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Bustin' Loose:
Aquatic Invasives from Aquarium Releases in Mississippi and Alabama

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Cover: Water hyacinth.
Photograph courtesy of Mandy Jansen.

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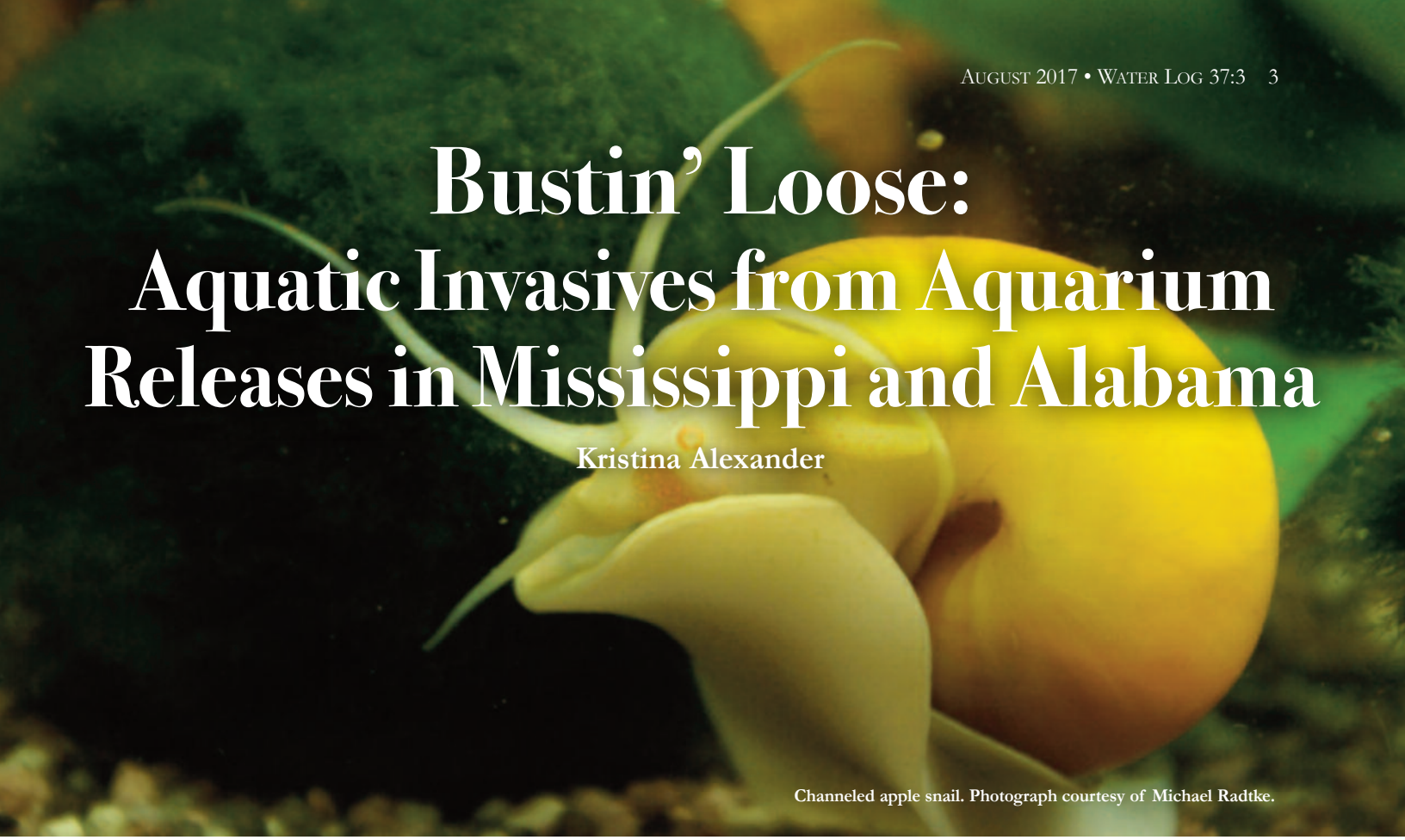
Bustin' Loose: Aquatic Invasives from Aquarium Releases in Mississippi and Alabama

Kristina Alexander



Channeled apple snail. Photograph courtesy of Michael Radtke.

Invasive species, so-named because they are not native and they take over their ecosystem, show up uninvited, although not always by accident. According to the U.S. Geological Survey, seven percent of aquatic nuisances appeared in Mississippi's ecosystem after being released from somebody's aquarium.[1] Still more species can be traced to releases from water gardens. Arguably, these means of introduction can be controlled, limiting further contamination from these species and preventing the introduction of future pests. This article highlights species introduced into Mississippi and Alabama ecosystems after aquarium spills and releases.

