

**Wisconsin Department of Natural Resources  
Natural Resources Board Agenda Item**

**SUBJECT:** Request approval of department recommendations for the 2022 bear harvest quotas.

**FOR:** January 2022 Board meeting

**TO BE PRESENTED BY:** Randy Johnson, Large Carnivore Specialist, Bureau of Wildlife Management

**SUMMARY:**

Department staff have worked with interest groups and analyzed 2021 bear harvest data and population metrics. Recommended quotas for 2022 were determined using the department's bear population model to assess the effects of various harvest levels relative to the current population estimate. Quotas and hunter success rates were used together to determine the final number of permits to be issued.

Zone	2021 Quota	2021 Permits	2022 Quota Recommendation	2022 Estimated Permits
A	1,100	1,925	1,075	1,805
B	750	1,255	800	1,430
C	600	3,000	600	3,000
D	1,800	3,450	1,800	3,680
E	160	1,600	200	2,000
F	30	300	25	250
Total	4,400	11,530	4,500	12,165

**RECOMMENDATION:** That the board approve the 2022 bear harvest quotas.

**LIST OF ATTACHED MATERIALS (check all that are applicable):**

Background memo

Type name of attachment if applicable

Type name of attachment if applicable

Type name of attachment if applicable

Approved by	Signature	Date
Eric Lobner, Bureau Director	<small>DocuSigned by:</small> <i>Eric Lobner</i> <small>49A5E090CF88465...</small>	1/5/2022   2:44 PM CST
Keith Warnke, Division Administrator	<small>DocuSigned by:</small> <i>Keith Warnke</i> <small>9D69747CE78D4CA...</small>	1/5/2022   3:23 PM CST
For Preston D. Cole, Secretary	<small>DocuSigned by:</small> <i>Steven Little</i> <small>7A5DFE3497144B5...</small>	1/10/2022   2:48 PM CST

cc: Board Liaison – AD/8

DS

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by Steven Little

**CORRESPONDENCE/MEMORANDUM**

DATE: December 21, 2021

TO: Natural Resources Board Members

FROM: Secretary Preston D. Cole

SUBJECT: 2022 Bear harvest quotas and license levels

**Summary**

The Department of Natural Resources (DNR) bear management goal is to maintain a healthy and sustainable black bear population that fulfills the numerous ecological, social, and cultural benefits of bears while minimizing bear-human conflicts. This year marks the second time quota recommendations were developed following the Wisconsin Black Bear Management Plan (Plan) and using the six management zone boundaries as identified in the Plan.

The DNR's Bear Advisory Committee reviewed and discussed bear population data and six criteria identified in the Plan to help determine zone-specific population objectives i.e. (increase, maintain, decrease). These criteria include, in no particular order, bear nuisance complaints, agricultural damage, hunter satisfaction, hunter crowding/conflict, hunter success rates, and data on bear health.

The DNR's Office of Applied Science (OAS) staff utilize advanced age-at-harvest population models that utilize harvest data to estimate zone-specific bear populations as well as predict future trajectories under varying levels of harvest. This provides the ability to select harvest quotas that, if met, are likely to achieve population objectives as determined for each management zone.

The recommendations of the DNR Bear Advisory Committee were endorsed without change by the Wisconsin Conservation Congress bear committee and approved by the Department's Wildlife Leadership Team.

The Department recommends the following quotas and licenses for 2022:

Zone	2021 quota	2021 licenses	2021 Total Harvest	2022 Population Objective	<b>2022 quota recommendation</b>	2022 license recommendation*
A	1,100	1,925	1,258	Maintain	<b>1,075</b>	1,805
B	750	1,255	721	Maintain	<b>800</b>	1,430
C	600	3,000	484	Maintain	<b>600</b>	3,000
D	1,800	3,450	1,258	Decrease	<b>1,800</b>	3,680
E	160	1,600	100	Maintain	<b>200</b>	2,000
F	30	300	25	Allow local control	<b>25</b>	250
<b>Total</b>	<b>4,440</b>	<b>11,530</b>	<b>3,846</b>		<b>4,500</b>	<b>12,165</b>

*\*The number of licenses made available to achieve the quotas are determined based on 4-year average hunter success rates in each zone.*

## **Background and Justifications**

The Department considered the following zone-specific information when developing the 2022 quota recommendations.

### Bear Management Zone A

Objective – Maintain population

Justification – Zone A was expanded in size and now includes much of the predominately forested and public lands in northwest Wisconsin while also excluding much of the more agriculturally dominated lands of Sawyer and Rusk Counties. Population models suggest bear numbers in Zone A have been on the decline for years and recent years' quotas have attempted to stabilize the population near current levels. However, harvest has exceeded quotas in this zone for the last three years. Much discussion was had by the DNR Bear Advisory Committee on this zone. Some committee members desired to see reduced quotas in this zone to allow population growth, while others wanted to see quotas at or above last year's quota to reflect the large zone and maintain opportunity. The population model suggested that a quota level of 950 would allow the bear population in this zone to stabilize. Committee suggestions ranged from quotas of 900 to 1,200 or more. Ultimately, the committee found general agreement with a quota recommendation of 1,075, although several committee members expressed desire for a higher quota. The model suggests a quota of 1,075 will result in a slight population decline. License numbers were calculated using the 4-year average hunter success rate of the zone (59.5%). Note that success rates are based on old zones prior to 2021 and new zones thereafter.

