

COUNTY FOREST COMPREHENSIVE LAND USE PLAN
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1 **800 INTEGRATED FOREST MANAGEMENT OBJECTIVES**

2 To introduce and communicate to the public, the County Board of Supervisors, and the Wisconsin
3 DNR, the integrated resource approach that forestry, wildlife and other natural resource staff will use
4 on the Chippewa County Forest during this planning period.
5

6 **805 INTEGRATED RESOURCE MANAGEMENT APPROACH**

7 Integrated Resource Management is defined as: "the simultaneous consideration of ecological,
8 physical, economic, and social aspects of lands, waters and resources in developing and
9 implementing multiple-use, sustained yield management" (Helms, 1998)

10
11 Management of Wisconsin's public forests is based upon determining an annual allowable harvest
12 level using a "sustained yield" principle. The basic premise of sustained yield is that harvest rates
13 balance with regeneration and growth rates of the forest, so harvest levels can be maintained at a
14 fairly constant rate indefinitely. The objective of keeping this balance, and forest management as a
15 whole, is to provide a relatively steady flow of benefits derived from the forest. These benefits include
16 diversity of forest cover types and wildlife habitat, income, recreational opportunities and a supply of
17 raw materials to industry. This balance also provides a stable level of workload associated with
18 establishment and administration of harvests.
19

20 The forest is in a constant state of change as natural processes and manmade influences impact the
21 composition of vegetation. Species composition and age distribution of trees determine how well
22 balanced the forest is at any given time. With the cut over and fire history of the Chippewa County
23 Forest, most tree growth started from relatively barren lands in the early 1900's.
24

25 In order to balance harvest levels with regeneration and growth it is desirable to have an even
26 distribution of ages by tree species or "forest cover type". In other words, there should be just as
27 many acres of new, young growth aspen as there are of mature, 55 year-old aspen. Harvesting in
28 the 1970's and 1980's was accelerated because much of the forest was maturing all at the same
29 time, particularly aspen. Currently, after much of this mature timber has been harvested, there is a
30 period of lower harvest levels. The annual allowable harvest for the period 2006-2015 is set at
31 748 acres. The eventual goal will be to stabilize the harvest levels. With proper balance, the
32 Chippewa County Forest will support an annual allowable harvest of about 600 acres. This
33 includes both regeneration harvests and intermediate thinning of immature stands.
34

35 This balance of ecological, economic, and social factors is the framework within which the Chippewa
36 County Forest is managed. This broad definition describes the content of everything within this
37 comprehensive land use plan. Previous chapters have discussed in depth many of the social and
38 economic issues.
39

40 For the purpose of this chapter, the scope of Integrated Resource Management includes:

- | | |
|--|---------------------|
| 41 Forests, habitats, biological communities | Wetlands and waters |
| 42 Wildlife and endangered resources | Soils and minerals |
| 43 Cultural and historical resources | |

44
45 Management of one resource affects the management or use of other resources in an area.
46 Managing each use or resource by itself is less effective than managing all of them in an integrated
47 way. This is a field level approach to integrated resource management. Management decisions are
48 made while considering that each site is part of a larger ecosystem. Similarly, the development and
49 implementation of this plan also considers other planning efforts in order to provide for broader scale
50 management.
51

52 The remainder of this chapter is written to help communicate how the Forest is managed on an
53 integrated resource approach.

55 810 SUSTAINABLE FORESTRY

56 The definition of sustainable forestry in the Wisconsin Administrative Code and the Wisconsin
57 Statutes is as follows:

58 "the practice of managing dynamic forest ecosystems to provide ecological, economic, social
59 and cultural benefits for present and future generations" NR 44.03(12) Wis. Adm. Code and
60 s..28.04(1)e, Wis. Stats.

61 For the purpose of this chapter, sustainable forestry will be interpreted as the management of the
62 Forest to meet the needs of the present without knowingly compromising the ability of future
63 generations to meet their own needs (economic, social, and ecological) by practicing a land
64 stewardship ethic which integrates the growing, nurturing, and harvesting of trees for useful products
65 with the conservation of soil, air and water quality, and wildlife and fish habitat. This process is
66 dynamic, and changes as we learn from past management.

67 810.1 TOOLS IN INTEGRATED RESOURCE MANAGEMENT

68 810.1.1 Compartment Recon

69 The County will support and use the compartment reconnaissance procedures as set forth by
70 the DNR Public Forest Lands Handbook 2460.5. The DNR forester will be responsible for the
71 completion and maintenance of the recon system and will assist in interpretation of the data to
72 be utilized in planning and scheduling resource management. The annual goal for updating
73 Chippewa County recon is 5% of the total County Forest acreage.

74
75 WI DNR Recon program provides general forest type distribution and size class at the date
76 the stand was examined. Recon is used to track harvesting activity and scheduled practices
77 on the County Forest acreage. The scheduled practices for the next ten years will be totaled
78 and divided by 10 to create the annual allowable cut (AAC) acreage for each species on the
79 forest.
80

81 810.1.2 Forest Habitat Classification System

82 The Forest Habitat Classification System (*A Guide to Forest Communities and Habitat Types*
83 *of Northern Wisconsin Second Edition; Kotar, et al.*) is a natural classification system for forest
84 communities and the sites on which they develop. It uses systematic interpretation of natural
85 vegetation with emphasis on understory species.
86

87 Through the application of Forest Habitat Classification, land managers are better able to
88 assess site potential of current stands, identify ecological and silvicultural alternatives, predict
89 the effectiveness of possible silvicultural treatments, assess feasible management
90 alternatives, and choose appropriate management objectives.
91

92 Data will be collected in order to classify the entire forest. This information should be included
93 in the compartment reconnaissance system during regular field inspections. This data should
94 also be compared to soil survey information in order to associate the relationships between
95 forest habitat types and soil types.
96
97

98 810.1.3 Soil Surveys

99 Forestry staff's knowledge of forest ecology and their experience across the landscape can
100 assist in associating forest habitat types and site indices with soil type information. These
101 associations can be beneficial in determining management prescriptions for specific sites.
102 Detailed soil surveys, when available, will be made a part of the compartment reconnaissance
103 system and continue to be correlated to the Forest Habitat Classification system. Soil survey
104 information may be obtained from the Natural Resource Conservation Service office.
105

106 810.1.4 National Hierarchical Framework of Ecological Units / Landscapes of Wisconsin
107 The National Hierarchical Framework of Ecological Units (NHFEU) is a useful tool in
108 understanding natural landscapes. The Wisconsin DNR uses Ecological Landscapes of
109 Wisconsin (WDNR Handbook 1805.1) which is an ecological land classification system based
110 on the National Hierarchical Framework of Ecological Units (NHFEU). Land areas identified
111 and mapped in this manner are known as ecological units.

