

Michigan's Non-Industrial Private Forestland Owners

Karen Potter-Witter
Professor
Department of Forestry

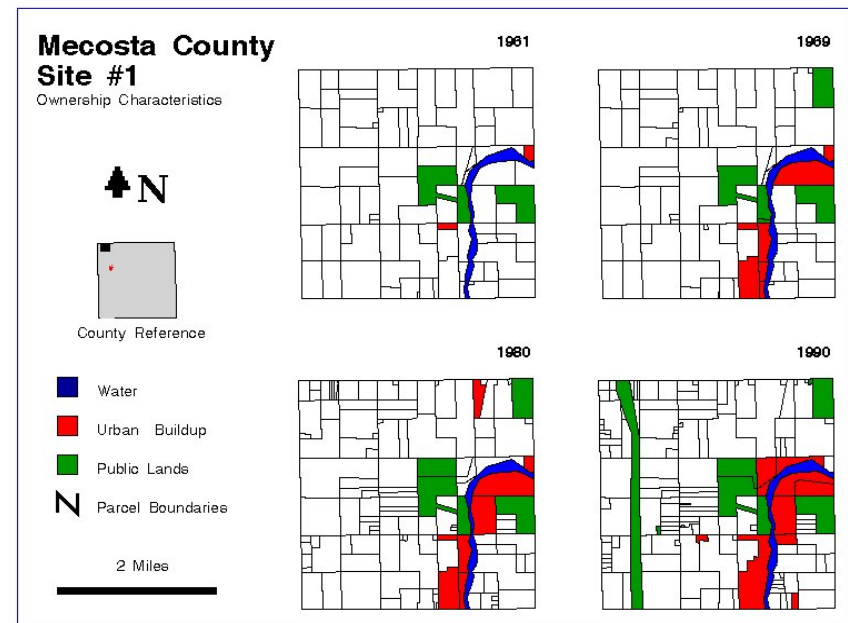


Who are Michigan's NIPF owners?

What are their characteristics? Their attitudes?

What are the characteristics of their forests?

What is the relationship between these and their management behavior?



Vasievich et al.

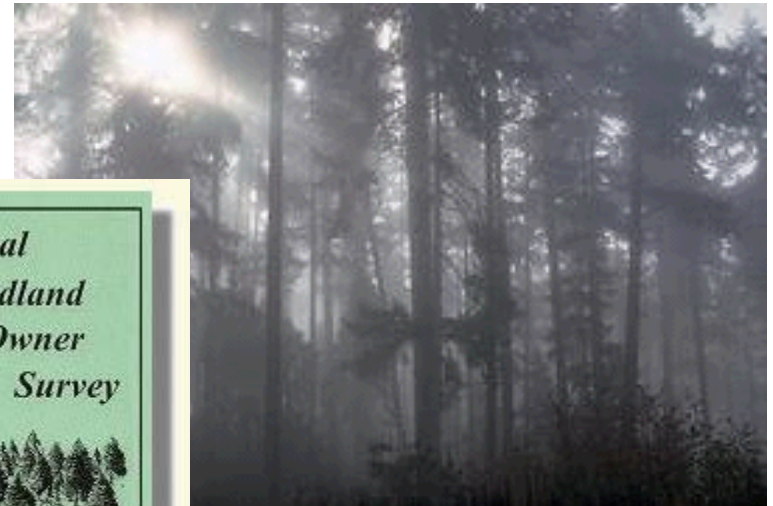
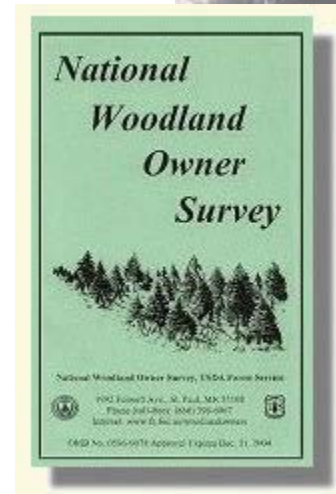
Who are Michigan's NIPF Owners?

National Woodland Owner Survey:

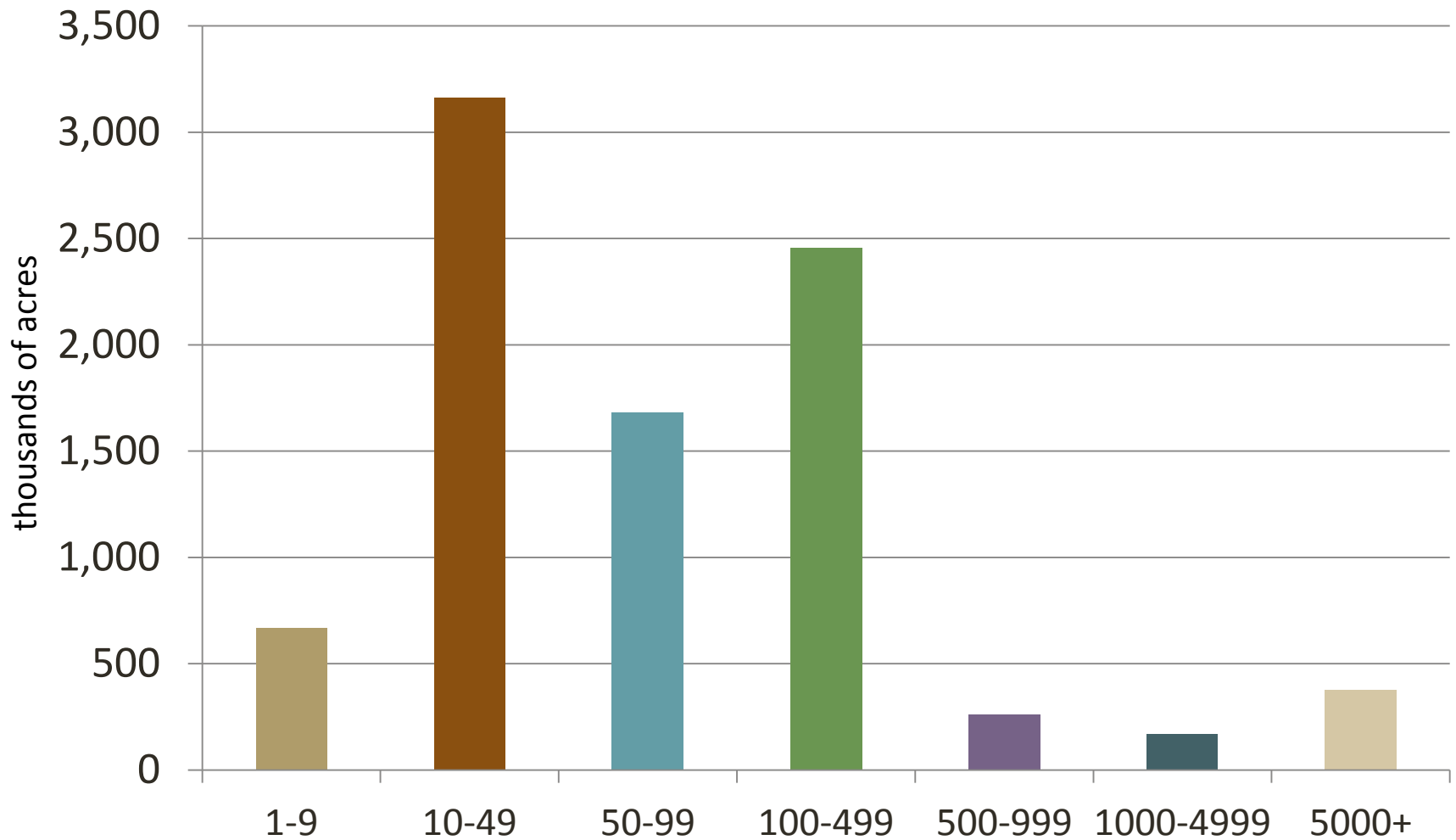
- Family Forests: families, individuals, trusts, estates, family partnerships, and other unincorporated groups of individuals that own forest land.
- Where forest land is defined as land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated.
- The minimum area for classification of forest land is 1 acre.

