

THE 1962 STATUS OF WATERFOWL AS
PRESENTED TO THE WATERFOWL ADVISORY
COMMITTEE, WASHINGTON, D. C.,
AUGUST 7, 1962.

by
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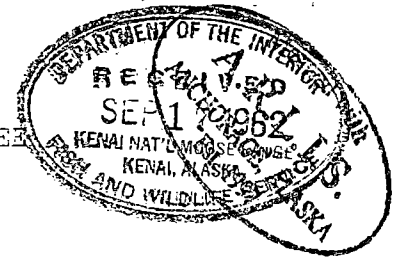
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THE 1962 STATUS OF WATERFOWL

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Washington, D. C., August 7, 1962



W. F. Crissey

Those of you who were present at this meeting last August will recall that we were forecasting a major reduction in fall flight due to severe drought in the major breeding areas. Also, it was brought out that as a result of drought in prior years the breeding population at the start of the 1961 season was below the level of the previous 12 years. The hunting regulations which were developed in response to this situation were based on a stated objective of not further reducing the size of the duck breeding population in 1962.

DUCK POPULATION OVERHARVESTED

In view of the lesser number of ducks expected to come South last fall the shooting regulations were considerably restricted for the purpose of reducing the kill. Our kill surveys have revealed that these restrictive regulations were successful to the extent that the estimated duck kill in the United States was reduced from 9,683,000 during the 1960-61 season to 6,350,000 last season, a saving of about $3\frac{1}{2}$ million birds. In spite of this saving, I regret to report that the total duck breeding population index this past spring, as recorded by the aerial survey crews (excluding scoter, eider, merganser, and oldsquaw), was reduced by about $3\frac{1}{2}$ million birds as compared to 1961. It is obvious now that in view of our objective to return as many birds to the breeding areas in 1962 as we did in 1961 we overharvested the duck population last fall.

DROUGHT CONDITION STILL PERSISTS IN IMPORTANT BREEDING AREAS

I am pleased to report there are signs that this year the drought condition affecting important breeding areas may be breaking. Water conditions were much improved in the southern and eastern portion of the pothole breeding range, which is similar to the general pattern of recovery following the drought in the late forties. I hasten to add, however, that habitat conditions have improved comparatively little in the important mid-continent pothole breeding habitat as compared to last year.

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(Slide No. 1 - Graph No. 1):

On this graph is plotted the number of water areas estimated to be present in the southern portions of the three Prairie Provinces during May and July each year since 1951. This graph must be qualified in one respect. For the years 1951, 1952, and 1953 pond data were not collected during the July survey in Manitoba. Therefore, the number of July ponds shown is in part an estimation for the first three years. Also, it is not possible to include the estimated number of water areas in the Dakotas and western Minnesota, since July surveys were not conducted in these States before 1957, and the number of water areas in May was not estimated in a manner comparable to that used in Canada.

The data in this graph represent total ponds regardless of size or type. Only temporary field puddles and some road ditches have been excluded from the count.

It can be seen at a glance that the number of ponds increased this year both in May and July (+22 percent and +49 percent, respectively), although the increase was not nearly as much as in 1960 following the very dry summer in 1959. Unfortunately, the improvement in some areas came after the bulk of the birds arrived in late April and early May. Other areas received sufficient moisture from snow melt and rainfall to benefit crops and to hold water levels constant, but not to improve them. Many areas continued to deteriorate and went dry this year for the first time since the drought began. Also, the distribution of rainfall was poor with a few locations receiving a great deal of water while most areas remained dry. Many of the ponds this year were of poor quality due to low water levels, while others were deluged with rain to the extent that nesting was disrupted. Wet, chilly weather at the end of May coincided with the period when early nests normally hatch, accounting in part for the near "bust" in first hatching attempts as evidenced by the absence of early hatched broods over much of the breeding grounds. Hay mowing also was reported to have caused heavy nest losses in some places.

In parts of the Dakotas the drought condition was completely reversed this year with the pond count more than doubling in both May and July. The number of ponds this year in the Dakotas is above the average of the past 12 years.

