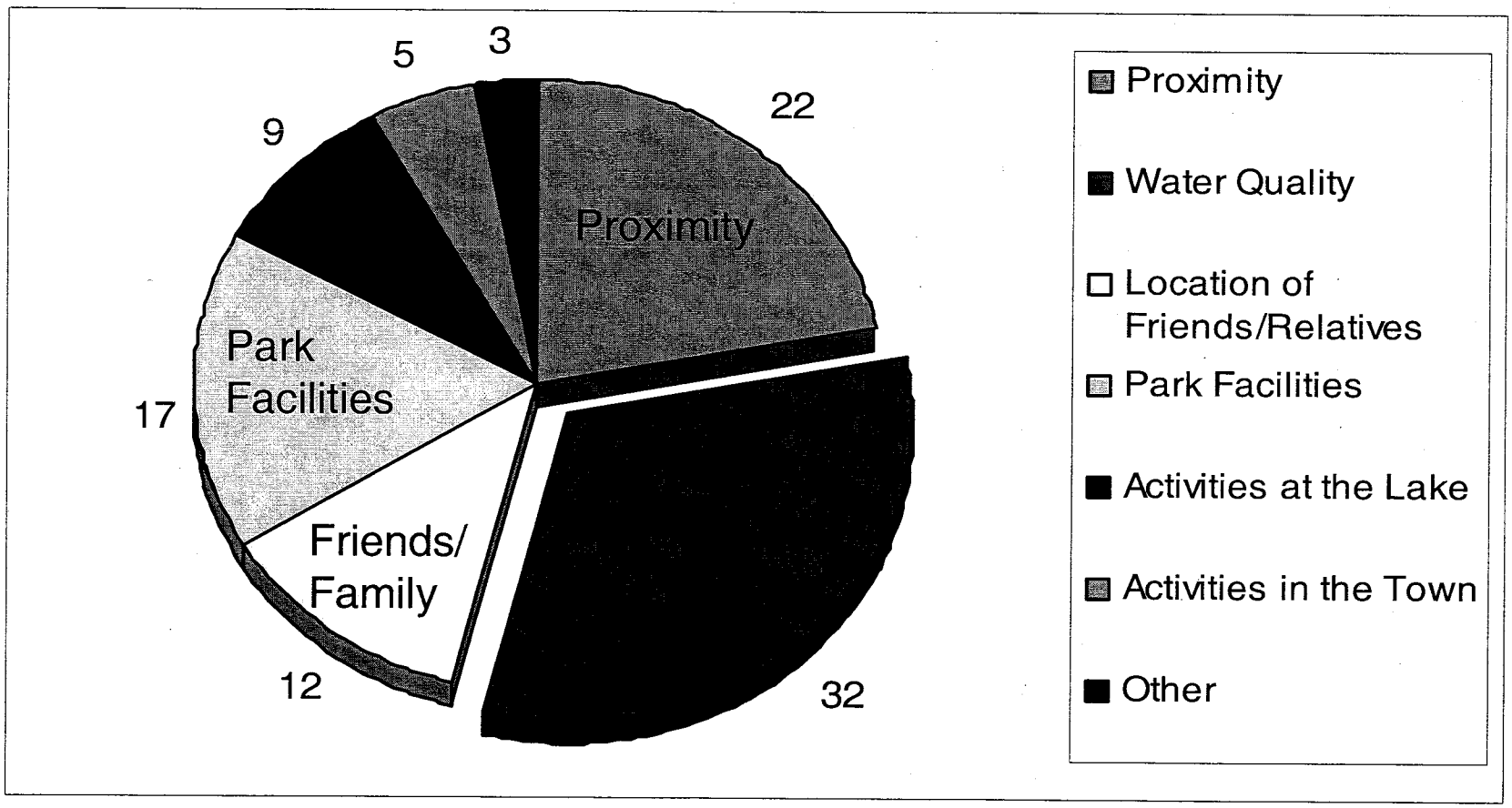
DNR Water Monitoring Program

Program Objectives

- Determine Status of Iowa's Water Resources
- Determine Trends in Water Quality
- Provide Sound and Scientifically Defensible Data for Decision making
- Provide Data on Program Effectiveness
- Engage Iowa's Citizens in Stewardship of Iowa's Water Resources

Assume you have a total of 100 importance points to assign to the following factors in **choosing a lake for recreation**. Please indicate the importance of each factor by allocating your 100 points among the items on this list. To indicate one item is more important to you than another, you should allocate more points to it. You do not need to give points to all of the items, but remember that the total needs to equal 100.



