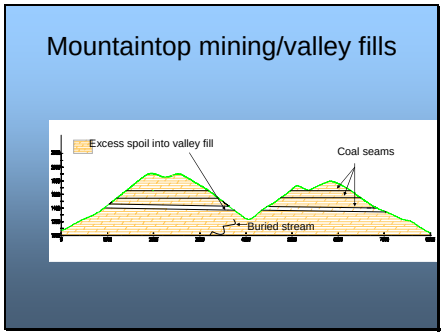
Appendix 5l Tibbott

Slide 1

Mountaintop mining is occurring in the largest remaining contiguous forest in the Northeast. Wildlife species richness here is considered to be among the highest in the United States. The area provides forest interior habitat for many neotropical migratory songbirds.

Slide 2



Mountaintop mining is a term that encompasses all types of surface coal mining (mountaintop removal, contour mining, area mining, etc.) in the steep terrain of the central Appalachian coalfields. It involves blasting apart and removing the rock material to expose coal seams that run horizontally through the mountains. As many as 18 coal seams may be removed through 250 to 600 vertical feet of mountain. Although mine operators are required to return the unwanted rock to the mine site, once blasted apart the rock occupies a larger volume than it originally did. The “excess spoil” is placed in nearby valleys. In the process, streams are buried.

 UNPUBLISHED MATERIAL

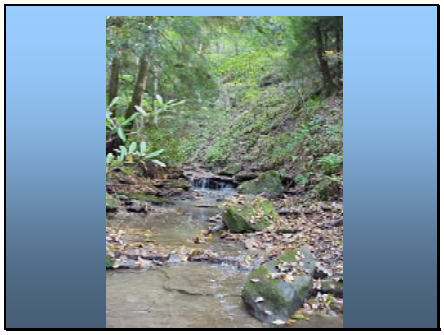
Slide 3

Shows an active surface mine, with natural landscape/forest in the background

Slide 4

Shows active mine, with valley fill being constructed to left of center, and natural landscape habitat in background.

Slide 5



Typical of the 1,200 miles of streams that have already been filled in the central Appalachians by valley fills.

Slide 6

Typical reclamation on these mines has involved planting herbaceous species to control erosion, with scattered plantings of black locust and autumn olive. Studies conducted for the draft Environmental Impact Statement and others have concluded that due to competition from the herbaceous plantings, overcompacting of the substrate, and other factors, natural forest regeneration is not likely to occur on these mines for many years.

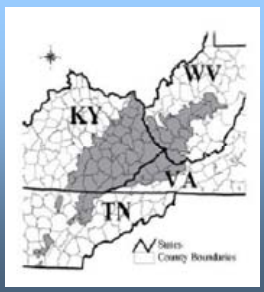
Slide 7

The Draft Environmental Impact Statement concluded that by the year 2012, mountaintop mining will have eliminated 2,416 miles of streams, and affected 2,200 square miles of terrestrial habitat (an area roughly the size of Delaware) within the central Appalachians.

Slide 8

Slide 9

Slide 10



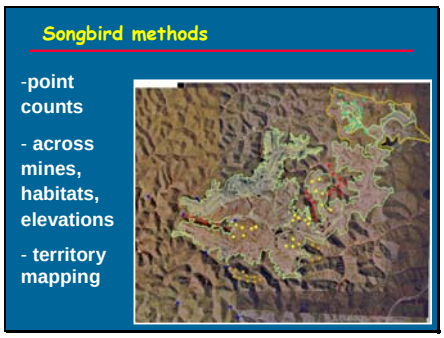
This is the primary region of mountaintop mining. Compare to the next slide, which shows the core breeding areas for two important forest interior species.

