

### **III. OPEN SPACE FUNCTIONS**

Through field study, consultation with resource experts familiar with the town, and meetings with the open space committee, the study team has learned how the town's open space resources perform different functions. These diverse functions range from water quality protection to historic resource protection.

We felt it was to the town's advantage to focus on these functions as the basis of its open space preservation strategy. By paying attention to the functions served by open space resources rather than to the resources themselves, the town will be better able to make logical and balanced land use decisions. When developers know beforehand which functions the town intends to preserve in an area, they can make appropriate design and planning decisions before committing significant resources to a project.

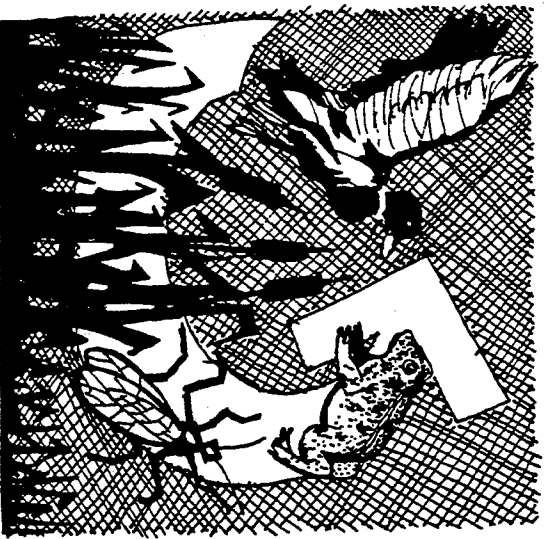
Most of the open space functions overlap and relate to one another. For example, by preserving water quality, the natural system is preserved. This, in turn, provides recreation opportunities. However, in order to provide a logical way to evaluate land use changes, the functions have been grouped into ten major areas.

The way in which the open space functions perform on a particular site and how this functional performance will be affected by a

change in land use can only be precisely determined by comparing that change to the site at the time the change is proposed. However, by looking at the information in this section, by referring to the study area analysis in Section V, and conferring with the town planning commission before any land use changes are made, a person will learn:

1. if a land use change can be made without causing significant harm to the open space system, and
2. how that change can be designed so as to maximize the future ability of the open space functions to continue performing.

This section contains a description of the ten major types of open space functions occurring in the Town of Dunn. At the end of this section we have included a chart which indicates how these functions are distributed among the different study areas in the town.



## 1. NATURAL SYSTEMS PRESERVATION

The preservation of the town's natural system is a prime function served by the town's open space system. The evaluation of land use changes should include the following natural system considerations:

**A. Wildlife**—Wildlife is broadly defined here to include all forms of animal life, from large mammals and game fish to invertebrates (animals without backbones), such as insects and crayfish. Wildlife is preserved by preserving its habitat. The habitat includes:

**Feeding habitat**—the right types of food and the opportunity to hunt or consume it.  
**nesting/resting/feeding/burrow habitat**—places to lay eggs, rear young, rest, and breed.

**wintering/migratory habitat for waterfowl**—places to rest during migratory flights and the availability of open water for over-wintering species. The springs in the Waubesa Wetlands are an important wintering area for ducks. Mud Lake is an important resting place for migratory waterfowl because the ice on the lake there melts sooner than in other waters in the area. Migrating waterfowl species which use Mud Lake include the pie-billed grebe, common goldeneye, coot, northern shoveler, gadwall, lesser scaup, black duck, pintail, American widgeon, ruddy duck, great blue heron, whistling swan, and Canada goose.

**movement corridors**—different habitat needs are often met in different areas, and requirements change with the seasons. Therefore, wildlife must have the ability to move along the ground to different parts of their habitat to complete daily and seasonal living cycles. Flight patterns of birds are also considered movement corridors.

The chart shown on page 32 summarizes the major types of habitat and wildlife in the town. This chart can be used to estimate potential effects that proposed land use changes can have on wildlife. Realize, however, that the chart does not include every species of wildlife in the town nor does it reflect the true complexity of wildlife habitat patterns. The study team felt that if the chart were more complex, it would cease to be a practical tool for evaluating land use impacts on wildlife. If important questions arise which require further information, wildlife specialists should be consulted.

