Increasing Accountability through Mandatory ID Systems for Non-Native Species[1]

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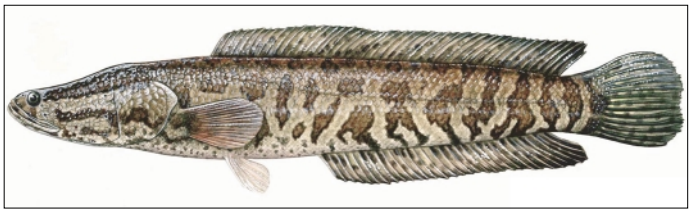
Recent technological developments have made mandatory identification systems possible for a wide variety of animals. Cows and other large livestock have long been identified through cheap methods such as ear tags or brands. Smaller animals and fish are a bit more difficult to permanently mark, but it is by no means impossible. The reduced costs and increased availability of radio frequency identification (RFID) technology and genetic fingerprinting is making it possible for owners to mark their animals through electronic, genetic, and chemical tags. Microchips, in use since the 1980s, are widely promoted to track and monitor fish populations. For example, the Army Corps of Engineers uses microchips containing RFID transponder technology to study migrating salmon in the Columbia River.[2] (Roberts, 2007). Tags, which consist of a chip and an antenna, can be attached to or embedded in objects, including animals and humans. Handheld readers scan the tag for data and send the information to a database for storage.[3]

Mandatory ID Systems

Florida

Florida law states that "any person who keeps or possesses for personal use any live venomous reptile not indigenous to Florida [. . .] or any live reptile of concern [. . .] must permanently identify such reptile." (Fla. Admin. Code r. 68A-6.0072). There are six species identified as "reptiles of concern": Indian or Burmese pythons, reticulated pythons, African rock pythons, amethystine or scrub pythons, green anacondas, and Nile monitors. Owners are required to use unique passive integrated transponder (PIT) tags, although venomous reptiles may be identified by photographic identification. The new rules became effective on January 1, 2008 for reptiles of concern and will go into effect on July 1, 2008 for venomous reptiles not indigenous to Florida. (Fla. Fish Wildife Conservation Comm., 2007). In addition to the marking requirements, owners must also report escapes to the Florida Fish and Wildlife Conservation Commission immediately upon discovery.



Had a mandatory marking program been in place in 2002, the origin of a snakehead found in a Maryland pond may have been determined sooner and the responsible party found in time to seek redress for any damages caused by the release of the fish into the wild. Photo: Susan Trammell, Bugwood.org

Maine

In November 2005, the National Marine Fisheries Service (NMFS) issued the Final Recovery Plan for the Gulf of Maine Distinct Population Segment (DPS) of Atlantic Salmon, which is listed as endangered under the federal Endangered Species Act. In the draft plan, NMFS had found that the ecological interactions between wild and farmed salmon continue to be a high level threat to the conservation of the DPS. (NMFS, 2004). One of the recovery actions identified by the federal government as necessary to minimize that threat is to "mark all farmed salmon prior to placement into marine net-pens" to assist with the screening of fish captured at weirs. The recovery plan states that each farmed salmon should carry a mark, permanent and detectable with minimal handling, to identify its facility of origin.

In addition, escaped salmon are considered pollutants under the federal Clean Water Act. In 2002, the U.S. District Court for the District of Maine in *U.S. Public Interest Research Group v. Heritage Salmon*, 2002 U.S. Dist. LEXIS 2706, stated that "fish that do not naturally occur in the water, such as non-North American salmon, fall within the term 'biological material' and are therefore pollutants under the Act." In response, working through the state's water quality authority, Maine amended its General Permit for Atlantic Salmon Aquaculture in June 2003 to require the marking of all aquaculture fish to designate origin to enable the identification of fish in the event of an escape or release. The specific marking techniques and strategies were not specified, but by July 31, 2007 all fish were to be identifiable by external means as commercially reared and identifiable as to the individual facility into which they were placed.

