



the CRAYFISH TALE

CRAYFISH AND pH values

Up beyond the Mogollon Rim of Arizona lies the little Black Canyon Lake. In spite of the 6 mile long, dusty and potholy road down to the trout lake, I decided a few years ago, to try out its reputation for also having large crayfish.

Half way down to the lake, I stopped at the little campground in the woods, and placed a marker at one of the camp sites. I had planned to spend the night there while my traps would verify the truth of the crayfish rumor. I placed ten of my Trapper traps on a trot line at one end of a steep side of the lake. As usual, then, I had baited with lots of pieces of chicken.

Having rattled down to the lake again the next morning, I found my little boat still anchored and undisturbed at the boat ramp. Rowing over to the other side of the lake, where the trot line was waiting for me, I tried to entice some trout onto my cowbell lure with the flashing spinners. No luck. As usual I feared this was a bad omen for how the crayfish catching would go.

How wrong I was. All the Trapper traps were well filled with crayfish, and big ones to boot. I was

delighted as I pulled up all the traps in the boat and estimated I had over two hundred crays in my 5 gallon bucket.

But there was something strange about this catch. At first I did not think it strange that I had so many big crayfish in that catch. But where were all the small ones? Usually, while bringing up traps with crayfish, there is a assortment of large, medium and small crays in each catch. Not this time. All of the catch consisted of large crayfish. How come my catch did not have any small crays as from some of the other lakes? And surprisingly, almost half of the catch were females. At this time of year, July, females are rather scarce in traps.

But my delight over the catch took over, and I returned home and bragged about the catch to my wife.

For at least two years I returned to this lake and had great catches. But then something happened. One day, when I had brought a friend to watch my impressive lake with the big crayfish, I was almost skunked. In all my ten traps I had barely caught two dozen crayfish. What on earth had happened? I even tried luring crays during two sessions, one afternoon and one overnight one. Same thing, very few crayfish in my traps.

Something very drastic must have happened. I wondered about the possibility of the anti crayfish authorities having poisoned the lake. But that could not have been the cause. Poison is not the method of the Game and Fish department. I knew that. But what else? Had they imported a new species of predatory fish in the lake? That could possibly have done it.

I asked a ranger later about new additions of fish in the lake, but the answer was, "no." No change of the fish population had occurred lately. So I abandoned this lake and started searching for other ones with better catches.

But what made the crayfishn population suddently change?

A few years later I heard rumors of another lake with lots of large crayfish. My informant made me promise not to mention the great catches he had pulled from this lake, so I promised to refer to the lake as 'Dennis' lake. And Dennis had caught large amounts of crays for his personal crawfish boils.

At first I had no idea where this magic lake was, but I kept searching. Finally I found it north of Payson and in *spite of its 16 mile bumpy dirt road*, I braved it last September. With son Peter's tent trailer in tow, *we found the lake far away from any paved road and partly hidden among juniper trees*.

We discovered a good camp site near the edge of the lake, and soon had established our camp site and moved into the trailer. As usual I had brought my trot line plus five traps and bait. This time I was going to use my discontinued Jumbo traps that are almost twice as large as my Trappers or Trappys. The bait this time was cat food in flat cans punctured with four

holes in each lid. Cat food made from white fish and tuna has been my favored bait for the last two years and has definitely outperformed my stand-by of chicken pieces.

I believed my friend Dennis' report of large amounts of crays in this lake. And as I had the month before caught over 1000 crays at another productive Arizona lake, I had decided to only place five traps this time.

Son Peter and I launched our little aluminum boat and rowed out a bit and started placing traps. All went well and we soon had all traps in the water so we could return to camp and enjoy the setting sun and the sight of Jupiter rising in the east.

The next morning we hooted and hollered as we brought up one filled trap after the other. My friend Dennis was obviously right. This sizeable lake had plenty of crayfish. One of my Jumbos even amazed me with a catch of no less than 80 crays in it. That was a record for me, and both Peter and I relished at the thought.

But again, something was rather strange. Practically all the crayfish were large. Only a few were medium. Not a one was small. Just like they had been at Black Canyon Lake.

At first, that fact did not bother me. I was just too elated at catching so many crayfish. We had pulled up a total of over 300 in those five traps. Very exceptional but also very welcome. But the more I pondered over the catch and its mostly large and no small crays at all, the more worried I got. Could this be the same situation as I found at Black Canyon Lake? Did this mean that we could expect a drastic reduction of crayfish here in a year or two? And if so, why?

Then one day my Swedish distributor, whose knowledge about crayfish is enviable, wrote this, and I translate:

"In the case of large crayfish, it usually is the result of them being unable to reproduce. And this, in northern Sweden, depends on the water temperature not rising high enough some years, while in the southern parts of the country it is caused by the acidification of the waters during spring floods. That causes the pH values to temporarily decline below 4.5 which is a critical limit and means that the roe under the tails of the females dies before the eggs are hatched. And while adult crayfish don't feel well in such acidic water, they survive. As a result of this, there are only adult and large crayfish that are left."

And what is Ph values? Here is one quote: "The pH of a sample of water is a measure of the concentration of hydrogen ions." While 7 is con-

sidered neutral and normal for unadulterated water, a low number means the water is acidic, and a high number means it is alkaline (basic).

I did not know about the acidification after spring floods, which would include snow melts, but I certainly have heard of acid rains. And acid rains usually come from clouds that have been acidified by coal burning power plants, and we have some in northern Arizona, not very far from the lakes in question. According to the EPA, a pH of 5-6 or lower has been found to be directly toxic to fish. Even automobile exhaust helps acidify rain filled clouds that we have plenty of during winter months.

As I don't own any device for measuring the Ph value of the lake waters in question, I have to wait until one comes along my path. But the information I received so far about Ph values and water acidification, certainly makes me wonder if this is not the cause of my fluctuating crayfish populations.

Merry Christmas to you all and may your traps soon be filled with crayfish again.

Trapper Arne