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Seriously Doe: Why a Hybrid Approach to Regulating Deer Farms is Right for West Virginia

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SERIOUSLY DOE: WHY A HYBRID APPROACH TO REGULATING DEER FARMS IS RIGHT FOR WEST VIRGINIA

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I. INTRODUCTION

Two government agencies—the United States Department of Agriculture and the Food and Drug Administration—share the burden of regulating eggs.¹ The Food and Drug Administration (“FDA”) regulates eggs sold in shells.² The United States Department of Agriculture (“USDA”) regulates egg products: liquid, frozen, or dehydrated eggs.³ The FDA regulates what the operations can feed the chickens.⁴ The USDA regulates the laying facilities.⁵ And

¹ Gretchen Goetz, *Who Inspects What? A Food Safety Scramble*, FOOD SAFETY NEWS (Dec. 16, 2010), <https://www.foodsafetynews.com/2010/12/who-inspects-what-a-food-safety-scramble/>.

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ *Id.*

while this scheme may have some downfalls, it certainly also has its benefits.⁶ The USDA and the FDA agree that communication and sharing “is critical to ensuring a safe and abundant food supply for Americans.”⁷ Dual regulation of an industry can increase clarity, improve efficiency, and free up valuable government resources.⁸ This dual regulation is useful when an industry implicates more than one agency’s area of expertise—as is common with farming and raising livestock.⁹

Some people are shocked to find out “deer farms” are a real thing. However, these “captive cervid operations”¹⁰ are growing in popularity.¹¹ And not just in West Virginia but across the country as well.¹² With the increase in the demand for deer and elk meat, new captive cervid operations (“CCOs”) are opening across the United States to satisfy the demand.¹³ CCOs offer the promise of new industry, new jobs, and economic growth.¹⁴ This industry, under proper regulation and supervision, and with the appropriate marketing, could grow to be a substantial part of West Virginia’s agricultural activity. West Virginia is particularly well suited for deer farms where the lack of flat, farmable, or grazeable land has had an impact on agriculture.¹⁵ However, there are also biologic, economic, and social concerns associated with CCOs.¹⁶

If left under-regulated, CCOs have the capability to completely change how West Virginians relate to white-tailed deer. White-tailed deer are a major

⁶ See Shanker Reddy, *USDA and FDA Cooperation Continues To Ensure a Safe Food Supply*, U.S. DEP’T OF AGRIC. (May 30, 2018), <https://www.usda.gov/media/blog/2018/05/30/usda-and-fda-cooperation-continues-ensure-safe-food-supply>.

⁷ *Id.*

⁸ *Id.*

⁹ See generally *USDA and FDA Announce a Formal Agreement to Regulate Cell-Cultured Food Products from Cell Lines of Livestock and Poultry*, U.S. FOOD & DRUG ADMIN. (Mar. 7, 2019), <https://www.fda.gov/news-events/press-announcements/usda-and-fda-announce-formal-agreement-regulate-cell-cultured-food-products-cell-lines-livestock-and>.

¹⁰ A cervid is any member of the Cervidae family. *Cervid*, MERRIAM-WEBSTER.COM, <https://www.merriam-webster.com/dictionary/cervid> (last visited Oct. 9, 2020). The Cervidae family includes elk, moose, and white-tailed deer. *Id.*

¹¹ Kristen Schmitt, *Deer Farming: The Next Adventure in Agriculture*, MOD. FARMER (Feb. 19, 2014), <https://modernfarmer.com/2014/02/deer-farming-next-adventure-agriculture/#:~:text=Initially%20established%20in%20the%201970s%20as%20a%20way,way%20to%20utilize%20small%20tracts%20of%20marginal%20land>.

¹² See *id.*

¹³ *Id.*

¹⁴ See *infra* notes 105–112 and accompanying text.

¹⁵ W. Va. Dep’t of Agric., *Big Bucks! West Virginia Deer Farm Industry Growing*, REG.-HERALD (Feb. 26, 2018), https://www.register-herald.com/news/big-bucks-west-virginia-deer-farm-industry-growing/article_b823d45e-8e96-5a6e-94b4-0ee2d8eba76e.html.

¹⁶ See *infra* Section II.A.

part of West Virginia's economy and cultural identity.¹⁷ West Virginia's tourism industry is based in large part on outdoor activities like hiking and mountain biking, rafting and fishing, and hunting.¹⁸ During the 2019 traditional buck firearm season—a two-week season from November 25th to December 7th¹⁹—West Virginia hunters harvested 36,796 white-tailed bucks.²⁰ In 2018, that number was 44,599.²¹

CCOs complicate the protection of this important natural resource. If a communicable disease is contracted by a captive cervid, it transmits to other captive individuals more rapidly than would occur in the wild because of the proximity of the animals.²² Additionally, CCOs bring with them the risk that captive deer will interact with the wild population—furthering biologists' concerns about animal health.²³ In fact, the spread of diseases like chronic wasting disease is likely the result of domestic cervids being transported from contaminated areas.²⁴ Moreover, hunting—and the tourism associated with it—is a substantial part of West Virginia's economy.²⁵ Both the increased risk of infectious disease and privatizing ownership of white-tailed deer could have serious impacts on the hunting and tourism industries.²⁶ But just like CCOs pose a threat to West Virginia's economy, if properly regulated and promoted, they also offer an opportunity for new business and industry.²⁷ Finally, the social issues range from concerns about conservation efforts to how to ensure the

¹⁷ *Hunting in West Virginia*, W. VA. DIV. OF NAT. RES., <https://wvdnr.gov/hunting/hunting.shtm> (last visited Oct. 10, 2020).

¹⁸ *Outdoor Adventures*, W. VA. TOURISM, <https://wvtourism.com/things-to-do/outdoor-adventures/> (last visited Oct. 9, 2020).

¹⁹ *DNR Releases Harvest Figures for Two-Week Buck Season*, METRONews, (Dec. 14, 2019, 6:34 AM), <http://wvmetronews.com/2019/12/14/dnr-releases-harvest-figures-for-two-week-buck-season/>.

²⁰ *2019 News Releases from the DNR*, W. VA. DIV. OF NAT. RES., <http://www.wvdnr.gov/news2019.shtm> (last visited Oct. 9, 2020).

²¹ *DNR Releases Final Numbers on 2018–19 Deer Seasons*, METRONews (Feb. 7, 2019, 10:06 AM), <http://wvmetronews.com/2019/02/07/313270/>.

²² See Ronald W. Opsahl, *Chronic Wasting Disease of Deer and Elk: A Call for National Management*, 33 ENV'T L. 1059, 1090 (2003).

²³ See Laura Bies, *Captive Cervid Breeding*, WILDLIFE SOC'Y, <https://wildlife.org/wp-content/uploads/2014/05/captive-cervid-breeding.pdf> (last visited Oct. 3, 2020).

²⁴ Elizabeth S. Williams, Michael W. Miller, Terry J. Kreeger, Richard H. Kahn et al., *Chronic Wasting Disease of Deer and Elk: A Review with Recommendations for Management*, 66 J. WILDLIFE MGMT. 551, 552–53 (2002).

²⁵ *Hunting in West Virginia*, *supra* note 17.

²⁶ See generally Ryan S. Miller, Matthew L. Farnsworth & Jennifer L. Malmberg, *Diseases at the Livestock-Wildlife Interface: Status, Challenges, and Opportunities in the United States*, 110 PREVENTIVE VETERINARY MED. 119, 128 (2013).

²⁷ W. Va. Dep't of Agric., *supra* note 15.

humane treatment of animals with wild natures.²⁸ Therefore, the West Virginia Legislature should divide the captive cervid industry into its individual pieces and utilize a hybrid approach to regulate CCOs. This approach should consider the mission and experience of state agencies and mandate regulation by the agency that is best suited to regulate specific pieces of the industry based on the agency's mission and expertise.

Part II of this Note will summarize the information necessary to understand the social and biological concerns associated with CCOs. It will also explore the mission and expertise of the two agencies qualified to regulate CCOs—the West Virginia Department of Agriculture and the West Virginia Division of Natural Resources. Part III will then canvass what regulations are necessary to adequately regulate the captive cervid industry and which agency is best suited to handle those regulations. Part III will also examine and compare West Virginia's current regulatory scheme to the regulations employed by Kentucky—a state that currently uses a hybrid approach to regulate CCOs. Part IV concludes that a mission-based approach to dividing jurisdiction between the West Virginia Department of Agriculture and the West Virginia Division of Natural Resources is most conducive to balancing the interest of the state in expanding the industry and protecting West Virginia's resources.

II. BACKGROUND

Captive cervid farms in the United States date back to the late 1800s, but the commercialization of the industry is a more recent phenomenon.²⁹ CCOs implicate several areas of public concern. First, the current wildlife conservation system used in the United States relies on hunting for funding.³⁰ This system is also based on the premise that wildlife is a public resource; thus, private ownership of a traditional wildlife species threatens that principle.³¹ Conservation is also threatened by the increased potential for the spread of communicable disease.³² Second, the consumption of venison and the risk of disease transfer from white-tailed deer to humans implicates human health and wellness.³³ And even with the desire to increase new industry in the state, these policy concerns should be considered when regulations are implemented.

²⁸ Ryan Sabalow, *Study: Some Deer Farmers Put Ethics on Line for Profits*, USA TODAY (March 31, 2014, 11:14 AM), <https://www.usatoday.com/story/news/nation/2014/03/30/study-deer-farmers-sacrifice-ethics-for-profit/6938465/>.