Washington

Maine is not the only state requiring identification of fish. In 2001, the Washington State legislature found that it was necessary to minimize escapes of Atlantic salmon through implementation of statewide prevention measures. The Legislature charged the Washington Department of Fish and Wildlife with developing rules for marine finfish aquaculture programs including provisions for prevention of escapes and rapid recapture.

These new rules, codified in Wash. Admin. Code 220-76-001 *et. seq*., became effective in 2003. All applications for marine finfish aquaculture permits must be accompanied by an escape prevention plan and recapture plan and it is the responsibility of farmers to report escapes and attempt to recapture escaped fish. Each permit application must contain a means mutually agreed to by the Department and aquatic farmer to individually identify all marine finfish in aquaculture hatched to the farmer after December 31, 2003.

An interesting aspect of these new rules was a provision that appeared in the proposed rules, but was dropped from the final version. The aquaculture industry in Washington appears to have dodged a bullet. An early iteration of rules contained the following provision: it is the "responsibility of the farmer who did not prevent the

escape to pay for eradication". Depending on how many fish escaped and the length of time between escape and discovery, those costs could be quite high.

Federal

The tagging and marking of farmed fish could also be a component of the regulatory program for offshore aquaculture currently being considered by the U.S. Congress. The National Offshore Aquaculture Act of 2007 (H.R. 2010), introduced on April 24, 2007, would require the Secretary of Commerce, through NMFS, to develop regulations addressing the environmental risks and impacts associated with offshore aquaculture. The legislation would mandate the development of rules which would require the maintenance of "record systems to track inventory and movement of fish or other marine species in the offshore aquaculture facility or harvested from such facility, and, if necessary, tagging, marking, or otherwise identifying fish or other marine species in the offshore aquaculture facility or harvested from such facility."

Increasing Accountability

Almost all states have laws prohibiting the release of non-native species. Mandatory identification systems for high-risk species and activities could improve enforcement of invasive species laws in a wide range of sectors, including aquaculture and the aquarium and exotic pet trade. If exotic pets, farm-raised fish, and other species of concern could be marked, federal and state enforcement officials might be able to identify the owner, farmer, or importer and hold him or her personally responsible for the release. The benefits of such systems are illustrated by the following examples.

In 2002, after a snakehead was discovered in a Maryland pond, state officials conducted a lengthy investigation. Although they were able to locate the man responsible for the release, a two-year statute of limitations had expired and misdemeanor charges could not be brought. (Keihl, 2002). If the dealer had been required to mark the fish before sale, authorities may have been able to find the responsible party sooner and seek redress. Similarly, when a piranha was caught by a fisherman in a Tennessee lake in January 2007, the Tennessee Wildlife Resource Agency concluded that the fish was most likely introduced into the lake by a pet owner who had tired of the fish. (Woody, 2007). Without mandatory marks and tags, however, there was no way to trace the escaped animal to a particular owner or company and take enforcement action.

While the development of marking systems will improve research and knowledge and traditional (criminal) enforcement, the ability to track a fish back to a facility of origin or farmer, or a python to its owner, raises some interesting civil liability issues. For the first time, other fish farmers, recreational fishers, neighboring property owners, and the general public will know who is to blame for a particular release. Federal and state environmental laws, however, are not designed to compensate private individuals for damages caused by environmental crimes. Private plaintiffs who have been harmed by the escape of aquaculture fish or exotic pets may turn to common law causes of action to vindicate their rights. "Common law actions vindicate private interests and are often the only way for an individual to obtain relief from personal harm, including personal injury as well as damage to property." (Grad, 2007). Commentators have recently argued that "[. . .] common law remedies are critically needed to *supplement*, not supplant, statutory approaches to protecting the environment." (Rechtschaffen, 2007). There are a variety of common law theories that could be used by individuals harmed by the release of non-native species, including, but not limited to, trespass, negligence, and strict liability.

