Pheasant News and Notes

February 2023

Trivia Question

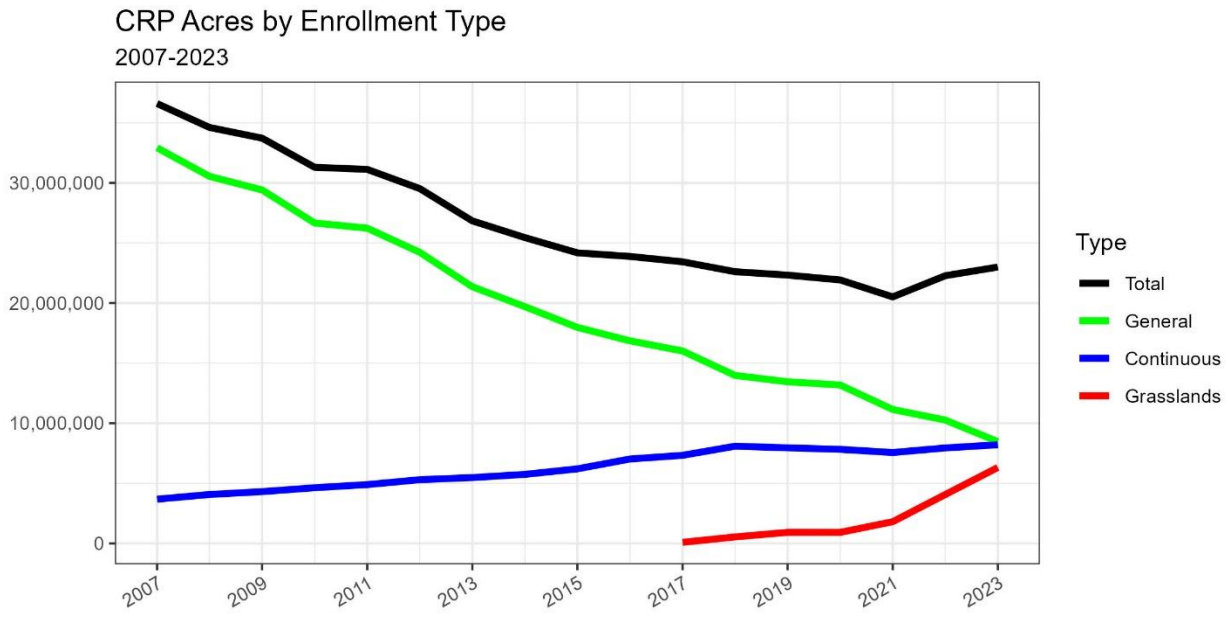
Our partnership focuses on the intersection of policy and science. What do Abraham Lincoln and Charles Darwin, two giants of these respective disciplines, have in common?

USDA and Legislative News

Senators Thune (R-South Dakota) and Klobuchar (D-Minnesota) reintroduced their Conservation Reserve Program Improvement Act from the previous session. According to their news release, the bill would:

- Make CRP grazing a more attractive option by providing cost-share for the establishment of grazing infrastructure – including fencing and water distribution – on all CRP practices and contracts if grazing is included in the approved conservation plan;
- Increase the CRP annual payment limitation from $50,000, which was established in 1985, to $125,000 to account for inflationary and rising land value pressures and provide landowners with more CRP enrollment options to ensure resources are appropriately conserved;
- Reinstate mid-contract management cost-share payments for activities that are not related to haying or grazing; and
- Permanently establish the State Acres for Wildlife Enhancement practice under Continuous CRP.

Those final three bullet items are clear wins for pheasants, while the first one is more complicated. In a perfect world, we would prefer that CRP acres not be grazed outside of the context of mid-contract management, particularly in the drier parts of the pheasant range. But the CRP world is currently far from perfect.



Nationally, our larger-block general signup acres are on a path to oblivion and our smaller-block continuous acres have been flat since around 2018. Changes that help elevate demand for the program are sorely needed, and it's hard to look a gift horse in the mouth when someone is trying to address the issue. On balance we would probably rather have more (non-Grassland signup) acres in the program and deal with a potential grazing management issue later, should it arise.

