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Indian Hills Lake

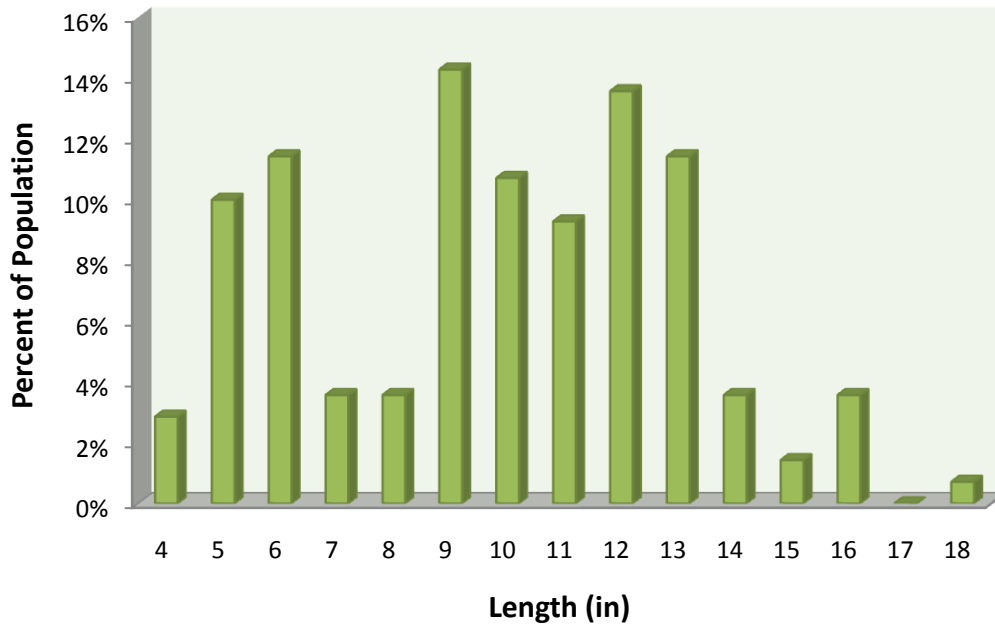
On 5/12/2011, on the request of John Darrough, I sampled the Indian Hills Lake using Missouri Department of Conservation electrofishing gear. John had questions concerning future stocking rates, sportfish population condition, and if there was a need to modify the current regulations to promote better fishing throughout the lake. Our sampling provided a thorough evaluation of the state of the sportfish population which is presented below.

Overall this lake has an excellent all around sportfish population. We collected 6 sport fish species: largemouth bass, black and white crappie, bluegill, flathead catfish, and redear sunfish. Large healthy individuals of all species were collected and while improvements can be made the sportfish population is currently in great shape when compared to other lakes of similar size. The two species with the most room for improvement in the Indian Hills Lake are largemouth bass and crappie. In lakes of this size this is a common scenario with tried and true solutions.

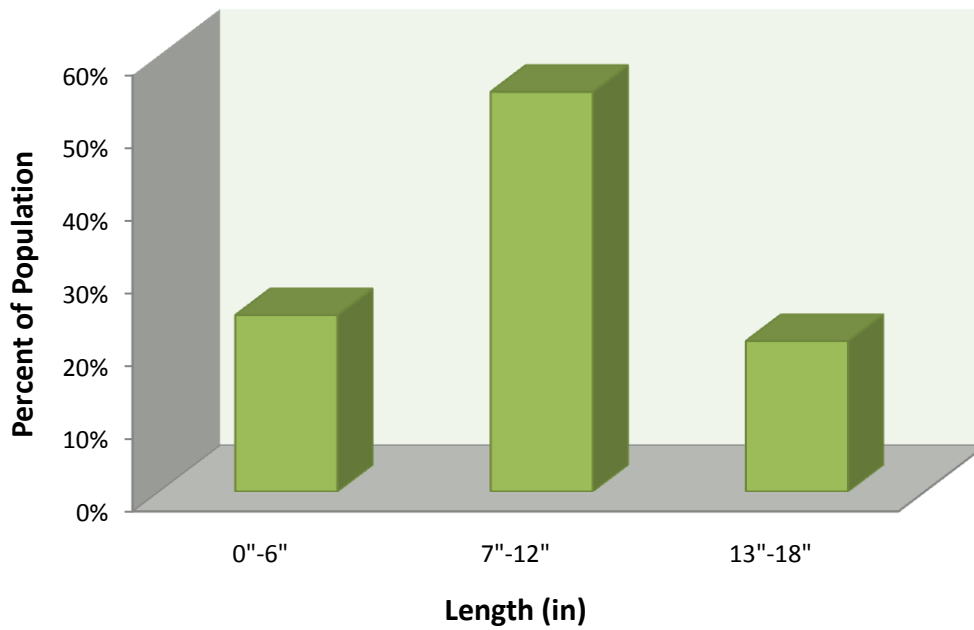
Largemouth bass in Indian Hills Lake are concentrated within the 9"-13" range, with about 50% of the population being between these lengths (figures below). This is not a bad thing because there are fair numbers of large bass, but it can be improved upon by shifting the dominant size bass up to the 14"-15" range using a slot limit. Encouraging fisherman to keep 9"-12" bass and protecting 13"-16" bass should reduce the number of small bass, providing additional resources for more bass to attain lengths >13". We collected bass that were in the 18" range, showing that the lake has the potential to produce