Private Causes of Action

Trespass

Consider the following hypothetical: Bob finds a non-native python in his backyard. What legal recourse does he have? Since it is illegal to release a non-native species into the wild, someone should be held responsible for this invasion. But who? Luckily for Bob, the python was implanted with a microchip identifying Phil, his next-door neighbor, as the owner. Bob may have a cause of action against Phil based on trespass.

Section 283 of the Restatement (Second) of Torts (a legal treatise published by the American Law Institute) states that a person is liable for trespass if he or she "[. . .] enters land in the possession of the other, or causes a thing or a third person to do so." It does not matter whether any harm resulted from the entry onto the land, because the landowner's right that was violated is his or her right to "exclusive possession." Still, discovering a python in your backyard is sure to cause some amount of emotional distress!

Unfortunately for Bob, trespass is an intentional tort, which means that Phil will only be liable if he intended to cause the python's entry onto Bob's land. For example, if Phil had thrown a ball against the wall of Bob's house or intentionally driven a stray cow onto Bob's land, Phil would be considered a trespasser in both cases. Therefore, if Phil released the snake into his backyard hoping it would cross onto Bob's property, Phil would be liable for trespass. However, if Phil's snake escaped from his cage and Phil did not know he had gotten out and entered Bob's backyard, Phil would not be liable for trespass because he did not intend to cause the entry. Phil might still be liable to Bob for any harm, but the cause of action would have to be based in negligence, discussed below, not trespass.

To further explore the common law, we need a different hypothetical. Acme Fish operates a salmon farm along a tidal river near the coast. The salmon reared at the farm differ genetically from the native salmon in the area. One June morning, workers at the farm discover that as many as 15,000 fish escaped from their cages overnight. Acme suspects a predator, such as a seal or seabird, eating a hole through the net, caused the escape. Researchers believe

that any offspring produced though interbreeding of native and escaped fish would have a short life expectancy.

Beta Farms runs a small (three net pen) operation several miles downstream from Acme. In July, fisheries officials order Beta to destroy its entire stock of salmon due to an infestation of sea lice. In its ten-year history, Beta had never had a sea lice infection. It is well known in the community that Acme Fish has had multiple sea lice infestations over the years. Beta believes Acme is responsible for the farm's losses. Beta has two possible grounds for recovery: negligence and strict liability.

Negligence

One of the most heavily utilized common law causes of actions is negligence. Negligence, as defined by the Restatement (Second) of Torts, is "[. . .] conduct which falls below the standard established by law for the protection of others against unreasonable risk of harm." To be liable for negligent action, a defendant must have breached a duty owed to the plaintiff and thereby caused harm to the plaintiff or his property. The traditional standard of care is that of a reasonable person. The Restatement defines a reasonable person as someone who "[. . .] exercis[es] those qualities of attention, knowledge, intelligence, and judgment which society requires of its members for the protection of their own interests and the interests of others."

To bring a successful negligence action against Acme Fish, Beta would have to prove that Acme owed a duty to it, Acme breached that duty, and that breach caused Beta's harm. It could be argued that Acme Fish has a duty to neighboring property owners to conduct its business in a way that does not damage their neighbors' property. Analysis of the question of breach would focus on whether Acme Fish acted as a reasonable aquaculture farmer in maintaining the nets, treating the fish for disease, and monitoring for predators. The court would look to industry standards and best management practices to determine the standard of care. If Acme Fish was not maintaining the nets in a manner accepted by the industry as a whole, it may have breached that standard.

To prove causation, Beta would need to convince the court that the escape of fish from Acme's farms caused the sea lice outbreak in Beta's pens. Scientists have linked sea lice from salmon in fish farms to escalating infection rates in wild populations migrating nearby (Atkinson, 2007), so it is theoretically possible that the disease could have been transmitted by the escaped fish. But sea lice also occur naturally and Beta's outbreak could have been caused by independent factors.

