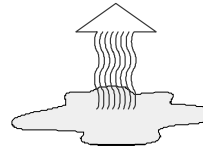
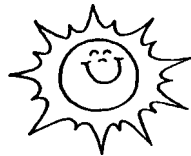


“Water: The Incredible Resource” 4th Grade Lesson

Michigan Farm Bureau Promotion and Education



P&E Stock #262

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Lansing, MI 48909-8460
1-800-292-2680, ext. 3202

Water : The Incredible Resource
4TH GRADE LESSON

Presented by
Members of Michigan Farm Bureau
Written by: Laurie Isley

Materials/Actions

Time Allotted

2-5 minutes
cycle.

hand).

Introduction

This lesson teaches children about water quality, water use, and the water

1. Introduce yourselves and show where you are from (use map or
2. Today we are going to talk about water. Water is one of the most important resources. Most of our planet is covered with water. Today we will learn the stages water goes through forming a cycle, the importance of keeping our water clean, and the partnership between agriculture and clean water.
3. Why do we need water? How might a farmer use water? *Expand on how farmers use water.*

I. Water Cycle

A. What is a cycle? A cycle is a recurring sequence of events.

B. Major parts in the water cycle includes:

1. Precipitation
2. Ground Water
3. Evaporation
4. Condensation

Distribute Water Cycle
Worksheet, scissors and gold tab.

Go through vocabulary words on the board
using posters.

Students complete the Water Cycle Worksheet.

II. Types of water contamination

Natural contamination vs. artificial contamination

A. Soil – Erosion

1. Rocks – Add the rocks to the jar and place lid back on the jar
2. Sand – Add sand to the jar and place lid back on the jar

Shake both jars. Observe the jars

- Which is cleaner? Discuss how this type of action occurs naturally

B. Other Contaminates

1. Tang – Add tang to one jar and place the lid on the jar
2. Vinegar – Add vinegar to the jar and place the lid on the jar

Shake both jars. Observe the jars

-What do you see – the Tang – is that bad – no

*-Can you see the vinegar? – no- can you smell it? Is that harmful?-
yes*

III. Measuring Contamination - parts per million (ppm)

A. How is contamination measured? Testing water

B. Parts per million (ppm) is the method used to determine if a contaminate is at a dangerous level.

C. Use the provide chart to explain parts per million

D. Have the students place 10 drops of water in the first compartment of the tray.

1. Then add 10 drops of food coloring to the same tray.
2. Have the students clean the eyedropper
3. Take one drop from the first compartment and place it in the second. Add

IV. Causes of Contamination

What causes contamination?

- A. Households
 - 1. Litter
 - 2. waste
 - 3. oil
- B. Industry
- C. Agriculture – fertilizer, animal waste

V. How agriculture helps keep water clean.

- A. Waste management plans for livestock
- B. Filter strips along rivers & ditches
- C. Use minimal amounts of crop protectants
- D. Leave residue on soil (cover crops) – conservation tillage

VI. Why water is important – Jug demonstration

- One jug of water represents all the water on earth.
- We will remove 1/3 cup from the jug, this 1/3 represents fresh water.
- Next we will take 12 tsp (4 Tablespoons) from the jug, this represents glaciers/ polar ice.
- 1 tsp removed from the jug represents ground water.
- 1 tsp removed from the jug represents surface water.

“Water: The Incredible Resource” 4th Grade Kit Packing List

Based on 35 students per class

Each kit is designed for conducting two presentations.

Need:

- Water cycle activity sheet 70 copies
- Blue water cycle activity sheet 70 copies
- Lab sheets 70 copies
- White paper (half sheets)
- Gold clips for water cycle activity sheets
- Plastic Trays
- Watershed map
- Conservation pictures
- Global Positioning System map
- Jars with lids
- Jars with vinegar
- 6 bags of: tang
stone
sand
- Plastic spoons
- Containers of food coloring one red and one blue
- Gallon jug
- Measuring cup
- Eye droppers
- Laminated pie chart of sources of contaminants
- Laminated lab sheet for demonstration
- Dry erase marker
- ¼ measuring cup
- Tablespoon
- Roll of paper towels

The Importance of Freshwater

Before demonstration: Fill a gallon jug with water, add 1-2 drops of blue food coloring.