112
113 Landtype Associations (LTA's) are considered landscape-scale ecological units, and are
114 identified by surficial geology, patterns of vegetation, soil parent materials, and water tables.
115 Most LTA's are between 10,000 and 300,000 acres in size. A full description of the LTA's for
116 Chippewa County Forest are found in Chapter 100 (130.1.4)

117
118 Goals can be developed for an LTA based in part on its capability, productivity, unique
119 character, and the scarcity or abundance of similar LTA's in the state, region or beyond.
120 Objectives for vegetation management, wildlife habitat, ecological restoration, and recreation
121 use can be tailored to the characteristics and potentials of the ecosystem.
122

123 810.1.5 Integrated Pest Management

124 Integrated Pest Management for the purpose of this Plan, is defined as follows:
125 "the maintenance of destructive agents, including insects, at tolerable levels, by the
126 planned use of a variety of preventive, suppressive, or regulatory tactics and
127 strategies that are ecologically and economically efficient and socially acceptable"
128

129 The Forest and Parks Department has the authority to approve and direct the use of
130 pesticides and other reasonable alternatives in an integrated pest management program on
131 the Forest. Refer to Chapter 500 (505.5.2) and 600 (610.3) for detailed discussion and
132 integrated pest management strategies.
133

134 810.1.6 Best Management Practices for Water Quality

135 Nationwide forestry operations contribute 3% of all nonpoint source pollution to our water
136 resources. Due to relatively level topography in Wisconsin, and especially Chippewa County,
137 this is anticipated to be less than 3%. However protecting our water resources during forest
138 operations is very important. Best Management Practices for Water Quality (BMP's) have
139 been developed. Often the most practical and cost-effective method to assure that forestry
140 operations do not adversely affect water quality on the County Forest is to use BMP's as
141 described in *Wisconsin's Forestry Best Management Practices for Water Quality. Publication*
142 *number FR093.*

143
144 Riparian Management Zone's (RMZ's) are a component of BMPs which play a large role in
145 Chippewa County Forest forestry operations and management. The County Forest has a
146 large number of lakes and streams where RMZ 's will influence management opportunities
147 and implementation.

148
149 Chippewa County will use BMP's on the Forest with the understanding the application of
150 BMP's may be modified for specific site conditions with guidance from a forester or other
151 natural resource professional. Modifications will provide equal or greater water quality
152 protection, or have no impact on water quality. Areas with highly erodable soil types, close
153 proximity to streams or lakes, or steep slopes may require mitigating measures in excess of
154 those outlined in the manual.

155
156 All Chippewa County employees practicing forestry receive BMP training. Additionally,
157 Chippewa County will require BMP training of all logging contractors that operate on County
158 timber sales.
159

160 810.1.7 Outside Expertise, Studies and Survey
161 Additional data necessary to management decisions on the County Forest will be sought from
162 agencies or individuals, which the Committee deems best equipped to provide that service.
163 This data will be used as appropriate for management planning.
164

165 810.1.7.1 Water Resources
166 The DNR fisheries biologist and the water management specialist will provide surveys,
167 studies, and technical advice as necessary to prepare and carry out recreational planning
168 affecting waters on the County Forest. (See Chapter 840)

169 Wetland Resources
170 Maps prepared by the DNR's Bureau of Fisheries Management and Habitat Protection
171 may be utilized for identifying wetlands. Although not comprehensive, particularly in
172 forested areas, these maps are a good initial tool for identifying wetlands on County
173 Forest lands. Assistance and technical advice will be requested from the DNR water
174 management specialist when wetlands may be affected by management practices. The
175 Army Corps of Engineers will also be consulted as appropriate. In addition, Wisconsin's
176 Forestry Best Management Practices for protecting water quality will be used. (See 820
177 for further details)

178 Floodplains
179 Maps prepared by the Federal Emergency Management Agency (FEMA) will be used to
180 identify floodplains. The County zoning staff may be consulted regarding management
181 activities in the floodplain.

182 Navigable Streams
183 The DNR's water regulations specialist will be consulted when navigable stream
184 crossings or navigable stream management projects are being planned (See Chapter
185 840.6.5). Best Management Practices for water quality will be used.
186

187 810.1.7.2 Wildlife Resources
188 DNR wildlife biologists will implement population and habitat surveys, provide technical
189 advice, and direct assistance needed for wildlife management planning and
190 implementation on County Forest lands. (See Chapter 840) Wildlife projects are
191 identified and implemented in collaboration with the County Forest Administrator, DNR
192 liaison forester, and the Committee
193

194 810.1.7.3 Soil Resources
195 Soil maps and surveys prepared by the Natural Resource Conservation Service (NRCS)
196 will be used in various phases of planning.
197

198 810.1.7.4 Mineral Resources
199 The DNR may provide information valuable for management of gravel and other mineral
200 resources. (See Chapter 515).
201

202 810.1.7.5 Cultural Resources
203 Management planning will take into consideration historical and archaeological sites.
204 More information may be obtained from the State Historical Society or the DNR's
205 archeologist.
206

207 810.1.7.6 Entomology / Pathology
208 DNR forest pest staff will provide information and consultation as requested by the
209 County. (See Chapter 610 for more information on forest pest control.)
210

211 810.1.7.7 Endangered Resources
212 DNR endangered resource staff will provide Natural Heritage Inventory (NHI) information
213 and are available for consultation on endangered resources issues.
214

215 810.1.8 Forest Fire Management

216 810.1.8.1 Wildfires

217 Wildfires under certain conditions and on appropriate sites may benefit the forest and
218 help achieve management goals. Examples of possible benefits include promoting
219 natural regeneration of oak, pine and other beneficial species and non-forest habitat
220 types. Chippewa County in collaboration with Wis. DNR fire control, may consider
221 allowing wildfires to burn up to natural barriers. Fire behavior, risk of breakout, timber
222 value and anticipated benefits will need to be evaluated prior to making a decision. In
223 addition to the silvicultural and wildlife benefits gained by allowing a fire to burn within
224 these parameters, elimination of fire plow lines will minimize soil disturbance and
225 possible invasive species establishment.

