

Agenda Item 7

Wolf Update



Washington Department of
FISH and WILDLIFE

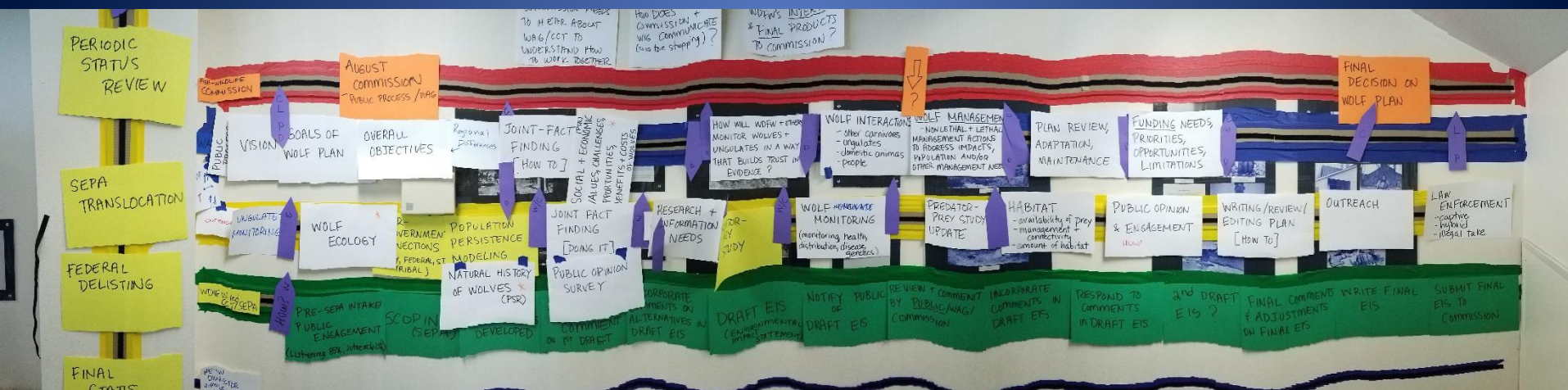
Donny Martorello, Wolf Policy Lead

Overview

- Current activities and updates
- Planning process for considering wolf translocation
- Roles and responsibilities among WDFW, the Fish and Wildlife Commission, and the Wolf Advisory Group on the process and development of a post-delisting Wolf Conservation and Management Plan
- Science Presentation

July 10-11 WAG Meeting

Draft path for development of post-delisting wolf conservation and management plan



