

## APPENDIX B

### Monitoring Plan Desert Branch Project Area

#### STOCKING SURVEY

FOREST: Monongahela

PROJECT NAME: Desert Branch Projects

SITE/LOCATION: Regeneration Harvest areas:

ACTIVITY	Amount of Activity by Alternative					
	Alt 1 Proposed Action	Alt 2 No helicopter	Alt 3 No Openings	Alt 4 No new roads	Alt 5 No action	Alt. 6
Clear-cut (acres)	34	19	0	19	0	19
Two-aged (acres)	14	14	0	14	0	14
Shelterwood* (acres)	45	45	0	45	0	45
Total Even age Regen harvest (acres)	93	78	0	78	0	78

**Table 2a Regeneration Harvests in the Proposed Action – Acres and actual units for stocking survey vary depending on the selected alternative.**

*Shelterwood harvest entails two separate time periods for logging  
Within approximately 5 years.*

Type of Cut	Stand	Stand Acres	Treatment Acres	Logging Method	Forest Type	Basal Area	Age in 2002	Slope %
Regeneration	69/10	193	16	C	89	180	81	23
Shelterwood	69/11	87	9		89	160	78	20
Regeneration	69/10	193	5	C	89	180	81	23
Shelterwood								
Regeneration	69/9	82	9	C	89	180	79	11
Shelterwood	69/10	193	6		89	180	81	23
Regeneration	69/15	146	14	C	56	140	76	19
Two Aged								
Regeneration	70/7	66	15	H	83	150	95	45
Clearcut								
Regeneration	70/5	270	19	C	89	120	92	39
Clearcut								

C = conventional logging with skidders and skid roads.

H = helicopter logging with no skid roads.

**MONITORING OBJECTIVE:** Assure lands adequately stocked within five years. Objective of survey after selection harvest is to assure that seedling/sapling regeneration with acceptable species occurs. Following the selection harvest, lands would still be adequately stocked with sawtimber and poletimber.

**MONITORING TYPE:** Effectiveness monitoring.

**PRIORITY:** High.

**PARAMETERS:** Every regeneration unit must be certified regenerated after 5 complete growing seasons have elapsed since the site preparation activity. Corrective action will be taken in areas that are not stocked.

**METHODOLOGY:** A variable number of small, fixed radius plots are placed throughout each unit after the first full growing season following harvest to represent and view each microsite within the unit, for example, areas with varying slope, aspect, moisture and shading. All woody species are recorded, including shrubs. Notes are made about grasses, ferns or impeding conditions at each plot and in the unit as a whole.

If Alternative 3 is selected, which includes 606 acres of single tree selection harvest, stocking surveys are done using a combination of variable radius plots (with a 10-factor prism) and fixed plots.

**FREQUENCY/DURATION:** Surveys are done after the first full growing season following harvest, and after the third full growing season following harvest. If regeneration is progressing, but is not sufficient to warrant certification, then a third survey would be done after the fifth growing season. For the shelterwood harvests, an additional stocking survey would be planned after the first full growing season following the shelterwood removal.

For selection harvests, under Alternative 3, surveys would be done either the third or fifth year after harvest.

**VARIANCE LIMITS:** A minimum of 40% of plots must be stocked with acceptable and desirable species. Objectives of the silvicultural prescription should be met, ie. at least 1375 stems per acre, with mast species making up the percentages as designated in silvicultural prescriptions for each unit.

**CORRECTIVE MEASURES:** Changes in prescription and implementation will be made to achieve desired results in future projects. For the shelterwood units, results of stocking surveys will be used to determine the timing of the shelterwood removal, which is expected to occur between the second and sixth full growing season after harvest and site preparation activities. If any units or portions of units are not certified regenerated within 5 years, corrective actions may include tree planting, designation as open/wildlife areas, deer fencing, etc. A separate environmental analysis may be required, depending on the corrective measure chosen for implementation.

**DATA STORAGE:** This data will be stored electronically, and percent stocking with certification is reported as part of the annual MAR report, nationally. Hardcopy field data sheets are stored in the district files.

**REPORT:** Annual MAR report, and KV tracking reports.

PROJECTED COST: \$25.00 per acres per survey, for a total of \$75.00 per acre for clearcuts and two aged cuts, and \$100.00 per acre for the shelterwood cuts.

PERSONNEL NEEDED: One or two field going employees are needed each time a survey is done, and a certified silviculturist is needed to review results, and visit any units showing questionable results.