226 810.1.8.2 Prescribed Fire

227 Use of prescribed fire as a management tool may gain importance in the future.
228 Controlled burns can be used to rejuvenate native grass openings and prepare sites
229 for natural oak regeneration benefiting both wildlife and silviculture. Many of the
230 ecosystems present today are the result of wildfires in the past.

231
232 All prescribed burning will be done in accordance with s. 26.12, 26.14 Wis. Stats. and the WI
233 DNR Prescribed Burning Handbook 4360.5. and in cooperation with the Wis. DNR as per
234 chapter 600 of this plan.

235 810.1.9 Local Silvicultural Field Trials

236 There are currently no trials on Chippewa County Forest Lands.

237 810.1.10 Local Citizen Involvement

238 The Chippewa County Forest and Parks Committee, comprised of elected County Board
239 members, is an open forum to listen, evaluate, and incorporate, where appropriate, the
240 public's input into management of the County Forest.
241

242 **820 BIOLOGICAL COMMUNITY TYPES**

243 A community is an assemblage of different plant and animal species, living together in a particular
244 area, at a particular time in specific habitats. Communities are complex and dynamic systems named
245 for their dominant plant species.

246
247 Species/community information has been condensed to familiarize the reader with the make-up of the
248 Forest. Refer to Chapter 130 for more information.
249

250 820.1 FORESTED COMMUNITIES

251 Forested cover types are made up of a variety of size classes and structure (canopy, layers,
252 ground vegetation, dead and downed material, and inclusions). Forested communities on the
253 Chippewa County Forest cover approximately 77% of the Forest.

254
255 Forest cover types associated with the County Forest in order of prevalence (% of forested
256 acres) are:

257 **Aspen (36%)** - Dominated by quaking and big tooth aspen often with red maple and paper
258 birch associated.

259 **Northern Hardwoods (20%)** - Consisting of a mixture of upland hardwood species
260 including sugar maple, red oak, yellow birch, basswood, ash and red maple.

261 **Oak (18%)** - Dominated by red, white, northern pin, and/or black oak and associated with
262 other hardwoods.

263 **Swamp hardwoods (7%)** - Consisting of black ash, elm and red maple with scattered
264 white pine, white spruce, tamarack and/or white cedar.

265 **Tamarack (5%)** - More than 50% swamp conifer species with tamarack predominating.

- 266 **White Birch (4%)** - Consisting of a majority of white birch. Often found in combination with
267 aspen and red maple.
- 268 **Red Pine (3%)** - More than 50% red pine.
- 269 **Fir/Spruce (2%)** - More than 50% fir and/or spruce.
- 270 **White Pine (1%)** - More than 50% white pine.
- 271 **Red Maple (1%)** - More than 50% red maple. Often associated with aspen and white birch.
- 272 **Note:** Red maple forest type percentages will be higher as recon is updated in the future
273 due to the fact that red maple was typed as northern hardwoods until 2005. Conversely,
274 the true northern hardwood forest type percentages will be lower.
- 275 **Other (3%)** – (swamp conifers, cedar, black spruce, hemlock-hardwood, jack pine)

276 820.2 NON-FORESTED COMMUNITIES

277 Non-forested communities within the Chippewa County Forest cover approximately 23% of the
278 forest.

279
280 Non-forested habitats are important components of management within the County Forest.
281 Upland and wetland non-forest types provide important habitat for distinct groups of species.

282 820.2.1 Upland Non-Forest

283 Upland Non-Forest areas of the County Forest include:

284 Grass openings – consists of upland grasses (brome, quack, bluegrass, timothy, big
285 and little bluestem, and Indian grass).

286 Herbaceous vegetation - ground cover predominated by herbaceous species with
287 bracken fern, sweet clover, ragweed, stinging nettle, upland aster, goldenrod,
288 blackberries/raspberries, and prairie dock being common.

289 Shrub openings - primarily upland sites less than 10% stocked with tree species but
290 having 50% or more of the area stocked with taller growing, persistent shrubs. This
291 includes, but is not limited to, shrubs such as hazel, gray dogwood, juneberry, sumac,
292 chokecherry, and prickly ash.

293 820.2.2 Wetlands

294 Wisconsin State Statutes define a wetland as “an area where water is at, near, or above the
295 land surface long enough to be capable of supporting aquatic or hydrophytic vegetation, and
296 which has soils indicative of wet conditions.” Wetland communities are a complex association
297 of plants and animals, soils and water levels having special natural values. These fragile
298 systems may rapidly degrade under incompatible uses and unskilled management. Wetlands
299 provide functional values including shoreline and flood protection, groundwater recharge,
300 water quality protection, and animal and plant habitat. It is Chippewa County policy to
301 preserve, protect, and manage the wetlands under its jurisdiction in a manner that recognizes
302 the natural values of wetlands and their importance in the environment. The County will:
303

- 304 a. Recognize wetland values in management plans, taking reasonable steps to minimize
305 harmful effects.
- 306 b. Cooperate with the DNR in wetland inventories and in preparation of essential wetland
307 information.
- 308 c. Maintain control of vital wetlands under its jurisdiction when to relinquish such control
309 would risk substantial site alteration and subsequent degradation of wetland values vital
310 to the area and the state.
- 311 d. Minimize adverse changes in the quality/quantity of the water flow to nourish wetlands.
- 312 e. Cooperate with local, state and national agencies and citizens to increase understanding
313 of the importance of wetlands and the need for land and water stewardship in guiding
314 development decisions.

315 f. Cooperate with the DNR in wetland management activities that would enhance the
316 quality and diversity of wetlands in the county and the region.
317

318 Wetlands are the transitional habitats between upland and aquatic systems where the water
319 table is usually at or near the surface, or where the land is covered by shallow water. Wetland
320 types present include:

321 Lowland brush – wetlands along or adjacent to waterways where water is present most
322 of the year but periodic drying allows vegetation to establish, primarily tag alder/ willow.

323 Deep marshes - wetlands characterized by emergent vegetation such as cattails and
324 pickerel weed and floating leaved plants such as white and yellow water lily and
325 watershield. Water depths of 6 feet are typically found on deep marshes.

