State of New Jersey
OFFICE OF ADMINISTRATIVE LAW

EXPEDITED

INITIAL DECISION

OAL DKT. NO. ENH 05799-19

AGENCY DKT. AO 2018-24

NEW JERSEY OUTDOOR ALLIANCE,

SAFARI CLUB INTERNATIONAL, AND

U.S. SPORTSMEN'S ALLIANCE FOUNDATION,

    Petitioners,

            v.

NEW JERSEY DEPARTMENT

OF ENVIRONMENTAL PROTECTION AND

CATHERINE R. MCCABE, COMMISSIONER,

    Respondents.

    Peter C. Bobchin, Esq., appearing for petitioners (Law Offices of John C. Lane, attorneys)

    James H. Lister, Esq. (Birch Horton Bittner & Cherot) of the Alaska and District of Columbia bars, admitted pro hac vice pursuant to N.J.A.C. 1:1-1.5.2(a), and appearing for petitioners New Jersey Outdoor Alliance and U.S. Sportsmen's Alliance Foundation, Attorney of Record: Peter C. Bobchin, Esq. (Law Offices of John C. Lane, attorneys)

    Regina Anne Lennox, Esq., member of the District of Columbia bar, admitted pro hac vice pursuant to N.J.A.C. 1:1-1.5.2(a), for petitioner Safari Club

International, Attorney of Record: Peter C. Bobchin, Esq. (Law Offices of John C. Lane, attorneys)

Cristin D. Mustillo, **Nicolas Seminoff** and **Jason T. Stypinski**, Deputy Attorneys General, appearing for respondents (Gurbir S. Grewal, Attorney General of New Jersey, attorney)

Record Closed: October 20, 2020   Decided: October 27, 2020

BEFORE **SUSAN M. SCAROLA**, ALJ (Retired, on recall):

STATEMENT OF THE CASE

The petitioners, New Jersey Outdoor Alliance, Safari Club International, and U.S. Sportsmen's Alliance Foundation (collectively the Hunting Coalition), contend that the Governor's Executive Order No. 34 issued August 20, 2018, 50 NJR 2039(a) (October 1, 2018), and the New Jersey Department of Environmental Protection Commissioner's Administrative Order 2018-24, issued on August 30, 2018, closing the State's lands[1] to black bear hunting as set forth in the New Jersey 2015 Comprehensive Black Bear Management Policy (CBBMP) were arbitrary and capricious, conflict with the scientific underpinnings of the 2015 CBBMP, and imperil public safety.

The respondents, the New Jersey Department of Environmental Protection (NJDEP) and its Commissioner, Catherine R. McCabe, contend that the closing of state lands to black bear hunting as designated in Administrative Order 2018-24 has reasonable evidential support and is neither arbitrary nor capricious.

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[1] The Administrative Order refers to "all lands owned, managed or otherwise controlled by the Department, including but not limited to, all State forests, parks, recreation areas, historic sites, natural areas, and wildlife management areas." Reference to "state lands" in this Initial Decision refers to all properties covered in the Order.

PROCEDURAL HISTORY

In accordance with the directive of the New Jersey Superior Court Appellate Division in the matter entitled New Jersey Outdoor Alliance et al. v. NJDEP, No. A-0525-18T4 (App. Div. November 16, 2018), https://njlaw.rutgers.edu/collections/courts/, this matter was transmitted by the NJDEP to the Office of Administrative Law (OAL) on April 25, 2019, for hearing as an expedited contested case. N.J.S.A. 52:14B-1 to -15; N.J.S.A. 52:14F-1 to -13.[2]

The hearing was conducted by Zoom on September 21, 22, and 23, 2020.[3] The record remained open for the receipt of written summations until October 16, 2020, when the record closed.[4]

FACTUAL DISCUSSION

Testimony[5]

For respondents:

Anthony E. McBride was accepted as an expert in black bear[6] management. He has a degree in natural-resource management, and a master's degree in biology from East Stroudsburg University (PA). He has published (although not on bears) and has presented on black bears to the University of Connecticut and the League of Municipalities on black bear damage control. He has taught animal-control officers at Kean University and Morris County College about wildlife damage and black bears. He was a principal drafter of the 2015 CBBMP and is familiar with its contents.

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[2] The matter was originally assigned to the Hon. Jeff Masin, ALJ (retired, on recall) and was re-assigned to me on May 12, 2020.

[3] The hearing was conducted by Zoom due to the state of emergency declared by the Governor as the result of the COVID-19 crisis, and the need to expedite this hearing.

[4] The record closed on October 16, 2020, but was reopened on October 20, 2020, to include the results of the October 2020 Segment A of the harvest season and Bear Activity Incidents through October 21, 2020. See infra.

[5] The witnesses were not sequestered.

[6] *Ursus americanus.*

McBride has worked for the Department of Fish and Wildlife (DFW) within the NJDEP for twenty-six years, starting as a seasonal wildlife control technician in 1994, and then as an assistant biologist and senior biologist. He has been a supervising wildlife biologist since 2012. The DFW is responsible for maintaining New Jersey's large diversity of fish and wildlife. It educates residents about the needs of species, fosters positive interaction, and maximizes recreational and commercial opportunities.

McBride oversees the black bear research project, which traps and marks black bears, collects data, reports contacts, and estimates bear population. The black bear research project has seven full-time staff members, two temporary employees, one to two seasonal employees, and ten volunteers. He makes sure that the staff is equipped, and that people are available on short notice to work on a bear. For example, if a Category 3[7] bear goes into a city, they have to work on that situation immediately. McBride traps and tags bears himself and is trained in the use of firearms and in the chemical immobilization of large animals for study or transfer. He also acts as a liaison to other parts of the DFW. He also works with conservation police officers.

McBride provided information on the nature of black bears. Black bear females give birth every other year. The cubs stay with their mother for the first year and then den with her over the winter. In May, after the second denning, the cubs disperse, and the females will have another litter. The black bear research project tracks the bears to their dens; the females are anesthetized; biological samples are taken, and the mothers and their cubs are counted and tagged. One year later, they are visited again. Cubs have a 70% rate of survival in their first year. Data is maintained from bears that are killed.

New Jersey bears have average litters that are larger than their counterparts in the west, or in Colorado, the Smoky Mountains, or Maine. New Jersey bears breed at a younger age, starting at ages two to three, and continue to breed to about eighteen years of age, so that every other year females between the ages of three and eighteen are breeding. This means they could breed seven or eight times. With an average litter of 2.8 cubs, a female could bear nineteen cubs. McBride had no data on whether New

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[7] Black bears are categorized by the level of risk they present to the human population and how they are handled. See infra.

Jersey bears survived longer than those in some other states, but he could make some comparisons with other states.

After the bears' winter denning period, the researchers go into the various Black Bear Management Zones[8] (BMZs) and try to trap bears during late May and June. At that time, bears are breeding and moving around as they look for mates. The second period of most movement is late August–September, as the black bears eat as much as they can to build up fat reserves before hibernation in the late fall.

Two kinds of traps are used to capture the bears for study: a culvert trap or an Aldrich foot snare. Bears can also be trapped for damage control of nuisance bears if they engage in certain behaviors.

Captured black bears are used for research. Ear tags are sequentially numbered, and tags are placed on both ears. A tattoo is placed in the bear's inner lip. That way, if the ear tags fall off, the researchers can still positively identify the bear. Tissue samples are sent to East Stroudsburg University's Northeast Wildlife DNA Laboratory, where the genes are analyzed. A population analysis can be based on tissue samples and matched to a bear. Ticks are pulled for study. Blood samples are also taken, as bears can have West Nile virus or other protozoan diseases and seem resistant to some pathogens. A small tooth is also removed and sent to Matson's Laboratory in Montana, which can provide an accurate age of the bear. Age is important, as females stop breeding cubs when they are about eighteen years old.

Measurements are taken of the bears whether they are captured for study or found dead. The head and feet are measured, and the bears are weighed. The head circumference is critical in determining whether the bear is a yearling or a sub-developed male. Biological samples are taken. All this information assists in developing the CBBMP.

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[8] The state is divided into seven BMZs: BMZs 1–5, located mostly in the northern and western parts of the state, permit black bear hunting; BMZs 6 and 7, located in the southern part of the state do not permit black bear hunting.

Bears are listed by categories in terms of handling. Category 1 bears are an immediate threat to people and property. These bears break into homes; kill pets and livestock; and approach people. When the target bear is caught, it is euthanized. If a bear is caught but was not the target, it is tagged and released. Category 2 bears are not a direct target; they are bears that go after garbage and are a nuisance. They try to change this bear behavior by aversive conditioning. Category 3 bears are exhibiting normal bear behavior, such as wandering into an urban center or taking food from a bird feeder. If yelled at, they would run away.

The bear hunt had not been held between 2006 and 2010, and there had been many incidents of human-bear interaction and concern for the public safety. A fatality had occurred in 2014, although it was not on state land, but rather on New Jersey conservation foundation land. The DFW provides data to the Fish & Game (F&G) Council, which formulates the black bear management policy. By 2014, the total number of human-bear incidents had risen to 1,900, and the F&G Council wanted to bring it down. The F&G Council has eleven members and promulgates regulations for:

- Issuing permits;
- Opening and closing of seasons;
- Distributing recreational opportunities to different groups: hunters, photographers, fishermen.

The F&G Council set forth its objectives for maintaining the black bear population and advised the DFW on how to manage the black bear population, balancing all factors that were considered:

- Researching black bears;
- Advancing science;
- Educating residents;
- Enforcing prohibitions on feeding black bears;
- Using lethal control on Category 1 bears;
- Using other techniques on Category 2 bears;
- Reducing and stabilizing the black bear population;

- Using regulated hunting as a viable tool.

The 2015 CBBMP is a comprehensive and broad policy which contains the F&G Council's objectives for black bear management in New Jersey. The F&G Council approved the 2015 CBBMP and it was adopted under the Uniform Administrative Procedure Act. In the 2015 CBBMP, the F&G Council, relying on science, referred to the public safety and made a recommendation for a more liberal hunting season. The December 2015 hunting season was the first one affected by the 2015 CBBMP.

Pursuant to the 2015 CBBMP, the black bear hunt was extended to include six days in October (Segment A) for archery (first three days) and then archery and muzzleloaders (for the second three days), and six days in December (Segment B) for firearms. December is firearms deer season and coincides with the bear-hunting season. The harvest season can be increased to a maximum of ten days (in December) if the 20% harvest rate is not achieved. The 2015 CBBMP provided for a harvest rate goal of 20%, with the hunt being stopped if the upper limit of 30% were reached.[9] The goal of 20% harvest rate was not reached in 2015 through 2019, except for 2016, when 25.9% of bears were harvested.

The 2015 CBBMP identified which BMZs were open for hunting and did not exclude any particular land within the BMZs from hunting or address which lands would be open to hunting. Neighboring states permit bear hunting: September to October in New York, and October in Pennsylvania.

