

SECTION I - NATURAL RESOURCE MANAGEMENT

INTRODUCTION: The primary resource management objective at Town Bluff Project will be to develop and implement management principles that conserve, restore, and maintain ecological and cultural integrity, productivity, and diversity of the natural resources. To accomplish this objective, resources at Town Bluff Project will be managed in accordance with all applicable laws and regulations and in a manner which will facilitate accomplishment management of the following resource objectives (RMO's):

1. Manage the forest resources in a manner consistent with ecosystem management principles to insure the health and vigor of the forest.
2. Manage aquatic vegetation, in cooperation with Texas Parks & Wildlife Department (TPWD), with an emphasis on controlling populations of noxious aquatic vegetation.
3. Manage habitat for fish and wildlife, to include threatened and endangered species (TES), in cooperation with TPWD and U.S. Fish and Wildlife Service (USFWS).
4. Manage environmentally and culturally sensitive areas, with an emphasis on avoiding degrading impacts to these resources.

A. SPECIFIC LONG TERM OBJECTIVES: To manage biological and physical systems in a manner that safeguards the long-term ecological sustainability, cultural integrity, biological diversity, and productivity of the Project's natural resources. Such management will address long-term consequences of decisions, and view various resources as interrelating parts of an overarching natural system. Specific long-term goals and objectives for accomplishment of the above-listed RMO's include:

1. Manage forest resources utilizing an ecosystem approach, to insure the health and vigor of the forest, while enhancing wildlife habitat, maintaining recreational and aesthetic values, insuring water quality, and establishing a diversity of age and species composition, while returning tangible benefits to the Project. These goals will be obtained through appropriate forest management practices that are necessitated by needs for ecological integrity and biological diversity and maturity, rather than by economic pressures. Such practices may include, but are not limited to: prescribed burning, timber harvesting, reforestation, and non-native species control.
2. Maintain an aquatic weed control program for water hyacinth, alligator weed, salvinia and hydrilla, through the use of appropriate surveillance and control measures, including herbicide application, water level manipulation, mechanical removal, and application of approved biological agents.
3. Manage project habitat to develop and sustain a diversity of resident game and non-game terrestrial wildlife species, to attract and support TES, to maintain gamefish populations, and to promote use by migratory and resident waterfowl. This shall be accomplished in consultation with TPWD and USFWS, in accordance with License DACW63-3-98-0632.

4. Manage the broad range of historic, prehistoric, built, and traditionally important cultural resource properties in order to protect known resources, identify additional resources, and to mitigate for any unavoidable impacts, while insuring that all legal, regulatory, and consultation considerations are met.

B. LAND ALLOCATION, CLASSIFICATION AND COMPARTMENT DESCRIPTIONS

Reference Town Bluff Project Master Plan (Revised 2003) for more detailed definitions and descriptions of the following Allocations and Classifications.

ALLOCATION: All federal lands at Town Bluff Project are allocated for *Operation* of the project.

CLASSIFICATION: The appropriate Land Classification will be assigned to each compartment. Classification will determine the management strategy employed in each compartment to accomplish the RMOs. Land Classifications are as follows:

- (1) Project Operations.
- (2) Recreation.
- (3) Mitigation. (Not present at project)
- (4) Environmentally Sensitive Areas.
- (5) Multiple Resource Management.
 - (a) Recreation – Low Density.
 - (b) Wildlife Management General.
 - (c) Vegetative Management.
 - (d) Inactive and/or Future Recreation Areas. (Not present at project)
- (6) Easement Lands.

COMPARTMENTS: To facilitate the management of resources at Town Bluff Project, lands are divided into compartments. These compartments, along with Project Land Classifications, are shown in Appendix A. Each compartment may be further divided into stands if physical boundaries or timber type differences within the compartment would necessitate varying vegetative treatments. Determination of compartment boundaries is based on physical, administrative, and operational characteristics of each area. There are twenty compartments identified for this project.

