

# 2013 WEST VIRGINIA MAST SURVEY AND HUNTING OUTLOOK



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



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## 2013 West Virginia Mast Survey

Eric Richmond, Christopher Ryan, Randy Tucker and Michael Peters

The Division of Natural Resources (DNR) in cooperation with the Division of Forestry, annually surveys the State to determine relative abundance of soft and hard mast of important trees and shrubs. Information on the quantity of wildlife food is provided to our cooperators, our hunters and the news media.

Two hundred fourteen (214) locations covering all regions of West Virginia were surveyed in 2013. Professionals from a variety of disciplines, including wildlife managers, foresters, wildlife biologists, retired wildlife managers and biologists, several conservation officers, one Natural Resources Commissioner and a few other cooperators devoted their time to collect data. Without the efforts from all of these individuals this survey would not be possible. We sincerely thank everyone and extend our special thanks to retired persons and sportsmen that gave their time and effort without any monetary compensation.

The mast survey is a relative estimation of mast produced by 18 different species. A sample of the mast survey form is included in the Appendix. To collect mast survey information, cooperators are assigned counties and areas familiar to them. Mast data is subjectively evaluated as abundant, common or scarce. The surveyor also documents species not seen. The mast index is calculated for each species by the following formula:

$$\text{Mast Index} = \left[ \frac{\text{abundant observations}}{\text{total observations}} \right] + \left[ \frac{\text{common observations} \times 0.5}{\text{total observations}} \right] \times 100$$

The mast index is calculated by species for each ecological region and elevation (high and low). The current year's index is compared to the previous year's index. It is also compared to a long-term average index spanning the life of the survey. Readers not familiar with our regions should refer to Figure 1 to determine the ecological region where they hunt.

Many wildlife species are highly dependent on mast produced by our trees and shrubs. Energy available in mast is more important for survival of many wildlife species than energy available in forage from agriculture crops and herbaceous plants. Seeds and fruits from trees and shrubs are necessary for not only overwinter survival, but also to assure that wildlife is in good physical condition to reproduce. Because of the importance of mast conditions, biologists and wildlife managers are able to forecast black bear, squirrel, white-tailed deer, wild boar and wild turkey population changes and harvests.

Compared to the 2012 survey, the mast index for all species combined is similar this year (Table 1). All oak mast species decreased substantially. Indices for oak

decreased from 28 percent for shrub oak to 74 percent for chestnut oak. White and black/red oaks decreased greater than 50 percent. Statewide, beech did very well this year. Beech increased 186 percent above last year's estimate. This year's index for beech was the third highest since the mast survey started in 1971. Hickories and walnut increased 51 and 52 percent, respectively.

For soft mast, black cherry increased the most this year. Cherry increased 79 percent above last year's index. Crabapple and apple fared equally well increasing 77 and 76 percent, respectively. Greenbrier essentially remained the same as last year by increasing only five percent. Of the soft mast species, sassafras decreased the most from 2012 (29 percent).

The abundance (or lack thereof) of oak mast may remind many of the dismal mast crop of 2009. The combination of beech, hickory and walnut should help offset the lack of oak mast. Surveyors reported that although oak was scarce, oak abundance in the higher elevations was more plentiful. For example, elevations above 2,800 feet were more likely to have decent acorn crops. Overall, the black/red oak index decreased 62 percent in 2013. The black/red oak index is 51 percent below the 42-year average (Table 2). These oaks require 18 months for the fruit to mature so the index is a product of last year's flowering conditions.

Compared to the 42-year average (Fig. 2), the 2013 mast index for all species combined is similar to the long term average (index of 43). The largest decrease was observed for scarlet oak (56 percent). This year, the indices for the species of interest are almost reversed, i.e., last year the indices for walnut and beech were down and indices for hard mast species (hickory, white oak, chestnut oak, black/red oak and scarlet oak) were up (Table 2).

The statewide index for hard mast species (beech, hickory and oaks) and black cherry was 16 percent below the 42-year average (Fig. 3). Oak index was 75 percent lower than the oak 42-year average (Fig. 4). All oak species declined in all regions, but appears to be the best in higher elevations of Region 2. The abundance of beech, hickory and walnut in all regions should help offset the decline of oak.

This year we have included a comparison of all hard mast species (Fig. 5). This is similar to Figure 3 but it excludes the influence of cherry. The index for all hard mast species (beech, walnut, hickory, white oak, chestnut oak, black/red oak, scarlet oak, and scrub oak) was essentially the same as the 42-year average.

Because mast abundance can vary at different locations, caution should be exercised when comparing the abundance values of these indices especially at the regional level. Nevertheless, the presence or absence of acorn production can be an important predictor in harvest. The 2009 mast crop was one of the worst since we began monitoring mast production. In some places, the oak mast production this year may resemble the crop of 2009. Because we compare mast abundance to the previous

year, caution should be exercised when interpreting the indices. Several factors can inflate or deflate the percent change in the index. Therefore, comparisons to the 42-year average should give us a tempered result that is more representative to the true mast condition.

