



Chicago Botanic Garden Lake Shoreline Enhancement Projects – Glencoe, IL Methodology for Landscape Performance Benefits

Prepared by:

Research Fellow: Jinki Kim, Assistant Professor, University of Illinois at Urbana-Champaign
Research Assistant: John Whalen, MLA Candidate, University of Illinois at Urbana-Champaign
Firm Liaison: Heidi Natura, Founder & Partner, Living Habitats

Environmental

**Increased species richness of the shoreline plant collections from 23 to 244 species.
Now 100% of these species are native perennials, compared to only 35% previously.**

The Chicago Botanic Garden and Living Habitats provided both the Shoreline Master Plant List and the Pre-Restoration Vegetation List used to quantify this figure. Living Habitats also confirmed the percentage of these species which are native perennials.

Shoreline Pre-restoration Vegetation List	
<u>Scientific Name (* = Non-native)</u>	<u>Common Name</u>
-	-
<i>Acer negundo</i>	Box Elder
<i>Agrostis alba</i> *	Redtop
<i>Alnus glutinosa</i> *	European Alder
<i>Ambrosia artemisiifolia elatior</i>	Common Ragweed
<i>Asclepias syriaca</i>	Common Milkweed
<i>Aster pilosus</i>	Hairy Aster
<i>Bidens cernua</i>	Nodding Bur Marigold
<i>Chenopodium album</i> *	Lamb's Quarters
<i>Cichorium intybus</i> *	Chicory
<i>Cirsium arvense</i> *	Field Thistle
<i>Cyperus esculentus</i>	Field Nut Sedge
<i>Daucus carota</i> *	Queen Anne's Lace
<i>Echinochloa crusgalli</i>	Barnyard Grass
<i>Festuca elatior</i> *	Tall Fescue
<i>Hordeum jubatum</i> *	Squirrel-tail Grass
<i>Lythrum salicaria</i> *	Purple Loosestrife
<i>Melilotus alba</i> *	White Sweet Clover
<i>Phalaris arundinacea</i> *	Reed Canary Grass
<i>Poa pratensis</i> *	Kentucky Blue Grass
<i>Polygonum pensylvanicum</i>	Pinkweed

<i>Rumex crispus</i> *	Curly Dock
<i>Sonchus arvensis</i> *	Field Sow Thistle
<i>Xanthium strumarium</i> *	Cocklebur

Shoreline Restoration Plant List

<u>Scientific Name</u>	<u>Common Name</u>
-	-
<u>TREES & SHRUBS</u>	-
<i>Amelanchier sanguinea</i>	Round-Leaved Serviceberry
<i>Amorpha canescens</i>	Leadplant
<i>Amorpha fruticosa</i>	Indigo Bush
<i>Aronia melanocarpa</i>	Black Chokecherry
<i>Cephalanthus occidentalis</i>	Buttonbush
<i>Cornus oblique</i>	Blue-Fruited Dogwood
<i>Cornus racemosa</i>	Gray Dogwood
<i>Cornus rugose</i>	Round-Leaved Dogwood
<i>Cornus stolonifera</i>	Red-Osier Dogwood
<i>Corylus americana</i>	American Hazelnut
<i>Cornus drummondii</i>	Drummond's Dogwood
<i>Decodon verticillatus</i>	Swamp Loosestrife
<i>Euonymus atropurpureus</i>	Wahoo
<i>Hamamelis virginiana</i>	Witch Hazel
<i>Hypericum kalmianum</i>	Kalm's St. John's Wort
<i>Ilex verticillata</i>	Winterberry
<i>Nyssa sylvatica</i>	Black Gum Tupelo
<i>Physocarpus opulifolius</i>	Ninebark
<i>Prunus virginiana</i>	Choke Cherry
<i>Rhus aromatic</i>	Fragrant Sumac
<i>Rhus glabra</i>	Smooth Sumac
<i>Ribes americanum</i>	Wild Black Currant
<i>Rosa blanda</i>	Early Wild Rose
<i>Rosa palustris</i>	Swamp Rose
<i>Rosa setigera</i>	Illinois Rose
<i>Salix discolor</i>	Pussy Willow
<i>Sambucus canadensis</i>	Elderberry
<i>Spiraea alba</i>	Meadowsweet
<i>Staphylea trifolia</i>	Bladdernut
<i>Viburnum cassinoides</i>	With Rod Viburnum
<i>Viburnum lentago</i>	Nannyberry
<i>Viburnum prunifolium</i>	Black Haw
<i>Viburnum rafinesquianum</i>	Downy Arrow Wood
<i>Viburnum trilobum</i>	Highbush Cranberry

