Fee Hunting and Fishing

UNIVERSITY OF ILLINOIS
EXTENSION

College of Agricultural, Consumer and Environmental Sciences



FEE HUNTING

Opportunities for Farmers and Rural Landowners

University of Illinois ~ U.S. Department of Agriculture ~Local Extension Councils Cooperating
University of Illinois Extension provides equal opportunities in programs and employment. 2007

Written by John Pike, University of Illinois Extension, Community and Economic Development Educator

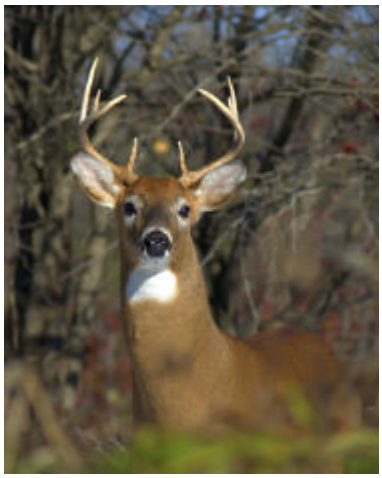
Farmers and rural landowners throughout Illinois are generating new profits by meeting the growing demand for the privilege to hunt on private property. But before entering into a fee hunting arrangement—whether leasing land or developing a commercial outfitting business— you need to consider all the factors and options with this type of enterprise. Due to the individual nature of these business arrangements, it is highly recommended that all parties involved with a hunting lease consult with their attorney, insurance agent, and other business advisors before granting access, or making or accepting payment for hunting privileges.

What's Driving Fee Hunting?

The demand for fee hunting opportunities has been on the rise. The main factors include inadequate profit from traditional commodity production, efforts to use all of the farm's resources and, in some cases, the opportunity to develop a personal hobby (hunting) into a profitable business. While the income potential varies depending on farm location, topography, local wildlife habitat, and activities being conducted on surrounding properties, most farms do have some marketable possibilities. It is important to keep in mind, however, that even though wild game may seem abundant on the majority of Illinois farms, all farms are not necessarily premium hunting locations.

Another factor driving the development of fee hunting is demand. More and more hunters are actively seeking out private land for recreational purposes. For this reason, landowners are often approached by potential customers long before they investigate the possible options involved with leasing their land or starting an outfitter business on their own. Many landowners initially question why people would pay to hunt on private land when there are thousands of acres open to public hunting.

But, the opportunity to hunt on private land often provides hunters with a less hectic, higher quality hunt that is not so dependent on the actions of other hunters who can interfere with the experience. Whether the hunters are involved with a full-service guided hunt offered by a commercial outfitter or involved in a private hunting lease, paying for the privilege to hunt on private land can offer a higher likelihood of success in a more relaxed atmosphere.



For many hunters, this peace of mind carries a high value. Because of the growing demand from a diverse customer base, farmers need to realize the true value of what their land currently offers, or more importantly, what it could be worth if managed properly.

Landowners often say, "I wouldn't pay to hunt on my land, so why would anyone else?" or "We really don't have a lot of trophy game on our farm." But, landowners need to look at their situation from a potential customer's point of view. Although the majority of farm owners have regular access to wildlife and nature, they need to realize that many citizens do not enjoy the same privilege on a regular basis.

In other situations, location is the key. For example, deer are bigger, and waterfowl is more abundant in certain parts of Illinois than in other states. As a result, what is considered to be an "average" hunt in your area might rank as the *hunt of a lifetime* for a hunter from another part of the country.

Also remember that hunting is enjoyed by a broad range of people . . . white-collar, blue-collar and "no-collar." Those with higher incomes might take multiple hunting trips during the course of the year or seek out the most premier leases. But, even hunters with a modest income will save up for the yearly *hunt of a lifetime*. For these reasons, there is an opportunity to capitalize on hunter demand, and everyone involved can benefit.

Operational Options

Generally speaking, there is a market for about any type of hunting arrangement that a landowner might be willing to offer. From seasonal leases with individuals or groups of hunters, to building a full-service outfitting business, there are many good examples of successful fee hunting businesses throughout Illinois and other regions of the country.

Landowners have been enticed to maintain or improve wildlife habitat on their farms to maximize the hunting value. In many cases, habitat management and selective harvest of some game species, especially deer, have increased wildlife populations and hunter success. Keep in mind that, for many hunters, the successfulness of the hunt is measured by much more than harvesting game. Being surrounded by nature and sharing time with other hunters before and after the hunt are also important factors when evaluating fee hunting options.

While profit potential attracts the interest of many landowners, only a few want to operate a commercial hunting or outfitting business. And even though many properties have the potential to generate some profit from hunting or other recreational uses, the income produced in most situations is supplemental at best. It takes either a true entrepreneur or a premier hunting site to capture the highest returns that are frequently quoted through the "rumor mill."

Leasing Hunting Land

In most situations, simply leasing land to an individual, group, or even another outfitter has been the best option. Two important factors that need to be considered from the start are liability and determining a fair value for the lease. (Liability is discussed in the next section.)

Prices for hunting leases vary widely, so you need to do some research prior to advertising or entering into a lease agreement. Prices for hunting leases will vary depending on farm size, agricultural practices, abundance and quality of game, habitat enhancement, reputation of the parcel as well as the general region, practices and activities on neighboring properties, and many other factors. Realtors, bankers, farm managers, Farm Bureau managers, university Extension personnel, and NRCS staff can help assess the price range for hunting leases in about any area.

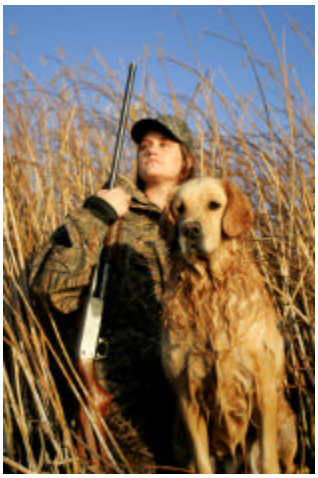
There are also several websites that advertise available leases by state and, in some cases, even by county. The information from these sites can be useful, but it may be difficult to find an exact comparison. One of the firms that hosts a website to put landowners in contact with hunters interested in leasing land also employs field representatives who will inspect land to determine how desirable the property would be in the lease market. These field reps then work with the landowner to determine what a fair price might be.

Remember that what is deemed to be a "fair" price is not always the highest price. There are situations where high-quality hunting land is being leased at what seems to be bargain prices; but, in these situations, landowners often value doing business with people with whom they have had a long-standing relationship and those whom they know will respect and look after the property as if it were their own. In other cases, land of moderate hunting quality might be leased at a premium price because of its convenient access or some other attribute that appeals to the hunter's needs or desires. Marketing efforts can also play an important role in the value of a hunting lease.

Starting a Commercial Hunting Operation

Rather than leasing land to other hunters, some landowners have chosen to develop commercial hunting clubs and outfitter businesses on their farms. In these situations, the operator is involved in much more than merely offering access to the property. In most cases, services such as lodging, meals, guide services, game processing, and transportation are offered. As a result of the added services, the revenue potential is usually higher; but, the ability to offer the services comes as a result of an investment over and above owning the land. These added investments can be quite expensive depending on the facilities, equipment and personnel involved.





If you are interested in starting a commercial operation, you need to develop a business plan to determine whether sufficient revenue can be generated to cover the added costs and provide a profit. It takes time to establish a business reputation and a loyal clientele, so you'll need to develop a strategy to build the business over time. Large investments in amenities such as lodge facilities should generally be viewed as long-term goals. Many of the most successful hunting club operators and outfitters in Illinois have "rustic" accommodations, but they generally go all out where habitat and customer service are concerned.

To avoid large investments in the early stages of this type of business, some hunting club operators work with existing businesses in the community to provide lodging and meals. This way, the hunting club operator can offer a full service package to clients, avoid risky or unnecessary investments, and benefit local businesses at the same time. In some cases, the hunting business may grow to the point where it might be feasible to invest in a facility of its own; in other cases, it may be more beneficial to continue working with local hotels and restaurants and invest in other assets to expand the business.

Those interested in establishing or operating a commercial hunting business should investigate licensing requirements. This information is available through the Illinois Department of Natural Resources (IDNR), http://dnr.state.il.us/, 217/782-6302. Although all fee hunting arrangements do not require special licensing from IDNR, leases and commercial hunting operations involved with waterfowl will likely require licensing, and licensing provisions are also in place to regulate deer and turkey hunting outfitters. It is highly advisable for landowners to determine licensing requirements as part of the planning process.

LIABILITY

Liability is an issue that is usually at the forefront of concerns when fee hunting is considered. While the recognition of liability is generally a good thing, it is often misunderstood through false assumptions or a lack of understanding about how the insurance industry works.

Because fee hunting enterprises are often started as a sideline business to an existing farm operation, it is often assumed that liability issues related to fee hunting would be covered by the existing farm liability policy. The logic is that since the business is being conducted on the farm, it is part of the farming operation. While this could be the case, business operators should always check with their insurance agent prior to conducting any new business activity. Usually, farm liability insurance only covers activities involved with "typical" or "traditional" farming practices. Although the definition of a farming practice will vary from company to company, it is probably safe to say that activities such as charging the public to visit your farm to hunt wild game is not part of that definition and not covered by most general farm policies.

Securing adequate insurance coverage is no easy task. Since no two fee hunting arrangements are alike, it is difficult for the insurance industry to assess the true risk associated with these ventures. To compensate for the unknown, the companies often have to charge high rates or refuse to provide coverage at all. For companies that do provide liability coverage for fee hunting businesses, it is normal for premiums to be based on the expected revenue that will be or has been generated by the operation. It is important to keep this in mind when discussing insurance issues with others involved in fee hunting as the rates quoted from these sources will probably not be comparable to your situation.

The best advice for obtaining liability coverage for your hunting enterprise is to allow plenty of time for planning and investigation. Start with your current insurance agent as the first source of advice. Get several quotes and network with others in the industry to learn from their experiences.



In most cases, it is possible to find affordable liability coverage for the majority of proposed fee hunting ventures, but it might take significant effort to identify the best solution for each situation.

While you want to be certain that you have adequate liability coverage, it is not always necessary that you secure the policy. If you are involved in operating a commercial hunting or outfitting business, commercial liability coverage will likely be a necessity. But in cases where your land is being leased to an individual hunter, group, or outfitter, you could require that the lessee provide their own liability insurance.

This responsibility should be explained in a written lease agreement. In these instances, it is recommended that the lessee provide the lessor (landowner) with a copy of the insurance policy to be reviewed by the lessor's business advisors (insurance agent and/or attorney) **before** signing the lease. By following this advice, you can be assured that your interests are adequately protected.

Accepting verbal notification of liability coverage can be risky because there is no way to verify that the policy provides adequate coverage for all parties involved. For example, the lessee who is the policy holder might be covered adequately but their guests, clients, employees, or the landowner might not have adequate or any coverage under that insurance policy. As an added precaution, insurance agents and attorneys often advise their clients to make sure they are listed as "additional insured" on the lessee's liability insurance policy. Consult with your insurance agent, attorney and other business advisors ahead of time for assistance in choosing the best option for your fee hunting arrangement.

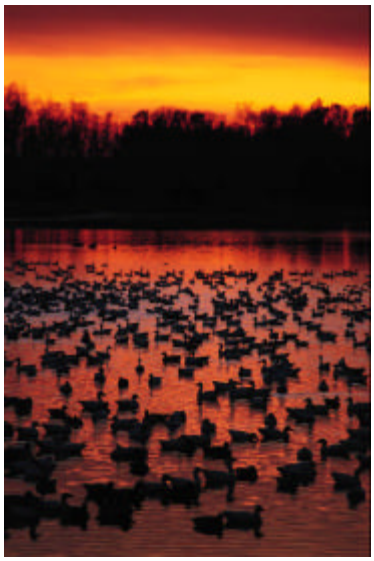
Leasing Issues

A written contract that outlines the expectations of all parties involved in a hunting lease is highly recommended. While a number of generic leases can be accessed on the Internet, it is always a good idea to consult with an attorney before using any of these documents. Even though a web-based document may seem to contain all the points you wish to address, laws differ from state to state as do personal situations. An attorney can help insure that all of your legal bases are covered as they apply in your state.

The wording of a hunting lease will vary depending on the situation, but these items are usually included:

- A description of the property.
- A description of what activities are allowed.
- A description of what activities are not allowed.
- Allowances or restrictions for sub-leasing or outfitting.
- A list of who is allowed to hunt or access the property, or at least a limit on the number of hunters allowed in the field at any one time.
- When access is allowed. Access is usually allowed for the duration of the hunting season. But depending on the agricultural practices being used on the land or the needs/desires of the hunters, access may be more or less restrictive. Some landowners allow year-round access so hunters can plant and maintain food plots and scout. In other instances, such as with livestock production, more restrictive access might be preferred.
- Amount of payment and payment date(s).
- Termination clause.
- Proof of insurance.
- Site specific or client specific issues.





MARKETING

Those interested in starting up a commercial hunting operation quickly see the need for marketing and advertising. But, landowners who are simply leasing their land should also consider the benefits of marketing.

While there are many instances where hunters actively search out land to lease, many others who are just as interested and willing to pay use a less aggressive approach. For hunters, websites, newspaper and magazine classified sections, and word of mouth are usually the search tools of choice. For a reasonable cost, or even free, you can usually spread the word about what you have to offer. Several websites allow landowners to post offerings for free and then charge hunters a small fee to access the listings. Websites of this type can easily be located through a web search.

If you pursue a commercial hunting operation, marketing will probably be more intensive, especially during the first couple of years. While marketing activities will be more involved, some of the most effective techniques can be employed at a low to moderate expense.

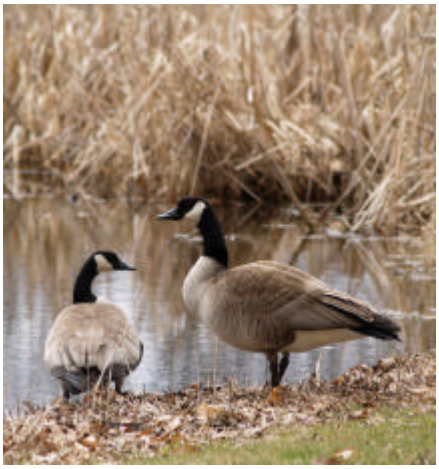
Donating hunts is one effective way to build the reputation of a new business. You can contact Ducks Unlimited, Pheasants Forever, Rocky Mountain Elk Foundation, Quail Unlimited and other organizations in your target market to donate a hunt that they can auction or use as a raffle item at a fund raising event. Since the majority of commercial hunting clubs and outfitters are patronized primarily by clients who do not reside in their immediate area, you'll want to target organizations that operate where your customers and potential customers live and work.

Depending on what your hunting club or outfitting business offers, the target market may be several states away. Hunts donated to local organizations generate good public relations in the community. But, these same donated hunts can have a bigger impact if you focus your efforts on distant markets, especially where deer and waterfowl hunting are concerned.

Networking is another marketing strategy. Inform your local Chamber of Commerce and/or tourism bureau of your enterprise. These organizations are in the business of promoting the local area and all it has to offer. Out-of-town hunters often contact the local Chamber or tourism bureau to find out about hunting opportunities. But, these organizations can only pass along information about your business if you provide it to them. In many cases, it would benefit a commercial hunting business to join the Chamber or business club in several local communities to generate awareness of the business and to network with other businesses that might steer potential clients in your direction. In addition, it is always advisable to make local convention and visitors bureaus (CVB), regional tourism development offices and the state bureau aware of your business operation and what you have to offer.

CONCLUSIONS

Farmers and landowners have several options to generate profits from fee hunting. Approach these opportunities like any other business proposition. Consult insurance professionals, attorneys and other business advisors to minimize your risks. The trend of fee hunting will most likely continue for years to come. This trend is an opportunity for landowners and communities to capitalize on local tourism development and maximize the potential for success.



WESTERN MARYLAND RESEARCH & EDUCATION CENTER
MARYLAND COOPERATIVE EXTENSION ✦ AGRICULTURAL EXPERIMENT STATION

RURAL ENTERPRISE SERIES

RES-07

Hunting Lease Enterprise

Lease hunting is an arrangement whereby the landowner grants access to his or her land for hunting for a certain period of time in exchange for fees or services. Landowners can lease some or all rights to hunt on their property by the day, week, season, or year. By choosing who you want to hunt on the property, you can solve many trespass problems because those hunters will tend to keep others off the property. A hunting lease enterprise may be a good option for absentee landowners because it can require little maintenance work once the arrangement is set up.

The disadvantages of offering a hunting lease include the loss of privacy, changes in your farm operation to accommodate hunters, liability concerns, safety concerns, and possible resentment from those who formerly hunted the property for free. Selecting responsible hunters, securing proper insurance, having a written lease, and communicating regularly with the hunters can minimize most concerns.

The profitability of a hunting lease enterprise will depend on the accessibility of other hunting lands, proximity to a population center, how good the hunting is, what species are available, the facilities provided, and the type of lease arrangement. You may decide to operate a full-fledged hunting lodge, let hunters camp on your land, or offer just hunting. You can charge by the acre, the day, the season, or the year. Most leases are done on a yearly or seasonal basis. These decisions will heavily influence the profitability of the enterprise and the skills and time needed to make it successful.

In most of the Northeast, hunting is primarily for white-tailed deer, wild turkey, and possibly squirrels. In coastal and river areas of the mid-Atlantic states, there is a sizable market for waterfowl hunting. Quail, pheasant, and/or dove hunting are sometimes offered at shooting preserves to which animals are brought.

Skills and Time Needed

Skills and time needed for a successful hunting lease enterprise depend on the type of operation. Seasonal and yearly leases tend to be best for landowners who do not themselves hunt and for those who want to minimize the time they spend dealing with the enterprise. For daily charge operations, the landowner or hired manager must enjoy dealing with the public. This type of operation will require the greatest investment of time to ensure safety and generally provides a greater level of service to hunters. Food and guide services are often provided in daily charge arrangements. In return for the extra services required, the profit per hunter can be considerably higher.

If you decide to do land management to improve the quality of hunting, you'll need to educate yourself on wildlife habitat management and understand what features will attract the target species. You'll need to carry out the practices you select or pay someone else to do it. Assistance on planning for wildlife is available from state wildlife agencies, cooperative extension, and nonprofit wildlife organizations.

Equipment Needed

For a simple seasonal or yearly lease in which the landowner provides no additional services, all that's needed to start the operation is a signed and notarized lease with a hunt club or group of individuals. If the hunt club is incorporated, then the club representative may be able to notarize the lease for the other members. More commonly, the landowner is leasing to a group of individuals who adopt a club name. In this case, all members must sign and notarize the lease for it to be fully binding. The landowner can specify in the lease any terms he or she wishes—

archery or muzzle loader only, the number of hunters allowed at one time, maintenance of hunting rights for certain friends and family members, etc. You can even specify in the lease that the leaser must perform certain jobs, such as planting or mowing food plots. Check with your state's wildlife management agency for applicable regulations and seasons. A sample lease is available on the Internet <www.naturalresources.umd.edu/Pages/Hunting_Lease.html>. It may be helpful to have a qualified lawyer look over the lease before you offer it to hunters.



A daily lease operation may require a building in which hunters can gather to receive instructions from the landowner or manager. Food, lodging, and guide facilities may be offered for daily and/or weekly arrangements. Some landowners may have existing cabins on the land that they allow hunters to use. This can be an additional source of income. Many hunting liability policies provide a reasonable level of protection for fire damage, but check the policy you select for the conditions that apply. For more information on budgeting for lodging facilities, see our vacation cabin publication (RES-09). If your customers will be mostly out-of-towners and you don't plan to offer overnight accommodations, consider whether adequate overnight facilities and restaurants exist nearby to meet hunters' needs.

Waterfowl hunting will probably require the construction of blinds, and tree stands may be necessary for deer hunting. You can do habitat improvement such as timber cutting, planting, and mowing to increase the number or diversity of animals your land will support.

Liability and Licensing Concerns

Each state has recreational statutes that minimize liability for landowners who allow individuals to hunt on their property at no charge. The statutes vary by state, but none of these statutes apply when you charge a fee. General farm insurance usually does not cover fee hunting or hunting leases in which a fee is charged. This is considered a business relationship, so special coverage is needed. Many landowners require hunters to sign a liability waiver as part of a lease agreement, but this will not protect the landowner in the event of an accident. Special liability coverage is needed. Fortunately, a number of landowner associations and insurance companies offer reasonably priced insurance. A list of sources of liability insurance can be found on the Internet at <www.naturalresources.umd.edu/Pages/Insurance.html>. You may wish to check with your present insurance provider as well.

Your state may require that you obtain a license for a fee hunting or hunting lease operation. Requirements will vary with the species. The costs are usually low, but penalties for not complying tend to be large. A special license may be needed to release and hunt pen-raised birds.

Marketing Concerns

To avoid resentment from neighbors, relatives, friends, and others who may have been hunting on the property, you may wish to offer them the opportunity first to lease the land. Absentee landowners must be especially concerned with this because vandalism can occur while they are away. You could try marketing your hunting lease rights through local sporting associations. County Cooperative Extension or state wildlife management agencies should be able to provide some contact information for these groups. You might place ads in sporting magazines or the sports section of local newspapers.

The largest amount of time spent in managing a hunting lease operation is in selecting a hunt club or individuals who will respect your property and your objectives. It is best first to do phone interviews to ask specific questions that are important to you. Check the references that potential leasers provide. You can then meet a few likely candidates at the property and make your decision. Once selected, cultivate a good working relationship with the group that can last years and require minimal effort.

If you have an elaborate operation, you may want to develop an attractive brochure or make a video to display at hunting shows and to send to interested individuals. You'll need letterhead and envelopes and probably a logo to market your business.

Some hunting preserves promote their businesses as year-round family fun places. They stage frequent seasonal events for members' families, such as hayrides and barbeques. This fosters goodwill among the hunters and their families and can increase hunter loyalty to the preserve.

What to Charge?

It can be difficult to find published information on the going price for hunting leases. Prices for a yearly lease for deer and turkey commonly range from $3 to $10 per acre. Waterfowl leases may bring in thousands of dollars if it is a prime location. What you charge will depend on how the lease is structured and if the land is actively managed, i.e., with food plots, tree stands, blinds, and many other factors. One way to find out is to talk with other landowners in the area who lease their land. Members of forest landowners associations and other agricultural associations will commonly share their experiences. Look in the paper and magazines and call other ads to see what others are asking.

Financial Picture

The budget that follows is for a year-long lease on deer and turkey hunting rights on a 70-acre parcel at a rate of $7 per acre. Except for minor costs for marketing and telephone, the enterprise netted $440. If the owner had invested in tree stands or wildlife planting, the income would have been less, but the fee per acre may have been higher. Many landowners work out agreements with hunters to plant food plots and maintain roads and fences. You may decide to allow hunters to provide their own tree stands, but you should specify in the lease that they not damage your better timber trees.

Hunting lease income on a yearly basis typically will pay the property taxes and then some. This is very attractive to many landowners. When you look at the amount of money generated over 20 years, you may find that the income from a hunting lease is worth more than periodic income from timber harvests.

Hunting lease operations are widely variable in charges, sources of revenue, and extent of services. The enterprise can be as plain or as fancy as you wish. Just remember that hunters are more likely to judge the experience by the quality of the hunting than by the quality of the lodge.

Information Resources

Jones, W.D., I.A. Munn, S.C. Grado, and J.C. Jones. 2001. Fee Hunting: An Income Source for Mississippi's Non-Industrial, Private Landowners. Forest and Wildlife Research Center. Mississippi State University. www.cfr.msstate.edu/fwrc/feehunting.pdf.

Kays, J.S. 1997. Recreational Access and Landowner Liability in Maryland: Guidelines for Managing Free or Fee Access. Extension Bulletin 357. University of Maryland Cooperative Extension Service, College Park, MD. Cost $2.50. (Order through www.agnr.umd.edu/MCE/Publications/Category.cfm?ID=8.)

Pike, J. 2001. Alternative Agriculture: Can Fee Hunting Increase Your Bottom Line? Rural Enterprise and Alternative Development Initiative Report No. 2. Southern Illinois University-Carbondale. www.siu.edu/~readi/grains/factsheets/hunting.pdf.

Yarrow, G.K. and D.C. Guynn, Jr. 1989. Fee Hunting on Private Lands in the South, symposium proceedings. Clemson University Cooperative Extension Service, Clemson, SC.

Yarrow, G.K. 1998. Developing a Hunting Lease: Considerations, Options, and Realities. In: J.S. Kays et al., eds. Natural Resources Income Opportunities for Private Lands conference proceedings. University of Maryland Cooperative Extension Service, College Park, MD. (Order through www.nraes.org/publications/nraes140.html.)

Selected sources of liability insurance for hunt clubs and other recreational enterprises. Developed by Maryland Cooperative Extension in Spring 2000. www.naturalresources.umd.edu/Pages/Insurance.html.

