

**SECOND ANNUAL INTERIM PERFORMANCE REPORT FOR MARYLAND’S LANDOWNER INCENTIVE PROGRAM TIER 2 GRANT (I-2-HM-1)**

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Wildlife and Heritage Service*

May 2009

**GRANT TITLE:** Maryland Landowner Incentive Program, Tier 2: Habitat Restoration and Enhancement for Species and Habitats at Risk

**GRANT PERIOD:** March 1, 2006 – June 30, 2011.

**SUMMARY OF WORK CONDUCTED UP TO MAY 2009**

LIP Biologist have continued to provide on-site technical assistance to new landowners, review applications, and design and implement new restoration projects during the period from June 2007, the date of our first Performance Report, until May 2009. In addition, program biologists continue to provide project oversight, on-site technical assistance, and administrative support for projects entering into year 2 or 3 of multi-year restoration projects. The table below summarizes this work since the beginning of the grant period.

Table 1: Technical Assistance and Application Review by the Maryland Landowner Incentive Program

|  | <b>March 2006<br/>– June 2007</b> | <b>June 2007<br/>– May 2008</b>                              | <b>June 2008<br/>– May 2009</b> | <b>TOTAL</b>          |
|--|-----------------------------------|--|---------------------------------|-----------------------|
| <b>On-site Technical Assistance (new landowners)</b> | <b>60 landowners</b>              | <b>51 landowners</b>   | <b>40 landowners</b>            | <b>151 landowners</b> |
| <b>Applications reviewed</b>                         | <b>39</b>                         | <b>27</b>  | <b>22</b>                       | <b>88</b>             |
| <b>Applications approved</b>                         | <b>29</b>                         | <b>17</b><br><small>(18 originally,<br/>1 cancelled)</small> | <b>10</b>                       | <b>56</b>             |
| <b>Signed agreements</b>                             | <b>22</b>                         | <b>14</b>  | <b>10</b>                       | <b>46</b>             |
| <b>Projects on hold/<br/>in development</b>          | <b>12</b>                         | <b>5</b>   | <b>10</b>                       | <b>NA</b>             |
| <b>Projects in review</b>                            | <b>8</b>                          | <b>2</b>   | <b>4</b>                        | <b>NA</b>             |

Landowners with 56 approved LIP projects together own 25,642 acres of land. Approximately 3,217 of these acres are being or will be restored through LIP funding. Maryland DNR Wildlife and Heritage Service has records post-1970 of 233 species at risk on these properties, 134 of them are targeted to benefit through LIP projects. Applications typically take between 6-12 months to be reviewed, approved, and developed with landowner agreements secured and on file. Therefore projects that are approved in 1 fiscal year, may not have signed agreements (with funds encumbered) until the following fiscal year. Projects that are on hold or in development represent applications that have been approved, but do not yet have signed agreements on file. The amount of projects on hold or in development and the total amount of signed agreements represents the total amount of approved applications.

Table 2 summarizes each project: the habitat type targeted, the practices used, the number of species to benefit, and the cost. The 10 projects in green are projects that have been contracted (with signed agreements) and implemented between June 2008 and May 2009. Projects highlighted in yellow are currently in the second or third year of implementation (14 projects). Projects that are fully completed are shaded in

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pink. Dollar amounts in red indicate changes from previous annual reports, due to budget changes during the course of the projects.

Some projects which list no target species are targeting the rare habitat types. Also note that the totals for species documented and targeted do not add up because some species are found and/or targeted on more than 1 property. A full list of all species to benefit from these projects can be found in Appendix 1. The total amount LIP has expended or encumbered for these projects is \$671,716.15. We have documented \$238,832.67 in cash and in-kind matching funds to date for these projects, which exceeds the 25% match as required by federal guidelines.

Table 1: Maryland LIP projects as of May 2009

| Project Name                           | Habitat type                                   | Total # acres | # acres to be restored | # species at risk documented on property | # species at risk to benefit | Practice(s)   | LIP Encumbrances (does not include match) |
|--|--|---------------|------------------------|--|------------------------------|---|---|
| American Chestnut Land Trust           | Coastal Plain Mature Forest                    | 786           | 786                    | 10                                       | 4                            | Invasive species control  | \$33,413.00                               |
| Behnke's Nursery                       | Patuxent Microdesert                           | 125           | 25                     | 3  | 1                            | Invasive species control; restoration of native plant community                       | \$17,100.00                               |
| Broad Creek Memorial Scout Reservation | Mountain Mature Forest                         | 1,686         | 60                     | 7  | 6                            | Invasive species control (hemlock woolly adelgid (HWA))                               | \$11,485.00                               |
| Carney                                 | Fen/Seepage Wetland                            | 45.5          | 3.2                    | 5  | 1                            | Fencing, prescribed grazing in bog turtle wetlands                                    | \$10,179.00                               |
| Central Maryland Audubon               | Mountain Mature Forest                         | 130           | 4                      | 1  | 0                            | Reforestation (contiguous forest)   | \$3,000.00                                |
| Cherry                                 | Groundwater Interfacing Wetland (Delmarva Bay) | 130           | 2                      | 3  | 3                            | Removal of encroaching red maple and sweet gum saplings from the edges of the wetland | \$3,000.00                                |
| Clagett (Patuxent R.)                  | Tidal Emergent Marsh                           | 138           | 1                      | 0  | 1                            | Invasive species control (Phragmites)   | \$81.25                                   |
| Cleary (Patuxent R.)                   | Tidal Emergent Marsh                           | 50            | 1                      | 0  | 1                            | Invasive species control (Phragmites)   | \$81.25                                   |
| Colburn Terrapin Project               | Beach  | 5.9           | .5                     | 1  | 1                            | Diamondback Terrapin Nesting habitat creation   | \$3,750.00                                |
| Cove Point Natural Heritage Trust      | Coastal Plain Mature Forest                    | 50            | 50                     | 0  | 0                            | Invasive species control (plant and HWA)  | \$7,823.00                                |
| Cypress Creek Bog                      | Fen/Seepage Wetland                            | 10            | 1                      | 12                                       | 18                           | Invasive species control (Phragmites)   | \$6,218.00                                |
| Denner                                 | Fen/Seepage Wetland                            | 5             | 0.5                    | 1  | 1                            | Invasive species control  | \$1,600.00                                |
| Dewling (Drum Pt.)                     | Beach  | 1             | <1                     | 0  | 1                            | Invasive species control  | \$112.50                                  |
| Drum Point Project, Inc.               | Beach  | 17            | 1                      | 1  | 1                            | Invasive species control  | \$1,466.79                                |
| Felsen (Drum Pt.)                      | Beach  | 1             | <1                     | 0  | 1                            | Invasive species control  | \$225.00                                  |
| George, Ruann                          | Piedmont Stream System                         | 125           | 3                      | 0  | 6                            | Fencing, livestock exclusion, Tree Planting (buffers)                                 | \$18,580.00                               |
| Gibson (Drum Pt.)                      | Beach  | 1             | <1                     | 0  | 1                            | Invasive species control  | \$112.50                                  |

