

Cooperative Prevention of Invasive Wildlife Introduction in Florida



SUMMARY REPORT

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Executive Summary

Florida's unique ecosystems are cherished for their exceptional diversity, recreational opportunities, and economic value. Endemic species such as the American Alligator are widely valued not only for their commercial importance, but also their historical and cultural significance. Nonetheless, the state's biological resources have been degraded over past decades as a result of myriad factors, including the human-mediated introduction of invasive wildlife species. Release or escape of Burmese pythons, feral hogs, purple swamp hens, and other nonnative species has led to the establishment and spread of wild populations of these species in the Everglades and other sensitive ecosystems. These species may pose significant threats to the environment, economy, and public health.¹

Invasive wildlife is introduced into Florida through a variety of anthropogenic pathways, including but not limited to shipping, aquaculture, and the pet trade. South Florida in particular is subject to importation pressure because Miami is a designated port of entry into the United States for wildlife shipments. Florida's thriving pet and aquaculture industries import a variety of wildlife species through Miami, some of which subsequently are released or escape from captivity. Once in the wild, wildlife species often establish sustaining populations and become invasive in Florida due to the state's hospitable climate, intensive development and associated environmental modification, and inaccessible natural areas. As a result, invasive species now make up a significant percentage of Florida's biodiversity.

The threats posed by invasive wildlife demand a policy response. While control and management of existing invasive species are important components of invasive wildlife policy, prevention of wildlife introduction is the most cost-effective strategy for addressing the threats posed by invasive wildlife species. Moreover, prevention is the only strategy that can fully avoid the damage caused by introduced species – once established, invasive species are extraordinarily difficult to eradicate.

Effective prevention requires both consistent, strong legal regimes and dedicated institutions with sufficient resources to implement legal standards. Florida and the federal government use similar legal tools for invasive wildlife prevention, including listing of invasive species, restrictions on the use of listed species, and inspection and other enforcement measures to ensure that importers, producers, and sellers of non-native wildlife comply with those restrictions. Unfortunately, these provisions fail to address all known potential invasive wildlife species and are difficult to implement due to their complexity and inadequate manpower, equipment, and funding.

Florida and the federal government can increase the effectiveness of their invasive wildlife prevention provisions by coordinating both their laws and regulations and their implementation efforts. Federal and state invasive species prevention laws and regulations are implemented by multiple agencies, each of which maintains separate invasive species lists and use restrictions (Table 1: Nonnative Wildlife Prevention Entities). Application of these inconsistent laws and regulations requires knowledge of other agencies' regulations and extensive interagency interaction and cooperation – a difficult task given persistent manpower and financial limitations. Modification of conflicting legal standards and harmonization and clarification of legal structures and roles would minimize the complexity and duplication that characterize existing legal structures. Moreover, coordinated standards and implementation processes ensure the efficient use of limited funding for prevention activities by avoiding duplication of effort, thereby ensuring that scarce enforcement resources are used efficiently. This study suggests specific recommendations to improve interagency cooperation for the enforcement of laws intended to prevent invasive wildlife importation and introduction.

Table 1: Nonnative Wildlife Prevention Entities*

Jurisdiction	Agency (cabinet department)	Abbreviation
Federal	Animal and Plant Health Inspection Service (USDA)	APHIS
Federal	Bureau of Customs and Border Protection (DHS)	CBP
Federal	Centers for Disease Control & Prevention (HHS)	CDC
Federal	Food and Drug Administration (HHS)	FDA
Federal	U.S. Fish and Wildlife Service (Interior)	FWS
Federal	U.S. Postal Service	USPS
State	Department of Agriculture and Consumer Services	DACS
State	Fish and Wildlife Conservation Commission	FWC
Cooperative	National Invasive Species Council	NISC
Cooperative	Aquatic Nuisance Species Task Force	ANSTF
Cooperative	Invasive Species Working Group	ISWG
Cooperative	Florida Invasive Animal Task Team	FIATT
Cooperative	Aquaculture Interagency Coordinating Council	AICC

* Many additional agencies carry out activities related to wildlife prevention but lack general regulatory authority over wildlife importation and release and are not considered in this report

Recommendations

This report identifies barriers to cooperative and coordinated enforcement of invasive wildlife prevention authorities in Florida, particularly with respect to importation. A variety of limitations affect coordinated and cooperative implementation of the various invasive wildlife prevention laws, including but not limited to turf issues or differences in focus or philosophy, funding and staffing limitations, limited information on laws implemented by other agencies, and the sheer multiplicity of relevant laws and policies. The following recommendations suggest approaches that may overcome these barriers.