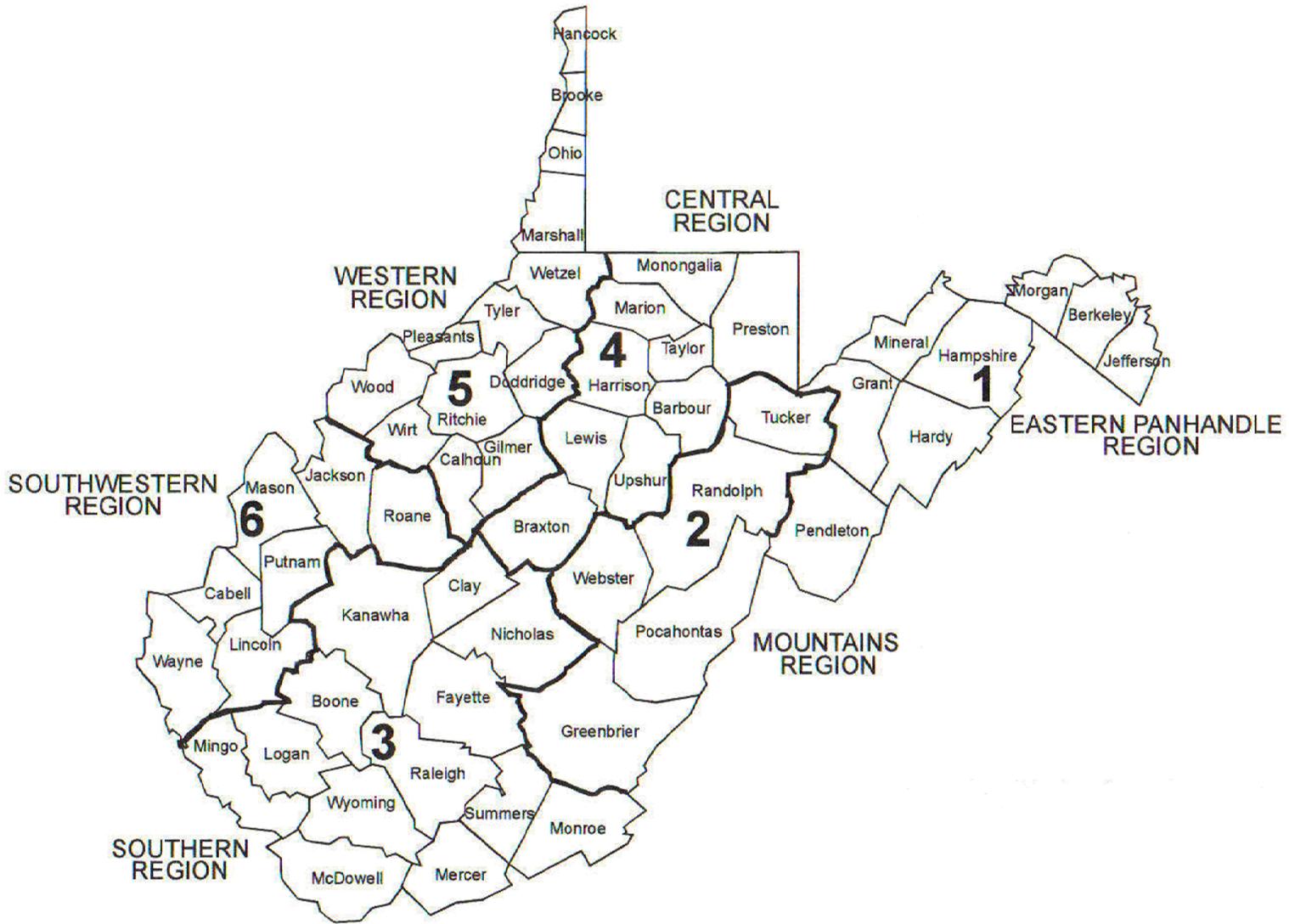
Soft mast species (black cherry, grape, hawthorn, crabapple, dogwood and apple) were above their respective 42-year averages (Table 2). Yellow poplar, blackberry, greenbrier and sassafras were below their 42-year averages.

When the mast survey began in 1971, our main purpose was to use it to forecast squirrel populations and hunting outlook. Current mast conditions impact overwinter survival and reproductive success of many other wildlife species.

It is recommended that hunters review the regional trends in mast as shown in Tables 3 and 4 to learn of food conditions in their region of the State. There are always some regional differences.

#### 2013 Mast Survey Highlights

- For all species combined the mast index is similar to the 42-year average
- Beech mast is exceptionally abundant this year
- Walnut and Hickory produced well
- Oak mast is sparse but best in higher elevations
- Apple is plentiful



1ZW0R7370374476190

Figure 1. Ecological regions of West Virginia.

