



# Landowner Behaviour and Attitudes in the Upper Thames and Grand River Watersheds

A Study of Factors Which May Explain the Conservation Behaviour Farmers

# Outline

- Why Relevant
- Study Area
- Trends in Agriculture
- There was a Study!!
- Descriptive Statistics
- Study Findings
- Implications and Next Steps

# Why Relevant?

- New nutrient targets for Lake Erie being developed – we need to look ahead to implementation
- Program modifications or new program development will benefit greatly from:
  - Better understanding of the general characteristics of the community
  - Information on landowner attitudes
  - Information on landowner behaviour

# Study Area in Lake Erie Basin



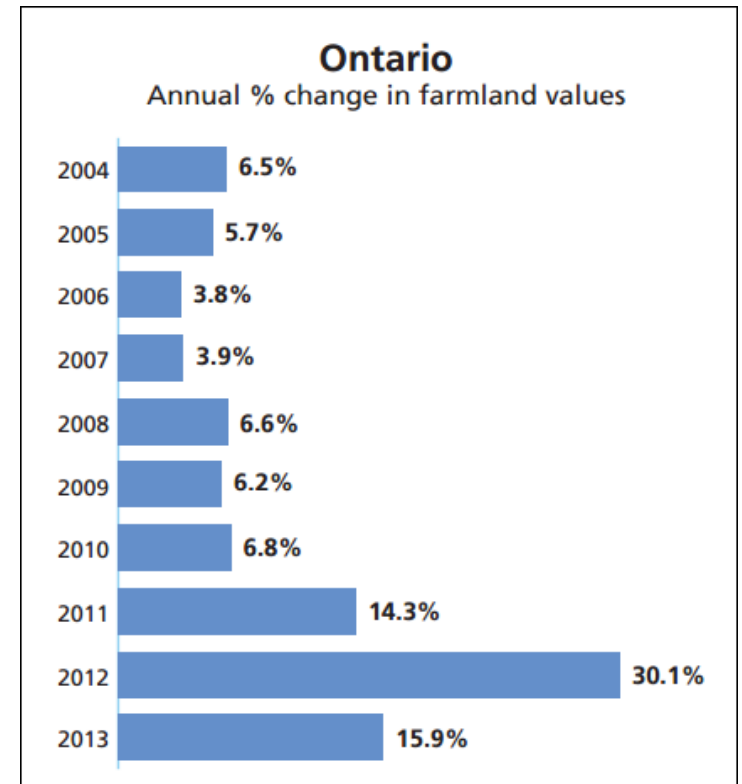
# Study Area



- Upper Thames Watershed
  - Area = 3,421 km<sup>2</sup>
  - Population = 516,000
  - Agriculture = 75% of land area
- Grand River Watershed
  - Area = 6,800 km<sup>2</sup>
  - Population = 925,000
  - Agriculture = 70% of land area

# Agriculture Trends

- Commodity prices are generally up since 2008
- Land prices have increased significantly in recent years
- Farm consolidations seem to be on the rise
- Pressure on woodlands, watercourse buffers, etc.
- Great Lakes water quality (Lake Erie)



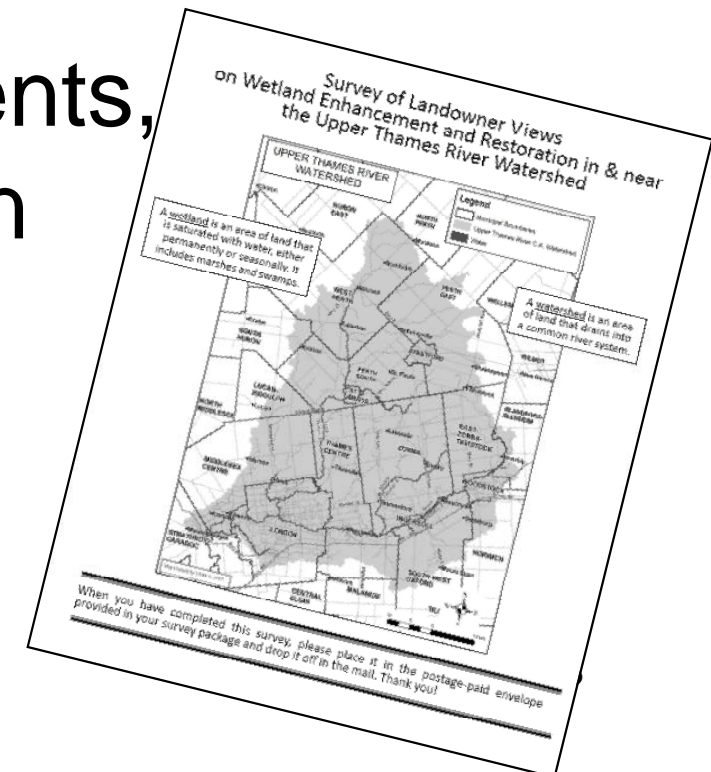
<https://www.fcc-fac.ca/fcc/about-fcc/corporate-profile/reports/farmland-values/farmland-values-report-2013.pdf>

# There was a Study

- Choice Experiment (UNB and Simon Fraser)
- Opportunity – My Research Question
  - Are there factors that explain why some farmers convert conservation lands to agricultural production while some farmers establish conservation lands on their properties?
- Surveys sent to all Rural Route addresses in the Upper Thames and 80 % of Grand Watershed
- Surveys were sent in April 2013
- 18 % response rate
- 3,227 usable surveys (n = 3,227)

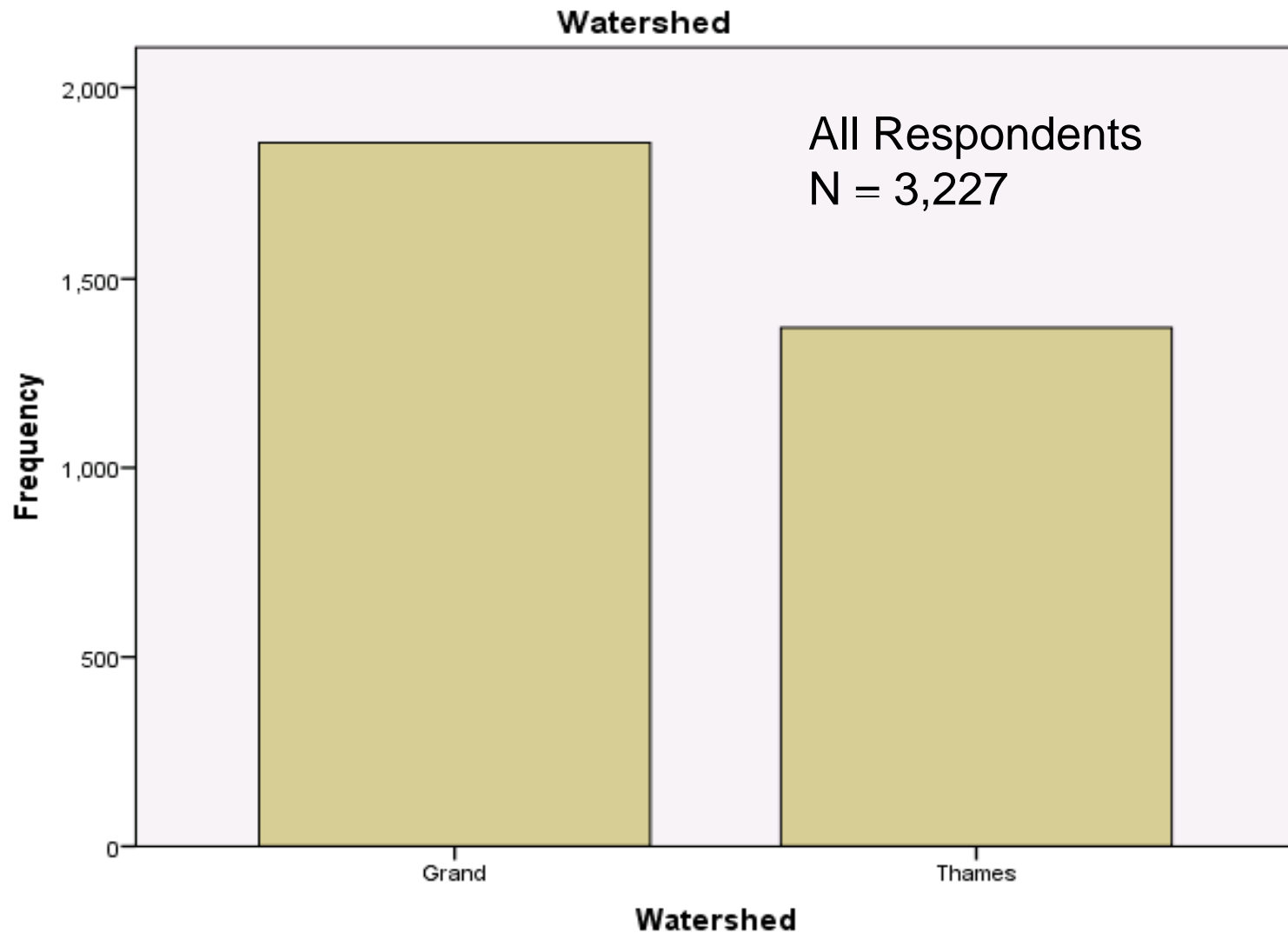
# Focus on Farmers

- “Farmers” are respondents that:
  - Own 100 acres or more of land **AND**
  - Report that 50 % or more of their income comes from farm receipts
- Of the 3,227 survey respondents, 626 met the “farmer” definition

