

Stop skybusters' pollution!

LEAD POISONING WASTES WATERFOWL

RICHARD A. HUNT, Waterfowl Biologist, Horicon

Littering marshes with 12 million pounds of lead annually sets up a huge toxic banquet for ducks, geese and swans. It's possible to load shells with non-poisonous shot, but ammo makers probably won't do that so long as they can avoid it.

Concern over the waterfowl resource has resulted in a closer look at factors causing mortality *in addition* to the harvest. One of these factors which has proved to be quite significant is lead poisoning.

Some hunters think lead poisoning is caused by pellets that hit and remain in the bird even though the bird is not killed. This is not the case.

Lead poisoning results from pellets swallowed when the bird is feeding. Apparently the lead is mistaken for seeds. Poisoning occurs when the pellets are ground up in the gizzard and the lead absorbed into the bird's system. While diet and weather greatly influence the effects of lead, one or more pellets can make the bird sick and eventually cause death.

Birds which pick up pellets generally become sick within three days. General symptoms include loss of flight, a green diarrhea, paralysis of the digestive tract, and slow starvation. Death generally occurs within three weeks.

Mallards have been the most common victims, but pintails in the west and some of the diving ducks such as redhead, canvasback, scaup and ring-neck also have important losses. Canada geese have been found dead from lead poisoning in considerable numbers on some of the major hunting areas.

How important is lead poisoning? Recent estimates indicate that about 12 million pounds of lead are scattered into the marshes and shooting areas each year by waterfowl hunters. Some of this shot remains for many years within reach of feeding birds.

An estimated 1,750,000 waterfowl may die annually from lead poisoning. Of this total, mallards represent

about 600,000 birds.

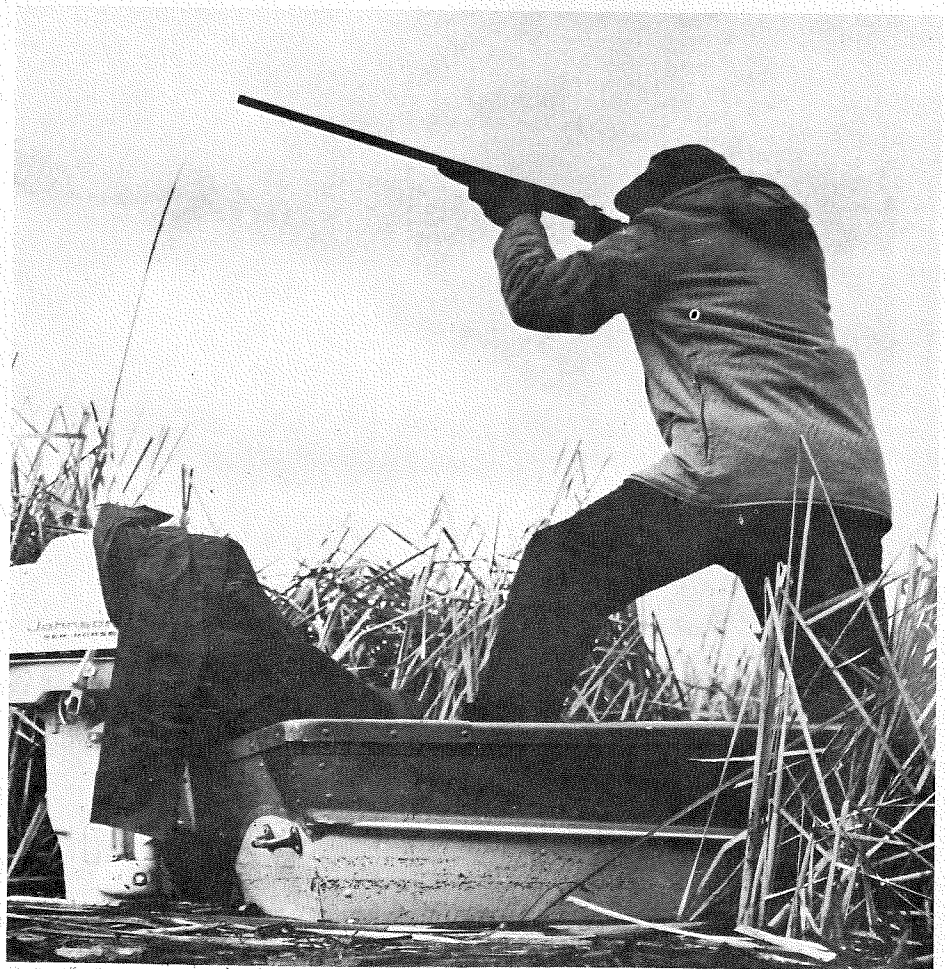
Mallard losses exceed the 1961-62 mallard harvest in the Mississippi flyway and in most years even exceed the total duck kill in Wisconsin! These are significant losses when one considers that all the wetlands purchased by the 105 million dollar duck stamp loan fund can not produce as many birds.

