# Agenda Item # 27

# **Wolf Conservation and Management 2017 Annual Wolf Report**

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*Washington Department of*
**FISH and WILDLIFE**

# Summary

- Wolf Plan Recovery Objectives

- Wolf Recolonization in Washington

- Listing Status

- Population Monitoring

- Population Trends

- Livestock – Wolf Interactions

- Research Updates

# Wolf Plan Objectives

- Restore self-sustaining wolf populations

- Maintain healthy ungulate populations

- Manage wolf – livestock conflicts

- Develop public understanding and promote coexistence

# Wolf Dispersal
## Northern Rocky Mtn 1995-2008

- 297 known dispersal events
  - M = 169
  - F = 128

- Mean age at dispersal
  - M = 32.8 months
  - F = 32.1 months

- Mean dispersal distance:
  - M = 98.1 km (61 mi)
  - F = 87.7 km (54 mi)

- Dispersals increase in fall and peak in January
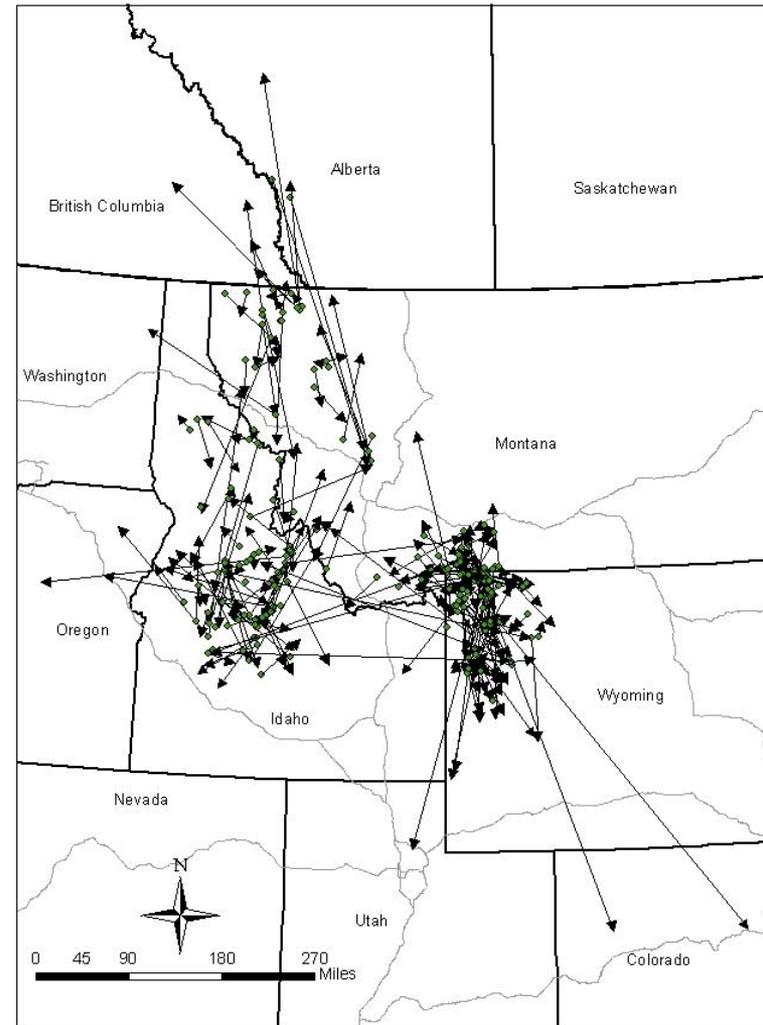