Source: ISU Lake Valuation Study, 2003

Iowa's Ambient Water Monitoring Program

- Surface Water
- Lakes
- Beaches
- City (upstream/downstream)
- Biological (fish / aquatic insects)
- Groundwater
- Citizen monitoring - IOWATER
- Data Management

Interior Rivers and Streams

62 Stream Sites "Non-city"

27 Upstream/Downstream Sites (14 cities)

Samples Taken Monthly (7 sites more frequently)

Test for water chemistry, nutrients

***For the first time*, all sites monitored for:**

Bacteria

Metals (Arsenic, Mercury, etc.)

Pesticides

Priority pollutants

***For the first time*, city sites monitored for:**

Pharmaceuticals, Antibiotics

Gasoline by-products

Biological Monitoring – Stream Health

Randomly Selected Sites (224)

Assess Health of Stream – Aquatic Insects

Integration of Water Chemistry, Physical Habitat

Fish Tissue and Sediment Contamination

Lake Monitoring

Contract with Dr. John Downing; Iowa State University

Recreational lakes (132)

Builds on Two Previous Studies (1980, 1994)

1. First comprehensive monitoring of Iowa lakes
2. First Monitoring of Metals, Pesticides, Sediment Quality
3. First Monitoring of "Toxic Algae"
4. Coordination within DNR for new information on fish populations, and the loss of lake volume through time.

Groundwater Monitoring

- 150 Municipal Wells
  Long-term 90 wells, plus 60 additional
- Monitored Annually for Nutrients, Pesticides
- ***New Monitoring***: Gasoline by-products, Radionuclides, Metals, Age of water
- Private Wells – Plan to start in 2005
- Unincorporated Communities – 2002 - 2003

Citizen Monitoring - IOWATER

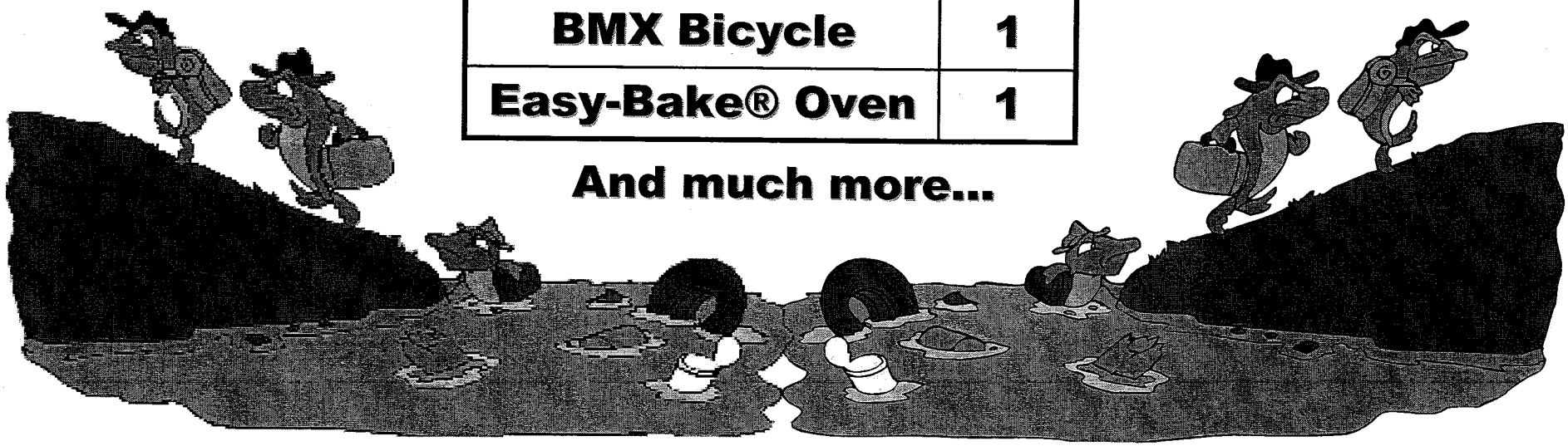
- Promotes Stewardship
- Enhances and Uses Local Knowledge
- Develops and Strengthens Partnerships
- Thousands of IOWATER volunteers have been trained in the past five years

Project Aware #1 Trash Facts

Over 100 Volunteers Cleaned Up...