Authors

Jonathan S. Kays, Regional Extension Specialist, Natural Resources

HUNTING LEASE ENTERPRISE BUDGET					
Property size		70			
Lease time frame		1 year			
Species		deer, turkey, squirrel			
Number of hunters		4			
Land use		50 acres forested, 20 in agriculture			
INCOME	**$/acre**	**$/year**			
Lease	7	490			
Cabin rental for season, year, etc	0	0			
Total		490			
VARIABLE COSTS		**UNIT**	**AMOUNT**	**PRICE**	**TOTAL COST ($)**
Food plot (labor & seed)		acre	3	0	0
Marketing (newspaper-magazine ad)			1	30	30
Phone		1 month	1	20	20
Tree stand (labor/material)		stand	0	0	0
Lawyer review			0	100	0
Insurance (if not paid directly by club)					
Total variable costs					50
Annual net income over variable costs					**$440**

P 5/2003

Fee Hunting

An Income Source for Mississippi's Non-Industrial, Private Landowners



By
W. Daryl Jones
Dr. Ian A. Munn
Dr. Stephen C. Grado
Dr. Jeanne C. Jones

FWRC RESEARCH BULLETIN
Bulletin #FO164
FWRC

Fee Hunting

An Income Source for Mississippi's Non-Industrial, Private Landowners

by

W. Daryl Jones
Dr. Ian A. Munn
Dr. Stephen C. Grado
Dr. Jeanne C. Jones

Forest and Wildlife Research Center

Mississippi State University

February 2001

Table of Contents

Introduction 1

Methods 1

Results 2

- Response Rates 2
- Types of Hunting 2
- Ownership Size and Composition 3
- Payment Methods 3
- Overhead Expenditures 4
- Wildlife Management Expenditures 4
- Gross Revenues 5
- Net Revenues 5
- Landowner Attitudes 5

Discussion 6

Literature Cited 7

List of Tables

Table 1. Percentage of Mississippi respondents who allowed hunting on their land during the 1996-1997 and 1997-1998 hunting seasons 8

Table 2. Average acreage owned in Mississippi by all survey respondents during the 1996-1997 and 1997-1998 hunting season 8

Table 3. Average acreage owned in Mississippi by respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons 8

Table 4. Average acreage owned in Mississippi by respondents not engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons 9

Table 5. Average acreage leased for hunting by Mississippi respondents involved in hunting leases during the 1996-1997 and 1997-1998 hunting seasons 9

Table 6. Average acreage dedicated to permit hunting by Mississippi respondents involved in permit hunting during the 1996-197 and 1997-1998 hunting seasons 9

Table 7. Average acreage dedicated to hunting guides or outfitters by Mississippi respondents involved with guides or outfitters during the 1996-1997 and 1997-1998 hunting seasons 10

Table 8. Game species featured in hunting leases by percentage of respondents involved in leasing during the 1996-1997 and 1997-1998 hunting seasons 10

Table 9. Game species included in hunting permits by percentage of respondents involved in permit hunting during the 1996-1997 and 1997-1998 hunting seasons 10

Table 10. Mean overhead expenditures by Mississippi respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons 11

Table 11. Mean overhead expenditures per acre by respondents engaged in fee hunting in Mississippi during the 1996-1997 and 1997-1998 hunting seasons 11

Table 12. Mean overhead expenditures by Mississippi respondents reporting expenditures during the 1996-1997 and 1997-1998 hunting seasons 12

Table 13. Mean overhead expenditures per acre by Mississippi respondents reporting expenditures during the 1996-1997 and 1997-1998 hunting seasons 12

Table 14. Mean wildlife management expenditures of Mississippi respondents engaged in wildlife management during the 1996-1997 and 1997-1998 hunting seasons 13

Table 15. Mean wildlife management expenditures of Mississippi respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons 13

Table 16. Mean wildlife management expenditures per acre of Mississippi respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons 13

Table 17. Mean gross revenues per landowner by fee hunting payment method during the 1996-1997 and 1997-1998 hunting seasons 14

Table 18. Mean gross revenues per acre dedicated to fee hunting by payment method in Mississippi during the 1996-1997 and 1997-1998 hunting seasons 14

Table 19. Mean net revenues per Mississippi landowner engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons 14

Table 20. Mean net revenues per acre dedicated to fee hunting by payment method in Mississippi during the 1996-1997 and 1997-1998 hunting seasons 14

Table 21. Mean ratings of problems associated with fee hunting reported by Mississippi respondents engaged in fee hunting during the 1997-1998 hunting season. Problems were rated on a scale from 1 (not a problem) to 5 (big problem) 15

Table 22. Mean ratings of problems that deterred respondents from engaging in fee hunting rated by Mississippi respondents not engaged in fee hunting during the 1997-1998 hunting season. Problems were rated on a scale from 1 (not important) to 5 (very important) 15

Introduction

Mississippi's ecologically rich and diverse land base extends from the longleaf pine savannahs of the southern Coastal Flatwoods and Lower Coastal Plain to the pine-hardwood forests of the northern Interior Flatwoods and Upper Coastal Plain. The majority of forests, agricultural lands, wetlands, and watersheds are privately owned and support a diversity of game and non-game wildlife species (USDA/NRCS 1996). Traditionally, agricultural and timber production have been major sources of income for non-industrial, private (NIP) landowners in Mississippi. With the popularity of wildlife-related recreation, particularly hunting, Mississippi landowners can diversify their income through fee hunting activities if they have adequate habitat to support game species.

The promotion of fee-based wildlife recreation on private lands encourages voluntary conservation and restoration of ecologically sensitive lands, with limited state and federal governmental involvement. Incentive-based federal programs, such as the U.S. Department of Agriculture's Conservation Reserve and Wetland Reserve Programs, have protected numerous acres of marginal lands within the state. However, enrollment in these programs is limited by the available funding, which is subject to the uncertainty of the federal budgeting process. Section 404 of the 1972 Clean Water Act and the Endangered Species Act of 1987 provide regulatory measures for the protection of wetlands (CEQ 1989); however, private landowners are seldom supportive of such regulations (Pease et al. 1997).

Wildlife recreation on private lands can benefit many Mississippi stakeholders. Private landowners can derive additional income from hunting, fishing, and non-consumptive activities such as bird watching and nature tours. Landowners who improve wildlife habitat quality, and thereby increase game concentrations, increase the recreational value of their land (Guynn 1990). Many forest and habitat management practices, including vegetation plantings and prescribed burning, benefit wildlife populations (Yarrow 1990; Johnson 1995). The net effects of landowner involvement in fee-based wildlife recreation are more conserved and restored acreage without the use of traditional regulatory measures; additional income sources for landowners; and enhanced opportunities for outdoor enthusiasts.

Little information is available concerning the number of non-industrial private landowners engaged in fee hunting, the amount and type of land dedicated to fee hunting by landowners, the various wildlife management practices these landowners implement, the costs and revenues associated with fee hunting, and various other issues related to fee hunting. This study was designed to provide this information for Mississippi.

Methods

Non-industrial, private landowners owning a minimum of 40 acres in Mississippi were identified and randomly selected from the 1995 property tax records by the Survey Research Unit of the Social Science Research Center at Mississippi State University. Forty acres was selected as a minimum to eliminate urban and suburban properties included in the property tax records. A mail questionnaire was developed using a multi-disciplinary effort involving forestry, wildlife, social science, and environmental policy professionals. Four independent surveys were conducted consisting of a regional and a statewide survey for the 1996-1997 hunting season and a regional and statewide survey for the 1997-1998 hunting season. The 1996-1997 regional survey targeted the Mississippi counties of Issaquena, Sharkey, Warren, and Washington in the southern portion of the Mississippi River Alluvial Valley (Delta counties) and the 1997-1998 regional survey targeted the Mississippi counties of Jackson, Harrison, Hancock, Pearl River, Stone, and George along the state's gulf coast (Gulf Coast counties). These regional survey areas were selected because they represent extremes in land use types. In the Delta, the percentage of the land base devoted to agriculture is among the highest in the state. Similarly, the percentage of the land base devoted to forestry in the Gulf Coast counties is among the state's highest (Hartsell and London 1995). The statewide surveys sampled the entire state and did not exclude respondents from the regional survey areas. Therefore, summaries of statewide surveys represent the entire state, not just the portions of the state outside the regional survey areas.

For the 1996-1997 hunting season, 1,363 questionnaires were mailed to a random sample of Mississippi landowners statewide and 1,293 questionnaires were mailed to a random sample of Delta county landowners at the end of March 1997. Landowners who did not return the questionnaire were sent a second questionnaire. Landowners were requested to confine their answers to the period March 1,

1996, to March 1, 1997, to reflect activities related to the 1996-97 Mississippi hunting season.

For the 1997-1998 hunting season, 2,030 questionnaires were mailed to a random sample of Mississippi landowners and 2,280 questionnaires were mailed to a random sample of Gulf Coast county landowners at the end of March 1998. The size of the original mailing was increased and the follow-up mailing eliminated to reduce survey time but still obtain approximately the same number of valid responses. Responses pertaining to the period March 1, 1997, to March 1, 1998, were requested to reflect activities related to the 1997-98 Mississippi hunting season.

The questionnaire was designed to obtain information on land ownership patterns, expenditures for wildlife management activities, and revenues and expenditures for fee hunting activities. Landowners were asked to report the acres owned by county and land-use type (e.g., forested, agriculture, wetlands, and other), whether they allowed hunting on their land, and whether they charged for hunting privileges.

Landowners who sold hunting privileges on their property were asked to report the payment method they used. Three payment methods were identified: hunting leases, permit hunting, and agreements with outfitters or guides. Hunting leases provide a group of hunters the sole right to hunt specified portions of the landowner's property for a period of one or more years. Lease payments are specified in the lease agreement. Permit hunting allows individual hunters the right to hunt a specified portion of the landowner's property for a limited time - typically a day - in exchange for a permit or gun fee. Outfitter or guide arrangements provide outfitters with exclusive hunting privileges for a specified portion of the landowner's property. Outfitters then provide guided hunts on this land. Typically, the landowner receives an annual fee or a percentage of the outfitter's gross revenue.

For each payment method, landowners were asked to report the wildlife species included in the agreement and the acreage dedicated to fee hunting by land type. To estimate net returns, landowners were also asked to report hunting-related overhead expenses and wildlife management expenses. Overhead expenditures included manager or caretaker wages, liability insurance premiums, personal supervision, trespass prevention and property posting expenses, and guest accommodation costs. Wildlife management activities included vegetation management practices, establishment of food sources and cover, installation and maintenance of blinds and tree stands, and plantings and flooding for waterfowl. Property taxes were excluded from the study.

Results

Response Rates

For the 1996-1997 hunting season, 1,363 questionnaires were sent to a random sample of Mississippi landowners and 1,293 questionnaires were sent to a random sample of Delta county landowners. Landowners who did not return the questionnaire were sent a second questionnaire. Six hundred fifty three and 567 completed surveys were returned, respectively. After accounting for surveys returned because of incorrect addresses, property sales, or deceased landowners, the response rates were 48% and 49%, respectively.

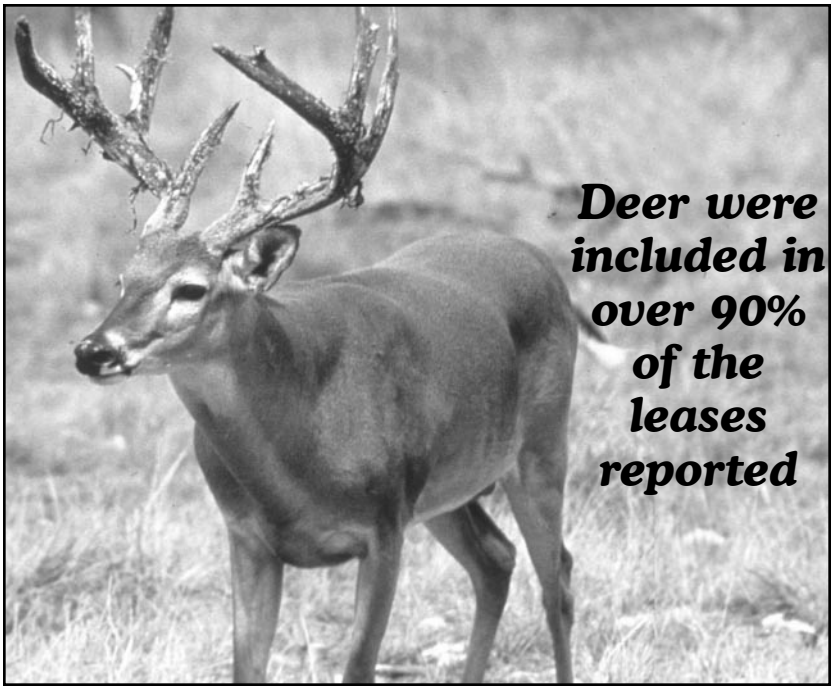
For the 1997-1998 hunting season, 2,030 questionnaires were sent to a random sample of Mississippi landowners and 2,280 questionnaires were sent to a random sample of Gulf Coast county landowners. In order to reduce survey time but still obtain approximately the same number of valid responses, the size of the original mailing was increased and the follow-up mailing eliminated. For the statewide sample, 555 completed surveys were returned and for the Gulf Coast sample, 508 completed surveys were returned. The response rates were 28% and 22%, respectively. No information was recorded for surveys returned due to incorrect addresses, property sales, or deceased landowners, so these rates are not adjusted for surveys sent to invalid addresses.

The percentage of respondents that charged for hunting privileges was very small, ranging from 8% in the Gulf Coast counties to 14% in the Delta.

Types of Hunting

Most respondents allowed hunting of some type on their land. Over the two year survey period, the percentage of respondents allowing hunting ranged from 50% in the Delta during the 1996-1997 season to 77% statewide during the 1997-1998 season (Table 1). Most of these respondents allowed people to hunt without paying a fee. For example, 68% of respondents to the 1997-1998 statewide survey did not charge for hunting privileges. However, these free hunting privileges were extended almost exclusively to family and friends only. Less than 5% of respondents allowed the general public to hunt for free without first obtaining permission.

Up to an additional 12% of respondents allowed the general public to hunt for free but only if the hunters obtained permission first. The percentage of respondents that charged for hunting privileges was very small, ranging from 8% in the Gulf Coast counties to 14% in the Delta.



Ownership Size and Composition

The land composition with respect to proportions of forest, agricultural, and other uses reported in these surveys reflects state and regional distributions. In the two statewide surveys, forests accounted for 56% and 60% of the average ownership (Table 2) which is consistent with the proportion of forest land on NIP ownerships in Mississippi as reported by Hartsell and London (1995). For the Delta counties, where agriculture predominates, forests accounted for only 32% of the average ownership. In contrast, for the Gulf Coast counties, where forestry predominates, forests accounted for 78% of the average ownership.

There were dramatic differences with respect to size of ownership between respondents that engaged in fee hunting and those who did not. For example, average ownership sizes for respondents engaged in fee hunting were 1,439 in the Delta counties and 1,590 in the Gulf Coast counties (Table 3), compared to 723 and 204 acres, respectively, for respondents not engaged in fee hunting (Table 4).

Furthermore, there were dramatic differences in land use composition with respect to proportions of forest, agricultural, and other uses between fee hunters and the general population. For all surveys, the proportion of forestland was substantially greater on ownerships of respondents engaged in fee hunting. For example, forests represented 90% of the average ownership of respondents engaged in fee hunting in the Gulf Coast 1997-1998 survey (Table 3), compared to only 78% for all Gulf Coast 1997-1998 respondents (Table 2). The difference was even greater in the statewide surveys.

Payment Methods

Hunting leases were the most common payment method used for fee hunting, ranging from 7% of respondents in the Gulf Coast survey to 13% in the 1997-1998 state survey (Table 5). In contrast, 3% or fewer respondents sold individual hunting permits (Table 6) and even fewer respondents (< 1%) had agreements with guides or outfitters (Table 7).

Respondents who leased hunting rights owned, on average, between 1,066 and 1,628 acres depending on the survey region (Table 5). These respondents dedicated, on average, between 52% and 73% of their total ownership to hunting leases. Forests represented the overwhelming majority of leased lands. In the Delta counties, forests accounted for 70% of leased lands. In the Gulf Coast counties, forests accounted for 97% of leased lands. The percentage of forests in hunting leases for the statewide surveys fell between these extremes. Over 90% of respondents that leased included white-tailed deer (*Odocoileus virginianus*) in their leases (Table 8). The wild turkey (*Meleagris gallopavo*) was the second most commonly included species, ranging from 64% in the Delta to 79% in the Gulf Coast. Waterfowl were commonly included in Delta leases (52%) but not in other regions. Quail (*Colinus virginianus*), dove (*Zenaida macroura*), and other game were also included by 22% to 45% of respondents, depending on the species and survey.

Respondents who sold individual hunting permits owned, on average, between 1,137 and 1,826 acres and dedicated between 33% and 68% of their ownership to permit hunting depending on the survey region (Table 6). As with hunting leases, forests accounted for the majority of lands dedicated to permit hunting. Deer were the most commonly featured species, ranging from 73% in the 1996-1997 state survey to 100% in the Gulf Coast survey (Table 9). Although dove hunting is a southern tradition (Hawkins 2000) that lends itself to permit hunting, the percentage of permit arrangements including dove was not substantially different than the percentage of hunting leases including dove.

Arrangements with guides and outfitters were not common in our study but were most frequent in the Delta. Delta landowners with arrangements with guides or outfitters dedicated 51% of their landholdings to the activity. Forested acreage accounted for 77% of the total lands committed to this arrangement (Table 7).

Overhead Expenditures

Overhead expenditures are reported two ways: expenditures averaged across all respondents engaged in fee hunting (Tables 10 - 11) and expenditures averaged across those respondents engaged in fee hunting that incurred each expense (Tables 12 - 13). The first illustrates average expenditures for fee hunting landowners as a group. The second illustrates the average size of these expenditures for the landowners that incur them.

Statewide, wildlife management expenditures averaged $1.54 per acre in the 1996-1997 season and $1.28 in the 1997-1998 season.

Overhead expenditures are substantially greater in the Delta and Gulf Coast counties compared to the statewide surveys. Mean overhead expenditures averaged $1,981 in the Delta for the 1996-1997 season and $863 in the Gulf Coast counties for the 1997-1998 season. In contrast, mean overhead expenditures in the statewide surveys were $290 for 1996-1997 and $199 for 1997-1998 (Table 10). In addition to this difference in overall magnitude, there was also a difference in the composition of overhead expenditures between the regional and statewide surveys. In the Delta and Gulf Coast counties, managerial expenses were the largest category followed by "other expenses," liability insurance, and road and trail construction. Guest accommodations and personal supervision also represented substantial expenditures in the Delta counties. In the statewide surveys, liability insurance and road and trail construction were the primary expenditures.

Overhead expenditures for the Delta and Gulf Coast counties were $2.21 per acre and $0.71 per acre respectively for land dedicated to fee hunting. For the statewide surveys, overhead expenditures averaged $0.31 per acre in the 1996-1997 season and $0.24 in the 1997-1998 season (Table 11). The relative magnitude of the various categories did not vary substantially from total overhead expenditures.

Although overall means provide interesting information about average overhead expenditures incurred by respondents engaged in fee hunting as a group, it provides very little information about typical expenditures for those who incur specific costs. Fewer than 35% of fee hunting respondents in each survey incurred any type of overhead expenditure. The percentage was even lower for any specific overhead category. Mean overhead expenditures for respondents who reported such expenditures varied greatly between surveys from a high of $7,469 for the Delta survey to $1,084 for the 1996-1997 state survey (Table 12). Although mean overhead expenditures for the statewide 1997-1998 survey were higher than those for the Delta counties, this higher total resulted from one landowner with a full-time manager. Respondents in the Delta who incurred overhead expenditures generally paid substantially more than respondents in other surveys. Delta respondents with overhead expenditures averaged $3.61 per acre in total overhead expenditures compared to expenditures of less than $1.00 per acre for respondents in the Gulf Coast counties and state 1997-1998 surveys (Table 13).

Wildlife Management Expenditures

For the 1996-1997 survey, respondents were asked to report their total wildlife management expenditures. Thus, the responses represent wildlife management expenditures for personal and/or fee hunting related purposes. Due to the survey design, it was not possible to isolate fee hunting and personal use related expenditures. Because most fee hunting landowners dedicated only part of their land to their fee hunting operations, some of their wildlife management expenditures may have been related to their personal hunting. Therefore, profits from fee hunting calculated using these expenditures are probably understated. For the 1997-1998 survey, only fee hunting respondents were asked to report their wildlife management expenditures and then only those related to their fee hunting operations. Thus, the responses represent wildlife management activities strictly for fee hunting on lands dedicated to fee hunting and can be used to provide a more accurate estimate of net revenues

About 23% of all respondents for the 1996-1997 season spent money on wildlife management (Table 14). Of those landowners actively managing for wildlife, Delta respondents spent, on average, $3,504 per year compared to $2,332 per year for respondents statewide. Vegetation management and planting food and cover crops were the most common activities. Twenty percent of respondents statewide and 18% of Delta respondents undertook these activities. Waterfowl management was more common in the Delta (9% of all respondents) than statewide (< 3%). Those respon-

dents who did manage for waterfowl spent considerable amounts, averaging over $1,800 per year in the Delta and $1,400 per year statewide.

About 19% of all fee-hunting respondents for the 1997-1998 season actively managed for wildlife as part of their fee hunting operation. Of those landowners engaged in fee hunting and actively managing for wildlife, Gulf Coast respondents spent, on average, $2,798 per year for wildlife management and state-wide respondents spent, on average, $2,556.

For all landowners engaged in fee hunting, wildlife management expenditures in 1996-1997, which included personal and fee hunting related expenditures, averaged $1,477 and $2,240 for the statewide and Delta surveys, respectively. Wildlife management expenditures in the 1997-1998 season, which included fee hunting related expenditures only, averaged $401 and $502 for the state-wide and Gulf Coast surveys, respectively (Table 15). For the statewide surveys, average wildlife management expenditures were $1.54/acre in 1996-1997 and $1.28/acre in 1997-1998 (Table 16). Per acre expenditures were greatest in the Delta counties ($2.54/acre) and lowest in the Gulf Coast counties ($0.42/acre). By comparing expenditures for the two seasons, it appears that, on average, landowners spend considerably more on wildlife management for personal hunting than for their fee hunting operation.

Gross Revenues

Annual gross revenues from fee hunting were greatest in the Delta counties, averaging $4,007 for hunting leases, $8,339 for permit hunting, $10,450 for arrangements with outfitters and guides, and $5,254 overall (Table 17). Gross revenues from hunting leases were reasonably consistent across all survey groups; however, gross revenues from permit hunting and outfitter and guide arrangements were substantially greater in the Delta, thus resulting in higher overall gross revenues than other survey areas. Total gross revenues for the Gulf Coast and statewide surveys were at least $1,000 less. On a per acre basis, gross revenues averaged $5.86 in the Delta versus $3.28 in the Gulf Coast, and $3.08 and $4.63 statewide for the 1996-1997 and 1997-1998 seasons, respectively (Table 18).

Annual net revenues averaged $3.91 per acre statewide during the 1997-1998 hunting season.

Net Revenues

Annual net revenues for the 1997-1998 season were substantially greater than the net revenues for the 1996-1997 season (Table 19). However, expenditures in the 1996-1997 season surveys included wildlife management expenditures related to personal hunting. Thus, net revenues from fee hunting for the 1996-1997 season are understated. Average net revenues for the 1997-1998 season more accurately represent typical net revenues available from fee hunting. Net revenues averaged $3,244 per landowner for the statewide survey and $2,655 for Gulf Coast counties. Although gross revenues were greater in the Gulf Coast counties, net revenues were lower due to higher overhead and wildlife management expenditures.

On a per acre basis, annual net revenues averaged $3.91 statewide and $2.17 in the Gulf Coast counties (Table 20). Net revenues for hunting leases ranged from $4.59/acre statewide to $2.29/acre in the Gulf Coast counties and, in general, were greater than net revenues per acre for permit hunting and outfitter/guide arrangements. The exception was guide/outfitter arrangements in the Delta where net revenues averaged $4.91/acre.

Although net revenues for permit hunting appear to be low, many respondents engaged in permit hunting also had comparatively high overhead costs, particularly for guest accommodations and other permanent improvements. It appears likely that many of these landowners are in the process of developing a hunting based operation, and net revenues should increase once operations become fully established.

Landowner Attitudes

Statewide and Gulf Coast respondents engaged in fee hunting during the 1997-1998 season were asked to rate problems associated with fee hunting listed in the survey on a scale from 1 (not a problem) to 5 (big problem). None of the problems received an average rating above 3, indicating that landowners engaged in fee hunting generally do not experience serious problems (Table 21). Poaching and trespassing was the highest rated problem, averaging 2.24 statewide and 2.18 for the Gulf Coast counties. Accident liability was rated next highest, with average ratings of 1.91 statewide and 2.03 for the Gulf Coast counties. Ratings for the remaining problems listed were lower, ranging from 1.25 to 1.82.

Respondents not engaged in fee hunting were asked to rate reasons why they elected not to participate in this

activity on a scale from 1 (not important) to 5 (very important). The average ratings for loss of land control, loss of privacy, accident liability, damage to property, and poaching and trespassing were all above 4 for both the statewide and Gulf Coast surveys. Overharvest of wildlife, financial gain not worthwhile, and not wanting wildlife hunted were rated between 3 and 4. These ratings indicate substantial differences between the actual and perceived problems. Twenty-four percent of statewide respondents and 14% of Gulf Coast respondents indicated that they would be more likely to sell hunting rights to their lands if their concerns were reduced.

Discussion

Forests provide substantial habitat for game and non-game wildlife species and are associated with the majority of our nation's remaining wetlands. However, these lands are under increasing pressures from agriculture, timber production, and development. Fee hunting provides monetary incentives to landowners for afforesting marginal agricultural land and protecting ecologically diverse forests and wetlands without the intervention of environmental regulations. Land-use planning by landowner cooperatives, economic development groups, and local communities can promote fee hunting on private lands as a viable alternative to development projects and agricultural production on marginal lands, thus protecting forests and emergent wetlands.

Respondents involved in fee hunting reported no appreciable problems associated with fee hunting on their land. In contrast, respondents not involved in fee hunting were very concerned about the potential problems, and this has deterred their participation. However, many non-fee-hunting respondents reported that if their concerns were reduced, they would be more inclined to sell hunting rights. Educational and outreach activities (e.g., Extension Service activities, Internet websites) are needed to inform landowners of the monetary returns associated with fee hunting, the wildlife management practices necessary to increase habitat quality, fee hunting marketing strategies designed to attract paying clients, and to reduce the perceived risks concerning fee-hunting.

To diversify their income, landowners can combine activities that enhance fee-hunting opportunities with traditional land-use practices. For example, many forest management practices used to increase timber yields can also benefit wildlife populations (Rohweder et al. 2000). The supplemental income from hunting may encourage voluntary conservation and restoration of privately-owned lands. For example, because forestland is the dominant land use type in fee hunting arrangements, private landowners may elect to plant trees on marginal or abandoned agricultural land. Similarly, because ecologically sensitive lands, such as wetlands, typically provide excellent wildlife habitat, landowners engaged in fee hunting are likely to protect these lands, thereby reducing the need for governmental regulatory measures associated with environmental protection.

Future research should address why so few landowners sell hunting rights by examining landowner motivations, and the perceived and real barriers to fee hunting. Once these factors are better understood, outreach activities focusing on marketing strategies and wildlife habitat management practices can be directed toward private landowners to promote income diversification and ecological stewardship on private lands.

Literature Cited

Council on Environmental Quality (CEQ) and Interagency Advisory Committee on Environmental Trends. 1989. Environmental Trends. Council on Environmental Quality, Executive Office of the President, and Interagency Advisory Committee on Environmental Trends. Washington, D.C. 152p.

Guynn, Jr., D.C. 1990. Fee hunting on private lands in the South: Synopsis, conclusions, and future directions. In: D.C. Guynn, Jr. and G.K. Yarrow (Eds.). Fee Hunting Proceedings 1990: Fee Hunting on Private Lands in the South. Clemson University, Clemson, S.C. pp.149-154.