1. **Introduction:** Farmers are careful to be good to the environment. We need to preserve our resources. One of the most important resources is water. Most of our planet is covered with water. The water found in freshwater lakes and rivers is an important drinking source for people and animals.
2. Let me show you how limited our water supply is.
3. **Hold up the gallon of water:**
This gallon of water represents all the water on earth. Pour out 1/4 cup of water into plastic cup. This 1/4 cup of water represents glaciers, ice caps and all the freshwater in the world.
4. Could I have a student volunteer to hold out their hand to help me demonstrate just how little of the worlds water is available for us to use?
5. **Take 2 drops of water from 1/4 cup of water and put in student volunteer's hand.**
These 2 drops of water represent all the water in freshwater lakes and rivers that is available for people and animals to use.

Water is an important resource and vital for people and animals. Using biodegradable products made from agricultural products, like cornstarch packing peanuts, is one way to help keep our water clean.

6. **Conclusion:** Food and fiber products are friendly to the environment. They can be recycled to create useful products and they keep the land and water clean. You can do this demonstration at home with their family, to show them just how little of the worlds water we can use. Thank you for your attention and remember to help conserve our water.

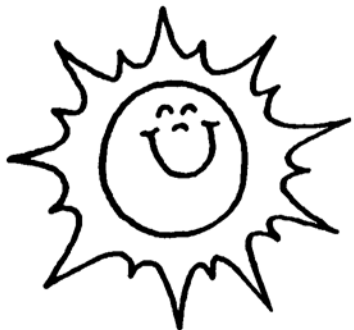
Percentage of water location (Information for presenters only)

The oceans	97.2%	Saltwater lakes	.008%
Glaciers/ice caps	2.0%	Atmosphere	.001%
Groundwater	.62%	(rain/humidity)	
Freshwater lakes (like the bay)	.009%	All rivers	0001%

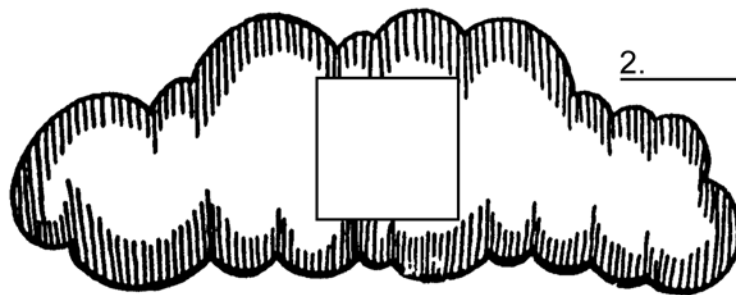
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Name _____

