

2021 WEST VIRGINIA MAST SURVEY AND HUNTING OUTLOOK



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**WEST VIRGINIA DIVISION
OF NATURAL RESOURCES
WILDLIFE RESOURCES SECTION**

2021 West Virginia Mast Survey

Chris Ryan, Linda Ordiway, Colin Carpenter, Holly Morris and Eric Richmond

The Division of Natural Resources (DNR), in conjunction with the Division of Forestry, annually surveys the state to determine relative abundance of soft and hard mast produced by trees and shrubs of importance to wildlife populations. Information on the quantity of wildlife food is provided to our cooperators, hunters, and various media outlets.

Mast surveys were completed at 244 locations covering all regions of West Virginia in 2021. Professionals and volunteers -- including wildlife managers, foresters, wildlife biologists, Natural Resources Police Officers, Natural Resources Commissioners, and retired personnel from a multitude of natural resources related disciplines -- devoted their time and effort to collect data for this survey. Without the participation of these individuals, completion of the statewide mast survey would not be possible. We would like to extend our sincerest gratitude to everyone who assisted with data collection in this year's survey.

The mast survey is a relative estimation of mast produced by 18 different tree and shrub species that are widespread and locally common throughout the state and are of nutritional value to wildlife. A sample of the survey form is appended at the end of the report. Cooperators are assigned counties and areas familiar to them to collect mast production information, and the same areas are generally surveyed each year to ensure consistency in the survey across years. Mast crop production is subjectively evaluated as abundant, common, or scarce for each species encountered by the observer in the surveyed area. The surveyor also documents species that are not encountered, along with additional mast-producing species of local importance (e.g., Pawpaw, Persimmon, Cucumber-tree, Blueberry, Huckleberry, etc.) that do not appear on the statewide survey form. The mast index is calculated for each species, and in some cases guilds of species (e.g., hard mast producers, all oaks, oak-cherry-hickory, etc.), via the following formula:

$$\text{Mast Index} = \left[\left(\frac{\text{Abundant Observations}}{\text{Total Observations}} \right) + \left(\frac{\text{Common Observations} \times 0.5}{\text{Total Observations}} \right) \right] \times 100$$

The mast index is calculated by species for each ecological region and elevation (high or low, relative to the local terrain of the surveyed county). The current year's index is compared to the previous year's index and the running long-term average spanning the life of the survey, which was first conducted in 1971. Readers unfamiliar with West Virginia ecoregions should refer to Figure 1 to determine the region(s) in which they hunt.

Many wildlife species are highly dependent upon mast crops produced by trees and shrubs, and dynamic factors -- including survival and reproduction or fecundity -- are affected by mast availability. Caloric value available in mast is much more important to the survival of many wildlife species than the caloric value in agricultural crops, herbaceous plants, and supplemental feed. Seeds and fruits from trees and shrubs are necessary not only for overwinter survival, but also for ensuring animals are in good

physical condition for reproduction in following months. Generally, animals that enter the winter months with abundant fat reserves will be more likely to survive the lean months of the year and will produce and successfully rear more offspring during the subsequent spring and summer months. Wildlife biologists and managers are able to predict hunting prospects and forecast population dynamics of black bears, squirrels, white-tailed deer, wild boars, wild turkeys, and other game species by using mast quantity and quality information gathered during the annual mast survey.

Compared to the 2020 survey year (Table 1), the statewide combined index for all monitored species was up approximately 61% for survey year 2021. Beech showed the largest improvements (up 207%) in hard mast production from year to year. In addition, hickory (up 131%), walnut (up 119%) and chestnut oak (up 111%) all showed dramatic improvements in 2021. White oak was up slightly but still did not produce consistently across the Mountain State. Black/Red, scarlet and scrub oaks were down 48, 60% and 6%, respectively. Overall, it's going to be a very spotty year for oak production. Hunters that find good acorn production should concentrate their efforts in those areas.

All soft mast producers improved -- in some cases dramatically— in 2021. Apple production increased 566% over 2020 and had an incredible index of 76. Crab apple, hawthorn, grape and black cherry were up 188, 171, 124 and 123%, respectively. These soft mast producers will have a pronounced impact on wildlife movements this fall and into early winter. Bowhunters should look for good apple production and concentrate efforts there while grouse and turkey hunters may have better luck around some of the other species. The remaining soft mast species saw improvement over 2020.

It is often best to compare this year to the long-term average (Table 2). One of the major advantages of West Virginia's mast survey is the consistent methodology. This consistency, started by some great biologists in the 1970's, enables us to put any current year into a better perspective. Beech, black cherry, walnut and hickory were all above their long-term average and will provide a lot of wildlife food this fall and winter. However, the two more important species, white and red/black oak, were below their averages and will leave a considerable gap in the food supply for a lot of wildlife. Apple, hawthorn and crab apple were all above their long-term average and should have considerable impacts on some harvests.

We provide regional comparisons to the mast production across in the state in Tables 3 and 4. While this information should prove to be a valuable asset to all readers, local and regional differences are always at play when it comes to mast production. The West Virginia Mast Survey is intended to provide a representative regional and statewide picture of wildlife food conditions "on the ground," but it is not a substitute for diligent scouting! As noted on a statewide scale, beech, hickory and walnut were up in every region from last year and also over their respective long-term averages. Hickory was especially good in the mountain counties. Black cherry also did very well across the entire state. In addition, black cherry was extraordinarily strong in the Mountain counties and will impact movements. Chestnut and white oaks were two of the more variable species across the state in 2021. Hunters really need to get out and do some walking to determine

the localized impacts these species may have on wildlife. Crab apple production was better in the Eastern Panhandle, Mountains, and North Central part of the state compared to the South or Ohio Valley.