Who are Michigan's NIPF Owners?

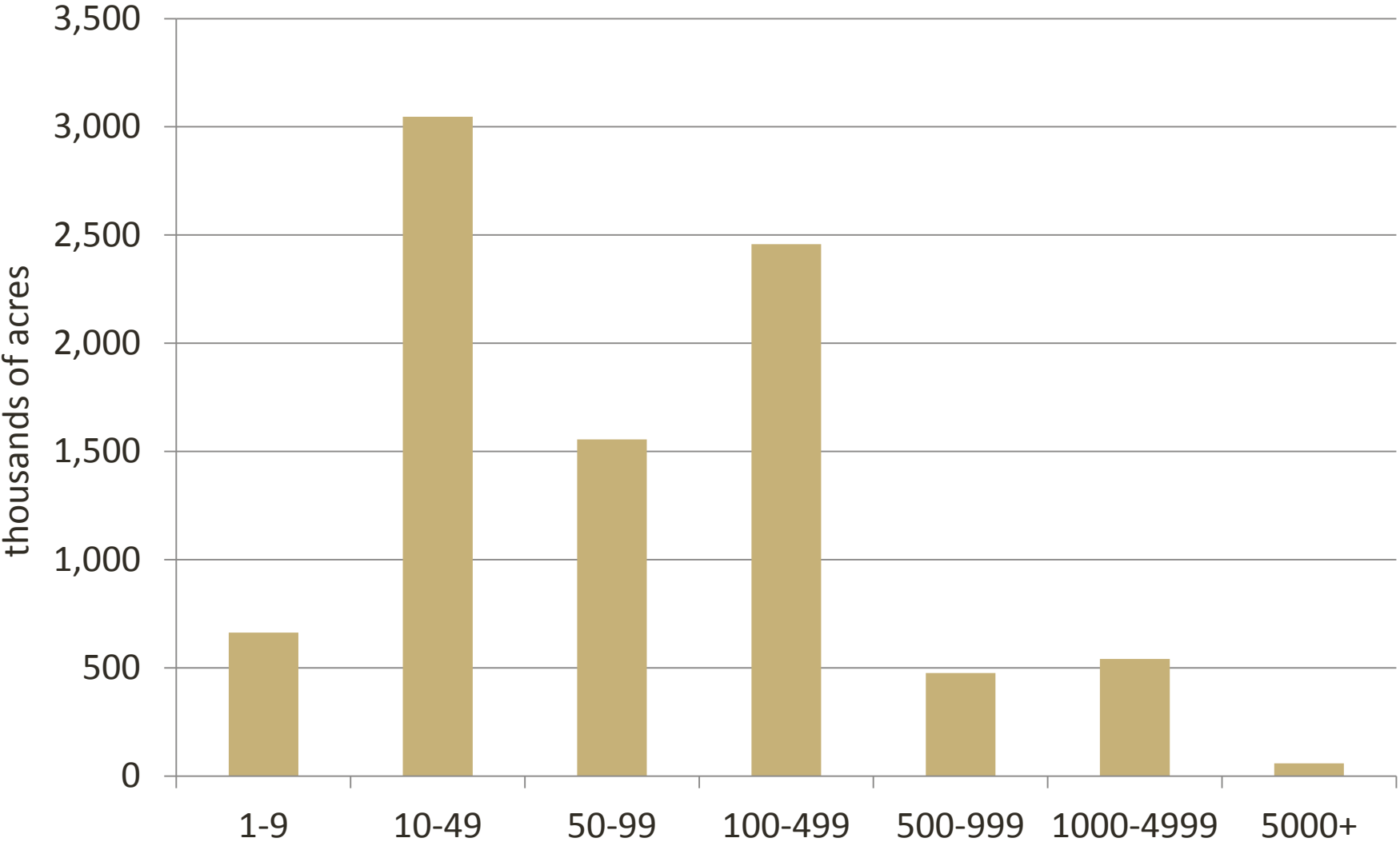
- 424,000 Michigan NIPF owners
- Own 54% (8.8 million acres of forest)
- 10- 49 acre class has the most acreage



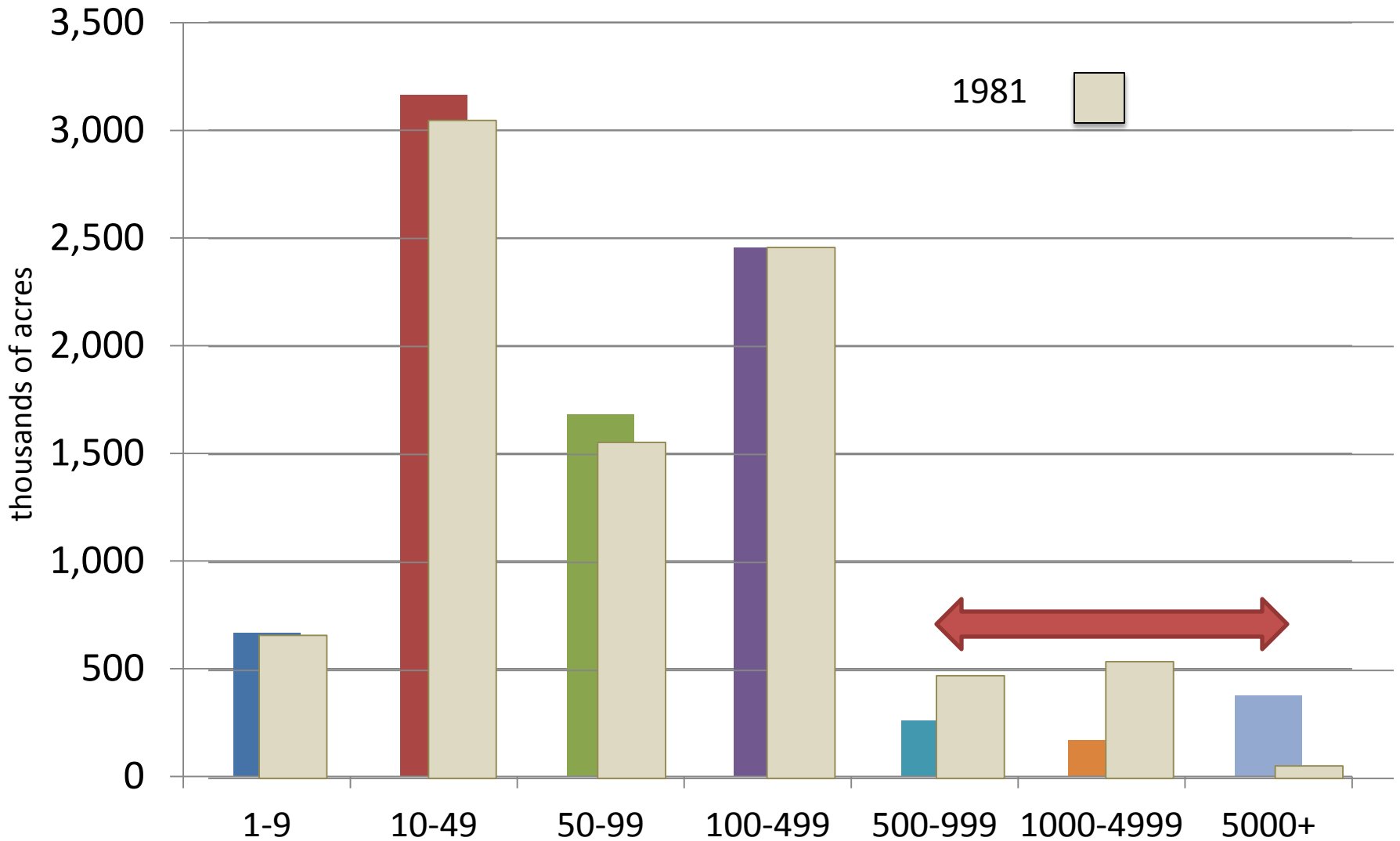
Michigan family forests by size class, 2004-2006