Notes from Around the Pheasant Range

A new pheasant modeling paper by Reza Amirkhiz, Ranjeet John, and David Swanson from the University of South Dakota has been published in *Ecological Informatics*. It uses SDGFP brood route counts of adult males during 2015-2019, seasonal and daily weather data, and habitat metrics at multiple scales to explain temporal and spatial patterns in rooster abundance. Regarding habitat, they found the highest summer rooster counts at areas with intermediate levels of grassland. Counts were also positively associated with herbaceous wetlands, small grains, and vegetation primary production, but effects were not apparent in all years. Woody cover generally had a negative effect. The spatial scales at which each habitat had the strongest effect varied from year-to-year, making firm conclusions difficult. Although some of the authors' decisions were curious (like using summer roosters seen on brood routes as their response variable), their use of a combination of habitat and seasonal weather variables to explain both abundance and detection probabilities is an interesting contribution.

John Cole, retired pheasant biologist for the Illinois DNR, recently wrote a nice piece in the *OutdoorIllinois Journal* on the history of pheasants in his state, using metrics from our *National Plan* to help explain trends and current habitat needs. John also happens to be the proud father of Beth Emmerich, our Technical Committee member from the Missouri DOC. Luckily for us, the apple didn't fall far from the tree.

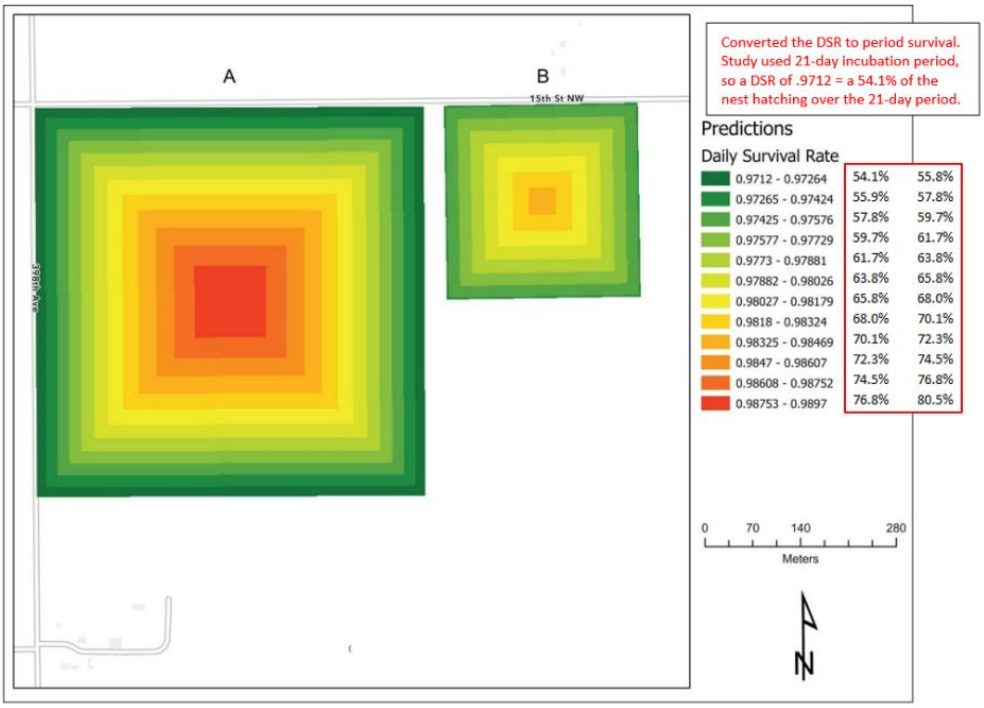
Jim Inglis (Management Board, Pheasants Forever) passed along a link to The Prairie Project, a collaborative of researchers and extension specialists working on brush encroachment in Great Plains rangelands and its economic, social, and ecological implications. Their web site has lots of good information on the subject for those interested. Jim also passed along an interview with one of USDA's wetlands specialists highlighting some new work on nutrient capture by agricultural wetlands.

Our Nebraska partners are busy responding to the introduction of a legislative bill directing the Game and Parks Commission to expend $500,000 annually on nest predator bounties. If that sounds familiar, the directive is modeled after South Dakota's Nest Predator Bounty program started in 2019. As in South Dakota, the bill directs the Commission to pay a $10 bounty for each badger, opossum, raccoon, red fox, and striped skunk taken from March 1st to July 1st; the Nebraska bill adds coyotes to the list as well. We wish our colleagues well in working with their legislators to reach best conclusion possible with this bill.

Last month we called your attention to a new publication by Alex Solem and Travis Runia (current and former Tech Committee members from South Dakota) that showed success of artificial nests was generally higher in the interior of larger blocks of habitat, but the patch size effect was mediated by the composition of the surrounding landscape. Todd Bogenschutz (Tech Committee, Iowa) provided the following perspective based on his and coauthors' previous telemetry-based work:

"I converted Alex's DSR's to nest success rate based on the 21-day period Alex had in the manuscript (see red box and text). I'd say it matches pretty well with our data. We found it was a complex relationship

with patch size, what was around the patch, and whether the cover was disturbed during the nesting season – e.g., hay/pasture or small grain fields. But the take home was larger is generally better, and minimize edges - keep things blocky regardless of size."



