

**The Necessity of Deer Management Due to Reduced Habitat Caused  
by Urban Sprawl and Related Issues**

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Deer thrive on habitat conditions created by sprawl development.<sup>1</sup> New development fragment forests and farms which create “edge” habitats that provide plenty of food and ample shelter for deer.<sup>2</sup> Improved habitat conditions coupled with below normal mortality rates result in increased reproduction and a bigger deer population.<sup>3</sup> This population growth not only results in more opportunities to see or hunt deer, it also results in increased vehicle collisions with deer, more damage to agricultural crops and ornamental vegetation, increased transmission of Lyme’s disease, and degradation of natural ecosystems.<sup>4</sup> These effects of overpopulation necessitate the need to take measures to control the deer population to achieve a balance between development, the ecosystem, and the deer herd. A unique situation arises when development occurs near a wildlife sanctuary where no hunting is allowed. This problem and the legal implications that S.C. DNR officials must deal with when implementing population control measures will be discussed later in this paper.

Sprawl can generally be defined as the inefficient development of land that results in a suburban built environment spreading into rural or undeveloped areas.<sup>5</sup> South Carolina lost 142,000 acres of forest from 1993 to 2000 as urban development and pine tree plantations replaced natural woodlands in parts of the state.<sup>6</sup> The overall decline would cover an area greater than the cities of Columbia and Greenville.<sup>7</sup> In fact, between 1992 and 1997, the state

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<sup>1</sup> Maryland Department of Natural Resources, *Charting The Course For Deer Management In Maryland, Executive Summary* [www.dnr.state.md.us/wildlife/summary.html](http://www.dnr.state.md.us/wildlife/summary.html) (March 1998).

<sup>2</sup> Id.

<sup>3</sup> Id.

<sup>4</sup> Id.

<sup>5</sup> Kit Smith, *South Carolina: How Shall We Grow?*

[http://www.propertyrightsresearch.org/articles4/south\\_carolina.htm](http://www.propertyrightsresearch.org/articles4/south_carolina.htm) (accessed March 21, 2004).

<sup>6</sup> Associated Press, *Urban sprawl called biggest threat to South Carolina forests*

<http://forests.org/archive/america/urspcall.htm> (December 5, 2001)

<sup>7</sup> Id.

ranked ninth in the nation in total acres of land converted to development (539,700).<sup>8</sup> When adjusted for relative size, South Carolina leapt to sixth place.<sup>9</sup> When adjusted for population, the state ranked fourth.<sup>10</sup> Furthermore, South Carolina is converting raw land to development at six times the rate of its population growth.<sup>11</sup> The rate of conversion has dramatically increased from 13 and 14 percent during the 1980's and early 1990's to more than 30 percent by the late 1990's.<sup>12</sup> There is no indication that this pattern will change in light of the U.S. Forest Service's study calling urban sprawl the greatest threat to the South's woodlands during the next four decades.<sup>13</sup> The study forecasted that the region will lose 31 million acres of forests in the next 40 years to development, with most of the losses in the eastern part of the region, including South Carolina.<sup>14</sup>

As a result of this urban sprawl and development, deer habitat is diminishing and increasing numbers of deer are forced to live on smaller tracts of land. It is unrealistic to think that the expansion of civilization will stop. As a result, the most practical solution is to control the deer population so that it remains at a level suitable for the environment. To understand why overpopulation is detrimental to a deer herd and the natural environment it is useful to understand the conditions under which deer evolved. In pre-colonial times, deer were subject to intense predation and hunting pressure.<sup>15</sup> Native American tribes hunted throughout the year for deer and depended on them as their primary food source.<sup>16</sup> In addition, predators such as

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<sup>8</sup> Smith <[http://www.propertyrightsresearch.org/articles4/south\\_carolina.htm](http://www.propertyrightsresearch.org/articles4/south_carolina.htm)>

<sup>9</sup> Id.

<sup>10</sup> Id.

<sup>11</sup> Id.

<sup>12</sup> Id.

<sup>13</sup> Associated Press <<http://forests.org/archive/america/urspcall.htm>>

<sup>14</sup> Id.