Invasive species can and do affect states' bottom line. They harm agriculture – by eating crops and fouling irrigation systems. They reduce fishing yields, including red snapper and shrimp, by eating eggs and larvae. They eliminate food for waterfowl, reducing hunting opportunities. They can impair recreational use of waterbodies by creating mats of vegetation that wrap around propellers and paddles. When the heavy mats decay and sink, they consume more oxygen than the system can tolerate, harming fish. And they directly harm the environment, by changing siltation, oxygenation, and light levels of ponds, lakes, and streams.

Most invasive aquatic plants spread not by seed, but by vegetative means – when bits of stem or roots break off and start new plants. Such plants, which all came to Mississippi and Alabama via an aquarium spill, include: Brazilian water weed, common salvinia, Eurasian watermilfoil, giant salvinia, hydrilla, and parrot feather. (*See* Invasive Plants table.) In fact, some of those plants are sterile, making the parts more dangerous than the whole. Dispersing these species does not require effort or in some cases, any human interaction. A kayaker breaking off a stem while paddling could start a new plant. Both types of salvinia can be spread by such small parts that dogs swimming in ponds can spread them. Eurasian watermilfoil does not need outside help; it "autofragments," breaking into rooting bits on its own after flowering.

Animal invasives are striking in aquariums, but ruthless in the wild. (*See* Invasive Animals table.) The lionfish and sailfin catfish have showy fins; the red claw crayfish sports a blue body and red claws; and the cleverly named giant apple snail is a giant snail the size of an apple. Turned loose, these animals are a menace, overcoming native species, outcompeting for resources, and breeding in overwhelming numbers. The snakehead fish, an aquarium darling (and also a tasty treat in some cultures), can eat every creature in its ecosystem, including birds and mammals. It is toothed and can crawl

Snakehead fish. Photograph courtesy of Brian Gratwicke.

from one pond to another, surviving up to two days on land if kept moist. Without natural predators, except maybe the climate (because many of these species thrive only in warm waters), there is little holding these invasive species back.

The problem is not new. Congress described the water hyacinth problem as follows:

> The plant is of quick growth, is moved about by the winds and currents, and as masses of roots and leaves develop and thicken they form into floating islands, which often conceal logs and other obstructions menacing the safety of any vessel that strikes them.[2]

That was in 1897. At that time, the St. Johns River in Florida was almost entirely blocked by the plant. Congress funded removal of the water hyacinth within the Rivers and Harbors Appropriations Act of 1899. But that did not end its spread.

Prevention by actively enforcing state laws appears more effective than cleaning up after the species has established. Under both Mississippi and Alabama law, it is illegal to release nonindigenous aquatic species. Both states also have lists of species that are banned entirely by guidance authorized by statute, which include snakehead fish, Eurasian watermilfoil, hydrilla, and water hyacinth. Alabama also prohibits the parrot feather, purple loosestrife, and Brazilian waterweed.

However, legislation has not led to success. A 2013 report by a Mississippi aquatic nuisance task force pointed to communication failures as a major reason why these laws were not effective. First, the report noted that people "involved with the aquarium, landscaping, and garden pond hobbies do not appear to recognize the problems with invasive species. This includes both consumers and merchants." Also, the report attributes the multiple agencies sharing jurisdiction over invasives as thwarting effective citizen action. People wanting to report a problem or get information do not know who to contact.[3]

Two of the species listed under the aquarium release tables (the red claw crayfish, the Brazilian water weed) have not been found in either Alabama or Mississippi, and the snakehead has not been spotted in Alabama ... yet. Both Alabama and Mississippi should consider adding the red claw crayfish to their banned species lists before it becomes a problem in their states. Also, an aggressive campaign to notify pet stores and aquarium owners on proper disposal of these species may prevent future invaders.

This is not a novel idea, and in fact, a group called Habitattitude addresses this by having online information about the environmental consequences of aquariums.[4] However, a search to find information on how to dispose of plants or fish from aquariums did not include any official sources – including Habitattitude – as hits on the first page of the search results, only blogs and chat rooms. Even someone trying to do the right thing would be unlikely to find correct information without some effort.

An informal internet search on disposing of aquarium contents found two separate discussions where avid aquarium owners advised each other to dispose of the sand from their tanks by bringing it to the beach.[5] Only some of the chatters disagreed. Another discussion on an aquarium forum about disposing of unwanted living fish had only a few chatters contributing that releasing the fish "into the wild" was bad and "could destroy whole ecosystems."[6]

If a leaf or stem of these invasive plants can start entire new colonies, dumping an aquarium in a backyard or a nearby pond can no longer be viewed as okay. Mississippi mandates that aquaculture facilities dispose of dead plants and animals by putting them in sealed containers.[7] Efforts should be made to let aquarium owners know they should do the same.