RESPONSIBLE OFFICIAL: Certified Silviculturist

PREPARED BY: J. Bard

## Snag Monitoring - Regeneration Harvest Areas

FOREST: Monongahela

PROJECT NAME: Desert Branch Projects

SITE/LOCATION: Regeneration Harvest areas:

ACTIVITY	Amount of Activity by Alternative					
	Alt 1 Proposed Action	Alt 2 No helicopter	Alt 3 No Openings	Alt 4 No new roads	Alt 5 No action	Alt. 6
Clear-cut (acres)	34	19	0	19	0	19
Two-aged (acres)	14	14	0	14	0	14
Shelterwood* (acres)	45	45	0	45	0	45
Total Even age Regen harvest (acres)	93	78	0	78	0	78

**Table 2a Regeneration Harvests in the Proposed Action.**  
*Shelterwood harvest entails two separate time periods for logging  
 Within approximately 5 years.*

Type of Cut	Stand	Stand Acres	Treatment Acres	Logging Method	Forest Type	Basal Area	Age in 2002	Slope %
Regeneration Shelterwood	69/10	193	16	C	89	180	81	23
	69/11	87	9		89	160	78	20
Regeneration Shelterwood	69/10	193	5	C	89	180	81	23
Regeneration Shelterwood	69/9	82	9	C	89	180	79	11
	69/10	193	6		89	180	81	23
Regeneration Two Aged	69/15	146	14	C	56	140	76	19

Regeneration Clearcut	70/7	66	15	H	83	150	95	45
Regeneration Clearcut	70/5	270	19	C	89	120	92	39

C = conventional logging with skidders and skid roads.

H = helicopter logging with no skid roads.

MONITORING OBJECTIVE: To determine whether methods used to retain and create snags have resulted in at least 6 snags over 9" DBH per acre.

MONITORING TYPE: Implementation monitoring.

PRIORITY: High.

PARAMETERS: At least 6 snags per acre over 9" DBH are required. Near dead trees are acceptable.

METHODOLOGY: Fixed radius plots used to make a count of snags by diameter class.

FREQUENCY/DURATION: Survey to occur one year after snag creation is completed.

VARIANCE LIMITS:

CORRECTIVE MEASURES: Changes in prescription and implementation will be made to achieve desired results in future projects, or in uncompleted units of the Desert Branch project.

DATA STORAGE: Hardcopy field data sheets are stored in the district files.

REPORT: Forest monitoring reports for wildlife.

PROJECTED COST: \$25.00 per acre.

PERSONNEL NEEDED: One or two field going employees.

RESPONSIBLE OFFICIAL: Wildlife biologist

PREPARED BY: J. Bard

## **Snag Monitoring - Thinning Harvest Areas**

FOREST: Monongahela

PROJECT NAME: Desert Branch Projects

SITE/LOCATION: Thinning Harvest areas: See selected alternative

MONITORING OBJECTIVE: To count existing snags following harvest to determine where additional snags are needed.

MONITORING TYPE: Implementation monitoring.

PRIORITY: High.

PARAMETERS: Snags counted should be over 9" DBH

METHODOLOGY: Fixed or variable radius plots used to make a count of snags by diameter class.

FREQUENCY/DURATION: Survey to occur one-three years after harvest is completed.

VARIANCE LIMITS: Snags in various dead tree categories, and near-dead trees will be tallied.

CORRECTIVE MEASURES: Where less than 6 snags per acre are present, snag creation will be scheduled.

DATA STORAGE: Hardcopy field data sheets are stored in the district files.

REPORT: Forest monitoring reports for wildlife.

PROJECTED COST: \$ per acre.

PERSONNEL NEEDED: One or two field going employees.

RESPONSIBLE OFFICIAL: Wildlife biologist

PREPARED BY: J. Bard

## **Monitoring of Seeding, Mulching, and Waterbreaks**

FOREST: Monongahela

PROJECT NAME: Desert Branch Projects

SITE/LOCATION: Skid trails, temporary roads in all conventionally harvested areas

MONITORING OBJECTIVE: To determine whether additional seeding, mulching or erosion control is needed

MONITORING TYPE: Implementation monitoring.

PRIORITY: High.

PARAMETERS: Areas of bare or eroding soil are to be retreated

METHODOLOGY: Roads are walked during sale administration to inspect for bare areas where establishment has not occurred and additional work is needed

FREQUENCY/DURATION: Roads/trails are usually walked at least three times. Once to inspect waterbreaks, once immediately after seeding and mulching are completed, and once when the grass cover could be expected to grow. Additional visits occur if seeding is not successful, or problems are identified.

VARIANCE LIMITS:

CORRECTIVE MEASURES: Additional waterbreaks, re-seeding, additional mulch applied

DATA STORAGE: Timber Sale reports on file at district, Supervisors Office

REPORT: Timber Sale Reports

PROJECTED COST: Included in Timber Sale Administration cost

PERSONNEL NEEDED: One or two field going employees.

RESPONSIBLE OFFICIAL: Timber Sale Administrator

PREPARED BY: J. Bard