

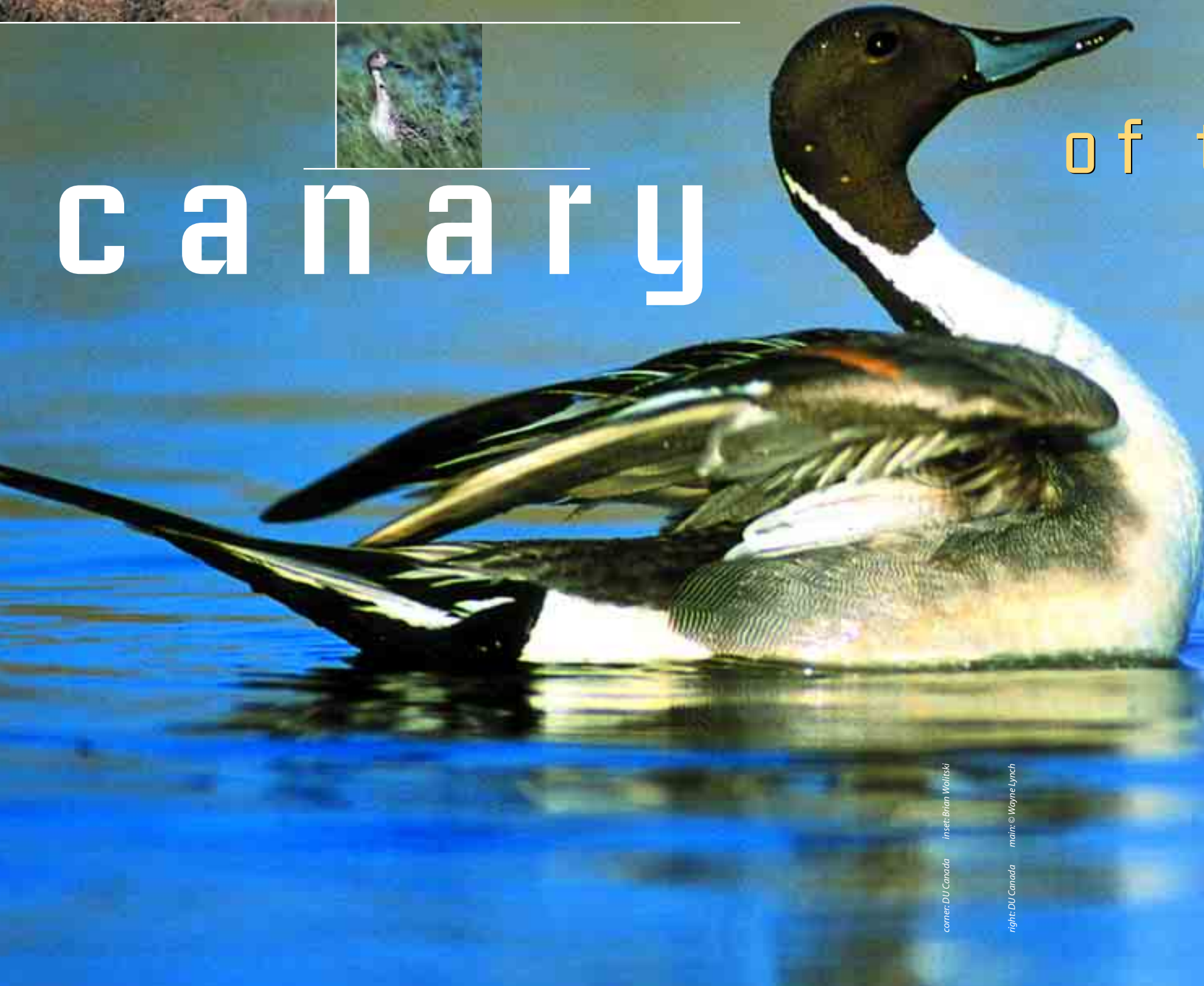


At a time when most prairie dabblers are thriving, the decline of Canada's pintail population is a mystery. Ducks Unlimited's Pintail Initiative looks to shed some light on this curious prairie conundrum.



