Welcome
Nahant Garden Club
Arbor Day Celebration

April 28, 2016
Nahant Life Saving Station
A Nahant Preservation Trust Building
“Trees In Nahant”

Barbara Warren
Salem Sound Coastwatch, Executive Director
MassBays Lower North Shore Regional Coordinator
How many of you love trees?
They frame our view – venture forward
To move through space—enjoy walks
Mark boundaries – create edges

Green Lawn Cemetery | Photo Robert A. Wilson
They help us remember—cherish

Calantha’s Tree at Lodge Park | Photo Robert A. Wilson
Find peace and solitude
Line our streets—create shade & give pleasure

Nahant Road Looking Toward Forty Steps | Photo Robert A. Wilson
In winter—enrich our experience
Trees Matter- shelter and food

- Great diversity of wildlife
- Opportunity for people to enjoy nature at our the doorstep

www.treesforcities.org
We Value Trees!  Habitat & Wildlife

Bumblebee in Apple Blossom | Photo Robert A. Wilson
We Value Trees! Habitat & Wildlife

Cardinal near the Audubon Sanctuary | Photo Robert A. Wilson
We Value Trees!  Habitat & Wildlife

Poplar at Northeastern  |  Photo Robert A. Wilson
We Value Trees!  Habitat & Wildlife

Monarch Migration, October 9, 2007  |  Photo Linda Pivacek
200 years ago—NO trees in Nahant

• First settlers deforested the peninsula in the 1600-1700s to pasture their cattle, making it almost devoid of vegetation.

• By 1819, not a single tree was left standing on Nahant.

*Ice King - Frederic Tudor and His Circle* by the authors of *Nahant on the Rocks*. 2003.
Trees Matter

Soil Stabilization

Tree roots help to bind and stabilize the soil, lessening the rate of soil erosion and downstream sedimentation....in Nahant into the ocean.

Roots take up water and help create conditions in the soil that promote infiltration.
Tree Champion – Frederic Tudor

"...he kept a garden. Although it flourished and grew, his little Eden was in the midst of a barren, rocky waste.....

Frederic's success with his own garden convinced him that he could extend his Eden over the whole peninsula. The scoffers who claimed that the salt air and the winds would kill all vegetation, including trees, only spurred him on. "

http://myweb.northshore.edu/users/ccarlsen/poetry/nahant/small-town-wide-view.html
Tree Champion– Frederic Tudor

"Tudor was famous for planting fruit trees and tobacco in his large gardens on Nahant.

Determined to reverse the barren appearance of treeless Nahant, he began in 1834 to give away trees to any Nahanters who would plant them on their property."

http://myweb.northshore.edu/users/ccarlsen/poetry/nahant/small-town-wide-view.html
Try to imagine- Nahant with no trees

Changes in the Land by William Cronon- landmark environmental history
Tree Champion—William Wood

“William Wood, described as an eccentric bachelor from Bunker Hill, offered the Town “ten hundred” books to begin a library on Nahant.

The town, accepting both his generous offer and his plan, called for each title to be borrowed at a cost of five cents, deposited in a bank in Boston, then withdrawn each year, in order to buy trees and shrubs to provide shade on the barren island.

The year of free public libraries arrived in 1872, when the Massachusetts legislature enacted a law to create them.

By then, Nahant had trees once more.”

http://myweb.northshore.edu/users/ccarlsen/poetry/nahant/small-town-wide-view.html
Once

1880’s   Tilling the soil for orchids to be shipped around the world, Tom Costin | Photo Barbara Warren
Once, Now

1880’s Tilling the soil for orchids to be shipped around the world, Tom Costin | Photo Barbara Warren
Now- Future

Red Oak - 250 Years old, Tom and Cindy Costin’s | Photo Barbara Warren
Future—takes vision, time, hard work……..
Trees Matter

Bring lasting benefits to people in Nahant

Moderate climate – winter and summer

Healthier lives
Trees Matter

➢ Healthier lives

Cleaner Air – Trees absorb through their leaves gases such as carbon monoxide (CO), nitrogen dioxide (NO2) and sulphur dioxide (SO2) that are known to cause respiratory problems and can also increase sensitivity to allergens.

Cooling and shading effect of urban trees helps to reduce the rate of ozone production.

