

# INVENTORY BASICS...

What are all  
the data for?

# WHY INVENTORY

**You cannot effectively manage your municipal tree resource without first knowing what you have.**

**You can't manage what you haven't measured.**

# WHY INVENTORY

## ■ Knowledge is Power

- What do you want to know?
- What do you want the power to do?

# WHAT DO YOU WANT TO KNOW

- What is the species composition?
- What is the age distribution?
- How many susceptible trees do we have?
- How many vacant planting locations?
- Is stocking increasing or decreasing?

# WHAT DO YOU WANT TO KNOW

- How many of our trees will still be here in 10 years?



# WHAT DO YOU WANT TO KNOW

- How many of our trees may be hazardous?





# WHAT DO YOU WANT TO KNOW

- How many vacant planting locations do we have?



# WHAT DO YOU WANT TO DO

- What are the goals of your Community Forestry Management Plan?



- No one species more than 10% of the population
- Address all high priority hazards
- Increase stocking to whatever percent
- Develop a long term sustainable maintenance plan
- Increase your annual budget



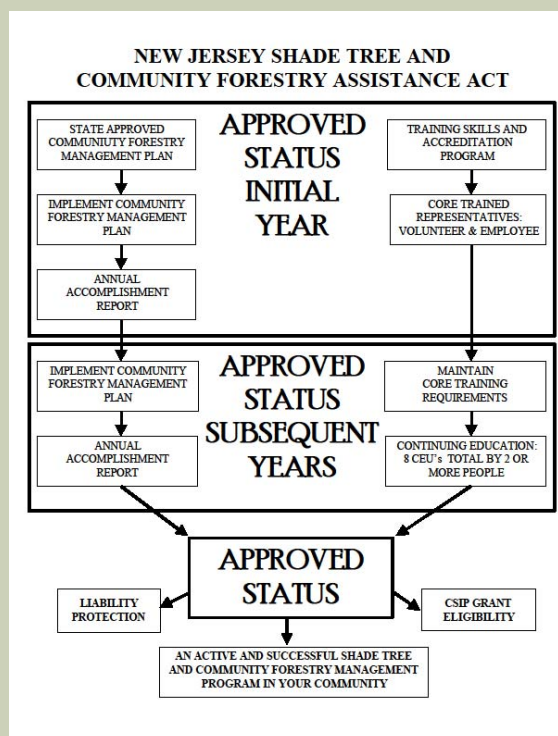
# WHAT DO YOU WANT TO DO

- Plant Trees
- Increase Stocking
- Increase Canopy Cover
- Get more Sustainable Jersey points!



# WHAT DO YOU WANT TO DO

- Remain in compliance with the NJ Shade Tree & Community Forestry Assistance Act
- Maintain liability protection
- Accomplish the goals of my CFMP



# WHAT DATA DO YOU NEED

## ■ Plant Trees

- How many vacant spots do I have?
- How many trees can I plant in a year? (time and budget)

## ■ Increase Stocking

- What is my stocking now?
- What is my stocking goal?
- How many trees are you losing each year that will need to be replaced?

## ■ Increase Canopy Cover

- How much can your overall canopy cover be affected by street tree plantings?

## ■ Get more Sustainable Jersey points!

# WHAT DATA DO YOU NEED

## ■ Plant Trees

- How many vacant spots do I have?
- How many trees can I plant in a year? (time and budget)

■ Just need trees and spots!

# WHAT DATA DO YOU NEED

## ■ Increase Stocking

- What is my stocking now?
- What is my stocking goal?

**existing trees + vacant spots =  
maximum stocking (how many trees will fit)**

**existing trees / maximum stocking =  
percent stocked (stocking now)**

# WHAT DATA DO YOU NEED

## ■ Increase Canopy Cover

- How much can your overall canopy cover be affected by street tree plantings?