McBride prepared his expert report and discussed the 2015 CBBMP. New Jersey uses an integrated approach to black bear management: research, education, control of food, lethal and non-lethal control, habitat analysis, and a regulated hunting season. The cultural carrying capacity is the number of bears that the human population can tolerate consistent with the ability of the habitat to sustain the population. The cultural carrying capacity can change over time. The cultural carrying capacity is influenced by a number of factors, including bear behavior, the human population and its behavior, whether the

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[9] The upper limit of 30% has never been reached and the season has always been extended.

populace follows recommendations for garbage control, the tolerance of people to bears, and the number of bears looking for food.

McBride concluded that the closure of state lands to black bear hunting pursuant to Administrative Order 2018-24 issued by the Commissioner was consistent with the 2015 CBBMP, which had a goal to reduce the black bear population and to stabilize it within the habitat. The black bear population has stayed below the 2015 population estimate, although the 2020 estimated population will not be known until after the October and December 2020 harvest season ends. As of August 21, 2020, reported black bear incidents had increased 65% for the year, but the exact number of incidents for the year will not be known until December. However, the black bear population appears to be stabilized similar to that of 2017 after the population had been reduced by the hunt of 2015.

The estimated 2019 black bear population had increased somewhat, but damage and nuisance complaints had gone down. The cultural carrying capacity can change at different bear-population levels, so the 2015 CBBMP did not rely on the actual number of bears in an area. The Lincoln-Peterson index is used by the F&G Council and the DFW to estimate the black bear population. The Lincoln-Peterson index is a point estimate of the black bear population and can be used as the mathematical estimate. The formula considers the number of bears tagged during research for that year. In a typical year about 150 black bears are trapped and tagged; this number is used in the Lincoln-Peterson index for the bear-population estimate.

New Jersey public and private land contains high-quality bear habitat, and bears move through the habitat. The researchers can see this when the black bears are caught and tagged. The tagged sample helps to give an estimate of the population according to the Lincoln-Peterson index. Confidence intervals are the lower and upper estimate of population. The Lincoln-Peterson index formula provides a 95% degree of confidence that the black bear population is somewhere between the two bounds of the upper and lower population estimates.

The estimated black bear population[10] in New Jersey based on the Lincoln-Peterson index was:

2014	3,606
2015	2,589
2016	2,409
2017	2,059
2018	1,527
2019	2,208

The 2014 population appeared to reach the cultural carrying capacity. The number of human-bear interactions between 2017–2019 was better tolerated by the human population. It was similar each year, and has held relatively steady from 2017 through 2019.

The harvest rate is the number of tagged black bears harvested divided by the number of bears tagged during that year corrected for losses, such as a tagged bear being struck by a motor vehicle. The estimated black bear harvest rate[11] was:

2014	7.5%
2015	18%
2016	25.9%
2017	16.3%
2018	14.2%
2019	15.3%

(The average from 2015 through 2019 was 17.94%.)

The 2015 CBBMP indicated that harvest rates of 20% are required for optimal black bear population control in New Jersey, and noted that a harvest rate of 15–20% should result in no decline in population. If the target rate were 20%, and 16.3% were reached, there would be no reason to limit hunting.

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[10] R-6.
[11] R-7.

Closing the state lands to black bear hunting has not affected the harvest rate, as bears go across land types and wander among them. Tagged bears on state land also represent untagged bears on state land. The black bear population is considered as a whole. Although Administrative Order 2018-24 closed state land to hunting, private and municipal, county, and federal lands have remained open to black bear hunters.

If fewer bears were harvested, McBride agreed the bear population could increase. In 2018, with the first year with no hunting on state lands, and an estimated bear population of 1,527, the harvest rate was 14.2%. The bear population was estimated to be 2,208 in 2019, an increase of approximately 600 bears, or a 44.6% increase in bears in one year. If the bear population were to increase by another 44.6%, the population could grow to be 3,192 bears in 2020 (2,208 + 44.6%).

Of the five BMZs' total acreage where bear hunting is permitted, 11.9% is state land (166,980 acres) and 88.1% is non-state land (1,234,589).[12] The harvest percentage[13] for each type was:

Year	% state land	% non-state land
2014	39.5%	60.5%
2015	41.9	58.1
2016	38.5	61.5
2017	47.9	52.1
2018	0	100
2019	0	100

The scientific data also showed the mobility of the black bears, as more than 50% of bears that had been tagged on state land were harvested on non-state land.[14] For

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[12] Non-state land also includes large federal and municipal land parcels, including the Newark/Pequannock Watershed, Delaware Water Gap National Recreation Area, Wallkill River National Wildlife Refuge, and Picatinny Arsenal. This is also high-quality bear habitat open for bear hunting and composes 76,466 acres. R-4, Table 4.

[13] R-8.

[14] R-4, Table 3.

example, in 2015, 26 bears were tagged returns in the harvest; 14 had been tagged on state land, and 12 on non-state. Of the 14 tagged on state land, 7 were harvested on state land and 7 on non-state land. Of the 12 tagged on non-state land, 3 were harvested on state land, and 9 were harvested on non-state land.

In 2016, 52 bears were tagged returns in the harvest; 21 had been tagged on state land, and 31 on non-state. Of the 21 tagged on state land, 12 were harvested on state land and 9 on non-state land. Of the 31 tagged on non-state land, 14 were harvested on state land, and 17 were harvested on non-state land.

In 2017, 22 bears were tagged returns in the harvest; 15 had been tagged on state land, and 7 on non-state. Of the 15 tagged on state land, 6 were harvested on state land and 9 on non-state land. Of the 7 tagged on non-state land, 3 were harvested on state land, and 4 were harvested on non-state land.

The bears are not confined to one type of land (state or non-state) as they roam over the habitat, and the data clearly indicates that bears roam off from, and on to, state and non-state land in rather similar percentages.

The number of black bear hunting permits issued in the state in 2017 through 2019[15] showed a decrease in the number of hunters who applied for permits:

2017[16]	8,790	(409 bears harvested, 16.3% harvest rate)
2018	6,521[17]	(225 bears harvested, 14.2%)
2019	6,708	(315 bears harvested, 15.3%)

Administrative Order 2018-24 is consistent with reducing population levels, even though the 2014–2016 average harvest rate was reduced to 17%.[18] The black bear population has not decreased, but rather is being sustained in New Jersey. The state

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[15] The number of hunting permits from previous years was not provided.
[16] R-4, Table 5.
[17] This is an approximate 25% decrease in the number of black bear hunters.
[18] This statistic includes 2014, a year not included in the 2015 CBBMP.

continues its long-term efforts: research, trapping, collecting data, and cooperating with other agencies and universities. The tools of education, enforcing the feeding ban, lethal and non-lethal control, adverse conditioning for bears, and regulated hunting (albeit not on state land) continue to be used.

Black bears were harvested on various types of land[19] available to hunters:

	2014	2015	2016	2017	2018	2019
Private	121	237	348	176	191	270
State	108	214	245	196	0	0
Federal	29	47	22	29	28	30
County/mun.	12	7	13	5	6	15
Unknown	3	5	8	3	0	0
Total Bear Harvest	273	510	636	409	225	315

McBride noted that closing state land was not the only reason for the decrease in bear-harvest rates from 2017 (16.3%) to 2018 (14.2%) and 2019 (15.3%) as compared to earlier years (2015, 18%; and 2016, 25.9%), although the harvest rate increased somewhat in 2019. Other factors besides closing state land to bear hunting must also be considered as affecting the harvest:

- Bear behavior—Archery does not startle bears and is not as aversive as gunfire would be.
- Human behavior—Whether the hunter previously harvested a bear; his selection of a bear; the difficulty in removing a bear from the woods.
- Hunter participation—The number of permits issued decreased from 2016 to approximately 25% in 2018 and 2019, so a smaller harvest would be anticipated.

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[19] R-9, Figure 4a.

Human-bear incidents[20] held fairly steady through 2017–2019 and all the tools used to control the black bear population (education, feeding ban, control, aversive conditioning, and a regular hunting season) were in effect. The number of incidents decreased slightly in 2019. The trend was declining from 2014 to 2019. The total number of damage and nuisance complaints[21] was:

Year	Incidents	Estimated Black bear population
2014	1,968	3,606
2015	1,476	2,589
2016	1,405	2,409
2017	705	2,059
2018	703	1,527
2019	649	2,208
2020[22]	811	

McBride noted that the seeming increase in incidents as of September 2020 was still less than the 2014 total, which was 1,968, or 1,157 more for the year. Total incidents through September 2020 compared to through September 2019 were 643 to 1,073 (503 to 811 if sightings were excluded). 811 is more than was noted for the entire year in 2017, 2018, and 2019. Bear activity is also increasing in counties other than those in BMZs 1–5. The year 2020 so far has the largest total of nuisance and damage complaints since 2016, but still fewer than 2014, 2015, and 2016.

Bears are active from late March to November/December and move around more during those times. This year, the number of complaints as of August surpassed the total from last year. In 2017, complaints totaled 699 for the whole year. By August 21, 2020, there were 671 complaints. This is not a surprise, as there is a strong correlation between the number of complaints received and an increase in bear population, but the population total was last estimated after the 2019 hunting season. There could be more bear activity

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[20] R-5. R-5 Figures 2a and 2b.
[21] R-10. This total does not include sightings of black bears.
[22] J-4F. Data as of September 21, 2020. Through October 21, 2012, the number of damage and nuisance complaints was 950.

if there were no bear hunting in state parks. The number of complaints does not necessarily indicate movement of bears.

McBride agreed that a man was attacked in his garage in West Milford in 2020. Complaints had been received about a Category 1 bear in that area and a trap had been set for it. West Milford is in close proximity to Abram Hewitt and Norvin-Green State Forests, which are closed to hunting.

The DFW has made substantial efforts to educate the public about bear avoidance and interaction: public-service announcements; publications; increased social media, including Instagram; wildlife education and bear-education programs; website activity; and training of police, including state, park, and municipal police officers who can act as first responders. Over 90% of state residents are compliant with garbage containment (which helps to keep bears away) and in keeping food sources away from black bears. The state has conducted intensive efforts to educate its citizens from 2014 to 2020, which are ongoing. There is a ban on the intentional feeding of black bears, although residents are not required to use black bear-proof garbage containers. Nuisance control can continue even if there is no hunting on state land.

McBride had a vague memory of seeing a letter[23] written by Frank Virgilio, acting chairman of the F&G Council, to the Governor and copied to the Commissioner, on June 26, 2018, in which Virgilio indicated that the F&G Council wanted "to work with you to balance the societal needs related to black bear management and allow science to guide our way in this important decision-making process." Virgilio outlined how the DFW Integrated Management Approach to Black Bears in New Jersey should include education; control of human-derived food; research; lethal and non-lethal bear control; and bear-population management to stabilize the black bear population "at a level consistent with the state's cultural carrying capacity for this species."