326 Shallow marshes - wetlands characterized by persistent emergent vegetation such as
327 cattails and pickerelweed, etc., and water depths to 1.5 feet.

328 Sedge meadow - wetlands characterized by sedges and cattails. Surface water depths
329 to 6 inches in winter and early spring, and exposed saturated soil surface in summer.

330 Bogs – wetlands characterized by sphagnum moss, cotton grass, leatherleaf, Labrador
331 tea, etc.

332 820.2.3 Open Water Habitats

333 Open water habitats are permanently flooded lands below the deep-water boundary of
334 wetlands. Water is generally too deep to support emergent vegetation. Presence of these
335 aquatic habitats within a forest landscape greatly increases the number of wildlife species.
336 They include rivers, lakes, and streams and are defined as:

337 Lakes - lakes, ponds, and flowages more than 40 acres in an area; or rivers more than
338 1/8 of a mile in width.

339 Streams - intermittent or permanent watercourses with slow water velocities and are
340 usually defined as being less than 1/8 mile in width.

341 Rivers - wetlands and deep-water habitats contained in a channel through which the
342 water flows and associated with forested riparian zones.

343 **830 FORESTED COMMUNITIES MANAGEMENT**

344 Chippewa County recognizes the importance of maintaining the diversity of the Forest under an
345 ecosystem approach. The process involved in making management decisions to encourage, or not to
346 encourage, specific species or communities is complex. It includes an understanding of:

- 347 • Objectives of the County Forest.
- 348 • Integration of the National Hierarchical Framework of Ecological Units (NHFEU - landforms,
349 soils, climate, vegetation classification at multiple scales).
- 350 • Application of habitat type classification to identify ecological potentials and silvicultural
351 alternatives.
- 352 • Past, present, and future desired condition.
- 353 • Surrounding ownership patterns and their generalized objectives.
- 354 • Socio-economic needs.

355 830.1 SILVICULTURE OF MAJOR COVERTYPES

356 Silviculture is the practice of controlling forest composition, structure, and growth to maintain
357 and enhance the forest's utility for any purpose. Silvicultural guidelines are written to
358 encourage a stand to contain the greatest quality/quantity of timber under either an even-, or
359 uneven-aged system. Guidelines are found in the *WI DNR. Silviculture and Forest Aesthetics*
360 *Handbook 2431.5.*
361
362

363 A summary of management on the Chippewa County Forest is described below.
364 Each covertype description includes a typical maturity age for the species. Harvest rotations
365 may be modified as appropriate for site quality differences and landscape considerations as
366 well as needs of fauna present on the sites where modification is accepted as proper
367 management. Terms referring to silvicultural practices are defined in Chapter 500 (505).

368 830.1.1 Aspen

369 Aspen is a shade intolerant species found throughout various areas of the forest and is
370 managed on an even-aged basis. Aspen matures at 40 to 70 years of age but may exist
371 longer. Aspen needs full sunlight to stimulate root sucker, regenerating the aspen in the stand.
372 The most effective method for creating optimum conditions for stand replacement is a
373 regeneration clearcut.

374
375 The aspen type is recognized as providing habitat values to a variety of wildlife species as well
376 as being an important species for economics and fiber production. Aspen stands represent
377 approximately 29% of timber sale acres planned for harvest over the next 10 years.

378
379 Chippewa County will maintain its aspen acreage, regenerating the mature aspen stands
380 using clearcuts. Aesthetic concerns can be mitigated by limiting the size of harvests,
381 retaining pine on the site, and creating irregularly shaped sale boundaries.

382 830.1.2 Northern Hardwoods

383 Northern hardwoods are species of hardwood trees that are intermediate to tolerant of shade.
384 Common species of trees found in northern hardwood stands in the County Forest include
385 white ash, basswood, sugar maple, red maple, red oak, bitternut hickory, butternut and yellow
386 birch. White pine can also be found as individual specie, as well as hemlock where a seed
387 source is present. Many of the species are long-lived with life spans in excess of 140 years on
388 good sites. This forest type can be managed both on an even-aged or all-aged basis. This is
389 the most abundant forest type on the County Forest. The northern hardwood type is rapidly
390 expanding as natural succession and as selection thinning practices occur in the forest.
391 Northern hardwood stands represent approximately 30% of the timber sales planned for
392 harvest over the next 10 years.

393
394 The County Forest will increase the acres of northern hardwoods in an effort to create larger
395 acreages of all-aged forests and to promote longer-lived tree species where old growth
396 ecosystems can be patterned. This policy will also benefit the local logging industry by
397 providing a sustainable supply of saw timber, veneer and pulpwood. In addition, this natural
398 conversion will provide a more favorable habitat for neo-tropical birds and other non-
399 consumptive wildlife that require a more closed canopy type habitat.

401 830.1.3 Oak

402 Oak is found throughout various areas of the forest and is managed on an even-aged or multi-
403 aged basis. Oak matures at 80 to 130 years of age but can live longer. Northern pin oak/black
404 oak/low quality red oak stands are managed using clearcutting to regenerate through stump
405 sprouts. Good quality oak stands are managed by thinning to release best quality trees for
406 stand genetic improvement and to produce good quality sawlogs. Openings from thinnings
407 allow the seedlings present to grow in increased sunlight.

408
409 The oak type is recognized as providing habitat values to a variety of wildlife species. Oak
410 clearcuts represent 4% and oak thinnings represent approximately 20% of timber sale acres
411 planned for harvest over the next 10 years.

412
413 The red oak type is found primarily on the better quality loams and sandy loams in the County
414 Forest. Red oak grows best on habitat types suitable for northern hardwood species.
415 Regeneration in red oak stands can include red maple and other hardwoods. Over time,
416 these shade tolerant species will replace the red oak. Regenerating red oak naturally has
417 proven to be difficult. Another variable is the timing of harvests for oak regeneration. It is
418 critical for harvests to coincide with a good acorn crop and occur while the acorns are falling.
419 With the Forest and Parks Department dozer, site preparation to expose mineral soil and
420 eliminate shade tolerant vegetation will considerably increase oak regeneration probabilities.

