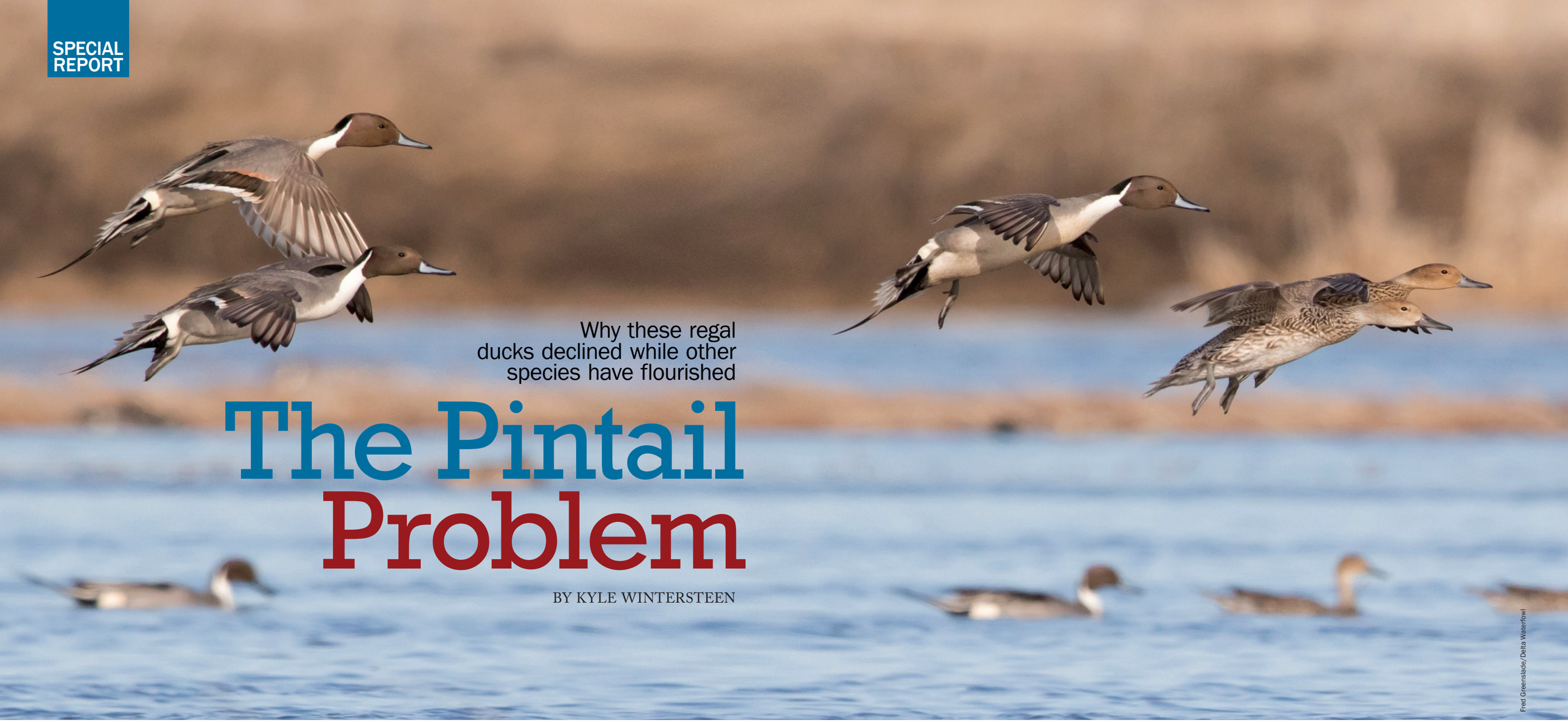
SPECIAL REPORT



Fred Greenslade/Delta Waterfowl

Why these regal ducks declined while other species have flourished

The Pintail Problem

BY KYLE WINTERSTEEN

The lone drake pintail's wings flash handsome shades of olive over your spread, a white stripe from neck to breast accentuating its sleek form. Adrenaline flows as the sleek duck turns, sets its wings and cups the sky with showy, downwardly extended tail feathers. No duck rides the air with greater precision and grace than a bull sprig.

You fold the bird with a mix of delight and regret, because you're now done hunting pintails for the day, given the one-pintail limit instituted across all U.S. flyways this season — the most restrictive since 2008.

