

## Chapter 4

# Overview of Assessment Processes and Findings for Natural Communities and Species of the Region



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### 4.1

## Terrestrial communities

### 4.1.1 Terrestrial classification

An important step in developing creating a recovery plan for the region's biodiversity was the development of a system for classifying the region's natural communities. While many of the region's land managers were using community classifications based on one developed by the Illinois Natural Areas Inventory (INAI) (White 1978), there were some differences among the many systems. The primary shortcoming of the INAI system is that it does not identify woodlands as a separate community type, whereas scientists today recognize this community's distinctiveness and importance. Scientists and land managers within Chicago Wilderness worked together to develop a standardized system for the region to serve as a tool for region-wide efforts, although classification systems in place at the local level are still used for specific management actions.

The classification scheme includes seven basic community classes. Within each community class are several community types, and often there are subtypes within types. Table 4.1 gives the complete listing of terrestrial community types. Complete scientific descriptions of the various communities can be found in the Chicago Wilderness Community Classification System (Appendix 1). Summarized descriptions may be found in the Chicago Wilderness *Atlas of Biodiversity* ([www.epa.gov/glnpo/chiwild](http://www.epa.gov/glnpo/chiwild)) and at the beginning of each of the sections in Chapter 5. This classification system was developed for regional purposes. It should be noted that the region is part of three natural divisions: Morainal, Lake Plain, and Grand Prairie. Natural divisions are units of

landscape defined by a combination of geology, physiography, soils, hydrology, pre-settlement vegetation, and characteristic fauna (Swink and Wilhelm 1994).

While the Chicago Wilderness classification system was the basis for this plan, it is important to be able to relate this system to national efforts to classify community types. Appendix 2 includes a cross-reference to the prevailing national standard for community classification (Grossman et al. 1998, Anderson et al. 1998, Federal Geographic Data Committee 1997). One benefit of this translation is that it allows comparison of Chicago Wilderness community classifications to The Nature Conservancy's database of globally threatened community types (Faber-Langendoen 1996). Table 4.2 shows the natural communities in the Chicago Wilderness region that are ranked as critically imperiled, imperiled, or rare at the global level. See Appendix 2 for an explanation of the entries in this table.

While natural communities are defined mainly according to plant associations, each community has associated animal species. Chicago Wilderness scientists and land managers developed a list of the major animal associations found in the terrestrial communities (Table 4.3). The animal assemblages do not coincide exactly with plant communities, and some differences in nomenclature arise from this. Some animal assemblages occur in more than one community type. This plan evaluates these animal assemblages in terms of their status and the importance of the Chicago region to their global conservation. Considering animal assemblages, rather than just individual species, allows a better understanding of trends due to widespread habitat loss and degradation. The region's mammal species, for the most part, use a range of habitats and do not aggregate readily into different habitat-based assemblages. We have not yet described

Table 4.1  
**Terrestrial Community Types in the Chicago Wilderness Classification System**

#### Forested Communities

- Upland forest
  - Dry-mesic
  - Mesic
  - Wet-mesic
- Floodplain forest
  - Wet-mesic
  - Wet
- Flatwood
  - Northern
  - Sand
- Woodland
  - Dry-mesic
  - Mesic
  - Wet-mesic

#### Savanna Communities

- Fine-textured-soil savanna
  - Dry-mesic
  - Mesic
  - Wet-mesic
- Sand savanna
  - Dry
  - Dry-mesic
  - Mesic

#### Shrubland Communities

- Fine-textured-soil shrubland
  - Dry-mesic
  - Wet-mesic
- Sand shrubland
  - Dry-mesic
  - Wet-mesic

#### Prairie Communities

- Fine-textured-soil prairie
  - Dry
  - Mesic
  - Wet
- Sand prairie
  - Dry
  - Mesic
  - Wet
- Gravel prairie
  - Dry
  - Mesic
- Dolomite prairie
  - Dry
  - Mesic
  - Wet

#### Wetland Communities

- Marsh
  - Basin
  - Streamside
- Bog
  - Graminoid
  - Low shrub
  - Forested
- Fen
  - Calcareous floating mat
  - Graminoid
  - Forested
- Sedge meadow
- Panne
- Seep and spring
  - Neutral
  - Calcareous
  - Sand

#### Cliff Communities

- Eroding cliff
- Dolomite bluff

#### Lakeshore Communities

- Beach
- Foredune
- High dune

or evaluated animal assemblages associated solely with aquatic communities, although key species and features of concern were part of the evaluation process for these communities.