²⁹ *Management Authority over Farmed Cervids*, CONG. SPORTSMEN'S FOUND., <http://congressionalsportsmen.org/policies/state/management-authority-over-captive-cervids> (last visited Oct. 9, 2020).

³⁰ *See infra* Section II.A.1.

³¹ *Id.*

³² *See infra* Section II.A.2.

³³ *See infra* Section II.B.

A. Conservation

CCOs could have an effect on conservation efforts. North American conservation relies on hunting and fishing for funding.³⁴ CCOs are based on privatizing this public resource, which could result in a decrease in hunting and a lack of funding for conservation.³⁵ Moreover, disease transmission between captive cervids and wild animals has been documented.³⁶ These threats to conservation are often one of the main objections raised to captive cervid farming.³⁷

1. North American Model of Wildlife Conservation

In the late nineteenth century, Canada and the United States took a revolutionary approach to wildlife conservation—the North American Model of Wildlife Conservation.³⁸ This model considers wildlife public property rather than “the purview of elites, to be used for their benefit and pleasure.”³⁹ The model puts the management of wildlife into the hands of experts, institutions of higher learning, and government elected officials.⁴⁰ These institutions are charged with serving the public and managing these natural resources on its behalf.⁴¹ The North American Model of Wildlife Conservation is based on seven principles: (1) maintaining wildlife as a public trust resource, entrusted to the state to manage; (2) prohibiting deleterious commerce in dead wildlife products; (3) regulating and defining appropriate wildlife use by law; (4) ensuring wildlife can only be killed for legitimate purposes; (5) recognizing and managing wildlife as an international resource; (6) utilizing and safeguarding science as the appropriate basis for wildlife policy; and (7) protecting the democratic allocation of citizens’ opportunity to harvest wildlife.⁴² In fact, the model suggests that “it

³⁴ See generally Bies, *supra* note 23.

³⁵ *Id.*

³⁶ *Id.*

³⁷ See generally Opsahl, *supra* note 22. These concerns were also raised by interest groups that opposed the transfer of regulation to the WVDA in 2015. Chris Lawrence, *Sportsmen Press for Veto on Deer Farm Legislation*, METRONews (Feb. 23, 2015, 8:13 PM), <http://wvmetronews.com/2015/02/23/sportsmen-press-for-veto-on-deer-farm-legislation/>.

³⁸ Shane P. Mahoney, Valerius Geist & Paul R. Krausman, *The North American Model of Wildlife Conservation: Setting the Stage for Evaluation*, in THE NORTH AMERICAN MODEL OF WILDLIFE CONSERVATION 1, 1 (Shane P. Mahoney & Valerius Geist eds., John Hopkins Univ. Press ed. 2019).

³⁹ *Id.* at 1–2.

⁴⁰ *Id.* at 2.

⁴¹ *Id.*

⁴² *Id.*

would be inconceivable to allow elk, caribou, and other hunted species . . . to be subject to the marketplace or right of ownership.”⁴³

Moreover, under this model, funding for conservation and wildlife management programs is largely dependent on recreational hunting.⁴⁴ The main sources of conservation funding are hunting and fishing license sales, taxes on gun and ammunition sales, and taxes on archery supplies.⁴⁵ The “user pay–public benefit” system of funding conservation has historically been successful; however, with the decline in hunting participants paying into the system, funding has become more and more scarce.⁴⁶ Hunters only make up roughly 4% of the United States population, and approximately 14% of the United States population purchases a fishing license.⁴⁷

And while some may argue that hunters and fishers are the people that benefit from the existence of these resources and therefore should be the ones funding conservation, there is inherent value to every American citizen in the preservation of natural resources.⁴⁸

A concrete example of this worth is the value of national parks. Over half the total economic value of the national parks comes from the public’s knowledge that the parks are protected for current and future generations.⁴⁹ This “non-use” value is also a factor in the preservation of wildlife.⁵⁰ In short, the percentage of the United States population that is “paying the lion’s share of the conservation tab” is declining while the general population enjoying the benefits of conservation is increasing.⁵¹

CCOs pose a threat to the North American Model of Wildlife Conservation because they allow a traditionally public, natural resource to become privatized.⁵² Such privatization could result in monetary values being placed on even wild cervids.⁵³ And once monetary values are placed on

⁴³ *Id.* at 4.

⁴⁴ *Id.* at 6; Mitch King, *The American System of Conservation Funding—What’s It Going To Look Like?*, WILDLIFE MGMT. INST. (Sept. 14, 2018), <https://wildlifemanagement.institute/outdoor-news-bulletin/september-2018/american-system-conservation-funding-whats-it-going-look>.

⁴⁵ King, *supra* note 44.

⁴⁶ *Id.*

⁴⁷ *Id.*

⁴⁸ Julie Seger, *Beyond a Visit: How We Value National Parks*, NAT’L PARK FOUND., <https://www.nationalparks.org/connect/blog/beyond-visit-how-we-value-national-parks> (last visited Oct. 9, 2020).

⁴⁹ *Id.*

⁵⁰ See generally David S. Brookshire, Larry S. Eubanks & Alan Randall, *Estimating Option Prices and Existence Values for Wildlife Resources*, 59 LAND ECON. 1 (1983).

⁵¹ King, *supra* note 44.

⁵² Bies, *supra* note 23.

⁵³ *Id.*

resources, incentives for privatization, illegal taking, trafficking, and exploitation of publicly owned wildlife may follow.⁵⁴

2. Diseases Affecting Cervids

There are three main infectious diseases that are of concern in white-tailed deer: chronic wasting disease (“CWD”), bovine tuberculosis (“bovine tB”) and brucellosis.⁵⁵ CWD is a prion disease that affects deer, elk, reindeer, sika deer, and moose.⁵⁶ Symptoms include wasting (drastic weight loss), stumbling, listlessness, and impaired neurologic functions.⁵⁷ However, symptoms may take over a year to develop in infected animals, and “some infected animals may die without ever developing the disease.”⁵⁸ CWD is fatal, and there are no treatments, vaccines, or tests that can be used antemortem.⁵⁹ The source of CWD is unknown, but it is “highly transmissible through the ingestion [of] or direct contact with pastures, soil, feces, urine, saliva, or blood.”⁶⁰

Bovine tB is a bacterial disease, most commonly found in domestic cattle and captive or wild cervids.⁶¹ Bovine tB is transmissible to humans, although bovine tB only accounts for approximately 2% of human tuberculosis cases diagnosed in the United States per year.⁶² Similarly, brucellosis is a bacterial infection.⁶³ Brucellosis is transmitted between animals through contact with an infected animal or a contaminated environment.⁶⁴ And even asymptomatic animals can transmit the disease to other individuals.⁶⁵ Brucellosis can be

⁵⁴ *Id.*

⁵⁵ R. ERIC MILLER, NADINE LAMBERSKI & PAULE CALLE, FOWLER’S ZOO AND WILD ANIMAL MEDICINE 256 (Kathyn C. Gamble et al. eds., 1st ed. 2019); Jarred Brooke, *Bovine Tuberculosis in Wild White-Tailed Deer: Background and Frequently Asked Questions*, PURDUE UNIV. EXTENSION FORESTRY & NAT. RES., <https://www.purdue.edu/fnr/extension/bovine-tb/> (last visited Oct. 10, 2020); *Brucellosis*, PA. GAME COMM’N, <https://www.pgc.pa.gov/Wildlife/Wildlife-RelatedDiseases/Pages/Brucellosis.aspx> (last visited Oct. 10, 2020); *Chronic Wasting Disease (CWD)*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/prions/cwd/index.html> (last visited Oct. 10, 2020).

⁵⁶ MILLER ET AL., *supra* note 55; *Chronic Wasting Disease (CWD)*, *supra* note 55.

⁵⁷ *Chronic Wasting Disease (CWD)*, *supra* note 55.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ MILLER ET AL., *supra* note 55.

⁶¹ Brooke, *supra* note 55.

⁶² *Id.*

⁶³ *Brucellosis*, *supra* note 55.

⁶⁴ *Id.*

⁶⁵ Jennifer O’Brien, *Prions Found in Feces of Deer Asymptomatic for Chronic Wasting Disease*, UNIV. CAL. S.F. (Sept. 9, 2009), <https://www.ucsf.edu/news/2009/09/4291/prions-found-feces-deer-asymptomatic-chronic-wasting->

difficult to diagnose because of its variable incubation period and inconsistent clinical signs.⁶⁶ Moreover, brucellosis is infamously difficult to treat—antibiotics may reduce the severity of the disease, but most animals remain chronically infected after contraction.⁶⁷

B. Human Health Implications

Cervid farming implicates human health in three ways. First—the most obvious—is that any consumption of venison poses the threat of foodborne illness.⁶⁸ Mandatory inspection of meat has a long history in the United States.⁶⁹ In fact, meat intended for human consumption is inspected at several stages through processing to ensure that the meat is coming from a healthy animal and that the facilities and equipment meet sanitation standards.⁷⁰ This is to ensure consumers are receiving safe, quality products.⁷¹

Second, despite the fact that there is currently no evidence that CWD can be transmitted to humans through consumption of infected deer meat, the Centers for Disease Control discourages eating the meat of infected deer.⁷² Additionally, other kinds of prion diseases can be contracted by humans. Creutzfeldt-Jakob disease (“CJD”) is a degenerative brain disorder that leads to dementia and death.⁷³ CJD, commonly referred to as “mad cow disease,” is contracted from eating meat from infected cattle.⁷⁴ The biological cause of CJD and CWD is the same—both CJD and CWD are the result of prions.⁷⁵ And a new study has shown

disease#:~:text=Scientists%20have%20discovered%20that%20deer%20asymptomatic%20for%20a, and%20possibly%20elk%20and%20moose%20in%20the%20environment.