2021 Mast Survey Highlights

- All Species Combined mast index is 61% above 2020 and 8% above the long-term average statewide.
- All oak species are below their long-term average even though white oak improved slightly from last year.
- Beech, walnut, black cherry and hickory are up dramatically above last year and also above the long-term average.
- Hickory and black cherry were much higher in the mountains.
- Soft mast production was very good in 2021 with apple, black cherry, hawthorn and crab apple having very good crops in 2021.

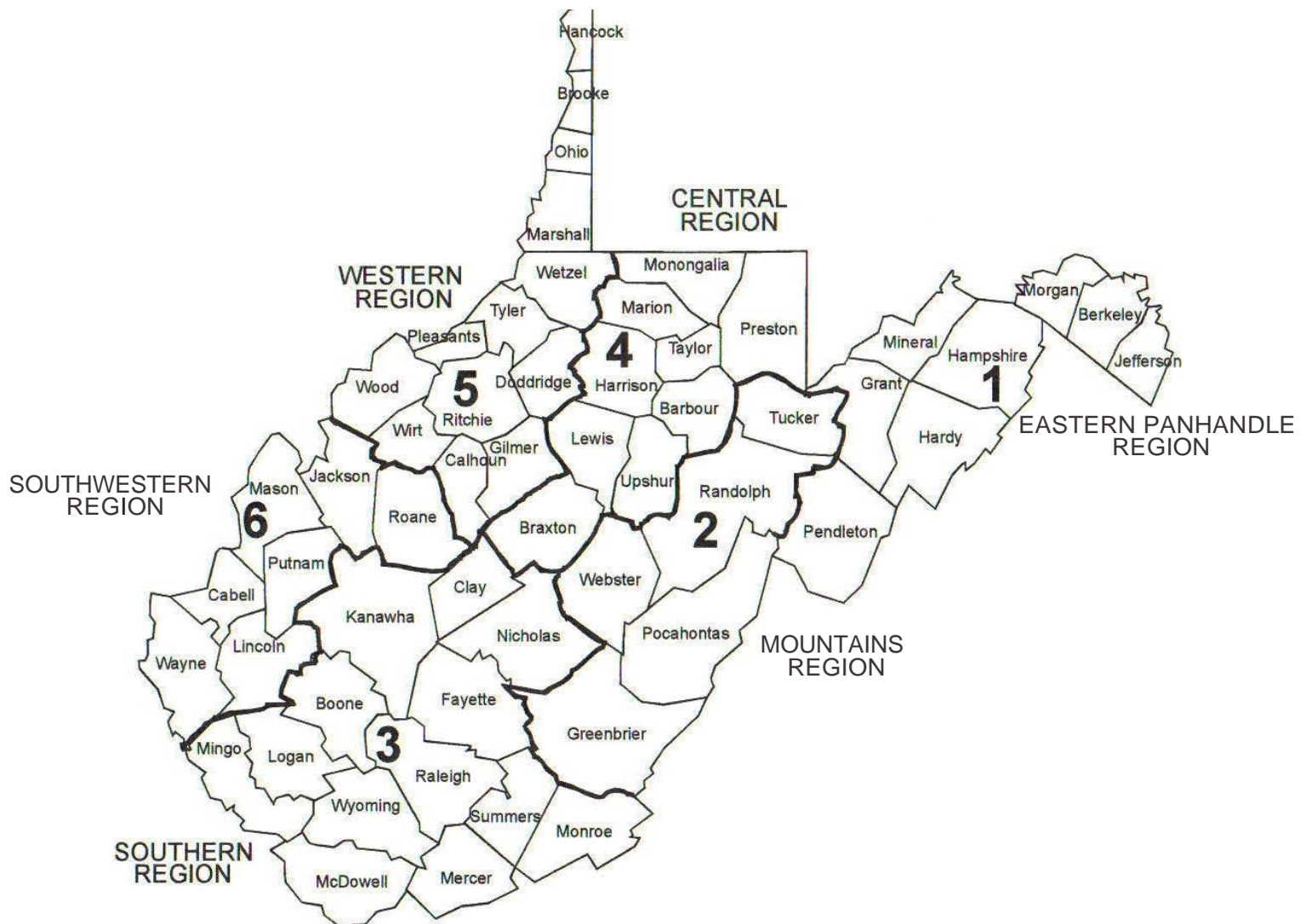


Figure 1. Ecological regions of West Virginia for 2021 mast survey.