<sup>15</sup> Maryland DNR, *Deer Management Options* <<http://www.dnr.state.md.us/wildlife/options.html>> (March 1998)

<sup>16</sup> Id.

mountain lions, wolves, and bears all preyed on the deer population.<sup>17</sup> By the late 1800's, extensive land clearing, unregulated hunting, and loss of habitat brought the whitetail deer population to a record low.<sup>18</sup> However, changing land uses, the enactment of stricter game laws, and a lack of natural large predators have caused the white-tailed deer population to rebound dramatically.<sup>19</sup> Today, an estimated 14 to 20 million deer are believed to inhabit the United States, and in many areas of the eastern U.S. populations have soared to previously unattained levels.<sup>20</sup> In light of this, a deer herd today that is insulated from hunting pressure and has no real predators is anything but “natural.”

An important aspect to consider in dealing with an overpopulated deer herd is the carrying capacity of the land. Carrying capacity can be described as the habitat and social requirements of deer that must be met within some level of tolerance in an ecosystem.<sup>21</sup> Biologists monitor two types of carrying capacity when analyzing the deer population.<sup>22</sup> Biological carrying capacity measures how many deer an area can support with sufficient food and living space.<sup>23</sup> Cultural carrying capacity measures the number of deer an area can support without causing too much negative interaction with people.<sup>24</sup> In any habitat, deer should not exceed the biological carrying capacity for two reasons: 1) Health and reproductive success are determined by the quantity and quality of food, shelter, and water; and 2) the social system of

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<sup>17</sup> Id.

<sup>18</sup> Nature Center, *White-Tailed Deer* <<http://www.wildwnc.org/af/whitetaildeer.html>> (accessed April 30, 2004)

<sup>19</sup> Id.

<sup>20</sup> DesertUSA, *White-Tailed Deer* <<http://www.desertusa.com/mag99/june/papr/wtdeer.html>> (accessed April 20, 2004)

<sup>21</sup> Delwin E. Benson, *Principles of Habitat Management for Deer* <<http://wildlife.tamu.edu/publications/A060.pdf>> (accessed April 4, 2004)

<sup>22</sup> Mindy Larsen Poldberg, *Deer and Management: A Comprehensive Analysis of Iowa State Hunting Laws and Regulations*, 3 Drake J. Agric. L. 279, 285 (1998)

<sup>23</sup> Id.

<sup>24</sup> Id.

deer can be adversely affected.<sup>25</sup> In the absence of deer population control, deer herds would grow until they reached the upper limit at which they could be sustained by local habitat, resulting in a deer herd in relatively poor health.<sup>26</sup> An uncontrolled deer population would grow until all available food has been consumed.<sup>27</sup>

Well-established social positions minimize unnecessary energy expenditure and help maintain social order in deer herds.<sup>28</sup> For example, the matriarchal doe seeks the most desirable and productive fawning areas to raise her offspring.<sup>29</sup> As a result, the less dominant does are relegated to lower quality fawning areas.<sup>30</sup> As doe numbers increase, the social structure of these groups becomes more complex and unstable.<sup>31</sup> A study highlighting the effects of social stress on white-tailed deer was conducted in Upper Michigan.<sup>32</sup> The researchers provided unlimited food to an enclosed deer herd until it resembled a wild herd that exceeded the carrying capacity of the land.<sup>33</sup> The researchers found that as deer density increased, the survival rate of fawns decreased.<sup>34</sup> Even though there were more does to raise offspring, fewer were successful at rearing young due to density related stress.<sup>35</sup> The researchers ultimately concluded that there was a direct correlation between the fawning success of does and their social rank within the herd.<sup>36</sup> Researcher John J. Ozoga stated that: “Density stress...independent of nutrition can alter

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<sup>25</sup> Benson <<http://wildlife.tamu.edu/publications/A060.pdf>>

<sup>26</sup> Maryland DNR <<http://www.dnr.state.md.us/wildlife/options.html>>

<sup>27</sup> Id.

<sup>28</sup> Jason R. Shavely, *Social Stress of an Overpopulated Deer Herd* <<http://www.qdma.com/articles/details.asp?id=45>> (Accessed April 4, 2004)

<sup>29</sup> Id.

<sup>30</sup> Id.

<sup>31</sup> Id.

<sup>32</sup> Id.

<sup>33</sup> Id.

<sup>34</sup> Id.

<sup>35</sup> Id.