Jimenez et al. 2017

# Wolves are returning to Washington

Dispersers from adjacent states and provinces, as well as resident WA packs, are naturally recolonizing the state
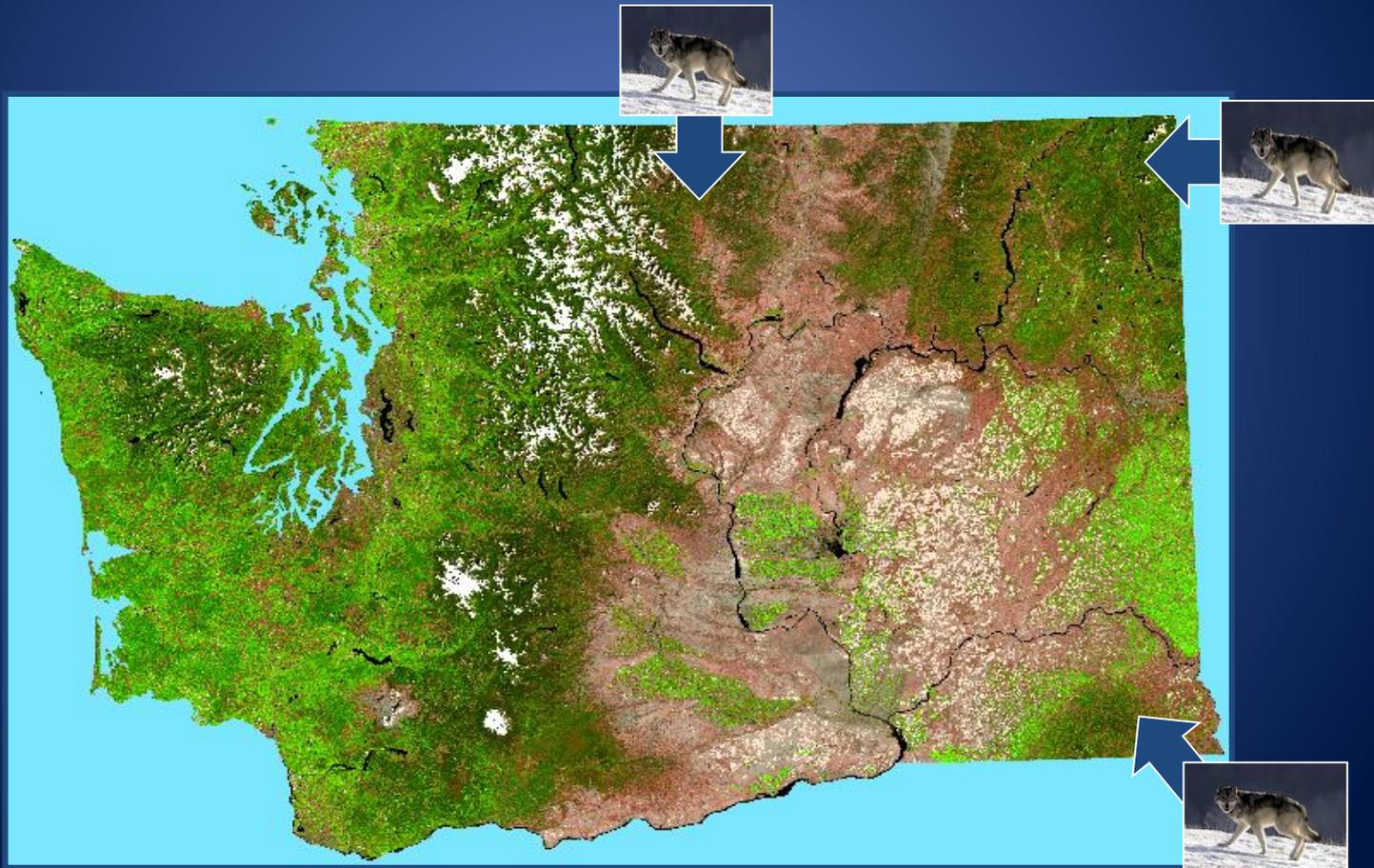
# Listing Status
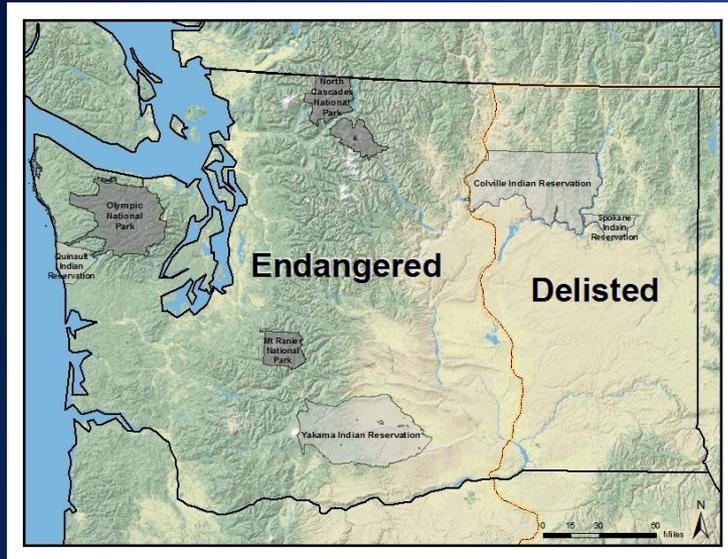