⁶⁶ *Brucellosis*, *supra* note 55.

⁶⁷ *Id.*

⁶⁸ See Tracy Robinson, *Handling Venison Safely During Harvesting and Preparation Key to Stemming Foodborne Illnesses*, OHIO STATE UNIV. (Sept. 27, 2019, 5:39 PM), <https://u.osu.edu/chowline/2019/09/27/handling-venison-safely-during-harvesting-and-preparation-key-to-stemming-foodborne-illnesses/>.

⁶⁹ *Inspection in the Meat Plant*, THEMEATWEAT.COM (Apr. 12, 2017), <https://meatscience.org/TheMeatWeEat/topics/processed-meats/article/2017/04/12/inspection-in-the-meat-plant>.

⁷⁰ *Id.*

⁷¹ *Id.*

⁷² *Deer Hunters, Be Sure Downed Animal Was Healthy Before Eating Venison*, PENN STATE NEWS (Nov. 22, 2013), <https://news.psu.edu/story/296308/2013/11/22/deer-hunters-be-sure-downed-animal-was-healthy-eating-venison>.

⁷³ *Creutzfeldt-Jakob Disease*, MAYO CLINIC (Oct. 4, 2018), <https://www.mayoclinic.org/diseases-conditions/creutzfeldt-jakob-disease/symptoms-causes/syc-20371226>.

⁷⁴ *Id.*

⁷⁵ *Id.*; MILLER ET AL., *supra* note 55.

that CWD can spread to primates through consumption of infected venison.⁷⁶ Thus, more research is needed regarding CWD and possible transmission to humans through the consumption of infected venison.

Third, several other types of bacterial infections can be transmitted from cervids to humans. The Centers for Disease Control has confirmed that tuberculosis can be contracted by humans after contact with an infected deer.⁷⁷ The cause of this transmission is likely the inhalation of infectious pathogens while the deer meat is being processed.⁷⁸ And while bovine tB is one of the less common strains in humans, increased up-close interactions with cervids could result in more cases being diagnosed.⁷⁹ The symptoms of bovine tB in humans include severe cough, fever, weight loss, and chest pain.⁸⁰ Notably, bovine tB is resistant to pyrazinamide—the antibiotic most commonly used to treat other strains of the tuberculosis bacteria.⁸¹

Other diseases that can be transmitted from cervids to humans include Q fever, leptospirosis,⁸² and brucellosis.⁸³ Brucellosis can be contracted by humans if infected biological materials come in contact with their eyes, nose, mouth, or skin.⁸⁴ Symptoms of brucellosis “include fever, chills, sweating, headache, low appetite, fatigue, and joint or muscle pain.”⁸⁵

C. *What the Relevant Agencies Do*

In recent years, there has been a shift toward involving departments of agriculture in the regulation of alternative livestock industries.⁸⁶ This is in part due to lobbying efforts by the industry, motivated by the knowledge that

⁷⁶ Sam Brasch, *Concerns Grow that Infections from “Zombie Deer” Meat Can Jump to Humans*, NPR (Jan. 17, 2018, 1:25 PM), <https://www.npr.org/sections/thesalt/2018/01/17/578582087/concerns-grow-that-infected-zombie-deer-meat-can-jump-to-humans>.

⁷⁷ Scottie Andrew, *Humans Can Get Tuberculosis from Deer, the CDC Says*, CNN HEALTH (Sept. 29, 2019, 3:26 PM), <https://www.cnn.com/2019/09/29/health/deer-tuberculosis-cdc-trnd/index.html>.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² For more information on Q fever and leptospirosis, see *Zoonoses Associated with Deer*, WASH. STATE UNIV., <https://iacuc.wsu.edu/zoonoses-associated-with-deer/> (last visited Oct. 9, 2020).

⁸³ *Hunters Risks*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/brucellosis/exposure/hunters.html> (last visited Oct. 9, 2020).

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ Opsahl, *supra* note 22, at 1076.

departments of agriculture monitor CWD less closely and are less concerned with the implications to wildlife.⁸⁷ In line with this trend, in 2015, West Virginia Senate Bill 237 transferred regulation of captive cervid facilities from the West Virginia Division of Natural Resources (“WVDNR”) to the West Virginia Department of Agriculture (“WVDA”).⁸⁸ Under West Virginia’s current regulatory scheme, the WVDA is solely responsible for regulating captive cervid farming.⁸⁹ Only seven other states currently grant their departments of agriculture exclusive jurisdiction over the industry, and eight states currently entrust regulation to their equivalent of the division of natural resources.⁹⁰

However, a vast majority of other states rely on a hybrid system—where the department of agriculture and division of natural resources work together to regulate CCOs.⁹¹ These states have broken down the captive cervid industry into individual facets and have charged the two agencies with regulating the industry based on these different subsets.⁹² There is also movement toward this more cooperative system at the federal level.⁹³ America’s Conservation Enhancement Act would create a Chronic Wasting Disease Task Force within the United States Fish and Wildlife Service.⁹⁴ The task force would be composed of representatives from both the United States Fish and Wildlife Service and the USDA, and it would be tasked with making recommendations and conducting research on CWD.⁹⁵ West Virginia Commissioner of Agriculture Kent Leonhardt testified before the senate committee considering the bill and supported the creation of the task force.⁹⁶

The WVDA and the WVDNR have very different missions and areas of expertise, and both agencies’ bailiwick is associated with areas of captive cervid farming. Considering the serious impacts that captive cervid farming could have on West Virginia, the legislature should take every precaution to ensure the careful and effective regulation of the industry.

⁸⁷ *Id.*

⁸⁸ Lawrence, *supra* note 37.

⁸⁹ See W. VA. CODE ANN. § 19-2H-1 (West 2020).

⁹⁰ *Chronic Wasting Disease and Cervidae Regulations in North America*, MICH. DEP’T OF NAT. RES. (Oct. 2018), https://gfp.sd.gov/userdocs/docs/CWDRegstableStateProvince_Fall18.pdf.

⁹¹ *Id.*

⁹² *See id.*

⁹³ S. 3051, 116th Cong. § 104 (2019).

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ Kent A. Leonhardt, *CWD Research Funding Long Overdue*, W. VA. DEP’T OF AGRIC., <https://agriculture.wv.gov/2020/02/02/cwd-research-funding-long-overdue/> (last visited Oct. 9, 2020).

1. The West Virginia Division of Natural Resources

The mission of the WVDNR is “to provide and administer a long-range comprehensive program for the exploration, conservation, development, protection, enjoyment and use of the natural resources of the State of West Virginia.”⁹⁷ The WVDNR is further broken down into sections.⁹⁸ One section of the division is charged with enforcement of laws and regulations, and the other section is charged with regulating wildlife resources.⁹⁹

The official policy of the State of West Virginia regarding wildlife is “that the wildlife resources . . . [should] be protected for the use and enjoyment of all the citizens of [the] State.”¹⁰⁰ Further, all wildlife species are to be protected for “values which may be either intrinsic or ecological or of benefit to man.”¹⁰¹ These benefits include (1) hunting, fishing, and other recreation; (2) economic contributions that are in the best interest of West Virginia; and (3) scientific and educational uses.¹⁰² And while it is important to note that captive cervids are not considered “wildlife” in West Virginia,¹⁰³ white-tailed deer as a whole are a natural resource of the state.¹⁰⁴

Moreover, the under-regulation of CCOs could have major effects on wild white-tailed herds and, as a result, on West Virginia’s economy. Hunting is a major industry in West Virginia. On average, the state sells 15,000 non-resident hunting licenses per hunting season.¹⁰⁵ In 2016, the WVDNR sold 852,909 hunting and fishing licenses.¹⁰⁶ These sales generated \$14,750,726 in license revenue.¹⁰⁷ In total, hunting contributes about \$500 million each year to West Virginia’s economy.¹⁰⁸ Hunting is also responsible for about 5,400 full- and part-

⁹⁷ *Wildlife Diversity Unit, the Endangered Species Program and Natural Heritage Program*, W. VA. DIV. OF NAT. RES. WILDLIFE RES., <http://www.wvdnr.gov/Wildlife/Wildlife.shtm> (last visited Oct. 9, 2020).

⁹⁸ W. VA. CODE ANN. § 20-1-14 (West 2020).

⁹⁹ *Id.*

¹⁰⁰ *Id.* § 20-2-1.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.* § 20-1-2.

¹⁰⁴ *See Fundamentals of Deer Management*, W. VA. DIV. OF NAT. RES. WILDLIFE RES., <http://www.wvdnr.gov/hunting/funddeerman.shtm> (last visited Oct. 9, 2020).

¹⁰⁵ Charles Young, *Buck Season Brings Boost to Mountain State’s Economy*, WVNEWS (Nov. 20, 2018), https://www.wvnews.com/buck-season-brings-boost-to-mountain-state-s-economy/article_fd7ec947-6eb7-5451-91f2-7c77c26f56f7.html.