-	-
-	-
PERENNIALS	-
<i>Acorus americanus</i>	Sweet Flag
<i>Actinomeris alternifolia</i>	Wingstem
<i>Alisma subcordatum</i>	Common Water Plantain
<i>Alisma triviale</i>	Large-Flowered Water Plantain
<i>Allium cernuum</i>	Nodding Wild Onion
<i>Anemone canadensis</i>	Meadow Anemone
<i>Anemone cylindrica</i>	Thimbleweed
<i>Angelica atropurpurea</i>	Great Angelica
<i>Aquilegia canadensis</i>	American Columbine
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Asclepias purpurascens</i>	Purple Milkweed
<i>Asclepias sullivantii</i>	Prairie Milkweed
<i>Asclepias tuberosa</i>	Butterfly Weed
<i>Asclepias verticillata</i>	Whorled Milkweed
<i>Asclepias viridiflora</i>	Short Green Milkweed
<i>Aster sagittifolius</i>	Drummond's Aster
<i>Athyrium felix-femina</i>	Lady Fern
<i>Baptisia alba</i>	White Wild Indigo
<i>Baptisia australis</i>	Blue False Indigo
<i>Baptisia bracteata var leucophaea</i>	Cream Wild Indigo
<i>Boltonia asteroides recognita</i>	False Aster
<i>Bromus ciliatus</i>	Fringed Brome
<i>Bromus kalmii</i>	Prairie Brome
<i>Calamagrostis canadensis</i>	Blue Joint Grass
<i>Caltha palustris</i>	Marsh Marigold
<i>Carex annectens xanthocarpa</i>	Small Yellow Fox Sedge
<i>Carex aquatilis</i>	Long Bracted Tussock
<i>Carex atherodes</i>	Hairy-Leaved Lake Sedge
<i>Carex bebbii</i>	Bebb's Oval Sedge
<i>Carex bicknellii</i>	Bicknell's Sedge
<i>Carex brevior</i>	Plains Oval Sedge
<i>Carex bromoides</i>	Brome Hummock Sedge
<i>Carex comosa</i>	Bristly Sedge
<i>Carex conjuncta</i>	Green-headed Fox Sedge
<i>Carex crinita</i>	Fringed Sedge
<i>Carex cristatella</i>	Crested Oval Sedge
<i>Carex emoryi</i>	Riverbank Sedge
<i>Carex frankii</i>	Frank's Sedge
<i>Carex gracillima</i>	Purple-sheathed Graceful Sedge
<i>Carex granularis</i>	Pale Sedge
<i>Carex gravida</i>	Long-Awned Bracted Sedge
<i>Carex grayi</i>	Common Bur Sedge