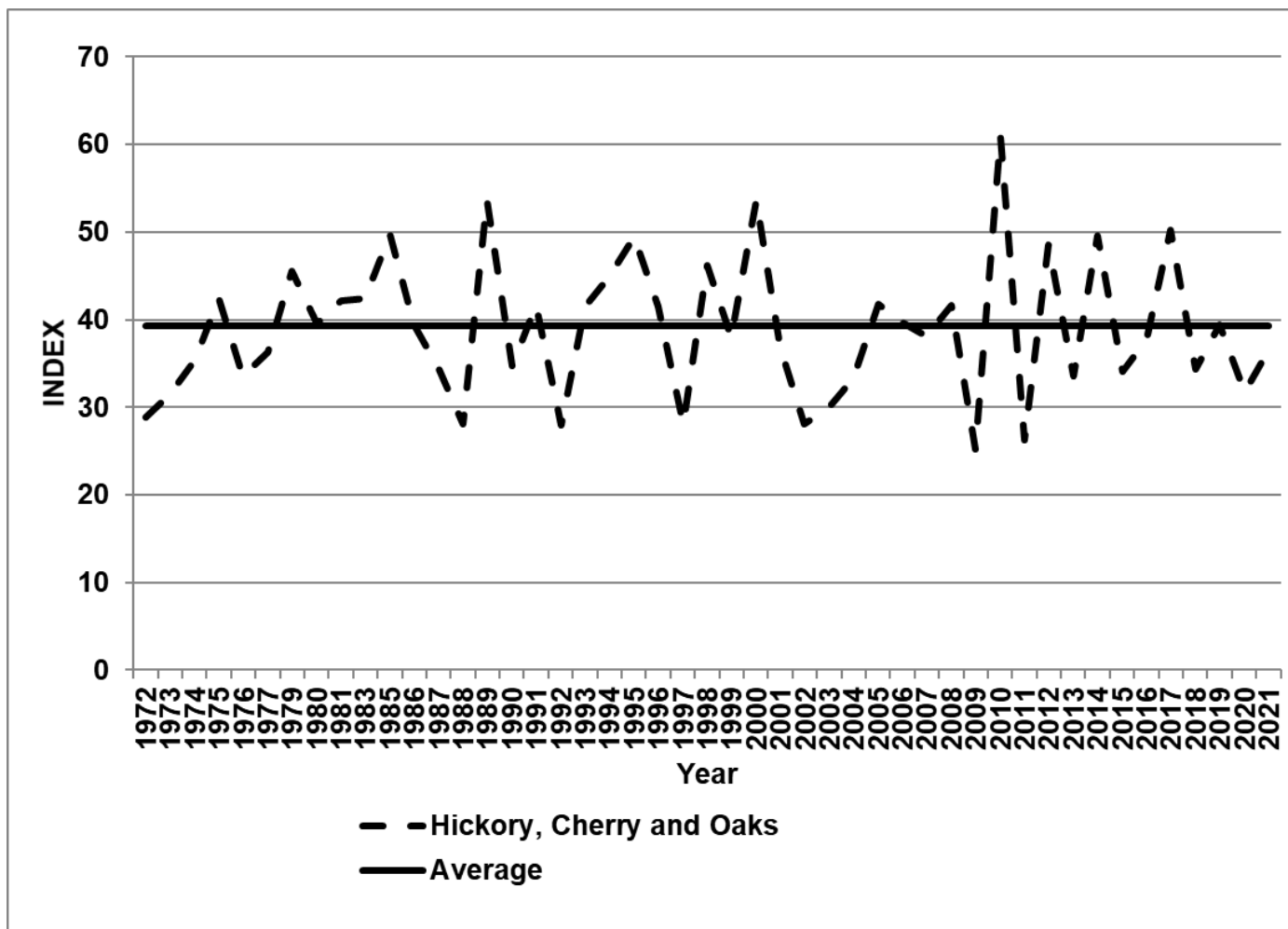


Figure 2. Hickories, Cherry and Oaks.