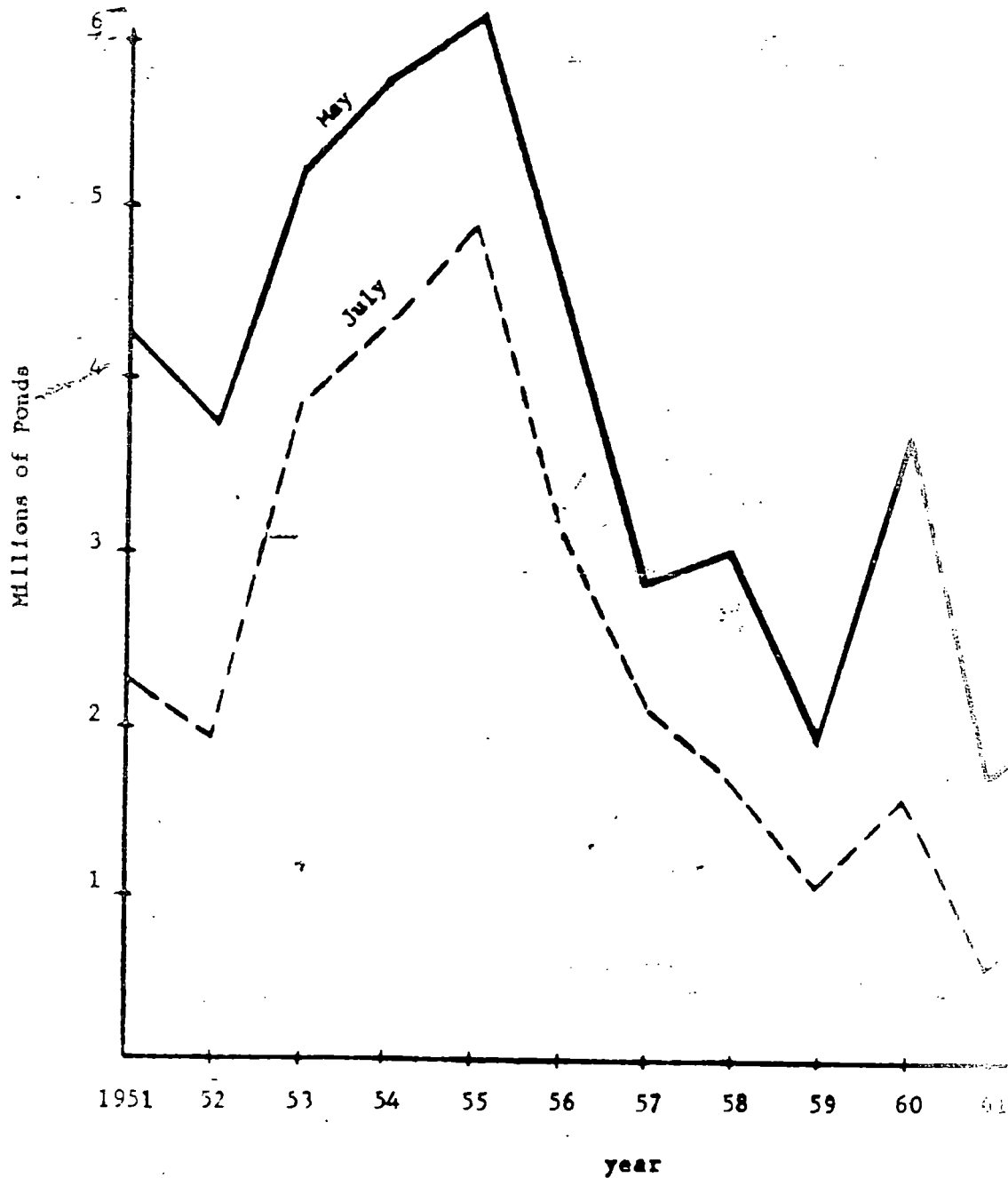
BREEDING POPULATION DECREASES

(Slide No. 2 - Graph No. 2):

On this graph is plotted the total duck population indexes for all breeding areas combined corrected for the different visibility rates that either have been determined by field measurement or were estimated to exist in each of the major habitat types. The trend in

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Graph 1 - Number of Water Areas
Southern Prairie Provinces



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number of water areas recorded in the southern portions of the Prairie Provinces is repeated once again to illustrate the importance of pothole habitat in controlling continental duck populations.

The breeding population index decreased approximately 17 percent from last year and is now 38 percent below the average of the past 12 years and is 47 percent below the peak level reached in 1956.

(Slide No. 3 - Graph No. 3):

To illustrate the situation further, this is a graph showing the trend in mallard breeding population indexes for the period 1954 through 1962. The index for 1962 is 38 percent below average, 57 percent below the peak level reached in 1958, and 30 percent below last year.

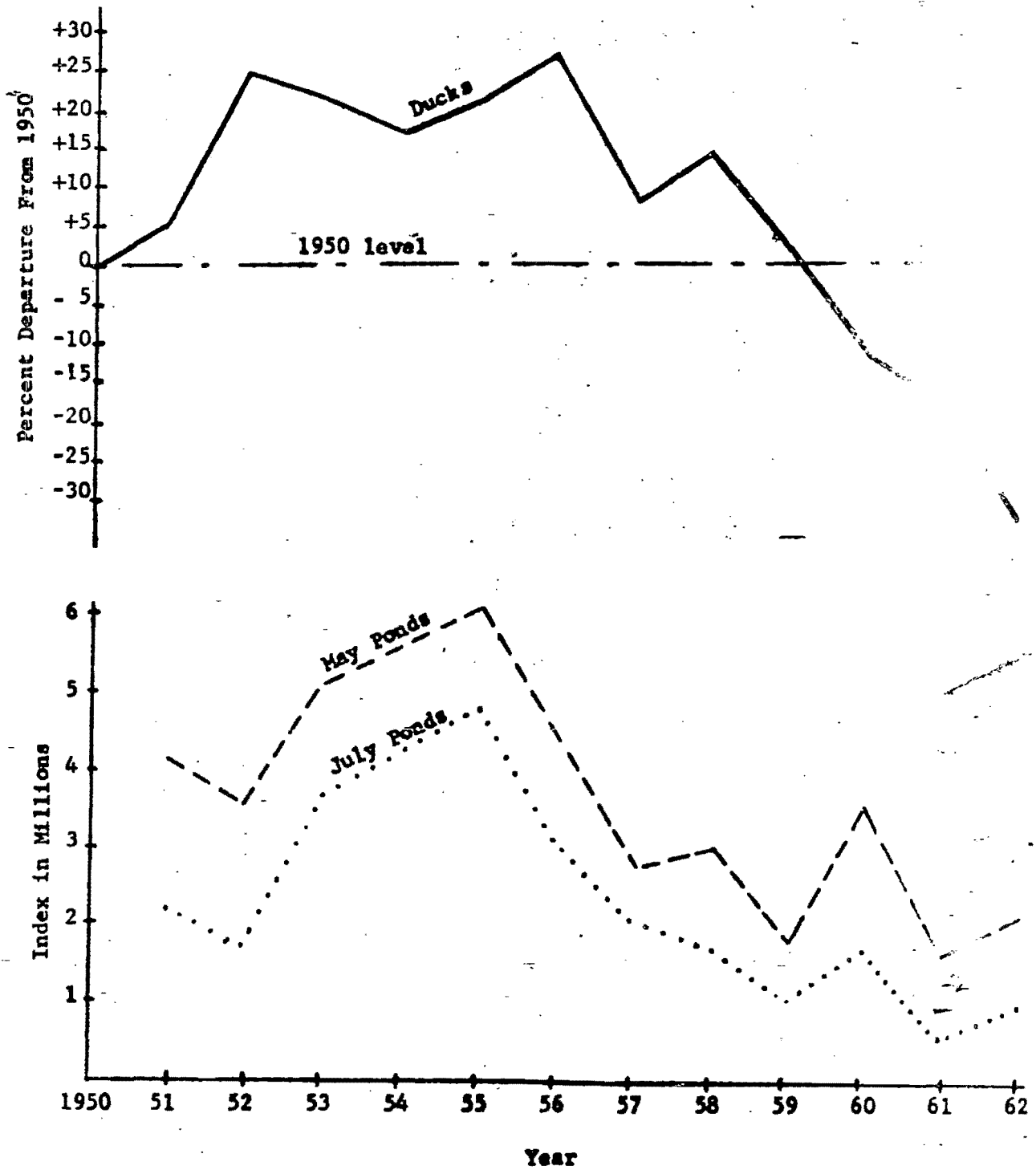
(Slide No. 4 - Graph No. 3):