1. Facilitate Interagency Cooperation

Establish a state Invasive Species Council

The termination of the ISWG highlights the need for a new statewide body to promote interagency coordination on invasive species issues. In fact, the ISWG itself has recommended that Florida should create a standing invasive species council (ISC) through either executive order or legislation. An ISC with explicit legal authorization can seek appropriations for permanent staff to implement the statewide invasive species plan in addition to carrying on the collaborative work performed by the ISWG to date. In addition to benefiting state interagency coordination, an ISC would permit the state agencies to liaise as a group with federal invasive wildlife agencies, either through NISC or individually. A close state ISC relationship with NISC could assist in the creation of joint federal-state prevention efforts, among other invasive species management benefits.

Create a joint FWS/FWC interdiction task force

Interdiction of illegal wildlife shipments is an increasing concern among law enforcement personnel. While CBP inspections at ports of entry are key to stemming this illegal trade, FWS and FWC may also play an important role in tracing the wildlife trade. These agencies can each be more effective if they work together, and therefore should consider developing a joint task force modeled on the joint DACS/APHIS Florida Interdiction and Smuggling Team, which has successfully halted some plant imports in Florida. Miami's prominence in the wildlife trade makes it a good target for interdiction efforts, and previous federal-state cooperation could ease implementation. In practice, a joint interdiction task force would focus on tracing illegal wildlife shipments through the importation process, working both from detected

violations in the state and detected illegal imports to their ultimate destinations in the state. A formal task force structure could simplify interagency cooperation for this interdiction effort and would provide needed a needed forum for information-sharing between state and federal inspectors.

Incorporate all responsible agencies in interagency bodies

Existing interagency bodies – notably FIATT and ISWG – are valuable tools for enhancing invasive animal prevention. These bodies do not include all responsible animal importation agencies, however, limiting their efficacy for promoting efficient and effective importation processes. For example, FDA and CDC do not participate in FIATT or have consistent linkages with state agencies other than the Florida Department of Health. Formalizing links between public health and wildlife agencies could strengthen enforcement efforts. Similarly, federal agencies do not participate on the ISWG (and are unlikely to participate in an ISC). Links between the FDA, CDC, and FWC are important tools to ensure both that the public health agencies are aware of potential zoonoses carried by commonly-imported nonnative wildlife species and that the FWC is apprised of developments in FDA and CDC regulations and advisories. Further, FDA inspections may reveal violations of FWC regulations and vice versa. Formal links between the agencies are therefore desirable both for training and continuing education and for streamlining law enforcement processes.

Interagency links can be formalized in several ways. First, all responsible federal and state agencies should attend FIATT meetings, despite that body's singular focus on South Florida. This relatively informal link allows agency personnel to build connections on both the federal and state levels. In addition, the Florida ISC, once created, should develop specific links with each federal agency, providing them with the information they need to obtain rapid responses from each state agency with invasive wildlife responsibilities. In addition, each agency's enforcement personnel should foster specific links with their peer agents, both as part of joint training exercises and through the creation of an enforcement handbook specifying specific contact information for inspection and enforcement personnel at each agency.

2. Eliminate Barriers to Information-Sharing

Implement joint training

Importation laws and procedures are complex, requiring inspectors to develop specialized taxonomic and legal knowledge through training programs and on-the-job experience. State and federal agencies are connected both legally and procedurally. FWC inspectors, for example, are deputized FWS agents and therefore can enforce both state and federal laws during state inspections, and FWS agents can use the Lacey Act to enforce predicate violations of state law. As a result, inspectors should ideally be able to recognize violations of other agency regulations. In most cases, however, each agency provides training for its own inspectors on its own regulations. Some agencies do provide some training on other agency provisions – FWC training, for example, has included presentations on USDA and FWS laws and regulations, and DACS has held workshops on its aquaculture certification, best management practices, and submerged sovereign lands leasing practices for state and federal coastal land managers. Nonetheless, each agency's training is performed separately.