<i>Carex hirtifolia</i>	Hairy Wood Sedge
<i>Carex hyalinolepis</i>	Common Lake Sedge
<i>Carex hystericina</i>	Porcupine Sedge
<i>Carex lupuliformis</i>	Knobbed Hob Sedge
<i>Carex lupulina</i>	Common Hop Sedge
<i>Carex lurida</i>	Bottlebrush Sedge
<i>Carex molesta</i>	Field Oval Sedge
<i>Carex muskingumensis</i>	Oval Swamp Sedge
<i>Carex pellita</i>	Broad-leaved Woolly Sedge
<i>Carex pensylvanica</i>	Pennsylvania Sedge
<i>Carex radiata</i>	Straight-styled Wood Sedge
<i>Carex retrorsa</i>	Deflexed Bottle-Brush Sedge
<i>Carex rosea</i>	Curly-styled Wood Sedge
<i>Carex scoparia</i>	Lance-Fruited Oval Sedge
<i>Carex shortiana</i>	Short's Sedge
<i>Carex squarrosa</i>	Narrow-Leaved Cattail Sedge
<i>Carex stipata</i>	Awl-Fruited Sedge
<i>Carex stricta</i>	Tussock Sedge
<i>Carex swanii</i>	Downy Green Sedge
<i>Carex tribuloides</i>	Awl-footed Oval Sedge
<i>Carex trichocarpa</i>	Hairy-Fruited Lake Sedge
<i>Carex typhina</i>	Common Cattail Sedge
<i>Carex vulpinoidea</i>	Fox Sedge
<i>Chelone glabra</i>	Turtlehead
<i>Coreopsis palmata</i>	Prairie Coreopsis
<i>Coreopsis tripteris</i>	Tall Coreopsis
<i>Dalea candidum</i>	White Prairie Clover
<i>Dalea purpureum</i>	Purple Prairie Clover
<i>Deschampsia caespitosa glauca</i>	Tufted Hair Grass
<i>Dodecatheon meadia</i>	Shooting Star
<i>Doellingeria umbellata</i>	Flat-Top Aster
<i>Echinacea pallida</i>	Pale Purple Coneflower
<i>Echinacea purpurea</i>	Broad-Leaved Purple Coneflower
<i>Eleocharis acicularis</i>	Needle Spike Rush
<i>Eleocharis erythoropoda</i>	Red-rooted Spike Rush
<i>Eleocharis obtusa</i>	Blunt Spike Rush
<i>Epilobium coloratum</i>	Cinnamon Willow Herb
<i>Eryngium yuccafolium</i>	Rattlesnake Master
<i>Eupatoriadelphus maculatus</i>	Spotted Joe-Pye Weed
<i>Eupatorium fistulosum</i>	Hollow Joe-Pye Weed
<i>Eupatorium perfoliatum</i>	Common Boneset
<i>Euphorbia corollata</i>	Flowering Spurge
<i>Eurybia macrophylla</i>	Big-Leaved Aster
<i>Filipendula rubra</i>	Queen-of-the-Prairie
<i>Gentiana alba</i>	Yellowish Gentian

<i>Gentiana andrewsii</i>	Bottle Gentian
<i>Geranium maculatum</i>	Wild Geranium
<i>Geum triflorum</i>	Prairie Smoke
<i>Glyceria canadensis</i>	Rattlesnake Master
<i>Glyceria grandis</i>	Reed Manna Grass
<i>Glyceria striata</i>	Fowl Manna Grass
<i>Helenium autumnale</i>	Autumn Sneezeweed
<i>Helianthus occidentalis</i>	Wester Sunflower
<i>Heuchera richardsonii</i>	Prairie Alum Root
<i>Hibiscus militaris</i>	Halber-Leaved Rose Mallow
<i>Hibiscus moscheutos</i>	Swamp Mallow
<i>Hierochloe odorata</i>	Sweet Grass
<i>Hypericum ascyron</i>	Great St. John's Wort
<i>Hypericum virginicum</i>	Marsh St. John's Wort
<i>Illiamna remota</i>	Kankakee Mallow
<i>Ionactis linariifolius</i>	Flax-Leaved Aster
<i>Iris virginica shrevei</i>	Blue Flag Iris
<i>Juncus acuminatus</i>	Sharp-Fruited Rush
<i>Juncus balticus littoralis</i>	Lake Shore Rush
<i>Juncus canadensis</i>	Candian Rush
<i>Juncus dudleyi</i>	Dudley's Rush
<i>Juncus effusus</i>	Common Rush
<i>Juncus torreyi</i>	Torrey's Rush
<i>Justicia americana</i>	Water Willow
<i>Koeleria macrantha</i>	June Grass
<i>Leersia oryzoides</i>	Rice Cut Grass
<i>Lespedeza capitata</i>	Round-headed Bush Clover
<i>Liatris pchnostachya</i>	Blazing Star
<i>Liatris spicata</i>	Marsh Blazing Star
<i>Lobelia cardinalis</i>	Cardinal Flower
<i>Lobelia inflata</i>	Indian tobacco
<i>Lobelia siphilitica</i>	Great Blue Lobelia
<i>Lycopus americanus</i>	Common Water Horehound
<i>Lysimachia quadriflora</i>	Narrow-leaved Loosestrife
<i>Lysimachia terrestris</i>	Swamp Candles
<i>Lythrum alatum</i>	Winged Loosestrife
<i>Matteuccia pensylvanica</i>	Ostrich Fern
<i>Mentha arvensis</i>	Wild Mint
<i>Mertensia virginica</i>	Virginia Bluebells
<i>Mimulus ringens</i>	Monkey Flower
<i>Nuphar advena</i>	Spadder Dock
<i>Nuphar variegatum</i>	Yellow Waterlily
<i>Nymphaea odorata</i>	Water Lily
<i>Nymphaea tuberosa</i>	White Water Lily
<i>Oligoneuron album</i>	Stiff Aster