This graph presents the breeding population trend for pintail. The breeding index for pintail this year is 42 percent below average, 60 percent below the peak year reached in 1956, and 21 percent below last year. Most important species show trends reasonably similar to mallard and pintail. For example, as compared to the average of the past 8 years the blue-winged teal index this year is -43 percent, baldpate -43 percent, canvasback -52 percent, and green-winged teal -56 percent. For scaup the 1962 index is 6 percent below average, 24 percent below the peak year reached in 1959, and 12 percent below last year. Although some scaup nest in pothole habitat and are affected by drought, the bulk of the population nests in the North where lack of water is not a problem.

AGE RATIO AS A MEASURE OF PRODUCTION SUCCESS

I expect that most of you are familiar with the Bureau's duck wing collection program. Based on techniques developed in 1958 it is possible to differentiate between immatures and adults by examining wings collected from hunters through the mail. After a small-scale experiment in 1958 the wing collection survey was expanded throughout the Mississippi Flyway in 1959. It was further expanded in 1960 to the Atlantic Flyway, and last season the survey included all four flyways. Data from this survey during the past three years have provided us with much valuable information. With regard to age ratios and using mallards as an illustration, in 1959 the mallard age ratio in the Mississippi Flyway kill was .77 immatures per adult. During the 1960-61 season the ratio increased to 1.76 and then decreased during the season just past to 1.08 immatures per adult. Nationwide during the past season the ratio for mallards was 1.05 immatures per adult. Based on banding data we know that immatures are more vulnerable to the gun than are adults. Using banding data as a measure of differential vulnerability, the ratio of immatures to adults in the Mississippi Flyway mallard population before the past three hunting seasons has been .53, 1.31, and .70, respectively. These rates of production have been too low to prevent the mallard population from going downhill under the shooting pressures that have prevailed.

Graph 2 - Trend in Duck Breeding Population Indexes



POTHOLE HABITAT CONDITIONS

Some of you in this room have just returned from Canada where you participated in a "show me" trip with Fred Glover. For those of you who took part, there is no need for me to describe conditions. However, for the benefit of those who have not visited the Prairies in the last two or three years I would like to show a few pictures.

(Slide No. 5 - Pothole near Boissevain, July 1962):

This picture was taken about mid-July near Boissevain in south-western Manitoba. A great deal of rain fell in this area from mid-May through July and as you can see the water extends through the vegetation into the field beyond. This pothole is located on one of our air-ground comparison study areas and it is perhaps significant to note that although there were over 200 potholes with water on the transect in July, neither the ground crew nor the air crew recorded a single brood.

(Slide No. 6 - Pothole near Fertile, Saskatchewan, July 1962):

I mentioned earlier that a few scattered areas received a great deal of rain this year while the bulk of the Canadian pothole breeding range was still dry. Boissevain is centered in one of the locations receiving abundant rainfall while Fertile, Saskatchewan, only 85 miles west, was still very dry. This picture was taken near Fertile during July and it shows a farmer cutting hay in a pothole that produced broods in 1960. On the Fertile air-ground comparison transect only 4 ponds held water out of a potential of over 200 and these were all dugouts.

(Slides 7, 8, and 9 - Pothole near Moose Valley, Saskatchewan taken in May 1961, May 1962, and July 1962):

