

RUFFED GROUSE
CONSERVATION PLAN

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INTRODUCTION

The Ruffed Grouse Conservation Plan (Plan) has been developed under the auspices of the Resident Game Bird Working Group of the Association of Fish & Wildlife Agencies. The development of this Plan is part of a continuing effort to establish species-specific or species-group-specific conservation strategies to guide resource planning and on-the-ground habitat management initiatives.

This Plan utilizes the North American Bird Conservation Initiative Bird Conservation Regions (BCR) as the geographic assessment unit to ensure consistency with other planning efforts that focus on avian species. BCR boundaries may be viewed at <http://www.nabci-us.org/bcrs.html>. Assessments are provided for 15 BCRs. Ruffed grouse exist in small numbers in isolated pockets of BCRs 9 and 17 but BCR-wide assessments are not provided for these BCRs.

Plan Objectives

- Provide a comparison of ruffed grouse habitat conditions and populations between the base year (1980) and 2005.
- Identify the habitat availability and management objectives required to sustain populations at, or restore them to the 1980 levels.

Farm abandonment throughout much of the eastern United States in the early- to mid-20th Century may have allowed ruffed grouse populations to reach densities higher than historical norms during this period. Therefore, 1980 was selected as the base year as it likely represents a point in time when these abandoned lands had moved beyond the early-successional stage.

The target year for returning ruffed grouse population densities to 1980 levels is 2025. It will require 10-20 years to implement the required even-aged management treatments and for the resulting habitats to develop into quality ruffed grouse habitat, although this will vary somewhat between BCRs due to varying vegetation growth rates.

Habitat conditions and population densities were based on available data or the expertise of resource professionals knowledgeable of regional conditions and populations. In some BCRs, the lack of forest inventory data for one or more time periods or the lack of published data on population density by forest type compromised the precision of assessments.

SUMMARY

The ruffed grouse is North America's most widely distributed upland game bird. Ruffed grouse are found throughout most of Canada, much of the eastern United States and portions of the Rocky Mountains in the West.

Ruffed grouse populations exhibit a 10-year cycle throughout the northern portion of the bird's range. Populations south of the northern tier of states in the United States exist at relatively low population densities and do not consistently exhibit detectable 10-year population cycles. Population trend data are insufficient throughout much of the West to document the presence or absence of a cycle.

The ruffed grouse is the most popular resident game bird throughout much of eastern North America. Approximately 1,000,000 hunters harvest approximately 2.2 - 2.8 million ruffed grouse throughout North America during a typical year. Available data suggest that ruffed grouse hunting results in annual expenditures exceeding \$500 million.

Ruffed grouse are abundant only where young forest habitats (5-15 years old in the East; 10-30 years old in the West) are common. Ruffed grouse can be found in many different forest types in North America, although deciduous or mixed forest types are preferred. Quaking and bigtooth aspen forests can support ruffed grouse population densities that greatly exceed those typically attained in other forest communities.

Historically, young forest habitats were sustained primarily by fire and other disturbance events throughout the ruffed grouse range. Today, in most regions, commercial timber harvests and other proactive habitat management practices must be implemented at regular intervals (approximately every 10 - 15 years) to ensure a continuous supply of quality ruffed grouse habitat on the landscape.

Even-age silvicultural systems (clearcut, seed tree, shelterwood) are the most appropriate methods to create ruffed grouse habitat. These methods remove sufficient canopy from the parent stand to result in enough understory development to provide protective cover for ruffed grouse.

Forest inventory data were used to document species composition by forest size-class for each BCR for 1980 and 2005. Because comparable data from two consecutive inventories are not universally available, trend estimates are not possible for all BCRs. Ruffed grouse population and breeding male density estimates were developed using these forest inventory data. Regional trends vary, but population densities have declined in most eastern regions and have increased in those western regions where estimates are available (Table 1).

Table 1. Historical and current estimates of ruffed grouse breeding population density by Bird Conservation Region.

Bird Conservation Region	1980 Ruffed Grouse Density ¹	2005 Ruffed Grouse Density	% Change
4 – Boreal Forest	na ²	na	
5 – Northern Pacific Rainforest	0.19	0.28	47
6 – Boreal Taiga Plains	na	14.1	
8 – Boreal Softwood Shield Forest	na	10.3	
10 – Northern Rockies	0.06	0.11	83
12 – Boreal Hardwood Transition	12.8	12.8	0
13 – Lower Great Lakes/ St. Lawrence Plain	9.5	9.1	- 4
14 – Atlantic Northern Forest	9.1	9.8	9
16 – Southern Rockies Colorado Plateau	0.5	0.8	60
22 – Eastern Tallgrass Prairie	4.3	3.2	- 26
23 – Prairie Hardwood Transition	10.9	9.6	- 12
24 – Central Hardwood Forest	1.9	1.7	- 10
28 – Appalachian Mountains	5.3	5.0	- 6
29 – Piedmont	1.9	1.9	0
30 – New England/Mid-Atlantic Coast	6.6	6.3	- 5

¹Drumming male grouse per square mile (2.6 square kilometers)

²Comprehensive data for entire BCR are unavailable

Ruffed grouse population densities are strongly dependent upon the proportion of small-diameter forest habitat on the landscape. The acreage of small-diameter forest required to support ruffed grouse population densities at 1980 levels and the annual acreage of even-age forest management treatments required to do so is presented for each BCR in Table 2.

