From Zebra Mussels to Coqui Frogs: Public Nuisance Liability as a Method to Combat the Introduction of Invasive Species

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TABLE OF CONTENTS

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INTRODUCTION

Ecological alterations and disturbances caused by non-indigenous invasive species ("NIS") deteriorate biodiversity[1] and have a devastating affect on an area's ecology, economy, and human health.[2] Of the roughly 13,000 non-indigenous species that have been introduced to Hawaii, only about one percent are considered invasive.[3] Invasive species can alter an area's physical and chemical conditions, affect species diversity, and cause ecological disturbances such as fires, flooding, and pathogen outbreaks.[4]

The economic costs of the cumulative impact of invasive species to the United States and Hawaii are staggering. Although the exact toll is difficult to calculate, a recent study estimated that exotic pests alone create economic costs of over $115 billion in the Unites States.[5] In Hawaii, invasive species damage ecosystems, housing, agriculture, human health, and costs the state hundreds of millions of dollars.[6] Lost revenues in Hawaii's agriculture sector alone account for an estimated $300 million per year, while the projected effects of the introduction of the brown tree snake from Guam could cost Hawaii an additional $450 million.[7]

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[1] Functioning ecosystems maintain air quality, preserve soil, control pests and disease, and dispose of natural environmental waste. Siobhan O'Keefe, *Using Public Nuisance Law to Protect Wildlife*, 6 BUFF. ENVTL. L.J. 85, 90 (1998) (citing DANIEL J. ROHLF, THE ENDANGERED SPECIES ACT: A GUIDE TO ITS PROTECTIONS AND IMPLEMENTATIONS 16 (1989)).

[2] An invasive species is defined as an alien species that significantly disrupts or distorts the proper function of an ecosystem. An alien species is described as a species that is transported outside of its native geographic range by intentional or unintentional human activities. THE NATURE CONSERVANCY, BRIEFING PAPERS, SMALL ISLAND DEVELOPING STATES AND INVASIVE ALIEN SPECIES (1992) [hereinafter TNC brochure]. A recent study by Hawaii's Legislative Reference Bureau described an invasive species simply as foreign plants or animals that have invaded a new environment. EDMOND K. IKUMA, DEAN SUGANO & JEAN K. MARDFIN, STATE OF HAW. LEG. REFERENCE BUREAU, FILLING THE GAPS IN THE FIGHT AGAINST INVASIVE SPECIES 1 (2002) [hereinafter LRB].

[3] Hawaii Department of Land and Natural Resources, Hawaii's Most Invasive Horticultural Plants, http://www.state.hi.us/dlnr/dofaw/hortweeds/ (last visited Nov. 11, 2008) (defining invasive species as alien species that have a negative environmental, economic, or health impact on existing ecosystems).

[4] GEORGE W. COX, ALIEN SPECIES IN NORTH AMERICA AND HAWAII 283 (1999). Most of these dollar impacts are limited to impacts on agriculture, forestry, fisheries, and navigable waters. *Id.* at 251.

[5] *Id.* Cox points out how environmental changes caused by introductions of invasive species can permanently alter the ecosystem to a stable, yet altered, state from which full recovery can become nearly impossible. *Id.*

[6] *See* LRB, *supra* note 2, at 13-16.

[7] *Id.* at 13 (citing The Coordinating Group On Alien Pest Species, The Silent Invasion (1999), http://www.hear.org/cgaps/); *Searches for Tree Snake at Risk*, HONOLULU STAR-BULLETIN, Mar. 30, 2007, at A5.

Invasive species also pose a serious danger to public health in the form of disease outbreaks caused by invasive pests and the pathogens they carry. This threat was exemplified on Maui in 2001 when a dengue fever outbreak had serious negative health and economic repercussions. Not only were people sickened by the outbreak, but related effects to Hawaii's tourism industry also demonstrated how a more severe epidemic could potentially cost the states billions of dollars in lost taxes, revenues, and jobs.[8] Although the Maui dengue outbreak was not directly attributed to an invasive species, the human health and economic fallout caused by the outbreak exemplified the possible effects of an outbreak caused by an invasive species. The Hawaii State legislature noted, "There is wide-spread agreement among farmers, scientists, government agencies, business people, and others that stopping the influx of new pests is essential to Hawaii's future well-being."[9]

Federal and state legislation aimed at controlling the introduction of invasive species have been inadequate.[10] Legislation designed to empower federal agencies with the ability to prevent the introduction of NIS has been unsuccessful in its implementation. Problems with federal efforts include lack of funding for enforcement, lack of agency coordination at the state level, lack of coordination and cooperation among federal agencies, lack of a comprehensive legal regime at the federal level, and required compliance with international trade agreements.[11] The Environmental Protection Agency ("EPA"), a federal agency charged with maintaining environmental quality, has acknowledged that its efforts to contain and control invasive species have not effectively slowed introduction of invasive species nor the damage they cause.[12] The EPA's negative assessment was supported by Congressman Jim Saxton, who stated "I am sadly aware that we are losing the battle against these unwanted invaders [referring to invasive aquatic species]."[13]

Hawaii has responded to the NIS threat by enacting its own legislation and empowering state agencies to implement prevention and control policies. Despite Hawaii's efforts, however, the current state system has shortcomings similar to those at the federal level: inadequate program funding and incomplete

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[8] LRB, *supra* note 2 at 15; Yasmin Anwar, *Dengue Fever Count Now 59*, HONOLULU ADVERTISER, Oct. 18, 2001, http://the.honoluluadvertiser.com/article/2001/Oct/18/ln/ln01a.html.

[9] LRB, *supra* note 2, at 7 (quoting The Coordinating Group on Alien Pest Species, The Silent Invasion (1999)).

[10] John A. Ruiter, *Combating the Non-Indigenous Species Invasion of the United States*, 2 DRAKE J. AGRIC. L. 259, 260 (arguing for a more comprehensive approach to battling NIS).

[11] LRB, *supra* note 2, at 31-33.

[12] HENRY LEE II & JOHN W. CHAPMAN, ENVTL. PROT. AGENCY, NONINDIGENOUS SPECIES – AN EMERGING ISSUE FOR THE EPA VOLUME 2: A LANDSCAPE FOR TRANSITION: EFFECTS OF INVASIVE SPECIES ON ECOSYSTEMS, HUMAN HEALTH, AND EPA GOALS 33 (2001).

[13] *The Growing Problem of Invasive Species: Hearing Before the Subcomm. On Fisheries Conservation, Wildlife and Oceans and the Subcomm. On National Parks, Recreation, and Public Lands of the H. Comm. On Resources*, 108th Cong. 108-17 (2003).

policies.[14] In fiscal year 2000, Hawaii spent $7.6 million to fight invasive species, far short of the estimated $50 million that experts suggest is required to successfully address the situation.[15] Hawaii's State Senate admitted Hawaii's "[C]urrent protection system [is both] piecemeal and lacking adequate vigor and comprehensiveness."[16] This negative assessment is supported by findings that twenty-five new species of pests, plants, and animals appear in Hawaii every year.[17]

Compliance with global trade agreements has restricted the ability of state and federal agencies from fully combating the NIS threat. Accidental introductions are increasing as global trade and human travel increase.[18] Most of these unintentional introductions come from horticulture plant trade and increased human travel.[19] Even as the costs, health risks, and environmental damage associated with NIS become more apparent and widely accepted, further trade restrictions to prevent NIS introduction may become more politically unacceptable in light of the growing global economy.[20]

Public nuisance tort liability may provide a solution to NIS introduction where federal and state legislation has failed. This article argues that, although the problem of invasive species introduction has been addressed by various legal regimes, public nuisance tort liability is particularly well-suited and should be used to target those who negligently or deliberately introduce invasive species in Hawaii.

Part I analyzes the obstacles and deficiencies of current methods used to prevent the introduction of invasive species. This section focuses on insufficient state legislation and the absence of effective federal guidance in the face of ineffective legislation, shrinking federal law, and policies promoting free trade. Part II analyzes Hawaii's unique ability to use public nuisance liability given its relaxed standing requirements compared to other jurisdictions. Part III examines the advantages of using Hawaii's public nuisance standing rules to engage industries in a proactive solution to prevent invasive species from even being introduced. This final section analyzes the advantages of public nuisance liability to create an incentive for industries to internalize costs associated with

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[14] LRB, *supra* note 2, at 31.

[15] *Id.*

[16] S. Conf. Res. No. 45 H.D. 1, 21st Leg. (Haw. 2001).

[17] Cox, *supra* note 4, at 177. Many of these are unintentional introductions via airplanes, agricultural products, and people entering Hawaii everyday.

[18] Eric Biber, *Exploring Regulatory Options for Controlling the Introduction of Non-Indigenous Species in the United States*, 18 VA. ENVTL. L.J 375 (1999); John L. Dentler, 17 U. PUGET SOUND L. REV. 191, 194–195 (1993); Patricia Stephanie Easley, *Life Out of Bounds: Bioinvasion in a Borderless World*, 18 STAN. ENVTL. L.J. 347, 349.

[19] HAWAII'S INVASIVE SPECIES, BISHOP MUSEUM BIOLOGICAL SURVEY 7 (George Staples & Robert Cowie, eds., 2001).

[20] LRB, *supra* note 2, at 32.

