

Development and Impact of an Industrial Wildlife Program

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Abstract: St. Regis Corporation has developed a multi-faceted wildlife program. The company's program has been successful in integrating wildlife management guidelines into its forest management practices. The wildlife department's responsibilities also include biological data collection from leasees, wildlife research, management of customer and guest hunting areas, and cooperative working relationships with staff and federal wildlife agencies. Hunting lease fees generated from the company's forest land fund the program. These funds have increased from approximately \$89,000 in 1976 to more than \$500,000 in 1983.

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There are approximately 4.2 million ha of commercial pine forest land in eastern Texas. Forest-based industry owns about 1.3 million ha. These lands provide habitat for a variety of wildlife and significant recreation for wildlife users. Wildlife management on private lands entails special problems and special opportunities. We outline here St. Regis Corporation's wildlife management policy and implementation on its 231,877 ha holdings in eastern Texas. We hope that these comments will be useful to other managers of private lands and we solicit their response to strengthen St. Regis' wildlife program.

Creation of Wildlife Department and Guidelines

The Corporation's main objective from its Texas land is to provide economical wood fiber to 2 newsprint mills. Environmental aspects are also of concern. Wildlife and fish are important natural resources so the company created a wildlife department (mid 1970s) working within the forest re-

sources division to manage wildlife on company land. The department was charged with the following responsibilities:

- (1) Develop guidelines for management of wildlife habitat and populations on company land;
- (2) Test wildlife management practices and conduct research on the 9,308 ha Brushy Creek Experimental Forest;
- (3) Develop a high quality hunting area for customers and guests on Brushy Creek;
- (4) Develop working relationships with state and federal agencies concerned with wildlife; and
- (5) Provide a positive public image for the company.

One of our first efforts was the development of our wildlife and forest management guidelines, a 10-point policy statement on the integration of wildlife and aesthetics in forest management. These guidelines address: cut size, shape and distribution of clear cuts; streamside management zones; prescribed fire; soil erosion; hardwood sites; roadside buffer strips; and endangered species. Streamside management zones are retained along drainages. A minimum of a 5-year interval is maintained in cutting of adjacent stands. Hardwood trees are left in some special hardwood sites. Prescribed burning is promoted. Buffer zones of unharvested trees are left between clearcuts and major highways.

The guidelines were implemented as policy in 1978 by our regional manager. The company has generally been receptive to these guidelines, but some compromises have been necessary during periods of wet weather and high wood demand.

Management of Different Areas

Leased Land

Apart from environmental concerns, economic justification for implementing wildlife guidelines is through leasing hunting rights. Land supporting huntable game populations yields economic returns from lease fees. We currently have about 136,381 ha (59%) of our Texas land in hunting leases. Fees from land leasing range from \$2.50 to \$10/ha per year. Leased lands will generate more than \$500,000 this year (1983). These wildlife revenues are generated in addition to our pine fiber growth which averages 3 to 7 cords/ha per year.

The Wildlife Department approves leases, collects biological data, and develops a management plan for each lease. Lessees with tracts of 405 ha or more are required to collect specific biological information. Each lease representative is visited personally to explain the data collection. Data collected include deer field-dressed weights, antler measurements, sex, and age. These

data, coupled with general biological information, deer census data, and forest management plans, form the basis for the wildlife plan for each area. Wildlife surveys on company land shows leased areas support the highest wildlife populations primarily due to security measures by the lessees who assume a surrogate ownership attitude. Deer censuses consistently yield higher deer population estimates on leased land than on open land.

Open Land

Approximately 16,997 ha (7%) is open to the public for recreation. These lands are delineated in a booklet showing tract locations. Wildlife populations on these lands are depressed compared to most leased acreage. These lands often suffer from poaching, trash dumping, arson, timber theft, and vehicle abuse. Due to these continuing problems, we will conduct a user questionnaire survey on these areas this hunting season to assess recreational experiences of users. The lands are maintained primarily to promote good public relations. We may in fact be receiving negative public relations on these lands because of the problems.

Woodland Trails

We have 2 woodland trails developed and maintained by wildlife personnel for recreational and educational purposes. These trails are frequently used by a broad spectrum of the public, ranging from grade school classes to retired people and these trails offer excellent opportunities to observe native fauna and flora.