Hartsell, A.J, and J.D. London. 1995. Forest statistics for Mississippi counties - 1994. Resource Bulletin SO-190. New Orleans, LA: U.S. Department of Agriculture, Forest Service, Southern Forest Experiment Station. 89p.

Hawkins, D. 2000. Traditional dove hunting. Mississippi Outdoors. 63(5):14-17.

Johnson, R. 1995. Supplemental sources of income for southern timberland owners. Journal of Forestry. 93(3):22-24.

Pease, J.L., M.L. Rankin, J. Berdon, and R. Reisz, ed. 1997. Why landowners restore wetlands: A national survey. Iowa State University Extension Service. 24p.

Rohweder, M.R., C.W. McKette, and R.A. Riggs. 2000. Economic and biological compatibility of timber and wildlife production: An illustrative use of production possibilities frontier. Wildlife Society Bulletin. 28(2):435-477.

United States Department of Agriculture, Natural Resources Conservation Service (USDA/NRCS). 1996. America's Private Land: A Geography of Hope. Program Aid 1548, USDA. Washington, D.C. 80p.

Yarrow, G.K. 1990. The role of landowner cooperatives in enhancing habitat and landowner income. In: D.C. Guynn, Jr. and G.K. Yarrow (Eds.). Fee Hunting Proceedings 1990: Fee Hunting on Private Lands in the South. Clemson University, Clemson, S.C. pp. 21-23.

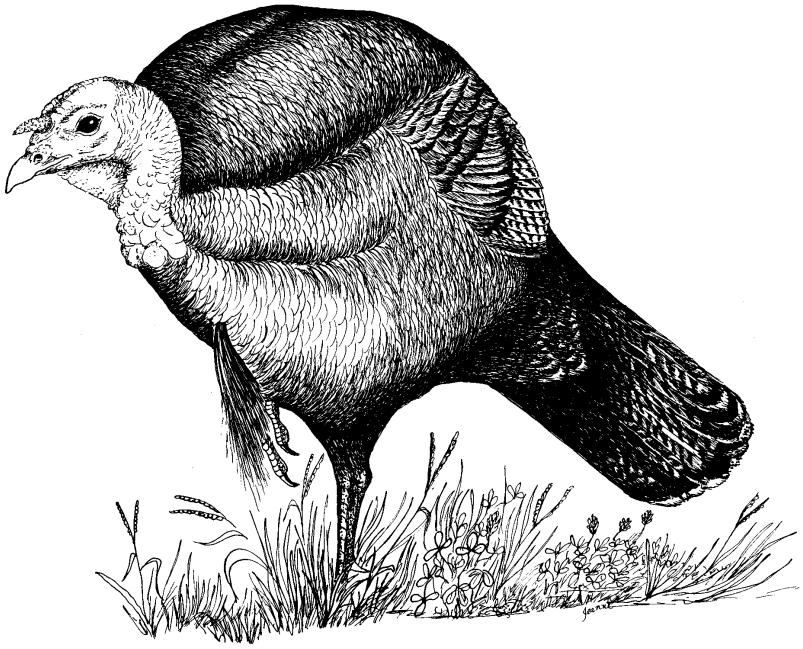


Table 1. Percentage of Mississippi respondents who allowed hunting on their land during the 1996-1997 and 1997-1998 hunting seasons.

Activity	State 1997 n = 653 %	Delta 1997 n = 567 %	State 1998 n = 555 %	Gulf Coast 1998 n = 508 %
Hunting Allowed	68	67	77	50
● Fee Hunting	11	14	14	8
● Hunting without a fee	64	60	68	44
✔ Family and friends	59	57	64	42
✔ General public by permission only	8	12	7	3
✔ General public without permission	4	1	3	2

Table 2. Average acreage owned in Mississippi by all survey respondents during the 1996-1997 and 1997-1998 hunting seasons.

Land Category	State 1997 n = 653	Delta 1997 n = 567	State 1998 n = 555	Gulf Coast 1998 n = 508
Forest	224	270	300	242
Agricultural	151	507	177	47
Other	23	54	22	23
Total	398	831	499	312
Wetlands[a]	23	158	28	25

[a] May occur in all land categories.

Table 3. Average acreage owned in Mississippi by respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons.

Land Category	State 1997 n = 71	Delta 1997 n = 79	State 1998 n = 69	Gulf Coast 1998 n = 39
Forest	925	775	941	1,445
Agricultural	205	539	285	52
Other	75	179	32	93
Total	1,206	1,439	1,258	1,590
Wetlands[a]	62	381	63	42

[a] May occur in all land categories.

Table 4. Average acreage owned in Mississippi by respondents not engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons.

Land Category	State 1997 n = 582	Delta 1997 n = 488	State 1998 n = 486	Gulf Coast 1998 n = 469
Forest	138	188	208	141
Agricultural	144	502	161	46
Other	17	34	21	17
Total	299	723	391	204
Wetlands[a]	19	183	23	18

[a] May occur in all land categories.

Table 5. Average acreage leased for hunting by Mississippi respondents involved in hunting leases during the 1996-1997 and 1997-1998 hunting seasons.

Region	% of total respondents	Acres owned	Acres leased %	Acres leased		
				Forested	Agricultural	Other
State 1997 (n = 56)	10	1,066	64	537	72	70
Delta 1997 (n = 60)	12	1,397	52	519	101	112
State 1998 (n = 64)	13	1,155	62	591	93	29
Gulf Coast 1998 (n = 38)	7	1,628	73	1,155	4	36

Table 6. Average acreage dedicated to permit hunting by Mississippi respondents involved in permit hunting during the 1996-1997 and 1997-1998 hunting seasons.

Region	% of total respondents	Permits sold	Acres owned	Acres permitted %	Acres permitted		
					Forested	Agricultural	Other
State 1997 (n = 10)	2	9	1,826	33	528	47	34
Delta 1997 (n = 9)	3	50	1,767	68	898	263	47
State 1998 (n = 12)	3	17	1,137	49	353	191	17
Gulf Coast 1998 (n = 2)	1	26	1,646	47	768	10	--

Table 7. Average acreage dedicated to hunting guides or outfitters by Mississippi respondents involved with guides or outfitters during the 1996-1997 and 1997-1998 hunting seasons.

Region	% of total respondents	Acres owned	Dedicated acres %	Acres leased		
				Forested	Agricultural	Other
State 1997 (n=2)	< 1	515	23	42	74	0
Delta 1997 (n=4)	< 1	3,340	51	1,349	272	75
State 1998 (n=0)	0	0	0	0	0	0
Gulf Coast 1998 (n=0)	0	0	0	0	0	0

Table 8. Game species featured in hunting leases by percentage of respondents involved in leasing during the 1996-1997 and 1997-1998 hunting seasons.

Region	Deer %	Waterfowl %	Turkey %	Quail %	Dove %	Other Game %
State 1997 (n = 56)	94	25	70	28	31	22
Delta 1997 (n = 60)	92	52	64	20	36	32
State 1998 (n = 64)	97	27	78	38	45	27
Gulf Coast 1998 (n = 39)	92	26	79	32	29	29

Table 9. Game species included in hunting permits by percentage of respondents involved in permit hunting during the 1996-1997 and 1997-1998 hunting seasons.

Region	Deer %	Waterfowl %	Turkey %	Quail %	Dove %	Other Game %
State 1997 (n = 10)	73	33	33	40	47	13
Delta 1997 (n = 9)	87	69	38	8	31	8
State 1998 (n = 12)	94	28	78	33	50	17
Gulf Coast 1998 (n = 2)	100	33	67	33	33	0

Table 10. Mean overhead expenditures by Mississippi respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons.

Expenditure Category	State 1997 n = 60	Delta 1997 n = 68	State 1998 n = 69	Gulf Coast 1998 n = 39
Manager	$29	$645	$14	$244
Consultant	0	0	0	37
Attorney	0	35	19	0
Accountant	39	71	11	15
Surveyor/appraiser	0	0	0	6
Liability insurance	47	146	41	135
Personal supervision	25	120	8	43
Road/trail construction	44	410	52	131
Trespass prevention/posting	13	14	5	17
Guest accommodations[a]	0	126	21	4
Purchasing released game	--	--	9	0
Other expenses	93	414	19	231
Total expenditures	$290	$1,981	$199	$863

[a]Construction costs were amortized over 27.5-year period.

Table 11. Mean overhead expenditures per acre by respondents engaged in fee hunting in Mississippi during the 1996-1997 and 1997-1998 hunting seasons.

Expenditure Category	State 1997 n = 60	Delta 1997 n = 68	State 1998 n = 69	Gulf Coast 1998 n = 39
Manager	$0.03	$0.72	$0.02	$0.20
Consultant	0.00	0.00	0.00	0.03
Attorney	0.00	0.04	0.02	0.00
Accountant	0.04	0.08	0.01	0.01
Surveyor/appraiser	0.00	0.02	0.00	0.01
Liability insurance	0.05	0.16	0.05	0.11
Personal supervision	0.03	0.13	0.01	0.03
Road/trail construction	0.05	0.46	0.06	0.11
Trespass prevention/posting	0.01	0.02	0.01	0.01
Guest accommodations[a]	0.00	0.14	0.03	0.01
Purchasing released game	NA	NA	0.01	0.00
Other expenses	0.10	0.46	0.02	0.19
Total expenditures	$0.31	$2.21	$0.24	$0.71

[a]Construction costs were amortized over 27.5-year period.

Table 12. Mean overhead expenditures by Mississippi respondents reporting expenditures during the 1996-1997 and 1997-1998 hunting seasons.

Expenditure Category	State 1997 (n)	Delta 1997 (n)	State 1998 (n)	Gulf Coast 1998 (n)
Manager	$583 (3)	$8,778 (5)	$32,225 (2)	$1,900 (5)
Consultant	0 (0)	0 (0)	1,500 (1)	108 (4)
Attorney	0 (0)	392 (6)	331 (4)	0 (0)
Accountant	588 (4)	808 (6)	242 (3)	192 (3)
Surveyor/appraiser	0 (0)	0 (0)	0 (0)	250 (1)
Liability insurance	311 (9)	740 (13)	1,583 (6)	1,054 (5)
Personal supervision	750 (2)	2,038 (4)	290 (2)	415 (4)
Road/trail construction	441 (6)	2,532 (11)	900 (4)	850 (6)
Trespass prevention/posting	150 (5)	190 (5)	117 (3)	217 (3)
Guest accommodations[a]	0 (0)	1,714 (5)	968 (3)	80 (2)
Purchasing released game	NA	NA	1,700 (2)	0 (0)
Other expenses	505 (11)	2,820 (10)	1,433 (3)	1,499 (6)
Total expenditures	$1,084 (16)	$7,469 (18)	$8,421 (11)	$2,399 (14)

[a]Construction costs were amortized over 27.5-year period.

Table 13. Mean overhead expenditures per acre by Mississippi respondents reporting expenditures during the 1996-1997 and 1997-1998 hunting seasons.

Expenditure Category	State 1997 (n)	Delta 1997 (n)	State 1998 (n)	Gulf Coast 1998 (n)
Manager	$0.06 (3)	$3.40 (5)	$20.52 (2)	$0.33 (5)
Consultant	0.00 (0)	0.00 (0)	1.32 (1)	0.28 (4)
Attorney	0.00 (0)	0.08 (6)	0.29 (4)	0.00 (0)
Accountant	0.16 (4)	0.19 (6)	0.20 (3)	0.04 (3)
Surveyor/appraiser	0.00 (0)	0.00 (0)	0.00 (0)	0.28 (1)
Liability insurance	0.13 (9)	0.30 (13)	1.09 (6)	0.34 (5)
Pesonal supervision	0.12 (2)	1.34 (4)	0.29 (2)	0.84 (4)
Road/trail construction	0.39 (6)	0.81 (11)	0.60 (4)	0.24 (6)
Trespass prevention/posting	0.12 (5)	0.09 (5)	0.07 (3)	0.04 (3)
Guest accomodations[a]	0.00 (0)	0.76 (5)	1.26 (3)	0.61 (2)
Purchasing released game	NA	NA	1.70 (2)	0.00 (0)
Other expenses	0.86 (11)	1.08 (10)	1.20 (3)	2.41 (6)
Total expenditures	$0.66 (16)	$3.61 (18)	$5.49 (11)	$0.92 (14)

[a]Construction costs were amortized over 27.5-year period.

Table 14. Mean wildlife management expenditures of Mississippi respondents engaged in wildlife management during the 1996-1997 and 1997-1998 hunting seasons.

Management Practice	State 1997[a] (n)	Delta 1997[a] (n)	State 1998[b] (n)	Gulf Coast 1998[b] (n)
Vegetation Management	$1,125 (135)	$1,020 (103)	$1,244 (13)	$346 (5)
Food and Cover	1,021 (134)	1,938 (110)	866 (11)	2,276 (6)
Stands and Blinds	542 (76)	738 (82)	1,258 (6)	840 (5)
Waterfowl Management	1,485 (15)	1,813 (52)	0 (0)	0 (0)
Total Expenditures	$2,332 (151)	$3,504 (135)	$2,556 (13)	$2,798 (7)

[a] Includes wildlife management expenditures for fee hunting lands and lands for the personal use of landowners.

[b] Includes wildlife management expenditures for fee hunting lands only.

Table 15. Mean wildlife management expenditures of Mississippi respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons.

Management Practice	State 1997[a] n = 60	Delta 1997[a] n = 68	State 1998[b] n = 69	Gulf Coast 1998[b] n = 39
Vegetation Management	$745	$398	$164	$44
Food and Cover	531	1,320	133	350
Stands and Blinds	121	309	104	108
Waterfowl Management	80	213	0	0
Total Expenditures	$1,477	$2,240	$401	$502

[a] Includes wildlife management expenditures for fee hunting lands and lands for the personal use of landowners.

[b] Includes wildlife management expenditures for fee hunting lands only.

Table 16. Mean wildlife management expenditures per acre of Mississippi respondents engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons.

Management Practice	State 1997[a] n = 60	Delta 1997[a] n = 68	State 1998[b] n = 69	Gulf Coast 1998[b] n = 39
Vegetation Management	$0.78	$0.45	$0.59	$0.04
Food and Cover	0.55	1.50	0.40	0.29
Stands and Blinds	0.13	0.35	0.29	0.09
Waterfowl Management	0.08	0.24	0.00	0.00
Total Expenditures	$1.54	$2.54	$1.28	$0.42

[a] Includes wildlife management expenditures for fee hunting lands and lands for the personal use of landowners.

[b] Includes wildlife management expenditures for fee hunting lands only.

Table 17. Mean gross revenues per landowner by fee hunting payment method during the 1996-1997 and 1997-1998 hunting seasons.

Payment Method	State 1997 (n)	Delta 1997 (n)	State 1998 (n)	Gulf Coast 1998 (n)
Leases	$2,645 (56)	$4,007 (60)	$3,646 (64)	$3,908 (38)
Permits	2,954 (10)	8,339 (9)	2,655 (12)	4,100 (2)
Outfitters/Guides	175 (1)	10,450 (4)	0 (0)	0 (0)
Total mean revenues	$2,964 (60)	$5,254 (68)	$3,844 (69)	$4,018 (39)

Table 18. Mean gross revenues per acre dedicated to fee hunting by payment method in Mississippi during the 1996-1997 and 1997-1998 hunting seasons.

Payment Method	State 1997 (n)	Delta 1997 (n)	State 1998 (n)	Gulf Coast 1998 (n)
Leases	$3.59 (56)	$5.66 (60)	$4.91 (64)	$3.27 (38)
Permits	5.89 (10)	6.50 (9)	3.87 (12)	3.70 (2)
Outfitters/Guides	1.35 (1)	6.16 (4)	0.00 (0)	0.00 (0)
Total gross revenues	$3.08 (60)	$5.86 (68)	$4.63 (69)	$3.28 (39)

Table 19. Mean net revenues per Mississippi landowner engaged in fee hunting during the 1996-1997 and 1997-1998 hunting seasons.

Cash flows from hunting	State 1997 n = 60	Delta 1997 n = 68	State 1998 n = 69	Gulf Coast 1998 n = 39
Gross Revenues	$2,964	$5,254	$3,844	$4,018
Overhead expenditures	290	1,981	199	863
Wildlife management expenditures	1,135	1,419	401	502
Net revenues[a]	$1,539	$1,845	$3,244	$2,655

[a] Net revenues for 1997 surveys are understated because the corresponding wildlife management expenditures include expenditures on lands for the personal use of landowners.

Table 20. Mean net revenues per acre dedicated to fee hunting by payment method in Mississippi during the 1996-1997 and 1997-1998 hunting seasons.

Payment Method	State 1997 (n)	Delta 1997 (n)	State 1998 (n)	Gulf Coast 1998 (n)
Leases	$2.85 (56)	$3.10 (60)	$4.59 (64)	$2.29 (38)
Permits	2.44 (10)	0.96 (9)	1.91 (12)	1.80 (2)
Outfitters/Guides	0.00 (1)	4.91 (4)	0.00 (0)	0.00 (0)
Net Revenues[a]	$1.60 (60)	$1.95 (68)	$3.91 (69)	$2.17 (39)

[a] Net revenues for 1997 surveys are understated because the corresponding wildlife management expenditures include expenditures on lands for the personal use of landowners.

Table 21. Mean ratings of problems associated with fee hunting reported by Mississippi respondents engaged in fee hunting during the 1997-1998 hunting season. Problems were rated on a scale from 1 (not a problem) to 5 (big problem).

Type of Problem	State 1998 Mean Rating	Gulf Coast 1998 Mean Rating
Loss of land control	1.56	1.25
Loss of privacy	1.82	1.39
Accident liability	1.91	2.03
Damage to property	1.77	1.67
Overharvest of wildlife	1.37	1.54
Poaching and trespassing	2.24	2.18
Financial gain not worthwhile	1.71	1.79
Breach of contract by hunters	1.27	1.34
Other	1.59	1.25

Table 22. Mean ratings of problems that deterred respondents from engaging in fee hunting rated by Mississippi respondents not engaged in fee hunting during the 1997-1998 hunting season. Problems were rated on a scale from 1 (not important) to 5 (very important).

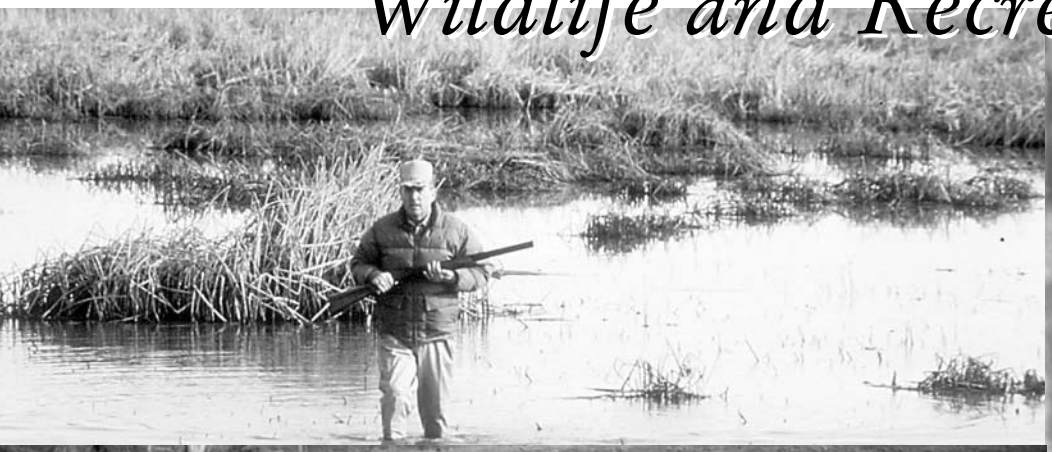
Type of Problem	State 1998 Mean Rating	Gulf Coast 1998 Mean Rating
Loss of land control	4.19	4.27
Loss of privacy	4.26	4.41
Accident liability	4.34	4.49
Damage to property	4.29	4.30
Overharvest of wildlife	3.60	3.73
Poaching and trespassing	4.19	4.23
Financial gain not worthwhile	3.75	3.88
Inability to obtain bank credit for fee hunting operations	1.80	1.74
Not knowledgeable in fee hunting arrangements	2.10	2.04
Land tract too small	2.59	2.87
No demand for fee hunting	2.37	2.10
Do not want wildlife hunted	3.15	3.59
Other	4.23	4.47



Forest and Wildlife Research Center
Mississippi State University
Box 9680
Mississippi State, MS 39762

Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability or veteran status.

kbrasher 02/01







Hunting Leases: Considerations and Alternatives for Landowners

Interest is growing in the South and throughout the United States for landowners to provide recreational access to their land for sportsmen and others to hunt, fish, and enjoy other types of outdoor recreation. For many farm, ranch, forest, and other landowners, alternative enterprises may provide an opportunity to sustain their natural resource base, maintain their quality of life, and increase annual profits.

Offering access to private land for recreational uses by the public can be a viable alternative enterprise. Natural resource-based alternative enterprises on private land range from producing products such as pine straw for mulching, to providing access for bird watching, trail riding, and hunting and fishing.

Recreational hunting and fishing leases have become an important source of supplemental income for many landowners in recent years, and the demand for access to private lands for recreational uses continues to grow. When these enterprises are appropriately developed and implemented, they will contribute to local community economies in many ways. However, there are many things to consider before implementing a hunting lease.

Not all private landowners will want to open their lands for such access and use, but for those who feel they would like to explore such

enterprises, some tradeoffs will be necessary. Landowners must consider and manage such enterprises as an integral part of their total operations. They must also keep in mind the long-term sustainability of their natural resource base on which the total operation depends.

The information in this publication helps you as a landowner make informed decisions about one potential alternative natural resource-based enterprise – hunting leases. Much of the information in this publication comes from a number of sources, including scientific papers presented at various conferences, and from personal experience working with private landowners and recreational users over the past 35 years.

This publication does not provide all-inclusive, definitive information on hunting leases for any individual. Natural resource productivity and sustainability capabilities in different areas are not necessarily the same. Each geographic site capability is different. Each landowner's objectives and management skills are different. Figures in this publication for fees charged per acre and minimum amounts of acreage suggested for specific kinds of hunting operations may not be appropriate for every operation. Some of the figures provided are "rule of thumb" or "ballpark" estimates for consideration based on regional or statewide surveys and informal discussions with enterprise operators. Liability insurance sources provided are simply sources known, and it is very likely there are many other providers. Sample lease agreements and sample hunting club bylaws are simply templates that you, a manager, or a hunting club group may find useful to customize for individual and operation needs.

Types of Hunting Leases

A hunting lease is an agreement between you as the landowner (lessor) and hunters (lessees) that grants the hunter access rights for hunting game animals (and other specified activities) on your property for a specified time period. Hunters usually pay you an agreed-upon dollar amount per acre or per hunter. However, in some leases you may agree to a smaller combination of dollars per acre or per hunter with a written agreement that the hunter or hunters perform some service in exchange for the privilege of hunting access. There are numerous kinds of leases and agreements based on the agreed-upon collaboration (usually in writing) between the lessor and lessee. Following are some common types of hunting leases:

Long-Term

- ✔ Seasonal lease – all species of game legal to hunt
- ✔ Seasonal lease – specified animal or animals
- ✔ Annual or multi-year lease – all species
- ✔ Annual or multi-year lease – specified game animal or animals.

Short-Term

- ✔ Daily hunting, often by permits
- ✔ Weekly hunts
- ✔ Multi-day (three to five) day hunts
- ✔ Special Season Hunts – such as bow, muzzleloader, or rifle only.

The most common types of hunting leases are the long-term annual and long-term seasonal. Under this type of leasing system, you generally provide individual hunters or groups of hunters the privilege of access to your land for hunting for a season, a full year, or for several consecutive years.

This type of leasing usually allows the hunter or hunters the privilege of hunting legal game species during specified open seasons, with fees assessed on a cost per-acre or lump sum basis. These leases let you specify which game species can be hunted, and you can reserve hunting rights for yourself, your guests, and immediate family. In fact, depending on the interests of the lessee and your willingness, these leases can be customized to the satisfaction of both you and the lessee, as well as the agreed-upon price paid for the privilege of leasing.

For many landowners, such long-term seasonal or annual leases for a set price per acre or lump sum seem to be the easiest to negotiate and require the least oversight. If you are satisfied with this type of arrangement, the lease fee is satisfactory, and the lessee(s) has demonstrated appropriate and responsible care of the land and resources, you can continue such annual leases on a multi-year arrangement.

Long-term leases have advantages and disadvantages. The advantages are that such leases generally result in better landowner-sportsmen relationships, because you get to know the lessee(s) personally, helping to build trust over time, and the sportsmen get to understand what your objectives are, and they become interested in helping manage the properties to meet these objectives. The longer time that lessee(s) lease a property, the better they come to know it, and the more likely they will become interested in working with you to improve habitat management for wildlife. The more provincial interest they develop in the property, the more they will help to prevent trespass and poaching. If you are satisfied with the long-term arrangement, you can project anticipated income.

The disadvantage is that sometimes such long-term lease arrangements make it difficult to increase lease fees when you need to, and some lessee(s) take such an interest that they begin to think of the property as theirs and forget to honor your rights. However, both sportsmen and landowners are more often willing to make time, labor, and financial investments in leased property when they know they have a secure arrangement for more than one year or season. Such long-term lease arrangements can be for specific game species only or offer hunting for all legal game species to the lessee(s). It can include such other activities as scouting before hunting seasons, camping, and fishing if available.

If you are active in the day-to-day management of the property, you may also choose to lease access rights for hunting one particular species to one hunter or group of hunters and to yet another hunter or group of hunters for hunting another species. An example would be deer hunting to one group and spring turkey hunting to another, or dove hunting to one group and waterfowl hunting to another. Obviously this works best when seasons do not overlap, and it generally requires intensive involvement by you or someone you assign such management responsibilities to. These leases usually return the most annual income but clearly also require the most intensive involvement of you or a manager. They also require more labor, time, and habitat management investments, such as providing dove fields, food plots, waterfowl blinds, and other requirements.

Short-term leases can be on a daily permit basis, such as for dove hunting; a per weekend basis for deer or waterfowl hunting; a weekly basis during a special season, such as bow hunting or muzzleloader hunting; or for a one-season, special management type of hunt, such as a late-season doe hunt only. Some of these hunts can be packaged to include guides, lodging if available (on the lease property or at a local motel), and meals. Clearly this type of leasing arrangement requires intensive management and marketing for greatest success, but it can yield a higher rate of return and does not obligate the entire property for an entire hunting season or year. In other words, you can provide access to limited portions of the land for shorter periods of time and can limit the hunting to the species desired.