The Water Cycle



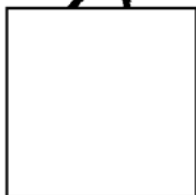
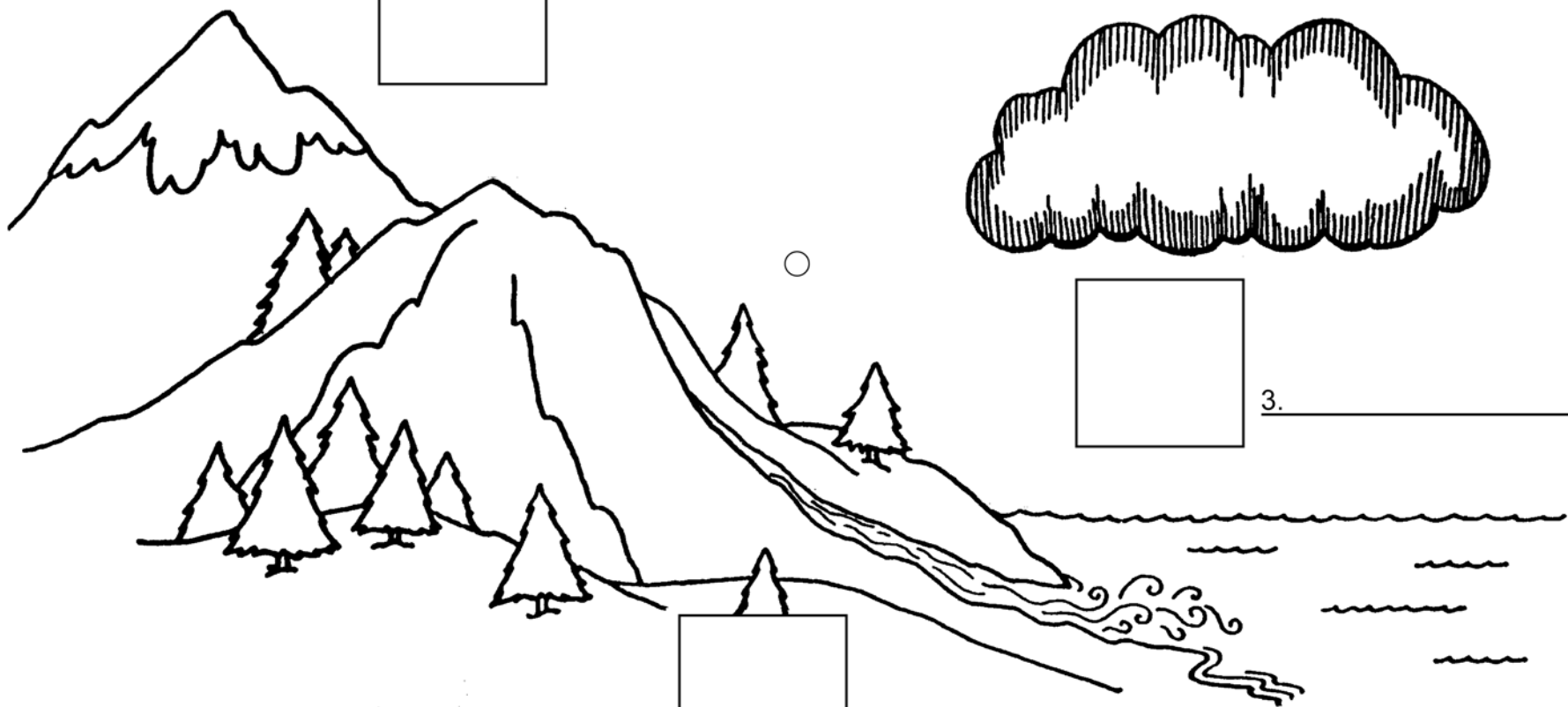
1. _____