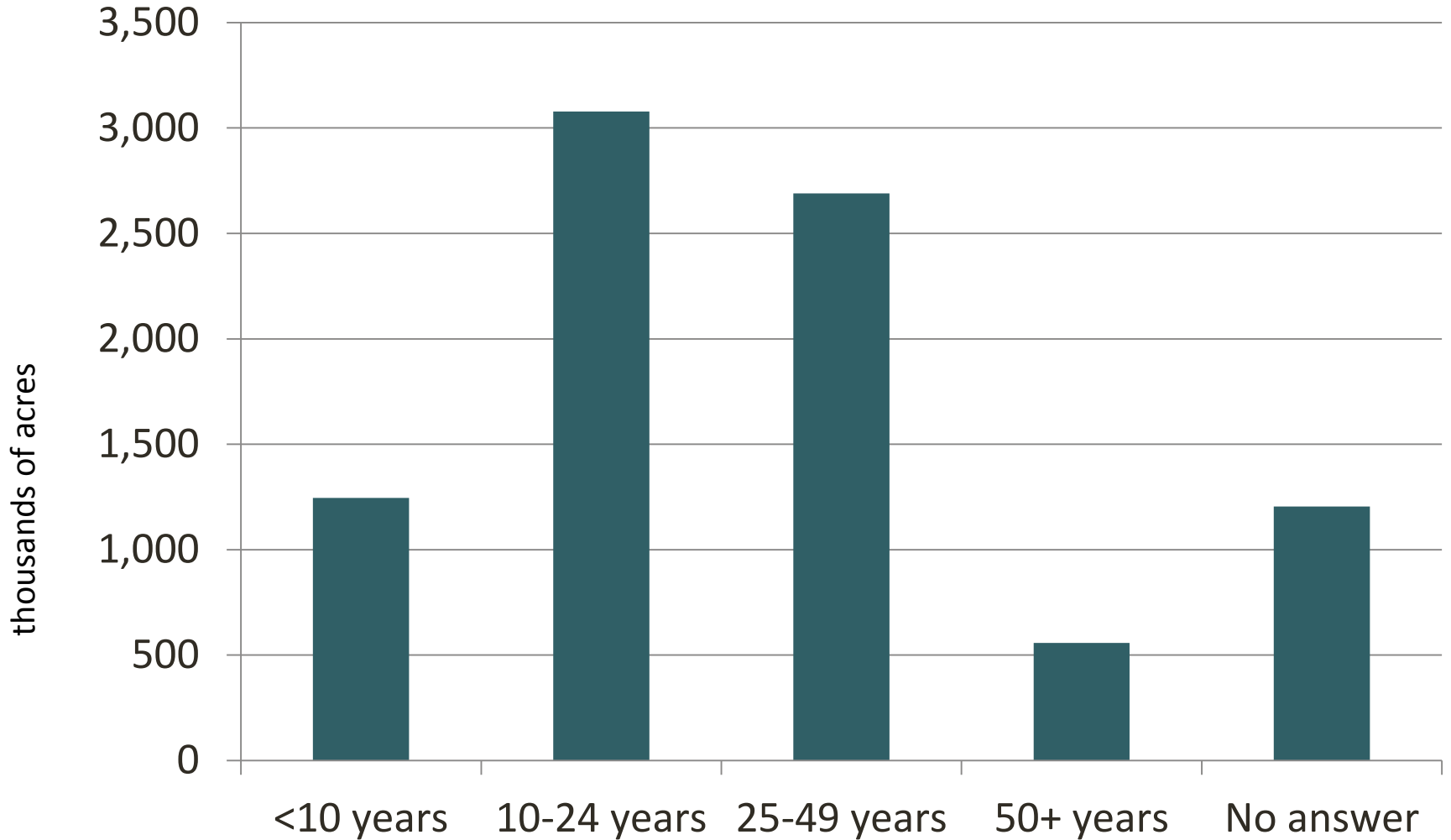
Michigan family forests by size class, 1981



