WORKSHEET

FOREST HEALTH INDICATOR: FOREST DIVERSITY

Name: _____

Date: _____

Location: _____

A healthy forest includes a variety of different plants and animals. One way to assess this diversity is to determine whether there is a mix of plant species of different sizes and ages, thus creating forest "layers" that provide habitat for many species.

MATERIALS

Pencil, paper, tape measure, chalk, tree identification guide (optional)

METHOD

Look at the leaves, bark, seed pods, or flowers of the trees in your forest plot to determine whether they are the same or different species. Use the *Tree Species Diversity* chart below to catalog this information. Tree identification guides are helpful with this step, but not necessary. If a tree identification guide is not available, use your observation skills to describe the differences in tree types and include this information in the *Tree Species Diversity* chart below.

For all trees in the sample plot, measure or estimate the diameter at a distance of 1.3 meters (4.5 feet) from the ground. This is known as diameter at breast height or DBH. Count or estimate the number of trees of different size classes using the corresponding DBH size classifications found in the *Size Diversity* chart below and record your findings. To help you, consider using chalk to mark the trees you have already counted.

Assess the presence or absence of different forest layers, using the descriptions found in the *Forest Layer Diversity* chart and record your findings.

RESULTS

Tree Species Diversity

Species	Name/ Description	# Found in Sample Plot
Species 1		
Species 2		
Species 3		
Species 4		
Species 5		

Size Diversity

Tree Size	DBH	# Found in Sample Plot
Saplings or Poles	10–24 cm (4–9 inches)	
Small	25–37 cm (10–14 inches)	
Medium	38–49 cm (5–19 inches)	
Large	50–75 cm (20–29 inches)	
Giant	> 75 cm (30 inches or greater)	

Forest Layer Diversity

Tree Layer	Description	Present in Sample Plot? (Yes/No)
Overstory	Trees whose canopies are fully exposed to the sun	
Understory	Trees growing in the shade of other trees	
Tall shrub	Shrubs (woody plants with several stems arising from the base) greater than 1.8 meters (6 feet) in height	
Short shrub	Shrubs less than 1.8 meters (6 feet) in height	
Forb	Herbaceous (non-woody) plants such as ferns, wildflowers, and grasses	
Leaf litter	Dead and decaying leaves and other matter on the forest floor	

RATING

Tree Species Diversity

Good	Three or more tree species present	3 Points
Fair	Two tree species present	2 Points
Poor	One tree species present	1 Point

Tree Species Diversity rating (points) for plot: _____ (Value A)

Size Diversity

Good	Three or more size classes present	3 Points
Fair	Two size classes present	2 Points
Poor	One size class present	1 Point

Size Diversity rating (points) for plot: _____ (Value B)

Forest Layer Diversity

Good	Five or six layers present	3 Points
Fair	Three or four layers present	2 Points
Poor	One or two layers present	1 Point

Forest Layer Diversity rating (points) for plot: _____ (Value C)

OVERALL FOREST DIVERSITY RATING

Determine the overall rating by adding up the points shown for the tree species, size, and forest layer diversity ratings, then dividing the total by 3. Round the total to the nearest whole number.

(Value A + Value B + Value C) ÷ 3 = _____ (Average point value)

Good	Average point value of 3
Fair	Average point value of 2
Poor	Average point value of 1

Overall Forest Diversity rating for plot:

_____

Sources: Greenleaf Forestry and Wood Products Inc. 2010. "Forest Health Checklist." www.greenleafforestry.com/services_006.php

Portland State University. 2010. "Protocol: Measuring Tree Diameter, Class Size, and Average Species Diameter."