Full reports from the animal workshops are available online at [www.chiwild.org](http://www.chiwild.org). Scientific names for the species mentioned in this plan are listed in Appendix 3.

### 4.1.2 Overview of existing information on natural-area extent

Originally based on the Illinois Natural Areas Inventory, the Illinois Natural Heritage database includes information about amounts and quality of remaining high-quality sites for each community type. These data provide a good representation of the high-quality sites in the

Illinois portion of the region (Table 4.4). These sites may be publicly protected or they may be on private land. Similarly, the Indiana Natural Heritage database provides information on the quantity and quality of community types found in Indiana, but the coverage is not nearly as complete as it is in Illinois. For many sites, the quantity and quality are not known.

To develop a more complete picture of the remaining extent of natural communities in the entire Chicago Wilderness region, we compiled data on protected land of each community type from a variety of sources (Table 4.5). While these data represent the best available compilation, the method of collection imposes many limits to their interpretation. The Forest Preserve and Conservation Districts vary greatly in the extent and type of information they have on their lands.

Table 4.2  
**Crosswalk<sup>1</sup> between Chicago Wilderness Communities and National Standard  
 for Community Types for those Communities which are Globally Rare<sup>2</sup>**

Chicago Wilderness Name	The Nature Conservancy Name	G-Rank
Dry-mesic fine-textured-soil savanna	North-central bur oak openings*	G1
Mesic fine-textured-soil savanna	North-central bur oak openings*	G1
Wet-mesic fine-textured-soil savanna	Bur oak terrace woodland	G1
Dry-mesic fine-textured-soil shrubland	Hazelnut barrens	G1?
Wet-mesic woodland	Swamp white oak woodland	G1
Wet-mesic sand shrubland	Hardhack shrub prairie	G1
Northern flatwood	Northern (Great Lakes) flatwood	G2
Mesic fine-textured-soil prairie	Central mesic tallgrass prairie	G2
Mesic sand prairie	Mesic sand tallgrass prairie	G2
	Midwest dry-mesic sand prairie*	G3
Wet sand prairie	Lakeplain wet-mesic prairie	G2
	Central wet-mesic sand tallgrass prairie	G2G3
	Lakeplain wet prairie	G2G3
	Central cordgrass wet sand prairie	G3?
Dry gravel prairie	Midwest dry gravel prairie	G2
Mesic gravel prairie	Midwest dry-mesic gravel prairie	G2
Dry dolomite prairie	Midwest dry limestone-dolomite prairie	G2
Dry-mesic sand savanna	Lakeplain mesic oak woodland	G2
	Black oak/lupine barrens*	G3
Sand flatwood	Pin oak-swamp white oak sand flatwood	G2?
Mesic dolomite prairie	Midwest dry-mesic limestone-dolomite prairie	G2?
Wet dolomite prairie	Midwest wet-mesic dolomite prairie	G2?
Panne	Interdunal wetland	G2?
Sand seep	Midwest sand seep	G2?
Dry fine-textured-soil prairie	Midwest dry-mesic prairie	G2G3
Wet fine-textured-soil prairie	Central wet-mesic tallgrass prairie	G2G3
	Central cordgrass wet prairie	G3?
Dry sand prairie	Midwest dry sand prairie	G2G3
Beach	Great Lakes sea-rocket strand beach	G2G4
Dry sand savanna	Black oak/lupine barren*	G3
Dry-mesic sand shrubland	Midwest dry-mesic sand prairie*	G3

<sup>1</sup> Based on community descriptions, The Nature Conservancy community types have been matched to Chicago Wilderness Community types. It should be noted that this is not a simple one to one match; often a Chicago Wilderness type covers more than one TNC type and vice versa.

<sup>2</sup> The Nature Conservancy has developed a system to reflect global rarity of the communities. The first three categories here are defined as follows:

- G1 = Critically imperiled globally (typically 5 or fewer occurrences)
- G2 = Imperiled globally (typically 6 to 20 occurrence)
- G3 = Vulnerable (typically 21 to 100 occurrences)
- G#G# = range of ranks; insufficient information to rank more precisely
- ? denotes inexact numeric rank

\* Signifies that the TNC community type corresponds to more than one Chicago Wilderness community type and therefore is found elsewhere in the crosswalk.