421
422 Red oak has high wildlife value due to its acorn production and tendency to develop wildlife
423 den cavities. It has very high timber value in sawlog-sized timber. Because of these factors, it
424 is important to retain red oak on the Chippewa County Forest where better quality northern
425 hardwoods, aspen and pine are limited and red oak is the dominant species.

426
427 Silvicultural trials using prescribed burns coupled with shelterwood harvests can be successful
428 for regenerating red oak given optimum site conditions. However, conducting these burns on
429 a large scale has proven difficult.

430
431 All silvicultural prescriptions usually benefit from inter planting with quality oak seedlings.

432 830.1.4 Swamp Hardwoods

433 Swamp hardwoods in the County Forest consist mainly of black ash with minor components of
434 red maple, elm and yellow birch. Black ash matures at 70-110 years of age but may exist
435 longer. This species is managed on an even-aged or multi-aged. It may produce quality pole
436 and sawlog trees. Black ash can grow on a variety of sites but is mostly restricted to sites that
437 are typically wet and subject to fluctuations in the water table. Swamp hardwood stands
438 represent less than 2% of timber sale acres scheduled for the next 10 years.

439
440 Marketability of swamp hardwoods is increasing. It provides wildlife value but is not as
441 beneficial as aspen and oak. Where aspen/northern hardwoods are present along the
442 margins of this timber type, management will favor those species. Where black ash and/or
443 red maple produces a quality stem and is not competing with more desirable species it will be
444 managed in the stand. Where the site does not create good quality stems the stand will be
445 grown to produce pulp fiber or left for wildlife habitat.

446 830.1.5 Red Pine

447 The majority of red pine on the County Forest has been planted. Scattered stands of natural
448 red pine also occur on the forest. Red pine matures at 90 to 120 years of age but can live
449 longer. Red pine stands represent 5% of timber sale acres planned for harvest over the next
450 10 years.

451
452 Forest management alternatives for these stands include:

- 453 a. Natural conversion to white pine (if present in or near the stand) does not require post-
454 sale treatment and provides a high value product.
- 455 b. Maintenance of red pine will require site prep and planting. This would result in higher
456 economic value forest product than natural conversion to hardwoods but lower wildlife
457 habitat value and less diversity than the other native types.
- 458 c. Natural conversion to northern hardwoods on the best soil/habitat types.

459 830.1.6 Paper Birch

460 Paper birch is also a shade intolerant species found throughout various areas of the County
461 Forest. It normally occurs as a component of other stands but in some instances occurs in
462 pure stands where favorable site conditions have happened such as burned over areas or
463 abandoned pastures where mineral soil was exposed. Where present in pure stands, it is
464 managed on an even-aged basis. Paper birch matures at 40 to 70 years of age but generally
465 does not persist longer because of various dieback conditions. Birch needs full sunlight to
466 regenerate which can be accomplished by strip clear cutting (seed origin) or by clear cutting
467 (stump sprouting). Birch sprouts will not survive repeated browsing by deer and can be a
468 limiting factor in maintaining this forest type.

469
470 The birch type is recognized as providing habitat values to a variety of wildlife species as well
471 as being an important species for economics and aesthetics. Birch stands represent
472 approximately 4% of timber sale acres planned for harvest over the next 10 years.

473

474 830.1.7 Fir/Spruce

475 White spruce is the major component of this forest type and grows mostly in the eastern
476 portion of the County Forest where the water table is high. Much of this forest type originated
477 as plantations established on abandoned agriculture land or under planted in cut over areas.
478

479 White spruce matures at 80 to 100 years of age but often exists longer. White spruce is
480 managed using selection harvests, therefore white spruce management lends itself well
481 where aesthetics, recreation areas, riparian management zones, timber productivity, or
482 development of old growth takes precedence.
483

484 White spruce selection harvests occur in 10 to 20 year intervals. Trees that are suppressed,
485 defective, or overcrowded are removed each harvest to give the dominant, best quality spruce
486 more growing space. Harvesting on these intervals creates a multi-aged stand that can
487 promote old growth characteristics by leaving some large snag trees which may eventually
488 become coarse woody debris on the ground. White spruce stands represent 4% of timber
489 sale acres planned for harvest over the next 10-year period.
490

491 830.2 Trees Locally Difficult to Regenerate

492 830.2.1 Red Oak

493 Red oak is a shade intolerant species and is generally found in stands of timber of similar age.
494 A mineral seedbed is necessary to regenerate oak species and it is assumed that most oak
495 present on the County Forest is of fire origin. Existing stands of red oak should be
496 considered for scarification coupled with shelterwood/seed tree harvests. Trials using this
497 method have proven successful in other areas around the state.
498

499 830.3 EXOTIC PLANT SPECIES OF CONCERN

500 Exotic or non-indigenous invasive plant species can cause significant ecological and
501 economic damage to the Forest. Some invasive species, such as buckthorn and garlic
502 mustard, eliminate not only wildflowers but also limit the regeneration of tree species.
503 Keeping them from dominating the understory is critical to the long-term health and economic
504 viability of the forest. Currently, Chippewa County Forest has few significant infestations of
505 invasive plants (garlic mustard being the most notable). With training, vigilance, and control
506 efforts, new infestations can be managed or eliminated. There are many invasive plants
507 threatening the forests in Wisconsin.
508

509 830.4 LEGALLY PROTECTED PLANT SPECIES

510 Some plants in Wisconsin are protected under the Federal Endangered Species Law, the
511 State Endangered and Threatened Species Law (s. 29.604 Wis. Stats. and NR 27 Wis. Adm.
512 Code), or both. Under Wisconsin State Law, no one may possess or sell any listed wild plant
513 without a valid endangered or threatened (ET) species permit. On public lands or lands one
514 does not own, lease or have permission of the landowner, one may not cut, root up, sever,
515 injure, destroy, remove, transport, or carry away a listed plant without an ET species permit.
516 There is an exemption on public lands for forestry, agriculture, and utility activity under the
517 state law.
518

519 In the Natural Heritage Inventory (NHI) program the DNR tracks information on these species
520 in the State. A list of legally protected plants known to occur in Chippewa County (on or near
521 the County Forest) is found in Chapter 900.

522 830.5 OTHER PLANT SPECIES AND NATURAL COMMUNITIES OF CONCERN – NHI

523 The NHI program at the DNR also tracks information on rare species and natural
524 communities, in addition to legally protected species.

