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WINNER!

**BEST NON-FICTION FEATURE
2010 MAGGIE AWARDS**

Greenheads **Forever**

by BRUCE BATT

*No waterfowl species has had a
greater influence on the history
of mankind than the mallard.*



left: Brian Wolitski (2) Top right: Tye Gregg

Perhaps no waterfowl species has benefited as greatly as the mallard from wetland and waterfowl conservation efforts that have been supported for decades by the continent's waterfowlers – who are determined to give back to the waterfowl resource.

FOR MOST DUCK HUNTERS, MALLARDS ARE THE PRIME quarry almost everywhere that ducks are hunted in North America – from Canada's Prairies, the Fraser River Delta of British Columbia, the coastal marshes along Ontario's Lake Erie and the oxbows of New Brunswick's St. John River to the cornfields of Kansas, rice fields of Texas and flooded hardwoods of Arkansas.

The mallard is the gold standard for the majority of waterfowlers because of its size, general abundance and its table quality. For many young hunters, their first greenhead is etched in their minds as one of the most important events in their early hunting years. It certainly is in mine.

Mallards are hunted in a great variety of situations. On Canada's Prairies, the most common place is in harvested grain fields where they may gather in concentrations of tens of thousands. Barley and wheat were once the fields of choice but peas and lentils are now just as heavily used wherever those crops are grown. The usual hunting method involves time spent searching for where the birds are feeding followed by meeting with the farmer to get permission to hunt in the field. Hiding in an open field may be done by digging pits in the ground, erecting willow or grass blinds, using flat layout blinds covered with straw from the crop or perhaps just hiding in a fencerow or ditch where the birds might cross.

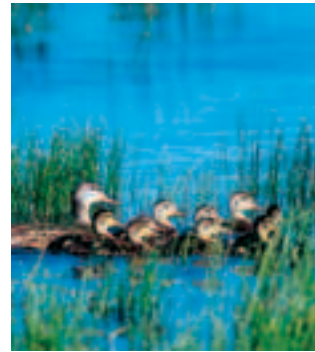


The unmistakable breeding plumage of the mallard drake (left, above) and an extensive range that spans the globe, makes it quite possibly the world's best-known duck.

Nothing in waterfowl hunting is more spectacular than the sight of mallards sliding down to decoys from hundreds of feet in an almost ballet-like spiral, with wings screaming in the wind as the birds dive, side-slip and roll to lose altitude. Add a cross wind, an overanxious dog and difficult shots from awkward sitting positions at birds that can flare out of range in seconds, and the scene is set for a litany of tales of great – and terrible – marksmanship. Mix in a prairie sunrise or sunset along with family and good friends – priceless!

In the southern states, perhaps the most classic hunting situation is in bottomland hardwood forests that flood because of winter rain patterns or because they are artificially pumped to simulate natural flooding. Mallards tumbling through the treetops in response to plaintive “highball” hailing calls and scattered decoys are the fodder for pleasant dreams and great mornings afield with friends. Winter is also the time of year when the birds are first starting to seek mates in preparation for the breeding season that is still three or four months away. Vocalizations are key components of this behaviour. As a result, duck calls that simulate mallard sounds are the basis for a whole industry unto itself.

DESPITE ITS POPULARITY AS A WINGED QUARRY IN North America, the mallard is better known to the greater part of humanity as livestock. It has



Left: a mallard hen on her nest blends well into the surrounding vegetation. The majority of nests are destroyed before eggs hatch, but mallards are persistent nesters – known to initiate up to six nesting attempts in a single season when conditions are ideal. Above: a brood reaches water. As many as 60 per cent of ducklings will succumb to predators and exposure.



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been domesticated and has served as a source of protein in the Orient since at least 5000 BC. The main form of domesticated mallard is the white Pekin duck that is sold and bartered in markets all over Asia, Europe and North America, where it is known as the Long Island duck. The finest restaurants of London, Paris, New York and Toronto serve roast duck whose ancestors were just like the common mallard that inspired the stylized logo that serves as DU's mark all over the world.