¹⁰⁶ *West Virginia Division of Natural Resources Annual Report 2016–2017*, W. VA. DIV. OF NAT. RES. (Nov. 6, 2017), https://www.wvdnr.gov/admin/PDF/DNRAnnualReport_2017.pdf.

¹⁰⁷ *Id.*

¹⁰⁸ Young, *supra* note 105.

time jobs—accounting for about \$154 million in salaries and wages.¹⁰⁹ And CCOs have their own way of contributing to the tourism and hunting industry of West Virginia. Commercial hunting operations are becoming more and more popular.¹¹⁰ These are operations that sell hunts to consumers.¹¹¹ Through selective breeding and feeding, these operations are able to produce what hunters consider “trophy bucks.”¹¹² However, commercial hunting operations often involve selectively breeding and hunting captive cervids and, thus, implicate ethical concerns not discussed in this Note.¹¹³

2. The West Virginia Department of Agriculture

The mission of the WVDA is “to protect plant, animal and human health and the state’s food supply . . . ; to promote food safety and protect consumers through educational and regulatory programs; and to foster economic growth by promoting West Virginia agriculture and agribusinesses throughout the state and abroad.”¹¹⁴ This mission encompasses both protecting human health and encouraging the development and expansion of agricultural industries.

The WVDA currently has an Animal Health Division that is devoted to looking for signs of disease in animals at fairs, auctions, and during transportation.¹¹⁵ This division is also charged with regulating transportation of livestock, implementing quarantines, and collecting and testing samples for infectious disease.¹¹⁶

In addition to the Animal Health Division, the WVDA also has a Meat and Poultry Inspection Division.¹¹⁷ This division inspects meat processing and distribution facilities, as well as live animals and carcasses.¹¹⁸ The Meat and

¹⁰⁹ Shawnee Moran, *DNR: Economic Impact from Hunter Spending in West Virginia Is Just Over \$500 Million a Year*, TIMES W. VIRGINIAN (Nov. 22, 2015), https://www.timeswv.com/news/dnr-economic-impact-from-hunter-spending-in-west-virginia-is/article_f90efcdc-90fb-11e5-aef8-8f659bf3faaa.html.

¹¹⁰ Bies, *supra* note 23.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ For information about the ethical implications of commercial hunting operations, see Laura J. Ireland, *Canning Canned Hunts: Using State and Federal Legislation To Eliminate the Unethical Practice of Canned “Hunting”*, 8 ANIMAL L. 223 (2002).

¹¹⁴ *West Virginia*, S.U.S. TRADE ASS’N, <https://www.susta.org/whoware/memberstates/westvirginia/> (last visited Oct. 9, 2020).

¹¹⁵ *Animal Health Division*, W. VA. DEP’T OF AGRIC., <https://agriculture.wv.gov/divisions/animal-health/> (last visited Oct. 3, 2020).

¹¹⁶ *Id.*

¹¹⁷ *Meat Poultry Inspection Division*, W. VA. DEP’T OF AGRIC., <https://agriculture.wv.gov/divisions/meat-poultry-inspection/> (last visited Sept. 23, 2020).

¹¹⁸ *Id.*

Poultry Inspection Division ensures that facilities are sanitary and use humane methods of slaughter.¹¹⁹ In fact, the Meat and Poultry Division currently regulates deer processors—businesses that butcher deer harvested by hunters.¹²⁰

In addition to the WVDA's involvement in regulating CCOs to protect human health, it should play a substantial part in the promotion and advancement of the captive cervid industry. CCOs developed in response to the market demand for venison.¹²¹ The United States began importing venison from New Zealand in 1975.¹²² In 2004, approximately 85% of all venison served in restaurants in the United States was imported from New Zealand.¹²³ CCOs in West Virginia are now able to sell venison and other deer products across the country.¹²⁴ Thus, regulation of CCOs should not only aim to protect West Virginia's traditional industries but also to foster this new one. This ties in with the WVDA's mission to foster economic growth and promote West Virginia agribusiness.¹²⁵

Because CCOs pose a potential risk to human health and offer an opportunity for economic growth, the WVDA should be involved in their regulation.

III. THE HYBRID APPROACH

Because of the nature of CCOs, there is a need for two broad categories of regulation. First, there need to be regulations regarding the production of cervid products: how and where cervids raised for venison will be slaughtered, how venison intended for human consumption is inspected, and how deer products are labeled and marketed. These regulations should ensure that cervids are treated humanely and that cervid products do not pose a threat to human health or wellness. This category of regulation relates more closely to the WVDA's mission of ensuring food safety, consumer wellness, and the prosperity of West Virginia agribusiness.

The second large category is regulations intended to protect animal health. The health of both captive cervids and wild cervid populations is crucial, so these regulations should address protecting both populations. To protect captive cervids, regulations should address spacing; herd management and surveillance; and how captive cervids are bought, sold, and transported.

¹¹⁹ *Id.*

¹²⁰ *Application for License To Operate a Commercial Slaughter and/or Meat and Poultry Processing Establishment*, W. VA. DEP'T OF AGRIC., <https://agriculture.wv.gov/wp-content/uploads/2020/09/Commercial-Processing.pdf> (last visited Oct. 9, 2020).

¹²¹ W. Va. Dep't of Agric., *supra* note 15.

¹²² *New Zealand Deer Industry History*, MOUNTAIN RIVER VENISON, <https://www.mountainrivervenison.co.nz/nz-deer-industry-history> (last visited Oct. 9, 2020).

¹²³ *Id.*

¹²⁴ *See* W. Va. Dep't of Agric., *supra* note 15.

¹²⁵ *West Virginia*, *supra* note 114.

Protecting wild deer herds involves ensuring (1) captive cervids cannot escape enclosures; (2) wild cervids cannot enter enclosures; and (3) captive herds are healthy in case of ingress or egress. These regulations relate closely to the WVDNR's mission of protecting West Virginia wildlife and natural resources.

Finally, because this Note recommends a hybrid approach to regulating CCOs, it also recommends inspection and enforcement be divided between the agencies. Considering the use of hybrid approaches to regulating CCOs in other states can also be informative. As such, agencies and regulations utilized by Kentucky to regulate the captive cervid industry will also be considered.

This Note recommends the following breakdown of the regulatory scheme:

Topic	Agency
Cervid slaughter and venison production	WVDA
Production and inspection of cervid products	WVDA
Animal identification	WVDA
Facility standards	WVDNR
Herd management programs	WVDNR with assistance from the WVDA
Transportation and importation from other operations	WVDNR
Inspections and enforcement	WVDNR and WVDA

A. Regulations Relating to the Production of Animal Commodities

Deer products can be broken down into two categories: venison intended for human consumption and all other deer products.¹²⁶ Because venison consumption could pose serious risks to human health if it is not properly inspected and certified, its regulation should be delegated to the WVDA. The WVDA is also responsible for grading "agricultural products"¹²⁷ and should therefore be charged with regulating the production and sale of other commodities produced by CCOs. Additionally, animal identification is an area of expertise of the WVDA. The WVDA currently has systems and regulations in place for the identification of livestock and cattle.¹²⁸ The West Virginia

¹²⁶ Other cervid products include antlers, hide, and doe estrus. See Brian Cahill, Marida Favia del Core, Nancy Green, Jerry Haigh et al., *General Information About Deer Farming*, N. AM. DEER FARMERS ASS'N, <https://nadefa.org/2019/02/13/general-information-about-deer-farming/> (last visited Oct. 9, 2020).

¹²⁷ W. VA. CODE ANN. § 19-2-5 (West 2020).

¹²⁸ *WVDA/USDA Cattle Identification Requirement Summary*, W.VA. DEP'T OF AGRIC. (May 13, 2013), https://agriculture.wv.gov/wp-content/uploads/2020/07/Poster_ADT.pdf.

Legislature's capitalizing on this expertise and already existing regulatory scheme would be resourceful.

First, the WVDA should regulate slaughter of cervids and the production of venison for human consumption. The WVDA currently has a division devoted to inspecting slaughter facilities and meat products.¹²⁹ Venison slaughtered for human consumption could pose serious risks to human health if the processing is not properly regulated or if the meat is not properly inspected.¹³⁰ The WVDA currently has regulations that apply both to operations that process wild deer after harvest and to captive cervid operations that assist customers in processing after a purchased hunt.¹³¹ Maintaining these requirements is an effective way to protect human health.

Another consideration for production of venison is ensuring humane slaughter. Neither the West Virginia Code nor the West Virginia Code of State Rules currently speaks to the humane slaughter of captive cervids.¹³² But West Virginia Code Section 19-2E-3 charges the WVDA with ensuring humane slaughter of "livestock."¹³³ And while captive cervids do not currently fall into that definition,¹³⁴ and this Note does not argue they should, expanding this statute would be a relatively simple solution.

Moreover, the Commissioner of Agriculture is expressly permitted to hire and certify inspectors to administer laws and requirements relating to meat inspection and slaughter.¹³⁵ In fact, the necessary operations and departments already exist in one form or another—making it both practical and reasonable to leave the regulation of these aspects of the captive cervid industry with the WVDA.

Second, much like the inspection of venison, the WVDA should be charged with inspecting other deer products. The West Virginia Commissioner of Agriculture is charged with inspecting and grading agricultural products to ensure quality.¹³⁶ Cervid products, such as antlers, hide, and estrus,¹³⁷ clearly fit

¹²⁹ *Meat Poultry Inspection Division*, W. VA. DEP'T OF AGRIC., <https://agriculture.wv.gov/divisions/meat-poultry-inspection/> (last visited Oct. 10, 2020).