SEPA Processes

PERIODIC
STATUS
REVIEW

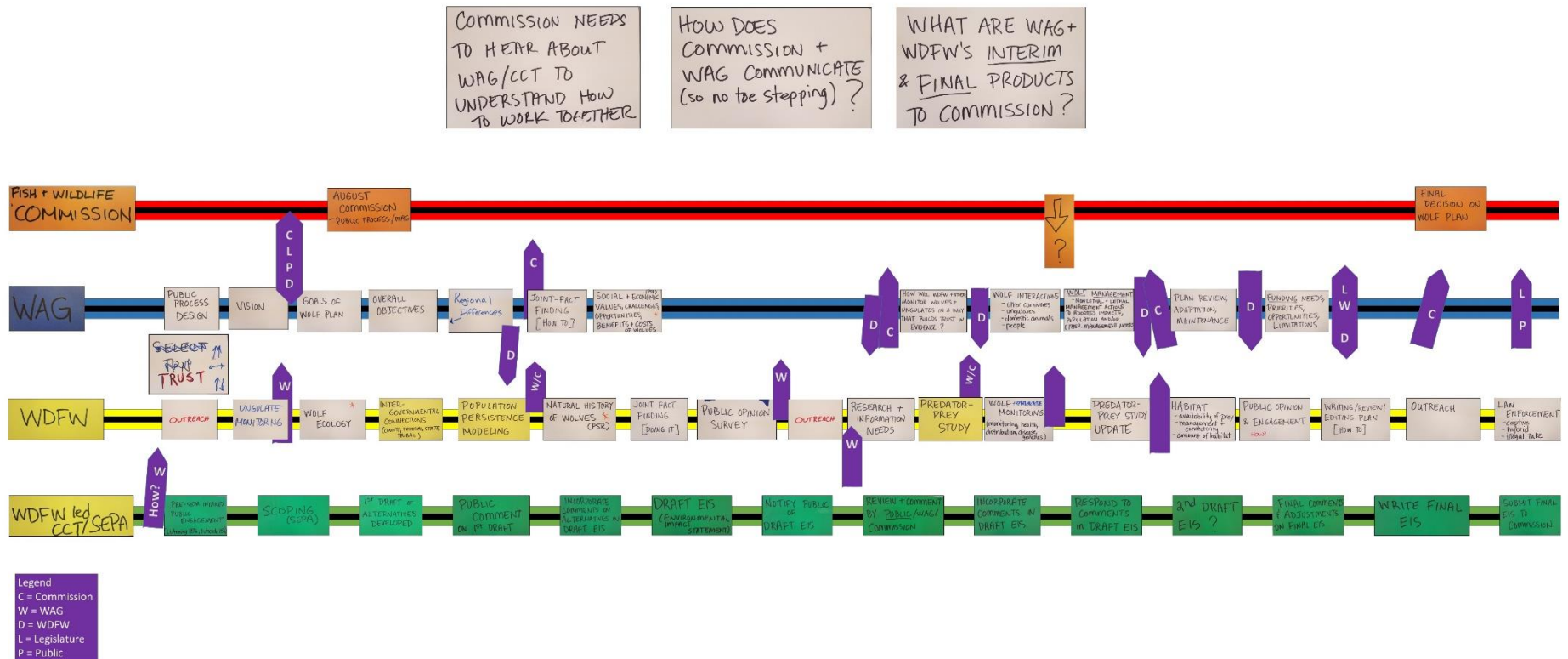
SEPA
TRANSLOCATION

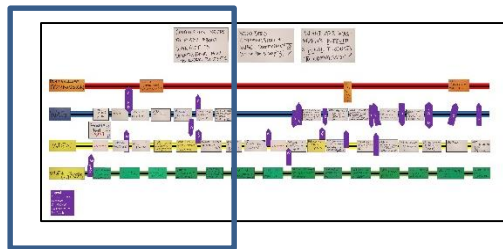
FEDERAL
DELISTING

FINAL
STATUS
REVIEW

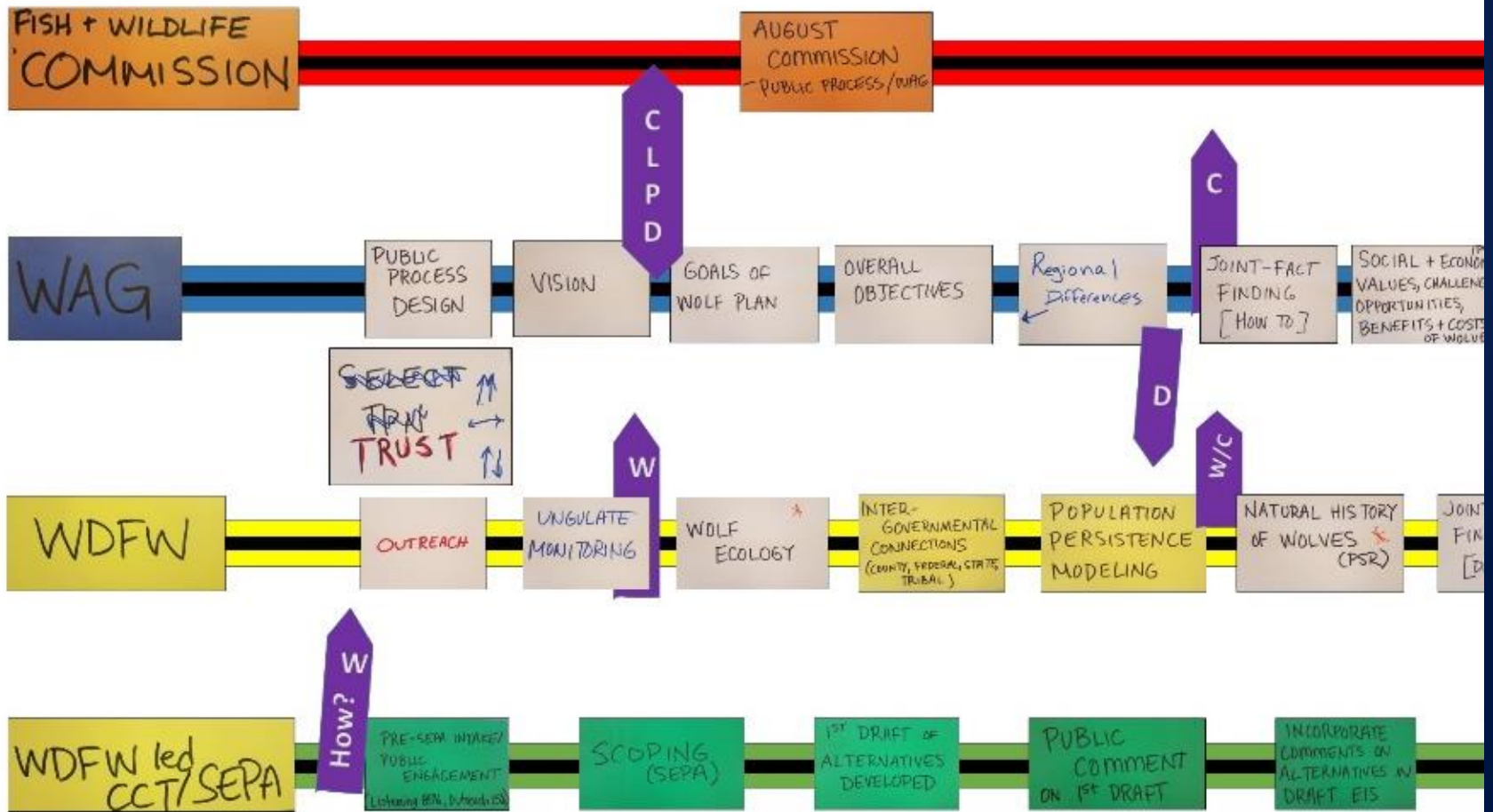
July 10-11 WAG Meeting

Draft path for development of post-delisting wolf conservation and management plan





