CENTER FOR URBAN RESTORATION ECOLOGY

RUTGERS

BROOKLYN BOTANIC GARDEN

Ecosystem Services: Benefits Supplied by Natural Ecosystems

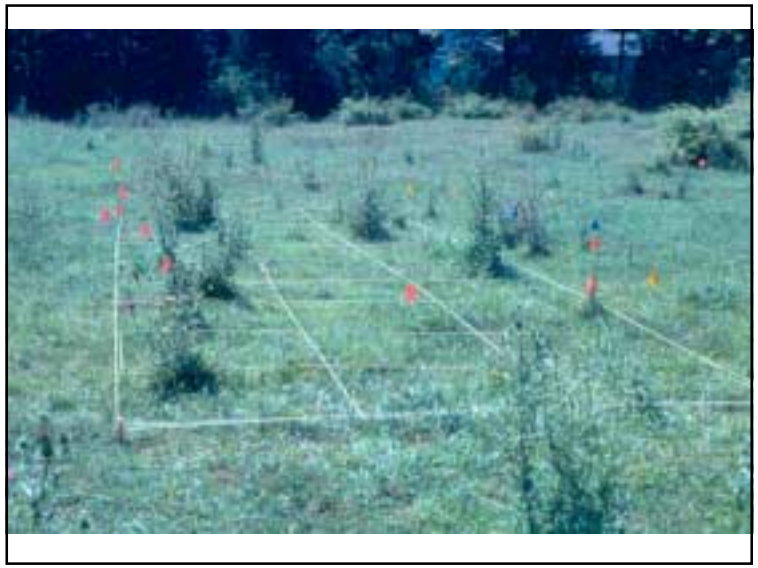
- Purification of air and water
- Mitigation of droughts and floods
- Generation and preservation of soils
- Cycling and movement of nutrients
- Partial stabilization of climate

ESA Issues in Ecology, #2, 1997

Ecosystem Services: Benefits Supplied by Natural Ecosystems

- Maintenance of biodiversity
- Pollination of crops and natural vegetation
- Dispersal of seeds through the landscape
- Control of the vast majority of potential agricultural pests
- Aesthetic beauty and intellectual stimulation for the community

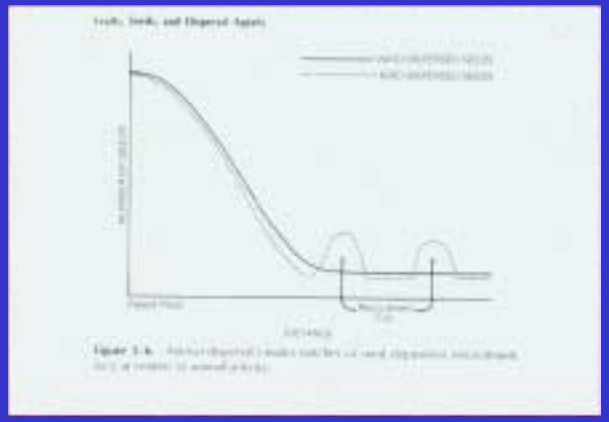
ESA Issues in Ecology, #2, 1997



Possible limiting factors of recruitment

- **Seed Rain/Deposition**
- Viable Seeds
- Microsite
- Seed Predators
- Seedling Predators


New Jersey
Manhattan
Staten Island
Brooklyn
Fresh Kills Landfill
Lower New York Bay

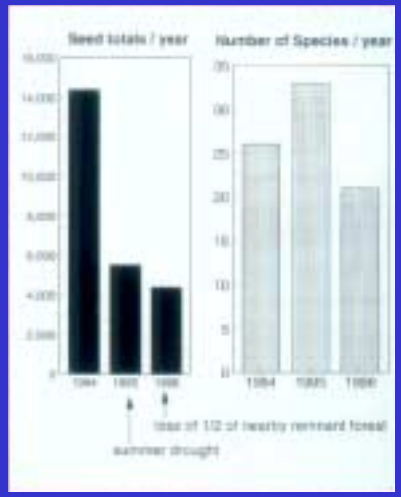


Patch Experiment

7 Species	Common name
Celtis occidentalis	Hackberry
Rhus copallina	Sumac
Amelanchier canadensis	Shadbush
Prunus maritima	Beach plum
Vaccinium corymbosum	Blueberry
Rubus allegheniensis	Blackberry
Rosa nitida	Rose

Seeds Found in Traps

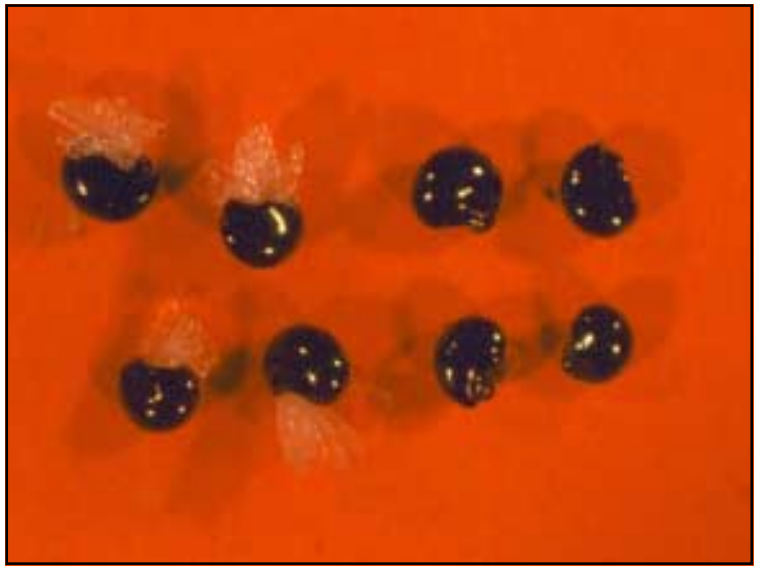
Amelanchier
Ampelopsis
Aralia
Celastrus
Celtis
Cornus
Eleagnus
Ilex
Juniperus
Lindera
Liriodendron
Lonicera
Malus
Morus
Myrica
Nyssa
Parthenocissus
Prunus
Quercus
Rhus
Rosa
Rubus
Sambucus
Sassafras
Smilax
Solanum
Taxus
Toxicodendron
Viburnum
Vitis
Acer
Ailanthus
Betula



Bee species found in New York City

Number of Genera	Number of Species	Number of species found at each site					
		Restored sites			Remnant habitats		
		1	2	3	1	2	3
35	121	51	53	30	62	21	80

(Yurlina, 1998)



Restoration and Scientific Progress

- Reproductive ecology (numbers, genetics)
- Community assembly (tempo, sequence)
- Biotic invasions (species, impact)
- Interactions among populations (movement of species)

Restoration and Public Needs

- Partner to conservation
- Buffering natural populations
- Supporting ecosystem processes
- Habitat links and corridors
- Learning management needs for preserves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