¹³⁰ *State Health Agency Urges Safety When Processing, Cooking, and Eating Wild Game*, WIS. DEP'T OF HEALTH SERVS. (Nov. 16, 2018), <https://www.dhs.wisconsin.gov/news/releases/111618.htm>.

¹³¹ W. VA. CODE ANN. § 19-2b-4. The current regulatory scheme establishes a licensing system, gives requirements for maintenance of records, and gives the WVDA the right to perform inspections. *Id.* §§ 19-2b-4 to -6.

¹³² *See* W. VA. CODE ANN. § 19-2h; W. VA. CODE R. § 61-34 (2020).

¹³³ W. VA. CODE ANN. § 19-2E-2.

¹³⁴ *Id.* § 19-2E-3.

¹³⁵ *Id.* §§ 19-2E-3 to -4.

¹³⁶ *Id.* § 19-2-5.

¹³⁷ Doe estrus is urine collected while the doe is in her estrus cycle, and it is often used by hunters during the rut to attract bucks. *See* Doug Howlett, *When and What Deer Scent To Use*,

the definition of agricultural products: “agricultural products include . . . products derived from the business of farming.”¹³⁸ Moreover, West Virginia Code Section 19-2-9 grants the Commissioner the ability to hire, train, and certify inspectors and graders to carry out this function.¹³⁹ And while the WVDNR is authorized to hire, train, and certify inspectors, this authority is limited to enforcing laws and regulations that protect West Virginia’s Natural Resources—not grading and inspecting these kinds of consumer products.¹⁴⁰ Thus, the responsibility to regulate and inspect deer products should remain with the WVDA.

Third, the WVDA is best equipped to regulate animal identification. The WVDA currently requires all captive cervids be marked with a unique number that is visible and identifiable.¹⁴¹ The WVDA is also specifically well situated to maintain this function because of its experience in maintaining identification requirements for other species of farmed animals.¹⁴² Expansion of this regulatory scheme will take advantage of the expertise of the WVDA.

Regulating, inspecting, and grading cervid products and setting animal identification standards relate closely to the WVDA’s mission of ensuring food safety, consumer protection, and agribusiness success. Additionally, the necessary systems to regulate these aspects of CCOs and ensure compliance are already in place in the WVDA’s organization. For these reasons, jurisdiction over these facets of the industry should remain with the WVDA.

B. Regulations Relating to Animal Health

Regulation of animal health differs substantially from the regulation of commodity production because it requires a much more intimate knowledge of the specific needs of cervids. And while the WVDA’s expertise lies in the regulation and development of farms and agricultural products, the WVDNR’s expertise lies in the regulation and protection of West Virginia’s wildlife species—including white-tailed deer.¹⁴³ Captive cervids, while not free to roam,

NRA AM. HUNTER (Aug. 24, 2011), <https://www.americanhunter.org/articles/2011/8/24/when-and-what-deer-scent-to-use/>.

¹³⁸ W. VA. CODE ANN. § 19-2-1.

¹³⁹ *Id.* § 19-2-9.

¹⁴⁰ *See* W. VA. CODE ANN. Ch. 20.

¹⁴¹ W. VA. CODE R. § 61-34-9.1 (2020). This requirement is similar to that imposed by 301 KY. ADMIN. REGS. 2:083.4 (2020). However, the Commissioner of Agriculture may exempt cervids in commercial shooting preserves from the identification requirement. W. VA. CODE R. § 61-34-9.2. To be exempt, the facility must annually provide either 30 cervids or 10% of the harvested cervids (whichever is less) for CWD sampling. *Id.*

¹⁴² *WVDA/USDA Cattle Identification Requirement Summary*, *supra* note 128.

¹⁴³ *White-Tailed Deer Management Plan*, W. VA. DIV. OF NAT. RES., <https://wvdnr.gov/hunting/DeerResearch.shtm> (last visited Sept. 25, 2020).

are in no sense domestic.¹⁴⁴ Further, the regulation of captive cervids can have serious impacts on the health of wild cervid herds.¹⁴⁵

1. Facility Standards

One of the most crucial facets of ensuring the health and safety of both wild and captive cervids is setting proper standards for the operation's facilities.¹⁴⁶ Standards for "flushing" wild cervids out of an enclosure before captive cervids are introduced ensures no wild deer are caught in the pen.¹⁴⁷ Adequate fencing guarantees that captive cervids cannot escape and wild deer cannot enter the enclosure.¹⁴⁸ Minimum spacing requirements protect the farmed deer from overcrowding that can damage the land as a result of over browsing and increase the likelihood that disease will be transmitted from one individual animal to another.¹⁴⁹ Because the creation and implementation of regulations that address each of these topics requires an understanding of cervid behavior and biology, the West Virginia Legislature should delegate the regulation of this aspect of the captive cervid industry to the WVDNR.¹⁵⁰ In fact, in Kentucky—which like a majority of states, employs a hybrid approach to regulating CCOs—the Department of Fish & Wildlife Resources ("KDFWR") regulates the physical facilities of captive cervid farms. Accordingly, Kentucky's regulations are generally more extensive and specific.¹⁵¹ The two main aspects

¹⁴⁴ See Cahill et al., *supra* note 126.

¹⁴⁵ *Id.*

¹⁴⁶ Opsahl, *supra* note 22, at 1059.

¹⁴⁷ W. VA. CODE ANN. § 19-2H-4(b)(4) (West 2020).

¹⁴⁸ Cahill et al., *supra* note 126.

¹⁴⁹ Opsahl, *supra* note 22.

¹⁵⁰ Neither Kentucky nor West Virginia have regulations outlining the process that must be utilized to "flush" wild cervids out of the area. See W. Va. Code R. § 61 (2020); 301 KY. ADMIN. REGS. 2 (2020). However, the application for a captive cervid operating license in West Virginia requires a description of how the applicant proposes to flush wild deer from the enclosure and to verify total removal. *Application for Captive Cervid Facility License*, W. VA. DEP'T OF AGRIC., <https://agriculture.wv.gov/wp-content/uploads/2020/05/Cervid-Forms.pdf> (lasted visited Oct. 3, 2020).

¹⁵¹ There are also many similarities between the fencing requirements of Kentucky and West Virginia. Both states require that the fence be a minimum of eight feet in height. 301 KY. ADMIN. REGS. 2:083.2(1)(a); W. VA. CODE R. § 61-34-8.1.c.2. In Kentucky, fences must be made of 12.5-gauge woven wire, 14.5-gauge high-tensile woven wire, wood planks, or chain link. 301 KY. ADMIN. REGS. 2:083.2(1)(a). West Virginia Fencing must be made of New Zealand style deer fence or its equivalent and made of a minimum of 12.5-gauge high tensile woven wire with locking knots and a maximum of six inch spacing. W. VA. CODE R. §§ 61-34-8.1.c.1 to -8.1.c.3. Both states have similar requirements for spacing, bracing, and sizing fence posts. For more information, see *id.* § 61-34-8 and 301 KY. ADMIN. REGS. 2:083.2.

of the physical facility that require regulation are fencing requirements and spacing minimums.¹⁵²

First, employing proper fencing in the first place and ensuring that the fencing is well maintained is essential to protecting wild cervids.¹⁵³ As such, the more specific and well-tailored regulations are to cervids in particular, the more protection they provide. A comparison between West Virginia's fencing regulations and Kentucky's requirements illustrates how similar regulations, aiming to accomplish the same goal, can vary significantly in specificity.

West Virginia's rules require that trees which may threaten the fence be removed or, alternatively, that the fence be constructed in such a way to prevent the breach from the fall of a tree.¹⁵⁴ In contrast, the KDFWR requires that any lumber with a height greater than the distance from the fence on the operator's property must be felled.¹⁵⁵ Similarly, where West Virginia requires gates be "of sufficient strength and construction"¹⁵⁶ and have functional locks,¹⁵⁷ Kentucky mandates (1) all parts of the fence, including gates, swinging water gaps, and stream crossings, be constructed to meet or exceed the standards of the fence;¹⁵⁸ (2) that gates be equipped with at least one latching and locking device;¹⁵⁹ and (3) that swinging water gaps and stream crossings be adequate to prevent ingress and egress during high water.¹⁶⁰ West Virginia requires five feet of clearance around the fence for inspection,¹⁶¹ while Kentucky requires six.¹⁶² It is implied in the West Virginia regulations that the facility operator must maintain the fence, whereas the KDFWR explicitly commands that the operator ensure that the fence is continuously maintained in a game-proof condition.¹⁶³

¹⁵² *Captive Cervid Facility Inspection Form*, K.Y. DEP'T OF FISHING & WILDLIFE RES., <https://fw.ky.gov/Wildlife/Documents/CaptiveCervidInspectionForm.pdf> (last visited Sept. 25, 2020).

¹⁵³ Cahill et al., *supra* note 126.

¹⁵⁴ W. VA. CODE R. § 61-34-8.1.c.8.

¹⁵⁵ 301 KY. ADMIN. REGS. 2:083.2(2)(c).

¹⁵⁶ W. VA. CODE R. § 61-34-8.1.c.9.

¹⁵⁷ *Id.* § 61-34-8.1.c.10.

¹⁵⁸ 301 KY. ADMIN. REGS. 2:083.2(6)–(7).

¹⁵⁹ *Id.* 2:083.2(6).