Hunting leases can be developed by sportsmen contacting you directly about the potential of leasing your land for hunting rights access. Or a broker may make such arrangements. However, more and more landowners interested in leasing their land for hunting access are finding that newspaper and magazine ads or a web site will often locate willing hunters or groups of hunters interested in leasing tracts of land for hunting privileges. There can be some advantage for some owners, particularly nonresident landowners, in having a broker take care of the advertising and locating and dealing with responsible lessee(s) and with neighboring landowners. Another advantage is the broker can help ensure the lessee(s) honor their lease and pay on time. However, such brokers will come at a cost.

Before beginning a hunting lease program, you need to consider a number of things and be prepared to spend some time, labor, and resources to determine the value of your resources, how to manage and sustain them as renewable natural resources, what your long-term objectives are, and if such a leasing program is compatible with your other land management objectives. You also should recognize the advantages and disadvantages of leasing your land for hunting, such as these:

Advantages

- ✔ Can be a dependable source of additional annual income

- ✔ Can provide in-kind labor assistance from lessee(s)
- ✔ Can help reduce trespass problems
- ✔ Can help you gain better control of who is using the land for what purposes
- ✔ Can complement other land management operations
- ✔ Can improve other recreational opportunities
- ✔ Can benefit local community economy
- ✔ Can help you better manage wildlife habitat and populations

■ *Disadvantages*

- ✔ Increased liability concerns and costs
- ✔ Will require increased landowner or manager involvement of dealing with lessee(s)
- ✔ Could mean some tradeoffs in other operations
- ✔ Could present conflicts with neighbors
- ✔ Likely to require some investment in habitat and access management
- ✔ Will require record keeping, evaluation, and business management

HUNTING LEASE AGREEMENTS

Without question, most hunting leases should be undertaken only with a written agreement. Such an agreement serves as a contract that protects the agreed-upon rights of both you (lessor) and the sportsman (lessee). The significance of a well-considered written lease agreement cannot be over emphasized, since it is the foundation for a successful hunting lease program. Effective hunting lease agreements protect your interests yet allow enough flexibility to permit enjoyment of the access rights provided to the sportsmen or lessee(s). Such leases can be developed from "boiler-plate" examples but can be customized to protect you against later conflicts. A lease must be well thought out before being finalized and agreed to by you and lessee(s). Most of the potential conflicts between you and lessee(s) can be prevented, and a good working relationship can be maintained by having a mutually agreed-upon written lease. Some "boiler-plate" examples of written hunting leases are provided in the back of this publication for examination and modification to meet individual needs. Your needs and desires are paramount but must be tempered by recognizing the needs and desires of the lessees and what they are willing to pay for.

■ *Considerations when Developing A Lease Agreement*

- ✔ **References** – If you are not familiar with sportsmen or groups who desire to lease your property, you should not hesitate to ask for references. You may get references from other landowners who leased to the lessee(s) previously or from Conservation officers or community leaders who know the person(s).
- ✔ **Proof of liability insurance** – As part of the lease agreement you can require the lessee(s) to pay for liability insurance (with your name listed on the policy) and provide proof of coverage by keeping a copy of the insurance policy with proof of purchase. Requirements for liability insurance can be written into the lease agreement. Be sure such policies cannot be canceled during the lease time. This precaution transfers a large portion of the liability to the lessee(s). Otherwise you are responsible for the costs of appropriate liability insurance coverage to ensure your protection.
- ✔ **Establish and maintain open communication** – An open channel of communication from the beginning prevents potential misunderstanding between you and sportsmen. For hunting clubs or organized groups of lessees, try to arrange a time before the hunting season to meet with the group and get to know them.
- ✔ **Organized groups/hunting clubs** – Hunting clubs should be well organized and governed by self-regulating bylaws and have a contact person designated. A sample of hunting club bylaws is provided in the back of this publication. You should receive a copy of adopted bylaws.
- ✔ **Lease to local sportsmen when possible** – Local sportsmen, if willing to pay, can often help look after property. Having such local participation often avoids the local resentment of the "outsider" image.
- ✔ **Annual meetings** – You should meet with sportsmen groups or hunting clubs who lease your land at least once each year before the hunting season to discuss land use changes,

modifications that may be needed to the lease agreement, or your need for some help improving habitat or hunting opportunities.

- ✔ **Limit hunters and guests** – For the benefits of safety, enjoyment, and protection of the resource, the number of hunters must be restricted. For example, too many hunters using the property at any one time during the season may compromise the safety, enjoyment, and sustainability of the resources. Here are some rules of thumb for consideration with exceptions for different kinds of habitat and hunting: for deer hunting, one hunter per 100 acres; for waterfowl hunting, one hunting party per 100 acres of wetlands or waterfowl habitat; and for turkey, one hunter per 200 acres.
- ✔ **Written rules** – Consider drafting written rules aimed at preventing potential accidents and protecting property, especially if there are known hazards, such as old wells, sinkholes, and other risks to personal safety on the property. Make sure all lessees are aware of these written rules, and have them sign a statement that they have read and understand these rules.
- ✔ **Incorporation** – Hunting clubs representatives (officers) cannot legally represent the entire club when signing a lease agreement unless the club or group is incorporated. If the club or group is not incorporated, each member of the club/group must sign and date the written lease agreement.
- ✔ **Liability risk reduction** – In addition to requiring the club/group to purchase an insurance policy to cover liability, you should practice a risk reduction program that reduces all known hazards on the property. Keep records of such efforts to reduce or eliminate known and potential risks to lessees. You should keep accurate records in case of a libel suit. Identify hazards you cannot reduce or eliminate, and explain them to lessees with a map and written description.

  Here are other considerations: If ATVs are to be used on property, require additional rider insurance from lessees. Avoid single-strand cable gates, or have them clearly marked and flagged. If portable tree stands are to be used, make sure lessees' liability insurance covers such use, or require permanent stands to be used. In accord with state law, require sportsmen to pass an approved hunter safety program and show a certificate of completion. (Anyone born after January 1, 1972 is legally required to complete a hunter education course before purchasing a Mississippi hunting license. Also, anyone 12 years of age but under 16 years of age must have a certificate showing completion of a hunter education course approved by the Department of Wildlife, Fisheries, and Parks before hunting in Mississippi.)
- ✔ **Attorney lease review** – Have an attorney review the written lease before it is agreed to and signed by either party. This helps protect both parties and clarifies that the agreement is legal and binding.
- ✔ **Up-front payment** – The agreed-upon lease payment should be made before the hunting season begins, preferably before the date of the lease period. This ensures that payment is made before the hunt begins, and it allows the owner the potential of investing the funds and earning interest.
- ✔ **Permanent structure policy** – You may or may not want the lessee to put up permanent structures, such as buildings, sheds, or cabins. If you do permit any of these, you should decide what types of structures to allow and what should happen to these structures if and when the lease is terminated.
- ✔ **Vehicle restriction** – You may want to restrict what type of vehicles may be used on identified roads and trails and/or restrict the use of particular types of vehicles to certain roads on the property.
- ✔ **Notification of presence** – You may require hunters to check in and out via a check station or notify you in advance by phone or in writing when hunting or otherwise accessing the property.
- ✔ **Arbitration** – Disputes can arise, regardless of how well the lease agreement is written. Some leases specify using arbiters who were agreed upon in advance by both parties. The arbiter should be a neutral party, such as an attorney, conservation officer, or other mutually agreed-upon individual.
- ✔ **Game law violations** – In case game laws are violated, unintentionally or intentionally, the club/group bylaws need to ensure the violation is reported to both the local conservation officer and to the landowner.

✔ **Automatic lease renewal** – If you are pleased with the lessee(s), you may want to provide for an automatic lease renewal agreement consideration. This can be put into effect barring conflicts or need for some change in the agreement, if agreed upon 90 days before the lease terminates. This may be an advantage for both parties if things are going well.

■ *Suggested Items To Include In a Written Hunting Lease*

✔ Your name, address, and phone number and the same information for the sportsmen, group, or club (lessees).

✔ The purpose of the hunting lease, describing the species of game allowed to be hunted as well as other activities allowed on the property, such as camping, fishing, scouting, permanent structure placement, and disposal.

✔ A description of the property with the location of the tract, boundaries, and areas off limits to hunting access. You should also provide a map with the property description. It is wise to conduct a tour of the property or tract to be leased with lessees to point out clearly marked property boundaries as well as any known restricted-use areas or hazards. In the description it is helpful to point out the present condition of the property, such as 20-year-old pine plantation, row crop areas, pasture, restricted areas, and reasons for restrictions.

✔ The duration of the lease, describing the beginning and ending dates of the lease, whether seasonal or annual, or longer term.

✔ The method of lease payment, stating how much the lessee(s) must pay and a date when payment must be received. Penalties for late payment can be described but must be well in advance of the beginning of the hunting season.

✔ Damage provisions and a deposit (if you think this is needed) to cover the costs of damage or loss of your property, livestock, or other resources if not repaired or compensated. Such damage provisions should specify that the lessee(s) are responsible for any damages or losses they or their guests (if allowed) cause to the property or to your assets. You should return damage deposits to the lessee(s) if damage is corrected or does not occur during the effective lease period.

✔ A termination of a lease clause with provisions to cancel a lease agreement if either party fails to abide by the terms of the written lease agreement, such as a lessee's violating state or federal game regulations. It must also ensure your or your heirs' rights to cancel a lease if you sell the property or if you die within the effective lease period.

✔ A subleasing clause that specifies whether the lessee(s) can sublease or assign leasing rights to a third party. You should avoid the idea of subleasing your property to third party access by the original lessee(s).

✔ The lessee's responsibilities should be clearly defined within the agreement to include these items: closing gates and repairing broken fences; obeying all state and federal game regulations; helping put out wildfires; evicting trespassers or at least immediately contacting the owner or local law enforcement personnel; adhering to the management plan regarding game harvest recommendations; keeping good game harvest records; appropriate posting of the property; restrictions on the use of alcohol; and off road vehicles as you determine.

✔ Your (lessor) responsibilities should be clearly defined within the lease to include duties (as you agree to provide) such as maintaining roads, planting food plots or preparing fields for dove hunting, and providing facilities for lodging or for cleaning and storing harvested game. Obviously these duties and amenities have a cost, and you will have to consider them in the cost of the lease.

✔ Your rights as the landowner must be clearly stated in the lease, such as the right to continue to manage the land to meet your identified objectives, the right to allow family members defined hunting privileges, and the right to request removal of a club or group member who violates property or approved behavior codes.

✔ You can add indemnity clauses or "hold harmless" disclaimers to the lease agreement. These may protect you from liability if someone is injured on your land. You can use them as proof that an injured lessee assumed the risks of doing a particular activity like climbing a tree or

crossing a fence. They do not, however, relieve you of liability associated with demonstrated negligence.

- ✔ The number of members allowed in lessee club/group.
- ✔ The number of guests, if allowed, and the number of total lessee(s) and invited guests that may be on the property to hunt at any specific time.

■ *Determining Hunting Lease Price Structure*

If you have no experience leasing land for hunting access, one of the most difficult decisions is determining a fair market price that is competitive yet gives you a reasonable return for the lease and any services or amenities provided. The following are known methods but are by no means the only methods:

- ✔ **Break even plus 10 percent** – The lease price is based on management and costs associated with the lease operation plus 10 percent to cover unforeseen costs and the need for the lease to cover operational costs and land taxes.
- ✔ **Habitat valuation** – The lease price is determined from a subjective rating of the quality and quantity of wildlife habitat available. For example, if the wildlife habitat and populations have been managed to provide high populations of wildlife and better than average hunting opportunities, the value of the lease may be higher, or if the lessee(s) want to limit or keep out other hunters that the property could reasonably sustain, they may have to pay a premium price for that.
- ✔ **Baseline plus value-added** – You charge a base price per acre plus charges on improvements made, amenities, or services provided.
- ✔ **Competitive pricing** – You base the lease price on the going rate of other leases in the area or lease prices charged elsewhere for similar access, services, and amenities provided.
- ✔ **Sealed bid** – This is similar to timber sales in that you develop a description of the hunting lease and what it offers, and you request sealed bids. You can do this via advertising or by contacting individuals or sportsmen groups who may have an interest.

How To Find a Responsible Lessee

It may be difficult to identify and locate responsible hunters who will take an interest in the land and resources being leased and who will respect the property and abide by terms and conditions in a written lease. It will pay dividends in the long-term, however. Without appropriate screening of lessee(s), you may find yourself with an unmanageable group who have no regard for your rights or maintaining the property and the sustainability of the habitat and wildlife. Many problems could arise, such as trash dumping, wildfires, road and tree damage, illegal hunting, damage to facilities and livestock, and over harvest of the game resource. For the most part, you can avoid these problems by using these practices:

- ✔ leasing to known sportsmen with some local members
- ✔ developing and using a well-constructed written lease that protects your interests and that every member, if the club or group is not incorporated, must sign, or if incorporated, that the representative makes sure every member has read and understands.

Remember that after you locate interested lessee(s) ask them to provide a list of references, and use this list to ensure they have not had problems in the past leasing lands from other landowners and are known to be responsible and ethical sportsmen. If the lessee(s) pass this background check, conduct a personal interview with the lessee(s) or their representative, if the group is incorporated. Develop a list of questions in advance that you want to have answered, and don't be afraid to ask tough questions. Then use all the information to make an informed decision about leasing to the lessee(s) and if you think they are willing to accept and abide by the terms of the written lease agreement.

■ *Trespass*

Mississippi law forbids all persons to enter private lands without permission from the landowner. Hunting, fishing, or trapping on land without permission of the landowner is a misdemeanor punishable by a fine and possible imprisonment. The trespass law is enforceable by conservation officers and county sheriffs.

Summary

Recreational access leases have become an important source of alternative income for many forest and agricultural landowners in the South as well as in other parts of the United States. Most forest industry landowners and managers now consider income from recreational access leases as a vital part of their resource and financial decision-making process.

If you as a private landowner consider such leases as an alternative enterprise to supplement your income, you should understand the advantages and disadvantages of the leases. You also must consider and remember you are not selling wildlife, which is publicly owned. You are selling the opportunity and privileges that go with access to your land for the purposes specified in the written lease agreement. Having some idea of the habitat quality and status of wildlife populations on your land will be important in making decisions. The sustainability of your renewable resources is the key to long-term income potential as well as sustainability of the operation. Recreational access/hunting leases can become an enjoyable and rewarding experience for you (lessor) and sportsmen (lessees) with advance planning, preparation, management, and communication.

As far as the economic potential of hunting leases, the range of returns varies considerably based on the type of lease. One example would be high quality waterfowl blinds leases that bring the highest annual returns per acre of access, versus leases for small game hunting that may be as low as 50¢ per acre, to high quality big game leases that may go for as much as $25.00 per acre or more in some areas. A recent study of fee hunting in Mississippi reported that for the 1997-98 season, annual net revenues averaged $3.91 per acre statewide by landowners leasing their lands for hunting.



Sample Hunting Lease Agreement

This hunting lease agreement is for educational purposes only. It is important to check with your attorney before writing and signing a binding legal agreement. You may want this lease to be more detailed or include more requirements, or you may want it to be less detailed. If you want to provide other services or rights, such as guides, cleaning game, or allowing the lessee to improve the habitat, you should include those provisions.

STATE OF:

COUNTY OF:

TRACT:

This Lease Agreement (the "Lease") entered into as of the day of _____, by and between _____ hereinafter referred to as Lessor, and _____a/an (state whether an individual, a partnership, corporation, or unincorporated association) hereinafter referred to as Lessee.

The Lessor agrees to lease the Hunting Rights, as defined below, on _____acres more or less, to Lessee for _____ ($_____/Acre), for a term commencing on _____, (the "Commencement Date") and ending on _____ (the "Expiration Date") on the following described property (the "Land").

See Attached Description

The Hunting Rights shall consist of the exclusive right and privilege of propagating, protecting, hunting, shooting and taking game and waterfowl on the Land together with the right of Lessee to enter upon, across and over the Land for such purposes and none other.

This Hunting Lease Agreement shall be subject to the following terms and conditions:

PAYMENT

1. The Lessee shall pay to the Lessor _____, the amount of one (1) year's Rent in full, on or before _____ by check payable to Lessor.

COMPLIANCE WITH LAW

2. Lessee agrees for itself, its licensees and invitees to comply with all laws and regulations of the United States and of the State and Local Governments wherein the Land lies relating to the game or which are otherwise applicable to Lessee's use of the Land. Any violation of this paragraph shall give Lessor the right to immediately cancel this Lease.

POSTING

3. Lessee shall have the right to post the Land for hunting to prevent trespassing by any parties other than Lessor, its Agents, Contractors, Employees, Licensees, Invitees, or Assigns provided that Lessee has obtained the Lessor's prior written approval of every sign designed to be so used. Every such sign shall bear only the name of the Lessee. Lessor reserves the right to prosecute any trespass regarding said Land but has no obligation to do so.

LESSOR'S USE OF ITS PREMISE

4. Lessor reserves the right in itself, its Agents, Contractors, Employees, Licensees, Assigns, Invitees, or Designees to enter upon any or all of the Land at any time for any purpose of cruising, marking, cutting or removing trees and timber or conducting any other acts relating thereto and no such use by Lessor shall constitute a violation of this Lease. This right reserved by Lessor shall be deemed to include any clearing, site preparation, controlled burning and planting or other forestry work or silvicultural practices reasonably necessary to produce trees and timber on the Land. Lessee shall not interfere with Lessor's rights as set forth herein.

GATES/BARRIERS

5. Lessor grants to Lessee the right to install gates or other barriers (properly marked for safety) subject to the written permission of Lessor and the terms and conditions relating thereto as set forth elsewhere in the Lease, on private roads on the Land, and Lessee agrees to provide Lessor with keys to all locks prior to installation and at all times requested by Lessor during the term of this Lease.

ROAD OR FENCE DAMAGE

6. Lessee agrees to maintain and surrender at the termination of this Lease all private roads on the Lands in at least as good a condition as they were in on the date first above-referenced. Lessee agrees to repair any fences or other structures damaged by itself, its licensees or invitees.

ASSIGNMENT

7. Lessee may not assign this Lease or sublease the hunting rights the subject of this Lease without prior written permission of Lessor. Any assignment or sublease in violation of this provision will void this Lease and subject Lessee to damages.

FIRE PREVENTION

8. Lessee shall not set, cause or allow any fire to be or remain on the Land. Lessee covenants and agrees to use every precaution to protect the timber, trees, land, and forest products on the Land from fire or other damage, and to that end, Lessee will make every effort to put out any fire that may occur on the Land. In the event that any fire shall be started or allowed to escape onto or burn upon the Land by Lessee or anyone who derives his/her/its right to be on the Land from Lessee, Lessor shall have the right immediately to cancel this Lease without notice, and any payments heretofore paid shall be retained by Lessor as a deposit against actual damages, refundable to the extent such damages as finally determined by Lessor are less than said deposit. In addition, Lessor shall be entitled to recover from Lessee any damages which Lessor sustains as the result of such fire. Lessee shall immediately notify the appropriate state agency and Lessor of any fire that Lessee becomes aware of on Lessor's lands or within the vicinity thereof.

INDEMINIFICATION AND INSURANCE

9. Lessee shall indemnify, defend and hold harmless Lessor, its directors, officers, employees and agents from any and all loss, damage, personal injury (including death at any time arising therefrom) and other claims arising directly or indirectly from or out of any occurrence in, or upon, or at the said Lands or any part thereof relating to the use of said Land by Lessee, Lessee's invitees or any other person operating by, for or under Lessee pursuant to this Lease. Lessee further agrees to secure and maintain a $1,000,000 public liability insurance policy in connection with the use of the Land with Lessor named as

insured and with such insurance companies as shall be agreeable to Lessor. This indemnity shall survive the termination, cancellation or expiration of this Lease.

RULES AND REGULATIONS

10. Lessor's rules and regulations attached hereto as Exhibit "A" are incorporated herein by reference and made an integral part hereof. Lessee agrees that any violation of said rules and regulations is a material breach of this Lease and shall entitle Lessor to cancel this Lease as its option effective upon notice by Lessor to Lessee of such cancellation.

    Lessor reserves the right from time to time, to amend, supplement or terminate any such rules and regulations applicable to this Lease. In the event of any such amendment, supplement, or termination, Lessor shall give Lessee reasonable written notice before any such rules and regulations shall become effective.

MATERIAL TO BE SUBMITTED TO LESSOR

11. If this Lease is executed by or on behalf of a hunting club, Lessee shall provide Lessor, prior to the execution hereof, a membership list including all directors, officers, and/or shareholders, their names and addresses and a copy of Lessee's Charter, Partnership Agreement and By-Laws, if any. During the term of this Lease, Lessee shall notify Lessor of any material change in the information previously provided by Lessee to Lessor under this paragraph 11.

LESSEE'S LIABILITY RE: TREES, TIMBER, ETC.

12. Lessee covenants and agrees to assume responsibility and to pay for any trees, timber or other forest products that may be cut, damaged, or removed from the Land by Lessee or in connection with Lessee's use of the Land or any damages caused thereupon.

NO WARRANTY

13. This Lease is made and accepted without any representations or warranties of any kind on the part of the Lessor as to the title to the Land or its suitability for any purposes; and expressly subject to any and all existing easements, mortgages, reservations, liens, rights-of-way, contracts, leases (whether grazing, farming, oil, gas or minerals) or other encumbrances or on the ground affecting Land or to any such property rights that may hereafter be granted from time to time by Lessor.

LESSEE'S RESPONSIBILITY

14. Lessee assumes responsibility for the condition of the Land and Lessor shall not be liable or responsible for any damages or injuries caused by any vices or defects therein to the Lessee or to any occupant or to anyone in or on the Land who derives his or their right to be thereon from the Lessee.

USE OF ROADS

15. Lessee shall have the right to use any connecting road(s) of Lessor solely for ingress, egress, or regress to the Land; such use, however, shall be at Lessee's own risks and Lessor shall not be liable for any latent or patent defects in any such road nor will it be liable for any damages or injuries sustained by Lessee arising out of or resulting from the use of any of said Lessor's roads. Lessee acknowledges its obligation of maintenance and repair for connecting roads in accord with its obligation of maintenance and repair under paragraph 6.

SURRENDER AT END OF TERM

16. Lessee agrees to surrender the Land at the end of the term of this Lease according to the terms hereof. There shall be no renewal of this Lease by implication or by holding over.

MERGER CLAUSE

17. This Lease contains the entire understanding and agreement between the parties, all prior agreements between the parties, whether written or oral, being merged herein and to be of no further force and effect. This Lease may not be changed, amended or modified except by a writing properly executed by both parties hereto.

CANCELLATION

18. Anything in this Lease to the contrary notwithstanding, it is expressly understood and agreed that Lessor and Lessee each reserve the right to cancel this Lease, with or without cause, at any time during the Term hereof after first giving the other party thirty (30) days prior written notice thereof. In the event of cancellation by Lessee, all rentals theretofore paid and unearned shall be retained by the Lessor as compensation for Lessor's overhead expenses in making the Land available for lease, and shall not be refunded to Lessee.

APPLICABLE LAW

19. This Lease shall be construed under the laws of the State first noted above.

IN WITNESS WHEREOF, the parties have hereunto caused this Agreement to be properly executed as of the day and year first above written.

WITNESSES:

Sample Hunting Lease Agreement

This hunting lease agreement is for educational purposes only. It is important to check with your attorney before writing and signing a binding legal agreement. You may want more details or fewer details than this lease includes. If you want to provide other services or rights, such as guides, cleaning game, or allowing the lessee to improve the habitat, they should be included.

_____, owner of _____farm, (legal description of the land), County, (state), herein referred to as "Landowner," for good and sufficient consideration, as hereinafter set forth, leases hunting rights on those portions of the _____ farm, hereinafter described, to _____ and others so executing this agreement and hereinafter referred to as "Lessees," on the following terms and conditions:

1. The tract of land, hereinafter referred to as "lease" upon which hunting rights are granted, is the _____ farm described herein consisting of approximately _____ acres.

   (description of land with aerial photograph if available)

   Lessees understand the location and boundaries of said tract and agree that no hunting rights are granted hereunder on any tract other than the tract herein designated and that no hunting or discharging of firearms shall be done by Lessees while traveling to or from the lease.

2. This agreement and the rights and duties granted and incurred hereunder shall be for a term commenc ing with the opening of _____ season in 20___, and the closing of _____ season in 20_____, as set for _____ County, (state), under regulations enforced by the (state wildlife agency) unless terminated pursuant to provisions of this agreement hereinafter set forth. Provided that either the Landowner or Lessee may cancel this agreement by giving written notice of its intent to do so thirty (30) days prior to the date that rental for the second or third year of the term here provided is due. In which event, Lessee shall be relieved of the obligation to pay further rental under the terms and shall deliver possession of the premises.

3. The consideration to be paid by Lessee to Landowner at _____ County, (state), is $_____ in cash, one-half to be paid on or before June 1, 20_____, and the balance to be paid on or before October 1, 20_____. Failure to pay the second installment shall thereupon terminate and cancel the lease and the amount already paid shall be forfeited as liquidated damage for the breach of the agreement. A $_____ deposit will be required to insure that lease premises are left in a clean and order ly condition. Farm personnel will inspect the premises within 30 days after the lease expires. If cleanup is necessary, the farm will accomplish such, and the $_____ deposit will be forfeited by the Lessees. If the premises are determined by farm personnel to be clean and orderly, the $_____ deposit will be returned to the Lessees within 60 days after expiration of the lease.

4. Lessees shall not assign this lease or sublet the leased premises without the written consent of _____.

5. Lessees shall at all times abide by and obey all state and federal hunting laws and regulations and Lessee shall be responsible for the conduct of Lessee's guests or members in connection with said hunting laws and shall be responsible for any violation of said hunting laws or regulations by said Lessee, its guests, or members. Any violation of the hunting laws or regulations of any governmental authority shall give rise to the right of immediate cancellation of this lease by the Landowner upon written notice to Lessees, and in the event of the cancellation of said lease due to violation of game laws by Lessees, its guests or members, no prorata of the rent previously paid shall be made, same to be forfeited as liquidated damages, and Lessees shall, upon receipt of such notice, immediately vacate and surrender unto the Landowner possession of the leased premises.

   Lessees shall, during the period in which it has access to the leased premises, continually protect same against trespassers and squatters, and to the best of Lessee's ability have such persons apprehended and prosecuted.

6. This lease agreement is expressly made subject to the "General Conditions of the Lease," which are attached hereto as Exhibit "A," and made a part hereof for all purposes the same as if copied herein verbatim.