How unthinkable for waterfowlers who gunned in the heydays of the 1950s, '60s and '70s, when pintails were typically outnumbered only by mallards. Imagine telling a California duck hunter in 1970 — when the Golden State's hunters bagged more than a million pintails — that future hunters would be permitted but one a day. Would a biologist have believed you, if you said in 1956, that the estimated breeding population of 10.37 million pintails would decline to a record low of 1.79 million in 2002 and languish at 2.62 million in 2016?

And here's the most consuming question of all: Why are pintails declining at a time when so many duck populations have grown to record-high levels?

In this Special Report, Delta Waterfowl explores the factors limiting pintail production, explains why conservative bag limits are not the solution, and details its research and policy objectives to get pintails back on track.

Exposed in Stubble

Until recently, fluctuations of the pintail population were strongly tied to the availability of shallow, invertebrate-rich wetlands on the prairies of southern Canada. The annual USFWS Breeding Population and Habitat Survey reveals that pintails and the pond count were both tremendously high in the mid-1950s, fell in the early 1960s, rose in the mid-1970s and dipped during the horrid 1980s drought.

Then something changed. The pond count was well above average from 1995 to 1997, but while mallards and other species surged back, pintails floundered. A longer wet cycle began 2004 and continues today, propelling numerous grassland-nesting ducks, including mallards, gadwalls, wigeon, teal and shovelers, to record highs. Yet since 1981, pintails have only exceeded their long-term average of 4 million birds once, in 2011. The 2016 survey marked a fifth straight decline.

Why the disparity?

"Good pintail production requires shallow wetlands to provide nutrition for hens and ducklings," said Dr. Frank Rohwer, president and chief scientist of Delta Waterfowl. "And, ducks need adequate nesting cover to conceal their eggs from predators. We've lost a ton of both in the heart of the pintail's breeding territory in southern Alberta and Saskatchewan."

A shift in agriculture practices has hurt pintails. Until the 1970s, most prairie Canada farmers idled their fields every other year. The resulting mixture of stubble

Pintails often select sparse nesting cover, which increases vulnerability to predators.

Fred Greenslade/Delta Waterfowl

and weeds — known as summer fallow — provided pintails with nesting cover.

"That was very beneficial to pintails, but today fallowing the land is extremely rare," said Jim Fisher, Delta's director of conservation policy for Canada. "Annual spring planting is the norm, which we believe is having a big impact on pintails."

According to Statistics Canada, western Canada had more than 20 million acres of fallow fields in the mid-1980s. In 2017, just 1.77 million acres are fallowed — a record low. Summer fallow is instead replaced by millions of acres of bare stubble, which leave pintail eggs completely exposed to predators. Yet, pintail hens attempt to nest in it anyway.

"Pintails nest up to a mile from water, and unlike mallards and gadwalls, for whatever reason they scatter their eggs all over the landscape rather than targeting thick grass," Fisher said. "Their eggs end up in whatever cover surrounds the wetland, which invariably leads to a multitude of vulnerable nests in the middle of stubble."

The change in farming practices and its impact on nest success — the biggest determinant of whether a population of ducks rises or falls — is compounded by the pintail's proclivity for early nesting.

