Waterfowl Production on National Wildlife Areas and Associated Marshes in the New Brunswick - Nova Scotia Border Area 1972

Due to an unusually late spring in the Maritime Provinces, production surveys were delayed approximately two weeks in order to coincide with the periods of peak brood numbers. The adjustment was based upon observations of spring migration chronology and pair formation. In some species, peak pair formation was up to three weeks later than in 1971. Helicopter surveys were conducted on all areas July 5 - 6, and August 6 - 7, 1972. To test the accuracy of these surveys, a third count was conducted on the Missaquash Marsh on September 5, 1972.

Several additional areas were surveyed this year to provide: (1) baseline data prior to management on new National Wildlife Areas and; (2) data on natural unmanaged marshes adjacent to the Tintamarre NWA. These included the Amherst Point and Shepody NWAs, the Provincial management area at Chimac, near Maccan, Nova Scotia, and the natural marshes adjacent to the Tintamarre NWA, namely Dave Lake and Midgic Marsh.

Results and Discussion

A decline in waterfowl production was expected in the Maritime Provinces due to the late spring, and unusually cold, wet weather during the period of nest initiation. This prognosis was supported in late August

by the presence of an unusually high number of young broods which were undoubtedly the result of renests. A substantially high loss of early nest attempts was indicated.

To obtain the most complete measure of production for each survey area, all broods Class IIb and older observed during the first survey (July 5 - 7) were added to the count recorded during the August survey. In all areas, the number of IIb broods observed in July was considerably less than in 1971. This further supports the conclusion of a retarded nesting season. Normally, many more Class IIb broods of all species would be observed during the first survey; however, all Class IIb broods observed in 1972 were black duck, a species that normally nests early and apparently better withstands adverse weather conditions.

Tintamarre National Wildlife Area

A decline in the total production (from 55 broods in 1971 to 47 broods in 1972) was observed at the Tintamarre NWA. On a species basis, however, black duck broods increased from 11 in 1971 to 16 in 1972. The number of broods of all other species was lower than in 1971 with the exception of the ring-necked duck which increased by three. These changes are believed to be attributable to the late spring conditions. Tables 1 to 3 summarize the 1972 survey data for the Tintamarre NWA.

Table 1. Waterfowl production in the Tintamarre NWA - July,1972

Natural Marshes	Number of broods						
	Black duck	G.-w. teal	B.-w. teal	Pintail	Wood duck	Unident.	Total
Large Lake	-	-	-	-	-	-	-
Long Lake	-	-	-	-	-	-	-
Front Lake	-	-	-	-	-	-	-
Paunchy Pond	-	-	-	-	-	-	-
Beach Pond	-	-	-	-	-	-	-
Sub-total	-	-	-	-	-	-	-
Impoundments							
1 (1972)*	-	2	-	2	-	-	4
2 (1969)	-	-	-	-	-	-	-
3 (1969)	5	-	1	-	-	1	7
4 (1969)	2	-	-	1	-	1	4
5 (1971)	1	-	1	-	-	1	3
6 (1971)	-	1	-	1	-	-	2
Sub-total	8	3	2	4	-	3	20
Grand total	8	3	2	4	-	3	20

* Year of flooding

Table 2. Waterfowl production in the Tintamarre NWA - August, 1972

Natural Marshes	Number of broods							
	Black duck	G.-w. teal	B.-w. teal	Pintail	R.-n. duck	Wood duck	Unident.	Total
Large Lake	-	-	-	-	-	1	-	1
Long Lake	-	-	-	-	-	-	-	-
Front Lake	1	4	1	-	2	-	-	8
Paunchy Pond	-	-	-	-	-	-	-	-
Beach Pond	-	-	-	-	-	-	-	-
Sub-total	1	4	1	-	2	1	-	9
Impoundments								
1 (1972)*	-	1	3	1	-	-	1	6
2 (1969)	-	-	1	-	-	-	1	2
3 (1969)	-	-	-	1	-	-	-	1
4 (1969)	2	5	3	1	-	-	-	11
5 (1971)	3	-	2	-	1	-	1	7
6 (1971)	2	1	-	-	-	-	-	3
Sub-total	7	7	9	3	1	-	3	30
Grand total	8	11	10	3	3	1	3	39

* Year of flooding

Table 3. Total waterfowl production in the Tintamarre NWA based on July and August, 1972 surveys.