<i>Oligoneuron riddellii</i>	Riddell's Goldenrod
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Osmunda regalis spectabilis</i>	Royal Fern
<i>Oxypolis rigidior</i>	Crowbane
<i>Packera aureus</i>	Golden Ragwort
<i>Packera paupercula</i>	Balsom Ragwort
<i>Panicum virgatum</i>	Switchgrass
<i>Parthenium integrifolium</i>	Wild Quinine
<i>Parthenocissus quinquefolia</i>	Virginia Creeper
<i>Pedicularis canadensis</i>	Wood Betony
<i>Pedicularis lanceolata</i>	Fen Betony
<i>Peltandra virginica</i>	Arrow Arum
<i>Penstemon digitalis</i>	Foxglove Beard Tongue
<i>Phlox divaricata</i>	Woodland Phlox
<i>Phlox glaberrima interior</i>	Marsh Phlox
<i>Phlox pilosa fulgida</i>	Sand Prairie Phlox
<i>Physostegia virginiana</i>	Obedient Plant
<i>Polemonium reptans</i>	Jacob's Ladder
<i>Polygonum amphibium</i>	Water Smartweed
<i>Polygonum coccineum</i>	Water Heartsease
<i>Polystichum acrostichoides</i>	Christmas Fern
<i>Pontedaria cordata</i>	Pickereel Weed
<i>Potentilla arguta</i>	Prairie Cinquefoil
<i>Pycnanthemum virginianum</i>	Common Mountain Mint
<i>Pycnanthemum tenuifolium</i>	Slender Mountain Mint
<i>Ranunculus flabellaris</i>	Yellow Water Crowfoot
<i>Ranunculus longirostris</i>	White Water Crowfoot
<i>Ratibida pinnata</i>	Yellow Coneflower
<i>Rudbeckia laciniata</i>	Wild Golden Glow
<i>Rudbeckia subtomentosa</i>	Sweet Black Eyed Susan
<i>Ruellia humilis</i>	Hairy Ruellia
<i>Rumex verticillatus</i>	Swamp Dock
<i>Sagittaria latifolia</i>	Common Arrowhead
<i>Sagittaria ridida</i>	Stiff Arrowhead
<i>Saururus cernuus</i>	Lizard's Tail
<i>Schizachyrium scoparium</i>	Little Bluestem Grass
<i>Schoenoplectus acutus</i>	Hard-stemmed Bulrush
<i>Schoenoplectus fluviatilis</i>	River Bulrush
<i>Schoenoplectus pungens</i>	Common Three Square Bulrush
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed Bulrush
<i>Scirpus atrovirens</i>	Dark Green Rush
<i>Scirpus cyperinus</i>	Wool Grass
<i>Scirpus pendulus</i>	Red Bulrush
<i>Scutellaria epilobifolia</i>	Marsh Skullcap
<i>Scutellaria lateriflora</i>	Mad-Dog Skullcap