Mallards are the most widespread ducks in North America and have actually expanded their range since the continent was settled. They also are the most studied duck in the world. In many ways mallards are the lab rats of the waterfowl world as they have been used in many experiments both in captivity and in the wild to examine nutrition, pesticide effects and, for duck managers, practices that aim to enhance their conservation. Most of what we do for the conservation of all ducks is based on what we understand about the mallard. While this is not a perfect solution as each species has unique characteristics, waterfowl conservation is well served because of strong science behind mallard management.

Production from the previous spring is central to determining hunting success. Biologists have learned much about how to predict breeding success and much about how to configure landscapes where the ducks can reproduce most successfully. Nevertheless, the job is far from finished as the landscapes used by breeding

ducks are in a constant state of change. The farming practices that dominate the landscapes change frequently in response to fluctuating markets, the development of new crop types, new farm chemicals and other technological advances. Most of these changes affect the ducks, often negatively, but sometimes they end up being very beneficial. And thus, even in the breeding season when not hunted, mallards are moving targets as far as their management is concerned.

MALLARDS ARE AMONG THE FIRST DUCKS TO arrive on the breeding grounds each spring – usually in the vanguard with northern pintails and Canada geese. The birds have been preparing for this time of the year for several months to maximize their chances of successfully raising a brood of young. Mallards arrive paired and ready to breed as soon as weather allows. Both sexes are in prime plumage and probably their best physical condition of the year.

Critical nutrients that go into the eggs are mobilized from body reserves the female has acquired on wintering and spring stopover areas. Much of this comes from waste agricultural crops, but eggs require minerals and nutrients that can be gained only from eating aquatic and terrestrial animal life. These food items are acquired in the winter and are gleaned from ponds formed by snowmelt in fields or from the warm edges of wetlands. These are the first places to melt and teem with aquatic

life in the form of snails, leeches, insect larvae (including mosquitoes!) and other “bugs.”

The hen mallard is very much in charge at this time of year. If you watch pairs carefully, you will see that she is almost always in the lead. When danger approaches, she's the one that decides when it is time to leave. She picks where to nest, where to feed and when to do so. This makes sense because she usually has brought back the male that she chose on a wintering or spring staging area to a place near where she herself was hatched.

Her response to this homing instinct means that she will already be familiar with the breeding area along with places to feed, nest and raise the brood after it hatches. The male could have come from almost anywhere on the continent.

Female choice is a key trait of the mallard mating system as there are many more males than females in the population. It has been that way for thousands of generations because females suffer higher mortality rates during the breeding period. Sitting in the same place – for more than three weeks – to incubate eggs makes a hen very vulnerable to predators, such as foxes, that want her to become food for their litter of kits back at the den. In some breeding seasons, depending on habitat, over 30 per cent of hens will be killed by predators.

The resulting abundance of males means the female can choose from the many suitors she encounters in winter and spring. The competition between males has resulted in them becoming brightly coloured and dressed up in ways that help them demonstrate their suitability as a mate. The female decides which male she thinks should help her produce the strongest ducklings.

THE MALE'S TIME IS DOMINATED BY FOLLOWING THE female, defending her from other males that may have not acquired a mate of their own and being alert while she feeds. This often results in spectacular aerial flights over the breeding grounds where the male, in defending his mate, will undertake a strenuous chase of intruding pairs while his female remains on the pond that they have staked out for feeding and privacy. In addition to defending prime feeding grounds, these chases also help assure the defending male will sire the ducklings produced.

It is not a perfect plan, however.