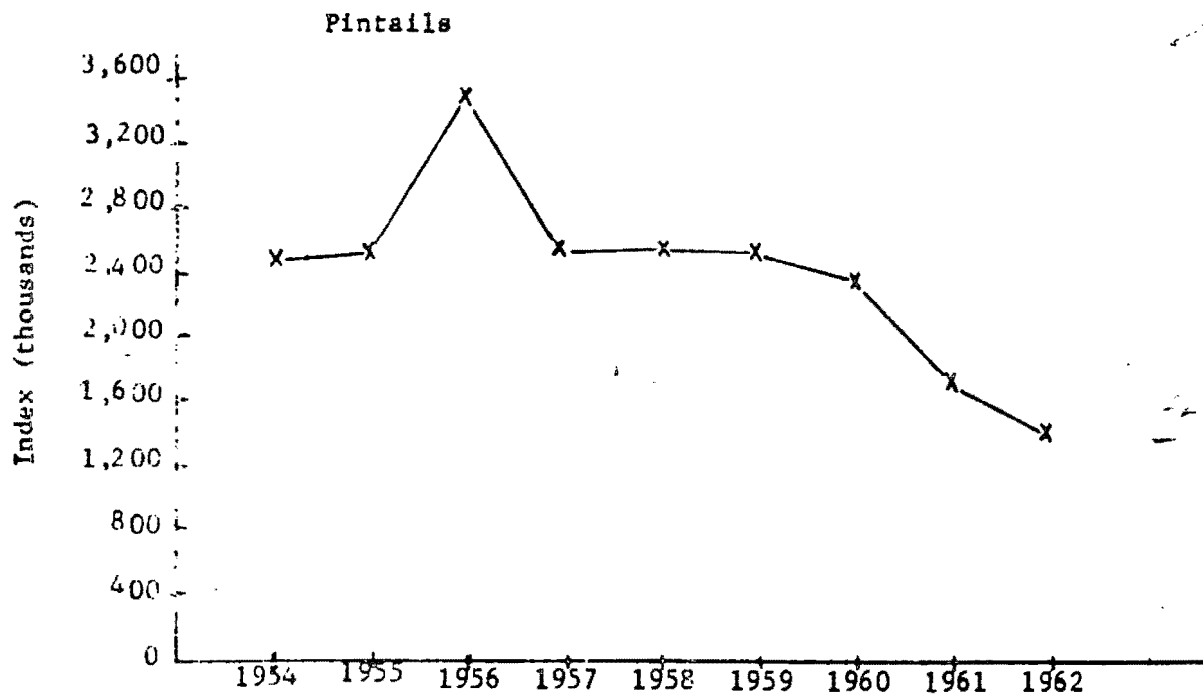
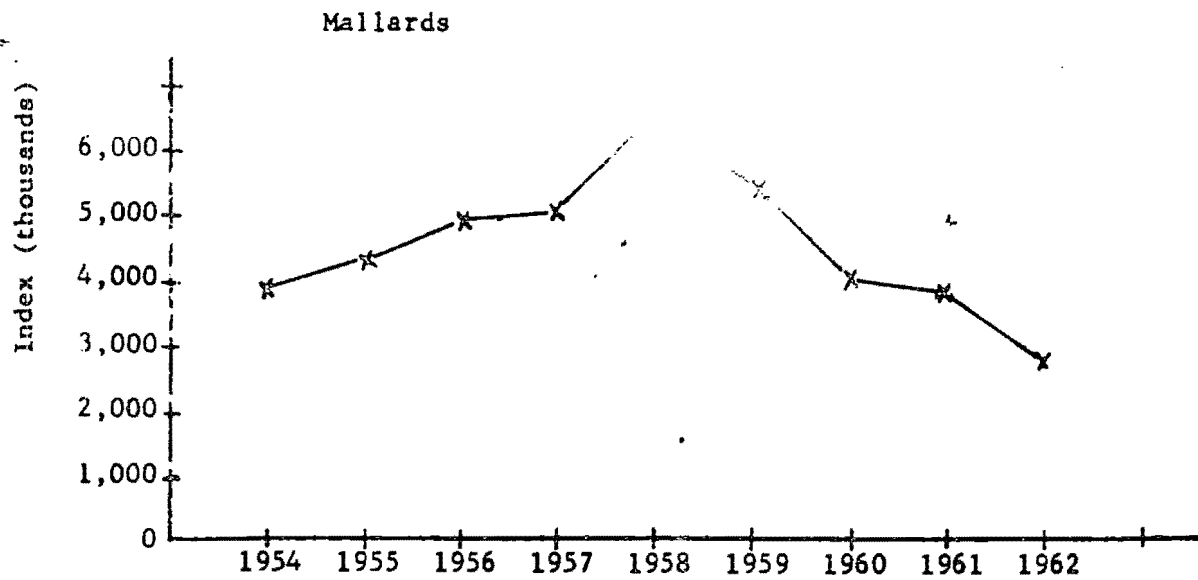
Ponds went dry in a number of locations this summer that held water last year.

(Slide 10 - Pothole near Grayson, Saskatchewan, May 1962):

As I mentioned earlier, the aerial crews count ponds without regard to size or type with a certain few exceptions. Many of the ponds counted during the last 4 years have been shallow and of low quality. Although they have built up the pond index they have produced little in the way of young ducklings.

Many more pictures could be shown and there is a wide variety of conditions to choose from. However, I believe that these more or less typify the situation this year. Overall, I would say that conditions have improved somewhat in perhaps one quarter of the pothole breeding range while about three quarters of this important breeding area is still in poor condition.

Graph 3 - Mallard and Pintail Breeding Population
Indexes, 1954-1962



STATUS OF CANVASBACK AND REDHEAD DUCKS

You will recall that we have been quite concerned about the status of canvasback and redhead during recent years. These birds nest successfully only in emergent vegetation such as cattail or bulrush. When water levels recede leaving the emergent vegetation of the previous years stranded on shore, the over-water nesting species either make no attempt to nest, or have very poor success. The very dry conditions that existed last year eliminated most over-water vegetation that might have provided nesting cover this year. Although shallow reflooding of many potholes this spring caused a luxuriant growth of emergent vegetation, this vegetation did not attain sufficient growth to provide nesting habitat until late in the season. Some nesting seems to have occurred in this new vegetation but it is not believed that production will be more than sufficient to balance natural losses.

