RECREATIONAL LEASES AS MEANS TO INCREASE LANDOWNER INCOME AND ENHANCE BIODIVERSITY: OBSERVATIONS FROM ILLINOIS, USA

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Abstract

Recreational leases for hunting, fishing, and wildlife watching provide a means by which landowners can supplement their income from land ownership. The income from recreational use is likely to provide incentives to conserve and manage land characteristics that enhance wildlife habitat hence biodiversity. Illinois professional farm managers were surveyed regarding recreational leases held by their clients. Information was collected on the extent of recreational leases or lack of, lease rates, recreational uses, types of wildlife, land management practices, and property characteristics. Results indicated that 38% of managers had recreational leases on about 6% of their managed properties. Average lease rates ranged from $9 to $38 per hectare depending upon the quality of the recreational property. Landowners on 55% of the properties adopted land management practices to enhance wildlife habitat. Results of a hedonic lease rate model indicated adoption of those land management practices positively affected lease rates.

Keywords: recreational lease, lease terms, land management, hedonic model

Introduction

Trends in production agriculture in Illinois have resulted in fewer, larger and more specialized production units (Hoppe and Banker 2006). Although this trend has been important to provide low cost commodities to consumers, a consequence has been reduced farm employment in rural areas. A consequence of increased specialization in maize and soybean production has been reduced habitat for wildlife (Warner 1994). About 77% of Illinois' land area is suitable for cropland and 80% of that cropland is in maize and soybean production (USDA-NASS 2006).

Another recent trend in Illinois is an increase in property values as a result of properties purchased for recreational uses (ISPFMRA 2006). Recreational buyers account for 10% of Illinois farmland buyers according to the annual survey by Illinois Society of Professional Farm Managers and Rural Appraisers (ISPFMRA 2006, p. 51). Recreational buyers purchase farmland for recreational uses such as hunting, fishing and wildlife watching. Prices for farmland being sold for recreational uses are increasing across the state. For example, Western Illinois, reported recreational farms selling for $1,800 to $3,000 per acre ($4,450 to $7,410 per hectare) in 2005 compared to $1,200 to $2,000 per acre ($2,960 to $4,940 per hectare) in 2002 (ISPFMRA 2006, p. 18). North Central Illinois reported a 10% increase in recreational land prices from 2004 to 2005 (ISPFMRA 2006, p. 23). Southern Illinois reported a 14% increase in recreational land values from 2004 to 2005 (ISPFMRA 2006, p. 50). Eight of the 10 regions in the

ISPFMRA survey reported a strong demand for recreational tracts. Only Northeast and Central Illinois did not report activity for recreational sales.

One means for farmers and landowners to capture the increase in wealth from rising land values as a result of strong recreational demand is to sell the property to a recreational land buyer. An alternative to selling farmland with desirable recreational attributes is to lease the land for recreational uses. Recreational leases for hunting, fishing, or wildlife watching provide a means by which rural Illinois landowners can supplement their income from their land and maintain their land ownership.

The opportunity exists for rural landowners to increase their income through recreational leases by capturing more of the annual recreational dollars spent in Illinois. The 2001 National Survey of Fishing, Hunting and Wildlife-Associated Recreation reported that Illinois in 2001 had 1.2 million anglers spending $598 million, 310 thousand hunters spending $450 million, and 2.6 million wildlife-watching participants spending $596 million (U.S Dept. of Interior, Fish & Wildlife Service—Illinois 2003, p. 5).

A minority of rural landowners have recreational leases. Likely reasons for why more landowners do not lease are a lack of information about appropriate lease rates for the type of habitat owned, length of lease to offer, lease associated expenses-- brokerage fees, advertising, land management changes and habitat enhancement expenses, as well as concerns about safety, liability, and damage to crops, timber and other property. To illustrate the variability of leasing rates and terms consider the asking lease rates, listed by a hunting lease broker. Annual leases range from $10 to $40 per acre ($25 to $99 per hectare). Weekly leases range from $16 to $27 per acre ($40 to $67 per hectare). Deer season only leases range from $18.75 to $31.25 per acre ($46 to $17 per hectare). A spring turkey hunting lease lists for $5.50 per acre ($13.60 per hectare) (Smith 2006). The size of those properties ranged from 24 to 200 hectares. This range of lease types and lease rates indicate a range of leasing opportunities for landowners, but also indicates why a landowner without prior recreational leasing experience is possibly reluctant to lease not knowing what type of lease, or how much to charge, or what other expenses will be incurred. This reluctance to lease by landowners suggests a role for professional farm managers to provide recreational lease services to landowners.

Objective

The purpose of this study was to provide information to landowners and professional farm managers about the recreational lease market in Illinois, in order to enhance their income and land use decisions. The specific objectives were: (1) to determine the extent of recreational leasing activity in Illinois, (2) to determine the lease terms and rents for recreational leases in Illinois, and (3) to determine the land management practices, land characteristics and other factors that affect recreational lease rates.

