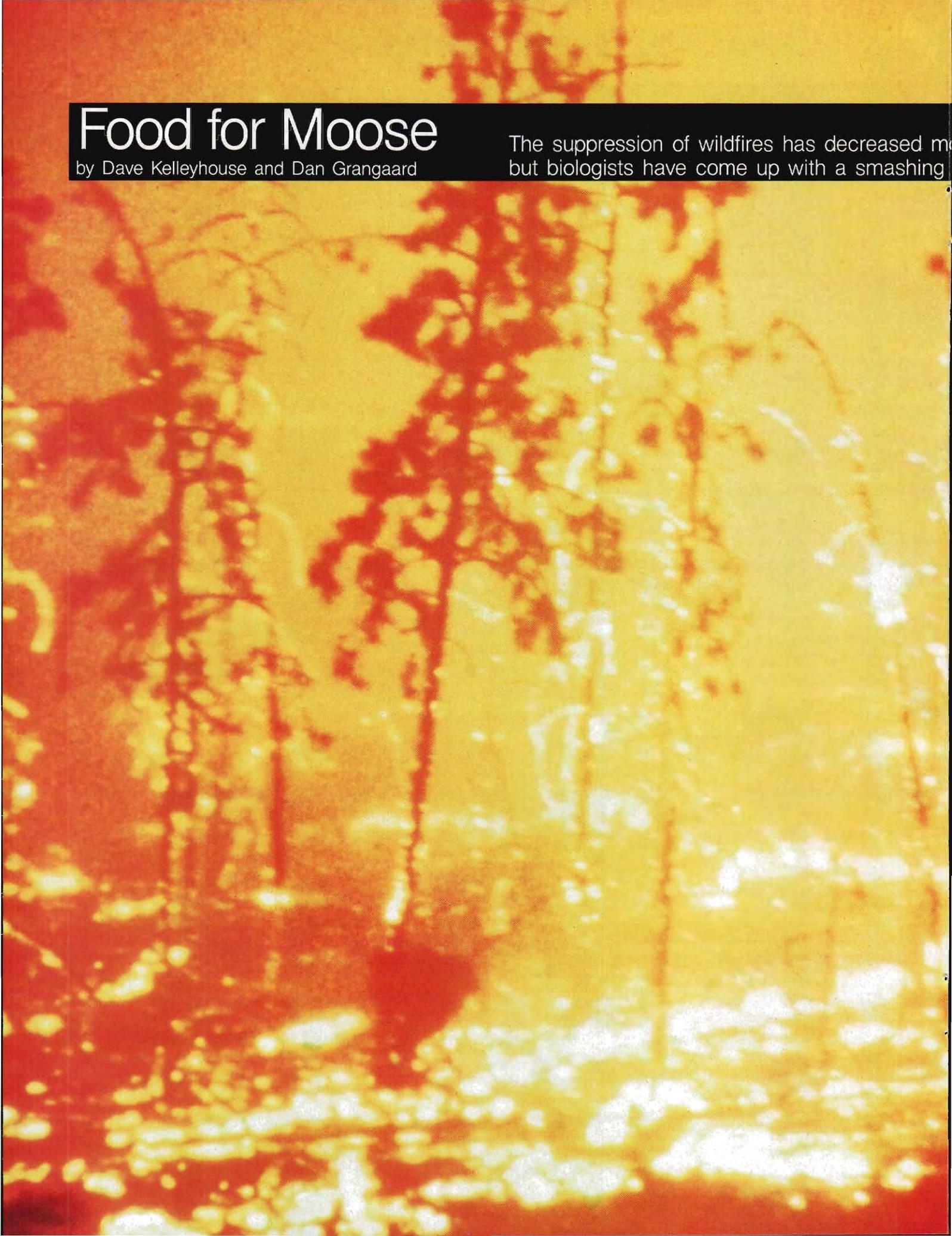


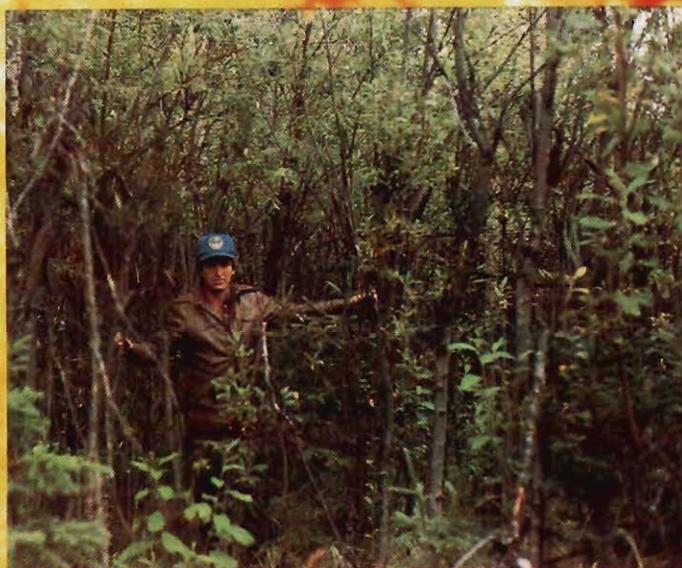
Food for Moose

by Dave Kelleyhouse and Dan Grangaard

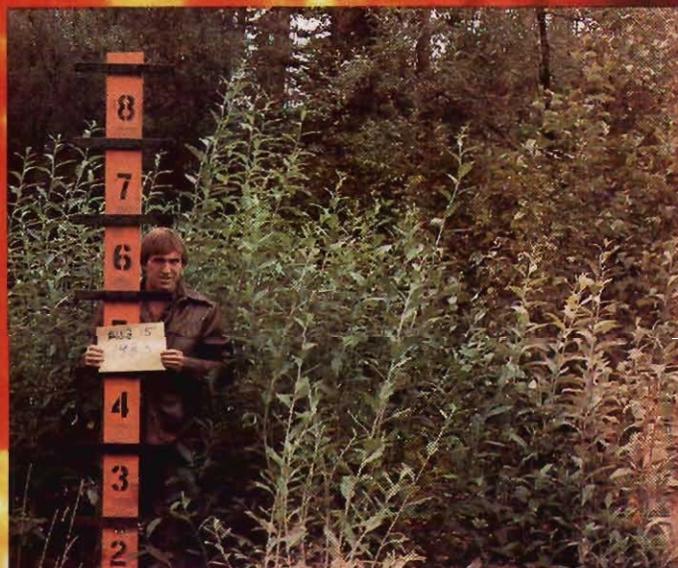
The suppression of wildfires has decreased moose numbers, but biologists have come up with a smashing



oose habitat,
solution.



Before crushing, the decadent stand of willows produced only 200 to 400 lbs. of browse per acre annually.



A year and a half after crushing, the new willows were 7½ feet tall and provided 1,000 lbs. of browse per acre.

A heavy mantle of snow blanketed the Tok River drainage in March, 1979, concentrating hundreds of moose on the valley floor. They were in poor shape, some even refusing to leave the hard surface of the Tok Cutoff Road to avoid passing vehicles. A number of moose were struck by cars, and others had to be shot because they charged people in their own yards. One starved cow near Slana slid down a cut-bank along the road and, too weak to escape, died with her front legs buried in a five-foot-deep snow drift. We examined many of the dead moose and found that their bone marrow was bright red and runny, a sure sign that nearly all fat reserves had been depleted.

It is a hard fact in Alaska that severe winters kill moose. During the severe winter of 1970-71, nearly one-half of the moose perished in many areas of the Interior, causing certain populations of moose to begin long-term declines. It is also true that the number of moose lost during periodic severe winters can be reduced if ample browse is available on both fall and winter ranges.