# canary

# of the prairie



The radio signal booming through my headphones signalled that the pintail hen I had come to know as "208" was sitting motionless just south of wetland B20. I moved as gingerly as

I possibly could with a tracking antenna in my hand, and the signal grew noticeably louder with each of my steps, until the hen exploded from the grass in front of me...

*By Dr. Karla Guyn*

**m**y heart raced as I stopped in my tracks. Circling above me once and tipping her head from side to side to look me over, 208 was gone in a flash – seeking refuge in a nearby wetland.

The nest site vacated by 208 was pretty typical for a pintail. It was located in short, sparse vegetation, and similar to other pintail nests I had found in the grasslands of southern Alberta, placed in a small depression about 10 centimetres deep. Peering into the nest bowl, I discovered five greenish-tinged eggs, with a small amount of down lining the bowl. Checking the eggs, I determined that 208 had not yet begun to incubate. I expected her to lay two or three more eggs before she would begin. Re-covering the eggs with vegetation, I hoped the nest would successfully hatch, despite the odds that only about one in 10 pintail nests ever do. Pintails, unlike mallards, do not frequently re-nest if their nest is destroyed. Therefore, if 208 were to lose this nest, she likely would only attempt to nest once more this season before packing it in and waiting for next year.

Tracking radio-marked pintails on the southern Alberta landscape was part of a research study I did for my PhD thesis from 1994 to 1997. I had not



camera: DU Canada inset: Brian Wollinski

right: DU Canada main: © Wayne Lynch

A pintail pair marches through a wet prairie field. At one time, pintail numbers rivalled mallards on the Canadian Prairies. But in 2002, the prairie pintail population matched an all-time record low of 1.8 million birds.



top right: Tye Gregg  
right: DU Canada  
left, below: Brian Wolitski

intended to pursue a PhD, but while completing my Master's degree, I was presented with an opportunity by DUC's Institute for Wetland and Waterfowl Research to study pintails in southern Alberta. Being an aspiring waterfowl biologist from Calgary, I had always been enthralled with pintails. As a bird, they seemed glamorous, with their spectacular plumage, sleek lines, secretive ways and unabashed reverence from waterfowlers. But their population seemed to be in trouble, and there was very little research underway to find out why, so the pintail study offer was impossible to resist.

At one time, pintail numbers rivalled mallards on the Canadian Prairies. Like most ducks, their numbers dropped dramatically during the drought of the 1960s, but rebounded during the better water conditions of the 1970s. Pintail populations slumped again during the drought of the 1980s, but this time their numbers didn't significantly increase with the improved water conditions during the 1990s. This failure to rebound is in stark contrast to other prairie nesting dabbling ducks, which reached near record levels during the wet '90s. In 2002, pintail numbers matched an all-time record low of 1.8 million birds. In 2003, pintail numbers increased slightly, but they remain nearly 40 per cent below their long-term average and at levels more than 50 per cent below their North American Waterfowl Management Plan (NAWMP) goal. Something is obviously wrong. Why is this graceful bird of the prairie slowly disappearing before our eyes? Like canaries in a coal mine, pintails are perhaps telling us something about the health of our prairie landscapes. Their declining population trend is possibly a warning sign about the health of the prairie ecosystem, which waterfowl, wildlife and humans rely on for existence.

Recently, Ducks Unlimited Canada (DUC) and Ducks Unlimited Inc. (DUI) took the proactive and unusual step of developing a species-specific program, the Pintail Initiative, to help reverse this decline. As a first step in this initiative, the population trends in the three primary breeding areas (Alaska and northern Canada, Prairie Canada and Prairie U.S. – see figures on page 18) were examined to determine where the problem might lie. We can clearly see that the majority of the decline in the pintail population has been in those birds that typically settled in Prairie Canada. So, what has happened, particularly since the 1970s, in Prairie Canada that could be responsible?