The 2018 transition report prepared for the incoming governor and commissioner by the DFW, based on science and data, said that with regard to black bear management,

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[23] Ex. J-1.

a reduction in hunting would cause an increase in bear-human conflicts. McBride agreed that banning bear hunting on state land was a reduction in hunting availability. He agreed that hunting is the only way to control the population of black bears in New Jersey, and that the population increase of black bears has to do with the size of the litters.

As far as McBride knew, other than the PowerPoint presentation to the Commissioner's staff and the transition report, no other presentations were directly made to the Commissioner. McBride was not aware whether the DFW had voted on the Administrative Order that was issued by the Commissioner. Administrative Order 2018-24 specifically recognized that Executive Order 34 intended the Commissioner to exercise the full extent of the legal authority (available) "to limit the hunting of American black bear within the state in order both to promote the public safety and welfare and protect an important wildlife species that provides an overall benefit to the citizens of this state." Administrative Order 2018-24 also noted that the Department would "focus its resources on pursuing, developing and increasing its alternative control methods and evaluating its policies, recommendations, and regulations related to black bear management on its lands, and [the Order] is in the best interest of balancing conservation, recreation, preservation and management of these lands at this time."

McBride concluded that the 2015 CBBMP recognized that harvest rates over 20% could result in subsequent declines in bear population (which it was trying to stabilize); harvest rates below 15% could result in subsequent years of population increase; and black bear populations could sustain annual harvest rates of 15–20% with little or no decline in population size. Further, bears are part of one mobile population within the state; tagged bears that are unavailable for harvest on state land are also representative of untagged bears on state land that are also unavailable for harvest. Accordingly, population estimates are accurate as bear mobility is considered.

The closure of state land to harvesting bear as set forth in Administrative Order 2018-24 remains consistent with having a regulated hunt and comports with the goals and objectives of the 2015 CBBMP to stabilize the black bear population consistent with the cultural carrying capacity. The population estimates from 2017 and 2019 are similar within about 150 bears, and this population level is lower than the level in 2014, after

which the 2015 CBBMP was drafted. The number of complaints had stabilized between 2017 and 2019 and was better tolerated by the human population than it was in 2014, which was also consistent with the 2015 CBBMP objectives.

For all these reasons, the Commissioner acted reasonably in issuing Administrative Order 2018-24. It was in accord with 2015 CBBMP and the scientific data that the NJDFW had received from the bear harvests and was neither arbitrary nor capricious.

For petitioners:

John E. McDonald, Ph.D., was accepted as an expert in black bear management and research species population estimation. He is a professor of wildlife at Westfield State University (MA).

From 2003 to 2012 he worked for the United States Fish and Wildlife Service, where he oversaw grant proposals for the states to use the best scientific tools for research, population estimation, and management proposals. He was familiar with New Jersey estimates of its black bear population. From 2003 to 2005 through 2010, New Jersey biologists asked him to compare bear-population estimates for accuracy.

Dr. McDonald worked for the Massachusetts Division of Fish and Wildlife overseeing mostly deer and moose. He conducted independent research on bear reproduction and survival in Massachusetts and received his Ph.D. in wildlife conservation after completing his dissertation on the effects of food supply on the cub survival of the black bear population. He has worked as an editor of scientific journals including *URSUS* for the International Association for Bear Research and Management. He is a Fellow of the International Association of Wildlife Biologists and has served as its president. He has published his own writing, including some about bears, including bear mortality and trends. He was also a representative to the Northeast Black Bear Technical Committee, which follows trends and ideas in bear management.

Dr. McDonald has not performed any field work on black bears in New Jersey. He has managed deer programs, and the deer and bear habitats overlap. Managing deer is different from bears, but the principles are the same: harvest, seasons, method of taking, bag limits.

Dr. McDonald was familiar with the 2015 CBBMP, which had a goal to reduce and manage the black bear population at a level that can be tolerated by the human population. Closing state land was inconsistent with that objective. He noted that the total number of bear complaints had fallen since 2010, but that the number of Category 1 incidents remained unacceptably high.

The 2015 CBBMP extended the season for harvesting to include six days in October and added archery hunting and muzzle-loading weapons. The 2015 CBBMP stated that a harvest rate of 15–20% of the black bear population would have little to no impact on population, but that a harvest rate of 30–35% would be the upper limit to sustain the population. A 20–30% harvest rate of the black bear population would be appropriate for New Jersey, and the 20% harvest rate would allow for stability and sustainability of the population of black bears. No other mention of range was included in the 2015 CBBMP.

No spring bear harvests are conducted in New Jersey, but some states have expanded or contracted the harvest seasons depending on needs. In New Jersey, the harvest season starts in October. If, at end of those six days, a 20% harvest rate has not been attained, then the season continues to six days in December. If, after that, the 20% harvest rate goal has not yet been reached, the hunt is extended for four more days. If the 20% harvest rate goal is still not reached, the hunt is not extended any longer.

Dr. McDonald noted that McBride had testified that a 15% harvest rate still allowed for some bear population growth, and had referred to an article by Sterling Miller of the Alaska Department of Fish and Game, but Alaska had a lower sustainable harvest rate.

Dr. McDonald did not disagree with the Miller analysis, but that analysis is over thirty years old and uses Western bears and applied another model. In the interim, more

data on black bear fertility and reproduction has become available. Harvest rates in excess of 20% may be acceptable in places like New Jersey, as eastern black bear populations are more productive than western.

Dr. McDonald testified that harvest rates of more than 20% will likely increase the black bear population, but at a lower rate of growth. A 20% harvest will sustain the population over time. But in all likelihood, the bear population will grow even if the harvest is more than 20%. The 2015 CBBMP cited Miller and indicated that the New Jersey black bear population could sustain annual harvest rates of 15–20% with little or no decline in population.

New Jersey state land in BMZs 1-5 contained 11.9% of the total acreage open to bear hunting before issuance of Administrative Order 2018-24. An average 42% of the bear harvest in 2015–2017 was on state land. If state land had been closed during those hunting seasons, the ratio would not have been the same. In 2017, 47.9% of the bear harvest came from state land, while 52.1% came from non-state land. Thus, 11.9% of the land accounted for 47.9% of the total number of bears harvested. Private lands could not compensate for the loss of the state lands. He concluded that the black bear harvest rate had decreased since 2018 because of the state closure of state parks, forests, and wildlife management areas to the bear harvest, although the amount of public land has been increasing.

Dr. McDonald noted the total harvests for bears and the estimated bear population (which point estimates declined from 2014) from 2014 to 2019:

	Total harvest	Estimated bear population
2014	273	3,606
2015	510	2,589
2016	636	2,409
2017	409	2,059
2018	225	1,527
2019	315	2,208

Dr. McDonald concluded that the closure of state lands was the cause of the reduced harvest. He noted that before the state lands closed, approximately 43% of the bear harvest came from there, but that it was 0% after state land closed. The number of bears on federal and municipal land was about the same, and the absolute number had stayed the same.

Dr. McDonald was aware that McBride opined that the causes of the drop-off in harvest numbers could be due to something other than land closure. Dr. McDonald acknowledged that there had been a prior drop-off in 2012 and 2013 when compared to 2010–2011. After four years of no bear hunting from 2006 to 2009, bear hunts were held in 2010 and 2011. In 2010 bears were not adapted to bear-hunting methods, and likely became more wary once the hunting season started. There was a higher black bear population in 2011, and for first two years, hunter participation was higher with the same opportunities. Bear behavior was the partial explanation for the harvest fall-off in 2012.

Dr. McDonald testified that several factors other than the closure of state land to bear hunting also impacted the harvest numbers. The hunting season used to be only in December and could be affected by food sources for bears, weather, or snow. Season timing could have been a possible cause of harvest drop-off if the bears were already in their dens. In 2010–2014, the protected females were already in their dens. By comparison, in 2016, most bears were harvested in October. Weather is a factor, generally, as the bulk of the harvest is taken in October, when the weather is better than December.

Bear behavior can also be a factor. Bears are naturally wary of hunting and can feel hunting pressure. Bears have good memories for where to get food and where they feel threatened. Bears on state land will feel safe, they will not hear gunshots on state land and could be adapting their behavior. That was another difference between the 2015–2017 and 2018–2019 harvest seasons.

Hunter behavior is also a factor, as bear hunters are generally a minority component of hunters. They selectively hunt bears, and most want one bear in their lifetime. Some also become more selective of the bear they want to harvest, as it is a lot

of work to drag a bear out of the woods. Some hunters may opt to wait for a smaller or a larger bear. The woods are more pleasant in October for hunters.

Dr. McDonald testified that hunter participation could be another factor: 8,790 bear-hunting permits were sold in 2017; 6,521 in 2018; and 6,708 in 2019. Since the state lands were closed to bear hunting in 2018, permit sales have dropped about 25%. For 2018 and 2019, the numbers of permits stayed about the same. State land requires a permit to hunt bears. Some federal or municipal areas require additional specific park permits to hunt, so some hunters may be discouraged from hunting. For example, the Newark Watershed permits hunting but requires a particular permit to hunt on that property in addition to the state bear-hunting permit. The average hunter must do more advance planning. Dr. McDonald concluded that hunters who could only hunt in state parks or on state land had dropped out of the harvest season because of the state land closure.

With state lands closed, bears could have moved off state lands. If so, hunter distribution would change across the landscape. The lack of participation by hunters in 2018 and 2019 could also have affected the harvest. Nevertheless, in 2018 and 2019, Dr. McDonald agreed that hunters found land to hunt, and bears to harvest.

A survey had been taken of bear-permit buyers in 2016 when state lands were still open for bear hunting. Of those bear hunters, 38% said they hunted on state land and 51% said they hunted on private land. The 2015 CBBMP described how some bears were not available to hunters for various reasons. Its recommendation was to encourage more public and private land to be open to bear hunting.

State lands are important to hunters, as can be seen, as permit sales fell after 2017. Dr. McDonald's conclusion was that closing state lands took away hunter opportunity, and that was the reason for the fall-off of permits in 2018–2019. He concluded that the lack of opportunity to hunt on state lands was the principal reason for the harvest fall-off, to a reasonable degree of scientific probability.

Dr. McDonald described how human development affected bear interactions, particularly in the wildland-urban interface where human development abuts the forest landscape, the preferred habitat for black bears. He described the closing of state land as creating bear sanctuaries. Dr. McDonald noted in his report that North Carolina had created a sanctuary policy to provide habitat, and it was fairly successful in increasing the black bear population in that state. North Carolina controlled state land as well as some private land. Sanctuaries have the effect of lowering hunting pressure on bears, but it really depends on how the sanctuary space is arranged on the landscape.

North Carolina created a sanctuary area for its bears because it had discrete bear populations and the state was trying to fill in the gaps. In the sanctuary area the bears were safe from hunting and gave birth to cubs who dispersed into other areas. The male bears dispersed but the ranges overlapped. North Carolina later altered its rules to allow for hunting, sometimes on state land. It reduced the amount of land and changed the regulations to permit hunting and altered the plan based on its population-management goals.

