Like many biologists and hunters, I'm much more comfortable with birds, habitat, dogs, quiet, and solitude. The loud, boisterous, chaotic crush of humanity at airports forces me to adopt the survival strategy of a nesting woodcock. I hide — behind a book - and hope no one notices me. In this case, it's one of my favorites, Guy de la Valdene's Making Game, just to help focus on the upcoming task.

For half of the Minnesota contingent, our trip began in the snow just west of the headwaters of the Mississippi River. The trip ended that evening with a blast of humid air as we step off the airplane at Louis Armstrong International Airport in New Orleans where the Big Muddy empties into the Gulf. All afternoon colleagues had converged here from across the eastern states. Our goal this week: count, age, and determine the gender of several thousand woodcock wings at the annual Woodcock Wingbee coordinated by the U.S. Fish and Wildlife Service (USFWS).

By seven o'clock at night, we all meet in the hotel lobby with hugs and handshakes. Most people haven't seen each other for a year, and several are new to the group. Represented are staff and retirees from four Fish and Wildlife Service offices, six state natural resource agencies, three U.S. Geological Survey offices, the Ruffed Grouse Society, and two graduate students from Minnesota and

We head down the street to the nearest restaurant. Everyone orders seafood, except the only local in the group, who gets a steak ... Hmm. Lori, a private lands biologist with the USFWS from Minnesota, tries her first, and presumably final, raw oyster. Coming from northwestern Minnesota, the land of culinary bland, we find Cajun spices to be a welcome change. No lefse or lutefisk down here.

The annual Woodcock Wingbee has been held since the 1960s and moves around the eastern half of the country, alternating between north and south of the Mason-Dixon Line. For example, in 2010 it was at Maplelag Resort in Minnesota, then the Charles Elliott Wildlife Center in Georgia, followed by Bald Eagle State Park in Pennsylvania. For 2012, we were at the Southeast Louisiana National Wildlife Refuge Complex Headquarters in Lacombe. This year it heads north to Brown County State Park in Indiana.

Researchers collect several types of data on woodcock. Singing ground surveys consist of approximately 1,500 routes across the breeding range, each about 3.6 miles long. About 50 percent of these are sampled each year. Biologists observe these routes on spring evenings, listening for the peenting and watching for the sky dance of the male. These data produce an index, whether the population is larger or smaller than the previous year's, and how the current year compares to the long-term average.

Bird banding is the form of research most people are famil-



iar with, and hunters who harvest banded birds treat the bands as trophies. Banding data tell biologists about bird movement and survivorship, where and when birds were banded, and where and when they were found or harvested. Woodcock banding is often done in the spring with pointing dogs finding broods of chicks only a few days old. This is some of the best possible out-of-season work for woodcock dogs and hunters alike.

The Harvest Information Program (HIP) survey is another valuable source of information. When buying their hunting licenses, all migratory bird hunters are asked a series of questions about their previous seasons' hunting. Biologists then sample a subset of the hunters who indicated they hunted woodcock during the previous year. The hunters are sent a diary to track the number of days they hunted and the number of woodcock harvested. This information is then used to calculate estimates of harvest, hunter participation, and success rates.

The Wingbee is part of yet another data gathering technique, the Woodcock Parts Collection Survey. It is held in early March. This gives hunters time to send in wings from the previous season, while also giving biologists time to write up the report so that it can be used to plan the following year's seasons and bag limits.

Wingbee hunters submit one wing from each woodcock they harvest. Wings come from long-time participants in the survey as well as from hunters selected from the HIP survey. The wings are sent to the FWS's Harvest Survey Branch located at the Patuxent Wildlife Research Center in Maryland. The wings are collected throughout the fall, boxed, and then sent to the Wingbee.

Data collected during the Wingbee tell biologists the ratio of



males to females and mature to young of the year birds. A high ratio of young birds to mature hens indicates a good year of reproduction. All of these datasets can be analyzed separately and together to give a complete picture of the life history and population trends of woodcock.

While these data give us the big picture, individual research projects by graduate students and agency biologists give us the finescale details. It takes all these data to adequately determine how to manage a species and its habitat, as well as set seasons and bag limits. Even with all these data and research, it seems like we know so little about most wildlife species.

Tuesday morning we arrive at the refuge headquarters in Lacombe and are welcomed by the refuge manager. A stack of 43 boxes sits against the back wall. Each box is full of envelopes and each envelope holds one wing. Tom Cooper, from the FWS's Division of Migratory birds, gives a quick presentation to get everyone up to speed on the how-tos of evaluating the wings. There's a jovial debate over the use of the terms determining gender or sexing of the birds. Most use the latter but the former is more proper. These days nobody wants to be overheard at a restaurant in the evening saying that he or she had "sexed a hundred birds today."

Next, we're all given a test of 25 random wings. We have to properly determine age and gender of each wing before we start opening the boxes. Sitting next to each of us on the table is our cheat sheet, a copy of Greg Sepik's booklet, "A Woodcock in the

Biologists and managers from across the eastern U.S. gather once a year to count and determine age and gender of thousands of woodcock wings sent in by hunters. (Photos/Earl Johnson)

Hand," published by the Ruffed Grouse Society and recently updated with the artwork of Christopher Smith. This booklet summarizes a series of papers published in the 1950s and 1960s on ways to age and determine the gender of woodcock.