"Here was our predicted nest success based on the data from our radioed hens (about the same upper end 70-80% in larger patches as Alex). The 3 large patches in our image were CRP fields ~160Ac each, diagonal line thru area was a railroad right of way. Several small CRP fields scattered through the study area, one smaller FWP CRP field in upper center of the map ~40 ac, then some filter strips, road ditches and hayfields and maybe an odd pasture or small grainfield. Based on our population model we needed to maintain an overall nest success of ≥42% to keep the population stable - assuming other vital rates (winter hen survival, chick survival, non breeding hen survival, etc.) remained around their mean values."

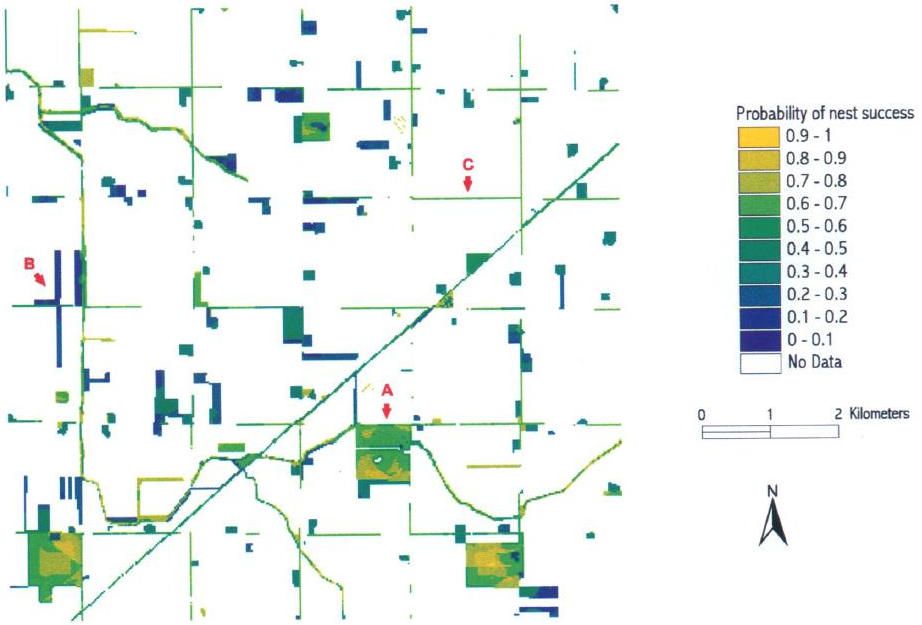
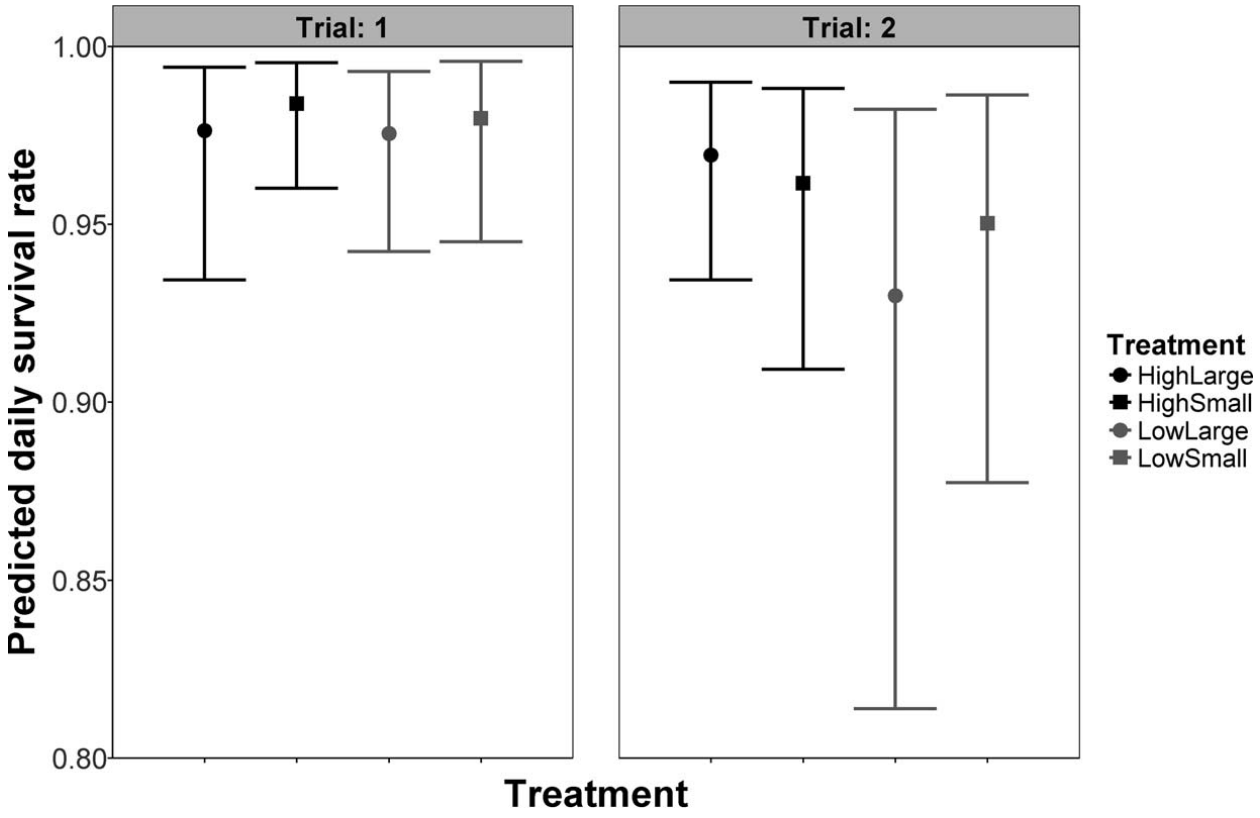