Table 4.3  
**Terrestrial Animal Assemblages  
 Identified for Conservation Planning**

### Birds

Moist grassland birds (with and without shrubs)  
 Dry grassland birds  
 Savanna birds  
 Open woodland birds  
 Hemi-marsh birds  
 Shoreline birds  
 Closed upland woods birds  
 Closed bottomland woods birds  
 Pinewood birds

### Reptiles and Amphibians

Savanna reptiles and amphibians  
 Sedge meadow, fen, and dolomite prairie  
 reptiles and amphibians  
 Forest and woodland reptiles and amphibians  
 Grassland reptiles and amphibians  
 Sand savanna and sand prairie reptiles  
 and amphibians  
 Marsh reptiles and amphibians  
 Panne reptiles and amphibians  
 High gradient stream reptiles and amphibians  
 River, lake, and pond reptiles and amphibians

### Insects

Dry and mesic blacksoil prairie insects  
 Dry and mesic sand prairie insects  
 Dry and mesic gravel prairie insects  
 Wet prairie insects  
 Dry blacksoil savanna and woodland insects  
 Wet blacksoil savanna and woodland insects  
 Sand savanna insects  
 Fen insects  
 Marsh insects  
 Sedge meadow insects  
 Bog insects  
 Floodplain forest insects  
 Upland forest insects  
 Foredune insects

### Mammals

The mammals of Chicago Wilderness do not aggregate into assemblages. Mammals of concern are listed in Table 4.8.

The McHenry County Conservation District (1998) recently conducted a natural-areas inventory for the entire county. This report provides information on each site's community types and its quality but does not include any acreage for the community types. Total acreage of each site is given. This study is useful in that it covers the entire county, not just Conservation District lands, but it is limited in that it does not include amounts of land for each community type.

The DuPage County Forest Preserve District has a complete database covering all of its holdings, which includes both quality and quantity of each community type on each of its sites. The DuPage community-classification system differs more than any other from the Chicago Wilderness system, and a comparison of the types was required before the data could be compiled with those from the other counties.

For the Recovery Plan process, the Lake and Kane County Forest Preserve Districts estimated the number of acres of each community type from aerial photographs of their sites. Lake County Forest Preserve District staff outlined each community type on the photographs and used a planimeter to calculate the areas. For Kane County, the areas were roughly estimated from the photographs. In both cases, the land managers assessed quality based on their experience with the lands in question, not on quantitative surveys.

Both the Cook and Will County Forest Preserve Districts have data on quantity and quality only for certain sites. These sites include Nature Preserves and a few sites for which there are detailed management schedules. The data come from the original Illinois Natural Areas Inventory, nature-preserve dedication proposals, and county management schedules. The data do not portray the complete picture of the natural areas in either county.

To add to the data available at the beginning of the Recovery Plan process, a current Chicago Wilderness project is using satellite imagery to develop a vegetation map for the entire region, including unprotected lands. From the satellite images, it is possible to identify vegetative cover for eleven land-use categories, including eight natural or semi-natural categories. The accuracy of these classifications is adequate within protected lands in Illinois to produce preliminary results (Table 4.6). These data help provide a more complete picture of the natural communities currently included in our preserve system. A next step in the process will be to improve the accuracy of the classifications of lands outside the preserves and in Indiana. Ultimately, remotely sensed data will provide a baseline for monitoring progress toward achieving the goals of this recovery plan, for measuring amounts and quality of natural communities, and for assessing the impacts of fragmentation and increased suburban development.

Table 4.4  
**Sum of Acres from Illinois Natural Areas Inventory by Community Type and Grade**

(Data are from Illinois Natural Heritage database for six county area of northeastern Illinois)