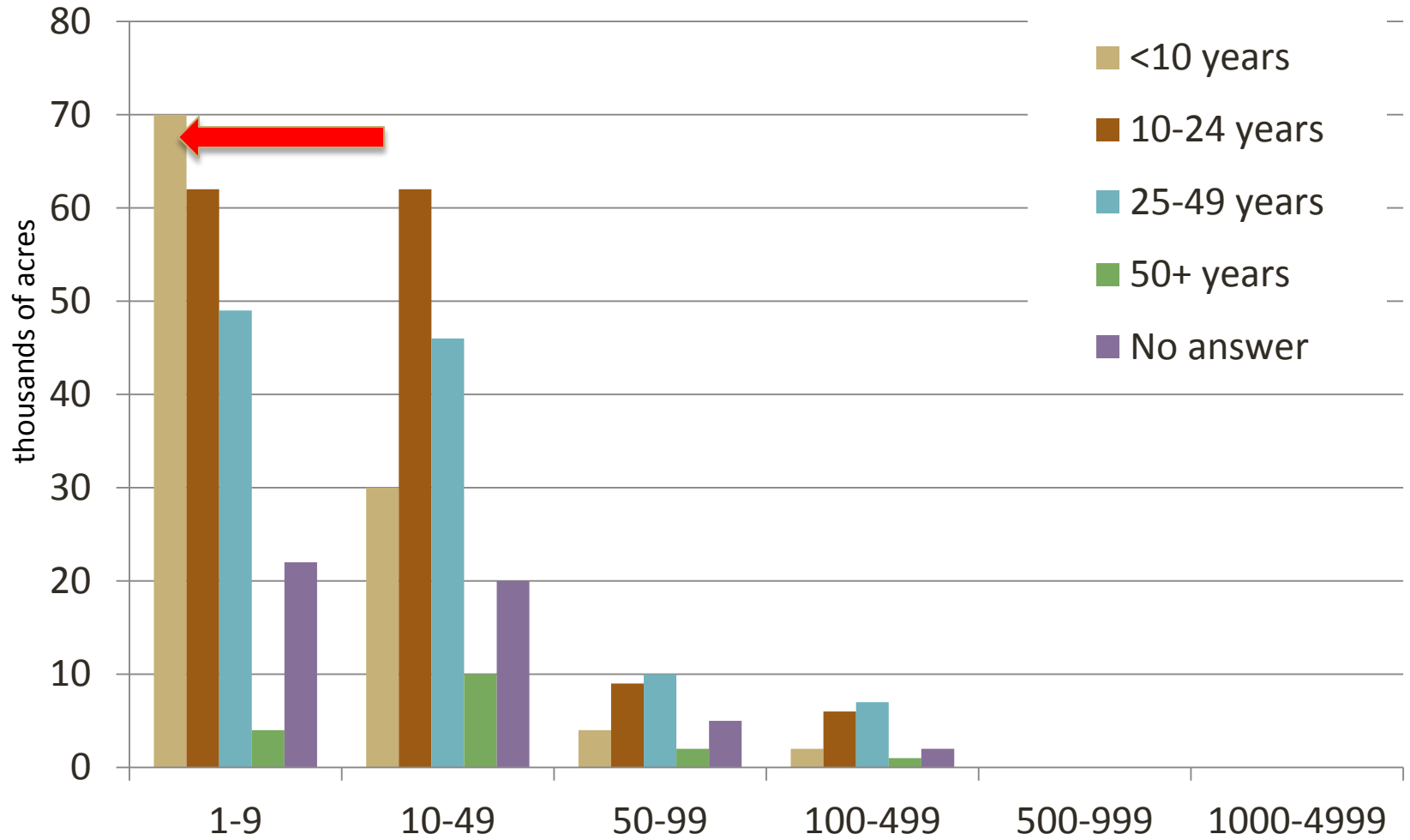
Michigan family forests by size class



Michigan family forests by length of tenure



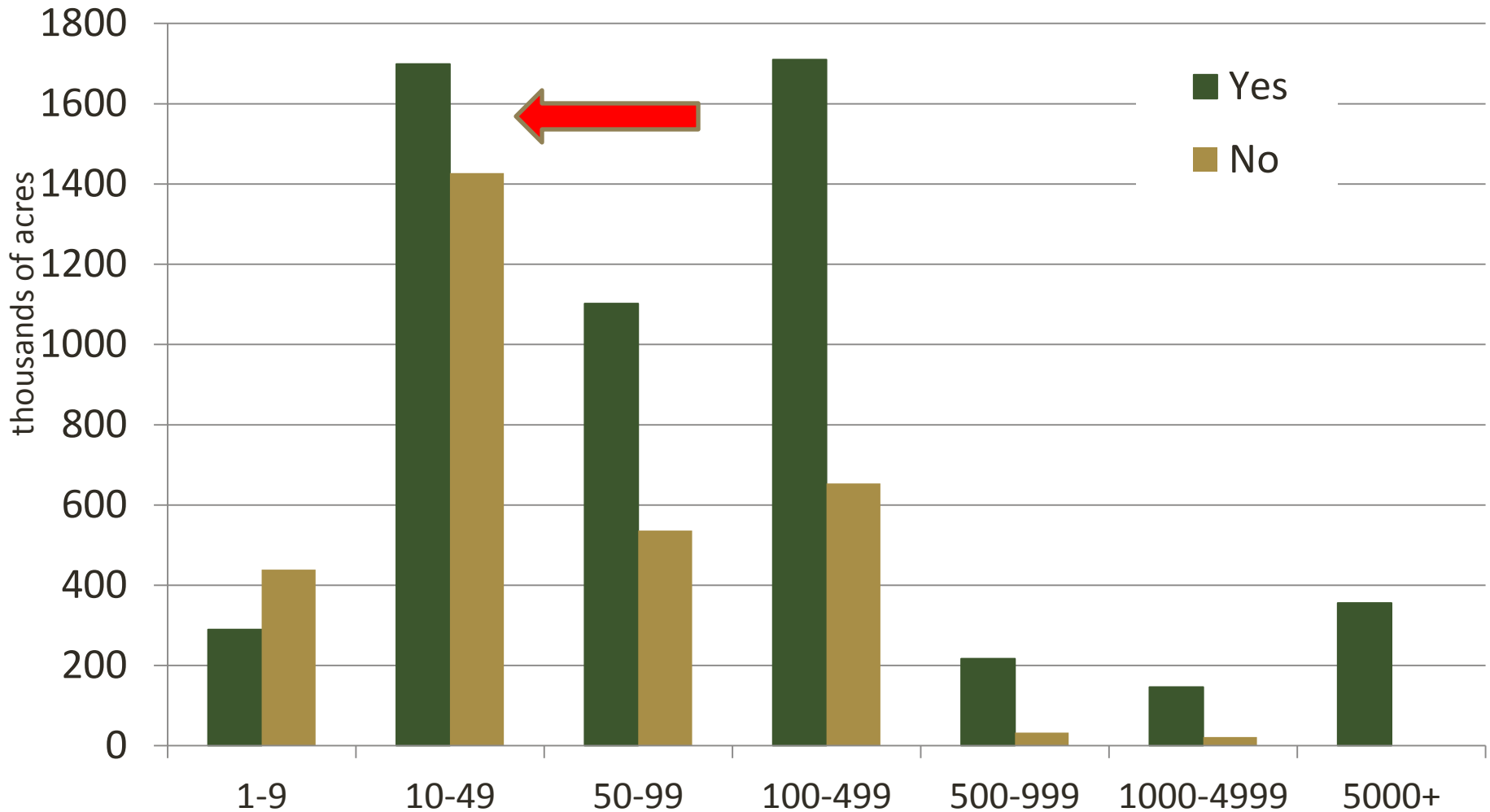
Michigan Family forests by parcel size & tenure