Kristina Alexander is a Research Counsel II at the Mississippi-Alabama Sea Grant Legal Program at the University of Mississippi School of Law.

Endnotes

1. Mississippi Aquatic Invasive Species Task Force, *Mississippi State Management Plan for Aquatic Invasive Species: Final Draft Management Plan*, p. 39 (March 20, 2013).
2. Sen. Rpt. 43 (55th Cong.), Committee on Commerce, *To Investigate the Obstruction of Navigable Waters of Southern and Gulf States by Water Hyacinths* (Apr. 5, 1897).
3. Mississippi Aquatic Invasive Species Task Force, *Mississippi State Management Plan for Aquatic Invasive Species: Final Draft Management Plan*, p. 74 (March 20, 2013).
4. Habitattitude is partnership of state and federal government agencies, the nursery and landscape industry, and the pet and aquarium trade.
5. The Planted Tank (thread from July 2010); Reef Central Online Community (thread from 2010).
6. Fishlore: Aquarium Fish Information (thread from March 2017).
7. MDAC, Bureau of Regulatory Services, *Guidance for Aquaculture Activities*, § 108-02.2.
8. This information is from the U.S. Geological Survey Nonindigenous Aquatic Species website: nas.er.usgs.gov, which has a searchable database by either common name or species, providing maps and other facts about invasives.

Invasive Plants

Species	Note
Brazilian water weed *(Egeria densa)*	A species of potential concern
Common salvinia *(Salvinia minima)*	Can form mats 10" thick
Eurasian watermilfoil *(Myriophyllum spicatum)*	Still being sold as an aquarium plant
Giant salvinia *(Salvinia molesta)*	Can double its plant mass every 7-10 days
Hydrilla, a/k/a waterthyme *(Hydrilla verticillata)*	Not yet established in Alabama
Parrot feather, a/k/a Brazilian watermilfoil *(Myriophyllum aquaticum)*	Can lead to more mosquitos, according to some researchers
Purple loosestrife *(Lythrum salicaria)*	Can produce 3 million seeds a year; found in five Mississippi counties; still sold to gardeners
Water hyacinth *(Eichhornia crassipes)*	Good breeding ground for mosquitos

Invasive Animals

Species	Note
Australian red claw crayfish *(Cherax quadricarinatus)*	Potential species, not in Mississippi or Alabama, yet
Giant apple snail *(Pomacea maculata);* **channeled apple snail** *(Pomacea canaliculata)*	Agricultural pest, especially harmful to rice, but cannot survive below 50 degrees
Giant snakehead	Spotted in Mississippi in June 2017, but not in Alabama, yet
Lionfish *(Pterois voltans)*	A super-predator that drastically reduces reef fish populations, consuming 60% of body weight every day
Vermiculated sailfin catfish *(Pterygoplichthys disjunctivus)*	Burrowing by males to attract females leads to siltation and potentially destabilize the banks, leading to erosion

Lions and Tigers and Shrimp, Oh My: Actions to Combat the Lionfish and Tiger Shrimp Invasions

Denman Mims

Lionfish. Photograph courtesy of Thomas Hawk.

Lionfish (*Pterois volitans*) and Asian tiger shrimp (*Penaeus monodon*) have become unwelcome visitors along the Gulf Coast. The invasion of these two non-native species illustrate how different species require different management approaches. Ideally, invasive species should be regulated prior to introduction via pathway-based approaches, such as controlling ballast water discharges or restricting aquaculture operations. Instead, it is more common for regulation to focus on species-based approaches that prevent the import or sale of certain species known to be harmful. Species-based control is generally considered less effective than pathway-based efforts, as species are often listed only after they have arrived. Accordingly, pathway-based regulation appears to be the better practice, as it might prevent the introduction of the species in the first place.

Tiger shrimp carrying eggs.
Photograph courtesy of Michael Ki Hyung Kwon.

Once a non-native species has successfully established itself in an ecosystem – breeding and thriving – the focus shifts to managing those species with the hope of containing them. Invasive species are notoriously difficult to eradicate, if not impossible. The lionfish and tiger shrimp illustrate the differences in invasive management. Culls of lionfish are conducted to limit the spread of species. However, culls are not always practical or successful. Culls of tiger shrimp, for example, may not be effective and may have negative environmental consequences as the shrimp cannot be caught without incurring high bycatch, in part because they do not yet dominate their ecosystem.

