to serve the landowner, please consider relinquishing some properties in 2014. We're here to remove deer for the citizens of Duluth. Having 27 pieces of property, and only five tags in your pocket, doesn't accomplish this mission. Find a buddy, and share some stands to help remove more deer.



Photo Credit: T. Schwartz

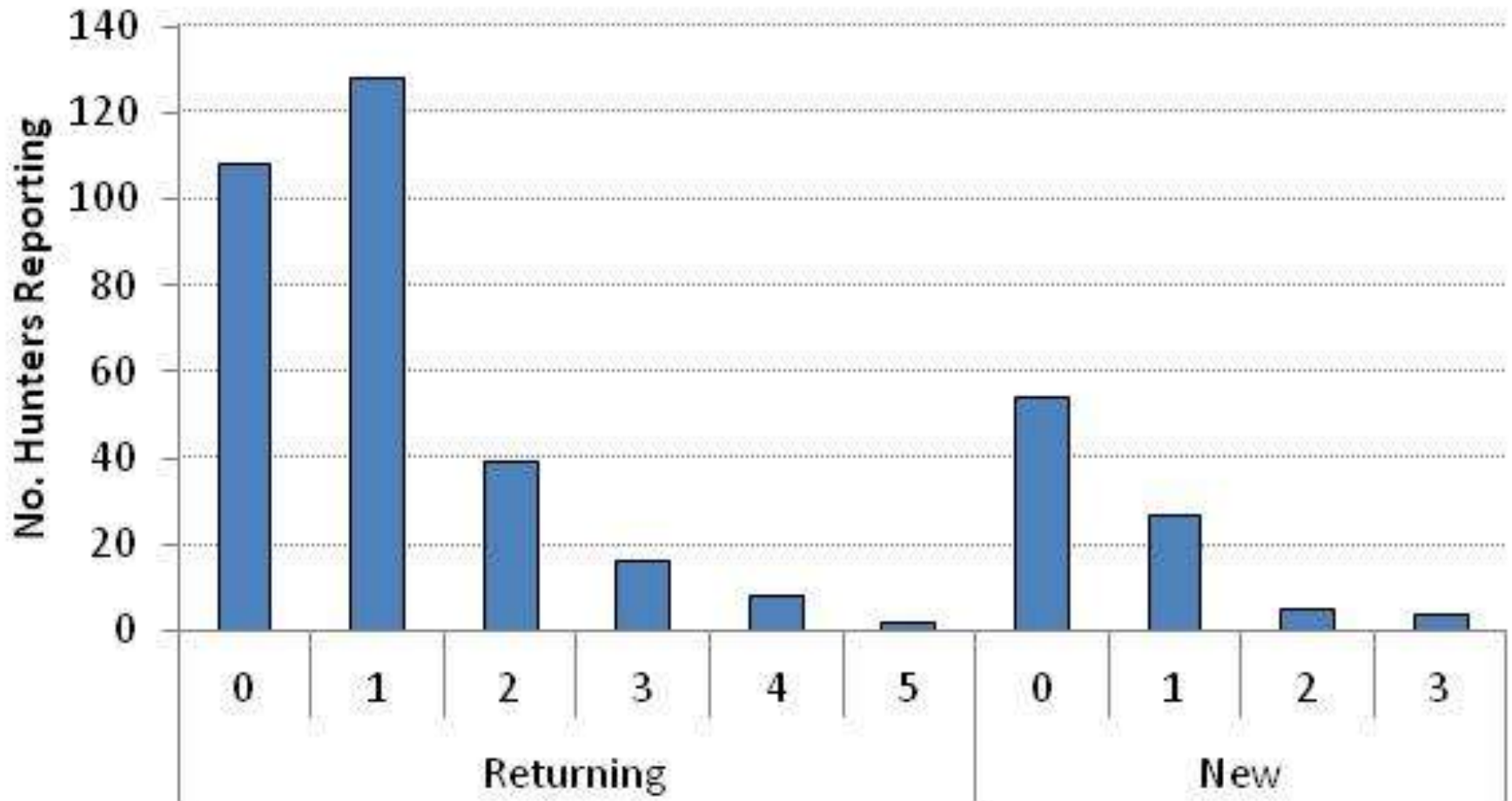
Returning vs. New Hunters

A photograph of a hunter in camouflage gear kneeling in a forest next to a harvested deer. The hunter is holding a rifle and looking towards the camera. The deer is lying on the ground, partially obscured by green foliage. The background shows a dense forest with trees and some autumn-colored leaves.

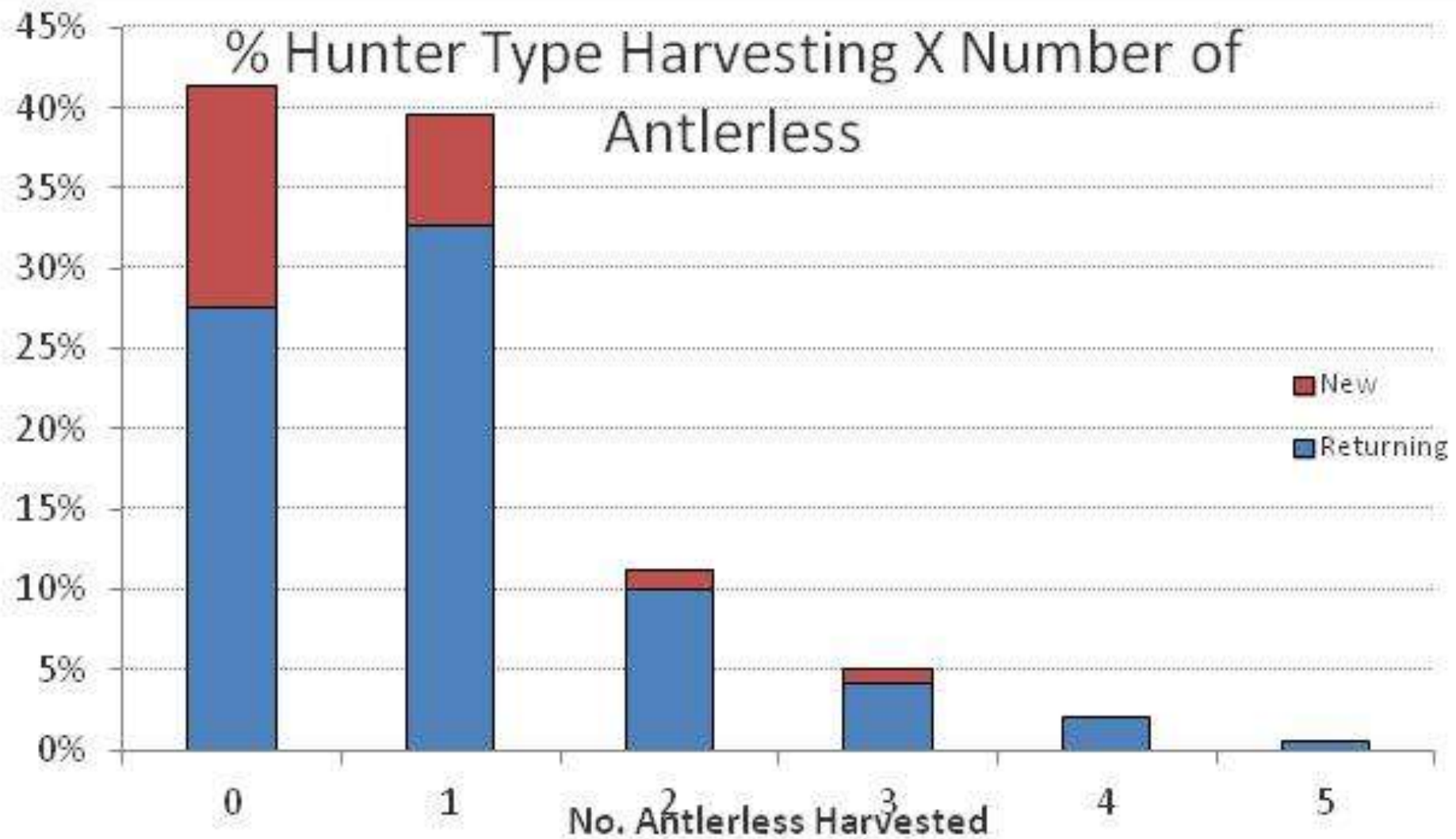
- **193 of 301 Returning Hunters Harvested:**
 - 271 Antlerless
 - 40 Antlered
 - 71.2% of Returning Hunters registered a deer
- **36 of 90 New Hunters Harvested:**
 - 74 Antlerless
 - 14 Antlered
 - 40.0% of New Hunters registered a deer

