

Strategy to Hasten the Recovery of Bighorn Sheep in Yakima Canyon

Test-and-cull with expanded harvest beginning in 2019

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- The Umtanum and Selah Butte bighorn herds (which we'll consider to be sufficiently connected to simply call the "Yakima Canyon" herd for purposes here) suffered an all-age die-off in winter 2009-2010, associated with introduction of *Mycoplasma ovipneumoniae* (*M. ovi*, hereafter).
- Recent experience with the "test-and-cull" strategy in captive herds in South Dakota, wild herds in South Dakota, and Washington's own Asotin Herd in the Hells Canyon metapopulation are highly suggestive that it can succeed in greatly expediting pathogen extinction more efficiently than feasible alternatives.
- However, "test-and-cull" is premised on the ability to identify most carriers within a population. This would be very difficult in a population as large as Yakima Canyon (> ~ 250 animals). To maximize the probability of successfully eradicating *M. ovi*, we propose to reduce the herd through recreational hunting contemporaneously with the test-and-cull project.
- Although we recognize that reducing the herd is unfortunate, we see little alternative: If we take no action, we expect the infection to persist, lamb recruitment to be poor, the herd to continue declining, and remaining animals to age such that most ewes will be approaching reproductive senescence.
- We propose to carry out herd reduction through permitting additional ewe hunts for the general public, sub-divided into 5 geographic areas. Ewe hunters would a) be prohibited from harvesting marked animals (because any marked animal remaining in the population would most likely not be a carrier), and b) be required to submit the entire head to WDFW within 48 hours, allowing us a chance to document whether a carrier had been removed.
- We would begin capturing as many animals using ground-based techniques as possible, testing all for presence of *M. ovi* on both nasal swabs and oral-pharyngeal wash. All animals would be color-banded; most would also be fitted with VHF transmitters (funding allowing). Animals testing positive for *M. ovi* would be removed lethally, if impractical to do so non-lethally.
- In March, 2019, we will propose to the Washington Fish and Wildlife Commission special ewe-only and ram-only permits in Yakima Canyon for 2019.
- We will use ground trapping (drop net, corral trap, clover trap, etc.) to handle large numbers of sheep economically. Some helicopter-based net gunning would likely still be needed in future years. We are currently experimenting with fermented apple pulp and remote cameras to increase efficiency of ground capture.