Species included in this chart were chosen because they were familiar to local people and they represent a broad sample of the wildlife found in the town. In most cases, by considering the habitat of these species, the habitat of unmentioned species will also be accounted for. For simplicity, some species were grouped into categories. These categories include, but are not necessarily limited to, the following:

### Birds of Prey

marsh hawk  
 rough-legged hawk  
 sharp-shinned hawk  
 Cooper's hawk  
 red-tailed hawk  
 great horned owl

### Song Birds (partial list)

mourning dove  
 flicker  
 red-headed woodpecker  
 hairy woodpecker  
 downy woodpecker  
 tree swallow  
 purple martin  
 blue jay  
 black-capped chickadee  
 white-breasted nuthatch  
 brown creeper  
 American robin  
 common grackle  
 American goldfinch  
 song sparrow

### Waterfowl

mallard  
 blue-winged teal  
 wood duck

### Upland Game Birds

ring-necked pheasant  
American woodcock  
bobwhite quail  
Hungarian partridge

### Marsh and Shore Birds

American bittern  
least bittern  
belted kingfisher  
yellow-headed blackbird  
red-winged blackbird  
Virginia rail

### Sora

swamp sparrow  
common snipe  
spotted sandpiper  
herring gull  
ring-billed gull  
Forster's tern  
black tern

### Small Rodents

mice  
meadow vole  
chipmunks

### Game Fish

walleye  
northern pike  
large-mouth bass  
white bass  
yellow bass

### Pan Fish

blue gill  
black crappie  
white crappie  
perch  
pumpkin seed

### Rough Fish

white sucker  
carp  
channel catfish  
black bullhead  
yellow bullhead  
brown bullhead

### Other Fish Species

freshwater drum or sheepshead  
stickleback  
assortment of minnow species

### Snakes

common garter snake  
Plain's garter snake  
DeKay's snake  
red-bellied snake  
brown water snake  
milk snake  
hog-nosed snake  
blue racer

### Turtles

Blanding's turtle  
painted turtle  
snapping turtle  
map turtle  
painted box turtle  
Bell's turtle  
false map turtle  
musk turtle  
spiny soft-shelled turtle

### Frogs

leopard frog  
green frog  
chorus frog  
spring peeper  
cricket frog  
tree frog  
pickeral frog  
bullfrog

### Toads and Salamanders

American toad  
tiger salamander  
mudpuppy  
four-toed salamander

### Invertebrates

insects  
crustaceans  
snails and clams  
annelids

Included in the consideration of wildlife habitat changes should be potential activities that occur near wildlife habitat which impair its usefulness. Some animals have a low tolerance to human disturbance and require a buffer between their habitat and sources of movement, light, and noise. Loose dogs from rural development often harass wildlife. This problem has already been reported in the Hook Lake area.

**B. Plant and Animal Diversity**—A second consideration which should be made when evaluating land use impacts is the importance of plant and animal diversity. The long-term stability of the natural system depends on preserving a diversity of plants and animals. These plants and animals should be viewed as parts of communities and food chains, not just as individual species. Oftentimes plant communities and food chains are disrupted in ways that aren't readily apparent. For example, building homes in woodlots may preserve large trees but destroys woodland plant communities and wildlife.

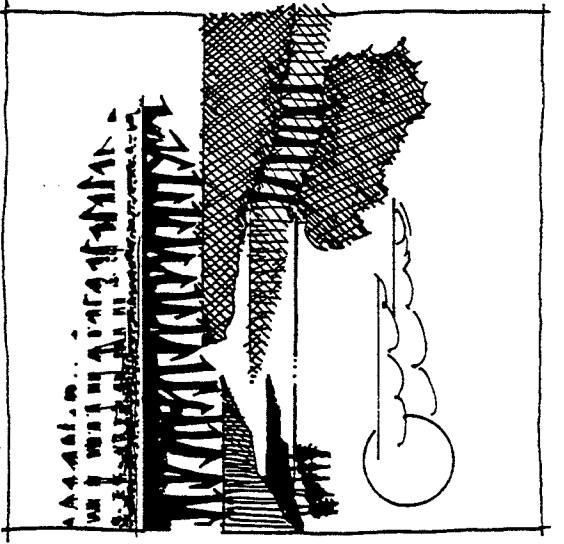
**C. Scientific Research**—Because of the area's rich geologic and natural history and its diversity of natural areas, the town offers valuable opportunities for scientific research. At present, for example, a major ecosystems research project is being conducted in the Waukesa wetlands.