Photo Credit: L. Birnbaum

Total Antlerless Harvest 2013

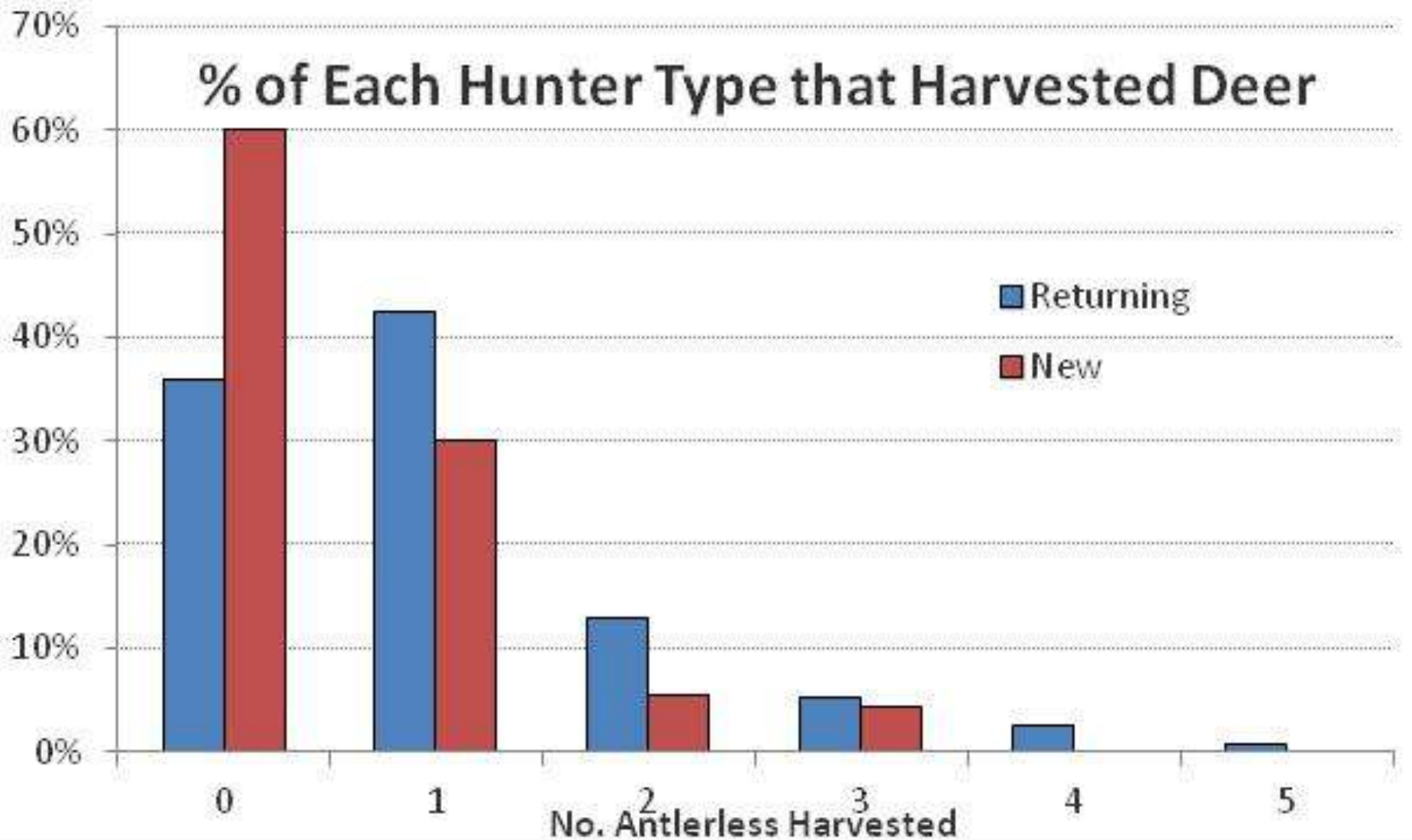


Number of antlerless harvested by New and Returning Hunters. 108 returning hunters and 54 new hunters failed to harvest a deer during the 2013 season.

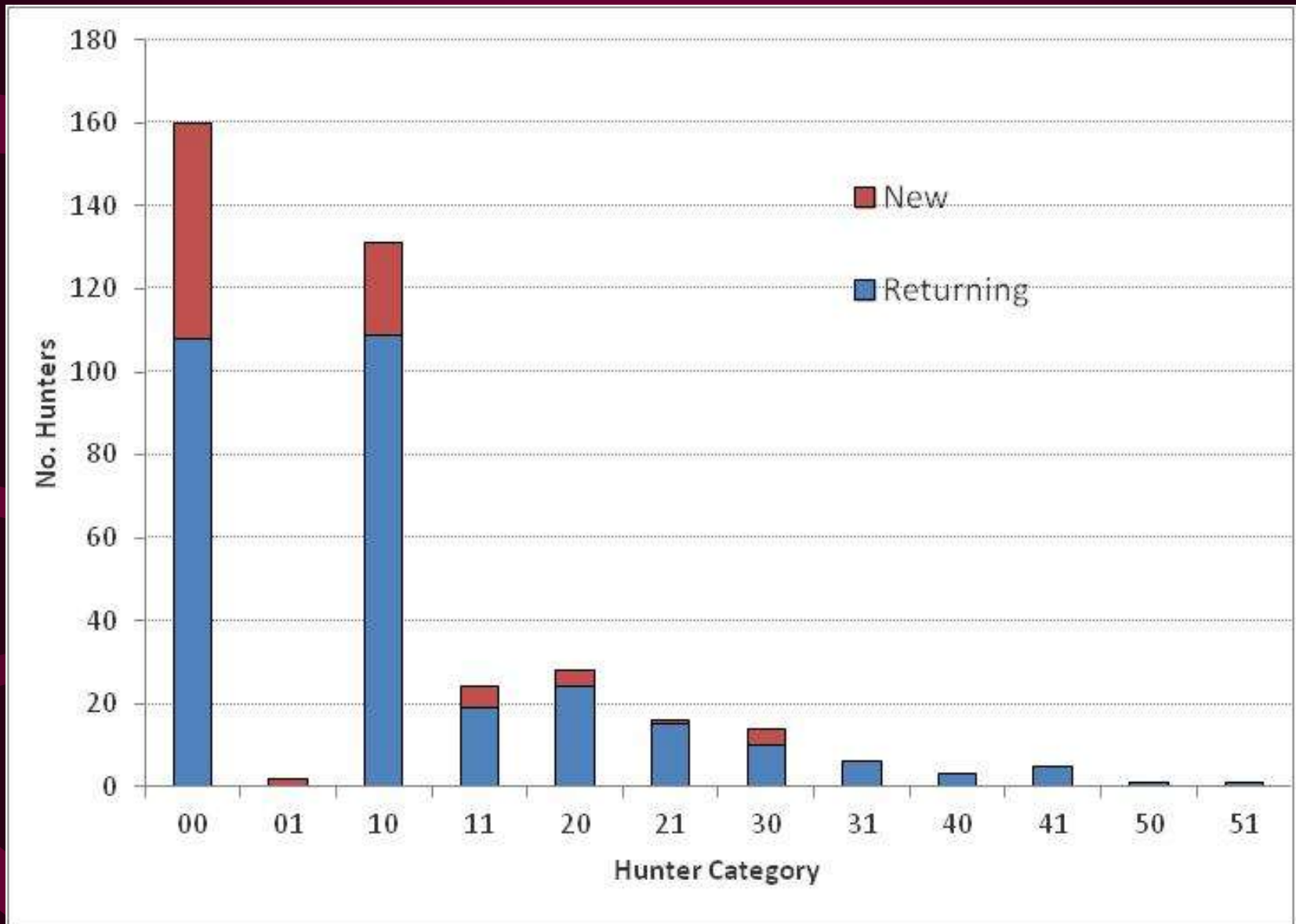


% of Hunters, broken down by new and returning, that harvested the number of antlerless indicated. Thus, approximately 41% of all hunters failed to register any antlerless, with 28% of those being Returning Hunters, and 14% being New.

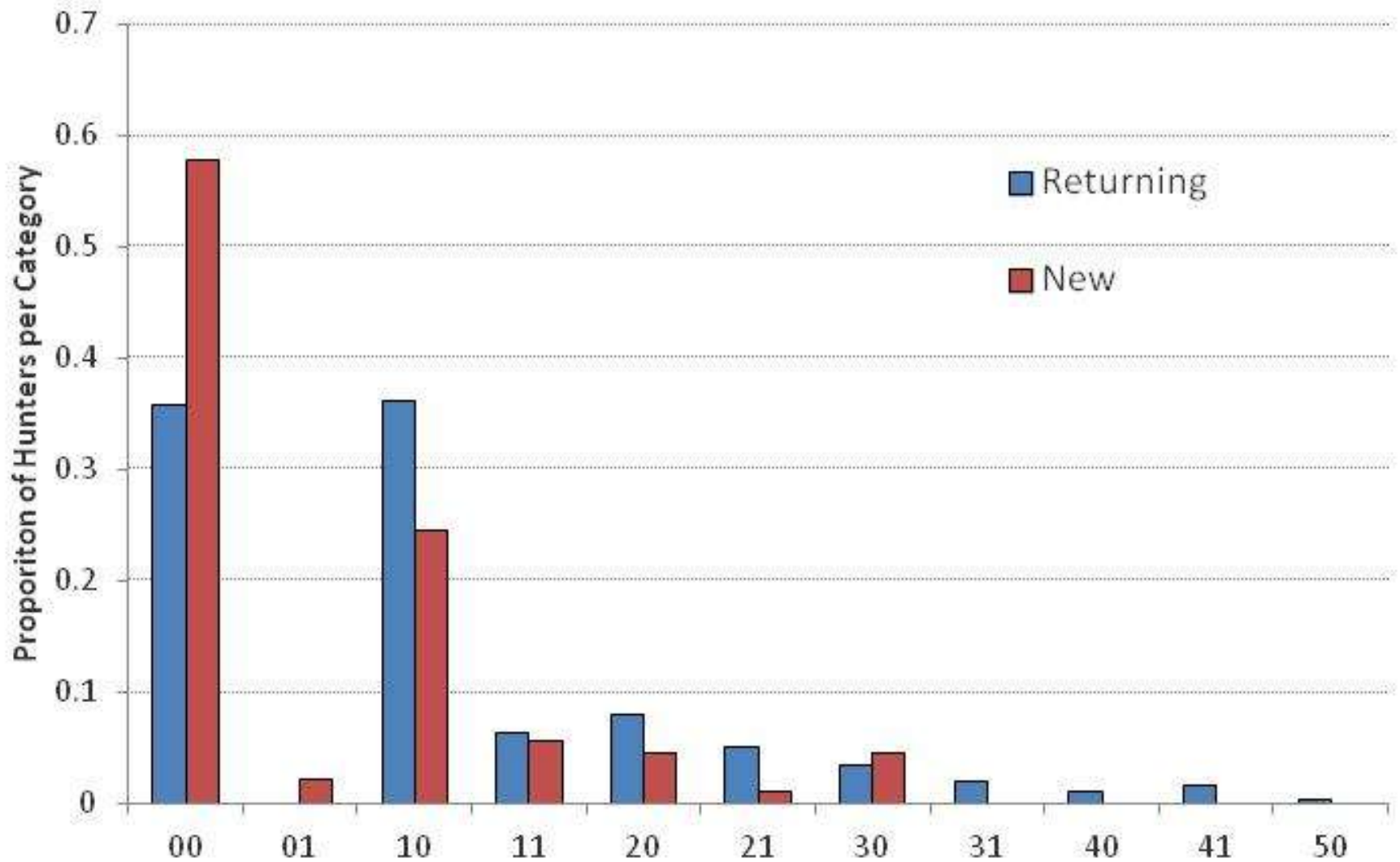
% of Each Hunter Type that Harvested Deer