CW Category	INAI Community Type	Total No. of Acres	% Grade A	% Grade B	% Grade C
Lakeshore.....	Beach	63	76	24	0
	Foredune	102	84	16	0
Cliff.....	Dolomite cliff	7.5	73	27	0
	Dry-mesic barren	6	0	0	100
	Eroding bluff	11.4	91	9	0
Forested.....	Dry-mesic upland forest	1236.5	15	46	25
	Mesic floodplain forest	243	2	29	63
	Mesic upland forest	980	19	50	26
	Northern flatwood	92.9	0	93	2
	Sand flatwood	261	0	8	87
	Wet floodplain forest	32	0	100	0
	Wet-mesic floodplain forest	34	0	76	24
	Wet-mesic upland forest	50	0	100	0
Prairie.....	Dry gravel prairie	29	10	31	10
	Dry sand prairie	179.2	68	9	23
	Dry-mesic dolomite prairie	27	7	10	56
	Dry-mesic gravel prairie	3	33	33	33
	Dry-mesic prairie	19	26	53	21
	Dry-mesic sand prairie	370.3	63	12	17
	Gravel hill prairie	5.6	0	100	0
	Mesic dolomite prairie	18	11	33	56
	Mesic gravel prairie	22	41	41	14
	Mesic prairie	417.9	9	44	39
	Mesic sand prairie	477.1	22	18	39
	Wet dolomite prairie	5	0	100	0
	Wet prairie	214.1	7	33	57
	Wet sand prairie	293	27	25	33
	Wet-mesic dolomite prairie	91	0	16	65
	Wet-mesic prairie	277.5	11	22	58
	Wet-mesic sand prairie	69.4	25	12	63
	Shrubland.....	Shrub prairie	78.5	0	38
Savanna.....	Dry sand savanna	277	40	4	23
	Dry-mesic sand savanna	388	11	27	42
	Dry-mesic savanna	3	0	0	100
	Mesic savanna	20	0	100	0
Wetland.....	Acid gravel seep	7	0	100	0
	Calcareous floating mat	169	62	36	2
	Calcareous seep	19.1	63	11	0
	Forested bog	107	29	64	0
	Forested fen	22.5	0	64	36
	Graminoid bog	7	71	29	0
	Graminoid fen	277.8	24	26	32
	Low shrub bog	34	62	24	0
	Low shrub fen	0.4	100	0	0
	Marsh	2098	14	70	13
	Panne	67	81	4	15
	Sedge meadow	1018.3	16	31	42
	Seep	28.6	41	35	10
	Shrub swamp	12	42	8	50
	Tall shrub bog	16	0	88	13

Table 4.5  
**Sum of Acres in Protected or Other Significant Natural Areas by Community Type**

(Data are from Illinois and Indiana Departments of Natural Resources and County Forest Preserve/Conservation Districts)  
 (Only includes lands that have been identified to community type)

	LAKE, IL <sup>2</sup>	COOK <sup>1</sup>	DUPAGE <sup>2</sup>	KANE <sup>2</sup>	LAKE, IN <sup>3</sup>	MCHEMRY <sup>1</sup>	PORTER <sup>3</sup>	WILL <sup>1</sup>
<b>FORESTED COMMUNITIES</b>								
<b>Upland forest</b>								
Dry-mesic	739	374		101	5		20	496
Mesic	1157	350	452		18	22	75	350
Wet-mesic	32	10						30
Unclassified					30.0			946
<b>Total</b>	<b>1928</b>	<b>734</b>	<b>452</b>	<b>101</b>	<b>53</b>	<b>22</b>	<b>95</b>	<b>1822</b>
<b>Floodplain forest</b>								
Wet-mesic		34	59	10	20			304
Wet	544	80	766					43
Unclassified	605			78				179
<b>Total</b>	<b>1149</b>	<b>113</b>	<b>825</b>	<b>88</b>	<b>20</b>			<b>526</b>
<b>Flatwood</b>								
Northern	480	213	389	40				
Sand		135						
Unclassified	33							
<b>Total</b>	<b>513</b>	<b>348</b>	<b>389</b>	<b>40</b>				
<b>Woodland</b>								
Dry-mesic	386	428	1368	3		83		
Mesic	318	214		1308				
Wet-mesic	127							
Unclassified	909	76		103				55
<b>Total</b>	<b>1740</b>	<b>719</b>	<b>1368</b>	<b>1414</b>		<b>83</b>		<b>55</b>
<b>TOTAL</b>	<b>5330</b>	<b>1913</b>	<b>3034</b>	<b>1642</b>	<b>73</b>	<b>105</b>	<b>95</b>	<b>2403</b>
<b>SAVANNA COMMUNITIES</b>								
<b>Fine-textured-soil savanna</b>								
Dry-mesic	140	1111		44		20		24
Mesic	224	9		45	34			
Wet-mesic	14							
Unclassified	381		2362	10				35
<b>Total</b>	<b>759</b>	<b>1120</b>	<b>2362</b>	<b>99</b>	<b>34</b>	<b>20</b>		<b>59</b>
<b>Sand savanna</b>								
Dry	277				18		200	
Dry-mesic	142	202			450		31	60
Mesic								
Unclassified					130			79
<b>Total</b>	<b>419</b>	<b>202</b>			<b>598</b>		<b>231</b>	<b>139</b>
<b>Unclassified savanna</b>								
<b>Total</b>				<b>457</b>				<b>31</b>
<b>TOTAL</b>	<b>1178</b>	<b>1321</b>	<b>2362</b>	<b>556</b>	<b>632</b>	<b>20</b>		<b>229</b>