### Wildlife/Habitat Matrix for Identifying Land Use Impacts

	BIRDS						MAMMALS										FISH				REPTILES		AMPHIBIANS		INVERTEBRATES
	Birds of Prey	Song-Birds	Sandhill Cranes	Water-Fowl	Upland Game Birds	Small Marsh and Shore Birds	Deer	Muskrat and Mink	Squirrels	Rabbits	Red Fox	Woodchuck	Small Rodents	Opposum	Raccoon	Game Fish	Pan Fish	Rough Fish	Other	Snakes	Turtles	Frogs	Salamanders	Toads	
Hedgerows	FN	FN			FN		FM		FN	FN	FN	FN	FN	FN	FN					FN				FN	FN
Woodlot Edge	FN	FN	F		FN		FN	FN	FN	FN	FN	FN	FN	FN	FN					FN				FN	FN
Woodlots	N	N	F		FN		FN	FN		FN	F	FN	FN	FN					F	FN*	FN		FN	FN	FN
General Pasture	F	FN	F		F		F		FN	F	FN	FN	F	F					FN	N	FN		FN	FN	FN
Cropped Field	F	F			F		F		F	F				F											FN
Idle Field	F	FN	F		FN		FN		FN	FN	FN	FN	FN	F						FN	N	FN		FN	FN
Upland Area Around marsh	FN	FN	FN		FN		FN	F	FN	FN	FN	FN	FN	FN	FN					FN	N	FN		FN	FN
Trees Over-looking Water	FN	FN						FN																	
Streams and Stream Corridor	F	FN	F		FN		FN			M	FN	FN	FN	FN	M				M	FN	FN		FN	FN	FN
Temporary Wetland	F	F	F		FN					FN		FN	FN	FN					N	FN	FN		FN	FN	FN
Cattail Marsh	F	FN	FN		FN		FN	FN				FN	FN	FN	FN				FN	FN	FN		FN	FN	FN
Brush Marsh	FN	FN			FN		FN	FN		FN		FN	FN	FN	FN					FN		FN		FN	FN
Kettle Hole marsh	FN	FN	FN		FN		FN	FN		FN		FN	FN	FN	FN				FN	FN	FN		FN	FN	FN
Open Water in marsh	F		M		FN		M													FN	FN		FN	FN	FN
Lakes Kegonsa and Waubesa	F		M		FN		FN													FN	FN		FN	FN	FN
Yahara River and Mud Lake	FM	M	M		FN		FN	FN							FN				FN	FN	M			M	FN

F = Feeding Habitat      N = Nesting/Resing/Breeding/Burrow Habitat      M = Movement Corridor

\* Box Turtles      \*\* Wood Ducks

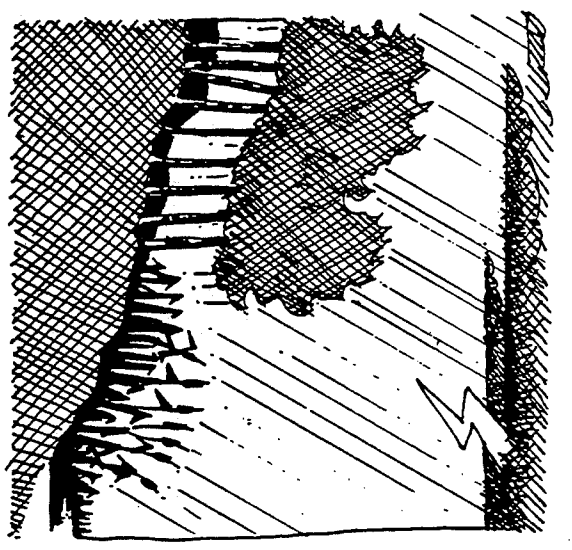


## 2. AESTHETIC QUALITY PRESERVATION

Both residents and visitors place a high value on the visual qualities of the town's open space resources. Natural scenery, views, and the overall rural atmosphere provide an important contrast to the noise, traffic, glare, and concrete which surround those places where most people either live or work. When land use changes occur in the town, aesthetic qualities can be preserved by making the most of the following principles:

1. Preserve roadside views of hedgerows, woods, lakes, streams, wetlands, shores, and farmland.

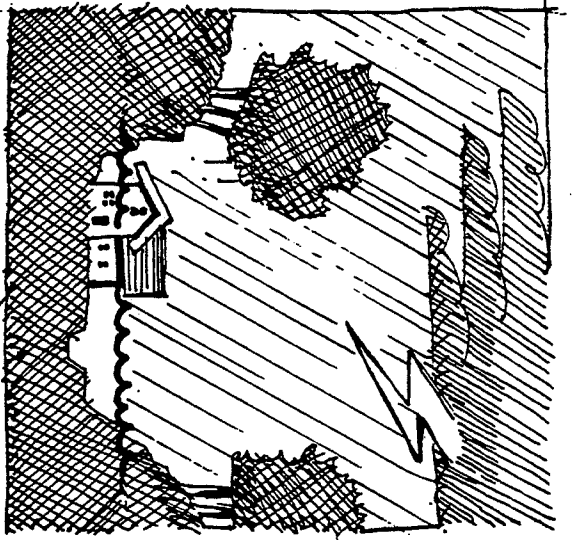
2. Preserve natural roadside vegetation.
3. Preserve views from within wetland areas and stream corridors which currently contain few signs of human activity.
4. Preserve high quality vistas of the lakes, wetlands, the agricultural landscape, and the Madison skyline.
5. Use natural colors and materials when building in the vicinity of open space resources.
6. Avoid concentrations of night lights in otherwise dark, rural areas.
7. Avoid the introduction of noise-generating activities where natural topography provides acoustic isolation, as in the Hook Lake area.



## 3. SURFACE WATER QUALITY PROTECTION

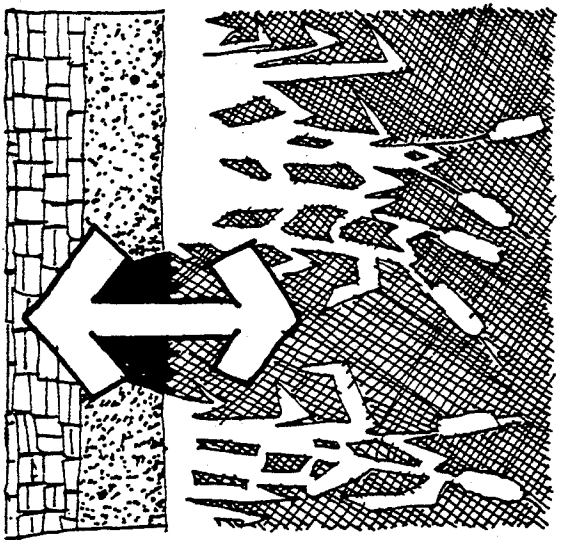
Land runoff from developed areas, construction sites, and agricultural areas is responsible for much of the pollution entering the town's lakes. This runoff contains sediment, nutrients, toxic chemicals, and other materials which destroy fish and game habitat and reduce water quality for recreational uses.

The protection of the town's open space resources helps reduce runoff problems. Hedgerows, wetlands, and vegetative buffer strips along streams and intermittent drainageways act as natural filters that prevent pollutants from reaching the lakes. However, accelerated rates of runoff and sedimentation reduce the ability of these resources to perform their filtering function. Therefore, it is vital to control runoff problems at their source. This can be accomplished by following the principles set forth in the "Erosion and Sedimentation" discussion in Section IV of this report.



#### 4. NON-STRUCTURAL FLOOD CONTROL

The preservation of floodplain areas provides a non-structural means of absorbing the impact of flood waters and reducing danger and property damage. The 100-year floodplain is generally considered the area in which flood storage capacity should be preserved.