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|   |                                       |       |       |    |    |   |                   |
|---|---------------------------------------|-------|-------|----|----|---|-------------------|
| Green                                   | Piedmont Stream                       | 175   | 102   | 0  | 0  | Tree planting (buffers), invasive species control, Fencing, Livestock exclusion   | \$56,316.00       |
| Gribble (Drum Pt.)                      | Beach                                 | 2     | <1    | 0  | 1  | Invasive species control  | \$112.50          |
| Halberstam, Robert                      | Fen/Seepage Wetland                   | 50    | 6     | 1  | 2  | Prescribed Grazing  | \$2,500.00        |
| Izaak Walton League (Rockville Chapter) | Piedmont Mature Forest                | 51    | 51    | 0  | 16 | Invasive Species Removal  | \$12,263.00       |
| Jean Ellen Shehan Dupont Audubon Center | Grassland; non-tidal emergent wetland | 948   | 305.5 | 22 | 22 | Grassland establishment, grass and forest buffer establishment, restoration of wetland hydrology, vegetation management | \$141,067.80      |
| Koste                                   | Coastal Plain Mature Forest           | 164   | 25.5  | 1  | 0  | Invasive species control (HWA), reforestation (contiguous forest)   | <b>\$9,981.70</b> |
| Lee, C. (Drum Pt.)                      | Beach                                 | 1     | <1    | 0  | 1  | Invasive species control  | \$225.00          |
| Lee, V. (Patuxent R.)                   | Tidal Emergent Marsh                  | 120   | 1     | 1  | 1  | Invasive species control (Phragmites)   | \$81.25           |
| Lower Marlboro Town Citizens Assoc.     | Tidal Emergent Marsh (Patuxent R.)    | 1     | 1     | 1  | 1  | Invasive species control (Phragmites)   | \$81.25           |
| Maher (Patuxent R.)                     | Tidal Emergent Marsh                  | 4.28  | 1     | 0  | 1  | Invasive species control (Phragmites)   | \$81.25           |
| Malkus                                  | Coastal Plain Mature Forest           | 288   | 8     | 1  | 1  | Reforestation   | \$4,407.58        |
| McDowell & Boyer                        | Mountain Mature Forest                | 71    | 7.5   | 1  | 0  | Invasive species control, restoration of native plant community   | \$5,762.00        |
| Maryland Ornithological Society         | Mountain Mature Forest                | 162   | 22    | 1  | 1  | Invasive species control  | \$11,700.00       |
| NJR, LLC                                | Piedmont Stream System                | 112   | 112   | 0  | 8  | Invasive species control  | \$20,962.5        |
| Oldfield Farms                          | Coastal Plain Stream                  | 1,378 | 2     | 1  | 1  | Invasive species control  | <b>\$9670.10</b>  |
| Port Tobacco River Conservancy          | Coastal Plain Stream                  | N/A   | 50    | 2  | 5  | Riparian Forest Buffers, wetland enhancement  | \$8,640.00        |
| Rock Lodge Trust                        | Mountain Mature Forest, Grassland     | 3,157 | 75    | 12 | 2  | Invasive species control, establishment of warm-season grassland  | \$21,450.00       |
| Rowell (Patuxent R.)                    | Tidal Emergent Marsh                  | 26.12 | 1     | 0  | 1  | Invasive species control (Phragmites)   | \$81.25           |
| Schmidt                                 | Grassland                             | 219   | 18    | 1  | 1  | Fallow Field Maintenance  | \$2,059.83        |
| Seitz                                   | Fen/Seepage Wetland                   | 25    | 5     | 2  | 1  | Fencing, livestock grazing in bog turtle wetlands   | \$18,335.00       |
| Sines                                   | Piedmont Mature Forest                | 13.9  | 13.9  | 1  | 1  | Tree planting, grassland establishment  | \$7,085.00        |
| Spiering                                | Grassland                             | 178   | 10    | 1  | 1  | Fallow Field Maintenance  | \$1,144.35        |
| Sylvan View Community Association       | Fen/Seepage Wetland                   | 7     | 7     | 3  | 3  | Restoration of wetland hydrology, restoration of native plant communities, fencing                                      | <b>\$72,49.95</b> |
| Teets                                   | Mountain Mature Forest                | 137   | 30    | 0  | 2  | Invasive species control  | \$3,744.00        |

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|  |   |        |      |     |    |  |                     |
|--|---|--------|------|-----|----|--|---------------------|
| The Nature Conservancy-Comprehensive     | many, including Delmarva Bays, Serpentine Barrens, Xeric Sand Ridge, Atlantic White Cedar Swamp, Bald Cypress Swamp, Cave | 10,926 | 617  | >86 | 86 | Invasive species control and monitoring, Atlantic White Cedar Swamp restoration (tree planting), reforestation of a field above a cave opening | \$96,988.00         |
| The Nature Conservancy – Jackson Lane    | Groundwater Interfacing Wetlands  | 330    | 330  | 11  | 9  | Invasive species control   | \$20,063.00         |
| The Nature Conservancy – Licking Creek   | Mountain Mature Forest  | 75     | 6    | 17  | 2  | Invasive species control (HWA)   | \$9,652.50          |
| The Nature Conservancy – Prescribed Burn | Groundwater Interfacing Wetland, Xeric Sand Ridge, Serpentine Barren  | 317    | 45   | 29  | 22 | Vegetation management (prescribed burning)   | \$55,104.00         |
| Watson, P. (Patuxent R.)                 | Tidal Emergent Marsh  | 25     | 1    | 0   | 1  | Invasive species control (Phragmites)  | \$81.25             |
| Watson, S. (Patuxent R.)                 | Tidal Emergent Marsh  | 25     | 1    | 0   | 1  | Invasive species control (Phragmites)  | \$81.25             |
| Weitzell                                 | Mountain Mature Forest  | 750    | 5    | 3   | 1  | Invasive species control   | \$5,655.00          |
| Zeiller (Drum Pt.)                       | Beach   | 1      | <1   | 0   | 1  | Invasive species control   | \$112.50            |
| Zodhiates                                | Fen/Seepage Wetland, Ridge and Valley Stream  | 55     | 38.5 | 1   | 2  | Reforestation, restoration of hydrology, invasive species control  | \$28,000.00         |
| <b>TOTAL:</b>                            |   |        |      |     |    |  | <b>\$671,716.15</b> |

**SUMMARY OF OBJECTIVES AND PROGRESS SO FAR**

The following summarizes our original objectives, by habitat type, for Maryland I-2-HM-1 funds, and our progress towards these goals. Where progress was made in the period since the previous performance report, this is highlighted in green. Where figures have changed since the previous performance report due to changes in projects underway, these are noted in pink.

**Project A. Restoration of Ridge and Valley, Piedmont, and Coastal Plain Stream Systems**

Objective: To provide technical and financial assistance to landowners to restore water quality and riparian habitats of stream systems using the following practices:

| Practice                       | GOAL      | PROJECTED COST | PROGRESS TO DATE | ACTUAL COST  |
|--------------------------------|-----------|----------------|------------------|--------------|
| Reforestation: Forested Buffer | 150 acres | \$150,000      | 80 acres         | \$59,480     |
| Grassland Buffers              | 75 acres  | \$30,000       | 0                | 0            |
| Invasive Species Control       | 50 acres  | \$25,000       | 142.5 acres      | \$49,062.50  |
| Livestock Exclusion & Fencing  | 5000 ft   | \$15,000       | 6,600 ft         | \$26,000     |
|                                | TOTAL:    | \$220,000      | 0                | \$134,542.50 |

We continue to work Watershed Groups like the Port Tobacco River Conservancy and the Potomac River Conservancy to expand our outreach to landowners. Since our last performance report we have signed grant agreements with both agencies obligating funds for installation of riparian buffers and invasive species control. We expect that additional funds will be awarded in the future for additional work in these watersheds. In the last performance report letters were sent to 377 landowners with riverfront property within the McIntosh Run Ecologically Significant Area in St. Mary’s County, Maryland. Since that time, we have received positive responses from 9 of these landowners and conducted site visits to all of them in coordination with our partners from the USFWS Chesapeake Bay Field Office. We provided habitat recommendations to these landowners but due to the quality of the habitat on their lands did not pursue restoration projects.

**Project B. Restoration of Barrens and Glades**

Objective: To provide technical and financial assistance to landowners to restore shale barrens and glades by controlling invasive and woody plant species and restricting livestock access to these sensitive habitats. To accomplish this objective we will use the following practices:

| Practice  | GOAL     | PROJECTED COST | PROGRESS TO DATE | ACTUAL COST |
|---|----------|----------------|------------------|-------------|
| Invasive Species Control                          | 50 acres | \$25,000       | 6 acres          | \$551.00    |
| Vegetation Management: Early-successional habitat | 15 acres | \$6,750        | 5 acres          | \$4,108.90  |
| Livestock Exclusion & Fencing                     | 1000 ft  | \$3,000        | 0                | 0           |
|   | TOTAL:   | \$34,750       |                  | \$4,659.90  |

Due to the rarity of barrens habitats, we have included serpentine barrens within this habitat type. Our outreach to 47 landowners resulted in site visits with 3 landowners with shale barren habitat and 3 landowners with serpentine barren habitat. We are currently working with 1 landowner in to develop a restoration plan.