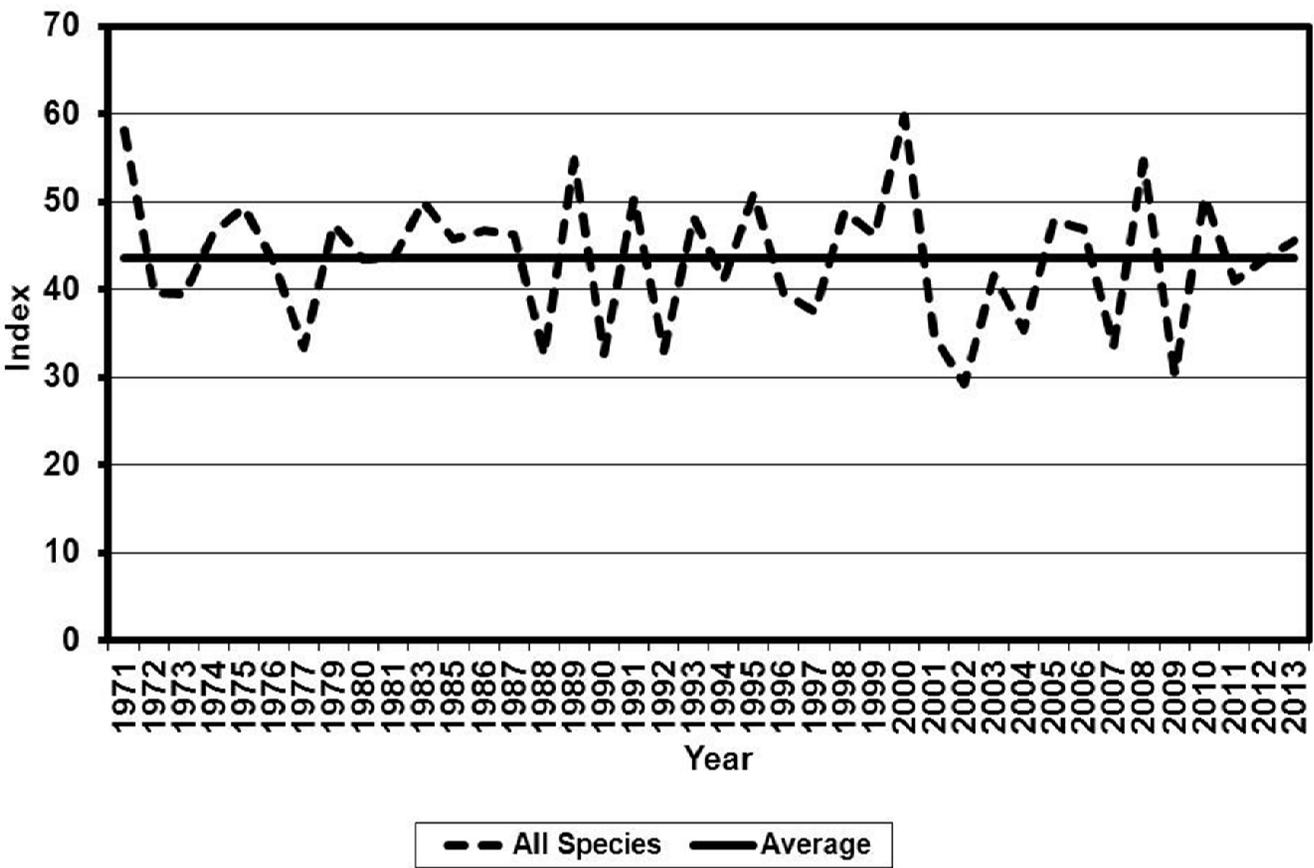
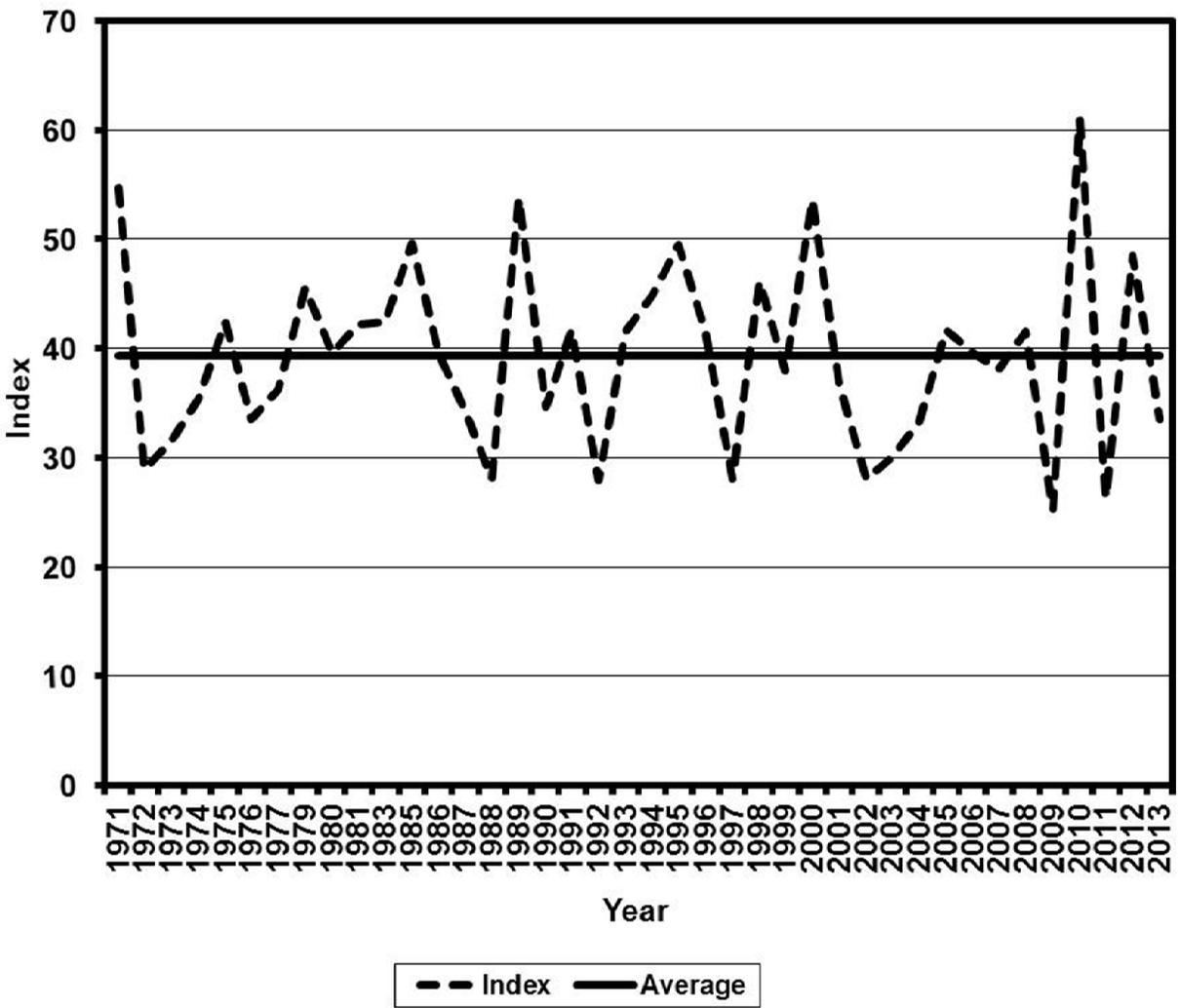