Reservoir Management

Kurth Lake (341 ha) is maintained for recreational fishing and as a wildlife refuge. Black bass (*Micropterus salmoides*) and other sunfish are the main species caught. The lake has been stocked with Florida bass (*M. salmoides floridana*) and white bass-striped bass (*Morone chrysops x M. saxatilis*) hybrids obtained from Texas Parks and Wildlife Department.

Brush reefs have been installed to enhance fish habitat and a concrete boat ramp constructed to facilitate lake access. Fishing recreation is provided free for company employees. For others, a fee system has been initiated to defray a portion of maintenance costs. Fees are \$2 per fisherman per day or \$25 per family per season. The lake is closed to the public annually from 1 November to 15 March and serves as a refuge for waterfowl and other wildlife. Mallards (*Anas platyrhynchos*), wood ducks (*Aix sponsa*), and ruddy ducks (*Oxyura jamaicensis*) are common wintering ducks. Double-crested cormorants (*Phalacrocorax auritus*) are common during winter, and last winter as many as 8 bald eagles (*Haliaeetus leucoccephalus*) used the reservoir.

A lodge is maintained at the lake for use for company meetings as well as for use by professional, civic, and religious organizations.

Brushy Creek Experimental Forest

The Brushy Creek Experimental Forest is a 9,308-ha area set aside for forest management, wildlife research and management, and customer and guest hunting entertainment. Forest management consists of a 30-year pulpwood rotation, clear-cutting, site preparation and planting, prescribed burning, and protection of streamside management zones following the standard techniques set forth in our wildlife-forestry guidelines. Some special practices are conducted for wildlife management on this area. Each year, 5% to 10% of the area is prescribed-burned. Approximately 1% of the area is planted annually to chufa, oats, wheat, and clover for turkeys and deer. Up to 32 ha are planted in chufa. No other supplemental feeding is conducted. Logging operations have been suspended during spring in the core home range of nesting turkeys. Regular patrolling of the area and limited access to the public appears to limit illegal hunting.

Wildlife management and research has centered on eastern wild turkey (*Meleagris gallopavo silvestris*), white-tailed deer (*Odocoileus virginiana*), and bobwhite quail (*Colinus virginiana*). Thirty-two wild-trapped eastern wild turkeys were released on Brushy Creek in 1979. These birds were monitored each year through the use of transmitters by Texas A&M University personnel through spring 1983. Studies include home range size, nesting habitat and success, and the effects of various forestry practices (Hopkins 1981). Eastern Texas has some 4.2 million ha of forested habitat, much of it suitable but unoccupied by wild turkeys. We expect the wild strain of eastern wild turkey at Brushy Creek to be of paramount importance for trapping and restocking wild turkeys in East Texas for the future.

Prior to 1971 Brushy Creek was open to unrestricted hunting and cattle grazing. The area was posted in 1971 and hunting was prohibited until 1977. Since 1977, emphasis of deer management has been to produce and harvest quality deer through maintaining the herd at or below carrying capacity, harvesting about an equal number of does and bucks to maintain a well-balanced sex ratio, and harvesting genetically inferior spike bucks. Census work is performed by the spotlight and helicopter techniques. Buck age-class management is by hunted area rotation. Brushy Creek is divided into 4 management units of approximately 2,428 ha each. While all areas each year are hunted for spikes and doe deer depending on the population, branched antlered bucks are hunted in only 1 unit per season. The unit is not hunted again for 4 years, thus allowing the harvest of older bucks.

This procedure has proven effective. Five years of data indicate 32% of bucks harvested have been 4.5 years old or older, and buck quality has been good. A typical 4.5-year-old buck from a sample of 46 deer from Brushy Creek weighed about 49 kg with inside antler spread of 38 cm; average base circumference, 11 cm; main beam length, 49 cm; and had 9.2 points. From 1977 through 1981, the Wildlife Department collected data on

age, weight, and antler development on 144 buck deer harvested from Brushy Creek. Data from the deer from the Brushy Creek pine habitat was compared to that of 406 bucks harvested throughout the Pineywoods ecological region and to data from 795 bucks measured in storage facilities in the South Texas Plains region.