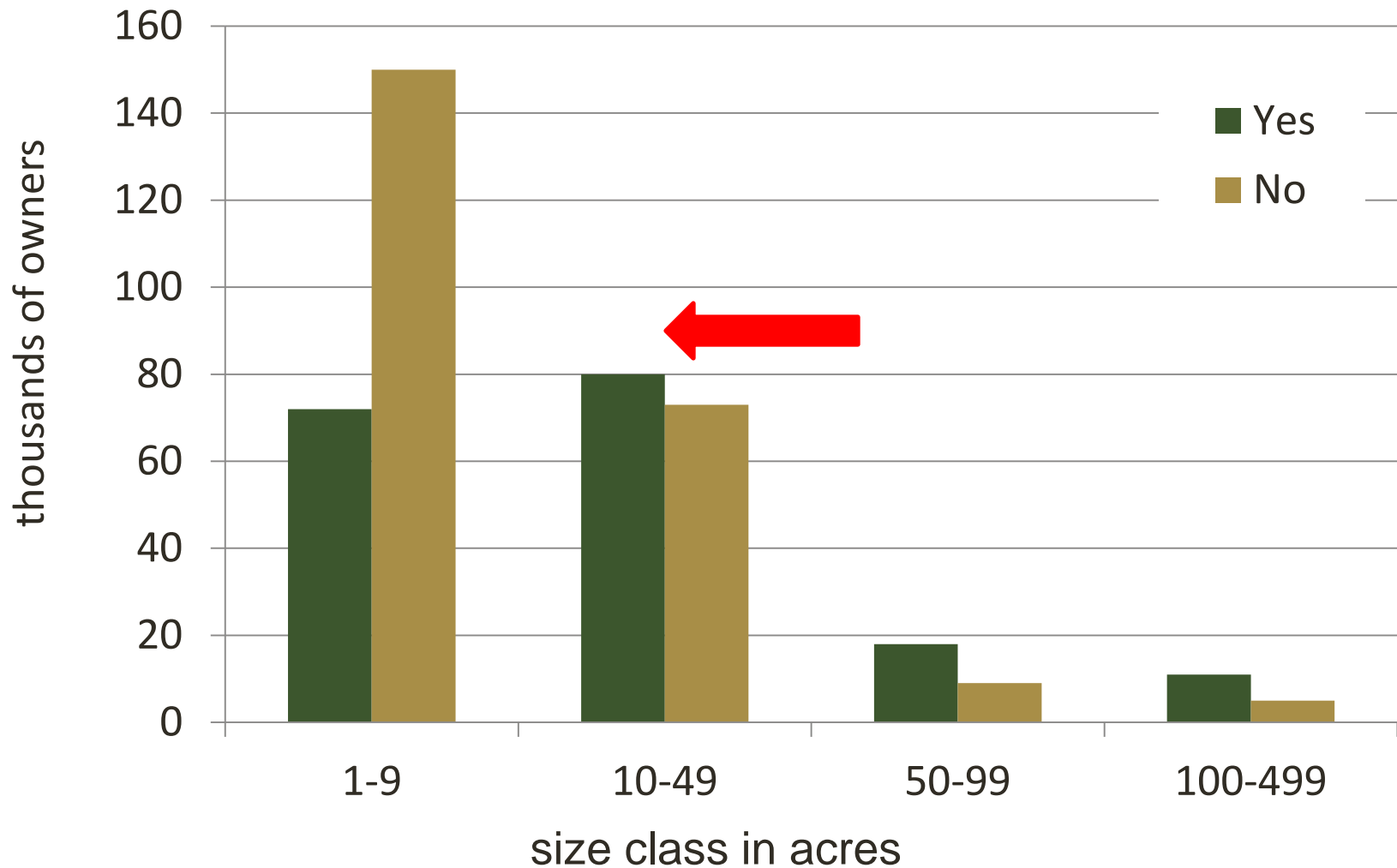
Parcel size and forest management

What do we know about Michigan NIPF
landowners management?

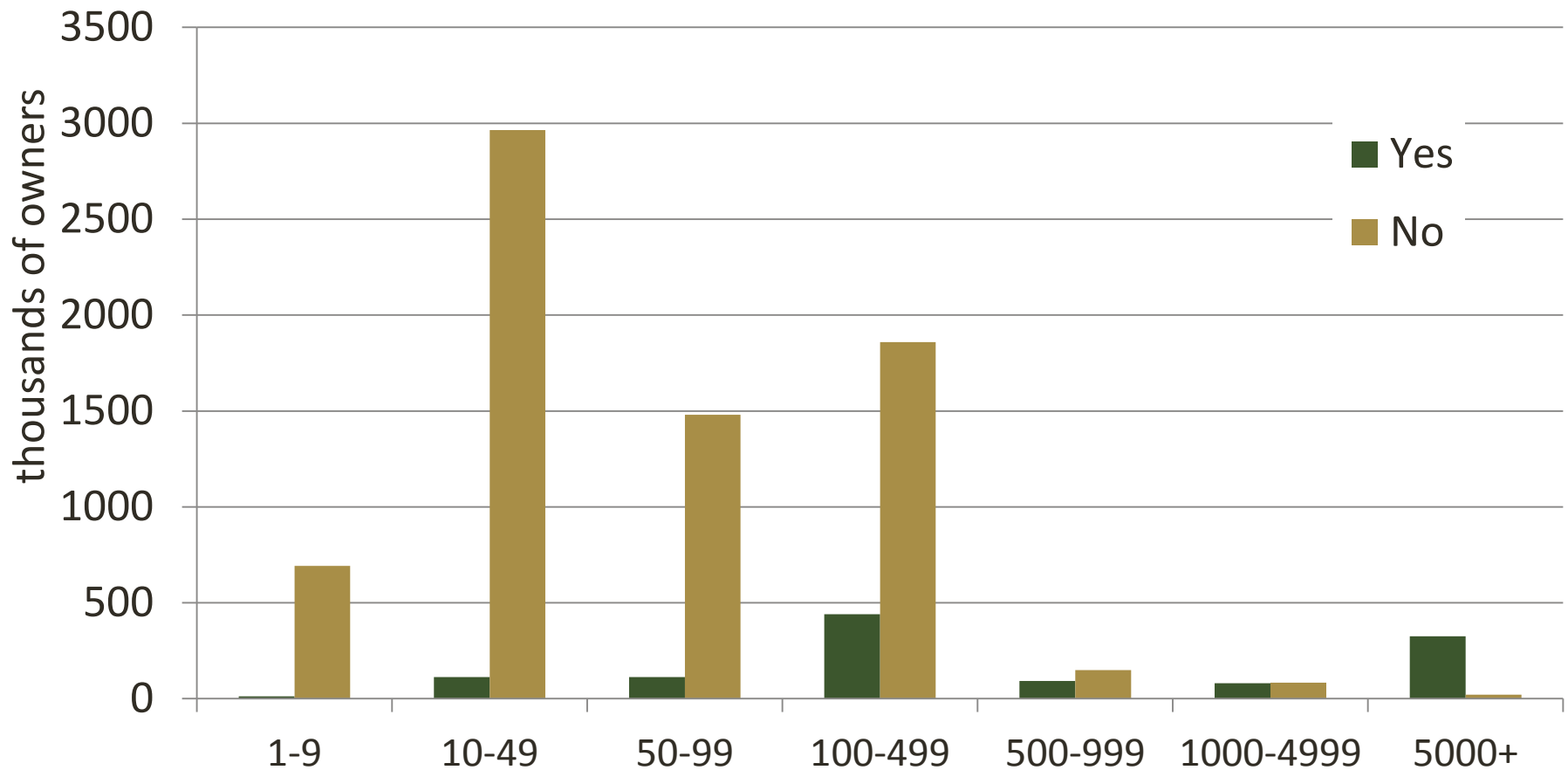
Acres of timber harvested on Michigan family forests by size class



Number of Michigan family forest owners harvesting timber



Number of Michigan family forest owners with management plans



Can these landowners be characterized?

- by objectives
- demographics
- parcel characteristics – especially size

MSU Michigan NIPF research results



- 2001 Statewide Survey – selected landowners
- 2003 Statewide Survey – random sample
- 2010 EUP and NLP Survey – random sample

2001 Survey

- Nonindustrial Forest Landowners:
 - in CFA
 - In Forest Stewardship Program
 - in MFA
 - in the Two Hearted River Watershed
- Funded by USDA Forest Service State & Private Forestry and MDNR Forest Management

Effectiveness of Programs for Non-Industrial Forest Landowners in Michigan

Sponsored by: USDA Forest Service, Northeastern Area State & Private Forestry

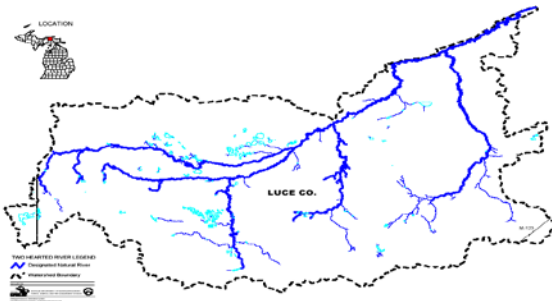
Michigan State University, Department of Forestry

MDNR Michigan Department of Natural Resources, Forest Management Division

Q-1 In what year did you first acquire ownership of forestland? (Year)		Q-2 How many road miles do you live from your nearest forestland? Miles					
Q-3a How many total acres of land do you own in Michigan? Acres							
Q-3b Of the total acres of land you own, approximately how many acres are in each of these uses?							
1. _____ Active cropland or pasture land							
2. _____ Permanently or temporarily inactive cropland or pasture land, shrub land, meadow							
3. _____ Tree plantation							
4. _____ Developed (homestead, buildings, roads, quarry, etc.)							
5. _____ Water or wetland							
6. _____ Natural forest (at least 10% covered by trees or other forest vegetation)							
7. _____ All other uses							
Q-4 What is your single most important reason for owning forestland? _____							
Q-5 How important to you is each of the following reasons for owning forestland? (Circle one number for each item)							
		Very Important		Not Important			
1. Recreation, scenic enjoyment	7	6	5	4	3	2	1
2. Part of a home or cabin site	7	6	5	4	3	2	1
3. Part of a farm	7	6	5	4	3	2	1
4. Income from timber or other forest products	7	6	5	4	3	2	1
5. Growing wood or other forest products for farm or personal use	7	6	5	4	3	2	1
6. Land investment	7	6	5	4	3	2	1
7. Other (describe) _____	7	6	5	4	3	2	1
Q-6 For each of these management activities, fill in the approximate acres or other amount that you accomplished, and indicate the amount that you still PLAN TO DO in the future.							
			Accomplished	Plan to Do			
Timber Production	Planted trees or prepared a site for natural regeneration primarily for timber (Acres)						
	Improved or protected an existing tree stand for timber (e.g., thin, remove cull trees, prune, release seedlings from weed or brush competition, control pests) (Acres)						
	Fenced livestock out of forestland (Acres)						
	Harvested timber (Acres)						
Wildlife Habitat	Planted trees, shrubs, or grass primarily for wildlife habitat. (Acres)						
	Improved wildlife habitat (e.g., nest boxes, brush piles, water facilities, thinned a tree stand, prescribed burn, etc.). (# of structures)						
	Improved habitat for an endangered plant or animal species (Acres)						
	Built or restored a wetland or pond (# of structures)						
Soil/Water/Snow Protection	Planted trees/shrubs primarily for a windbreak or living snowfence to protect a field, livestock, road, or farmstead; or renovated windbreak (Acres)						
	Planted grass or other permanent vegetation in a field primarily for soil protection (Acres)						
	Planted trees, shrubs or grass in a riparian buffer next to a stream, wetland, or lake to protect water quality (Acres)						
	Fenced livestock away from a stream, wetland, or lake (Acres)						
Other	Designed, built or improved permanent access road or recreational trail (Yards)						
	Other: _____						
	Other: _____						
Q-6b Please go back up to Q-6 and circle the accomplishments (acres, etc.) for which you received cost-share payments such as from the Stewardship Incentives Program, Forestry Incentives Program, or other state or federal program.							

2001 Survey objective

- Evaluate the current effectiveness of incentive programs for non-industrial private landowners.



Parcel characteristics by owner group

	TRW	CF	FSP	MFA
Year acquired	1975 ^a	1973 ^a	1981 ^b	1975 ^a
Miles to residence	217 ^b	190 ^b	65 ^a	101 ^a
Total acreage	124 ^a	315^b	181 ^a	409^b

Management activity in percent of total acres, 2001

	TRW	CF	FSP	MFA
	percent of total acres			
Timber	7.9	16.3**	9.3	14.9**
Wildlife habitat	2.9	2.2	5.6**	3.1
Soil/water protection	1.0	0.6	1.6	1.0

Management activity in percent of total acres, 2001

	TRW	CF	FSP	MFA
	percent of total acres			
Timber	7.9	16.3**	9.3	14.9**
Wildlife habitat	2.9	2.2	5.6**	3.1

2003 Forest Landowner Survey

1. In what year did you first acquire your forested land? year

2. How did you acquire your forested land? Please check the ONE that best applies:

Purchase

Gift

Inheritance

Other (please specify)

3. Is your forested land also the site of your permanent residence?

Yes (skip to Question 5a)

No

4. If you answered "no" to Question 3, how many road miles do you live from your nearest forested land? miles

5a. How many total acres of land do you own in Michigan? acres

5b. Of the total acres of land you own, approximately how many **acres** are in each of these uses?

Active cropland or pasture land

Permanently or temporarily inactive cropland or pasture, shrub land, meadow

Tree plantation

Developed (homestead, buildings, roads, quarry, etc.)

Water or wetland

Natural forest (at least 10% covered by trees or other forest vegetation)

All other uses

- **Variables:**
- acreages & activities
- motivations for owning land
- demographics
- reasons for NOT harvesting
- uses of technical assistance
- preferences for incentives, information sources

2003 Survey research questions

- What management activities are being done?
- What characteristics of Michigan NIPF landowners influence management on their land?
- If they have not harvested timber, why not?

Management activities, 2003

Activity	Average acreage
Planted trees	12.3
Harvested timber	57.5
Improved a stand for timber	25.6
Built/restored a wetland or pond	3.0
Fenced livestock or deer out	5.2

(n=299)

Harvesters & non-harvesters: characteristics

Variable	Mean values	
	Harvesters	Non-Harvesters
Year acquired forested land*	1981	1984
Total acres owned**	180	81
Total forested acres**	92	39
Age	57	58

Harvesters & non-harvesters: reasons for owning

Reason	Average importance – ranked highest (1) to lowest (5)	
	Harvesters	Non-harvesters
To enjoy beauty/scenery	1.30	1.34
To protect nature/biodiversity	1.61	1.62
For privacy	1.63	1.63
Part of home, farm, vacation	1.64	1.71
For hunting/fishing*	1.70	2.13
For other recreation	1.99	2.16
To pass on to heirs*	1.93	2.28
For land investment	2.19	2.32
For production of firewood*	2.98	3.58
For production of timber products*	2.87	3.98
For collection of nontimber products	3.47	3.67

Summary

- Ownership tenure & parcel size (both total & forested) relate to timber management likelihood
- Those who manage for timber have higher ratings for:
 - Using their land for hunting/fishing
 - firewood production
 - Bequeathing land to heirs
- Those who manage for timber value aesthetics, biodiversity & privacy as much as non-harvesters

Can Michigan's NIPF landowners be clustered by parcel and demographic characteristics?

- clusters of Michigan family forest owners based on their reasons for owning forested property.
- clusters were defined and tested for significant differences

	Rotated principal component scores			
Reasons for owning forestland	Homestead	Consumptive Enjoyment	Personal Recreation	Preservation
as part of home, vacation home, farm or ranch	0.86	0.05	0.00	0.14
privacy	0.80	0.08	0.16	0.16
cultivation/collection of non-timber forest products.	0.22	0.75	0.12	0.05
production of firewood or biofuel (energy)	0.05	0.84	0.17	0.02
production of sawlogs, pulpwood or other timber products.	-0.09	0.86	0.05	-0.01
hunting or fishing	0.00	0.21	0.84	0.00
recreation other than hunting or fishing.	0.18	0.08	0.75	0.24
enjoying beauty or scenery	0.36	-0.05	0.09	0.79
protecting nature and biologic diversity	0.04	0.09	0.14	0.90
passing land to my children or other heirs	Retained as unique variable			
land investment	Retained as unique variable			

Principal components for landowner clusters

Discriminant variables	Reasons for owning forestland
Homestead	Part of home, privacy
Consumptive Enjoyment	Production of sawlogs, pulpwood, firewood or biomass
Personal Recreation	hunting or fishing, other recreation
Preservation	enjoying beauty or scenery, protecting nature and biologic diversity
Passing land to heirs	unique variable
Land investment	unique variable