C. NATURAL RESOURCES OF PROJECT

1. TOPOGRAPHY OF PROJECT

The Town Bluff Project area is situated in the south-central portion of the Western Gulf Coastal Plain region. Topography ranges from relatively flat to gently rolling with local relief usually less than 50 feet. Project lands are located in the Neches River Basin, and shoreline slopes in the lake area are generally less than 5 percent. An alternating series of unconsolidated sand and clay strata of sedimentary origin basically form east-to-west trending hills, which result in a slight southern aspect toward the Gulf Coast.

Soils at Town Bluff Project have a well-developed, moderately deep profile. The origin of these soils is both alluvial (sandy to fine loam) and marine (silty clay to blackland clay). Major soil associations include the Bienville-Cart-Wrightsville (loamy fine sand-fine sandy loam), the Gardner-Susquehanna (fine sandy loam on a firm plastic clayey B horizon), and the Urbo-Mantachie (loamy clay loam). Major limitations include low permeability, high water table, frequent flooding, and high erodibility.

2. AQUATIC RESOURCES OF PROJECT

The reservoir inundates approximately 11,987 surface acres which produces a volume of 94,200 acre-feet at normal pool elevation (83.0 NGVD). Lake width varies from one mile at the dam to a maximum of four miles near mid-reservoir, and the length of shoreline at the top of the normal pool is 160 miles. The lake receives runoff from a drainage area of approximately 7,573 square miles of the Neches River watershed. The lake, however, has an average depth of only seven feet, with a maximum depth of approximately 30 feet. The lake level is maintained as much as possible between 81 and 83 feet NGVD.

Several aquatic plants, including water hyacinth and alligator weed, grow in abundance due in part to the shallow water and high nutrient levels found in the lake. The suspended soil particles from runoff and wave action, along with high concentrations of organic matter, create turbid conditions in the reservoir. Several prime fishing areas may be found on and around the original Neches River channel, where changes in water depth and vegetation produce exceptional habitats. Shallow areas in the northern sections of the reservoir provide a high-priority waterfowl environment for feeding and resting.

The Lower Neches Valley Authority (LNVA), an agency of the State of Texas, contributed two million dollars toward the construction of this Project for which LNVA is authorized to draw from the lake a maximum of 2,000 cubic feet of water per second. Water withdrawn from the lake is generally replaced by releases made for power production from Sam Rayburn Reservoir. With the completion and startup of the R. D. Willis hydroelectric powerplant in November of 1989, Town Bluff has been able to produce electricity, at an average of about 90 megawatts per day, while releasing water to the LNVA.

3. WETLANDS

By virtue of its location at the confluence of the Angelina and Neches Rivers, project lands support numerous and diverse wetlands. In addition to swamps, bogs, and riparian corridors, all project lands lying below conservation pool (83.0 NGVD) are classified as a "jurisdictional wetland", and as such, are regulated by Section 404 of the Clean Water Act. Coordination with the District regulatory staff has and will continue to obtain the necessary guidance and permits prior to conducting activities that may impact wetland areas.

4. VEGETATION OF PROJECT

Trees, shrubs, vines, and grasses found on the Project are consistent with the native and naturalized species common to Jasper and Tyler Counties of east Texas. Woodlands cover nearly 95 percent of the area at Town Bluff Project. Management of these lands places high priority on sustaining the forest resources for timber, aesthetics, recreation, watershed, and improving wildlife habitat. Southern bottomland hardwoods form the major vegetation type with small areas of grassland being limited to developed parklands.

Prior to the purchase of land for the Project, lumbermen removed the highest grade timber while showing little regard for perpetuating the forest or wildlife habitat. After acquiring the Project lands in the 1940's, the majority of the wooded areas below 83 feet NGVD were cleared in preparation for water impoundment.

