(Optional) Do you have any comments?

_______________________________________________________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________

THANK YOU

If you have questions about the research or any part of the questionnaire, contact Dr. Scott M. Swinton at 1-517-353-7218, by e-mail at swintons@msu.edu, or by postal mail at Department of Agricultural, Food, and Resource Economics, Michigan State University, East Lansing, MI 48824-1039.

BIOENERGY AND LAND USE

WE NEED YOUR HELP!

The purpose of this survey is to understand your views about bioenergy. There are no right or wrong answers because people have different attitudes and uses for their land.

YOUR OPINIONS MATTER

By completing this questionnaire you are helping to inform the design of future policies that better reflect the views and concerns of Michigan landowners.
WHO SHOULD FILL OUT THIS SURVEY

1. Do you own over 10 acres of rural land, land that is grassland, forest, or farmland?
   - □ No
   - □ Yes
   If you answered NO, please stop filling out the survey now and mail it in the provided prepaid envelope. Thank you for your response!

2. Are you the main decision maker for land management for your rural land?
   - □ No
   - □ Yes
   If you answered NO, please give this questionnaire directly to the person who makes the land management decisions for your rural land.

SECTION A: YOUR CURRENT LAND MANAGEMENT PRACTICES

A1. Do you own rural land in more than one location?
   - □ No
   - □ Yes

A2. What is the county where most of your rural land is located? ____________

A3. Do you currently rent out any of your rural land to others?
   - □ No (please go to A7)
   - □ Yes

IF YOU ANSWERED YES:

A4. How many acres of your rural land did you rent out in 2011? ______ACRES

A5. What was the most common rental rate for your land? $______PER ACRE

A6. Not including land that you may have rented out to others, did you grow any commercial crops on the rural land you own in 2011?
   - □ Yes
   - □ No

A7. How much longer do you plan to own the majority of your rural land?
   - □ Less than 1 year
   - □ 1 to 5 years
   - □ 5 to 10 years
   - □ More than 10 years
   - □ For the rest of my life

A8. How would you describe what is on the rural land you own?

SECTION E: BACKGROUND INFORMATION

This last section asks for background information to help identify patterns among different kinds of landowners. Your answers here are very important and will be kept completely confidential.

E1. What is your age? ____________ (YEARS)

E2. What is your gender?
   - □ Male
   - □ Female

E3. Including yourself, how many members are in your household? ____________

E4. Are you a farmer or do you do farm work?
   - □ Yes
   - □ No

E6. How much is the annual pretax income of your household in 2010? Include net income from all sources (salary, wages, social security, rental properties, and investment income).
   - □ Less than $25,000
   - □ $25,000 to $49,999
   - □ $50,000 to $99,999
   - □ $100,000 to $149,999
   - □ $150,000 to $199,999
   - □ $200,000 and above

E8. What is the highest level of education you have completed?
   - □ Less than 12 years
   - □ Completed high school or GED
   - □ Some graduate work
   - □ Some college (including AA, AS degrees)
   - □ Technical training beyond High School
   - □ 4-year college degree
   - □ Graduate degree

E9. Is any part of your rural land restricted by zoning in any way? (Check all that apply.)
   - □ Zoned for agricultural use
   - □ Zoned for residential use
   - □ Zoned for industrial use
   - □ Not restricted by zoning
   - □ I am uncertain
D2. Please check the box that best represents your agreement with the following statements related to potential concerns with renting.

<table>
<thead>
<tr>
<th>Concern</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The potential smell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Noise from harvesting, planting, or other activities</td>
<td></td>
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<tr>
<td>Dust in the air</td>
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<tr>
<td>Potential legal costs of contracting</td>
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<tr>
<td>The length of the contract</td>
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<tr>
<td>The possible need for insurance</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Having other people on my land</td>
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<td></td>
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<tr>
<td>The land changing so that I can no longer use it as I have</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>The use of pesticide and fertilizer on my land</td>
<td></td>
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</tbody>
</table>