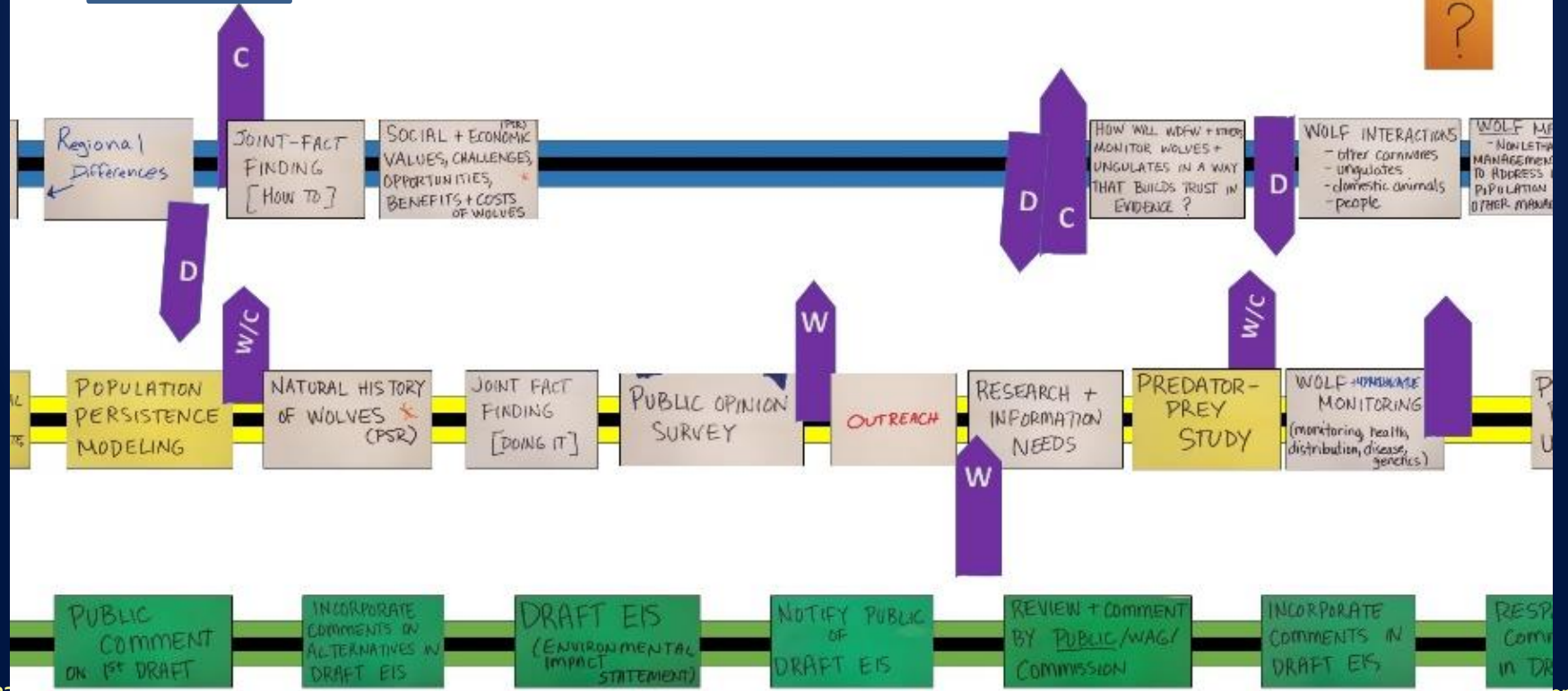
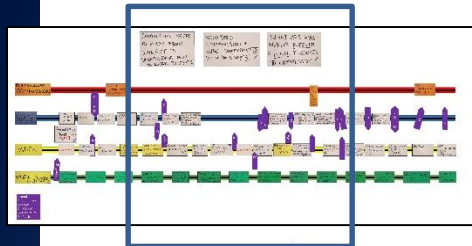
COMMISSION NEEDS TO HEAR ABOUT WAG/CCT TO UNDERSTAND HOW TO WORK TOGETHER



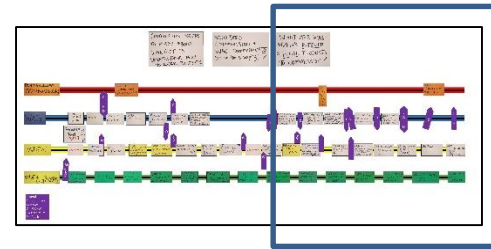
COMMISSION NEEDS TO HEAR ABOUT WAG/CCT TO UNDERSTAND HOW TO WORK TOGETHER

HOW DOES COMMISSION + WAG COMMUNICATE (so no toe stepping)?