7. If Lessees default in the performance of any of the covenants or conditions hereof, including the "General Conditions of Lease," which are attached hereto as Exhibit "A," then such breach shall cause an immediate termination of this lease and a forfeiture to Landowner of all consideration prepaid. The Lessee shall have no further rights under the term of this lease agreement. In the event a lawsuit arises out of or in connection with this lease agreement and the rights of the parties thereof, the prevailing party may recover not only actual damages and costs but also reasonable attorneys' fees expended in the matter.

8. Landowner shall not be liable for any injuries, deaths, or property damage sustained by (1) any Lessees hereto, (2) any employees of Lessees, (3) any business invitees of Lessees, (4) any guest of Lessees, (5) any person who comes to the leased premises with the express or implied permission of Lessees on the _____ farm with permission of the Lessee hereunder except for such injury, death, or property damage as may be sustained directly as a result of Landowner's sole negligence. Lessee hereunder jointly and severally agrees to indemnify Landowner, his agents or employees against any claim asserted against Landowner or any of Landowner's agents or employees as a result of personal injury, death or property damage arising through: (1) the negligence of a Lessee or any persons on the farm with the permission of a Lessee, or (2) through the concurrent negligence of a Landowner or his agents or employees any one or more of Lessees or any person on the _____ farm with the permission of the Lessee.

   All minors permitted by Lessee to hunt, fish, or swim on the leased premises shall be under the direct supervision of one of their parents (or guardian) and when children are present on the leased premises, the parents shall be fully responsible for their acts and safety and agree to hold Landowner harmless therefor, regardless of the nature of the cause of damage, whether property or personal injury, to themselves or others.

9. The leased premises are taken by Lessee in an "as is" condition, and no representation of any kind is made by _____ regarding the suitability of such premises for the purpose for which they have been leased.

10. This lease may not be terminated or repudiated by Lessee except by written notice signed and acknowl edged in duplicate before a Notary Public by Lessee, and such termination or repudiation shall not be effective until Lessee has mailed one executed copy thereof to Landowner by registered mail and filed the other executed copy thereof for record in the Office of the County Clerk, _____ County, (state). This lease shall be binding upon the distributes, heirs, next of kin, successors, executors, administrators, and personal representatives of each of the undersigned. In signing the foregoing lease, each of the undersigned hereby acknowledges and represents:

    (a) That he has read the foregoing lease, understands it, and signs it voluntarily; and
    (b) That he is over 21 years of age and of sound mind;

In witness whereof, the parties have set their hands this the _____ day of _____, 20_____.

LESSEES: DATE: LANDOWNER: DATE:

_____ _____

_____

_____ WITNESS: DATE:

_____ _____

_____

STATE OF _____

COUNTY OF _____

The foregoing instrument was subscribed, sworn to, and acknowledged before me this _____ day of _____, 20_____, by _____ and _____.

My commission expires:_____

_____

Notary Public

Exhibit "A," General Conditions of Lease (Examples of Optional Clauses)

_____ LANDOWNER, LEASE TO _____ LESSEE

These general conditions of lease are applicable to the lease agreement between _____, hereinafter referred to as LANDOWNER, and _____, LESSEE. Lessee and all persons authorized to Lessee to hunt upon the leased premises shall be hereinafter collectively referred to as "Hunters."

1. It will be the responsibility of the Lessee to furnish each hunter or guest with a copy of these general conditions of lease.

2. Lessees understand and agree that the leased premises are not leased for agricultural or grazing purposes and, consequently, taken subject to the rights thereof.

3. Lessee acknowledges that Landowner owns the property herein leased, primarily for agricultural purposes and the growing of timber. Lessee shall in no manner interfere or obstruct Landowner's farming, forestry, or livestock operations.

4. Landowner reserves the right to deny access to the leased premises to any person or persons for any of the following reasons: drunkenness, carelessness with firearms, trespassing on property of adjoining landowners, acts which could reasonably be expected to strain relationships with adjoining landowners, or any other activities which to the ordinary person would be considered objectionable, offensive, or to cause embarrassment to Landowner or be detrimental to Landowner's interest. Failure of Lessee to expel or deny access to the premises to any person or persons after being notified to do so by Landowner may result in the termination of this lease at discretion of Landowner.

5. No hunter shall be allowed to:
   (a) Shoot a firearm from a vehicle;
   (b) Erect a deer stand within 150 yards of the boundary of the herein leased premises;
   (c) Permanently affix a deer stand in trees;
   (d) Abuse existing roads by use of vehicles during wet or damp conditions.
   (e) Fire rifles or other firearms in the direction of any house, barn, other improvements or across any haul road located on the leased premises;
   (f) Build or allow fires on the leased premises, except in those areas specifically designated by Landowner in writing, and, in event, shall be kept fully liable for such fires; and
   (g) Leave open a gate found closed or close a gate found open.

6. Hunters shall at all times maintain a high standard of conduct acceptable to _____.

NATURAL RESOURCE ENTERPRISES

Hunting Club Bylaws

Hunting Club bylaws should contain provisions that govern the day-to-day operation of the club. The bylaws should be adapted to local conditions that affect the club, its relationship with landowners(s), and the well-being of the land and wildlife resources. You should keep the bylaws as simple, concise, and understandable as possible for the benefit of the members and yourself. Some clubs develop bylaws that are too complex and too extensive for the basic needs and are too difficult to manage or enforce adequately. Bylaws should be written to be basic to the operation of the club or group's interest and to add others as needed based on the club/group's growth, changing needs, changing wildlife regulations, or changes you need. Some examples of items that need to be considered when drafting bylaws are as follows:

- ✔ Guest privileges and/or regulations.
- ✔ Safety for members, for the landowners, and/or property.
- ✔ Land management and stewardship of the property.
- ✔ Appropriate disciplinary procedures for all members and guests, if allowed.
- ✔ Rules of the hunt for all participants.
- ✔ Strict adherence to all state and federal wildlife regulations.
- ✔ Functional/operational committees, such as camp operation and maintenance, stand or blind placement and maintenance, food and cooks for organized hunts, and such.
- ✔ Maintenance of appropriate member and landowner(s) relations.
- ✔ If management for quality deer management is a club/group objective, this needs to be made clear in the bylaws.
- ✔ Any club/group self-imposed management requirements, such as no dogs, use of trailing dogs for retrieving cripples, or for chasing deer. Also consider if other species are allowed to be hunted during regulated seasons, such as turkey, squirrels, raccoons, waterfowl and such, and doves.

Obviously hunting club/group bylaws are essential for many organized hunting operations, and if you have concerns about the legality of the bylaws and their enforcement, you may consult a lawyer. Clearly one of the most important considerations must be that all members and invited guests must understand and agree in writing to the adopted bylaws for them to be useful and effective. The items listed above for consideration are not all you need to consider. The list can be expanded based on the desires and needs of you and the membership.

Liability Insurance for Landowners and Hunting Clubs

Insurance is a contract where an insurer (insurance company) undertakes to protect the insured (person purchasing the insurance) against loss, damage, or liability from an unknown or possible event. The insured pays the insurer a premium for this coverage.

Liability insurance covers loss because of negligence. It does not cover loss because of an intentional act. You can greatly reduce negligence on most private lands through risk planning.

Liability insurance companies generally limit the total liability of the insurance company to a certain amount, which may be much less than the insured person may suffer. Therefore, liability insurance may not completely eliminate the loss that occurs, but it does reduce the risk of loss.

If you already have liability insurance on your property, you may be able to work with your insurer to add liability coverage for a hunting lease. Your insurer may require that the hunting club or lessees get liability insurance as part of the written lease agreement. You may want to prepare or have an attorney prepare a hunting club disclaimer that all hunting club members or lessees must sign that points out potential risks on the land. Some of these might be an abandoned well, livestock that may need to be avoided, and such. Disclaimers may not be legal, but they do serve to warn lessees of potential risks and may prevent a liability suit if the lessees ignore the identified risks they signed a waiver for.

Many insurance companies offer liability for hunting clubs or for landowners who lease their land for hunting or other recreational access. **The following list by no means includes all sources of information, but it does provide some sources of information about liability insurance, coverage, costs, and comparisons.** Another source you should not overlook is a rider to existing policies to cover recreational access including hunting.

If someone pays for access to your land to hunt or fish or other recreational use, you owe that person certain duties of care, such as posting warnings as to dangerous conditions on the property, including potentially dangerous animals, abandoned wells, old buildings, and other structures. You may be liable for injuries to a hunter caused by another hunter if not you are not covered by insurance. For example, liability may be based on your negligence if you allow too many hunters in a given area, or if you admit an intoxicated hunter who injures another hunter.

■ *Some Known Sources of Liability Insurance*

Southeastern Wildlife Federation's Hunting Club Liability Insurance Program
Contact – Ms. Carol Cash Turner, Insurance Agent, Southeastern Wildlife Federation, P.O. Box 1109, Montgomery, Alabama 36102. Telephone: (334) 832-9453. Premium rates are based on the number of members in the club and the limit of liability selected. SWF offers liability limits of $300,000, $500,000 and $1,000,000 in either Limited or Broad form. The Limited form excludes occurrences between members and/or guests. The Broad form also has $25,000 Fire Legal Timber coverage. Both forms include a $25,000 Accidental Death benefit and a $1,000 medical Expense benefit for each member. There are no hidden charges, and as many as four landowners may be listed as "Additional Insured" at no extra cost. For any landowners over four, the cost per landowner is $10 plus tax.

Davis-Garvin-Agency
Contact – Dr. Ed Wilson, Account Executive, P.O. Box 21627, Columbia, South Carolina 29221-9961. Telephone: (800) 845-3163, or (803) 732-0060. This agency provides two types of hunting lease liability packages: (1) for an individual hunting club; or (2) for a landowner with a large acreage or groups of landowners representing large acreages. The premium for hunting clubs is determined by the number of members and

guests, with the minimum premium being $364 for a $1 million per occurrence liability limit. The premium for large properties or groups of landowners is determined by the acreage involved, with the minimum acreage being 10,000 acres. The rate for a $1 million per occurrence liability limit varies from 24¢ per acre plus tax for 10,000 to 49,000 acres to 17¢ per acre plus tax for 50,000 + acres.

Bramlett Agency
1000 Energy Center, Suite 104, P.O. Box 369, Ardmore, Oklahoma 73042, (405) 223-7300. This company sells liability insurance for most types of hunting leases.

ISERA (International Special Event and Recreation Association)
Contact – Jim Quist, Underwriting Specialist, 8722 South Harrison Street, Sandy, Utah 84070. Telephone (toll free): (877) 678-7342 or (801)-304-3735. This company insures primarily shooting preserves and shooting ranges.

Worldwide Outfitters and Guide Association, Outfitters and Guides Underwriters Inc.
Contact – Jim Quist, 8722 South Harrison Street, Sandy, Utah 84070. Telephone (toll free): (877) 678-7342 or (801) 304-3735. This company insures primarily guides and outfitters for a variety of outdoor recreation activities, including hunting and fishing.

Outdoor Underwriters, Inc.
Contact – R. Tim Reed, CLU, Outdoor Recreation Insurance, P.O. Box 431, Wheeling, West Virginia 26003. Telephone: (800) 738-1300. This company is affiliated with the Philadelphia Insurance Companies and insures guides, outfitters, hunting clubs, and landowners with hunting leases for up to $1,000,000 per occurrence.

These are just some examples. Many other insurers may offer such insurance, including your present property insurer through an additional rider. However, the above contacts provide the opportunity to contact these insurers and compare coverage and costs.

For more information, these publications are available from your county Extension office:

P2308 – Natural Resource Enterprises – Wildlife and Recreation, A Checklist of Considerations

P2310 – Natural Resource Enterprises – Wildlife and Recreation, Hunting Leases

SRAC #479a – Fee Fishing: An Introduction

SRAC #480 – Fee Fishing Ponds: Management of Food Fish and Water Quality

SRAC #481 – Development and Management of Fishing Leases

SRAC #482 – Fee Fishing: Location, Site Development, and Other Considerations

The authors wish to express appreciation for permission to use artwork from the Wildlife Management Institute from its publication *Improving Access to Private Land* and to artist Charles Schwartz in the publication *Big Game of North America*." Excerpts of this publication were adapted from (Yarrow, G.A. 1998) "Developing A Hunting Lease." Dr. Greg Yarrow is Associate Professor of Wildlife, at Clemson University, Clemson, South Carolina and a former Mississippi State University Extension Wildlife Specialist.

Mississippi State University Extension Service

msucares.com

By **James E. Miller**, Outreach/Research Scientist, Extension Wildlife and Fisheries

Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or veteran status.

Publication 2310
Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. JOE H. MCGILBERRY, Director (5M-10-02)

Managing Kentucky Fee Fishing Operations

Forrest Wynne
Kentucky State University, Graves Coop. Cooperative Extension Service, Mayfield, Kentucky

Abstract: Management strategies for operating fee fishing operations in Kentucky are described. Recommendations are given for stocking rates of catfish, hybrid bream, and trout; aeration, pond depth and shape, supplemental feeding, and other management considerations. Marketing considerations discussed include pricing, and amenities such as restrooms, fish-cleaning services, and concessions including rental or sale of tackle and supplies.

Key Words: catfish, fee fishing, Kentucky, management, marketing, ponds

Proceedings, 11th Triennial National Wildlife & Fisheries Extension Specialists Conference, October 14-18, 2006, Big Sky, MT

There are approximately 175 privately owned fee fishing operations in Kentucky. Fee fishing facilities may often be referred to as pay lakes or fish-out ponds. Fee fishing operations usually consist of one or more ½- to 10-acre ponds. The Kentucky Department of Fish and Wildlife Resources (KDFWR) requires fee fishing operators to stock a minimum of 1,000 lbs of adult catfish per surface acre of water, at least once a year. The KDFWR charges a license fee of $125 for the first two pond surface acres. A fee of $20 is charged for each additional surface acre of pond(s). Registered fee fishing operations are provided with daily licenses for customers. Yearly fishing licenses are required when fishing at non-permitted facilities.

Fee fishing ponds are typically stocked with 1- to 4-lb channel catfish at densities of 1,000 - 4,000 lbs per surface acre. Kentucky fee fishing ponds are often stocked with 300 lbs of fish or more, on a Thursday or Friday. Customers often observe weekly stockings. The fish are bought from live hauler trucks at prices of $0.70 - $1.85 per lb. The price of fish paid by fee fishing operations is often dependent on the quantity of fish ordered and the distance they must be transported.

High fish densities and aeration helps insure fishing success. Aeration devices and water testing equipment should be used by operators that stock ≥1,000 lbs of fish per surface acre. Aeration devices should be placed so they can operate effectively but provide as little inconvenience and potential danger to customers as possible. Electric aeration devices rated at 1 hp per acre may be placed on timers and used for supplemental aeration. Larger gasoline or diesel-powered aerators may be more desirable for severe oxygen depletions and other emergency situations.

Typical lakes and ponds may produce 20 - 200 lbs of fish per surface acre. Many of these fish may be undersized or be of an undesired species. Fee fishing lakes provide an alternative fishing resource for those who are not interested in utilizing, or who are unable to utilize, more natural fisheries (Cichra et al. 1994a). Kentucky's fee fishing industry annually imports an estimated 2 million lbs of catfish from other southern states. Roughly 6% of the fish required for stocking these ponds are grown in-state.

Fee fishing operations will accept frequent, small deliveries of variable size fish and provide a local market for beginning and small-scale catfish producers. Fee fishing markets have provided a vital link in establishing the pond-raised catfish industry in other southern states. One or two fee fishing operations exist in many Kentucky counties. Some of these facilities are located near large population centers. However, many successful operations exist in more rural areas. A 1984 fee fishing survey (Cremer et al. 1984) indicated 42% of Kentucky customers fished alone, while 44% fished in family groups. Most customers were male and traveled from local or nearby areas.

Irregular shaped ponds of ½ to 2 acres provide a more natural and aesthetic fishing environment and these smaller ponds are easier to manage. Two or three ponds provide management advantages over a single pond operation. If fish are off-flavor, become diseased, will not bite, or if pond repairs are needed, the business will not be forced to temporarily close while the issue is addressed. Drain structures should be

installed to allow rapid pond draining. Shallow pond areas (<2 feet in depth) should be avoided, since they tend to promote aquatic plant growth. Triploid grass carp may be stocked to control soft-stemmed aquatic plants; however, these fish can reach large sizes and are periodically caught by hook and line. If possible, fee fishing ponds should be constructed with a 3- to 5-foot depth. A smooth pond bottom permits the seining and removal of non-biting fish. The numbers of non-biting, or hard-to-catch catfish has been estimated to be as high as 40% in fee fishing ponds (Cichra 1999).

Good parking facilities and a combination ticket/concession stand should be located at the main entrance. Fee fishing operations should have limited access, for security purposes. Property liability insurance may be considered, or accident release forms should be signed as customers enter the property.

The Kentucky fee fishing season typically runs from the middle of March to early November. Some fee fishing operations are open 24 hours, 7 days a week. Others have limited hours or are open Thursday through Sunday. Businesses charge either a general admission fee of about $5 to $7 per day (called "Ticket Lakes"), or charge a lower admission fee of $2 to $3 and an additional $1.25 to $1.85 per pound for fish caught (called "Pound Lakes"). Selling fish by the pound provides more accurate fish stock records, but it requires an attendant to weigh the fish as customers leave. Customers should be discouraged from returning captured fish to the pond, since they often do not survive.

Bonus ponds may be stocked with hybrid bream or large catfish. Rainbow trout may be stocked during the fall, winter, and spring months when water temperatures remain below 68º F. Bonus ponds have been used successfully to attract fee fishing customers. Stocking largemouth bass, crappie, shad, bluegill, and other fish into fee fishing ponds can make pond management difficult and should be avoided.

Catfish will "take the hook" better if they are fed less than 1% of their body weight per day (Masser et al. 1993). Feeding will allow the fish's immune system to combat disease and to maintain its body weight. Supplemental feeding will keep the fish healthier, making them hungrier. Convincing fee fishing customers of the benefits of supplemental feeding may be difficult. Feeding may especially discourage customers fishing in general admission lakes, as opposed to those lakes which charge by a per-pound basis. Night feeding using a sinking feed, feeding when the operation is closed, or choosing not to feed may be the best management policy, depending on the clientele.

Fee fishing operations make most of their profits from the sale of concession items. Fishing tackle, worms, chicken livers, stink baits, soft drinks, and candy are commonly sold. Fishing rods and reels may be sold or rented. Spinning or spin casting gear is most frequently used. Security deposits may help discourage rental equipment vandalism. Many fee fishing operations use holding tanks to sell additional fish to fishermen or to customers not interested in fishing. Some fee fishing operations will accept food stamps.

Fish cleaning ($0.25 to $0.50 per lb of fish) and food vending services are often provided. Adequate restroom facilities are necessary to insure the success of an operation. Consult the county health department about existing regulations regarding these types of facilities. Some fee fishing operations provide alternative activities for non-fishermen such as pony rides, game rooms, playgrounds, camping, etc.

Aesthetics, facility cleanliness, and safety are important details which can determine an operation's success. Providing paved or gravel pond banks that are clear of vegetation near the water's edge will improve accessibility. Benches, picnic tables, shelters, and shade trees may be located a short distance from the pond. Litter containers and life saving gear should be readily accessible. Entrance signs displaying regulations, such as the limit of two fishing rods per fishermen, fish size or quantity limits, and prohibiting the use of alcohol, abusive language etc., are useful management tools.

Many fee fishing operations depend on repeat customers and word of mouth advertising to attract business (Cichra et al 1994b). Attractive roadside signs as well as radio, television, and newspaper advertisements may also attract customers. A fee fishing operation's success will depend on the manager's ability to run a business and manage the public, in addition to managing the fish health. It is important to remember that fee fishing customers expect to catch fish!

Literature Cited

Cichra, C. E. 1999. Fee fishing in Florida. Fisheries and Aquatic Sciences Circular, 809 (revised). University of Florida, UF/IFAS EDIS Database, http://edis.ifas.ufl.edu/FA015. 11 pp.

Cichra, C. E., M. P. Masser, and R. J. Gilbert. 1994a. Fee-fishing ponds: An introduction. Southern Regional Aquaculture Center, SRAC Publication No. 479. 5 pp.

Cichra, C. E., M. P. Masser, and R. J. Gilbert. 1994b. Fee-fishing ponds: Location, site development and other considerations. Southern Regional Aquaculture Center Publication No. 482. 6 pp.

Cremer, M. C., S. D. Mims and G. M. Sullivan. 1984. Pay Lakes as a Marketing Alternative for Kentucky Fish Producers. Aquaculture and Natural Resources, Kentucky State University community Research Service Program, Frankfort, KY. 25 pp.

Masser, M. P., C. E. Cichra, and R. J. Gilbert. 1993. Fee-Fishing Ponds: Management of Food Fish and Water Quality. Southern Regional Aquaculture Center Publication No. 480. 8 pp.

SRAC Publication No. 479

Southern Regional Aquaculture Center

November 1994

Fee-Fishing
An Introduction

Charles E. Cichra, Michael P. Masser and Ronnie J. Gilbert*

Fishing is the number one recreational pastime in the United States. The U.S. Department of the Interior estimated that 35.6 million anglers spent $24 billion in 1991. The increasing demand on already over-utilized public fishing waters provides an opportunity for the development and expansion of commercial fishing facilities. "Fee-fishing," the practice in which anglers pay for the right to fish or for any fish that are caught, can bridge the supply shortfall for quality fishing opportunities, especially near urban areas. Fee-fishing can provide profits for the owner, social and recreational benefits for the community, and a market for locally produced fish.

Many privately owned ponds are seldom fished and often underharvested. These can be turned into alternative sources of revenue for the pond owners. In addition, many sites exist for new ponds that can be specifically designed, constructed and managed for fee fishing.

Fee-fishing is appealing to a variety of individuals, including experienced anglers who seek particular species, anglers who like to fish but are limited by time or resources, families with small children, the physically challenged and the elderly. Fee-fishing can be attractive to tourists or individuals that fish only occasionally, since most states do not require anglers to have a license to fish in fee-fishing ponds.

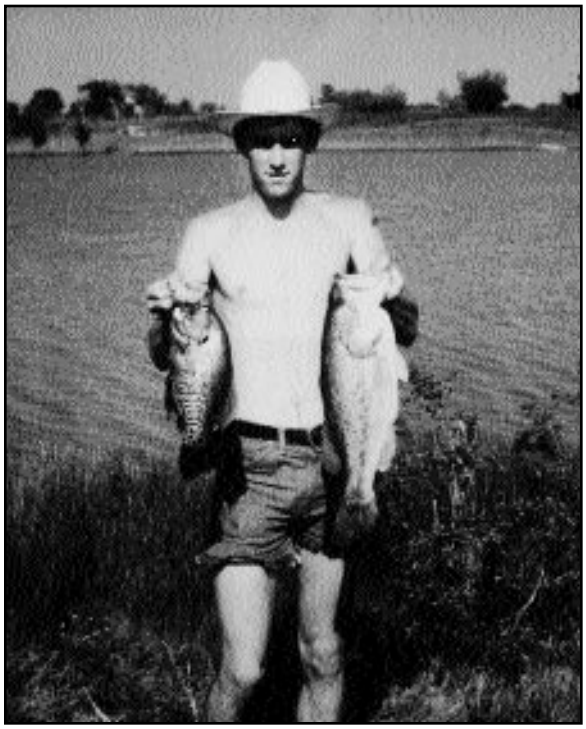


Figure 1. Fishing rights on larger ponds with quality fishing can be leased on a long-term basis.

Types of fee-fishing operations

There are three basic types of fee-fishing operations: (1) long-term leases; (2) day leases or "ticket" lakes and (3) "fish-out" ponds, "pound" lakes or "pay-by-the-pound" lakes. Long-term leasing involves the leasing of exclusive fishing rights on a long-term basis similar to hunting leases to an individual or group (Figure 1). Fishing success relies on natural production of the leased water body. Day leasing involves collecting a daily use fee from anglers, allowing access to a given water body. Both natural production and occasionally stocked fish support the angler's harvest. Fish-out ponds are stocked with high densities of catchable-size fish. The angler is then charged for each fish caught or limited as to the number that can be taken. More information can be found in SRAC Publication Numbers 480 (*Fee-fishing Ponds: Management of Food Fish and Water Quality*), 481 (*Development and Management of Fishing Leases*) and 482 (*Fee-Fishing: Location, Site Development and Other Considerations*).

*Respectively, Extension Fisheries Specialist, University of Florida; Extension Fisheries Specialist, Auburn University; and Extension Aquaculture Specialist, University of Georgia.

Long-term leasing

Long-term leasing usually involves quality fishing for largemouth bass or panfish, such as bluegill, redear sunfish and crappie. Location and aesthetics are often the most important selling points. Many people fish to relax and escape the hustle and bustle of daily life. They want a quality fishing experience and are willing to pay for it. Unlike hunting leases, which generally require a large tract of land to support adequate game, fishing leases can be small. With proper management, each acre of water can support 300 to 400 pounds of harvestable-size sportfish, providing many hours of productive fishing.

Major steps involved in leasing the fishing rights to a pond include: (1) locating suitable lessee, (2) establishing terms of the lease and (3) executing the written lease.

Interested parties can be located through word of mouth, newspapers or magazine advertisements. The amount of effort and money expended in locating possible lessees should depend on the quality of the fishing and the location and visual attractiveness of the site. These factors will determine the value of the lease. A trophy bass fishery, located at an attractive site and close to a large metropolitan area, will bring top dollar.

The lease should spell out exactly the rights and responsibilities of each party including:

1) who will have access / fishing rights to the pond;
2) how long the lease will be in effect;
3) the price;
4) under what conditions the lease can be broken;
5) any fishing limits or regulations that are to be followed;
6) other privileges such as camping or swimming;
7) what management practices will be followed such as aquatic weed control, water level drawdown and stocking;
8) who will pay for each management option;
9) how much liability insurance will be required and who will pay for it; and
10) what privileges will be retained by the owner.

A written lease should be prepared with the advice of an attorney, certified public accountant, fisheries biologist and / or other professionals.

Major costs to the pond owner are locating a lessee and drawing up the lease. Any work requested by the lessee should be paid by the lessee. Annual returns can vary from less than $100 to almost $100,000. Lease prices vary primarily due to the size of the water body and quality of fishing, but also because of site location and configuration, and demand.