Statistical tests were conducted by J. E. Adams, professor of mathematics, Stephen F. Austin State University. Deer from Brushy Creek had similar body sizes and generally larger antlers than the deer from the South Texas Plains ecological region. Brushy Creek bucks were larger with larger antlers than bucks from the remainder of the Pineywoods ecological region.

While unsuccessful efforts are rarely reported, we feel it will benefit other managers to relate our failures. We were unsuccessful in developing a huntable quail population in a 809 ha longleaf pine stand after liming, burning, disking, and planting various legumes for several years. Ground vegetation, especially *Andropogon*, was relatively dense, and native legumes were sparse.

Cooperative Research

Cooperative research between St. Regis and the Wildlife Habitat and Silviculture Laboratory (WHSL) of the U.S. Forest Service Southern Forest Experiment Station has proven beneficial from several aspects. St. Regis obtains information from research that can be translated into management on the ground. The wildlife lab is benefited from consultation on the design and implementation of experiments, obtains assistance in applying treatments, uses company land, and has feedback from field biologists in establishing research priorities. Results of research also directly benefit the wildlife resource. Findings are sometimes translated into better wildlife habitat management on the ground. And finally, users of the wildlife resource benefit from increased populations of wildlife. Deer hunters realize returns from investments in deer habitat research and bird enthusiasts enjoy watching the variety of songbirds in forest stands.

Following are some examples of recent investigations in areas of mutual interest that have been designed to provide information for the integration of wildlife and timber management appropriate for industrial lands.

Economic and biological aspects of green tree reservoirs have been inspected (Allen and Halls 1976). Food habits of wintering ducks were determined and the economic feasibility of leasing explored. Habitat preference by adult turkeys and hens with broods in an area intensively managed for pine production is currently being investigated by Texas A&M University, the Texas Parks and Wildlife Department, St. Regis, and WHSL. Currently, an intensive study of streamside management zones and wildlife communities is being developed by the WHSL. Consultation and study areas are being provided by St. Regis.

Other WHSL studies have been conducted on company land. Results of 1 showed that there were about 3 times the abundance and diversity of birds in the woods edge as in the woods interior or clearcut edge or interior (Strelke and Dickson 1980). In a developing pine plantation, the bird community consistently increased in complexity the first 8 years as the stand developed (Dickson et al. 1984). Retention of snags in a St. Regis clearcut increased bird abundance and diversity over areas in which snags were removed (Dickson et al. 1983). Birds used the snags for perching, foraging, and nesting. In a study of song repertoire size, habitat quality, and reproduction, cardinal song repertoire was found to vary with habitat quality (Conner et al. unpubl. data). Small mammal relative abundance and habitat preference has been documented in 2 adjacent forest stands of different ages (Fleet and Dickson unpubl. data).

Conclusions

Managing wildlife in eastern Texas has been beneficial for the wildlife resource, recreational users of wildlife, and St. Regis Corporation. Wildlife populations, especially deer, are enhanced on company lands and recreational users of wildlife reap more use of wildlife. St. Regis benefits from environmental considerations in land management through economic returns from leasing and indirectly through favorable public recognition. In 1978, the wildlife guidelines of the company were recognized as "innovative forest management" in national competition sponsored by the American Paper Institute and National Forest Products Association. Facets of the East Texas wildlife program have been adopted for use on St. Regis land in other states. Cooperative efforts for wildlife between St. Regis and federal and state agencies have proven successful.

Literature Cited

- Allen, C. E. and L. K. Halls. 1976. Feasibility of a green tree reservoir in eastern Texas. Proc. Annu. Conf. Southeast. Assoc. Fish and Wildl. Agencies. 30:404-407.
- Dickson, J. G., R. N. Conner, and J. H. Williamson. 1983. Snag retention increases bird use of a clearcut. J. Wildl. Manage. 47:799-804.
- Dickson, J. G., R. N. Conner, and J. H. Williamson. 1984. Bird community changes in a young pine plantation in East Texas. So. J. Appl. For. 8:47-51.
- Hopkins, C. R. 1981. Dispersal, reproduction, mortality, and habitat utilization of restocked eastern turkeys in East Texas. Ph.D. diss. Texas A&M University, College Station. 116pp.
- Strelke, W. K. and J. G. Dickson. 1980. Effect of forest-clearcut "edge" on breeding birds in East Texas. J. Wildl. Manage. 44:559-567.