Figure 2. Indices of all mast species combined, 1971-2013.

Figure 3. Indices of beech, hickory, oaks and black cherry, 1971-2013.



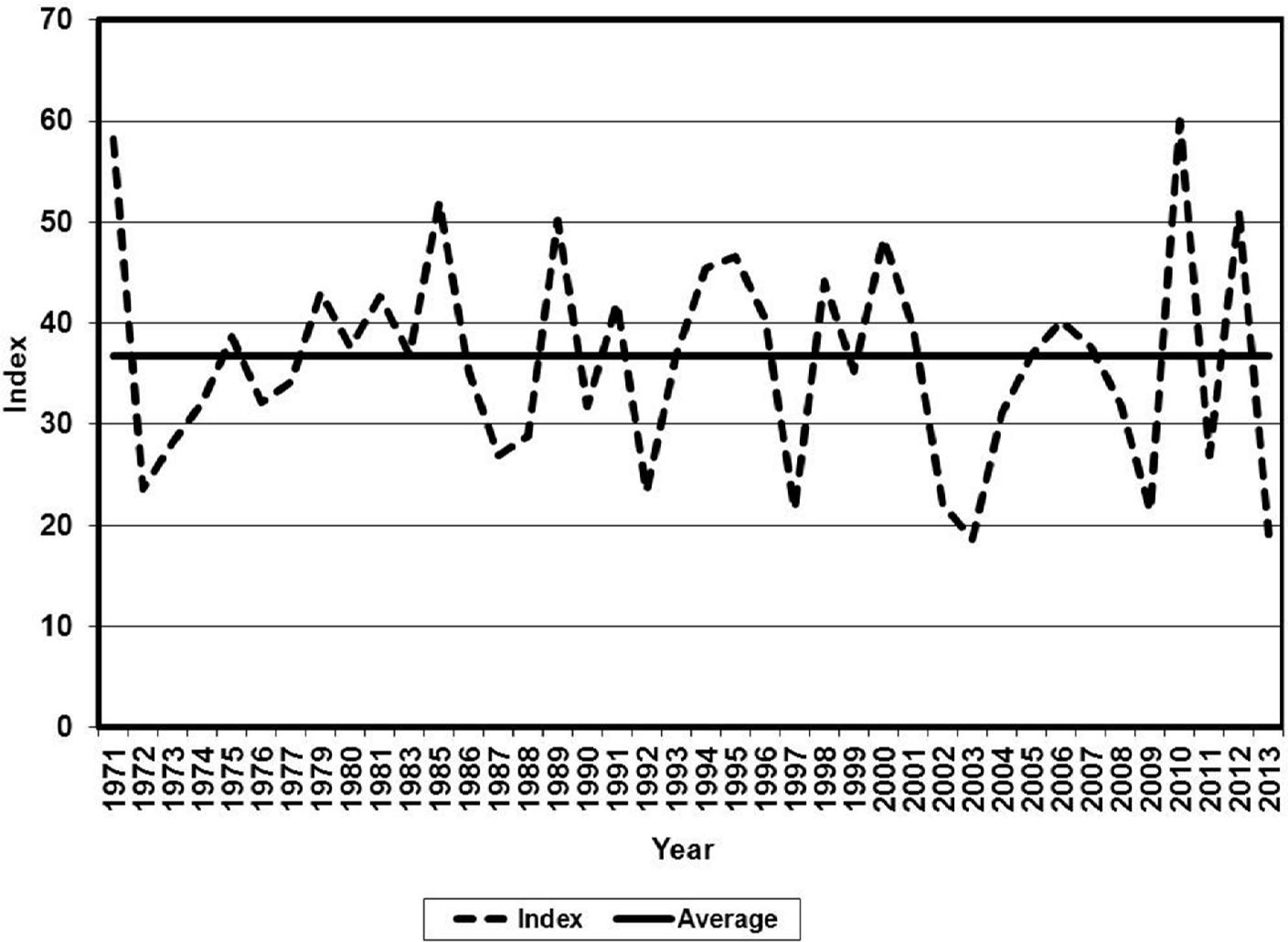