## Federal Status:

- Eastern 1/3 Washington
  - Included in NRM DPS: 2007
  - Delisted in 2011

- No federal wolf recovery requirements
  - WA status not figured into NRM delisting

## State Status:

- Endangered species statewide

- Wolf Conservation and Management Plan: 2011
  - 3 recovery areas
  - Delisting requirements
- Federal, state, tribal management

# Definitions





- Pack
  - Two or more wolves traveling together in a defined territory

- Successful breeding pair
  - Male and female raising two or more pups until Dec 31

# Reports from the Public

- Online
- Pamphlets
- Outreach materials
- 1-877-933-9847

# How do we keep track of wolves?



- First, we have to find them
  - Sighting reports
  - Depredations

- Follow-up surveys
  - Cameras
  - Tracks and other sign
  - Howling

- Attempt captures
  - Aerial captures - winter
    - Radio collared packs
  - Trapping Captures - summer

# Wolf Population Status

| Recovery Region | Successful Breeding Pair | Minimum Count | Known Mortality | Known Dispersal | Livestock Depredations |
|---|---|---|---|---|---|
| Eastern | 13 | 106 | 13 | 8 | 8 |
| N. Cascades | 1 | 16 | 1 | 1 | 0 |
| S. Cascades/Coastal | 0 | 0 | 0 | 0 | 0 |
| Total | 14 | 122 | 14 | 9 | 8 |