	LAKE, IL <sup>2</sup>	COOK <sup>1</sup>	DUPAGE <sup>2</sup>	KANE <sup>2</sup>	LAKE, IN <sup>3</sup>	MCHEMRY <sup>1</sup>	PORTER <sup>3</sup>	WILL <sup>1</sup>
<b>SHRUBLAND COMMUNITIES</b>								
<b>Fine-textured-soil shrubland</b>								
Wet-mesic fine-textured-soil	1							
<b>Unclassified shrubland</b>	<b>2</b>		<b>410</b>					<b>44</b>
<b>TOTAL</b>	<b>3</b>		<b>410</b>					<b>44</b>
<b>PRAIRIE COMMUNITIES</b>								
<b>Fine-textured-soil prairie</b>								
Dry	82		203	2				
Mesic	329	377	974	83	73	23		33
Wet	96	170	315	10	5	19		5
Unclassified	198			58		3		59
<b>Total</b>	<b>705</b>	<b>547</b>	<b>1491</b>	<b>153</b>	<b>78</b>	<b>45</b>		<b>97</b>
<b>Sand prairie</b>								
Dry	179				22			25
Mesic	603	147			27		33	95
Wet	375	178			183			26
Unclassified					141			30
<b>Total</b>	<b>1157</b>	<b>325</b>			<b>373</b>		<b>33</b>	<b>176</b>
<b>Gravel prairie</b>								
Dry		28	6	9		30		
Mesic		21						
Unclassified								
<b>Total</b>		<b>49</b>	<b>6</b>	<b>9</b>		<b>30</b>		
<b>Dolomite prairie</b>								
Dry				1				2
Mesic								118
Wet			49					14
Unclassified				2				115
<b>Total</b>			<b>49</b>	<b>3</b>				<b>249</b>
<b>TOTAL</b>	<b>1862</b>	<b>921</b>	<b>1547</b>	<b>165</b>	<b>451</b>	<b>75</b>	<b>33</b>	<b>522</b>
<b>WETLAND COMMUNITIES</b>								
<b>Marsh</b>								
Basin	1375					554		
Streamside	965					190		
Unclassified	913	120	2481	377	301		100	471
<b>Total</b>	<b>3253</b>	<b>120</b>	<b>2481</b>	<b>377</b>	<b>301</b>	<b>744</b>	<b>100</b>	<b>471</b>
<b>Bog</b>								
Forested	149							
Graminoid	4					8		
Low shrub	12					10		
Unclassified								
<b>Total</b>	<b>165</b>					<b>18</b>		

	LAKE, IL <sup>2</sup>	COOK <sup>1</sup>	DUPAGE <sup>2</sup>	KANE <sup>2</sup>	LAKE, IN <sup>3</sup>	MCHENRY <sup>1</sup>	PORTER <sup>3</sup>	WILL <sup>1</sup>
<b>Fen</b>								
Calcareous floating mat	76					51		
Forested	6		120	23			10	1
Graminoid	65	44	78	10		63		2
Unclassified	8			37	35		27	1
<b>Total</b>	<b>155</b>	<b>44</b>	<b>198</b>	<b>70</b>	<b>35</b>	<b>113</b>	<b>37</b>	<b>4</b>
<b>Sedge meadow</b>	<b>355</b>	<b>317</b>	<b>520</b>	<b>254</b>	<b>40</b>	<b>417</b>		<b>89</b>
<b>Panne</b>								
		<b>67</b>		<b>73</b>		<b>1</b>		
<b>Seep and spring</b>								
Neutral						4		
Calcareous		11		7		1		
Sand		1						
Unclassified	10			12			3	
<b>Total</b>	<b>10</b>	<b>12</b>		<b>19</b>		<b>5</b>	<b>3</b>	<b>2</b>
<b>TOTAL</b>	<b>4003</b>	<b>493</b>	<b>3272</b>	<b>719</b>	<b>377</b>	<b>1297</b>	<b>140</b>	<b>566</b>