Background

An invasive species is a plant or animal that is not native to the United States whose presence threatens the stability of its new ecosystem. They are also called nuisance, injurious, exotic, or introduced species. However, not all non-native species are considered invasive, as not all have the ability to alter their ecosystem. One federal law defines such harmful species as "nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural or recreational activities dependent on such waters."[1]

Invasives are not a rarity along the Gulf Coast. Some, like nutria rats (*Myocastor coypus*) and Eurasian boars (*Sus scrofa*), were introduced intentionally to provide fur and food sources. Lionfish, native to the Indian Ocean, Pacific Ocean, and Red Sea, might have been introduced when Hurricane Andrew caused accidental aquarium releases in 1992, although other sources indicate they were in U.S. waters in the 1980s.[2] Tiger shrimp (sometimes known as giant tiger prawns) are a Southeast Asian species that have invaded the East African Coast. They may have been introduced to the United States by hurricanes carrying eggs from Africa, from farming operations in the Caribbean, or from an accidental release by a South Carolina aquaculture research station.

Both species are found on the Gulf Coast, but only the lionfish dominates its environment. Lionfish have been found along the entire Gulf Coast in aggregations as high as 1,000 fish per acre.[3] Once introduced, lionfish have an indiscriminate palate, preying upon commercially and ecologically important species, including snapper and grouper, at unsustainable rates. Specifically, lionfish populations can consume 460,000 prey fish per acre per year and have reduced their fish prey by up to 90% in areas where they are abundant.

Although not as widespread or abundant as lionfish, tiger shrimp may pose a similar ecological threat if allowed to establish a stable breeding population. They have been reported from Texas to North Carolina, but in relatively low numbers. Only about 50 to 300 individuals are reported each year, which leads some scientists to conclude that the shrimp do not originate from a stable breeding population in the Gulf, but are instead blown in from the Caribbean where they are farmed.[4] However, the U.S. Geological Survey believes it is "likely" that there is a breeding population in U.S. waters. Additionally, with sea temperatures on the rise, these shrimp may be able to expand northwards, to areas previously too cool for them.

Although not as widespread or abundant as lionfish, tiger shrimp may pose a similar ecological threat if allowed to establish a stable breeding population.

State Legal Efforts

State laws and regulations addressing the lionfish and tiger shrimp invasions vary. Texas, Louisiana, Georgia, Florida, Alabama, and Mississippi opt for a "blacklist" approach where certain exotic species are specifically banned.[5] Typically, a state statute will direct a state agency to prepare and maintain a list of prohibited exotic species. Unlisted species are presumed acceptable for import and possession. However, there can be a disconnect. While statutes authorize the listing of nonindigenous species, the regulations formalizing that authority may not be updated regularly. For example, with the exception of Florida, no state's blacklist names lionfish as a banned species, and while Louisiana advises shrimpers to look out for tiger shrimp, the species is not banned.

Florida is uniquely aggressive in combatting the lionfish invasion. Florida formally banned importing lionfish and their eggs as of August 1, 2014.[6] Florida has no commercial or recreational bag limit on lionfish, which encourages the harvest of the species. Captive lionfish breeding has been banned in Florida since 2014, except for individuals who hold special permits.

Non-Legal Approaches to Managing Invasives

Once a species is established, regulatory approaches become less effective. Direct government actions are often needed to try to contain populations. Government-funded invasive species culls have been successful in some instances. For example, in response to the nutria rat invasion, Louisiana implemented the Coastwide Nutria Control Program, where hunters are awarded $5 for the tail of each invasive nutria they collect. In 2015-2016, the program collected 349,235 tails and curbed vegetative destruction on the coast from 105,000 acres in 1999 to fewer than 10,000 acres in 2016, although the state found an 8.2 percent increase in nutria-impacted lands from 2015 to 2016.[7]

Unlike nutria, lionfish are widely more distributed, breed more prolifically, and are more difficult to collect because they live underwater. Accordingly, the species' population is not likely to be curbed in a significant way through culling. Instead, conservation efforts prioritize areas of special concern for lionfish harvest such as marine sanctuaries and other reefs. Consider, for example, the National Oceanic and Atmospheric Administration (NOAA) National Marine Sanctuaries Lionfish Response Plan.[8] That plan allows permits for catching lionfish in what are otherwise no-take zones. The plan includes partnering with local volunteers and non-profits to organize fish culls (also called tournaments, rodeos, and derbies). These tournaments have become popular, with 25 different events listed in Florida waters for 2017 alone.