### Description

<table>
<thead>
<tr>
<th>Description</th>
<th>Acres of Rural Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROPLAND</td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td></td>
</tr>
<tr>
<td>Soybeans</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>Other row crops</td>
<td></td>
</tr>
<tr>
<td>Fruit trees or plants</td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
</tr>
<tr>
<td>HAY AND PASTURE LAND</td>
<td></td>
</tr>
<tr>
<td>Grassland or Pasture</td>
<td></td>
</tr>
<tr>
<td>Hay or Alfalfa</td>
<td></td>
</tr>
<tr>
<td>FARMABLE NON-CROP LAND (Could be farmed if cleared)</td>
<td></td>
</tr>
<tr>
<td>Forest</td>
<td></td>
</tr>
<tr>
<td>Shrub or Scrub (low growth with bushes or few trees)</td>
<td></td>
</tr>
<tr>
<td>Other potentially farmable land</td>
<td></td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
</tr>
<tr>
<td>Any other rural land (Wetlands, lawn and garden, not farmable land.)</td>
<td></td>
</tr>
<tr>
<td>Other (please specify):</td>
<td></td>
</tr>
<tr>
<td>Other (please specify):</td>
<td></td>
</tr>
</tbody>
</table>

A9. Total number of acres of rural land that you own: ___ ACRES
A10. How do you or other family members use the different types of rural land that you own?

I use my rural land for this purpose:
(Check all that apply)

- As scenery or for a desired view
- Physical activities (walking, running, or sports)
- Recreational vehicle use (4x4, quads, or dirt bikes)
- Hunting and Fishing
- For grazing livestock (Cattle, sheep, horses, pigs, etc.)
- Commercial crops or garden income
- For conservation program income
- For a home or second home
- For firewood
- Food plots for deer or other game
- Other use (please specify):
  ___________________________
  □
- Other use (please specify):
  ___________________________
  □
- Other use (please specify):
  ___________________________
  □

SECTION D: YOUR OPINIONS ON BIOENERGY, THE ENVIRONMENT, AND RENTING LAND.

D1. Please check the box that best represents your agreement with the following statements related to bioenergy and the environment.

- Growing crops for renewable automotive fuel is necessary for our nation’s future.
- □ □ □ □ □
- Burning renewable plant-based resources for electricity instead of burning non-renewable resources such as coal is worth the extra cost.
- □ □ □ □ □
- Humans have the right to modify the natural environment to suit their needs.
- □ □ □ □ □
- Humankind is severely abusing the environment.
- □ □ □ □ □
- The so-called "ecological crisis" facing humankind has been greatly exaggerated.
- □ □ □ □ □
- The balance of nature is very delicate and easily upset.
- □ □ □ □ □
- Renewable energy is not urgently needed right now.
- □ □ □ □ □
MIXED PRAIRIE

Planted: Spring of the first year
Harvested: Every Fall after year 1 or 2
Fertilized: Yearly
Average number of farmer visits: 3 per year
Maximum height: 1 to 5 feet
Production: Bioenergy
Soil erosion: Low compared to other bioenergy crops
Greenhouse gas emissions: Average compared to other bioenergy crops
Water contamination: Low compared to other bioenergy crops
Crop as a wildlife habitat: Excellent compared to other bioenergy crops
Rental rate paid to you by farmer: $300 DOLLARS PER ACRE PER YEAR
Length of contract: 5 YEARS IN MIXED PRAIRIE

C7. If somebody wanted to rent your existing cropland to grow mixed prairie for $300 an acre per year for 5 years, would you rent any of it out?

☐ Yes, I would be willing to rent out ______ACRES
☐ No (Choose one explanation)
  ☐ I do not own any existing cropland.
  ☐ I would not rent any of this type of land for this use no matter how high the rent was.
  ☐ I would rent out this type of land for this use if the rent were higher.

C8. If somebody wanted to rent your existing hay and pasture land to grow mixed prairie for $300 an acre per year for 5 years, would you rent any of it out?

☐ Yes, I would be willing to rent out ______ACRES
☐ No (Choose one explanation)
  ☐ I do not own any existing hay and pasture land.
  ☐ I would not rent any of this type of land for this use no matter how high the rent was.
  ☐ I would rent out this type of land for this use if the rent were higher.

C9. If somebody wanted to rent your existing farmable non-crop land to grow mixed prairie for $300 an acre per year for 5 years, would you rent any of it out? (The renter would be responsible for clearing costs. You would get any timber sales.)