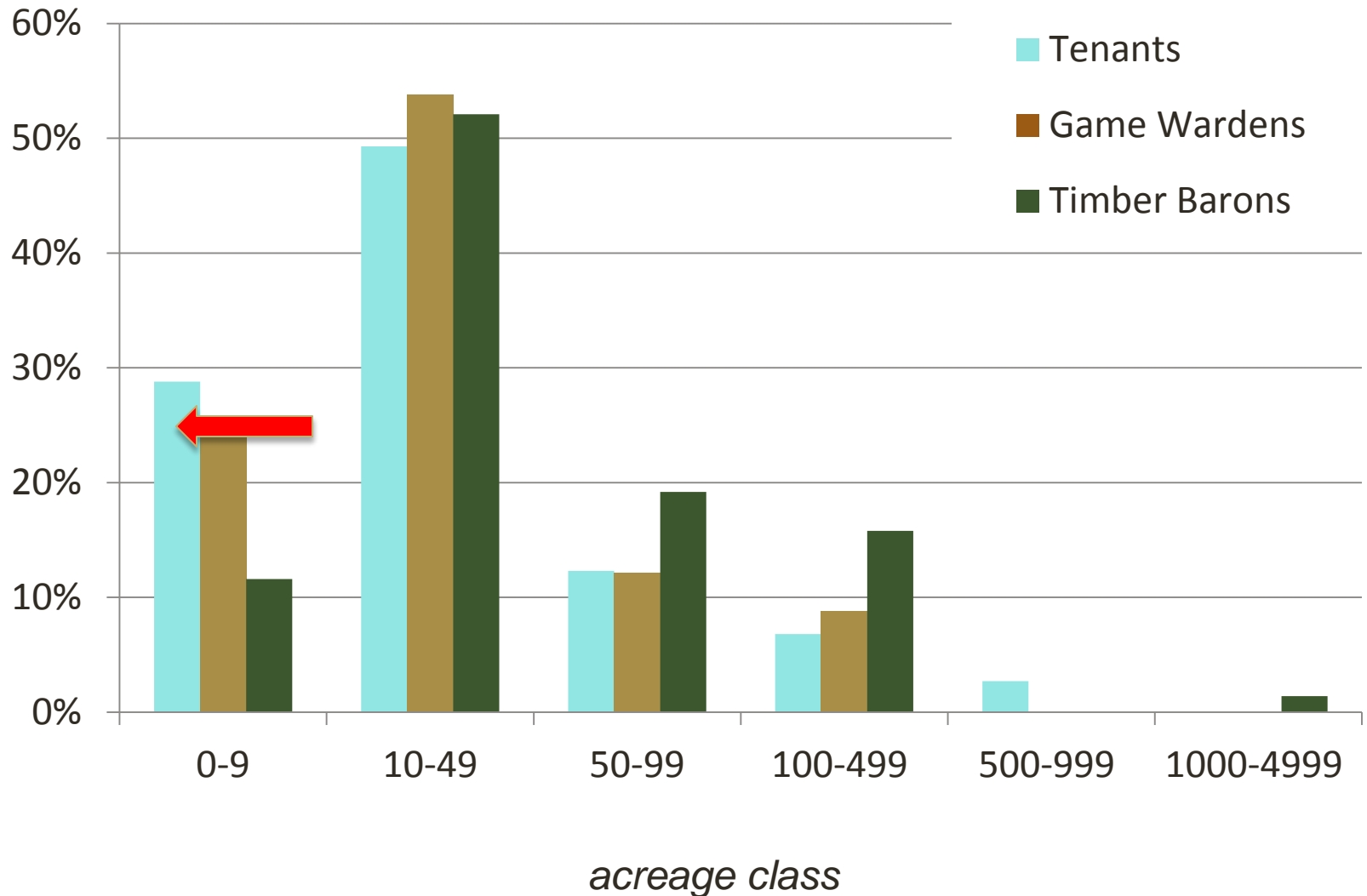
Landowner segments

- Game wardens – personal recreation, bequeathing land more important, consumptive enjoyment unimportant
- Timber barons –consumptive enjoyment more important
- Tenants – personal recreation and consumptive enjoyment less important
- Importance or unimportance here is relative, not absolute

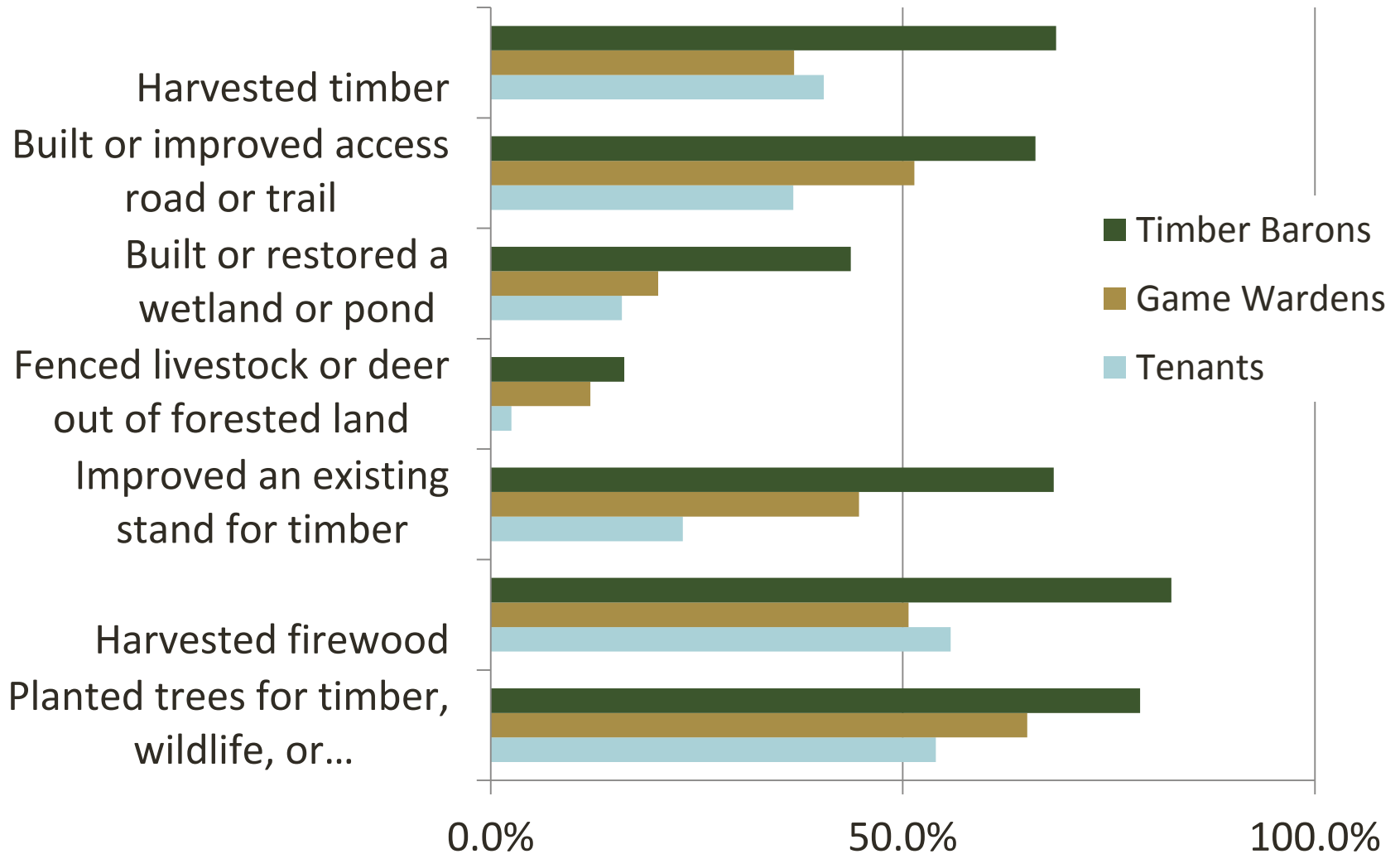
Demographic characteristics of family forest owner segments (2003)

Variable	Game Wardens	Tenants	Timber Barons
Respondent Age	52.9	57.2 ^a	55.4 ^a
Education	Some college ^a	Some college ^a	Some college ^a
Income	\$60,000-74,999 ^a	\$60,000-74,999 ^a	\$40,000-59,999 ^a
Employment	Employed full time ^a	Employed full time ^a	Employed full time ^a
Absent Ownership	34.6%	54.2%	43.8%

Forest parcel size by family forest owner segment, 2003



Management activities by NIPF owner segment, 2003



2010 Forest landowner survey

- **Population:** landowners owning at least 20 acres of forest in the study area
- **Random sample:** 1,600 randomly selected private forest landowners



Feedstock Center of Energy Excellence – Biomass Availability

- Objective
 - Model biomass of availability to translate standing inventory and growth to volumes that would realistically be available
- Scope
 - within specified radius of Kinross (150 miles)
 - by ownership
 - by region

Non-industrial private timber harvests

- What variables influence harvesting behavior?
- What are current attitudes and intentions toward harvesting for woody biomass energy production?

The 2010 Forest Landowner Survey

Section A: We would like to start by asking you a few questions about the forest land that you own in Michigan.

1. Do you currently own any forest land in Michigan?

Yes No

If "no", please return the questionnaire in the postage paid envelope provided. Thank you.

2. If "yes", please tell us the location of your forest land.

County State

3. How many unconnected parcels or tracts of forestland do you own? (Please Check (✓) one box)

1 parcel 2 parcels
 3-5 parcels 6-10 parcels
 More than 10 parcels 0 parcels

4. How many total (forested and non-forested) acres of land do you own in Michigan?

acres

5. Of the total acres of land you own, approximately how many acres are in each of these uses?

<input type="checkbox"/>	Active cropland or pasture land
<input type="checkbox"/>	Permanently or temporarily inactive cropland or pasture, shrub land, meadow
<input type="checkbox"/>	Tree plantation
<input type="checkbox"/>	Developed (homestead, buildings, roads, quarry, etc.)
<input type="checkbox"/>	Water or wetland
<input type="checkbox"/>	Natural forest (at least 10% covered by trees or other forest vegetation)
<input type="checkbox"/>	All other uses

6. How did you acquire your forest land? Please check one that best applies:

Purchase Gift
 Inheritance Other (please specify)

Principal component and discriminant analysis

- **Consumptive use** – land investment, production of timber products
- **Recreationists** - hunting, fishing & other recreation
- **Naturalists** – aesthetic enjoyment, protecting nature and biologic diversity, forest as a part of their home
- **Multiple objective owners** - land investment, part of home, privacy, bequest, non timber forest products, firewood or biofuel, timber products

Forest management and ownership characteristics, 2010

Variable	Consumptive Use	Recreationists	Naturalists	Multiple Objective
Mean forest area (acres)	202 ^a	110 ^b	88 ^b	147 ^a
Past harvest (%)	55 ^a	32 ^b	41 ^b	53 ^a
Intend to harvest (%)	61 ^{ac}	47 ^{ab}	39 ^b	68 ^c
Actively manage (%)	51 ^a	46 ^a	40 ^a	71 ^b
Resident owner (%)	13 ^a	25 ^b	46 ^c	42 ^c

Forest management and ownership characteristics, 2010

Variable	Consumptive Use	Recreationists	Naturalists	Multiple Objective
Mean forest area (acres)	202^a	110 ^b	88 ^b	147^a
Past harvest (%)	55^a	32 ^b	41 ^b	53^a
Intend to harvest (%)	61 ^{ac}	47 ^{ab}	39 ^b	68 ^c
Actively manage (%)	51^a	46^a	40^a	71 ^b
Resident owner (%)	13 ^a	25 ^b	46^c	42^c

Conclusions

- Parcel size does make a difference
- There are other factors influencing management
- We can identify groups of like landowners
 - Consumptive Users*
 - Recreationists*
 - Naturalists*
 - Multiple Objective Owners*
 - Timber Barons*
 - Game Wardens*
 - Tenants*
- Target approaches and programs

Acknowledgements: 2001 Survey

- McIntire-Stennis Cooperative Forestry Program
- Michigan Department of Natural Resources, Forest Management Division, Cooperative Resource Programs
- USDA Forest Service S&PF
- Michigan Agricultural Experiment Station
- University of Minnesota, College of Forest Resources
- Special thanks to:
 - Tom Birch, USDA FS
 - Cara Boucher, Susan Krusik, Kathie Arney, & Margaret Spagnuolo MDNR-FMD
 - Melissa Simons, FMD and MSU
 - Mel Baughman & Karen Updegraf, U Minnesota

Acknowledgements 2003 Surveys

- **Michigan Department of Natural Resources, Forest, Mineral & Fire Management Division, Cooperative Resource Programs with special thanks to:
Debra Huff, Margaret Spagnuolo, Cara Boucher & Sarah Kilgore**
- **USDA Forest Service State & Private Forestry**
- **Dr. Georgia Peterson, Dr. Maureen McDonough, Dayle Jackson, Julie Kerr & Kendra Sales, MSU Department of Forestry**
- **MSU Extension Forestry**

Acknowledgements: 2010 Survey

- **Feedstock Center of Energy Excellence:**
 - Frontier Renewable Energy
 - Michigan Economic Development Corporation
 - Special thanks to Donna LaCourt, Ray Miller, Art Abramson
- **MSU AgBio Research**
- **MSU Forestry timber availability research group:**
 - Shivan GC, Research Associate
 - Lee Mueller, Research Assistant
 - Brett Kuipers, Research Assistant
- **Michigan Forest Biofuels Research:**

www.michiganforestbiofuels.org/

Sources:

- Butler, Brett J.; Miles, Patrick D.; Hansen, Mark H. Mon. Oct, 29 14:19 CDT 2012. National Woodland Owner Survey Tabler web-application version 1.0. Amherst, MA: U.S. Department of Agriculture, Forest Service, Northern Research Station. [Available only on internet: <http://fiatools.fs.fed.us/NWOS/tablemaker.jsp>]
- Kuipers, Brett T.; Shivan. G.C. and Karen Potter-Witter. 2012. Identifying appropriate communications means for reaching nonindustrial private forest landowners. Journal of Forestry.
- Kuipers, Brett T. 2011. "Non Industrial Private Forest Landowner Communication Analysis in North Eastern Michigan: A Segmentation Approach." Michigan State University. United States -- Michigan: Dissertations & Theses @ CIC Institutions; ProQuest Dissertations & Theses Diss. 1514760. 139p.
- Mueller, Lee S. 2012. "Nonindustrial Private Forest Owners in Michigan: Examination at a Finer Scale." Michigan State University. United States -- Michigan: Dissertations & Theses @ CIC Institutions; ProQuest Dissertations & Theses Diss.1491648. 70p.
- Mueller, Lee S. and Karen Potter-Witter. 2010. Regional variation among nonindustrial private forest owners in Michigan. Poster presented at the Society of American Foresters National Convention, October 27-30, 2010, Albuquerque, NM. Society of American Foresters, Bethesda, MD.
- Peterson, Georgia and Karen Potter-Witter. 2006 Stalking the elusive non-industrial private forest landowner in Michigan. Proceedings of the 2006 Society of American Foresters National Convention. Pittsburg, PA. Oct. 25-29. Society of American Foresters, Bethesda, MD.
- Potter-Witter, Karen. 2005. A Cross-sectional analysis of Michigan Nonindustrial Private Forest Landowners. N. J. of Appl. Forestry. 22(2):132-138.