FALL FLIGHT FORECASTS

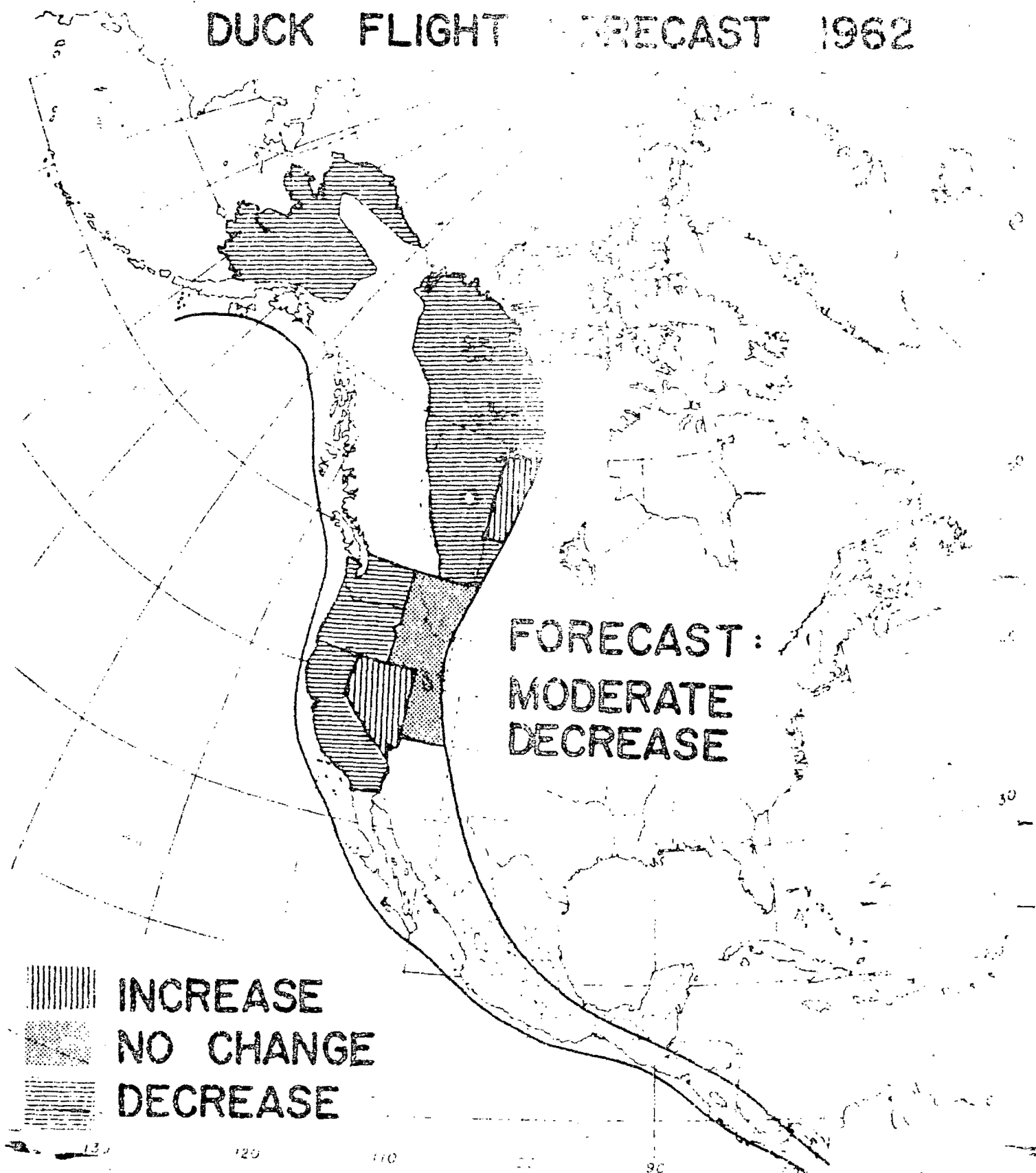
(Slide No. 11):

This slide presents the fall flight forecast for ducks from each of the major breeding areas. In Alaska the spring breakup was late and when it occurred there was considerable flooding of nesting habitat. Although the breeding population remained about the same as in 1961, it is estimated that production will be off about 50 percent. In northern Alberta and the Northwest Territories the spring was retarded, breeding population was reduced by 36 percent from 1961, and population surveys during July indicated that a decrease below the low level of last year could be expected. In the southern portions of the Provinces of Alberta, Saskatchewan, and Manitoba the breeding populations of ducks decreased 23 percent, 47 percent, and 37 percent, respectively. Aerial survey crews in these areas were in agreement that production this summer was less than at any time since breeding ground surveys were initiated. In northern Saskatchewan, northern Manitoba, and Ontario spring was late but conditions thereafter were quite favorable. The breeding population increased 26 percent and it was estimated that production was considerably better than last year.

In the States, and beginning in the west, drought conditions still prevail in Washington, Oregon, and California, although there was some improvement this year. Both breeding population and production are expected to be down somewhat in each of these three States. In Idaho and Nevada water conditions were somewhat improved. In Idaho production was judged to be near normal while in Nevada a small reduction in breeding population was more than made up for by an increase in production, and an increased fall flight is expected. Utah has somewhat more water this year but a decrease in breeding population is expected to be balanced by an increase in production, and no change in fall flight is expected. In Wyoming and Colorado

PACIFIC ATWAY

DUCK FLIGHT FORECAST 1962



conditions improved markedly and major increases in breeding population and production were recorded. In Montana there were both improvements and deterioration in water conditions in various parts of the State. The breeding population decreased somewhat but it is expected that this will be made up for by an increase in production.

In eastern North Dakota and in South Dakota drought conditions were completely reversed and the pond index more than doubled both in May and July. The number of ponds is now above the average of the past 12 years. Although breeding population increased 60 percent, surveys during July revealed some increase in production but the increase did not measure up to the increase in breeding population. In Minnesota there was considerably more water this year but it is expected that the flight this fall from Minnesota will be about the same as last year. Michigan had the highest breeding duck index in 14 years and production was correspondingly high. Iowa found duck populations and production levels equal to or slightly better than last year. In Nebraska there was a 51 percent reduction in breeding population and the fall flight is expected to be reduced considerably as compared to last year. Wood duck production in Missouri and Indiana is expected to be somewhat improved. In the Northeastern States it is expected that there will be an increase in the fall flight from Maine, while no change is expected from the remaining States, collectively, as compared to last year.