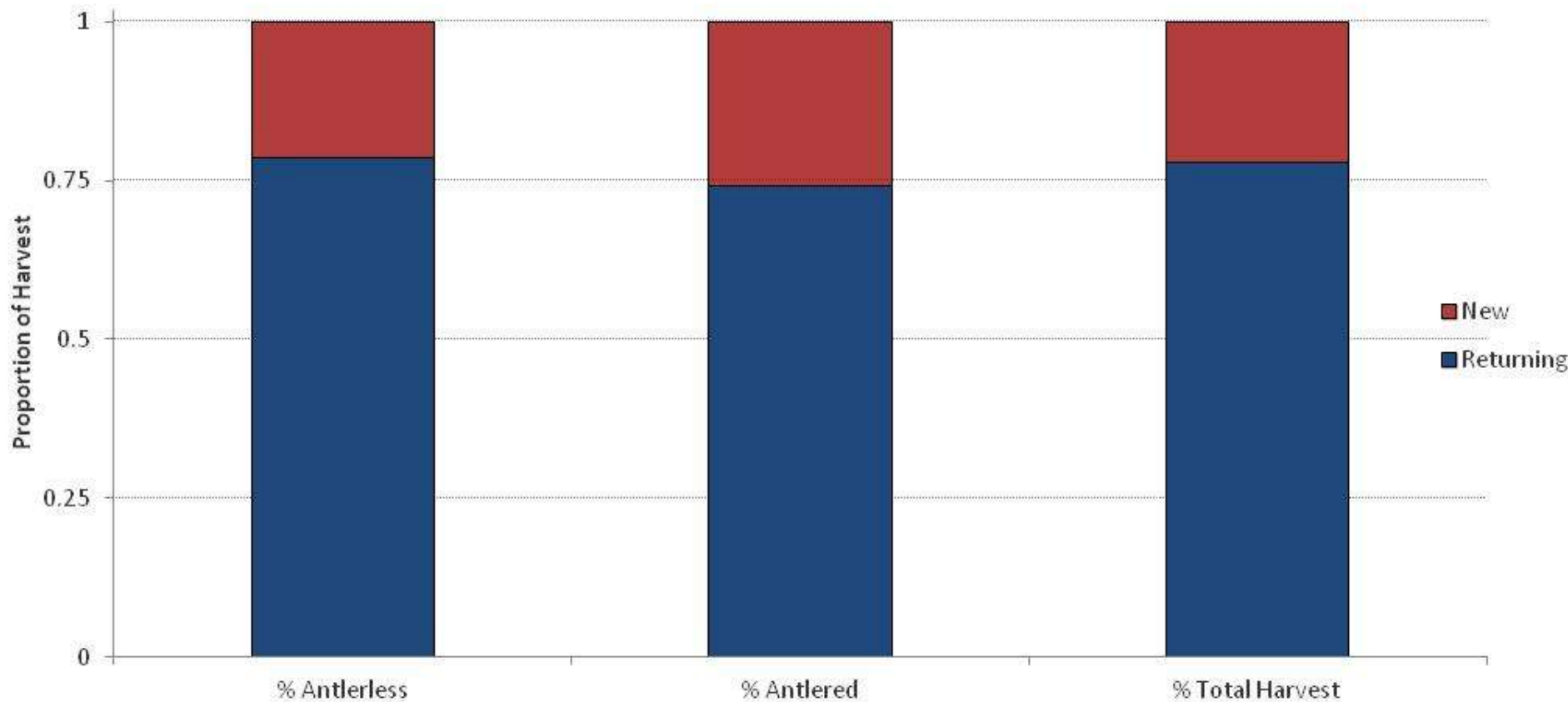
This graph is slightly different from the previous one. Here, the number of New and Returning hunters were separately normalized to 100%. Approximately 36% of all Returning hunters failed to harvest a deer in 2013, whereas 60% of all New hunters failed to harvest a deer.



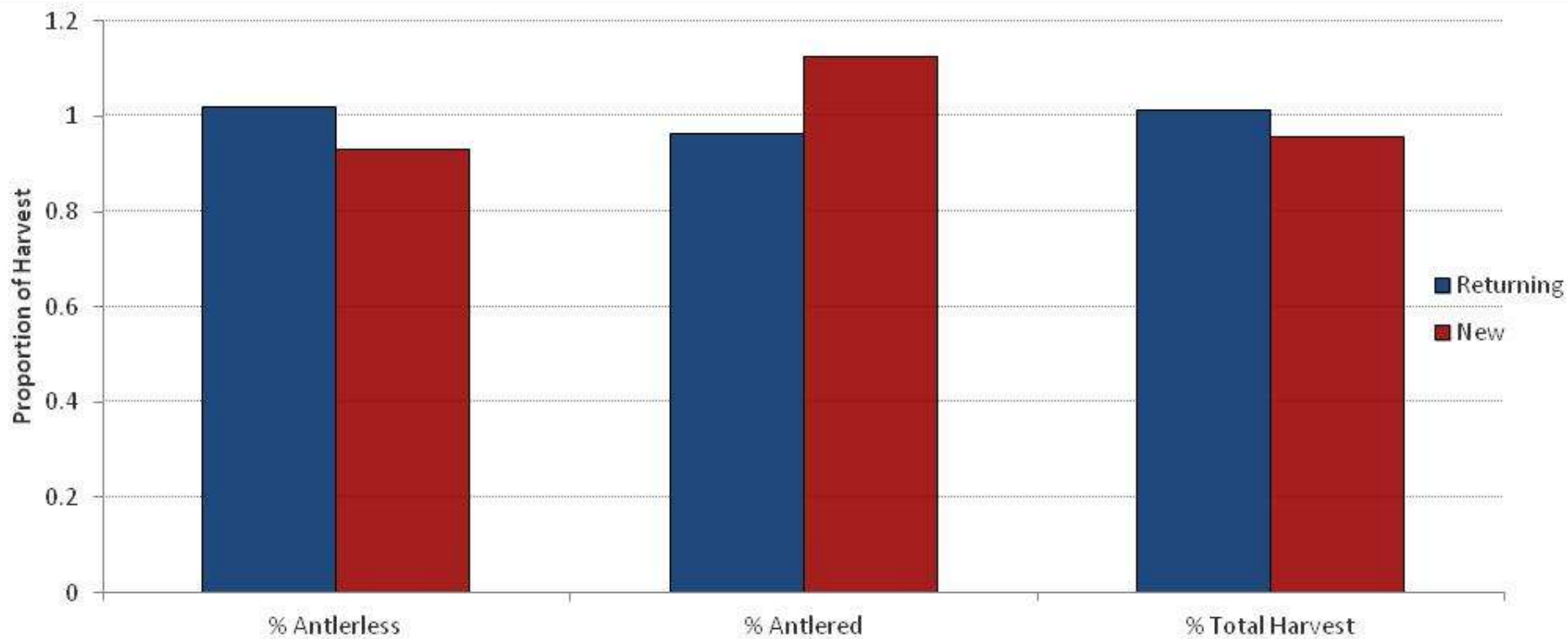
This figure further breaks down total harvest by both New and Returning Hunters in Duluth during the 2013 season.



Here, hunter numbers were again normalized by hunter type to 100. Thus, approximately 58% of all Returning hunters didn't shoot a deer in 2013. However, 36.2% of Returning hunters did shoot one antlerless (10), while 24.4% of New hunters registered one antlerless (10).



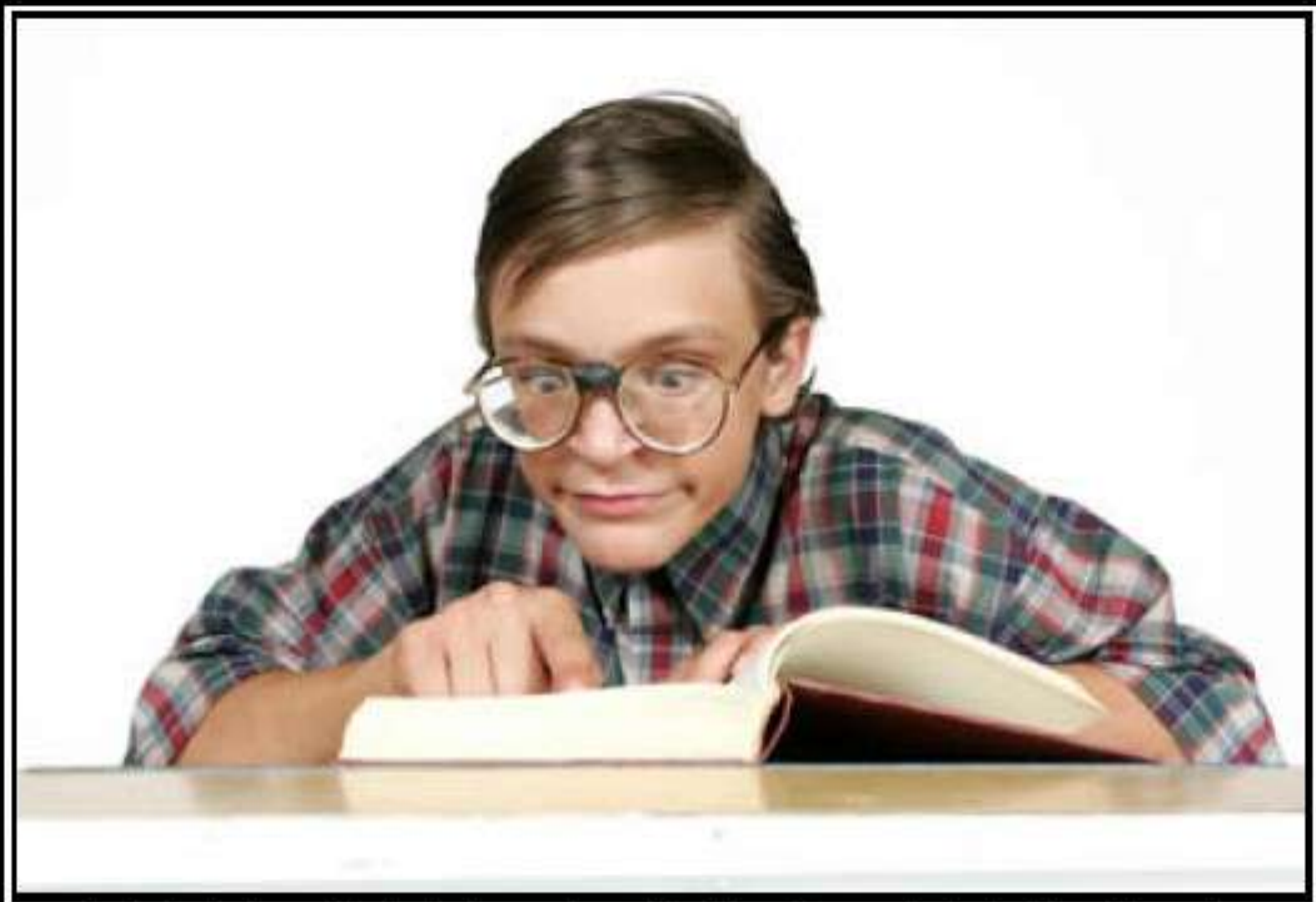
Here is the proportion of deer harvest attributed to New and Returning hunters. Close to 75% of total antlered harvest and 79% of total antlerless harvest were registered by Returning Hunters. This is raw data, and does not account for the much larger participation by Returning Hunters. This is not meant to imply that New hunters aren't pulling their weight.