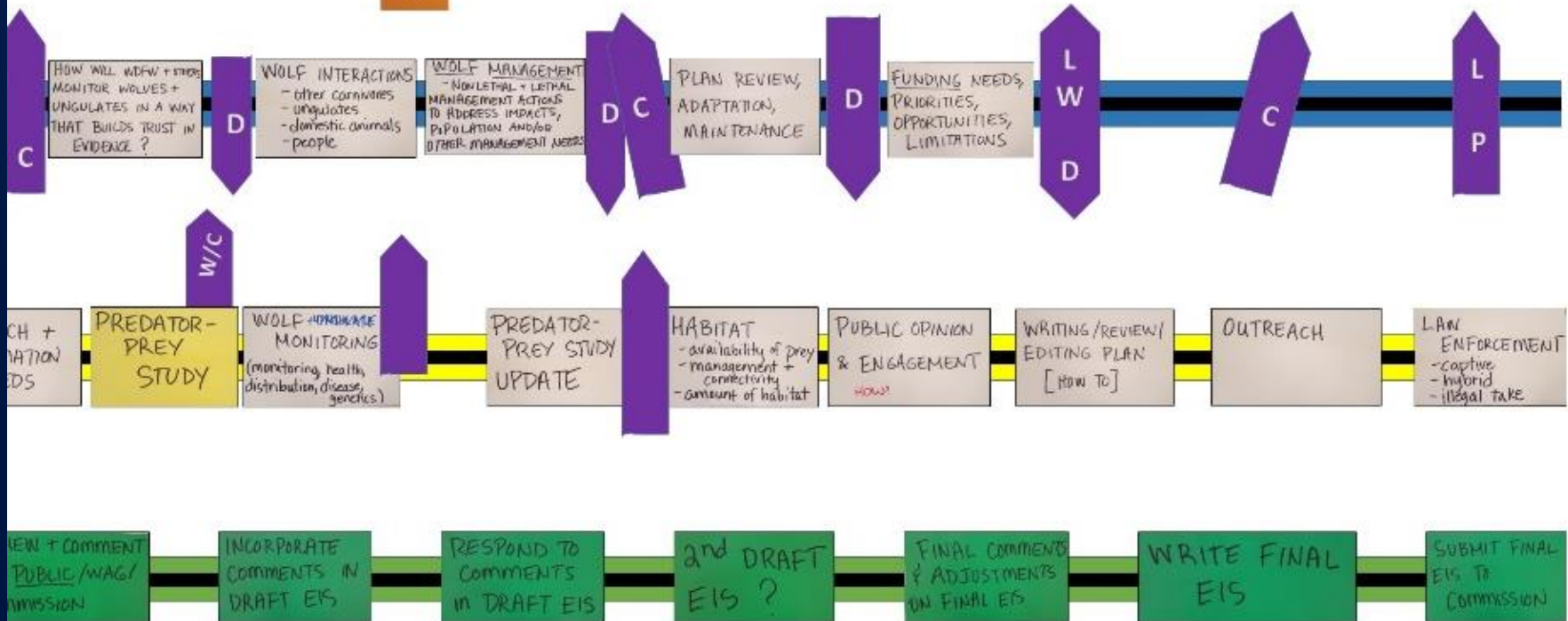
WHAT ARE WAG + WDFW'S INTERIM & FINAL PRODUCTS TO COMMISSION?



WHAT ARE WAG+ WDFW'S INTERIM & FINAL PRODUCTS TO COMMISSION?