Natural Marshes	Number of broods							
	Black duck	G.-w. teal	B.-w. teal	Pintail	R.-n. duck	Wood duck	Unident.	Total
Large Lake	-	-	-	-	-	1	-	1
Long Lake	-	-	-	-	-	-	-	-
Front Lake	1	4	1	-	2	-	-	8
Paunchy Pond	-	-	-	-	-	-	-	-
Beach Pond	-	-	-	-	-	-	-	-
Sub-total	1	4	1	-	2	1	-	9
Impoundments								
1 (1972)*	-	1	3	1	-	-	1	6
2 (1969)	-	-	1	-	-	-	1	2
3 (1969)	5	-	-	1	-	-	-	6
4 (1969)	4	5	3	1	-	-	-	13
5 (1971)	4	-	2	-	1	-	1	8
6 (1971)	2	1	-	-	-	-	-	3
Sub-total	15	7	9	3	1	-	3	38
Grand total	16	11	10	3	3	1	3	47

* Year of flooding

Production on natural marsh areas within the Tintamarre NWA was up slightly over 1971; however, impoundment production declined. Impoundments flooded in 1969 continued to support the largest number of broods per acre of habitat although reduced somewhat from the 1971 season. In 1971 a total of 32 broods were raised on impoundments flooded in 1969 (approximately 2.81 acres of habitat per brood) whereas in 1972 only 21 broods were counted on the same areas (approximately 4.29 acres of habitat per brood). Impoundments flooded in 1971 supported 16 broods in 1971, as opposed to 11 broods in 1972. In terms of acres of habitat per brood that represents 6.25 and 9.09, respectively. Impoundment Number 1, which was flooded during the winter of 1972, contained six broods in its first season. That represents an above-average first year success when compared with other impoundments in the Tintamarre NWA.

Missaquash Marsh

Waterfowl production on the Missaquash Marsh declined sharply from 108 broods in 1971 to 66 broods in 1972. Broods of American coots and Canada geese are included in those figures (Table 4).

On the basis of the July and August surveys, production on the Missaquash declined about 40% over 1971,

Table 4. Waterfowl production on the Missaquash Marsh - 1972

Estimate	Number of broods									
	Black duck	G.-w. teal	B.-w. teal	Pintail	R.-n. duck	Wood duck	Amer. coot	Can. goose	Unid.	Total
July 6	18	12	9	7	4	-	3	2	-	55
Aug. 7	14	14	11	4	2	1	-	-	3	49
July & Aug.	18	14	13	8	4	1	3	2	3	66

whereas the Tintamarre NWA declined only 25%. The 1972 data used in the calculation of these percentages does not include broods of American coots and Canada geese on the Missaquash, or production on the Tintamarre NWA Impoundment 1 which was flooded in 1972. Assuming similar spring conditions for each location in 1972, it appears that the greater decline on the Missaquash may be due in part to factors other than weather. It can only be speculated that production reached a peak on the Missaquash marsh characteristic of the normal evolution of new marshes. Comparable surveys in future seasons would provide additional information with which to evaluate production trends; however, a new extension to the Missaquash will be flooded this fall, redistributing and undoubtedly increasing the breeding population. This will make further evaluation of production trends on the original area difficult if not impossible.

To double-check the accuracy of our surveys, a third helicopter count was conducted on the Missaquash on September 5. All broods younger than Class IIb were considered to have hatched after the August count and therefore were not included in the previous surveys. Only eight broods younger than Class IIb were observed, which increases the total production count to 74. The number of new broods observed was not considered large enough to

warrant a third count on the other survey areas. The following table summarizes the results of the September 5 survey.