The major forest cover types at Town Bluff Project include closed canopies of pine, pine-hardwoods, mixed bottomland hardwoods and cypress-tupelo gum swamps. The latter type exhibits a more open growth varying from site to site.

Loblolly pine dominates the pine forest, which covers approximately 10 percent of the Project area. Small stands of pine developed on old fields with an understory of sassafras, muscadine grape, yaupon, flowering dogwood, American holly and a variety of vines and briars. Pro-active forest management activities, such as periodic thinnings, prescribed burns and small regeneration harvests, are necessary to perpetuate this cover type.

The pine-hardwood cover type comprises approximately 35 percent of the total forested area. A mixture of hardwoods and loblolly pine is characteristic of this cover type, which occupies the well-drained portions of the Project lands. Dominant hardwoods include sweetgum, American beech, willow oak, southern magnolia, swamp chestnut oak, water oak, hickory, dogwood, and holly. Some of the associated species in the pine-hardwood forest consist of yaupon, red maple, muscadine grape, and sassafras. Again, pro-active forest management activities are necessary to perpetuate the pine component of this cover type.

The mixed bottomland hardwood forest covers approximately 45 percent of the Project lands, occupying the stream bottoms and associated terraces. The major species of this climax forest vary according to site: sweetgum and water oaks are prevalent on heavy-textured soils of the flats and low ridges; there are sweetgum and mixed oaks on ridges and better drained flats; with overcup oak and water hickory on heavy clays of the low, poorly drained flats and shallow sloughs. Other dominant species include mockernut hickory, bitternut hickory, American beech, southern magnolia, sugarberry, green ash, and winged elm. The most common understory species are flowering dogwood, American holly, yaupon, sassafras, persimmon, red maple, sycamore, white ash, and mixed oaks. There are fewer wet-site species in the minor stream bottoms of the Coastal Plain than in the major stream bottoms. The proportion of species such as the elms, sugarberry and ironwoods, is increased due to the past high-grading harvests in these areas. This cover type generally requires only re-active (disease control/salvage operations) forest management activities (or no active management in certain locations) to perpetuate itself. Pro-active forest management techniques may be employed in certain areas to alter the species composition for wildlife benefit or for aesthetic reasons.

Although pine, pine-hardwood, and mixed bottomland hardwoods forests form the major associations of trees found on the Project, pure stands of baldcypress and tupelo gum occur in some areas. The baldcypress-tupelo stands are found in low, poorly drained flats, small sloughs, and oxbow lakes located in the Neches River bottom. Stands of cypress and tupelo are usually small in size and contain no understory. Water tupelo is dominant in swamps of alluvial floodplains and estuaries, while swamp tupelo predominates in non-alluvial and coastal swamps. Management will consist of maintaining the proper flood regime to perpetuate these stands.

Grass and weeds cover less than five percent of the Project lands and occur on areas that were cleared for agricultural purposes. Grassy areas must be mowed or burned frequently in order to be maintained.

5. FISH AND WILDLIFE, GENERAL

Animals life (including mammals, birds, herptiles, fish and invertebrates) found at the Project are consistent with the native and naturalized species common to Jasper and Tyler Counties in East Texas. The major game species found on the Project are gray squirrels, fox squirrels, white-tailed deer, mallards, wood ducks, and other waterfowl. Feral hogs are abundant on the northern half of the Project. Less numerous are northern bobwhites, mourning doves, eastern cottontails, swamp rabbits, gray foxes, and American woodcock. An association of warblers, woodpeckers, water birds, and American alligators add to the Project's unique aesthetic value.

Management needs include surveying vegetation on all Project lands to assess greatest potential in benefiting wildlife species groups. Forested areas with a good mix of pine and hardwoods are suitable for deer management, while bottomland hardwood stands will be primarily designated for squirrel management. Wetland sites will be further improved, where possible, by waterfowl management.