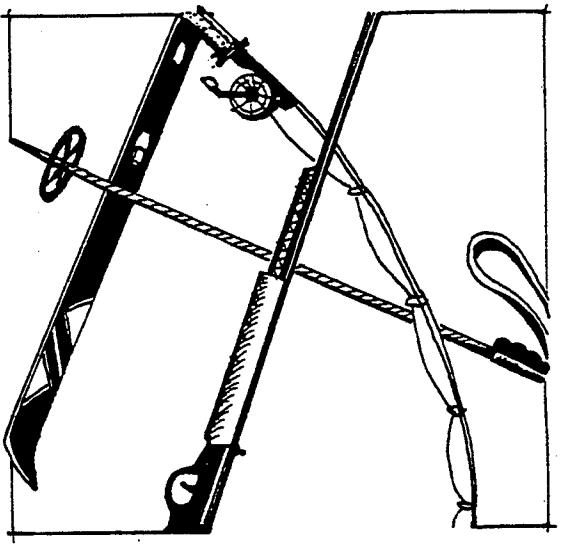


#### 5. MAINTENANCE OF GROUNDWATER SYSTEM

The ground water system in the town provides a high volume of pure water for wells and, where discharged from springs, for Lake Waubesa, Mud Lake, and Lake Kegonsa. The preservation of the town's open space system also helps preserve the quality and quantity of the ground water system. Much of the southern one-third of the town serves as an aquifer (ground water source) recharge area. Here, water that collects in wetlands and low areas seeps through the soil to the water table. Because much of this part of the town contains sand and gravel layers, care must be taken when deciding on the location and density of septic systems and sanitary landfills. Sand and gravel does a relatively poor job of filtering pollutants from these sources. Considerable ground water recharge also occurs on hilltops throughout the town which contains porous soils.

The northern two-thirds of the town and the hilly area to the southwest of Lake Kegonsa are considered aquifer discharge areas. There, numerous springs provide clean water to the lakes. In these areas, care must be taken to preserve the flow of spring water to the lakes and to ensure that springs are not blocked by improper pond development. The hilltops in these areas function as aquifer recharge areas.

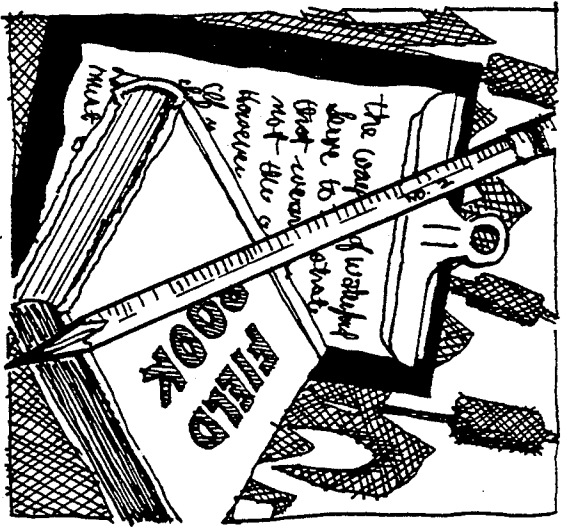
In the future, increases in runoff caused by urban development and the continuous removal of high amounts of ground water from the Yahara River watershed could reduce ground water levels. This could dry up shallow wells and degrade the quality of the town's wetlands and lakes.



## 6. PROVISION OF RECREATION OPPORTUNITIES

The open space system provides a wide variety of recreation opportunities for town residents and residents of surrounding communities. For many centuries, the town's lakes, streams, and wetlands provided outstanding opportunities for hunting, fishing, and trapping. Today, although these opportunities still exist, they are undertaken more for recreation than for economic purposes.