Cubs disperse throughout the landscape. Having large parcels of state land as sanctuary increases bear activity, as they have more areas to breed and grow. They also migrate from this land to other areas. Based on this, Dr. McDonald expected human-bear incidents in New Jersey to increase. As black bears move across the landscape, state land is part of the habitat and is interspersed with private land. The quality of land is important for state management. Off-state land management is up to private owners. They and municipal and federal properties can offer different hunting opportunities, but some of these properties may have additional fees that can be a barrier to potential hunters, as is the example of the Newark Watershed. In terms of bear management, these properties pose different challenges. The municipal harvest is relatively small in proportion.

As for the degree to which interspersal of state lands with other lands has an impact on hunting, he noted that in some BMZs, the state parcels are close together or connected. There is some clumping of state lands and some abut other lands. The Wawayanda State Park and Abram S. Hewitt State Forest abut each other, the Norvin

Green State Forest is in the vicinity, and a variety of wildlife-management areas are in the same locale.

The geographical uneven clusters and geographic disparity affect the harvest. There was not enough data to know where bears are during the harvest season. De facto sanctuaries can also be created on other lands where bears might not be hunted because the landowner does not permit it or because the land is within a safety zone where hunting is not permitted. The location of property near buildings within non-state land can also affect the hunt, as generally nothing can be hunted within 450 feet of a building, creating a sort of bear sanctuary in these areas.

Dr. McDonald agreed with McBride that to estimate the black bear population in an area, experts use the Lincoln-Peterson index by applying raw data. The point estimate of bear population can then be determined to a certain level of confidence within a range. So, for example, the 2015 New Jersey estimate was 2,589 bears with a confidence level that the population was between 1,779 and 3,399 bears. The same analysis applied to 2019 showed a population of 2,208 bears, with a confidence level of between 1,374 and 3,043 bears. This showed that the populations were about the same, as the numbers overlapped substantially. He noted that there was no significant difference in the black bear populations between 2015 and 2019.

The Lincoln-Peterson equation is based on:

1. For the first capture that year, the DFW marks a representative sample of bears with tags and tattoos.
2. The total bears harvested is considered the second capture.
3. Of the total harvest, what percent of captured bears had been tagged or marked?
4. The result equals the estimated total bear population.

It is a ratio:

$$\frac{\text{\# of marked bears harvested}}{\text{\# of marked bears that season}} = \frac{\text{\# total bears harvested}}{\text{estimated bear population}}$$

The theory is that the ratio of marked bears harvested to the total number marked that season is the same proportion as the number of bears harvested would be to the total bear population (the unknown in the formula).

For example, if 50 black bears were tagged during the capture season and 10 tagged bears were harvested out of a total harvest of 400 bears, then there is a 1 in 5 chance of harvest during the hunting season. It is a representation of population and the formula can be expressed as:

Estimate total # bears = <u>n1 # marked bears (50)   X   n2 # total harvest (400)</u>
                                        M2= # marked bears harvested (10)

In this example, the result for the total estimated number of bears is 2,000, assuming that marked and unmarked bears are harvested at the same rate. The formula works if each bear has the same chance of being harvested.

Dr. McDonald evaluated the impact of the state land closure on the Lincoln-Peterson bear population estimates. He concluded that since the closure of state land to bear hunting, the estimates of the bear population were not reliable. The Lincoln-Peterson estimator relies on an assumption that all bears have an equal probability of being recaptured. Without this, the mathematical formula does not work. The bears on state land have a zero percent chance of recapture. Dr. McDonald opined that the Lincoln-Peterson index has not been accurate since 2018 when state lands were excluded from the hunt, so the State is not using the best data.

The Lincoln-Peterson index is a closed-population estimator. It also assumes that between trapping and harvesting, no additional births, deaths, emigrations, or immigrations have occurred. Bear cubs are born in January; they have a 70% survival rate and their mortality rate is low. Known losses to tagged bears from accidents or otherwise are subtracted. Bears in New Jersey also roam in New York and Pennsylvania, and the formula assumes bears are leaving and coming in the same proportion.

Byron K. Williams (and others) wrote an expert treatise entitled *Analysis and Management of Animal Populations: Modeling, Estimation and Decision Making*, that has been relied upon by biologists since 2001. It includes the Lincoln-Peterson estimator and its assumptions.

New Jersey's use of the Lincoln-Peterson estimator was reasonably accurate prior to 2018. Other states use a modified method; not all states use a method based on recapture. Dr. McDonald is satisfied with New Jersey using the Lincoln-Peterson estimator to estimate the bear population, and if more precision were needed, a different estimator would be used. This assumes state land is open to bear hunting.

As Williams noted, the Lincoln-Peterson index contains certain assumptions that underlie it. The three assumptions of the Lincoln-Peterson formula are:

1. Marked bears must not be lost. New Jersey double-marks ear tags and tattoos bears so New Jersey tag loss is minimal, and the number of bears missed would be negligible. (Dr. McDonald has never measured tag loss in New Jersey.) New Jersey also uses direct recovery, as only bears tagged for that year are counted. It is highly unlikely that marked bears are being missed.

2. The population is closed between samples. No bears are entering or leaving; bears travel from Pennsylvania to New Jersey or New Jersey to Pennsylvania, but this also has an insignificant effect. (Dr. McDonald has no idea how many bears do this.)

3. Within a sampling, all bears have equal capture probabilities. New Jersey marks bears on state and non-state land, but not all bears have an equal probability of being captured if state land is closed to hunting. The DFW is making an assumption here that the ratio is the same for both lands, but the assumption cannot be met if state land is closed to hunting. The ratio of marked bears to unmarked bears is equal on and off lands if this assumption is made. But, if state land is closed, some bear areas are closed to hunting.

The Lincoln-Peterson analysis depends on recapture, and if there no recapture available, then the number of bears residing on state land cannot be estimated. This is because only the bears on non-state land have the chance of recapture. There is no second sample taken on state land. There is likely a high abundance of bears on state land and in BMZs 1–5. Bears are drawn to higher quality food on both state land and non-state land. If there is a high mast[24] crop, the abundance can happen across the entire habitat. The percentage of bears invulnerable to harvest is unknown. The effect is that the overall population in the BMZs is underestimated, but he cannot quantify the exact amount.

As for the three Lincoln-Peterson assumptions, the first two are acceptable, but the third assumption—that the second sample is representative of bears in the field with equal chance of recapture—is not met because New Jersey adds a fourth assumption of the probability of equal recapture, but Dr. McDonald does not feel this is accurate. The first two assumptions are insignificant in counting, but the third and the state's fourth addition could have a significant impact on the count, although Dr. McDonald was not able to quantify it. If half of marked bears are missing, then that would be a significant effect. The chance of equal recapture is violated in New Jersey.

More bears are found in good-quality habitat, and there is a high abundance of good habitat on state land. The closure of state land in New Jersey created bear sanctuaries. Dr. McDonald agreed with McBride's assumption of this. Bears know where they are less likely to be threatened. It is not just about land type, but where they feel less threatened. Population growth starts on sanctuaries.

Since New Jersey uses its hunting season as the second capture period and because it traps and marks bears over state and non-state land, it is likely that a significant percentage of marked bears stay on state land and have a zero percent chance of

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[24] Mast is the fruit of forest trees and shrubs, such as acorns and other nuts. More generally, mast is considered the edible vegetative or reproductive parts produced by woody species of plants, i.e., trees and shrubs, that wildlife and some domestic animals consume as a food source. Mast can be hard or soft. See https://en.wikipedia.org/wiki/Mast_(botany), last visited on October 25, 2020.
Merriam-Webster's definition of *mast* (Entry 3 of 3): nuts (such as acorns) accumulated on the forest floor and often serving as food for animals. See https://www.merriam-webster.com/dictionary/mast, last visited on October 25, 2020.

recapture. Williams says nothing about a zero percent chance of capture as a violation of the formula, just that the chance of capture is less. When a bear is tagged on state land and stays there, there is a zero percent chance of recapture. It depends on where the bear is during the harvest: if it is on state land, the chance of recapture is zero. The effect of this is that instead of having three unknowns there are more unknowns: the total estimated population and the number of bears available to be recaptured (bears marked and available to be recaptured). If a percentage of these bears stays on state land, then it affects the equation.

Williams discusses the marked to unmarked ratios and about whether those ratios are representative of the sample. Williams does not talk about difference when some bears are not available for capture, just the factors that affect capture probability.

Dr. McDonald used 2015 as an example. In that year, 132 bears were tagged, and 510 were harvested. Twenty-six of those harvested had been tagged. The population was estimated to be 2,589 (132 times 510 divided by 26). There is no way to know if the marked to unmarked ratio on state lands is accurate. If it is assumed to be equal, then that is another assumption.

The formula assumption is that the harvest rate is a representative sample of the population. If this assumption is wrong, then the conclusion is not "robust." In nature, there is no perfect satisfaction of who is being recaptured, for example, young males and females, but if a certain portion of bears have no chance of recapture, then the population conclusion is not robust.

Bears, both marked and unmarked, move around. Many state lands are good bear feeding areas with high-quality food sources. Bears want as much food as possible, especially hibernating females. The number of bears can also be skewed in an area. In the early years of the harvest, 40–50% of the harvest was on state land. Bears are not uniformly distributed on the landscape and changes in hunting pressure affect that. This results in the effect of a dense population on the unmarked ratio, the number of bears per unit of area. The ratio of marked to unmarked can be different. Some nuisance bears

are a component of the tagged-bear sample and are more likely to occur on private land than state land.

The DEP assumes the ratio of bears is the same, but bears can be trap-happy or trap-shy. Dr. McDonald opined that the bear-management plan did not comply with the Lincoln-Peterson formula after the closing of state land to hunting.

The cultural carrying capacity is the number of bear-human conflicts that society can tolerate. This has to do with human behavior. Most agencies survey a population sample and gather information from residents on toleration to assess what kind of bear behavior people can tolerate. The 2015 CBBMP wanted to maintain the cultural carrying capacity. But as more sightings are reported, it may show the cultural carrying capacity is changing.

The state land closure was inconsistent with the 2015 CBBMP because it undermined the goals of population control and cultural carrying capacity and inhibited the ability to get an accurate number of the bear population. The average harvest rate from 2015 through 2017 was 20.1%, but only in 2016 did it exceed 20%. And because the harvest rate was under the 20% harvest rate, the recommendation of the 2015 CBBMP that lands be opened to harvesting was being inhibited. Citizens are placed at risk because, as the number of bears goes up, the likelihood of encounters with bears increases.

The 2015 CBBMP had a goal of reducing and stabilizing the black bear population to a level commensurate with available habitat and consistent with reducing risk to public safety and property. No specific number of bears is specified in the 2015 CBBMP because an exact number cannot be determined, just a population estimate. The most robust number is achieved from capture, mark, and recapture. The Lincoln-Peterson estimator that New Jersey uses has not been as accurate since state land closed.

