



AIRBOATING MEMORIES

by H W Heusmann

Our venerated waterfowl biologist looks back on a long career that has involved many hundreds of hours piloting one of the most challenging and effective forms of biological sampling equipment the agency has ever employed...

THE first time I jumped a dike with the airboat was my last time. We were nightlighting, using the airboat to capture ducks for banding at the Great Meadows National Wildlife Refuge in Concord. Our airboat was equipped with intensely bright lights mounted on the bow and powered by a generator. The dazzling lights confuse the ducks enough to allow us to get close enough to net them (hence the term, "nightlighting"). The Great Meadows wetland where we band is basically a large impoundment divided into two sections of roughly similar size by an earthen dike a couple of feet high and the width of a single-lane road. Often, we would first work one side of the impoundment, and if there weren't many ducks there, or after we had caught most

of those that were available, we would back the trailer in again, load the boat, and then launch on the opposite side of the dike. This process took 20 minutes or so, and since we had agreed not to run the admittedly loud machine after 11:00 P.M., the time lost was valuable.

If we could just get the boat from one side to the other without the hassle and delay, I reasoned, the work would be that much easier and more efficient. The machine is driven by an *airplane* propeller, after all, and an airboat in an exciting airborne maneuver has long been a staple in every movie and television show about the Everglades. I had been told that Dave Grice, a former project leader, had once jumped the dike with the boat after laying down a bed of cattails and wetting them

down to make a slick ramp for the jump. I was also told he went about 6 feet in the air, but I dismissed that as just story embellishment. I figured if he could do it, I could do it.

I revved the engine and headed for the dike at full throttle, expecting to glide smoothly up and over the obstacle and cruise effortlessly into the other impoundment. Instead, I went completely airborne and came down hard enough on the other side to knock the electrical plugs (and, from what it felt like, most of my internal organs) loose, leaving me in total blackness and wondering if my sudden blindness was due to concussion.

After that, we loaded the boat on the trailer on one side, and unloaded it off the trailer on the other side whenever we needed to cross the dike. What's 20 minutes, anyway?

THE Massachusetts Division of Fisheries and Wildlife (MDFW) purchased its first airboat in 1967. Previously, biologists had captured ducks using baited cage traps. This technique, which required daily checking and baiting of floating traps, was very time consuming, restricting our banding efforts to just a few sites at a time. The real impetus to find another way to capture ducks, however, was an otter. Much to the consternation of the waterfowl crew, this agile, aquatic predator made short work of a number of trapped ducks on several occasions. Raccoon predation of ducks in bait traps had long been a problem, but it could usually be solved by moving the traps to less accessible locations. The otter, however, was much more persistent than a raccoon; it found the traps no matter where they were placed. Dave Grice, upon learning about the (then) new technique of capturing ducks at night with an airboat and lights, convinced his superiors to free up the money to purchase one of the machines. It's never cheap or easy to outwit an otter....

I joined the MDFW in June of 1969, but didn't get to work on the airboat until the following year. Our boat was a 14-foot fiberglass Aircat with a semi-catamaran hull. It was powered by a 125-hp Lycoming engine and had three 500-watt, quartzite lights mounted on the bow, one high and center, the others low on either side of it. Two crew members