The Florida Fish and Wildlife Conservation Commission Lionfish Tournament Assistance Program also encourages these events, donating $1,500 to tournaments with more than 20 participants. The tournaments harvest sizable amounts, with the Florida Fish and Wildlife tournaments conducted in partnership with the Reef Environmental Education Foundation harvesting 18,560 lionfish from 2009 to 2016. However, killing 2,500 fish a year does little to slow the dominance of a species where each female can lay 2 million eggs annually.

Bounty programs and tournaments are not conducted for tiger shrimp, likely because they lack the abundance of lionfish. Extensive trawling aimed at eradicating tiger shrimp could cause more environmental harm than it would prevent, due to bycatch and other concerns.

Lionfish. Photograph courtesy of Paulo Ordoveza.

With aquaculture operations and ocean currents the most likely sources of tiger shrimp introductions, options are limited. Nothing can be done about currents sweeping tiger shrimp in from across the ocean, leaving aquaculture regulations as the only practical means to limit tiger shrimp introductions. Aquaculture has become a leading vector for invasive species worldwide.[9] To minimalize the risk of tiger shrimp introductions, tiger shrimp aquaculture facilities need to be strictly managed. As a start, many states already require that aquaculture recirculation systems do not discharge into state waters.[10] However, as long as non-natives are farmed in the United States there is a possibility of their spread. From storm surges to submerged eggs sticking to the legs of waterfowl, there are ways that non-native eggs can be introduced into the environment from aquaculture operations.

Denman Mims was an Intern at the Mississippi-Alabama Sea Grant Legal Program at the University of Mississippi School of Law in the Summer of 2017, and is a student at the Tulane School of Law.

Endnotes

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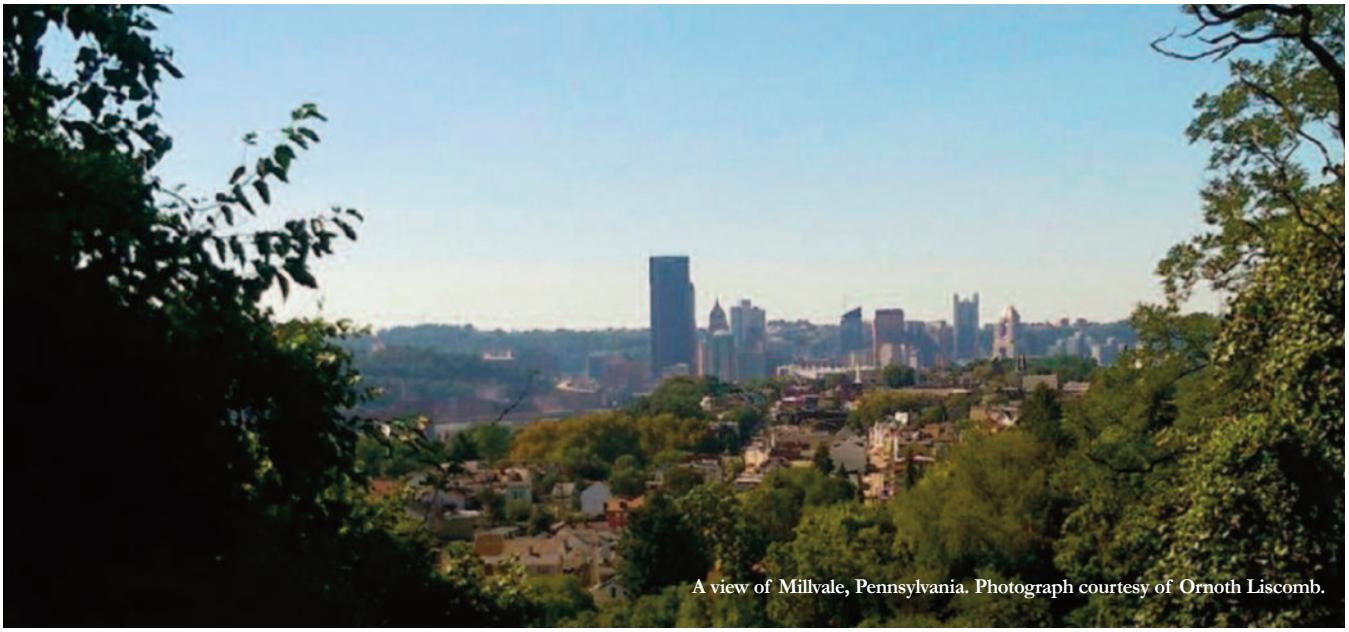
The Ecodistrict: A Framework for Environmental Mitigation at the Neighborhood Level

Stephen Deal



A view of Millvale, Pennsylvania. Photograph courtesy of Ornoth Liscomb.

