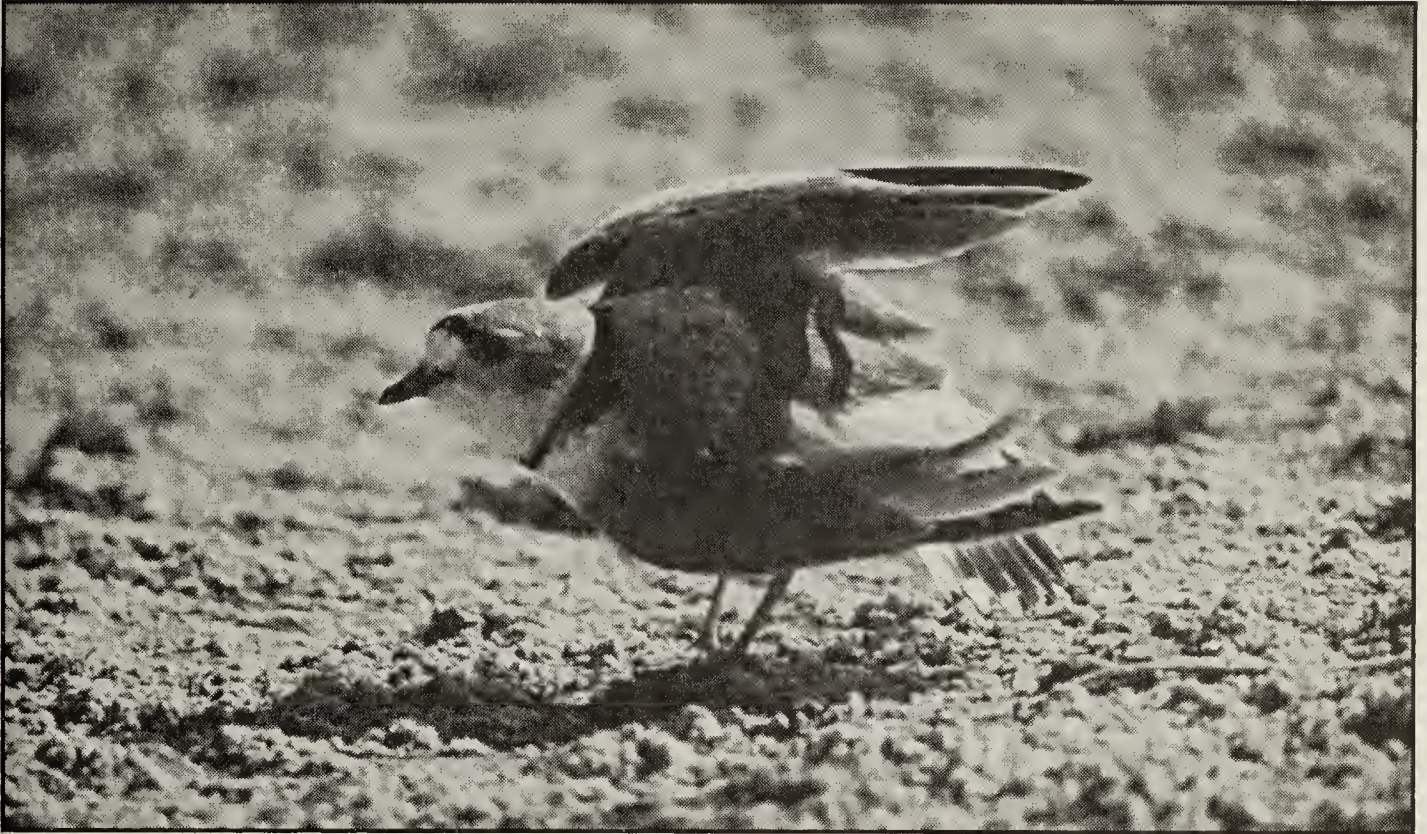


# MY EXPERIENCE IN MOVING 2 NESTS OF PIPING PLOVERS

PAULE HJERTAAS, 15 Olson Place, Regina, SK S4S 2J6



*Piping Plover*

*Saskatchewan Wetland Conservation Corporation*

During the summer of 1996, I was hired by Saskatchewan Wetlands Conservation Corporation (SWCC) to study the nesting success of Piping Plovers on Diefenbaker Lake. Their total population was only 78 birds in 1996, likely because of very high water levels during the period when the birds established territories. I managed to follow 18 pairs and two renests throughout the summer.