<sup>36</sup> Id.

a doe's rate of physical maturation and reproductive performance."<sup>37</sup> He further noted that, "Neonatal mortality was due primarily to fawn abandonment and imprinting failure as a result of territorial behavior at high densities."<sup>38</sup>

Deer also are one of the most influential species on the ecosystem.<sup>39</sup> Large deer herds can damage valuable ecosystems by over-browsing.<sup>40</sup> This occurs when the vegetation is not sufficient to sustain the overabundance of deer in a particular area and sustain its natural growth.<sup>41</sup> Overpopulated deer herds can also damage forests by consuming forest resources faster than they can regenerate.<sup>42</sup> Large deer populations can wipe out woody species and vegetation by consuming all seedlings in the forest.<sup>43</sup> As a result, when the older trees die there are no younger trees to replace them.<sup>44</sup> An overpopulated deer herd can even alter the character of the understory in a forest by eating shrubs and wildflowers but leaving inedible ground covering vegetation such as ferns.<sup>45</sup> This blocks sunlight from getting to small saplings and make growth more difficult.<sup>46</sup> As a result of deer destroying their own food source, they also destroy the habitat of many other species.<sup>47</sup> In fact, the population of song birds and game birds

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<sup>37</sup> Id.

<sup>38</sup> Id.

<sup>39</sup> Christopher E. Rice, *Success Runs Wild: Pennsylvania Game Commission and Balancing Between Management and Survival of an Overpopulated Deer Herd that Poses a Potential Threat*, 11 Penn St. Envtl. L. Rev. 153, 170 (2002).

<sup>40</sup> Id.

<sup>41</sup> Id.

<sup>42</sup> Id.

<sup>43</sup> Id. at 171

<sup>44</sup> Id.

<sup>45</sup> Id.

<sup>46</sup> Id.

<sup>47</sup> Id. at 170

as been shown to decline due to the loss of habitat caused by over-browsing.<sup>48</sup> This is because excessive deer feeding eliminates the birds' cover and nesting sites.<sup>49</sup>

Many different deer management options have been tried with varying results. One of these is taking no action and allowing nature to take its course.<sup>50</sup> As discussed earlier, this option would lead to deer herds growing beyond the optimum carrying capacity of the land, resulting in poor herd health and ecosystem destruction. According to the Maryland Department of Natural Resources, high density herds are prone to cyclic population fluctuations and catastrophic losses.<sup>51</sup> In addition, a deer population allowed to consume all available foods would result in vegetative destruction of many plants, shrubs, and trees that are utilized by other species.<sup>52</sup> Crop damage and landscape damage to property owners would also be severe.<sup>53</sup> In essence, the optimum balance between society, the ecosystem, and the deer herd would not be achieved through this alternative.

A second alternative is to relocate excess deer to other locations.<sup>54</sup> This option comes with a huge price tag. The costs from states that have utilized this method ranged from \$412 to \$800 per deer.<sup>55</sup> It first requires trapping, netting, and/or immobilization to capture the deer.<sup>56</sup> The deer then must be relocated to a release site capable of handling these excess deer.<sup>57</sup> Due to the high deer densities all over South Carolina, this would most likely require relocation to some other state, probably not even in the South. Furthermore, relocated deer have low survival rates

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<sup>48</sup> Id.

<sup>49</sup> Id.

<sup>50</sup> Maryland DNR <<http://www.dnr.state.md.us/wildlife/options.html>>

<sup>51</sup> Id.

<sup>52</sup> Id.

<sup>53</sup> Id.

<sup>54</sup> Id.

<sup>55</sup> Id.

<sup>56</sup> Id.

<sup>57</sup> Id.

because of their poor physical condition caused by the overpopulated site they are being removed from.<sup>58</sup> This reduces their chances of being able to adapt to a new environment.<sup>59</sup> States that have done this reported casualty rates ranging from 55 per cent to as high as 85 per cent shortly after relocation.<sup>60</sup> The low success rate and the high cost of this alternative render it impractical. Furthermore, we cannot ignore the impacts that relocated deer could have on the carrying capacity of their relocation site. It might only be moving the problem from one location to another.

Repellants temporarily prevent damage resulting from the problem but do nothing towards achieving the balance needed for rectifying the problem. Repellants are aimed at reducing and discouraging deer feeding behavior on planted materials.<sup>61</sup> They must be applied prior to anticipated periods of deer browsing either directly on the plant or in the vicinity of the vegetation.<sup>62</sup> Repellants must be reapplied after every rainfall.<sup>63</sup> They have proved cost-effective when used in small areas such as gardens or small orchards.<sup>64</sup> However, larger applications are costly and of limited effectiveness.<sup>65</sup> In addition, the potency of repellants may vary from year to year and in different areas.<sup>66</sup> When deer numbers reach maximum carrying capacity, repellants may be totally ineffective.<sup>67</sup> Most importantly, this alternative does nothing to achieve the balance needed in the environment.

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<sup>58</sup> Id.

<sup>59</sup> Id.