While there are many conservation groups that focus on preserving pristine wilderness, few groups focus on greening up the city landscape. Worse yet, an overly simplistic understanding of natural systems in an urban context may result in greenery that amounts to little more than window dressing and is not fully integrated to provide comprehensive ecosystem services. New Urbanist developer Andres Duany used the term "green camouflage" when describing green infrastructure that fails to properly acknowledge its urban context: "an urban paradigm cannot be based on the implantation of natural vignettes in the residual places between buildings."[1]

One way to ensure that urban greenery provides tangible benefits is to create an ecodistrict. An ecodistrict helps establish a baseline of environmental performance in a neighborhood. By engaging in a comprehensive planning process, ecodistrict neighborhoods can then use this baseline to craft projects and performance goals that improve upon existing environmental conditions. This type of planning approach has value because it ties environmental mitigation directly into the institutional life of a neighborhood.

An Ecodistrict and its Elements

The Portland Sustainability Institute provides a good definition of the term ecodistrict:

> An EcoDistrict is a neighborhood that is committed to sustainability that links green buildings, smart infrastructure and behavior to meet ambitious sustainability goals over time. EcoDistricts are the right scale to generate sustainability – small enough to innovate quickly and big enough to have a meaningful impact.[2]

Developing an ecodistrict starts with determining the performance metrics, which are built in at the beginning of the planning process. The Portland Sustainability Institute identified eight performance areas for ecodistricts:

- equitable development
- energy
- water
- health and well being
- community identity
- access and mobility
- material management, and
- habitat and ecosystem function.

While neighborhoods have a great deal of discretion over what metrics they choose to pursue, these categories are a useful primer on the type of policy goals for neighborhoods.

A key component of the ecodistrict process is gathering data to understand prevailing environmental conditions within the neighborhood. This data can then be used to establish firm numbers on existing natural indicators within the study, thereby establishing a robust baseline. The type of data used varies widely from district to district, but existing ecodistrict documents and reports can reveal the sources needed to build that baseline. In the Lloyd ecodistrict in Portland, Oregon, data were gathered on the amount of pervious and impervious surface area within the neighborhood along with the number of gallons of stormwater the area produced over the course of a year.[3] Other relevant data categories cited include annual figures on carbon emissions, district energy demand, and waste generated within the area. Also, in order to develop a more complete picture of the district's ecological footprint, data were sorted and filtered by land use categories. For example, water demand was tabulated for each basic land use category: residential, commercial, industrial and open space. This type of data breakdown is useful because it helps build a more comprehensive picture of environmental impact within the area, and it can be a useful proxy for gauging the type of efficiency gains that may accrue to individual properties once the ecodistrict is implemented.

The Millvale Ecodistrict: A Blueprint for Neighborhood Action

In 2011, the Pennsylvania Department of Environmental Protection awarded an ecodistrict grant to the consulting firm evolveEA.[4] After being approached by a Millvale nonprofit organization, evolveEA decided to make Millvale, Pennsylvania the focus for its ecodistrict planning process.

While the ecodistrict concept has gained wide acceptance in dense and large urban neighborhoods, the Millvale experience shows how this type of visioning process can have benefits for smaller neighborhoods as well. With a population of around 3,500, the Borough of Millvale is comparable in scale and size to many neighborhoods within small and mid-sized cities.[5] Accordingly, the process used in Millvale could be used in small, older neighborhoods to evaluate how to allocate scarce resources and human capital.

The Millvale ecodistrict plan was completed in 2012, and updated in 2016. It focuses on six key areas of environmental sustainability: energy, water, food, mobility, air, and equity. The efforts of evolveEA and the Borough of Millvale in ecodistrict planning were recognized with a silver medal from the American Planning Association's National Planning Achievement Award for Environmental Planning.

Now on Phase 2.0 of the Ecodistrict Pivot Plan, the Borough of Millvale has already made a number of notable strides in community sustainability. For example, in Phase 1 of the plan, Millvale was able to create a comprehensive inventory of vacant lots that could be converted to food production along with information on food processing and distribution points.[6] A fresh food hub was also developed in the town center, complete with a business incubator on the second floor that will cater to emerging food entrepreneurs.

Another key area for the plan was water management, and since the plan allowed for a comprehensive analysis of the borough's watershed as a whole, participants were able to get a better handle on the type of projects that would have the greatest impact. Much of the data gathering for the water section was centered on Girty's Run, a tributary of the Allegheny River and the borough's main water feature. By gathering data about the existing hydrology within the study area, the plan's

A view of the Allegheny River under the 16th Street Bridge. Photograph courtesy of Matt Niemi.

authors learned that 61% of the flow originated from outside the study area, primarily from upstream separated sewer systems. As a result, many of the recommendations centered on improving regional cooperation around Girty's Run. Specific goals outlined within the document included the creation of a watershed authority for Girty's Run and increasing collaboration with the Girty's Run Joint Sewer Authority.