PACIFIC FLYWAY

(Slide No. 12):

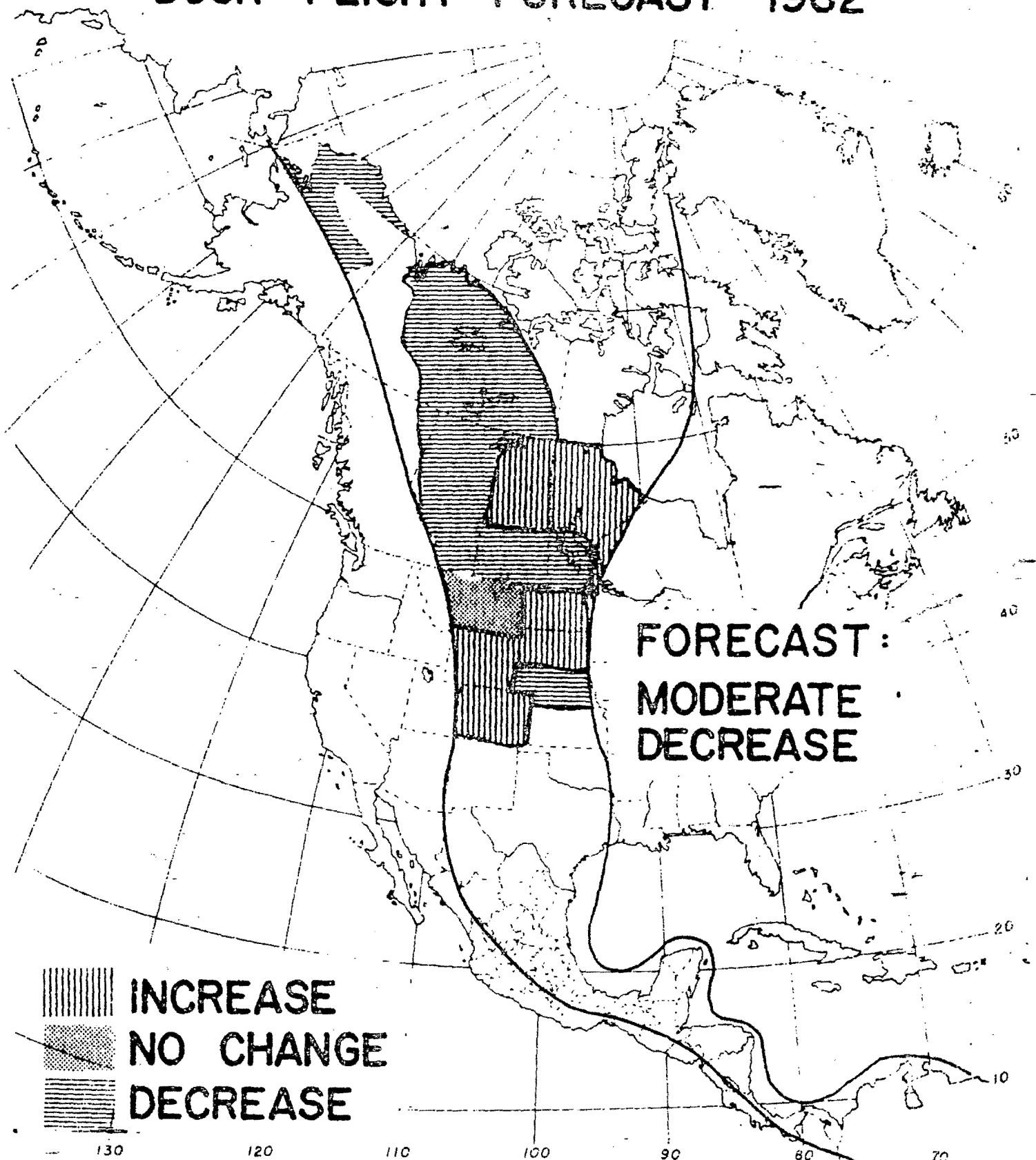
Ducks:

In the breeding range supplying the Pacific Flyway there was a marked reduction in the number of ducks observed during the May-June survey. Production surveys during July revealed moderate reduction in numbers of young in all important areas. Only in Nevada is an increase in fall flight expected. It is concluded, therefore, that there will be at least a moderate decrease in the 1962 fall flight of ducks in the Pacific Flyway.

Geese:

According to the annual winter survey, populations of Canada geese and white-fronted geese did not change appreciably from last year (-8% and +7%, respectively). The population index for snow geese increased 17 percent and cackling geese increased 14 percent. Since production data for arctic nesting geese are lacking, average production must be assumed. If production is average then the fall flight will not change as compared to the previous year. However, it is possible to predict probable change this year in comparison to the flight two years ago using change in the winter survey index as a basis. In effect, when production data are lacking we must manage on the basis of population trend data one year in arrears. With this as explanation, it is estimated that the fall flight of all geese will be the same as last year, but as compared to 1960 the flights of snow and cackling geese will increase somewhat while the flights of Canadas and white-fronts from the North will remain about the same.

CENTRAL FLYWAY DUCK FLIGHT FORECAST 1962



Surveys of the Great Basin Canada goose nesting areas revealed that breeding populations were down somewhat in Idaho, California, and Montana, and up somewhat in Wyoming, Colorado, and Nevada. Production was judged to be better than last year in Idaho, Colorado, Wyoming, Utah, and Nevada, while decreases were recorded in California, Washington, and Montana. Overall, it is estimated that the Great Basin Canada goose population will remain unchanged as compared to last year.

The number of wintering brant decreased slightly as compared to 1961 but the population remained at a relatively high level. Limited surveys on the brant breeding areas in Alaska revealed that production is good. Therefore, a small increase in the fall flight of brant is expected.

Coot:

Production of coot in all important breeding areas is expected to be markedly reduced by drought conditions. Therefore, a major reduction in the fall flight of coots is expected.