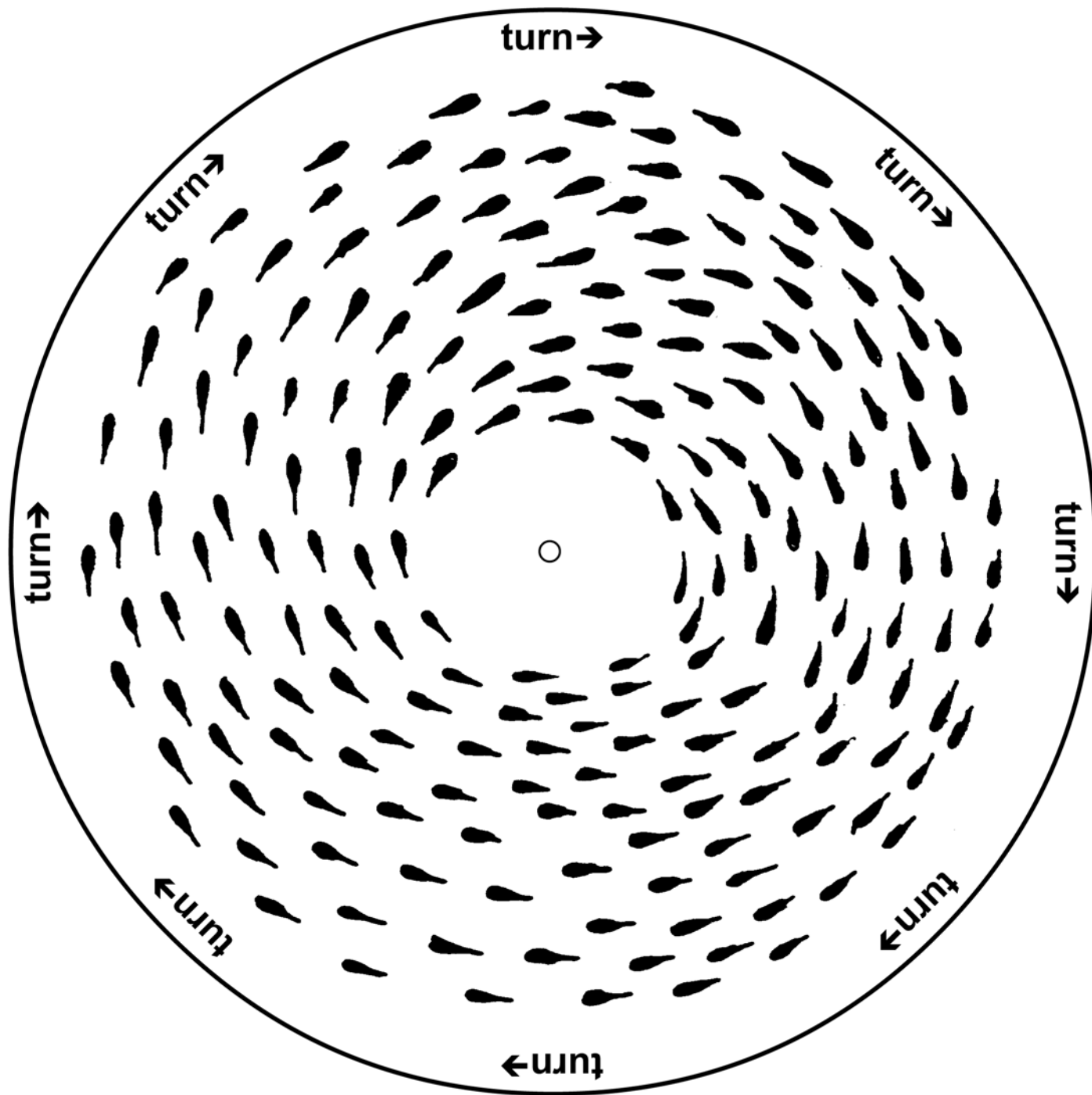
2. _____



3. _____



4. _____



Data Sheet for Parts Per Million (PPM)

Name: _____

CUP NUMBER	COLOR	CONCENTRATION
1		
2		
3		
4		
5		
6		
7		
8		
9		

1. When did the color disappear? Cup# _____
2. Which cup had 1 part per million (ppm) of food coloring? _____
3. What happened to the food coloring? _____

