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SPECIES AREA CURVE COMPARISON

Benchmark plot: FDn12-0029 Clearcut in October 2007, slash re-distributed and scattered, no burning, natural regeneration.

Comparison plot: FDn12-0028 Clearcut in October 2007, burned in September 2009.

SUMMARY OF CUMULATIVE NUMBER OF SPECIES BY PLOT AREA

This compares the total number of species in each subplot between the benchmark and comparison plots.

Negative difference indicates species loss due to treatment at that scale.

Positive difference indicates species gain due to treatment at that scale.

Area (m2) Benchmark Comparison Difference

1 14 12 -2

2 17 19 +2

4 22 22 =0

8 24 24 =0

16 29 25 -4

32 37 32 -5

64 47 36 -11

128 51 39 -12

256 60 45 -15

512 66 45 -21 max

1024 72 60 -12

Species Apparently Lost Due to Treatment

These are plants present in the benchmark plot but not the treatment plot.

For re-sampling of permanent plots, this is direct evidence of extirpation.

For benchmark comparisons, it suggests species loss in 1024 m2 patches.

SEC M N H L PLANT NAME

STA 3 2 1 3 Balsam fir -- Abies balsamea

STA 1 1 1 5 Pearly everlasting -- Anaphalis margaritacea

STA 5 1 1 5 Bog aster -- Aster borealis

STA 3 3 3 3 Side-flowering aster -- Aster lateriflorus

STA 2 2 2 3 Large-leaved aster -- Aster macrophyllus

STA 3 2 2 4 Leathery grapefern -- Botrychium multifidum

STA 2 4 3 3 Smooth brome -- Bromus inermis Exotic

STA 1 2 3 5 Harebell -- Campanula rotundifolia

STA 2 4 3 2 Pennsylvania sedge -- Carex pensylvanica

. . . . Sedge -- Carex

STA 2 2 3 5 Canada thistle -- Cirsium arvense Exotic

. . . . Field thistle -- Cirsium discolor

STA 4 2 2 4 Red-osier dogwood -- Cornus stolonifera

. . . . Smooth scouring-rush -- Equisetum laevigatum

STA 4 3 3 3 Yellow avens -- Geum aleppicum

STA 5 1 1 5 Mountain fly-honeysuckle -- Lonicera villosa

STA 3 3 2 2 Pointed wood-rush -- Luzula acuminata

STA 2 2 2 3 Canada mayflower -- Maianthemum canadense

STA 2 2 3 5 Cultivated timothy -- Phleum pratense Exotic

STA 3 2 1 3 White spruce -- Picea glauca

. . . . Bluegrass; Meadow-grass -- Poa

STA 2 3 3 4 Rough-fruited cinquefoil -- Potentilla recta Exotic

STA 1 1 2 5 Sand cherry -- Prunus pumila

STA 2 4 3 2 Chokecherry -- Prunus virginiana

STA 4 2 2 4 Alder-leaved buckthorn -- Rhamnus alnifolia

STA 4 2 2 3 Swamp gooseberry -- Ribes hirtellum

STA 1 1 3 5 Balsam ragwort -- Senecio pauperculus

STA 3 3 4 2 White campion -- Silene latifolia Exotic

STA 1 1 3 5 Gray goldenrod -- Solidago nemoralis

STA 3 2 3 5 Sow-thistle -- Sonchus

STA 3 2 2 5 Meadowsweet -- Spiraea alba

STA 2 2 3 5 American vetch -- Vicia americana

Species Conserved at a Coarser Scale

These are plants present in both plots, but now their distribution seems coarser due to treatment.

For re-sampling of permanent plots, this means that the plant has been extirpated from one of the smaller plots.

For benchmark comparisons, it suggests species loss at a fine-scale, but not at coarser scales.

SEC M N H L PLANT NAME

STA 2 3 2 2 Wild sarsaparilla -- Aralia nudicaulis

STA 3 5 5 3 Virginia wild rye -- Elymus virginicus

STA 1 1 2 5 Sticky hawkweed -- Hieracium scabrum

STA 1 2 3 5 Red clover -- Trifolium pratense Exotic

STA 1 1 2 5 Hairy goldenrod -- Solidago hispida

STA 3 4 4 2 Dandelion -- Taraxacum

STA 1 1 2 5 Jack pine -- Pinus banksiana

STA 4 2 2 4 Bluejoint -- Calamagrostis canadensis

. . . . Snowberry -- Symphoricarpos albus

STA 1 1 3 5 Smooth aster -- Aster laevis

STA 1 1 2 5 Wintergreen -- Gaultheria procumbens

STA 1 1 2 5 Prairie willow -- Salix humilis

STA 1 2 3 4 Pale vetchling -- Lathyrus ochroleucus

STA 2 2 3 4 Lindley's aster -- Aster ciliolatus

. . . . Prickly rose -- Rosa acicularis

. . . . Dog violet -- Viola conspersa

STA 2 2 2 3 Juneberry -- Amelanchier

STA 2 2 2 3 Juneberry -- Amelanchier

STA 1 1 1 5 Cow-wheat -- Melampyrum lineare

STA 2 2 2 3 Bracken -- Pteridium aquilinum

Species Conserved at the Same Scale

These are plants present in both plots at the same scale.