☐ Yes, I would be willing to rent out ______ACRES
☐ No (Choose one explanation)
  ☐ I do not own any existing farmable non-crop land.
  ☐ I would not rent any of this type of land for this use no matter how high the rent was.
  ☐ I would rent out this type of land for this use if the rent were higher.

A11. Please check the box that best represents your agreement with the following statements related to your land and land use.

☐ I would never sell the rural land that I own.
☐ I would be willing to sell my land if I knew it was going to be used for agriculture.
☐ I would consider renting the rural land that I own.
☐ I would allow someone renting my rural land to store bales of hay or straw on it for a few months each year.
☐ My family or friends would prefer that I not rent my rural land to grow crops.
☐ Sometime in the next 10 years I plan to change the way I use my rural land.
PART B: BIOENERGY AND BIOENERGY CROPS

**BIOENERGY** is energy that comes from a biological source, such as crops, grasses, or trees. These sources are often called bioenergy crops. These crops can be burned to generate heat or electricity. They can also be refined to make a liquid fuel, such as ethanol. Today, the most common form of ethanol in the United States comes from corn grain. It is possible, however, to make ethanol from other plants as well.

B1. Had you heard of bioenergy before?
☐ Yes
☐ No

B2. Did you know that ethanol can be produced from other sources besides corn grain?
☐ Yes
☐ No

B3. Did you know that many bioenergy crops can be grown on less fertile soil such as farmable non-crop land that may be currently in forest or shrubs?
☐ Yes
☐ No

**CORN** is the most common crop grown in the United States. Corn has a variety of uses from food and animal feed to corn syrup and ethanol. The non-grain parts of the corn plant (e.g., stalk, leaf, husk, and cob) are often left in the field following grain harvest. About half of these corn scraps need to be left on the field to provide nutrients and organic matter to the soil, while the other half can be used for bioenergy by either being burned or transformed into ethanol.

B4. Have you ever grown corn before?
☐ Yes
☐ No

B5. Were you aware that corn scraps could be used for bioenergy?
☐ Yes
☐ No

**HYBRID POPLAR TREES**

- Planted: Spring of the first year
- Harvested: 5-10 years after planting
- Fertilized: Every few years
- Average number of farmer visits: 1 per year
- Maximum height: 20 to 30 feet
- Production: Bioenergy
- Soil erosion: Average compared to other bioenergy crops
- Greenhouse gas emissions: Low compared to other bioenergy crops
- Water contamination: Average compared to other bioenergy crops
- Crop as a wildlife habitat: Average compared to other bioenergy crops
- Rental rate paid to you by farmer: $200 DOLLARS PER ACRE PER YEAR
- Length of contract: 10 YEARS IN POPLAR TREES

C4. If somebody wanted to rent your existing cropland to grow hybrid poplar for $200 an acre per year for 10 years, would you rent any of it out?
☐ Yes, I would be willing to rent out ______ ACRES
☐ No (Choose one explanation)
  ☐ I do not own any existing cropland.
  ☐ I would not rent any of this type of land for this use no matter how high the rent was.
  ☐ I would rent out this type of land for this use if the rent were higher.

C5. If somebody wanted to rent your existing hay and pasture land to grow hybrid poplar for $200 an acre per year for 10 years, would you rent any of it out?
☐ Yes, I would be willing to rent out ______ ACRES
☐ No (Choose one explanation)
  ☐ I do not own any existing hay and pasture land.
  ☐ I would not rent any of this type of land for this use no matter how high the rent was.
  ☐ I would rent out this type of land for this use if the rent were higher.

C6. If somebody wanted to rent your existing farmable non-crop land to grow hybrid poplar for $200 an acre per year for 10 years, would you rent any of it out? (The renter would be responsible for clearing costs. You would get any timber sales.)
☐ Yes, I would be willing to rent out ______ ACRES
☐ No (Choose one explanation)
  ☐ I do not own any existing farmable non-crop land.
  ☐ I would not rent any of this type of land for this use no matter how high the rent was.
  ☐ I would rent out this type of land for this use if the rent were higher.
SWITCHGRASS is a native, warm-season perennial grass. It is known for high yields that make it attractive for fuel production or heat and electricity generation. Because switchgrass is a perennial, there is no need to disturb the soil each year for planting and it requires less fertilizer than other bioenergy crops. Also, perennial switchgrass fields may provide habitat for birds, mammals and beneficial insects.