Research Method

The means to accomplish the first two objectives were to survey professional farm managers about the extent of recreational leasing, terms of leases, lease rates, land management practices, and characteristics about the property. The third objective was accomplished by a model to estimate recreational lease rates as a function of land management practices, land characteristics, location factors, and other socioeconomic factors.

Survey

Previous recreational lease studies (McCurdy and Echelberger 1968, Baen 1997, Hussain et al 2005, and Buller et al 2006) were reviewed prior to development of our survey instrument. The survey procedure

outlined by Dillman (2000) was followed. The survey was sent to members of the Illinois Society of Professional Farm Mangers and Rural Appraisers (ISPFMRA). An internet based survey by QuestionPro.com (2006) was used to collect survey responses. Contact information consisted of current e-mail addresses from the 2006 ISPFMRA membership roster. The survey targeted accredited farm mangers (AFM) whose accreditation was conferred by the American Society of Farm Managers and Rural Appraisers (ASFMRA) and who manage real property within the state of Illinois. Although the initial e-mailing included individuals with the accredited rural appraiser (ARA) designation as well in case they managed land as well.

The membership list consisted of 277 contacts, of which approximately 133 were designated AFM. The initial survey was distributed on 4 December 2006 with three reminders occurring at approximately twelve day intervals. The survey was constructed in a manner that contained both specific and open ended responses to various questions. Questions were posed to managers who managed property with recreational leases and those who managed property without recreational leases. Managers with recreational leases were subjected to questions that inquired about the overall terms, conditions, physical makeup of property, and land management practices. Managers without recreational leases were subjected to questions that provided insight to reasons and conditions why recreational leases may or may not be a viable option.

Responses were sorted by managers with and without recreational leases. Responses were grouped into five regions within the state of Illinois (region 1 northwest, region 2 northeast, region 3 east central, region 4 west central, and region 5 south) as defined by the Illinois Department of Natural Resources (IDNR 2007). The criterion to assign a response to a region was based on which region contained the majority of the counties containing a respondent's managed properties. The objective for grouping responses into regions was to investigate the correlation between regions and recreational leasing and lease rates. Descriptive statistics were prepared by QuestionPro.com (2006) and SPSS for Windows (2004).

Hedonic lease rate model

A hedonic lease rate model was developed to determine the characteristics impacting lease rates. Hedonic models were used in previous real estate valuation models because of non-uniform nature of each parcel of real estate. The model assumes that there is a market for each characteristic of a property. Hedonic models have been used in lease rate studies (Bain 1997, Hussain et al 2005, and Buller et al 2006). The model decomposed the contribution to the lease rate by each of the explanatory variables included in the model. The estimated model in general form was:
Lease rates per hectare = f(regional location, size of tract, land composition, water sources, lodging and food services, wildlife populations or habitats, preferential leases, and land management practices).
Where, lease rate per hectare was the dependent variable. Regional location variables referred to the five state regions defined by IDNR. Region 4 west central Illinois was hypothesized to have a positive impact because of its reputation for fee hunting and large deer. Region 5 southern Illinois also has a reputation for water fowl hunting clubs. Size of leased tract was hypothesized to have an inverse impact on leaser rate per hectare assuming less competition for larger tracts. Land composition variables capture the land mix in terms of percent woods, cropland, etc. Properties with woods or a mixture of land classes are hypothesized to have greater recreational value. Water source variables, streams, ponds, etc. were hypothesized to add value especially in regions with water fowl hunting. Lodging and food service offered by landowners was hypothesized to add to lease rates. Wildlife populations or habitat variables were hypothesized to add to lease rates for specific species of wildlife. Preferential leases were hypothesized to add value because the recreational tenant's access to property has preference over a crop tenant's access. Land management practices to enhance wildlife habitat were hypothesized to add value to lease rates. The model was estimated by linear regression using SPSS for Windows (2004).

Results

The survey completion rate was 39% or 52 farm managers completed the survey out of the 133 AFMs listed in the membership roster. Respondents managed property in all five IDNR regions. The majority of respondents were from region 3 east central with 47%, followed by region 4 west central with 26%, region 1 northwest with 16%, region 5 south with 4%, and region 2 northeast with 2%. Of the 52 respondents, 20 managers had clients with recreational leases. Those 20 managers were from regions 1, 3, and 4 with 45% from region 4. This was not surprising because as previously stated region 4 is noted for their deer hunting and fee hunting. The respondents managed a total of 236,590 hectares, of which 7,400 hectares were under some form of recreational lease, approximately 3%. Recreational leases accounted for 6% of the total managed area for those 20 managers with recreational leases.
For those respondents without recreational leases, 65% responded that they foresee no recreational leases for their clients within the next five years. Reasons checked for no foreseeable leases included: property not suited for recreational purposes 61%; perceived problems (liability, damage to property, conflicts with farm tenant, etc.) out weigh benefits of lease 39%; landowner and manager were not knowledgeable about recreational leases 13% each; and there is not sufficient demand for recreational leases 10%.