What is the magnitude of lead poison losses in Wisconsin? Fortunately, no really major duck die-off have been observed. We have had frequent small losses particularly in mallards, at Horicon marsh and at

Lake Puckaway. Both these areas are traditional hunting sites.

In Canada geese, significant mortality has occurred at several areas. The largest lead poisoning loss was at Horicon in the fall of 1962 when 400 geese died. Another 200 geese were found in 1963. Other sites where 100 or more geese have been found include Lake Puckaway, Mud lake in Dodge county, Mud lake in Columbia county, and Rock Prairie refuge. In total, more geese have been found dead from lead poisoning in Wisconsin than in any other state.

Some whistling swans also have



been found dead from lead poisoning each year. Most of these losses have occurred in the Green Bay area and on Lake Winnebago where the birds concentrate in spring migration.

What is being done about solving the lead poisoning problem? Perhaps of most significance is that the major arms and ammunition manufacturers now recognize the importance of lead poisoning and have come to the conference table with state and federal agencies to find a solution. The gun companies and related industries have undertaken extensive research programs with some encouraging preliminary results.

One of the most important studies to date has concerned the use of iron shot instead of lead. Tests were sponsored by the Olin Corporation at their Nilo Farms on game farm mallards. Hunters were provided guns and shells of both lead and iron shot. Observers noted kills and crippling losses and all dead birds were examined for shot effect.

Results of these tests showed iron shot to have similar characteristics to lead shot at ranges up to 40 yards. At longer ranges iron shot decreased in efficiency. A particularly interesting point from these tests was that crippling losses with iron shot were 12 birds per 100 bagged while with lead shot there were 39 cripples per 100 birds bagged.

There are unfortunately a number of major problems in the use of iron shot. The test pellets used were hard iron. After 300 rounds, a full choke gun was opened up to an improved cylinder choke. Manufacturing techniques are available that can soften iron shot to prevent barrel wear. To be worked out are reduced cost factors in production of suitable iron shot. One of the most important obstacles to acceptance of iron pellets is the general philosophy developed over the years of "longer ranges and super patterns" in the modern lead pellet shells. A whole new concept of shotgun performance may be necessary.

Some other encouraging test results may be possible in the near future.

Studies are now underway on various coating materials on lead pellets. A number of other materials and alloys of lead have been developed. These need testing not only on the gun and its performance but also on the effect that can occur from birds being hit by the pellets and birds picking up the pellets as food. Think what a savings in birds there could be if lead poisoning were eliminated and crippling losses could be significantly reduced!

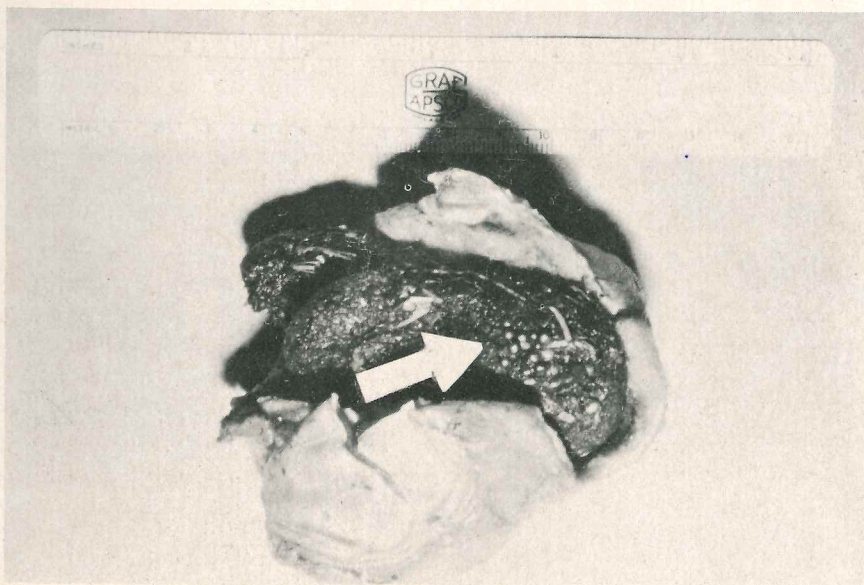
How quickly the lead poison problem is solved remains to be seen. That it can be solved seems certain.

A watchful eye and perhaps some pressure in the right places will be needed so that the lead poisoning situation does not get set aside if duck populations again increase, as happened in the mid-1950's. There's been plenty of time to move, for lead poisoning was identified as a cause of mortality as early as 1874.

In the meantime, hunters can help prevent losses by eliminating some of the sky-busting that occurs on every duck marsh. These wild shots only serve to create more cripples and deposit more lead on our valuable wetlands.



Here are lead-poisoned geese on the federal refuge at Horicon.



Note the lead pellets in this goose gizzard.