This data DOES account for the number of New and Returning hunters participating. It is further described in the next slide.

Previous Slide

- In the previous slide, hunter numbers were normalized to 1.0, or 100%, by hunter type, and demonstrates the contributions by both New and Returning hunters.
- Values depict the relative contribution of each hunter type to the total harvest. Thus, if each hunter type harvested deer in the exact proportion to their participation number, then the value would be 1.0. Values greater than 1.0 indicate that the hunter type contributed in a higher proportion than their participation, while values less than 1.0 indicates that harvest was expected to be higher based upon the number of participants.
- In proportion to their numbers, harvest of antlerless was slightly higher for Returning hunters (> 1.0) than for New hunters (0.93).
- This same trend was observed where Returning hunters harvested antlered individuals in a higher proportion than their participation rate (1.13).



I HAVE NO LIFE

and I can PROVE it mathematically.

New vs. Returning Hunters

- Returning hunters harvested 0.98 0.12 antlerless deer
- New Hunters harvested 0.54 0.17 antlerless
 - $t = 4.2798$, $P < 0.00001$, thus there was a significant difference between the two groups of hunters. In other words, Returning Hunters harvested antlerless at a much higher per hunter rate as did New Hunters.

New vs. Returning Hunters

- Returning hunters harvested 1.14 ± 0.14 total deer
- New Hunters harvested 0.63 ± 0.18 total deer
 - $t = 4.3191$, $P < 0.0001$, thus there is a significant difference in the total harvest of deer in Duluth in 2013, with Returning hunters harvesting significantly more bucks per hunter than New hunters.
 - This might suggest the “home field advantage” hypothesis for Returning Hunters relative to New ones.

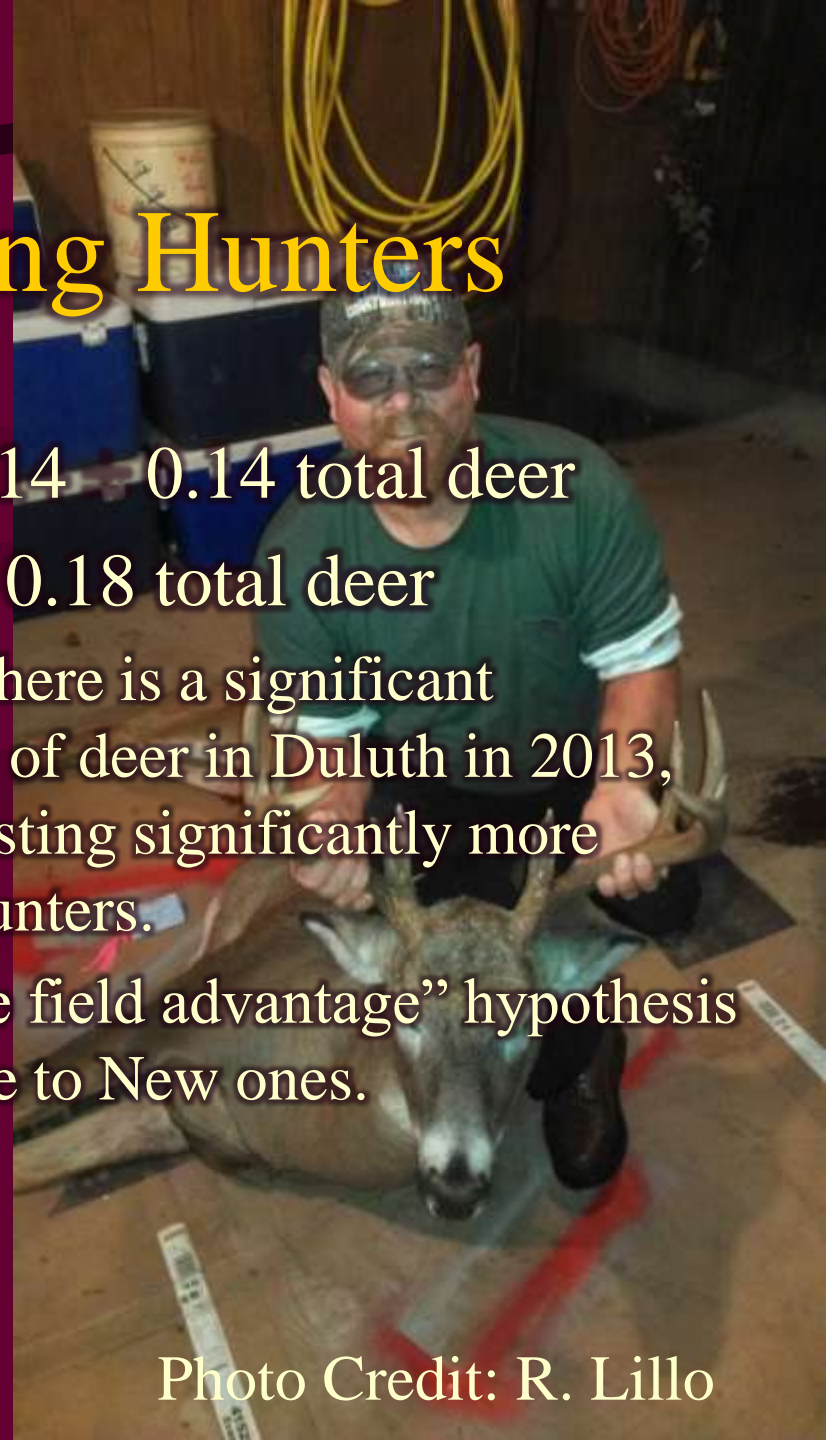


Photo Credit: R. Lillo

New vs. Returning Hunters

- Again, these differences are no doubt due to the learning curve for New hunters. Returning hunters have the advantage of first-hand knowledge of deer movement within their DHAs; they probably know more landowners; they may have an advantage.
- The ABA Board continues to be impressed each season at the New recruits, and the energy and enthusiasm that they demonstrate to the goals of this management hunt.

Local vs. Non-Local Hunters

| | # Participating in 2013 | # Antlerless | # Antlered |
|----------------|-------------------------|--------------|------------|
| Locals | 341 | 310 | 48 |
| # Duluthians | 274 | 243 | 39 |
| Non-Local MN | 29 | 21 | 3 |
| Out-of-Staters | 21 | 14 | 3 |