A long-term lease can be advantageous to the landowner. The owner only deals with a few individuals on an occasional basis, minimizing labor. In addition, the landowner will have someone on the property, which should decrease problems with trespassing, theft, vandalism and fire. This option is particularly appealing for absentee landowners. One limitation to long-term leasing is that not all ponds are large enough, or have suitable fisheries, locations or aesthetics.

Day leasing

An aesthetically pleasing pond or one that offers good fishing tends to attract local anglers. Many anglers ask for the right to fish, while others trespass. Such an "attractive nuisance," often considered a liability, can be turned into a source of income. Instead of allowing free fishing, the owner can charge a nominal daily fee for fishing rights, hence the term "day leasing." Ponds of at least 1 acre, but often 5 to 10 acres, are most commonly day leased (Figure 2).

Most of these ponds are located close to a public road. Appropriate signs allow easy recognition by individuals travelling in the area. Angler harvest relies primarily on the natural production of the pond, including largemouth bass, bluegill, redear sunfish and crappie. However, channel catfish may be supplementally stocked to attract more anglers by increasing harvest.

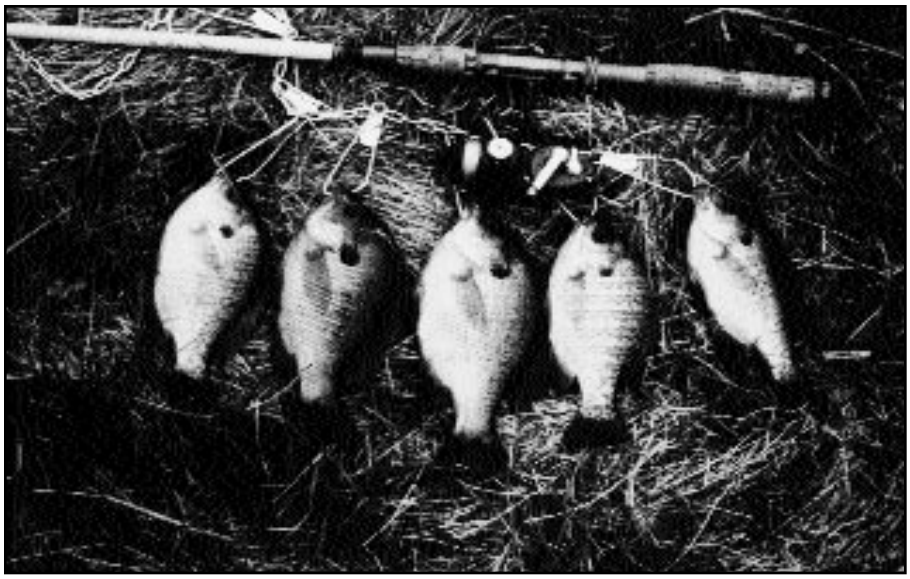


Figure 2. Natural fish production provides most of the angler harvest at day leases.

There are many methods to monitor angler access. First, pond location should be close to the manager's residence to ensure that all anglers pay. The simplest way to collect fees is to have anglers place them into a specially constructed deposit box as they enter the property. This reduces the time expended in collecting fees and works well with small numbers of trustworthy local anglers. Another way to regulate access is to lock the entrance to the pond and require anglers to check in before gaining access. This may be inconvenient if it disrupts work or family life. Posting limited hours and even seasons of the year when the pond is open to fishing will relieve some of this inconvenience. A final method of keeping track of those who have paid is to allow open access to the pond. The manager then visits the pond on an occasional basis to collect the entrance fee. A dated receipt, ticket or permit is then given to those who pay. Later, the manager visits the pond and makes sure that each angler has a current ticket, collecting entrance fees from those that don't possess a current ticket. These operations are often referred to as "ticket lakes."

Operating costs for day-lease ponds are intermediate to those of long-term leases and fish-out ponds. Major costs are collecting the daily use fee and removing garbage. An aesthetically appealing pond helps attract anglers. Advertising can be as simple as by word of mouth. However, this method will generally restrict use to local anglers, and will likely result in only a modest income. Larger numbers of anglers can be drawn to such a pond by posting attractive signs along the roadside and by advertising in local newspapers.

Cost of fish is usually minimal if the natural production and harvest of fish is in balance. Supplemental stocking can increase catch rates and angler interest in returning, with cost varying with the quantity and cost of stocked fish. Returns from stocking can far outweigh costs. Additional costs, associated with proper pond management, include aquatic weed control, mowing of pond banks, fertilization, liming and supplemental feeding.

Daily fees generally range from $2 to $7 per day for adults for bass/panfish ponds, but can go as high as $100 per day for ponds with quality bass fishing. There is frequently a limit on the number of fish that can be kept. Children are often admitted free or at half price. Senior citizens are sometimes given discounted fees.

One advantage of day leasing over long-term leasing is the lack of a long-term commitment, allowing the owner to be more flexible in the use of the pond. The day lease relies on natural fish production and requires minimal input of time and money; a distinct advantage over a fish-out operation. A day lease operator could also simply charge for access with no management. A disadvantage of day leasing is that it requires more of the pond owner's time than is required in long-term leasing. Time must be spent collecting litter and fees.

Fish-out ponds

Fish-out ponds, also known as "pound lakes" or "pay-by-the-pound ponds" involve the highest level of management, the highest costs, and potentially the highest returns. Fish-out ponds are marketing as opposed to production operations. Fish-out ponds are especially appealing to families with children (Figure 3) and novice anglers, because of the increased probability of catching fish. They can be excellent places to learn to fish and also to purchase guaranteed fresh fish.

Catchable-size fish are stocked at densities well above natural production limits. Currently, the most commonly used species in southeastern fish-out ponds are channel catfish and rainbow trout. Other species are difficult to consistently obtain in abundance or to haul, hold or stock. A minimal entrance fee is usually charged. An additional charge is then paid for any fish that are caught, based on their number, weight or length. Another method is to charge a fee for entry with a catch limit on numbers or weight of fish.

Fish-out operations should have a minimum of two ponds, allowing anglers to select where they fish. Having more than one pond

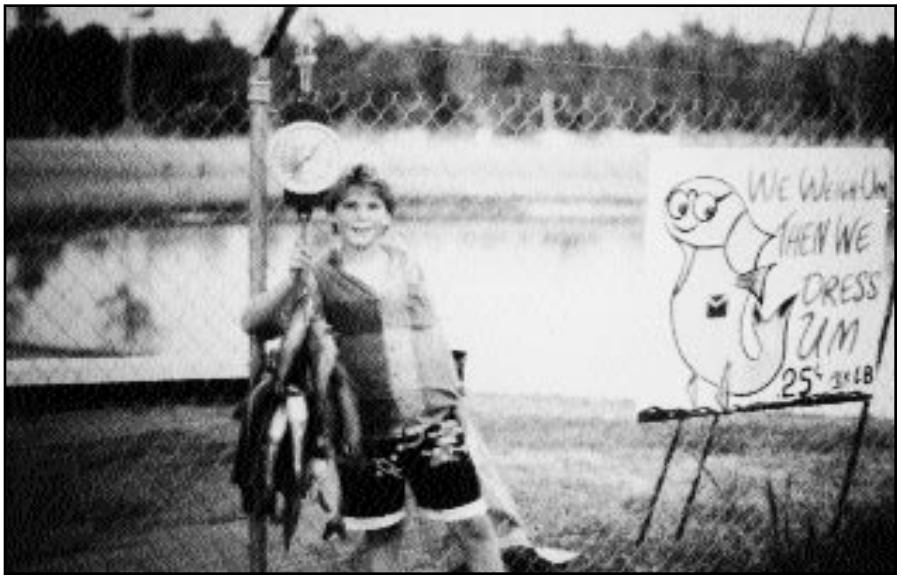


Figure 3. Children like to fish at fish-out ponds because of the high likelihood of catching fish.

allows fishing to continue should problems occur in a pond. Ponds of a variety of shapes and sizes will give anglers the feeling of a natural setting. Half-acre ponds will accommodate a fairly large number of anglers who will be able to "reach" most of the fish, but not so large that the ponds can't be easily seined.

One problem with catfish is that all of them are not caught before fishing success drops off. Typically, catch rates may be as high as 8 to 10 fish per angler hour for the first two weeks after stocking, dropping to 1 to 2 fish per angler hour after the first few weeks. These "hook-shy" fish can be seined from the ponds, placed into live tanks and sold live or sold as processed fish to individuals who don't fish or to those who don't catch enough fish to meet their needs.

Late spring through early fall (April through November) is the primary sales period for catfish. Sales as high as 4,000 pounds per week have been recorded during the spring at individual fish-out operations. Both anglers and fish slow down in the summer. Sales usually increase in the fall as temperatures cool. Fish-out operations are generally open on weekends. Some are open seven days a week. Daylight hours are most common; however, many remain open after dark, especially on weekends.

Shade, a picnic area, food and beverages, bait, tackle, rental equipment, ice and a fish cleaning service can be incorporated into the business. The best means of advertising are word of mouth and roadside signs. Prizes can be given to anglers who catch extremely large fish or tagged fish.

Costs for such an enterprise are highly variable. Major expenses will be for fish and for labor. Help must be on site during all hours of operation to rent equipment, sell concessions, weigh fish and collect fees, keep the facilities litter free, and minimize poaching. Other costs include construction of office, concession and toilet facilities, fencing or natural barriers to keep trespassers out; fish feed; and monitoring and maintaining proper water quality. Returns from a fish-out operation are limited primarily by the number of pounds of fish, concessions and services that can be sold. Entry fees of $1 or more per person are common. Fish prices vary from $1 to over $2 per pound live weight for catfish and over $3 per pound for rainbow trout. Many operators indicate that they make more money from selling drinks, food, bait and tackle than from the fish sold.

A distinct advantage of fish-out operations is the possibility of using small ponds. Ponds can be located within city limits and at major highway intersections. Also, fishing success does not rely on natural production, but upon artificially maintained populations. The major disadvantage is that fish-out operators must make a tremendous commitment to public relations, marketing and promoting, and must be sensitive to public needs and behavior. Such operations need to be near population centers and highly visible. A lot of time is required on the part of the manager, who must deal with "people problems" (Figure 4).

Considering fee-fishing as a business

Fee-fishing allows pond owners to supply fishing opportunities to anglers while simultaneously using under-utilized resources as a source of income. Fee-fishing is both a form of entertainment and a source of fresh fish for the user.

Market

Fee-fishing operations are good markets for fish producers. Production acreage in many states is small and geographically dispersed. Producers can sell their fish live to local fee-fishing operations. Thus, there is no need to build a processing facility, and many state health regulations can be avoided by selling live fish. Producers can often get a higher price per pound from fee-fishing operators than from processors.



Figure 4. Day lease and fish-out pond operators must be willing to deal with people.

Licenses and permits

As with most aquaculture facilities, permits must be obtained for surface and ground water (wells) rights, surface water storage (pond and ditch construction), construction of buildings and to meet any additional county or municipal regulations. In addition, permits may be required to sell live fish, bait and concessions, and for construction of buildings. Employees involved in selling food and cleaning fish should obtain state health certificates.

Many states have special permits for the operation of fee-fishing facilities such as ticket lakes or fish-out ponds. These allow anglers to fish at the facility without having to purchase state fishing licenses.

Liability

Customers are subject to injury, therefore liability insurance is highly recommended. Liability insurance is available from most specialty insurance agents. Costs vary, but are usually based on gross annual revenues. In addition, product liability insurance covers you if someone gets sick on the fish that they take home and cook. In the case of a long-term lease, the cost of liability insurance is less and is usually paid by the lessee (Figure 5).

All reasonable steps should be taken to avoid negligence. Alcohol should be prohibited. Aeration equipment should be placed so that it can operate effectively, yet provide little inconvenience and potential danger. First aid and life saving equipment should be readily available. Swimming should not be allowed. Safe access for handicapped anglers should be provided.

People management

Successful day leases and fish-out operations require as much people management as they do fish management. They require a commitment to public relations, marketing and promotion, and sensitivity to public desires and behavior. The attention span of many anglers is short. Many people fee fish because they are almost certain to catch fish. If they do not catch fish within 5 or 10 minutes, they begin to complain. Some operations charge low prices for their fish, provide little service and have few expenses. Customers bring their own equipment and take care of themselves. Many successful operations often charge more per pound, but provide everything including tackle rental, employees to explain rules, instruction for new anglers, conversation while they fish, and employees to remove fish from their hooks and to clean and pack their catch on ice.

Operators must be able to get along with people, because that's half the business. If you don't like people, you have a losing battle on your hands, no matter how well you manage your fish. You must be polite and courteous, even under the most difficult situations. The biggest problem that some anglers will have is knowing when to stop catching fish, catching more than they have money to pay for, and discovering this upon trying to leave your facility.



Figure 5. Liability insurance must be provided at all fee-fishing operations in the event that someone is injured.

Conclusion

Fee-fishing facilities are rapidly increasing in number, but vary substantially in their success due to differences in location, facilities, services and management. Medium to large ponds with controlled access are best suited for long-term leasing, while small to medium ponds can be day-leased or used as fish-out ponds. If individuals do not want to take the time to deal with people, yet want to use their ponds as a source of revenue, then they would be best advised to lease on a long-term basis.

Sources of information

For additional information on fee fishing and pond management, contact your local county Extension agent, state fisheries specialist, local USDA Soil Conservation Service office or the nearest office of your state Fish and Game Commission. Phone numbers for these agencies are listed in the government section of your phone book.

The work reported in this publication was supported in part by the Southern Regional Aquaculture Center through Grant No. 89-38500-4516 from the United States Department of Agriculture.

SRAC Publication No. 480

Southern Regional Aquaculture Center

December 1993

Fee-Fishing Ponds

Management of Food Fish and Water Quality

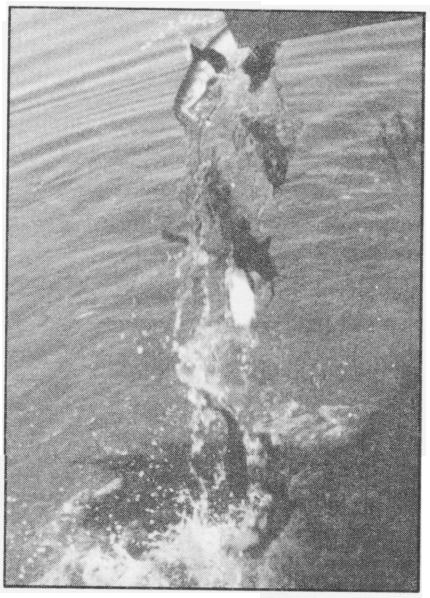
Michael P. Masser, Charles E. Cichra and Ronnie J. Gilbert

Fee-fishing operations, popular throughout the Southeast, can be a viable business opportunity that blends marketing, recreation and aquaculture. Articles often appear in the popular press about individual fee-fishing establishments, but few scientific studies have looked at their operation or management. Therefore, this fact sheet, and others in this series, rely heavily on personal observations and communications with fee-fishing operators and Extension specialists, and not strictly on scientific experimentation.

Proper management of fee-fishing ponds is extremely important not only to the health and matchability of the fish, but also to the corresponding economic success of the business. Many fee-fishing operators do not understand the basics of fisheries management, and therefore, suffer reduced profitability or financial losses. This publication suggests guidelines for management of the water and the fish to improve fish health, reduce fish mortality and increase angler catch rates, thereby increasing overall profitability y of fee-fishing operations.

Species selection

The initial management decision is to determine the type and source of fish to be stocked. Farm-raised fish are superior to wild-caught fish because farm-raised fish-are usually available in consistent quantities, are already conditioned to crowded pond environments and will consume formulated feeds. For sources of farm-raised fish contact your county Extension office, State Fisheries Extension Specialist, local Soil Conservation Service office, or state game and fish agency. The majority of fee-fishing operations in the Southeast stock farm-raised catfish or some combination of catfish with other warmwater species. It is best to remove existing fish populations from a pond when converting it into a food fish fee-fishing pond.



Loading, hauling and stocking is always stressful on fish.

Farm-raised catfish are popular because of their availability, catchability, hardiness and desirability as a food fish. There are several kinds or species of catfish including channel, blue, white, flathead, hybrid catfish and bullheads. Channel catfish are the predominant farm-raised species and are, therefore, the most readily available and most commonly-stocked species. Farm-raised blue catfish, white catfish and channel x blue catfish hybrids, where available, are also good for stocking into fee-fishing ponds. Flathead catfish and bullheads are seldom farm-raised and are generally undesirable for stocking into fee-fishing ponds. Bullheads can rapidly overpopulate a pond, while flatheads become large predators on other fish in the pond.

Fee-fishing operations in areas with a coldwater source (i.e., mountain streams or large springs) stock rainbow trout. The biggest problem with trout is local availability. Farm-raised rainbow trout are available in several southeastern states, predominantly North Carolina, but also Georgia, Kentucky, Tennessee, Virginia, West Virginia, Arkansas and Missouri. A few fee-fishing operations stock rainbow trout only in the

winter. Winter stocking of rainbow trout allows the fee-fishing establishment to operate when catfish are no longer actively biting. Rainbow trout do well under static pond conditions when water temperatures are below 65°F.

Rainbow trout should not be stocked until pond temperatures are consistently below this temperature. If rainbow trout are stocked on top of existing catfish populations, anglers will catch few catfish because of the aggressive feeding behavior of the trout and because catfish feed less actively when water temperature is low. Rainbow trout need to be removed before the water warms to 70°F in the spring or they will die. Unless otherwise stated, the following information details the use of warmwater species, e.g., channel catfish.

Hauling and stocking

The handling and water quality changes, caused by seining, loading, hauling and stocking, stress fish. Most fee-fishing operators do not produce their own fish and have little control over the seining, loading and hauling of fish they purchase. Operators should work with reputable producers and live-haulers that are experienced in providing fish to fee-fishing operations. Operators should purchase fish that have been denied feed for at least 1 to 2 days prior to transport during warm weather or 3 to 4 days prior to transport during cold weather. For more information on live-hauling procedures see SRAC Publication Numbers 390, 391, 392 and 393, on Transportation of Warmwater Fish.

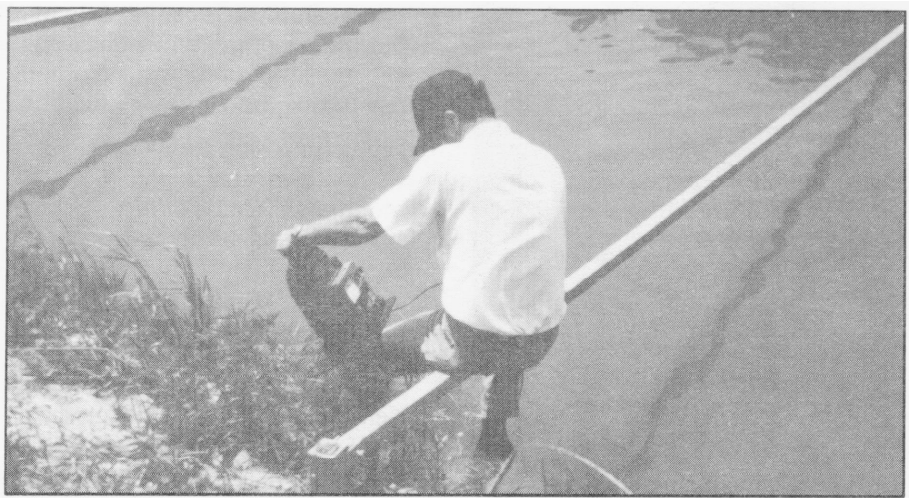
Reducing stress during unloading and stocking is one key step to successful fee-fishing management. Fish should also be observed for signs of low dissolved oxygen stress, parasites and diseases. Signs of low dissolved oxygen can include:

- dead fish,
- fish gasping at the surface, and
- pale skin/gill coloration.

Signs of parasites and diseases can include:

- skin or fin sores and discolorations,
- erratic swimming,
- staying or gasping at the surface, and
- discolored or eroded gills.

Observe the fish in the hauling tank. Remove a few fish from the tank (particularly any that look or act unnatural) and check them closely. Look at the gills. If gills of several fish are pale, eroded or bloody, the fish are probably either sick or highly stressed. If signs of disease are visible, fish should be treated in the hauling tank or placed into a holding tank or small pond where they can be isolated from other fish and treated (see SRAC Publication Number 410, *Calculating Treatments for Ponds and Tanks).*



Routine oxygen testing is an important management tool.

As many as *3* to 5 percent of transported fish will commonly die within a few days from hauling and stocking stress. Higher losses are indicative of fish that were already diseased or were hauled and handled poorly. Prior agreement of acceptable fish mortality rates and compensation for dead fish should be made before any fish are ordered from the supplier. Discuss mortality problems with the fish producer or live-hauler and work together to reduce future losses.

When purchasing live fish, the concept of "caveat emptor" (buyer beware) cannot be over-stressed. It is important for the operator to establish the point at which the fish become his/her property. Generally, the health of the fish is the responsibility of the producer or live-hauler until they are stocked into the fee-fishing pond. Determine if the producer/ live-hauler will stand behind his/her product in the event of a major fish loss that occurs within a few days of stocking and can be attributed to a verifiable disease.

Fish should be acclimated or conditioned to the pond water before being placed into the pond. It is a good idea to exchange water between the pond and the hauling tank prior to stocking. A slow exchange of water acclimates or tempers the fish to the new water conditions. Check the temperature and pH of both the pond and the hauling tank water. Most fish can generally tolerate a sudden change in temperature of up to 5°F and in pH of up to 2 units. Some water exchange/ adjustment period is beneficial even if the hauling tank water and pond water are very close to the same temperature and pH. A good rule-of-thumb is to temper fish at least 20 minutes for each 10°F difference in water ternperature and/or for each unit of pH difference. Tempering is more important when moving fish from cold hauling water into warm

pond water (e.g., in summer) and when moving fish from hard or brackish water into soft fresh water. Always watch the fish closely during the tempering process and keep the hauling tank well aerated.

Stocking density and frequency

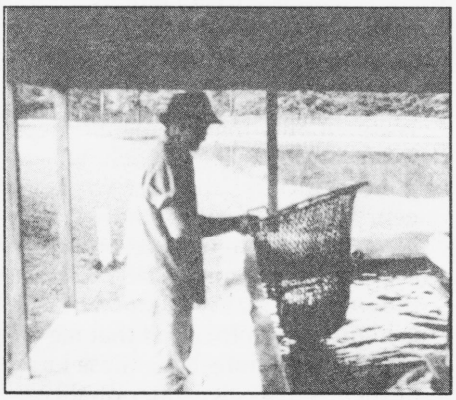
Stocking densities for fee-fishing ponds can vary from 1,000 to 10,000 pounds or more of fish per surface acre. Usually, fee-fishing operations which charge a single entrance fee ("ticket-lakes") in an all-you-can-catch system are stocked at 1,000 to 2,500 pounds of fish per acre. Operations that charge by the weight of fish that are caught ("fishout" or "by-the-pound" ponds) are usually stocked at higher densities under the assumption that more fish in the pond will result in higher catch rates. Most "fishout" ponds are stocked at 4,000 to 6,000 pounds of fish per acre.

However, recent research results with channel catfish at the University of Georgia suggest that angler catch rates are not related to pond stocking density. Catch rates were not significantly different in fee-fishing ponds initially stocked at 2,000 or 4,000 pounds of channel catfish per acre. Catch rates did not decline as densities declined. Regardless of stocking density, catch rates were high (8 to 10 fish per angler hour) when ponds were initially opened for fishing and declined to an average of 1 to 2 fish per angler hour after a few weeks of fishing.

Fish tend to be shy and elusive creatures. Healthy fish, when first stocked into ponds, tend to swim around the pond as though they are adjusting or orienting themselves, This behavior continues for several days, during which time the fish are easily caught, and fishing success is usually high, After this period, the fish that remain tend to move around less, possibly establishing territories, and are more difficult to catch. These fish are referred to as being "hook-shy". Many experienced fee-fishing operators believe that fishing success is increased when small to moderate amounts of fish are stocked frequently, rather than stocking large numbers of fish at less frequent intervals.

Managing fish inventory

"Hook-shy" fish are not easily caught and tend to accumulate in the pond, reducing the remaining carrying capacity of the pond and fishing success. Good recordkeeping on the weight of fish removed will suggest how many fish can be restocked without over-loading the pond, and will give a fairly accurate account of the weight of "hook-shy" fish remaining in the pond. As many as 30 to 40 percent of the fish in a pond can be unmatchable or "hook-shy."



"Hook-shy" fish can be seined from ponds and held in live wells for sale to customers.

Many operators fish a pond until few fish are being caught, then either drain or seine the pond to remove the remaining fish. These fish can then be restocked into other ponds or sold as live or processed fish. Ideally, in an intensively-managed operation, non-biters are removed regularly and offered for sale either as live or processed fish, and the ponds restocked with new fish, Several fee-fishing operators have reported some success in moving "hook-shy" fish to other fee-fishing ponds. Moving these fish to other ponds seems to reduce their "shyness," at least for a short period of time. Even ponds that can be seined should be drained every three or four years to remove unseinable fish.

Feeding

Fish in fee-fishing ponds should be fed. Research has shown that a complete feed of at least 26 percent protein should be used. Feeding helps to keep fish healthy and prevents substantial weight loss. Many operators like to feed as much as possible and still maintain good water quality. At high stocking densities, this will not be much more than a maintenance diet or ration.

A maintenance ration will keep the fish healthy, but still hungry, so they will continue to bite. A maintenance ration is around 1/2 to 1 percent of the body weight of the fish. Feed the maintenance ration every day or at least three times per week when water tem peratures mandate feeding. Table 1 gives an estimated maintenance ration for feeding 1,000 pounds of fish. If good inventory records are kept, then maintenance feeding rates can be accurately calculated, If records are not available, an effort should still be made to provide a maintenance level of feed to the fish.

Winter feeding is also important. Fish that are not fed throughout the winter will lose weight and have higher disease and mortality rates. Most diseases and resulting fish losses will not appear until the water warms in the spring and may be due to the consequence of not following a winter feeding schedule. With proper winter feeding, fish will usually grow 5 to 25 percent, are healthier and start biting earlier in the spring. Table 2 gives a practical winter feeding schedule for catfish.

Feed age and storage conditions are also important as vitamin and mineral quality of feed deteriorates with time. This deterioration is accelerated by high temperatures and moisture. Store feed in a

Table 1. Feeding schedule to maintain the health of fish in a fee-fishing operation. Fish are fed 3 times per week.

Water Temperature ºF	% of Total Fish Weight to Feed	Pounds of Feed per 1,000 Pounds of Fish
Warmwater fish		
70-75	0.5	5
76-89	1.0	10
above 89	0.5	5
Coldwater fish		
45-55	0.5	5
56-60	0.7	7
61-65	1.0	10
above 65	0.5	5

Table 2. Winter feeding schedule for catfish in fee-fishing operations. Feed should be 26% protein or higher.