Figure 4. Index of all oaks, 1971-2013.

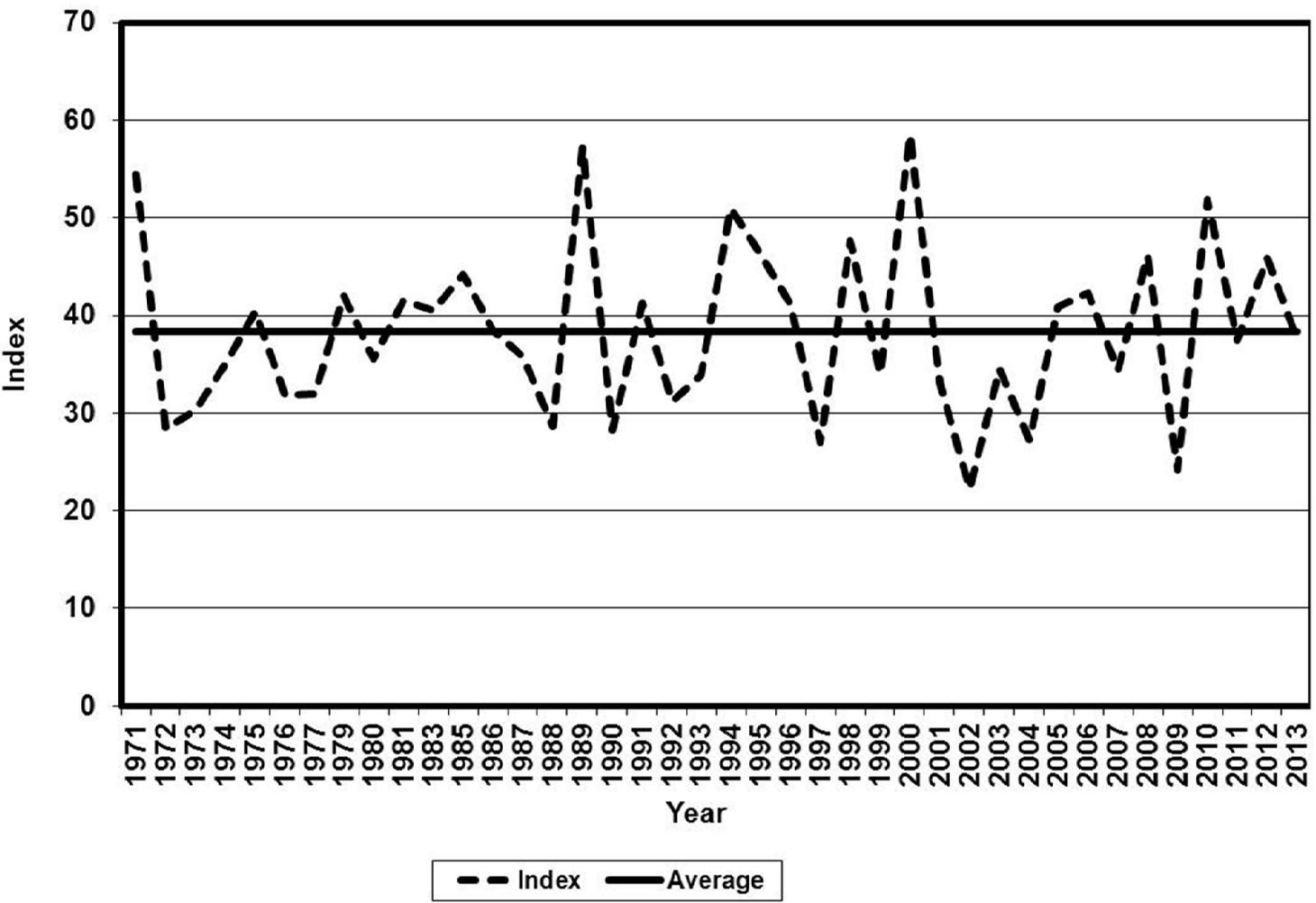


Figure 5. Index of all hard mast species, 1971-2013.