Dr. McDonald reviewed all the documents reviewed by Commissioner and saw nothing to support closing state land to bear hunting. The DFW implemented the 2015 CBBMP and a goal was to reduce and stabilize the black bear population, but the

population would increase if the bear harvest were stopped. Nothing in the 2015 CBBMP suggested that hunting pressure on black bears should be reduced.

Dr. McDonald reviewed the exhibits reviewed by Commissioner prior to the issuance of Administrative Order 2018-24, which included the DFW black bear outreach and the education efforts made by the DFW to the populace. He saw nothing about reducing hunter pressure. A student's thesis written in 2009 about human risk perception and bear awareness that concluded that the number of homeowners using protected garbage cans would not increase, was also included. The August 2012 Northeast Black Bear Technical Commission report described bear biology and the available options for managing black bear populations, including hunting.

Other information related to the density of bears in sanctuaries. Females generally stay in their home range, but dispersal is uneven among offspring. Bears can build up to high densities. Another article said nothing about closing state land. Another discussed fatal attacks by black bears from the years 1900 to 2009 and noted that 20% had occurred in the previous twenty years. Nothing in the article said state lands should be closed to hunting. The 2015 CBBMP did not support closing state lands to bear hunting.

State lands are now sanctuaries and human-bear interactions are likely to increase near sanctuary borders. The first year to see this growth in population based on creation of the state land sanctuary in New Jersey would be 2020, which should show an increase. The population growth should make black bears push off from state lands and travel to non-state lands. Dr. McDonald did not know personally about towns surrounding the park, but said he would expect an increase in interactions in Hewitt State Forest or Wawayanda State Park, because of the human population density in towns surrounding those areas.

Dr. McDonald examined the trend in damage and nuisance complaints from 2014 to 2019 and partially from 2020.[25] He noted that 671 incidents had been reported through August 2020, while there were 402 by August 2019, and 649 in total for that year. If he

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[25] Ex. 45A, B, and C.

extrapolated the number at the same rate, 1,083 complaints could be expected for 2020. There had been no increase from 2018 to 2019, probably because of bear behavior related to food abundance and food availability. It also depended on the biology of bears; in 2018 there was a decrease in the harvest. Young females survived and went into their dens in 2019 and had litters. They spent winter in the den and came out in March/April and breeding started again in June. Adult female bear survival rate is relatively high. In May, the yearlings and young bears started looking for food. He expected nuisance complaints to rise because state land is serving as a sanctuary, and he expects the trend to continue.

Changes in the harvest rate can result in more bear incidents, but not necessarily the first year thereafter, as it is cyclical. Bear productivity is so high in New Jersey, he expects more bear-human incidents. A 15% harvest rate is not enough to prevent the bear population from increasing. In 2018, the harvest rate was 14.2%; using the Lincoln-Peterson index, he estimated that since then the black bear population has increased by about 600.

One goal of the 2015 CBBMP was to reduce human-bear interactions and conflicts. In 2015, there were 1,454 complaints; in 2018, there were 705; and in 2019, 649. The 2015 CBBMP allowed farmers to obtain depredation permits; law enforcement can also kill bears and do aversive conditioning. There are other ways than just hunting to respond to human-bear incidents.

Dr. McDonald did not know whether the recent 90% increase in sightings could be because people were staying home due to the COVID-19 pandemic. The 2015 CBBMP does not explicitly state that the cultural carrying capacity can be measured through sightings. The 2015 CBBMP does not prohibit bears from moving around in the state, and there is no bear hunting south of BMZ 5. The number of sightings could also be tied to the low bear-season harvests in 2018 (225) and 2019 (315).

The number of bear-human interactions is a function of bear harvest and time. Dr. McDonald reviewed a chart[26] that demonstrated the relationship between the rate of harvest, human-bear interactions between 2014–2019, population estimates and time. It is this combination that drives bear management policies. As a starting point, the cyclical nature depends on harvest and harvest rate. Then the following seasons are important for bear reproduction as surviving females mate and have litters. Their cubs ultimately leave the den and find their own habitat. As the numbers increase, the likelihood of human-bear interaction increases. But this is seen over time and not immediately after a harvest.

Dr. McDonald concluded that "the closure of state lands to bear hunting mandated by Administrative Order 2018-24 has created a situation in which the DEP is unlikely to meet the population objectives of the 2015 CBBMP and cannot reliably assess the true status of the black bear in New Jersey, with regard to either its absolute abundance or population trend, given the methodologies they currently use, and the closure conflicts with the scientific underpinnings of the 2015 CBBMP and is not supported by the evidence."

John Rogalo testified that he is a resident of Stanhope, Sussex County, New Jersey, which borders on part of Allamuchy State Park. He has a degree from Cook College in wildlife science and forestry and is active on his local environmental commission and land-use board. He is president of the New Jersey Outdoor Alliance, an organization dedicated to conservation of wildlife and the natural resources of New Jersey.

Rogalo, a trained and experienced hunter, frequently uses Allamuchy and other state parks and forests for hiking, canoeing, kayaking, fishing, and hunting deer, waterfowl, turkeys, and bears. He described one frightening encounter that he had with a black bear that he was able to safely extricate himself from. Prior to the 2015 CBBMP, he saw bear activity near his home. After the 2015 bear hunt, he noted a reduction in bear activity. In 2018, he did not note much of a change in bear activity, but starting in

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[26] Ex. 45B.

2019–2020, he saw an uptick in bear visitations by his home and in his community. Last year he saw bear scat throughout the park and noted the most bear activity he has ever seen.

Rogalo has seen signs in kiosks and in park parking lots about how to avoid bears and how to prevent human interaction with bears, but he has noted no increase in bear education and awareness in his area. He thought the State was doing everything it could already. He has seen no increase in garbage protection.

Rogalo has received a permit to harvest a bear every year since the most recent CBBMP in 2015. He was able to harvest a bear in 2015 and in 2017. Deer-hunting and bear-hunting seasons overlap, so many deer hunters obtain a permit for bear hunting in case the opportunity to harvest a bear presents itself to the hunter. Rogalo belongs to two gun clubs and one of his clubs rented land to hunt on, but he chose not to. Since 2018, there is no availability for him to harvest a bear because he is hunting deer on state land and the season overlaps with the bear season. Hunters can hunt near the Delaware Water Gap in BMZ 1, but that area gets sold out of the required permits. He believed that closure of state land has affected his ability to hunt bear on state land.

Documentary Evidence

The documentary evidence[27] relied upon by both experts showed:

Year	Estimated bear population	Total No. of Incidents[28]; Damage/ Nuisance total[29]; Cat 1 & 2 total	Number of Permits issued[30]	Number of bears Harvested	Harvest Rate % (% on state land, % non-state land)
2014	3,606	2,846; 1,968; 1,417	-	273	7.5% (39.5%; 60.5%)
2015[31]	2,589	2,209; 1,454; 1,031	-	510	18% (41.9%; 58.1%)
2015 CBBMP takes effect with hunting seasons in October and December:					
2016[32]	2,409	2,120; 1,400; 1,000	-	636	25.9% (38.5%; 61.5%)
2017	2,059	962; 699; 409	8,790	409	16.3% (47.9%; 52.1%)
State land closed to hunting Administrative Order 2018-24:					
2018	1,527	883; 703; 443	6,521	225	14.2% (0%; 100)
2019	2,208	818 649; 403	6,708	315	15.3% (0%; 100%)

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[27] This is a compilation of the charts and tables included in the evidence.

[28] The total of bear activity include damage and nuisance bears as well as sightings. The totals change slightly from year to year in Ex. R-10. For example, 2015 compared to 2014 showed 1,454 damage and nuisance incidents in 2015, but when 2015 was compared to 2016, it showed a total of 1,476 for 2015. Similarly, for 2016, it showed a 1,400 total and then a 1,405 total; 2017 was 699 compared to 705; and 2018 was 703 compared to 705. The disparity does not appear to be significant.

[29] The number of counties reporting bear activity ranged from 16 to 19.

[30] The number of permits issued prior to 2017 was not provided.

[31] Hunting season was December only in 2015.

[32] October and December bear hunting season segments were conducted in 2016 through 2019.

2000[33, 34, 35]		1,073; 811; 553			

New Jersey's bear population, like other mid-Atlantic populations, is larger, denser, and exhibits a higher rate of fecundity compared to other, less productive habitat areas of the country.[36]

Findings:

Credibility is best described as that quality of testimony or evidence that makes it worthy of belief. The Supreme Court of New Jersey considered the issue of credibility in In re Estate of Perrone, 5 N.J. 514, 522 (1950), when it pronounced:

> Testimony to be believed must not only proceed from the mouth of a credible witness but must be credible in itself. It must be such as the common experience and observation of mankind can approve as probable in the circumstances.

See also Spagnuolo v. Bonnet, 16 N.J. 546 (1954); State v. Taylor, 38 N.J. Super. 6 (App. Div. 1955).

In order to assess credibility, the witness' interest in the outcome, motive, or bias should be considered. Furthermore, a trier of fact may reject testimony because it is inherently incredible, or because it is inconsistent with other testimony or with common experience, or because it is overborne by other testimony. Congleton v. Pura-Tex Stone Corp., 53 N.J. Super. 282, 287 (App. Div. 1958).

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[33] Incidents to September 21, 2020.

[34] As this decision is being written, Segment A of the 2020 bear harvest season has concluded. The NJDEP reported that 141 bears were tagged this season; 336 bears were harvested in Segment A, which included 15 tagged bears. The harvest rate was calculated at 10.6%. Segment B of the harvest season continues in December. The 2020 population will be officially estimated after the harvest season concludes, but as of this writing the Lincoln-Peterson index would calculate it at 3,158 bears. (These recent NJDEP statistics have been included with the consent of counsel for the parties.)

[35] The NJDEP released its Bear Activity Report through October 21, 2020. 1,255 incidents were reported; 950 damage and nuisance complaints; 625 Category 1 and 2 incidents. (This is also included with the consent of counsel.)

[36] The high-quality habitat in New Jersey forests and parks apparently helps to produce a better than average bear.

It is within the province of the finder of facts to determine the credibility, weight, and probative value of the expert testimony. State v. Frost, 242 N.J. Super. 601, 615 (App. Div.), certif. denied, 127 N.J. 321 (1990); Rubanick v. Witco Chem. Corp., 242 N.J. Super. 36, 48 (App. Div. 1990), modified on other grounds and remanded, 125 N.J. 421 (1991).

I accept the testimony of Rogalo as truthful. He described his experiences as a conservationist and hunter who has significant hunting and outdoor expertise. His observations as to his experiences of the bear harvest and his participation in it are accepted as truthful.