NIS introduction that are currently passed on to Hawaii's taxpayers and government agencies. The article concludes by encouraging private citizens and public officials in Hawaii and other jurisdictions to adopt this mode of enforcement given the advantages argued and the unique challenge posed by invasive species introduction.

Overall, the dangers of invasive species have been well documented, and this article does not detail those effects. Instead, this article highlights and supports increasing interest within the legal community to apply the flexible nuisance doctrine to a new realm of environmental law. This article does not suggest that public nuisance law can provide the cure-all solution to invasive species introduction, yet public nuisance law may be an effective tool for an isolated island ecosystem such as Hawaii.[21]

I. OBSTACLES AND DEFICIENCIES OF CURRENT REGULATORY SYSTEM

Federal and state legislative attempts to prevent the introduction of invasive species are not new efforts. Starting as early as 1900, Congress passed legislation aimed at preventing the spread of invasive organisms threatening agricultural production.[22] Years later, Presidents Carter and Clinton signed executive orders encouraging federal authorities to prevent introduction of invasive species into federal land and encouraging private citizens as well as state and local governments to prevent introduction into "natural ecosystems."[23] Additionally, Congress enacted several federal statutes to provide resources to federal agencies to control the invasive species problem.[24] Despite all of these actions, however, the problem of invasive species introduction continually grows, especially in Hawaii, where dozens of new species appear annually and destruction to local ecosystems continues.[25]

A. Shortcomings at the Federal Level

Attempts at the federal level to officially recognize and control the

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[21] *See* Daniel P. Larsen, *Combating the Exotic Species Invasion: The Role of Tort Liability*, 5 DUKE ENVTL. L. & POL'Y. F. 21 (1995) (asserting public nuisance liability as one possible tool in a wide ranging, systemic approach to the problem of invasive species introduction).

[22] 18 U.S.C. § 42 (2007) (Referred to as the Lacey Act, the Secretary of the Interior was given the power to prevent the importation of certain plants and animals deemed to be injurious to humans, agriculture, and/or forestry, or wildlife. Violation of the act is considered a crime and punishable by a fine or up to six months imprisonment.).

[23] *See* Exec. Order No. 11,987, 3 C.F.R. 116 (1977) and Exec. Order No. 13,112, 3 C.F.R. 159 (1999).

[24] Alien Species Prevention and Enforcement Act, 39 U.S.C. § 3015 (2000); National Invasive Species Act, 16 U.S.C. §§ 4701 - 4751; Plant Protection Act, 7 U.S.C. §§ 7701 - 7772.

[25] *See* LRB, *supra* note 2, at 7-8; Justin Pidot, *The Applicability of Nuisance Law to Invasive Plants: Can Common Law Liability Inspire Government Action?*, 24 VA. ENVTL. L.J. 193 (2005) ("One hundred years after the first environmental law attempted to address invasive NIC, the problem has worsened dramatically").

introduction of invasive species have proved inadequate in execution, scope, and breadth. Although twenty federal agencies are authorized and mandated to prevent the damaging effects of NIS, none of these agencies have the required authority to address the problem effectively.[26] Federal efforts to control the proliferation of NIS are plagued by a lack of funding, inefficient inter-agency cooperation, and an unsupportive federal regulatory framework.[27] As a congressional study conceded, "The current Federal effort [at addressing invasive NIS] is largely a patchwork of laws, regulations, policies, and programs . . . ."[28] The same study observed that legislation intended to prevent the introduction of NIS is overly narrow and only indirectly addresses root causes.[29]

No single federal statute directly regulates all invasive NIS introductions into the United States.[30] Although Congress first addressed the problem of NIS introduction as early as 1900,[31] for almost a century there were no serious attempts to focus on specific species and their effects on native ecosystems.[32] During the 1990's, the federal government responded to calls within the scientific, environmental, and agriculture industries to use its police powers to impose civil and criminal penalties on parties that violated the statutes governing NIS.[33] The major legislative actions at the federal level that deal with preventing and controlling NIS introduction are the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 ("NANPCA"),[34] the National Invasive Species Act of 1992 ("NISA"),[35] and the Plant Protection Act of 2000 ("PPA").[36]

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[26] Marc L. Miller, *The Paradox of U.S. Alien Species Law, in* HARMFUL INVASIVE SPECIES: LEGAL RESPONSES 125 (Marc L. Miller & Robert N. Fabian eds., 2004).

[27] Pidot, *supra* note 25, at 183 (asserting that nuisance liability can inspire government agencies to more adequately address the invasive species problem).

[28] Pidot, *supra* note 25, at 11 (quoting Office of Tech. Assessment, U.S. Cong. Publ'n No. OTA-F-565, Harmful Non-Indigenous Species in the United States 11 (1993)).

[29] *Id.* ("Many only peripherally address NIS, while others address the more narrowly drawn problems of the past, not the broader emerging issues.").

[30] Larsen, *supra* note 21, at 26.

[31] *Id.* at 26-27 (Act of May 25, 1900, ch. 553, 31 Stat. 187).

[32] Larsen, *supra* note 21, at 26-27. The first of this recent legislation was the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990, which addressed the introduction of NIS aquatic species through ballast water of shipping vessels. 16 U.S.C. § 4711 (1990).

[33] David M. Whalin, *The Control of Aquatic Nuisance Nonindigenous Species,* 5 ENVTL. L. 65, 120 (1998).

[34] Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990, 16 U.S.C. § 4712 (1994); Eric Biber, *Exploring Regulatory Options for Controlling the Introduction of Non-Indigenous Species to the United States,* 18 VA. ENVTL. L.J. 375, 394-5 (1999).

[35] National Invasive Species Act, 16 U.S.C. §§ 4701–51 (1997); Biber, *supra* note 18, at 390.

[36] Plant Protection Act, 7 U.S.C. §§ 7701–79 (2000); Pidot, *supra* note 25, at 194.

1. Nonindigenous Aquatic Nuisance Prevention and Control Act

NANPCA initially addressed the unintentional introduction of NIS through the ballast water of ships in the Great Lakes and Hudson River watershed, but the statute's coverage was later expanded to apply to all ports within United States waters.[37] NANPCA specifically responded to the introduction of zebra mussels in the Great Lakes and the resulting damage caused to the region's water and port infrastructure.[38] NANPCA requires ships to minimize the impact of aquatic NIS introduction in domestic ecosystems by forcing them to exchange their ballast water away from U.S. ports.[39] Under NANPCA, ships can opt out of participation in the exchange program by adopting environmentally sound alternatives to ballast water dumping.[40] Initially, the voluntary ballast water exchange program was set up outside the Great Lakes basin.[41] NANPCA allows civil and criminal sanctions to be imposed for each day that a ship violates NANPCA's guidelines.[42] NANPCA also created a task force to develop a program to combat the introduction of NIS.[43] The resulting program charged the Coast Guard with the duty of adopting specific guidelines regarding ballast water exchange and enforcing a mandatory ballast exchange program.[44]

Deficiencies of NANPCA include its limited coverage and jurisdiction, unstable and inadequate federal funding, and its preclusion of citizen enforcement.[45] First, NANPCA is limited in jurisdiction because it primarily applies to the Great Lakes ports. Outside of the northeast United States, the ballast exchange program is not fully implemented and enforced.[46] Even if NANPCA was implemented outside of the Great Lakes, the statute only focuses on aquatic species and ballast water introduction.[47] NANPCA's focus on ballast water addresses only one avenue, or vector, in which invasive species are introduced, and completely ignores the threat posed by land-based NIS.[48]

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[37] Whalin, *supra* note 33, at 119.

[38] Zebra muscles have a history of being a very troublesome invasive species because they spread rapidly in drain pipers and other fresh water enclosed spaces and can cause lots of damage. Population densities of zebra muscles in Lake Erie essentially cover every underwater object. Larsen, *supra* note 21, at 2, 5.

[39] Ruiter, *supra* note 10, at 268.

[40] Larsen, *supra* note 21, at 32.

[41] Ruiter, *supra* note 10, at 267.

[42] Civil fines are up to $25,000 for every day of violation and a possible class C criminal felony. Nonindegenous Aquatic Nuisance Prevention and Control Act, 16 U.S.C. § 4711g (1994); Whalin, *supra* note 33, at 120.

[43] John L. Dentler, *Noah's Farce: The Regulation and Control of Exotic Fish and Wildlife*, 17 U. PUGET SOUND L. REV. 191, 218 (1993) (evaluating the adequacy of federal and Washington state efforts to combat invasive species).

[44] Larsen, *supra* note 21, at 32; *See* Ruiter, *supra* note 10, at 267.

[45] Larsen, *supra* note 21, at 33.

[46] Miller, *supra* note 26, at 136-37.

[47] *Id.*

[48] Whalin, *supra* note 33, at 120.

Although the focus on ballast water is important for preventing introduction of aquatic species, invasive species legislation must be comprehensive enough to address terrestrial species as well.