<sup>60</sup> Id.

<sup>61</sup> Id.

<sup>62</sup> Id.

<sup>63</sup> Id.

<sup>64</sup> Id.

<sup>65</sup> Id.

<sup>66</sup> Id.

<sup>67</sup> Id.

Fences merely prevent deer from getting to the enclosed vegetation. An effective fence must generally be over eight feet tall if non-electric.<sup>68</sup> Electric fences may be smaller.<sup>69</sup> Non-electric barrier fences are more costly than electric ones.<sup>70</sup> However, electric fences should be used with caution in areas of high human contact.<sup>71</sup> Like repellants, fences are most successful and economical for smaller areas such as small orchards or gardens.<sup>72</sup> In addition, fences do not adequately address the larger scale concerns relating to achieving a balance between the deer herd and the environment.

Some people have advocated the use of contraceptives to manage deer numbers. This form of population control is still evolving and remains experimental. Questions remain about many aspects of this technology including the methods of delivering the contraceptives, the percentage of does requiring treatment, and the effects it would have on the social structure and long-term health of the deer population.<sup>73</sup> It can have a detrimental affect on the gene pool of a herd because it is more effective on healthy deer.<sup>74</sup> As a result, widespread use of this technique may result in the healthier, inoculated deer being unable to reproduce while the unhealthy deer do.<sup>75</sup> Another drawback is that the process works very slowly and does not solve current population problems.<sup>76</sup> In any case, the practicality of treating an adequate number of deer will most likely limit the use of this method to small insular herds.

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<sup>68</sup> Id.

<sup>69</sup> Id.

<sup>70</sup> Id.

<sup>71</sup> Id.

<sup>72</sup> Id.

<sup>73</sup> Id.

<sup>74</sup> Mindy Larsen Poldberg, *Deer and Management: A Comprehensive Analysis of Iowa State Hunting Laws and Regulations*, 3 Drake J. Agric. L. 279, 287 (1998)

<sup>75</sup> Id.

<sup>76</sup> Id.

Providing supplemental feeding to reduce damage to natural and ornamental vegetation has been suggested by some. The theory is based on the idea that the supplemental food will detract the deer away from the vegetation sought to be protected.<sup>77</sup> The problem with this method is that it does not provide a long term solution. Its greatest effect would be to temporarily draw deer away from plants needing protection. It will not reduce overpopulated deer herds to biologically manageable numbers. It will probably only compound the problem by providing the deer with more food, and thus increasing the survivability and production of the deer herd.<sup>78</sup> This would lead to conflicts with the natural carrying capacity of the land.<sup>79</sup> Supplemental feeding also concentrates the deer in a particular area which increases the likelihood of disease.<sup>80</sup> In addition, supplemental feeding on a larger region wide basis would be impractical.

Some have proposed releasing predators to manage the deer population. However, the only predators considered by biologists to effectively hunt deer are wolves and mountain lions.<sup>81</sup> It would be impractical to release these large, wide-ranging predators into urban locations where they would also pose a threat to humans and domesticated animals.<sup>82</sup> In addition, urban locations would not provide suitable habitat for these predators.<sup>83</sup>

The use of sharpshooters to control deer populations has been successfully used in some locations.<sup>84</sup> The use of this method has increased significantly in the last decade.<sup>85</sup> It seems best suited for smaller areas such as suburban communities, corporate campuses, or government

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<sup>77</sup> Maryland DNR <<http://www.dnr.state.md.us/wildlife/options.html>>

<sup>78</sup> Id.

<sup>79</sup> Id.

<sup>80</sup> Id.

<sup>81</sup> Id.

<sup>82</sup> Id.

<sup>83</sup> Id.

<sup>84</sup> Id.

<sup>85</sup> Id.

properties because of safety concerns.<sup>86</sup> The cost of employing sharpshooters is relatively high because of the expenses incurred for bait, shooter salaries, and meat processing.<sup>87</sup> The costs from other areas around the country that have employed this method have ranged from \$91 to \$260 per deer.<sup>88</sup>

The use of regulated hunting to manage the deer population is considered by many to be the most effective means. It has proved to be the most efficient and least expensive technique for deer management.<sup>89</sup> In fact, hunter expenditures provide a boost to local economies and all costs are covered through hunting licenses and other fees.<sup>90</sup> It is by far the most practical way to manage deer populations on a large scale basis. It allows biologists to maintain desirable deer levels by manipulating the size and sex composition of the harvest, varying the season time and length, and issuing a specified number of harvest permits.<sup>91</sup> This alternative is generally not viable in urban locations due to safety concerns and conflicting attitudes towards wildlife and hunting.<sup>92</sup>

As mentioned earlier, a unique situation exists when sprawl nears the confines of a protected wildlife sanctuary, and specific legal provisions must be met to harvest deer in a sanctuary. Pursuant to statute, the Wildlife and Marine Resources department can “designate and establish sanctuaries where game birds and animals may breed unmolested.”<sup>93</sup> The department may also enter into an agreement with a landowner to set aside a certain number of

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<sup>86</sup> Id.