Having the ecodistrict in place made it easier to see how these projects fit into a larger framework for sustainability and whether they represent the best use of resources to improve upon the baseline of current environmental indicators.

Ecodistricts as Laboratories of Innovation

The use of neighborhood based performance metrics also provides a solid foundation for implementing novel policy proposals and design strategies that otherwise may not be imagined. One neighborhood where a number of interesting innovations have been made through the ecodistrict apparatus is the Capitol Hill neighborhood of Seattle. The organizers of the Capitol Hill initiative grouped proposed pilot projects and activities under eight performance areas: water, habitat, culture, energy, materials, transportation, health, and equity.[7]

One of the specific goals that emerged from the neighborhood planning process was the promotion of biodiversity. In order to achieve this, neighborhood leaders and local stakeholders hired an expert to implement a pollinator pathway.[8] A pollinator pathway has the goal of connecting two or more urban green spaces not just physically, but in a way that allows for a unified ecosystem to emerge. The process to create a pollinator pathway involved using a high number of native plants, which are able to meet the requirements of pollinating insects and creatures. This effort to build more meaningful connections between urban ecological communities would not be as easy to plan if an ecodistrict were not already in place to collect data on existing natural assets and the current environmental baseline of the neighborhood.

The Capitol Hill ecodistrict also sought to improve the area's urban fabric through design review and innovative building practices. One way this has been accomplished is through the creation of a neighborhood-based land use review committee.[9] The committee meets once a month and invites developers to come in and discuss their preliminary proposals. The committee forwards discussions and recommendations to Seattle city officials. The committee also participates in regulation changes, such as when the city undertakes a large-scale rezoning or implements design guidelines that will affect the community appearance and character of the Capitol Hill neighborhood.

The ecodistrict is also promoting more efficient land use through better parking management practices. A comprehensive report was released in 2015 detailing existing parking space occupancy within the neighborhood. The ecodistrict developed a plan to turn the existing stock of parking spaces from a maintenance burden into a collective community asset by creating a parking benefit district. The district would direct a portion of the revenue from city installed parking meters to the neighborhood, which is authorized to use those meter funds for whatever neighborhoods services are deemed important.[10] Aside from providing a new stream of revenue, a parking benefit district can potentially change the way residents perceive parking. By receiving financial benefits, Capitol Hill residents and business owners may be more inclined to favor extending parking hours or adding additional meters. It is a great way of giving local residents a compelling reason to optimize the use of parking spaces in the neighborhood.

Between the land use review committee and the exploration of parking strategies, it is clear that the Capitol Hill ecodistrict is bringing about a paradigm shift in how the neighborhood perceives itself and its role in facilitating change. By being able to gather comprehensive data on a neighborhood's social and environmental performance and translating those findings into achievable benchmarks, an ecodistrict provides a solid footing for the testing of untried policy solutions and design strategies. In this sense, an ecodistrict is a vehicle for incremental change since it can forge ahead with policy-based experimentation that might be harder to undertake in the formal arena of city politics.

Conclusion

With its performance metrics and specifications regarding data gathering, an ecodistrict may seem like an arduous undertaking for many communities. However, ecodistricts' high degree of customization and ability to set achievable benchmarks for environmental mitigation are very empowering for communities who value environmental mitigation, but do not know where to start. Smaller, neighborhood-based ecodistricts may also serve as a useful watchdog over decisions implemented by city governments. If a city policy is somehow perceived to be counter-productive or less than optimal, an ecodistrict can lobby the city for change while working on an alternative model for the city to adopt in the future. Above all else, the core idea behind ecodistricts – a neighborhood-based organization that can aggressively pursue environmental targets – may serve as the "missing link" to ecological planning in urban areas: a self-mobilizing, neighborhood-based entity that can provide a holistic perspective to green infrastructure implementation.

Stephen Deal is the Extension Specialist in Land Use Planning for the Mississippi-Alabama Sea Grant Legal Program.

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Alabama Utility Company Loses Motion to Dismiss Clean Water Act Citizen Suit

Kristina Alexander

In a country that values law and order, it should be no surprise that if the government breaks the law, it can be stopped. Many U.S. laws, particularly those involving pollution, allow anybody that is harmed when a law is broken to sue the violator, even if the violator is the government. This authority is known as a citizen suit, although citizenship is not required.