larger bass. However, the high number of smaller bass are likely putting a strain on the prey population, limiting the abundance and overall size of bass >13". I recommend a protective slot limit for this lake be set at 13"-16" and that there is no additional stocking of largemouth bass. This means that bass between 13"-16" be released and fish outside the slot are available to harvest, with an emphasis on harvest of bass < 13". The slot limit will help to shift the size structure of the population into the 2-3 lb range but it should be made aware to fisherman that harvesting smaller bass is recommended to help improve future fishing. This approach is dependent on anglers harvesting small bass and will take several years to see a noticeable change. Bass reproduce well in lakes and do not need additional stocking each year. A lake can only support a certain number of bass and with the numbers collected there should be no problem with natural recruitment keeping the populations at current levels. Stocking bass is not going to contribute a significant number of individuals to the fishable population and is not the best place to spend your funds.

Largemouth Bass



Largemouth Bass



At the time of our sample the crappie were in post-spawn areas of deeper water that were too deep for our gear to sample. As a result we did not collect very many individuals but the individuals we did collect were in the 8"-11" range. After discussing the crappie fishing with local fisherman the consensus was that there was a substantial crappie population but that they were a little on the small side. This is common in lakes of this size. Crappie need lots of structure to thrive, which provides them with food and shelter. The best way to promote crappie fishing is to provide crappie with additional structure to boost the number of prey available in the lake and the overall carry capacity of crappie. I recommend that improvements to the crappie population be focused on sinking brush piles around the lake in varying depths and lots of them. It is not necessary to stock crappie on a yearly basis. Crappie are very successful when spawning and will provide more than enough young to keep the population at carrying capacity. The limiting factor is food and shelter so I would focus my funds and effort on building structure, not stocking any more crappie.

Bluegill in Indian Hills Lake are well distributed in size and abundance, I would not recommend any management needs for this species. Redear sunfish in this lake were very impressive. Several of the individuals sampled were 11"+ which is a very nice redear. Not only were these fish very large but they were also healthy and heavy. Redear will spawn in lakes and have moderate success doing so. With so many large individuals I recommend that there be no additional stocking of redear. Redear feed heavily on aquatic snails which are part of the fish parasite life cycle. Since redear are dependent on snails for food they will likely keep up a large enough population, through natural reproduction, to control parasites. However, if in the future a significant increase in parasites return to the other sportfish additional redear can be restocked.

Several flathead catfish were collected with the biggest one being 30". We did not collect any channel catfish but it is likely that these fish were in deeper water than could be sampled with our gear. However, collecting large flatheads is a sign that the lake is producing large catfish and that the channel catfish population is likely doing fine. Channel catfish do not reproduce well lakes of this size so I would recommend that additional annual stocking of catfish be continued.

In conclusion I recommend that the channel catfish stocking continue and that other funds be focused on adding additional structure to the lake and that no additional crappie, bass, or redear be stocked. The young crappie, bass, and redear that are being stocked are likely ending up as forage so there is no need to pay a premium price for forage fish when fathead minnows are much cheaper. The single best thing you can do to promote fishing on this lake is to add structure in depths ranging from 5'-15' and lots of it.