Recommendation: Quota – 1,075                  Estimated Licenses – 1,805

### Bear Management Zone B

Objective – Maintain population

Justification – Zone B boundaries remained unchanged. Population models suggest the bear population in this zone has been stable for the last few years. A review and discussion of the relevant criteria indicated overall agreement with an objective to maintain the population near current levels. Demand for bear hunting opportunity in this zone is significant, with hunters currently waiting at least 11 years for a license. Population models suggest a quota of 800 will result in continued population stability and is the recommendation. License numbers were calculated using the 4-year average hunter success rate of this zone (56.0%).

Recommendation: Quota – 800                  Estimated Licenses – 1,430

### Bear Management Zone C

Objective – Maintain population

Justification – The former zone C was split into 3 zones, with the new zone C retaining much of the Central Forest and other quality bear habitats of the central part of the state. Population models suggest a stable population in this zone which is consistent with the objective for this zone. Population models suggest a quota of 575 would result in population stability and the committee agreed upon a quota of 600, identical to last year, to maintain consistency among years. As with last year, available licenses were calculated based on an anticipated 20% hunter success rate (actual 2021 success rate was 16.1%).

Uncertainty in this metric means actual harvest could vary from the desired goal of 600. Another year of data will be helpful in anticipating future success rates in this zone.

Recommendation: Quota – 600                      Estimated Licenses – 3,000

Bear Management Zone D

Objective – Decrease bear population.

Justification – Zone D was reconfigured to better encapsulate regional variation in forest and agricultural lands and to allow more fine-scale management of historically high agricultural damage complaints in this area. With that, an objective to decrease the bear population in this zone was identified last year and remains the objective this year. While a harvest of 1,258 bears in this zone fell well short of the desired quota of 1,800 bears last year, it still represents the highest level of harvest in this area in at least a decade. It may take several years of harvest to reduce the population and potentially see any reductions in agricultural damages. As in previous years, agricultural damage will continue to be addressed through the wildlife damage abatement and claims program. Prior to the season, concerns were expressed regarding hunter crowding and conflict, particularly on public lands in this zone, however anecdotal reports did not reveal widespread issues with hunter crowding. Hunter surveys following the season will be illustrative in better understanding any conflict/crowding issues that may occur with continuing this quota and license level. Based upon the totality of factors at this time, the recommendation is to continue with a quota of 1,800 which models suggest will result in a moderate population reduction in the zone if achieved. License numbers were calculated using the 4-year average hunter success rate of the zone (48.9%). Note that success rates are based on old zones prior to 2021 and new zones thereafter.

Recommendation: - Quota – 1,800                      Estimated Licenses - 3,680

Bear Management Zone E

Objective: Maintain population

Justification – Zone E was created from the west and southwestern portions of the former zone C. The bear population in this zone has been increasing in number and distribution over the last decade, with an average of 65 bears harvested annually in what is now Zone E. Population models suggest increasing harvest will slow population growth and stabilize near current levels and this remains the objective for this zone. The department recommends a quota of 200 which models suggest will achieve population stability. License numbers were again calculated based on an anticipated 10% success rate (actual 2021 hunter success rate 6.2%), but uncertainty on this metric means actual harvest could vary from the desired goal of 200. Another year of data will be helpful in anticipating future success rates in this zone.

Recommendation: - Quota – 200                      Estimated Licenses: - 2,000

Bear Management Zone F

Objective: Allow local control of bear population

Justification – Zone F was created from the southern and southeastern portions of the former zone C. This area has seen limited increases in bear numbers in recent years, with an average harvest of 19 bears annually in what is now zone F. However, the zone overall contains relatively little suitable habitat and high human densities and the Plan calls for allowing local control over bear range expansion by ensuring ready availability of licenses. Population models suggest a harvest of 25 bears would likely lead to a

slight reduction in the population and this is the Department's recommended quota. License numbers were again calculated based on an anticipated 10% success rate (actual 2021 hunter success rate 8.3%), but uncertainty with this metric means actual harvest could vary from the desired goal of 25. Another year of data will be helpful in anticipating future success rates in this zone.

Recommendation: - Quota – 25                      Estimated Licenses – 250

### **License Availability**

The 2022 statewide total license recommendation of 12,165 licenses represents an 5.5% increase from the 11,530 licenses available in 2021. This is primarily due to an overall quota increase of 1.3% from last year (4,440 to 4,500). Additional years of management following the new zone structure should serve to reduce uncertainty in harvest success rates and other metrics allowing more informed license allocations to achieve desired zone-specific harvests.

