

WHAT WILL BIOLOGISTS THINK OF NEXT?

By James H. Phillips

For nearly half a century I have found pleasure in reading biological studies related to waterfowl. It is one of my evening past-times. The scientific literature often has the great advantage of being refreshingly different, unlike the sporting magazines whose fare is depressingly similar. Few of us need to read another story entitled “How To Call Ducks” or “How To Rig Duck Decoys.”

My entry into the realm of scientific literature began as a young teen-ager in the early 1950s when the outdoor columnist for The Chicago Tribune mentioned the Illinois Natural History Survey’s publication of a pamphlet entitled “Housing for Wood Ducks” by the celebrated biologist Frank Bellrose. I ordered a copy and found upon receipt a listing of other scientific papers available from the Survey, which I immediately obtained.

About the same time the renowned waterfowl biologist H. Albert Hochbaum published “Travels and Traditions of Waterfowl,” which I ordered and devoured. Hochbaum, of course, achieved his fame studying the canvasback on Manitoba’s famed Delta Marsh.

The stack of scientific papers and books I have accumulated over the years has reached considerable volume. My collection needs to be culled, but I hesitate to throw away any old studies. They provide me with an historical perspective. For example, when steel shot became an issue in the late 1970s and early 1980s, I dug through my scientific papers and re-read one of Bellrose’s original studies on lead shot poisoning – a document I had acquired in the mid-1950s.

These early studies by the first generation of waterfowl biologists reflect the gathering of basic biological data. They focus on courtship, nest-building, egg-laying, brood-rearing, migration and population status. They chart breeding and wintering ranges.

One of my favorite studies involved the issue of whether ducks oriented themselves by sight or the earth’s magnetic field. Bellrose sought to resolve this issue by blind-folding a number of mallards. He placed a paper mask over their eyes and tossed them aloft to literally fly blind. As I recall, nearly all the ducks quickly scrambled for altitude and then headed in a northerly direction. This suggested the ducks utilized the earth’s magnetic fields to orient themselves.

I find this interesting in an anthropomorphic sense. The ducks headed north – toward their birthplace or “home.” Isn’t home the place we yearn to return to in times of danger? Isn’t it the place we feel most secure?

Today, of course, PETA would scream bloody murder if it learned of such an experiment. Bellrose explained that the paper mask was designed to fall off before the duck crashed to earth.

Mostly, though, early biologists sought to answer the issue everyone viewed as the primary problem – declining numbers of ducks. They studied the foods of ducks. They studied effects of weather and habitat alteration on nest success. They looked at nest predators such as ground squirrels and crows.

The crow, unknown on the northern prairies prior to European settlement, became a special concern. Biologists explained that evolution had ill-prepared ducks to deal with crows. Studies concluded that crows destroyed hundreds of thousands of eggs each year, which naturally reduced the fall flight. Thus began the “Crow Wars.” Sporting organizations urged members to kill the “vile bandits” to preserve our flocks.

Biologists also attempted to determine in a mathematical way whether hunting was responsible for increasingly thin fall flights.

Does all this sound vaguely familiar? It should, because we are studying the same problems today. Foxes and raccoons have replaced crows as the problem predators. Zebra mussels and purple loosestrife have stolen the headlines from pothole invertebrates and wild celery. Complex and opaque statistical analyses have replaced earlier, simpler mathematical calculations.

Yet, our ducks continue to decline. They have declined to levels below that which the breeding habitat will support. We find ourselves today with more breeding habitat than breeding ducks.

With this as background, you can understand my surprise the other day when I received a biological study that purported to discover a new threat to our flocks – a peril known as “neophobia.” It is the fear of anything new. The authors explain it as “the avoidance of an object or other aspect of the environment solely because it has never been experienced before and is dissimilar than anything that has been experienced.” They hypothesized black ducks were more “neophobic” and therefore less able than mallards to adapt to various forms of human disturbance. This, in turn, caused black ducks to decline in parts of their range where mallards were increasing. The hypothesis was based partly on the fact that black ducks are considered warier than mallards.

To test the level of neophobia in each species, mallards and black ducks were segregated by species and kept in pens that contained an orange pylon. Food was placed by the pylon each morning. On some days a bright object that the ducks had never before seen was placed beside the food. At other times the food was placed some distance away. The greater the length of time before ducks “adjusted” to a new object or location and began eating, the greater the degree of neophobia. To the biologists’ surprise, mallards displayed “higher levels of neophobia than black ducks.”

“Our research suggests that a relatively high level of neophobia either helps mallards cope better with human disturbance, that black duck wariness rather than neophobia limits their ability to habituate to human disturbance, or that our experimental protocol did not produce natural levels of neophobia in the study birds,” they concluded.

More research is needed, they added.

Why?

As my collection of scientific literature reveals, we have completed our second full review of duck biology and are beginning a third examination of its various components. At the same time we know that we have sufficient breeding habitat to host more ducks of all species. We know from Delta Waterfowl’s recent research that predator control can increase nest success. We know that shooting kills ducks.

We also know waterfowl-management has achieved significant success with only two species -- the wood duck, which at the turn of the 20th Century many believed teetered on the brink of extinction, and the North Atlantic eider. Interestingly, the wood duck’s recovery came about only after the species duck received a quarter-century of complete protection from the gun. Even today the daily kill in the three eastern flyways is restricted during the general waterfowl-hunting season. The eider also received years of protection.

Thus, history suggests the answer to rebuilding our beleaguered flocks does not lie with new-fangled notions like neophobia. It tells us we should look to old-fashioned game-keeper concepts like predator control and not killing more ducks than are produced.

If we take care of the ducks, the ducks will take care of us.