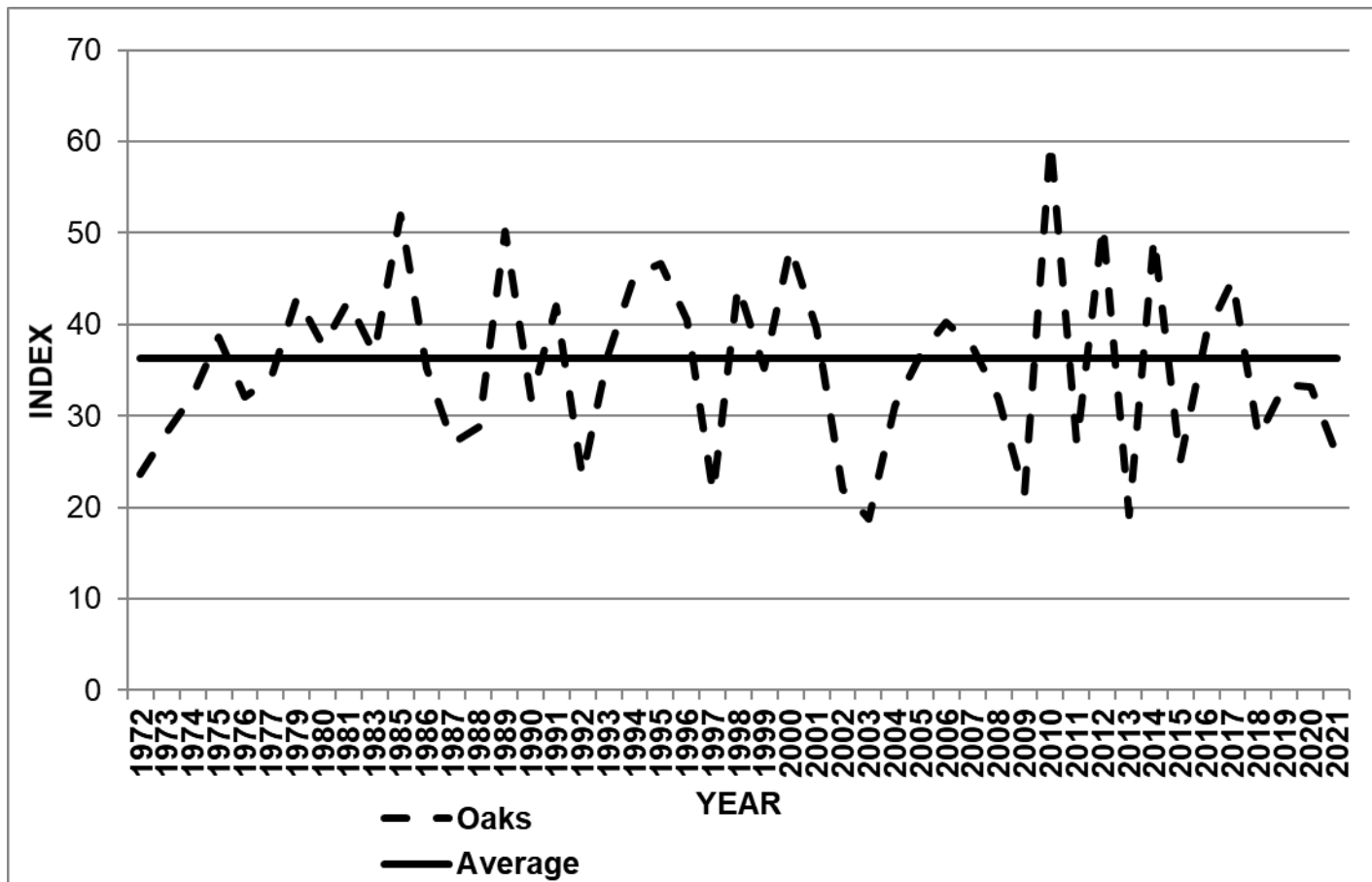


Figure 3. All Oaks.