# Washington's Known Wolf Packs
## As of December 31, 2017
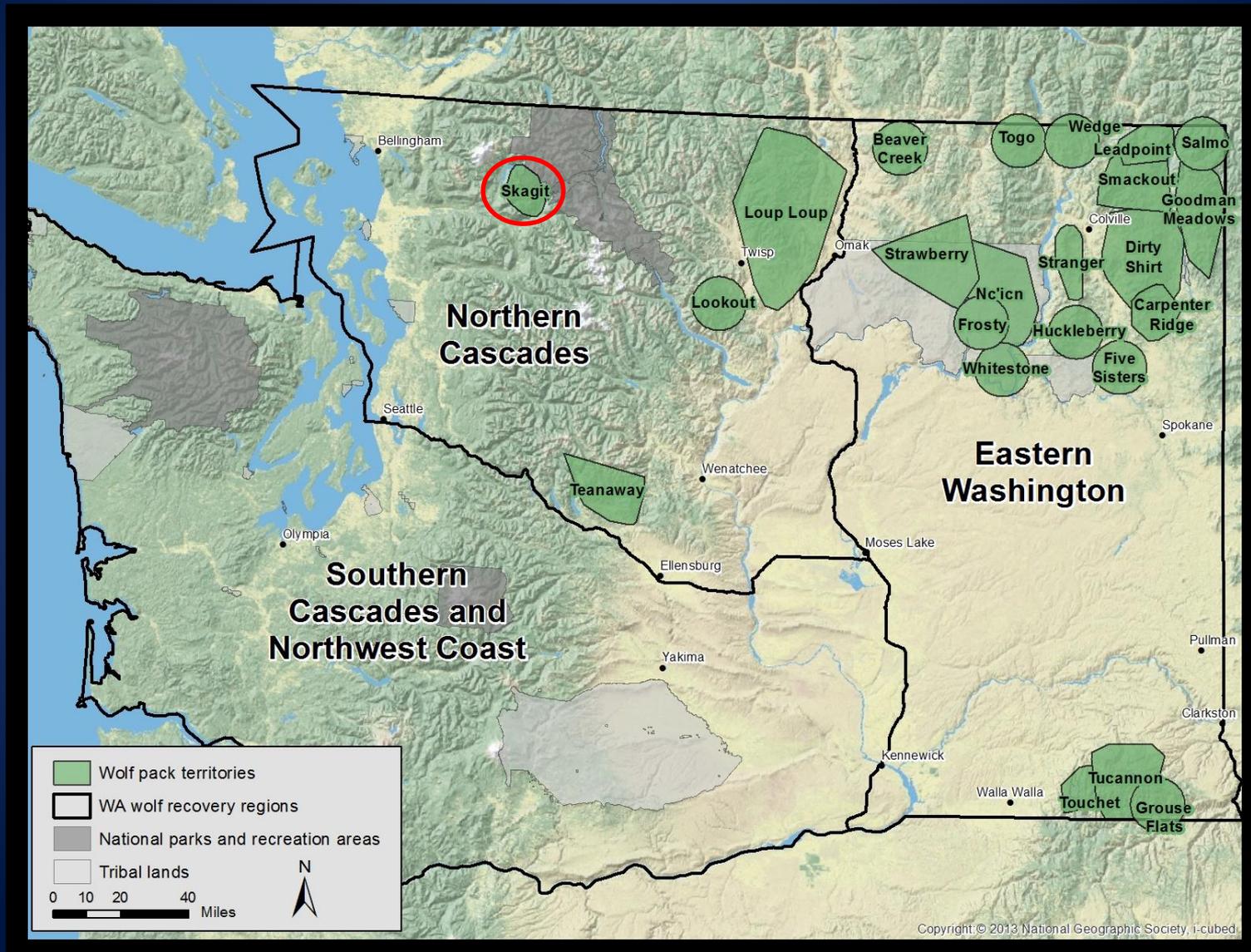
# Territoriality – Wolf Movements
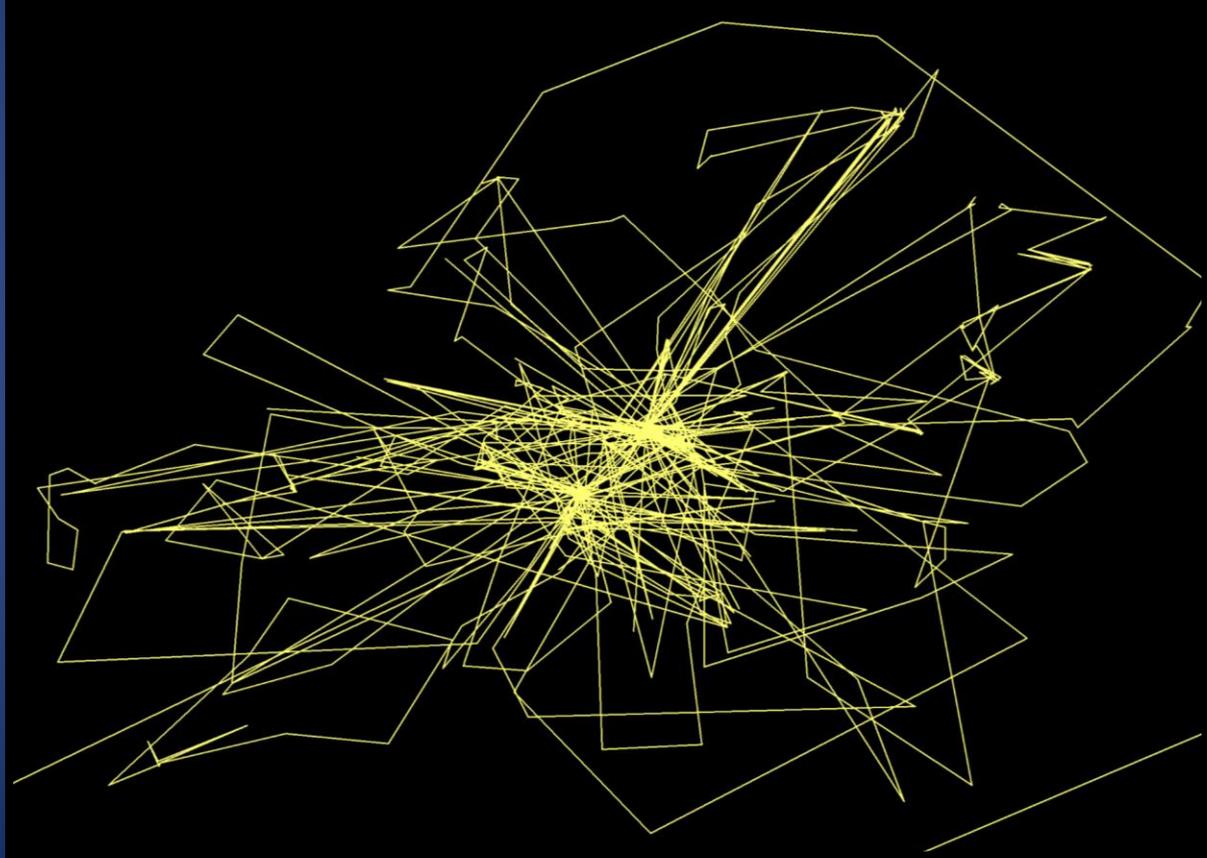
# Capture and Monitoring
## 2017 Calendar Year