Noise Reduction –
Trees Matter

➢ Healthier lives

Cooling the Air – heat reflected upwards from their leaves, significantly reduces summer air temperature

Shade – dappled shade provides a useful barrier to harmful ultra-violet radiation, as well as reducing heat-induced stress amongst people and animals
Trees Matter—dappled shade

Birch Leaves at Costin Residence | Photo Robert A. Wilson
Trees Matter

- Shelter urban open spaces by slowing down wind speeds, substantially reducing air turbulence, especially around buildings, making towns and cities more comfortable for people.

The shelter from trees and woods in towns also reduces the heating and air-conditioning costs of buildings. This can save as much as 10% of annual energy consumption, and cut down the air pollution caused by burning fossil fuels.
Trees Matter

Carbon dioxide – major greenhouse gas

As trees grow they absorb and store the carbon in their timber, making forests important in the fight to reduce the rate of global climate change.

However, since it takes a woods about an acre in size to absorb the carbon emissions of an average person, this role for trees in towns will always be strictly limited.

Nevertheless, all extra trees are valuable and their role in absorbing carbon is certainly symbolically important.
Trees Matter

Reducing stormwater & flooding-

Leaf canopies provide surface area where rain water lands and evaporates. The rain is intercepted by the leaves and then evaporates or drips more gradually to the ground. This lessens the likelihood of flashflooding and helps to conserve ground water.

Using trees in towns as part of sustainable urban drainage systems is a self-sustaining and cost-effective stormwater management strategy which should be used to complement much more expensive hard-engineering options.
Trees consume water

Willow Trees at the Golf Course | Photo Barbara Warren
Trees consume water - LOTS

100 mature trees catch 200,000 gallons of rainwater/year
In the process, Cool Us!

100 = 1,000
We Value Trees— increase property values

1 large tree can add 10% to the market value of residential real estate.
Greenscapes North Shore

Environmentally friendly landscaping

Easy ways to reduce water usage and chemicals in your yard or park - - - - - and reduce RUNOFF.

www.greenscapes.org
Create a Hydrologically Functional Lot

Managing Stormwater

Conservation of Trees

Porous Pavement

Amended Soils

Open swale Drainage

Rain Gardens

Rain Barrel
Planting trees

Tall trees, such as: maple, oak, spruce, and pine

Plant the right tree in the right place
Plant taller trees away from overhead utility lines

Tree pruning zone

40 feet height or less

Medium trees, such as: washington hawthorn and goldenraintree

Small trees, such as: redbud, dogwood, and crabapple

20 ft

50 ft
Planting native trees

Red Maple
Smooth Shadbush
River Birch
Witch Hazel
White Pine
American Holly
Serviceberry
(*Amelanchier arborea*)

- Large shrub or small tree
- Medium to dark green leaves in summer
- Known for its fantastic fall color range: bright yellow, peach, apricot to orange and deep red
- Very appropriate in a natural setting with an evergreen backdrop
Pin Oak
(Quercus palustris)

• Large (50’ - 70’) fast growing tree

• Strongly pyramidal with central leader

• Good shade tree

• Fall color is red-to-burgundy
Eastern Red Cedar *(Juniperus virgininiana)*

- Handsome native evergreen
- Light blue berries that attract wildlife
- Excellent as a specimen
- Useful in masses for windbreaks and screening
- Also salt tolerant
Armstrong Cylindrical Red Maple
\textit{(Acer rubrum\textquotesingle Armstrong\textquotesingle)} - cultivars
Shademaster Honey Locust (Gleditsia Tricanthos) – not native
Gingo Tree (*Gingo Biloba*) - not native
Japanese Tree Lilac
*(Syringa Reticulata)* – not native
Sugar Maple

(Acer saccharum)
Tree species in the Northeast are shifting northward. The range of spruce/fir, maple, and elm/ash/cottonwood forests are shrinking and being replaced by oak/hickory forest in most of the region, and by loblolly/shortleaf pine forest in the southernmost areas. Source: USGCRP (2009)
Planting trees-
Think about
the future....

Maintaining species, structural, and age class diversity is important in the face of climate change:

• Create mosaics of habitats for existing wildlife species and new species that may move into the area

• Less vulnerable to environmental stresses and disturbance events

• Reduce risk of damage and financial loss, and create economic opportunities by managing for species that are suited to the changing climatic conditions.
Natural disaster—may strike

“Big tree after September 1938 Hurricane”
www.legacystories.org/public-archives/stories.entry/nahant-ma
Trees do not live forever – stewards

Bailey’s Hill Trees at the Kelly Greens Golf Course | Photos Barbara Warren and Vi Patek
How would you feel— if Bailey’s Hill was
How would you feel– trees gone?