Interestingly, if Beta was able to overcome the causation hurdle, in some states it might also have a state statutory (as opposed to common law) cause of action against Acme. For example, in Maine, 7 Maine Rev. Stat. § 3961(1) states that "[. . .] when an animal damages a person or that person's property due to negligence of the animal's owner or keeper, the owner or keeper of that animal is liable in a civil action to the person injured for the amount of damage done if the damage was not occasioned through fault of the person injured."

Strict Liability

Strict liability is "liability without fault." If a defendant's actions express the required elements, this is a preferred cause of action because the plaintiff does not have to prove that the defendant did something wrong.

Strict liability can apply to intrusions by animals. A possessor of livestock is generally liable for harm caused by his livestock intruding upon the land of another even if he has exercised reasonable care to prevent the livestock from intruding. Section 504 of the Restatement states that liability does not usually extend to harm not reasonably to be expected from the intrusion or "[. . .] brought about by the unexpectable operation of a force of nature, action of another animal or intentional, reckless or negligent conduct of a third person."

Many states have adopted this common law rule in statutes that impose strict liability for damages by livestock. Not all state definitions of livestock include fish, however. In Maine, for example, livestock means cattle, equines, sheep, goats, swine, domesticated fowl and rabbits. But in Arkansas and Louisiana, for instance, the definition of livestock includes domesticated fish grown, managed, and harvested or marketed as a cultivated crop.

If the above hypothetical was set in a state that included fish within the definition of livestock, Beta Farms might have a cause of action against Acme Fish. Acme Fish, as the possessor of the escaped livestock, would be liable for any harm caused by the intrusion onto Beta Farms' property. Beta Farms would still need to prove that Acme's stock caused the disease, but if the damage could be traced back to Acme, Acme could be held strictly liable for damage. Acme would likely argue in defense that the intrusion was caused by the actions of the predator and that strict liability should not apply. However, the impact of predation on aquaculture cages is well known and it would be hard to argue that an animal chewing a hole through a net is an "unexpectable operation" of the animal.

Contemplating the application of strict liability to a set of hypothetical facts can be a useful academic exercise, but real life is much more challenging. Recent events in Scotland highlight the challenges of applying strict liability to aquaculture operations. In preparation for introducing an aquaculture and fisheries bill in the 2006/2007 session of the Scottish Parliament, the Scottish Executive developed a consultation paper in December 2005. The paper contained a number of proposals that the Executive was seeking input on from the aquaculture and fisheries communities.

One proposal under consideration was the creation of a strict liability offense with respect to escapes of finfish from fish farms. If fish escaped from a farm, the operator would be guilty, unless he could prove he had taken all reasonable steps to prevent an escape from occurring. (Scottish Executive, 2005). Although a significant majority

of respondents supported the creation of a strict liability offense, many expressed concerns as to how such a liability system would work. One of the main problems identified was the inability to prove which farm was responsible for the escape. (Scottish Executive, 2006a). Without a requirement to tag or mark fish, proving responsibility is almost impossible. Although the Scottish Executive ultimately declined to pursue this proposal, due to concerns that it would be too difficult to enforce and might discourage the reporting of escapes (Scottish Executive, 2006b), it reflects a growing interest worldwide in increasing the accountability of the aquaculture sector.

Conclusion

The introduction of non-native species into the environment can cause massive harm, not just to the environment, but also to business interests and private individuals. Violators of existing invasive species laws must be brought to justice and held responsible for any damage that results. Mandatory ID programs could increase criminal enforcement and accountability. Individuals whose property or businesses are harmed by the release of an invasive species need not wait for criminal enforcement, however. Private causes of action have an important role to play in invasive species management, as well.

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[2] "RFID technology uses wireless communication in radio frequency bands to transmit data from tags to readers." (GAO, 2005).

[3] Many pet owners rely on this same technology to insure proper identification of dogs and cats.