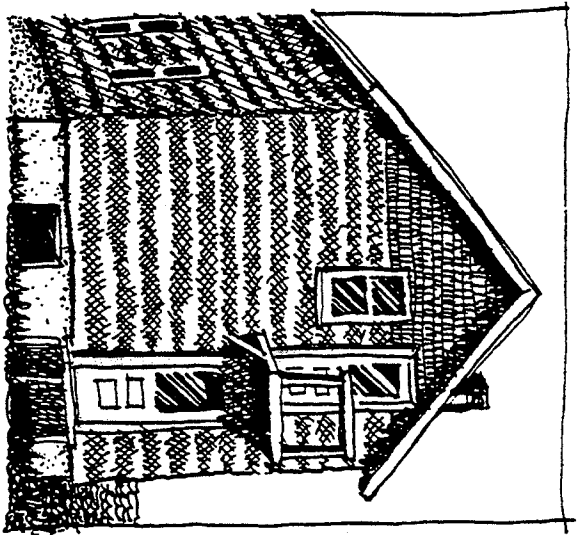
Since the turn of the century, Lakes Waubesa and Kegonsa have enjoyed a wide reputation for their boating, swimming, and skiing opportunities. The open space system also contains many potential park sites for picnicing and active recreation activities. Stream corridors, wetland perimeters, and ridgelines hold future potential as hiking, walking, and cross-country skiing trails. Roadsides and hedgerows provide wild food gathering opportunities—activities that are especially enjoyed by longtime residents of the town.



## 7. EDUCATION AND SPIRITUAL ENRICHMENT

The open space resources of the town provide many opportunities for learning about the natural environment and discovering the relationships between human activities and natural processes. Much of this learning occurs informally, as people observe the land around them during a day's visit or over a period of many years. The town's open space resources are also used for local school and university class tours, providing "real world" lessons to reinforce classroom studies.

The spiritual enrichment that results from living close to areas where nature remains uncontrolled is one of the most important functions of preserved open space. The growth of this emotional tie with the land often goes hand in hand with an increased knowledge and familiarity with it.



## 8. HISTORIC AND CULTURAL RESOURCE PROTECTION

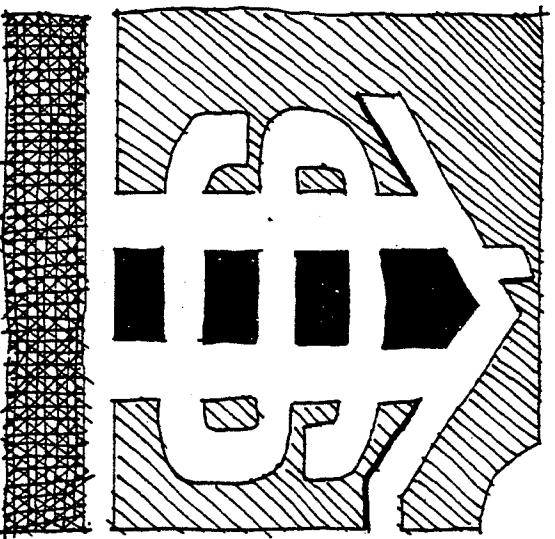
Many historical and cultural resources are associated with other open space resources in the town. For example, Indian campsites were located where food was plentiful—near rivers, lakes, and wetlands. Early farmsteads were located near sources of water and wood. Historic and cultural sites that exist today stand as reminders of the past and add meaning to our daily lives. Not only is it important to preserve these sites but it is important to preserve the natural settings around them because they provided the original context within which events occurred on the site.

Examples of archaeological sites in the town include campsites, villages, mounds, fords, burial sites, and gardens. Examples of settlement era sites including farmsteads, schools, a cemetery, and remnants of trails. More contemporary cultural resources, such as outstanding examples of modern architecture, have not been inventoried. They, too, contribute to the overall quality of the community.



### 9. COMMUNITY SEPARATION

Physical elements of the landscape often provide good limits to community growth in a particular direction. This helps reduce uncontrolled sprawl which, in turn, helps the community maintain its identity and provide services efficiently. By using natural resources, such as rivers or wetlands, to define the edge of the community, a pleasant municipal boundary is provided which improves the overall quality of the community. The most significant example of this in the town is the function that the Yahara River and Mud Lake play as the border between McFarland and the town.