Biologists have determined that many clutches of eggs have been inseminated by more than one male. Thus, for all his efforts, the paired male will likely inseminate more eggs with his hen than other males but likely not all of them. A long-standing debate among biologists is whether or not the female is in contact with other males by choice or as a result of

left, above: Brian Wolitski far left: Denis Faucher



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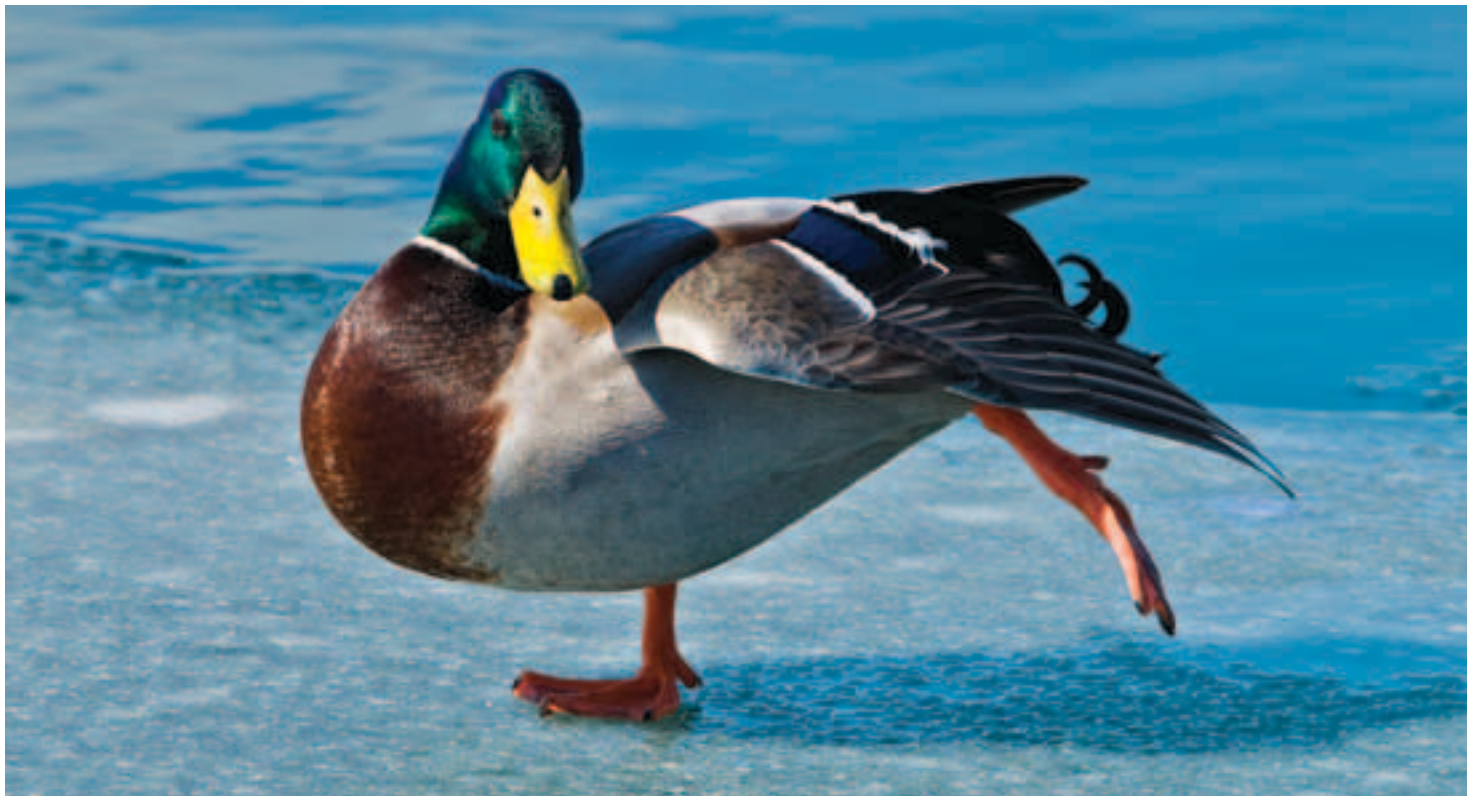
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Above: one of North America's hardiest duck species, mallards are often among the first to arrive on the spring breeding grounds – and last to leave in fall.

some type of forced copulation with additional males – which has been observed in semi-captive flocks.

Once nesting begins, the hen typically lays one egg each day while the male waits on the territorial pond for her return. She continues to actively feed while the male is alert for other mallards or predators. As egg-laying continues, the hen spends more time each day on the nest and by the time the average clutch of nine eggs is reached, she is on the pond for only about an hour each day. By then the male has started to roam about the countryside, apparently searching for additional mating opportunities with hens that are still nesting for the first time and with other females that have lost their nests to predators and are trying to get started again.

The opportunities to mate with re-nesting hens are many, because most nests are destroyed before they hatch and mallards are persistent nesters. Mallards have been known to initiate up to six nesting attempts in a single season when habitat conditions are ideal. Nevertheless, even this persistence is not enough to guarantee successfully producing ducklings. In some landscapes, 90 out of every 100 nests will be lost to predators and other factors. Research has determined that the proportion of nests that hatch is the single most important factor driving mallard population dynamics. Furthermore, nesting success is higher in landscapes with more cover types like pasture, hayfields, and natural vegetation as opposed to landscapes dominated by spring-seeded cereal grain crops. Accordingly, many of DUC's habitat

programs are designed to increase the amounts of these perennial cover types and, therefore, nesting success.

This apparent readiness of the male to capitalize on a variety of breeding opportunities has contributed to real threats to the integrity of several closely related species such as the black duck of eastern North America. As a result of artificial releases of hand-raised mallards in the northeast, and because the landscape has changed so much following settlement, mallards now breed within much of the historic range of the black duck. One unfortunate consequence is that hybridization between mallards and black ducks is very common, especially in the southern portions of the range. The very survival of the black duck as a recognizably distinct bird is threatened by being swamped with mallard traits in its gene pool. Elsewhere in North America, the Mexican duck and Florida mottled duck are similarly threatened.

AFTER ABOUT 26 DAYS OF INCUBATION THE EGGS hatch synchronously over a period of just a few hours. Once they are dry the female leads her down-covered ducklings to the pond she has chosen for their first introduction to water and the foods found there. The hen does not feed the ducklings as they instinctively peck at the tiny animals swimming in the water and at other items such as seeds and algae. She broods the ducklings to keep them warm when they are very small, leads them to plentiful sources of food, defends them from competitors and is ever alert to

right: Darin Langhorst

left: © Andrew McLachlan



The mallard's familiarity and abundance frequently makes it the subject of waterfowl research initiatives, including many over the years by Ducks Unlimited Canada. Information gleaned from these studies helps shape DUC's conservation efforts.

predators. Despite these efforts many ducklings – often as many as 60 per cent – succumb to predation or to exposure.

Over the next seven or eight weeks, their down is replaced by feathers and the surviving ducklings are ready for their first flight – the first hatched ducklings by the end of July but some broods may be as late as the end of September.

STRONG INVESTMENTS IN SCIENCE HAVE ALLOWED waterfowl managers to identify that many of the key events that drive mallard population dynamics occur on the breeding grounds. In the simplest terms, predation on hens, nests and ducklings largely determine mallard population dynamics.

These relationships also guide DUC's work on the breeding grounds. This work is very diverse but focuses on the factors with the greatest impact on duck populations. After more than 71 years, and with science guiding conservation, DU has refined approaches that can be most successful in each area in which DU works.

Every issue of *Conservator* carries stories of DUC's work to benefit breeding waterfowl. These may involve wetland restorations, waterfowl-friendly farming practices, public policy initiatives, co-operation with extraction industries or educational programs. Because the mallard is almost everywhere and because so much of waterfowl conservation benefits mallards, almost everything that DUC does is intended, in some measure, to benefit what many think to be the king of ducks. ✕



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