#### CLIFF COMMUNITIES

Eroding bluff	5							
Dolomite		2		6				
<b>TOTAL</b>	<b>5</b>	<b>2</b>		<b>6</b>				

#### LAKESHORE COMMUNITIES

Beach	63							
Foredune	102							
<b>TOTAL</b>	<b>165</b>							

#### CULTURAL COMMUNITIES

Cropland	2258		1071	854		5		149
Tree plantation	469	3	677	146				
Turf grass	243	14		251				10
Unassociated growth–grass	2934	601	2432	1608		28		291
Unassociated growth–shrub	604	16	2331			39		
Unassociated growth–tree	794		2278	60				
Unclassified unassociated growth			508					65
Unclassified cultural						140		
<b>TOTAL</b>	<b>7301</b>	<b>634</b>	<b>9297</b>	<b>2919</b>		<b>212</b>		<b>515</b>

<sup>1</sup> Data do not represent all natural areas in county.  
Data include INAI sites and some forest preserve/conservation district sites.

<sup>2</sup> Data include all FPD sites and INAI sites.

<sup>3</sup> Data do not include all natural areas in county.

Table 4.6  
**Sum of Acres in Protected Areas in Illinois Counties by Community Type**

(Data are from Satellite Imagery; Sites include Forest Preserve/Conservation Districts, IL DNR, and INAI Sites)

Community Type <sup>1</sup>	Cook	DuPage	Kane	Lake	McHenry	Will	Total
Savanna (oak woodland)	5,832	1,707	577	3,087	850	1,610	<b>13,663</b>
Floodplain forest	5,686	956	589	1,757	678	2,061	<b>11,727</b>
Upland forest/woodland	12,178	3,667	740	2,160	714	4,718	<b>24,177</b>
Prairie	5,411	1,989	158	2,207	267	3,890	<b>13,922</b>
Wetland	5,512	3,236	1,095	8,307	4,801	3,576	<b>26,527</b>
Open water	5,136	1,139	283	4,240	750	1,837	<b>13,385</b>
Unassociated woody	11,609	1,772	523	255	913	2,425	<b>17,497</b>
Unassociated grassy	11,773	7,222	2,683	4,448	2,682	14,900	<b>43,708</b>

<sup>1</sup> These community types are not strictly parallel to those in other tables. They represent the level of detail for which there is confidence in the correlation between satellite image classifications and ground-truthing and the knowledge of land managers.

### 4.1.3 Methodology for community assessment

To generate information for this Recovery Plan, the Science and Land Management Teams developed a two-stage process to assess the status of biodiversity in the region and to make recommendations for conserving regional biodiversity.

The first stage in this evaluation process was to examine the status and conservation needs of the region's animal assemblages. This assessment was conducted in a series of four workshops, each focusing on a major taxonomic group (birds, mammals, reptiles and amphibians, and invertebrates). These workshops brought together experts on these species to develop consensus on the identification of the species assemblages, their status, and the region's contribution to the global conservation of the species.

The second stage in the process was to examine the status of each terrestrial community type, its biological importance, and the region's contribution to its global conservation. In four workshops, using a consensus-building

process, land managers and scientists covered the four main community groupings: forested, savanna, prairie, and wetland. Prior to the workshop, we gathered data from the Illinois Natural Heritage Database, the Indiana Department of Natural Resources, and the Forest Preserve or Conservation Districts of the six northeastern Illinois counties, as described in section 4.1.2. There are still major gaps in the data on how much of each natural community type exists in the region. Thus, the information available for the development of this plan only allowed relative assessments across community types. The workshops relied primarily on the expert knowledge of the scientists and land managers from the region.

The community-status evaluation in this second stage had two parts. The first part developed a measure or level of concern about how much of the community type currently remains in the region, using the following criteria:

- Number of acres remaining
- Percent remaining from extent before European settlement
- Number of occurrences

- Number of sufficiently large occurrences
- Amount under formal protection

The second part developed a measure of level of concern based on the condition of the remaining examples and used the following criteria:

- Percentage remaining of good quality
- Degree of fragmentation and isolation
- Extent and effectiveness of current management efforts

Each community type received a relative ranking for each factor and a combined ranking to represent an overall level of conservation concern (very high, high, moderate, or low). It is important to stress that there are insufficient data for any of these criteria to allow a quantitative assessment. The criteria, and available data, were used only as guides in reaching consensus among Chicago Wilderness scientists and land managers about the relative status of the communities. A high priority for work in Chicago Wilderness is to continue to develop more precise assessments of the quantity and quality of natural areas in our region.