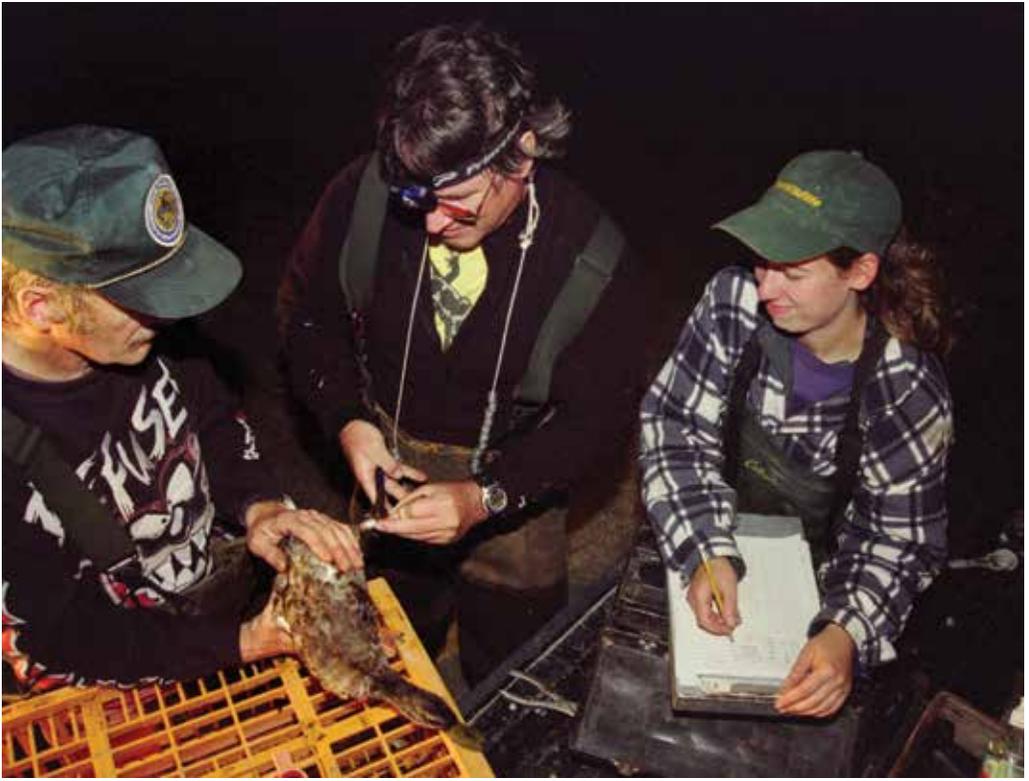
with long-handled dip nets sat on a bench seat with the driver perched on a high seat behind them. Ducks were netted and placed in a crate between the two netters, or in a crate sitting on the hull, and were processed and banded at the end of the evening.

The 125-hp engine was sadly underpowered for our needs, so we got stuck frequently. Getting unstuck involved the netters getting out of the boat and rocking the front from side to side while the driver did the same thing with the engine fins. The boat would slowly creep forward, a few inches at a time, while the pushers would sink deeper into the mud. If the boat broke loose suddenly, one or both of them were left mired in the muck.

I was promoted to the position of waterfowl biologist in August of 1970. For the next couple of years I enjoyed netting ducks, a naturally exciting challenge that at times offered fast and furious action. Pete Pekkala, a technician from our Northeast District office, drove and maintained the boat. Two years later, when Pete was promoted to game manager of the newly created Connecticut Valley District office, I found myself doing the driving.

DRIVING an airboat is technically simple. Anyone can do it. There is only a steering bar, or "joystick," that moves the rudders left and right, and a foot throttle. But learning to drive an airboat to safely and successfully catch ducks is something else. The second night I was at the helm we were on the Sudbury River, having an unusually good night, with more than 60 ducks captured. However, at some point I looked down and saw that we were taking on a lot of water. I assumed we had a leak (not an uncommon occurrence when you are bashing off of submerged stumps and rocks and pounding through heavy swamp brush), so I started back to the launch site. On the way back, Dick Burrell, a linebacker-proportioned biologist who was one of my netters that night, made a try for a mallard in the middle of the river and lost his net. He made a motion (we all wear hearing protection on the airboat, so hand signals are our only means of communication) to swing around to retrieve the net.

I confidently turned the boat and suddenly realized I couldn't straighten it out again! The boat tipped, and, as I struggled



The author, left, biologist Tom Early (now retired), and biologist Trina Moruzzi, right, use teamwork to document and band a crateful of airboat-captured ducks. The crew captures and bands an average of 40-45 ducks per trip; 800-1200 birds per season. Band recoveries provide invaluable data on survival and migration.

with the steering bar, at some point it occurred to me that I was underwater. I let go and started kicking to the surface. We weren't wearing life vests, and were dressed in hip boots, rain pants, and hooded rain jackets: not quite ideal outfits for swimming. Fortunately, even as my boots filled up, an air bubble trapped in my rain jacket carried me to the surface. I broke into the air amid assorted flotsam and realized I could just make out Dick's bobbing head in the starlit darkness. The other netter was already swimming for shore.