Natural events such as forest fires and the meandering of rivers once produced a renewable source of browse before man began exerting his influence on the land. With man and his developments came intensive forest fire suppression programs, which reduced the acreage burned each year from nearly 2 million to only 600,000 acres, reducing by the same amount the creation of young and productive wildlife habitat. After nearly three decades of overzealous fire fighting in the bush, the ability of the land to support moose has diminished.

This trend is likely to change because of more enlightened fire management since 1979. New fire management plans, jointly prepared by major land owners and managers, list areas where forest fires will not receive aggressive control action. In addition to helping to rehabilitate much wildlife habitat, such plans also promise to save millions of dollars in public funds annually that will no longer be needed for suppression of these beneficial fires.

While moose will undoubtedly benefit from fire management planning in remote areas, wildland fires cannot be allowed to rage in areas where they could threaten human lives, developments, and private property. The Tok River moose winter range is a good example of moose habitat where commercial timber, utility lines along the highway, and scattered houses justify a high level of forest fire suppression.

In 1981, the Alaska Department of Fish and Game (ADF&G) and the Upper Tanana-Fortymile Fish and Game Advisory Committee agreed to experiment with the mechanical crushing of over-mature willows to increase browse. Crushing has been used before as a habitat management technique by ranchers in the western states and by the U.S. Fish and Wildlife Service on the Kenai National Moose Range (now the Kenai National Wildlife Refuge). But, unlike the situation in Tok, managers in other areas have used crushing to attempt to convert forested habitat to brushy, food-producing fields.