DUC research biologist Jim Devries and researchers from Montana State University examined habitat changes collected from 1961 to the mid-1990s on Canada's Prairies. Using pintail data collected through the annual U.S. Fish and Wildlife Service/Canadian Wildlife Service spring surveys and land use data collected every five years from Statistics Canada's Census of Agriculture, Devries and crew determined that since 1961, fewer pintails



were settling to breed in areas of the prairies with increasing cropland. This increase in cropland was not mainly due to loss of native prairie, but rather a shift from summerfallowing, where croplands are rested in alternate years, to an annual cropping regime where more acres are now cropped each and every year.

The loss of summerfallow is a key piece in the pintail productivity puzzle. In the 1970s, when some 30 to 50 per cent of the land was summerfallowed in any one year, the landscape looked and functioned very differently for pintails. Summerfallow is typically left idle for most of the summer, except that it is tilled to control weeds. The tillage operation usually does not occur until all other land is seeded and 30 years ago, when smaller farming equipment prevailed, this might not happen until late May or early June. Therefore, pintails winging their way back to the prairies in the 1970s were faced with a landscape that resembled a patchwork quilt of quarter sections that were primarily black dirt from being summerfallowed the year before, and soon-to-be-summerfallowed quarter sections with stubble still standing. Pintails, more than any other duck, will nest in cropland. And when faced with this landscape, many of the birds would opt to nest in the available stubble, destined for fallow that year. But because pintails nest early in the spring, there was a good chance these nests in summerfallow might hatch before cultivation of that field later in spring.

These days, summerfallow has fallen out of favour, largely due to concerns over soil erosion and the prevalence of nitrogen fertilizer, and most cropland is planted every year. When a northward-bound pintail hen arrives, she is faced with a sea of standing crop stubble, all of which looks pretty good for nesting. Unbeknownst to the hen, most of this stubble is slated for crop production this year, and there is a pretty good chance that if her nest escapes the notice of local predators, the seed drill won't miss it. Nearly 13 million acres of summerfallow have been converted to annual cropping in Prairie Canada since the 1970s, a massive change in land use that likely has had devastating effects on pintails.

For the Pintail Initiative to be successful, it is clear that pintail populations will need not only the conservation of existing uncropped habitat, but a better chance for success in annually cropped lands as well. This challenges DUC to find "workable" agricultural solutions that impact large acreages. To do so, DUC launched two



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figure 1 – northern United States

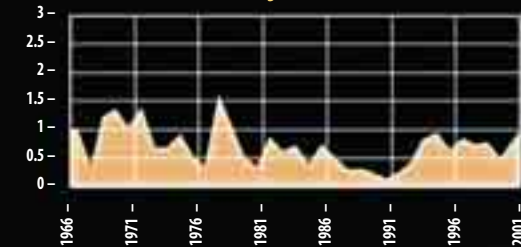


figure 2 – Alaska and northern Canada

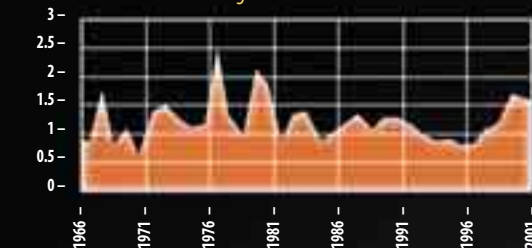
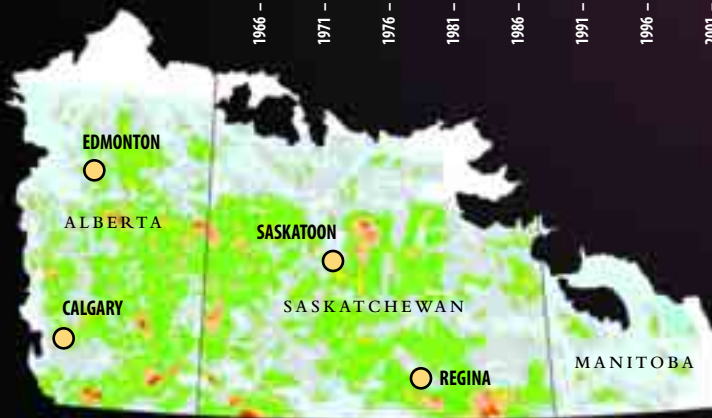