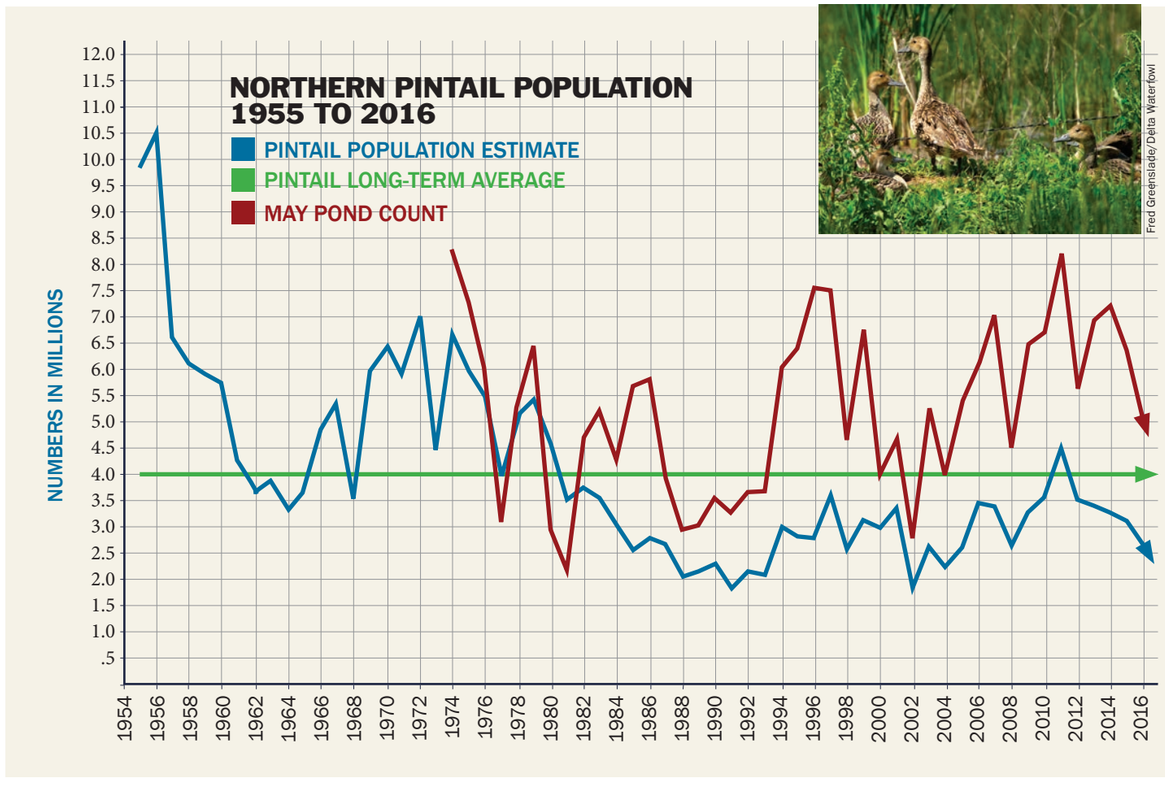
"Delta's research demonstrates that nest success for all ducks is lowest early in the breeding season," said John Devney, vice president of U.S. policy for Delta Waterfowl. "Predators have a lot of mouths to feed in the spring, and when pintail eggs start appearing in stubble or short, early grass, they're easy prey at a time when alternative foods are scarce."

Many early nesting ducks tend to be aggressive renesters. Pintails are decent renesters, but unfortunately, they are hard-wired to select sparse cover. So, their second nest attempts often fail because of predation or are lost to the plow in the stubble.

"Pintails just don't drive at the breeding effort like mallards, which will nest again and again when the prairies are wet," Devney said. "Historically, that didn't matter, but the loss of native grasses and fallowed fields in prairie Canada has proven a seismic change."

Not All Ponds Are Equal

A second key crisis affecting pintail populations is the ongoing dissolve of prairie Canada's temporary and seasonal wetlands.



Fred Greenslade/Delta Waterfowl

"Pintail production is far more dependent on the presence of small, seasonal and temporary wetlands than many ducks, including mallards," Rohwer said. "Unfortunately, those shallow wetlands are inconvenient for farmers when they occur in the middle of a crop field, and they're also the easiest to drain."

Why then, have species such as blue-winged teal and gadwalls — whose reproductive success is also tied to shallow wetlands — increased well above their long-term average breeding populations?

"Bluewings and gadwalls tend to nest farther east and south than pintails, where wetland conditions have been quite good," Rohwer explained. "There hasn't been the long-term loss of wetlands in North Dakota, the core of the bluewing's breeding range, that we've seen in prairie Canada. In fact, the Canadian Wildlife Service says we haven't even slowed the wetland drainage, let alone stopped it. We believe this is having a dramatic effect on pintail production, and our current pintail research is further exploring it."

Whereas the United States has robust laws against wetland drainage, Canadian laws are much more difficult to enforce. There is no Farm Bill equivalent in Canada, and therefore no risk of losing federal benefits for producers who drain wetlands. Canada's wetland easements are more limited as well, as there was no legal tool to establish them until the late 1990s.

The 2016 estimate of 5.01 million ponds included 758,000 ponds in southern Alberta and 2.09 million ponds in southern Saskatchewan. The numbers are comparable to long-term averages, and since 2004, prairie Canada's ponds have often been well above average — so why are pintails performing as if the prairies are dry?

Delta believes the lack of nesting cover is negating the ability of wetlands to boost pintail production, and on top of that, prairie Canada's pond count is misleading. Consider that when shallow wetlands are diverted, they form deeper, more permanent wetlands. The ponds are still counted, but offer less benefit to breeding pintails.