**Project C: Restoration of Cliffs and Sandstone Outcrops**

Objective: To provide technical and financial assistance to landowners in the restoration of native forest habitats on cliffs and sandstone outcrops using the following practices:

| Practice                         | GOAL          | PROJECTED COST  | PROGRESS TO DATE | ACTUAL COST |
|----------------------------------|---------------|-----------------|------------------|-------------|
| Invasive Species Control         | 20 acres      | \$10,000        | 0                | 0           |
| Reforestation: Contiguous Forest | 40 acres      | \$40,000        | 0                | 0           |
|                                  | <b>TOTAL:</b> | <b>\$50,000</b> |                  | 0           |

Due to the limited extent of this habitat type, it has been difficult to find good candidates for restoration.

**Project D. Restoration of Mountain and Piedmont Mature Forest**

Objective: To provide technical and financial assistance to landowners to restore forests, reduce fragmentation, and control invasive species in the Ridge and Valley and Allegheny Plateau regions of Maryland. Specific practices and costs are as follows:

| Practice                         | GOAL          | PROJECTED COST   | PROGRESS TO DATE | ACTUAL COST         |
|----------------------------------|---------------|------------------|------------------|---------------------|
| Invasive Species Control         | 30 acres      | \$15,000         | 390.5 acres      | \$68,571.39         |
| Reforestation: Contiguous Forest | 85 acres      | \$85,000         | 29.5 acres       | \$15,375.00         |
| Invasive Species Control (HWA)   | 0             | 0                | 66 acres         | \$21,137.50         |
| Restoration of native vegetation | 0             | 0                | 7.5              | \$2,881.00          |
|                                  | <b>TOTAL:</b> | <b>\$100,000</b> |                  | <b>\$107,964.89</b> |

We continue to treat and monitor groves of hemlock trees for hemlock woolly adelgid on 2 properties having mountain mature forest. These trees are an important part of the forest, functioning to stabilize stream banks, reduce water temperature, and provide habitat for associated rare species including the ostrich fern, the smoky shrew, and 6 rare aquatic species. We have also developed a restoration project for the Izaak Walton League to treat invasive species on their property adjacent to State Park Lands thereby improving contiguous forested corridors for wildlife.

**Project E. Restoration of Subterranean Habitats**

Objective: To provide technical and financial assistance to landowners to restore and protect land adjacent to, and containing, subterranean habitats, using the following practices:

| Practice                           | GOAL          | PROJECTED COST  | PROGRESS TO DATE | ACTUAL COST    |
|------------------------------------|---------------|-----------------|------------------|----------------|
| Reforestation of Contiguous Forest | 50 acres      | \$50,000        | 5 acres          | \$2,000        |
| Grassland Buffers                  | 100 acres     | \$40,000        | 0                | 0              |
| Livestock Exclusion & Fencing      | 2500 ft       | \$7,500         | 0                | 0              |
|                                    | <b>TOTAL:</b> | <b>\$97,500</b> |                  | <b>\$2,000</b> |

Since June 2007 we have contacted 12 landowners with caves on their property. We have 1 project with The Nature Conservancy (TNC-Comprehensive) which will reforest a 5 acre field above a cave in Garrett County. We have had difficulty meeting our objectives for this habitat type due to the rarity of subterranean habitats on private property.

**Project F. Restoration of Fens and Seepage Wetlands**

Objective: Provide technical and financial assistance to landowners to restore habitat for the federally threatened bog turtle and other fen/seepage wetland species at risk, by applying the following practices:

| Practice  | GOAL          | PROJECTED COST  | PROGRESS TO DATE               | ACTUAL COST         |
|---|---------------|-----------------|--------------------------------|---------------------|
| Vegetation Management: Early successional habitat | 30 acres      | \$45,000        | 6.6 acres (prescribed grazing) | \$8,664.00          |
| Grassland Buffers                                 | 50 acres      | \$20,000        | 0                              | 0                   |
| Invasive Species Control                          | 30 acres      | \$15,000        | 98.5 acres                     | \$18,808.03         |
| Livestock Exclusion & Fencing                     | 3750 ft       | \$11,250        | 4364 ft                        | \$31,125.20         |
| Restoration of wetland hydrology                  | 0             | 0               | 12 acres                       | \$39,499.85         |
| Restoration of native vegetation                  | 0             | 0               | 7 acres                        | \$14,000.50         |
|   | <b>TOTAL:</b> | <b>\$91,250</b> |                                | <b>\$112,097.58</b> |

Due to the success of our first 2 prescribed grazing projects, we are providing funding for continued maintenance grazing on both of our original sites for an additional 4 years, as well as considering other potential properties where this practice could be used.

**Project G. Restoration of Calcareous Woodlands**

Objective: To provide technical and financial assistance to landowners to restore calcareous woodlands using the following practices:

| Practice                 | GOAL          | PROJECTED COST  | PROGRESS TO DATE | ACTUAL COST    |
|--------------------------|---------------|-----------------|------------------|----------------|
| Grassland/Forest Buffers | 35 acres      | \$35,000        | 8 acres          | \$8,000        |
| Invasive Species Control | 30 acres      | \$15,000        | 0                | 0              |
|                          | <b>TOTAL:</b> | <b>\$50,000</b> |                  | <b>\$8,000</b> |

Calcareous woodlands are an extremely rare habitat type in Maryland, ranked S1. There are only 4 landowners known to have this habitat type on their property – we have contacted all 4 by letter, and have had only 1 application. Therefore, it is unlikely we will be able to meet our objective of 65 acres of restoration for this habitat type.

**Project H. Restoration of Coastal Plain Mature Forest**

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Objective: To provide technical and financial assistance to landowners in restoring mature forest habitat for Delmarva fox squirrel and other species at risk, and controlling invasive species in forests of the Coastal Plain of Maryland. LIP projects will include the following practices:

| Practice                                   | GOAL          | PROJECTED COST   | PROGRESS TO DATE | ACTUAL COST        |
|--|---------------|------------------|------------------|--------------------|
| Reforestation of Contiguous Forest         | 125 acres     | \$125,000        | 16.5 acres       | \$8,352.33         |
| Invasive Species Control                   | 15 acres      | \$7,500          | 856 acres        | \$37,072.67        |
| Vegetation management: Understory thinning | 28 acres      | \$14,000         | 0                | 0                  |
| Invasive Species Control (HWA)             | 0             | 0                | 24 acres         | \$14,000.00        |
|  | <b>TOTAL:</b> | <b>\$146,500</b> |                  | <b>\$59,425.00</b> |

We have still been unable to have the Coastal Plain hemlocks treated for wooly adelgid due to the high workload of Maryland Department of Agriculture crews, but are hopeful that treatment will occur in the upcoming year.

**Project I. Restoration of Groundwater-Interfacing Wetlands**

Objective: To provide technical and financial assistance to landowners to restore Coastal Plain wetlands, including Delmarva bays, using the following practices:

| Practice                         | GOAL          | PROJECTED COST  | PROGRESS TO DATE | ACTUAL COST                          |
|----------------------------------|---------------|-----------------|------------------|--------------------------------------|
| Reforestation: Forested Buffers  | 5 acres       | \$5,000         | 10 acres         | \$10,000.00                          |
| Invasive Species Control         | 8 acres       | \$4,000         | 450 acres        | \$31,083.03                          |
| Vegetation Management            | 29 acres      | \$43,500        | 83 acres         | \$24,204.06                          |
| Restoration of wetland hydrology | 10 acres      | \$10,000        | 20 acres         | \$0 (cost covered by matching grant) |
| Livestock Exclusion & Fencing    | 1,400 ft.     | \$4,200         | 0                | 0                                    |
| Restoration of native vegetation | 0             | 0               | 20.5 acres       | \$17,100.00                          |
|                                  | <b>TOTAL:</b> | <b>\$66,700</b> |                  | <b>\$82,387.09</b>                   |

We continue to work with The Nature Conservancy to monitoring our project to remove invasive plants in and around Delmarva Bays on 120 acres on 2 preserves on the Eastern Shore of Maryland. We are also working closely with TNC biologist to monitor project areas where LIP funded the removal of encroaching woody plants from 66 acres Delmarva Bay, 64 on The Nature Conservancy property and 2 on the property of another landowner adjacent to a Nature Conservancy Preserve. Our work has exceeded our objectives for invasive control and vegetation management in this habitat type, although we have not had an opportunity to implement fencing. In the last fiscal year we conducted an outreach mailing to 52 landowners with records of Delmarva-bay dwelling rare species on their property. From this outreach effort, we spoke with 13 landowners, visited 6 of them, and approved 1 application for a project to remove encroaching vegetation in a Delmarva Bay Property.