Diefenbaker Lake is a reservoir that has a main filling period corresponding with the snow melt in the Rockies, which is usually end of June and early July. This is just as the plover eggs are close to hatching after their 28 days incubation.

My visits were four days apart and many nests and young disappeared in

these intervals. Two nests, that had eggs with only a short time to pipping, were being threatened by rising water levels. After phoning Dale Hjertaas (who had just read a recent successful report from the U.S.A), we decided it would be a good idea to try to move them<sup>1</sup>.

My observations and experience in moving these two nests are given below:

## **Hitchcock Bay**

The first nest, called Hitchcock 8, was located on Hitchcock Bay. On June 19, it was surrounded by water within 30 to 60 cm on three sides. In cloudy, cool and windy weather, I returned to the area on June 20 before 6 a.m. and moved the nest 6 m. up the beach with some of the gravel at the bottom and the

marker rocks surrounding it. After 20 minutes, I could still see the parents searching the whole beach, seemingly in a random pattern, and sitting on the original nest site, even with the marker rocks gone. Around 6:11, the eggs were cold and I concluded the move was too far all at once. I moved the nest back within 45 cm of the original site, dug a small depression in the sand, leaving a small sand pile at the edge, and put a bit of gravel. By 7:20 one parent was sitting on the nest and the eggs were warm. Then, I moved the nest another 60 cm.

By 7:49, the female was again sitting on the eggs and they were warm again. I moved them up another 60 cm. By the time I had walked back 30 m, the bird came back to the previous site, looked around, spotted the eggs at their new site, went over and sat on them immediately.

The beach was so long and flat that I moved the nest a longer distance, one m, at 8:08. One bird was giving a broken-wing display close to me the whole time. Again that bird went to the previous nest location first, then came directly to where I had moved the nest and sat on it. I am sure it clearly saw what I was doing.

At 8:33, I moved the nest another 1.2 m. The adult went straight to the new location without checking the previous site. It was staying within 1.5 m of me every time I moved the eggs. At 9:00 a.m. I tried a two m jump to the first site I had moved the nest to but this was too far. The bird checked all the previous sites in a panic before I was more than 15 m away. I moved it back to 1.2 m from previous site, but the bird did not locate the nest. I had to settle for a 0.6 m move only, where the bird could see the eggs when standing at the previous site. It settled on the nest in the new

location right away. By that time, I got worried about how many times I could safely move that nest! At 9:45, I did a double move of 0.6 m each. I let the bird find the new location and sit before I moved it again. In spite of the distance I moved the nest, it was still only about 3 cm above water level. I conclude it was the other adult (the male?) in attendance at the nest as it ran away from me.

At 10:00, I managed a successful triple move with the bird again just sitting in the new location before the nest was moved again, for a total distance of 2.3 m. The bird attending was likely the female as it stayed close to me and very quickly came back directly to the new location. I discovered that one egg has a small dent in it on one side, like it had a little peck. This time, I moved the rocks found around the original nest site as well as the pile of soil from all my diggings to the new location.

At 10:51, I succeeded in three successive large moves of 1.5 m each time with the bird going right back to the new location. She seemed well trained now, likely zooming in on the marker rocks and the dirt pile, going back to the new site when I was less than two m from the new location. The nest was still only about 5-7 cm above water level though!

Shortly after 11:00, I tried a final two successive moves of around 1.3 m. The bird did not find the last location, so I back tracked one location, waited a few minutes for it to get used to it and tried again. I had to subdivide this last move into two smaller ones so she could find the eggs each time from the previous location. The bird took over 10 minutes to settle in the last location. It did not seem to like going over the small ridge. The nest was finally located around 10 cm above water level and had around six days to hatching.

