Thanks to an Illinois pioneer, estimating waterfowl populations is now

Bird's Eye Bio

Story and Photos
By Joe McFarland

Everybody's heard of those promotional contests where average people win a prize by guessing how many jelly beans fill a big jar.

Maybe you've won a similar contest yourself.

Chances are, you weren't competing against a specially trained Illinois waterfowl biologist; at least, not one of the airborne biologists trained to glance out a window and estimate the numbers of ducks and geese that comprise our migratory waterfowl populations. It's really quite a trick.

It takes a trained eye to produce an accurate count. But that's what experts do every week during late autumn and winter, flying over flocks and instantly producing data.

Ducks and geese arrive in Illinois by the millions in late autumn and winter, then depart before spring. It's essential that wildlife managers know how many waterfowl were here in order to establish science-based quotas and bag limits for waterfowl hunting.

How many waterfowl do you see in this photo? Time's up. A trained waterfowl biologist must count hundreds or even thousands of birds in seconds.

The trick is recognizing group numbers.

"First of all, people tend to underestimate how many birds are in a flock overhead," explained Scott Stuewe, a Department of Natural Resources (DNR) biologist and pilot who has the ability to look at flocks and accurately estimate the population. Stuewe flies over selected Illinois waterfowl habitats once a week during the winter migration, counting up what he sees, then relays his report to a state waterfowl hotline.

"Five hundred geese might look like only 150 to somebody," Stuewe said. "But once you actually count each bird you might be surprised at how many are there."

Stuewe is joined by two or three other biologists in his plane as he flies a few hundred feet over lakes and rivers between Springfield and the Ohio River; it's one of the several waterfowl survey routes flown weekly around Illinois. The

a breeze at 120 m.p.h.

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DNR biologist and pilot Scott Stuewe flies fellow biologists over Illinois waterfowl habitat in late fall and winter. His passengers compile the official weekly waterfowl counts—but Stuewe assists by spotting flocks.

biologists observe ducks and geese—usually at the same time of day and the same day every week—and independently submit their estimates.

Amazingly, the estimates are roughly the same.

"One of us might estimate 9,500 and another guy 10,000," Stuewe said. "And so we take the average of 9,750."

But how do biologists know their estimates are correct?

Years ago, famed Illinois waterfowl biologist Frank Bellrose would stare at an aerial photograph of a flock of waterfowl, counting each bird with a magnifying glass and a pin. Using a grid to measure the size of the area, Bellrose could extrapolate how many birds were present by counting the number of bird-filled units in the grid.

When Bellrose would later fly over birds during his waterfowl surveys, that training helped him recognize the quantity of birds he observed.

Today, simple computer programs are a great training alternative: Bird- shaped dots appear on a computer screen, then disappear. The viewer types in an estimate of how many dots they believe they saw. The computer then reports the actual number of dots it presented.

After many sessions of observing various concentrations and configurations of dots, viewers get quite proficient at knowing what, for example, 11,500 dots look like.

Waterfowl managers never know precisely how many birds are in an entire region. But that's not what matters.

"All of our flights look for trends," explained Ray Marshalla, DNR waterfowl program manager. "The aerial surveys give us information as to when waterfowl are present throughout the state. The 10-year averages then tell us when waterfowl are most likely to be visiting those sites, and that helps guide the establishment of waterfowl hunting season dates."

Knowing when and how many birds are likely to be in the region helps waterfowlers prepare for better hunting. But there's something else biologists notice while flying over waterfowl habitat.

Waterfowl blinds usually are easy to spot.

"Think about what a bird sees," Stuewe suggested. "Usually the blinds don't look bad when you're standing on the ground. But the color of camouflage material often creates something the opposite of camouflage. For example, if a blind is set up in a field of dead, brown vegetation, a green blob in the middle of that field is really going to stand out."

As for decoys, Stuewe is rarely fooled by the rows of plastic below.

His advice: Forget about the evenly spaced, symmetrical patterns. Natural congregations of birds look different.

"Every once in a while I'll turn the plane to check out what looks like a flock of geese but it turns out to be decoys," Stuewe said. "It doesn't happen very often. But when it does it's because the decoys were set up to actually look like flocks of geese."

After flying a waterfowl survey, biologists Tim Krumwiede, Dan Woolard and Stuewe compile an average and submit their estimates to the public within minutes after landing.