As far as the scientific and expert testimony, both McBride and Dr. McDonald were extremely knowledgeable and impressive witnesses. They testified forthrightly and candidly and directly addressed the questions put to them. Both had significant familiarity with black bears and their habits and habitats, although McBride was more familiar with New Jersey black bears in the field than was Dr. McDonald. Both agreed on the basic science of bear reproduction and population control and population size estimation. They generally agreed on the information provided by the DEP but disagreed on the conclusions to be drawn from it, particularly with regard to the effect of not permitting bear hunting on state land and the effect this would have on the harvest rate, on obtaining an accurate estimate of the black bear population, and on interactions between humans and bears.

I **FIND** the documentary evidence as **FACT**: the statistics were prepared by the DEP and are uncontested except as to the harvest rate and its effect on the total estimated bear population. I **FIND** that the most important fact (as expressed by Dr. McDonald) was the cyclical nature of the bear population, which is dependent on various factors including availability of food sources, weather, bear behavior, human behavior, hunting pressure, and harvest rates. The results of a harvest cannot be known in the next harvest season, but rather over the next two to three years, and is, of course, also dependent on the continued harvest rates and the food supply available during those subsequent years.

The primary disagreement presented is whether the inability to hunt on state land has reduced the harvest rate significantly, affected the ability to arrive at an accurate estimate of the black bear population, placed the population at risk, and impacted the goals and objectives of the 2015 CBBMP. The state relies on the Lincoln-Peterson index to estimate the black bear population, which is based on a capture-tag-recapture model. Utilizing the number of bears tagged in the current season, and then seeing how many of those tagged bears are harvested during the hunting season and comparing that to the total harvest should result in an estimate of population within a confidence range of 95% accuracy according to the Lincoln-Peterson index. Both experts agreed that the estimator was accurate for years prior to 2018 within a 95% confidence level.

Dr. McDonald opined that because bears on state land were not available to be harvested, this results in a non-representative sampling during the harvest, and that the Lincoln-Peterson index is skewed to be inaccurate for years 2018 and 2019.[37] The Lincoln-Peterson index assumes that all bears are equally available to be harvested and that by cutting off a certain number of bears, an inaccurate bear-population estimate was returned for 2018 and 2019. Accuracy also depended on whether bears become trap-happy or trap-shy.

McBride opined that the closure of state land would not affect the Lincoln-Peterson index estimation because bears roam all over the countryside and are not aware whether they are on state or non-state land. This can be seen in the statistics that show where bears were tagged and then where those tagged bears were harvested. More than 50% of the bears roamed from one area to another, and more roamed from state land to non-state land than vice versa. The ratio of tagged bears to captured and tagged bears as required for the Lincoln-Peterson estimator should remain essentially the same, as every tagged bear represents a portion of untagged bears.

I **FIND** that while the Lincoln-Peterson estimator assumes all bears have an equal opportunity to be harvested, the Lincoln-Peterson assumption is based more on the

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[37] Presumably, this would include 2020 as well.

difference between trap-happy and trap-shy bears, rather than any type of sanctuary created when state land or other land is off-limits for bear hunting. The experts agreed that there will always be land on which bears cannot be harvested. For example, a bear may be available for harvest on non-state land but because it is on swampy ground, a hunter might avoid it. Or the bear may be within a certain area where hunting is off-limits, such as near homes or because a property owner does not allow hunting. All these factors must be included when equal harvest opportunity is considered.

Further, bears are not aware of the owner of the land on which they roam. Both experts agreed that bears wander over the landscape, whether they have been tagged or not. Given the statistics that show that bears wander off and on to state land and that marked and unmarked bears do likewise, and in relatively equal proportions, I cannot accept the opinion that because marked bears on state land are not subject to recapture, the harvest rate is incorrect or that the Lincoln-Peterson index is skewed to undercount bears or to be inaccurate. I **FIND** that the Lincoln-Peterson index analysis of bear-population estimate is not disrupted because of the closure of state lands to the bear harvest and that it provides an accurate estimate of the bear population whether state lands are closed or not.

And while Dr. McDonald opined to a reasonable degree of scientific probability that the reason for the harvest fall-off in 2018 and 2019 was the lack of opportunity to hunt on state lands, I do not accept that as fact, as he later clarified that statement (and agreed with McBride). The closure of state land to black bear hunting was not the sole cause for the harvest fall-off, adding that several other factors impacted the harvest numbers. The bear-harvest season was only in December until 2016. In prior years, the protected females were already in their dens. Weather was also a factor, as the bulk of the harvest was taken in October when the weather is generally better than December.

Bear behavior was also a factor, as bears were naturally wary of hunting and felt hunting pressure from weapons being fired. Hunter behavior was also a factor, as bear hunters were generally a minority component of hunters and selectively hunted bear. Many wanted just one in their lives. It is a lot of work to drag a bear out of the woods. Some hunters may opt to wait for a smaller or a larger bear. Human participation is also

a factor, as the number of permits decreased from 2017 to 2018 and 2019, with a slight increase in 2019. As the number of permits decreased, the number of bears harvested might also decrease.

Accordingly, I **FIND** that there were numerous factors that led to the drop-off in the bear harvests in 2017 and 2018, including bear behavior, weather, hunter behavior, and hunter participation, and that the closure of state land to bear harvesting was not the sole or even the primary cause.

The 2015 CBBMP recognized that the black bear population had increased to at least the 2010 level of 3,500 bears, and that human interactions had increased greatly over the previous five years, with a high reached in 2014. The goal of the 2015 CBBMP was to reduce and stabilize the bear population at a level compatible with the availability and quality of habitat, consistent with public safety and agricultural concerns. No specific number of bears was provided; it is rather the cultural carrying capacity of humans that determines the bear population that can be sustained.

The 2015 CBBMP recognized that black bear populations could sustain annual harvest rates of 15–20% with little or no decline in population size. And to protect against overharvest, an upper limit of 30% was deemed acceptable. The 2015 CBBMP also determined that a harvest rate of between 20% and 30% for black bears would be appropriate in New Jersey, and harvesting was permitted to reach that level by the ability to extend the hunt if 20% were not reached in October or after the first six days of the December segment, but only if 30% had not been reached.

I **FIND** that while the target rate of 20% of the bear population should ensure that the population is sustained and that a 30% harvest rate would result in a population decline, the CBBMP does not demand a 20% harvest rate. It is a target, but the season would not be enlarged further beyond the two segments to guarantee a 20% harvest rate, recognizing that in some years the target may not be achieved, particularly when the bear population had decreased.

I also **FIND** that the number of human-bear inactions went from a high of 2,856 incidents in 2014 before the 2015 CBBMP was adopted and decreased to 2,209 and 2,120 in 2015 and 2016, respectively, and then decreased substantially in 2017, 2018 and 2019 with 962, 883 and 818 reported incidents, respectively. The number has risen in 2020 to 1,073 through September 21, and while the percentage increase appears high, the incidents are substantially equivalent to those of 2017, 2018 and 2019, and even annualized would not exceed those of 2015 or 2016.

I also **FIND** that the closure of state lands has essentially created a sanctuary for black bears, both tagged and untagged, and that the effect of this will be felt within a two- to three-year cycle, as protected bears have litters and the cubs mature and expand their habitats from the state land.

I **FIND** that the Commissioner or her staff were provided with the 2015 CBBMP and other documents that were sufficient to make a determination as to whether state lands should be closed to bear harvesting. The 2015 CBBMP does not make any one objective more important than any other.

LEGAL ANALYSIS

The 2015 CBBMP[38] was adopted in accordance with the holding of the New Jersey Supreme Court in US Sportsmen's Alliance Foundation v. NJDEP, 182 N.J. 461 (2005), which held that a black bear hunt must conform to a comprehensive black bear management policy developed by the F&G Council, an entity of the DFW, a division of the DEP, and approved by the DEP Commissioner. In accordance with that decision, the 2015 CBBMP was adopted and incorporated into N.J.A.C. 7:25-5.6.

The 2015 CBBMP was challenged in League of Humane Voters of N.J. et al. v. N.J. Department of Environmental Protection, No. A-4630-15 (App. Div. February 13, 2019), https://njlaw.rutgers.edu/collections/courts/, as arbitrary and capricious and violative of the Uniform Administrative Procedure Act. The court rejected that challenge;

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[38] The 2015 CBBMP expires on June 12, 2021. At best, one hunting period on state lands—the December segment B of the 2020 harvest season—remains in dispute.

therefore, the policy set forth in the 2015 CBBMP is not the subject of this appeal. Rather, the issue presented is whether the Commissioner, following Executive Order No. 34 issued by the Governor on August 20, 2018, acted reasonably under the 2015 CBBMP in issuing Administrative Order 2018-24 on August 30, 2018, that prohibited the use of land under State control from the bear hunt or whether such Administrative Order was arbitrary and capricious with no evidential support. Safari Club Int'l, et al. v. NJDEP, et al., 373 N.J. Super. 515 (App. Div. 2004).

As the Appellate Division stated in its decision in New Jersey Outdoor Alliance et al. v. NJDEP, No. A-0525-18T4, 2018 NJ Super LEXIS 2525 (November 16, 2018), in directing the agency to refer this matter to the OAL for a hearing:

> "[The OAL] shall address the hotly disputed and fact-dependent claims that the closure is arbitrary and capricious, conflicts with the scientific underpinnings of the CBBMP, and imperils public safety." [Page 3.]

> "The pertinent data, and the scientific reliability of that data, including the most recent data from the October and December phases of the 2018 hunt, could be analyzed and dissected [in the OAL] . . . ."[39] [Page 36.]

The burden of proof rests with the petitioners, who must prove that the Commissioner's action was arbitrary and capricious by a preponderance of the credible evidence. Atkinson v. Parsekian, 37 N.J. 143 (1962) (citations omitted).

The focus of the analysis here is the 2015 CBBMP, which replaced the 2010 CBBMP, and which was adopted as an Appendix to N.J.A.C. 7:25-5.6 effective November 16, 2015. The 2015 CBBMP provided that the DFW "utilizes an integrated approach to managing black bears; this integrated black bear management strategy includes educating people about black bear ecology, recommending human behavioral adjustments while in bear range, enforcing laws that minimize human-bear conflicts, taking action against dangerous and nuisance bears, monitoring the bear population and implementing population control." 47 N.J.R. 2842.

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[39] This decision includes data from both the 2018 and 2019 October and December harvest seasons, as well as some data from the October 2020 harvest which just concluded.

The 2015 CBBMP, using the best available scientific data, sets forth the objectives for managing the New Jersey black bear population in a comprehensive policy with no objective more important than any other. These objectives are to:

- Sustain a robust black bear population as part of New Jersey's natural resource base.
- Advance the scientific understanding of black bears.
- Educate the public about common-sense practices that reduce the risk of negative black bear behavior on humans, their homes, their property, and their communities.
- Enforce the law on bear feeding and garbage containment.
- Use lethal force on high-risk dangerous bears.
- Use non-lethal aversive conditioning techniques on nuisance bears.
- Reduce and stabilize the population at a level commensurate with available habitat and consistent with reducing risk to public safety and property.
- Ensure that regulated hunting remains a safe and effective management tool to provide recreation and control New Jersey's black bear population. 47 N.J.R. 2842.