**Project J. Restoration of Bald-Cypress and Atlantic White-Cedar Swamps**

Objective: To provide technical and financial assistance to landowners in restoration of bald-cypress and Atlantic white-cedar swamps in floodplains of Coastal Plain streams and rivers using the following practices:

| Practice                           | GOAL          | PROJECTED COST  | PROGRESS TO DATE | ACTUAL COST        |
|------------------------------------|---------------|-----------------|------------------|--------------------|
| Reforestation of Contiguous Forest | 20 acres      | \$20,000        | 35 acres         | \$42,000.00        |
| Invasive Species Control           | 10 acres      | \$5,000         | 5 acres          | \$459.17           |
|                                    | <b>TOTAL:</b> | <b>\$25,000</b> |                  | <b>\$42,459.17</b> |

In the last fiscal year we approved a project with The Nature Conservancy to help them restore 35 acres of Atlantic White Cedar on 2 of their Preserves on the Eastern Shore of Maryland where historically Atlantic White Cedar occurred. Work on this project was contracted and began this year. Invasive species controls are currently being undertaken on 5 acres of established bald cypress swamp in The Nature Conservancy’s Nassawango Preserve.

**Project K. Restoration of Xeric Sand Ridges and Patuxent Microdeserts**

Objectives: To restore forest communities associated with xeric sand ridges on the eastern shore of Chesapeake Bay, and native plant and arthropod communities associated with microdesert habitats adjacent to the Patuxent River, using the following practices:

| Practice                                | GOAL          | PROJECTED COST  | PROGRESS TO DATE | ACTUAL COST     |
|---|---------------|-----------------|------------------|-----------------|
| Reforestation of Contiguous Forest      | 20 acres      | \$20,000        | 0                | 0               |
| Native plant community restoration      | 100 acres     | \$20,000        | 25 acres         | \$10,000        |
| Invasive Species Control                | 10 acres      | \$5,000         | 25 acres         | \$7,100         |
| Vegetation management – prescribed burn | 0             | 0               | 0                |                 |
|   | <b>TOTAL:</b> | <b>\$45,000</b> |                  | <b>\$17,100</b> |

Due to changes in management at the Behnke’s Project Site on the banks of the Patuxent River we have scaled back our project to remove invasive species and restore native vegetation. We are still hopeful that this project will yield quality habitat for rare hymenopterans and xeric plant species, even given the smaller scope.

**Project L. Restoration of Contiguous Grasslands**

Objectives: To restore contiguous native grasslands or savannas historically associated with serpentine soils, barrens, or glades, or anthropogenic grasslands (e.g., hayfields, reclaimed surface mines) using the following practices:

| Practice               | GOAL      | PROJECTED COST | PROGRESS TO DATE | ACTUAL COST |
|------------------------|-----------|----------------|------------------|-------------|
| Establishment of warm- | 100 acres | \$40,000       | 80.4 acres       | \$35,520.00 |

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|  |               |                 |             |                    |
|--|---------------|-----------------|-------------|--------------------|
| season grassland                           |               |                 |             |                    |
| Vegetation management – grassland thinning | 0             | 0               | 139.5 acres | \$9,919.00         |
| Fallow field maintenance                   | 0             | 0               | 28          | \$3,203.88         |
| Invasive species control                   | 0             | 0               | 297         | \$37,000.00        |
|  | <b>TOTAL:</b> | <b>\$40,000</b> |             | <b>\$85,642.88</b> |

In consultation with Maryland DNR’s upland game bird biologist, we amended into our approved practices for grasslands a practice called “fallow field maintenance”. This year we made our first incentive payment to participating farmers to leave at least 10 acres of cropland fallow for 3 years, without seeding or modifying the land. The natural fallow field flora that results supports the Northern Bobwhite Quail, a species of Greatest Conservation Need, as well as other grassland birds. We are well into our first year of this project and will continue monitoring the response of quail and other birds to this practice to gauge its success.

**Additional Project:**

**Creating Beach Nesting Habitat for Diamondback Terrapins**

We have also worked in coordination with the Army Corp of Engineers (ACE), the Wetland Restoration Service, and the Terrapin Institute to develop and implement projects to create Nesting Beach Habitat for Diamondback Terrapins, a state watch-list species. Populations of these aquatic turtles have been declining in the state and can be attributed to several reasons including decline in suitable nesting habitat.

**Restoring Tidal Emergent Marsh for the Federally Endangered Sensitive Joint- Vetch**

In addition to the projects listed above, and specified in our grant agreement, we have worked on 8 properties to restore tidal emergent marsh habitat for the federally threatened Sensitive Joint-Vetch (*Aeschynomene virginica*). Sensitive Joint-Vetch occurs in less than 25 locations in the country, 1 of which is along the Patuxent River in Maryland. The plant is a poor competitor and relies on the presence of bare mud in the intertidal z1 in order to germinate and grow. However, the invasive perennial plant species Phragmites (*Phragmites australis*) has taken over much of this intertidal region along the river, preventing the establishment of the annual Sensitive Joint-Vetch. This stretch of the river includes private, state and county-owned land. LIP partnered with MD DNR Wildlife and Heritage Service Southern Region Staff and the Maryland Department of Agriculture weed control team to apply a chemical treatment by boat to shoreline Phragmites stands in the region. LIP contacted local private landowners and paid for the treatment on the land of 8 willing landowners, while the state and county portions were paid for by the respective agencies. The match for LIP funds was provided by DNR in the form of equipment and staff time, resulting in no cost for the participating landowners.

**CONCLUSION**

The Maryland Landowner Incentive Program over the last 3 years has continued to make progress in restoring habitat for species at risk in the state. We have reviewed 88 applications and approved 56 projects for funding under this Tier 2 Grant. We continue to review, develop and implement new projects while also providing technical assistance and oversight to multi-year projects begun in previous years. Overall, we have approved projects to restore land in 11 of our 12 target habitat types, the exception being cliffs and sandstone outcrops, which are very limited in extent. While we are still working towards our goals for certain practices like grassland buffers and forested buffers, we have already surpassed our goals for invasive species control in 5 of our target habitats, and have exceeded goals for other practice types in 5 target habitats. We have also amended additional practices into our grant narrative as we learn more about the specific needs in each habitat.

**QUANTIFIED OUTCOMES**

**Our quantified outcomes over the last 3 grant periods from June 2006-May 2009:**

|  | <b>TOTAL</b>   | <b>TOTAL COST</b>   | <b>TOTAL COST PER ACRE</b>   |
|--|----------------|---------------------|------------------------------|
| <b>Total number of acres of wetlands under agreement to be improved, managed or restored</b> | <b>774.6</b>   | <b>322,208.80</b>   | <b>\$415.97/Acre</b>         |
| <b>Total number of non-wetland acres under agreement to be improved, managed or restored</b> | <b>2061.9</b>  | <b>\$349,507.35</b> | <b>\$169.51/Acre</b>         |
| <b>TOTAL ACRES</b>   | <b>2836.50</b> | <b>\$671,716.15</b> | <b>\$236.81/acre Average</b> |