Table 1. 2013 statewide index compared to 2012 mast index.

<b>Species</b>	<b>2012</b>	<b>2013</b>	<b>Percent Difference</b>
Beech	27	76	186
Walnut	36	54	52
Hickory	50	75	51
White Oak	55	23	-57
Chestnut Oak	63	16	-74
Black/red Oak	55	21	-62
Scarlet Oak	53	15	-72
Black Cherry	36	64	79
Grape	38	48	25
Scrub Oak	28	20	-28
Yellow Poplar	42	43	1
Hawthorn	44	61	41
Crabapple	39	68	77
Dogwood	61	51	-16
Blackberry	40	46	16
Greenbrier	35	37	5
Sassafras	39	28	-29
Apple	41	72	76
Other	74	75	2
<b>All Species</b>	<b>46</b>	<b>45</b>	<b>-1</b>

Table 2. 2013 statewide index compared to 42-year average mast index.

<b>Species</b>	<b>Avg Index</b>	<b>2013</b>	<b>Percent Difference</b>
Beech	38	76	100
Walnut	37	54	47
Hickory	47	75	60
White Oak	38	23	-38
Chestnut Oak	33	16	-51
Black/red Oak	43	21	-51
Scarlet Oak	34	15	-56
Black Cherry	45	64	42
Grape	41	48	17
Scrub Oak	36	20	-45
Yellow Poplar	47	43	-9
Hawthorn	48	61	29
Crabapple	53	68	29
Dogwood	48	51	6
Blackberry	51	46	-8
Greenbrier	40	37	-8
Sassafras	36	28	-23
Apple	56	72	28
Other	68	75	10
<b>All Species</b>	<b>43</b>	<b>45</b>	<b>4</b>

Table 3. Percent difference in mast index by species between 2012 and 2013 by ecological region.

Species	Ecological Region					
	1	2	3	4	5	6
Beech	125	218	238	320	192	59
Walnut	1	131	45	79	28	53
Hickory	28	25	62	91	86	18
White Oak	-67	-49	-43	-66	-68	-44
Chestnut Oak	-86	-57	-80	-66	-71	-64
Black/red Oak	-80	-54	-68	-51	-57	-52
Scarlet Oak	-78	-72	-86	-57	-71	-59
Black Cherry	75	78	324	56	33	4
Grape	4	85	16	41	15	13
Scrub Oak	-27	-40	-100	N/A	N/A	N/A
Yellow Poplar	41	7	4	-5	2	-6
Hawthorn	4	45	-4	90	66	45
Crabapple	45	50	50	101	111	21
Dogwood	-74	-12	-27	10	21	1
Blackberry	-2	95	-17	5	160	-7
Greenbrier	-40	-44	-6	15	74	6
Sassafras	-83	0	-19	33	17	-20
Apple	-33	83	143	94	77	61
Other	-19	N/A	13	111	-35	N/A
<b>All Species</b>	<b>-37</b>	<b>7</b>	<b>-1</b>	<b>17</b>	<b>16</b>	<b>-2</b>

Table 4. Percent Change in 2013 mast index by species from average of years (1971-2012) by ecological region.

Species	Ecological Region					
	1	2	3	4	5	6
Beech	151	62	103	93	86	103
Walnut	-2	89	36	22	48	93
Hickory	56	60	45	48	73	76
White Oak	-25	-12	-41	-58	-56	-31
Chestnut Oak	-65	-1	-69	-46	-61	-45
Black/red Oak	-76	-39	-57	-43	-47	-36
Scarlet Oak	-70	-39	-80	-40	-55	-33
Black Cherry	42	119	30	8	35	42
Grape	-7	51	12	-14	13	67
Scrub Oak	-47	-45	-100	-100	-100	-100
Yellow Poplar	20	19	6	-33	-53	-1
Hawthorn	10	44	4	15	13	57
Crabapple	-6	32	15	36	28	40
Dogwood	-57	15	-11	20	31	32
Blackberry	-9	-6	-33	-35	37	24
Greenbrier	-46	-35	-33	-15	18	31
Sassafras	-72	-21	-16	-41	-6	11
Apple	-46	36	37	34	35	59
Other	-17	N/A	42	48	-33	N/A
<b>All Species</b>	<b>-24</b>	<b>19</b>	<b>-4</b>	<b>-4</b>	<b>10</b>	<b>30</b>

## 2013 West Virginia Hunter Outlook

Erich Richmond, Christopher Ryan, Randy Tucker and Michael Peters

### GRAY AND FOX SQUIRRELS

Hickory, walnut, and beech have much improved mast conditions over last year and the long term average, but oak mast did not fare as well this year. Spotty mast conditions from last year and the mild winter resulted in good carry over and reproduction for this year's hunting. **Bushtail hunters should expect higher harvests for the 2013-2014 season.**

Hunters should be well served in finding good squirrel numbers in beech. Surveyors reported cutting in the hickory as early as the first week of August. Those hunters looking to add fox squirrels to their bag should be very successful in finding them along the creek bottoms feeding in the walnuts.