Relative biological importance for each community type was determined with the criteria of species richness, numbers of endangered and threatened species, levels of species conservatism, and presence of important ecological functions (such as the role of wetlands in improving water quality in adjacent open waters). Information from the workshops focusing on major taxonomic groups provided the basis for this discussion.

Workshop participants then judged the role of the Chicago Wilderness region in the global conservation of each of the community types. For some communities, the Chicago Wilderness region is on the edge of the range; for some, the region contains important examples but the community type is also well-represented in other regions; and for others, the region is central to the community's global conservation.

In addition to these assessments, the workshops discussed threats to species and communities, and opportunities and needs for action. A third series of workshops, organized by major community class, helped to refine vision statements for each of the communities. These visions help to define what scientists say the landscape should look like fifty years from now if we are to conserve all of the region's current biodiversity. All of these discussions together provided a basis for identifying recovery needs and actions for the community types presented in Chapter 5.

#### 4.1.4 Overall priorities and condition

The assessments conducted in the workshops have been used to rank each of the community types and each of the species assemblages. The rankings on status, biological importance, and contribution to global conservation have been combined together for each community type to come up with a tiered ranking of conservation targets for the region (see Table 4.7). These tiers represent relative priorities for increased conservation attention to the community types. Those in the highest tier are of the highest concern, because these communities are at high risk of loss (due to the small amount remaining or its degraded condition), have high biological importance, and represent some of the best opportunities in the world to conserve the community type. Lower tiers have some combination of these factors, but are not at a high level of concern or importance in all categories. This tiered system does not imply that efforts in place to protect and manage those communities falling in lower tiers should be halted or diminished. Often, it means the opposite: these conservation measures are having the desired effect and these communities are at less risk of complete loss. All the community types are important to the region's biodiversity and none should be lost. Those in the higher tiers need more attention if we are to save them.

The workshops evaluated each terrestrial animal assemblage in terms of whether it was declining or of concern for other reasons, as well as in terms of the Chicago region's contribution to the global conservation of the species involved. The results are presented in Tables 4.8 and 4.9. Again, assemblages of greater global significance or of greater concern due to their status should be a priority for increased conservation attention, but all current conservation efforts should be maintained.

Appendix 4 includes lists of the rankings on different factors that led to the overall rankings on conservation concern for the communities. The findings are discussed in detail in Chapter 5. More detailed reports on natural communities and animal assemblages are available online ([www.chiwild.org](http://www.chiwild.org)).

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## 4.2

### Aquatic communities

#### 4.2.1 Process for assessing aquatic communities

A classification system for the aquatic communities was developed, using primarily physical characteristics. A summary is presented in Table 4.10 and the complete ver-

Table 4.7

**Conservation Targets for Recovery Based on Status, Importance, and Distribution**

**First (highest) Tier**

Woodland (all moisture classes)  
 Fine-textured-soil savanna (all moisture classes)  
 Mesic sand savanna  
 Sand prairie (all moisture gradients in dune and swale topography)  
 Dolomite prairie (all)  
 Panne  
 Graminoid fen  
 Fine-textured-soil prairie<sup>1</sup> (all moisture classes)

**Second Tier**

Dry sand savanna  
 Gravel prairie (all)  
 Basin marsh<sup>2</sup>  
 Calcareous floating mat  
 Calcareous seep  
 Sand prairie (other than those in dune and swale topography)  
 Northern flatwood  
 Streamside marsh<sup>3</sup>

**Third Tier**

Sand flatwood  
 Dry-mesic sand savanna  
 Forested fen  
 Sedge meadow

**Fourth Tier**

Upland forest (all)

**Fifth Tier**

Floodplain forest (both)  
 Bogs (all)  
 Sand and neutral seep

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<sup>1</sup> Fine-textured-soil prairie is in the highest tier because 1) CW has so many relatively large high quality examples and so much adjacent land that is restorable, and in many cases being restored, 2) that CW has so many and such large restoration areas, 3) that this community type has suffered the highest proportional loss of high quality acreage, and 4) this community type is especially important as a gene pool for agriculture, since it produced the soils which are probably the Midwest's long term most important natural resource.