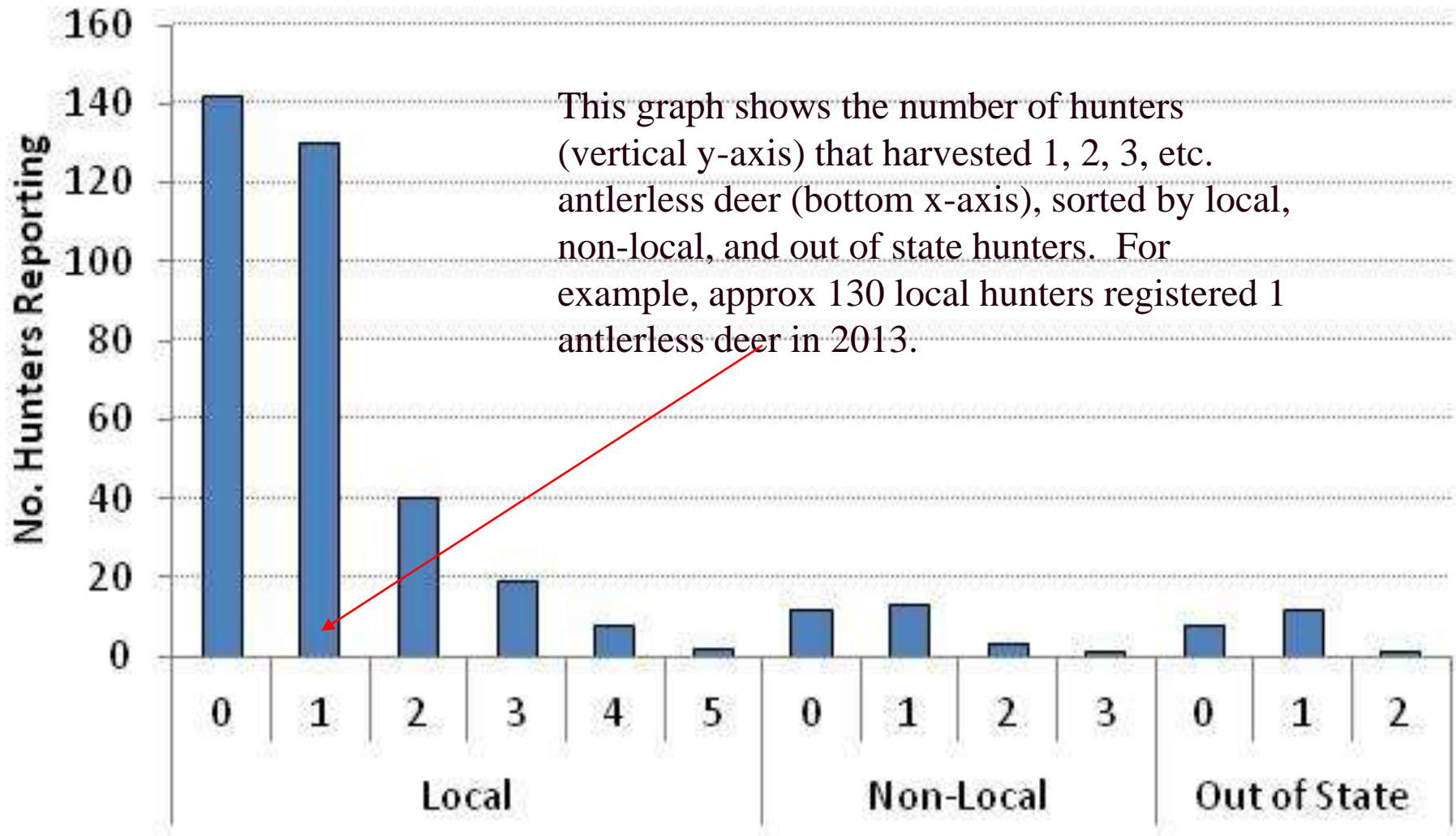


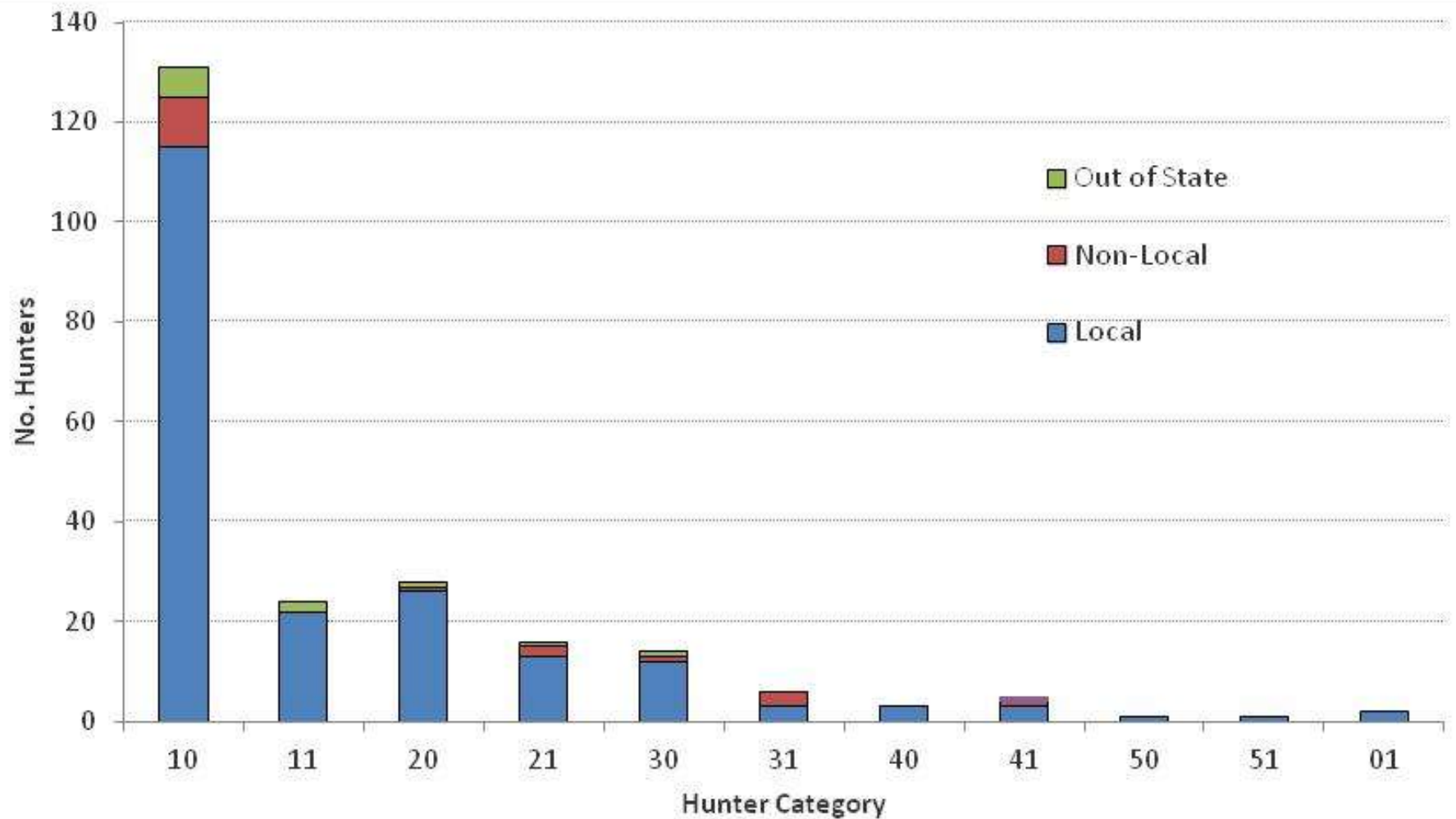
Local vs. Non-Local Hunters

- Non-locals accounted for 7.4% of the hunters (N=29), and 6.0% of the harvest.
- Out-of-Staters accounted for 5.4% of the hunters (N=21) and 4.3% of the harvest
- Locals harvested 90% of does (N=310)
- Locals harvested 88.9% of bucks (N = 48)
- Non-locals harvested 6.1% of does (N=21)
- Non-locals harvested 5.6% of bucks (N=3)
- Out-of-Staters harvested 4.1% of does (N=14)
- Out-of-Staters harvested 5.6% of bucks (N=3)
- *Non-locals are hunters living further than Floodwood, e.g. Brainerd, Twin Cities*