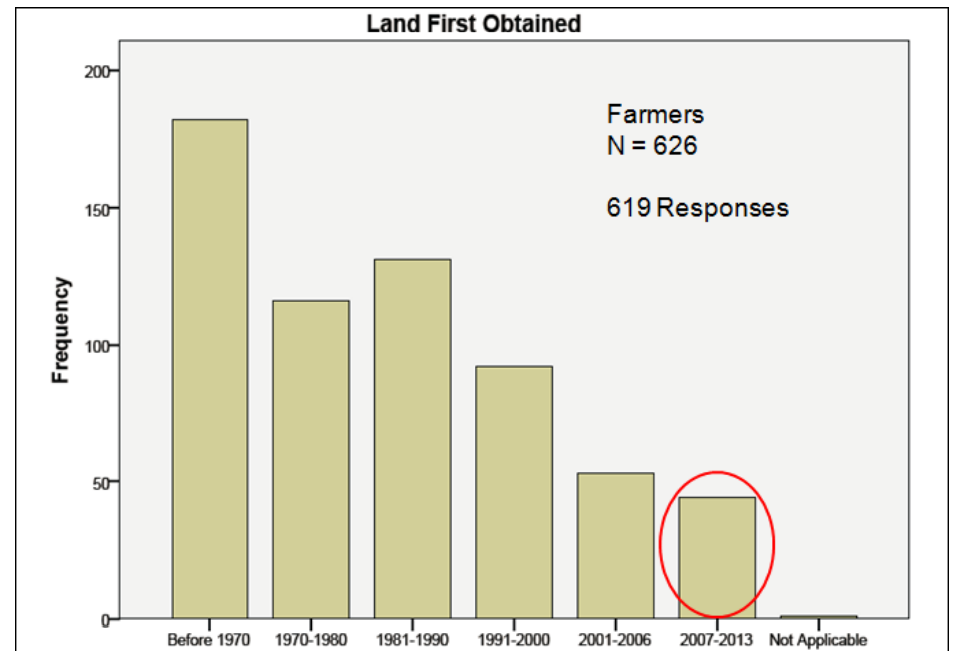
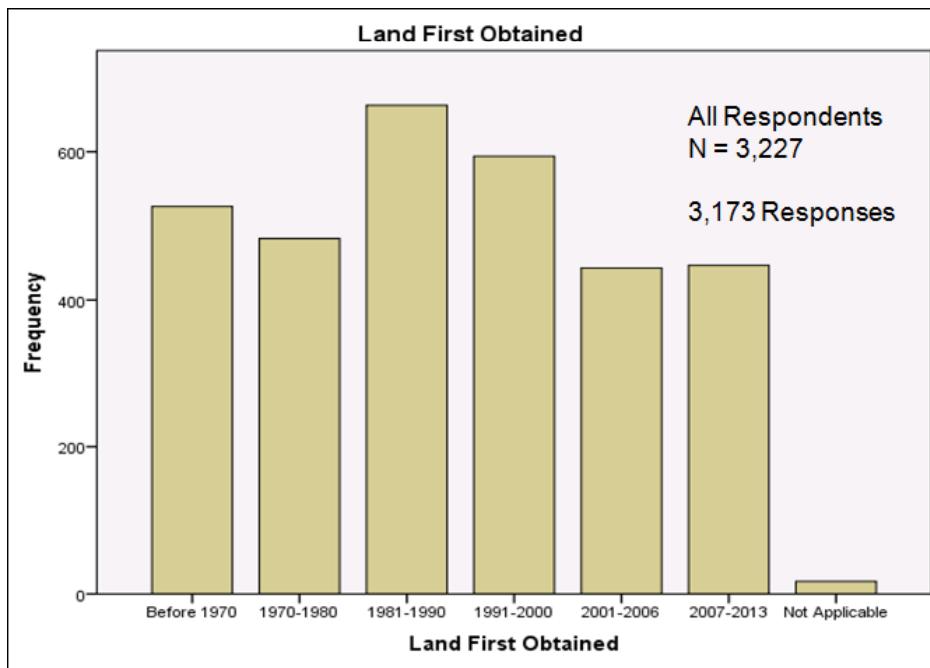




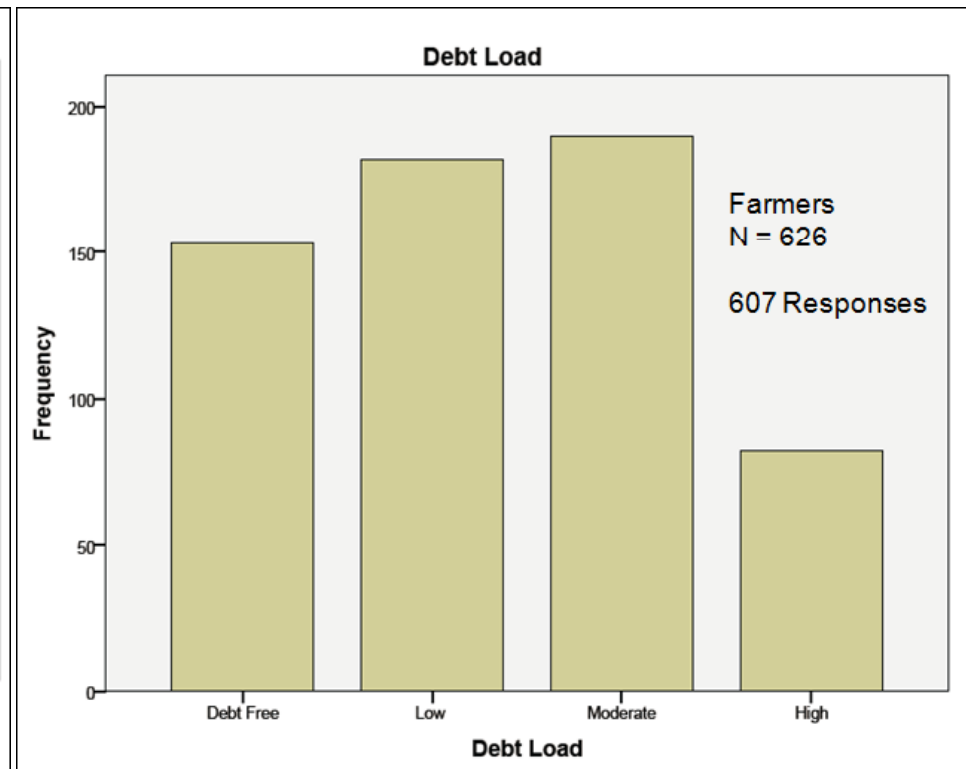
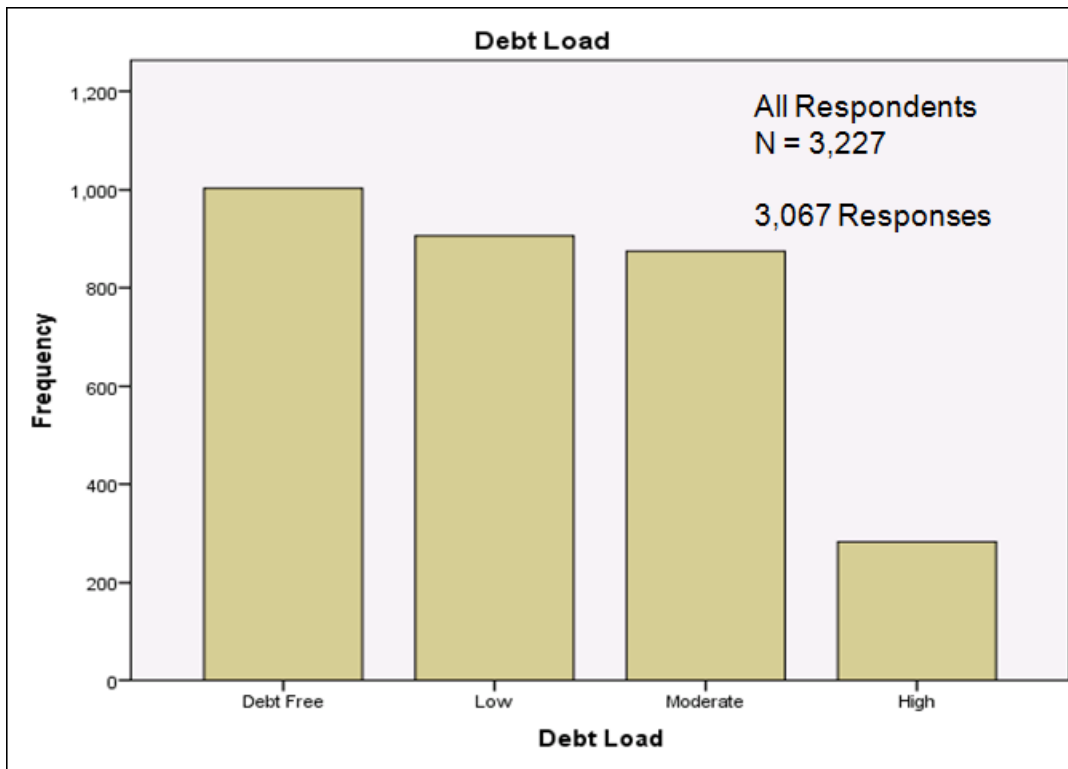
# Some Descriptive Statistics