<i>Senna hebecarpa</i>	Wild Senna
<i>Silene regia</i>	Royal Catchfly
<i>Silphium integrifolium</i>	Rosinweed
<i>Silphium laciniatum</i>	Compass Plant
<i>Silphium perfoliatum</i>	Cup Plant
<i>Silphium terebinthinaceum</i>	Prairie Dock
<i>Sisyrinchium albidum</i>	Common Blue-Eyed Grass
<i>Sisyrinchium angustifolium</i>	Stout Blue-Eyed Grass
<i>Sisyrinchium campestre</i>	Prairie Blue-Eyed Grass
<i>Sium suave</i>	Tall Water Parsnip
<i>Solidago graminifolia</i>	Common Grass-leaved Goldenrod
<i>Solidago speciosa</i>	Showy Goldenrod
<i>Sparganium eurycarpum</i>	Bur-reed
<i>Spartina pectinata</i>	Prairie Cordgrass
<i>Sporobolus heterolepis</i>	Prairie Dropseed
<i>Stylophorum diphyllum</i>	Celandine Poppy
<i>Symphyotrichum erociodes</i>	Heath Aster
<i>Symphyotrichum laeve</i>	Smooth Blue Aster
<i>Symphyotrichum novae-angliae</i>	New England Aster
<i>Symphyotrichum oolentangiense</i>	Sky Blue Aster
<i>Symphyotrichum puniceum</i>	Bristly Aster
<i>Symphyotrichum urophyllum</i>	Arrow-Leaved Aster
<i>Symplocarpus foetidus</i>	Skunk Cabbage
<i>Thalictrum dasycarpum</i>	Purple Meadow Rue
<i>Tradescantia ohiensis</i>	Spiderwort
<i>Utricularia vulgaris</i>	Great Bladderwort
<i>Verbena hastata</i>	Blue Verbena
<i>Vernonia fasciculata</i>	Ironweed
<i>Vernonia missurica</i>	Missouri Ironweed
<i>Veronicastrum virginicum</i>	Culver's Root
<i>Viola palmata</i>	Prairie Violet
<i>Zizia aptera</i>	Heart-Leaved Meadow Parsnip
<i>Zizia aurea</i>	Golden Alexanders

Provides 6.05 acres of new and improved habitat for at least 217 observed species of waterfowl and shoreline birds, fish, turtles, mussels, frogs, and aquatic insects, 98% of which are native species.

Based on data collected by Chicago Botanic Garden staff observing and inventorying species in the Garden through 2013, as well as takeoff calculations provided by Living Habitats. Living Habitats also confirmed the percentage native species.

Take-off Calculations			
------------------------------	--	--	--

<u>Project</u>	<u>Total New Native Habitat SF</u>	<u>Additional Created Land SF</u>	<u>Miles of Shoreline Addressed</u>
319 A+B	94,350	79,670	1.12
Japanese Garden Lake	28,250	31,000	0.65
North Lake	141,020	111,305	1.16
Grand Totals in SF/MI	263,620	221,975	2.93
Grand Totals in AC	6.05	5.10	N/A

Partial list of inventoried Garden wildlife species to 2013:

Shoreline Birds (165)

American Bittern	Falcon, Peregrine	Kingfisher, Belted
Least Bittern	Flycatcher, Willow	Kinglet, Golden-crowned
Blackbird, Brewer's	Gnatcatcher, Blue-gray	Kinglet, Ruby-crowned
Blackbird, Red-winged	Goldeneye, Common	Loon, Common
Blackbird, Rusty	Goldfinch, American	Martin, Purple
Blackbird, Yellow-headed	Goose, Cackling	Merganser, Common
Bluebird, Eastern	Goose, Canada	Merganser, Hooded
Bobolink	Goose, Snow	Merganser, Red-breasted
Bufflehead	Grackle, Common	Merlin
Dickcissel	Grebe, Eared	Nighthawk, Common
Bunting, Indigo	Grebe, Horned	Oriole, Northern
Canvasback	Grebe, Pied-billed	Oriole, Orchard
Cardinal, Northern	Gull, Herring	Osprey
Catbird, Gray	Gull, Lesser Black-backed	Owl, Great Horned
Chickadee, Black-capped	Gull, Ring-billed	Owl, Short-eared
Coot, American	Harrier, Northern	Phalarope, Wilson's
Cormorant, Double-crested	Hawk, Cooper's	Phoebe, Eastern
Cackling Goose	Hawk, Red-shouldered	Pintail, Northern
Crow, American	Hawk, Red-tailed	Pipit, American
Dove, Mourning	Hawk, Rough-legged	Plover, Lesser Golden
Dowitcher, Short-billed	Hawk, Sharp-shinned	Plover, Semi-palmated
Duck, American Black	Heron, Black-crowned Night	Rail, Black
Duck, Mallard	Heron, Great Blue	Rail, King
Duck, Ring-necked	Heron, Green-backed	Rail, Virginia
Duck, Ruddy	Heron, Little Blue	Rail, Yellow
Duck, Wood	Hummingbird, Ruby-throated	Redhead
Dunlin	Jay, Blue	Redpoll, Common
Eagle, Bald	Junco, Dark-eyed	Redstart, American
Egret, Cattle	Kestrel, American	Robin, American
Egret, Great	Killdeer	Sandpiper, Baird's
	Kingbird, Eastern	Sandpiper, Buff-breasted