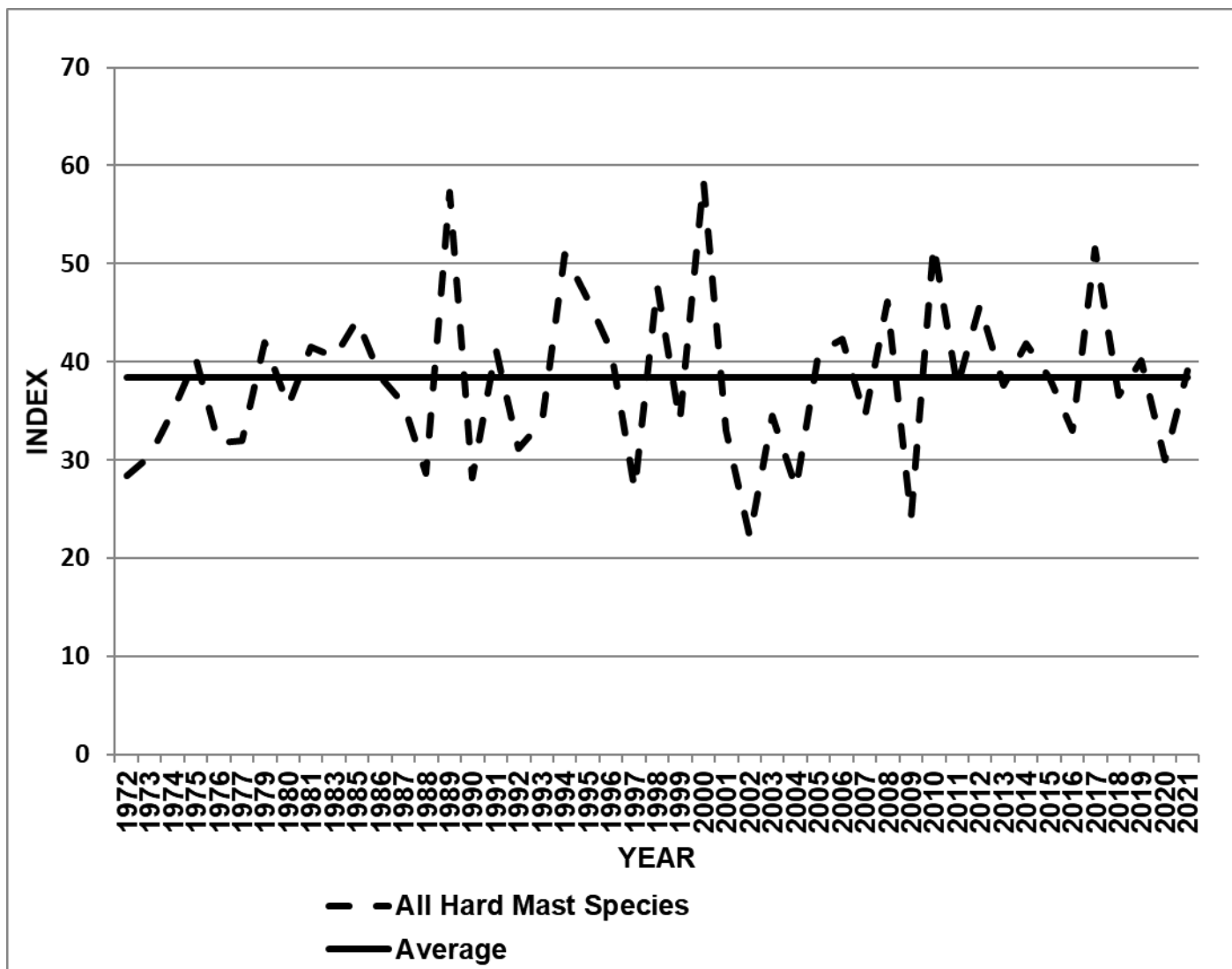


Figure 4. All Hard Mast Species.

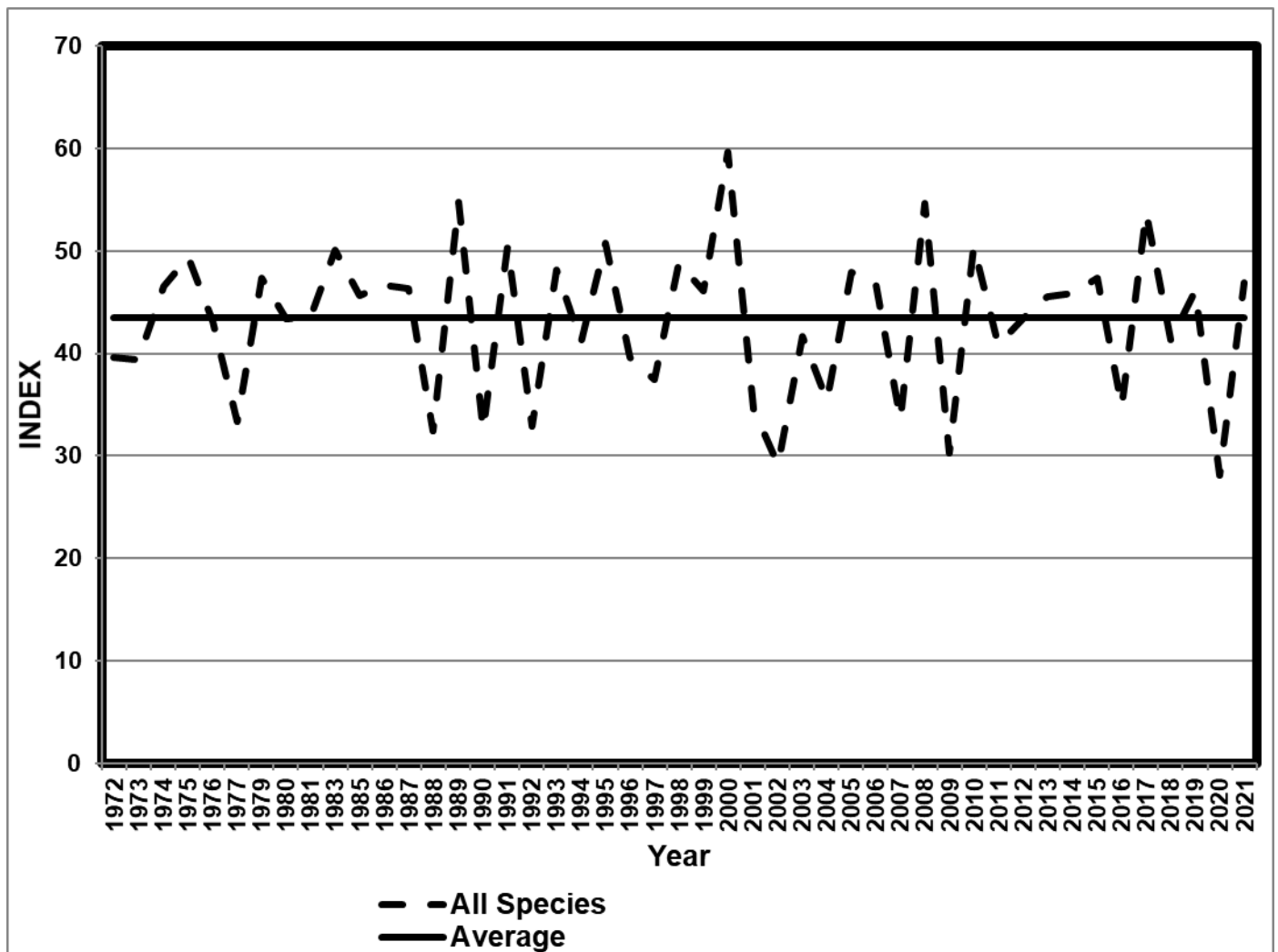


Figure 5. All Mast Species.

Table 1. 2021 statewide index compared to 2020 mast index.

Species	2020	2021	Percent Difference
Beech	22	66	207
Walnut	27	60	119
Hickory	25	58	131
White Oak	17	22	29
Chestnut Oak	14	30	111
Black/Red Oak	53	28	-48
Scarlet Oak	51	21	-60
Black Cherry	31	69	123
Grape	23	52	124
Scrub Oak	31	29	-6
Yellow Poplar	28	37	33
Hawthorn	25	67	171
CrabApple	23	67	188
Dogwood	41	53	27
Blackberry	43	54	26
Greenbrier	30	36	21
Sassafras	11	21	90
Apple	11	76	566
All Species	29	46	61

Table 2. 2021 statewide index compared to 50-year average mast index.