figure 3 – southern Canada



## a curious decline

Pintail populations in the prairies of the United States (figure 1) and in Alaska and northern Canada (figure 2) remain relatively stable. In southern Canada however (figure 3) – namely southern Alberta, Saskatchewan and Manitoba – the decline is obvious. Above: A DUC “thunderstorm map” shows estimated pintail breeding distribution across Prairie Canada. On this map, warmer colours (reds, oranges, yellows) depict areas of higher abundance of breeding pintails. This technology helps DUC target habitat programs to areas that make the biggest difference to improving pintail numbers.



For DU’s Pintail Initiative to be successful, it is clear that pintails will need not only the conservation of existing uncropped habitat (1), but a better chance for success in annually cropped lands as well. Pintails, more than any other duck, will nest in cropland (2). Nearly 13 million acres of summerfallow have been converted to annual cropping in Prairie Canada since the 1970s, a massive change in land use that has led to increased agricultural production (3, 4) – a change that likely has had devastating effects on pintails.



others: Darin Langhorst  
pintail: DU Canada  
nest: © Wayne Lynch

pintail-focused studies in Saskatchewan. The first was done in co-operation with the Saskatchewan Wetland Conservation Corporation and examined the potential conservation value of a “cropland conversion program,” where marginal cropland would be converted to hayland. In this two-year study, over 2,000 acres of hayland were searched for duck nests each year. We found that pintails on average hatched one nest every 142 acres, nearly 10 times the ratio that is typically observed in spring-seeded cropland. This suggested that conversion of cropland to perennial forages would improve pintail productivity.

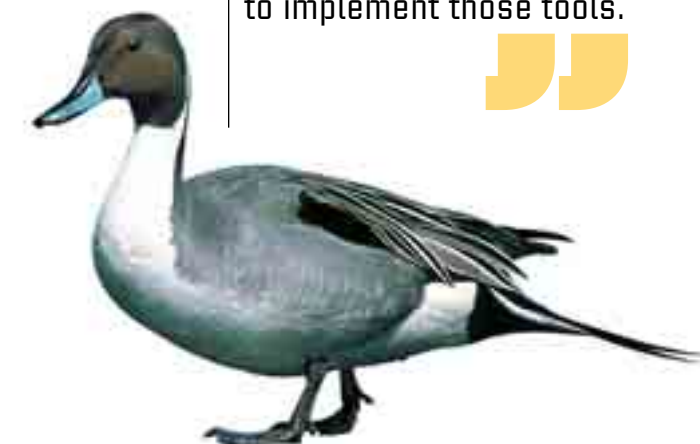
The second study focused on pintail productivity in fall-seeded cereal fields. Given that pintails often nest in cropland, DUC recognized the potential of fall-seeded crops, such as fall rye and winter wheat, to reduce the destruction of nests by tillage. This research compared the use and breeding success of pintails in spring-seeded versus fall-seeded crops. Nearly 4,000 acres of both fall-seeded crops and spring-seeded fields were searched over the two-year study. The results were compelling. Pintails on average hatched one nest every 72 acres in fall-seeded crops in contrast to one nest every 1,332 acres in spring-seeded cropland. This improved production resulted from both higher nest densities of nests in fall-seeded crops and higher hatching rates as well. The study provided a solid endorsement for the use of fall-seeded crops as a pintail-friendly cropping alternative in areas where annual cropping has encroached on traditional pintail breeding areas.