This suggests that the treatment had no effect on the plant in either re-sampled plots or benchmark comparisons.

SEC M N H L PLANT NAME

STA 2 2 2 3 Beaked hazelnut -- Corylus cornuta

STA 1 1 2 5 Poverty grass -- Danthonia spicata

STA 2 2 2 3 Common strawberry -- Fragaria virginiana

STA 2 3 2 3 Moutain rice-grass -- Oryzopsis asperifolia

. . . . Hairy panic grass -- Panicum lanuginosum

STA 3 2 2 3 Red raspberry -- Rubus strigosus

STA 2 1 1 4 Lowbush blueberry -- Vaccinium angustifolium

Species Conserved at a Finer Scale

These are plants present in both plots, but now their distribution seems finer due to treatment.

For re-sampling of permanent plots, this means that the plant has ingressed onto a smaller plot.

For benchmark comparisons, it suggests that the plant has expanded its local population due to treatment.

SEC M N H L PLANT NAME

STA 2 3 3 4 Canada goldenrod -- Solidago canadensis

STA 1 2 3 4 Veiny pea -- Lathyrus venosus

STA 3 1 1 3 Bunchberry -- Cornus canadensis

STA 2 2 2 3 Bush honeysuckle -- Diervilla lonicera

STA 3 1 1 3 Bunchberry -- Cornus canadensis

STA 1 2 2 4 Spreading dogbane -- Apocynum androsaemifolium

STA 3 2 2 4 Fringed brome -- Bromus ciliatus

STA 3 3 3 3 Lettuce -- Lactuca

. . . . Quaking aspen -- Populus tremuloides

STA 3 2 2 2 Fly honeysuckle -- Lonicera canadensis

STA 3 2 2 3 Starflower -- Trientalis borealis

STA 2 3 3 2 Wood-anemone -- Anemone quinquefolia

STA 3 3 3 2 Three-flowered bedstraw -- Galium triflorum

STA 3 2 2 3 Dwarf raspberry -- Rubus pubescens

STA 3 2 2 3 Paper-birch -- Betula papyrifera

Species Appearing Due to Treatment

These are plants appearing after treatment due to seedbank release or ingress.

For re-sampling of permanent plots, this is direct evidence of establishment.

For benchmark comparisons, it suggests species gain in 1024 m2 patches.

SEC M N H L PLANT NAME

STA 1 2 3 5 Yarrow -- Achillea millefolium Exotic

STA 2 1 1 4 Green alder -- Alnus viridis

STA 1 1 2 5 Bearberry -- Arctostaphylos uva-ursi

STA 3 2 1 2 Bluebead lily -- Clintonia borealis

STA 2 4 4 3 Hawthorn -- Crataegus

STA 3 1 1 4 Fireweed -- Epilobium angustifolium

STA 4 3 3 3 Field horsetail -- Equisetum arvense

. . . . Horsetail; Scouring-rush -- Equisetum

. . . . Daisy fleabane -- Erigeron annuus

STA 2 2 3 4 Northern bedstraw -- Galium boreale

STA 1 1 2 5 Sharp-pointed rice-grass -- Oryzopsis pungens

STA 1 1 2 5 Red pine -- Pinus resinosa

STA 2 3 3 3 White rattlesnake-root -- Prenanthes alba

STA 1 2 2 4 Pin cherry -- Prunus pensylvanica

STA 3 5 4 1 Prickly gooseberry -- Ribes cynosbati

STA 2 2 2 4 False melic grass -- Schizachne purpurascens

STA 3 3 3 3 Giant goldenrod -- Solidago gigantea

STA 2 3 3 2 Rosey twisted-stalk -- Streptopus roseus

STA 2 3 3 3 Downy arrow-wood -- Viburnum rafinesquianum

SHIFTS IN SYNECOLOGICAL SCORES DUE TO TREATMENT

Compare benchmark and treatment scores for a general sense of synecological shifts.

Compare lost and new scores to see how extinctions and gains affected the site.

Compare the coarser and finer scores to get a feel for what abundance shifts might indicate.

Significant shifts should probably be consistent among all 3 comparisons.

Group M N H L

Lost 2.6 2.2 2.4 3.9

Coarser 1.7 1.9 2.5 4.0

Same 2.0 1.8 1.8 3.5

Finer 2.5 2.1 2.2 3.1

New 2.1 2.3 2.5 3.5

Benchmark 2.3 2.1 2.3 3.7

Treatment 2.1 2.1 2.3 3.6