The former "Angelina-Neches Scientific Area" (now The Forks Unit of the Angelina-Neches/Dam B Wildlife Management Area, managed by TPWD; also Compartment 12 of appendix A) of the Project has been given a priority 1 rating by USFWS in their Texas Bottomland Hardwood Preservation Program, which designates a high quality bottomland area for several key waterfowl species. Management policy will aim at increasing the carrying capacity and maintenance of critical habitat for waterfowl restoration.

The lake provides an excellent habitat for catfish and fair habitat for bass at the Project. Catfish are frequently taken, partially due to a desirable habitat created by the turbid nature of the lake. Black bass and crappie are also caught during certain times of the year, especially in the rivers and sloughs at the northern end. The lake is test-netted four times a year, every other year, by TPWD to determine species composition and relative abundance.

6. SPECIAL CONSIDERATIONS

(a) Cultural Resources: The management of cultural resources is an equal and integral

component of resource management at Town Bluff Project. Numerous Federal laws, regulations, and Executive Orders require the preservation and management of archeological, architectural, engineering, traditional cultural properties, sites of significance to Native American Indian tribes, and paleontological resources. The policy and guidance provided in Engineer Regulation (ER) and Engineer Pamphlet (EP) 1130-2-540: Chapter 6 provides the basis for cultural resource management responsibilities. Appropriate land management activities will only be conducted after considering all of these applicable statutes and concerns.

The cultural resource management program supporting Town Bluff Project has been developed to ensure all cultural considerations are being met and that all consultation requirements are being completed as part of a standard operating procedure. The cultural resource program manager will coordinate closely with the lake and project personnel during task planning and execution to ensure cultural resource considerations are being met.

Archeological resources comprise the majority of cultural resources known to exist on Town Bluff Project fee lands. Careful planning and coordination help avoid impacts to known resources and an Integrated Cultural Resource Management Plan (ICRMP (formerly Historic Properties Management Plan (HPMP))) is being prepared per ER 1130-2-540 to guide those efforts. Ongoing inventory efforts will continue to identify additional resources that will also be managed accordingly. Any unavoidable impacts will be mitigated according to plans prepared in consultation with all consulting parties.

(b) Protected Habitat: Nest cavity and animal den trees, rookeries, or specific habitats located on the Project will be protected. All timber inventory or marking contracts will include clauses to insure that these critical habitat resources for wildlife are protected.

c) Rare and Endangered Species: On occasion, bald eagles have been reported attempting to nest on the reservoir. This has not been confirmed. Upon detection, surveillance of any nest sites of bald eagles or ospreys at the lake will be coordinated with TPWD. Buoy markers will be placed in a circular zone up to 500 feet from any nest in or adjacent to the lake. Boat traffic will be prohibited within the buoyed area. Patrols by Corps and TPWD personnel will be scheduled to monitor active nests sites. When nesting is completed and the young birds leave, buoys will be removed from the site. Any bald eagle nest located inland will be protected as required by USFWS guidelines.

Surveys for identifying the presence of the red-cockaded woodpecker (RCW) are conducted prior to any timber harvests in pine or mixed pine-hardwood stands. To date no RCWs or evidence of their presence have been found on project lands. In addition, the nearest active RCW clan or cluster is approximately 25 miles away on the Longleaf Ridge area of the Angelina National Forest. Protective measures for RCW cavity trees that might be found during future surveys on the Project will consist of marking the tree with paint and establishing a zone around the cavity tree to prevent disturbance. The size of the protective zone and any other protective measures will comply with USFWS management recommendations.

Paddlefish are present in small numbers at the project, and efforts are ongoing with TPWD to increase the population through stockings and habitat improvement.

The American alligator, which in the past was listed as threatened, is found in great

numbers on the project. An annual alligator survey is conducted by TPWD in conjunction with their management of the Wildlife Management Area. An annual alligator hunt is conducted in late summer, with the number of permits issued based on results from the annual surveys.