FINAL
DECISION ON
WOLF PLAN



March 2018 Wolf Advisory Group Literature Review



Washington Department of
FISH and WILDLIFE

Scott McCorquodale, R3 Wildlife Program Manager
Ben Maletzke, Statewide Wolf Specialist
Candace Bennett, Wildlife Conflict Specialist
Wildlife Program

Overview

- WAG – Introduction to the Literature
 - Preparation for WAG meeting
 - WAG meeting recap
 - Introduction
- Concepts from WAG meeting
 - Carrying capacity
 - Density dependence
 - Additive versus compensatory mortality

Overview

- Materials provided
 - March 2018 WAG meeting minutes
 - Literature reviewed spreadsheet

Wolf Advisory Group Meeting Notes

March 22, 2018

Hal Homes Community Center in Ellensburg

WAG Members: Paula Swedeen, Dave Duncan, Diane Gallegos, Tim Coleman, Dan Paul, Molly Linville, Tom Davis, Nick Martinez, Don Dashiell, Andy Hover, Jess Kayser, Jessica Kelly, Ralph Kratz, Samee Charriere

WDFW Staff: Donny Martorello, Candace Bennett, Joey McCanna, Steve Pozzanghera, Trent Roussin, Bruce Botka, Tara Meyer, Scott McCorquodale, Todd Jacobson, Dan Brinson, Stephanie Simek, Robert Waddell, Annemarie Prince, Ben Maletzke, Dan Christensen, Joe Bridges, Ellen Heilhecker, Steve Wetzel, Matthew Trenda

Third Party Neutral: Francine Madden

Welcome and check in

The third party neutral welcomed everyone to the meeting and everyone checked in around the room. The third party neutral went over the agenda for the day.

Sharing information

A lot of overlap in information needs from the different groups from yesterday (including the public). The third party neutral went over some of the similarities from the lists created during the previous day's discussions. These themes will be fleshed out more in the future.

Eight major themes

- Process
- Plan
- Funding
- Impacts: Economic and other (plus/minus)
- Outreach
- Public Perceptions
- Science / data out there now
- Washington science

The department discussed how they implement science into decision-making. Research in general is often about exploring relationships between things. The goal is to find the cause and

Preparation for the WAG Meeting

Introduction to the Literature

- Questions
 - WAG members
 - WDFW staff feedback
- Consolidated to four topics
 - Wolf population dynamics
 - Predator-prey dynamics
 - Ungulate populations
 - Conservation Conflict Transformation

Authors	Title	Year	Journal	Volume	Issue	pages	article type	research location	subject	notes
U. Hunsicker and EA McDonald	Conflict in invasive species management	2013	Front Ecol Environ	12	3	113-141	review	worldwide	CCT	Introduction of a different conflict curve. A type of CCT approach to addressing conflict
de Cooing, C	From pre-empting to sustaining peace: implications of complexity for resilience and sustainability	2016	Resilience: International Politics, Practices, and Discourses			2189-2293		worldwide	CCT	application of complexity theory on peacebuilding field. Describes complexity theory
deBruinwender, T. et al	Combining internal and external motivations in multi-scale governance arrangements for biodiversity and ecosystem services	2016	Environmental Science and Policy	58		1-10	survey	EU	CCT	Most of the article building successful process includes inclusive decision making, core staff of the system, to support process to encourage autonomous competencies
Dickson, AJ	Complexities of conflict: the importance of considering social factors for effectively resolving human-wildlife conflict	2016	Animal Conservation	13		418-466	review	worldwide	CCT	Use of a multi-disciplinary participatory approach to address socio-economic, Ecological, and cultural conditions surrounding conflicts for long term success of decisions.
J. C. Sandstrom, and G. Bostedt	The problem of spatial scale when studying the human dimensions of a natural resource conflict: humans and wolves in Sweden	2006	The International Journal of Biodiversity Science and Management	2	4	343-349	case study	Sweden	CCT	Looked at how different survey methods on people opinions could be missing a key component of feedback. Coagulate different survey methods of opinions.
Amin, D. Medin, and K. Shikata	Shared bonds on resilient resolution of violent political conflict	2007	PNAS	104	18	7327-7340	primary	middle east	CCT	When people cooperate in activity as a shared value, cost-benefit bargaining can backfire. Must look at identity conflicts to have a successful process.
Hill, CM	Perspectives of "conflict" at the wildlife-agriculture boundary: 10 years on	2011	Human Dimensions of Wildlife	20	4	296-301		worldwide	CCT	Labels on the situation can cause more issues and mask important areas that need to be addressed (eg, not calling BPOC and human-wildlife relationships are not just physical, they are also influenced by spiritual or religious)
Madden, F	Creating Coexistence between humans and wildlife: global perspectives on local efforts to address human-wildlife conflict	2014	Human Dimensions of Wildlife	9		247-257	workshop summary	worldwide	CCT	Summary of an ECN workshop. Defined lessons learned and next steps to expand CCT
Allen, F and B. McQuinn	Conservation blind spot: The case for conflict transformation in wildlife conservation	2014	Biological Conservation	178		97-106	case study	worldwide	CCT	The CCT
Jac, V, Staley, AJ, Bennett, C, Inman, G, AP, Schreier, and J Van Doran	Prohibition eras in wolf management led to conflict, illegal kills, and feralized wolf hunt	2015	Conservation Letters	8	5	351-360	case study	Wisconsin	CCT	Public support of lethal removal of wolves is directly related to the perceived wolf population numbers and risk
A. W. Bussard, A. Dickman, G. Hodson, J. W. Ott, M. Kibadi, C. Mwangi, V. Belderb, C. Zuber, and A. Zimmermann	An interdisciplinary review of current and future approaches to improving human-wildlife relations	2016	Conservation Biology	31	3	513-523	review	worldwide	CCT	Moving forward, research must be interdisciplinary to collaborate on planning, method selection, development, analysis along with use of human-wildlife geographers to look at how they interact over time, and use of mapping techniques for improved human-wildlife relations.
Essen, E and HP Hansson	How stakeholder co-management approaches conservation conflicts: revisiting sustainability problems of Swedish wolf conservation	2015	Conservation and Society	13	4	332-344	case study	Sweden	CCT	Explored use of consensus in wildlife conflict
Wool, HV, Kaitera, MN, Peterson, and TR Peterson	The radicalization of rural resistance: how hunting cosmopolitanism in the Nordic countries contribute to illegal hunting	2014	Journal of Rural Studies			60-11	case study	Nordic	CCT	explored why hunters in Nordic countries become wolf poachers. If you do not challenge the dominant ethics (environmentalism) then illegal hunting (up to average killing) will happen.
Vilson, EJ, Bradley, JA, Gode, RM, Berman, J, A. Nelson, M. Kim, and TD Swisher	Wolf Livestock Conflict and the Effects of Management	2018	Journal of Wildlife Management				primary	Montana	Livestock	Impacts of Hunting (and various other things) on livestock conflict
Cooper, B. T. Alderton, and R. B. Waagen	Forecasting cattle depression risk by reclassifying prey wolves	2018	Wildlife Biology	2018	1	1-13	research	ED, MT, WA	Livestock	
W. M. Getz, W. M. Getz, W. M. Getz	The dynamics of conservation outcomes for predators								Livestock	