<sup>87</sup> Id.

<sup>88</sup> Id.

<sup>89</sup> Id.

<sup>90</sup> Id.

<sup>91</sup> Id.

<sup>92</sup> Id.

<sup>93</sup> S.C. Code Ann. § 50-11-860

acres of land for sanctuary purposes.<sup>94</sup> However, the agreement may be terminated at any time by the landowner and the department.<sup>95</sup> Land designated as a sanctuary prohibits anyone from hunting or trespassing upon these lands for five years from the date of the agreement.<sup>96</sup>

Eleven different areas are currently designated as wildlife sanctuaries.<sup>97</sup> One of these areas is the Sea Pines Public Service District on Hilton Head Island in Beaufort County.<sup>98</sup> Sea Pines is a 5,280 acre private community on the southern portion of Hilton Head that provides habitat for many species of wildlife, including the white-tailed deer.<sup>99</sup> However, as the deer population has increased, so have the number of automobile collisions and landscape damage.<sup>100</sup> The South Carolina Department of Public Safety concluded that motorists within Sea Pines were 6.5 times more likely to have a collision with a deer than other South Carolina motorists.<sup>101</sup>

In response to this problem, Community Service Associates, Inc. (“CSA”) hired Dr. Robert Warren, a professor of Wildlife Ecology and Management at the University of Georgia School of Forest Resources, to conduct a study of the deer population.<sup>102</sup> At the conclusion of his research, Dr. Warren submitted an in-depth report and a proposal recommending the removal of 100 to 200 deer, which is about fifty percent of the herd.<sup>103</sup> On the basis of this study, the Wildlife department issued permits to remove the specified number of deer using lethal techniques.<sup>104</sup> The Sea Pines Association for the Protection of Wildlife (“SPAPW”), comprised

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<sup>94</sup> Id.

<sup>95</sup> Id.

<sup>96</sup> Id.

<sup>97</sup> S.C. Code Ann. §50-11-880

<sup>98</sup> S.C. Code Ann. §50-11-880(1)

<sup>99</sup> Sea Pines Ass’n for the Protection of Wildlife, Inc. v. S.C. Dep’t of Natural Res., 345 S.C. 594 (S.C., 2001)

<sup>100</sup> Id. at 597.

<sup>101</sup> Id. at 597 (n1)

<sup>102</sup> Id. at 597

<sup>103</sup> Id. at 597-598

<sup>104</sup> Id. at 598

of Sea Pines residents and property owners, opposed reduction by lethal means and brought suit.<sup>105</sup>

The Supreme Court addressed several issues on appeal. The first is when does a private citizen have standing to challenge the issuance of permits for the lethal elimination of deer in a wildlife sanctuary.<sup>106</sup> To determine whether there is standing, the S.C. Supreme Court applied the three-pronged test adopted by the United States Supreme Court in *Lujan*.<sup>107</sup> This test requires a plaintiff to satisfy the following three elements:

First, the plaintiff must have suffered an "injury in fact," an invasion of a legally protected interest which is (a) concrete and particularized, and (b) actual or imminent, not "conjectural" or "hypothetical." Second, there must be a causal connection between the injury and the conduct complained of, the injury has to be fairly traceable to the challenged action of the defendant, and not the result of the independent action of some third party not before the court. Third, it must be "likely," as opposed to merely "speculative," that the injury will be "redressed by a favorable decision."<sup>108</sup>

It is arguable that there is no legally protected interest in a wild animal because all wild game is property of the state.<sup>109</sup> Thus there would be no injury in fact. However, the U.S. Supreme Court in *Lujan* held: "The desire to use or observe an animal species, even for purely esthetic purposes, is undeniably a cognizable interest for the purpose of standing."<sup>110</sup> In addition, the South Carolina Supreme Court has also recognized a legally cognizable interest in observing and enjoying wildlife.<sup>111</sup> In *S.C. Wildlife Fed'n v. S.C. Coastal Council*, the court held that an environmental group's allegations were sufficient for standing purposes because they "alleged an individual injury in the adverse effect of a specific decision of the Coastal Council on their

