

ODFW responses to concerns raised by affected parties and organizations during a request to consult

On October 14, 2015, in an effort to consult with agencies, organizations, local governments, tribes, other states, and interested persons the Oregon Department of Fish and Wildlife solicited review and comments to the October 9, 2015 updated biological status review. Twenty-seven groups or individuals responded. Responses to concerns brought up most often were grouped together and ODFW responses follow.

Some commenter's expressed concern that Idaho wolf numbers could potentially be reduced to 150 and negatively impact genetic interchange with the larger Idaho population

- ODFW contacted Idaho wolf manager – no management direction for reducing to 150 wolves
- ODFW makes no quantitative assumption of Idaho's future numbers
- Idaho manages currently under their 2002 Wolf plan (which includes no population objectives). Though new planning efforts are forthcoming, ID provided several examples of support from their Governor and Commission for maintaining a minimum of 518 wolves (2005 Pop)
- Preliminary indications for 2015 – expect a similar number of wolf packs as previous year
- Idaho wolf managers do not believe a reduction to 150 wolves is foreseeable
- Wolves were documented to disperse from Idaho into Oregon in 1999 (156 ID wolves), 2000 (196 ID wolves), and 2007 (764 ID wolves)

Inadequate address of small population/genetic concerns

- Nearly all commenter's genetic concerns related to the combined effects of small and isolated wolf populations. This is not realistically appropriate for Oregon as we have specific data showing genetic interchange (i.e., Oregon wolves are not isolated)
- We included known interchange of wolves, genetic testing, examined quasi-extinction as a conservative measure
- Genetic related concerns relied on theoretical treatment of small populations and were not supported by data relevant to Oregon wolves
- Current population fitness indicators suggest that genetic factors are not limiting wolf population growth -- negative effects of a genetically depressed population would be expected to manifest when population is low and over time. To assume that genetic bottlenecking will occur later, and at a higher population, is speculative and not supported by science – larger populations avoid inbreeding effects even better than smaller ones

Several commenter's urged that ODFW should use a "precautionary approach". We agree, and did so in our analysis in the following ways

- Starting population is a minimum count. Used observed or otherwise documented count data, pup counts, minus uncollared lone or transient non-territorial individuals. The combination of which mandatorily underestimates population
- ODFW did not just analyze extinction probabilities, but rather conservation thresholds (e.g., quasi-extinction)
- Use of uniform probability distributions to draw vital rates
- Survival rates used in model are lower than currently observed in Oregon before accounting for human-caused mortality

- Had all wolves older than 10 years old die in the model
- Pup survival during the first 6 months is underestimated because it is based on count data
- Density dependent threshold (i.e., maximum population size) is lower than predicted population size based on prey availability
- Density dependent threshold is a lower density than where documented reductions in survival occur in other wolf populations
- Literature suggests survival of dispersing wolves is 6% lower than residents. We increased this value to 10% in our model
- Wolves that left Oregon were not allowed to return to Oregon
- Emigration rate treated as a percentage of total available dispersers. Immigration was a constant number. As wolf population increases, a larger number of individuals leave the state than can arrive
- Mean rates of human-caused mortality were greater than have been observed in Oregon.
- By using an individual based model for which we had adequate data, we removed the possibility of higher population numbers based on unfounded speculation and assumptions
- Our model produces a growth rate that is substantially lower than what we currently observe, suggesting the conservative nature of our model. By being conservative in the short-term, when all evidence suggests our population will grow much faster and we have more than likely overstated the risk of population failure

Several commenter’s questioned why ODFW did not consider downlisting to threatened status

- Downlisting is an option to the Commission
- Didn’t initially evaluate because of expectation set in the Wolf Plan
- Requires a determination (Criterion 1) that “the species is not likely to become endangered in the foreseeable future”
- Our analysis (especially population trend) shows that criteria for both delisting & downlisting are met
- Little difference or effect of downlisting, the request appears to be about social acceptance

Many commenter’s are concerned of ODFW’s analysis of criterion 1 (i.e., significant portion of range) in that wolves only occupy 12% of the potential range

- Data shows that we don’t have a disjunct population – it is a highly dispersed but connected population
- The Wolf Plan identified 2 important wolf management zones and wolves are represented as breeding populations in both
- Wolves use a large portion of Oregon – some as occupied homerange areas, and some as passage or dispersal corridors
- Assessing areas of use or occurrence is a matter of scale (e.g., unoccupied portions of homeranges, or dispersal/passage corridors)
- Other species (e.g., Columbian white-tailed deer) were delisted by Commission when occupying a much lower proportion (< .002%) of historic range in Oregon

Several commenter’s expressed concerns of ODFW’s application of Minimum Viable Population (MVP) as related to assessing “recovery” of wolves in Oregon

- ODFW did not use or analyze Oregon’s wolf population from the standpoint of MVP

- Evaluation of the five delisting criteria and resulting recommendation to delist is not based on maintaining a MVP
- Evaluation is based on conservation (per rule) and does not contain any numerical assessment for “recovery”
- There are no population targets or caps on wolf populations. Even the conservation population objective in Plan is not a target population.