Joint training can increase the efficacy of each agency's invasive wildlife prevention actions. Interagency training would provide solid grounding on each agency's regulations – particularly for agencies that are not typically seen as “wildlife agencies,” such as CDC and FDA. Import inspectors would benefit from training on each agency's permit requirements, prohibitions, and restricted species. Facility inspections by state and federal agents – whether for aquaculture, public health, or other reasons – may also turn up violations of laws implemented by other agencies. With joint training, inspectors can learn the required information and can establish contacts within other agencies to enable rapid interagency responses when violations are detected. In addition, economies of scale may permit joint training at minimal cost – or potentially even at a reduced cost.

Develop electronic permitting databases

Federal law requires wildlife importers to be licensed and to inform FWS of the wildlife species they import. Similarly, importation, possession, and other uses of listed species require an FWC permit and/or license.

CDC also requires preapproval of imports of some listed species. Each of these agencies thus has access to a powerful source of data on trends in wildlife importation and potential future invasive wildlife threats. Unfortunately, the information submitted by importers could be managed more effectively by federal and state agencies. For example, FWS keeps permit records thorough its Law Enforcement Management Information System (LEMIS), but the LEMIS records lack some important data, are not made in real time, and are unavailable to the public or other agencies – including FWC – unless specifically requested.² Other agencies, notably FWC, rely exclusively on paper permits and maintain no electronic database to permit large-scale review of state-specific import data.

State and federal agencies with import inspection responsibilities, including FWS, FWC, and CDC – should cooperate to develop real-time, searchable electronic databases of all imports.³ The data collected could be used not only for enhancing the efficacy of inspections but also to determine what species are the subjects of the highest propagule pressure – useful information for use in invasive species policy development for protecting both the environment and public health. For example, FWC could target its early detection programs around areas and species at particularly high invasion risk. Public accessibility of these databases could also enhance the agencies' enforcement abilities by harnessing interested citizens, who could determine easily whether exotic wildlife in stores is properly permitted.

Combine and maintain centralized restricted species lists

Each responsible agency restricts the use of nonnative species, imposing limits on importation, possession, sale, and other uses of those species. These rules are applied by inspectors during importation and inspection of aquaculture facilities, pet stores, and other venues. To carry out their duties, inspectors must be able to identify all state and federal listed species and to know which restrictions apply to which species. Centralized, accessible lists may aid them in this task by providing up-to-date, one-stop shopping for biological and legal information.

In Florida, separate centralized lists are available for biological and legal information. FWC has collected

these species and provided biological information for each one.⁴ ISWG, meanwhile, has collected legal restrictions that apply to each species.⁵ The value of these lists can be easily increased by combining the information held by each body and by incorporating Federal listing information. The centralization and maintenance of existing lists would be an appropriate task for the ISC once that body has been created. The ISC could also enhance the content on the lists by, instead of reprinting statutes (as the ISWG has done), providing a species-by-species summary of restrictions on legal uses that could serve as a quick reference for inspectors.

Update interagency body websites

Developing and maintaining websites allows both agency personnel and the public to obtain information on upcoming projects and activities. Several interagency bodies could improve their web presence to permit greater access to agency expertise and resources. For example, the AICC does not maintain a website. Similarly, the NISC website does not provide access to minutes from recent meetings or other public documentation of its activities, although other useful information is available. An important goal of these interagency bodies is to ease access to information. Effective provision of this information over the internet is a cost-effective way to decrease informational barriers among agencies and between regulators and the regulated community.

3. Enact Legal Reforms

Adopt preventive risk screening for wildlife importation

It is currently permissible to import nonnative wildlife into the United States, and to transport it into Florida, without any prescreening for invasion risk. Both the federal and state governments should require risk-based screening prior to importation, adopting a clean-listing methodology in accordance with recommendations made by other groups.⁶ In Florida, risk screening could be based on existing trials initiated by the ISWG risk assessment working group and should be used by FWC in determining species for listing. FWC should take a precautionary approach to risk screening by prohibiting the importation, sale, possession,

propagation, or other use of species that have not been subjected to risk screening and by refusing to issue permits for facilities or persons wishing to possess or use unscreened species.