PHOTOGRAPH: BARBARA WARREN

Bailey’s Hill Trees | Photos Barbara Warren
Wicked Oriental Bittersweet

PHOTOGRAPH: ROBERT A. WILSON

Early Spring at Northeastern | Photo Robert A. Wilson
Remove Oriental Bittersweet

- Remove from your yards
- Volunteer to remove from public spaces
Decide what and where – then the HOW

Plant the right tree in the right place

Tall trees, such as: maple, oak, spruce, and pine

Medium trees, such as: Washington Hawthorn and goldenrain tree

Small trees, such as: redbud, dogwood, and crabapple
HOW
HOW

Diagram illustrating proper planting procedure for a tree or shrub.

- 2 - 4" of organic mulch applied over planting area and away from trunk
- Trunk flare junction: level with or 1 - 2" above existing grade
- Backfill with unamended topsoil from hole
- Existing grade
- Burlap, rope, and wire cut away from visible ball
- Rootball sitting directly on top of undisturbed soil
- Slope sided hole is three times as wide as the rootball diameter
Soil preparation - includes compost & tea

- Trees need attention for the first couple of years
- Water, compost, protection
- Get a 2-year warranty if possible
- Plant in early spring before June
Trunk- five different layers

A. **Outer bark** - tree’s protection from the outside world
   - Continually renewed from within
   - Keeps out moisture
   - Prevents tree from losing moisture when the air is dry
   - Insulates against cold and heat
   - Wards off insect enemies

B. **Inner bark or “phloem”** - the pipeline for food to pass to the rest of the tree
   - Lives for only a short time
   - Turns to cork to become part of the protective outer bark when dies

C. **Cambium** cell layer - growing part of the trunk
   - Produces new bark annually in response to hormones
   - Pass down through the phloem with food from the leaves.
     These hormones, called “auxins,” stimulate growth in cells.

D. **Sapwood** - tree’s pipeline for water moving up to the leaves
   - New wood
   - As newer rings laid down, inner cells lose their vitality and turn to heartwood

E. **Heartwood** - central, supporting pillar of the tree
   - Although dead, does not decay or lose strength while the outer layers are intact
   - Composite of hollow, needlelike cellulose fibers bound together by a chemical glue called lignin
Preventing damage - weed wracking

- Mulch Correctly!
- Protect the BARK!!
- NO WEED WRACKING or MOWING!!!
Preventing damage - aeration

- Both soil compaction and increases in grade deplete the oxygen supply to tree roots.

- If soil aeration can be improved, root growth and water uptake can be enhanced.

Holes drilled through the root system to improve aeration.
How can you make a difference?

Tree Along Tudor Beach | Photo Robert A. Wilson
What are the consequences?

Poplar at Northeastern | Photo Robert A. Wilson
Tree City USA- Provides Community Forestry Program

- Direction
- Technical assistance
- Public attention
- National recognition
Framework for Action

• Provides direction
• Systematic management of tree resources
• Tree master plan - inventory
Steps to becoming a Tree City USA

- Meet the Four Standards
- Complete and upload application documents each year by December 31 - No Fee!
- Apply at www.arborday.org/TreeCityUSA
Requirements to be a Tree City USA

1. Tree Board
2. Tree Care Ordinance
3. Community Forestry Program
   With Annual Budget of at Least $2 Per Capita
4. Arbor Day Observance and Proclamation
1. Tree Board

- May be a professional forester/arborist
- Group of volunteer citizens charged by ordinance with developing and administering a tree management program
- Legally responsible for the management of the community’s trees
2. Tree Care Ordinance

- Establishes a tree board and gives it responsibilities

- Guidance for planting, maintaining and removing trees on public property

- Provides an opportunity to set good policy that is legally enforceable
3. Community Forestry Program With Annual Budget of at Least $2 Per Capita

- Percentage of city workers’ salaries spent on tree care
- Tree planting/watering/fertilizing
- Equipment rental/purchase/maintenance
- Arbor Day expenses
- Tree care conferences, workshops, memberships
- Value of volunteer labor
100 Trees Over 40 Years-

Benefits = $161,000
  Energy
  Air Quality
  Runoff
  Real Estate

Costs = $89,000
  Planting/Pruning
  Removal/Disposal
  Irrigation
  Sidewalk Repair
  Litter
  Legal/Administration

Pay Off: $72,000
Nahanters can make it happen

Together with Trees...
Worth Our Time. Worth Our Resources.

Willingness to volunteer → Public tree care → Pride in community → Better care of personal trees → More pride → Willingness to volunteer
Thank You!
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