Temperature °F	% of Total Fish Weight to Feed	Feeding Frequency
45-50	0.5	once/week
51-55	1.0	twice/week
56-60	1.0	every other day
61-65	1.5	every other day
66-70	2.1	every other day

cool, dry place. **Never** use feed that is moldy, clumped or discolored. Note the date the feed was manufactured and never use feed that is 90 days past its production date.

Water quality

Good quality water is essential in any successful aquaculture venture. In the case of fee-fishing operations, water quality management must include not only the water in the pond(s), but the change in water quality from the hauling system to the pond. Since ponds can have different water quality, each one must be observed, tested and managed individually. Fee-fishing operators should seek additional information on water quality from their county Extension office or State Fisheries Extension Specialist, and refer to SRAC water quality videos *(Water Quality Dynamics, Introduction to Water Quality Testing* and *Procedures for Water Quality Management).*

Water quality management factors to be considered in fee-fishing pond(s) include: dissolved oxygen, pH, alkalinity, ammonia and nitrite. Chemical test kits or meters are available commercially to test these water quality components. It is highly recommended that fee-fishing operations have these kits or meters to assess water quality on a regular basis.

Oxygen

Once healthy fish are stocked into a fee-fishing-pond, the most important water quality factor is dissolved oxygen. Low dissolved oxygen stress is fairly common in fee-fishing ponds and is a common cause of many disease outbreaks.

All living things consume oxygen in the process of respiration. In the pond, fish, insects, worms, bacteria and plants (at night) consume oxygen.

Oxygen dissolves into water, thus, the term "dissolved oxygen." Oxygen dissolves into static ponds by diffusion from the air and from aquatic plants. Unfortunately, oxygen is not very soluble in water. So little oxygen dissolves in water that it must be measured in parts per million (ppm) or milligrams per liter (mg/L). The atmosphere contains about 20 percent oxygen or 200,000 ppm, yet pond water seldom contains as much as 20 mg/L. The amount of oxygen that will dissolve in water depends on the temperature and salinity of the water and the barometric pressure. If pure water is allowed to sit undisturbed, oxygen will diffuse into it until no more will dissolve at that temperature, salinity and pressure. This is called the saturation point (Table 3). Note that as water temperatures increase, the oxygen saturation level decreases. Therefore, low dissolved oxygen problems are more common in warm weather.

Ponds can become supersaturated with dissolved oxygen through the action of aquatic plants. Microscopic aquatic plants, called algae, produce most of the oxygen in ponds through the process of photosynthesis, which occurs during the daylight hours. Production of

Table 3. Volubility of dissolved oxygen in fresh water at standard sea level pressure.

°C	°F	D.O. mg/L (ppm)	°C	°F	D.O. mg/L (ppm)
10	50.0	10.92	24	75.2	8.25
12	53.6	10.43	26	78.8	7.99
14	57.2	9.98	28	82.4	7.75
16	60.8	9.56	30	86.0	7.53
18	64.4	9.18	32	89.6	7.32
20	68.0	8.84	34	93.2	7.13
22	71.6	8.53	36	96.8	6.95

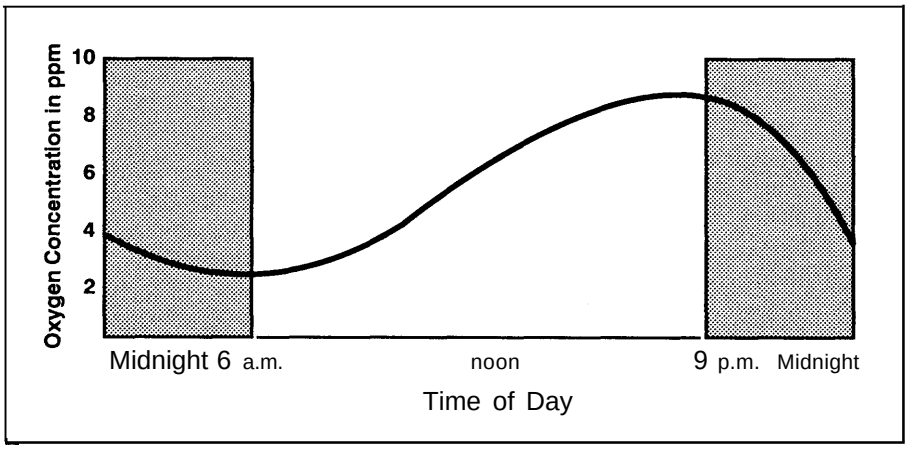


Figure 1. Typical daily oxygen cycle in warmwater ponds.

excess oxygen in the daytime, followed by high consumption of oxygen at night (i.e., respiration), causes oxygen concentrations to cycle up and down daily (Figure 1). Lowest oxygen concentrations typically occur near sunrise.

Fortunately, under normal circumstances more oxygen is produced by plants via photosynthesis than is consumed through respiration by all plant and animal life in the pond. Problems appear when dissolved oxygen concentrations drop below critical levels in the pond. In many trout, catfish and even carp ponds, with substantial water inflow, the primary source of oxygen is the dissolved oxygen in the inflowing water.

Dissolved oxygen below 4 mg/L generally causes stress to warmwater fish. This stress reduces the fish's feeding behavior and lowers resistance to disease. Coldwater fish generally start to stress at dissolved oxygen concentrations below 6 mg/L. Dissolved oxygen should be checked whenever a problem is believed to exist, such as when pond water changes color or when fish show signs of stress.

Dissolved oxygen can be checked either with a chemical test kit or an electronic oxygen meter. Chemical tests are inexpensive, but are tedious and take as long as 20 minutes to conduct. Chemical tests can be used if only two or three ponds are to be checked. Electronic oxygen meters are relatively expensive, but are a must if ponds need to be checked frequently because of high fish densities or if several ponds must be managed at the same time.

Oxygen depletions can occur because of high respiration rates, rapid dilution of oxygen (during pond turnover), and/or chemical depletion of dissolved oxygen. High respiration rates can occur when fish are stocked at too high a density, an algae bloom becomes too dense, or high bacterial decomposition rates exist. From a practical management standpoint, this means that fish should not be overstocked in the pond. Fish densities in some existing intensively managed fee-fishing ponds do exceed 10,000 pounds per acre, in warmwater ponds with some nightly aeration, but no continuous water exchange. But the maximum density normally should not exceed 6,000 pounds per surface acre.

Algae blooms turn the pond water various shades of green, greenish-blue or greenish-brown. If algae blooms become too dense (e.g., "pea-soup" green), they can cause oxygen depletions at night during overcast weather conditions, or as they die. Algae blooms increase in density in response to increased nutrients from fertilization and feeding. Most fee-fishing ponds should not be fertilized if the fish are fed. If feeding alone does not sustain an algae bloom, then check the alkalinity of the pond. If alkalinity is above 20 mg/L, then the pond could be lightly fertilized in early spring to develop a bloom. **Be careful, do not overfertilize!**

A summer pond "turnover" can cause an oxygen depletion. Turnovers are caused by cold winds and/or intense, cold rains which break up temperature stratification (layers) in deep ponds. The deep, cooler layers of the pond are usually devoid of oxygen. After the upper water layer (with oxygen) mixes with the deeper water layer (no oxygen) during a turnover, the pond may have critically low dissolved oxygen concentrations. Pond destratifiers, mechanical devices which keep the pond well mixed, have been used to prevent stratification and, therefore, turnovers. Aeration and/or flushing with well-oxygenated water are the only management options available after a turnover has occurred. In ponds with substantial outflow, an inverted standpipe drain system can help prevent stratification and, therefore, oxygen depletion from turnover.

Algae blooms should be carefully watched and dissolved oxygen concentrations checked when blooms become dense or pond color changes. When algae blooms die, the water changes color (usually becomes dark brown) quickly. Ponds should be aerated if dissolved oxygen drops below 3 mg/L. Continue to aerate until dissolved oxygen concentrations remain above recommended levels for the fish species that are present. Dissolved oxygen should be checked whenever the pond changes color, when fish stop biting or feeding, or when fish are observed near the surface. Dissolved oxygen should be checked routinely in the morning and evening.

pH

Hydrogen ions (acidity) in solution are measured in pH units. A pH of 7 is neutral, below 7 is acidic and above 7 is basic or alkaline. Ponds with algae blooms will experience daily swings of one half to two pH units or more depending on the density of the algae bloom and the alkalinity of the

pond. Fish generally do well when pH is between 6.0 and 9.5. A rapid pH change of 2 units (e.g., 7 to 9) or more in a short period of time is stressful to fish. Also, ammonia toxicity is affected by water pH. The daily fluctuations in pH can be reduced or buffered by the addition of alkaline ions.

Alkalinity

Alkalinity is a measure (in mg/L) of the total concentration of bases in water. Bases in pond water are mostly carbonate and bicarbonate ions. These bases react with hydrogen ions to slow or buffer pH changes. The higher the total alkalinity, the less pH generally fluctuates (see SRAC Publication Number 464, *Interactions of pH, Carbon Dioxide, Alkalinity and Hardness in Fish Ponds).* An alkalinity of at least 20 mg/L is needed to promote algae blooms.

Alkalinity can be increased in ponds by the addition of agricultural lime. A soil test of pond mud is the most accurate method to determine how much lime is needed. Pond mud can be tested by the Soil Testing Lab associated with your county Extension office. Contact your county Extension office for information on the proper methods of taking and preparing pond mud samples. In the absence of mud samples, water samples should be analyzed.

Ammonia

Ammonia is the principal waste product of fish and is released during bacterial decay. Ammonia dissolves in water into two compounds: ionized and un-ionized ammonia. Un-ionized ammonia is very toxic to fish. The proportion of ionized to un-ionized ammonia in solution depends on the pH and temperature of the solution (see SRAC Publication Number 463, *Ammonia in Fish Ponds).* As temperature and pH increase, the percentage of un-ionized ammonia increases. At high temperatures and pH, total ammonia concentrations of 2 or 3 mg/L can be very stressful or deadly to fish. Fish exposed to high ammonia concentrations will not feed and will become more susceptible to disease.

Ammonia seldom becomes a problem in fee-fishing ponds. High ammonia concentrations can, however, occur if a pond has been overstocked or overfed, or after an algae die-off. Check ammonia levels after algae die-offs or whenever the fish stop biting (or feeding). If high ammonia concentrations occur, stop feeding the fish and flush the pond with fresh water if possible.

Nitrite

Ammonia is converted into nitrite which is also toxic to fish (see SRAC Publication Number 462, *Nitrite in Fish Ponds).* Nitrite as low as 0.5 mg/L causes severe stress in fish. Nitrite can become a problem and should be checked after a fall turnover, in deep ponds, or after a high ammonia episode. At these times, nitrite levels often reach 3 to 5 mg/L.

Nitrite toxicity can be controlled through the addition of chloride (salt). Forty-five pounds of salt per acre-foot of pond water will bring the chloride concentration to 10 mg/L. Ten parts per million chloride will counteract 3 1/3 of a mg/L nitrite. If salt cannot be added to the pond, then stop feeding the fish, flush the pond with fresh water and try to reestablish or maintain the algae bloom.

After any episode of low dissolved oxygen, high ammonia or nitrite, the fish should be watched closely for disease outbreaks. Usually diseases will start to appear within three to ten days after a water quality problem.

Aeration

Aeration will seldom be needed at stocking rates below 1,500 pounds per surface acre and feeding rates below 10 pounds per acre per day. Aeration may be needed periodically if higher stocking or feeding rates are employed, or under certain weather conditions (hot, windless, cloudy summer days).

Many types of mechanical aerators are commercially available. Aerators can be powered electrically, by diesel or gasoline engines, or from the power-take-off of a tractor. Paddlewheel aerators are very efficient, but are expensive to purchase and are not usually manufactured in low horsepowers for small ponds (i.e., less than 3 acres). As a general rule, about one to one-and-one-half horsepower of electric paddlewheel aeration is sufficient to aerate one surface acre of pond. Other aerator designs may need additional horsepower, but many are available in small sizes which adapt well to small fee-fishing ponds. For help in choosing a good aerator for specific ponds, contact your county Extension office or State Fisheries Extension Specialist.

Off-flavor

Off-flavor is caused by certain algae, fungi and bacteria which most commonly develop in summer and fall in nutrient-rich ponds. Ponds that develop scums (paint-like films or droplets) and those that give off strong odors often contain off-flavor fish. Off-flavor can occur in fee-fishing ponds if they develop dense algae blooms from over-fertilization or over-feeding. Many times fish purchased from producers are off-flavor when purchased. In fact, some producers attempt to sell off-flavor fish to fee-fishing establishments when they cannot sell them to processing plants. Not all customers will notice off-flavor (since it is common in wild fish), but many will be dissatisfied by off-flavor fish and may not return as customers.

Always ask producers or live-haulers if the fish are on-flavor. In many cases producers will discount off-flavor fish. Take one to three fish from the hauling tank and check them for off-flavor (see SRAC Publication Number 431, *Testing Flavor Quality of Preharvest Channel Catfish).* If off-flavor is present, it maybe possible to isolate these fish in a separate pond for a

few days (usually 7 to 21 days) until they are purged of the off-flavor. If isolation is not possible and if your customers dislike off-flavor fish, then reject the load of fish.

Weed control

Fee-fishing ponds experience aquatic weed problems like all other ponds. Aquatic herbicides can be used to control aquatic vegetation (see SRAC Publication Numbers 360 and 361, *Aquatic Weed Management).* If you intend to use a herbicide read the label carefully. Most aquatic herbicides have restrictions on fishing and water use after treatment. If the fee-fishing establishment has several ponds for fishing, then herbicide treatment can be rotated (along with fishing) from pond to pond without great inconvenience to the customers. Herbicide use may temporarily restrict fishing in a single-pond establishment, however. In addition, the control of algae or vascular plants may cause dissolved oxygen depletions; be aware of the consequences before treating.

An alternative in many southeastern states is to stock grass carp (white amur). Grass carp stocked at 5 to 20 fish per acre will control most aquatic weed problems that would directly affect fee-fishing operations. Many states require the use of sterile triploid grass carp. Check state regulations and stocking recommendations with your county Extension office or State Fisheries Extension Specialist, Soil Conservation Service office or state fish and game agency before stocking grass carp.

One problem with using grass carp in fee-fishing ponds is that they readily take many popular catfish baits, but often break off because of their large size and great strength. This can result in their injury and death. Anglers must be told to release any grass carp they catch, or their value for vegetation control will be lost. Grass carp are edible, so the fee-fishing operator could allow anglers to keep these fish, paying for them by the pound as they do for other fish. The grass carp would then have to be replaced with new fish. Check with your county Extension office or State Fisheries Extension Specialist, Soil Conservation Service office or state fish and game agency on the legality of selling grass carp for food.

Fish health management

Fish diseases / parasites are always present in the pond environment. Fish are susceptible to these diseases when they become stressed or their resistance is lowered by poor water quality, handling, or nutritional problems (see SRAC Publication Number 474, *The Role of Stress in Fish Disease).* Signs of stress or disease include:

- not feeding (or biting),
- swimming erratically or flashing,
- acting highly excitable or irritable,
- swimming at the surface or lying in shallow water,
- not swimming away rapidly when disturbed, and / or
- having visible sores or discolorations.

If these signs appear, collect a fish or several fish and look for: open sores; eroded areas on fins, skin, mouth, or gills; pale or swollen gills; excessive slime on skin or gills; protruding eyes; and swollen or sunken bellies. Do not collect fish by hook-and-line; healthy fish bite, sick fish don't! If any of these symptoms appear, take or send the fish to a fish diagnostic lab as quickly as possible. Check with your county Extension office or State Fisheries Extension Specialist for the location of the nearest fish disease diagnostic lab and proper shipping procedures to follow for sending samples (see SRAC Publication Number 472, *Submitting a Sample for Fish Kill Investigatiom).* **Do not wait!** Diseases spread rapidly and treatments need to begin as soon as possible. Disease outbreaks will often occur after fish are stocked, especially if captured wild fish are purchased.

A final word of caution about diseases. Many diseases have similar symptoms. Do not assume that because fish show the same symptoms as a previous disease that it is the same disease. Treatments change with the specific disease. An incorrect treatment may cause higher fish losses than doing nothing at all. Always get a diagnosis by a qualified fish disease specialist before starting treatment,

Other considerations

Managing a fee-fishing operation is a complex undertaking. The above discussions have attempted to explain management of the water and the fish, People management is still the key to running a successful fee-fishing operation. This section will discuss management considerations concerning the regulation of fishing through rules related to tackle requirements, fish releases and bait restrictions.

Fishing tackle should be strong enough to catch the fish that are stocked. Light tackle and line will result in many fish being lost by anglers. Fish can be injured and may later die, or they may not feed again until healed. They often become "hook-shy." Set minimum line or tackle requirements that will reduce the loss of fish (or be the sole source of suitable tackle). Most fee-fishing operations have a "no release" requirement. Escaped or released fish severely reduce profitability in fee-fishing operations which charge by the pound. All fish must be kept and not released for the same reasons as outlined above. One notable exception is a fee-fishing operation connected to a restaurant which charges youngsters a fishing fee, then allows them to catch unlimited numbers of fish; however, all fish must be taken to the restaurant where they are cleaned and served to customers.

Most fee-fishing operations restrict the use of live fish (e.g., shad, gold-

en shiners and sunfish) as bait in order to prevent their escape and establishment in the ponds. These bait species can rapidly overpopulate the pond and may introduce new disease organisms. Live bait should be restricted to non-fish species such as worms, crickets and crawfish. Many fee-fishing operations restrict live bait to only that which it sells and do not allow live bait to be brought in by the customer.

Recordkeeping

Fee-fishing is a business, and like any good business operation it requires good recordkeeping. Managers of fee-fishing operations should keep records on numbers and weight of fish stocked and on those removed by anglers or found dead in the ponds. Accurate records will help the manager make better decisions on when to restock with new fish, when to seine to remove "hook-shy" fish, and how much to feed to maintain healthy fish. Many fee-fishing operations that do not charge by the pound still require that all fish be weighed before the customer leaves the premises. Records of water quality (dissolved oxygen, ammonia, etc.) will help managers monitor trends and help identify stressors when disease outbreaks occur. Keep good records, and many management decisions will be clearer and less costly.

Conclusion

This fact sheet has dealt with the management of fish and water quality in food-fish type, fee-fishing ponds. Many of the same water quality considerations discussed, however, would be applicable to the management of largemouth bass-bluegill ponds which are leased for fishing. Of course, there is more to a successful fee-fishing operation than just the management of the fish and water. Fee-fishing operators have to consider location, physical layout, concessions and all the things that impact on their customers. In other words, people management is just as important to consider as fish management. For information on these and other aspects of fee-fishing please refer to SRAC Publication Numbers 479 *(Fee-fishing: An Introduction),* 482 *(Fee-fishing: Location, Site Development and Costs)* and 481 *(Development and Management of Fishing Leases).*



People management is the key to running a successful fee-fishing operation.

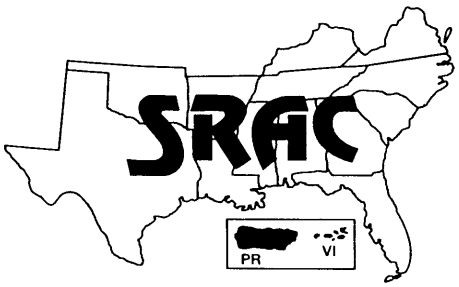
Publication Authors

Michael P. Masser, Extension Fisheries Specialist, Auburn University, Auburn, AL; Charles E. Cichra, Extension Fisheries Specialist, University of Florida, Gainesville, FL; and Ronnie J. Gilbert, Extension Aquaculture Specialist, University of Georgia, Athens, GA.

The work reported in this publication was supported in part by the Southern Regional Aquaculture Center through Grant No. 89-38500-4516 from the United States Department of Agriculture.

SRAC Publication No. 481

Southern
Regional
Aquaculture
Center



June 1992

Development and Management of Fishing Leases

Billy J. Higginbotham and Greg M. Clary*

Leasing of hunting rights to generate income for landowners has become a common practice in most southern states. However, leasing of fishing rights generally has been limited to "fish-out ponds," where channel catfish, rainbow trout, or other species are stocked in specially designed (aquaculture) ponds. Other fee fishing systems include day and long-term leasing of ponds and reservoirs for sportfishing.

The popularity of fishing leases as farm or ranch enterprises has not kept pace with hunting leases generally because water resources held in the public domain have been more readily available compared to state and federal land for sporthunting. Nevertheless, a new trend involving fee fishing is slowly developing across the South. An increasing number of landowners who lease hunting rights are realizing that ponds and reservoirs on their property are valuable resources with the potential to generate additional profits.

Properties with sportfishing opportunities should be more valuable than lands leased for hunting alone, depending on the profitability of sportfish leases. A survey of Texas hunting leases reported that ponds were present on nearly one third of the ranches and that fishing was considered a popular recreational activity on 18 percent of these leases. Results of a 1985 survey by the U.S. Fish and Wildlife Service indicated that while 16.7 million adult Americans hunted, over 2.5 times that number (46.6 million) went fishing.

Demand for opportunities to lease sportfishing rights is expected to increase as demand on public waters increases. It has been reported that demand for fishing is more than twice the demand for hunting among Texans. Furthermore, anglers reported that on average they would take almost twice as many trips as hunters. Anglers were willing to take five trips averaging 125 miles / trip, while hunters were willing to take three trips at 250 miles / trip annually.

Sportfishing as an income-generating enterprise in combination with hunting leases recently has begun to interest some landowners. This is especially true on properties that are not capable of supporting hunting recreation because of limited tract size or urbanization. An increasing number of pond owners have realized that there is a demand for quality sportfishing opportunities. Much of the demand for leased fishing rights results from increased fishing pressure on public waters, decreased construction of new reservoirs, desire for exclusive fishing rights and reasonable expectations of catching fish.

The most important ingredient to successfully leasing private waters for sportfishing is proper management of fish populations. This ensures that they remain at levels capable of supporting reasonable harvest rates. The increased interest in catch and release fishing enhances the opportunities for more anglers to share the available fisheries resources. Catch and release also is consistent with anglers' desire for exclusive fishing rights and expectations of catching fish.

Management

Major steps involved in sportfish leasing include locating lessees, establishing the terms of the lease and drawing up the lease agreement. Landowners offering fishing rights based on a management plan of "there's the gate and here's the key" will seldom be successful. Careful consideration of expected revenues and costs of starting a sportfish leasing program will provide reasonable expectations for profit. Landowners need to carefully plan their leasing enterprise to match available resources, demand for recreational experiences and profit expectations. For instance, sportfisheries emphasizing trophy size fish receive considerable publicity, yet anglers indicate trophy fishing ranks low as a motivation to go fishing.

Larger ponds and reservoirs offer more options for managing fish populations. For example, landowners with 10-acre reservoirs are

* Cooperative Extension Program, Prairie View A&M University, and The Texas A&M University System.

in a more favorable position to manage exclusively for largemouth bass than landowners with l-acre ponds. Even though a market may exist for a target species such as largemouth bass, landowners might consider other species such as channel and blue catfish, sunfish, crappie and even rainbow trout. These alternative species may appeal to a broader range of anglers and may offer increased fishing opportunities.

Marketing is an important responsibility managers face in operating successful fishing leases, as it is for successful hunting leases. Landowners successfully leasing private waters for fishing will offer unique experiences at reasonable prices. These will not be readily available or accessible to the general public at public fishing areas. Careful evaluation of direct competition from other leasing operations, of alternate public fishing areas and of the number of potential lessees is necessary.

Lease fees received by landowners should be expected to pay the various expenses associated with establishing and operating lease enterprises in addition to acceptable returns for landowner labor and management. Investment costs may vary from onetime expenses such as pond construction or improvement to annual operating input costs including fertilizers, labor, chemicals and maintenance. Additional expenses may include security, liability insurance and a portion of the property's ad valorem taxes. Many landowners will be leasing fishing rights on existing ponds or lakes and will not be incurring actual costs involved in pond or reservoir construction.

Management strategies important to developing fisheries on private lands are:

1. Appropriate stocking rates and species balance;
2. Control of noxious aquatic vegetation; and
3. In some cases, fertilization to increase carrying capacity.

Other important operational activities include water quality maintenance, fish attractor construction and maintenance, and fish population surveys conducted by a professional biologist.

Value-added amenities

In addition to basic input costs, additional service-related amenities often provided to clientele include boats and motors, fishing tackle, guide services, meals and lodging. These value-added items are often desired by anglers, but do increase the cost of the lease. Landowners establishing a profitable leasing enterprise must determine in advance how much potential customers are willing to pay for these value-added amenities. It is important to ensure that revenues exceed costs of establishment and operation for a profitable enterprise.

Economic analysis

The potential profitability y of investing in a sportfish lease enterprise should be evaluated prior to start-up in much the same way as any long-term investment with expected future returns. Net present value (NPV) analysis is an appropriate economic tool for estimating the profitability of establishing a sportfish leasing enterprise while accounting for the long-term nature of the investment.

The calculation of NPV is accomplished by deducting current investment requirements from future net earnings, expressed in terms of current dollars, generated by the investment. Expressing future net earnings in current dollars involves accounting for expected inflation and anticipated interest earnings foregone by not putting the same amount of money in an alternative investment. In other words, NPV accounts for the time value of money or the earning potential money has if placed in an interest paying account.

For example, the current value of a contract promising to pay $100 after 5 years is $68.05 (assuming money would earn a real rate of 8 percent interest in an alternative investment). On the other hand, a $68.05 investment today at 8 percent (real rate compounded annually) interest would grow to $100 at the end of five years. In other words, a person would be indifferent between having $68.05 today and $100 five years in the future with the opportunity to earn an 8 percent real rate of interest.

The discount (interest) rate used in estimating NPV is a reflection of several factors, including the landowner's expected return on this and other alternative investments, level of risk involved and prevailing inflation rate. It is appropriate to consider foregone opportunities as costs in economic evaluations and in establishing the rate at which future earnings are discounted to current values since other activities may be negatively impacted by the decision to lease part or all of the available fishing rights.

For example, a landowner facing the costs and revenues listed in Table 1 for an existing 10-acre pond receives more than the 8 percent real return on investment included in the NPV analysis, as indicated by the positive NPV estimate. Results in this example imply that as long as the annual lease fee is greater than $902/yr, the landowner would reap greater benefit from the lease than from investing in an alternative with an 8 percent real rate of return. If the 10-acre lake were located on a 1,000-acre hunting lease, the annual lease fee for fishing rights might be included with the hunting lease by adding an additional amount per acre to the original hunting lease charge.

