

Appendix 4

Methods to Estimate Forested Habitat

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West-side Forests

Data Sets

Data sets used in this analysis were obtained from the R1 Geospatial Library and included:

- Ownership (Forest Service) for Region 1 - 1:126,720
- Ecological Unit Subsections for Region 1 - 1:500,000
- Vegetation (vmap - lifeform) for western Region 1

Processing steps

All processing was done in ArcMap (v8.3)

1. Converted Ownership and Subsections to 15 meter grid to match lifeform data (resulting datasets: fsown_g, subsec_g)
2. In Raster Calculator performed a combine operation on Ownership, Subsection and Lifeform Grid (resulting dataset: for_subsec_lf)
3. Joined Ownership, Subsection and Lifeform attributes to the for_subset_lf Grid
4. Exported the for_subsec_lf attribute table and converted to an Excel spreadsheet
5. In Excel:
 - Removed unnecessary columns
 - Computed acres based on 15 x 15 meter grid cells
 - Summarized results using a pivot table

Accuracy Issues

The datasets used to generate these results have some limitations and therefore the accuracy of this analysis should be considered as gross estimates only. The biggest concern is with the use of the ecological subsections which are 1:500,000 scale data (approx. 1/8 inch on a map of this scale equals 1 mile on the ground). I'd recommend displaying these results to the nearest 1,000 or 10,000 acres rather than to the nearest acre.

East-side Forests

This analysis is similar to that done for the 7 west-side forests (Idaho Panhandle, Nezperce, Clearwater, Kootenai, Flathead, Bitterroot, Lolo) using R1Vmap data to determine forested lands. A dataset which is a combination of SILC2 and SILC3 was used to determine forested lands for 5 east side Forests (Beaverhead-Deerlodge, Custer, Gallatin, Helena, Lewis & Clark).

This March 6 2006 version replaces all earlier versions.

Information for the Dakota Prairie was not included because we did not have a dataset for determining forested lands.

Small portions of the Lolo and the Flathead NF were not included in the previous west-side analysis because the R1Vmap data did not cover these areas. The excluded portions for these to Forests were included in this analysis

Data Sets

Data sets used in this analysis were obtained from the R1 Geospatial Library and included:

- Ownership (Forest Service) for Region 1 - 1:126,720
- Ecological Unit Subsections for Region 1 - 1:500,000
- Hydrologic Unit Boundaries (5th code) for Region 1
- Vegetation (mtsilc3) for eastern Region 1

Processing steps

Processing was done in ArcMap (v9.0) and Workstation ArcInfo (v9.0)

6. Projected mtsilc3 to standard projection used in RO (resulting dataset mtsilc3_prj)
7. Selected Covertypes > 4000 and < 4400 to produce a dataset of Forested lands (mtsilc3_tree)
8. Converted Ownership, Subsections and Fifth Code HUC's to 30 meter grid to match mtsilc3_prj (resulting datasets: fsown_g, subsect_g, huc5_g)
9. Using fsown_g produced an ownership grid which only included the 5 eastside forests plus the portions of the Lolo and Flathead which were not included in the previous analysis for the Westside (fsown_es)
10. Performed 3 combine operations as follows:
 - fsown_g, mtsilc3_tree – to obtain forested acres by unit (resultant grid: fsown_tree)
 - fsown_g, mtsilc3_tree, huc5_g – to obtain forested acres by unit by fifth code HUC (resultant grid: fsown_huc5)
 - fsown_g, mtsilc3_tree, subsect_g – to obtain forested acres by unit by subsection (resultant grid: fsown_subsect)
11. Joined appropriate attributes to each of the three grids created in step 4 as follows:
 - For fsown_tree joined attributes from fsown_g
 - For fsown_huc5 joined attributes from fsown_g and huc5_g
 - For fsown_subsect joined attributes from fsown_g and subsect_g
12. Exported the attribute tables for the three resultant grids from step 5 and converted to an Excel spreadsheet
13. In Excel:
 - Removed unnecessary columns
 - Computed acres based on 30 x 30 meter grid cells
 - Summarized results using a pivot table

Accuracy Issues

This March 6 2006 version replaces all earlier versions.

The datasets used to generate these results have some limitations and therefore the accuracy of this analysis should be considered as gross estimates only. The biggest concern is with the use of the ecological subsections which are 1:500,000 scale data (approx. 1/8 inch on a map of this scale equals 1 mile on the ground). I'd recommend displaying these results to the nearest 1,000 or 10,000 acres rather than to the nearest acre.

Appendix 5

Common and Scientific Names.

Black cottonwood *Populus tricocarpa*
Douglas-fir *Pseudotsuga menziesii*
Grand fir *Abies grandis*
Jeffery pine *Pinus jeffreyi*
Lodgepole pine *Pinus contorta*
Paper birch *Betula papyrifera*
Ponderosa pine *Pinus ponderosa*
Quaking aspen *Populus tremuloides*
Sagebrush woody *Artemisa* spp.
Western hemlock *Tsuga heterophylla*
Western larch *Larix occidentalis*
Western red cedar *Thuja plicata*
White pine *Pinus albicaulis*
Whitebark pine *Pinus monticola*

Carpenter ants *Camponotus* spp.
Mountain pine beetle *Dendroctonus ponderosae*
Western pine beetle *Dendroctonus brevicomis*
Whitespotted sawyer beetle *Monochamus scutellatus*

Barred owl *Strix varia*
Black-backed woodpecker *Picoides arcticus*
Cooper's hawk *Accipiter cooperii*
Flammulated owl *Otus flammeolus*
Great horned owl *Bubo virginianus*
Imperial woodpecker *Campephilus principalis*
Ivory billed woodpecker *Campephilus imperialis*
Northern goshawk *Accipiter gentilis*
Pileated woodpecker *Dryocopus pileatus*
Red-tailed hawk *Buteo jamaicensis*
Ruffed grouse *Bonasa umbellus*
Sage grouse *Centrocercus urophasianus*
Spotted owl *Strix occidentalis*
Three-toed woodpecker *Picoides tridactylus*

American marten *Martes americana*
Gray fox *Urocyon cinereoargenteus*
Grizzly bear *Ursus arctos*
Long-tailed weasel *Mustela frenata*
Snowshoe hare *Lepus americanus*

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