Several commenter’s expressed concerns that ODFW did not adequately account for the potential of increasing human mortality following delisting (e.g., after delisting, potential harvest will affect reproductive potential, as will setting the regulatory environment to increase take).

- Unclear if this concern is referring to a disproportionate increase in human-caused mortality
- Human caused mortality is specifically addressed in our analysis and is recognized as a very important component in wolf management
- ODFW model addresses this by using a range of human-caused mortality
- Wolf protections remain in place following delisting
- Any authorized mortality different than now (per wolf plan) could occur in Phase 3 which means a significantly higher population. Larger populations sustain higher levels of mortality

One commenter expressed concern that the model fails to consider climate change

- We are not aware of any scientific information which provides definitive information regarding the impacts, if any, of global warming on wolves in temperate regions

Many commenter’s expressed concern regarding the uncertainty of the future of the Wolf Plan as related to Criterion 5 (adequate regulatory mechanisms to protect the species) by noting that the Plan is “up for revision”, or “set to expire”.

- The Wolf Plan states: *“Every five years the Commission will undertake an effort to formally assess the effectiveness of the plan’s implementation” (Page 83)*. Thus, the plan is not set to “expire”, nor is it up for “revision”, though evaluation may result in the commission amending the Plan
- OAR Criterion 5 specifically requires any analysis to be based on *“existing state or federal programs or regulations...to protect the species”*. Therefore, any analysis which involves the Wolf Plan can only consider the current plan

ODFW did not consider the scientific evidence when considering the effects of delisting on human tolerance and illegal take of wolves.

- ODFW clearly has stated that human-caused mortality is important to wolves
- The concerns appear to be based on the premise that delisting will result in increased legal and illegal take which will negatively affect population viability (i.e., concern is related to future management decisions and allowances and not necessarily ESA)
- Viability concerns overall are focused on a low wolf population, but increased take is only allowed by existing regulatory mechanisms in the future when the population will be higher (i.e., Phase 3)
- Nearly all information provided ODFW related to human tolerance was premised on the effects of delisting and liberalizing lethal control. As related to Criterion 5 the existing Wolf Plan does not liberalize lethal control until wolf populations are higher
- Plan maintains current protections in portion of Oregon with lower populations (i.e. Phase 1 area)

Many commenters expressed concern that wolves are not being considered the same as other wildlife (i.e., "no other species would be delisted at such a low number")

- Delisting is not based solely on population, but rather on the five ESA criteria
- We only evaluated delisting in respect to the five delisting criteria, per rule. Because of that we would expect the population of each species at the time of delisting to be different
- All species are unique in how the ESA criteria apply

One commenter questioned if we have considered using or analyzing Washington's delisting population objectives instead of Oregon's 4 BP's/3 years.

- We only worked from the Plan which is in place. Consideration of future objectives and numbers will likely be part of any future plan evaluation
- Objectives only drive when the wolf population is considered for delisting

Some commenter's expressed concerns on ODFW's reliance on federal protections in the western portion of the state when ODFW is supportive of federal delisting in Oregon

- Though the rule requires us to consider federal protections and programs, our analysis depends mostly on Oregon-specific analysis

Some questions/concerns were expressed regarding ODFW's apparent arbitrary changing of the population of wolves (77 – 81 – 85) and not accounting for known mortalities

- 81 wolves is the 2014 known population. This number was retroactively changed from 77 to account for data which clearly showed 4 additional wolves in the South Snake River pack
- We accounted for 85 individuals in July and used that number because it was what we knew at the time and those adults would likely have been present in April (i.e., start of the wolf's biological year). We have not updated the numbers since to account for known mortalities
- Model was rerun in Sept to account for 4 mortalities from the starting population and results did not significantly change. Would not be appropriate to change analysis and use mid-year numbers for only certain parameters

Some commenter's expressed concern at ODFW's "eagerness", "rush", or "predetermined intent" to delist

- Following the agreed upon Plan intention and timing/process
- ODFW received Commission guidance in October 2014 regarding forthcoming entry in to Phase II in eastern Oregon
- Conservation population was determined to have been met in January, 2015
- Initial draft review of biological status provided to Commission in April 2015 – the review contained only an analysis of biological data and the five delisting criteria
- Second and updated draft review of biological status review provided the Commission in October 2015 – results of the review continue to indicate that the five criteria are met

Some expressed concern that ODFW's use of wolf population data in adjacent states to support a delisting recommendation is incorrect

- ODFW did not rely on adjacent populations to meet delisting criteria. However, basic biological processes (e.g., dispersal) occur, and will continue to occur, between wolves from adjacent states and this cannot be realistically ignored

Some commenters questioned if the state considered financial consequences of delisting of wolves?

- No. Oregon ESA only allows the consideration of biological factors

How might relisting the species be impacted by delisting? If wolves again decline does this analysis have bearing on the relisting process?