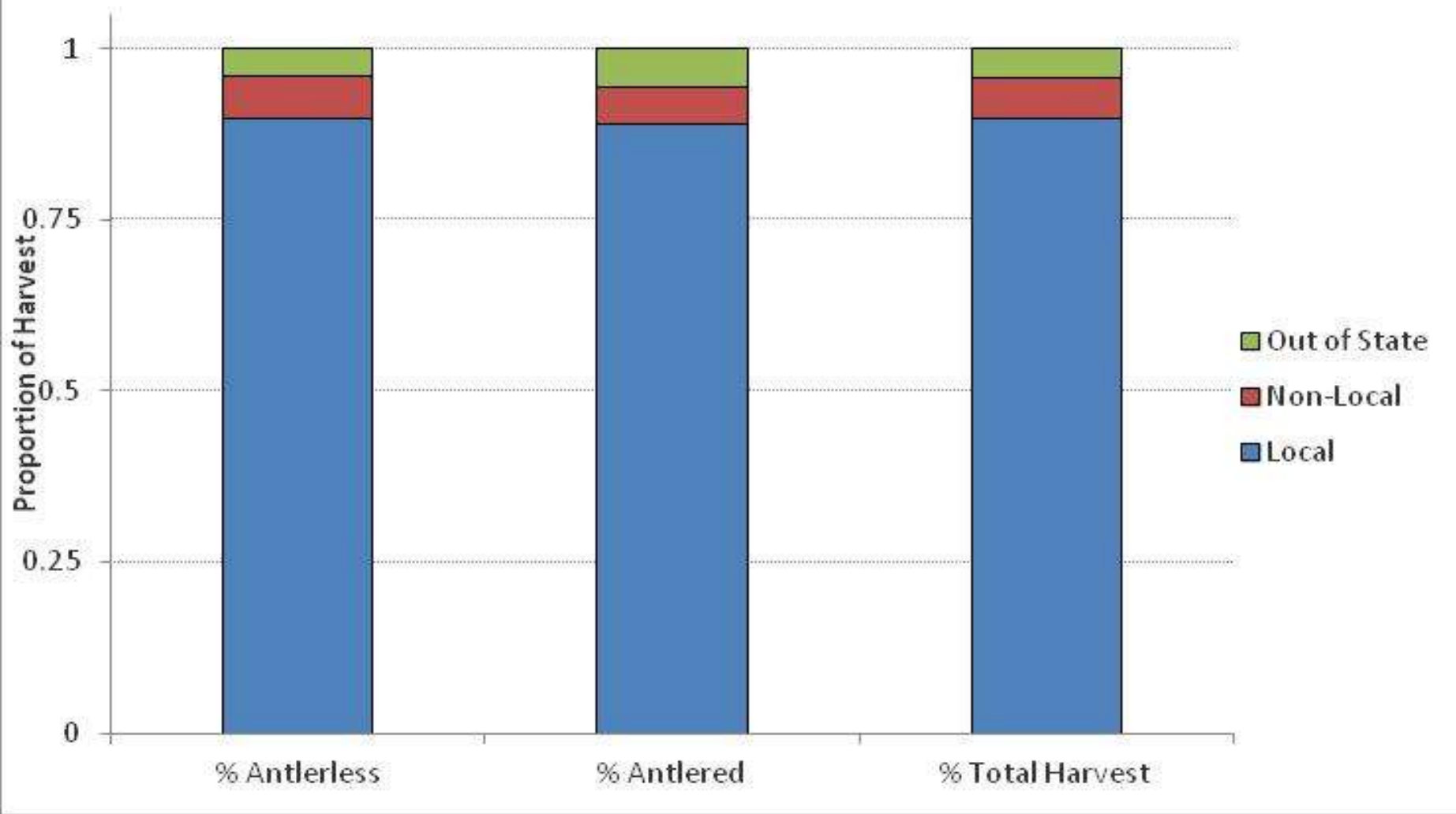


Total Antlerless Harvest 2013

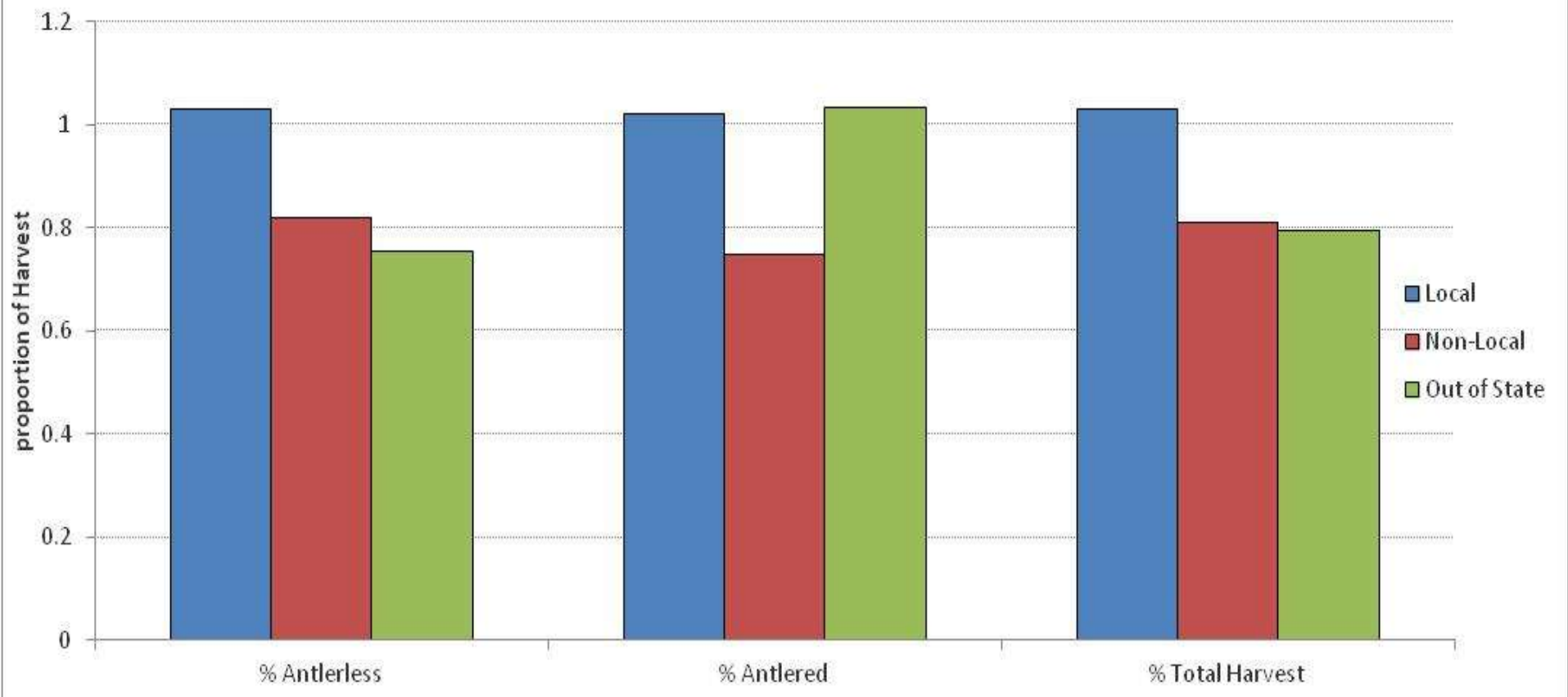




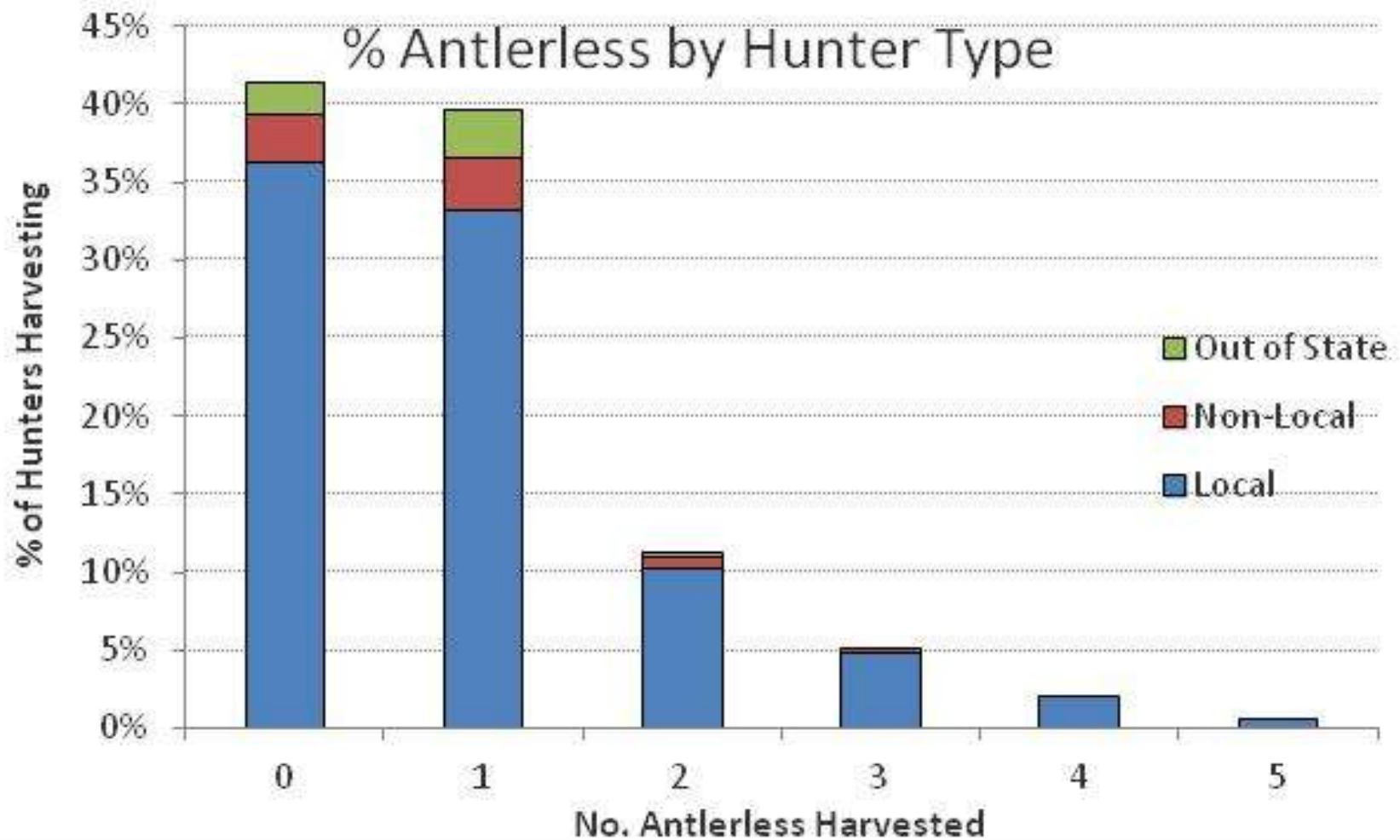
This figure further breaks down total harvest by Local, Non-Local, and Out-of-State Hunters in Duluth during the 2013 season.



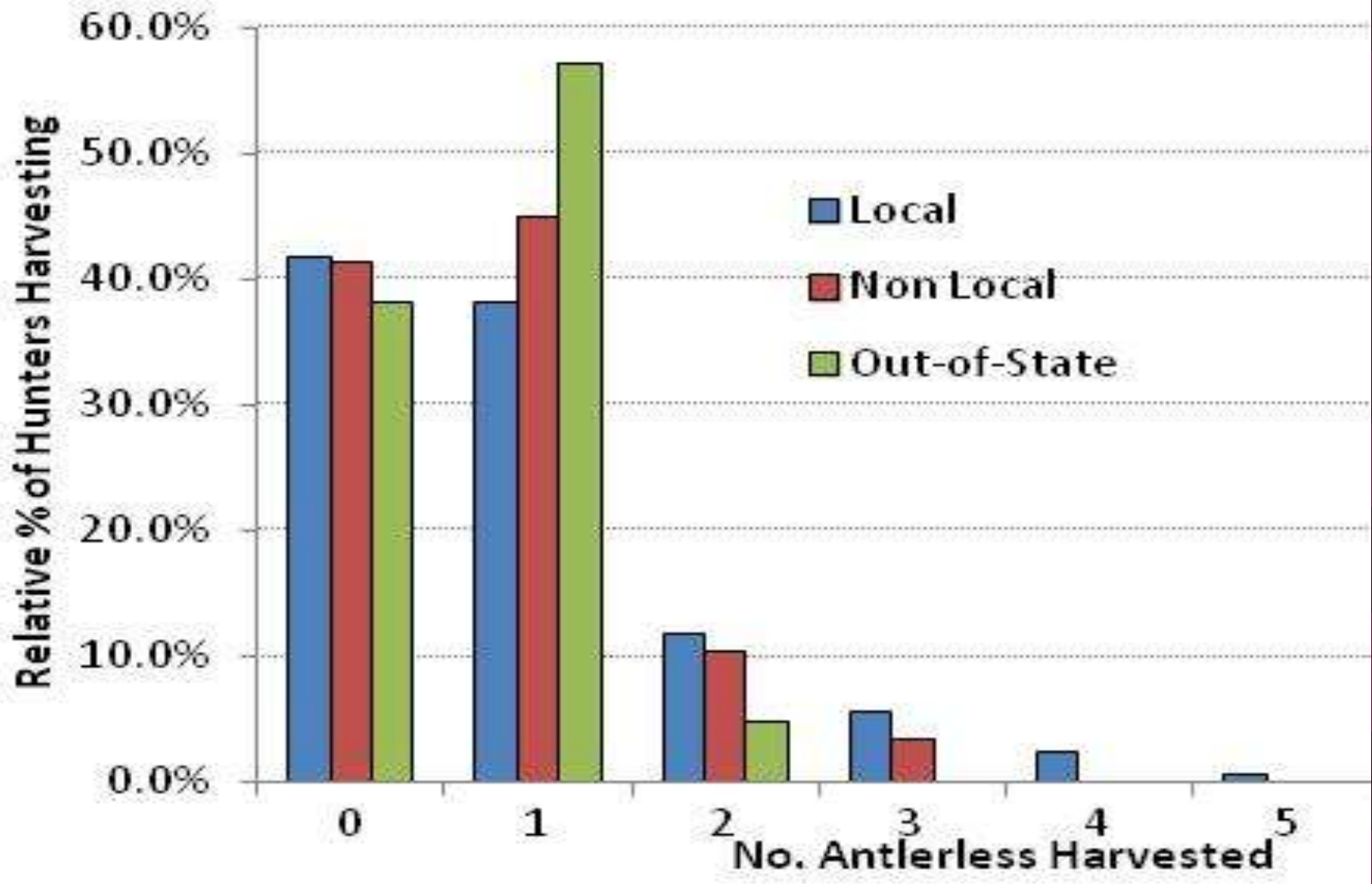
Here is the proportion of deer harvest attributed to each type of hunter. Close to 89% of antlered harvest and 90% of antlerless harvest was registered by Local Hunters. This is raw data, and does not account for the much larger participation by Local Hunters. This is not meant to imply that Non-Local and Out-of-State hunters aren't pulling their weight.