CENTRAL FLYWAY

(Slide No. 13):

Ducks:

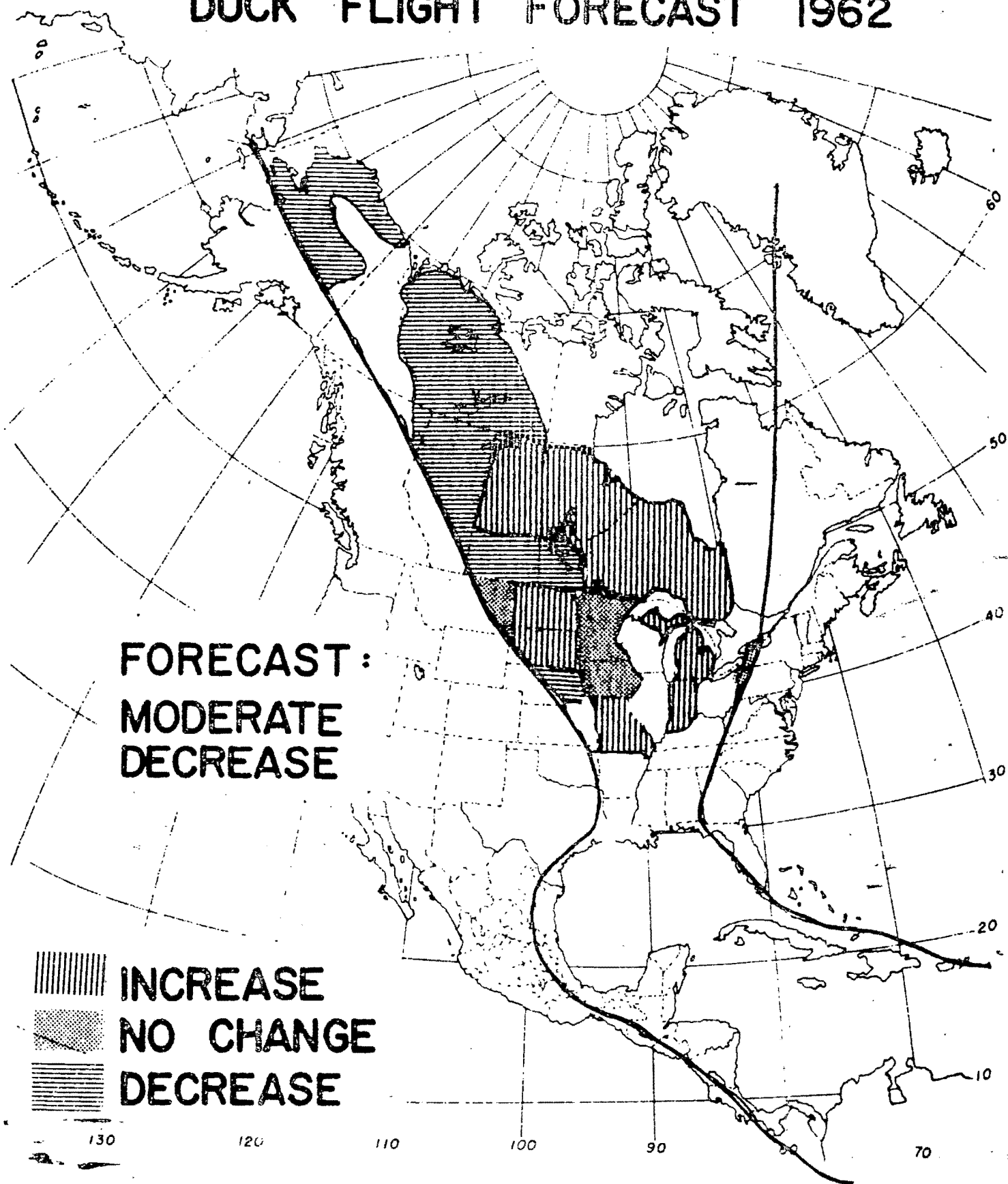
We expect that the decrease in duck breeding populations combined with the poor prospects for production in critical areas will result in at least a moderate decrease in the fall flight of ducks in the Central Flyway as compared to 1961.

Geese:

The total wintering population of geese in the Central Flyway decreased 11 percent from last year. However, the decrease was made up entirely of blue geese. Populations of snow geese and Canada geese remained unchanged, while a number of white-fronts increased considerably.

Since goose production data are lacking, average production is assumed. Therefore, it is expected that the fall flight of all species of geese will be the same as last year. Compared with 1960, it is expected that the fall flight of snow geese and Canadas will be about the same, while the flight of white-fronts may increase somewhat and blue geese will decrease.

MISSISSIPPI FLYWAY DUCK FLIGHT FORECAST 1962



Coot:

The production of coot in all important breeding areas is expected to be markedly reduced by drought conditions. Therefore, a major reduction of this species in the fall flight to the Central Flyway is expected.

MISSISSIPPI FLYWAY

(Slide No. 14):

Ducks:

Conditions affecting the Mississippi Flyway this year are quite similar to those in the Central. Breeding populations of ducks have decreased and prospects for production are poor in critical areas. Therefore, it is expected that there will be at least a moderate decrease in the fall flight of ducks in the Mississippi Flyway as compared to 1961.

Geese:

The wintering population of geese in the Mississippi Flyway decreased 20 percent as compared to 1961. The population of Canadas remained about the same (-3%), while blue geese decreased 32 percent, snow geese decreased 24 percent, and white-fronted geese decreased 19 percent. Assuming average production, it is expected that the fall flight of all geese will be the same as last year. Compared with 1960, it is expected that the fall flight of Canadas will be about the same while the flight of snows, blues, and white-fronts will decrease somewhat.

Coot:

The production of coot in all important areas is expected to be markedly reduced by drought conditions. Therefore, a major reduction of this species in the fall flight to the Mississippi Flyway is expected.