**SECTION 7 REVIEW SUMMARY**

We have completed Section 7 reviews for 46 of our 56 approved landowner projects. Of these, 25 properties have no known occurrences of federally listed species. The remaining 21 are as follows:

| Project(s)  | Species                         | Determination  |
|---|---------------------------------|--|
| ACLT  | Bald eagle                      | No effect  |
| Carney<br>Seitz   | Bog turtle                      | Not likely to adversely affect– see note below***  |
| Denner  | Bog turtle                      | Not likely to adversely affect - project will follow closely all the recommendations of the Biological Opinion, which states that if this is d1 the risk of take resulting from invasive species removal is “discountable” and is extremely unlikely   |
| Dewling<br>Felsen<br>Gibson<br>Gribble<br>Zeiller<br>Lee<br>Drum Point Project, Inc.              | Northeastern Beach Tiger Beetle | Not likely to adversely affect – chemical application is occurring when adult beetles are absent   |
| Malkus  | Delmarva fox squirrel           | No effect - planting activities will not involve any direct disturbance to the mature forest stands where the squirrels live, and will impact only land that is currently planted with grass   |
| Pickering Creek Audubon   | Delmarva fox squirrel           | Not likely to adversely affect - although imidacloprid may be moderately toxic to mammals through direct ingestion, the limited application of the insecticide into soil directly below hemlock trees or into the trunk will eliminate the possibility of ingestion by Delmarva fox squirrels. |
| Clagett<br>Cleary<br>Lee, V.<br>Lower Marlboro TCA<br>Maher<br>Rowell<br>Watson, P.<br>Watson, S. | Sensitive Joint-Vetch           | Not likely to adversely affect - herbicide is being applied after the completion of the sensitive joint-vetch’s annual life cycle  |

\*\*\* For the Carney and Seitz prescribed grazing projects, we received concurrence from the Chesapeake Bay Field Office of the USFWS that the fencing and grazing practices are not likely to adversely affect the bog turtle, and therefore these projects were approved and deemed exempt from the terms of the bog turtle Biological Opinion issued in March of 2006.

**APPENDIX 1: Species that stand to benefit from MD LIP projects**

| Common Name                     | Scientific Name                        | Type              | Global rank | State rank | Project(s) where benefits              |
|---------------------------------|--|-------------------|-------------|------------|--|
| Sensitive Joint-vetch           | <i>Aeschenomene virginia</i>           | plant             | G2          | S1         | Patuxent River                         |
| Auricled Gerardia               | <i>Agalinis auriculata</i>             | plant             | G3          | S1         | Green                                  |
| Running juneberry               | <i>Amelanchier stolonifera</i>         | plant             | G5          | S2         | TNC Comprehensive                      |
| Henslow's Sparrow               | <i>Ammodramus henslowii</i>            | bird              | G           | S1S2       | RockLodge, Teets                       |
| Grasshopper sparrow             | <i>Ammodramus savannarum</i>           | bird              | G5          | GCN        | JEDS Audubon                           |
| Bristly Sarsaparilla            | <i>Aralia hispida</i>                  | plant             | G5          | S1         | Rock Lodge                             |
| Curtiss' three-awn              | <i>Aristida curtissii</i>              | plant             | G5          | SU         | TNC Prescribed Burn                    |
| Giant Cane                      | <i>Arundinaria gigantea</i>            | plant             | G5          | S2         | Sylvan View                            |
| Serpentine aster                | <i>Aster depauperatus</i>              | plant             | G2          | S1         | TNC Prescribed Burn, TNC Comprehensive |
| Rough-leaved aster              | <i>Aster radula</i>                    | plant             | G5          | S1         | TNC Comprehensive                      |
| Tickseed Sunflower              | <i>Bidens coronata</i>                 | plant             | G5          | S2S3       | Cypress Creek Bog                      |
| Small-fruited Beggar-ticks      | <i>Bidens mitis</i>                    | plant             | G4?         | S1         | Cypress Creek Bog                      |
| Aster-like Boltonia             | <i>Boltonia asteroides</i>             | plant             | G5          | S1         | TNC Jackson Ln., TNC Prescribed Burn   |
| Blunt-lobe Grape-fern           | <i>Botrychium 1idense</i>              | plant             | G4Q         | S1         | NJR                                    |
| Side-oats grama                 | <i>Bouteloua curtipendula</i>          | plant             | G5          | S2         | TNC Comprehensive                      |
| Porter's reedgrass              | <i>Calamagrostis porteri</i>           | plant             | G4          | S1         | TNC Comprehensive                      |
| Harebell                        | <i>Campanula rotundifolia</i>          | plant             | G5          | S2         | TNC Comprehensive                      |
| Buxbaum's Sedge                 | <i>Carex buxbaumii</i>                 | plant             | G5          | S2         | IWLA                                   |
| Davis' Sedge                    | <i>Carex davisii</i>                   | plant             | G4          | S1         | George                                 |
| Davis' Sedge                    | <i>Carex davisii</i>                   | plant             | G4          | S1         | Green                                  |
| Little prickly sedge            | <i>Carex echinata</i>                  | plant             | G5          | S1         | TNC Comprehensive                      |
| Coast Sedge                     | <i>Carex exilis</i>                    | plant             | G5          | S1         | Cypress Creek Bog                      |
| Lake-bank sedge                 | <i>Carex lacustris</i>                 | plant             | G5          | S2         | TNC Comprehensive                      |
| Hop-like Sedge                  | <i>Carex lupuliformis</i>              | plant             | G4          | S1?        | TNC Jackson Ln., Cherry                |
| Mead's Sedge                    | <i>Carex meadii</i>                    | plant             | G4G5        | S1         | IWLA                                   |
| Dark green sedge                | <i>Carex venusta</i>                   | plant             | G4          | S2         | TNC Comprehensive                      |
| Inflated sedge                  | <i>Carex vesicaria</i>                 | plant             | G5          | S1         | TNC Comprehensive                      |
| Velvety sedge                   | <i>Carex vestita</i>                   | plant             | G5          | S2         | TNC Comprehensive                      |
| Atlantic White Cedar            | <i>Chamaecyparis thyoides</i>          | plant             | G4          | S3         | Cypress Creek Bog                      |
| Leatherleaf                     | <i>Chamaedaphne calyculata</i>         | plant             | G5          | S1         | Sylvan View                            |
| Northeastern beach tiger beetle | <i>Cicindela dorsalis dorsalis</i>     | insect            | G4T2        | S1         | Drum Pt.                               |
| Tiger beetle                    | <i>Cicindela scutellaris rugifrons</i> | insect            | G5          | S3         | Behnke's                               |
| Northern harrier                | <i>Circus cyaneus</i>                  | bird              | G5          | S2B        | JEDS Audubon                           |
| Sedge Wren                      | <i>Cistothorus platensis</i>           | Vertebrate Animal | G5          | S1         | Rock Lodge                             |
| Spotted turtle                  | <i>Clemmys guttata</i>                 | reptile           | G5          | GCN        | JEDS Audubon                           |
| Bog Turtle                      | <i>Clemmys muhlenbergii</i>            | reptile           | G3          | S2         | Carney, Denner, Seitz, Zodhaites       |
| Northern bobwhite               | <i>Colinus virginianus</i>             | bird              | G5          | GCN        | JEDS Audubon, Schmidt, Spiering        |
| Reflexed Cyperus                | <i>Cyperus refractus</i>               | plant             | G5          | S2?        | NJR                                    |
| Tall Larkspur                   | <i>Delphinium exaltatum</i>            | plant             | G3          | S1         | TNC Comprehensive                      |
| Blackburnian Warbler            | <i>Dendroica fusca</i>                 | Vertebrate Animal | G5          | S1S2B      | Rock Lodge                             |