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<sup>105</sup> Id. at 598

<sup>106</sup> Id. at 599

<sup>107</sup> *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 112 S. Ct. 2130 (1992)

<sup>108</sup> *Sea Pines Ass'n for the Protection of Wildlife, Inc.*, 345 S.C. at 601

<sup>109</sup> S.C. Code Ann. §50-1-10

<sup>110</sup> *Lujan*, 504 U.S. at 562

<sup>111</sup> *S.C. Wildlife Federation v. S.C. Coastal Council*, 296 S.C. 187, 371 S.E.2d 521 (1988)

members' use and enjoyment of the fish and wildlife of the wetlands.”<sup>112</sup> The court in *Sea Pines* also expressly adopts the view that “one’s aesthetic and recreational interests in enjoying and observing wildlife are a judicially cognizable injury in fact.”<sup>113</sup>

A plaintiff’s injury must also be actual or imminent. A mere hypothetical or conjectural injury will not satisfy the injury in fact requirement of the *Lujan* test, *supra*. The appellants in *Sea Pines* did not produce any evidence that the issuance of permits would diminish their opportunity to observe and enjoy the deer.<sup>114</sup> The court found the appellant’s injury to be conjectural because it is not certain that reducing the size of the deer herd would decrease the number of deer actually viewed by residents each day.<sup>115</sup>

In addition, assuming that there was a particularized harm, a plaintiff’s injury must likely be redressed by a favorable decision. In *Sea Pines*, the appellant environmental groups offered an alternative plan to reduce the size of the deer herd using all non-lethal means first.<sup>116</sup> This included the use of birth control if the Department decided the deer herd still needed to be reduced after using the non-lethal means.<sup>117</sup> The court reasoned that birth control would have the same effect as the lethal techniques, a reduction in the size of the deer herd, and thus it is unlikely that the injury would be redressed by a favorable decision.<sup>118</sup> Because the injury was not redressable, the appellants were denied standing.

The appellants also challenged whether the Department properly issued permits for the lethal elimination of deer in the Sea Pines’ wildlife sanctuary.<sup>119</sup> Under section 50-11-880, it is

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<sup>112</sup> S.C. Wildlife Federation , 296 S.C. at 190

<sup>113</sup> Sea Pines Ass’n for the Protection of Wildlife, Inc., 345 S.C. at 601-602

<sup>114</sup> Id. at 602

<sup>115</sup> Id.

<sup>116</sup> Id.

<sup>117</sup> Id.

<sup>118</sup> Id.

<sup>119</sup> Id. at 600

unlawful to attempt to take or kill any wildlife in sanctuaries.<sup>120</sup> However, the statute also gives the Department the following rights:

If the department determines that, due to size, disease, or other extraordinary factors, a particular population of a species located in, on, or around a sanctuary described above constitutes a threat to the health, safety, and welfare of the public or to itself, or other species in, on, or around the sanctuary, it may authorize the taking of a sufficient number of species to reduce or eliminate the threat. The wildlife must be taken by department personnel or other persons acting under their supervision and the authorization for the taking limits the number of animals taken and the days, times, and methods to be used.<sup>121</sup>

The court reviews the Department's permitting decisions under the standards specified in the Administrative Procedures Act ("APA").<sup>122</sup> In reviewing a decision by an administrative agency, the court will not substitute its judgment for that of the agency concerning the weight of the evidence as to questions of fact.<sup>123</sup> The findings of the agency are presumed correct and will be set aside only if unsupported by substantial evidence.<sup>124</sup> Substantial evidence is defined as such evidence as a reasonable mind might accept as adequate to support a conclusion.<sup>125</sup> A reviewing court will not overturn a finding of fact by an administrative agency "unless there is no reasonable probability that the facts could be as related by a witness upon whose testimony the finding was based."<sup>126</sup> The court in *Sea Pines* found that there was sufficient evidence to support the Department's finding that the increase in the deer population, the increase in deer/vehicle collisions, and the potential spread of disease constituted a threat to the health,

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<sup>120</sup> S.C. Code Ann. § 50-11-880

<sup>121</sup> *Id.*

<sup>122</sup> *Sea Pines Ass'n for the Protection of Wildlife, Inc.*, 345 S.C. at 603

<sup>123</sup> *Kearse v. State Health & Human Servs. Fin. Comm'n*, 318 S.C. 198, 456 S.E.2d 892 (1995); citing S.C. Code Ann. § 1-23-380(A)(6)

<sup>124</sup> *Kearse*, 318 S.C. 198

<sup>125</sup> *Id.*

<sup>126</sup> *Lark v. Bi-Lo, Inc.*, 276 S.C. 130, 276 S.E.2d 304 (1981)

safety, and welfare of the public.<sup>127</sup> Therefore, the requirement of section 50-11-880 was satisfied.