Species	Avg Index	2021	Percent Difference
Beech	39	66	71
Walnut	39	60	55
Hickory	48	58	22
White Oak	37	22	-40
Chestnut Oak	32	30	-9
Black/Red Oak	42	28	-34
Scarlet Oak	33	21	-38
Black Cherry	46	69	51
Grape	41	52	25
Scrub Oak	36	29	-21
Yellow Poplar	46	37	-19
Hawthorn	48	67	39
CrabApple	54	67	25
Dogwood	49	53	7
Blackberry	51	54	7
Greenbrier	39	36	-9
Sassafras	35	21	-41
Apple	57	76	35
All Species	43	46	8

Table 3. Percent difference in mast index by species between 2020 and 2021 by ecological region.

Species	Ecological Region					
	1	2	3	4	5	6
Beech	65	356	202	297	134	126
Walnut	155	707	199	26	47	32
Hickory	133	1016	74	120	138	45
White Oak	140	133	-44	33	260	325
Chestnut Oak	278	263	29	110	113	67
Black/Red Oak	-40	-39	-72	-31	-22	-55
Scarlet Oak	-55	-38	-79	-20	-45	-69
Black Cherry	52	108	163	117	111	177
Grape	67	447	90	388	104	47
Scrub Oak	-46	-10	N/A	N/A	N/A	NA
Yellow Poplar	39	160	-14	163	61	-10
Hawthorn	882	60	1435	247	212	0
CrabApple	707	240	30	689	458	-6
Dogwood	-52	98	65	43	91	11
Blackberry	-47	31	75	202	-19	115
Greenbrier	-21	49	18	76	3	-23
Sassafras	1191	110	12	130	60	0
Apple	362	962	445	591	1711	122
All Species	30	128	35	98	70	27

Table 4. Percent Change in 2021 mast index by species from average of years (1971-2020) by ecological region.

	Ecological Region					
Species	1	2	3	4	5	6
Beech	178	73	70	95	50	31
Walnut	40	71	66	32	63	48
Hickory	20	56	10	11	24	13
White Oak	-36	-49	-52	-34	-38	-21
Chestnut Oak	-40	-27	-36	1	61	17
Black/Red Oak	-40	-33	-56	3	-13	-58
Scarlet Oak	-34	-35	-60	18	-21	-70
Black Cherry	30	86	71	15	41	40
Grape	23	49	-5	27	46	42
Scrub Oak	-61	-18	NA	NA	NA	NA
Yellow Poplar	31	-20	-54	-13	-3	6
Hawthorn	54	32	91	23	9	6
CrabApple	33	27	8	23	10	21
Dogwood	-22	33	18	-16	-2	16
Blackberry	-9	13	4	0	18	-3
Greenbrier	-5	-19	-32	12	18	-17
Sassafras	14	-15	-63	-67	-33	-34
Apple	25	56	33	30	33	6
All Species	-8	10	-12	0	9	-3

HUNTING OUTLOOK

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Black Bear

Fall 2021 will continue to feature the most liberal bear seasons in West Virginia history. As in 2020, the bear archery season for 2021 is set to open concurrently with the deer archery season (September 25). Archers will have 14 weeks to hunt bears in 2021.

There will be 5 discrete early bear firearms seasons open for a total of 41 days in 24 different counties where hunters may use dogs. Four counties will be open for 10 days of firearms bear hunting from August 28 – September 6 and 7 days of firearms bear hunting from October 30 – November 5 with or without hounds. Four counties will be open for 7 days of firearms bear hunting from September 11 – 17 and 7 days of firearms bear hunting October 2 – October 8 with or without hounds. All or parts of 16 counties will be open for 7 days of firearms bear hunting from September 18 – September 24 and 3 days of firearms bear hunting from October 18 – October 20 with or without hounds. Youth, senior and handicapped hunters will have the opportunity to harvest a bear during a 2 – day antlerless deer season in mid – October. In addition, 51 counties will be open for concurrent bear hunting for 4 days in late October during an antlerless firearms season.

Fifty-one counties will be open for bear hunting during the deer firearms season. All or parts of 26 counties will be open for 4 weeks of firearms bear hunting in December with or without hounds. Finally, all or parts of 37 counties will be open to 4 weeks of firearms bear hunting without hounds in December. Bear hunting seasons will be open for 121 days from August – December in West Virginia in 2021. Sunday hunting is permitted on both private and public land. **Despite the liberal seasons for 2021, we are predicting a lower bear harvest.**

Archery hunting success rates depend greatly on mast conditions. Harvests decrease in years of mast abundance and increase in years of mast scarcity. **The archery harvest should be lower in 2021.** Although the red oak group (red, black and scarlet oak) did not produce well in 2021, black cherry, beech and hickory did very well. In addition, white oak production increased significantly over 2020 levels. Bears will be foraging on black cherry early in the season before transitioning to the available hard mast.

The firearms bear harvest will likely be lower than the harvest of 2020. Mast spread across the landscape will mean that bears will also be spread out. However, the December harvest should be greater in 2021 than in 2020 because mast will still be available for bruins to find.