Preparation for WAG Meeting

Introduction to the Literature

- Acknowledgments
 - A broad array of relevant resources available
 - First attempt to inform, not path forward
 - Science is often used selectively to support differing perspectives
 - Differences between popular articles/opinions and peer-reviewed literature
 - Few studies examine management actions

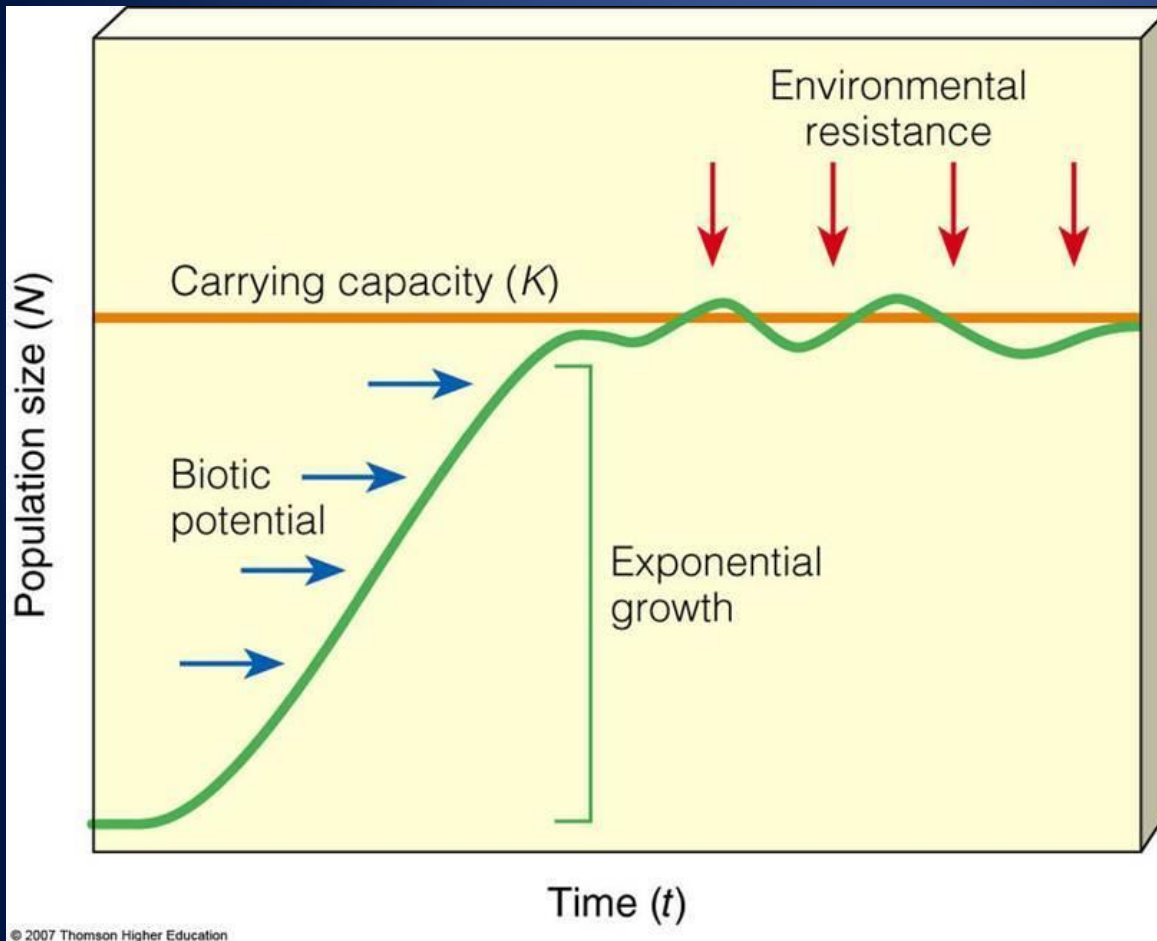
WAG – Introduction to the Literature

March 2018 Meeting Recap



Concepts from WAG Meeting

Carrying Capacity



© 2007 Thomson Higher Education

Concepts from WAG Meeting

Density Dependence

- A factor that acts in proportion to the density of animals.
- Density Dependence influences the population as it reaches Carrying Capacity (K).
 - Dependent factors
 - Availability of Forage, Predation, Intraspecific competition, Territoriality, Disease, Emigration
 - Independent factors
 - Severe Winter/Deep Snow/Ice on Snow, Extended Cold, Drought, Human Impacts (-)
 - Mild Winter, Rains, Habitat Enhancements, etc. (+)



Concepts from WAG Meeting

