Muskellunge Stocking Myths Vs. Reality

"A Candid Discussion by an Experienced Fish Manager"

By: Bruce Ruppel, Regional Field Editor

NIMBY, an acronym for "not-in-my-back-yard" is usually associated with locating landfills, powerplants or toxic dumps, however, to some anglers in states where muskies are few and far between, NIMBY is a rallying cry against muskellunge stocking. Anglers in many of these non-muskie states have precious little opportunity to catch a muskellunge. However, through the continued stocking efforts of the states and non-profit groups like Muskies, Inc., the number of waterbodies with true-strain muskellunge is slowly increasing. But as the muskie stocking increases, so has the concern expressed by some anglers about introducing this unique gamefish. Since this appears to be a common malady in states with little or no muskie experience, let's briefly look at just a couple of the more common myths and misconceptions surrounding muskellunge and muskie stocking. We can then have the facts as ammo the next time a non-muskie fisherman brings up the subject.

Chapter #22 muskie stocking Greenwood Lake New Jersey.

Historically, muskellunge were often portrayed in fishing articles as giant, rouge, killers, with the demeanor of a fish eating buzz-saw. Tales were told that muskies would kill for the sheer "fun" of it, or would eat everything that they could get their massive jaws around and that the only way to land one of these beasts was to shoot it with a pistol before bringing it aboard. Unfortunately, this distorted imagery is still perpetuated even today by outdoor writers with a need for eye-catching stories, and these images continue to thrive in the minds of some of today's anglers, as well.

To the uninitiated, the problem with muskellunge very often stems from a "perception" of how a muskellunge exists in its aquatic ecosystem. To some anglers, seeing that muskellunge can grow quite large (30+ lbs.) and have such a fierce set of dentures conclude that once stocked muskies will seriously deplete all the fish (including gamefish) from a lake. This seemingly reasonable conclusion is highly inaccurate. Throughout it's entire natural range, which includes the entire upper midwest and central Canada, muskellunge have co-existed with other gamefish for eons of time. Even in it's expanded range (Maine to Colorado) muskies thrive without significantly impacting upon other fisheries. Pennsylvania, for example has conducted an extensive amount of muskellunge stocking in a wide variety of non-muskie waterways. The Pennsylvania Fish Commission has accumulated some excellent data on lakes as small as 59 acres that have been stocked with muskellunge that continue to support healthy populations of bass, walleye and perch without degradation to either their quality or quantity. The reason behind this is simple. Muskellunge feed mainly upon the most abundant forage fish that a water body has to offer, whether it's shiners, herring, suckers, chubs, gizzard shad, carp or whatever. This species doesn't get large by expanding energy chasing down gamefish. It feeds primarily on whatever fish species is most commonly available and very often these are "undesirable" species.

In addition, studies have shown that muskellunge require only about 6% of it's body weight in food to maintain itself. What that means is that this species doesn't need a lot of protein (fish flesh) to convert to energy to maintain it's metabolism. The food to weight conversion in muskellunge is very high, especially if the food has a high fat contest (I.E., suckers, carp, chubs). The lower metabolic rate indicates that muskellunge may actually feed less frequently then expected, which probably has some effect with the "catchability" of this species, too.

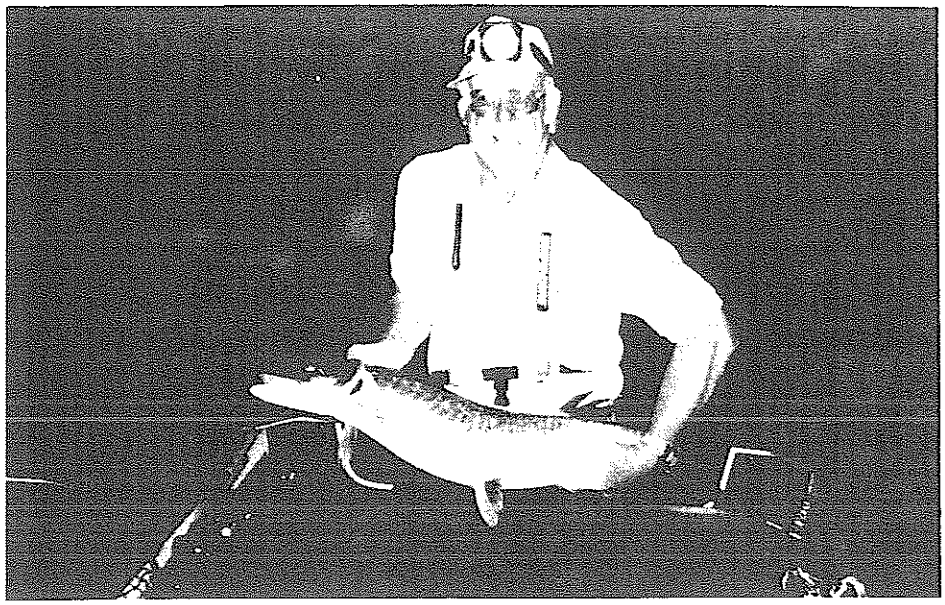
Also, many lakes often contain a large quantity of forage fish that are bigger than can be readily consumed by existing top trophic level (bass, trout, walleye, ect.) gamefish. These would include gizzard shad, carp, suckers and chubs (>10-12 inches). This is where muskellunge can fill an important fisheries niche and provide an excellent recreational opportunity, too. And although muskies prefer to feed on larger size forage fish they easily adapt to feeding on the smaller members as well. This is well evidenced in literature and best exemplified by a huge 65 lbs. Canadian muskie being caught recently by a walleye angler using a 4 inch countdown Rapala. Even many of the most dye-in-the-wool muskie-holics are beginning to see the virtue of down-sizing their tackle.

