

Wildlife Habitat

Many of the principles for establishing and managing habitats for beneficial insects also apply to establishment of wildlife habitat in general. Establishing and maintaining habitat can be purely for aesthetic and conservation purposes, or it can be done with an eye toward encouraging the presence of game species. Fee hunting or hunting leases can be a significant source of farm income if the farm acreage is large enough and productive enough. Tennessee reports an average hunting lease size of 663 acres. (1) It is not necessary for all or even most of the farm's acreage to be in habitat plantings in order for it to be a good location for hunting game species. According to the Mid-America Hunting Association, "... once there is food then there [are] good deer to be found. The deer will make use of whatever cover that is near their dinner table (2)."

Many wildlife species thrive in edges between their nesting and shelter areas and tilled crop areas, so arranging a farm to have several relatively smaller habitat plantings can be as good as or better than a large single block of habitat in terms of species diversity and productivity (3,4).

Habitat plantings might be permanent native grass and prairie plant species to provide shelter, nesting areas, food and space for whatever species you want to encourage. Game examples include quail, pheasants, grouse, ducks, geese or deer. Non-game birds as well as mammals, reptiles and amphibians will also be attracted to habitat areas. Attracting wild game and non-

Profitability of a Hunting Lease

This example uses the figures from the Wildlife Habitat table. References are not repeated here; refer to the table and other text boxes for references.

Sample calculation for 633-acre farm (average hunting lease size in Tennessee), assuming that wildlife habitat is strategically placed to reduce soil erosion on 10% of those acres (63 acres).

Annual gains due to wildlife habitat:

- Annual hunting lease: $\$30/\text{acre} \times 633 \text{ acres} = \$18,990$
- Annual gain in soil fertility on all acres by reducing soil erosion: $\$8.20/\text{acre} \times 633 \text{ acres} = \$5,191$

Total annual gain = \$24,181

Annual costs for wildlife habitat:

- Annual amount of total habitat establishment cost: $\$27/\text{acre} \times 63 \text{ acres} = \$1,701$
- Annual maintenance cost for habitat: $\$50/\text{acre} \times 63 \text{ acres} = \$3,150$
- "Hassle cost" of maneuvering farm equipment around habitat: $\$30/\text{acre} \times 63 \text{ acres} = \$1,890$
- Lost cash crop income on habitat acres: $\$230/\text{acre} \times 63 \text{ acres} = \$10,868$

Total annual costs = \$17,609

Net annual gain = $\$24,181 - \$17,609 = \$6,572$

game species to agricultural property might also involve planting food plots of annual crops, or leaving unharvested strips of cropland for winter feed (5).

The table below does not include any mention of cost-sharing or annual payments from public or private programs. Land in wildlife habitat may certainly be eligible for such programs, especially if the habitat placement is done to maximize soil and water conservation benefits. Some (but not all) of those programs may restrict the landowner's ability to also charge a fee for hunting on the property. This table shows costs and benefits of habitat with no program support, with a hunting lease as an income source and leaving you to place your own value on benefits to non-game wildlife species.

If having wildlife habitat is part of your vision for the future of your land, then your farm transition plan should include:

- A plan for who will do the work of habitat establishment and maintenance. A beginning farmer could put "sweat equity" into the establishment work and receive a credit on the land lease or sale price for that effort.
- A plan for fair division of costs and benefits from the wildlife habitat. There could be a wide variety of arrangements. For example, if retiring farmers or landowners want to retain the hunting rights for themselves and family members, then the value of those hunting rights should be included in the financial planning and the farm operator should receive a credit to make up for hunting lease fees he or she won't be able to charge.
- Terms of the lease or sale should specify the boundaries of the habitat areas and prohibit damage to or removal of the habitat.