(d) Pollution: Potential sources of pollution and containment capability are included in Appendix I. Interim guidance on an Oil/Hazardous Spill Contingency Plan for the project, as required by ER 1130-2-413, is on file: Memorandum for O&M DIST. #2, Number 92-28, 30 Sep 92, Subject: Environmental Emergency Response Measures. Sewage and waste disposal incidents are investigated to determine the source. Appropriate corrective action is accomplished with the visitor assistance program or by reporting to the Texas Health Department. Pesticide application by project personnel is limited to use of over-the-counter aerosol space sprays for spot control of ants, wasps, spiders, etc., around project facilities. All other pesticide application made on public lands is accomplished by contract to a State-certified applicator, whose certification is appropriate for the category of control involved. All contracted pest control is inspected by Corps personnel to verify that the pesticides used are in proper formulation and that product label safety specifications are followed.

Town Bluff Project is recycling waste material produced at the Project. Aluminum cans generated at the Project Office are being recycled. Also, all vehicle and equipment waste oil is delivered to Sam Rayburn Powerhouse for delivery to a hazardous waste recycling company.

(e) Fire Control: A Fire Management Plan for the Project is detailed in Appendix C. In addition, there is a Cooperative Forest Fire Agreement by and between the Texas Forest Service and the Corps of Engineers (Appendix C). The purpose of the agreement is to set forth the responsibilities for the protection, detection, and suppression of forest fires on Corps lands at Town Bluff and Sam Rayburn Projects, and the state and privately-owned land adjacent to the boundaries of the Projects.

(f) ERGO - ERGO is a comprehensive system to achieve, maintain, and monitor compliance with environmental laws and regulations. This program was designed by the Corps to fully meet its stewardship responsibilities at its many facilities throughout the United States. Currently, the status of the ERGO Program at Town Bluff is in its initial stages; however, an ERGO coordinator has been trained and assigned. An ERGO inspection was conducted at Town Bluff Project in June 1993. The ERGO Program for the R.D. Willis hydroelectric powerplant is being carried out by the Sam Rayburn Project. Areas inspected included the project office compound, all parks, Martin Dies Jr. State Park, and the Tidelands commercial concession (since removed). All areas inspected revealed some items not in compliance, but, overall, everything was in satisfactory condition. Efforts are currently underway to correct the identified deficiencies. The Environmental Compliance Assessment Report is being prepared by Fort Worth District staff for the project. This report will be incorporated into the project's Environmental Management Plan.

(g) Southern Pine Beetle (SPB) Hazard Identification and Control: The SPB is the most destructive insect pest of pine forest in the South. Research has led to a better understanding of the beetle and its relationship to the tree and stand. With this information, measures can be taken to prevent beetle attack or to more effectively deal with an outbreak once it occurs. SPB infestations are most likely to develop in pine stands that are over-crowded and slow growing. Over-mature stands on poorly drained, bottomland sites such as exist on much of the project

lands are especially prone to beetle attack.

The goal of SPB prevention programs is to identify pine stands growing under conditions most preferred by the SPB. These high-hazard stands should be managed to favor vigorous tree growth and to promote natural resistance to SPB. To assure long-term protection from SPB the following precautionary measures should be taken:

- (1) Hazard rate pine stands to assess susceptibility to SPB. USDA Southern Pine Beetle Handbook (Agriculture Handbook No. 645).
- (2) Manage high hazard stands to increase tree vigor and reduce risk of SPB infestations.
- (3) Detect and control active SPB infestations when they occur.

Hazard rating provides a basis for scheduling thinning or other preventative treatments. It also aids in setting control priorities, should an outbreak occur. Timber losses can be reduced by controlling infestations in order of priority, based on stand hazard, tree value, and level of beetle activity.