Slide 11

FOREST IMPACTS

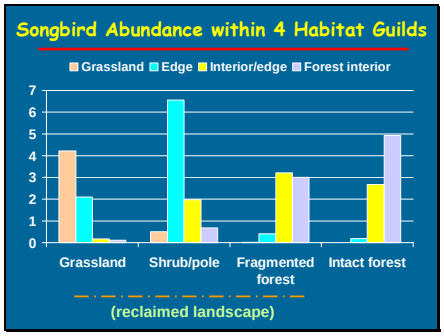
STATE	BASELINE	ISSUED & FUTURE PERMITS	TOTAL FOREST LOSS (AC)
KY	306,313	511,164	817,477
TN	60,381	18,308	78,689
VA	148,092	58,448	206,540
WV	132,492	173,174	305,666
TOTAL			1,408,372

Slide 12



.

Slide 13



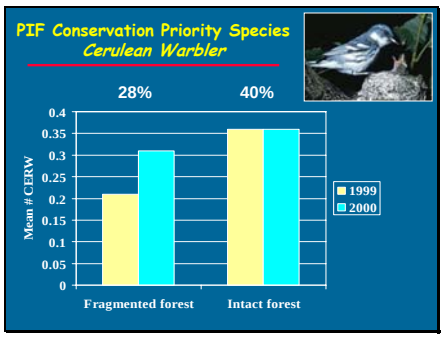
Looking at abundance of 4 habitat guilds based on pt counts.

2 major points:
- in the reclaimed landscape, increased diversity of habitats leading to increased diversity in the avian community
- positive response of grassland and early successional spp

In the 2 forest treatments, FI species were significantly more abundant in the intact forest, suggesting that there are some effects from forest fragmentation.

 UNPUBLISHED MATERIAL

Slide 14

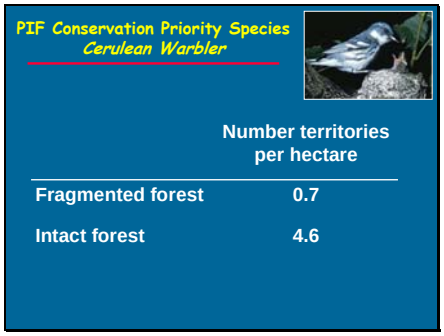


The Cerulean warbler is listed at highest priorty; action level II

2 yrs of pt counts

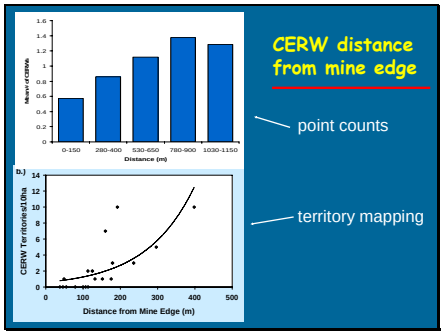
28% of pts in frag forest had cerw detections; 40% in intact had cerw detections

Slide 15



Mean territory density over 6x greater in intact forest

Slide 16



We also looked at response of cerulean warblers to edges.
Etc.

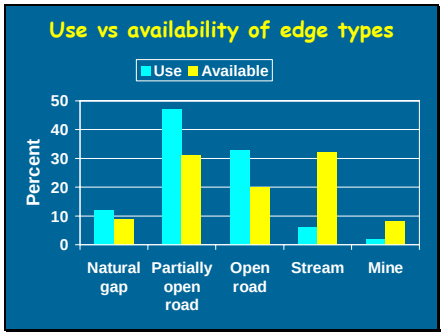
Based on pt count data, edge effects extended ~340m into the forest

 UNPUBLISHED MATERIAL

Slide 17

Avoided abrupt, large scale edge of mines

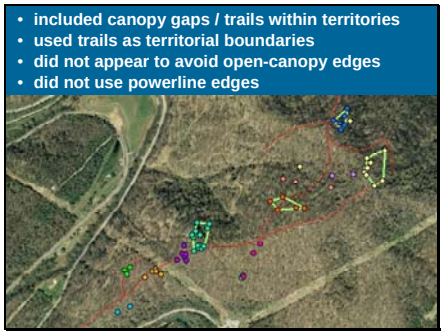
Slide 18



from table 3 of Weakland and Wood paper

But didn't avoid smaller-scale edges, such as natural canopy gaps, and preferentially placed territories closer to road edges and farther from mt-top mine edges

