



Conservation Action Planning for the Natchaug Basin

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Workshop I Results:

Targets, Key Ecological Attributes (KEAs) and Viability Indicators

Target – Main Stem Rivers

KEA 1 - Floodplain/Riparian Connectivity to Main Stem

Indicator – Flood frequency

KEA 2 – Riparian Corridor Condition

Indicator – Percentage width and length natural cover in riparian zone

KEA 3 – Hydrologic Regime

Indicator - Indicators of Hydrologic Alteration (IHA) analysis

KEA 4 – Sediment Dynamics

Indicator - Cross-section and elevation sediment measurement

Indicator - Degree of pool filling and embeddedness

KEA 5 - Water Chemistry

Indicator – Nitrogen

Indicator – Dissolved Oxygen

Indicator – Turbidity

Target – Headwater Streams and Wetlands Complexes

KEA 1 – Hydrologic Regime (Natural Flow)

Indicator – Number of diversions

Indicator - Population density

Indicator – How close to target flow

KEA 2 – Water Quality

Indicator – Biological Communities

Indicator – Macro invertebrate abundance

Indicator – Wetland plant communities

KEA 3 – Physical Structure and Composition (Canopy vs. Open water)

Indicator – Percentage of natural habitat

Indicator – Percentage of riparian habitat

Indicator – Large woody debris

Indicator – Percentage of ecological types

KEA 4 – Watershed Condition

Indicator – Population density

Indicator – Percentage of natural cover

Indicator – Percentage low impact development practices

KEA 5 – Connectivity (Longitudinal, lateral and vertical)

Indicator – Number (presence/absence) of unnatural barriers

KEA 6 – Sediment Regime

Target – Cold Water Fisheries (*Key Assumptions: Cold water fisheries can be viable for next 100 years. Cold water and headwater are not synonymous because headwater streams are often warm - beaver activity is necessary for headwater viability.*)

KEA 1 – Population size and distribution

Indicator – Number of brown and brook trout per hectare (or mile)

Indicator – Number of mussels per hectare (or mile)

KEA 2 - Water Quality

Indicator – Temperature

Indicator – Dissolved Oxygen

Indicator – Turbidity

KEA 3 - Connectivity

Indicator – Number (presence/absence) of unnatural barriers

KEA 4 – Groundwater Recharge

Indicator – Number of diversions (volume of flow)

Indicator - Population density (metric)

Indicator – Temperature monitoring (USGS methodology)

KEA 5 – Substrate Condition

Indicator – Percentage of substrate embeddedness

KEA 6 – Nuisance Species

Indicator - Presence/Absence of didymo

Target – Lakes and Ponds

KEA 1 – Terrestrial Buffer

Indicator - Percentage of natural vegetation x distance from shoreline

KEA 2 – Natural Shoreline

Indicator – Percentage of natural cover x distance (docks, beaches)

KEA 3 – Water Quality

Indicator – Meet water quality standards x% of time

Indicator - Meet bacteria threshold

Indicator - Meet trophic goal

KEA 4 – Healthy Biological Community

Indicator – Species richness

Indicator – Meet trophic goal

Indicator – Percentage of native species

KEA 5 – Watershed Condition

Indicator – Percentage undeveloped within x distance of shoreline

Target – Aquifers and Groundwater Recharge

KEA 1 – Hydrologic Connectivity

Indicator – Percentage of pervious area

Indicator – Connectivity of river system

KEA 2 – Soil Types and Geological Material

Indicator – Percentage in unaltered condition

KEA 3 – Groundwater Quality within Recharge Area

Indicator – Macro invertebrate composition

Indicator – Percentage undeveloped or low impact development practices

Target – Forest (Key Assumption: Particular species composition should not be a target for a 100 year time frame. Preservation of a variety of forest types (Ecological Land Units) will allow natural variation and ecological resilience.)

KEA 1 – Total Forest Cover

Indicator – Percentage of watershed in forest cover

KEA 2 – Large Forest Blocks

Indicator – Number of forest blocks of xx size

KEA 3 – Connectivity

Indicator – Connectivity index

KEA 4 – Representativeness and Redundancy

Indicator – Percentage of proportional Ecological Land Units (ELUs)

KEA 5 – Age Class and Diversity

Indicator – Percentage of non-invasive plants

Indicator – Size class target

KEA 6 – Native Species

Indicator – Percentage of invasive species

Target - Atlantic White Cedar Swamps

KEA 1 – Demographic Dynamics

Indicator – Age Structure

Indicator – Reproductive success (number of young saplings)

Indicator – Minimum dynamic area

KEA 2 – Water Chemistry

Indicator – pH fluxes

Indicator – Nutrient fluxes

KEA 3 – Hydrologic Dynamics

Indicator – Water table elevation

Target – Grassland

KEA 1 – Grassland Cover

Indicator – Percentage of goal

KEA 2 – Grassland blocks > 20 acres; > 50 acres in proximity

Indicator – Presence/Absence of bobolink

Indicator – Presence/Absence of meadow lark

Indicator – Percentage of block goal

KEA 3 – Species Composition

Indicator – Number of hay and crop fields

Indicator – Number of fields managed for wildlife

KEA 4 – Proximity and Connectivity to other habitat

Indicator – Presence/Absence of x number breeding wood turtle population

Indicator – Presence/Absence of x number breeding woodcock population

Target – Vernal Pools (Temporary Ponds)

KEA 1 – Species Composition

Indicator – Presence/Absence obligate species

Indicator – Number of egg masses

KEA 2 – Hydrologic Cycle

Indicator - Duration

KEA 3 – Adjoining Land Habitat Condition

Indicator - Width and circumference (Figure 1)

Indicator – Temperature

Indicator – Percentage area within width contours

KEA 4 – Forest Canopy Condition

Indicator – Percentage canopy closure

