

Case Study: Birdlands Plantation, Panola County, MS

This case study illustrates how a private landowner with a clear vision of objectives and an understanding of wildlife habitat requirements can develop and implement an effective conservation plan. On this property, federal farm programs (CRP and WHIP) provide the vehicle for wildlife habitat development. This case study illustrates the objective-driven approach to conservation planning and implementation.

Birdlands plantation, in Panola County Mississippi, has a rich history of agriculture, bobwhite

hunting, and bird dog field trialing. The core property has been the site of regional and national



field trials for over 50 years. However, by the mid-1990's, wild bird populations on the 5,111 ac property had reached an all-time low. Like many other properties throughout the Southeast, high populations of wild bobwhite were seemingly a thing of the past. Some of those involved in the field trials on Birdlands suggested that to keep the trial viable they might have to resort to the release of pen-reared birds. However, this "solution," although commonly adopted on other grounds, is not an ecologically sound approach and was not an option for the owners. Instead, in 1997 they engaged a wildlife consultant to evaluate habitat conditions, identify causes of the population



decline, and suggest management practices that would restore populations to former levels.

The owners had a clear vision of their goal and objectives. They simply wanted to create the finest all-age bird dog field trial site, run on wild birds, in the Mid-South. They intended to accomplish that through intensive habitat management that would produce and sustain a high density of wild bobwhites.

Goal: To create the finest all-age bird dog field trial site, run on wild birds, in the Mid-South

Birdlands Plantation is held in 3 ownerships, by 2 families (Map 1). The northern 1/3 of the property is held by one family, the southern 1/3 by a second family, and the central portion is held in a limited liability corporation, under joint ownership. However, because the families have common objectives and a shared vision, the property is effectively managed as a whole.

Site Description

Birdlands is located in the Loess hills of Northwest Mississippi, not far from where the hills drop off into the Mississippi Delta. The topography is flat in the floodplains to rolling or steeply sloped in the uplands. Upland soils are highly erodible and deeply gullied in places. Upland soils on Birdlands are generally of the Loring (LoB2, LoB3, LoC3) and Grenada (GrB2, GrC3) series. Floodplains are comprised of predominantly Collins Soil series (Cm, Co).

In recent years, the property had been primarily dedicated to production of rowcrops, forage crops, and forest products

(Map 2). In 1997, land cover/land use on the property included mixed pine/hardwood (17%), rowcrop (14%), 11-year-old pine plantation enrolled in the CRP (21%), pasture hay (11%), grass CRP (14%), and pecan groves (8%). Pastures were dominated by bermudagrass and heavily grazed. Crop fields (beans, wheat, and corn) were typically large and clean farmed, although grass filter strips had been established on sloping fields. The 11-year-old pine plantations were dense, closed canopy, with a deep duff layer of needles and little understory except where individual tree mortality had created light gaps. Grass CRP fields were either dense stands of broomsedge with a deep duff layer or solid stands of tall fescue.

Analysis

In developing a comprehensive management program, the wildlife consultant examined each portion of the property and tried to identify locally limiting resources (Map 3). The objective was to make 100% of the property usable to birds and increase the habitat quality in areas already supporting birds. The property had a number of assets including: historically high bobwhite populations, good bobwhite seed population, favorable landscape context, rich soils, good natural seed bank, farm program eligibility, and a progressive District Conservationist and County Executive Director in the county Farm Services Center.

However, it also had liabilities. The availability of essential habitat components for bobwhite varied considerably across the property. In more intensively cropped portions of the property, waste crops such as beans provide an abundant food source that can be made available to birds if sufficient cover is available in close proximity. In these areas, food was not limiting.

However, nesting cover, brood-rearing cover, and woody escape cover were scarce. Consequently, in rowcrop areas, management should emphasize creation of wooded draws, pine corridors, plum thickets, and grass/fallow field borders.



Conversely, in CRP fields, grass cover was widely available, but unsuitable because of the dense growth and

deep litter accumulation. In grass-dominated fields, food was less available and brood-rearing cover scarce. Management activities emphasized renovation of grass stands using prescribed fire. Rotational cropping of food plots and strip disking could be used to create early successional plant communities that would provide

foraging and brood rearing habitat. The dense exotic grasses in tall fescue CRP fields and



bermudagrass pastures had stymied the development of a diverse native plant community and inhibited movement of chicks and foraging adults. Herbicidal eradication of the exotics and re-establishment of a native plant community was needed in these areas.

The 11-year old pine plantations with closed canopies and little ground cover would provide no habitat until thinned and burned.