525 830.5.1 Special Concern Plants
526 Special Concern Species are those species in which some problem of abundance or
527 distribution is suspected, but not proven. The main purpose of this category is to focus
528 attention on certain species before they become threatened or endangered.

529 830.5.2 Natural Communities
530 Similarly, specific records of natural communities are also tracked.

531 **840 WILDLIFE SPECIES MANAGEMENT**

532 840.1 BACKGROUND

533 For the purpose of this plan, wildlife will include all native birds, mammals, fish, amphibians,
534 reptiles, and insects with a strong focus on the natural communities in which they live. Wildlife
535 biologists will emphasize habitat management that interrelates and benefits wildlife, and
536 complements sound forestry practices. Concerns about biological diversity on the County
537 Forest and how it fits in the regional, continental, and global perspective may cause wildlife
538 management to place increased emphasis on segments of the forest community. Practices
539 such as old growth, snag and den tree management, access management, forest openings
540 maintenance, oak management, and aspen maintenance, can be priorities in the dynamics of
541 forest management. A primary goal of wildlife management on the Chippewa County Forest is
542 to provide a diversity of healthy ecosystems necessary to sustain native populations for their
543 biological, recreational, cultural and economic values.

544 840.1.1 Technical Planning

545 Planning will be a cooperative effort of the director, DNR liaison forester, and wildlife biologist
546 in formulating management plans and utilizing wildlife management techniques for the overall
547 protection and enhancement of the forest community, of which wildlife is a key component.

548 840.1.2 Guidelines

549 DNR manual codes on Endangered and Threatened Species Permits Issue (1724.5),
550 Feasibility Studies and WEPA Analyses for Establishing or Modifying Property Project
551 Boundaries (2105.1), Guidelines for Defining Forest-Wildlife Habitat Management (2112),
552 Forest Opening Maintenance and Construction (2112.1), and the Public Forest Lands
553 Handbook (2460.5), are references and guidelines in wildlife planning efforts.

554 840.1.3 Inventory

555 Habitat needs will be determined by analysis of forest reconnaissance information. Population
556 estimates will be conducted periodically by DNR wildlife, endangered resources personnel,
557 and other trained cooperators. A biotic inventory was completed in 2005 and is available for
558 viewing at the Forest and Parks Department Office.

559 840.2 RESOURCE MANAGEMENT AND AREAS OF FOCUS

560 In applying this Plan to the forest, the following areas of focus were identified in achieving Plan
561 objectives:

562 840.2.1 General Management Policies

563 Forest management practices may be modified to benefit wildlife and biodiversity in certain
564 situations. Following are forest management planning considerations:

- 565 a. Even-aged regeneration harvests (clearcuts) should vary in size and shape.
- 566 b. A diversity of stand age, size and species.
- 567 c. Berry and nut bearing trees/shrubs, den trees, and adequate number and variety of
568 snags.
- 569 d. Cull trees (future snag or den trees) not interfering with specific high value trees.
- 570 e. Timber types, habitat conditions, and impacts on affected wildlife.
- 571 f. Access management.
- 572 g. Best management practices for water quality (BMP's).

573 h. Create larger blocks of unfragmented northern hardwoods ages and trending to larger
574 diameter, old growth forest structure over time.

575 840.3 HABITATS OF IMPORTANCE

576 Important habitat types are cover types known to be of importance to certain native wildlife
577 and whose absence would make that wildlife significantly less abundant. These shortages
578 may be on a local or broader scale. The following habitat types can be considered important:

579 840.3.1 Aspen

580 The aspen type is recognized as providing habitat values to a variety of wildlife species. This
581 type will continue to be regenerated, with consideration given to reserving scattered den and
582 mast producing trees in the process. Maintaining stands in aspen and managing against
583 shade tolerant tree species conversion will benefit deer, ruffed grouse, woodcock, snowshoe
584 hare, and black bear.

585 840.3.2 Large Blocks of un-fragmented woods

586 Permanent blocks of contiguous forests are also essential to well-balanced wildlife habitat.
587 Increasing the representation of larger forested blocks by acquisition has always been a
588 priority on the County Forest.

589 840.3.3 Forest openings

590 Permanent grass openings are essential to well-balanced wildlife habitat. Openings will be
591 maintained or developed where needed.

592 840.3.4 Oak

593 The oak type is important to wildlife because of its cavity-forming potential and mast
594 production. Future management will focus on protecting and regenerating this type.
595 Maintaining stands in oak and aspen cover types on some dry mesic sites will benefit deer,
596 wild turkey, ruffed grouse, snowshoe hare, and black bear.

597 840.4 FOREST GAME SPECIES

598 The management of forest game (white-tailed deer, ruffed grouse, black bear, wild turkey,
599 snowshoe hare, and furbearers) is centered on maintaining early successional species such
600 as aspen, white birch and oak; with aspen and oak being the primary species of importance
601 on the County Forest.

602
603 Manual Code 2112 is a DNR document establishing guidelines for measuring forest game
604 habitat. It has been used to measure changes in forest wildlife habitat. While the scope of
605 Manual Code 2112 can be narrow (deer habitat units compared with landscapes and
606 ecoregions) by today's management standards, the impacts are broad.

607
608 Foresters, in concert with wildlife biologists, will continue to monitor forest game species and
609 adjust land management prescriptions where appropriate.

610 840.5 FOREST NON-GAME SPECIES

611 Efforts have been made with the DNR to inventory existing populations, identify needs, and
612 maintain valuable habitat types. A biotic inventory was completed in 2005 and is available for
613 viewing at the Forest and Parks Department Office.
614

615 840.5.1 Neotropical Migrant Birds

616 Neotropical migrant birds (NTMB) are songbirds that breed in North America and winter
617 in Central and South America. Over 120 species of NTMBs spend a portion of each year
618 in Wisconsin. NTMBs include warblers, tanagers, vireos, thrushes, swallows, blue-
619 winged teal, and hummingbirds, and use a variety of habitats including forests, shrubs,
620 and grasslands. These species play an important role in forest health by consuming
621 large amounts of insects, including forest pest species such as gypsy moths and forest
622 tent caterpillars.
623

624 In recent years, several neotropical species have experienced significant declines in
625 population. These declines likely reflect a reduction in suitability, or a loss of habitat
626 where these species breed, overwinter and/or migrate. However, species that nest in
627 forests or shrublands, such as the cerulean warbler, golden-winged warbler, and veery
628 are also declining nationwide.