Sandpiper, Least
Sandpiper, Pectoral
Sandpiper, Semi-palmated
Sandpiper, Solitary
Sandpiper, Spotted
Sandpiper, Stilt
Sandpiper, White-rumped
Scaup, Greater
Scaup, Lesser
Scoter, White-winged
Shoveler, Gadwall
Shoveler, Northern
Shrike, Northern
Snipe, Common
Sora
Sparrow, White-crowned
Sparrow, American Tree
Sparrow, Chipping
Sparrow, Clay-colored
Sparrow, Field
Sparrow, Fox
Sparrow, Harris's
Sparrow, Le Conte's
Sparrow, Lincoln's
Sparrow, Savannah
Sparrow, Sharp-tailed
Sparrow, Song
Sparrow, Swamp
Sparrow, Vesper
Sparrow, White-throated
Swallow, Bank
Swallow, Barn
Swallow, Cliff
Swallow, N. Rough-winged
Swallow, Tree
Swan, Trumpeter
Swan, Tundra
Swift, Chimney
Teal, Blue-winged
Teal, Green-winged
Tern, Black
Tern, Caspian
Tern, Forester's
Thrush, Hermit
Thrush, Swainson's
Towhee, Rufoussided
Veery
Vireo, Redeyed
Vireo, Warbling
Warbler, Blackpoll
Warbler, Blue-winged
Warbler, Chestnut-sided
Warbler, Goldenwinged
Warbler, Magnolia
Warbler, Mourning
Warbler, Palm

Warbler, Prairie
Warbler, Prothonotary
Warbler, Tennessee
Warbler, Yellow
Warbler, Yellow-rumped
Waterthrush, Northern
Waxwing, Cedar
Wigeon, American
Willet
Woodcock, American
Woodpecker, Downy
Woodpecker, Hairy
Wren, House
Wren, Marsh
Wren, Sedge
Yellowlegs, Greater
Yellowlegs, Lesser
Yellowthroat, Common
Mammals (26)
Big Brown Bat
Hoary Bat
Little Brown Bat
Red Bat
Silver-haired Bat
Beaver
Eastern Gray Chipmunk
Eastern Cottontail
Coyote
White-tailed Deer
Red Fox
Mink
Prairie Deer Mouse
Northern White-footed
Mouse
Muskrat
Opossum
Raccoon
Cinereous Shrew
Short-tailed Shrew
Striped Skunk
Eastern Fox Squirrel
Eastern Grey Squirrel
Southern Flying Squirrel
Thirteen-lined Ground
Squirrel
Meadow Vole
Woodchuck

Lepidoptera (2)

Tiger Swallowtail Butterfly
Monarch Butterfly

Reptiles and Amphibians (11)

Bullfrog
Red-eared Slider

Garter Snake
American Toad
Midland Painted Turtle
Musk Turtle
Snapping Turtle
Spiny Soft-shelled Turtle
False Map Turtle
Common Map Turtle
Ouachita Map Turtle

Mussels (4)

Giant floater
Paper pondshell
Cylindrical papershell
Lilliput

Dragonflies and Damselflies (9)

Common White-tail
Widow Skimmer
Twelve-spotted Skimmer
Eastern Pondhawk
Eastern Amberwing
Common Green Darner
White-faced Meadowhawk
Eastern Forktail
Familiar Bluet

Improved the garden's lake water quality as measured by in-lake nutrient concentrations. Monitoring data from 1997-98 (pre-restoration) and 2004-05 (post restoration) indicate total phosphorus reductions of 84%, dissolved phosphorus reductions of 98%, ammonia nitrogen reductions of 77%, and nitrate+nitrite nitrogen reductions of 23%.

Data provided by Chicago Botanic Garden.

Social

Educated nearly 10,000 children and adults in 2013 in garden-sponsored shoreline ecology/aquatics education programs held along the restored shoreline areas. These events are planned to continue annually and included family drop-in activities, school field trips, boy and girl scout visits, camp visits, World Environment Day visitors, and Northwestern University and IIT class visits.