Dick was looking wildly around and shouting my name. I was behind him, saying, "I'm here! I'm here!" But he kept shouting. Then I saw him pause, reach up, and pull off his ear muff hearing protectors. He flung them away, at which point he heard me, turned around, and was clearly relieved to see I hadn't drowned. We clung to the bow of the boat for a moment, listening to glugs of

escaping air. Then the entire boat sank out of sight....

As a young biologist and the captain of this calamity, I thought I would be fired. But when I called the Director that night and told him why I needed to borrow one of the fisheries biologists who scuba-dived, he just chuckled. Apparently, things like this sometimes happened. We retrieved the boat the next day, using inner tubes placed inside it and then inflated underwater to raise it. I was embarrassed to discover no leak. I had simply taken in one too many standing waves maneuvering the boat around while we were netting ducks. When Dick lost his net and I turned the boat, his weight (nearing 300 pounds at the time) added to the water in the boat rushing to his side, causing us to capsize. For several years after that, Bob Bellville, one of my assistants, took great pleasure in impudently referring to me as the "U-boat captain."

WE dried the boat out and continued to run it for several more years. When it finally reached the point that it was running so poorly even broods of *ducklings* could out-swim us, we replaced the engine with a 150-hp upgrade. But it still didn't have enough juice for the job. Often, as we struggled yet again with the stuck boat, we joked what it would be like if the boat were manned by 40-year-old guys instead of hearty young biologists in their twenties and thirties. Little did I know....

Eventually we were spending so much time repairing the engine, the frame, or the hull of the old boat that it was seriously interfering with our banding efforts. We had added so much fiberglass to patch the old hull that the boat had acquired a permanent list. In 1984, we finally drummed up enough money to buy a new boat.

Our new boat was built by Combee Airboat of Lake Hamilton, Florida. It was 17 feet long, 7½ feet wide, and 24 inches deep amidship with a flat-bottomed hull. Most importantly, it was powered by a 0540 Lycoming air-cooled, 260-hp engine. Combee suggested that we put a high-density polymer layer on the bottom of the boat to make it slipperier and faster. I wasn't interested in going any faster, but I was intrigued by the possibility of protecting the bottom of the boat from the rocks and stumps we so often hit. With the old boat, we typically had to remove the engine once or twice a season to repair holes in the hull. We ordered the polymer shield, and, when we put a hole in the side of the boat, we bought some more polymer shielding and added it to the sides as well.

One night, shortly after getting the new boat, we were at Ames Pond on Turkey Hill Brook in Paxton, a site that is choked with a lot of buttonbush. Buttonbush is a woody, wetland shrub that provides excellent cover for wood ducks. It can

grow upwards of 6 or 8 feet, and can form dense islands of cover. With the old boat, we were relegated to moving around the edges, trying to net the ducks that ventured near the borders of the brush. It was frustrating to see birds a few feet away in the brush, figuratively thumbing their bills at us, just out of reach of our nets. Netting in buttonbush was very difficult because the many branches typically deflected your net. If the bushes weren't too high, however, we could sometimes ram through small patches without becoming stuck. That was often enough to scare the ducks out into open water where we could scoop them.

On this particular night there were a lot of ducks in the buttonbush and we seemed to be catching quite a few of them. I couldn't believe the power of the new machine. I was driving, intent on finding the next bird, when I realized I was running over the top of the buttonbush, a dozen yards from open water. We were catching wood ducks in the middle of the buttonbush cover and the boat was completely out of the water! Almost in a panic, I gunned the boat to get us out of there. There would be no way we could push the boat if we became stuck in the middle of a buttonbush patch. Once out of danger, I cautiously moved back into the buttonbush. Amazingly, the boat actually ran up over the top of it effortlessly, allowing us to net birds from overhead. We could go anywhere! I christened the boat the *Enterprise* right on the spot. With our more powerful engine and polymer shield, we could now "boldly go where no biologist had gone before!"