Second, NANPCA's funding lacks the steady, stable base required to develop an effective national program to prevent aquatic NIS introduction.[49] Without this funding, the required research, agency coordination, and enforcement are overwhelming.[50] With limited funds and resources, agencies tend to focus on the species that will get the most attention in order to guarantee future funding.[51]

Last, NANPCA's civil and criminal sanctions are enforced by executive agencies and do not allow for citizen enforcement or damages to affected communities.[52] This mode of enforcement, referred to as a command and control structure because of its hierarchical method, is criticized for stifling creative solutions because it does not provide incentives for private parties to develop new technologies and methods to limit introduction.[53] NANPCA's command and control structure also resigns enforcement and implementation to inconsistent political commitments and federal administrative priorities. Without a statutory provision specifically providing for citizen enforcement, the scientific complexity, geographic breadth, and enormous costs of NIS exceed the ability of private parties to bear the costs of facilitating native ecosystems.[54]

Although far from perfect, NANPCA represents the first good faith recognition by Congress that NIS introduction is a wide-ranging problem requiring a solution based on funded research programs, technological advances, and mandatory regulatory guidelines.

2. National Invasive Species Act

In 1996, Congress passed the National Invasive Species Act ("NISA"), a statute intended to stem the tide of NIS introduction in the United States by providing a more direct and comprehensive approach than NANPCA.[55] NISA focuses on interstate travel and therefore addresses both terrestrial and aquatic NIS.[56]

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[49] Ruiter, *supra* note 10, at 269; Biber, *supra* note 18, at 403.

[50] *See* Ruiter, *supra* 10, at 269. Only $1 million is spent on control of aquatic NIS.

[51] The gypsy moth is used as an example of a high profile pest given much attention by regulatory agencies at the expense of less well known but perhaps more harmful invasive species. Biber, *supra* note 18, at 401.

[52] Larsen, *supra* note 21, at 33.

[53] Larsen refers to the private sector as the segment of society most capable of developing an innovative and effective solution to the invasive species problem. *Id.* at 7; Biber, *supra* note 18, at 400.

[54] Biber, *supra* note 18, at 400.

[55] Whalin, *supra* note 33, at 121.

[56] NISA also re-authorized NANPCA and expanded regulation of ballast water to a nationwide program under the Department of Transportation. Eric Biber, *supra* note 18, at 395; Whalin, *supra* note 33, at 122.

NISA is significant for Hawaii because it federally recognizes and targets the importation of NIS from foreign countries and interstate commerce from the continental United States.[57] NISA also specifically addresses the problem of NIS introduction into Hawaii by focusing on inspection of interstate mail packages, and authorizes inspection of all incoming mail to Hawaii.[58] NISA recognizes that postal services are a significant vector for the intentional introduction of invasive species.[59] NISA uses a pre-existing "black list" of non-mailable species and allows for the lists' expansion as scientists develop a better understanding of the affects of NIS introduction.[60] This regulation of interstate activity (the mail system) was a significant step forward in curbing the intentional introduction of invasive species.[61]

NISA has significant shortcomings, including its reactive approach and focus on intentionally introduced NIS.[62] The reactive approach of NISA's "black list" of banned species is problematic because the science behind invasive species is constantly responding to changing environmental factors. Therefore a fixed list of banned species gives no incentive to prevent the introduction of species whose harm is unknown.[63] Since this list creates a presumption in favor of introduction unless stated otherwise, lists of species with harmful impacts will always be reactive rather than proactive and merely ameliorate the harm rather than prevent it in the first place.[64]

Although NISA's command and control enforcement can be effective for curbing intentional introduction through postal services, this mode of enforcement has not served to slow the tide of negligent and unintentional introduction of NIS to Hawaii.[65] NISA targets intentional introductions by mail

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[57] Larsen, *supra* note 21, at 31.

[58] 39 U.S.C. § 3015; Larsen, *supra* note 21, at 33.

[59] Whereas NISA's predecessor, the Lacey Act, dealt primarily with importation of injurious animals from other countries (mainly for agriculture protection), NISA applied this regulatory solution to other species (pests, plants) and interstate mail. Larsen, *supra* note 21, at 27.

[60] *Id.* at 28.

[61] Miller, *supra* note 26, at 138; Larsen, *supra* note 21, at 34.

[62] *See* Larsen, *supra* note 21, at 34 ("[I]t uses the flawed 'dirty list approach from the Lacey Act for designating 'injurious animals.'"); Whalin, *supra* note 33, at 120-22.

[63] Larsen, *supra* note 21, at 28-29.

[64] Larsen, *supra* note 21, at 28 (pointing out disadvantages of the Lacey Act's dirty list system, upon which NISA is based , as too inflexible too accommodate new species and have significant benefits). *See* Dentler, *supra* note 18, at 226. Pidot, *supra* note 25, at 194 n.71. Critics of NISA have argued that if serious about combating NIS, Congress needs to create a list of species . This different presumption would be the opposite of the current list and create a list of allowed species and presume all others banned. In 1973, The Department of Interior, with support for environmental groups such as Sierra Club, proposed creating a "clean list" regulatory system in which all species are deemed inappropriate for introduction unless explicitly stated other wise. After intense opposition from the pet trade industry and several scientific groups, this idea was not implemented. Robert Brown, *Exotic Pets Invade United States Ecosystems: Legislative Failure and a Proposed Solution*, 81 IND. L.J. 713, 719 (2006).

[65] Larsen, *supra* note 21, at 34.

and cargo, rather than unintentional introduction caused by negligent handling or inspection of cargo containing invasive species.[66] NISA's focus on intentional introduction fails to address the increasing causes of horticulture trade and human travel.[67] Similar to the downfalls of NANPCA, NISA does not allow for citizen enforcement,[68] and instead uses civil penalties levied by overwhelmed agencies to deter introduction and contribute to clean up costs.[69]

3. Plant Protection Act

The Plant Protection Act of 2000 ("PPA"),[70] which targets species that have negative impacts on native plant species, was designed primarily to protect agricultural production.[71] The PPA creates broad authority to control invasive pests and plants by allowing the United States Department of Agriculture to restrict interstate transportation of "noxious weeds."[72]

The PPA's main drawbacks are its bias toward agriculture industries and its ineffectiveness in preventing the introduction of species harmful to plants not involved in market production.[73] This bias results in sensitive native ecosystems being ignored at the expense of agricultural interests. Federal agencies focus their efforts on eradicating high-profile existing invasive pests instead of focusing on equally environmentally damaging, less well-known species that harm non-agricultural land.[74]

The PPA also contributes to the lack of agency coordination that has historically plagued enforcement of NIS legislation. The PPA contains language that prevents states from imposing additional or different restrictions on federally listed plants under the Act.[75] States have responded by banning importation of plants not on the federal list of noxious weeds, which has transformed the PPA into a baseline that forces states to unilaterally act for further protection.[76] With each state imposing bans on different species and federal agencies responding to the minimal NIS listings, jurisdictional and communication problems are inevitable. This federal baseline approach

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[66] *Id.*

[67] *Id.*

[68] *Id.*

[69] Civil penalties for each introduction or day of continuous introduction are to be at least $250 but not more than $100,000. 39 U.S.C. § 3018(c)(1) (2000).

[70] Pidot, *supra* note 25, at 194-95. The PPA consolidated several existing agricultural law, including the Plant Quarantine Act, Federal Plant Pest Act, Federal Noxious Weeds Act, and certain parts of the Organic Act, all of which specifically protected agricultural production.

[71] *Id.*

[72] *Id.* at 194. The Noxious Weed Control and Eradication Act of 2004 added to the PPA by providing grant money and additional funds to encourage and control the targeted problem.

[73] Pidot, *supra* note 25, at 195.

[74] Biber, *supra* note 18, at 400-01.

[75] Pidot, *supra* note 25, at 196.

[76] *Id.*

facilitates the patchwork, non-uniform system that has led to inconsistent and inadequate prevention of NIS introduction.

4. Executive Orders

There have been two administrative attempts at the federal level to control the introduction of NIS.[77] Although both orders had good intentions, each failed in their execution because of a lack of enforcement and implementation. In 1977, President Carter issued Executive Order 11,987 to direct agencies to restrict and prevent introduction of NIS into native ecosystems owned or operated by the federal government.[78] The damage caused by NIS was not a widely accepted problem at that time, and federal authorities did not implement or enforce the order's mandate.[79]

In 1999, President Clinton executed Executive Order 13,112 ("EO") in order to minimize the economic, ecological, and human health impacts caused by NIS introduction.[80] Clinton's EO established the National Invasive Species Council ("NISC"), a national body charged with creating a plan to achieve the goals of the EO through its centralized coordinating authority.[81] Once again, however, this administrative solution proved to be ineffective and incapable of approaching the systemic causes of the invasive species problem.[82] The plan created by the NISC became a low priority of federal agencies. A Congressional investigation noted that few of the EO's required actions were ever completed and little progress was ever made in the overall implementation of the plan.[83]

B. Hawaii's Inability to Control NIS Introduction

Hawaii's native species are particularly sensitive and vulnerable to invasive species because the islands' geographic isolation facilitated unique evolution patterns in a secluded environment and caused Hawaii's native species to lose

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[77] Executive Orders are an odd area of law, where presidents direct one or more specific agencies to act in a particular manner. Although Executive Orders (EO) cannot create new government powers because legislative power is vested in Congress, EO's can direct authority already vested in the executive branch.

[78] Exec. Order No. 11,987, 3 C.F.R. 116 (1978), *as reprinted in* 42 U.S.C. § 4321 (2000).

[79] "It is wrong, I think, to judge Executive Order No. 11987 as anything other than a truly bold but ultimately ineffectual statement of wise policy unfortunately ahead of its time." Miller, *supra* note 26, at 148; "[T]he Order was little more than an empty promise because the authorized guidelines were neither finalized nor implemented." Larsen, *supra* note 21, at 31.