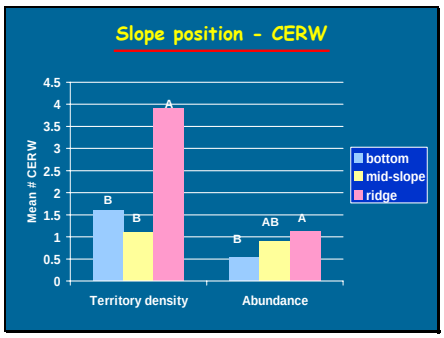
Slide 19



data from Kelly Perkins MS thesis

Red line is trail, points are cerw locations, polygons are cerw territories

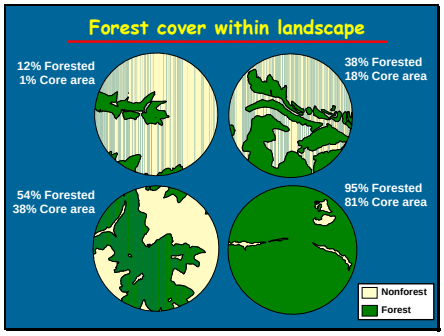
Slide 20



More on ridges than on bottoms (same pattern with both territories and abundance)
(bottoms are 1st or 2nd order streams; not river valleys)

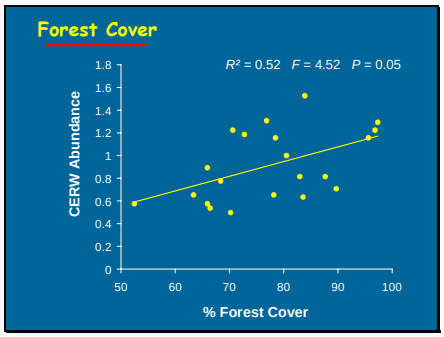
mt-top mining takes out ridges

Slide 21



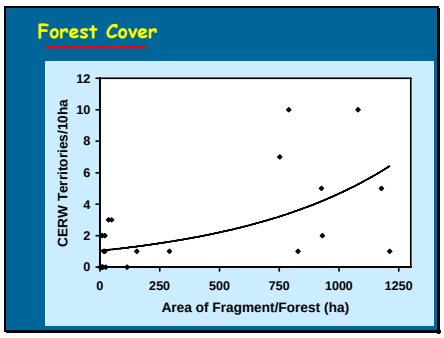
Also looked at terr density and abundance relative to amount of forest cover in the landscape; these are 4 examples of point count stations with 3km buffer

Slide 22

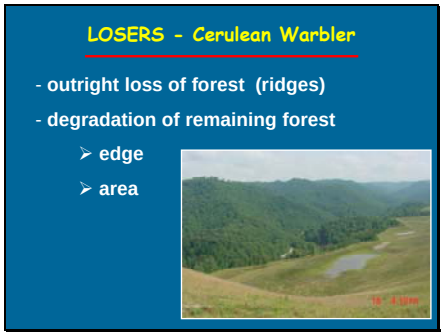


Both abundance and terr density signif increased with increasing amts of forest cover

Slide 23



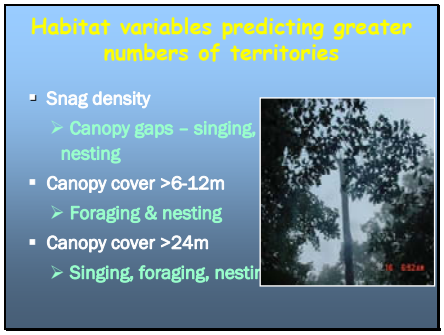
Slide 24



Forest spp, eg cerw, are affected both by loss of forest habitat and degradation of remaining habitat from edge effects and area affects. Also loss of ridges.

CERW esp hit hard because of limited range and declining pops. Note that mt-top mining region overlaps signif portion of most dense populations of cerw.

Slide 25



From mt-top territory mapping analyses