White-tailed Deer

The total white – tailed deer harvest in 2021 should be similar to that of 2020.

Increased mast abundance across the state will mean that deer do not need to travel as far in search of food. This will hold true for the early part of the season, but deer movements should increase as the season progresses and food supplies decrease.

We are predicting a **similar archery harvest in 2021.** Archers would be wise to find the pockets of white oaks that produced in 2021 for early season success. Beech also produced exceptionally well in 2021 and deer will be found competing with bears, turkeys, squirrels and many other birds and mammals for the highly – preferred nuts. Look for apple trees to be a good place to harvest a deer with archery equipment.

The buck firearms season harvest should be similar to the harvest in 2020.

Two of the key factors that will determine the buck firearms harvest will be weather and participation. Many states documented an increase in hunting participation in 2020 due to the COVID – 19 pandemic. However, with many other activities happening again in 2021, it remains to be seen whether we will have large numbers of hunters in the woods. Even if the woods are full of hunters in 2021, survey data shows that our hunters are much more selective about which bucks they harvest now than they were in the past. Poor weather on the first 3 days of the season can also cause a significant decrease in buck harvest.

The antlerless harvest in 2021 should be similar to the harvest in 2020. The antlerless harvest will be influenced by many of the same factors that influence the buck firearms harvest. There have been only minor changes to the antlerless deer hunting regulations in 2021. Hunters around the state have ample opportunity to harvest an antlerless deer.

The muzzleloader harvest should also be similar to 2020. Muzzleloader harvests have not varied much over the past 5 years and are influenced by weather and participation. Muzzleloader harvests decreased when the season was changed to open immediately after the buck firearms season. Even though the original season timing was brought back (1 week between buck firearms and muzzleloader) the harvest never increased back to the levels recorded before the change.

The Mountaineer Heritage Season harvest should be similar to 2020.

Harvest during the first 3 years of the Mountaineer Heritage Season has been relatively consistent. Participation may increase slightly this year because turkeys have been added to the list of species that can be harvested. A hunter will have 4 days to attempt to harvest a deer, bear or turkey. Hopefully this regulation change will please our turkey hunters who used to enjoy hunting during December.

Gray and Fox Squirrels

Squirrel numbers are a direct result of food conditions from the previous year. Squirrels usually produce a spring litter, but the summer litter survival is dependent upon overwinter food availability. Poor mast conditions last year should result in a lower number of squirrels produced this year. Early season hunters should focus on walnut, hickory, and beech, and shift emphasis to chestnut oak later in the season. **Hunters should expect lower harvests in 2021-2022 season.**

Wild Turkey

Fall turkey harvests are heavily influenced by brood production in that year and available mast. Based on brood surveys this summer, brood production is better this year compared to years past across the state. In addition, cicada brood X (ten) hatched this year in the eastern panhandle counties, proving an ample food source for turkey poults. This resulted in more poults than average surviving into the fall season in this region.

Every county will again have some length of fall turkey season in 2021. Traditional counties will continue to have a 4-week season. Non-traditional counties will have either a one or two – week season. Hunters should check the 2021-2022 Hunting Regulations on page 42 to find out the fall turkey hunting regulations specific to their county. New this year, hunters participating in the Mountaineer Heritage Season may harvest one either-sex turkey. See page 34 of the 2021-2022 Hunting Regulations for more details on legal weapons. **The wild turkey harvest should be higher than last year because of increased reproduction.**

Wild Boar

Hunters recorded the second highest harvest of wild boar since the implementation of a hunting season in 1979. Hunters once again had the opportunity to hunt in early February in addition to the archery and October firearm seasons. Harvests have been on an upward trend since the introduction of the winter season, but reproduction is directly associated with mast conditions from the previous year. Ecological Region 3 reported overall mast production 36% below the long-term average in 2020. Mast conditions from 2020 coupled with a high harvest should produce a **harvest lower than that of 2020.**

Raccoon

Hunters should expect lower raccoon harvests during 2021-2022. Raccoon populations are highly dependent upon hard and soft mast conditions. Last year, mast conditions were below both the previous years' and the long-term indices. Hard mast conditions strongly influence overwinter survival and reproduction. Populations may have declined slightly due to the previous mast conditions making hunting prospects poorer for this upcoming season. However, reduced harvests over time and no significant outbreaks of canine distemper reported should result in plenty of strikes.

Cottontail Rabbits

A second mild winter once again helped rabbit populations. The normal to wet spring conditions provided a flush of lush escape cover that has continued into the fall. The flush of vegetation provides added protection from both avian and mammalian predators. Habitat is key for rabbit numbers and a lack of young forest stands and scrubby shrubby habitat is the main contributor to the long-term declines in WV. Fluctuations in annual populations are strongly influenced by environmental conditions with precipitation most critical. Given the vegetation conditions and relatively moist spring – fall (a short dry spell in the summer) **hunters should expect higher rabbit populations this year.**

Ruffed Grouse

The 2020-2021 season reported the lowest flush/hr rate since 1993. At 0.55 birds per hour many had a very challenging grouse season. Spring of 2021 was near perfect conditions for successful brood rearing. The moisture provided young vegetative shoots that supported the insects necessary for chick survival. Soft mast production overall was higher than previous years. American beech in all grouse regions was notably up from previous years. Focus for the early parts of the season should be on producing beech forests or individual trees at the mature forest interface with disturbance. As the season progresses focus should be on winter apples and grape following the first frost or series of notably cold nights. Without a continual pattern of forest disturbance and timber harvests providing the cover and food resources required by grouse, populations will continue to decline. **All things considered hunters should experience a higher number of bird contacts this year.**

Table 1. 2021 quick check chart of predicted statewide wildlife harvests.

