

Small Parks Exotic Plant Project 1996-97 Summary Report

Tom Remaley and Kristine Johnson, Great Smoky Mountains National Park

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Introduction

In the spring of 1996, FY 96 funding was allocated through the Southeast Regional Science Fund to address exotic plant problems in the Southern Appalachian Cluster smaller parks. GRSM led the project by providing technicians to 1) assess the needs of each park, 2) make on-site visits to identify and map target species, 3) assist with planning and prioritization, 4) prescribe appropriate management techniques, 5) train personnel in each park in identification and control of exotic species, 6) purchase supplies and equipment, and 7) assist with contracting exotic plant treatments. FY 97 southeast regional funding was allotted again to continue the work in FY 97. This report includes an overall assessment of the project and a brief summary of each park's assessment.

Each of the smaller parks in the cluster were contacted initially; ANJO advised that assistance was not needed because their area was a 100% managed landscape and LIRI advised that they did not have time for exotic plant management. As site visits were made to participating parks, we found most park staff to be very receptive to the project. Many parks had crucial but manageable problems, and significant progress can be made with minimal time investment when proper techniques are applied.

Since most parks now have at least minimal supplies and equipment, future purchases will be for additional herbicide and non-durable safety supplies. Several parks were unable to participate in training sessions and requested additional training dates.

We feel the project has been efficient and objectives are being met, however several issues need to be addressed to improve long term effectiveness.

All of the Parks involved in this project have had difficulty devoting the necessary time and resources to control exotic populations. In most cases, what is needed is a consistent effort to control, monitor, and survey for exotic species. Those Parks that are able treat exotic plants themselves can only do so several times per season. This infrequency makes it exceedingly difficult to keep workers current on herbicide safety and treatment techniques, exotic species identification, and treatment follow-up. In most cases, annual or biannual refresher training courses are and will be necessary.

Some of the Parks have dealt with this problem by using the project funds to extend the season of a current employee (KIMO) or use volunteers (CHCH, CUGA). This solution can be highly effective, but is dependent on the ability of the resource manager to train and monitor the workers; this is not feasible for all of the parks. Some of the highest priority sites are too large to be effectively treated by one or two workers; these site could be treated through contract.

Several of the Parks have relied on private contractors to bring some of the highest priority sites under control (CHCH, CARL, FODO) or to conduct surveys (OBED). The cost of contract work

is generally high and subsequent treatments are usually necessary. This option requires detailed site assessment, a thorough knowledge of species characteristics and approved herbicides, and close monitoring of the work to ensure adherence to contract stipulations and IPM protocols. The Great Smoky Mountains has been able to make site visits, recommendations, and write contracts for these parks when necessary, but has had difficulty monitoring the contract work. Most of the contractors have limited experience treating exotic plants and on-site instruction is crucial. Since the future of exotic plant management in several of these Parks will be dependent on private contracts, a list of potential contractors should be contacted and interviewed to ensure that they meet NPS objectives and comply with NPS safety and IPM policies.

The Great Smoky Mountains has invested over one thousand hours surveying parks, writing reports, conducting training sessions, procuring herbicide and equipment, writing contracts, and advising park managers in the past two years. Because the 1996 allocation of these funds was concurrent with an ongoing NRPP exotic plant control project in the Park, we had the personnel to devote to this program. In 1997, it was difficult to meet the needs of all of the parks and several projects had to be postponed. However, many of the Parks have made significant improvements to their exotic plant management programs and natural resources.

Summaries of Park Assessments

During the 1996 field season each Park was visited by a crew from the Great Smoky Mountains. A report outlining survey results, management recommendations, and appropriate IPM plans were produced for each park. The 1997 field season concentrated mainly on resupplying park with herbicide and equipment, conducting training sessions, and writing contracts. The following is a brief summary of each report for each Park.

Abraham Lincoln Birthplace

ABLI has a few exotic plant problems that should be addressed soon in order to prevent much more expensive and time-consuming work in a few years. Among these, Japanese barberry and oriental bittersweet are the greatest management concern. Both of these species are prolific seeders and can readily invade forest openings. Monitoring will be important, since seed sources are all around and small, initial populations are much easier to control.

ABLI was eager to start treating problem areas in the 1997 field season, requesting training and equipment as soon as possible. They had already started removing some of the more severe infestations in 1996 and were interested in continuing progress.

Carl Sandburg Home

Of the twelve problem exotic species found at CARL, four (oriental bittersweet, Brazilian milfoil, Japanese spirea, and tree of heaven) should be considered an immediate threat to natural and historical resources and given top management priority. All these plants have the potential of spreading rapidly, forming dense monocultures, and suppressing natural processes and succession.