[80] Exec. Order No. 13,112, 64 Fed. Reg. 25 (Feb. 8, 1999); Miller, *supra* note 26, at 148; Pidot, *supra* note 25, at 197-98.

[81] Miller, *supra* note 26, at 149.

[82] *Id.*

[83] Pidot, *supra* note 25, at 197 (stating that less than 20% of the plan's recommendations and actions were ever implemented and the whole program was slow in getting off the ground).

their natural defense mechanisms.[84] A prominent conservation biologist noted that invasive species are the leading environmental problem in Hawaii, yet the general public does not consider the cumulative and ecological impacts of NIS serious.[85] This lack of citizen concern translates into inadequate state legislation that is theoretically comprehensive yet inadequately implemented.

Although Hawaii's system to prevent and control the introduction of NIS is considered one of the world's best, its implementation remains inadequate due to jurisdictional gaps between agencies and inadequate funding of enforcement.[86] An examination of the agencies responsible for enforcement of this regime demonstrates that, despite seemingly effective attempts at a comprehensive system of policy enforcement, current coordinated efforts leave large gaps unable to be filled by under-funded agencies.

1. State Agencies

Although Hawaii's system of invasive species control attempts to create a coordinated system between specialized agencies, the overall effect of this decentralized regime has been the creation of jurisdictional gaps between responsible agencies. The limits of Hawaii's coordinated effort are exemplified by the state agencies responsible for the bulk of the inspection and eradication efforts associated with NIS: the Hawaii Department of Agriculture ("HDOA")[87] and the Hawaii Department of Land and Natural Resources Division ("DLNR").[88] A memorandum of understanding between these two agencies renders the HDOA responsible for preventing the introduction of NIS into the state and delegates eradication of introduced species to the DLNR.[89] Despite the memorandum of understanding, a lack of practical coordination between the two agencies exacerbates the jurisdictional gaps created by their confined roles in

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[84] Cox, *supra* note 4, at 176. Some of the other factors that caused Hawaii's unique biodiversity are the lack of large mammals, lack of terrestrial grazers, and its relatively late human colonization. LRB, *supra* note 2, at 8.

[85] Cox, *supra* note 4, at 186. In the past few years, public education efforts have attempted to alert citizens and tourists to the costs and problems associated with invasive species as a means to enlist citizen support for eradication efforts, funding requests, and prevention awareness. Staples & Cowie, *supra* note 19, at 9-11.

[86] Susan Miller & Alan Holt, *The Alien Pest Species Invasion in Hawaii: Background Study and Recommendations for Interagency Planning* 69, THE NATURE CONSERVANCY, (July, 1992), *available at* http://www.hear.org/articles/pdfs/nrdctnch1992.pdf [hereinafter TNC Background Study].

[87] LRB, *supra* note 2, at 21, The DLNR division of Forestry and Wildlife is the specific branch of the DLNR responsible for NIS eradication on conservation and agricultural land.

[88] *Id.* at 25, For a full list of all state and federal agencies involved in NIS prevention and control programs in Hawaii, *see* THE NATURE CONSERVANCY OF HAWAII, NATURAL RESOURCES DEFENSE COUNCIL, THE ALIEN PEST SPECIES INVASION IN HAWAII: BACKGROUND STUDY AND RECOMMENDATIONS FOR INTERAGENCY PLANNING, July 1992, *available at* http://www.hear.org/articles/pdfs/nrdctnch1992.pdf.

[89] LRB, *supra* note 2, at 27.

implementing the overall invasive species system.

The HDOA, a highly specialized agency that carries out the majority of the state's prevention programs, reflects the downfalls of entrusting rigidly organized and already overwhelmed state agencies with broad invasive species policy enforcement. In an attempt to be a comprehensive clearinghouse for preventing introduction of invasive species, the HDOA maintains lists of permitted, restricted, and prohibited species that encompass a wide array of microorganisms, pathogens, plants, and animal species. [90] Since these lists were codified into rules through the Hawaii Attorney General, any attempt to amend the lists must be through the normal public notice, hearing, and comment processes mandated by the Hawaii Administrative Practices Act.[91] This rigid amendment procedure prevents the HDOA from quickly responding to new invasive species threats.

Similarly, the DLNR's Division of Forestry and Wildlife ("DFW") exemplifies the difficulties faced by an already under-funded and overwhelmed agency responsible for implementing the majority of Hawaii's invasive species eradication efforts.[92] The DFW, the nation's only state agency to combine forestry and wildlife protection,[93] has jurisdiction over invasive species eradication on 800,000 acres of state owned land as well as certain agriculture lands.[94] The double duty of forestry and wildlife protection undertaken by the DFW, combined with the large amount of land under its jurisdiction, overwhelms the agency with the responsibility of levying penalties for DLNR rule violations, acting as the state's main regulator of endangered species and critical habitat, and eradicating invasive species on public land.[95]

In addition to the overwhelming burden created by consolidating forestry and wildlife protection in a single agency, the DFW is frequently asked to cooperate in invasive species eradication with other agencies and landowners beyond the DFW's statutory mandated jurisdiction.[96] Although the DFW makes limited progress in eradicating invasive species, DFW's various authorities and large jurisdictional mandate limits its ability to adequately implement its invasive species policies.

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[90] HAW. REV. STAT. § 141-43. This list is an example of a "clean list" supported by many experts and lobbied for at the federal level; TNC Background Study, *supra* note 86, at 25.

[91] TNC Background Study, *supra* note 86, at 25.

[92] HAW. REV. STAT. § 183-1.5(4); HAW. REV. STAT. § 183D-2(1); LRB, *supra* note 2, at 25.

[93] TNC Background Study, *supra* note 86, at 42-43.

[94] *Id.* (including forest reserves, hiking trails, and recreation areas); HAW. REV. STAT. § 195-4(a).

[95] HAW. REV. STAT. § 183D and 195D (year). TNC Background Study, *supra* note 86, at 43. These wildlife and wilderness preserve areas cover about 200,000 acres throughout the state.

[96] The DFW often acts at the invitation of private landowners or other government agencies to lead eradication efforts in remote or rural areas where an invasive pests or species introduction threatens to spread to surrounding areas. Some of these control efforts include chemical spraying for weed control and trapping invasive snakes, mongoose, and feral cats. TNC Background Study, *supra* note 86, at 42.

2. Collaborative Efforts

Hawaii's legislature responded to the growing invasive species threat and overwhelmed state agencies by creating collaborative efforts to combat the NIS problem. The first of these collaborative efforts was the Coordinating Group on Alien Pest Species ("CGAPS"),[97] a de-centralized committee composed of management-level participants from major government agencies and private organizations.[98] Created in 1995 to facilitate collaboration between interested parties relevant to NIS prevention and control in Hawaii,[99] CGAPS represents a much needed first effort to raise public awareness and facilitate communication among state, federal, and community organizations.[100] However, CGAPS's decentralized structure and management-level members lack the high-level participation and political leadership necessary to commit major government resources to NIS control and prevention.[101] Although CGAPS influences funding decisions, promotes broad communication, institutes public awareness programs, coordinates focus groups, and conduces case studies,[102] CGAPS has been unable to facilitate the substantial cooperative commitment of resources necessary to adequately combat the invasive species threat.

In response to CGAPS's shortcomings and a study by the Legislative Reference Bureau that found "[T]he State lacked political will to effectively fight the invasive species problem,"[103] the Hawaii legislature created the Hawaii Invasive Species Council ("HISC") in 2003.[104] Hawaii's creation of the HISC expresses a political realization, at least on paper, of its commitment and political will to address NIS introduction. Co-chaired by the DLNR and HDOA (Hawaii's main NIS prevention and control agencies), it consists of leaders from the University of Hawaii, Hawaii Department of Tourism, Department of Transportation, Department of Health, and state and county governments.[105]

HISC members can make major commitments and take leadership roles in coordinating NIS policy because the HISC is comprised of high level leaders

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[97] CGAPS (http://www.hawaiiinvasivespecies.org/cgaps/)- main webpage, http://www.hear.org/cgaps (Nov. 22, 2008)

[98] *Id.*

[99] CGAPS brochure, http://hear.org/cgaps/pdfs/200406HISC_ISC_CGAPS_brochure.pdf (Nov. 22, 2008). [hereinafter CGAPS brochure]

[100] *Id.*

[101] LRB, *supra* note 2, at 63.

[102] *Id.*

[103] LRB, *supra* note 2, at 64.

[104] HAW. REV. STAT. § 194; LRB, *supra* note 2, at 28; DEPARTMENT OF LAND AND NATURAL RESOURCES, HAWAII INVASIVE SPECIES COUNCIL, http://www.state.hi.us/lrb/rpts02/gaps.pdf; SB 1505 (study by the legislative reference bureau that analyzed the effectiveness of the council and lead agency approaches around the world in combating NIS).