The first indicator is size. Females are as much as a third larger than males. The bird's "wing chord" is the measurement from the "wrist" or angle of the wing to the tip of the longest feather on the back of the wing. If the wing chord measures less than 127 millimeters, it's a male; if greater than 139, it's a female. If it's in between, we measure the width of the outer three primary feathers, the long flight feathers on the outside edge of the wing. The twittering noise males make during their spring courtship display (the "sky dance") comes from the vibrations of the three narrow outer feathers. If these feathers together are less than 12.4 millimeters wide, it's a male.

Once we determine gender, aging is next. For this we look at the secondary flight feathers on the wing, specifically feathers called s5 through s8. There are no measurements here; the determination is a little more subjective. Juvenile birds will have a distinct dark band near the tip of the feathers and any mottling will be evenly distributed on both sides of the feather's midline. In adults, the dark band is less distinct or nonexistent and the mottling is uneven.

Variation is part of nature, but it's still amazing how different these wings are. Some wings take a mere second or two to process, while others take several minutes or even require consultation among those sitting nearby to properly identify.

The first day all participants keep their heads down and plow through the pile of envelopes in front of them. This gets pretty monotonous after a couple hundred wings. By the second afternoon, a few rubber band skirmishes break out between various tables. Throughout the days and into the evenings, most of the dozens of conversations in the room revolve around birds, habitat, dog breeds, management, and other trivia. Let's face it; we're all a bunch of wildlife nerds.

It is interesting to think about the years of education, research, and management experience represented in the room, as well as the range of habitats and other wildlife species everyone has worked on. Eavesdropping on a few of the casual conversations would probably be as educational, or more so, than many graduate school courses in wildlife management.

To end the second afternoon, we sweep up enough loose feathers from the floor to start our own pillow factory. And then: We've been looking forward to a crawfish boil for weeks. Several large cardboard boxes lined with plastic are brought in, and we all dive into the Cajun spiced crawfish, potatoes, and corn on the cob. Soon everyone has random piles or neat stacks of crawfish shells in front of his or her plate and a very full belly. The after-dinner entertainment is a talk by Dan Sullins of Stephen F. Austin State University on his graduate research project on stable isotopes in woodcock feathers. His goal is to determine where a bird was born and fledged from the chemical, or more specifically isotopic, signature in the feathers.

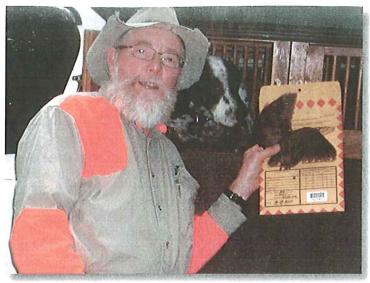
The last day goes by quickly as we have only a few wings left.

Another cleanup. Then we hit the road for Sandy Hollow Wildlife Management Area. Mike Oline, recently retired as a wildlife biologist from the Louisiana Department of Wildlife and Fisheries, gives us a tour of the site, which he managed for the last couple decades. This is always one of my favorite parts of any trip - learning about new habitats and seeing the pride in people as they talk about what the site used to look like, what it looks like today after their hard work, and how the wildlife have responded. Mike points out some patches of woodcock habitat, and it looks strange indeed to someone from Minnesota. It's as thick as a stand of popple and hazel up

north, but with more vines and thorns. While the plant species are different, the structure of the vegetation is remarkably similar. And this habitat looks even more challenging than northern popple for

walking and swinging a gun.

On the last stop of the tour, we informally break into small groups. A couple of us grab dried leaves from the ground, look at bark and leaf buds, and try to differentiate the several species of oaks on the site. Others focus on the pine trees. Still others stand back and look at the landscape. Each set of eyes focuses on a



At the end of successful fall woodcock hunt, Earl Johnson is ready to send wings to the U.S. Fish and Wildlife Service. They will be among all those to be evaluated during the Woodcock Wingbee in spring.

slightly different component of the habitat.

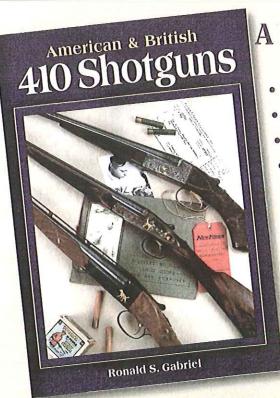
After the tour, we race back to the hotel. The extroverts head to Bourbon Street while the introverts walk down to a restaurant for quiet conversation and a final taste of Cajun before heading north. The conversation, again, revolves around birds, habitat, dogs, and management policy. We never tire of talking about these subjects.

We're up before five to catch the morning planes back home. It's not hard to tell who rolled back in from Bourbon Street a couple hours ago and who called it an early night. I spend the first hour at the airport reading the last chapter of Mak-

ing Game, featuring the same Mike who led the tour yesterday. Art imitating life.

Once we're all back home and (mostly) recovered, Cooper sends us a summary from the week's work. We processed just over 14,000 wings and had a raw index of 1.37 juveniles per adult female.

While it's important to get the wings processed and data collected, it's just as important to meet new people and get reacquainted with old friends, see new habitat, share ideas, and learn from the experience of others.



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