USING an airboat to capture ducks for banding has many advantages over other methods. One is mobility. Instead of being confined to a few bait-trap or rocket-netting sites, we can move all over the state. We might band birds on the Ipswich



Photo © by Bill Byrne

A good driver can often "tell whether the trail left through the duckweed is from a frog, a turtle, a muskrat, or a duck."



River Audubon Sanctuary in Topsfield one night, and be 120 miles away on the Housatonic River in the Berkshires the next night. This means that our banding samples are more representative of our state's waterfowl population than if our banding is restricted to a few refuges or management areas.

The airboat also allows us to band a wider variety of species. With bait traps we primarily caught wood ducks, mallards, and black ducks. With the airboat we can capture not only those species, but also blue-winged and green-winged teal, wigeon, pintail, hooded mergansers, coots, rails, even herons and grebes if we wish. We even used it in the spring once to catch canvasbacks in Falmouth and ring-necked ducks in Sudbury.

We can go to an area and band more ducks during one night of airboating than we could do in an entire season of bait-trapping. As an example, we operated bait traps at Rice City Pond in Uxbridge between early August and late September of 1986. During six nights of trapping we banded 56 ducks. We airboated the same site on August 30, however, and captured 90 birds in a single night. Somewhat surprisingly, only a half dozen or so were birds we had previously banded by bait trapping. We only boat sites where we have the potential to catch at least 20

ducks. We don't always make our 20-bird minimum, and occasionally we even get skunked, but on other nights we may catch 40, 60, or even a 100 or more ducks. (Our record catch so far is 244 birds on the Great Meadows National Wildlife Refuge in Concord.) Therefore, we band an average of 40-45 ducks a trip. Depending on the number of nights we are able to go to boat, we may band between 800 and 1,200 birds in a season.

BUT there are limitations to airboating. Because the boat is so large and heavy, it can only be launched at certain sites. While a concrete ramp is not necessary, the launch site needs to be wide enough to accommodate the trailer, not too steep or too shallow, and must have a reasonably firm bottom. Although our truck is four-wheel-drive and has a front-mounted winch, there have been a number of occasions when I wasn't sure we would ever get the boat back out because the trailer axle hung up, or we were mired in mud, or the winch was pulling the tree we were hitched to out by the roots instead of pulling the truck and trailer out.

Things got a little better when it dawned on us that we could use the power of the boat to assist the truck. By firing up the engine after the boat was loaded, we

could literally push the truck while its own engine and winch pulled, and getting out became a lot easier. But sometimes even that isn't enough. Somehow, though, we always find a way, even if it takes an hour and a half. We carry planks in the truck with us at all times, and, if we expect difficulty, we bring along longer planks.

The other necessity for a successful airboat operation is having ducks at night. Some places used by ducks during the day and with an adequate launch site simply aren't used by ducks at night. They may stay on the area until after sunset, but then fly off at dusk. The site also needs cover to hold the birds. When birds raft up at night in open water, they scatter upon the approach of the boat, and after a few passes, fly off. The driver has to be especially careful in these open water situations because although airboats are agile, highly maneuverable machines in shallow water, in deep water they tend to bog down and become unwieldy. In the excitement of the chase it is all too easy to get swamped by your own wake when you circle back sharply on another pass. While you can usually catch a few ducks on open water, most end up disappearing.

Although we have added mufflers to our exhaust and don't operate the boat past 11 P.M. most nights, some places are just too developed to airboat. I'll never forget the night we were airboating in front of the Marriott Hotel in Newton, just outside of Boston, blasting around after ducks at Norumbega Park on the Charles River. Norumbega Park was a site where people had been feeding ducks since the 1930s, and the Marriott had only replaced the amusement park in 1969. When a couple of patrol officers asked us to leave because of the complaints, we moved away from the area, not realizing that moving a half mile downstream didn't make that much difference in the noise we were generating. When we came in that night, a red-faced Chief of Police was waiting and threatened to throw us in jail! We don't airboat at that site anymore....

Every year is different, and the success of our banding operations is always dependent upon the weather. If rainfall has been scant, there may not be enough water to boat some sites, because either the cover has dried out, or there is not enough water to launch the boat. Occasionally, we get so much rain that



When the airboat gets stuck or breaks down (the former being the most frequent occurrence) both captain and crew may be required to jump in and lend a hand.

the roosting cover is flooded out and the birds fly off or just aren't there in the first place.