Tires	**109**
Bags of Trash	**91**
Barrels	**20**
Chairs	**16**
Tarps	**10**
Meth Labs	**1**
BMX Bicycle	**1**
Easy-Bake® Oven	**1**

And much more...



Beach Monitoring

- Prior to 1999, No Beach Monitoring
- Develop Background on All DNR Beaches
- Improve Future DNR Beach Management

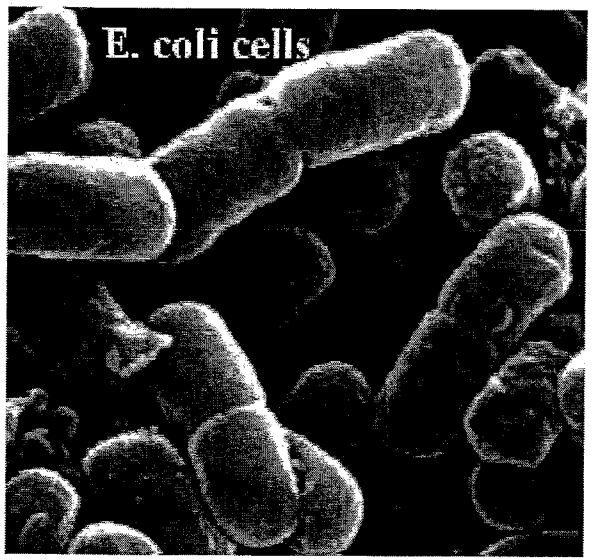
  Safety, Aesthetics, Use by Public
- 35 Beaches Monitored Weekly During Recreational Season
- In 2004 - Added 37 County Beaches

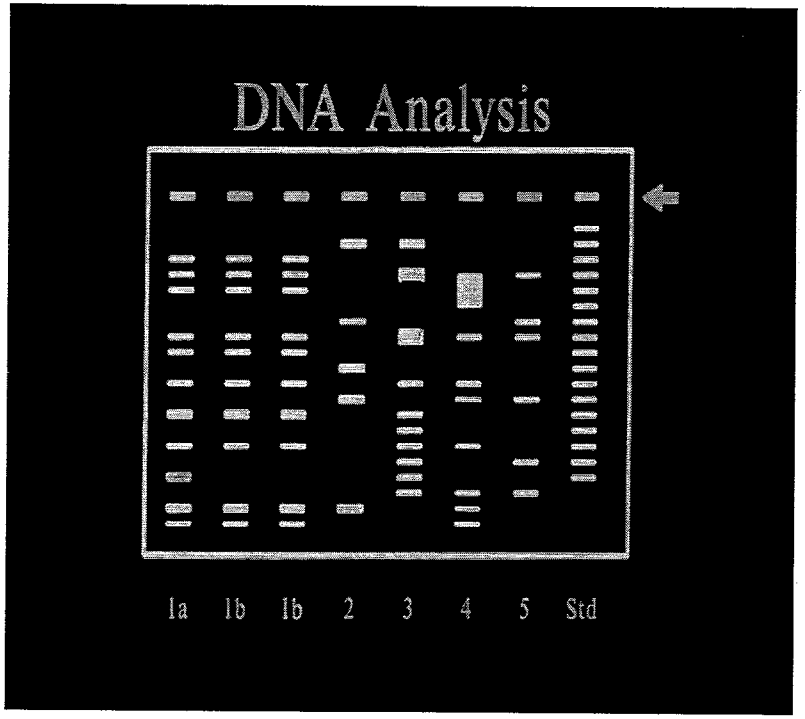
Follow-Up Monitoring

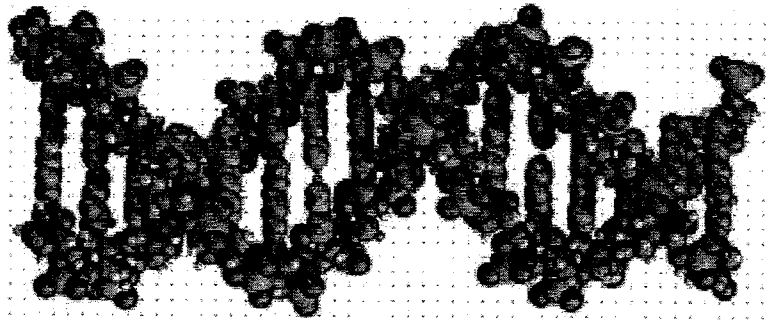
- For Beaches Exceeding Bacteria Standards
- Public Meeting
- Identify Potential Sources
- Beaches with Chronic Problems:

  Backbone Lake
  Beeds Lake
  George Wyth Lake
  Lake Darling
  Prairie Rose Lake
  Rock Creek Lake

Ribotyping Process

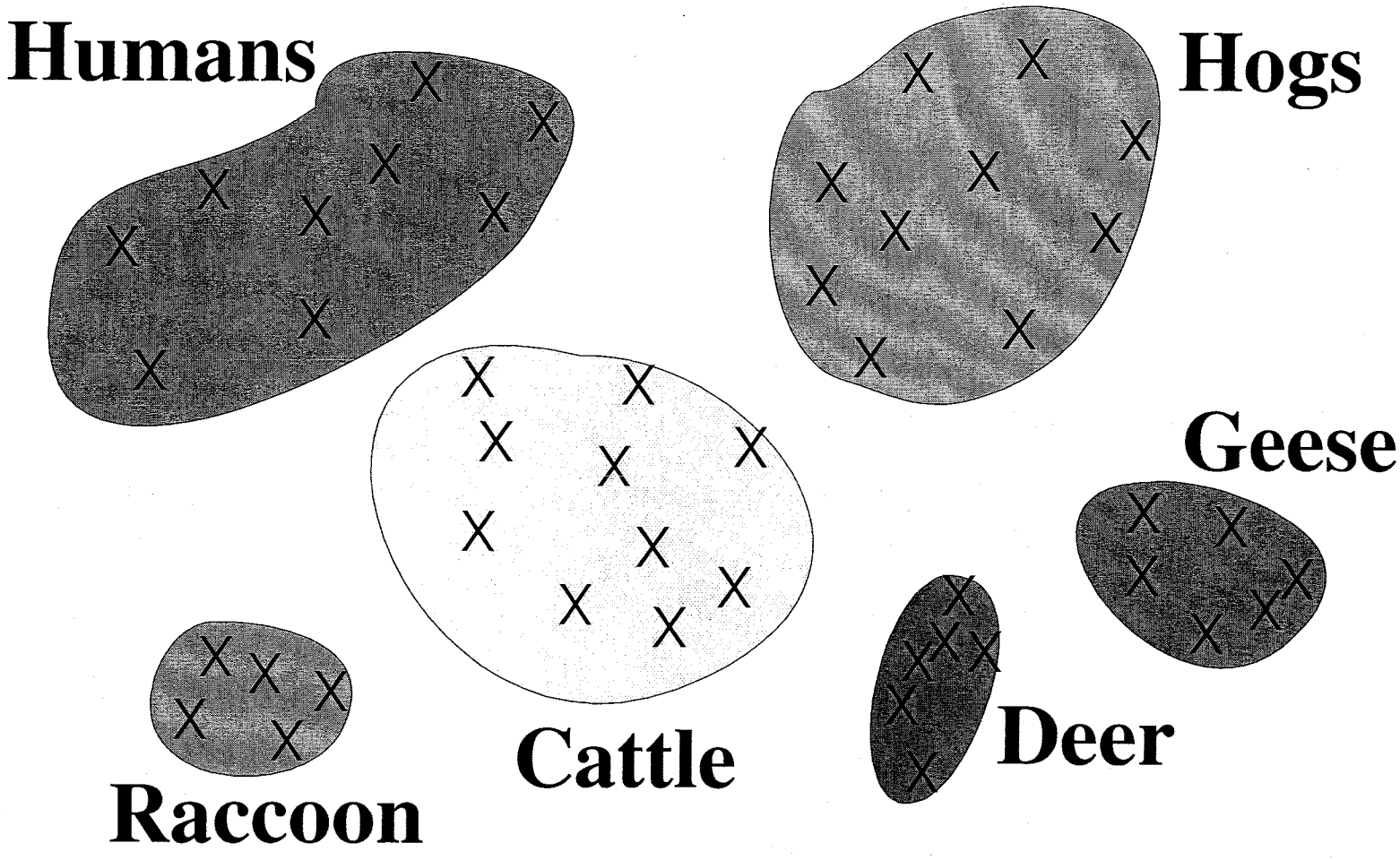






***E.coli* cells are opened**

…releasing DNA



X = known fecal samples

Long-term Monitoring

"Comprehensive water quality monitoring programs can detect problems before they become critical issues and are needed to determine if pollution control programs are working. Perhaps the most important is the public's right to know their water is safe for its intended use."

Data collected today will be used for Future management decisions