A 1996 practical training session treated several problem areas in the Park. Park personnel and visitors commented on the significant aesthetic improvement accomplished after one day of treatments. In 1997, a refresher training course was held and two large areas will be treated through contract.

Chickamauga and Chattanooga

Chickamauga and Chattanooga has an exotic plant management program in place and has been treating exotic plant populations for several years. Their greatest need is for herbicide and equipment. Two technicians from GRSM were sent to demonstrate new equipment and application techniques. CHCH hired an SCA (using Park funding) to primarily work on exotic plants. They found this to be effective and cost efficient. In 1997, three acres of kudzu and tree of heaven were treated through contract.

Cowpens

The initial survey of COWP covered the majority of the Park with special attention given to areas in and around the battlefield. Twelve invasive exotic species were identified throughout the Park. Of the twelve invasive exotics found at COWP, three species (tree of heaven, mimosa, and kudzu) occupying six sites are an immediate threat to natural and historical resources and should be considered a high priority for control. Because of time constraints at COWP, 1997 training sessions had to be postponed until the 1998 field season.

Cumberland Gap

Cumberland Gap has experience treating exotic plants, mainly in efforts to restore an abandon highway corridor that was planted with kudzu. GRSM supplied CUGA with equipment, herbicide, and related technical material. CUGA sent three technicians to a training session held at BISO to cover new herbicides and techniques for treating kudzu.

Fort Donelson

Five invasive exotic species were identified throughout the Park (multiflora rose, privet, common mullein, Japanese honeysuckle, and mimosa). The 1996 contract to remove privet from the Park was very successful. Treatments to control the residual exotic populations continued in 1997 using Park personnel.

Guilford Courthouse (8/19,20)

GUCO has several exotic plant infestations including wintercreeper, kudzu, wisteria, and tree of heaven. Problem areas should be addressed within the next year in order to prevent much more expensive and time-consuming work later. Monitoring is an important part of exotic plant

management, especially in areas where exotics are adjacent to the boundary. A training session was held during the 1997 field season.

Kings Mountain

The survey of the Park concentrated on areas of specific concern (i.e. the battlefield area) and areas particularly susceptible to exotic invasion. Eleven invasive exotic species were identified throughout the Park. Overall, the battlefield area has only a few exotic species and no sites that are larger than twenty or thirty square meters. Wisteria, mimosa, J. honeysuckle, and multiflora rose are scattered in varying densities along Piedmont Road. There is a small stand of tree of heaven, of seed bearing size, at the boundary with Kings Mountain State Park. In 1996 and '97, this project extended the field season of a seasonal ranger to work on exotics.

Ninety Six

The survey covered known exotic problem areas, the battlefield and connecting trails, and Park border roads. Six invasive exotic species were identified throughout the Park. Scattered small patches of mimosa seedlings and larger single trees were found at the edges of the battlefield. Privet and multiflora rose populations are primarily concentrated on the southwest edge of the field adjacent to the pond. Because of the size and extent of these populations preclude short-term control and management should focus on limiting further spread and incremental removal.

A large kudzu population is a direct threat to a unique stand of rare Oglethorpe oak. If left untreated, kudzu may kill most or all of the trees in this area. An extensive population of wisteria in the southern area of the Park has severely impacted native vegetation and threatens an adjacent privately owned pine plantation.

Obed River/Big South Fork River

Overall, invasive exotic plants are not a significant problem at OBED. Although there were six invasive exotic plants found at OBED, overall impacted area is small ($<1000 \text{ m}^2$). The lack of extensive exotic plant populations may be attributed to the lack of extensive settlement in this area. The small infestations found by the initial survey should be treated as soon as possible. In 1997, further surveys were accomplished through contracted botanists.

Russell Cave

The survey of Russell Cave found large areas of privet and scattered populations of Japanese honeysuckle, multiflora rose, kudzu, and vinca. Present exotic populations can be initially treated by a crew of four in eight days. Left untreated these species have the possibility of forming large monotypic populations that will severely impact the natural resources. We were given permission by the Superintendent to survey the Park, but any further assistance was refused.

Stones River

In addition to unique historical resources, STRI has an extensive network of cedar glades. Throughout the Park exotics were found along the margins of all of the larger glades. All of the earthworks are impacted by exotic plants to varying degrees. In addition to addressing exotic plant management issues, recommendations were made on restoration using warm season grasses. STRI plans to hire a seasonal employee in the winter of 1997 to work primarily on exotics. A training session was held during the 1997 field season.