### 10. PROPERTY VALUE ENHANCEMENT

Not all of the land that is open in the town today will forever remain undeveloped. When development does occur in a planned context, studies have shown that protected open space resources have a positive effect on property values. A study conducted by the Southeastern Wisconsin Regional Planning Commission found that "parkways, especially those which preserve high value elements of the natural resource base or enhance the natural beauty of an area, consistently have a significant positive impact on the value of adjacent residential property."<sup>1</sup>

A study of the effects of greenbelts on property values in Boulder, Colorado<sup>2</sup> suggest that the existence of greenbelts may have a significant effect on adjacent property values. This study also suggests that, in the long run, increased property values from the developed land could compensate for the cost of land acquisition and the loss of property tax revenues from the preserved open space.

### INFORMATION SOURCES

<sup>1</sup>Southeastern Wisconsin Regional Planning Commission, A REGIONAL PARK AND OPEN SPACE PLAN FOR SOUTHEASTERN WISCONSIN: 2000, Chapter 10, "Impact of Public Open Space Lands on Residential Property Values Based on Analyses in Milwaukee County," p. 275, Waukesha, WI, November 1977.

<sup>2</sup>Correll, Mark R., and Lillydahl, Jane H., Singell, Larry D., "The Effects of Greenbelts on Residential Property Values: Some Findings on the Political Economy of Open Space," LAND ECONOMICS, Vol. 54, No. 2, May 1978.

Barrows, Richard and Rosner, Monroe, PUBLIC LAND AND PROPERTY TAXES, Research Division, College of Agriculture and Life Sciences, University of Wisconsin-Madison, No. R2794, June, 1976.



# Distribution of Open Space Functions in the Town of Dunn

STUDY AREA:	FUNCTION:					
	1. Natural Systems Preservation					
A. NORTHWEST	P	P	P	P	R	R
B. WAUBESA WETLANDS	P+	P+	P+	P+	P+	P+
C. GRASS LAKE	P+	P+	P	P	P	(P)
D. HOOK LAKE	P+	P+	P	P	P+	P+
E. SOUTHEAST	P+	P+		P+	P	(P)
F. MUDD LAKE & KEENANS CREEK	P+	P+	P+	P+	P+	P+
G. DOOR CREEK	R	R	P	P	R	(P)
	2. Aesthetic Quality Preservation					
	P	P	P	P	R	R
	P	P	P	P	P	P
	P	P	P	P	P	P
	P	P	P	P	P	P
	3. Surface Water Quality Protection					
	R	P+				R
	4. Non-Structural Flood Control					
	P	P	P	P	P	P
	5. Maintenance of Groundwater System					
	P	P	P+	P+	P	P
	P	P			P	P
	6. Provision of Recreation Opportunities					
	P	P	P+	P+	P	P
	P	P	P	P	P	P
	P	P	P	P	P	P
	P	P	P	P	P	P
	P	P	P	P	P	P
	P	P	P	P	P	P
	P	P	P	P	P	P
	7. Education and Spiritual Enrichment					
	P	P	P	P	P	P
	P	P	P	P	P	P
	8. Historic and Cultural Resource Protection					
	P+	P	P	P	P	P
	P	P	P	P	P	P
	9. Community Separation					
	P	P	P	P	P	P
	10. Property Value Enhancement					

P = function present      P+ = function very important      R = function present, but rehabilitation needed      (P) = future potential for function in area

*Swamps and wetlands were once considered wasteland, undesirable, and not picturesque. But as the people became more sophisticated, an appreciation was acquired that swamps and wetlands serve a vital role in nature, are part of the balance of nature and are essential to the purity of the water in our lakes and streams. Swamps and wetlands are a necessary part of the ecological creation and now, even to the uninitiated, possess their own beauty in nature.*

*Is the ownership of a parcel of land so absolute that man can change its nature to suit any of his purposes? The great forests of our state were stripped on the theory man's ownership was unlimited. But in forestry, the land at least was used naturally, only the natural fruit of the land (the trees) were taken. The despoliation was in the failure to look to the future and provide for the reforestation of the land. An owner of land has no absolute and unlimited right to change the essential natural character of his land so as to use it for a purpose for which it was unsuited in its natural state and which injures the rights of others.*

*... The changing of wetlands and swamps to the damage of the general public by upsetting the natural environment and the natural relationship is not a reasonable use of that land which is protected from police power regulation.*

—JUST V. MARINETTE COUNTY  
56 Wis. 2d 7. (1972)