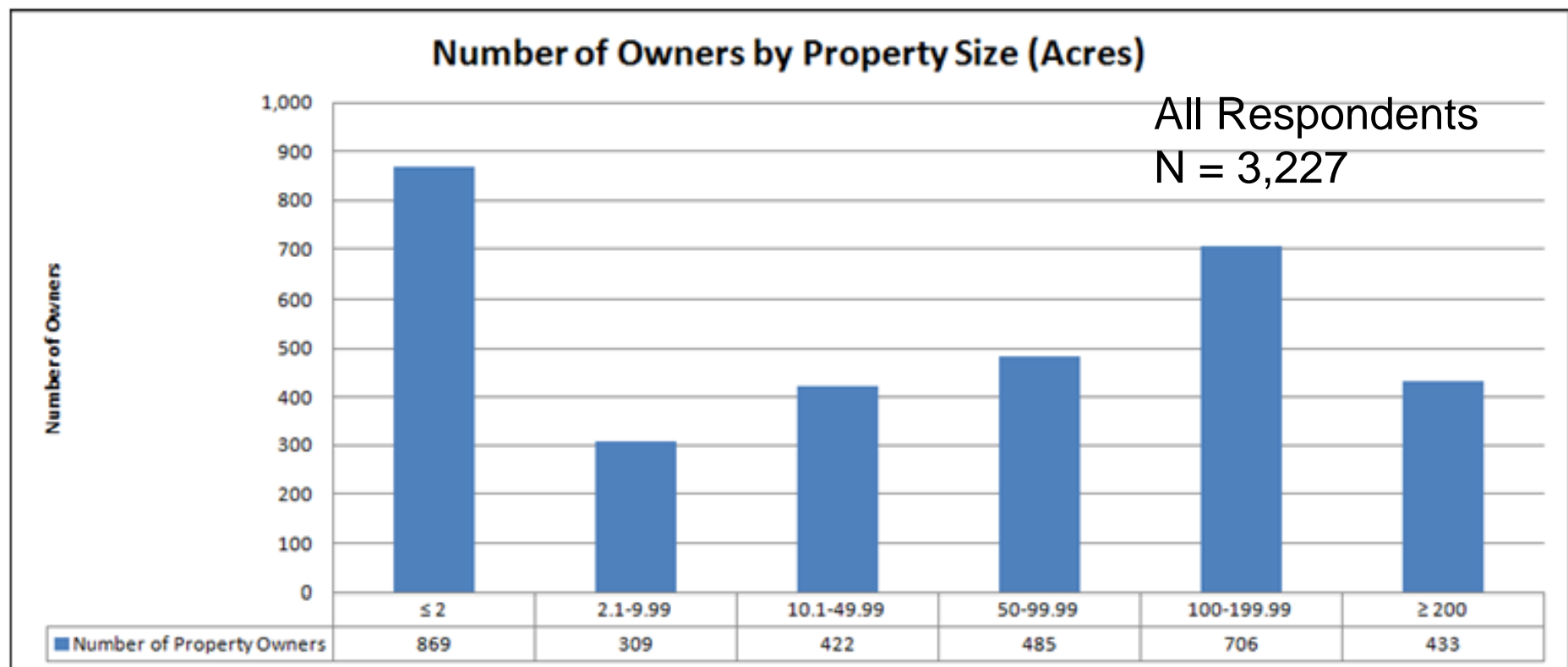


# Land First Obtained



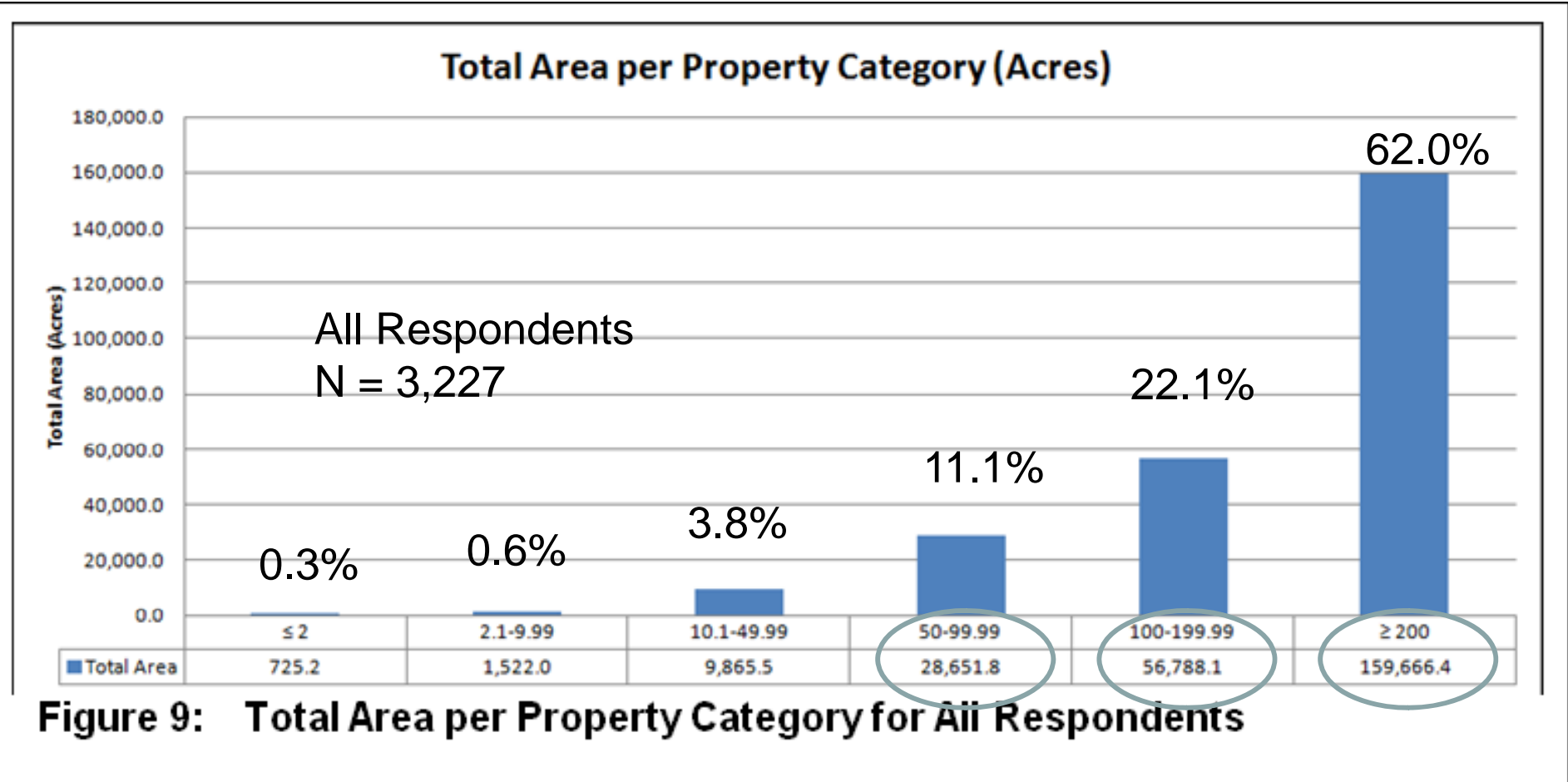
# Debt Load





**Figure 8: Total Number of Owners by Property Size for All Respondents**

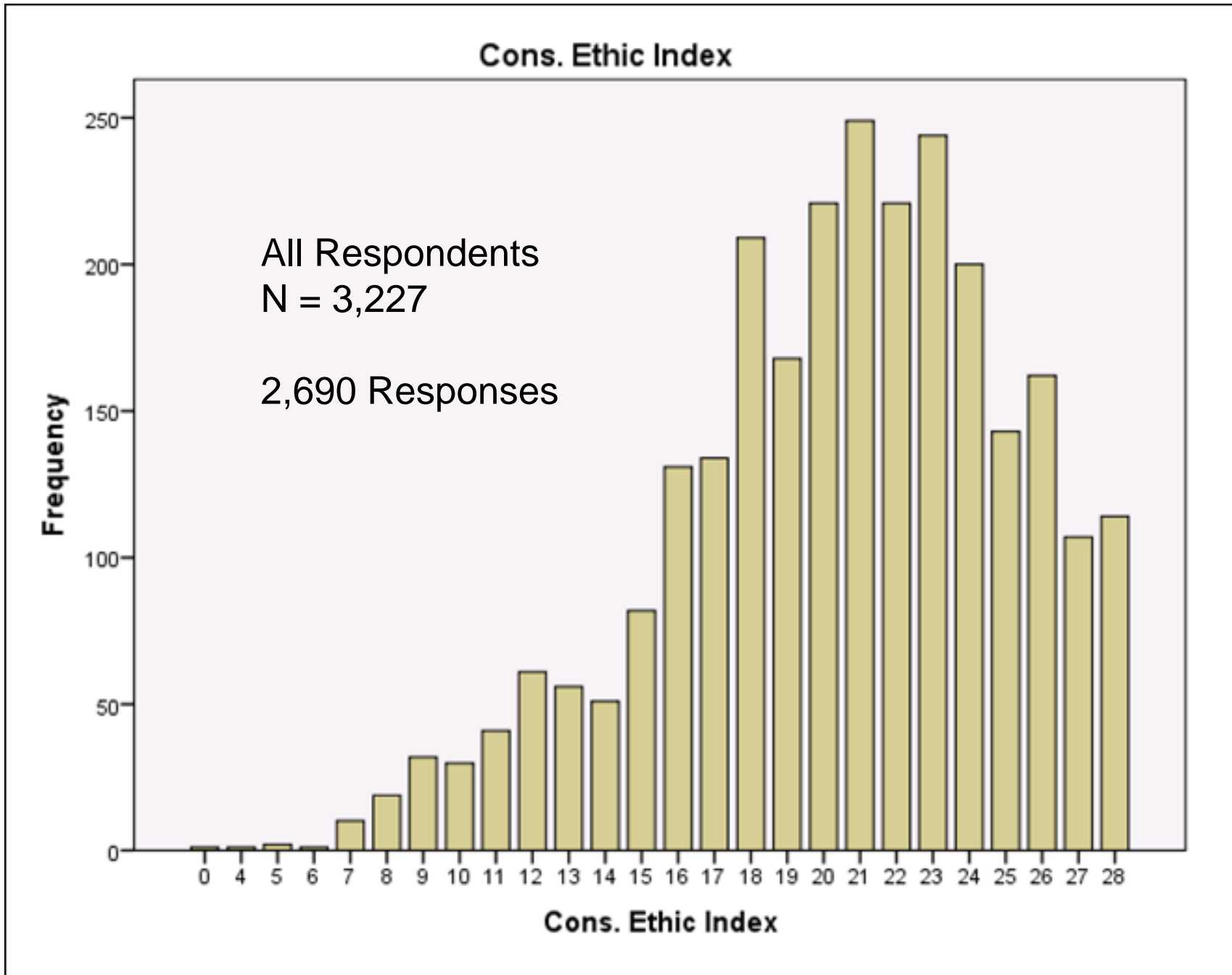
- Land represented by all survey respondents from the Grand survey represents 9.6 % of the Grand Watershed
- The total area of land represented by all survey respondents from the Upper Thames survey represents 17.5 % of the land area of the Upper Thames watershed.



- A relatively low number of people own a large area of the land represented in the survey

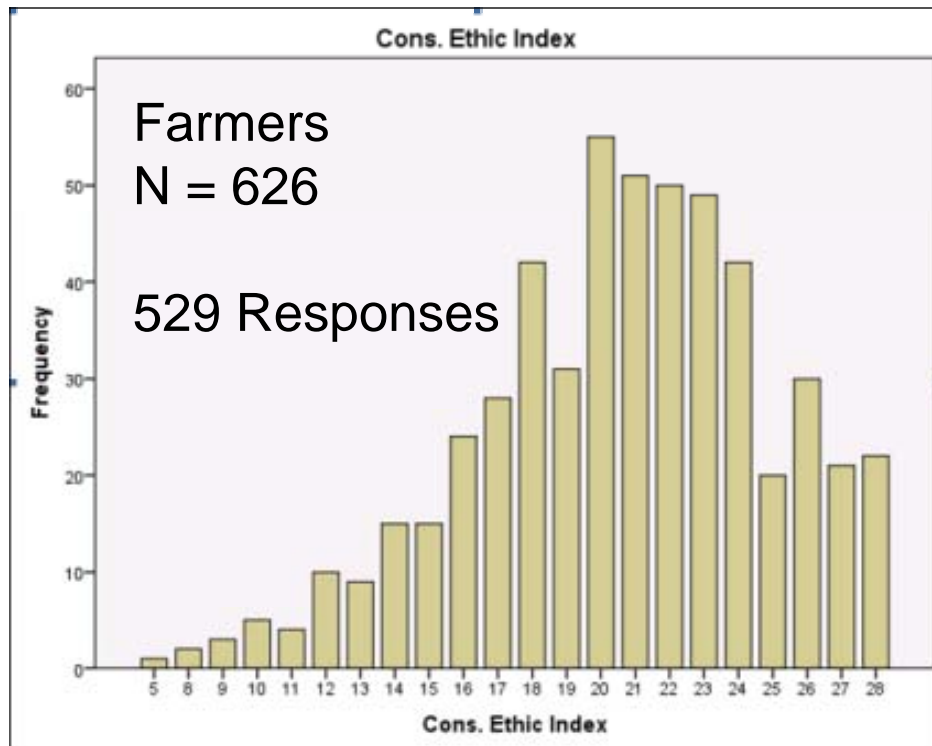
# Attitudes vs. Behaviour

- Conservation attitude determined based on a Conservation Ethic Index constructed from answers to various questions in the survey
- Conservation behaviour measured by the addition or removal of “conservation lands” from 2006 to survey implementation (April 2013)