The 2015 CBBMP extended the black bear hunting season from one December segment to two six-day segments, one in October (Segment A) and one in December (Segment B). N.J.A.C. 7:25-5.6(a); 47 N.J.R. 929(a), 933 (May 18, 2015). The second hunting segment was initiated in 2016 to "allow for more consistent harvest, with essentially all bears available for hunting and with fewer complications due to weather events." 47 N.J.R. at 930.

The regulations addressed the timing of the hunt with respect to harvest. If the rate of harvest reached 30%, the hunting season concluded.[40] If the harvest rate by the

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[40] The "harvest rate" is a calculation equaling "the number of harvested bears that were tagged in the current calendar year within BMZs open to hunting divided by the number of bears that were tagged in the current calendar year that are available for harvest (total number of bears tagged in the current year within BMZs open to hunting minus known mortality of such bears and number of such tagged bears known to have left the BMZs that are open to hunting)." N.J.A.C. 7:25-5.6(a).

end of the December six-day segment was below 20%, the hunt would be extended for an additional four consecutive days. N.J.A.C. 7:25-6(b). Hunters could purchase two permits, but could only harvest one bear per BMZ. N.J.A.C. 7:25-5.6(a)(1), (2); see N.J.R. at 939. The boundaries of the hunting zones were changed in the 2015 CBBMP, and a new zone was created. N.J.A.C. 7:25-5.6(a)(3); 47 N.J.R. at 934–35. The number of permits for sale was increased from 10,000 to 11,000, and the previous lottery to determine who would receive a permit was eliminated. N.J.A.C. 7-25.6(a)(1); 47 N.J.R. at 934.

The harvests from December 2015 through December 2017 were conducted in accordance with the provisions of the 2015 CBBMP. Although the 2015 CBBMP did not specify on which land the black bears could be hunted, effective with the 2018 hunt, Administrative Order 2018-24 specifically banned black bear hunting on state lands. The remaining provisions of the 2015 CBBMP were not affected.

The petitioners, the Hunting Coalition (New Jersey Outdoor Alliance, Safari Club International, and U.S. Sportsmen's Alliance Foundation), argue that:

I. THE CLOSURE SUBSTANTIALLY UNDERMINES THE EFFICACY OF THE CBBMP BY REDUCING THE ACHIEVEMENT OF HARVEST, POPULATION AND INCIDENT OBJECTIVES.
    A. The closure prevents achievement of the 20% minimum harvest rate.
    B. The approximately 50% reduction in total harvest compared to the average pre-closure total harvest was caused by the state land closure.
    C. The state land closure has halted and reversed gains in achieving CBBMP objectives to control the bear population and reduce bear incidents.
II. THE CLOSURE'S CREATION OF BEAR SANCTUARIES UNDERMINES THE CBBMP'S FINDING THAT LAND SHOULD BE OPEN TO BEAR HUNTING TO REDUCE THE RISK OF INCIDENTS.
III. THE STATE LAND CLOSURE SUBSTANTIALLY UNDERMINES THE CBBMP BY RENDERING UNRELIABLE THE STATE'S METHOD TO ESTIMATE THE SIZE OF THE BEAR POPULATION.

IV. THE STATE LAND CLOSURE LACKS ANY SCIENTIFIC SUPPORT AND RUNS COUNTER TO DFW RECOMMENDATIOMNS INTENDED TO PROTECT PUBLIC SAFETY.

The NJDEP argues that:

I. Standard of Review and Burden of Proof.

II. Petitioners have failed to show that Administrative Order 2018-24 substantially undercuts the 2015 CBBMP.

A. Administrative Order 2018-24 is consistent with the 2015 CBBMP

1. The closure of state lands is consistent with sustaining a robust black bear population.

2. The closure of state lands is consistent with advancing scientific understanding of black bears.

3. The closure of state lands is consistent with: educating the public about common-sense practices that reduce the risk of negative black bear behavior on humans, their homes, their property, and their communities; enforcement of the law on bear feeding and garbage containment; the use of lethal control on high-risk, dangerous bears; and the use of non-lethal aversive conditioning techniques on nuisance bears.

4. The closure of state lands is consistent with ensuring that regulated hunting remains a safe and effective management tool to provide recreation and control New Jersey's black bear population.

5. The closure of state lands is consistent with reduction and stabilization of the black bear population at a level commensurate with available habitat and consistent with reducing risk to public safety and property.

B. The Department's population estimates remain valid and may reasonably be relied upon to make management decisions.

1. Bears move between and throughout state and non-state lands.

2. Bears on non-state lands are representative of the bear population across BMZs 1–5.

3. Petitioners were unable to prove that the closure of state lands to bear hunting caused any bias in the Lincoln-Peterson estimate, or, if it did,

that the bias was significant enough that the DFW could not reasonably rely upon the Lincoln-Peterson methodology to make management decisions.

C. Closure of state lands to bear hunting under Administrative Order 2018-24 did not impact the DFW's ability to accurately assess harvest rates for the bear population under the CBBMP to determine whether a hunting season should be extended.

III. Petitioners have shown neither that bears pose a serious threat to public safety and that state lands must be opened to combat this threat, nor that there is any public-safety or other vital public interest that requires state lands to be open to bear hunting.

In rebuttal, the Hunting Coalition argues that:

1. Standard of Review and Burden of Proof.

2. The DEP avoids discussion of specific CBBMP objectives.

3. The DEP does not deny that the 20% minimum harvest rate has not been achieved.

4. The DEP does not deny that the bear population increased immediately following the closure.

5. The DEP's claim to human-bear incident reduction is misplaced, as bear incidents are rapidly increasing in 2020.

6. The DEP does not rebut evidence regarding sanctuaries and uneven reduction in hunting pressure.

7. The DEP closing cannot resolve the fundamental issue with its Lincoln-Petersen population estimates.

8. The evidence from the hearing shows that the closure lacks any evidentiary support.

In its rebuttal, the NJDEP argues that:

I. The CBBMP Does Not Establish Specific Numbers to Inform Management Decisions

II.   The Closure of State Lands Does Not Undermine the CBBMP

    A.   Petitioners have failed to show that the closure of state lands adversely affected the harvest rate.

    B.   Petitioners have failed to show that the closure of state lands caused a reduction in the number of bears harvested.

    C.   The closure of state lands is consistent with the CBBMP, as the black bear population has been reduced and human-bear incidents have declined since its adoption.

III.   Petitioners' Argument That Bears on State Lands Will Endanger Nearby Communities is Speculation.

IV.   The DFW's Use of the Lincoln Petersen Methodology Continues to Produce Accurate Population Estimates for Black Bears in BMZs 1-5.

V.   The Record Shows that the Closure of State Lands to Bear Hunting is not Arbitrary and Capricious

The 2015 CBBMP recognized that the black bear population had increased to at least the 2010 level of 3,500 bears, and that bear-human interactions had increased greatly over the previous five years since the 2010 CBBMP. The goal was to reduce and stabilize the bear population at a level compatible with the availability and quality of habitat, consistent with public safety and agricultural concerns. Hunting was the method established by the 2015 CBBMP to achieve that goal. The 2015 CBBMP recognized that black bear populations could sustain annual harvest rates of 15–20% with little or no decline in population size. And to protect against overharvest, an upper limit of 30% was deemed acceptable. The F&G Council then determined that a harvest rate of between 20% and 30% for black bears would be appropriate in New Jersey, and harvesting was permitted to reach that level by the ability to extend the hunt if 20% were not reached in October or after the first six days of the December segment, but only if 30% had not been reached.

While 20% may be considered a target, the 2015 CBBMP did not provide that it was an absolute goal. Rather, it recognized that harvests between 15% and 20% should have no deleterious effect on the black bear population, and afforded hunters the opportunity to harvest black bears to 20% of the estimated population. The average

harvest between 2015 and 2017 was just over 20%; the average from 2018 and 2019 was just under 15%. The average from 2015 through 2019 was almost 18%, or just under the 20% target. Further, as the bear population was reduced by the larger harvests of 2015 through 2017, the likelihood of reduced harvests in the years thereafter was in line with Dr. McDonald's conclusion that the rise and fall in harvest and population was cyclical, with a lag time of two to three years. As the population decreased in accordance with the CBBMP's goals and objectives, the number of bears available to harvest would similarly decrease.

The state land closure cannot be considered the cause of the reduction in harvest rates in 2018 and 2019. As both experts testified, other factors also came into play in affecting the 2018 and 2019 bear-hunting seasons: weather; season timing; bear behavior; hunter participation; and hunter behavior. Until 2016, hunting was only in December and protected females were already in their dens. Weather was also a factor, as the bulk of the harvest was later taken in October when the weather was generally better than December.

Bear behavior was another factor, as bears became naturally wary of hunting after the expanded seasons of 2016 and 2017, and could have felt hunting pressure from weapons being fired. Hunter behavior was also a factor, as bear hunters choose to hunt selectively, as many want to harvest just one in their lives, and it is a lot of work to drag a bear out of the woods. Some hunters may have opted to wait for a smaller or a larger bear. Human participation was also a factor because the number of permits issued for the bear harvest decreased from 2017 to 2018, with a slight increase in 2019. As the number of permits decreased, the number of bears harvested might also decrease. Or some of the hunters who may have wished to harvest their one bear may have done so in prior seasons. All these factors combined led to a decline in the bear harvest, and it was not due solely or even in large part to the closing of state lands to bear hunting.

While the 2015 CBBMP had a goal of reducing the bear population in New Jersey through the harvest, it appeared that the goal had been achieved by 2018 when the bear population had been reduced to approximately 1,527 bears, substantially below that of the 2014 population of 3,606, which formed the basis for the 2015 CBBMP. The efficacy

of the 2015 CBBMP was not undermined by Administrative Order 2018-24 because the goal of bear-population reduction set forth in the policy had been achieved by 2018.

And, not only had the bear population been cut by more than half with the success of harvests in 2015, 2016, and 2017, the number of human-bear incidents reflected that population decrease with a substantial reduction in human-bear incidents, with 705 incidents reported in 2017, 705 in 2018, and 649 in 2019. The number of incidents is only just now in 2020 starting to increase, but it has not yet risen even to the level of 2015 or 2016.

As for the estimated bear population, it runs in cycles.[41] The bear population decreased by 2018 and the number of bears available for harvest also decreased, coinciding with a decrease in hunter participation as well. The bear population was stabilized. It may well be that within the next two or three years the bear population may start to increase, as the targeted harvest-rate goal of 20% has not consistently been reached. As the bear population would start to increase, more bears should become available for harvest. This was seen in 2019 when 315 bears were harvested, an increase from the 225 of 2018, and was reflective of the increase in the bear population.