Knowing what tools to use is only part of the challenge DUC faces when designing conservation programs. We must also know where to implement those tools. As a first step, DUC needed to know what areas of Canada’s prairies typically attract the highest densities of pintails. To determine this, DUC’s Geographic Information Systems (GIS) specialists and scientists from the Institute for Wetland and Waterfowl Research worked together to develop a map depicting long-term expected pintail pair densities across prairie Canada. The resulting “thunderstorm map,” nicknamed so because these kinds of maps resemble the images we see from weather radar, uses different colours to illustrate duck densities (left). Cutting-edge GIS technology has helped DUC target habitat programs to areas that make the biggest difference to improving waterfowl populations. This means solid investment decisions.

With GIS tools in hand, and with an assessment of habitat change since the 1970s, the habitat goals of the Pintail Initiative could be developed with greater confidence. When the objective is to increase continental populations, as is the case with the Pintail Initiative, habitat change must occur on a large scale. For pintails, this is especially imperative because they are nomadic in nature and will settle wherever the prairies offer the best wetland conditions each spring. Therefore, targeting small landscapes, which may be wet only every few years, is not adequate. Of course a widespread international program comes with a hefty price tag. Over the next 25 years, the Canadian prairie portion of the Pintail Initiative is projected to cost \$50 million.

DU’s concern about the pintail is shared by many other organizations. In March 2001, waterfowl researchers and managers from across North America gathered in California for a Northern Pintail Workshop called to assess our current understanding of pintail

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biology and population status, to explore possible explanations for the continued poor status of pintails, and to discuss appropriate management and research actions. A strong consensus emerged from the workshop that it is of paramount importance to improve pintail breeding success on their prairie breeding grounds. The management strategies in DU's Pintail Initiative were agreed upon by the conservation world as an important component of the overall conservation plan for continental pintail populations. While improving breeding success is pivotal, at the same time, it is important to remain vigilant about protecting habitat on key wintering and migration areas. Fortunately, conservation efforts in places such as the Central Valley of California over the last decade have already done much to improve conditions for wintering pintails in the Pacific Flyway.

At the same meeting the idea of forming a group that could keep the pintail issue on the front burner was generated. Over the course of the next year a proposal for a "Pintail Action Group" was developed and in August 2003, the international North American Waterfowl Management Plan (NAWMP) Committee endorsed the idea and the "Pintail Action Group" (PAG) became a reality. PAG representatives from Mexico, the Canadian Wildlife Service, United States Geological Survey, United States Fish and Wildlife Service, Ducks Unlimited, state agencies and academic institutions reflect the pintail's wide range, spanning from the Arctic to just shy of the equator. The PAG's primary mandate is to advocate and support planning, co-ordination, and evaluation of northern pintail manage-

ment and research actions among the NAWMP Joint Ventures, Flyways, government agencies, and other organizations. The group held its first meeting in November 2003 in a mood of high energy, determination and enthusiasm for the job ahead.

Female 208 eventually did hatch and I had the opportunity to watch her and her brood for the rest of that summer. Although scientists are supposed to remain completely objective and unattached to their subjects, we often develop a fondness for our birds, particularly when they are individually marked, allowing us to recognize them and glimpse into their daily lives. So at the end of that summer, when I was making my last telemetry round, it was with some reservation that I bid farewell to pintail 208, knowing that she and others like her have a challenging future ahead of them. Despite the uncertain future, I am reassured by the fact that Ducks Unlimited, and other concerned agencies and individuals, are working harder than ever to insure that the pintail does not meet the same fate as many coalmine canaries. ✕



*Dr. Karla Guyn is spearheading Ducks Unlimited Canada's Pintail Initiative, a key component of the larger continental DU pintail effort. A native Calgarian, Guyn's dedication to pintails has led to her appointment as the first-ever chair of the Pintail Action Group.*

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