- Family Drop-In Activities (aquatic ecology- and shoreline-related) at the Kleinman Family Cove along the North Lake Shoreline: 5,100 children and adults
- Public/Private School Field Trips (from the Chicago metro area): 4,000 students and teachers
- Boy/Girl Scout program participants: 350 children
- Camp CBG participants: 250 children
- World Environment Day visitors: 135 children and adults
- Science First/College First program participants: 60 students
- Nature Nights program participants: 51 children and adults
- Northwestern University/Illinois Institute of Technology classes: 40 students

TOTAL: approximately 9,986

Figures Provided by Chicago Botanic Garden, compiled in 2013

Demonstrates that ecologically-based shoreline restoration can be visually appealing. Visual preference surveys of Garden visitors conducted in summer 2013 indicated a 63% preference for a shoreline restoration approach that combines a modestly organized planting design with ecologically sound practices. Additionally, 66% of respondents found turf-edged lakeshores the least attractive and 76% understood that turf-edged shorelines to be the least supportive of healthy lake ecology.

The shoreline project has provided a model of ecologically-based shoreline restoration for education and reference of visitors, researchers, and green industry professionals. A visual preference survey indicated that visitors find the garden's shoreline visually appealing and prefer it to its prior condition.

Data based on survey administered on-site in June and July, 2013

Parameters:

- Chicago Botanic Garden
- Great Basin Overlook, Rose Garden, Esplanade

Description:

- 11 questions (including 3 demographic questions) (read orally)
- 2 to 3 minute duration
- Consent form (requiring verbal agreement, read prior to beginning questionnaire)
- 11 X 17 sheet containing four reference images of Garden shorelines (page 3)

Respondents:

- 30
- Agreed to consent form (oral)
- Answered survey questions (oral)

Limitations:

- Time to interact with each respondent was limited due to Garden restrictions. Total time spent with each participant needed to be less than three minutes (including consent form and survey) to respect the intrusion into the visitors' time.

Results:

- Copy of original survey with results are provided on the following page .

2013 Visitor Perception Survey – RESULTS /30 Participants

Please tell us about your experience today while visiting the Chicago Botanic Garden.

1. What was the main purpose of today's visit to the Garden? Please check all that apply.

- | | |
|--|---|
| <input type="checkbox"/> To rest and relax (46%)
<input type="checkbox"/> To learn about native animals and plants (26%)
<input type="checkbox"/> To enjoy nature (33%) | <input type="checkbox"/> To spend time with family and friends (20%)
<input type="checkbox"/> To enjoy the Garden's beauty (33%)
<input type="checkbox"/> To get some exercise (23%)
<input type="checkbox"/> Other _____ (6%) |
|--|---|

2. How often do you visit the Chicago Botanic Garden? Please check one box only.

- | | |
|--|--|
| <input type="checkbox"/> Every few years (20%)
<input type="checkbox"/> Once a year (10%) | <input type="checkbox"/> 2-5 times a year (53%)
<input type="checkbox"/> Other _____ (16%) |
|--|--|

Now, I am going to show you four pictures (A, B, C, and D) taken along the Garden's lake shorelines.

3. Of these four shoreline images, which shoreline do you find most attractive?
A = 63% B = 13% C = 0% D = 23%
4. Which shoreline do you think least attractive?
 A = 10% **B = 66%** C = 23% D = 0%
5. Which shoreline do you think functions best to enhance the lake's ecology?
 A = 23% B = 3% **C = 56%** D = 16%
6. Which shoreline do you think does the poorest job to enhance the lake's ecology?
 A = 3% **B = 76%** C = 10% D = 10%
7. If you owned property along a lake, which water-edge landscape(s) would you be willing to create along your own lakeshore? (multiple choices permitted)
A = 66% B = 13% C = 13% **D = 66%**
8. If there are publicly owned lakes in your community (for example, a park district pond), which shoreline landscape(s) would you like them to consider? (multiple choices permitted)
A = 73% B = 6% C = 30% D = 50%
9. Are you?
 Male (43%) Female **(57%)**
10. Which age group do you belong to?
- | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65 or older |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (0%) | (16%) | (6%) | (36%) | (13%) | (26%) |
11. Where is your usual place of residence?
 Chicago Metropolitan Area **(100%)**
 Elsewhere in the US (0%)

International (0%)

Images included on 11 X 17 reference sheet:

