Transmitted Electronically

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Dear Chancelor May, Dean Dillard and Dean Stetter,

We, the undersigned scientists with expertise in wolf biology and behavior, livestock-wolf conflict, carnivore ecology and conservation, economics, ethics, and transparency in scientific research are writing today to express our deep concern over an article posted on the University California, Davis (UC Davis) website on April 21, 2025: *Novel Study Calculates the Cost to Cattle Ranchers of an Expanding Wolf Population*, by Emily Dooley, Communications Specialist, in the College of Agricultural and Environmental Sciences (CAES). The story presented preliminary research of four UC Davis scientists -- Tina Saitone, Ken Tate, Ben Sacks and Brenda McCowan -- on how an expanding gray wolf population in California may be affecting the economics of cattle operations.

Wolf recovery in California, the U.S. and worldwide is highly controversial, with strong disagreements between cattle ranchers and wolf conservationists. Ms. Dooley and the research team should have known that the article's subtitle -- *One Wolf Can Cause Up To $162,000 in Losses Due To Reduced Growth and Pregnancies* [of Cattle] -- would cause wide public attention. This sensational headline coupled with the portrayal of the researchers' preliminary findings as facts has caused a rush of articles that parrot the study's results without question as to their scientific accuracy or applicability to other areas.

The article shared no counter interpretations and few nuances, despite the controversial nature of wolf politics and the obvious complexity of the study. Because of this poor journalism, the popular media has echoed the article's unsubstantiated claims as uncontroverted fact, doing real harm to the prospect of human-wolf coexistence.

As scientists, we especially are alarmed by this media coverage because the ongoing study has not been peer-reviewed or published in an academic journal. This important step in the scientific process would have ensured that the work of the UC Davis team would have been critically and fairly reviewed before dissemination.

The article summarized four findings of the study, highlighting one of the findings as its subtitle, namely:

- One wolf can cause between $69,000 and $162,000 in direct and indirect losses from lower pregnancy rates in cows and decreased weight gain in calves.

The study's findings interest many people, including conservationists, wildlife managers and cattle ranchers. This study, or similar efforts, could lead to better animal husbandry or other changes to livestock operations or wildlife management that could improve human coexistence with wolves. But to do so, the research needs to be correctly designed, and its results fairly interpreted, especially given its controversial implications.

At this stage, because the study's preliminary results have not undergone peer-review, with the methodology detailed, we cannot offer a robust critique of the research. But we raise the following initial questions and concerns based on our review of its summary.

Most fundamentally, we believe it is misleading to conclude that one wolf causes between $69,000 and $162,000 in losses, for several reasons.

As an initial matter, why are the costs based on individual wolves when we know that most wolves live and hunt in packs? Also, by using the *minimum* number of wolves in the study area, the researchers maximized the calculation of the cost per wolf.

Publicizing the cost "per wolf" implies that the study's findings would be typical for other California wolves. It invites others to calculate per capita costs from wolves in vastly different areas throughout the U.S., with different rates of predation.

Moreover, the cost calculations seem skewed upward for reasons which become apparent on reviewing the PowerPoint presentation given by lead researchers Tate and Saitone at a Feb 18, 2025, rangeland symposium at UC Davis. The researchers explained that the calculations were made using a minimum estimate of 21 wolves across three study packs with adjacent territories during August through October of 2023. Territories of three additional packs known to exist at the time are located to the north and south (including one quite far south) of the three study packs. Using the minimum number of wolves in the study area maximizes the cost per wolf. Selecting the study area to include three adjacent packs rather than encompassing all known packs in California or a representative sample among the six existing packs ensured the bias that the results would maximize the cost per wolf. The researchers calculated weight loss in calves and loss of conception as being $69,627 per wolf under moderate conflict or $162,658 per wolf under severe conflict. To validly assess cost per wolf, the study must either include the whole population of California wolves or a representative sample of it.

Indeed, the study's complex environmental setting demands careful research design. The effects of wolves to cattle (and other domestic and wild species) vary widely due to contextual factors such as: breed of cattle; herd size and age structure; forage quality; the owner's handling of the cattle, including seasonal management, whether cow carcasses have been removed, and use of non-lethal deterrents; wolf pack size; the diversity of other predators; the availability of wild prey for the wolves; annual differences in weather, especially rainfall; and much more. Did the study account for this variability in their control and treatment herds and the resulting

effects on stress levels? Given these factors and other variables, the article's discussion of the study should have clarified that its results may have limited applicability in other settings.

Making matters worse, the economic calculations ignore the positive financial benefits of co-existing with wolves. It appears that the study did no cost-benefit analysis. Yet wolves provide numerous positive financial benefits. For instance, in Wisconsin, behavioral changes in deer due to wolf presence have so greatly decreased the number of deer-vehicle collisions it is saving the state $10.9 million annually and those savings are 63 times the amount of money the state is paying farmers and ranchers for verified wolf-caused losses (Raynor *et al.* 2021).[1] Surveys conducted in the northern Rockies conclude that visitors coming to the region for the express purpose of seeing wolves in Yellowstone National Park likely are directly contributing more than $82 million annually into the three-state economies of Montana, Wyoming and Idaho (Neher *et al.* 2022.).[2] Wolf presence and the species' natural hunting practices result in essential ecological benefits which ripple throughout food chains, can be expressed in economic terms and are sometimes termed ecosystem services (Ripple *et al.* 2022; Gilbert *et al.* 2022).[3] By ignoring these benefits, the article contributed to the spread of misinformation about wolves among policymakers and the public at large.

As our concerns demonstrate, the study's claims deserved wider scrutiny before being promoted in a university-based news release, where the public assumes scientifically valid results. We expected more from UC Davis.

While the University's actions already caused irreparable damage, we believe that some corrective action is possible and necessary.

We ask that UC Davis / CAES publicly clarify that its April 21 article reported on preliminary results of an ongoing study that had not been peer-reviewed and published in an academic journal. You must clarify that the economic costs of wolves reported in these preliminary results are unlikely to apply to other areas, with different predation rates or other conditions.

Going forward, we strongly recommend that when publicizing initial study findings, you take care to emphasize that the findings are preliminary, have not yet been subjected to peer-review or accepted by any academic journal for publication.

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[1] Raynor, J.L., Grainger, C.A. and D.P. Parker, 2021. Wolves make roadways safer, generating large economic returns to predator conservation. PNAS 2021 Vol 118 No. 22 e2023251118 https://www.pnas.org/doi/pdf/10.1073/pnas.2023251118

[2] Neher, C., Duffield, J. and A. Patterson. May 2022. Economic Impact of wolf-related visitation to Yellowstone National Park: An update of 2005 estimates, pp. 20-28 in *Greater Yellowstone Wildlife-Related Activity Valuation Study*. RRC Associates, Institute for Tourism and Recreation Research, University of Montana. 29 pp. https://www.wildlivelihoods.com/_files/ugd/94fbf7_e3af2ba3eff94781a02fc73fc8bbe38b.pdf

[3] Ripple, W.J., Wolf, C., Phillips, M.K., Beschta, R.L., Vucetich, J.A., Kauffman. J.B., Law, B.E., Wirsing, A.J., Lambert, J.E., Leslie, E., Vynne, C., Dinerstein, E., Noss, R., Wuerthner, G., DellaSala, D.A., Bruskotter, J.T., Nelson, M.P., Crist, E., Darimont, C., and D.M. Ashe. 2022. Rewilding the American West. *BioScience* Vol 72(10) pp. 931-935. https://tesf.org/wp-content/uploads/2022/08/Ripple-etal_2022.pdf; Gilbert, S.L., Haynes, T., Lindberg, M.S., Albert, D.M., Kissling, M., Lynch, L., and D. Person. 2022. Potential Futures for Coastal Wolves and Their Ecosystem Services in Alaska, With Implications for Management of a Social-Ecological System. *Frontiers in Ecology and Evolution*. Vol. 10, Article 809371. https://www.frontiersin.org/journals/ecology-and-evolution/articles/10.3389/fevo.2022.809371/full

U.S. universities and their scientists play an essential role in providing knowledge to inform policymakers. Unfortunately, universities increasingly are being accused of ideological bias and public trust in scientists, while going up slightly in 2024, remains lower than before the pandemic. These concerning public perceptions threaten the essential role of higher education institutions and science in democratic society. These trends should serve as clear warning to administrators to craft policies that ensure their news releases on studies fairly reflect the reach of their findings. Such a policy would have prevented the damage done by this misleading article of the costs of wolves.

Sincerely,

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