The creation of a bear sanctuary on state land is not consequential to the 2015 CBBMP. While some black bears might find security on state land and the population increase, some of those bears will be moving from that land as they expand their habitats and become available for harvest. The number of tagged bears to untagged bears on state land would remain proportionate, as each tagged bear is representative of untagged bears, no matter which land they are tagged or harvested on. The statistics showed that bears wandered relatively equally off and on to state land. This sanctuary area would therefore not impact the Lincoln-Peterson index in the accurate calculation of the bear population or undermine its scientific accuracy.

The 2015 CBBMP was a comprehensive, broad five-year plan, and nothing in it required that state land host a bear harvest. Taking into consideration all the factors set

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[41] The 2015 CBBMP is a five-year plan and expires in 2021. Presumably, another black bear management policy will then be implemented.

forth above, it cannot be concluded by a preponderance of the credible evidence that the closing of state land to the bear harvest from 2018 on was arbitrary or capricious, conflicted with the scientific underpinnings of the 2015 CBBMP, imperiled public safety, or otherwise interfered with the efficacy of the 2015 CBBMP.

CONCLUSION

Most of the goals of the 2015 CBBMP—bear-population reduction, bear-population stabilization, and human-bear interactions—have been able to be achieved without hunters being able to harvest bears on state land. While the targeted harvest rate of 20% has not been met on average for the past three years, it has reached an average of almost 18% for the past five years, which, while not 20% or over, is substantially in compliance with the 2015 CBBMP. The 2015 CBBMP called for a black bear harvest season, which has been continuously afforded to hunters in New Jersey since 2015, albeit not on state land since 2018. The goal of black bear population reduction has been reached and the population stabilized, although it may have started to increase in 2019. The number of human-bear incidents has declined since 2015 and has remained low since 2016 and through 2019. Even though the number rose through September 21, 2020, it has not reached pre-2015 levels.

The petitioners have not proved by a preponderance of the credible evidence that Administrative Order 2018-24, issued on August 30, 2018, that closed state lands to black bear hunting effective with the 2018 black bear harvest, was arbitrary and capricious, conflicted with the scientific underpinnings of the 2015 CBBMP, and imperiled public safety. Accordingly, the petition shall be dismissed.

ORDER

I **ORDER** that the petition seeking to declare that Administrative Order 2018-24 is arbitrary and capricious is hereby **DISMISSED**.

I hereby **FILE** my initial decision with the **COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION** for consideration.

This recommended decision may be adopted, modified or rejected by the **COMMISSIONER OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION**, who by law is authorized to make a final decision in this matter. If the Commissioner of the Department of Environmental Protection does not adopt, modify or reject this decision within forty-five days and unless such time limit is otherwise extended, this recommended decision shall become a final decision in accordance with N.J.S.A. 52:14B-10.

Within thirteen days from the date on which this recommended decision was mailed to the parties, any party may file written exceptions with the **DIRECTOR, OFFICE OF LEGAL AFFAIRS, DEPARTMENT OF ENVIRONMENTAL PROTECTION, 401 East State Street, 7th Floor, West Wing, PO Box 402, Trenton, New Jersey 08625-0402**, marked "Attention: Exceptions." A copy of any exceptions must be sent to the judge and to the other parties.

October 27, 2020
DATE

SUSAN M. SCAROLA, ALJ

Date Received at Agency:

Date Mailed to Parties:

SMS/cb

APPENDIX

WITNESSES

For petitioners:

John Rogalo

John E. McDonald, Ph.D.

For respondents:

Anthony E. McBride

EXHIBITS

Joint Exhibits:

J-1   Administrative Record from Case No. A-0525-18T4

J-1A Executive Order 34

J-1B Administrative Order 2018-24

J-1C 2015 Comprehensive Black Bear Management Policy

J-1D Status Report on Implementation of the CBBMP (Jan. 4, 2018)

J-1H Bear Harvest by Land Ownership Type 2010-2017

J-2A 2014 Black Bear Season Harvest Information

J-2B 2015 Black Bear Season Harvest Information

J-2C 2016 Black Bear Season Harvest Information

J-2D 2017 Black Bear Season Harvest Information

J-2E 2018 Black Bear Season Harvest Information

J-2F 2019 Black Bear Season Harvest Information

J-3   McDonald, report on the effects of the closure of New Jersey state lands to black bear hunting on black bear population (July 29, 2020)

J-4A NJ Division of Fish and Wildlife, Bear Activity Report (Jan 1-Apr 20 Period)

J-4B NJ Division of Fish and Wildlife, Bear Activity Report (Jan 1-May 20 Period)

J-4C NJ Division of Fish and Wildlife, Bear Activity Report (Jan 1-June 21 Period)

J-4D   NJ Division of Fish and Wildlife, Bear Activity Report (Jan 1-August 21 Period)

J-4E   Annual Black Bear Activity Reports covering 1/1/2009 to 12/31/13
(See DEP ex 3m for Reports covering 1/1/2014 to 12/31/2019)

J-5   McBride, Report on the Consistency of Administrative Order 2018-24 with the 2015 Comprehensive Black Bear Management Policy (August 31, 2020)

J-7   Cover Letter from counsel for the NJDEP identifying documents the Commissioner reviewed and referenced documents

J-7A   Status Report on the Implementation of the 2015 CBBMP

J-7B   NDDFW 2018 Outreach and Enforcement Activities

J-7C   Black Bear Education Materials Distributed and Programs Presented by NJDFW

J-7D   Tiedemann, Humans and Black Bears: An Analysis of Risk Perception and Bear Awareness as Methods of Reducing Conflict in Northwest New Jersey (2009)

J-7E   Northeast Black Bear Technical Committee, An Evaluation of Black Bear Management Options (2012)

J-7F   Raithel et al., Recreational Harvest and Incident-response Management Reduce Human-Carnivore Conflicts on Anthropogenic Landscape (2016)

J-7G   Herrero, Fatal Attacks by American Black Bear on People: 1900-2009

J-7H   2015 Comprehensive Black Bear Management Policy

J-8   16. Council Meeting Presentation – March 3, 2015

J-9   18. 2018 DFW Transition Document- Final Feb 15, 2018 BWM

J-10   20. Updated Bear Presentation for Commissioner 2018

J-12   Tredick, Updated Review on the Feasibility of Using Fertility Control to Manage New Jersey Black Bear Populations

J-13   Bureau of Wildlife Management, 2016 New Jersey Bear Permit Buyers Survey Results

J-14   Presentation, Black Bear Hunting in New Jersey and Its Effects on Damage and Nuisance Complaints

J-16   Bears conditioned or euthanized by State Park Police and WCU on State Land

J-17A   Bear incident report incident-by-incident spreadsheet (excludes sightings) 2003-2018 (1/4/2003 through 9/17/2018)
(Note - Per agreement of counsel the exhibit is admitted only as to incidents on or after 1/1/2014.)

J-17B   Bear incident report incident-by-incident spreadsheet (9/17/2018-7/22/2019)

J-17C   Bear incident report incident-by-incident spreadsheet (7/23/2019-1/29/2020

J-18   Population estimate calculations (in both PDF and native Excel)

J-19   CBBMP signature pages and Certificate of Proposal, Adoption and Promulgation

J-22   NJDEP, "Affirmative Case Documents"

J-22A   Figure 1

J-22B   Figures 2a and 2b

J-22C   Figure 3

J-22D   Figure 4a and Figure 4b

J-22E   Figure 5a and Figure 5b

J-22F   NJ Division of Fish and Wildlife, Bear Activity Reports (2014/2015 through 2018/2019)

J-23   Email from Madonia to McBride re: Harvest by land ownership type

J-24   Email from Madonia to McBride re: bear harvest-land ownership type and attachment

J-26   2018 New Jersey Black Bear Hunting Season (FAQs)

J-27   Email chain form Smith to Madonia, CC McBride re: Bear Hunt Info for Oakland

J-30   Respondents' Supplemented Answers to Petitioners' First Set of Interrogatories

J-36   Wall map showing NJ land units (provided to NJDEP in hard copy)

J-37   NJDEP Website, "Bear Season Opens Monday, Dec. 5"

J-38   NJDEP Website, "Public Hunting Land in NJ"

J-39A NJDEP Website, "State Park Service Areas Open to Hunting"

J-39B NJDEP Website, "Wildlife Management Areas"

J-40A Abram S. Hewitt SF Map

J-40B Abram S. Hewitt SF Map

J-41A Allamuchy Mtn. SP Map

J-41B Allamuchy Mtn. SP Map

J-41C Allamuchy Mtn. SP Website Excerpt

J-42A Norvin Green SF Map

J-42B Norvin Green SF Map

J-42C Norvin Green SF Map

J-43A Walpack WMA Map

J-43B Walpack WMA Map

J-4-A   Wawayanda SP Map

J-44B Wawayanda SP Map

For petitioners:

P-1   Anthony E. McBride, Curriculum Vitae

P-2   Administrative Order No. 2018-24

P-3   2015 Comprehensive Black Bear Management Policy

P-4   McBride, Report on the Consistency of Administrative Order 2018-24 with the 2015 Comprehensive Black Bear Management Policy (August 31, 2020)

P-5   Figures 2a Damage and Nuisance Complaints 2014-2019 and 2b. Damage and Nuisance Complaints and Lincoln-Peterson Population Estimates (2014-2019

P-6   Figure 1. Lincoln-Peterson Bear Population Estimates for Hunt Area (2014-2019

P-7   Figure 3. Bear Seasons Harvest rates (2014-2019)

P-8   DEP and non-DEP Lands.

Figure 5a. Size and percentages of DEP and non-DEP lands in BMZs 1-5 and Figure 5B. Percentage of bear harvest on DEP and non-DEP lands (2014-2019)

P-9   Geographic data

Figure 4a. Black bear harvest by land type (2014-2019) and

Figure 4b. Bear telemetry data Land type where radio-collared bears made their winter dens (2014-2019)

P-10   Bear Activity Reports (2015-2019)

P-11   Non-lethal management techniques

Table 1. Summary of bear related educational materials distributed by the DFW from 2014 through 2019 and

Table 2. Summary of attendance numbers at bear education programs by county from 2014 through 2019

For respondents:

R-1

R-6   Excerpt, State of New Jersey, Senate Judiciary Hearing, Confirmation of Commissioner McCabe

R-11   [Not admitted]

R-20

R-21

R-25   [Not admitted]

R-28   Email chain from Golden to Herrighty re: bear bullets

R-29   Email chain from Madden to Herrighty et al. re: Bear Incident Vernon Twp.

R-31   Article: Booming bear population makes NJ residents wary

R-32   ARTICLE: Drastic expansion of NJ bear hunt approved by state council

R-33

R-34

R-35

R-44C [Not admitted]

R-45A Key Statistical Points

R-45B Bear Incidents as a Function of Bear Harvest with Lag Time

R-45C Figure 2a. – Updated