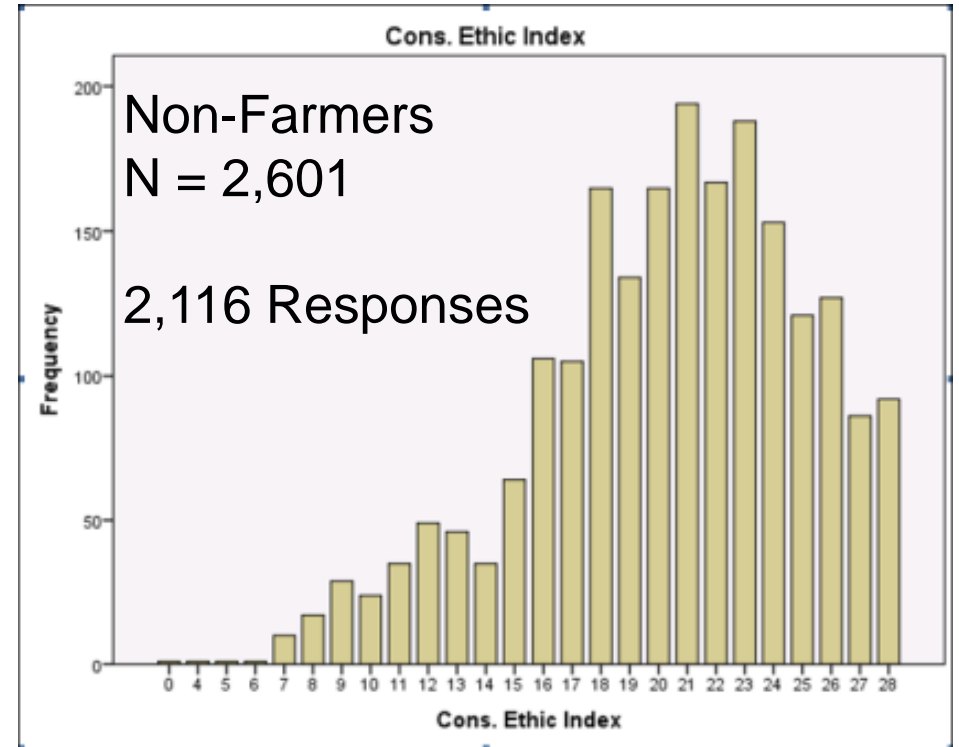


# Conservation Ethic Scores

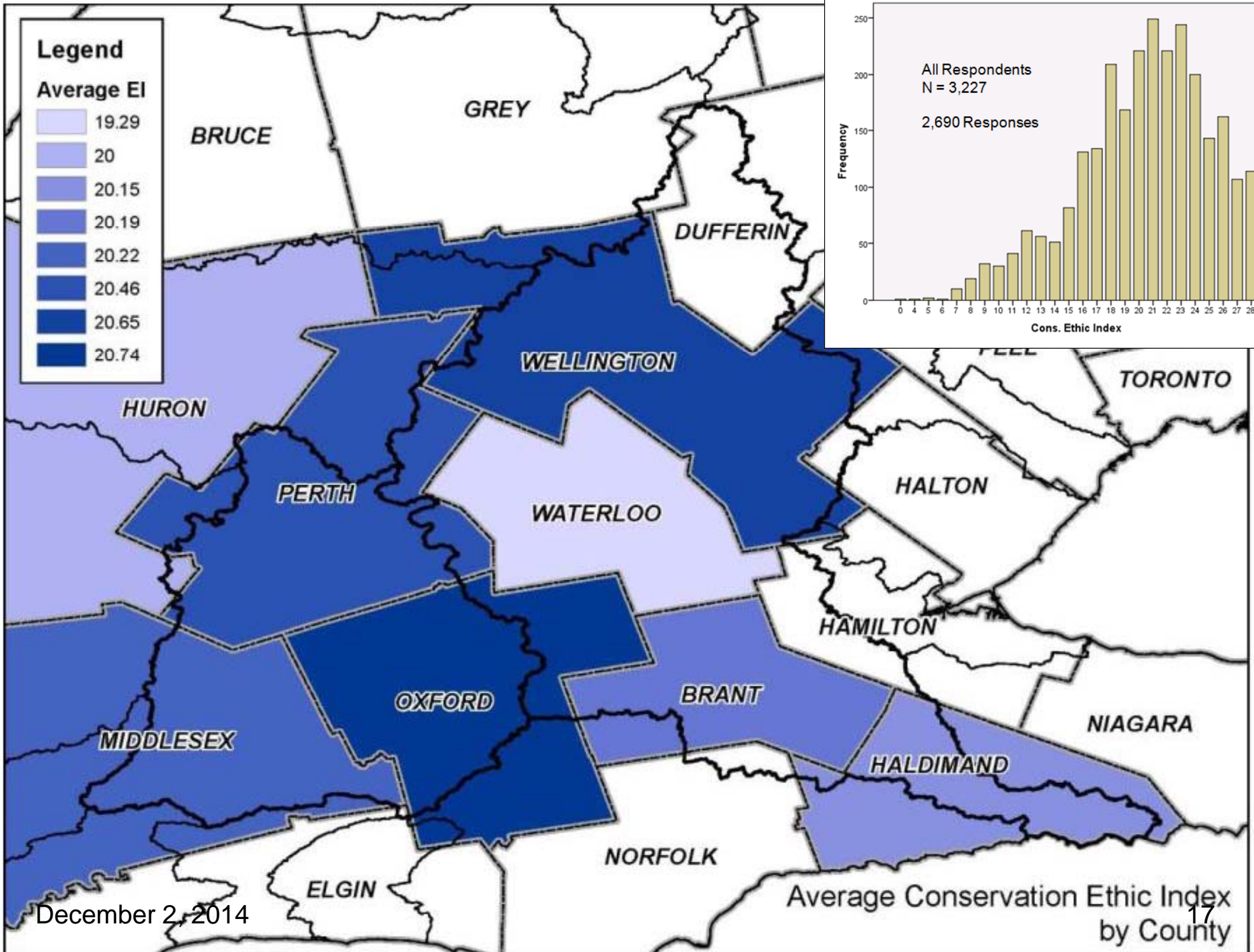
## Farmers

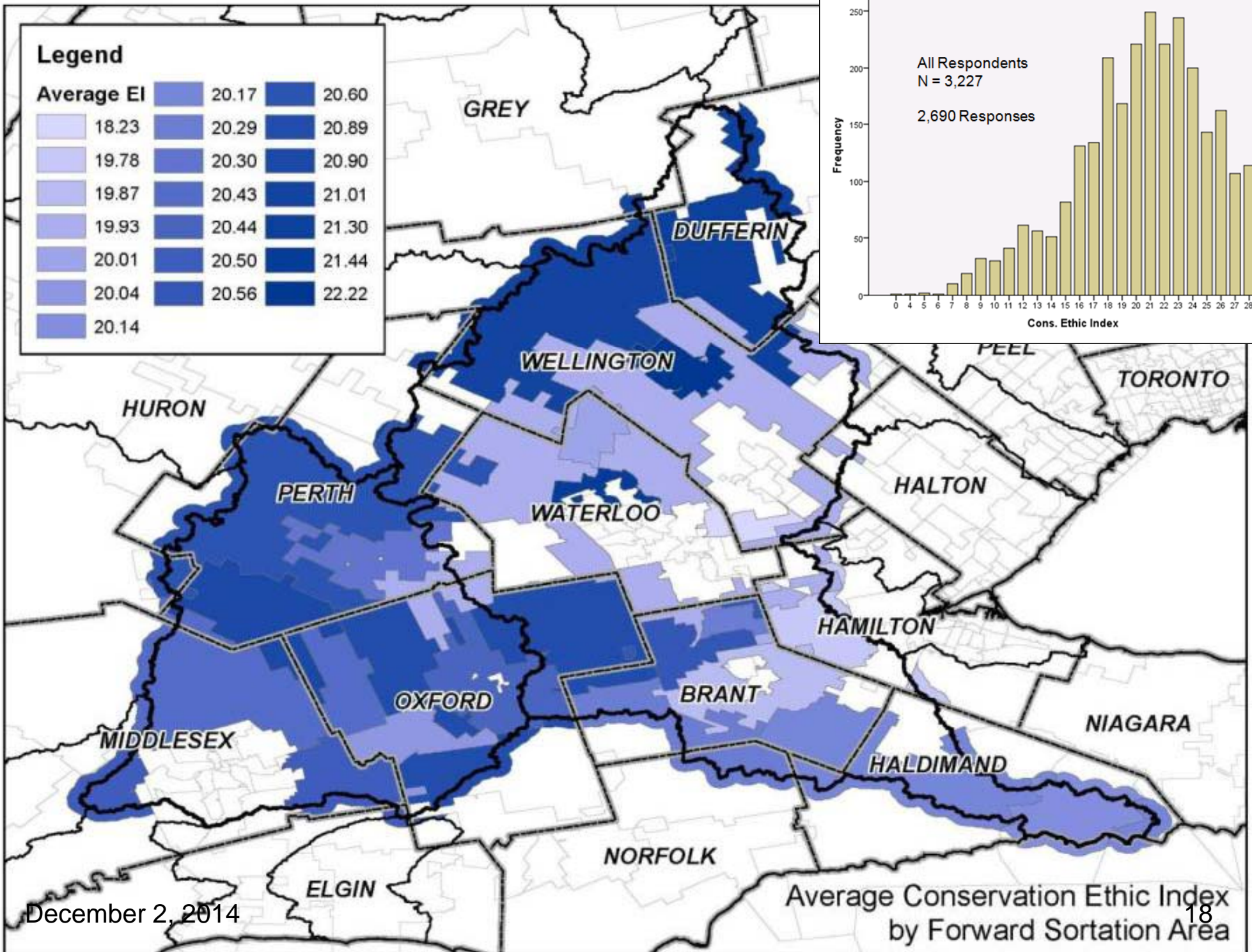


## Non-Farmers









# Findings for Farmers (Statistical)

- Farmers with larger properties tend to exhibit more conservation oriented behaviour. No relationship for conservation ethic score.
- Farmers that have owned their land for a longer period of time exhibit more conservation oriented behaviour and have higher conservation ethic index scores.