Alternatively, the appellants argued that the Department improperly issued permits under statutes other than section 50-11-880.<sup>128</sup> Specifically, they argued that sections 50-11-1050, 1090, and 1180 do not give the Department the authority to take deer in a wildlife sanctuary.<sup>129</sup> Section 50-11-1050 provides that:

Where wildlife is destroying property, the department, upon the request of the property owner, may issue a permit authorizing the property owner, under the supervision of the department, to take action necessary to remove the destructive wildlife from his property.<sup>130</sup>

Section 50-11-1090 provides that:

The department has the authority during any season of the year to permit the taking of any game animal and prescribe the method by which they may be taken when they cause damage to crops or property or when they pose a significant human health risk. Any animal taken under these conditions is under the supervision of the department.<sup>131</sup>

The relevant portion of section 50-11-1180 provides that: “Permits may be granted by the department to any properly accredited competent person permitting him to collect protected wildlife for strictly scientific or propagating purposes only.”<sup>132</sup>

The court held that section 50-11-880 is not a permitting statute and once the Department makes a determination that there is a threat to the health, safety, and welfare of the public under section 50-11-880, another statute must be applied to issue the permits.<sup>133</sup> Therefore, a wildlife sanctuary is not specifically excluded from these statutes.<sup>134</sup>

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<sup>127</sup> Sea Pines Ass’n for the Protection of Wildlife, Inc., 345 S.C. 604-605

<sup>128</sup> Id. at 606

<sup>129</sup> Id.

<sup>130</sup> S.C. Code Ann. § 50-11-1050

<sup>131</sup> S.C. Code Ann. § 50-11-1090

<sup>132</sup> S.C. Code Ann. § 50-11-1180

<sup>133</sup> Sea Pines Ass’n for the Protection of Wildlife, Inc., 345 S.C. at 606

<sup>134</sup> Id.

An issue that has yet to be decided by the court is whether wildlife sanctuaries themselves are constitutional. The state constitution provides that the General Assembly shall not enact local or special laws concerning the protection of game.<sup>135</sup> However, the General Assembly is authorized to divide the state into as many game zones as it deems necessary and to enact laws for the protection of game in the several zones.<sup>136</sup> Sanctuaries present a constitutional problem because they are for the protection of game in a specific area and not for the entire game zone of which they are a part. To circumvent this problem the legislature should designate sanctuaries as their own game zone.

The situation in Sea Pines illustrates how controversial management decisions can be in urban and suburban locations. People tend to become polarized in their views on the issue, and achieving a consensus on what management approach to take is nothing short of challenging. As stated by the assistant attorney general for the Maryland Department of Natural Resources: “The difficult issue facing natural resource and wildlife managers is not choosing the most biologically sound method of reduction, but finding the most culturally acceptable and affordable method.”<sup>137</sup> It typically involves compromises and trade-offs between differing interests.<sup>138</sup> Often times, individual human values and perceptions determine what are “ecologically balanced” rather than concrete biological data. Because of this, one wildlife manager has recognized that: “One of the truisms of the wildlife management profession is that wildlife management is 90% people management and only about 10% management of wildlife.”<sup>139</sup> Thus, even though state wildlife agencies have the biological and technical expertise to manage

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<sup>135</sup> S.C. Const. art. III, § 34(VI)

<sup>136</sup> S.C. Const. art. III, § 34

<sup>137</sup> Mindy Larsen Poldberg, *Deer and Management: A Comprehensive Analysis of Iowa State Hunting Laws and Regulations*, 3 Drake J. Agric. L. 279, 285 (1998)

<sup>138</sup> Gary Parsons, *The Increasing Conflicts of Deer and Human Populations in Suburban Areas: Symposium*, 5 Buff. Env'tl. L.J. 353 (1998)

<sup>139</sup> Parsons, 5 Buff. Env'tl L.J. at 422-423

wildlife populations, as stewards of a public resource, they must recognize the importance of involving the public in management decisions.<sup>140</sup> Although not necessary when implementing policies on a state wide basis, public involvement is critical when determining what actions to take in urban or suburban locations such as Sea Pines. By involving the public in the process and educating them about the need for population control, wildlife agencies could possibly prevent the time and expense required to later justify their decisions.