[105] CGAPS brochure, *supra* note 99; 2007 Legislative report and summary, http://www.state.hi.us/lrb/rpts02/gaps.pdf;
http://www.hawaiiinvasivespecies.org/pdfs/2007cgaps_statewidereport.pdf [hereinafter Legislative Report].

from a wide range of agencies.[106] By including the heads of these important organizations rather than merely the management level personnel like CGAPS, the HISC improved on CGAPS and injects authority and accountability into NIS policy enforcement.[107]

3. Jurisdiction Gaps

Although GCAPS and HISC are substantial efforts to consolidate authority and coordinate agency activity relating to NIS policy implementation, many jurisdictional gaps persist. First, the discovery of a new invasive species leads to a jurisdiction gap as responsibility shifts from HDOA prevention responsibilities to DFW-led eradication.[108]

This jurisdictional confusion occurred between the HDOA and DLNR and led to costly delays that allowed the Coqui frog to introduce itself and spread throughout the Hawaiian Islands.[109] When the Coqui's introduction on the Island of Hawaii was first discovered in the late 1990's, jurisdiction seemed to belong to the HDOA because the frog was accidentally introduced through ornamental plants, which are technically under the authority of the HDOA.[110] However, jurisdiction over the Coqui frog transferred from the HDOA because the memorandum of understanding between the DLNR and HDOA gave the DLNR control over all eradication efforts.[111] The transfer of jurisdiction took time and resulted in a delay before the DNLR initiated eradication efforts.[112] Confusion over agency responsibility and funding coupled with underestimating the scope of the potential damage led to substantial delay that allowed the frogs to spread.[113] The Coqui frog's introduction proved that without a clear lead agency from the outset, jurisdictional gaps can have serious repercussions.[114]

The transfer of jurisdiction from the HDOA to DFW occurs at a crucial time in controlling damage caused by the invasive species. Rather than being able to quickly eradicate the problem initially, confusion over appropriate jurisdiction

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[106] *See* LRB, *supra* note 2, at 63.

[107] *Id.*

[108] TNC Background Study, *supra* note 86, at 65. As noted above, the HDOA has minimal authority over prevention and detecting while DFW focuses on control.

[109] LRB, *supra* note 2, at 62.

[110] Since ornamental plants are terrestrial forma, they are considered agricultural products and therefore under jurisdiction of the Hawaii Department of Agriculture ("HDOA").

[111] *See* LRB, *supra* note 2, at 62.

[112] Despite the Memorandum Of Understanding, confusion persisted because DLNR has jurisdiction over "established" pests while HDOA maintains jurisdiction over "escaped" pests. TNC Background Study, *supra* note 86, at 65.

[113] *See* LRB, *supra* note 2, at 62.

[114] LRB, *supra* note 2, at 62. Several states and New Zealand currently have a lead agency approach to NIS. Although a lead agency provides administrative accountability, responsibility, and concentrated authority, its critic point out the system's inherent bias toward agricultural industries, its drain of funding on other environmental departments, and the problem of a lead agency not understanding the capacities and needs of other involved agencies.

leads to costly delay and damage to Hawaii's agriculture and ecosystems.

Another jurisdictional gap exists in determining which agency should conduct the inspection of incoming materials that may contain invasive species. The HDOA's inspection responsibilities primarily focus on materials originating from the continental United States. Because the HDOA's jurisdiction is limited to one vector of imported materials, the HDOA must be referred by U.S. Customs or another federal agency to intercept items originating outside the United States.[115] HDOA's constraint on domestic imports allows incoming freight to fall outside the state's jurisdiction, yet potentially not be adequately reviewed by under-staffed federal agencies.[116]

In addition, thorough inspection of foreign and domestic cargo is difficult because cargo is unloaded and stored by a number of private commercial companies rather than a centralized customs center.[117] A shortage of inspectors forces the HDOA to rely on self reporting by shippers who might not have an incentive to accurately and thoroughly describe their manifest in a decentralized inspection system.[118] While smuggling and inadvertent introductions are commonplace in such a setting, some high-risk cargo, such as cut timber, is not inspected at all.[119]

4. Lack of Funding

The ability of Hawaii to successfully combat invasive species is inhibited by cuts to government-funded programs, minimal earmarking of funds for NIS programs, and a lack of special NIS related taxes. Various Hawaii state agencies charged with enforcing NIS statutes complain that the lack of funding is the greatest hindrance in its fight against invasive species.[120] Hawaii officials have also recognized that improving funding is more crucial than any other proposed change to the current NIS regime.[121]

In 2000, the Government Accountability Office found that Hawaii spent $7.6 million on invasive species policy enforcement,[122] roughly 15% of the $50,000,000 amount needed to successfully implement federal and state NIS programs.[123] Similarly, HISC's budget was cut in half for the fiscal year 2007,

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[115] TNC Background Study, *supra* note 86, at 25.

[116] To see problems of the federal system of preventing importation and introduction of invasive species, *see supra* notes 26-84 and accompanying text.

[117] TNC Background Study, *supra* note 86, at 59.

[118] *Id.*

[119] *Id.*

[120] LRB, *supra* note 2, at 34.

[121] *Id.*

[122] *Id.* State government agencies did their own study of NIS program expenditures and came up with a figure of $11 million for 2000, numbers which are inconsistent with both GAO and CGAPS findings. *Id.* at 35, endnote 2 on 42.

[123] LRB, *supra* note 2, at 34.

from $4,000,000 the previous three years to $2,000,000 for 2007.[124] Although the DFW is the lead control agency and employs approximately 25 staff members with an operating budget of over $2 million, it has no permanent research facility and/or staff and therefore relies on other agencies to fill this gap.[125] According to Governor Lingle's Office, the DLNR's 2007-2009 operating budget to fight invasive species will include $2 million in added funding to offset the decreased funding to HISC.[126] However, the majority of these funds went to eradication and control efforts,[127] even though many experts agree that prevention is more efficient for combating invasive species introduction.[128]

The lack of clear directives by the legislature to redirect and allocate funds specifically to NIS makes consistent funding difficult.[129] When state funding sources funnel into general budgets within an agency or department, those funds are sometimes not used for invasive species control.[130] Without a link between funding sources and NIS policy implementation, the bases on which these programs rely is eroded because of difficulty tracking the exact amount of government funds spent.[131]

Similarly, special taxes designed to pay for efforts to prevent and control NIS, rare as they are, are often not clearly earmarked for invasive species programs and instead get folded into general funds. One example is the air cargo tax, which is authorized by statute.[132] Although some of the generated fees have been used in NIS prevention programs at Hawaii's major airports, there is no statutory language linking those fees to specific NIS policy implementation. Therefore the money generated from the cargo tax does not directly fund invasive species policies.[133]

Despite the current funds allocated to Hawaii's NIS programs, it still falls dramatically short of the estimated $50 million required to successfully implement the preventative and control programs. A new economic approach to NIS prevention and control, such as tort liability, is needed if the government cannot provide the necessary funds to implement the legal regime.

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[124] Legislative Report, *supra* note 105, at 5.

[125] TNC Background Study, *supra* note 86, at 43.

[126] HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES 2007 BUDGET REQUEST, http://www.hawaii.gov/dlnr/reports/2007-2009%20DLNR%20Budget%20Summary.pdf

[127] *Id.;* Legislative Report, *supra* note 103, at 6.

[128] Staples & Cowie, *supra* note 19, at 9; TNC Background Study, *supra* note 87, at 69.

[129] LRB, *supra* note 2, at 41.

[130] *Id.*

[131] *Id.* at 40.

[132] HAW. REV. STAT. § 261-7(e) (2008) and HAW. ADMIN. RULES § 19-16.1-1 (2008).

[133] LRB, *supra* note 2, at 41.

II. PUBLIC NUISANCE LAW: A POTENTIAL MEANS OF ADDRESSING INVASIVE SPECIES

Although some legal scholars have described nuisance law as an amorphous doctrine, courts have defined public nuisance as an unreasonable and substantial non-trespassory interference with a public right.[134] Fundamentally, public nuisance law provides a cause of action to compensate plaintiffs and abate unreasonable interferences with public rights.[135]

The cause of action in a public nuisance suit can be brought by either private parties on behalf of the public or by government officials representing the sovereign state. During a public nuisance suit brought by private parties, the private party acts as a public representative and the private cause of action represents public rights.[136] Individuals who bring public nuisance suits act as representatives of the public good. On the other hand, a government official's cause of action is on behalf of the sovereign state and the public rights the government protects.[137]

Using public nuisance to vindicate environmental harm has some unique advantages, such as the ability to focus on the effect of an action, the opportunity for plaintiffs to receive damages and injunctive relief, and the creation of a vehicle to protect community values from localized problems.[138] Professor Denise Antolini has distilled three unique characteristics of nuisance law: substantial interference with a public right, unreasonableness of defendant's conduct, and equitable flexibility.[139] This section will demonstrate how the elements and rules associated with public nuisance make the doctrine advantageous for invasive species protection.

A. *Elements of Public Nuisance*

Public nuisance suits brought by government officials and those brought by private parties share similar elements and legal claims within tort liability. The similarities between public nuisance brought by governments and those brought by private parties include requirements of a substantial effect, the use of

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[134] Nelson Smith, III, *Nuisance and Trespass Claims in Environmental Litigation: Legislative Inaction and Common Law Confusion*, 36 SANTA CLARA L. REV. 39, 52 (1995) (citing Hydro Manufacturing, Inc v. Kayser-Roth Corp., 740 A.2d 950 (R.I. 1994)); Denise Antolini, *Modernizing Public Nuisance: Solving the Paradox of the Special Injury Rule*, 28 ECOLOGY L.Q. 755, 756 (2001) (arguing for a modernization of public nuisance in order to avoid unjust results resulting from lack of standing under the special injury rule).