## ■ i-Tree Canopy

## ■ Street tree stocking calculations



# WHAT DATA DO YOU NEED

- **Improve species diversity**
  - Collect species data
  - Diversity can be improved at the genus level too!
- **Improve the health and safety of the tree resource**
  - Collect condition rating / notes / prune data
  - You can use i-Tree to collect a “slice in time” list of these
- **Demonstrate the value of the tree resource**
  - i-Tree

# WHAT DO YOU WANT TO DO

- **Develop a long term sustainable maintenance plan**
  - Prune trees on a rotating, scheduled maintenance cycle
  - Avoid spikes in tree pruning and removal / hazard abatement budgets

# WHAT DATA DO YOU NEED

## ■ Develop a long term sustainable maintenance plan

- Collect tree diameter data
- Diameter classes will work fine in most cases

### i-Tree Streets Diameter Class Defaults

0-3"  
3"-6"  
6"-12"  
12"-18"  
18"-24"  
24"-30"  
30"-36"  
36"-42"  
42"+

**SO, WHAT DATA SHOULD YOU COLLECT**

**Only what you  
will use!**

# WHAT ARE DATA

- Facts or information used usually to calculate, analyze, or plan something.

# UNDERSTANDING DATA

- Conceptually, every inventory involves features, attributes, and values:
  - Features – the items that are inventoried (in our case, sites or trees)
  - Attributes – the characteristics of a feature that will be recorded
    - Location information
    - Tree information
  - Values – the quantitative or qualitative measures of an attribute
    - DBH
    - Tree Condition



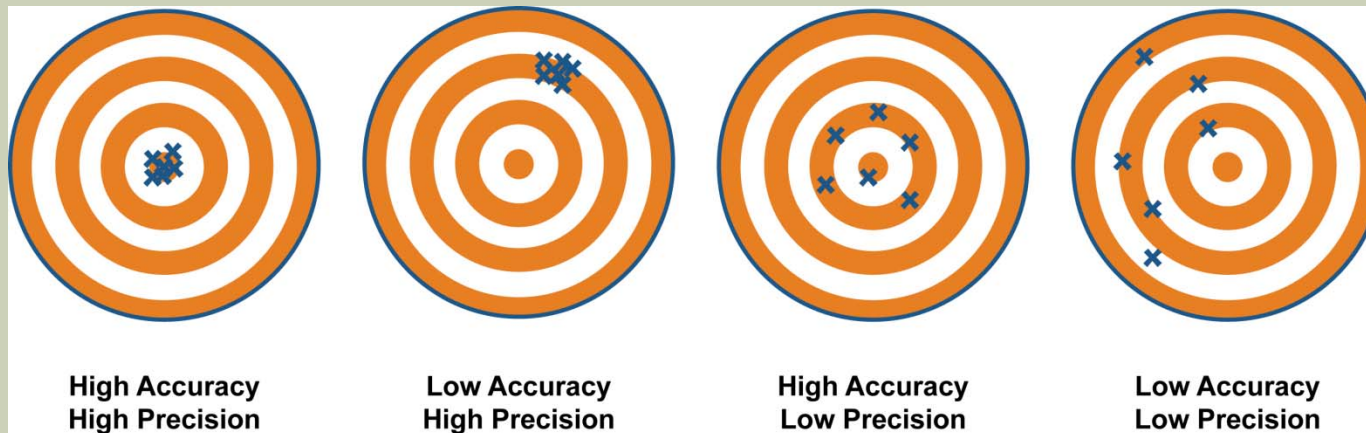
# UNDERSTANDING DATA

## ■ Accuracy

- The success of estimating the true value of a quantity

## ■ Precision

- The clustering of sample values around their own average



# UNDERSTANDING DATA

## ■ Bias

- A systematic distortion arising from such sources as a flaw in measurement or an incorrect method of sampling
  - Consistently overestimating tree diameters by measuring below dbh
  - Arbitrarily shifting sample plot locations to obtain what you believe to be more typical samples

# UNDERSTANDING DATA

- If you pace 100 feet from a tree to measure height, what does your location represent?
- When you measure a tree diameter, what does that measure represent?
- When you record the genus or species of a tree, what does that data represent?

# UNDERSTANDING DATA

- How accurate are your data?
- How precise are your data?
- What areas of your inventory do you expect may be biased? In what ways?
- How can you improve the quality of your data?