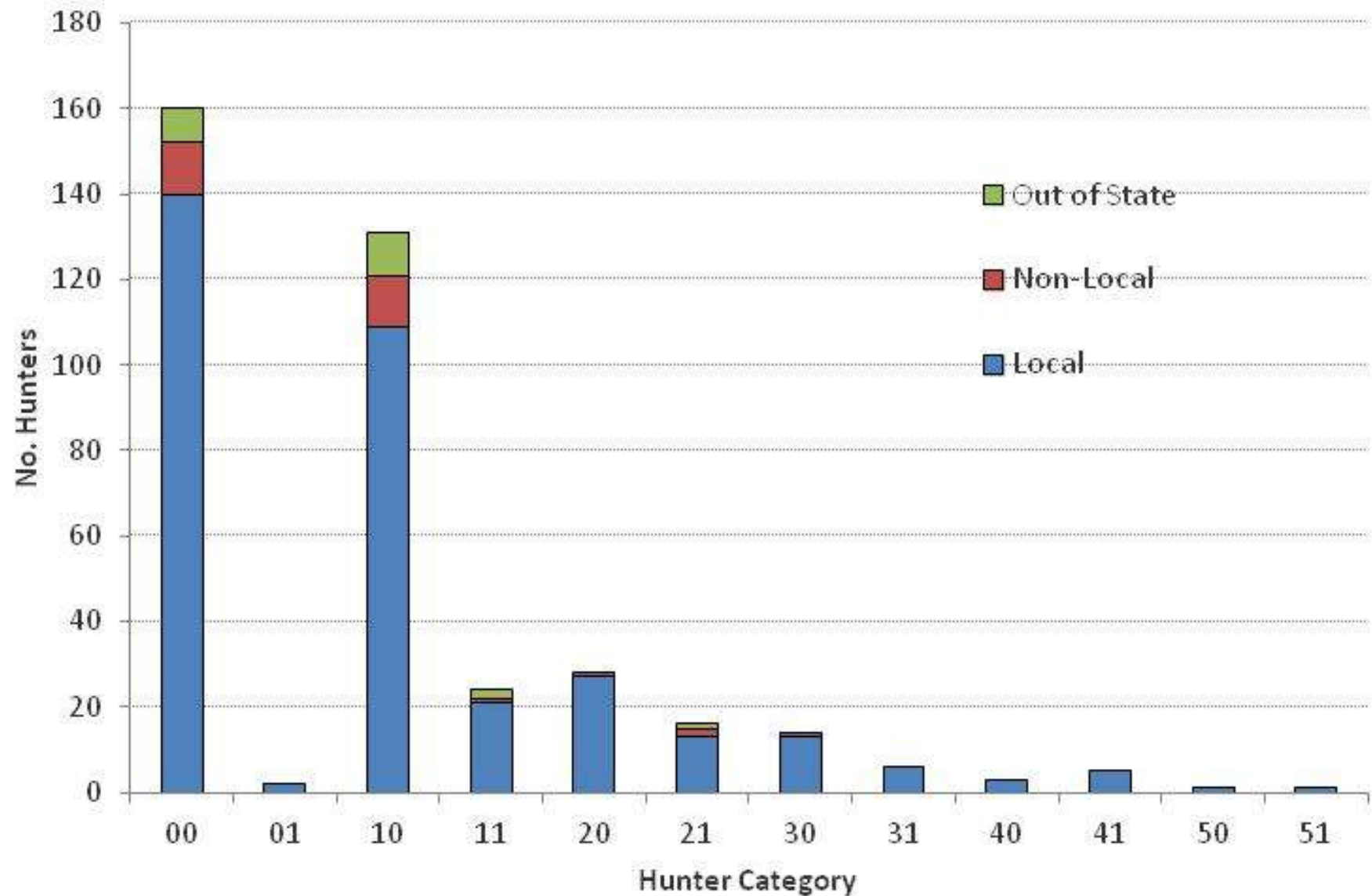
Similar to the New vs Returning slide, harvest by hunter type was normalized to 1.0 for each hunter type. This shows the relative contribution to harvest, and removes the bias of the larger number of Local Hunters. Thus, Local hunters harvested more per hunter for both antlerless individuals and total harvest (> 1.0). Out-of-State hunters harvested more antlered individuals relative to their participation rate. This is **NOT** to be interpreted that Out-of-State hunters are “stealing all of OUR bucks”. This could be that out-of-state hunters may not be holding out for a P&Y buck, but are shooting whatever is standing broadside at 15 yards, given their limited time to hunt here in Duluth.



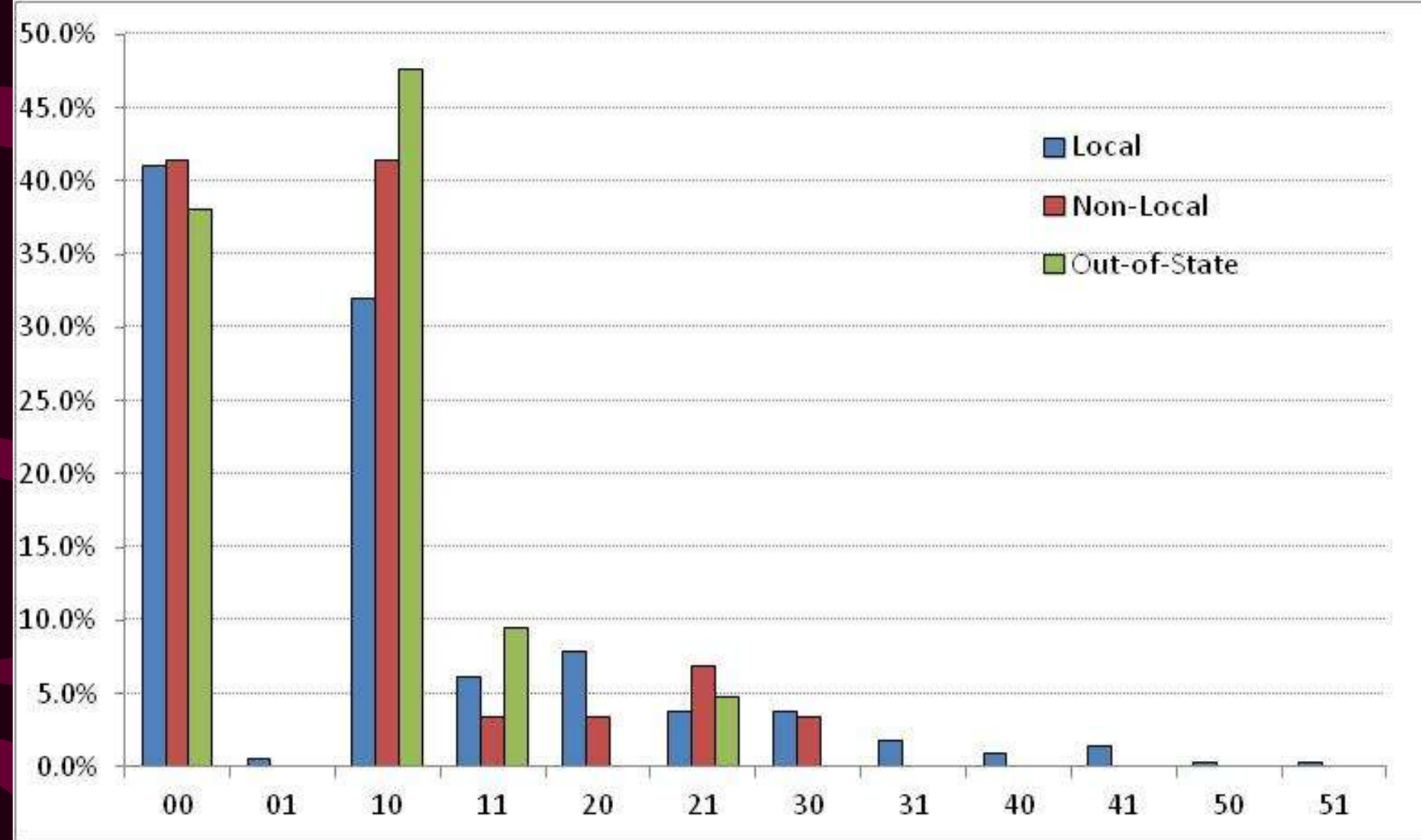
Percentage of hunters, by type, harvesting X number of antlerless. Thus, just over 36% of Local hunters did not harvest a deer in 2013, whereas only 2% of Local hunters harvested 4 antlerless.



- This shows the relative percentages of each hunter type that harvested X number of antlerless. Thus, of all Local hunters, less than 40% harvested 1 antlerless. Of all Out-of-State hunters, almost 60% of them harvested one antlerless.



This figure further breaks down total harvest by Local, Non-Local, and Out-of-State Hunters in Duluth during the 2013 season.



Here, hunter numbers were again normalized by hunter type to 100. Thus, approximately 40% of all Local and Non-Local hunters didn't shoot a deer in 2013. However, more than 45% of Out-of-State hunters did shoot one antlerless (10). Less than 5% of Out-of-State hunters harvested three deer (21), probably due to the high cost of tags.

Locals vs. Non-Locals

- Locals harvested 0.91 0.11 antlerless deer
- Non-locals harvested 0.72 0.20 antlerless
 - $t = 1.637$, $P = 0.1053$, thus there was no significant difference between the two groups of hunters. Non-locals harvested the same number of antlerless deer per hunter as did local hunters.
 - For this analysis, non-locals and out-of-state hunters were combined to increase sample size of that group.

More differences between Locals and non-Locals



- Locals harvested 1.05 ± 0.13 total deer
- Non-locals harvested 0.88 ± 0.26 total deer
 - $t = 1.129$, $P = 0.2622$, thus there is no significant difference in the total harvest of deer in Duluth in 2013, with Non-Local hunters harvesting the same number of deer per hunter as did locals.
 - In the past, a presumed “home field” advantage existed for local hunters, who had probably more time to devote to scouting, moving areas, and targeting deer than those that don’t live locally.

Locals vs. Non-Locals, cont.

- Likely non-local hunters only have weekends to hunt, whereas locals have mid-week to devote to their hobby. With the higher cost of tags for out-of-State hunters, and the time required to invest in stand time, one would expect there to be a difference. But for the first time in the Duluth Hunt, there was no difference between these two groups. This is likely due to all hunters having equal difficulty in finding deer within the DHAs.

Photo Credit: D. Ribich

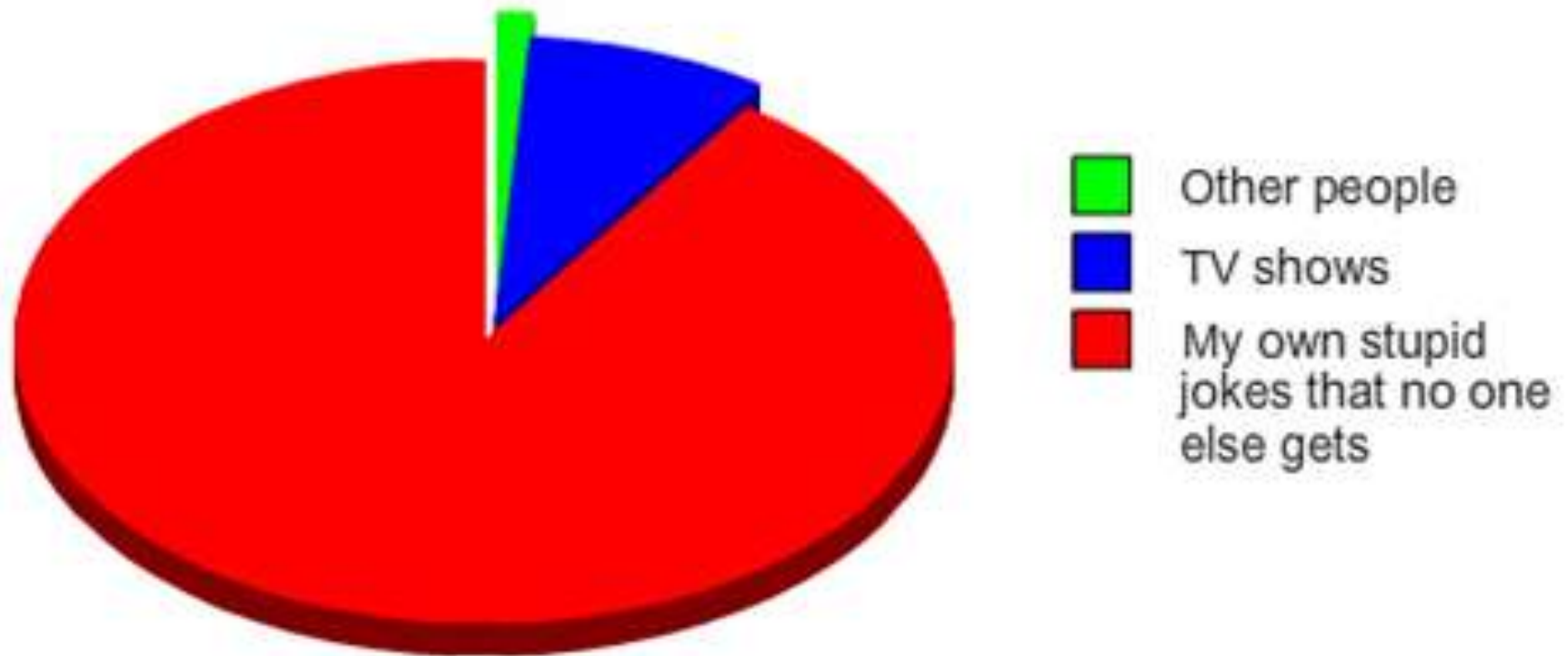
Enough Stats!