Terms and characteristics of recreational leases

The average tract size for a recreational lease was 388 hectares. The leased tracts ranged in size from 8 hectares to a high of 1618 hectares. The managers indicated that 83% of the lease agreements were written. Managers were asked to indicate the annual lease income per land area for low, median, and high valued recreational properties. The average indicated values per hectare for low, median, and high valued properties were respectively, $9, $28 and $38. Lease rates were quoted primarily as price per acre 45%, followed by lease fee per season 35%. The respondents indicated that 65% of the leases were contracted for a year while 31% were contracted for a deer hunting season.

Clientele

The leaseholders were individuals 55%, outfitters 27%, hunting clubs 14%, and the remainder being other. Recreational leases were acquired primarily for deer hunting 75%, followed by small game 8%, turkey hunting 6%, goose and duck hunting 6%, and fishing 1%. Leases for bird watching, 4-wheelers and snowmobiles were not indicated by the managers.

Land mix and land management practices

The mean land mix for a typical lease consisted of 32% cropland, 5% pasture, 50% woods, 1% wetlands and 1% streams and ponds. The range of responses describing a typical land mixed varied. Woods for example ranged from 0% to 100%.
Additional services provided by landowners included the posting of property hunting signs 71%, and the provision of duck and goose blinds 24%.
Land management practices enhancing wildlife habitat were practiced on 55% of the leased properties. Those practices included food plots 42%, permanent cover 27%, mowing 24%, establishing trails 15%, and developing ponds 4%.
Managers indicated that 71% of the landowners with recreational leases carried additional liability insurance. Added coverage ranged from $100,000 to $5,000,000.

Hedonic lease rate model results
The small number of managers with recreational leases and incomplete responses limited the number of explanatory variables in the model. Two models were estimated with alternative dependent variables, the median lease rate and the high lease rate. The explanatory variables were region 4, a binary variable identifying region 4 from regions 1 and 3; size of leased tract measured as midpoint of range indicated by

managers for median value properties and likewise for high value lease rate model; cropland measured as a percent of leased tract area; woods measured as percent of leased tract area; superior lease measured as a percentage of leases which are superior; land management practices measured as a percentage of landowners adopting land management practices to enhance habitat.

The results (Table I) indicated that for the median lease rate model land management practices and land use variables for woods and cropland were significant at 10% probability and had a positive impact on lease rates. For the high lease rate model, location in region 4 and land management practices were significant at 10% probability and had positive impacts on lease rates.

Table I: Hedonic Lease Rate Model

	Median Lease Rate			High Lease Rate		
Variables:	Estimates		Std. Error	Estimates		Std. Error
Intercept	-19.254		16.974	-30.377		38.740
Region 4	4.710		10.345	39.578	*	20.077
Size of tract (ha)	-.017		.039	-.159		.297
Cropland (%)	.398	*	.210	.702		.420
Woods (%)	.346	*	.182	.256		.363
Superior lease (%)	.096		.119	-.062		.235
Land management practices (%)	.257	**	.114	.492	*	.229
Number of observations	19			19		
R^2	0.501			0.510		

**Significant at 10%*
***Significant at 5%*

Summary and Conclusions

Our first objective was to determine the extent of recreational leasing activity in Illinois. From our results, 38% of the managers had property with recreational leases. For those managers without recreational leases, 35% indicated they would likely have recreational leases in the next 5 years. If this expectation is fulfilled then approximately 60% of the managers would have recreational leases. This could result in approximately an additional 5,000 hectares with recreational leases if all of those managers maintained 6% of their managed land area in recreational leases.

Our second objective was to determine the lease terms and rents for recreational leases in Illinois. Average lease rates ranged from $9 to $38 per hectare depending upon the quality of the recreational property. Cash rents for cropland of average productivity in western Illinois ranged from $250 to $350

per hectare in 2005 (ISPMRA 2006, p17). Thus, the addition of recreational lease income could increase lease income from 2 to 15%.

Our final objective was to determine land management practices, land characteristics and other factors that affect recreational lease rates. Our small number of observations and variation in lease terms and property characteristics limit a definitive statement on factors that impact lease rates. Our results suggest that location, percent woods and crops and adoption of land management practices to enhance habitat had positive impacts on lease rates, but the adoption of land management practices to enhance habitat was the consistent factor having an impact on both median and high value lease rates.

We conclude that opportunities for recreational leasing provide a means to increase Illinois landowner income and provide incentives to improve wildlife habitat and hence the biodiversity of rural Illinois.

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