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| Common Name               | Scientific Name                    | Type              | Global rank | State rank | Project(s) where benefits                          |
|---------------------------|------------------------------------|-------------------|-------------|------------|--|
| Few-flowered Tick-trefoil | <i>Desmodium pauciflorum</i>       | plant             | G5          | S1         | ACLT   |
| Stiff tick-trefoil        | <i>Desmodium strictum</i>          | plant             | G4          | S1         | TNC Prescribed Burn, TNC Comprehensive             |
| Tall Swamp Panicgrass     | <i>Dichanthelium scabriusculum</i> | plant             | G4          | S1         | TNC Comprehensive                                  |
| Glade fern                | <i>Diplazium pycnocarpon</i>       | plant             | G5          | S2         | Weitzell   |
| Leatherwood               | <i>Dirca palustris</i>             | plant             | G4          | S2         | TNC Comprehensive                                  |
| Knotted spikerush         | <i>Eleocharis equisetoides</i>     | plant             | G4          | S1         | TNC Comprehensive                                  |
| Robbins' spikerush        | <i>Eleocharis robbinsii</i>        | plant             | G4G5        | S1         | TNC Prescribed Burn, TNC Comprehensive             |
| Beaked Spikerush          | <i>Eleocharis rostellata</i>       | plant             | G5          | S2?        | Cypress Creek Bog                                  |
| Alder Flycatcher          | <i>Empidonax alnorum</i>           | Vertebrate Animal | G5          | S2         | Rock Lodge   |
|                           |                                    |                   |             |            |  |
| Big-topped lovegrass      | <i>Eragrostis hirsuta</i>          | plant             | G5          | S1S2       | TNC Prescribed Burn, TNC Comprehensive             |
| Flattened Pipewort        | <i>Eriocaulon compressum</i>       | plant             | G5          | S2         | TNC Comprehensive                                  |
| Parker's pipewort         | <i>Eriocaulon parkeri</i>          | plant             | G3          | S2         | TNC Prescribed Burn, TNC Comprehensive             |
| White Trout Lily          | <i>Erythronium albidum</i>         | plant             | G5          | S2         | Green  |
| White-bracted B1set       | <i>Eupatorium leucolepis</i>       | plant             | G5          | S2S3       | TNC Comprehensive                                  |
| Cluster Fescue            | <i>Festuca paradoxa</i>            | plant             | G5          | S1         | Port Tobacco                                       |
| Harper's Fimbristylis     | <i>Fimbristylis perpusilla</i>     | plant             | G2          | S2         | TNC Jackson Ln.                                    |
| Smooth Fuirena            | <i>Fuirena pumila</i>              | plant             | G4          | S2S3       | TNC Comprehensive                                  |
| Common Moorhen            | <i>Gallinula chloropus</i>         | Vertebrate Animal | G5          | S2B        | NJR  |
| Fringe-tip Closed Gentian | <i>Gentiana andrewsii</i>          | plant             | G5?         | S2         | IWLA   |
| Cherrydrop snail          | <i>Hendersonia occulta</i>         | invertebrate      | G5          | S2         | TNC Comprehensive                                  |
| Featherfoil               | <i>Hottonia inflata</i>            | plant             | G4          | S1         | TNC Jackson Ln., TNC Comprehensive                 |
| Creeping St. John's-wort  | <i>Hypericum adpressum</i>         | plant             | G3          | S1         | TNC Prescribed Burn                                |
| Coppery St. John's-wort   | <i>Hypericum denticulatum</i>      | plant             | G5          | S2         | TNC Jackson Ln.                                    |
| Frosted Elfin             | <i>Incisalia irus</i>              | insect            | G3          | S1         | TNC Comprehensive                                  |
| Crested Iris              | <i>Iris cristata</i>               | plant             | G5          | S1         | TNC Comprehensive, IWLA                            |
| Dwarf Iris                | <i>Iris verna</i>                  | plant             | G5          | S1         | TNC Comprehensive, Port Tobacco                    |
| Least Bittern             | <i>Ixobrychus exilis</i>           | Vertebrate Animal | G5          | S2S3B      | NJR  |
| Butternut                 | <i>Juglans cinerea</i>             | plant             | G3G4        | S2S3       | IWLA   |
| Brown-fruited rush        | <i>Juncus pelocarpus</i>           | plant             | G5          | S1         | Sylvan View, TNC Prescribed Burn Cypress Creek Bog |
| Potato Dandelion          | <i>Krigia dandelion</i>            | plant             | G5          | S1         | IWLA   |
| Red-root                  | <i>Lachnanthes carolineana</i>     | plant             | G4          | S1         | TNC Prescribed Burn, TNC Comprehensive             |

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| Common Name                        | Scientific Name                    | Type              | Global rank | State rank | Project(s) where benefits              |
|------------------------------------|------------------------------------|-------------------|-------------|------------|--|
| Loggerhead Shrike                  | <i>Lanius ludovicianus</i>         | Vertebrate Animal | G4          | S1B,S1N    | NJR                                    |
| Laughing gull                      | <i>Larus atricilla</i>             | bird              | G5          | S1B        | JEDS Audubon                           |
| Green Floater                      | <i>Lasmigona subviridis</i>        | mollusc           | G3          | S1         | TNC Licking Cr.                        |
| Sandplain flax                     | <i>Linum intercursum</i>           | plant             | G4          | S2         | TNC Comprehensive                      |
| American Gromwell                  | <i>Lithospermum latifolium</i>     | plant             | G4          | S1         | TNC Comprehensive                      |
| Hooded Merganser                   | <i>Lophodytes cucullatus</i>       | Vertebrate Animal | G5          | S1S2       | Rock Lodge                             |
| Hairy Ludwigia                     | <i>Ludwigia hirtella</i>           | plant             | G5          | S1         | TNC Comprehensive                      |
| Wild lupine                        | <i>Lupinus perennis</i>            | plant             | G5          | S2         | TNC Comprehensive                      |
| Bog clubmoss                       | <i>Lycopodiella inundata</i>       | plant             | G5          | S2         | TNC Comprehensive, Rock Lodge          |
| Lowland loosestrife                | <i>Lysimachia hybrida</i>          | plant             | G5          | S2         | TNC Comprehensive                      |
| Star-flowered False Solomon's-seal | <i>Maianthemum stellatum</i>       | plant             | G5          | S1         | Green                                  |
| Climbing milkweed                  | <i>Matelea obliqua</i>             | plant             | G4?         | S1         | TNC Comprehensive                      |
| Ostrich Fern                       | <i>Matteuccia struthiopteris</i>   | plant             | G5          | S2         | BSA                                    |
| Erect Water-hyssop                 | <i>Mecardonia acuminata</i>        | plant             | G5          | S1         | TNC Comprehensive                      |
| Narrow melicgrass                  | <i>Melica mutica</i>               | plant             | G5          | S1         | TNC Comprehensive                      |
| Three-flowered melicgrass          | <i>Melica nitens</i>               | plant             | G5          | S2         | TNC Comprehensive                      |
| Rock sandwort                      | <i>Minuartia michauxii</i>         | plant             | G5          | S2         | TNC Comprehensive                      |
| Large-seeded Forget-me-not         | <i>Myosotis macrosperma</i>        | plant             | G5          | S2S3       | ACLT                                   |
| Large-seeded Forget-me-not         | <i>Myosotis macrosperma</i>        | plant             | G5          | S2S3       | Port Tobacco                           |
| Small-flowered Baby-blue-eyes      | <i>Nemophila aphylla</i>           | plant             | G5          | S1         | Port Tobacco                           |
| Compton Tortoiseshell              | <i>Nymphalis vaualbum</i>          | plant             | G5          | S1         | Rock Lodge                             |
| Black-fruited mtn. rice            | <i>Oryzopsis racemosa</i>          | plant             | G5          | S2         | TNC Comprehensive                      |
| Giant swallowtail                  | <i>Papilio cresphontes</i>         | insect            | G5          | S2         | TNC Comprehensive, IWLA                |
| Savannah sparrow                   | <i>Passerculus sandwichensis</i>   | bird              | G5          | S3S4B      | JEDS Audubon                           |
| Logperch                           | <i>Percina caprodes</i>            | fish              | G5          | S1S2       | BSA                                    |
| Shield Darter                      | <i>Percina peltata</i>             | fish              | G5          | S3         | BSA                                    |
| Smooth Phlox                       | <i>Phlox glaberrima</i>            | plant             | G5          | S1         | IWLA                                   |
| White Fringed Orchid               | <i>Platanthera blephariglottis</i> | plant             | G4G5        | S2         | TNC Comprehensive, Cypress Creek Bog   |
| Yellow-fringed Orchid              | <i>Platanthera ciliaris</i>        | plant             | G5          | S2         | Cypress Creek Bog                      |
| Pale green orchid                  | <i>Platanthera flava</i>           | plant             | G4          | S2         | TNC Comprehensive                      |
| Large Purple Fringed Orchid        | <i>Platanthera grandiflora</i>     | plant             | G5          | S2         | NJR                                    |
| Grove meadow-grass                 | <i>Poa alsodes</i>                 | plant             | G4G5        | S2         | TNC Comprehensive                      |
| Pied-billed grebe                  | <i>Podilymbus podiceps</i>         | bird              | G5          | S2B        | JEDS Audubon, TNC Prescribed Burn, NJR |
| Rose Pogonia                       | <i>Pogonia ophioglossoides</i>     | plant             | G5          | S3         | Cypress Creek Bog                      |
| Cross-leaved milkwort              | <i>Polygala cruciata</i>           | plant             | G5          | S2         | TNC Prescribed Burn, TNC Comprehensive |
| Seneca snakeroot                   | <i>Polygala senega</i>             | plant             | G4G5        | S2         | TNC Comprehensive, IWLA                |