The best way to do this is to establish some sort of citizen task force or committee to achieve management goals that are mutually acceptable to most involved. Although idealistic to think this would please everybody, a task force that gave everybody a voice, and sincerely addressed their concerns in a neutral manner, would go a long way towards easing hostility towards the agency's decisions. The task force would involve representative stakeholders from the affected community and staff members from the wildlife department with a neutral party acting as a facilitator of the discussion. The wildlife managers could act as advisors on the advantages and disadvantages of taking different courses of action. They could also help educate members of the community on the effects that uncontrolled deer populations have on overall herd health, other wildlife, the environment, and society. This may help to change people's unfounded opinions that the killing of deer is always a bad thing. It may also ease some of the hostility people have towards taking such action. After an open discussion where everybody's concerns have been adequately addressed, the wildlife department could make a good faith effort to implement action that is satisfactory to all involved.

Although public involvement should be solicited when the circumstances require it, wildlife agencies should not be constrained from implementing appropriate measures due to local attitudes and opinions. As a state agency, the Department of Natural Resources is in the best

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<sup>140</sup> Id.

position to handle the ever-changing status of the deer herd in South Carolina. Game regulations need to be constantly reviewed and changed in order to properly manage wildlife. That is why the legislature has bestowed upon the DNR the power to determine hunting season dates, bag limits, etc. The DNR is more adept than the legislature or local citizens to deal with these types of issues. In addition, the DNR should not have to deal with a patch work of local ordinances or regulations. If the regulation and management of wildlife were controlled on the local level then it would be impossible for the DNR to effectively implement their decisions. One example of this would be if counties were able to set their own bag limits or seasons. This would allow hunters to utilize the different seasons or limits in different counties in order to take more deer than the DNR has deemed appropriate. For these reasons, discretion should not be taken away from the DNR from deciding what is best for wildlife in the state.

My solution is not meant to divest the DNR of any of its power to control the deer population. It is not even legally required before the DNR can take necessary action. It is simply a different way to approach and diffuse an emotionally charged issue. It is also a way for the DNR to educate the general public about biologically sound management practices and gain public support. It is hardly debatable that regulated hunting is the most efficient and best method for controlling deer populations on a large scale basis. In regard to this, the DNR is in the best position to analyze population data and manage the overall deer herd. A deer task force composed of members of the community is only meant as a solution to problems that arise in urban and suburban locations. As urbanization continues to spread, the DNR will inevitably encounter more and more situations like that in Sea Pines. This inevitability necessitates the need for the DNR to find an effective way to handle these types of problems. Although Sea Pines is a little unique because it involves a wildlife sanctuary where no hunting is allowed, it is

similar in that most hunting in urban locations is not allowed. Due to this, alternative measures not traditionally utilized will have to be explored.

One solution that could be employed is to use archery only hunting in certain locations. This would require enough land adjacent to an urban or suburban location to hunt on, but would not pose a safety threat to other people like discharging firearms would. Some locations have successfully used this method as a management tool. A good example is in Westchester County, just north of New York City.<sup>141</sup> They are now harvesting about 1,500 - 1,600 deer per year in that county by archery alone.<sup>142</sup> Another option already mentioned is the use of sharpshooters. This would alleviate some of the safety concerns with random hunters discharging firearms in populated areas. However, it runs the risk of being more unacceptable than other methods because residents in suburban and urban locations are generally not accustomed to hearing gun shots. This may have some affect on the public support for this method. The desirability of using this method will also depend on how isolated the area is where the deer are being harvested, and its proximity to populated areas. Although still experimental, immunocontraception may be a desirable solution in highly populated areas where harvesting deer is unfeasible.

In conclusion, as habitat continues to diminish and deer populations continue to flourish, the need for population control is necessary. The DNR is the prominent biological authority when deciding on what's best for the deer herd. They have also been vested by the legislature with the legal authority to take action necessary to manage the deer herd. However, educating the public about the need and benefits of deer management is important to achieve support for a

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<sup>141</sup> Jim Snider, *The Increasing Conflicts of Deer and Human Populations in Suburban Areas: Symposium*, 5 Buff. Env't'l. L.J. 353, 380 (1998)

<sup>142</sup> Id.

unified approach in urban and suburban areas. A task force of community residents and biologists would help to achieve this purpose and possibly prevent legal action in the future.