¹⁶⁰ *Id.* 2:083.2(7). West Virginia also has a regulation requiring water courses, gullies, and ditches to be properly fenced to prevent escape. W. VA. CODE R. § 61-34-8.1.c.13.

¹⁶¹ W. VA. CODE R. § 61-34-8.1.a.6.

¹⁶² 301 KY. ADMIN. REGS. 2:083.2(2)(a)–(b). However, an exception to this requirement exists if the fence is a property boundary fence. Then six feet of clearance is required on the inside of the enclosure. *Id.*

¹⁶³ *Id.* 2:083.2(9).

Second, adequate spacing is important in CCOs. Like fencing, the KDFWR regulates spacing.¹⁶⁴ Unlike West Virginia's requirement that sets one standard for all cervids,¹⁶⁵ Kentucky has two standards: one for species whose adult weight is less than 400 lbs¹⁶⁶ and one for species whose adult weight is greater than 400 lbs.¹⁶⁷ This distinction addresses the fact that requirements for different species vary significantly. For instance, an axis deer—the smallest species explicitly listed in West Virginia's definition of cervid, weighing in at an average mature male weight of 150–250 lbs¹⁶⁸—and a moose—the largest cervid listed in West Virginia's definition, with mature males weighing up to 1,800 lbs¹⁶⁹—will have very different spacing requirements.

While Kentucky's dual standard is beneficial for CCOs because it could allow producers with limited space to farm smaller species of cervids, it is inferior to West Virginia's regulation in one way: Kentucky's spacing requirement increases linearly.¹⁷⁰ In comparison, West Virginia requires a minimum enclosure size of 5,000 square feet and a 25% increase in size for each additional animal.¹⁷¹ Therefore, despite West Virginia's monotonous regulation, it still results in more space for cervids than Kentucky's dual approach.¹⁷² A combination of these two approaches would best balance the need to keep space requirements reasonable and to ensure captive cervids are cared for properly.

Addressing the vast differences in need between different species of the Cervidae family ensures (1) that facilities are not required to meet the spacing requirements of moose when they are raising smaller species and (2) that moose are not subjected to the disservice of being restrained by spacing requirements drafted with smaller species in mind. And using an exponential model more accurately reflects the increased need for space and resources as the number of

¹⁶⁴ *Id.* 2:083.6.

¹⁶⁵ W. VA. CODE R. § 61-34-8.1.d.

¹⁶⁶ 301 KY. ADMIN. REGS. 2:083.6(1).

¹⁶⁷ *Id.* 2:083.6(2).

¹⁶⁸ *Axis Deer*, TEX. INVASIVE SPECIES INST., <http://www.tsusinvasives.org/home/database/Axis-axis> (last visited Oct. 10, 2020).

¹⁶⁹ *Moose*, NAT'L GEOGRAPHIC, <https://www.nationalgeographic.com/animals/mammals/m/moose/> (last visited Oct. 10, 2020).

¹⁷⁰ Kentucky requires an additional 1,000 square feet for each individual under 400 lbs and 1,500 square feet for each individual over 400 lbs. 301 KY. ADMIN. REGS. 2:083.6.

¹⁷¹ W. VA. CODE R. § 61-34-8.1.d (2020).

¹⁷² Under West Virginia's system, an enclosure with 5 cervids—regardless of the size—must be a minimum of 12,207 square feet. *See id.* An enclosure for five cervids of a species that weighs over 400 lbs in Kentucky would be 7,500 square feet. *See* 301 KY. ADMIN. REGS. 2:083.6. Another flaw in Kentucky's regulation is the lack of clarity in the standard. It is unclear from the language of the regulation (1) if species whose *average* adult weight is less than 400 lbs are subject to the smaller space requirement or (2) if species whose adult weight *has never been documented to exceed* 400 lbs are subject to the 1,000 square foot requirement.

animals in the enclosure increases. One important consideration when drafting spacing requirements that neither state's regulations takes into account is the differences in behavior between different species. While some species like elk will form large herds,¹⁷³ others are less social, often living alone or in small groups.¹⁷⁴ These differences could have substantial impacts on the spacing requirements for different species.

Therefore, because the regulation of spacing and fencing should involve a more thought-out application of biological principles, it relates more to the WVDNR's mission and expertise and should be regulated by the WVDNR.

2. Herd Management and Surveillance

Another major source of protection for both captive and wild herds is herd management and surveillance programs. The guidelines for these voluntary programs¹⁷⁵ are outline by the USDA.¹⁷⁶ Herds can earn USDA accreditations in bovine tB, brucellosis, and CWD.¹⁷⁷ Some states also operate independent CWD herd monitoring programs, many of which meet or exceed the standards imposed by the USDA CWD Herd Certification Program (the "USDA HCP").¹⁷⁸

The USDA HCP requirements include standards for fencing, animal identification, animal inventories, and animal testing.¹⁷⁹ After each year that participating herds meet program standards, the herd advances in status.¹⁸⁰ After five years of successful surveillance, the herd is certified "low risk."¹⁸¹ However, the requirements for each accreditation vary. Earning these accreditations has several benefits. Most states prohibit importation of cervids from facilities that do not have these certifications, and in some cases, states prohibit movement of cervids through the state unless the cervid is from a certified herd.¹⁸²

¹⁷³ *Elk*, NAT'L GEOGRAPHIC, <https://www.nationalgeographic.com/animals/mammals/e/elk/> (last visited Oct. 10, 2020).

¹⁷⁴ David H. Hirth, *Social Behavior of White-Tailed Deer in Relation to Habitat*, 53 WILDLIFE MONOGRAPHS 3, 13–15 (1977).

¹⁷⁵ While the programs are voluntary, participation is required to move cervids among the states. *Cervid Health Program*, U.S. DEP'T OF AGRIC., <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/cervid> (last visited Oct. 10, 2020).

¹⁷⁶ *Id.*

¹⁷⁷ *Id.*

¹⁷⁸ *Chronic Wasting Disease Program Standards*, U.S. DEP'T OF AGRIC., https://www.aphis.usda.gov/animal_health/animal_diseases/cwd/downloads/cwd_program_standards.pdf (last visited Sept. 27, 2020).

¹⁷⁹ *Id.* For more detailed on the USDA HCP, see 9 C.F.R. §§ 55–81 (2020).

¹⁸⁰ *Cervid Health Program*, *supra* note 175.

¹⁸¹ *Id.*

¹⁸² *Chronic Wasting Disease and Regulations in North America*, *supra* note 90.

West Virginia requires herds to be enrolled in the West Virginia CWD Herd Certification Program (“WV HCP”)—this program meets the standards of the USDA HCP.¹⁸³ The WV HCP requires that facilities in West Virginia only accept cervids from herds that meet the USDA HCP and bovine tB herd accreditation program requirements.¹⁸⁴ Moreover, West Virginia facilities may only receive animals sourced from herds if the transfer is from a herd that has had ongoing, adequate CWD surveillance for 60 months.¹⁸⁵

The WV HCP also sets out testing and reporting requirements for participating herds. Any cervid over 14 months old that dies or is slaughtered must be tested for bovine tB and brucellosis by a licensed veterinarian or inspector.¹⁸⁶ Additionally, all cervid deaths from unknown causes must be reported to the WVDA within 24 hours.¹⁸⁷ The animal must then be submitted to a licensed veterinarian to determine cause of death and for CWD testing.¹⁸⁸ The CCO must notify the WVDA of CWD test result within five days of receiving the result,¹⁸⁹ but a positive CWD result must be immediately reported to the state veterinarian “by the most expedient means possible.”¹⁹⁰

To maintain compliance with the WV HCP, CCOs must also have a West Virginia licensed and accredited veterinarian perform an annual visual

¹⁸³ W. VA. CODE R. § 61-34-11.2 (2020).

¹⁸⁴ *Id.* § 61-34-11.4. The bovine tB herd accreditation program requires participating herds to test all cervids over 12 months of age. *Cervids: Bovine Tuberculosis (bTB) in Cervids*, U.S. DEP’T OF AGRIC., <https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/cervid/cervids-bovine-tb> (July 6, 2020). All tested cervids must test negative to bovine tB twice in nine to 15-month intervals. *Id.* Additionally, cervids added to the herd not bred by the facility must be tested on the same schedule regardless of age. *Id.* If herds pass these standards, the herd can be certified bovine tB free for 33 months until retesting is required. *Id.* For more information about the USDA tB certification program, see 9 C.F.R. § 77.

¹⁸⁵ W. VA. CODE R. § 61-34-11.5.

¹⁸⁶ *Id.* § 61-34-11.10. Additionally, all test results must be made available to the WVDA within five days of receiving results, and the CCO is responsible for all costs associated with testing. *Id.*

¹⁸⁷ *Id.* § 61-34-11.9.

¹⁸⁸ *Id.* Only West Virginia licensed and accredited veterinarians may perform testing on captive cervids. *Id.* § 61-34-11.16. And all samples for CWD testing must be collected by trained WVDA personnel, licensed veterinarians, or other officials. *Id.* § 61-34-11.17.

¹⁸⁹ *Id.* § 61-34-11.11.