[135] RESTATEMENT (SECOND) OF TORTS § 821B (1997) [hereinafter RESTATEMENT]; Pidot, *supra* note 25, at note 193.

[136] Larsen, *supra* note 21, at 50.

[137] *Id.* at 41. Most legal scholars trace this aspect of public nuisance law to medieval England, where a royal sovereign acted for the benefit of his subjects and had the inherent authority to bring legal actions on behalf of their welfare.

[138] Antolini, *supra* note 134, at 773-75.

[139] Antolini, *supra* note 134, at 771.

reasonableness test to determine the extent of the interference, and the finding of a public right being interfered with.[140] Similarly, both doctrines focus primarily on the effect of the alleged action rather than the action itself.[141]

If a court finds an activity results in a substantial and unreasonable interference with a public right, the court can proceed to determine the other requirements of a successful public nuisance claim.[142] In *People ex. Rel. Gallo v. Acuna*, the California Supreme Court recognized that a public nuisance is an offense against a right common to the public and stressed the importance of examining the harm itself when considering whether or not a public nuisance exists.[143] In *Gallo*, the San Jose city attorney sought an injunction prohibiting certain gang members from associating together in public, claiming the gangs presented a public nuisance that intimidated members of the community. In affirming the injunction, the California Supreme Court held that the reasonableness of the interference should be determined in an impartial, objective manner to determine whether or not the conduct constitutes a public nuisance.[144] The court emphasized that determining the interference to be harmful is central to finding a public nuisance, and the alleged harm must be measured objectively and constitute a real, substantial invasion.[145]

Both types of public nuisance use this reasonableness test to determine the gravity of the interference imposed on public welfare.[146] However, different burdens of reasonableness exist for public nuisance suits brought by private parties and those brought by public officials (see below). In order for the action to be unreasonable, "[T]he gravity of the harm [must] outweigh the utility of the actor's conduct."[147] This broad reasonableness test allows the definition and finding of a public nuisance to evolve over time as the values and characteristics of the affected community change.[148] An advantage to this flexible reasonableness doctrine is that it allows for more equitable judicial control over what is otherwise a very amorphous and broad-reaching cause of action.[149] Although a determination of a public nuisance considers the reasonableness of the conduct, it does not substantially detract from the doctrine's focus on compensation over cause and the requirement that the interference be

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[140] Larsen, *supra* note 21, at 40-41.

[141] "The essential element of an actionable nuisance is predicated upon unreasonable injury rather than upon unreasonable conduct." *Id.* at 49. (citing Wood v. Picillo, 443 A.2d 1244, 1247 (R.I. 1982)).

[142] Antolini, *supra* note 134, at 773.

[143] *See generally* 929 P.2d 596 (Cal. 1997).

[144] *Id.* at 605 (citing the RESTATEMENT (SECOND) OF TORTS, §821F (1979)).

[145] *Id.*

[146] RESTATEMENT, *supra* note 135, §§ 826(a) & 827

[147] Larsen, *supra* note 21, at 42.

[148] *Id.*

[149] Antolini, *supra* note 134, at 772-73.

substantially offensive to the affected community.[150] Accordingly, the type of harm that a court will abate does not seem to be any different for public versus private nuisance suits.[151]

1. Advantages of Public Nuisance Suits Brought by Government Officials on Behalf of the State

Unlike private parties who bring a public nuisance claim, a government official acting on the part of a sovereign does not need to prove fault to establish liability for the public nuisance.[152] Instead, the court uses strict liability for damage caused by the defendant's action.[153] The strict liability rule conforms to the rationale behind traditional public nuisance law where a violation of public welfare must concede to the police power of the sovereign.[154] Rather than inquire into the mental state of the defendant in order to find negligence, intent, or knowledge, the court uses strict liability to expedite and strengthen the sovereign's ability to control public welfare.[155] This strict liability rule is a powerful tool because it allows the sovereign to protect public resources from interferences caused by private parties, even on private land.[156]

Other than the strict liability rule, another major advantage of public nuisance suits brought by public officials is that statutes of limitations do not apply.[157] The rejection of the statute of limitations as a bar to suit exemplifies how far courts are willing to go in order to facilitate government protection of public rights. For example, in a public nuisance suit brought by the State of California against a mine operator, the California Supreme Court stated that "[A] right to continue a public nuisance cannot be acquired by prescription."[158] The rejection of a statute of limitations in that case exemplified the court's willingness to prevent the continued interference with a public right and concede to the desire of the sovereign state to abate the harm.

2. Burden of Proof and Standing Requirements for Private Parties as Plaintiffs for Public Nuisance Claims

The two main differences between public nuisance suits brought by public officials and those brought by private parties on behalf of the public are the latter's greater burden of proof and strict standing requirements. In public

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150 Pidot, *supra* note 25, at 203-04; RESTATEMENT, *supra* note 135, at § 821B.

151 *Id.* at 13.

152 Larsen, *supra* note 21, at 45.

153 *Id.*

154 *Id.*

155 *Id.*

156 *Id.*

157 Pidot, *supra* note 25, at note 204.

158 Pidot, *supra* note 25, at 214.

nuisance claims, private parties have a higher proof standard because unlike public officials, the former do not act with the authority of the sovereign state's police power.[159] The higher proof burden ensures that private parties do not impose strict liability under a traditionally fault-based scheme.[160]

For unintentional actions that lead to a nuisance, the defendant will only be liable if his or her duty of care was breached. The calculation of the appropriate standard of care for negligence in the overall public nuisance scheme depends on jurisdiction because public nuisance has evolved separately under each state's common law.[161] This fragmented evolution of public nuisance law is one reason why it is regarded as such an ambiguous doctrine.[162] However, this fragmented doctrinal evolution also leads to one of public nuisance law's most cited advantages: the flexibility to appropriately respond to the nature of the affected community's standards, its specific values and needs, and the time period in which the harm occurs.[163] This flexibility corresponds with the judge's equitable flexibility to avoid unjust results and burdensome remedies that are not in balance with corresponding abilities of defendants to abate or prevent the nuisance from occurring.[164]

Before the court can consider the rules regarding specific standing of a plaintiff, it must first decide if a public right is at stake.[165] Although there is no specific definition of a public right, courts have been fairly liberal in their interpretation of what constitutes a public right and have included aesthetic values and environmental conservation.[166] Private citizens who bring public nuisance claims also have a high standard for establishing standing under the traditional 'special injury rule.'[167]

The requirement that private citizens demonstrate the strict "special injury rule" exists in almost every American jurisdiction. Hawaii stands alone in allowing citizen suits for public nuisance without requiring special injury.[168] In Hawaii, a plaintiff must only show an 'injury in fact,' not an injury that is different in kind from others.[169] The next section will examine the 'special injury' and 'injury in fact' rules and the challenges faced by plaintiffs attempting to establish standing.

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[159] Larsen, *supra* note 21, at 47.

[160] *Id.*

[161] Larsen, *supra* note 21, at 49.

[162] *Id.*

[163] Antolini, *supra* note 134, at 776.

[164] *Id.*

[165] Pidot, *supra* note 5 , at 213.

[166] *See* Pruitt v. Allied Chem. Corp., 523 F. Supp. 978 (D.C. Va. 1981); Burgess v. M/V Tamano, 370 F. Supp. 247 (D.C. Me 1978) (finding that pollution that killed marine species constituted public nuisance). Pidot, *supra* note 25, at 214.

[167] *Id.* at 215.

[168] Larsen, *supra* note 21, at 46-47.

[169] *Id.*

B. Standing Conflicts

Although there have been calls for a liberalization of the traditional standing requirement for public nuisance under the special injury doctrine, only Hawaii has moved toward a more encompassing and accommodating rule.[170] The Second Restatement of Torts tries to offer a compromise between the two extreme limits of the standing rule, stating that any plaintiff who is representative of the public may have standing to abate the nuisance. Although there was evidence of a trend away from the special injury rule with the Restatement and Hawaii's newer rule, the shift in public nuisance standing requirement has yet to materialize.[171]

1. Traditional Special Injury Rule

Antolini illustrates the traditional rule's unjust application by citing a court's dismissal of a public nuisance suit brought by Alaska Natives against Exxon Valdez for the destruction of subsistence fishing grounds and cultural rights during the 1989 oil spill in Prince William Sound, Alaska.[172] Even though Exxon conceded the subsistence rights of the Alaska natives were legally recognized, Exxon argued that all Alaskans have the same rights and therefore no special injury existed.[173] The Ninth Circuit Court of Appeals later affirmed the district court summary judgment in favor of Exxon because the injury was not different in kind.[174]

Courts are more likely to approve standing under the traditional special injury rule where the plaintiff has a commercial interest at stake or private land is being degraded.[175] The individual plaintiff must show that his or her harm is different from the harm suffered by other members of the affected community. Without showing a different injury, a private party lacks standing to maintain a public nuisance claim.[176] Some legal experts are critical of the special injury rule because it bars plaintiff's claims in cases where the court has admitted that an injury exists and the result of the rule's application was unjust.[177]

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[170] Pidot, *supra* note 25, at 216.

[171] *See* Larsen, *supra* note 21, at 47.

[172] *In re* Exxon Valdez, No. A89-0095-CV (HRH), 1994 WL 182856, at 2 (D. Alaska Mar. 23, 1994); Antolini, *supra* note 134, at 781-82.