629
630 Some decline may be tied to forest fragmentation. There are two forms of forest
631 fragmentation, each with different impacts on forest birds. One form of forest
632 fragmentation occurs when portions of a forest are converted into non-forest cover types
633 (urbanization and agricultural). This is permanent fragmentation and poses the greatest
634 threat to all forest wildlife. The second type is the fragmentation of habitat or cover type.
635 This habitat fragmentation occurs naturally due to local geological features or can be a
636 result of human activity (harvest activity). Both kinds of forest fragmentation have
637 impacts on neotropical birds including changes in competition for resources, predation
638 rates, and perceived quality of habitat. To assure a rich diversity of NTMBs in
639 Wisconsin's forests, emphasis should be placed on forest management guidelines that
640 promote habitat for NTMBs with the most specialized habitat needs.

641
642 As habitat is lost and fragmented by development on private lands, Wisconsin's County
643 Forests continue to provide increasingly important habitat to numerous NTMB species
644 that occur in a variety of forest types and age classes. This is due to the active,
645 sustainable management and consistent ownership in the public trust.

646 840.6 LEGALLY PROTECTED ANIMAL SPECIES

647 The Federal Endangered Species Act of 1973 and the Lacey Act together provide for the
648 protection of wild animals threatened with extinction. The State Endangered and Threatened
649 Species Law requires the State assume responsibility for conserving wild animals by
650 restricting and regulating the taking, possession, transportation, processing, or sale of
651 endangered or threatened wild animals within its jurisdiction. The Federal Migratory Bird Act
652 and the Eagle Protection Act provide additional protection of certain species of birds. Thus, if
653 a species is legally protected, it is protected anywhere it occurs in Chippewa County.
654 Endangered species list (NHI) for the Chippewa County Forest is included in Chapter 900.

655 840.7 OTHER ANIMALS OF SPECIAL CONCERN - NHI

656 The DNR tracks information on rare animal species when some problem of abundance or
657 disturbance is suspected but not proven. The main purpose of this category is to focus
658 attention on certain species before they become threatened or endangered.

659 840.8 FISH AND WATERS MANAGEMENT

660 Public waters shall be managed to provide for optimum natural fish production, opportunities
661 for quality recreation and a healthy balanced aquatic ecosystem where practical. Emphasis
662 will also be placed on land-use practices that benefit the aquatic community. Management of
663 County Forest lands will attempt to preserve and/or improve fish habitat and water quality.

664 840.8.1 Technical Planning

665 Management of all waters within the County Forest is the responsibility of the DNR. Technical
666 assistance will be provided by the local fisheries biologist. Studies and management will be
667 conducted in the manner described in DNR Fish Management Handbook 3605.9.

668 840.8.2 Water Surveys

669 Comprehensive lake and stream surveys on the County Forest will be conducted by the DNR
670 fisheries biologist as required. The publication, "Surface Water Resources of Chippewa
671 County," contains additional information relative to these waters.

672 840.8.3 Population Surveys

673 Surveys of fish populations in waters within the County Forest will be conducted by the DNR
674 as required and will generally run concurrently with water surveys. Fish management
675 programs will be guided by these surveys.

- 676 840.8.4 Lake Management
- 677 Management of lakes within the County Forest will be consistent with the capability of the
- 678 resource and any unique aspects associated with that resource.

- 679 840.8.5 Stream Management
- 680 Streams containing warm water or cool water species will be managed to perpetuate their
- 681 qualities. Corresponding land and water use practices will be consistent with this policy.
- 682 Maps inventorying water resources can be found Chapter 900.

- 683 840.8.6 Best Management Practices for Water Quality
- 684 Protection of water resources on the County Forest will be consistent with the “Wisconsin
- 685 Forestry Best Management Practices (BMPs) for Water Quality”. Examples of protective
- 686 measures are:
- 687 a. Riparian zones
- 688 b. Erosion control measures
- 689 c. Stream bank protection

- 690 840.8.7 Access and development
- 691 Access and development of County Forest waters will be limited to those activities consistent
- 692 with the above water management policies. See Chapter 700 also for further information on
- 693 water access.

- 694 840.8.8 Outstanding and Exceptional Water Resources
- 695 There are no outstanding and exceptional water resources on the Chippewa County Forest.

696 840.9 CHIPPEWA COUNTY SHORELAND ORDINANCE

- 697 In this ordinance there are two issues that may be applicable to management on the County
- 698 Forest.
- 699 a. Removal of shore cover (Sec. 54-124)
- 700 b. Filling, grading, lagooning, dredging, ditching and excavating (Sec 54-125)
- 701 In accordance with these ordinances, FSC Regulations and BMP for water quality, the
- 702 County Forest will be managed to meet or exceed the requirements of these regulations.
- 703

704 **850 LANDSCAPE MANAGEMENT**

705 850.1 BIOLOGICAL DIVERSITY

706 For the purposes of this plan, biological diversity is the variety and abundance of species, their

707 genetic composition, and the communities, ecosystems, and landscapes in which they occur.

708 It refers to ecological structures, functions, and processes that occur in ecosystems to sustain

709 the system as viable entities. The forest landscape, a mosaic of plants and animals of various

710 sizes and ages, are in constant flux due to succession from both natural and planned events.

711

712 Research in this field has led to looking beyond stands and forest boundaries when making

713 management decisions, and more towards large scale regional landscapes as a part of

714 ecosystem management. Rather than manage forests on a stand by stand basis this proposal

715 recommends taking a landscape view of a much larger area when considering management

716 activities. An evaluation would be made of a given activity regarding its affect on other plants

717 and animals within a larger regional area. It involves a need to recognize and consider the

718 impacts an action may have on other species and what trade-offs there are from that action in

719 determining what action should be taken. The end result will be to produce a variety of forest

720 successional stages within large and small stands in the forest mosaic, to preserve species

721 and genetic variation for future generations.