Density Dependence

- Populations below Carrying Capacity (K):
 - Individuals in good body condition
 - Environmental stresses may have less impacts
- Populations near Carrying Capacity (K):
 - Larger proportion of individuals may be in poor body condition
 - More susceptible to limiting factors
 - severe winter, drought, disease, predation, catastrophic events, etc.



Concepts from WAG Meeting

Additive vs. Compensatory Mortality

- **Additive Mortality** – When an animal dies from cause A, had that not happened, they would very likely persisted in the population and contributed to population growth.
- **Compensatory Mortality** – One kind of mortality largely replaces another kind of mortality.



Example: N Yellowstone Elk Numbers

Wolves Reintroduced

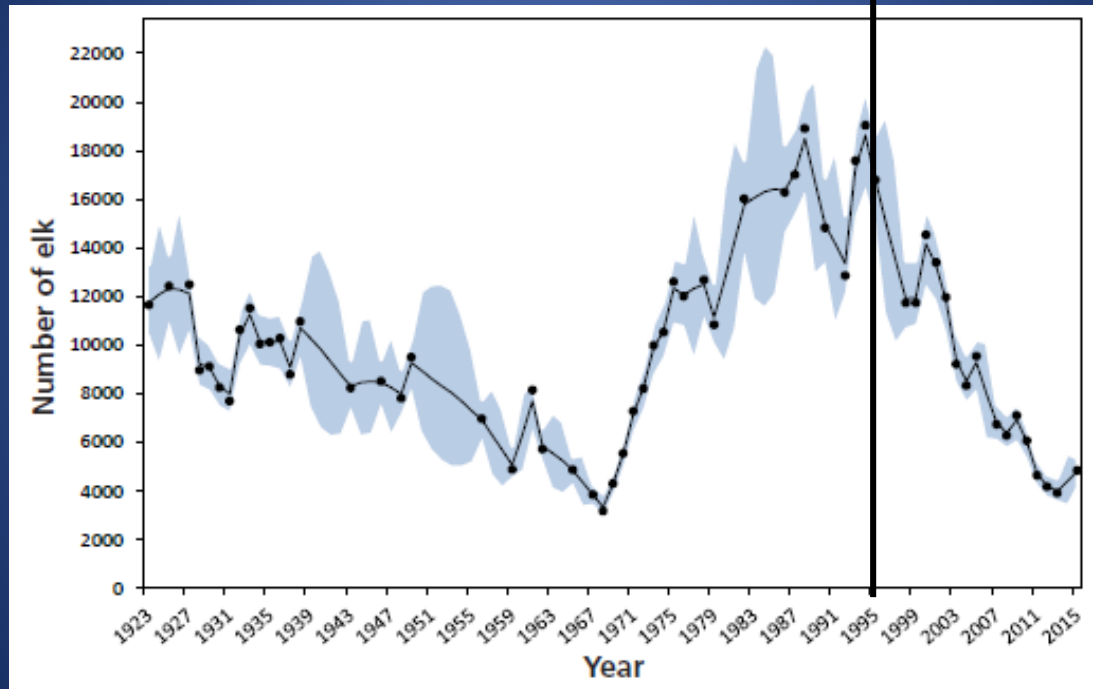


Figure 1. Counts (circles) and fitted trend line for abundance of the northern Yellowstone elk herd, 1923-2015. Shaded area indicates uncertainty about the trend. Data are from the Northern Yellowstone Cooperative Wildlife Working Group.