The Zone A quota recommendation of 1,075 would result in 1,805 licenses made available, a 9.4% decrease in licenses from last year. This reduction is the result of a slightly reduced quota and above average hunter success rates the last two years.

The Zone B quota recommendation of 800 would result in 1,430 licenses made available, a 13.9% increase in licenses from last year. This increase is the result of an increased quota and stable hunter success rates in this zone.

The Zone C quota recommendation of 600 would result in 3,000 licenses made available. This is identical to last year and is intended to provide another year of data on hunter success rates in the new zone to better inform future decisions.

The Zone D quota recommendation of 1,800 would result in 3,680 licenses made available, a 6.6% increase from last year. This increase is the result of an identical quota and below average hunter success rates last year.

The Zone E quota recommendation of 200 would result in 2,000 licenses made available, a 25% increase in licenses from last year. This increase is the result of an increased quota and identical estimated hunter success rates in this zone.

The Zone F quota recommendation of 25 would result in 250 licenses made available, an 8.3% decrease in licenses from last year. This decrease is the result of a slightly decreased quota and identical estimated hunter success rates in this zone.

Interest in bear hunting continues to increase in Wisconsin. Last year saw record high interest with nearly 130,000 applications for either a harvest license or preference point for the 2021 season. The minimum number of preference points needed to draw a license in 2021 were as follows:

- Zone A: 8 points
- Zone B: 11 points
- Zone C: 2 points
- Zone D: 2 points
- Zone E: 1 point
- Zone F: 1 point

Drafted by: Randy Johnson, Large Carnivore Specialist

## Comparison of old and new zone boundaries

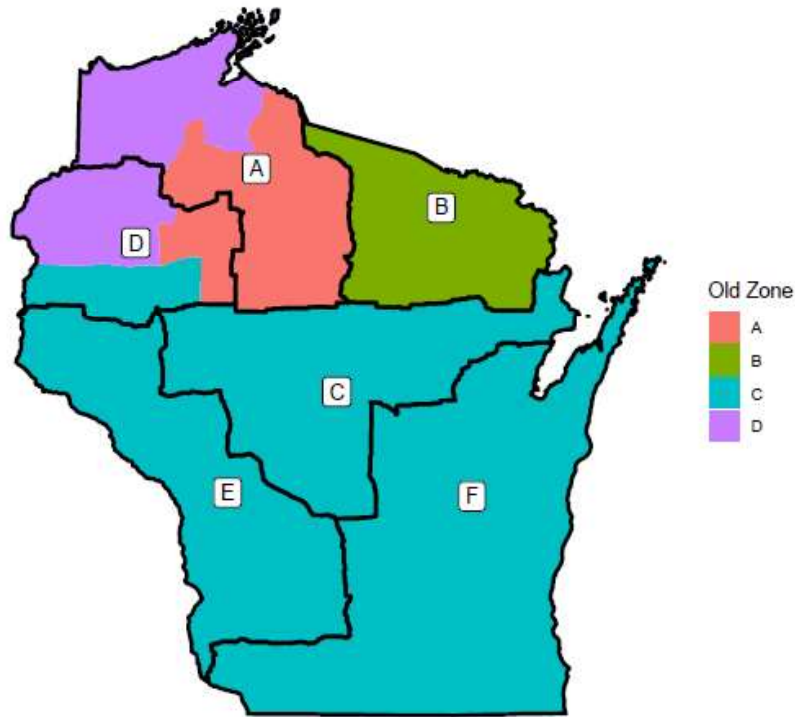


Figure 1: Comparison of old and new bear management zones. New zones are labeled in the map, outlined in black.

Table 2: Wisconsin zone-specific and total bear harvest since 2010, including all sources of harvest, for new bear management zones (crosswalked from old zones prior to 2021). Most recent harvest is mostly complete, but may be subject to slight revision.

Year	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Total
2010	2,468	1,001	605	1,013	32	14	5,133
2011	1,894	985	543	807	37	15	4,281
2012	2,136	844	568	1,057	36	5	4,646
2013	1,721	492	715	950	47	25	3,950
2014	1,879	739	653	1,135	92	28	4,526
2015	1,697	781	645	1,040	77	24	4,264
2016	1,864	849	730	1,137	72	24	4,676
2017	1,562	816	666	1,027	67	20	4,158
2018	1,726	680	439	806	50	15	3,716
2019	1,386	658	575	969	75	16	3,679
2020	1,622	766	663	1,136	100	19	4,306
2021	1,258	721	484	1,258	100	25	3,846
<i>Average</i>	<i>1,768</i>	<i>778</i>	<i>607</i>	<i>1,028</i>	<i>65</i>	<i>19</i>	<i>4,265</i>