<sup>2</sup> Basin marsh has been placed in a higher tier than would be the case based on status and importance alone, because it is receiving significant conservation attention in the region and there is great opportunity to do more.

<sup>3</sup> Streamside marshes are very difficult to restore in the current altered hydrological conditions. Therefore, the priority is to research ways to improve their condition before undertaking extensive restoration actions.

Table 4.8

**Terrestrial Species Assemblages (or species in the case of mammals) of Concern or in an Overall Declining Condition**

**Birds**

**Poor condition**

Moist grassland birds (without shrubs)

**Suboptimal conditions**

Moist grassland birds (with shrubs)  
 Dry grassland birds  
 Savanna birds  
 Open woodland birds  
 Hemi-marsh birds (without shrubs)  
 Shoreline birds

**Reptiles and Amphibians**

**Declining**

Savanna reptiles and amphibians  
 Sedge meadow, fen, and dolomite prairie reptiles and amphibians  
 Forest and woodland reptiles and amphibians  
 Grassland reptiles and amphibians  
 Sand savanna and sand prairie reptiles and amphibians  
 High gradient stream reptiles and amphibians

**Insects**

**Of concern**

Dry and mesic blacksoil prairie insects  
 Dry and mesic sand prairie insects  
 Wet prairie insects  
 Sand savanna insects  
 Fen insects  
 Dry and mesic gravel prairie insects  
 Marsh insects  
 Dry and blacksoil savanna and woodland insects

**Mammals**

**Of concern**

Eastern mole  
 Pygmy shrew  
 Least shrew  
 Little brown myotis  
 Indiana myotis  
 Northern long-eared bat  
 Eastern pipistrelle  
 Evening bat  
 Least weasel  
 Badger  
 Gray fox  
 Franklin's ground squirrel  
 Southern flying squirrel  
 Woodland vole

Table 4.9

**Terrestrial Species Assemblages which are Critical or Important to the Global Conservation of the Assemblages**

**Globally Critical**

Moist grassland birds (with and without shrubs)

**Globally Important**

- Savanna birds (with and without shrubs)
- Open woodland birds (with and without shrubs)
- Savanna reptiles and amphibians
- Marsh reptiles and amphibians
- Sedge meadow, fen, and dolomite prairie reptiles and amphibians
- Dry and mesic blacksoil prairie insects
- Dry and mesic sand prairie insects
- Wet prairie insects
- Sand savanna insects
- Wet blacksoil savanna and woodland insects (??)
- Dry blacksoil savanna and woodland

Table 4.10

**Summary of the Aquatic Community Types in the Chicago Wilderness Classification System**

**Streams**

**Headwater streams**

- Continuous flow
  - Coarse substrate
  - Fine substrate
- Intermittent flow
  - Coarse substrate
  - Fine substrate

**Low order**

- High gradient
- Low gradient

**Mid order**

- High gradient
- Low gradient

**Lakes**

- Natural lakes
- Lake Michigan
- Glacial
  - Kettle
  - Flow through
- Bottomland
- Vernal pond
- Manmade
  - Naturalized
  - Other

sion is in Appendix 5. Two different groups of Chicago Wilderness scientists and land managers evaluated the aquatic communities of the region. One group looked at rivers and streams and the other at inland lakes. While the two groups used different methods for evaluating the communities, both used various criteria to place specific lakes, rivers, and streams into different categories. In both cases the emphasis was on the existing quality of these bodies of water. The categories used inform the reader of the relative quality of the lake, river, or stream, and they also give an indication of what some of the recovery goals should be. In both cases, as more information becomes available and or conditions change, the lakes, rivers, and streams will move between categories. A full description of the assessment process is in Chapter 6.

**4.2.2 Overall priorities**

Each stream has a recovery goal based on its current condition or the presence of features of special concern. The recovery goals are protection, restoration, rehabilitation, and enhancement. The streams with goals of protection and restoration are of higher quality and are of very high and high priority respectively for conservation action. Complete results for the streams assessed are included in Figure 6.1. Of the streams assessed, 37% are of high or very high priority.

The lakes were organized into the following four categories: exceptional, important, restorable, and other. Again, priority is placed on the exceptional and important lakes, which are currently of higher quality. Twenty-three lakes were identified as exceptional lakes and twenty-five as important lakes. The results are shown in Tables 6.1 and 6.2.