- Ok, no more tests for the differences in means for a while. . . . I'd like to apologize, but I'd be lying outright!
 - I'm sick that way . . . ☺
- Now back to more interesting summaries

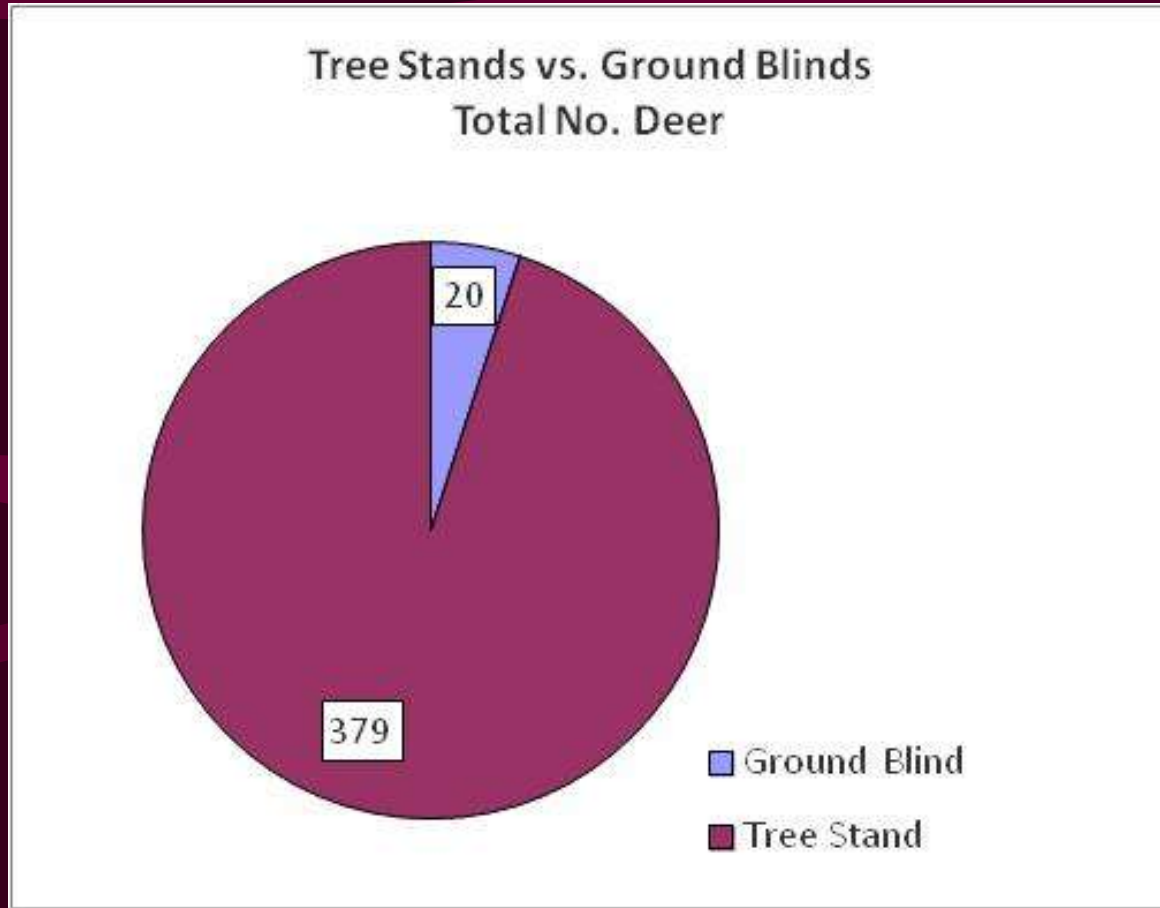
. . . .

Photo Credit: T. Brisse

Things that make me laugh



Harvest from Tree Stands vs. Ground Blinds



Zero incidents reported. Thank you for staying safe!!

Venison Donation

- 232 harvested deer were reported as “Donated”
 - Includes Food Shelf, friends, family, etc.
 - 304 in 2009 (51.7%)
 - 373 in 2010 (61.8%)
 - 340 in 2011 (57.9%)
 - 308 in 2012 (53.7%)
- All or part of 58.1% of harvested deer were donated.



Photo Credit: D. Ribich

Lottery Results

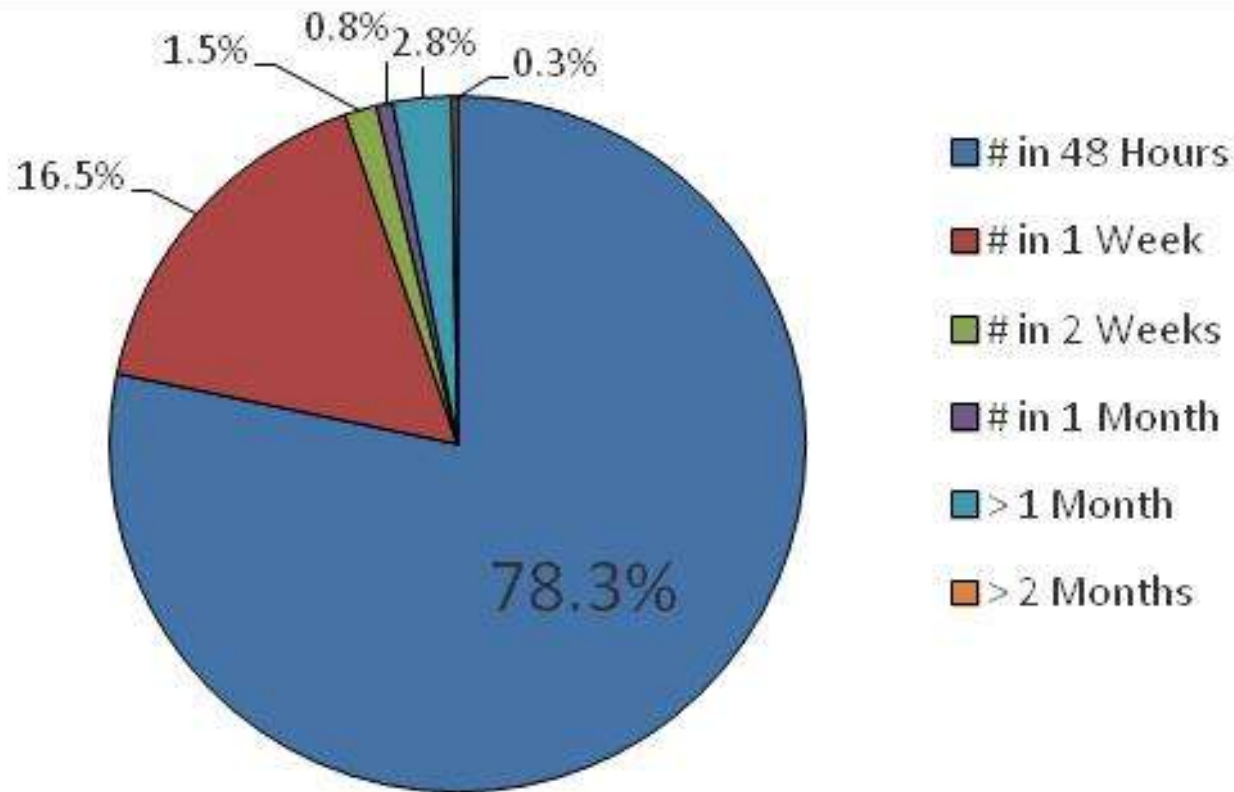
- **85.9%** of Returning Hunters received their 1st Choice DHA!
 - 200 returning hunters, or 65.8% got their first choice, and **DID NOT** have to attend the Lottery!
 - 61 Returning Hunters received their First Choice at the Lottery
 - 261 of the Hunters received their First Choice DHA
- 3.9% received 2nd Choice DHA (N=12 Hunters)
- 89.8% of Returning Hunters got to hunt where they wanted to!
- 22 New Hunters got their first choice, and 12 their second choice, in the Lottery. 38.6% of New hunters got into a DHA of choice.
- Hard to argue that the system isn't working well, in spite of what you might read or post online!
- But if there were a comment box to complain about the process, I'd like to file a grievance. For the fourth year in the last five, I didn't get ANY of my DHA choices!

Mandatory Registration

A person in camouflage gear is seen from behind, carrying a large animal, likely a deer, through a field. The scene is set at dusk or dawn, with a soft glow on the horizon and trees in the background. The person is walking away from the camera, and the animal is being carried in front of them.

- Rules Manual states that hunters have 48 hours to register their harvest.
- How'd we do?
- Much better than in years past! Thank You!

Photo Credit: P. Mannon



Deer registration, measured as the difference between the date registered with the ABA and the date of harvest. Within 48 hours is required by the Rules Manual.

- 78.4% deer registered within 48 hours.
 - Up from 60.2% in 2008, 70.8% in 2009, and 76.2% in 2010, 77.8% in 2011, and 76.4% in 2012.
- I can live with the 16.5% that did so within 1 week
- I'm pleased that we only had 5.3% registered late.
 - Only 12 deer registered > 30 days late
 - This has improved greatly, and for that the ABA is very thankful.
 - Seven deer were not registered until HCs called to remind!
 - Down from 35 in 2008, 16 in 2009, and 19 in 2010, but higher than the 5 in 2011 and 4 in 2012.
 - I really do appreciate, for the most part, that hunters are actually reading the garbage I spew out on a weekly basis, and are catching errors on a timely fashion.

Questions?

- If they're legitimate questions, ask Bork
- If you just want to vent or complain about the Hunt, please direct that to infoduluthhunt@gmail.com

