Hyperabundant Deer in the Salish Sea

Too Much of a Good Thing

Deer populations are about 10 times higher than historical levels[1]

Today the density of black-tailed deer in the Gulf and San Juan islands ranges from 0.21 to 1.6 deer/ha, with many islands exceeding 1 deer/ ha.[2-5] Multiple lines of evidence suggest historic deer densities were well below 0.08 deer/ha (1 deer per 12.5 ha), and that above this threshold negative impacts to ecosystems emerge.[3]

Tara Martin

No to Low Deer -Browse Island
Sofie McComb

Causes & Effects

Reductions in hunting, loss of predators (cougars, wolves) and supplemented food supply with land use change have allowed deer numbers to escalate to the point where they are transforming island ecosystems.[1] Deer hyperabundance negatively impacts deer health with increased risks of disease and parasites.

Ecological Impacts

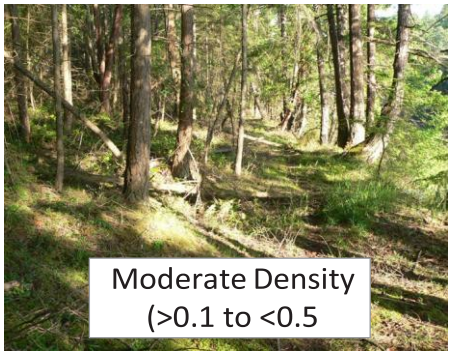
Overabundant deer simplify and degrade island ecosystems

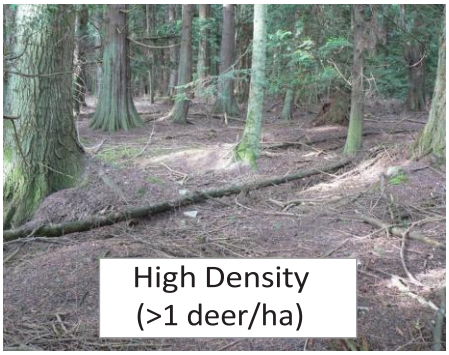
Research conducted in the Gulf Islands over the last 20 years has shown substantive ecological impacts resulting from browsing by hyperabundant deer populations. These browsing impacts lead to the loss of entire plant communities and then cascade through to declines in pollinator and songbird communities as a result of altered foraging and feeding habitat.[2-5]

High Deer-Browse Island
Tara Martin

Hyperabundant Deer Browsing leads to…

Loss of Forest Understory





Loss of shrub architecture for nesting & foraging songbirds

Loss of culturally significant species

Thriving oak-camas meadows support culturally important foods and medicines, like camas and other carbohydrate-rich root foods

Loss to floral resources for pollinators

What Can We Do?

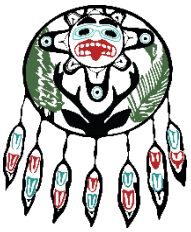
Support Indigenous-led Deer Harvesting

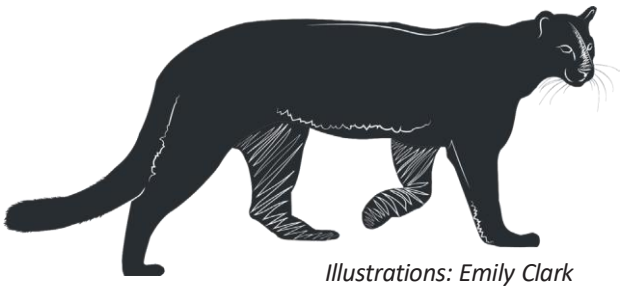
- Harvesting of black-tailed deer by Indigenous hunters in accordance with their cultural practices and safety regulations, led by guardian stewards appointed in different regions
- Hunters and stewards paid honoraria equivalent to efforts, as appropriate
- Meat processing and youth mentorship workshops held with communities

Create Opportunities for Local Hunters

- Increased licensed hunting by local hunters on the land, both Indigenous and non-Indigenous resident hunters
- Supporting hunting through increased certifications (PAL, CORE), guided hunting trips, regulation changes, and supplies
- Private landowners inviting hunting on their land through hunting agreements

Learn more about
Restoring the Balance
Q'úyél q'úwen





Illustrations: Emily Clark

Prevent Harm to Local Predators

- Improve natural predator persistence within the region by increasing social acceptance for predators that naturally come to the area
- Outreach efforts about predator presence, and provide financial supplements when livestock predation events occur

Key Readings

Alex Harris, CDL Cameras

1) McComb, S., Beckett, K., Akerman, T. J., Arcese, P., Bedford, D., Dunwiddie, P., Fisher, J. T., Golumbia, T., Gonzales, E. K., Irvine, R., James, A., Long, E. S., Martin, J.-L., Michel, S., Pelkey, W. E., Sylvester, T. A., Thomas, S. K., Thomas, N., & Martin, T. G. (2026). Decision analysis rooted in Indigenous and Western scientific knowledge identifies cost-effective strategies for managing hyperabundant deer to restore keystone places. People and Nature, 8, 4–20. https://doi.org/10.1002/pan3.70136

2) Beckett, K., Elle, E., Kremen, C., Sherwood, A., McComb, S, & Martin, T. G. (2023). Hyperabundant black-tailed deer impact endangered Garry oak ecosystem floral and bumblebee communities [Volume 38 (2022) e02237]. Global Ecology and Conservation, 43, e02425.https://doi.org/10.1016/j.gecco.2022.e02237

3) Arcese, P., Schuster, R, Campbell, L., Barber, A., Martin, T.G. (2014) Deer density and plant palatability predict shrub cover, richness, diversity and aboriginal food value in a North American archipelago. Diversity & Distributions. 12:1368-1378. https://doi.org/10.1111/ddi.12241

4) Martin, T.G., Arcese, P., Kuhnert, P.M., Gaston, A.J., Martin, J-L. (2013) Prior information reduces uncertainty about the consequences of deer overabundance on forest birds. Biological Conservation 165:10-17. https://doi.org/10.1016/j.biocon.2013.05.017

5) Martin, T. G., Arcese, P. & Scheerder, N. (2011) Browsing down our natural heritage: Deer impacts vegetation structure and songbird assemblages across an island archipelago. Biological Conservation 144:459-469. https://doi.org/10.1016/j.biocon.2010.09.033

Conservation Decisions Lab

THE UNIVERSITY OF BRITISH COLUMBIA

Faculty of Forestry & Environmental Stewardship

Galiano Conservancy ASSOCIATION

Document written by Sofie McComb & the Conservation Decisions Lab at University of British Columbia
Contact: Tara.Martin@ubc.ca; taramartin.org