Table 2. Acres of small-diameter forest and annual management required to sustain ruffed grouse populations at, or restore these populations to 1980 levels by Bird Conservation Region.

Bird Conservation Region	Small-Diameter ¹ Forest Objective (acres)	Even-Age Management Annual Objective ² (acres)
4 – Boreal Forest	na	na
5 – Northern Pacific Rainforest	839,700 ³	42,000 ³
6 – Boreal Taiga Plains	na ⁴	na
8 – Boreal Softwood Shield Forest	na	na
10 – Northern Rockies	208,400 ³	10,400 ³
12 – Boreal Hardwood Transition	14,617,000	730,900
13 – Lower Great Lakes/ St. Lawrence Plain	3,543,300	177,200
14 – Atlantic Northern Forest	10,669,300	533,500
16 – Southern Rockies Colorado Plateau	717,000 ³	35,900 ³
22 – Eastern Tallgrass Prairie	354,800	17,700
23 – Prairie Hardwood Transition	2,653,600	132,700
24 – Central Hardwood Forest	523,200	26,200
28 – Appalachian Mountains	7,290,000	364,500
29 – Piedmont	650,600	32,500
30 – New England/Mid-Atlantic Coast	467,400	23,400

¹Stands of trees \leq 5 inches (12.5 cm) d.b.h. and nonstocked stands.

²Determined by dividing the Small-Diameter Forest Objective by 20. Assumes minimal small-diameter forest created by natural disturbance.

³Deciduous forest only.

⁴Not available due to incomplete forest inventory data.

The use of BCRs provides the ecological foundation for the ruffed grouse population goals and associated habitat management objectives. However, the implementation of the recommendations designed to accomplish these objectives is likely to be coordinated by resource management agencies responsible for specific jurisdictions. Therefore, small-diameter forest objectives and annual treatment targets are provided for each state and province (Table 3).

Table 3. Acres of current annual even-age management, and the small-diameter forest and annual management required to sustain ruffed grouse populations at, or restore populations to 1980 levels by political jurisdiction where historic and current population estimates can be determined.

Political Jurisdiction	Small-Diameter ¹ Forest Objective (acres)	Even-Age Management Annual Objective ² (acres)	Even-Age Management Current Annual Treatment (acres)
Arkansas	159,100	8,000	7,000
California	61,400 ³	3,100 ³	3,400 ³
Colorado	0	0	0
Connecticut	105,500	5,300	4,800
Georgia	515,400	25,800	23,400
Idaho	60,000 ³	3,000 ³	3,000 ³
Illinois	36,200	1,800	1,500
Indiana	287,200	14,400	12,400
Iowa	90,700	4,500	3,600
Kansas	20,900	1,000	800
Kentucky	26,500	26,300	23,900
Maine	4,728,900	236,400	253,700
Maryland	80,700	4,000	3,700
Massachusetts	153,100	7,700	7,200
Michigan	3,674,000	183,700	177,400
Minnesota	4,978,300	248,900	244,600
Missouri	263,700	13,200	10,500
Montana	192,000 ³	9,600 ³	9,600 ³
New Hampshire	406,500	20,300	21,800
New Jersey	247,600	12,400	11,500
New York	2,080,400	104,000	101,100
North Carolina	729,000	36,500	34,100
Ohio	1,013,400	50,700	46,300
Oregon	534,500 ³	26,700 ³	29,100 ³
Pennsylvania	1,992,100	99,600	91,100
Rhode Island	23,600	1,200	1,100
Tennessee	626,900	31,300	28,500
Utah	493,400 ³	24,700 ³	24,700 ³
Vermont	417,500	20,900	22,200
Virginia	962,400	48,100	45,200
Washington	256,800 ³	12,800 ³	13,900 ³
West Virginia	1,060,400	53,000	48,200
Wisconsin	3,544,500	177,200	165,900
Wyoming	60,800 ³	3,000 ³	3,000 ³
New Brunswick	2,613,500	130,700	130,700
Nova Scotia	759,200	38,000	38,000
Ontario ⁴	3,321,400	166,100	163,200
Prince Edward Island	113,900	5,700	5,700
Quebec ⁴	5,237,100	261,900	266,700

¹Stands of trees ≤ 5 inches (12.5 cm) d.b.h. and nonstocked stands.

²Determined by dividing the Small-Diameter Forest Objective by 20. Assumes minimal small-diameter forest created by natural disturbance.

³Deciduous forest only.

⁴Does not include BCR 8.