Habitat Resource Management

Although the overall composition of Birdlands was quite diverse, given land use practices tended to be clustered, creating 3 separate types of landscape (e.g., pine plantations, rowcrop, grasslands). Each of these landscapes had its own unique challenges and solutions. Bobwhite require interspersed of different successional stages (i.e., grasslands, shrubby woody cover, annual plant communities). Therefore, the management objective was to document the missing components in each of these landscapes and identify specific practices that would create and maintain these essential communities. Following is an analysis of each landscape and proposed solutions.

Row Crop Fields

Limitations

- No perennial grass for nesting
- No annual plant communities for brooding
- No woody escape cover
- No transition zones between crop and adjacent forest (i.e., field border, filter strip, etc)
- Poor connectivity across agricultural matrix

Management Action (Maps 4 and 5)

- Create grass/legume field borders
 - WHIP – native grass-legume transition zones
 - CRP - CP22 with tree, shrub, and herbaceous zones
- Create wooded corridors and plum thickets.
 - WHIP - hedgerow establishment (pine trees and shrubs)
 - CRP – CP22 with tree, shrub, and herbaceous zones



Figure 1. Partridge pea in field border.



Figure 2 Bicolor lespedeza and pine corridors were established under WHIP to divide large fields into smaller units and increase usable space for bobwhite.



Figure 3. Herbaceous field border created under WHIP in foreground, CP22 shrub zone behind corn.



Figure 4. Riparian buffer established under CP22 and planted to a five species hardwood mixture.

Grasslands

Limitations

- Extensive plantings of exotic grasses (tall fescue and bermudagrass)
- Bobwhite not adapted to foraging in thick sod
- Broomsedge fields dense with deep litter layer from years of annual bushhogging
- Large grass fields provide little winter food

Management Action (Maps 4, 6, 7, 9, and 10)

- Herbicidal eradication of forage grasses [Roundup® + Plateau® (now marketed as Journey®) for fescue, Arsenal® for Bermuda)
 - Cost-shared under WHIP for non-CRP
 - Cost-shared as cover crop enhancement on CRP re-enrollment
- Rotational strip-disking and prescribed burning creates annual plant/legume communities and bare ground. Reduces litter accumulation
 - WHIP prescribed fire and strip disking practices on non-CRP
 - Written into CRP management plan as recurring management practices
- Establish rotational food plantings.



Figure 5. Diverse plant community following herbicidal renovation of fescue.



Figure 6. Diverse plant community following rotational strip-disking.



Figure 7. Partridge pea response to disking and burning.



Figure 8. Rotational food planting of beans, browntop millet, milo, or Egyptian wheat.

CRP Pine Plantations

Limitations

- Densely stocked stands
- Closed canopy
- No sunlight to forest floor
- Little or no herbaceous ground cover
- Essentially un-usable to birds

Management Action (Maps 4 and 8)

- At contract expiration re-enroll as CP11 with 50 point wildlife option
- Prescribe burn
- Thin to < 300 trees/acre
- Convert 15% to openings with herbaceous cover
- Establish 3-year prescribed burn rotation
- Use selective herbicide to control hardwood understory encroachment



Figure 9 & 10. CRP pine stands 2 years after thinning.



Today, wildlife populations flourish on Birdlands. Bobwhite are at higher population levels than anytime in recent

history. And it seems to just keep getting better. In fact, the owners stated this past year (2002-2003) was their best ever. The owners and their guests averaged more than 3 covey finds/hour and experienced many 12-20 covey days throughout the season. The property hosts 2-4 field trials/year and under favorable weather conditions, trialers can expect to see 15-17 coveys pointed in a day.



Bobwhite have not been the only beneficiaries. Grassland songbirds, such as meadowlark, dickcissel, red-winged black birds, and common yellow throat abound in the diverse grasslands. Grassland raptors, such as northern harriers, find abundant prey during winter and barn owls breed on the property. The property supports a large, well-balanced deer herd and a quality deer management program produces premium lease rates. Even eastern wild turkey, absent from this portion of the state for decades, are making a comeback.



Wildlife populations are often an accidental by-product of agricultural practices, but in the case of Birdlands it is no accident. Wildlife conservation is fully integrated into the rowcrop and timber production system. Now the owners are reaping benefits with abundant wildlife populations, reduced erosion, better water quality, and a sustainable revenue stream. Participation in

a suite of federal farm programs has been integral to the success of Birdlands' wildlife conservation program. The success of this operation has provided a model for other landowners in the local community, state, and field trial community. This site demonstrates that, even in today's landscape, comprehensive planning, objective-driven program selection, and integrated wildlife habitat management can produce great returns.



Rip- the objective-driven dog

The Objective!

The following maps, referenced in the table of contents, illustrate the planning process.