# Findings for Farmers (Continued)

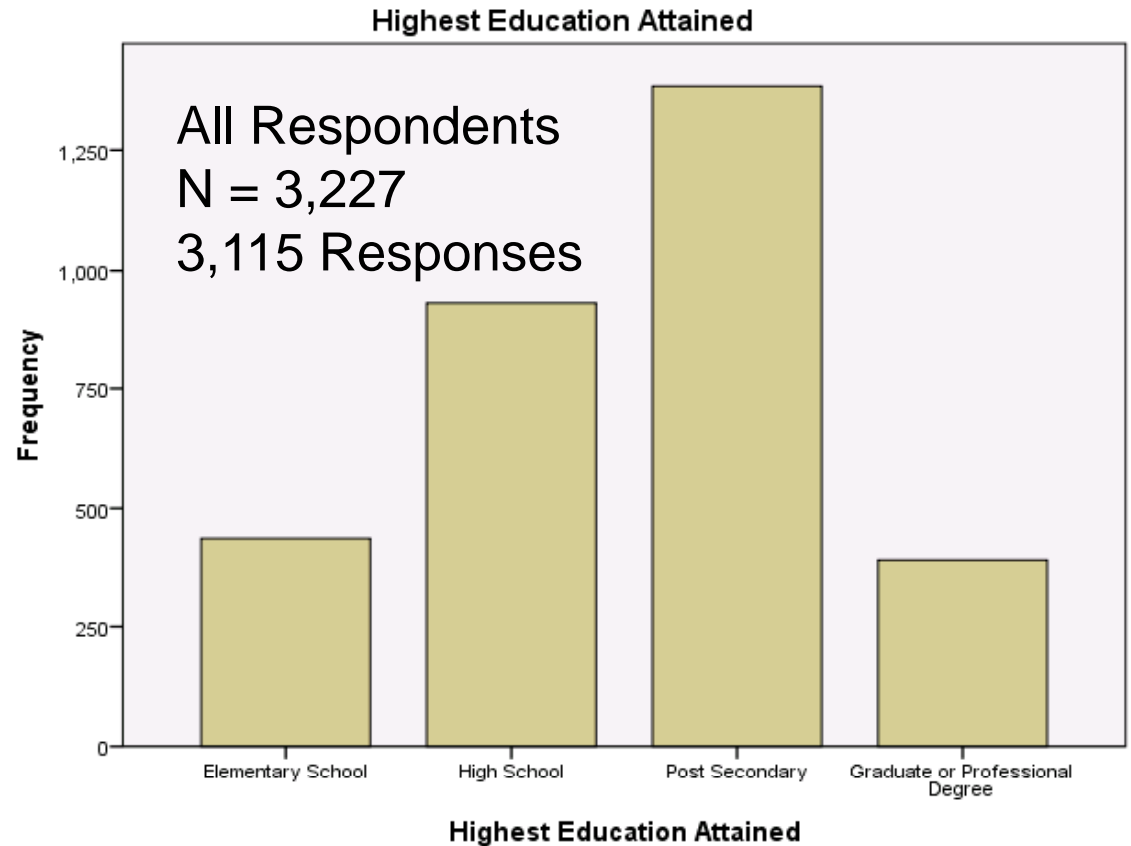
- Farmers with higher debt loads tend to have lower conservation ethic scores (slightly lower standard)
- Older farmers exhibit more conservation oriented behaviour than younger farmers (slightly lower standard)

# Findings for Farmers (Continued)

- Weak relationship (lower standard) between highest education attained and conservation attitude
- No relationship between household income and conservation behaviour or conservation attitude
- No relationship between reliance on farm income and conservation behaviour or conservation attitude

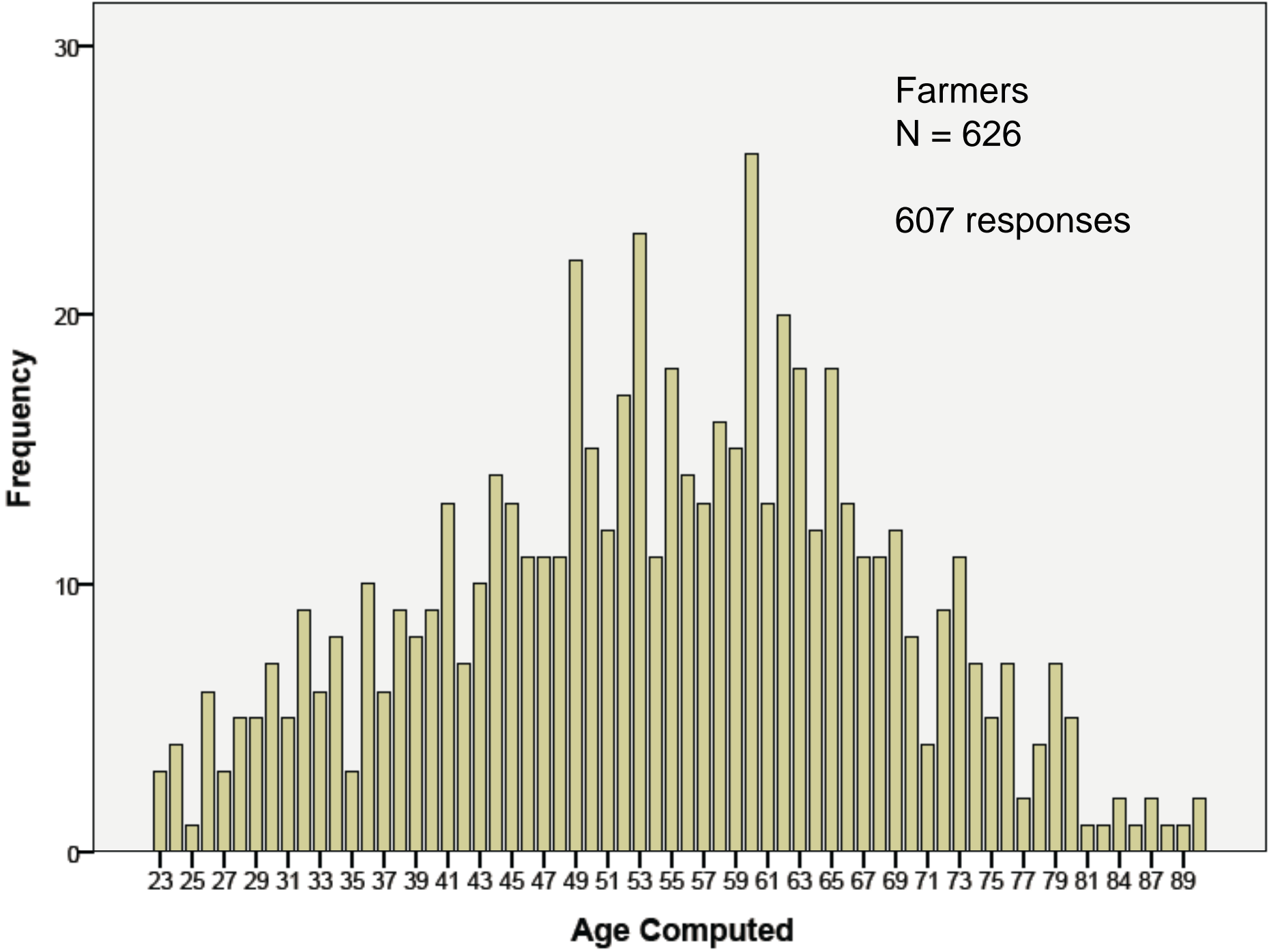
# Age and Education (Descriptive)

- Farmers under 40 years old report a lower level of education attained than farmers 40 – 59 years old and farmers 60 years and older.



Education level for all respondents

# Age Computed



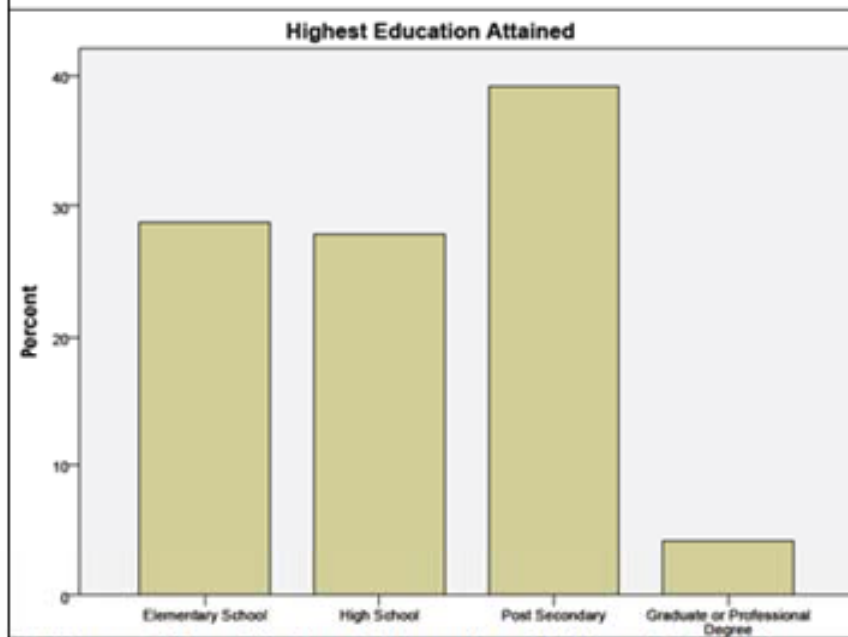


Figure 13: Highest Education Attained For All Farm Respondents

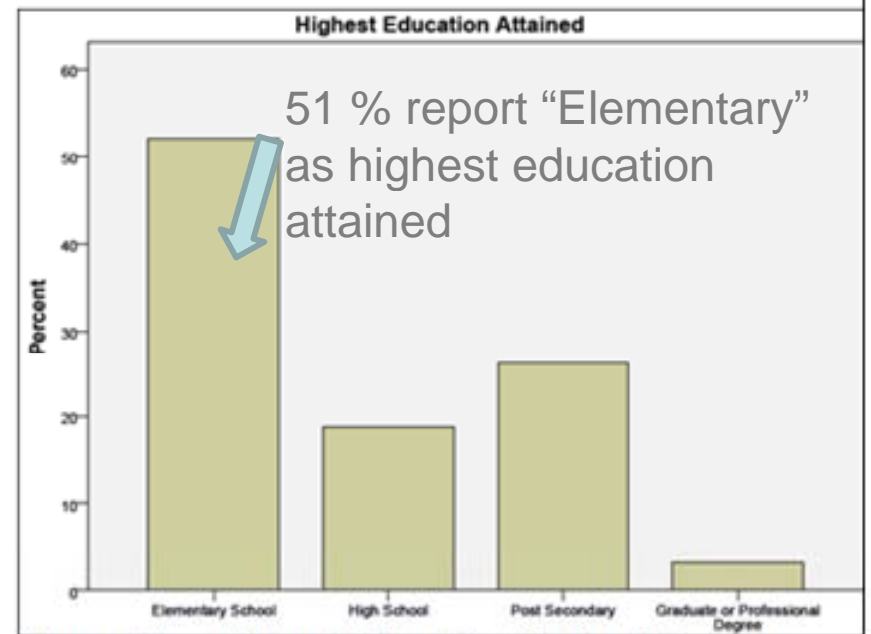


Figure 14: Highest Education Attained For Farm Respondents Less Than 40 Yrs (N = 96)