4. Is there still food coloring in cup #7? _____

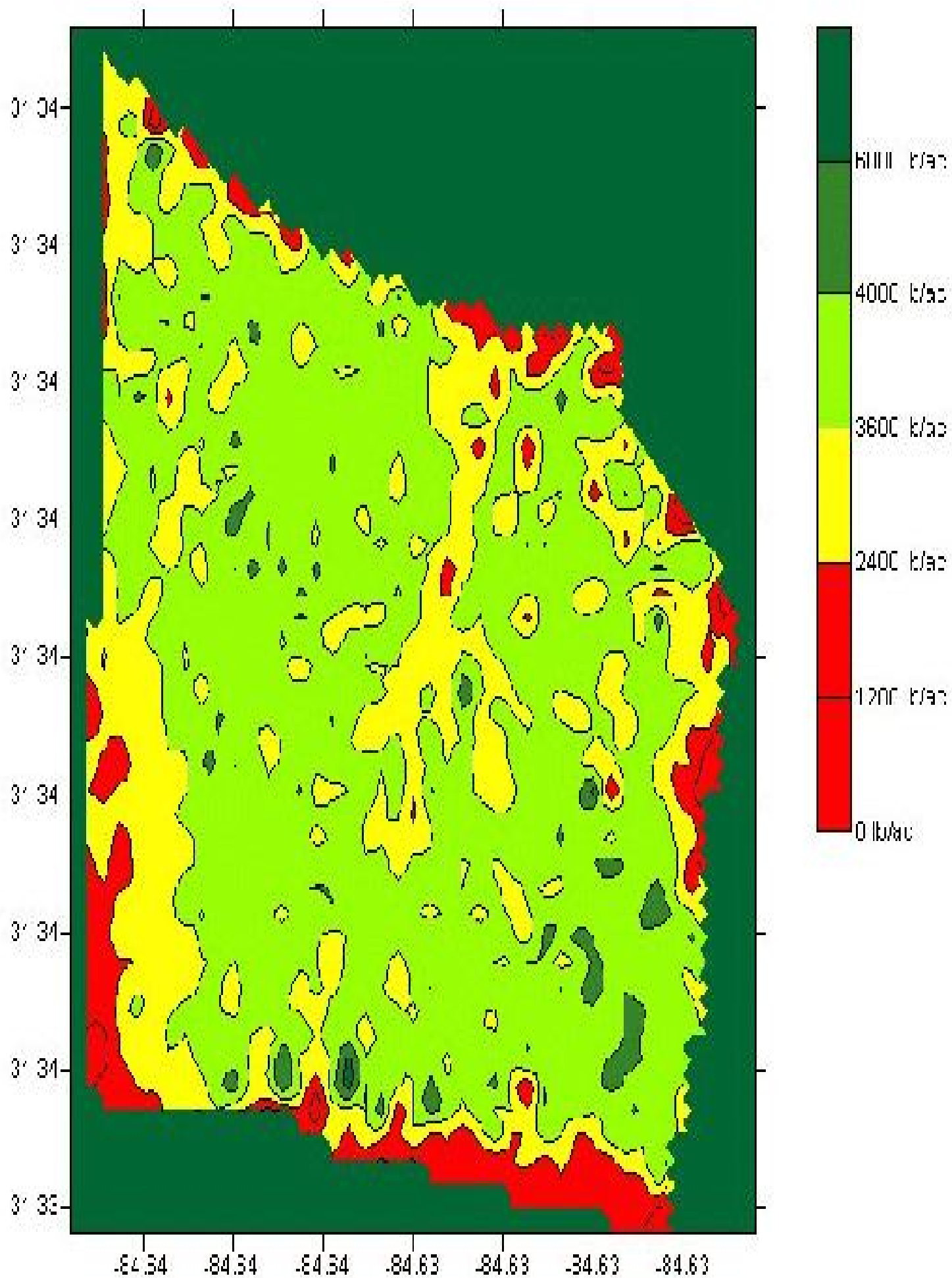


Lake Superior

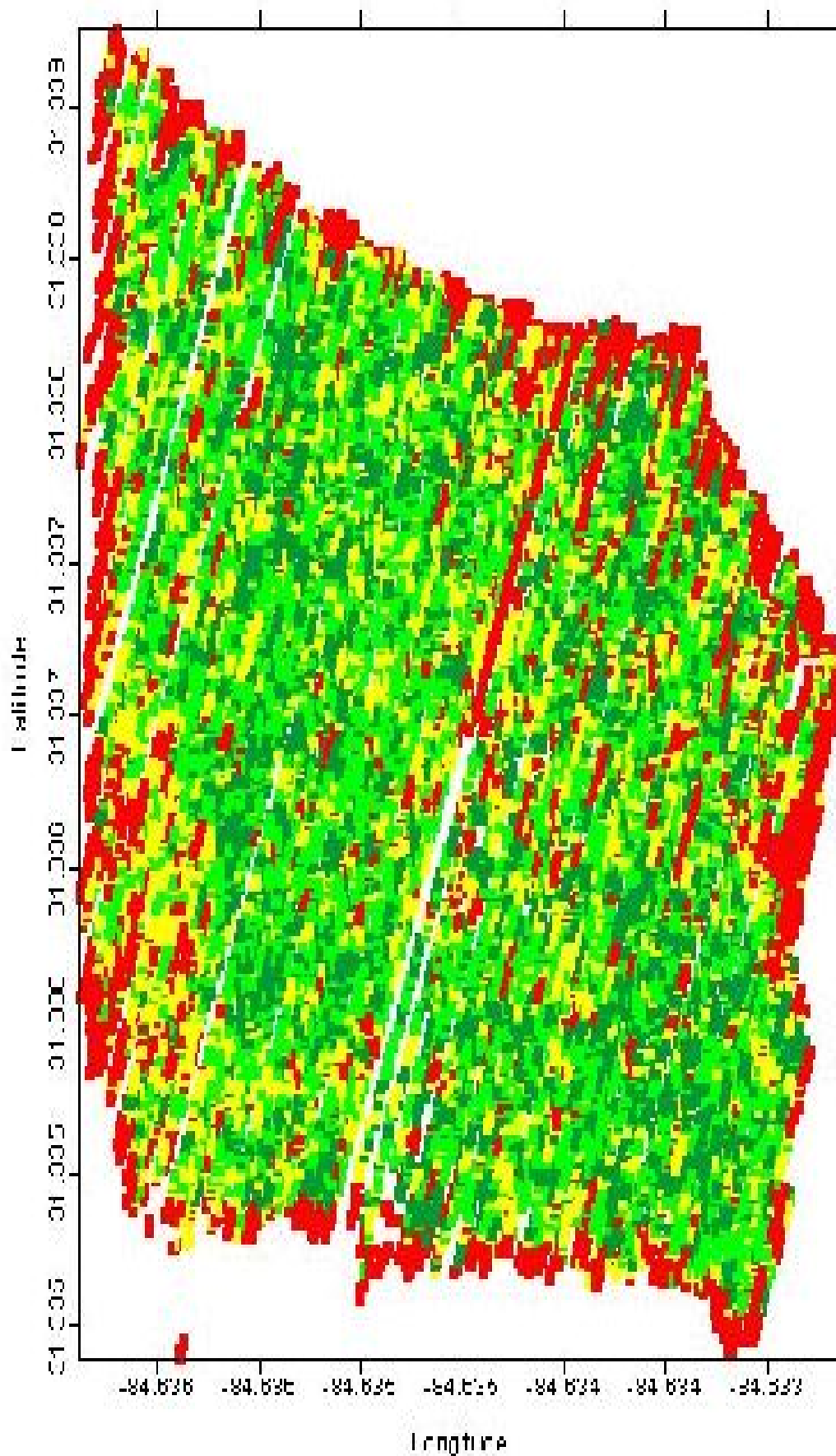
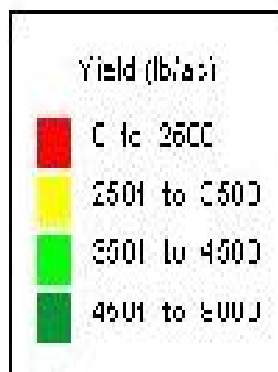
Lake Michigan

Lake Huron

Betsie-Platte



1997 Peanut Yield
Field A10, S & S Farms
Arlington, Georgia



GPS MAP