¹⁹⁰ *Id.* § 61-34-11.11.a. In addition to setting out testing requirements, the program also sets out quarantine procedures in the case of a positive result. *Id.* § 61-34-11.12. If any farmed cervid tests positive for any contagious or infectious disease, a quarantine will be put in effect. All quarantines are conducted at the discretion of the agency. *Id.* Investigations to identify herds linked by animal movements are also conducted, and the expenses associated with the quarantine and investigation are the responsibility of the CCO. *Id.* §§ 61-34-11.12 to 11.13.

examination of each captive cervid.¹⁹¹ The veterinarian must take inventory and create a report that must be submitted to the WVDA.¹⁹²

Finally, West Virginia CCOs must “make every effort to prevent escapes of animals from the captive cervid facility.”¹⁹³ If a captive cervid does escape, a report must be made to the WVDA’s Animal Health Division within eight hours or upon the discovery of the escape, whichever is sooner.¹⁹⁴ Captive cervids that escape must be “dispatched” by WVDA or WVDNR personnel.¹⁹⁵ However, after the cervid is secured, the Commissioner of Agriculture and State Veterinarian may determine whether the escaped cervid presents a health risk to the public, other captive cervids, or wildlife, and based on that determination, the cervid may not be destroyed at the WVDA’s discretion.¹⁹⁶ Samples for CWD testing must be collected from escaped cervids that are destroyed.¹⁹⁷

Similar to West Virginia, the Kentucky Office of the State Veterinarian administers the herd management program.¹⁹⁸ However, Kentucky offers two monitoring programs: the CWD Herd Certification Program (the “KY HCP”) and the CWD Herd Monitoring Program (the “KY HMP”).¹⁹⁹ Enrollment in either the HCP or HMP requires annual renewal.²⁰⁰

The KY HCP is the program for herds intended only for breeding and propagating.²⁰¹ These herds are subject to higher standards than KY HMP herds and must meet all USDA HCP requirements in addition to the requirements of the Kentucky Office of the State Veterinarian.²⁰²

The KY HMP is a program designed specifically for herds comprised of animals intended only for slaughter or harvest—animals that once released into the enclosure will never leave the facility.²⁰³ These herds do not meet the requirements of the USDA HCP and, as such, are not eligible for certified

¹⁹¹ *Id.* § 61-34-11.15.

¹⁹² *Id.* The inventory completed by the licensed veterinarian must be submitted to the WVDA within 30 days. *Id.* The health report must be submitted to the department within 60 days of its completion. *Id.*

¹⁹³ *Id.* § 61-34-12.1.

¹⁹⁴ *Id.*

¹⁹⁵ *Id.* § 61-34-12.2.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.* § 61-34-12.3.

¹⁹⁸ 302 KY. ADMIN. REGS. 20:066.2 (2020).

¹⁹⁹ *Id.*

²⁰⁰ *Id.*

²⁰¹ *Id.* 20:066.3(a).

²⁰² *Id.*

²⁰³ *Id.* 20:066.6(2). CCOs enrolled in the KY HMP are prohibited from moving a live cervid off the facility. *Id.*

status.²⁰⁴ However, all cervids entering a KY HMP facility must still originate from a USDA CWD certified herd.²⁰⁵

Through the KY HCP and the KY HMP, the Office of the State Veterinarian sets out identification, reporting, and testing requirements. First, all animals that are 12 months of age and older in Kentucky herds must have at least two forms of animal identification:²⁰⁶ official identification and visual identification, such as a flop tag.²⁰⁷ Any observation of clinical signs of CWD must be reported to the herd's veterinarian within 24 hours.²⁰⁸

Second, the CCO must also maintain and provide health records to the State Veterinarian or Animal and Plant Health Inspection Service representative.²⁰⁹ To enroll a herd in the KY HCP, the CCO must conduct a verified²¹⁰ physical inventory of all animals to establish the baseline herd inventory.²¹¹ An annual herd inventory must then be conducted to review all records and observe all animals.²¹² The state veterinarian or an Animal and Plant Health Inspection Service representative may also request additional physical inventories to verify herd compliance with program standards.²¹³

Third, tissue specimens of all animals that die or are killed by harvest or slaughter must be collected for CWD testing.²¹⁴ Failure to comply with testing requirements will result in inspection by an Animal and Plant Health Inspection Service inspector or state representative to evaluate the herd's status.²¹⁵ All

²⁰⁴ *Id.* 20:066.6.

²⁰⁵ *Id.* 20:066.6(1).

²⁰⁶ *Id.* 20:066.3(a).

²⁰⁷ *Id.*; *id.* 20:066.6(3). For KY HCP herds, the identification number used must be unique to that animal within the herd. *Id.* 20:066.3(a). Animals in KY HCP herds under 12 months of age must meet these identification requirements before being moved from the facility for any purpose. *Id.* 20:066.3(b).

²⁰⁸ *Id.* 20:066.3(b)(1)(3); *id.* 20:066.6(5).

²⁰⁹ *Id.* 20:066.3(b)(1)(5). These records must include (1) a complete inventory of animals, including the official identification number, age, and sex of each animal; (2) a record for each purchased or natural addition to the herd; (3) a record of each cervid leaving the herd; (4) a record of all individual animal tests conducted on cervids in the herd; and (5) records received from the herd veterinarian related to veterinary services provided to the herd. *Id.*

²¹⁰ *Id.* 20:066.3(b)(1)(6)(a).

²¹¹ *Id.* The KY HMP also requires verified inventories. The CCO must conduct a physical inventory of all animals in the presence of a representative of the State Veterinarian. *Id.* 20:066.6(10)(a). A representative of the State Veterinarian must then verify all animal identifications and records. *Id.*

²¹² *Id.* 20:066.3(b)(1)(6)(b).

²¹³ *Id.* 20:066.3(b)(1)(6)(c). When inventories are conducted, the CCO is responsible for assembling, handling, and restraining the animals and for all costs incurred to present the animals for inspection. *Id.* 20:066.3(b)(1)(6)(d).

²¹⁴ *Id.* 20:066.3(b)(1)(4)(c); *id.* 20:066.6(6)(c).

²¹⁵ *Id.* 20:066.3(b)(1)(4)(d).

deaths, including animals killed by harvest or slaughter, of animals in the herd age 12 months or older must be reported to the Office of the State Veterinarian.²¹⁶

Like West Virginia, Kentucky prohibits the release of captive cervids into the wild regardless of what herd management program the cervid originates.²¹⁷ If a captive cervid escapes, the CCO is responsible for immediately capturing or destroying the escaped animal upon discovering its escape.²¹⁸ If the CCO is unable to capture the escaped animal within 48 hours from discovering its escape, it must make a report of the escape to the KDFWR.²¹⁹ The CCO must also report any known ingress of wild cervids into the enclosure.²²⁰ The KDFWR or any of its officers may capture or destroy escaped animals or those that have ingressed if necessary.²²¹

Kentucky's split approach, which regulates CCOs that breed and sell cervids differently than CCOs that do not export cervids, has its benefits. It requires less stringent regulations for CCOs that never intend live animals to leave the facility, and thus, in theory pose no risk of spreading communicable disease. However, the assumption that the facility can ensure a cervid will never leave is flawed. Captive cervids can escape even the best enclosures.²²² Additionally, there is concern that because of the social nature of cervids, contact occurs between wild and captive cervids through fences.²²³ Thus, these lax regulations pose a threat to wild populations.²²⁴ Moreover, lower standards put all animals being imported by the CCO at risk. Healthy animals introduced into

²¹⁶ *Id.* 20:066.3(b)(1)(4); *id.* 20:066.6(6). When cervids from a KY HCP herd are taken by harvest or slaughter, such report must be submitted by the last day of each calendar month. *Id.* 20:066.3(b)(1)(4)(a). However, such report must be submitted within 7 days when animals die from illness or an unknown reason. *Id.* 20:066.3(b)(1)(4)(a).

²¹⁷ 301 KY. ADMIN. REGS. 2:083.9(2) (2020).

²¹⁸ *Id.* 2:083.5(1).

²¹⁹ *Id.* 2:083.5(2). And even if the CCO captures the escaped animal within 48 hours of its escape, the CCO must still send a written report to the KDFWR within 10 days. *Id.* 2:083.5(3). The report must describe what escaped and the reason for the escape. *Id.*

²²⁰ *Id.* 2:083.5(4).

²²¹ *Id.* 2:083.5(5).

²²² See, e.g., Sasha Goldstein, *What the Elk? Cervids Escape from Derby Enclosure*, SEVEN DAYS (June 28, 2017), <https://www.sevendaysvt.com/vermont/what-the-elk-cervids-escape-from-derby-enclosure/Content?oid=6477002>; Tony Kennedy, *Farm Deer Escapes Concern Department of Natural Resources Because Deer May Carry Chronic Wasting Disease*, STARTRIBUNE (Apr. 17, 2018), <http://www.startribune.com/farm-deer-escapes-concern-department-of-natural-resources-because-deer-may-carry-chronic-wasting-disease/480057463/>; *Elk Escape from Captive Cervid Facility in Pennsylvania Near West Virginia Border*, W. VA. DIV. OF NAT. RES. (Nov. 4, 2011), <http://www.wvdnr.gov/2011news/11news217.shtm>; *436 Deer Have Escaped from Farms to Wild*, CWD-INFO.ORG (Mar. 18, 2003), <http://cwg-info.org/436-deer-have-escaped-from-farms-to-wild/>.

²²³ See Opsahl, *supra* note 22, at 1091.

²²⁴ *Chronic Wasting Disease Fact Sheet*, N.J. DIV. OF WILDLIFE, <https://njfishandwildlife.com/pdf/cwdqanda.pdf> (last visited Sept. 25, 2020).

the facility may be put at risk of contracting the disease if the herd is infected. As such, West Virginia should hold all CCOs to the standards set by the USDA HCP. If a dual approach to herd management is adopted, it should impose *higher* standards on operations that intend to move live cervids off the premises because these animals pose the greatest threat of spreading communicable diseases.