Strengthen state laws and regulations

Florida invasive species agencies deserve credit for implementing legal reforms, in part due to an ISWG-led effort to reduce gaps and inconsistencies among their laws and regulations.⁷ The legal reform process in the state is not complete, however, as weaknesses remain with respect to invasive wildlife prevention. Further revision of legal authorities will permit agencies to reduce the burdens associated with taxonomic identification and listing and will provide a clearer idea of what species are being possessed in Florida – whether imported or bred domestically. Simplified and strengthened legal authorities can also reduce barriers to interagency cooperation by eliminating gaps and inconsistencies between agency regulations.

FWC has taken concrete steps to simplify and consolidate its nonnative species regulations under the leadership of the new ESCS. This effort should be considered a starting point rather than a destination: FWC should consider imposing more stringent restrictions on nonnative wildlife possession and importation. First, current regulations prohibit possession and use only where there is “reasonable expectation of escape.” This clause introduces uncertainty into the regulatory system and should be eliminated in order to further limit the availability of nonnative species through the pet trade and other problematic pathways. In addition, FWC should expand its limitations on the use of listed species to explicitly address uses such as breeding, sale, and purchase of nonnative species that are not currently considered by the regulations.⁸ Finally, FWC should consider listing additional species as “prohibited,” paying particular attention to freshwater fish species that might be used in aquaculture.

DACS should also clarify and strengthen the requirements for obtaining certification for aquaculture facility use of nonnative species. As recently witnessed through the introduction of Asian swamp eel, escapes through aquaculture are a virtual certainty.⁹ DACS therefore should take a precautionary, preventive approach to its certification decisions. Explicit prohibition on culture of FWC-listed conditional species,

in addition to the current prohibition on prohibited species, would strengthen DACS' prevention measures. In addition, DACS should require risk assessment for any unlisted nonnative species for which invasion risk is unknown prior to certifying to any facility for culture of that species.¹⁰

Strengthen federal laws and policies

Like state laws and regulations, federal invasive wildlife prevention authorities are weak and in need of revision. Federal leadership in policy development should be a priority, particularly for the Fish and Wildlife Service, whose Lacey Act listing practices are particularly problematic. As noted, the FWS should in particular focus on implementing a program for prescreening of nonnative animal imports to determine invasiveness before species are introduced into the country. Other reforms, such as the CDC's ongoing development of regulations for preventive import restrictions, are equally noteworthy. A notable recent analysis of federal wildlife importation revealed numerous weaknesses that demand modification of laws and regulations.¹¹ Although a full summary of those recommendations would be redundant and is not included here, this report endorses the recommendations and encourages Congress and the federal agencies to adopt them.

4. Increase funding for invasive wildlife prevention programs

Increase the number of state wildlife inspectors

In comparison to spending on control and management, funding of prevention remains frustratingly small both on the state and federal levels. FWC has been and continues to be limited by its lack of inspectors.¹² FWC should seek funding to create permanent inspector positions at facilities where wildlife is screened for entry into the United States. These inspectors should work directly with CBP and FWS inspectors, providing direct links between the agencies and reducing response times when potential violations of state law are detected by federal inspectors.

Fund implementation of statewide invasive species plan

Funding for prevention lags behind funding for control and management across all agencies despite the fact that prevention is the most cost-effective tool for addressing invasive species impacts. Funding for control and management of existing species should not be reduced, but additional funding is needed to implement the statewide plan. Creation of an ISC is a crucial first step, along with creation of permanent staff positions within the ISC. Dedicated funding of this body increases the likelihood that the statewide plan will result in concrete improvement of invasive wildlife prevention on the ground.