"Not all ponds are created equally," Devney said. "Mallards are really elastic with where they'll breed, but not pintails. While many biologists point to declining grassland habitat as the key issue affecting pintails, the loss of small wetlands is also of major consequence."

When pintails do not find their preferred prairie wetlands, they engage in a behavior known as "overflight." They fly north to the arctic, where production is exceedingly low and where many pintails may not even attempt to nest. Despite an average pond count in 2016, Rohwer says it's clear that overflight occurred, given that breeding pintails were down 60 percent in Saskatchewan.

Limits Needlessly Reduced

Given the pintail's struggles, the U.S. Fish and Wildlife Service has reduced the pintail limit to just one bird daily. Delta Waterfowl believes this is an overly restrictive measure.

"I think it's entirely unwarranted," Rohwer said. "There's no data to suggest that hunter

Fred Greenslade/Delta Waterfowl

DELTA RESEARCH EXAMINES PINTAIL POPULATIONS

Delta Waterfowl will delve into existing pintail population and harvest data through a pair of important studies this year. The research is aimed at determining whether the population goals used to set hunting regulations for pintails are realistic given the current level of available breeding duck habitat.

Dr. David Koons of Colorado State University will thoroughly examine the U.S. Fish and Wildlife Service's May Breeding Duck Population and Habitat Survey data. Specifically, he will be looking at individual 150-mile-long flight transects that have been flown by survey pilots for decades. Koons will study changes in ponds and upland nesting cover to determine whether pintails have declined because of landscape changes.

"We're going to look at the factors that are ailing pintails," he said. "We want to find out why pintails are declining in certain areas where other upland-nesting duck species are doing well."

While Koons' study focuses on habitat, Dr. Todd Arnold of the University of Minnesota will examine band return data and harvest information. Arnold's research has three parts: He will look at pintail production through study of age ratios, determine the impact of hunter harvest on the pintail population and analyze pintail sex ratios.

Through Parts Collection Survey data (wings sent in by hunters), Arnold can determine whether pintails have experienced a long-term decline in production, and if so, whether the decline is in the Prairie Pothole Region.

"Everyone suspects the decline in pintails is from something that's happened in prairie Canada," he said. "This study could tell us where to focus our efforts to best help pintails."

Arnold will use banding data to study the relationship between hunter harvest and the overall survival rate of pintails.

"One of the key things we know from banding data for some duck species is there doesn't seem to be any change in survival rates because of hunting," he said. "We'll see if that's true with pintails."

With a decrease in the daily bag limit of one pintail daily across the United States, Delta Waterfowl is looking at whether sex-specific regulations (like those for mallards) make sense for pintails. For example, could U.S. hunters shoot two or three pintails daily, with only one hen in the bag?

"We suspect the sex ratio is skewed for pintails," Arnold said. "If there are two drakes for every hen, then those extra drakes are superfluous and can be harvested without hurting the population." — *Paul Wait*

harvest is having any effect on the size of the pintail population. A two-pintail daily limit has been tolerated in the past, so unless drought causes a major decline, I think that's a pretty reasonable number."

Research by University of Nevada-Reno Ph.D. candidate Ben Sedinger suggests that hunting's impact on duck populations is even lower than previously thought. His study, funded in part by Delta Waterfowl, produced convincing evidence that as the pintail harvest rises, other forms of mortality go down.

"It's estimated that 35 percent of pintails die in a given year from all causes, including the approximately 1 to 7 percent that are shot," Sedinger said. "Additionally, if we reduce the number of pintails harvested, roughly 35 percent of the population will still die in a given year. It's just that more will die of starvation, disease and getting eaten (by predators). Harvest may be an easy variable to manage, but fine-tuning the daily bag limit from two to one is very likely futile. Unless pintails replace that 35 percent every year (through production on the breeding grounds), the population will still decline."

Rohwer further notes that the 2016 pintail breeding population estimate of 2.62 million greatly exceeds the canvasback estimate of 736,500 — yet hunters are allowed to shoot two cans daily this fall. Two redheads will also be permitted, despite a breeding population that's more than a million birds below the pintail estimate.

The USFWS sets pintail limits using a model established under the Adaptive Harvest Management strategy. The plan allows regulatory adjustments for changes in breeding populations, harvest estimates, habitat conditions and more. However, Delta Waterfowl believes the pintail model is flawed, because it adheres to the 2012 North American Waterfowl Management Plan's goal of increasing the breeding pintail population to 5.6 million.