### COTTONTAIL RABBITS

One of the most important factors in growing and maintaining rabbits for the fall and winter is cover. Having adequate rainfall to grow the grasses and forbs is essential. West Virginia did have plenty of rain during the summer of 2013 and the wet summer has produced favorable conditions for providing great cover and rabbits going into the early fall months. Hunters should expect good bunny numbers for this hunting season. **Expect higher harvests this season as compared to those of 2012.**

### RACCOON

**Similar harvests are forecasted for 2013.** Spotty mast conditions statewide last year provided sufficient nutrition for overwintering coons. With good carryover we expect good reproduction rates resulting in higher populations. However, there may be a localized affect on the population in the southern part of the state as a result of an outbreak of distemper in the spring of 2013. There was an outbreak in 2012, also in the south, that did not appear to have a profound impact on last year's harvest. The final result should reflect similar numbers along the trap lines and the trees.

## BLACK BEAR

West Virginia hunters will have some very unique hunting opportunities for black bears in 2013. There will be an early split gun season when dogs may be used, over half of the counties will be open for some type of season concurrent with buck gun season, there is a 3 month bow season and we still have the traditional December gun season. Therefore, **in 2013 we are predicting a record black bear harvest.**

For the first time in history the early season using dogs will be split by two weeks between the traditional mountain counties and the 8 southern counties. The initial early season will be held from September 21–27 followed by an October 7–11 season in the southern counties. In addition, hunters may still continue to harvest two bears provided at least one comes from Boone, Fayette, Kanawha, Logan, McDowell, Mingo, Raleigh or Wyoming counties. Hunters should consult the 2013–2014 Hunting and Trapping Regulations for specifics on county dates. This season structure was designed to allow hunters using dogs additional opportunities in non-traditional counties.

Hunters that do not use dogs will be presented with many opportunities for the first time in history. A concurrent bear-buck gun season will be held from November 25–December 7 in 29 counties. Nineteen counties will be open to a limited number of permits and prior application was due by August 19, 2013. In limited counties the season will be open on private land only and landowners were not required to submit a permit. The number of permits available was determined by the hard mast conditions with more permits available during a hard mast failure. A hard mast failure would mean that bears would go to den earlier and therefore would reduce harvests and success rates. Our hard mast data indicates that oak mast conditions are at an all-time low but the abundant beech and hickory did not qualify it as a failure. Successful applicants will be sent their permits the second week of October, 6 weeks before the concurrent season.

Bear archery harvests are directly correlated with hard mast conditions. Therefore, the 2013 bear archery harvest should be higher. Although the total hard mast conditions are not a failure, the lower oak conditions will make it easier for archery hunters to pattern and harvest bruins. Hunters should concentrate on hickory or beech flats for their best chances at success. Moreover, early in the season hunters will find success in black cherry stands that are not totally consumed by wildlife at that point in time.

The traditional December gun season will be an interesting one to remember. Although, 2013 would not be classified as a hard mast failure the failure of the acorn crop will likely have a large impact on the harvest at that time. Oak trees dominate our landscape and are more important on a biomass level than many other species. If all of the beech and hickory have been consumed by December it will drive a majority of the bears to den which will make a much lower harvest during that traditional season.

Although this traditional season will have a lower harvest we are predicting the record harvest based off a combination of all factors (i.e., season structure, mast conditions and population size).

## WHITE-TAILED DEER

This year's harvest forecast for white-tailed deer should be **higher for 2013**. The poor oak mast conditions coupled with regulations changes should greatly benefit deer hunters. For the first time in history, hunters will be able to harvest 2 deer each day during any season provided that only one may be antlered. In addition, they will not be required to take the first deer to the checking station before pursuing the second animal. Therefore, hunters that have a limited amount of time may harvest 2 deer with a bow on a Saturday or kill an extra antlerless deer during the first three days of the gun season. We predict that this regulation change will be very popular with many hunters that only have a limited amount of time to pursue animals but still want to fill their freezers with healthy venison. Localized outbreaks of Epizootic Hemorrhagic Disease (EHD) in 2012 may have minor impacts on a very small scale but the white-tailed deer herd remains healthy and balanced with its habitat.