- No. The listing (or relisting) relisting process would consider the same five (equally important) criteria so there is no precedent or connection between delisting numbers now and relisting numbers in the future if necessary

PVA Specific Concerns and ODFW Responses

There was some concern about our use of a uniform distribution to draw vital rates from. Comments indicated other distributions are more statistically appropriate (e.g., a beta-binomial distribution for survival rates).

- We agree there are alternative statistical distributions to draw from when randomly drawing vital rates. We considered additional distributions when developing the model
- However, our approach of using a uniform distribution represents a conservative approach to modeling
- Other distributions will have a central mean vital rate that is most commonly chosen through random sampling. This reduces overall variation in randomly drawn vital rates. Using a uniform distribution, we increase variation (i.e., all outcomes are equally likely) in randomly drawn vital rates
- Increased variation in vital rates will cause a population to perform worse on average – this caused our approach to be conservative
- Modeling with reduced variation in vital rates would cause a more optimistic view of population viability. We used a conservative approach to follow the precautionary principle

It was also noted several times that our PVA should have incorporated genetic effects

- “Although the synergism between demographic problems and inbreeding depression is real and important, in general we do not advocate trying to put genetics into a PVA, simply because of the lack of data needed to do so. As before, we instead suggest setting a high enough quasi-extinction threshold to minimize the chances that genetic problems would dramatically change the PVA’s conclusions”. Morris and Doak (2002); p. 42
- Morris and Doak (2002) suggest using a quasi-extinction threshold of 50-100 individuals in all PVA’s so that the complex effects of demographic stochasticity and inbreeding depression do not need to be explicitly modeled
- In our model we used a threshold of 4 breeding pairs as one metric of population failure. This represents a quasi-extinction threshold
- When 4 breeding pairs were first documented in Oregon there was a minimum population of 49 wolves, which is effectively within the range of quasi-extinction threshold suggested
- Our use of a 4 breeding pairs as a quasi-extinction threshold negates the need to explicitly model genetic effects in our PVA
- Morris, W. F., and D. F. Doak. 2002. Quantitative conservation biology: theory and practice of population viability analysis. Sinauer Associates

We received several comments suggesting we should have conducted a spatially explicit population viability analysis.

- When developing our model we relied on available data to determine which type of model to run. Spatial models require increased amounts of data to build the model. For example, to truly model spatial dynamics, we would need to know the effects of habitat on survival, dispersal, reproduction and other vital rates. We simply do not have this information at this time
- Without having empirical data, we would have to build a model that relies on unfounded speculation and assumptions
- Consequently, we again followed the advice of Morris and Doak (2002):
 - "...the benefits of using complex models to perform population viability analyses will often be illusory. That is, although more complex models may promise to yield more accurate estimates of population viability because they include more biological detail, this gain in accuracy will be undermined if the use of a more complex model requires us to guess at critical components about which we have no data. Instead, our philosophy is that the choice of models and methods in PVA should be determined primarily by the type and quantity of data that are available and not by the desire to include all interesting and possibly important processes. It is better to use a simple approach (keeping the simplifications in mind) than to construct a complex house of cards that relies on numbers with no empirical justification". P. 13
- Morris, W. F., and D. F. Doak. 2002. Quantitative conservation biology: theory and practice of population viability analysis. Sinauer Associates

Several commenter's suggested our estimates of human-caused mortality were too low and will increase once delisting occurs.

- Data from collared wolves is the only realistic option to determine human-caused mortality rates
- Our mean estimates of human-caused mortality used in the model are currently higher than observed for collared wolves in Oregon
- We based our assessments on existing regulatory policies and the Oregon Wolf Plan. Based on our assessment of these policies, we contend there are adequate mechanisms to minimize human-caused mortality in the future to levels similar to those we used in our model
- Additionally, we considered additional situations where human-caused mortality rates were higher. As expected and reported, population viability declined with increasing human-caused mortality. However, we again note, that we contend existing regulations and policy are sufficient to maintain human-caused mortality rates to levels that will not threaten wolf populations in the future

General disagreement on parameter values or scenarios used in the model.

- In almost all cases, we rely on data observed in Oregon or from published studies to parameterize our model
- Each data source used in our model is clearly documented and appropriate literature cited to support this value or assumption
- When we do not use a published estimate (e.g., interval between catastrophes), we clearly state this fact and list the values we use. Additionally, we often consider multiple scenarios where these values might change and describe how those changes would affect our outcome
- We expected there to be some disagreement about parameters used in the model. However, we clearly state what parameter values we used and these can be evaluated by the reader. In most cases, we indicate how variation in this parameter would influence population growth rates and

viability. The main results we focus on are what we contend is the best parameterization of the model

- We did not consider alternative scenarios in the future because we relied on existing regulations, policies, and plans to guide our future predictions. We could have modeled any number of future scenarios, but this would rely on undo speculation regarding future policy and management actions that currently do not exist