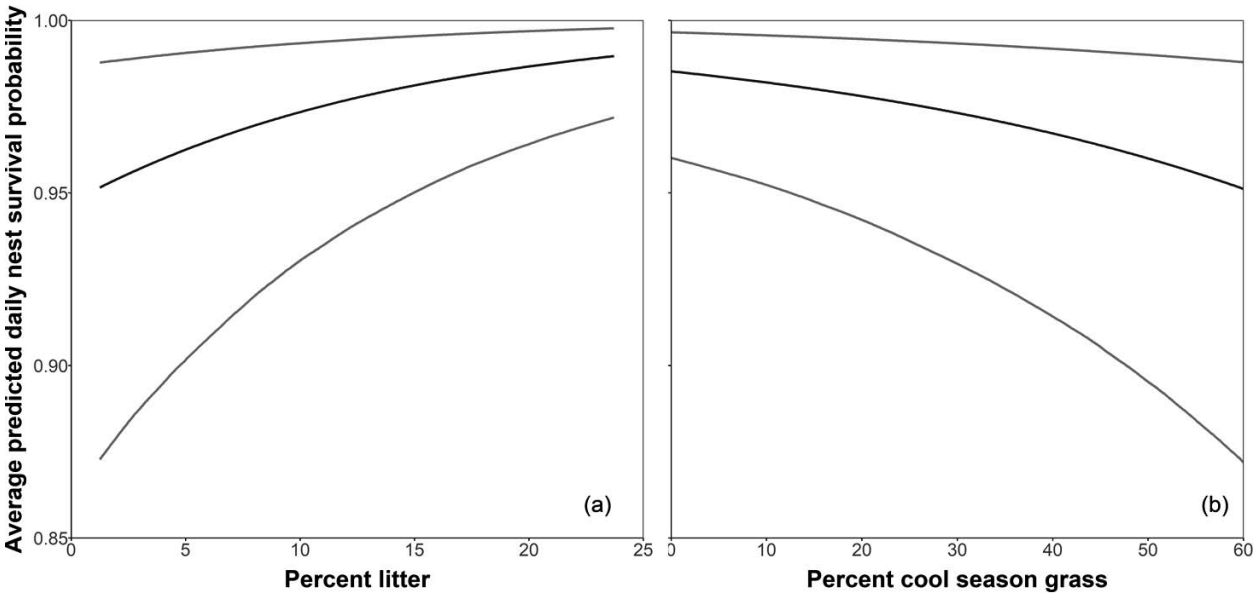
Fig. 4. Probability of nest success of ring-necked pheasants predicted by a logistic regression model that is a function of landscape composition and configuration variables within a 485-m radius of nests at the Kossuth area, northern Iowa. (A) A large patch where success is generally >0.50 but is influenced by the configuration of the landscape surrounding the patch, (B) an area where moderate-sized patches are clustered that would be predicted to have success rates <0.30, and (C) an isolated road right-of-way where predicted nest success is relatively high.