"I think the reduced limit is driven by the idea that we need to grow the pintail population to much larger numbers, so we ought to be ultra-conservative with hunter harvest," Rohwer said. "Wouldn't it be nice if it was that easy?"

Pintails haven't approached NAWMP's population objective since the 1979 estimate of 5.38 million. Since then, breeding habitat has decreased dramatically, as has the number of pintails using it. Regionally, the 2016 breeding pintail estimate was 289,000 in southern Saskatchewan, down from a long-term average of 1.1 million, while the estimated 168,000 pintails in southern Alberta were well shy of the long-term average of 665,000 — placing both about 75 percent below historic averages.

These statistics beg sobering questions: Is the NAWMP's pintail population objective realistic, or do breeding habitat declines present an impossible hurdle? And if 3 million to 4 million pintails is the new normal, shouldn't limits be set with a goal of population stability rather than growth — thereby allowing a more generous hunter harvest?

To answer these questions, Delta is working with Dr. David Koons of Colorado State University to study puddle duck carrying capacity in the Prairie Pothole Region. If the carrying capacity — that is, the highest number of pintails that can be sustained in available breeding habitat — is found to be lower than the metric used in pintail harvest models, then Delta will have a science-backed case for increasing the pintail limit.

"If limits aren't increased, there's real potential to further affect the long-term health of pintails by adding to the number of waterfowlers quitting the sport," Rohwer said. "Californians love their pintails and spend a whole lot of money to benefit them. If they hang it up and quit protecting the habitat in those impoundments, that's a real problem for conservation."

The Pacific Flyway accounts for about 55 percent of the nation's pintail harvest. In the 2015-2016 season, California waterfowlers shot 161,448 pintails, greatly exceeding the mallard harvest.

If a long-term, one-pintail limit is imposed on California's 46,900 waterfowlers, not to mention hunters in Washington, Utah, Louisiana, Mississippi, the Texas Gulf and other regions where sprig are duck-strap staples, who'd blame them for hanging up their calls and selling their decoys?

Finding Solutions

The answer to the perils facing nesting pintails might be found where they've been comparatively successful in modern times: North Dakota, which supported 378,000 breeding pintails in 2016, more than either southern Alberta or Saskatchewan.

"The Canadian prairie may be the historic core of the pintail's breeding range, but in the past 10 years, the United States has more than carried its load," Devney said. "The Conservation Reserve Program, USFWS wetland easements, federal Duck Stamp dollars and other initiatives have helped set the table for nesting ducks. That's enabled pintails to partially overcome the deficits in prairie Canada, but it isn't enough."

Canada lacks the United States' dynamic habitat policies and incentive-based programs, such as CRP, a provider of nesting habitat, and Delta's Working Wetlands — a pilot program protecting 9,568 of North Dakota's most threatened shallow wetlands that's gaining congressional support for inclusion in the next Farm Bill.

Prospective policy solutions include converting a portion of Canada's wheat producers to cattle grazers. Cows — just like nesting ducks — require grass and water. An option being pursued more aggressively is shifting spring-tillage fields to winter wheat, which has proven to provide far more productive nesting cover than stubble. Ducks that nest in winter wheat have surprisingly good hatch rates.

"The Prairie Habitat Joint Venture has set a goal of converting 20 percent of producers to winter wheat," Devney said. "That's a lofty expectation."

Ultimately, Canada must embrace a large-scale, incentive-based program that works with the agriculture community to save small wetlands and provide nesting grass, Devney said.

Canada's Alternative Land Use Services — invented as a Delta Waterfowl program in 2006 and released as a healthy, independent entity in 2015 — is a promising, regional model. ALUS provides incentives to producers who voluntarily conserve duck nesting grass, wetlands and other wildlife habitats.

"Delta can be proud of ALUS, which is now active in 11 Alberta counties, two major watersheds in Saskatchewan and one in Manitoba," Fisher said.

The model demonstrates that farmers are eager to benefit nesting ducks and other wildlife, if they are provided fair financial incentives.

"Delta will continue to advocate for a prairie-wide, incentive-based program with the full financial backing of the Canadian government," Devney said. "Anything less is a failure for pintails and other grassland-nesting ducks." ▲

Kyle Wintersteen is managing editor of Delta Waterfowl.

Fred Greenslade/Delta Waterfowl

The U.S. Fish and Wildlife Service has reduced the bag limit to one pintail daily for the 2017-2018 season. Delta Waterfowl believes the change is overly restrictive.