We are predicting a **higher archery harvest** in 2013. The poor oak mast conditions will mean that deer will be easier to pattern and harvest. This should lead to increased success rates and more animals in the hunter's freezers. In addition, the increased daily bag limit will also help some hunters that primarily hunt on Saturdays. The opportunity to continue to hunt after harvesting an animal should help out the hunter with a limited amount of time to pursue their passion.

The **buck harvest should be similar** to the harvest of 2012. Wildlife Resources Section employees working game checking stations in 2012 noticed an increase in the number of large antlered animals coming to official game checking stations. Data indicates that the age structure of harvested bucks has shifted over time to include a lower percentage of yearling animals and a higher number of mature bucks. This trend has been across the state and points to the fact that hunters are passing up younger animals for the chance at a more mature animal. This will lead to an increased number of larger bucks in the harvest.

**Antlerless harvests should be higher in 2013.** An increase in the daily bag limit from one to 2 animals will likely have the largest impact during the antlerless season. Hunters that only get to go hunting during the first couple days of the traditional gun season may now harvest an antlerless deer and still continue pursuing a buck or another doe during the same day. Hunters should consult the 2013–2014 Hunting and Trapping Regulations for specific county information.

The **muzzleloader harvest should be higher this year.** The change in the season dates of our traditional muzzleloader season caught many hunters off guard in

2012 and led to a lower harvest. However, the dates have remained the same in 2013 and we expect the harvest to return to levels of 2011 and before of approximately 7,500–8,000.

## **WILD TURKEY**

Counties with a spring harvest of 0.75 gobblers per square mile or more qualify for a two-week fall season (October 12–19 and October 28–November 2) includes Brooke, Hancock, Harrison, Marion, Marshall, Mason, Monongalia, Ohio, Preston, Tyler, Upshur, Wirt and Wood. Counties with a one-week fall season (October 12–19) includes Cabell, Calhoun, Gilmer, Jackson, Lewis, Lincoln, Logan, McDowell, Pleasants, Putnam, Ritchie, Summers, Taylor, Wetzel and Wyoming. Last year 15 counties were open for a one week season and 7 counties were open for a two week season. There are still 15 counties open for a one week season but there are now 13 counties open for a two week season.

A mild winter and average reproductive conditions should mean that survival was good. With the poor oak mast conditions, hunters should concentrate their efforts near beech or black cherry flats. In addition, because the limited amount of oak mast was at higher elevations hunters should do well to focus their efforts in those localized areas where acorns may be present. Due to the larger number of counties open for a fall season and the poor oak mast conditions, we are predicting a **higher fall turkey season harvest**.

## **RUFFED GROUSE**

As with turkeys, a mild winter and average reproductive conditions should result in good survival rates. The beech conditions, especially in areas where there are large trees located around thickets should be good areas for hunters to check out. Crabapple and hawthorn indices were respectively 77 and 41 percent above their long-term average and should not be overlooked. Areas with large concentrations of these species will be excellent locations to locate grouse. It is predicted that **flushing rates and harvests should be similar to last year**.

## **WILD BOAR**

An increased harvest in 2011 was a direct result of good mast production in 2010. Good acorn and other hard mast production results in good reproduction. Boar harvests will fluctuate with the mast conditions and the weather. In 2012, mast conditions were spotty, but we again saw a significant increase in the boar harvest. Hurricane Sandy dropped snow over the boar area creating optimal hunting conditions

for these elusive creatures. Last year's spotty mast conditions coupled with the increased harvest should result in less hogs available to hunters in 2013. **A lower harvest of boars is predicted for 2013.**

Table 1. 2013 quick check chart of predicted statewide wildlife harvests.

<b>Species</b>	<b>Higher</b>	<b>Similar</b>	<b>Lower</b>
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. 2013 quick check chart of deer harvest forecast by region and season.

Region	Season				
	Bow	Buck	Antlerless	Muzzleloader	Total Kill
1	Higher	Similar	Similar	Higher	Similar
2	Higher	Similar	Higher	Higher	Slightly Higher
3	Higher	Similar	Higher	Higher	Slightly Higher
4	Higher	Similar	Similar	Higher	Similar
5	Higher	Similar	Similar	Higher	Similar
6	Higher	Similar	Higher	Higher	Higher
<b>Statewide</b>	<b>Higher</b>	<b>Similar</b>	<b>Higher</b>	<b>Higher</b>	<b>Higher</b>

## **APPENDIX**



**REPORT OF MAST CONDITIONS**  
(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: \_\_\_\_\_

\_\_\_\_\_  
City State Zip

**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, 2013 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, 2013**

**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	<input type="checkbox"/>	<input checked="" type="checkbox"/>
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--------------------------	-------------------------------------

## 2013 HUNTING PROSPECTS

PLEASE CHECK BELOW WHETHER YOU THINK HUNTING WILL BE THE SAME, BETTER OR POORER THAN 2012 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 ☒ ☑





**Mast  
Survey**

**Wildlife Resources**  
*West Virginia Division of  
Natural Resources*

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**Bulletin 13-03**



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.