[173] *Id.*

[174] *In re* Exxon Valdez, 104 F.3d 1196 (9th Cir. 1997) (holding that Alaska Natives failed to prove "special injury" rule to warrant recovery under public nuisance claim).

[175] Pidot, *supra* note 25, at 216.

[176] *Id.*

[177] Antolini, *supra* note 134, at 776. *Contra* Victor E. Schwartz & Phil Goldberg, *The Law of Public Nuisance: Maintaining Rational Boundaries on a Rational Tort*, 45 WASHBURN L.J. 541, 551 (2006) (arguing that the special injury is essential to prevent overuse and abuse of an already flexible and overextended doctrine).

2. Hawaii's Rule – Akau v. Olohana

In *Akau v. Olohana*, the Supreme Court of Hawaii adopted a more liberal 'injury in fact' standing requirement for private plaintiffs in public nuisance suits.[178] In *Akau*, private parties sued to enforce public access along beach access routes. Defendant landowner responded that only the state can file suit to abate a public nuisance and force access to the trails.[179] The court disagreed, and ruled that in order to maintain a public nuisance claim, a private plaintiff must only show he or she suffered an injury in fact and that the suit alleviates the need for a multiplicity of similar suits.[180] The injury in fact requirement disregards a plaintiff's harm in relation to the rest of the community, and instead allows any party significantly injured by a threat to a public right to bring a claim for damages or injunction.[181] In supporting this new rule, the Hawaii Supreme Court reasoned that "[I]t is unjust to deny members of the public the ability to enforce the public's rights when they are injured."[182] The court followed the test laid out in the Restatement,[183] which was seen as ushering in a new shift in the standing requirement for public nuisance.[184] Although there are no further reported cases at the appellate level, *Akau* remains the common law standard for public nuisance brought by private parties in Hawaii.[185]

III. ADVANTAGES OF PUBLIC NUISANCE LIABILITY IN HAWAII

The application of public nuisance tort liability to invasive species introduction can alleviate the shortcomings of current legislative efforts outlined above by providing necessary funding to existing programs, allowing lawsuits to fill gaps in jurisdiction between regulatory agencies, and promoting proactive solutions through economic incentives in order to prevent unintentional introductions. The advantages of public nuisance liability are particularly suited to solve these shortcomings in Hawaii, where the more liberal injury in fact

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178 Akau v. Olohana Corp., 652 P.2d 1130 (Haw. 1982).

179 *Id.* at 1134.

180 *Id.*

181 Pidot, *supra* note 25, at 216.

182 *Id.*

183 "In order to maintain a proceeding to enjoin to abate a public nuisance, one must . . . have standing to sue as a representative of the general public, as a citizen in a citizen's action or as a member of a class in a class action." RESTATEMENT (SECOND) OF TORTS § 821C(2)(c) (1979); Antolini, *supra* note 134, at 10; Pidot, *supra* note 25, at 216, n.215.

184 See Antolini, *supra* note 134, at 760 n.8, for legal scholarship characterizing the special injury rule as outdated and in need of reform.

185 Several cases have mentioned Akau since, but as dicta. *E.g.*, Mottl v. Miyahira, 23 P.3d 716 (Haw. 2001) (holding that university faculty members' union challenging reduced state education budget did not have standing to sue because they did not show injury in fact); Pele Def. Fund v. Paty, 837 P.2d 1247, 1257 (Haw. 1992) (observing the effect of the Akau rule that lowered standing requirements in cases of public interest).

standing rule unlocks the doctrine's flexibility.

The threat of public nuisance claims affords the best preventative solution to unintentional introductions of invasive species by individuals and businesses. The possibility of public nuisance suits against industry and individual defendants who negligently introduce invasive species serves as an effective deterrent and can stimulate innovative industry wide solutions. David Larsen touts the doctrine's equitable flexibility and ability to facilitate innovative solutions through industry incentives.[186] Another scholar found the main advantage of applying pubic nuisance to invasive species would simply be the ability to address negligent introductions, a vector completely ignored by the current statutory regime.[187] Public nuisance law is already used regularly to fill holes and address shortcomings in current environmental laws, [188] so the application of public nuisance liability to unintentional NIS introductions would be consistent with the doctrine's historical adaptation to changing community needs.

This section will apply NIS introductions to Hawaii's public nuisance regime, analyze the advantages of such an application, and link those advantages to a viable and proactive solution for NIS control based on public nuisance liability.

A. NIS Satisfies Requirements of Successful Public Nuisance Claim

Claims against tortfeasors who introduce NIS fits within Hawaii's public nuisance tort law because plaintiffs can allege that damage caused by NIS harms a public right, introduction of the harmful species evidences a failure to exercise the required standard of care, and the harm suffered by the public satisfies the injury-in-fact standing requirement established in *Akau*. Similarly, a public nuisance suit brought by a public official would be allowed because introducing invasive species harms the public and its right to environmental preservation and health. But in order to maintain a private suit, the plaintiff must also show an injury in fact, prove an unreasonable standard of care, and stand in for many other similar lawsuits.

1. Introduction of NIS Jeopardizes Public Rights to Biodiversity, Environmental Preservation, and Public Health

The definition of public nuisance encompasses invasive species because a right common to the general public includes biodiversity as well as clean air,

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[186] Larsen, *supra* note 21, at 36. Larsen recognizes three distinct advantages of applying nuisance law to unintentional introductions of NIS. First, a liability scheme would encourage transporters to use aggressive efforts to prevent introductions. Second, public nuisance tort liability would provide flexibility for a business to adjust its practices and change methods to a more effective procedure to combat introduction and spread of NIS. Third, encouraging new solutions through liability incentives would create new knowledge and methods to combat the threat. *Id.*

[187] Ruiter, *supra* note 10 at 271.

[188] Pidot, *supra* note 25, at 198.

water, and soil. Public nuisance claims have previously been asserted to prevent environmental harm to public rights such as air, water, and soil pollution.[189] Invasive species can degrade these environmental resources and human health. Therefore, the harm caused by invasive species satisfies the requirement that a harm adversely affect biodiversity, agriculture, and other established public rights before being considered a nuisance. Several jurisdictions have already moved toward recognizing wildlife diversity as a public right and the Congressional Technology Office has referred to invasive species as "biological pollution."[190]

Courts have found public nuisance where damage to aesthetic values and environmental conservation has resulted.[191] In *Colorado Division of Wildlife v. Cox*, the Colorado Court of Appeals ruled that disruption of native species and biodiversity constituted a public nuisance.[192] The Colorado Division of Wildlife wished to issue an abatement order to prevent Cox's operation of an exotic wildlife ranch. In affirming the lower court's finding that characterized the release of "exotic, non-native" wildlife as a public nuisance, the court held that exotic wildlife may be considered a public nuisance if it interferes with native species, thereby degrading biodiversity.[193]

The environmental harm caused by invasive species is not particularly different than other pollution already established as causes of public nuisance. Such public rights have included access to healthy fish stocks, viable marine life, and unobstructed native wildlife.[194] Like other pollutants, exotic species degrade the native environment, and their introduction is comparable with other environmental damaging disruptions.[195] Since these are the very ecosystems that would be affected by NIS, a court could hold the aesthetic and cultural values derived from native ecosystems a public right and important for the public welfare.

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[189] Leo v. Gen. Elec. Co., 538 N.Y.S.2d 844 (N.Y. App. Div. 1989) (holding that pollution of river and contamination of fish constitutes public nuisance and commercial fishermen who suffer harm different and above rest of society have standing to sue over pollution to river from which they derive their living); State v. Fermenta ASC Corp., 616 N.Y.S.2d 702 (N.Y. Sup. Ct. 1994) (holding that county water authority could maintain public nuisance suit regarding polluted water against pesticide manufacturer).

[190] David P. Eldridge, *Leviathan Lurks: Might the National Invasive Species Act of 1996 Actually Authorize Invasion by Proscribed Species?*, 6 S.C. ENVTL. L.J. 47, 49 (1997).

[191] State *ex rel* Wear v. Springfield Gas & Elec. Co., 204 S.W. 942 (Mo. Ct. App. 1918) (ruling that waste water discharged by gas company constituted an enjoinable public nuisance); RESTATEMENT (SECOND) OF TORTS § 821B cmt. e (1979) ("Some courts have shown a tendency, for example, to treat significant interferences with recognized aesthetic values or established principles of conservation of natural resources as amounting to public nuisance."); Pidot, *supra* note 25, at 214.

[192] Colo. Div. of Wildlife v. Cox, 843 P.2d 662 (Colo. App. 1992).

[193] *Id.* at 664.

[194] *See* Pidot, *supra* note 25, at 214 (citing several cases where disruption of wildlife habitats has environmental quality has been held to constitute a nuisance).

[195] Larsen, *supra* note 21, at 45.

Aside from environmental values, native ecosystems and invasive species have been shown to have enormous economic impacts on Hawaii. The enormous economic burden alone that NIS introductions put on Hawaii would represent an objectively unreasonable harm to public welfare. In Hawaii, the economic impacts and harms caused to industries, agriculture, and native ecosystems by NIS invokes a public right and welfare.

