The fight against pike

by Emily Smith

These two pike demontrate how they make a meal of juvenile salmon. A population of pike can easily wipe out a populaiton of juvenile salmon in a salmon-rearing body of water. Photo Credit: Alaska Department of Fish and Game

Since arriving from Tennessee about a month ago, I have learned a lot about some of the invasive species threatening the harmonious balance of Alaska's different ecosystems. In Tennessee, we have our own set of invasive species to deal with, but some, such as rainbow trout, have been around so long that most people don't think of them as invasive. Others, like the wooly adelgid—an insect that attacks and kills Eastern Hemlocks, were first introduced in New England but are so destructive that we have been helpless to stop their spread. In Alaska, I have noticed that people care a lot about protecting their land from invasive species, and have not given up hope that invasives can be stopped and removed.

One of the biggest threats to Southcentral Alaska's waters is the northern pike. I learned about it first from the many posters plastered around our office warning of the "voracious predator" threatening salmon. Once I began researching the northern pike, though, I realized that they do not play the role of villain everywhere. Other than Southcentral Alaska, northern pike can be found in almost every other part of Alaska, and what's more is that they are a valued sportfish in the places where they occur naturally. In places where they have co-evolved for thousands of years with other fish, pike are just another player in a balanced ecosystem.

However, when northern pike were illegally introduced to the Kenai Peninsula, some shallow and vegetated lakes where juvenile salmon and rainbow trout dwell became a fish buffet for the pike. In some lakes pike have become the only fish species left in the water. There are a number of now infamous pictures of pike preying on salmon or of pike caught with 8, 10 or 12 juvenile salmon in their stomach at one time. When pike are introduced into a lake which has been stocked, Alaska Department of Fish and Game (ADF&G) often discontinues stocking the lake because there are better ways to spend that money than on pike food, even if the waterway was once a popular salmon fishing spot.

Fishery organizations have been dealing with the introduction of northern pike on the Kenai Peninsula since the first ones were confirmed in Derks Lake in the mid-1970s. Derks Lake is part of the Soldotna Creek drainage, and from there pike naturally spread to other parts of the drainage. The spread of pike was aided by additional illegal introductions elsewhere. Currently, 16 Peninsula lakes have been confirmed with northern pike populations. Rainbow trout, Dolly Varden, Coho salmon, and stickleback populations once thrived in many lakes within the Soldotna Creek drainage, but have now all but been wiped out by the pike. Now though, Sevena Lake's population of native fish have begun to rebound thanks to the ADF&G control netting programs to reduce the number of pike in the lake.

Control netting is just one approach that ADF&G has taken to try and curb the pike problem. Arc Lake, located near Soldotna, was previously stocked with salmon by ADF&G until pike were discovered in 2000. In 2008, Arc Lake was treated with rotenone by ADF&G to eradicate the pike. Rotenone is a natural plant chemical which is commonly used as a piscicide, or fish killing agent. At first glance, a chemical killing agent may seem like an extreme measure, but other than draining a lake, which is costly and often impractical, it is the only way to totally get rid of an invasive fish. By making fish unable to use the oxygen absorbed in its blood, rotenone effectively kills

fish while leaving most non-gill breathing organisms unaffected, and it quickly breaks down into non-lethal compounds. Rotenone naturally degrades with warm temperatures and sunlight allowing waters to be restocked or colonized by desirable species.

In 2000, a Nikiski lake was chemically treated with rotenone to eradicate the yellow perch that had been illegally stocked there. The treatment successfully removed the perch and any threat of them becoming the second aquatic nuisance species predator to become established on the Peninsula.

In 2008, Arc Lake was the first lake on the Peninsula to be chemically treated as a means for pike removal, and its apparent success has enthused ADF&G to continue the eradication process. Plans are now in the works to treat two more lakes. Scout Lake just east of Soldotna and Sand Lake in Anchorage are both being considered. Chemical treatment is not something that is taken lightly, though. Part of the process for obtaining the authorizations to treat the lakes includes public commenting periods. There are two authorizations that both require public commenting periods. One is for the State of Alaska Department of Environmental Conservation Pesticide Use Permit Application that was submitted for each lake project. The second is for the Environmental Assessments (EA's) written for each lake project.

ADF&G encourages people to voice their concerns or to ask questions about these projects. The EA's can be viewed online at: http://www.sf.adfg.state.ak.us/Statewide/InvasiveSpecies/PDFs/SandLakeEA.pdf

For specific information regarding the Pesticide Use Applications, please contact the Alaska Department of Environmental Conservation Pesticide Use Program.

Communication is key in preventing further spread of pike on the Peninsula. People need to know that, along with being illegal, stocking pike can pose a serious threat to natural salmon populations, and ADF&G needs to know if pike are found in any new waters. This is why they promote the R&R policy of retain and report. If you catch a pike on the Peninsula, do not release it back into the water, and if it is from a place previously not thought to have pike in it, contact ADF&G because your catch information could prove valuable in the fight against this invasive species.

While efforts to reduce pike populations continue, the threat of pike spreading into areas where they could cause even more damage still exists. Kenai Fish and Wildlife Field Office's weir on Soldotna creek near where it feeds into the Kenai River has video confirmation of pike swimming from the creek towards the river. The Kenai River is not good pike habitat, but it could be used as a corridor for pike to move into the Moose River which would be devastating for this productive Coho rearing stream.

The Swanson River is another productive Coho stream threatened by the close proximity of pike. Stormy Lake which contains pike is connected to the river, so temporary net barriers have been placed across the connecting stream. A permanent barrier could be in the plans for the future; however, constructing a barrier that can block tiny larval pike is no easy task.

Despite the challenges, work to remove pike from the Peninsula will continue. Since increasing pike control efforts in 2001, ADF&G has made an impact on the pike population, and with continued efforts, removing or containing pike on the Peninsula may be an attainable goal. However, these goals can only be accomplished with the cooperation of the public. First of all, do not stock pike. If you catch pike on the Peninsula, keep them, and report any pike you catch in a new or suspicious place. If you have concerns about any pike removal plans, talk to ADF&G, they want to hear from the public. Finally, the 2009 Fishing Regulations have a list of lakes on the Peninsula where pike fishing has been liberalized, so if you feel like taking a direct approach to supporting the removal of pike, grab your fishing gear and have at it!

Emily Smith is the Environmental Education Intern at the Kenai Fish and Wildlife Field Office. A recent graduate of East Tennessee State University, Emily came to the Fish and Wildlife Service through an internship program with the Student Conservation Association in May 2009. Previous Refuge Previous Refuge Notebook columns can be viewed on the Web at http://www.fws.gov/refuge/kenai/.