Because herd management and surveillance programs involve the detection and prevention of CWD and other communicable diseases, it relates most closely to the WVDNR's mission of protecting wildlife and should fall under its jurisdiction. However, because it also requires working closely with the USDA, the most agreeable solution would involve substantial assistance from the WVDA to ensure that all necessary USDA standards are being met.

3. Transportation and Movement

Because there is no way to prevent or treat CWD, the only way to control it is to contain it by preventing uninfected animals from coming into contact with an infected animal or the environment that housed an infected animal. Similarly, bovine tB is incredibly contagious, and brucellosis is difficult to diagnose and treat. For these reasons, monitoring the movement of captive cervids is crucial—and relates directly to the protection of West Virginia wildlife. Thus, it should be regulated by the WVDNR.

While the WVDA has experience quarantining and regulating the movement of traditional livestock species, the movement of captive cervids closely relates to the health of wild cervids and requires intimate knowledge of the transmission of CWD, bovine tB, and brucellosis. The WVDNR has been monitoring and containing the spread of CWD since it was first detected in West Virginia in 2005.²²⁵ The WVDNR is also taking action to further its understanding of CWD through research.²²⁶ This is the kind of experience and knowledge necessary to ensure protection of one of West Virginia's important natural resources—white-tailed deer. These unique features of the WVDNR make it particularly suited to regulate the movement of captive cervids. In fact, of the 42 states that employ the division of natural resources equivalent in the regulation of captive cervids, 24 involve that agency in the regulation of inter and intrastate movement of cervids.²²⁷ This is further evidence that the movement of cervids should involve the WVDNR.

Currently, West Virginia's CCOs may only receive cervids from brucellosis accredited herds and from bovine tB accredited herds from states where bovine tB has not been diagnosed.²²⁸ Applications for importation must

²²⁵ *Chronic Wasting Disease*, W. VA. DIV. OF NAT. RES. WILDLIFE RES., <https://www.wvdnr.gov/Hunting/ChronicWaste.shtm> (last visited Oct. 10, 2020).

²²⁶ *Id.*

²²⁷ *Chronic Wasting Disease and Regulations in North America*, *supra* note 90.

²²⁸ *Id.*

be filed with the WVDA.²²⁹ Moreover, intrastate movement of cervids is generally not permitted from counties where CWD has been detected in the wild deer population or any of the surrounding counties.²³⁰ However, the WVDA may approve intrastate movement of cervids on a case-by-case basis.²³¹ Movement of cervids is only permitted from states with CWD Herd Certification Programs that meet or exceed the WV HCP standards.²³² West Virginia also prohibits the receipt of a captive cervid from an out-of-state facility that is located within 15 miles of a confirmed case of CWD in the last five years.²³³

The Kentucky Department of Agriculture²³⁴ (“KDA”) has implemented similar requirements for transportation of captive cervids.²³⁵ Kentucky requires that the exporting state compels CCOs to obtain identification and laboratory diagnosis from brain tissue for cervids 12 months of age or greater that (1) display clinical signs of CWD; (2) die, including deaths by slaughter or hunting; or (3) are ill or injured regardless of if the illness or injury results in death.²³⁶ The KDA also requires CCOs to obtain cervids from herds that have been monitored for five years and have complied with the Kentucky CWD HCP.²³⁷

Kentucky completely bans importation from states with confirmed cases of CWD.²³⁸ In most instances, this regulation is more stringent than West Virginia’s ban on importation if a case of CWD has been confirmed within five

²²⁹ *Id.*; see also *Cervid Facility in-State and out-of-State or Through State Transfer Request*, W. VA. DEP’T OF AGRIC., <https://agriculture.wv.gov/wp-content/uploads/2020/09/Farmed-Cervid-Facility-IN-STATE-THROUGH-STATE-OUT-OF-STATE-TRANSFER-REQUEST.pdf> (last visited Sept. 25, 2020).

²³⁰ *Chronic Wasting Disease and Regulations in North America*, *supra* note 90. CWD has been identified in West Virginia in Berkeley County, Grant County, Hampshire County, Hardy County, Jefferson County, Mineral County, and Morgan County. Emily D. Coppola, *Chronic Wasting Disease Not Currently Threatening All W.Va. Deer*, BLUEFIELD DAILY TEL. (Mar. 7, 2019), https://www.bdtonline.com/news/chronic-wasting-disease-not-currently-threatening-all-w-va-deer/article_0829b660-4087-11e9-a8b2-bf7d87825152.html.

²³¹ W. VA. CODE R. § 61-34-11.5 (2020).

²³² *Chronic Wasting Disease and Regulations in North America*, *supra* note 90.

²³³ *Id.*

²³⁴ The KDA is responsible for regulating movement of cervids. KY. REV. STAT. ANN. § 150 (West 2020). This Note observes that these regulations may offer valuable guidance in implementing similar regulations in West Virginia, but still asserts that the appropriate agency to regulate this aspect of the industry is the WVDNR.

²³⁵ Cervids can only be imported into Kentucky if they have been subject to (1) a program of surveillance and identification for CWD that meets or exceeds the requirements of the Kentucky Cervid CWD Surveillance and Identification Program and (2) any other health requirements as regulated by the KDA for cervids. *Id.* § 150.740(3).

²³⁶ *Id.*

²³⁷ *Id.*

²³⁸ *Id.* § 150.740(4).

years and within a 15-mile radius.²³⁹ However, there is no language in Kentucky's regulation about importation from a CWD-free state where the CCO is close to the border of a state with confirmed CWD cases.²⁴⁰ Transportation of a cervid that originates in a state other than Kentucky through the state to another destination must also be permitted by Kentucky's Office of the State Veterinarian.²⁴¹ In order to receive authorization from the KDA and the State Veterinarian, cervids originating from states that do not have brucellosis class free status must be negative to an official brucellosis test within 30 days prior to entry or originate from a brucellosis certified herd.²⁴² However, cervids imported from brucellosis class free states are exempt from testing.²⁴³ Moreover, all cervids 12 months of age or older must be negative to an official bovine tB test within 90 days of entry or originate from a bovine tB accredited herd.²⁴⁴

Finally, Kentucky allows all costs incurred in the investigation, response, and eradication of disease to be imposed on the person who imports a diseased animal in violation of applicable statutes and regulations.²⁴⁵

Movement and transportation of cervids poses a serious risk of the spread of communicable diseases. An intimate knowledge of cervid diseases and biology are no doubt an asset to the agency creating and enforcing transportation regulations. Thus, the WVDNR should be charged with the regulation of transportation and movement of captive cervids.

Because these regulations relating to animal health require intimate knowledge about cervid behavior and biology, the WVDNR is best situated to create and enforce them.

C. Inspections and Enforcement

Finally, the State must ensure CCOs comply with regulations. In West Virginia, the WVDA inspects facilities before a license is issued.²⁴⁶ CCOs must grant the WVDA access to conduct periodic inspections to ensure compliance

²³⁹ *Id.*

²⁴⁰ While there is no specific language addressing this issue, permission to import cervids is evaluated on a case-by-case basis. 302 KY. ADMIN. REGS. 20:040.13(2)(c) (2020).

²⁴¹ KY. REV. STAT. ANN. § 150.740(10).

²⁴² 302 KY. ADMIN. REGS. 20:040.13(3)(b)(2) (2020).

²⁴³ *Id.* 20:040.13(3)(b)(1).

²⁴⁴ *Id.* 20:040.13(3)(c).

²⁴⁵ KY. REV. STAT. ANN. § 150.720(2).

²⁴⁶ W. VA. CODE R. § 61-34-9.1 (2020).

with regulations.²⁴⁷ The KDFWR and the KDA both conduct initial inspections of CCOs.²⁴⁸ The KDFWR then inspects CCOs annually or after expansion.²⁴⁹

When utilizing a dual-agency regulatory scheme, it is only logical to require inspection by both agencies. Inspections by each agency should examine the sectors of the operation that each agency regulates. Thus, in the scenario proposed by this Note, the WVDNR would inspect the physical facility and review records relating to transportation and herd management. The WVDA would be responsible for inspecting facilities to ensure animals are correctly identified and that any commodity production done on site meets the WVDA's standards.

IV. CONCLUSION

Because CCOs stand to offer West Virginia substantial benefits while also posing substantial risks, a more comprehensive approach to their regulation is warranted. Rather than drawing arbitrary lines and asking the chosen agency to play catch up on complicated, intricate issues, the best solution is to employ both the WVDA and the WVDNR in the regulation of the captive cervid industry. Charging the WVDA with the regulation of deer products and animal identification taps into divisions and systems already in place within the WVDA. Similarly, relying on the WVDNR to regulate the physical facilities and animal health makes use of the Division's extensive knowledge regarding cervids and their biology and behavior. This mission-based approach ensures that the agency with the necessary experience and expertise regulates the appropriate parts of CCOs. And with proper regulation, the captive cervid industry can thrive in West Virginia without harming a significant natural resource—wild white-tailed deer.

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²⁴⁷ *Id.* § 61-34-6.1.

²⁴⁸ 301 KY. ADMIN. REGS. 2:083.8(11) (2020); *id.* 20:066.

²⁴⁹ *Id.* 2:083.8(11).

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