D. COORDINATION WITH OTHER AGENCIES

1. Texas Parks and Wildlife Department: Approximately 859 acres of Government land at Town Bluff Project is managed by TPWD as Martin Dies, Jr. State Park under Lease No. DA-41-443-CIVENG-1024. A detailed discussion of this area is found in Section II, D. In addition, approximately 12,635 acres of Project land (includes 6,757 acres of lake impoundment) is managed by TPWD under License No. DACW63-3-98-0632 (Angelina-Neches/Dam B Wildlife Management Area). Major work efforts by TPWD include operation of five information boxes/bulletin boards and maintenance of entrance signs and boundary markers. These licenses do not preclude timber or wildlife management projects by the Corps. For compartments within TPWD boundaries (2(b), 7, 10, 11, 12, 13, 14 and 16), techniques will be supplemental or cooperative. TPWD law enforcement officers are responsible for controlling game law violations and they are assisted by Town Bluff Park Rangers in search and recovery operations. Primitive camping is allowed at designated sites in the Dam B Wildlife Management Area (Compartment 13) and permits are available at the Town Bluff Project Office. The primitive camping program was formulated by the Corps and TPWD in 1975.

2. Texas Forest Service: As explained in Paragraph B.5(e) of this section, a cooperative forest fire agreement exists between the Corps and the Texas Forest Service. The Texas Forest Service also coordinates with the Project for control of Southern Pine Beetle on all areas of the reservoir. The Texas Forest Service locates beetle infestations by aerial and ground surveillance and notifies the Project Office if the beetle infestation is on or near Government Property.

3. U.S. Fish and Wildlife Service: All planned timber harvests are coordinated with USFWS through informal consultation. Any discovery of TES will necessitate immediate coordination with USFWS in order to determine best methods for protection and perpetuation.

4. Texas State Historic Preservation Officer (SHPO): The SHPO reviews and comments on any proposed undertaking or activity at Town Bluff Project per the requirements of the National Historic Preservation Act (Public Law 89-665) that may impact resources that are

significant to American history, prehistory, or engineering accomplishments. All proposed activities, including timber harvests, are coordinated with the SHPO and other consulting parties prior to undertaking the activity so that the resources are managed appropriately.

E. IMPLEMENTATION PLAN AND COMPARTMENT MANAGEMENT

1. Natural resources management operations for five fiscal years have been developed for Town Bluff Project and are included as Appendix B. Most of these management operations involve some type of activity or measure to protect, enhance, or improve the existing habitat found on the project. A minor number of tasks are required to maintain cultural sites or to improve environmental quality. Each compartment will be surveyed for presence of TES and cultural resources prior to implementation of any management activities. Conservation of the project's natural resources is of primary importance. These resources will be protected to safeguard against natural disasters and unauthorized use. The main protective measures include:

- (a) Boundary and compartment identification and marking.
- (b) Controlling access with blockades, gates, and fences.
- (c) Preparing firelanes and/or firebreaks.
- (d) Identifying and protecting cultural sites.
- (e) Surveying, marking, and protecting habitat for TES.
- (f) Surveying pine stands to identify and control SPB infestations.
- (g) Surveying compartments for needed repairs and maintenance of blockades, fences, and gates.

2. Public lands are managed according to ecosystem principles for multiple-use benefits such as wildlife habitat, timber growth, recreation, watershed protection, and aesthetics. Manipulating vegetative cover to provide these benefits is an important objective. Some of the vegetative measures used to provide multiple-use benefits include:

(a) Control burns under mature pine and pine/hardwood stands to reduce ground fuels, improve wildlife browse, increase visibility in park areas, clean up harvest slash, and reduce the density of undesirable understory species.

(b) Inventorying forested areas of all compartments to provide static estimates of volume, stand density, species composition, and to further develop detailed stand maps.

(c) Contracting for marking of pine and pine/hardwood stands and locating points and access routes for transporting harvested wood products.