Even if you ultimately choose not to enroll habitat acres in a conservation program, your local NRCS office could still be helpful in the process by providing maps of your farm and technical advice. Find your local NRCS service center:
<http://offices.sc.gov.usda.gov/locator/app?agency=nrcs>

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Qualitative Benefits of the Practice	Cost of Implementation and Potential Income Loss	Potential Income Gain and Reduced/Avoided Costs	Your Judgment: Value Per Acre of This Practice on Your Land
<p>Increase species diversity of farm by as much as 380% (3)</p> <p>Nesting habitat for songbirds</p> <p>Food source for migrating birds and insects</p> <p>Pollinator and beneficial insect habitat</p> <p>The numbers in this table are broad estimates, and you should adjust them for your farm's conditions.</p>	<p>Establishment cost spread over 15 years: \$27/acre of habitat/year (<i>See Habitat Costs text box in Pollinator Habitat section</i>)</p> <p>Management and maintenance cost for habitat: \$50/acre of habitat/year (<i>See Habitat Costs text box in Pollinator Habitat section</i>)</p> <p>Loss of net income from cash crop on the wildlife habitat acres: \$230/acre/year. (<i>See Cash Grain Profitability Calculation text box in Crop Rotation section</i>). Reduce this number if planting on less-productive acres.</p> <p>\$30/acre/year cost for the acreage of the habitat, for extra time and hassle in field operations (tillage, spraying, and harvesting) to maneuver around the area. (7)</p>	<p>\$30/acre/year on total farm acres; hunting lease price for exclusive right to hunt entire farm. (Range \$10-\$60 per acre) (6)</p> <p>\$8.20/acre/year gain in fertilizer value of soil by saving 95% of 4.1 tons/acre/year from soil erosion if habitat is on 10% of cropland acres. This amount applies to total farm acres. (<i>See Value of Saving Soil text box; 3</i>)</p> <p>Benefit to society: approximately \$19/acre/year gain in water quality value of soil by saving 95% of 4.1 tons/acre/year of soil from erosion if habitat is on 10% of cropland acres. This amount applies to total farm acres. (<i>See Value of Saving Soil text box; 3</i>).</p>	<p>Potential income gain and costs avoided: +</p> <p>Potential income loss and costs to pay: -</p> <p>Your judgment on value to your farm of qualitative benefits: +</p> <p>Value to society or environment: +</p> <p>Add up the total net value per acre per year:</p> <p>Multiply by a time frame (5 years? 10 years?)</p> <p>Total value over time:</p>

References:

- (1) **Earning Additional Income Through Hunt Leases on Private Land.** Craig Harper, Charles Dixon, Paul Jakus, and Alan Barefield. University of Tennessee Agricultural Extension Service, publication #PB1627.
<https://utextension.tennessee.edu/publications/Documents/PB1627.pdf> (accessed 8/21/13).
- (2) **Deer Hunting on Private Land in Kansas, Iowa, and Missouri.** Mid-America Hunting Association.
www.magba.com/deerhunting.html (accessed 8/21/13).
- (3) **A Landowner's Guide to Prairie Conservation Strips.** The Leopold Center for Sustainable Agriculture, Iowa State University.
www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2013-08-landowners-guide-prairie-conservation-strips.pdf (accessed 8/21/13).
- (4) **Field Borders for Wildlife.** 2013. Virginia Department of Game and Inland Fisheries.
www.dgif.virginia.gov/habitat/landowners/infosheets/field-borders.asp (accessed 8/21/13).
- (5) **Enhancing Wildlife Habitat on Farmlands.** 2002. Marja H. Bakermans and Amanda D. Rodewald. The Ohio State University Extension, publication #W-14-2002.
<http://ohioline.osu.edu/w-fact/0014.html> (accessed 8/21/13).
- (6) **Prices for Leasing Hunting Property.** 2011. Discussion thread on Quality Deer Management Association Forum.
www.qdma.com/forums/archive/index.php/t-42639.html (accessed 8/21/13).
- (7) **Economic and Environmental Costs and Benefits of Living Snow Fences: Safety, Mobility, and Transportation Authority Benefits, Farmer Costs, and Carbon Impacts.** February 2012. Gary Wyatt, University of Minnesota Extension; Minnesota Department of Transportation Research Services.
www.lrrb.org/media/reports/201203.pdf (accessed 8/12/13).

Further Resources:

Farmlands and Wildlife: Pennsylvania State University, College of Agricultural Sciences.
<http://pubs.cas.psu.edu/FreePubs/pdfs/agrs104.pdf>

This manual emphasizes the importance of agriculture in maintaining habitat for wildlife. It is also intended as a guide to farmland wildlife, habitat management methods and their benefits, methods of wildlife damage control, sources of financial assistance for habitat projects, and additional educational resources.