5. Support Compliance and Enforcement

Expand reptiles of concern tracking program to all suitable exotic pet species

FWC recently adopted a new regulations mandating microchipping of listed reptile species sold as pets. This regulation should increase compliance by allowing federal and state agents to track the owner of abandoned pets recovered from the wild and enforce existing laws and regulations against them. Although data on the impact of this program on pet releases may not be sufficient to draw conclusions about the program's success, the FWC should consider expanding the program beyond a few reptiles if initial results are positive, particularly to wildlife of concern that does not yet have an established wild population. While the use of microchips or other identifying marks may not be feasible for all species, it is likely that the technique could be used for other exotic pets.

Increase state penalties for noncompliance along with education and amnesty programs

FWC recently instituted a pet amnesty day where pet owners can drop off unwanted pets rather than discard them. The amnesty day is coordinated with a public education campaign to increase public awareness of the problems posed by abandoned exotic pets, and is similar to successful programs initiated in Australia and New Zealand. This novel program promises to increase compliance with Florida's wildlife laws, but it should be associated with a simultaneous increase in penalties for noncompliance. Pet owners now have

a legal, nonlethal outlet for discarding their unwanted pets, and FWC and FWS should both increase penalties for noncompliance and increase their enforcement efforts against owners who choose not to take advantage of the amnesty program.

Notes

- 1 Other types of organisms affect the environment, the economy, and public health in addition to wildlife. Agricultural invaders such as citrus canker and citrus greening have substantial defined and reported economic impacts. Similarly, the Asian tiger mosquito is a known carrier of human and animal diseases. The effects of invasive wildlife are generally more difficult to quantify, but nonetheless may be substantial.
- 2 Defenders of Wildlife, *BROKEN SCREENS: THE REGULATION OF LIVE ANIMAL IMPORTS IN THE UNITED STATES* 33 (2007).
- 3 Such systems should avoid manual data entry by importers, to ensure that data is collected and synchronized with the database during the inspection rather than after it has been completed.
- 4 FWC, *Welcome to Nonnative Species Information*, at <http://myfwc.com/nonnatives/index.htm>.
- 5 ISWG, *Florida's Prohibited and Restricted Species Lists*, at <http://iswgfla.org/Prohibited%20species.htm>.
- 6 *See generally* Defenders of Wildlife, *BROKEN SCREENS: THE REGULATION OF LIVE ANIMAL IMPORTS IN THE UNITED STATES* (2007).
- 7 This effort was partially based on work by ELI's invasive species program. *See generally* Environmental Law Institute, *FILLING THE GAPS: TEN STRATEGIES TO STRENGTHEN INVASIVE SPECIES MANAGEMENT IN FLORIDA* (2004).
- 8 These changes would ideally raise all nonnative wildlife to the current "conditional" level, making that list largely repetitive. As a result, FWC could consider further consolidating its list.
- 9 *See* Marine Aquaculture Task Force, *SUSTAINABLE MARINE AQUACULTURE: FULFILLING THE PROMISE, MANAGING THE RISKS* 45 *et seq.* (2007) (discussing history of escapes from aquaculture facilities). The Asian swamp eel was first discovered in the wild in Florida in 1994. Jeanne Prok, *Asian Swamp Eel Invasion Increases in Southeast*, *ANS DIGEST*, Nov. 2000, at 5. Other species, such as the walking catfish and blue tilapia, were established after introduction in the 1960s. USGS, *Clarias batrachus (Linnaeus 1758)* (2006), at <http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=486>; Will A. Strong, FL-IFAS, *A LITERATURE REVIEW ON BLUE TILAPIA WITH AN EMPHASIS ON FEEDING HABITS*, available at <http://fishweb.ifas.ufl.edu/CourseMaterials/Cichra%20Class/BlueTilapia.pdf>.
- 10 Recent changes to FWC's nonnative species regulations require amendment of DACS's aquaculture provisions regarding possession of "restricted" species – a classification that was eliminated by the FWC. This process is currently underway.
- 11 *See generally* Defenders of Wildlife, *BROKEN SCREENS: THE REGULATION OF LIVE ANIMAL IMPORTS IN THE UNITED STATES* (2007).
- 12 *See* Environmental Law Institute, *FILLING THE GAPS: TEN STRATEGIES TO STRENGTHEN INVASIVE SPECIES MANAGEMENT IN FLORIDA* 49 (2004) (recommending enhanced funding for border security).

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