Speech presented by Don L. Brown at a meeting of Montana Natural Resources Council, Helena, Montana

December 5, 1961

THE EFFECT OF THE 1961 DROUGHT ON MONTANA WILDLIFE

Fishing

Summer is always a critical time for Montana streams, but the drought summer of 1961 resulted in new lows. U. S. Geological records last August showed:

The Musselshell River at Mosby was dry throughout July. Parts of the river had gone dry in other years, but never for the entire month.

The Milk River at Nashua was next to dry with two cubic feet of water flow per second.

Ten-Mile Creek near Helena ran dry in mid-June, six weeks earlier than normal.

Runoff at the Judith River near Utica was the lowest for any July since records began in 1920.

Runoff for Rock Creek near Red Lodge and Yellowstone River at Billings was second and third lowest respectively, since the 1930 drought period.

Dry ponds were common throughout the eastern part of the state and irrigation reservoirs such as Cooney, Martinsdale and Harris were drawn to a minimum.

Although waters in Northwestern Montana were not affected, some streams west of the continental divide, such as Bitterroot River and Little Blackfoot River reached record lows.

Heavy withdrawals for irrigation helped bring about these low water conditions.

Montana has a reputation for outstanding fishing. Each year fish taken from Montana waters win national recognition.

How long will Montana have outstanding fishing? This is a matter of great concern to sportsmen and the Fish and Game Department. Good fishing depends on good fish habitat; that is on adequate flows of clean water, on cover such as the pools formed by stream

meanders, and on clean gravel areas for spawning and production of insects for fish food.

We are losing good fish habitat at an alarming rate. Stream straightening, dam building, pollution, siltation, irrigation, and overgrazing of stream banks by livestock are all taking their toll. Fish habitat is going down the drain so fast that try as we may, we cannot even inventory the losses.

As 1961 was a drought year this is an opportune time to mention irrigation practices and their effect on fishing.

In Montana there are no minimum flow laws for streams or minimum water level laws for lakes to insure enough water is left to keep fish alive. As a result nationally renowned fishing streams such as the Jefferson, Gallatin, and Big Hole Rivers had sections that were completely dry last summer. How was this done? It was easy! When the regular diversion dams did not take enough water, bulldozers built them high enough with gravel from the stream bottoms to take it all.

I am sure you are all aware of the numerous small tributaries of our major trout streams that are dried up each year for irrigation. Not only are these streams lost to fishing but the larger streams suffer too for these smaller streams serve as spawning areas. Even our mountain lakes are going - tapped for irrigation.

Now all this would be bad enough if the water taken from our streams and lakes was all properly used. Apparently, most of it isn't. A 1958 report on SOIL AND WATER RESEARCH NEEDS by a committee representing 25 public and private agencies in Montana states:

> "Records of irrigation practices on many Montana farms show a very low efficiency as measured by the amount of water stored in the soil compared to the amount applied. Application efficiency as low as 16 to 20 percent is not uncommon. Clearly the irrigated acreage could be increased many fold by increasing the efficiency of application without extending the ditch system or increasing the water supply. The development of more efficient methods

of irrigation is possible through research."

Then injury is added to injury. Fish habitat in an upper section of stream is reduced by taking more water than can be efficiently used and fish habitat downstream is destroyed by silt in the excess irrigation water when is is returned to the stream. The silt settling on the stream bottom, fills the spaces between individual rocks and stones, this smothers bottom dwelling insects on which fish feed and kills the eggs of fish which attempt to spawn.

Fishermen spent 36 million dollars pursuing their sport in Montana last year. In other words, fishing is important enough to the state's economy alone that it should not be allowed to dwindle away for lack of concern.

More fish hatcheries are not the answer. They have their place as an important tool of fisheries management but they are of little avail when fish habitat is gone. At least 75 percent of the trout creeled in Montana originate from natural spawning, not hatcheries, and that does not take into consideration the perch, sauger, whitefish and other species that we do not even try to propagate. We simply could not maintain fishing at its present level with hatchery fish alone.

The answer, it appears to us, is legislation that will protect fish habitat, legislation that will recognize fish as a beneficial use of water and provide for minimum flows in streams and minimum water levels in lakes to sustain fish life. Irrigation would not have to suffer as waters now wasted could provide the minimum flows. Such legislation will not be easy to get, but it is essential if fish and wildlife are to get a fair shake in the mad scramble for water.

Big Game

1. An increase in the number of damage complaints with big game animals moving to bottom lands.

2. Concentrations due to water shortages especially stock water ponds.

3. Increased opposition to more liberal seasons because it was necessary to bring big game numbers in balance with forage supplies.

EFFECTS OF CUTTING AND GRAZING CONSERVATION RESERVE LANDS ON GAME BIRDS

Critical moisture conditions in major segments of about 23 counties in eastern Montana during the past growing season prompted the designation of drought disaster status in these areas. The removal of grass-legume forage the first week of July through cutting and further removal until December 31 with livestock grazing has drastically reduced upland game bird food and cover on most of these conservation reserve lands. In some cases little concern was indicated for conservation measures since some soil bank operators came out of semi-retirement and purchased cattle, of necessity from other drought disaster counties, and paid no more than $1.00 per acre for hay and generally not over 30¢ per acre for grazing. Little actual control was exercised to prevent excessive use of the forage plants utilized under emergency drought conditions since the owner-cooperator is responsible for maintaining the unmeasured composition of his grass-legume soil bank stand. The removal of moisture holding vegetative cover, litter and mulch undoubtedly reduced security levels of the areas for upland game birds and thus decreased annual production, but also resulted in the loss of soil building organic matter basic to the objectives of the conservation reserve program.

The future will depend on conditions, but next year's reduced production will be reflected in the fall harvest.

Also a hope and a prayer that we have increased moisture and that someday legislature will recognize additional beneficial uses of water - to wit: fish and fishing. The justification comes from the fact that nearly half of the residents in Montana buy a fishing license. They spend over 30 million dollars pursuing their sport, an average of 18.3 days per year.