(d) Preparation of strict thinning requirements in contracts to protect the residual stand and as guidance for monitoring harvesting operations. Most pine and pine/hardwood stands will be thinned to a basal area of 70-90 square feet per acre. Afterwards, thinning will be conducted at approximately 15-20 year intervals to match the growth rate of the stand. Careful selective cutting should result in timber stands that produce sustained yield of forest products and are of maximum value to wildlife. Timber to be sold will be advertised and sold by the Real Estate Division of the Fort Worth District. Timber sales less than \$5000 may be sold by the Reservoir Manager of

the Town Bluff Project.

(e) Replanting areas that have been salvaged after a SPB infestation or other natural disaster. Low-lying areas will be replanted with flood tolerant hardwoods or baldcypress, and upland areas will be converted to wildlife food or replanted with loblolly pine.

(f) Regeneration harvests may be necessary to perpetuate certain desirable forest cover-types, particularly when quality stands have passed biological maturity and are being replaced by a less desirable species composition (oak-beech-hickory to ironwood-gum, for instance). This methodology may also be employed to speed up natural succession (such as converting a gum dominated stand to an oak dominated one), or to introduce different age classes into a large stand. Treatments utilized will be shelterwood, seed-tree and small clearcut harvests, depending on the desired species and age composition. Efforts will occasionally be made to replicate natural disturbances by interspersing small, irregular shaped clearcuts into a shelterwood or selective harvest. If a dependable seed source for the desired species is not present in the target area, artificial regeneration (replanting) of a stand may be necessary.

(g) Managing southern bottomland stands found on the Project shall be consistent with the prescribed goals of the USFWS's Bottomland Hardwood Preservation Program. The primary goal is protecting and preserving bottomland hardwood habitats important to resident and wintering waterfowl, such as breeding or wintering populations of wood ducks and mallards. Natural habitats of benefit to waterfowl requires little additional development to retain its high value. Improvements in hardwood zones are possible by implementing certain management practices. Low intensity single-tree and group selection thinnings in hardwood zones for wildlife purposes is generally needed to: (1) adjust tree species composition to favor wildlife, (2) create openings for Wood Duck brood habitat and food plots, (3) release desirable mast producers, and (4) encourage development of reproduction from desirable tree species.

(h) Disking and planting open areas of parks, around the headquarters and primary facilities, and in cut-over areas with native wildflowers to enhance the aesthetic qualities of the project.

(i) Considering the present rate of land development and reduction of necessary habitat for many wildlife species, managers of public lands must preserve and improve vital habitat areas. A few measures to improve wildlife habitat areas for groups of selected species are:

(1) Planting tree species in open park areas that will provide shade, improve aesthetics, and increase nesting areas for birds. Planted species should be flood tolerant, fast growing, provide shade, and easily maintained.

(2) Establishing wildlife food plots, which provide wildlife with supplemental food sources during the "pinch periods" of late summer and winter.

Food plots are to be designed to provide benefits for the widest variety of wildlife species possible. White-tailed deer and rabbits will benefit from the plantings of ryegrass, winter wheat, clovers, vetches, and bi-color lespedeza. Quail and songbirds will benefit from the planting of Russian olive, autumn olive, and lespedeza around the perimeter of the food plots. Songbirds will also benefit from the production of insects afforded by the winter and summer cover crops. Sawtooth oak trees will be planted in or near food plots and in other areas for mast production to benefit squirrels, turkeys, and white-tailed deer. Trees producing "soft" mast, such as red mulberry and flowering dogwood, will be planted and encouraged near food plots. Food plots will be located inside controlled park areas to reduce incidences of poaching.

(3) Preserving and improving groups of desirable wildlife plants by release thinnings which encourage development of fruit and mast producing species in the stand. Oaks and other fruit/mast producing species will be encouraged by selective and release thinning operations. Snags and cavity trees will be preserved in all areas (where practical) to provide dens and/or perches for a variety of wildlife species. Establishing artificial perches may be desirable in areas void of natural perches.