However, the question still remains in some anglers minds, "Will muskellunge eat gamefish?" The answer is obviously, yes, with this caveat, occasionally. We've all heard reports of muskies attacking a hooked smallmouth or walleye, but research has shown that while some smaller gamefish gamefish specimens ar found in gut analysis of muskellunge, the largest percent of the food preferred by muskies is composed of soft-rayed forage fish (i.e., suckers, chubs, shiners, etc.) species. This has been repeatedly demonstrated through the analysis of the stomach contents of muskellunge examined during various studies. However, the actions of a hooked fish, the struggling, erratic swim-

ming and unnatural movement can trigger a muskie to strike. This illustrates that muskies are prone to eating fish that are injured, weak, dying, or susceptible in some way. This is why so many lures are designed to imitate a struggling fish, but that's a whole 'nother story.

Some anglers say, "Once stocked, muskellunge will spawn and over-populate a lake". This is another common and often repeated misconception. Unlike other Esox (muskellunge, pike and pickerel) species, muskellunge do not readily pose a danger of creating an "exploding" population which would over-populate a lake. While unique conditions can be found where northern pike and pickerel have overrun a lake creating stunted or "hammer-handle" specimens, true-strain muskellunge typically do not exhibit the same tendency. And, there are some very sound biological reasons why this doesn't occur. It's basic to fish population structure that the largest predators are found in the smallest quantity. Muskellunge are (for all intents and purposes) one of the largest freshwater predators. Nature has ways of controlling muskellunge populations, primarily by controlling the early life-stages of the species.

In general terms, muskies are notoriously poor spawners. In the wild, successful spawning is limited by a wide variety of environmental factors, including water level and temperature fluctuations, turbidity, pH, and quality of spawning substrate (rocks or vegetation). Any of these factors can negatively effect spawning success and egg survival. Spawning success (egg fertilization) for wildstock muskellunge varies from about 10-65%. This species is not a nest builder, but a broadcast spawner, utilizing shallow weedy embayments, coves and mouths of tributaries. This spawning process typically subjects the eggs and sperm to various hazardous environmental conditions, such as wind driven wave action and currents that can leave eggs scattered and unfertilized. While this spawning method is also typical of both pickerel and pike, their eggs tend to be sticky and cling to aquatic vegetation suspended above the sediment and debris, thereby increasing the probability of fertilization.



Chapter #22 member, Jim Smith, with fruit of a successful stocking program. . . a 12 lb., 35" Greenwood Lake muskie. Jim's first muskie ever!

Low egg survival is another common limiting factor in muskellunge natural propagation. Cold spring rains can dramatically change water temperatures and increase turbidity (muddy waters) at spawning sites. Muskellunge eggs are very temperature sensitive, and high egg mortality has been attributed to water temperature fluctuations of only a few degrees and the high turbidity (common springtime condition) often encapsulates and suffocates the spawned eggs. These conditions alone could account for the loss of an entire year class in a lake, particularly if that lake has only a limited muskellunge population. Also one the eggs settle onto the bottom, predation by various aquatic organisms (benthic insects, invertebrates and fish) is common and at times extremely detrimental.

Post-hatch predation at shared spawn-

ing sites can also significantly reduce survival of the muskie spawn. True-strain muskies are sequentially the last Esox species to spawn in the early spring. Pike, and to some degree, pickerel, use the same habitat as muskellunge and will often spawn in the very same embayments. However, pickerel and pike typically spawn shortly after ice out, and muskellunge are two to three weeks, to as much as a month behind. Thereby creating a situation where the muskellunge fry that do hatch become food for any young-of-the-year (YOY) pike or pickerel that have spawned earlier in the same areas. Muskellunge mortality due to YOY predation is extremely high. Studies have shown that pike that are only a week or two older are voracious feeders and can decimate 80% of a muskellunge year class. Although not studied directly, it is suspected, from what we know about their spawning habits that pickerel could have the same effect upon the early life stages of YOY muskellunge too.