Citizen suit provisions are common in pollution statutes, such as the Clean Water Act (CWA). The law allows "any citizen" to act as a plaintiff to sue "any person" for violating the act. Citizen is defined broadly to allow any person or persons whose interests may be or are being harmed by the pollution to file suit. And those plaintiffs can sue any alleged polluter, even federal, state, and local government entities. A successful citizen suit will result in the violation being stopped; there is no monetary reward for the plaintiff nor any criminal punishment or fine for the defendant, although the plaintiff may be entitled to recoup its out-of-pocket expenses for bringing the suit.

Wastewater discharges by the Oxford Water Works and Sewer Board ("Oxford Water") of Oxford, Alabama, were the subject of a citizen suit brought by Coosa Riverkeeper, Inc. ("Riverkeeper").[1] Riverkeeper argued that Oxford Water was polluting the Choccolocco Creek by dumping more e. coli, chlorine, and formaldehyde than allowed by its CWA discharge permit.

In addition to denying that it was polluting, Oxford Water claimed that Riverkeeper's citizen suit should be dismissed because the Alabama Department of Environmental Management (ADEM) was already enforcing CWA matters in state court on behalf of the State of Alabama. The CWA prevents defendants from being sued by citizens and the government for the same claims. In addition to insulating the defendant from the difficulties of defending on multiple fronts, this provision avoids the risk of having conflicting judicial decisions from different courts.

Under the CWA, if the Environmental Protection Agency or a state is "diligently prosecuting" that defendant, no citizen suit is allowed. The U.S. Supreme Court described the bar as "mandatory, not optional,"[2] so if there are two suits to ensure compliance on the same issues, the citizen suit cannot continue. Instead, the citizen may join the other lawsuit.

The court compared the complaint brought by Riverkeeper in federal court to the one brought by ADEM in state court. Riverkeeper had three main arguments: that Oxford Water had violated its permit by discharging more e. coli and chlorine than its permit allowed; that Oxford Water had not reported the discharges as required; and that Oxford Water was discharging formaldehyde into the water and did not have a permit to do so. ADEM's suit claimed that Oxford Water had not monitored or reported as required, and that it made unpermitted discharges into the creek, such as ammonia and fecal coliform.

In its review, the court agreed with Oxford Water that ADEM was diligently prosecuting the claim that Oxford Water failed to report its permit violations as required. However, the court found that the other two claims brought by Riverkeeper were not being pursued by the state. The fact that both suits were based on violating the same CWA permit by polluting

The Choccolocco Creek watershed. Photograph courtesy of G-S-M Media.

Choccolocco Creek was not enough – they would have to have the same precise purpose. They did not. According to the court, "Nowhere does [ADEM'S] complaint allege that Oxford violated its permit discharge limitations for e. coli or chlorine."[3] Therefore, if ADEM won, the discharges of e. coli and chlorine may not be abated. Because the complaints addressed different pollutants, the court held that "the state court action is not adequate" to fix those alleged violations.[4]

Additionally, the court addressed Oxford Water's claim that because ADEM had renewed its permit after those discharges purportedly occurred, it had a complete defense. This argument is known as the "permit defense shield." The theory is that the state should know about the activity of the permittee when reviewing a permit application or renewal, and by granting the permit, the state has in essence found that the violations did not matter. One action is indispensable to establish this defense: disclosing the violations. In this case, the court found that Oxford Water had not disclosed its formaldehyde releases to ADEM in its permit renewal application. Therefore, the permit defense shield failed because Oxford Water could not show that ADEM knew about the illegal discharges when it issued the permit.

Accordingly, Oxford Water will defend claims of discharging amounts of e. coli and chlorine above what its permit allowed, and claims that it discharged formaldehyde without any permit, in the federal court that decided this action. And Oxford Water will defend other claims regarding permit violations – such as excessive ammonia, total suspended solids, and fecal coliform – in state court.

Kristina Alexander is a Research Counsel II at the Mississippi-Alabama Sea Grant Legal Program at the University of Mississippi School of Law.

Endnotes

1. Coosa Riverkeeper, Inc. v. Oxford Water Works and Sewer Board, No. 2:16-CV-01737, 2017 U.S. Dist. LEXIS 92938 (N.D. Ala. June 16, 2017).
2. Hallstrom v. Tillamook Co., 493 U.S. 20, 26 (1989).
3. *Coosa Riverkeeper*, 2017 U.S. Dist. LEXIS 92938 at *23.
4. *Coosa Riverkeeper*, 2017 U.S. Dist. LEXIS 92938 at *31.

The University of Mississippi
WATER LOG
Mississippi-Alabama Sea Grant Legal Program
Kinard Hall, Wing E, Room 258
P.O. Box 1848
University, MS 38677-1848

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Editor: Kristina Alexander

Publication Design: Barry Barnes

Contributors:
Stephen Deal
Denman Mims

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