USING an airboat to capture ducks by nightlighting involves the calculated use of both noise and lights. Ducks tend to roost in wetland vegetation that cannot be penetrated by a boat with a conventional outboard motor. With nothing extending below its flat-bottomed hull, however, the airboat can move with impunity through very shallow water and even across mudflats. Because we work at night, using bright lights, the ducks can't see the boat, only the lights on it. Capture success is diminished if it is too light out, probably because the ducks can then see the boat. Even the full moon may provide too much light for successful nightlighting, so we try to schedule our operations to avoid it.

When most people hear the noise the airboat generates, they express disbelief that we can get close enough to ducks to catch them with a dip net. However, the noise of the boat serves to confuse the birds. Predators try to be quiet when stalking ducks, while the airboat is anything but quiet. (We use both ear plug inserts and muff-type hearing protectors, but are still relieved when the airboat engine is finally shut down for the night.) A duck's first instinct at night is usually to hide when something approaches. This is especially true of wood ducks and, indeed, most local ducks in general. After all, the roosting cover is their home and safe haven: Why leave it? Migrant birds that are just stopping overnight are more prone to flush when the boat approaches than are resident birds.

We capture ducks in all kinds of cover: pickerelweed, cattails, American lotus, wild rice, water willow, buttonbush, even flooded alder thickets. Some places, such as flooded timber, are not navigable even with the airboat, however. If there are many stumps, you feel like you are in a pinball machine, bouncing from one stump and ricocheting off another. A netter may be leaning out for a bird when the boat suddenly careens off in another direction. While the driver has the steering stick to hang on to, the netters have only the seats of their pants.

Actually, it's the seats of their waders. Several years ago we switched from rain jacket, rain pants and hip boots to just



Photo © by Bill Byrne

Biologist Trina Moruzzi removes a mallard from her net. Netting ducks from the airboat requires a host of skills – not the least of which is just keeping your seat!

rain jacket and chest waders. The waders give us a greater sense of confidence when we have to leap out of the boat to push it off an obstruction or to snare a duck. That sudden realization that you have gone in over your hip boots wasn't a pleasant one....

Over the years we have made many modifications and improvements to our equipment, methods, and procedures. One year when our generator konked out, we tried using a spotlight that was normally used for nightlighting woodcock in fields. We caught more ducks that night than we customarily did, and added a spotlight to our gear. We presently use a million-candle-power Q-beam. The light, operating off the boat battery and held by the driver, can be used to draw the netters' attention to a duck, and to follow birds through the vegetation so the netter doesn't lose sight of them. The only sad part was that it tied up the driver's free hand, so he had to give up the stick formerly used to smack the netters on the head when he wanted to get their atten-

The airboat has proved an exceptional research tool for the efficient capture of a large variety of waterfowl. This hen wood duck has just been banded.

tion to go after a duck. The netters weren't quite as sad....

Our commercial poultry crates were replaced by custom-made crates that fit inside the boat between the netters. Now, both crates, one for big ducks and one for smaller ones, fit in the boat and we don't

have to leave one on the hull where it interferes with netting. The hinged door that had to be opened to put in each bird was replaced by strips of inner tubing, which allow birds to be pushed quickly into the crate, freeing the netter to go for the next bird. We also learned to bring strobe lights mounted on tall rods to place out in the marsh as reference points. We make our own dip nets, strong enough to withstand the abuse they go through, but light enough for easy and agile handling. We learned which sites were good and when to boat them, and which sites weren't worth doing. As a result, we now catch as many birds as we did when we started, but in half the number of trips.

Netting ducks requires some experience and innate hand-eye coordination. Each netter develops his or her own technique. Ducks have to be bagged in the net because, unlike fish, they can usually fly. If you scoop them from below, they just fly out of the net. You have to first get the net over the duck, then twist the net to bag it; not as easy as it sounds.

We often rely on movements of vegetation to spot ducks. If a bird doesn't move, it is much more difficult to detect. Even a brightly colored drake wood duck can blend into the background if he doesn't move. But netting "movement" can be risky: More than one netter has come up with an angry muskrat instead of a duck! Often you don't see a bird until it



Photo © by Bill Byrne

flushes. Accomplishing an "aerial" (netter slang for snagging a flying duck) is prized evidence of expertise (or luck). So are "doubles" (scooping up two ducks in one pass). Rarely, if you get a brood lined up just right, you might get three or four in one net, a feat repeated no more than once or twice in a season.

While the netters have the glamorous job, the driver is responsible for finding birds, maneuvering the boat so the netters can get close enough to catch them, and must also keep from getting stuck and avoid getting lost. If he's lucky, he can manage to do all four things about 70% of the time.

One of the most uncomfortable positions I find myself in is being in the middle of a featureless cattail marsh with no safe place to stop and clueless about which direction is liable to run us up on dry ground, and which direction leads to open water. Good drivers can become experienced trackers. They can look over the vegetation and have a good idea if it is likely to hold ducks. They learn which plants mean "no water" and where it is safe to boat. Often they can tell whether the trail left through the duckweed is from a frog, a turtle, a muskrat, or a duck. A good driver can ram through waterwillow and spin the boat 180 degrees to catch the duck left exposed. Pete Pekkala taught me how to circle a bed of vegetation to hold the birds in the cover, knowing they will flush if they are allowed to reach the edge and open water.

There is a certain strategy to nightlighting. Early in the season, we boat rivers and other sites where we are likely to encounter broods. Since the birds are still going through their molt and are flightless at that time, we can often catch most of those we see. We need encounter only three or four broods to have a productive night. Later in the season, we boat areas where ducks "stage," or come to roost. These are often impoundments with good vegetative cover. Catching ducks on windy nights is challenging because it is more difficult to track the movements of the birds in the cover; in addition, they tend to flush more readily. On windy nights, then, we may go to sites that are sheltered.

The phase of the moon is not as important early in the season when the birds are flightless, but once they are flying, we avoid boating from the first quarter to 3 days after the full moon. After that, the moon doesn't rise until well after we have started and we have already caught most of the ducks available. Light rain is good for catching ducks, heavy rain is not. And I *really* hate boating in the fog: Not only do you not know where you are or where you are going, you can't see the ducks either. While warm nights mean bugs, you just keep your mouth closed. But a cold

night will leave you stiff and barely able to move your fingers, especially if you are a netter, neoprene gloves or no.

THE original cast of those 20- and 30-year-olds on the airboating crew, the ones who proudly called themselves the A Team, then the B+ Team, then the B-... well, we eventually found we were a bunch of 50-plus-year-olds, still boating, still pushing, still catching ducks. Now they've all retired. I'm the only one left.

Over the years I have shifted back and forth between netting and driving. When I started, Pete Pekkala drove the boat and Bob Bellville and I netted. After Pete was promoted I drove the boat until Bellville got tired of the physical strain of netting and took over driving. He became a very good driver. When Bellville was assigned to other projects, I began driving again with Tom Early and Dick Burrell netting. When Dick's aging shoulder started bothering him too much to continue to net, he took over driving and also became a very good driver. After Dick retired, I went back to driving. I'm on my fourth boat.

After 16 years of operation, the old 17-foot, fiberglass-hulled, Lycoming-powered airboat was replaced by a 15-foot, aluminum-hulled model powered by a 350-hp automotive engine with a drive reduction unit to increase thrust. This modern, powerful machine was donated by Ducks Unlimited, Inc., in 2006, as the agency's budget couldn't accommodate the purchase of a new boat. With the retirements of Dick Burrell and Tom Early, members of the original A Team for over two decades, I now work with as many as 15 other crew members as I move about the state. Some of these are excellent netters, some not so much. All are younger. I am past my 65TH birthday now and know I can't do this forever, but it certainly has been interesting....

H W Heusmann (left) has been MassWildlife's Waterfowl Research Project Leader since 1970. He has earned an international reputation within the scientific wildlife community for his decades of innovative waterfowl research, journal articles, and waterfowl management plans. More than a dozen of his articles have appeared on our pages over the years, and we are delighted to report he still has at least a couple more waiting in the wings...



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