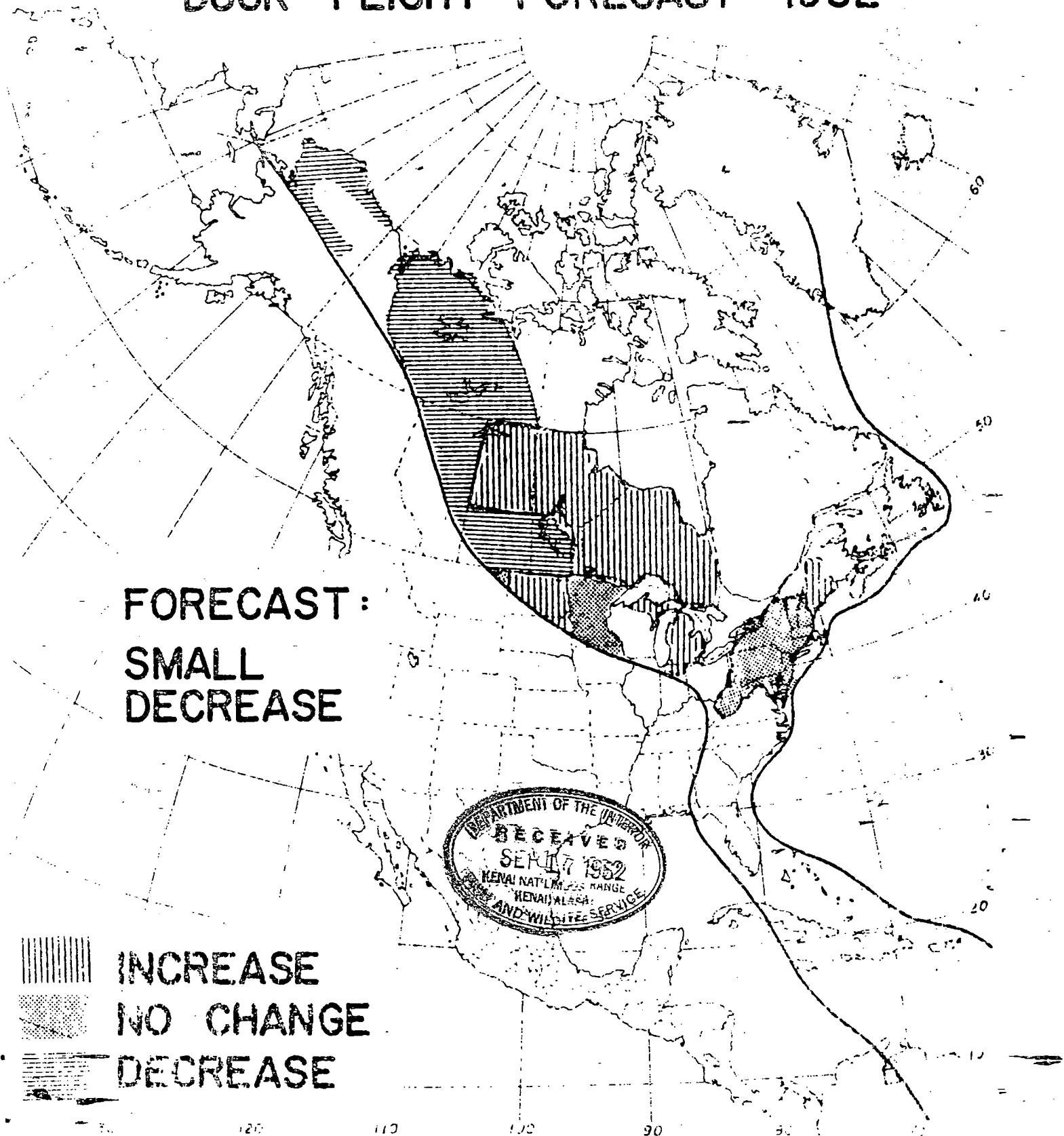
ATLANTIC FLYWAY

(Slide No. 15):

Ducks:

In forecasting changes in fall flight of ducks in the Atlantic Flyway it is not possible to use breeding ground survey data to nearly the same extent as in the three flyways to the west. This is due primarily to lack of adequate techniques for conducting surveys in the important Quebec-Labrador breeding area. Research was resumed in Quebec and Labrador this year to develop a duck survey technique. If we can successfully develop a reliable survey method in this vast country, we will have corrected a deficiency in our breeding ground.

ATLANTIC FLYWAY DUCK FLIGHT FORECAST 1962



survey data. However, since we lack breeding ground data from this area this year it is necessary to depend to a large extent on the results of the annual winter surveys for determining trends in the breeding population of some species of ducks for the Flyway.

The number of wintering ducks in the Flyway, based on the January 1962 survey, decreased slightly (-7%). For the fifth consecutive year the winter population index has remained at a level of somewhat less than $2\frac{1}{2}$ million ducks, in contrast with the five year period, 1952-1956, when the duck index averaged nearly $4\frac{1}{2}$ million. Most of the important species of ducks, with the exception of the wood duck, are involved in the lower population levels during recent years. It is perhaps significant to note that the black duck maintained its level as compared to 1961 (+37%), while the pintail and mallard decreased due to drought in the West (-19% and -34%, respectively).

This year for those species of ducks in the Flyway coming primarily from western breeding areas we expect that the population will decrease. Since we lack duck production information from the Northeast, we must assume average production and no change as compared to last year in the fall flight from this region. When all information is combined it is expected that there will be a small decrease in ducks in the Atlantic Flyway this year.

Geese:

Weather appears to have been unfavorable during the summer of 1961 in northern breeding areas, since most arctic nesting species decrease last fall. In the Atlantic Flyway the Canada goose, brant, and swan decreased 24 percent, 54 percent, and 37 percent, respectively, according to the winter survey last January. Lacking production data and assuming average production, it is estimated that the fall flight of Canada geese and brant will be the same as last year but compared to 1960 a moderate decrease is expected in the flight of Canadas and a marked decrease in the flight of brant.

Coot:

The production of coot in all important breeding areas is expected to be markedly reduced by drought conditions. Therefore, a major reduction in the fall flight of this species to the Atlantic Flyway is expected.

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