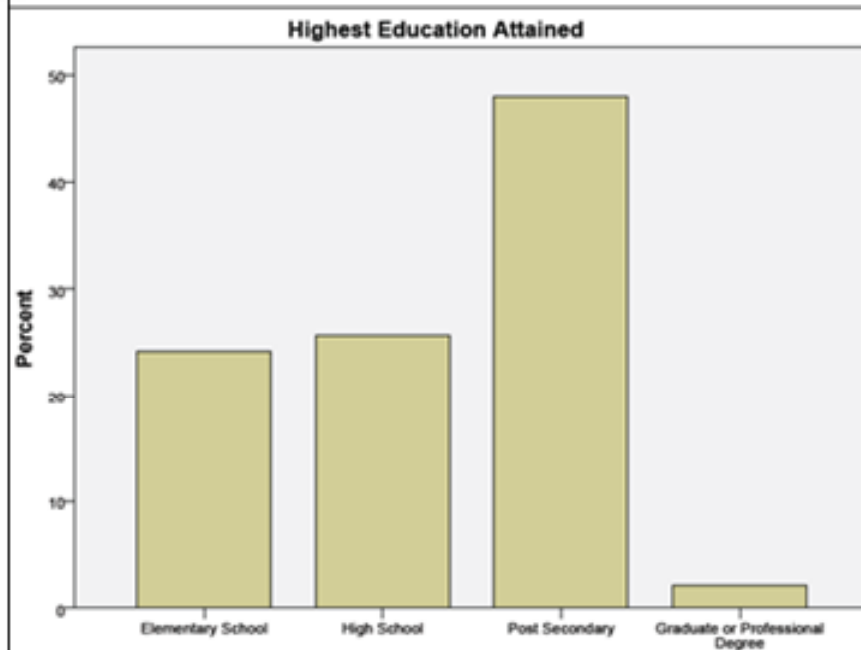


Figure 16: Highest Education Attained For Farm Respondents 40 – 59 Yrs (N= 273)

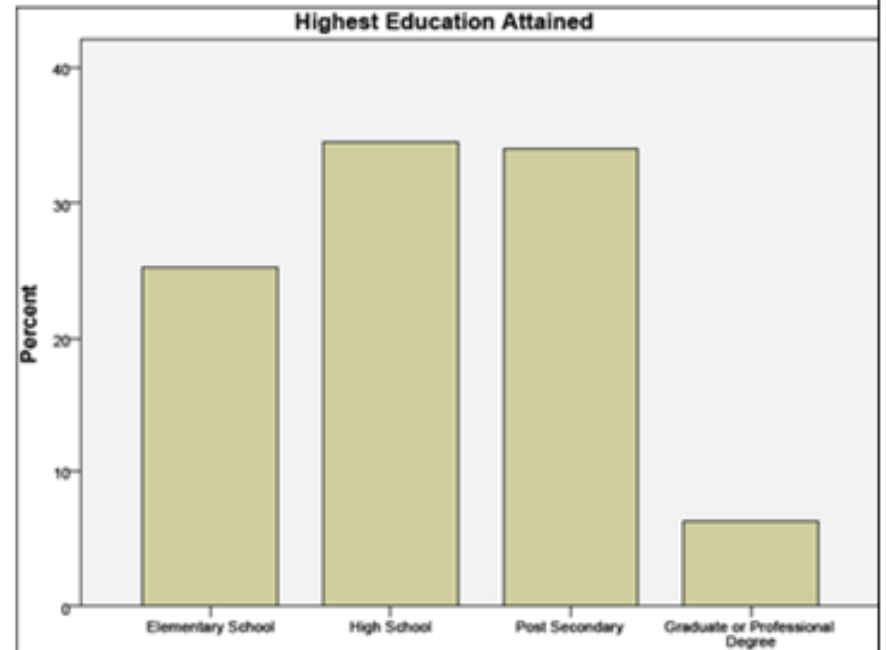
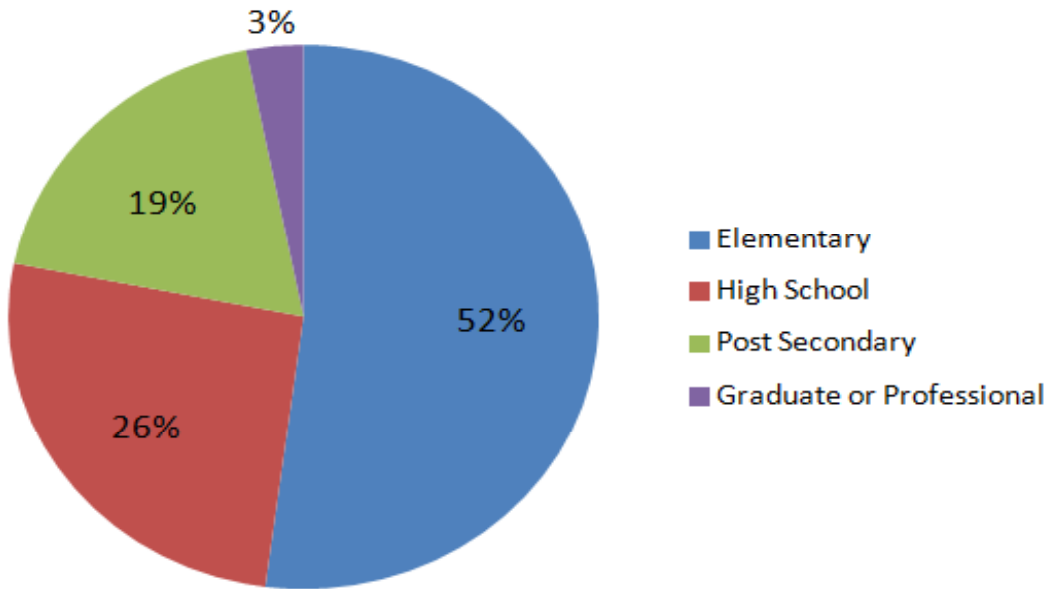


Figure 16: Highest Education Attained For Farm Respondents 60 + Yrs Old (N = 206)

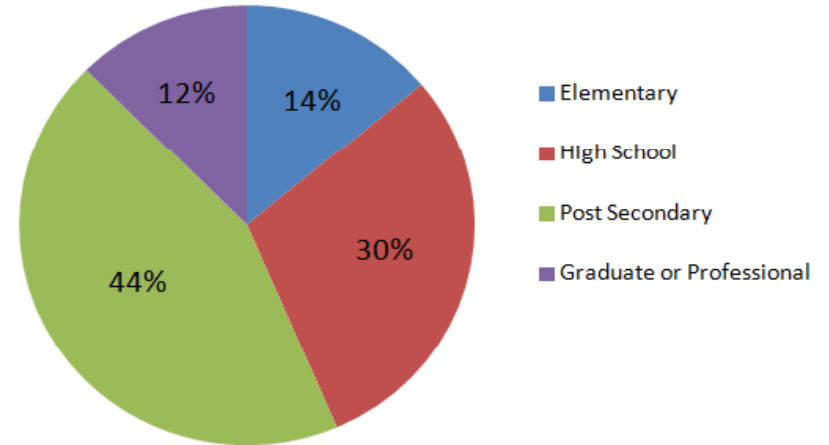


# Formal Education

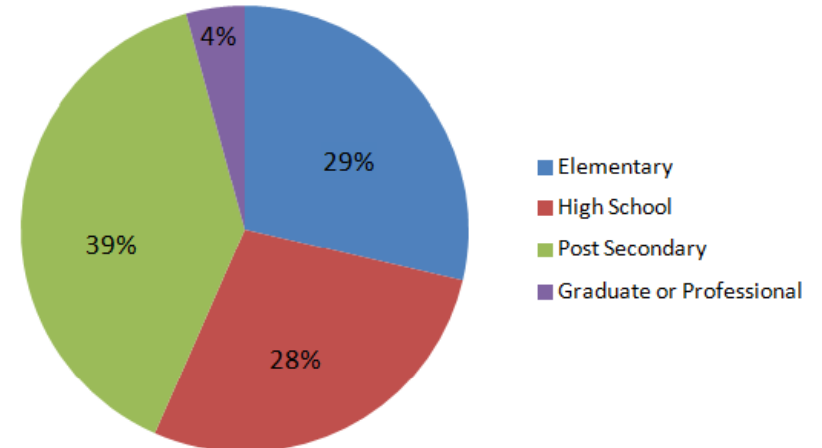
**Highest Education Achieved for Farm Respondents Under 40 Years Old (n=96)**



**Highest Education Achieved for All Survey Respondents (n=3,145)**



**Highest Education Achieved for All Farm Respondents (n=617)**



December 2, 2014

# Secondary Analysis

(Kirsten Grant, OMAF / U of G)

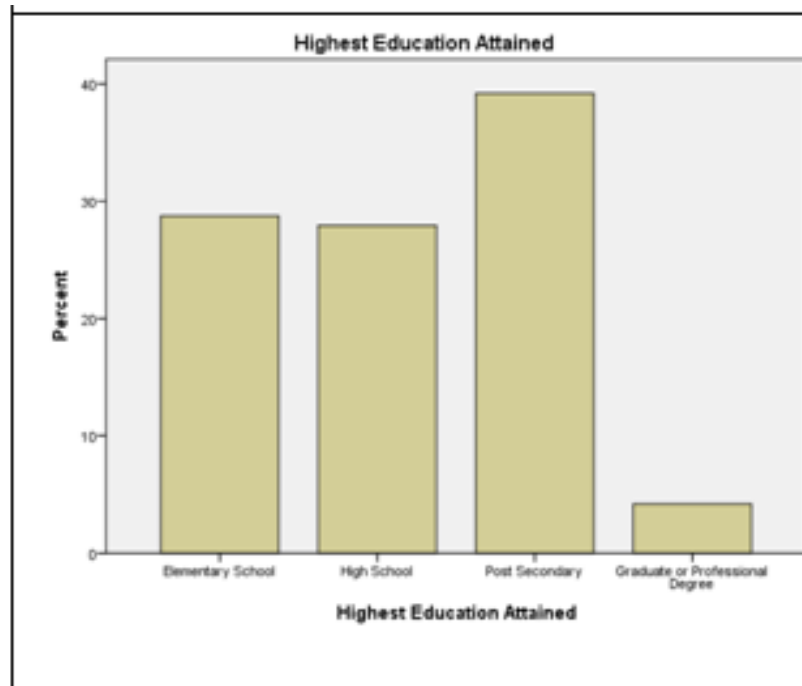


Figure 9: Highest education attained for all large scale farmers (N=620).