2. Unintentional Introduction Can Be an Unreasonable Interference

The introduction of invasive species satisfies the Restatement's test for unreasonable harm because the conduct is prescribed by statute and is of a continuing nature which the actor has a reason to know effects a public right.[196] The extensive federal and state legal regime gives industries that normally may introduce NIS (shipping, travel) the notice to satisfy both of these prongs and raise the standard of care in a results-focused doctrine. The negative effects of NIS have become increasingly common knowledge as Hawaii increases public education and enacts more regulations that specifically target industries that engage in business involving common vectors of invasive species introduction.

The focus of nuisance law on the effect of the defendant's conduct rather than the nature of the conduct itself limits the viability of defenses defendants may assert based on common industry practice and statutory compliance. Even if a defendant uses reasonable and widely accepted prevention methods, those methods still may not overcome a finding of an unreasonable interference because of the reluctance of courts to allow continuance of harm to public rights.[197] Unreasonable interferences with public rights can be found with little or no fault requirements because public nuisance focuses on the results of the defendant's actions.[198] However, private parties who bring suit must still anticipate the plaintiff's unreasonableness burden and prepare to argue the test laid out in *Akau* and the Restatement. If environmental destruction caused by oil spills and hazardous waste constitute unreasonable interferences, then NIS introduction resulting in similar economic costs of control and environmental losses should also constitute a similar unreasonable interference.[199]

3. Introduction of NIS Satisfies Akau Injury in Fact Standing Requirement

The liberal injury in fact standard adopted by the Hawaii Supreme Court can be satisfied because NIS introductions affect agricultural production, fishing

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[196] O'Keefe, *supra* note 1, at 99.

[197] O'Keefe, *supra* note 1, at 100. "[I]t is a well settled principle of nuisance law that the adoption of the most approved ... methods ... do[es] not justify the continuance of that which, in spite of them, remains a nuisance."

[198] Pidot, *supra* note 25, at 220-21.

[199] Ruiter, *supra* note 10, at 273.

stocks, infrastructure, wildlife biodiversity, and native ecosystems. Therefore, agriculture industries, subsistence fishermen, wildlife enthusiasts, environmental organizations, and utility companies all suffer injuries substantial enough to satisfy an injury in fact requirement when NIS are introduced and cause damage. State agencies and taxpayers are also injured because prevention and eradication of NIS directly costs Hawaii millions of dollars every year.

Potential plaintiffs could maintain a public nuisance suit as a whole, or one individual could come forward to claim relief on the whole group's behalf. These plaintiffs would represent the injury to the general public and would have standing because they actually suffered a significant injury related to a public right. This standing requirement would probably be difficult to fulfill in other jurisdictions but Hawaii has the unique ability to find standing without comparing the plaintiff's injury to the general public or similarly situated parties.

A public nuisance suit brought by a private party as a public representative would also satisfy *Akau's* requirement that the public nuisance claim obviate the need for a multitude of individual suits. This element ensures that the plaintiff acts on behalf of a large segment of the community he or she claims to represent. Applied to invasive species, a member of an effected business sector, scientific field, group of landowners in an affected region, or environmental group could speak on behalf of that group and replace individual lawsuits by every affected individual. In this way, the second element of *Akau* is met and the public nuisance can be established.

B. Advantages of a Public Nuisance Tort Liability System for Introductions of Invasive Species

The advantages of a public nuisance liability scheme for Hawaii and NIS provide incentives for industries responsible for introducing NIS to work towards a proactive solution. Public nuisance is ideal because the doctrine's flexibility allows it to change as science, methods of unintentional introductions, and legislative commitments continue to evolve. The flexibility of the doctrine is also evident in its remedies, which include damages and injunctive relief.

Rather than rely on government regulation to monitor every vector of entry, keep up-to-date lists of allowed species, enforce preventative measures, and lead all eradication efforts, a tort liability system allows citizens most affected by invasive species to force industries to pay the costs that result from conducting the businesses that can eventually cause introduction of invasive species.

1. Public Nuisance Liability Facilitates Industry Involvement in Proactive Solution

Given the shortfalls of the current command and control regulatory regime for NIS control in Hawaii, public nuisance liability provides a solution where

transporters are encouraged to develop the most cost effective methods to prevent introductions of invasive species.[200] Instead of a system of confrontation between government and industry, public nuisance liability can use citizen enforcement to fill the gaps created by the current politically vulnerable enforcement regime.

A proactive solution based on tort liability creates an economic advantage for minimizing damage to native ecosystems because it forces industries to internalize the externalities normally placed on state agencies and community resources.[201] Industries that cause the harm and unintentionally introduce NIS do not normally bear the burden and costs that their conduct creates. Tort liability attempts use citizen involvement to force defendants to fund prevention and control efforts normally paid for by the government, although exact quantification of environmental and aesthetic values remains contentious.[202] Forcing industries that introduce the species to pay is consistent with the "polluter pays" principle, a system where liability is enforced upon polluters, which in turn forces them to act responsibly and with a high standard of care for the affected community.[203] In the case of public nuisance, private citizens can enforce this principle and ensure industry liability through lawsuits. In this way, individuals can ensure industries bear an appropriate burden for the harm they cause while encouraging proactive solutions by making litigation and liability expensive.

Broad based citizen and public official enforcement of public nuisance claims will obviate the economic downsides of tort liability and facilitate a more proactive solution on the part of industry and transporters. Allowing larger groups of effected individuals and public officials to collectively institute tort actions can counter the tragedy of the commons, a result caused by marginal losses being spread over large populations.[204] Large landowners and established environmental groups have the incentive to pursue claims for introductions of NIS and counteract the difficulty of coordinating a large legal claim when harm is dispersed over a large enough population and individual citizens are only slightly affected and therefore lack the incentive to file a suit.

2. Public Nuisance Tort Law Can Respond to Changing Environmental Values and Scientific Knowledge

Another advantage of applying public nuisance law to NIS in Hawaii is that the flexibility of the doctrine allows for it to change along with the science and

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200 Larsen, *supra* note 21, at 28.

201 *See* Pidot, *supra* note 25, at 220.

202 *Id.* at 220.

203 Ved P. Nanda, *Agriculture and the Polluter Pays Principle*, 54 AM. J. COMP. L. 317, 319-20 (2006). For an example of a strict liability polluter pays regime, see the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601-9675 (2002).

204 Biber, *supra* note 18, at 446.

the needs of the community.[205] As the threat and damage from NIS multiplies, Hawaii needs a legal regime that can adequately respond to that growth and utilizes advances in technology for the prevention and eradication of NIS. By forcing industries to be proactive in combating the NIS threat, public nuisance and its incentives to internalize costs will spur development of new methodologies and technologies to better prevent the interference with the public right and nuisance.

Some commentators question the effectiveness of nuisance law as applied to NIS because the doctrine is too flexible and an inherently reactive tool compared to legislation.[206] Yet all legislative attempts employed so far have been ineffective precisely because of their command-and-control perspective and their focus on using the police powers of the state. The current, rigid nature of a command-and-control statutory system only prolongs the current system's inadequacy because rules remain unchanged unless amended,[207] whereas public nuisance law can continually adapt to changing circumstances.

Public nuisance is also flexible in that it allows for different plaintiffs to file the suit, depending on the potential risk, harm caused, expertise of the parties, and complexity of litigation. Environmental organizations such as The Nature Conservancy[208] and Trust for Public Land,[209] which own large tracts of land in Hawaii, have the expertise and ability to institute complex litigation against large transporting companies.[210] In addition to those large environmental groups, the state through the Attorney General's Office could wield its considerable resources to force proactive solutions in the face of devastating impacts of NIS on the state's tourism and agriculture industries. The flexibility of public nuisance allows for different types of plaintiffs depending on the situation presented by a particular NIS threat.

Plaintiffs also have the flexibility of seeking an injunction to stop the nuisance or seeking damages suffered by the general public.[211] The state has the same two options as private plaintiffs applied to government land and damage it may suffer.[212]

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[205] Larsen, *supra* note 21, at 37.

[206] Pidot, *supra* note 25, at 218.

[207] Larsen, *supra* note 21, at 37.

[208] The Nature Conservancy is an environmental organization whose Hawaii branch protects 200,000 acres of critical habitat ecosystems in Hawaii. The Nature Conservancy, The Nature Conservancy in Hawaii, http://www.nature.org/wherewework/northamerica/states/hawaii/.

[209] The Trust for Public Land protects land by purchasing it and holding it in trust for public use. The Trust for Public Land, Hawai'i: The Trust for Public Land, http://www.tpl.org/tier2_rl.cfm?folder_id=269.

[210] The large amount of environmentally sensitive land owned by these organizations and the large budgets with which they operate would enable them to see a public nuisance lawsuit through the courts. Pidot, *supra* note 25, at 217-18.

[211] Larsen, *supra* note 21, at 50.

[212] *Id.* at 51.

CONCLUSION

The threats from non-indigenous species are serious and commonly accepted in the scientific community. Invasive species result in substantially negative financial, environmental, and health impacts to Hawaii. Although the state and federal legislatures have attempted to prevent this harm, these statutory methods and legal regimes have failed. Through the adoption of public nuisance tort liability, the parties most affected by invasive species will have an avenue of legal recourse sufficient enough to force industries to develop proactive solutions to NIS introductions. Due to Hawaii's liberal standing requirements as established in *Akau*, citizen groups have a legal basis to bring these suits if government officials do not. The gaps in the current enforcement regime are too wide. Hawaii needs public nuisance liability to fill those gaps and protect what is left of the state's biodiversity and native ecosystems.

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