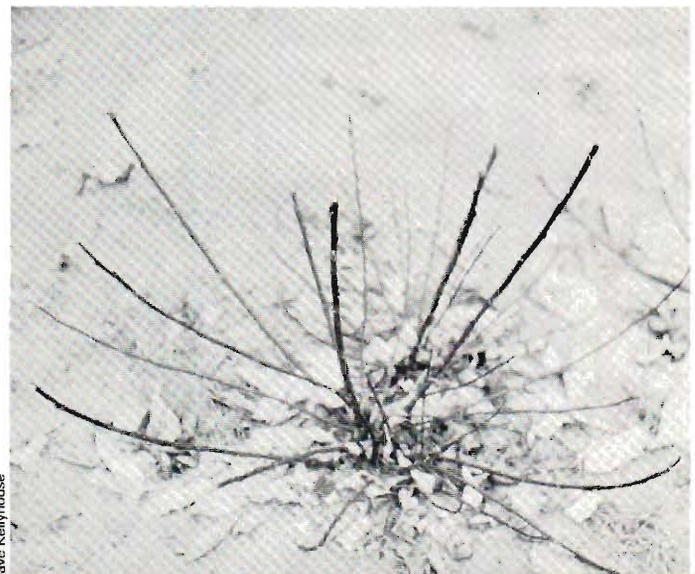
The plan in the Tok River valley, by contrast, was simply to kill the above-ground parts of old-age willows that had grown out of reach of moose. Biologists predicted that this would stimulate growth of new sprouts from the living roots and root crowns of the parent plants. ADF&G decided to shear off the decadent stems with a crawler tractor in late winter, when the stems are cold and brittle.

A small, 30-acre test site was selected and a local contractor, Glen Burnam, was hired to do the work with a maneuverable JD450 tractor. It took Glen, an avid moose hunter himself, only a few days in March of 1982 to shear off and crush down the 15-to 25-foot-high willows in two old, dry slough channels of the Tok River. The site resembled the aftermath of a bomb blast after the job was done. The frozen ground protected the soil from erosion.

Within days, moose began feeding heavily in the area on the tops of the flattened feltleaf willows, which were too high for the animals to reach before crushing. It was heartening to see such immediate benefits to wintering moose.



Dave Kellyhouse



Dave Kellyhouse

By crushing a stand of mature feltleaf willows, biologists created instant browse by bringing the edible tips within a moose's reach. More browse will grow from the stems and root crowns next spring. The new browse was popular with wintering moose. They often will eat to the snow line.



ADF&G



Wildfire suppression projects reduced the acreage burned each year in Alaska by 70 percent and reduced the creation of young and productive wildlife habitat by the same degree. After three decades of this, the land's ability to support moose had diminished.

By June, thousands of tiny green sprouts were already visible throughout the crush. By August, the vigorous new shoots had grown a full four feet. Thus, by the end of the first summer, the production of moose food on the site had increased from an estimated 200 to 400 lbs. per acre to 1,000 lbs. per acre. We even found evidence of browsing by snowshoe hares and of leaf stripping by moose during the summer. By the end of the first winter, 1982-1983, moose had eaten nearly all of the palatable new leaders. In fact, when we did our browse-use surveys in May, we found that only those portions of the leaders that were covered by snow remained.

By August, 1983, the new plants had grown to nine feet, well within the 12-foot-high reach of moose. Estimated yield of the crushed site after only two growing seasons was 2,000 to 3,000 lbs. per acre, or about 10 times the production before crushing. Because moose eat about 20 lbs. of browse each day during winter, the 30-acre experimental site was providing at least 3,000 moose-days of forage compared to 300 to 600 days worth before treatment.

Based upon the success of the 30-acre experimental project, which cost only \$30 per acre to treat, ADF&G is crushing an additional 400 acres this year. If comparable results can be achieved, this larger project should produce nearly 1 million lbs. of browse by the winter of 1985-86, increasing the carrying

capacity of the Tok River moose winter range significantly. The 400 acres to be crushed will be in scattered willow patches throughout the range to benefit as many moose as possible. The benefits should extend for at least 10 years.

The mechanical treatment of moose winter ranges can never replace forest fires because of the vast, remote nature of most of Alaska's moose habitat. The technique does, however, hold considerable promise for managing the habitat of important moose populations in accessible areas where wildfires cannot be tolerated. Given the ever-increasing value of moose and other species of wildlife that flourish in young habitat, ADF&G will continue to test new techniques to provide for their habitat needs in a cost-effective manner. ■

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