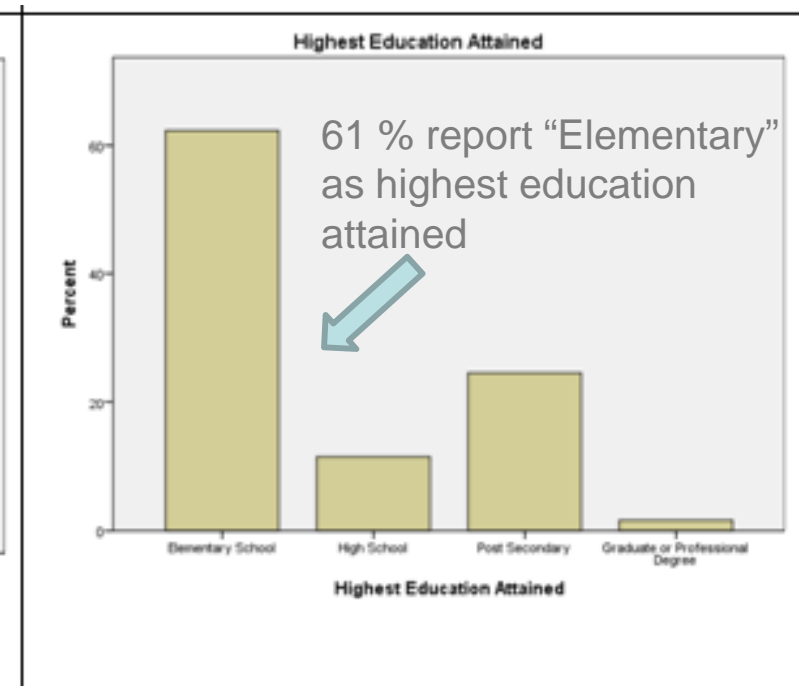


Figure 10: Highest education attained for large scale farmers less than 35 years of age (N=61).

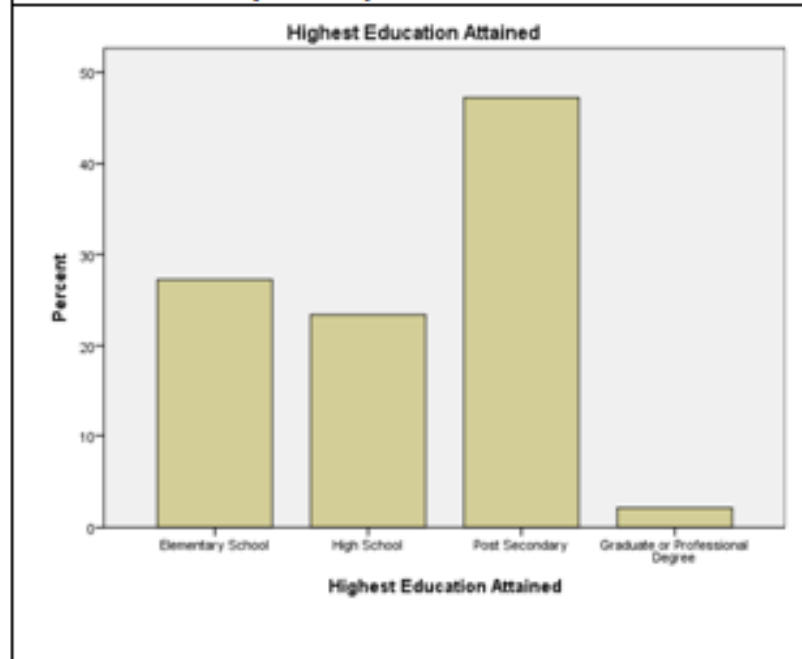


Figure 11: Highest education attained for large scale farmers between 35 and 55 years of age (N=235).

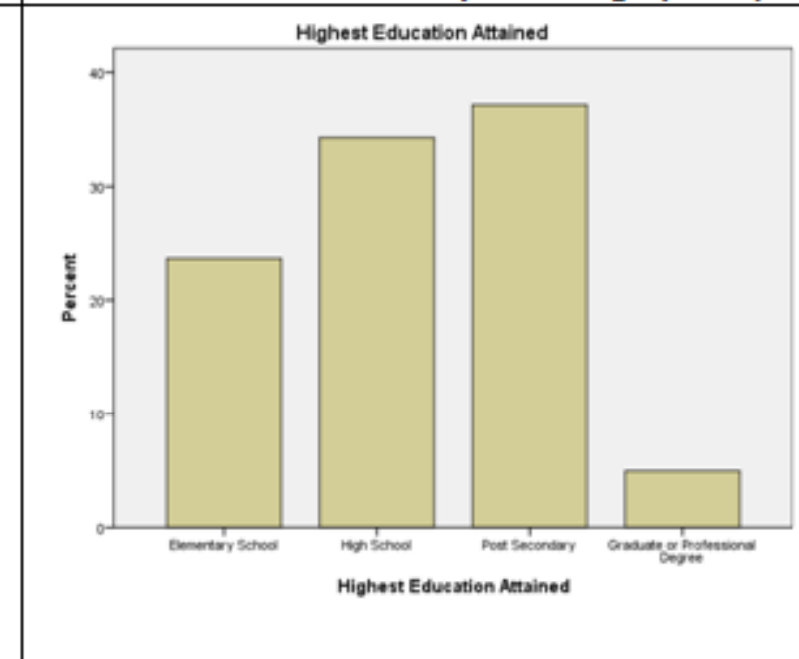


Figure 12: Highest education attained for large scale farmers over 55 years of age (N=385).

# What does it all mean??

- Perhaps should put more effort into targeting large property owners for our conservation services.
- Modify services to appeal to younger operators
- Distribution of ethic index scores provides some indication on where we might want to focus marketing/promotion efforts

# New Questions!

- Why are younger farmers less conservation oriented?
- Why are younger farmers not pursuing formal education?
- Is the shifting economics of agriculture having a greater impact on the conservation behaviour and attitudes of younger farmers?
- What does this mean for program uptake?

# Limitations and Cautions

- Non-response bias
  - 82 % non-response rate
  - More likely to hear from “conservation oriented” people
  - Removal of conservation lands likely under reported
- Net change in conservation lands is only one measure of conservation behaviour - did not explore conservation tillage.

# Limitations and Cautions

- Snapshot in time
  - Commodity prices have retreated
  - Land prices remain high
- Net change in conservation lands is only one measure of conservation behaviour. For example, did not explore conservation tillage.

# Next Steps – COA Project

- Anticipated tasks:
  - Separate data (Upper Thames from Grand)
  - Prepare additional descriptive statistics and compare to other data sources (non-response)
  - Additional statistical analysis (non-farm, examine different landowner categories)
  - Secondary research (ie. focus groups)
  - Integrate with Choice Experiment results
  - Make the “implementation connection”
  - Reports, Publication and Promotion

# Acknowledgements



Contact Info:

Jeff Brick, UTRCA

[brickj@thamesriver.on.ca](mailto:brickj@thamesriver.on.ca)