On top of all that, research in Wisconsin and other states has demonstrated that the largest predation of stocked YOY muskellunge (less than 5 inches) is from largemouth bass. These studies indicate that the stock mortality attributed to the presence of largemouth bass can range up to 100% with an average of about 30%. This information has become fundamental to fisheries departments when developing muskie stocking programs, and the reason why muskellunge of at least 7-8 inches (or larger) in length are considered minimum size for stocking.

Despite these natural controls, it's not likely that muskellunge will be stocked into every lake in a state. True-strain muskellunge are coolwater fish and only those waters that maintain good water quality, forage and habitat are suitable candidates for a true-strain population. Given the wide variety of water quality that's typically found within a state, it's only common sense that muskellunge could not survive everywhere. However, where true-strain muskellunge have been introduced into lakes that have the proper characteristics to successfully support the fishery they usually provide an excellent supplement to the fisheries that currently exist. Fortunately though, the true-strain's cousin, the tiger muskie can tolerate an even wider range of water conditions. These sterile muskie-pike hybrids could early survive in the larger number of urban, marginal or re-claimed lakes and would thereby provide many more anglers with an opportunity to catch a truly large trophy-size fish from water of lesser quality. Many states are beginning to understand the important role that muskellunge and tiger muskies bring to a multi-species fisheries management plan and have begun to increase stocking these species and provide fishing opportunities to more anglers than ever before. With improved hatchery propagation programs for both species it is anticipated that there will be continued efforts to develop additional muskellunge populations wherever possible.

Some non-muskie anglers say, "Muskies are not for everybody (but only the angling elite) so why stock them?" This goes back to the "perception" obstacle previously discussed. Anglers attitude largely direct fisheries development in most states. Cries for more trout, tend to bring more trout. Calls for bigger bass produces the state attempts to generate bigger bass. Comparably the efforts to stimulate muskellunge fishing in traditionally non-muskie states have been small scale, Unfortunately, most anglers in these states simply don't have experience fishing for muskellunge. This is similar to the old adage of which came first, the chicken or the egg. Without a muskie fishery, you can't get experience fishing for muskies, and visa verso. But, as more and more lakes are stocked, more anglers will get their own first-hand experience at catching the "king" of freshwater fish and more muskie addicts will be born.

Also despite general opinion, this is not a species that requires a large initial investment in specialized tackle or equipment (that comes after the "muskie-bug" bites). Most anglers already have very functional gear and would only need to learn some new fishing techniques. Many of the state's newly converted muskie anglers have experienced catching their first fish on tackle they use for bass, trout, walleye or pike. However, there is a significant difference between muskellunge and other freshwater fish. Since this species does grow quite large (30+ lbs.) and are long lived (over 20 years) and are difficult to catch, they should be considered a true trophy species and thereby strongly supported by catch and release fishing. Killing a barely legal fish (30-36 inch) will only reduce the number of specimens that will attain true trophy-size class. And this

species above all others in freshwater is an ideal candidate for developing into a true trophy-size class fishery.

In many states, fisheries management plans typically call for multiple species programs so a large population of muskellunge is not likely to dominate in any one particular waterbody. However, a small muskie population could easily be maintained in many lakes under multiple species management. This should be encouraged too, as it would make the muskellunge experience more accessible to all anglers.

To sum it all up, muskies aren't the "bad-guys" of freshwater fish, as some anglers would like to portray. They are a unique trophy-class gamefish that should be available for all anglers. As you can see from this thumbnail sketch, that natural biological controls and limited gamefish predation exemplify why muskellunge stocking is not a real threat in fisheries management. The concerns expressed about stocking muskellunge often come from a direct bias by some anglers that want to "protect" their favorite fishery. These anglers may not want muskies in "their" waters because they fear that muskies may eat all of "their" bass or trout or whatever. However, the experiences and data of other states from all around the country just doesn't support that outcome. It's known that development of even supplemental true-strain muskellunge and tiger muskie fisheries in a lake is an excellent addition to the diversity of a states freshwater program, and once established, muskellunge fishing receives a lot of interest and support from all anglers involved, and fortunately the cry of NIMBY is not shared by all in the angling community.

If anyone would like to know more about muskies, muskie fishing, and/or muskellunge management, please feel free to contact:

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