On June 27, Margaret Skeel returned to Hitchcock Bay to find water surrounding the nest within 30 cm again on three sides. The parents were both still present. The eggs were warm but showed no sign of hatching. She used the technique described previously to move the nest another six m up the beach. The parents did not follow on the last move she made, so she had to move back to a lower than she felt was safe.

When she returned, the whole area was under water except a small "island" which she checked thoroughly. No adults or young Piping Plovers were found at that time.

The location of the second nest, which gave me an opportunity to attempt a move, was called Sage 1. On June 20, I found it surrounded by water within 30 cm on three sides. The substrate was very moist. I managed a successful double move, then went to look for Sage 2.

When I came back, I moved Sage 1 twice 0.6 m again. With this move, the bird went back to the original nest site and tried every alternative site in the proper order and in turn until it found the new location. I waited 10 minutes.

A further two moves of 0.6 m each and the nest should be 4 cm above water level. Again, the final spot I chose was on the other side of a ridge, but the birds would not recognize this as a proper location. They ran back and forth over the nest without seemingly recognizing it. I had to move the nest back to two previous locations and let the birds go through a sitting exchange at this site. Within 5-10 minutes, there was another sitting change at the nest and the arriving bird again went to look at all the previous locations. It finally realised where the nest was and sat on it.

The final location was finally 0.6 m below the ridge I had identified as safe. This was because the birds would not recognize the nest in the higher location. I noticed one egg having a very light crack near the small end.

## Discussion

This experiment shows that nests can successfully be moved up the beach to escape water level rises. Despite the move, the parents recognized the new nest site and returned to it to brood. We do not have evidence indicating whether or not the moved eggs hatched. The Hitchcock 8 nesting site was under water at the next visit on July 1st. I estimated it was one day beyond the normal hatching date, but this can vary by 2-3 days. Sage 1 had hatched at least one chick by June 27, which had disappeared by July 1st. On both latest visits, the beach at Sage 1 had been only 10-15 m wide which has been identified by Wayne Harris as short of the critical width needed for Piping Plovers to successfully raising young. (pers. comm.)

Whether the parents stay and move with the nest seems to be due to various factors. This includes how often they exchange duty at the nest. A change of duty had to be done at a new location before both birds are aware of it. The female was mostly in attendance at Hitchcock Bay and the moves were quite smooth and could be very fast. In contrast, the Sage Bay pair was replacing each other often at the nest that meant much backtracking. A longer time would likely be needed to have success with such a pair as both partners have to be aware of the new locations. Also moving the nest within a seeing distance (for the birds) from the previous location seems fundamental to the success of the move. This was especially true in the early moves when the

birds are not accustomed to being moved. The topography of the beach is important. In both cases a "safe" location seemed difficult to accept if the birds had to go up a ridge to get there. Finally, the time allowed between the moves had to be adequate. The longer the time, the more chances both parents are aware of the new location. It may also be less stressful for them.

### Conclusion

Piping Plover nests can successfully be moved up a beach to escape rising water levels although the success of the operation depends on observation of the pair's behaviour, the topography of the beach, and the time to hatching.

I consider it would also be a waste of time if the remaining time to hatching is too long, likely requiring many more moves over a much larger area as water levels keep rising. It can, however,

be questioned whether there is any point in moving nests to higher grounds if the beach area remaining at the high water mark is not wide enough to successfully raise young or to prevent predation of the young.

### Acknowledgment

I would like to thank SWIC, particularly Dave Duncan, for giving me the opportunity to work on such an interesting project, Dale Hjertaas for his suggestion and support of the nest moving, and Margaret Skeel for replacing me on a few field visits.

### References

1. Prellwitz, Dwain M., Erickson, Kathleen M, and Osborne, Lark M.;1995; Translocation of piping plover nests to prevent nest flooding; Wildlife Society Bulletin, 23(1): 103-106



*Snowshoe Hare*

*George Tost*