MacNulty et al. 2016

Example: N Yellowstone Elk Hunter Harvest

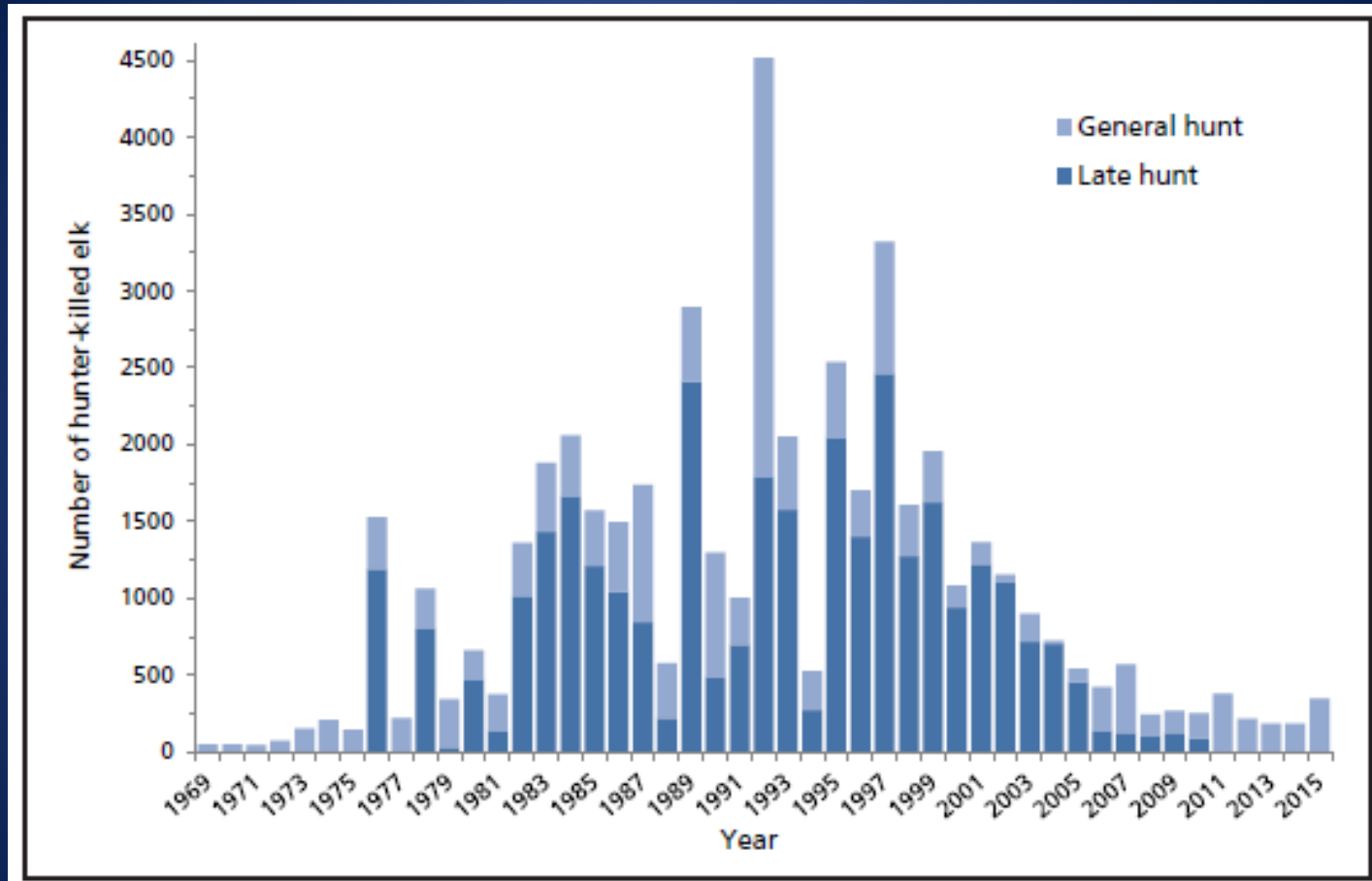


Figure 4. Annual number of northern Yellowstone male and female elk harvested by hunters in Montana Hunting District 313 (north of the park boundary) during the natural regulation era, 1969-2015. The final late season hunt occurred during the winter 2009-2010. Data are from Lemke et al. (1998), Vucetich et al. (2005), and Loveless (2015).

MacNulty et al. 2016

Summary

- The systems have varying levels of complexity
- This complexity strongly affects case study outcomes
- Science often evolves
- Wildlife management includes people and wildlife

Questions?