Table 5. Waterfowl broods observed on the Missaquash Marsh September 5, 1972.

Date	Number of broods						
	Black duck	G.-w. teal	B.-w. teal	Pintail	R.-n. duck	Widgeon	Total
Sept. 5	7(1)	7(1)	10(3)	2	5(1)	3(2)	34(8)

( ) Number of broods Class IIa or younger

Unmanaged Marshes

In 1972, helicopter brood surveys were reintroduced on Midgic Marsh and Dave Lake marshes adjacent to the Tintamarre NWA. Table 6 compares the 1972 survey data with that obtained via helicopter surveys in 1967, 68 and 69. The 1972 production estimates are based upon the results of surveys on July 5 and August 7. Production has been relatively low on those areas both before and after the establishment of the Tintamarre NWA and the beginning of intensive management.

It does not appear that management practices on the adjacent NWA have seriously affected production on the above unmanaged areas even though counts were notably lower in 1972. The Tintamarre NWA was established in 1967, with

Table 6. Waterfowl production on Dave Lake and Midgic Marsh, 1967-69 and 1972

Species	Number of broods							
	Midgic Marsh				Dave Lake			
	1967	1968	1969	1972	1967	1968	1969	1972
Black duck	-	3	3	-	2	3	9	3
G.-w. teal	1	2	-	3	2	1	-	2
B.-w. teal	2	5	4	-	1	8	5	1
R.-n. duck	3	-	4	-	1	-	3	3
Pintail	5	2	-	-	1	-	-	-
Wood duck	-	-	-	-	-	-	-	-
Mallard	-	-	1	-	-	-	-	-
Totals	11	12	12	3	7	12	17	9

intensive management beginning in 1968-69; however, in the years 1967-69 production on unmanaged areas did not decrease and in some cases increased. Most of the decline in 1972 can undoubtedly be attributed to the late spring.

Amherst Point and Shepody NWAs

In 1972 complete helicopter brood surveys were conducted on the Amherst Point and Shepody NWAs. Although there are no comparable data, the continuation of those surveys will provide baseline data from which to evaluate waterfowl response to management in the future. Table 7 summarizes production on the above areas in 1972.

Maccan, Chimac and Chignecto

Other waterfowl management areas surveyed in 1972 were the Provincial projects at Maccan, Chimac and Chignecto. Those wetlands are being managed similar to the Tintamarre NWA, and should provide additional information to evaluate impoundment management. Table 8 summarizes waterfowl production at these Provincial Management Areas in 1972.

Table 7. Total waterfowl production on Amherst Point and Shepody NWAs - 1972

Area	Number of broods					
	Black duck	G.-w. teal	B.-w. teal	R.-n. duck	Baldpate	Total
Amherst Point	1	-	3	2	3	9
Germantown	6	1	1	3	-	11
Total	7	1	4	5	3	20

Table 8. Total waterfowl production on the Maccan, Chimac and Chignecto Provincial Management Areas - 1972

Area	Number of broods				
	Black duck	G.-w. teal	B.-w. teal	Baldpate	Total
Maccan	3	2	3	-	8
Chimac	4	-	1	2	7
Chignecto	1	-	1	-	2
Total	8	2	5	2	17

Summary

Waterfowl production on NWAs and associated marshes in the New Brunswick - Nova Scotia border area was below normal in 1972. An exceptionally late spring resulted in the presence of many young broods in August and September, some of which will be flightless at the opening of the hunting season. The harvest on opening day may include an unusually high percentage of inexperienced local birds, which could influence next year's production.

An exceptionally sharp decline on the Missaquash Marsh may suggest that production has peaked in that area. Such peaks and subsequent declines are apparently characteristic of new impoundments through the normal process of succession. The Missaquash, flooded in 1965, has increased its production yearly to a high of 108 broods in 1971. Production declines on other areas are believed to be entirely attributable to late spring conditions.

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W. R. Whitman
Wildlife Biologist
Canadian Wildlife Service