# Extra Slides

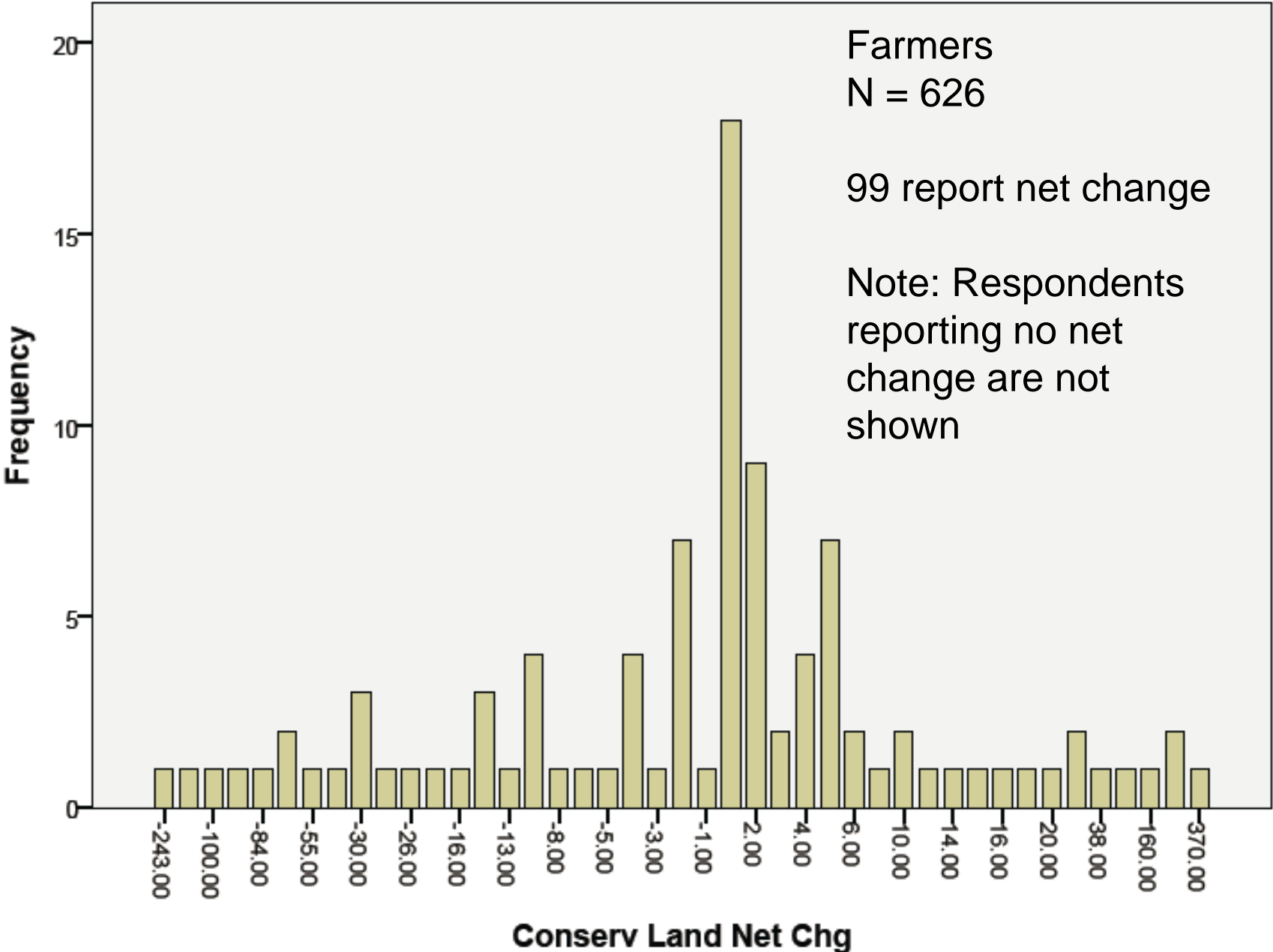
- For reference if there are questions

### Conserv Land Net Chg

Farmers  
N = 626

99 report net change

Note: Respondents reporting no net change are not shown



## Section 2: Your Land Management

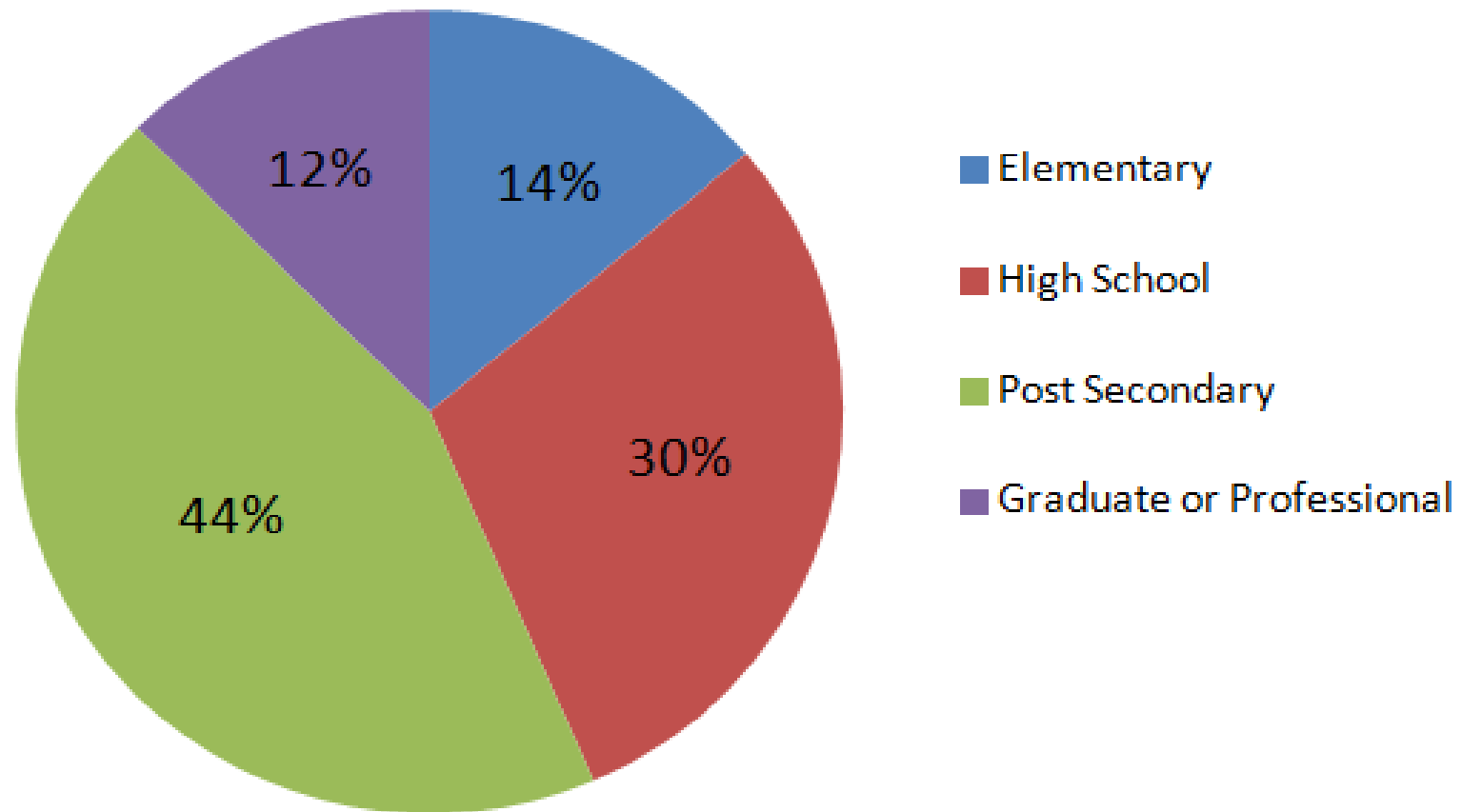
- 10.** How many acres of your land are currently left untilled or dedicated to other land cover types, and how have these areas changed since 2006?

*Please indicate your answers using the spaces provided below. For any specific land cover type that does not apply to your situation, please leave the associated space blank.*

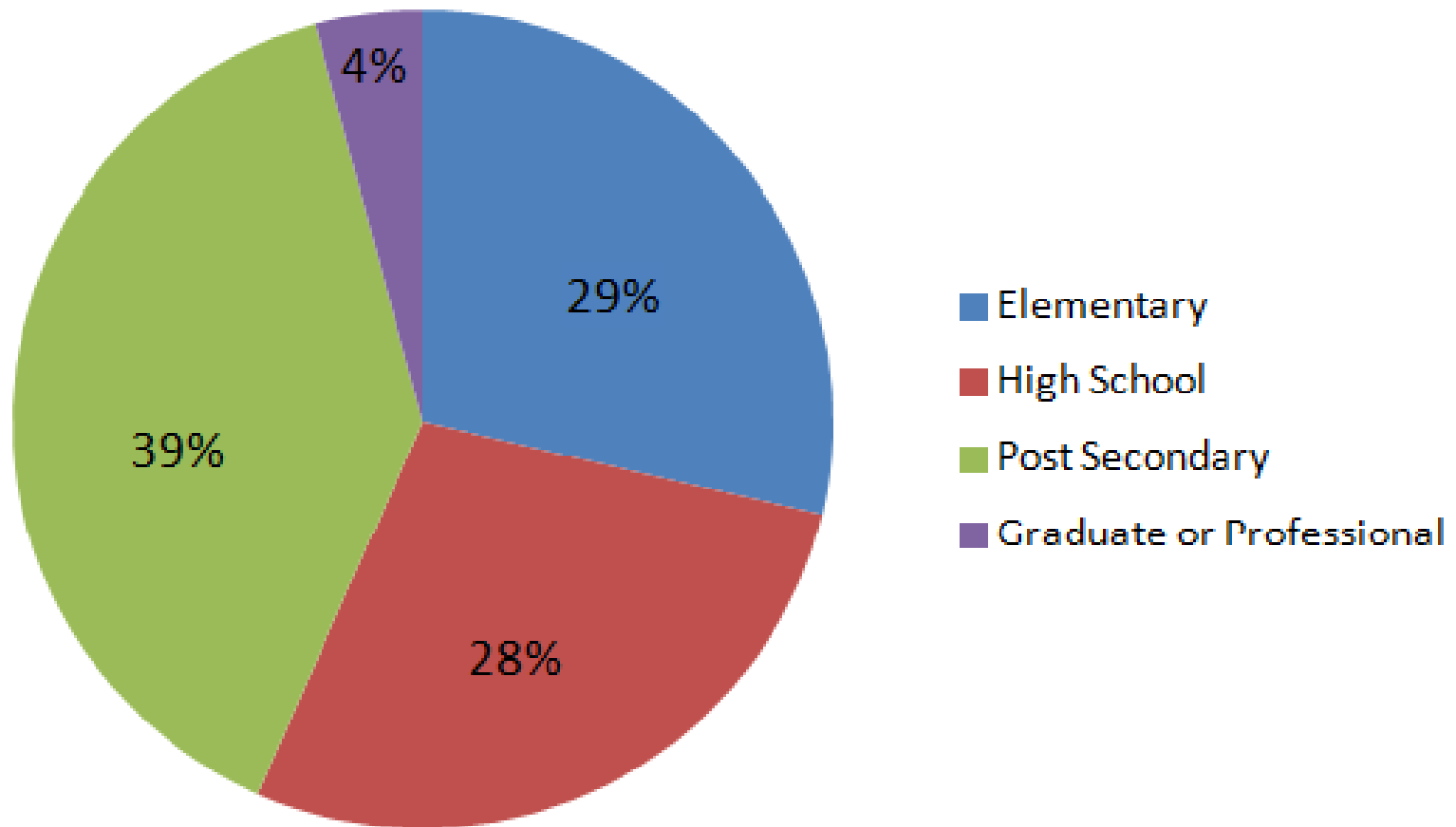
<u>Land cover type</u>	<u># of acres now</u>	<u>Change since 2006</u>	
		<u>Increase (acres)</u>	<u>Decrease (acres)</u>
Land left untilled	_____	_____	_____
Fence line	_____	_____	_____
Wind break	_____	_____	_____
Trees	_____	_____	_____
Shrub land meadow	_____	_____	_____
Ditch	_____	_____	_____
Wet area / Wetland	_____	_____	_____
Other conservation measure: _____	_____	_____	_____

<b>Table 8: Information Used to Construct Conservation Ethic Index</b>						
		<b>Value Applied</b>				
<b>Q #</b>	<b>Content of Question</b>	<b>Response</b>				
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>7</b>	People own land for many different reasons. How important are each of the following reasons to you?					
7- <sup>5</sup>	For recreation (hunting, fishing, walking etc.)	4	3	2	1	0
7- <sup>7</sup>	For the sake of our future generations	4	3	2	1	0
7- <sup>8</sup>	To preserve ecosystems	8	6	4	2	0
<b>13</b>	As a landowner, I have the responsibility to:					
13- <sup>1</sup>	Be a good steward of my land and to maintain it in good condition for future generations	4	3	2	1	0
13- <sup>2</sup>	Leave the land in a better condition than when I acquired it	4	3	2	1	0
13- <sup>3</sup>	Take into account the values of society at large when making decisions about my land	4	3	2	1	0
<b>Responses for Question 7</b>		<b>Responses for Question 13</b>				
1. Very Important 2. Important 3. Neither Important or Unimportant 4. Of Little Important 5. Un-important		1. Strongly agree 2. Agree 3. Neither agree or disagree 4. Disagree 5. Strongly Disagree				

## Highest Education Achieved for All Survey Respondents (n=3,145)



## Highest Education Achieved for All Farm Respondents (n=617)



## Highest Education Achieved for Farm Respondents Under 40 Years Old (n=96)