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| Common Name            | Scientific Name                  | Type              | Global rank | State rank | Project(s) where benefits                      |
|------------------------|----------------------------------|-------------------|-------------|------------|--|
| Vesper sparrow         | <i>Pooecetes gramineus</i>       | bird              | G5          | S3S4B      | JEDS Audubon                                   |
| Sora                   | <i>Porzana carolina</i>          | Vertebrate Animal | G5          | S1B        | NJR  |
| Alleghany plum         | <i>Prunus alleghaniensis</i>     | plant             | G4          | S2         | TNC Comprehensive                              |
| Harperella             | <i>Ptilimnium nodosum</i>        | plant             | G2          | S1         | TNC Comprehensive                              |
| Torrey's mountain-mint | <i>Pycnanthemum torrei</i>       | plant             | G2          | S1         | TNC Prescribed Burn, TNC Comprehensive         |
| Virginia Mountain-mint | <i>Pycnanthemum virginianum</i>  | plant             | G5          | S2         | TNC Comprehensive                              |
| Shumard's Oak          | <i>Quercus shumardii</i>         | plant             | G5          | S2         | Green, IWLA                                    |
| Carpenter Frog         | <i>Rana virgatipes</i>           | amphibian         | G5          | S2         | TNC Jackson Ln., TNC Comprehensive             |
| Golden-crowned Kinglet | <i>Regulus satrapa</i>           | Vertebrate Animal | G5          | S2B, S4N   | Rock Lodge                                     |
| Hairy snoutbean        | <i>Rhynchosia tomentosa</i>      | plant             | G5          | S2         | TNC Prescribed Burn, TNC Comprehensive         |
| White Beakrush         | <i>Rhynchospora alba</i>         | plant             | G5          | S3         | Cypress Creek Bog                              |
| Drowned hornedrush     | <i>Rhynchospora inundata</i>     | plant             | G3G4        | S1         | TNC Prescribed Burn, TNC Comprehensive         |
| Tiny-headed Beakrush   | <i>Rhynchospora microcephala</i> | plant             | G5          | S2S3       | TNC Comprehensive                              |
| Long-beaked baldrush   | <i>Rhynchospora scirpoides</i>   | plant             | G4          | S2         | TNC Prescribed Burn, TNC Comprehensive         |
| Torrey's Beakrush      | <i>Rhynchospora torreyana</i>    | plant             | G4          | S2         | TNC Comprehensive                              |
| Engelmann's arrowhead  | <i>Sagittaria engelmanniana</i>  | plant             | G5          | S2         | Cherry, TNC Comprehensive                      |
| Long-beaked Arrowhead  | <i>Sagittaria longirostra</i>    | plant             | GNRQ        | SU         | ACLT   |
| Brook Trout            | <i>Salvelinus fontinalis</i>     | fish              | G5          | S3S4       | BSA, Zodhaites                                 |
| Canada burnet          | <i>Sanguisorba canadensis</i>    | plant             | G5          | S2         | TNC Comprehensive                              |
| Canada Burnet          | <i>Sanguisorba canadensis</i>    | plant             | G5          | S2         | IWLA   |
| Northern Pitcher-plant | <i>Sarracenia purpurea</i>       | plant             | G5          | S2         | TNC Comprehensive, Rock Lodge                  |
| Salt-marsh Bulrush     | <i>Scirpus cylindricus</i>       | plant             | G5          | S2         | Durham Pt.                                     |
| Water Clubrush         | <i>Scirpus subterminalis</i>     | plant             | G4G5        | S1         | TNC Comprehensive                              |
| Bashful Bulrush        | <i>Scirpus verecundus</i>        | plant             | G4G5        | S2S3       | IWLA   |
| Delmarva Fox Squirrel  | <i>Sciurus niger cinereus</i>    | mammal            | G5T3        | S1         | Malkus,  |
| Slender nutrush        | <i>Scleria minor</i>             | plant             | G4          | S1         | TNC Comprehensive                              |
| Shining nutrush        | <i>Scleria nitida</i>            | plant             | GNR         | S1         | TNC Comprehensive                              |
| Reticulated nutrush    | <i>Scleria reticularis</i>       | plant             | G4          | S2         | TNC Prescribed Burn, Cherry, TNC Comprehensive |
| Tall Nutrush           | <i>Scleria triglomerata</i>      | plant             | G5          | S1S2       | TNC Comprehensive                              |
| Pink Bog-button        | <i>Sclerolepis uniflora</i>      | plant             | G4          | S2         | TNC Comprehensive                              |
| Common skullcap        | <i>Scutellaria galericulata</i>  | plant             | G5          | S1         | TNC Comprehensive                              |
| Leonard's skullcap     | <i>Scutellaria leonardii</i>     | plant             | G4T4        | S2         | TNC Prescribed Burn, TNC Comprehensive         |
| Veined Skullcap        | <i>Scutellaria nervosa</i>       | plant             | G5          | S1         | TNC Comprehensive, IWLA                        |