B6. Have you ever seen switchgrass before?
  □ Yes
  □ No

B7. Did you know that switchgrass is a perennial, so it only needs to be planted once every decade or so?
  □ Yes
  □ No

HYBRID POPLARS are fast-growing trees that are closely related to cottonwoods and aspens. They are grown in a way that makes them look more like row crops than a typical forest. Hybrid poplars need very little maintenance and fertilizer. As perennial trees they create relatively little greenhouse gas emissions. Also, hybrid poplars may offer a good habitat for birds, mammals and beneficial insects.

B8. Have you ever seen hybrid poplar trees planted in rows?
  □ Yes
  □ No

B9. Were you aware that perennials like poplar cause less greenhouse gases because the soil is not tilled every year?
  □ Yes
  □ No

MIXED PRAIRIE is a combination of different types of prairie grasses. Similar to switchgrass, it is a perennial so it does not need to be replanted. Because of this it requires less fertilizer than other bioenergy crops. Also, prairie grasses may offer a good habitat for birds, mammals and beneficial insects.

B10. Do you currently have any prairie grasses on your land?
  □ Yes
  □ No

B11. Did you know that mixed prairie offer what is called “functional diversity”, which means that even though there are only a couple different species of grass they provide the benefits of a bio-diverse landscape?
  □ Yes
  □ No
PART C: FOUR SPECIFIC BIOENERGY CROPPING SYSTEMS

The following four pages each show a specific bioenergy cropping system.

Please start by reading the description of the crop, considering what it might be like to rent out your rural land to grow the crop. Then mark the number of acres you would be willing to commit for the length of the contract at the given price. The different types of land you are asked about renting refers back to the land you described in Question A8 (Cropland, Hay and Pasture Land, and Farmable Non-Crop Land).

Think about the four different scenarios separately. In other words, when you are presented with a suggested offer to rent your land for a particular bioenergy crop, assume that the other three offers do not exist as options.

We ask you to focus only on the scenarios we are proposing for each cropping system.

CORN

Planted: Every spring
Harvested: Every fall
Fertilized: Yearly
Average number of farmer visits: 7 per year
Maximum height: 7 to 10 feet
Production: Grain and residues for Bioenergy
Soil erosion: High compared to other bioenergy crops
Greenhouse gas emissions: High compared to other bioenergy crops
Water contamination: High compared to other bioenergy crops
Crop as a wildlife habitat: Average compared to other bioenergy crops
Rental rate paid to you by farmer: $200 DOLLARS PER ACRE PER YEAR
Length of contract: 5 YEARS IN CORN

C1. If somebody wanted to rent your existing cropland to grow corn for $200 an acre per year for 5 years, would you rent any of it out?

☐ Yes, I would be willing to rent out ______ACRES

☐ No (Choose one explanation)

☐ I do not own any existing cropland.

☐ I would not rent any of this type of land for this use no matter how high the rent was.

☐ I would rent out this type of land for this use if the rent were higher.

C2. If somebody wanted to rent your existing hay and pasture land to grow corn for $200 an acre per year for 5 years, would you rent any of it out?

☐ Yes, I would be willing to rent out ______ACRES

☐ No (Choose one explanation)

☐ I do not own any existing hay and pasture land.

☐ I would not rent any of this type of land for this use no matter how high the rent was.

☐ I would rent out this type of land for this use if the rent were higher.

C3. If somebody wanted to rent your existing farmable non-crop land to grow corn for $200 an acre per year for 5 years, would you rent any of it out? (The renter would be responsible for clearing costs. You would get any timber sales.)

☐ Yes, I would be willing to rent out ______ACRES

☐ No (Choose one explanation)

☐ I do not own any existing farmable non-crop land.

☐ I would not rent any of this type of land for this use no matter how high the rent was.

☐ I would rent out this type of land for this use if the rent were higher.