"However, small patches or road ditches in the middle of nowhere (C in the map) had surprisingly high success rates, but numerically we had very few nests in these types of habitat. Perhaps the rate in these habitats shouldn't be a surprise - small patch of grass surrounded by a sea of plowed soil - why would a mammalian nest predator be out there!"

So the statement "pheasants have higher nest success in larger blocks of habitat" has an element of truth in it, but adding "depending on the landscape" makes it more true. Given that qualifier, it should not be surprising that other studies have failed to detect a patch size effect. In a recent paper from the former Fontaine lab in Nebraska, patch size did not influence the success of artificial pheasant nests in that state. In their figure legend below, "high" and "low" describe the density of artificial nests within study fields, and "small" and "large" describe the size of fields in which nests were placed. For context, Todd's minimum 42% nest success threshold needed for stable populations equates to a 0.96 daily survival rate over 21 days of nest exposure.



Instead of nest density or patch size, they found vegetation components of fields (percent litter and cool season grass) were most predictive of nest success.



Also, Nielsen et al. (2008) failed to detect a consistent effect of average habitat patch size on pheasant *abundance* (which is what we are ultimately trying to produce) measured in 11 different land resource regions across 10 states. In some regions the effect was weakly positive and in others weakly negative, and in only one was the effect statistically significant (ironically, the significant (positive) effect was detected in the LRR where the Fontaine lab's study was conducted).

Where does that leave us on patch size? Others may argue, but my interpretation is that sweeping generalizations are probably unwise, and we can't yet reliably predict where large and small patches will contribute most effectively. However, we have yet to see a situation where large blocks have been clearly outperformed by small blocks, and per-acre costs of enrolling large blocks are probably lower. Make of that what you will.

Pheasant-relevant Media

Thune-Klobuchar bill would bolster Conservation Reserve Program
MNDNR: Pheasant feeding discouraged despite snowy winter
Please, don't feed the pheasants
What's up with all these pheasants?
Nebraska Senators propose funding $500k bounty on pheasant predators
How are pheasants, birds coping in the snow, cold?
Chinese ringneck pheasant becomes the South Dakota state bird in 1943
Pheasants at risk on unfamiliar ground
U.S. Fish and Wildlife Service launches Center for Pollinator Conservation
Majority of Americans want Farm Bill to promote sustainability, environmental benefits
Sustainable farming group says record-high crop insurance subsidies are unsustainable
S&P Global forecasts increase in U.S. corn, soybean and wheat acres
Three grizzly bears test positive for highly pathogenic avian influenza, show severe symptoms
$30,000 an acre: Eye-popping farmland prices in northwest Iowa have an impact across the Midwest
Alphabet launches ag 'moonshot' subsidiary

Recent Literature

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Heathcote, R. J. P., M. A. Whiteside, C. E. Beardsworth, J. O. Van Horik, P. R. Laker, S. Toledo, Y. Orchan, R. Nathan, and J. R. Madden. 2023. Spatial memory predicts home range size and predation risk in pheasants. Nature Ecology and Evolution (early online edition).

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Rhodes, E. C., H. L. Perotto-Baldivieso, E. P. Tanner, J. P. Angerer, and W. E. Fox. 2023. The declining Ogallala Aquifer and the future role of rangeland science on the North American High Plains. Rangeland Ecology and Management 87:83-96.

Carpio, A. J., et al. 2023. Understanding the impact of wild boar on the European wild rabbit and red-legged partridge populations using a diet metabarcoding approach. European Journal of Wildlife Research 69:18.

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Chong, D. L. A., B. McHale, K. B. Garrett, and M. J. Yabsley. 2023. Fatal systemic haemosporidiosis in a free-ranging Greater Sage-grouse (*Centrocercus urophasianus*). Journal of Wildlife Diseases (early online version).

Dickson, T. L., B. Poynor, and C. J. Helzer. 2023. Cattle graze central U.S. milkweeds at least as much as grasses, even under patch-burn-grazing management. Rangeland Ecology and Management 87:158-166.

Lark, T. J. 2023. Interactions between U.S. biofuels policy and the Endangered Species Act. Biological Conservation 279:109869.

Trivia Answer

Both Lincoln and Darwin were born on February 12th, 1809. Happy President's Day!

This update is brought to you by the National Wild Pheasant Conservation Plan and Partnerships. Our mission is to foster science-based, socially-supported policies and programs that enhance wild pheasant populations, provide recreational opportunities to pheasant hunters, and support the economics and social values of communities. You can find us on the web at https://nationalpheasantplan.org.