722

723 The US Forest Service adopted a policy of ecosystem management and established a

724 National Hierarchy of Ecological Units referred to in 810.1.4. In an effort to maintain

725 sustainable ecosystems and to conserve biodiversity, the Chippewa County Forest and Parks

726 Committee supports the general concept of ecosystem management. During this current
727 planning period Chippewa County will cooperate with other agencies and the tenants of the
728 Forest Stewardship Council's Forest Certification Program. This will assist County Forest
729 managers in making better management decisions.
730
731 Chippewa County Forest lands will be managed for biological diversity as the Forest and
732 Parks Committee deems to be in the public's best interest and within the framework of the
733 County Forest Law (s.28.11 Wis. Stats.).

734 850.2 HABITAT FRAGMENTATION

735
736 The natural variation of communities across a landscape, often referred to as "natural
737 patchiness", is a normal part of the environment. The pre-settlement natural landscape of
738 Wisconsin was broken up into wetlands, prairies, forests, lakes and streams, all occurring in
739 numerous patches of varying sizes. Some species such as prairie chickens thrived only on
740 very large patches of suitable habitat. Many other species were more successful at the
741 interface edge between plant communities, and took advantage of two or more habitat types
742 (i.e. white-tailed deer).

743
744 Unlike natural patchiness, forest fragmentation is the permanent division of large and
745 continuous ecosystems, communities and habitats into smaller areas surrounded by altered or
746 disturbed land. Many species continue to do well in these artificially segmented landscapes.
747 Some, such as white-tailed deer, are even more successful than they were historically.
748 However, other species of plants and animals lose preferred habitat as a result of increased
749 forest fragmentation.

750
751 By breaking up forest ecosystems or communities through fragmentation the size of a
752 particular ecosystem or habitat becomes smaller. Some species need large areas of a
753 particular habitat or ecosystem to survive and maintain a population. As areas become more
754 fragmented for these species their population can decline and eventually the species may be
755 eliminated from the local ecosystem so affected.

756
757 Fragmentation can cause habitat isolation. Species that lack the ability to move between
758 patches of habitat can lose genetic viability and diversity. The greater the distance between
759 patches of habitat or like ecosystems the more isolated some populations may become.
760 Inbreeding may become more common or a species may not be able to complete its life cycle
761 due to an interaction with another species (i.e. cowbirds and other neotropical migrant birds).

762
763 Fragmentation will increase edge of the interface between two or more habitats. Edge effects
764 are beneficial to species that use two or more habitats, but detrimental to other species.
765 Species that live in the interior of a habitat may not be able to adapt to an edge habitat. They
766 may be more vulnerable to competition, predation or climatic changes. These species decline
767 with fragmentation.

768
769 The adoption of management plans and strategies developed cooperatively with neighboring
770 forest owners and managers will help to consider fragmentation on a landscape level.
771 Encouraging land acquisition within the forest blocking will decrease forest fragmentation by
772 land uses other than forestry.
773

774 850.3 OLD GROWTH

775 850.3.1 Old Growth / Benchmark Stands

776 The definition for old-growth stands contained in the Wisconsin DNR Old-Growth and Old
777 Forests Handbook, old-growth is "relatively old and relatively undisturbed by humans". To
778 further clarify, each forest type has characteristics of forest structure and development as
779 determined by historic and current patterns of human and natural disturbance. Based on this
780 definition, there are no old-growth stands within the County Forest ownership.

781
782 Many of the northern hardwood and some pine stands are being managed to attain old forest
783 status. This is defined as forests which are older than the typical managed forest (beyond

784 traditional rotation age) but are not biologically old. They may be beyond economic maturity
785 but are not senescent. Much of the potential for old forest exists along the Hickory Ridge Trail,
786 Camp Lake/Spence Lake block, Moonridge Trail and along the Deer Fly Trail in the County
787 Forest. In these areas there exists favorable stand conditions and continuous blocks of 80 to
788 over 300 acres of forest.

789 850.3.2 Extended Rotation Forest

790 Extended rotation represents mature forests managed for both forest products and for the
791 development of some of the ecological and social benefits associated with older forests.
792 These sites are dominated by biologically mature trees that are older than their traditional
793 rotation age and younger than their average life expectancy. In general, management
794 prescriptions on these sites are delayed beyond the normal rotation that is used on the
795 balance of the forest. These extended rotation stands may be any species that create stand
796 conditions with large diameter trees, native plant conditions, and coarse woody debris and
797 down timber.

798
799 Three cover types which could be managed under extended rotations where the site meets
800 quality and management criteria are red oak, white and red pine and northern hardwoods.
801 Opportunities to manage on extended rotation will be sought out to provide diversity of age
802 and habitat for flora and fauna. An example would be the red pine plantation along Plantation
803 Trail in Sections 29, 30 & 32, Township 32 North – Range 8 West. This red pine was
804 established in 1948 and will become a mixed pine and northern hardwood forest type over
805 time. The red pine in this area could easily reach 18 to 24 inches in diameter by age 120.

806 850.4 OTHER SPECIAL MANAGEMENT AREAS

807 850.4.1 Wilderness Areas

808 Wilderness areas are large roadless areas where natural forces predominate and
809 man's influence is minimal. Currently, no wilderness areas have been designated
810 within the County Forest. Nearly all forest stands have been significantly impacted by
811 man since 1883. Such impacts include fire, logging, farming and other various
812 homesteading actions. Some exceptions can be found in swamp conifers stands that
813 are classified as non-productive, but they may have been impacted by some of the
814 larger fires that occurred in the past.

815

816 850.4.2 Wild Areas

817
818 Wild areas are areas similar to wilderness including predominance of natural forces or
819 restoration possibilities. They are, however, subject to some management practices
820 not permitted in wilderness areas. Management guidelines for these areas are
821 generally as follows:

- 822 • Timber harvesting is permitted under restrictions designed to retain the wild
823 quality. This may include but is not limited to such things as winter logging,
824 modification of slash disposal, or similar requirements.
- 825 • No motorized vehicles are permitted except for harvesting, restoration and
826 maintenance equipment.
- 827 • Roads shall not be open to public vehicular access.
- 828 • Hunting, fishing and trapping may be limited.
- 829 • No utility or other easements shall be permitted.
- 830 • Mineral exploration shall be subject to special approval.

831

832 No wild areas have been identified in the Chippewa County Forest.

833

834 850.4.3 State Natural Areas

835 County Forest has no State Natural Areas (SNAs). The only listed SNA in Chippewa County
836 is Plagge Woods located in the Town of Birch Creek, (N ½ NE ¼, Section 11, Township 32
837 North – Range 7 West) and is under state ownership.