IF YOU HAPPEN TO SEE a small red airplane going through aero­
batic maneuvers near Fairbanks this winter, don’t be alarmed. It’s only
biologists Bill Gasaway and Steve DuBois of the Alaska Depart­
ment of Fish and Game conducting a moose research project. Gasaway,
DuBois, Dr. Sam Harbo of the University of Alaska and other
biologists working on this project are trying to improve tech­
niques used to find the answer to a question that has plagued them
for years: how many moose are there in various regions of Alaska?

Gasaway has been spending many of his days for the last couple
of years behind the stick of the Alaska Department of Fish and
Game’s high-performance Bellanca Scout aircraft as he and DuBois
attempt to discover just how many moose are being overlooked during
standard-technique moose surveys. Their work is neither routine nor
easy, since Gasaway does much of his flying at almost treetop level.
Standard surveys are normally flown in straight lines over vast
expanses of bush at an altitude of 300 feet. Gasaway, however, often
flies in a tight circular pattern. By intensively examining every clump
of trees and shrubs he can count almost all the moose in a one or
two square-mile area. This biologist’s technique takes longer but he
sees far more moose than observers conducting standard, straight-line
transect surveys.

To find out just how much more efficient his method is, Gasaway and several other biolo­
gists radio-collared 44 moose in Game Management Unit 20 (east of
Fairbanks) during the fall of 1976. When they fly a test survey, Gasaway and DuBois first get a
rough “fix” on the location of one of their collared moose by radio. They then select a one to two
square-mile plot of land around the animal. Next they fly through the
area using the standard moose survey technique, counting all the
moose they see and noting if the collared moose was observed. They
then search more thoroughly by flying in small tight circles over the
entire plot, again counting all the moose they see. Usually, additional
moose are spotted during the second search. In the rare instances
when the radio-collared moose is not located after the second survey,
DuBois flicks on the radio receiver so Gasaway can home-in on the
collared animal. The radio signal usually leads to the solitary moose
lying down in a spruce forest or some other spot difficult to see by
air. Such animals would very rarely be seen using any standard survey
 technique, but Gasaway and DuBois have been able to find the
hidden moose 9 out of 10 times using their intensive survey tech­
nique. While flying normal surveys through the same area they only see the collared animals 7 out of
10 times. If survey conditions are poor they may see as few as 3 out of
10 with the standard technique, but can still locate 9 out of 10 with
the intensive method.

Through this technique of paired surveys, Gasaway is be­
ing to understand why some moose are missed during standard
surveys. More importantly, he is usually able to predict about how
many moose will be missed during standard surveys conducted under
various snow, habitat and light conditions. Why all the fuss to
develop such accurate moose pop­ulation estimates? Well, as the
human demand for moose, moose habitat, and industrial development
increases, better estimates of moose numbers are needed to determine
safe levels of harvest by humans, the relationship of the moose
population to its habitat and the amount of wolf and bear predation
upon various herds. Gasaway’s research project hopefully will
provide game biologists with new “tools” they need to determine
such things.

In addition to gathering infor­mation about the limitations of
standard survey techniques, this biologist and crew are also
gaining additional knowledge of moose biology. For instance, in the
fall many radio-collared moose that spend spring and summer in · the
Tanana Flats south of Fairbanks, migrate northeast into the Chen­a,
Little Chena and Salcha River drainages or south into the foot­
hills of the Alaska Range. These animals spend the winter in specific
areas that they use year after year. Some moose, however, remain in
the Tanana Flats year-round. Gasaway’s group has also found
that moose use open grassy or mar­shy areas as well as shrub habi­
tats in summer, birch and willow
shrub habitats during the fall and

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are primarily benefiting only those
moose calves remaining year-round
with their mothers on the Tanana
Flats where wolf control is most
intensive. Although spring and
summer survival is high for all
moose calves born on the Flats,
Gasaway has found that calves
which leave the Flats in the fall
with their mothers are often lost
over the winter.

Anyone who spends a lot of
time flying at low elevations over
the Alaskan bush is bound to
observe many varieties of wildlife.
Gasaway and DuBois are no excep­
tions. Steve DuBois has always held
a special interest in waterfowl, so
during his spring flights he has been
keeping a record of swan nesting
sites on the Tanana Flats, noting
seasonal concentrations and pre­
ferred nesting areas. Gasaway and
DuBois have also gathered valuable
information on the distribution,
abundance and biology of other
species, including black bear,
caribou and wolf.

Gasaway’s research is providing
much needed answers to questions
about the effectiveness of present
moose survey techniques. When
he finishes his field work he will be
responsible for training other
biologists so that they too are able
to use the new survey technique.
Because the new technique is
expensive, it will probably not be
used on a statewide basis every
year, but it will be used when more
accurate population estimates are
required for a specific area. All in
all, Gasaway’s work should lead to
definite improvements in the
management of Alaskan moose
populations.

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