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| Common Name                | Scientific Name                     | Type                | Global rank | State rank | Project(s) where benefits              |
|----------------------------|-------------------------------------|---------------------|-------------|------------|--|
| Veined Skullcap            | <i>Scutellaria nervosa</i>          | plant               | G5          | S1         | IWLA                                   |
| Virginia Mallow            | <i>Sida hermaphrodita</i>           | plant               | G3          | S1         | Green                                  |
| Halberd-leaved greenbrier  | <i>Smilax pseudochina</i>           | plant               | G4G5        | S2         | TNC Comprehensive                      |
| Showy Goldenrod            | <i>Solidago speciosa</i>            | plant               | G5          | S2         | ACLT                                   |
| Smoky Shrew                | <i>Sorex fumeus</i>                 | mammal              | G5          | S2S3       | BSA                                    |
| Swamp-oats                 | <i>Sphenopholis pensylvanica</i>    | plant               | G4          | S1S2       | IWLA                                   |
| Wide-leaved Ladys' Tresses | <i>Spiranthes lucida</i>            | plant               | G5          | S1         | Rock Lodge                             |
| Dickcissel                 | <i>Spiza americana</i>              | bird                | G5          | S2B        | JEDS Audubon, Green                    |
| Field sparrow              | <i>Spizella pusilla</i>             | bird                | G5          | GCN        | JEDS Audubon                           |
| Northern dropseed          | <i>Sporobolus heterolepis</i>       | plant               | G5          | S1         | TNC Prescribed Burn                    |
| Featherbells               | <i>Stenanthium gramineum</i>        | plant               | G4G5        | S1         | TNC Prescribed Burn, TNC Comprehensive |
| Least tern                 | <i>Sterna antillarum</i>            | bird                | G4          | S2B        | JEDS Audubon                           |
| Royal Tern                 | <i>Sterna caspia</i>                | bird                | G5          | S1B        | JEDS Audubon                           |
| Squawfoot                  | <i>Strophitus undulatus</i>         | mollusc             | G5          | S2         | TNC Licking Cr.                        |
| Eastern meadowlark         | <i>Sturnella magna</i>              | bird                | G5          | GCN        | JEDS Audubon                           |
| Allegheny Cave Amphipod    | <i>Stygobromus allegheniensis</i>   | Invertebrate Animal | G5          | S2S3       | George                                 |
| Pizzini's Amphipod         | <i>Stygobromus pizzinii</i>         | Invertebrate Animal | G3G4        | S1         | Green                                  |
| Roundtop Amphipod          | <i>Stygobromus</i> sp. 14           | Invertebrate Animal | GNR         | S1         | Green                                  |
| Mountain pimpernel         | <i>Taenidia montana</i>             | plant               | G3          | S2         | TNC Comprehensive                      |
| Fameflower                 | <i>Talinum teretifolium</i>         | plant               | G4          | S1         | TNC Prescribed Burn, TNC Comprehensive |
| Bog fern                   | <i>Thelypteris simulata</i>         | plant               | G4G5        | S2         | TNC Comprehensive, Rock Lodge          |
| Pale mannagrass            | <i>Torreyochloa pallida</i>         | plant               | G5          | S1         | TNC Comprehensive                      |
| Kate's mountain clover     | <i>Trifolium virginicum</i>         | plant               | G3          | S2S3       | TNC Comprehensive                      |
| Snow Trillium              | <i>Trillium rivale</i>              | plant               | G4G5        | S1         | RockLodge, TNC Comprehensive, Teets    |
| Fibrous bladderwort        | <i>Utricularia fibrosa</i>          | plant               | G4G5        | S1         | TNC Comprehensive, Cypress Creek Bog   |
| Purple bladderwort         | <i>Utricularia purpurea</i>         | plant               | G5          | S1         | TNC Prescribed Burn                    |
| Reversed bladderwort       | <i>Utricularia resupinata</i>       | plant               | G4          | S1         | TNC Prescribed Burn, TNC Comprehensive |
| Large Cranberry            | <i>Vaccinium macrocarpon</i>        | plant               | G4          | S3         | Cypress Creek Bog                      |
| Small cranberry            | <i>Vaccinium oxycoccos</i>          | plant               | G5          | S2         | TNC Comprehensive                      |
| Goose-foot Corsalad        | <i>Valerianella chenopodiifolia</i> | plant               | G5          | S1         | TNC Comprehensive                      |
| Marsh speedwell            | <i>Veronica scutellata</i>          | plant               | G5          | S1         | TNC Comprehensive                      |
| Fringed Yelloweyed-grass   | <i>Xyris fimbriata</i>              | plant               | G5          | S1         | TNC Comprehensive                      |
| Small's yelloweyed-grass   | <i>Xyris smalliana</i>              | plant               | G5          | S1         | TNC Prescribed Burn, TNC Comprehensive |
| Northern prickly-ash       | <i>Zanthoxylum americanum</i>       | plant               | G5          | S1         | TNC Comprehensive, IWLA                |

**ANNUAL INTERIM PERFORMANCE REPORT FOR MARYLAND'S LANDOWNER INCENTIVE PROGRAM TIER 2 GRANT (I-3-D-1)**

*Prepared by Linh Phu, LIP Biologist  
Maryland Department of Natural Resources,  
Wildlife and Heritage Service*

September 2009

**GRANT TITLE:** Maryland Landowner Incentive Program, Tier 2: Habitat Restoration and Enhancement for Species and Habitats at Risk

**GRANT PERIOD:** July 1, 2007-Jun 30, 2017

**PERFORMANCE PERIOD:** July 1, 2008- June 30, 2009

**SUMMARY OF WORK CONDUCTED UP TO June 30, 2009**

In the period from July 2008, the date of our first Performance Report for this grant, up to June 30 2009, Maryland's Landowner Incentive Program continues to provide on-site technical assistance to landowners, review applications, design projects and sign Landowner Agreements for habitat restoration projects. To date, we billed most of this work to our first grant I-2-HM-1 (2005 MD LIP Tier 2). As of July 1, 2009, we encumbered most of the appropriated funds under the Tier 2 grant, and are starting to bill and encumber projects to our second Tier 2 grant (I-3-D-1). Currently, we have 2 landowner agreements for Grant I-3-D-1 including one for the practice of Delayed Harvest Payments to benefit Delmarva Fox Squirrel (a practice not included in I-2-HM-1) and the second for invasive species removal (signed after the performance period). We billed most of the projects and technical assistance activities to our first Tier 2 grant, unless it was for the practice of Delayed Harvest Payments to benefit Delmarva Fox Squirrels. We have not billed any additional projects or work to this grant during the performance period and do not have many additional numbers to report.

Table 1. Technical Assistance and Application Review by the Maryland Landowner Incentive Program under Grant I-3-D-1

| <b>Actions</b>                      | <b>June 2007 – May 2008</b> | <b>June 2008-June 2009</b> |
|-------------------------------------|-----------------------------|----------------------------|
| <b>On-site Technical Assistance</b> | <b>11 landowners</b>        | <b>2 landowners</b>        |
| <b>Applications reviewed</b>        | <b>11</b>                   | <b>4</b>                   |
| <b>Applications approved</b>        | <b>1</b>                    | <b>1</b>                   |
| <b>Signed agreements</b>            | <b>1</b>                    | <b>0</b>                   |
| <b>Projects on hold</b>             | <b>1</b>                    | <b>0</b>                   |
| <b>Projects in review</b>           | <b>1</b>                    | <b>2</b>                   |

Table 2 summarizes our project: the habitat type targeted, the practices used, the number of species to benefit, and the cost. The total amount LIP has expended or encumbered for these projects is **\$42,375.00**.

Table 2. Maryland LIP projects under grant I-3-D-1 as of June 2008.

| Project Name   | Habitat type                | Total # acres | # acres to be restored | # species at risk documented on property | # species at risk to benefit | Practice(s)  | LIP expenditures (does not include match) |
|----------------|-----------------------------|---------------|------------------------|--|------------------------------|--|---|
| Eby, Bradley   | Coastal Plain Mature Forest | 50            | 50                     | 1  | 1                            | Delayed Harvest Payments to benefit Delmarva Fox Squirrels | \$42,375.00                               |
| <b>TOTALS:</b> |                             | 50            | 50                     | 1  | 1                            |  | <b>\$42,375.00</b>                        |

**SUMMARY OF OBJECTIVES AND PROGRESS SO FAR**

We billed and reported in our first Tier 2 grant much of the progress in the accomplishments of our goals. We do not have any additional projects to report for this performance period.

**Project H. Restoration of Coastal Plain Mature Forest**

Objective: To provide technical and financial assistance to landowners in restoring mature forest habitat for Delmarva fox squirrel and other species at risk, and controlling invasive species in forests of the Coastal Plain of Maryland. LIP projects will include the following practices:

| PRACTICE   | GOAL          | PROJECTED COST   | PROGRESS TO DATE | ACTUAL COST     |
|--|---------------|------------------|------------------|-----------------|
| Reforestation of Contiguous Forest                       | 50 acres      | \$50,000         | 0                | 0               |
| Invasive Species Control                                 | 15 acres      | \$7,500          | 0                | 0               |
| Delayed Harvest Payment in Delmarva Fox Squirrel habitat | 50acres       | \$56,500         | 50acres          | \$42,375        |
| Vegetation management:                                   | 15acres       | \$7,500          | 0                | 0               |
|  | <b>TOTAL:</b> | <b>\$121,500</b> | <b>50acres</b>   | <b>\$42,375</b> |

We fulfilled our goals for the practice of Delayed harvest payments at a lowered projected cost. The 25% match is being met because the landowner will be accepting a 25% reduction in the delayed harvest payments. The regular rate is \$113/acre/year and the landowner is accepting \$84.75/acre/year. We continue to bill the other practices under this Project to our first grant I-2-HM-1.

**SECTION 7 REVIEW SUMMARY**

We completed Section 7 reviews for both of our projects. The following are the determinations:

| Project(s)   | Species               | Determination |
|--------------|-----------------------|---------------|
| Eby, Bradley | Delmarva Fox Squirrel | No effect     |

**APPENDIX 1: Species that stand to benefit from MD LIP projects**

| Common Name           | Scientific Name               | Type       | Global rank | State rank | Project(s) where benefits |
|-----------------------|-------------------------------|------------|-------------|------------|---------------------------|
| Delmarva Fox Squirrel | <i>Sciurus niger cinereus</i> | vertebrate | G5T3        | S1         | Eby, Bradley              |