Marketing and promoting sportfish leases

Outdoor recreation experiences consist of five parts: planning and anticipation, travel to activities, onsite activities, travel from activities and recollection of experiences. All of these elements are important to successfully marketing the fishing enterprise.

Table 1. Example net present value (NPV) analysis of sportfish leasing on an existing 10-acre lake.[1]

Item	Years				
	Start Up	1	2	3	4
Revenue-Lease Fees	$1,250	$1,250	$1,250	$1,250	$1,250
Fingerlings	700				
Fertilizer	150	150	150	150	150
Lime	40				
Herbicide	200	200	200	200	200
Labor	250	250	250	250	250
Taxes	30	30	30	30	30
Insurance	100	100	100	100	100
Net Income	(220)	520	520	520	520
NPV[2]	$1,502				
Breakeven lease price[3]	$ 902				

[1]Assumptions used in creating this example include: (1) lease fees collected at the start of each year to eliminate borrowing operating capitol, (2) start-up costs are assumed to be on owner capital contribution, (3) operating costs are incurred at the beginning at each year, 4) NPV calculated using an 8 percent real rate of return and (5) lake contains fish populations but supplemental stocking of Florida bass and channel catfish fingerlings is planned.
[2]NPV=current value of future net incomes minus initial Start-up costs.
[3]Lease price at which NPV equals $0.

Marketing consists of matching the products of an operation with the needs and desires of customers. However, marketing a recreational experience differs from marketing commodities such as crops, livestock and timber. Landowners interested in marketing sportfish recreation will be dealing with a "non-standard" commodity and will probably be dealing directly with customers (marketing retail).

If on-site lodging is available and the property is close to an urban area, landowners may want to employ a lease of limited duration, i.e., day, weekend or week. However, if landowners do not desire a high degree of contact with the public or cannot provide lodging, a season-long or year-round lease may be preferred. Each landowner must determine the marketing strategy that best suits the individual situation.

Many people mistakenly believe that marketing is just another word for advertising. Promotion can take on many forms, only one of which is advertising. Two effective ways to promote leasing arrangements are personally explaining your leasing opportunities to anglers and providing testimonials by satisfied customers. Advertising techniques that have proven successful for hunting leases also apply to sportfish leases. Word of mouth, local news, natural resource agencies and chambers of commerce are primary sources of advertising for hunting and fishing lease information. Other successful advertising and publicity techniques include, but are not limited to, magazine articles, television, radio, sports shows, trade journal stories and direct mail-outs.

Lease agreements

In order to prevent misunderstandings and clearly define the terms of a sportfishing lease, a written agreement should be developed by the lessor and signed by both parties (see example on page 4). With obvious modifications, many considerations included in hunting leases can be used as a basis for developing written sportfishing lease agreements. Deer lease agreements often include duration of the lease, description of the lease tract, access, species available, hunting methods allowed, density of hunters, price, payment schedule, use of facilities, lease transferability and rights lease renewal.

Although it is possible to prepare a written sportfishing lease on your own, it is recommended that you consult your lawyer during the actual drafting of the document. Money paid for such services may well prevent potential legal problems. At least two copies of the lease should be prepared and properly signed – one copy for the landowner and the other for the lessee(s).

Landowner liability

As with hunting leases, landowners must address the issue of liability whenever sportfishing rights are leased. Landowners leasing sportfishing rights should include a "hold harmless" clause in a written lease agreement that protects them from liability and makes lessees responsible for damage or accidents. Since "hold harmless" clauses are not infallible, landowners should consider

extending insurance coverage or requiring lessees to purchase liability insurance that covers both parties. Statutes regarding liability may also differ between states.

Summary

Although the leasing of sportfishing opportunities is a relatively new enterprise compared to hunting leases, management and marketing concepts are similar. Landowners interested in marketing sportfishing recreation must wear two hats: the hat of a fisheries manager to maintain suitable fish populations and the hat of a successful business manager to maintain positive cash flows and profitability while working with clientele. Unfortunately, many individuals are accomplished and comfortable in one of these roles, but lack the skills or interest to be attentive to the other. The success of sport-fishing operators depends upon well thought out, detailed and written management and marketing plans. The intense competition that exists today for the publics' recreation dollar almost ensures that those depending on blind luck will not succeed. The availability of quality fishing is an important component of a sportfish recreation enterprise. However, it is only one part of the entire recreational experience.

References

Cichra, Charles E. 1989. "Fee Fishing in Florida." Florida Cooperative Extension Service Circular No. 809. Gainesville, FL.

Clawson, Marion and Jack L. Knetsch. 1966, "Economics of Outdoor Recreation." Published for Resources for the Future by Johns Hopkins Press. Baltimore, MD.

Fambrough, J. and J. C. Stribling. 1988. "The Texas Deer Lease. " Texas Agricultural Extension Service, No. L-2334. Texas A&M University System, College Station, TX.

Higginbotham, B. J. and M. H. Legg. 1989. "Fee Fishing: Aquaculture or Recreation Proceedings of Texas Fish Farming Conference, Texas Agricultural Extension Service. College Station, TX

Marion, W. R. and J.A. Hovis. 1985. "Developing a Hunting Lease in Florida," Florida Cooperative Extension Service. Fact Sheet WRS-1. Gainesville, FL.

Reichers, R. K. and G. R. Wilde. 1991. Comparisons of Motivations, Characteristics and Attitudes of Texas Freshwater and Saltwater Anglers. 121st Annual Meeting, American Fisheries Society, San Antonio, TX.

Stoll, J. R. and G. Dharmaratne. 1989. "Private Sector Transactions in the Market for Recreational Hunting Opportunities." Unpublished Manuscript. Department of Agricultural Economics, Texas A&M University, College Station, TX.

Thigpen, J. and D. W. Steinbach. 1990. ''Marketing the Hunting Experience." Texas Agricultural Extension Service, No. B-1694. Texas A&M University System, College Station, TX.

Thomas, J. K., and C. E. Adams. 1989. "The Public and Texas Wildlife." Texas Agricultural Experiment Station, Texas A&M University, College Station, TX.

Thomas, J. K., C. E. Adams, W. K. Knowles and D. W. Steinbach. 1989. Development of Wildlife Resources on Private Lands." Texas A&M University System, College Station, TX.

Thomas, J. K., C. E. Adams and J. Thigpen. 1990. "Texas Hunting Leases: Statewide and Regional Summary." Technical Report No. 90-4. Texas Agricultural Experiment Station, Texas A&M University, College Station, TX.

United States Fish and Wildlife Service. 1988.1985 Survey of Fishing Hunting and Wildlife Associated Recreation. Washington, DC.

Sample Fishing Lease

This lease made and entered into this _____ day of _____, 19__, between _____, hereinafter called the "LANDOWNER," and _____ (the person or group to whom fishing rights are being leased), hereinafter called the "LESSEE."

WITNESSETH THAT:

1. LANDOWNER for and in consideration of the rents and covenants hereinafter referred to does hereby lease unto LESSEE for the purpose of fishing for (bass, catfish, bluegill) the following premises (describe the tract of land and/or pond to be leased).

2. The term of the lease will be for the period of one year, beginning on _____, 19__, and ending on _____, 19__.

3. LESSEE shall pay unto LANDOWNER a rental of $ _____ in cash, one-half of the total rental paid on or before _____, 19__, and the balance to be paid on or before _____, 19__.

4. LESSEE will abide by the state and Federal laws regarding quantity of catch (limit) and minimum size of fish, e.g., 12-inch minimum for bass fishing, and will report quantity and size of fish caught to the LANDOWNER so that records may be accurately kept.

5. LANDOWNER reserves the right and privilege for a maximum of (give number of people) persons from his family to fish on the leased property at any time.

6. LESSEE may permit guests to accompany him upon the leased property for the purpose of fishing for (bass, catfish, bluegill) but the number of guests the LESSEE may invite upon the leased property shall not at any time exceed (number agreed upon).

7. LESSEE will not cut, injure, or destroy any trees, crops, roads, fences, buildings, or other improvements located on the leased property, and LESSEE agrees to compensate LANDOWNER for all damages so caused as determined by LANDOWNER. Vehicular travel is limited to established roads now located on leased property.

8. LESSEE will not assign this lease or sublet the leased property or any part thereof without the written consent of LANDOWNER.

9. LESSEE agrees to save harmless LANDOWNER against any and all claims of loss, damages, liabilities, or other expense of any nature, character, and kind that may arise out of, be connected with, or as a result of LESSEE'S occupancy and activities on the leased property.

10. If LESSEE defaults in the performance of any of the conditions or covenants hereof, then such breach shall cause an immediate termination of this lease and a forfeiture to LANDOWNER of all rentals prepaid.

11. LESSEE and his guests (may) (may not) camp overnight on the premises and (may) (may not) swim in the pond.

12. LANDOWNER agrees to maintain adequate weed control in and around the pond, and (describe any additional management practice that will be performed, e.g. periodic stocking with catfish, feeding of fish, etc., or any other facilities that will be provided for the lessee's use).

LANDOWNER	LESSEE
WITNESS	LESSEE (Space should be provided for each lessee to sign.)

SAMPLE

From "Fee Fishing in Florida," Charles E. Cichra.

The work reported in this publication was supported in part by the Southern Regional Aquaculture Center through Grant No. 89-38500-4516 from the United States Department of Agriculture.

SRAC Publication No. 482

Southern Regional Aquaculture Center

August 1994

Fee Fishing

Location, Site Development and Other Considerations

Charles E. Cichra, Michael P. Masser and Ronnie J. Gilbert*

Important ingredients for a successful fee-fishing operation are: having a good location, knowing your clientele, providing good facilities and services, and operating like any profitable business.



The site must be carefully chosen, developed and promoted to attract a large group of anglers, and once there, for them to have a successful and enjoyable fishing experience. The staff must work with the customers to provide consistently good catches in a pleasant atmosphere. This fact sheet provides information which can be used as the basis for locating, developing and operating such a facility.

Additional information can be found in SRAC Publication Numbers 480, *Fee-fishing Ponds: Management of Food Fish and Water Quality* and 483, *Fish-out Ponds: Economics.*

Location

Most successful fee-fishing operations are located within 30 to 50 miles of population centers with 50,000 or more people. Proximity to popular fishing areas or other types of public attractions increases an operation's chance for success. Locating in a high-traffic area (major highway or intersection) increases the number of people who pass by and have a chance to see the operation.

Do not locate near an existing fee-fishing operation unless you are confident that there are enough customers to support more than one facility. The majority of anglers at urban fee-fishing establishments drive 15 miles or less, while anglers at rural fee-fishing operations commonly drive more than 15 miles.

Ponds should also be located in a "natural" setting screened from urban distractions, and have easy access and plenty of parking. Trees effectively screen roads, parking areas and buildings from the fishing area. Other considerations in selecting a site include having soils suitable for constructing ponds and having an adequate supply of high quality water. For more information, refer to SRAC Publication Numbers 100, 101 and 102 on site selection and construction of levee and watershed ponds.

*Department of Fisheries and Aquaculture, University of Florida; Alabama Cooperative Extension Service, Auburn University; and Cooperative Extension Service, University of Georgia.

Clientele

Fee fishing appeals to experienced anglers who simply like to fish but are limited by time or resources (e.g., owning a boat), families with small children, the physically handicapped, single parent families and the elderly. Fee fishing is attractive to tourists or individuals who only occasionally fish because in most states no license is required to fish in a fee-fishing pond.

Fee fishing provides the excitement and challenge of fishing with improved chances of catching fish. Fish-out ponds are especially appealing to families with children because of the ease of catching fish. They are an excellent place to take someone who is learning to fish.

Many patrons will have little fishing experience. Nationwide, most patrons are family groups (parents with children), groups of family members and friends, or individual men. Many customers will be retired or disabled. Repeat customers will represent a large proportion of the clientele.

The four leading reasons why people go fee fishing are:

- good fishing;
- as a family activity;
- abundance of amenities available; and
- it is a fun and safe activity.

Advertising

Fee fishing must be planned as a business. Advertising can greatly enhance the probability of success. Many forms of advertising are used by fee-fishing operators, including word-of-mouth, roadside signs, newspaper advertisements, television and radio commercials, local shopper and visitor guides, bumper stickers, fliers, direct mail, and hats and clothing with imprinted advertising.

The most effective means of advertising are word-of-mouth and signs. Most customers come based on word-of-mouth, so be sure that customers are satisfied. For every group of anglers which has a good fishing experience, as many as 8 to 10 additional groups will show up at an operation. It is a definite advantage for an operation to have been around for a while so that customers get to know the facility and its operators. Having a good relationship between the management and customers is important to ensure that people will refer others to the operation. Professionally-painted attractive signs, large enough to be easily seen and well located, are usually worth the expense. During the start-up period of a new operation, other forms of advertising can also be effective. Advertisements should include directions; facilities, services and activities available; schedule of operation; and fees.

Permits

Permits must be obtained for surface and ground water (wells) rights, surface water storage (pond and ditch construction), construction of buildings and for meeting any additional county or municipal regulations. Permits may also be required to sell live fish, bait and concessions, and for construction and operation of restroom and fish cleaning facilities. Employees involved in selling food and cleaning fish should obtain state health certificates.

Many states also have special permits for the operation of fee-fishing facilities. These permits allow customers to fish without having to purchase state fishing licenses.

Developing a successful fee-fishing operation

A fee-fishing operator should always keep in mind that, primarily, he/she is providing recreation, not just selling fish. To successfully provide quality recreation, the operator must pay close attention to facility design and security, pond construction, fishing success, concessions, daily operation, promotion, safety and aesthetics. A fee-fishing operation is a people-oriented business that requires a person with the personality, motivation and resources to deal with the public. It is not that much different from operating a restaurant; people come for enjoyment and expect service.

Facility design and security

Security and control of access must be kept in mind when designing a fee-fishing operation. Good security will increase customer safety and decrease vandalism, unwanted entrance during off hours and theft. In most cases, complete fencing of the pond area with only one entrance is recommended. Paths, fences, gates and landscaping should lead the customers from the parking area to the entrance, usually the concessions area, where entry and exit to the ponds can be supervised. This design ensures that entrance fees are collected. Entrance fees help to reduce loitering by individuals who do not intend to fish. As anglers leave the facility, fees can be collected for all fish that were caught, and coolers, pails and other storage containers can be inspected to reduce theft.

Concessions and restrooms should be located in the entrance and exit area. Sales of concessions can be increased by funneling traffic past concession areas. Restrooms should be located in sight of the cashier to allow for good supervision. Restrooms and other out-of-the-way places are a temptation for some customers to dispose of fish that they have caught and do not want to purchase.

Security lighting of more remote parts of the ponds will help keep out unwanted night-time intruders and provide a safer and more convenient fishing environment for late-night anglers. Lighting also allows extended hours of operation.

Since a fee-fishing business is often operated close to the owner's home so that the pond and concession areas can be closely watched, it is important to

make private areas off limits to customers. Areas open to fishing and associated activities should be clearly identified to protect the privacy of family members and neighbors.

Paths leading to the ponds will minimize the effects of heavy foot traffic. Special considerations must be taken in design and construction for physically-handicapped anglers. Often, inexpensive minor design modifications will greatly improve access for this group of anglers. **Keep safety in mind!**

Pond size and construction

Every imaginable shape, size and construction technique have been used for fee-fishing ponds. The following are some important considerations that a prospective or expanding fee-fishing operator should consider when building or renovating ponds. Pond size and construction are important to the overall success of a fee-fishing operation.

Ponds should be constructed with:

- a good clay base and dam core
- smooth, even bottoms with no stumps or obstructions
- properly constructed drains
- proper bank, side and bottom slopes
- accessible banks
- levees that are wide enough to allow vehicular traffic for stocking, harvest by seining and routine maintenance
- emergency spillways

Ponds without a proper clay base or dam core will leak making it difficult to manage or maintain water levels. Ponds should be constructed with a drainage system through the dam and smooth bottoms sloping toward the drain without obstructions, so they can easily be seined and drained (see SRAC Publication Number 480 (*Fee-fishing Ponds: Management of Food Fish and Water Quality*).

Rectangularly-shaped ponds allow a larger shoreline-to-water ratio than square ponds, thus providing more shoreline for fishing a given size pond. Irregularly-shaped ponds give people the feeling that they are fishing under a more or less natural setting; however, margins should not be so irregular that the pond cannot be effectively seined. Optimum pond depth is between 3 to 5 feet, except where icing is a problem. Those ponds should be 5 to 8 feet in depth. Fish do well at this depth and seining is simplified. Avoid pond areas with depths of less than 2 feet to reduce aquatic weed problems.

Pond banks need to be grassed or sodded and should be wide, relatively flat, but gently sloping toward the pond. This allows for easy access, room to accommodate the movement and comfort of customers, and quick drainage of water after rains. Ideally, ponds should be constructed with minimum slope of the banks down to the water so patrons can fish at the water's edge and land fish without problems. Finally, if the pond receives run-off during rainfall, it should have an emergency spillway. It may be necessary to build an escapement barrier across the emergency spillway to keep large fish from leaving the pond during heavy rains. For assistance in pond construction contact your local USDA Soil Conservation Service Office.

Pond size is also important. Small ponds are better from a management and fishing success standpoint than large ponds. Ponds of one quarter to one acre in size can be readily managed. Ponds of this size can be quickly stocked to optimum levels, seined or treated for disease or to improve water quality, and can be intensively fished from the banks. Ponds larger than two acres generally do not allow complete fishing access unless they have been specifically designed with earthen jetties, piers or a highly convoluted shoreline (see "Utilizing existing ponds" section which follows).

Intensively managed fee-fishing operations should have multiple ponds. This enables the manager to better control fishing success and to isolate and treat diseases or other problems. If several ponds are available, the manager can move patrons to ponds where fish are actively biting, assuring successful and satisfied customers. Fish can be moved from one pond to another to increase densities and catchability. Also, fish of unknown condition (i.e., purchased off-farm) can be isolated in a separate pond away from other fish so there is no chance of disease transmission. If a single pond



Concessions can increase profit potential.

in a multiple pond fee-fishing enterprise develops a problem (e.g., disease), the manager can get the problem under control in that pond without having to close the entire operation.

Water source

All ponds must have a water source. Sources could include rainfall, a reservoir, stream or well. Rainfall can be undependable; therefore, these ponds should have an alternative water source. Many fee-fishing operations have a reservoir that traps rainfall which is used to fill and maintain the fish-out ponds. The reservoir may also be fished. Ponds can be filled with water from a nearby stream, but first check on state laws that regulate use of public water. Surface water sources may introduce wild fish, parasites and diseases. The best water source is a well which produces good quality water. Wells should be sized to the pond acreage. For filling ponds, a well of at least 40 gallons per minute per acre of pond is needed. A well that produces 20 gallons per minute per acre of pond is sufficient to maintain water levels. Finally, always have well water checked for its quality before relying on it as a water source.

Concessions

Concessions can be the most profitable segment of a fee-fishing enterprise. Concessions should be within easy access of the ponds, attractively maintained, and can include some or all of the following:

- bait
- fishing tackle
- food, snacks and drinks
- ice
- newspapers
- cookbooks, fish batter and seasonings
- hats and clothing
- first aid supplies
- rental equipment (rods, reels, chairs, umbrellas, etc.)
- live and dressed fish (fresh / frozen)
- fish cleaning services

Concessions should be viewed as not only a chance to make money, but also an opportunity to provide the customer with essential services. Many patrons will arrive having forgotten critical supplies; without a concession that carries these items, patrons will be forced to return home or leave to purchase the items elsewhere. A selection of bait (worms, crickets and stink-bait) and fishing tackle (hooks, line, sinkers, corks and lures) is most essential.

Many concessions also rent fishing equipment, chairs and giant umbrellas. Cane poles or spin casting gear are most commonly used. Deposits help discourage rental equipment vandalism and theft. Food is also common, ranging from drinks and snacks to complete meals. Sundries such as sunscreen, bandaids, aspirin and antiseptics should also be sold. Often, operations sell imprinted caps, sunglasses and T-shirts. These become walking advertisements for the establishment. A holding tank can provide live fish for individuals who do not fish, but want fresh fish for home consumption, and for anglers who want more fish than they were able to catch.

Adequate restroom facilities are necessary to insure the success of an operation. They must be kept clean. Consult with your County Health Department about appropriate regulations.

Finally, fish cleaning services are popular. Many anglers like to catch fish, but do not like to clean them and will pay for this service. Fee-fishing operations commonly charge $0.25 to $0.75 per pound to clean fish for the customer. Before starting a fish cleaning service, check with your County Health Department about sanitation standards for fish processing and waste disposal. Dressed fish, fresh and / or frozen, are also commonly sold. Selling dressed fish means anyone can take fish home for dinner. Consider accepting food stamps.

Non-anglers can be provided with alternative activities and conveniences such as game rooms, playgrounds, picnic areas and camping facilities. Seriously consider the possible financial return on such investments and potential increased liability and maintenance cost before providing these facilities.

Times of operation

For most of the southern United States, the primary fishing season runs from the middle of March through early November, with Memorial Day to Labor Day being the peak period. People have the urge to fish and fish are generally most willing to bite during this period. Sales as high as 4,000 pounds per week, most of which are sold on weekends, have been recorded at some operations. Both anglers and fish slow down in the heat of the summer. Southern states have an advantage over northern states in that catfish will often bite during the winter, especially if it is mild. Northern operations, however, can provide anglers with good fishing through much of the fall, winter and spring by stocking species such as rainbow trout which prefer cold water. Ice coverage can stop pond fishing, but aerators can keep ponds open and fishable.

Fish-out operations are generally open on weekends. Thursday through Sunday are peak days. Some operations are open seven days a week, 24 hours a day. Daylight hours are most common, with many operations remaining open after dark especially on weekends. A good plan is to start out slowly, being open only on weekends, and then to expand operating hours as business increases.



Regulations should be in obvious places.

Signs

Signs should clearly direct customers to parking areas and from parking areas to the entrance of the pond area. At the entrance, signs should provide all information needed by potential customers including prices, fishing regulations, times of operation and activity rules. Prices for fish, fishing and fish cleaning, along with other services should be clearly displayed to avoid confusion and later misunderstandings. All rules should be posted. Swimming and the use of alcohol should be prohibited for liability reasons. All fish caught should be kept to prevent loss of fish due to delayed hooking and handling mortality.

Other items that can or should be on the signs include:

- prohibiting the use of abusive language
- indicating which ponds are open for fishing
- indicating any fishing gear restrictions
- prohibiting snagging, minnow traps and live bait
- asking customers to report anyone breaking these rules

These rules, along with information on how to fish and business name, location and times of operation, can be included in a pamphlet that is given to all customers. Anglers can refer to this while fishing, and take it home as a form of advertising to later encourage them and others to return.



Limited entry times and well-publicized liability statements are good practices.

Promotion

Night fishing and group rates, including free entrance fees, should be offered to the elderly, handicapped and youth groups such as those sponsored by churches, schools and scout organizations. You may want to award prizes for the largest fish, most fish or for catching a specially-marked fish when groups are fishing.

Some operations further promote their business with regular customers by tagging a few "trophy" fish and offering prizes to any angler that catches one. Posting instant photographs of customers with their catch, especially large fish or large numbers of fish, will bring people back to show their friends the photograph, and it will encourage other anglers to return. Your imagination is the limit when promoting your business.

Safety and liability

Liability insurance is highly recommended because customers can be injured while on the property. Product liability insurance covers you if an individual gets sick eating fish that they take home. Insurance coverage is often required by the landowner, if different from the operator, and by your banker. Generally, the more people that you deal with, the higher your insurance rates. All reasonable steps should be taken to avoid negligence. Alcohol should not be allowed on the premises because of the many problems and questions of liability that it can cause.

Equipment must be placed so that it can operate effectively, yet provide little inconvenience and potential danger to customers. Electrical aerators also pose the problem of combining the hazards of electricity with that of water. First aid and life saving equipment should be readily available. All areas should be kept mowed to reduce habitat for snakes and other pests. Fire ant and wasp control programs should be maintained to reduce injuries due to

insect bites and make fishing more comfortable.

Aesthetics and comfort

The area in and around the ponds should be aesthetically pleasing. The grounds should be well kept: grass mowed, banks maintained and litter removed. Covered trash containers should be readily available and frequently emptied. Provide benches and picnic tables in shaded areas for customers by planting fast-growing trees or constructing small shade pavilions or awnings. Good seating and shade will improve customer comfort and increase the length of their stay. Fee fishing is a people-oriented business; provide patrons with good fishing in a pleasing setting and they will be return customers.

Utilizing existing ponds

Many existing ponds, while not ideal for fee fishing, can be successfully used. In fact, many fee-fishing operations in the Southeast use old hill ponds.

The problems with using existing hill ponds are generally associated with design. These ponds usually will not have proper access around the entire pond, many will be too large (usually greater than 2 acres) to be fished effectively, and most cannot be easily drained or seined. Ponds that cannot be completely fished, and those that cannot be drained or seined, accumulate large numbers of "hook-shy" or non-catchable fish (see SRAC Publication Number 480, *Fee-fishing Ponds: Management of Food Fish and Water Quality*). Thirty to fifty percent of the catfish in a pond can be "hook-shy." This accumulation of fish reduces fishing success and limits the number of additional fish that can be stocked into the pond. As fishing success drops, so will customer satisfaction.

Although access and fishing success can be a problem, larger hill ponds can be attractive because of their aesthetic beauty and the perception of a larger, less crowded environment. Overwhelming fishing success may not be the most important aspect of a customer's fishing trip. Some customers come to enjoy the experience of fishing and the beauty of uncrowded natural surroundings.

Many times large hill ponds are managed as "ticket lakes" rather than as "fish-out lakes." Fewer fish are stocked and most profit is derived from concessions. The entrance fee goes to purchase fish for restocking. Large hill ponds managed as ticket lakes can be profitable, particularly as supplemental income.

Remember, fee fishing is a recreation business. Success will be based on repeat customers and good word-of-mouth advertising. A repeat customer is one who caught fish and "had a good time." An attractive, well-managed pond with consistently good fishing and friendly service will keep customers coming back!

Additional sources of information

Contact your county Extension office or State Fisheries Extension Specialist for more information on fee fishing in your state. Many states have Extension publications which deal specifically with the topic of fee fishing or with related topics such as pond construction, fish production, management of water quality and fish health.

The work reported in this publication was supported in part by the Southern Regional Aquaculture Center through Grant No. 89-38500-4516 from the United States Department of Agriculture.