Species	Higher	Similar	Lower
Gray and Fox Squirrels			X
Cottontail Rabbits	X		
Ruffed Grouse	X		
Raccoon			X
White-tailed Deer		X	
Wild Boar			X
Wild Turkey	X		
Bear			X

Table 2. 2021 quick check chart of deer harvest forecast by region and season.

Region	Season					
	Bow	Buck	Antlerless	Muzzleloader	Heritage	Total Kill
1	Similar	Similar	Similar	Similar	Similar	Similar
2	Similar	Similar	Similar	Similar	Similar	Similar
3	Similar	Higher	Similar	Similar	Similar	Similar
4	Similar	Similar	Similar	Similar	Similar	Similar
5	Similar	Lower	Lower	Similar	Similar	Lower
6	Similar	Lower	Similar	Similar	Similar	Similar
Statewide	Similar	Similar	Similar	Similar	Similar	Similar

REPORT OF MAST CONDITIONS
2021
(See opposite side for instructions)

LOCATION: _____ ELEVATION: ☐ High ☐ Low
COUNTY: _____ DATE: _____
Month Day Year

ELEVATION: _____ ASPECT: _____

AVAILABLE MAST, FRUIT, ETC.

SPECIES	Abundant	Common	Scarce	Species Not Seen
BEECH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WALNUTS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HICKORIES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WHITE OAK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CHESTNUT OAK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BLACK/RED OAK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCARLET OAK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BLACK CHERRY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GRAPES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCRUB OAK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
YELLOW-POPLAR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAWTHORNE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CRABAPPLE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DOGWOOD	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BLACKBERRY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GREENBRIER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SASSAFRAS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
APPLE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS: _____

NAME OF PERSON REPORTING _____

DIVISION: _____

ADDRESS: _____

INSTRUCTIONS FOR REPORTING MAST CONDITIONS

PLEASE PRINT CLEARLY USING A BLUE OR BLACK INK. USE CAPITAL LETTERS AS ILLUSTRATED BELOW

LOCATION: Give the nearest post office address or some other adequate description.

Example: Alpena Post Office, or two miles south of Alpena near head of Roaring Creek. Do not give such descriptions as "on the ridge above George Walker's Store."

COUNTY: Name the county in which the survey was made.

DATE: Enter the date (month/day/year) on which the survey was made.

ELEVATION: Give the approximate elevation. Example: 2,500 feet, 800 feet, etc.

AVAILABLE MAST, FRUIT, ETC.

Please indicate the relative abundance of the mast, fruit, etc. this season by placing an X in the box under the proper column opposite the species concerned. Do not write in any wording such as poor, very poor, not so good, etc. Place a X in the box under the "species not seen" column if you did not see the tree or shrub species, or if the species does not occur in the area you conducted the survey.

Please return the forms by August 31, 2021 so that compilations can be made immediately thereafter.

Mail completed forms to:

WV Division of Natural Resources

Mast Survey

PO Box 67

Elkins, WV 26241

RETURN BY AUGUST 31, 2021

Important! The form should be completed IN CAPITAL LETTERS using a BLACK or DARK BLUE ballpoint/fountain pen. Characters and marks used should be similar in the style to the following:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0 ☒ ☒

2021 HUNTING PROSPECTS

PLEASE CHECK BELOW WHETHER YOU THINK HUNTING WILL BE THE SAME, BETTER OR POORER THAN 2020 FOR EACH GAME SPECIES LISTED. LIST THE COUNTY YOU ARE RATING. USE A SEPARATE SHEET FOR EACH COUNTY. IF YOU DO NOT KNOW, OR IF THE GAME SPECIES IS NOT PRESENT IN YOUR WORK AREA, DO NOT CHECK ANYTHING. USE CAPITAL LETTERS AS ILLUSTRATED BELOW.

COUNTY RATED: _____

DATE: _____
Month Day Year

GAME SPECIES	BETTER	SAME	POORER
SQUIRRELS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RABBITS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GROUSE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RACCOON	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DEER	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TURKEY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QUAIL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BEAR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHERS (LIST)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS: _____

NAME OF PERSON REPORTING: _____

DIVISION: _____

ADDRESS: _____

City State Zip

Important! The form should be completed IN CAPITAL LETTERS using a BLACK or DARK BLUE ballpoint/fountain pen. Characters and marks used should be similar in the style to the following:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 1 2 3 4 5 6 7 8 9 0 ☒ ☑



Federal Aid Project
funded by your purchase of
hunting equipment

Mast Survey

Wildlife Resources

*West Virginia Division of
Natural Resources*

324 Fourth Avenue
South Charleston, WV 25303

(304) 558-2771
Fax: (304) 558-3147

Bulletin 21-04



It is the policy of the Division of Natural Resources to provide its facilities, services, programs, and employment opportunities to all persons without regard to sex, race, age, religion, national origin or ancestry, disability, or other protected group status.

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