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NOTE: This is the last of two columns dealing with the menace of PCB pollution in our nation's waterways.

Perhaps when most residents of southern Minnesota think about serious pollution problems in river systems their minds focus on such rivers as the Hudson in New York, the Chicago in Illinois, the Charles in Massachusetts, and other rivers of the nation which flow through the urban, industrialized centers where the sheer amount of residential and industrial discharge is simply too great for the natural drainage systems to handle. It seems a far cry from these built-up banks and the debris-laden, oil-slicked water to the serene, hardwood-lined banks of the slowly meandering Minnesota River — a place where a family can spend an entire summer's day canoeing 10 or more miles in a canoe, enjoying the clean sights, sounds, and scents of a comparatively unspoiled area.

Appearances can be deceiving.

Mixed with that amber-colored, easily flowing water and the natural sediment it carries and deposits are potentially harmful, man-made chemicals in such minuscule quantities that in order to be aware of their presence, extensive testing with sophisticated scientific equipment has to be used. Quantities of chemical pollution so small that they are measured in parts per million (ppm) — the equivalent of five steps on a walk from Washington D.C., to San Francisco, and parts per billion (ppb) — a thousandth of that. Chemical pollution that can accumulate to such a degree in the fatty tissues of fish, birds, and mammals at the end of the food chain, so as to possibly cause physical harm, or affect reproduction.

Poly-chlorinated Biphenyls (PCBs) represent that kind of a pollution problem, and they are present in Minnesota River fish, sometimes very heavily concentrations.

[redacted] received [redacted] word about PCBs last year when the Food and Drug Administration (FDA) confiscated a load of commercially caught carp from the Mississippi River near Lake Pepin. The reason for the FDA's action was due to concentrations of PCBs in the carp exceeding the 5ppm limit for fish sold for human consumption.

That event set the stage for a [redacted] series of tests by the Minnesota Pollution Control Agency (MPCA) and the FDA to find out just how wide-spread the contamination was in the Mississippi River, and its major tributaries, including the Crow, Rum, St. Croix, Cannon, and Minnesota Rivers.

On the Minnesota River, monitoring stations were set up near Jordan, Shakopee, and the confluence of the Minnesota and Mississippi Rivers for the purpose of taking sediment, water, and fish samples. Along with the monitoring stations, water samples were taken from water treatment plants at several points along the river, including Mankato.

The initial testing of fish samples at the three stations along the Minnesota River showed PCB concentrations in excess of 5ppm in white bass, catfish, and carp, along with that, water samples taken from the Mankato treatment plant showed concentrations of PCBs suspended in the water sufficient to cause suspicion that those three species of fish contained more than 5 ppm of PCBs in the Mankato area as well. For that reason, in August of last year the DNR asked sport fishermen to limit consumption of white bass, carp, and catfish caught downstream from Mankato to no more than one fish per week.

[redacted] time the MPCA has been collecting additional samples from selected points along the river, including Mankato, as well as New Ulm, and Granite Falls. They also sampled fish from the Blue Earth River at Rapidan Dam.

According to Marvin Hora, senior biologist with the MPCA, the as yet unpublished results of these tests show that concentrations of PCBs in carp, white bass, and catfish taken from the Minnesota River near Mankato are at least as heavy as the concentrations found in those species of fish taken from the worst contamination points along the Mississippi.

Fillets from white bass taken near Mankato had concentrations of PCBs up to 10 ppm (almost four times the federal limit for fish sold for food). Catfish fillets from the Mankato area had concentrations up to 15 ppm, and carp fillets showed up to 10 ppm.

Also, according to Hora, those

MONS 033095

three species of fish, when taken from the New Ulm area showed concentrations of PCBs, near or slightly above FDA 5 ppm limit.

Walleyes and Northerns, apparently because they are not a fatty or "oily" type fish, do not contain high quantities of PCBs in the Minnesota River. Additional good news includes the extremely low levels of PCBs found in all fish taken from below Rapidan Dam on the Blue Earth River.

Solving the PCB problem in the Minnesota River, as well as in other water systems throughout the United States, is no easy matter. PCBs are incredibly long-lived chemicals. Although



Mankato area fish contaminated

Jim How

exact figures are not known at this time, estimates by the scientific community set the half life (half the time it takes a substance to dissipate in the environment) of the chemical at anywhere from 20 to 200 years, depending on the specific type of PCB. Small quantities accumulate in the bottom sediment, and thus can continue to create a problem for years to come. In the Mankato area it is possible that the severe levels of contamination in fish is the result of PCB discharges which took place five or 10 years ago. The small quantities from the water treatment plant water samples (0.4 ppb at the time tested) might be from residues already in the environment, from very small industrial leakage, or both.

As outlined in the first installment of this series, PCBs are posing a serious threat to many of the commercial and sport fisheries of the United States, including among others, the entire Great Lakes system. As also mentioned, researchers are just beginning to look into the possible harmful effects of the chemical on both fish and mammal populations. To date, the data this research has turned up is all grim.

Even if all use of PCBs were to be terminated overnight, we still would have to face the hard fact that the hundreds of millions of pounds of PCBs already in the nation's environment would take many years to dissolve, and the problem would persist.

Certainly in light of the information at hand, legislative action must be taken on both federal and state levels to severely restrict, or if feasible, stop the use of the chemical. It makes absolutely no sense to allow an already serious problem to become worse.

MDNS 033096