- Captured 12 wolves  - From 12 different packs

- Monitored 22 wolves from 15 packs

- Currently monitoring 16 collared wolves (13% of minimum number of known wolves) from 11 packs (50% of known packs) in Washington
  + 1 collared lone wolf – Skagit?

# Eastern Washington Recovery Area

| Confirmed Pack | Successful Breeding Pair | Minimum Count | Known Mortality | Known Dispersal | Livestock Depredations |
|---|---|---|---|---|---|
| Beaver Creek | Yes | 4 | | | |
| ~~Sherman/Profanity~~ | No | 1 | 3 | 1 | 4 |
| Wedge | No | 3 | | | |
| Stranger | No | 3 | | | |
| Huckleberry | Yes | 4 | 1 | 1 | |
| Smackout | Yes | 6 | 3 | 1 | 2 |
| DirtyShirt | Yes | 7 | 2 | 3 | |
| Carpenter Ridge | Yes | 13 | | | |
| Salmo | Yes | 5 | | | |
| Goodman Meadows | Yes | 5 | | 2 | |
| Touchet | Yes | 4 | | | |
| Tucanon | No | 2 | | | |
| Grouse Flats | No | 3 | | | |
| Leadpoint | No | 2 | | | 1 |
| Five Sisters | Yes | 4 | | | |
| Togo | No | 2 | | | 1 |
| Frosty | Yes | 6 | 1 | | |
| Strawberry | Yes | 8 | 1 | | |
| Nc'icn | Yes | 7 | | | |
| Whitestone | Yes | 5 | 1 | | |
| Misc/Lone Wolves | | 12 | 1 | | |
| **Recovery Area Total** | **13** | **106** | **13** | **8** | **8** |

# North Cascades Recovery Area

| Confirmed Pack | Successful Breeding Pair | Minimum Count | Known Mortality | Known Dispersal | Livestock Depredations |
|---|---|---|---|---|---|
| Lookout | No | 3 | | | |
| Loup Loup | No | 2 | 1 | 1 | |
| Teanaway | Yes | 8 | | | |
| Skagit?? | No | 1 | | | |
| Misc/Lone Wolves | | 2 | | | |
| **Recovery Area Total** | **1** | **16** | **1** | **1** | **0** |



Wilderness Awareness School - Camera RRB          08-03-2017 07:58:15

# Trend in Minimum Number of Wolves

March 16-17, 2018, WDFW Commission Meeting Presentation
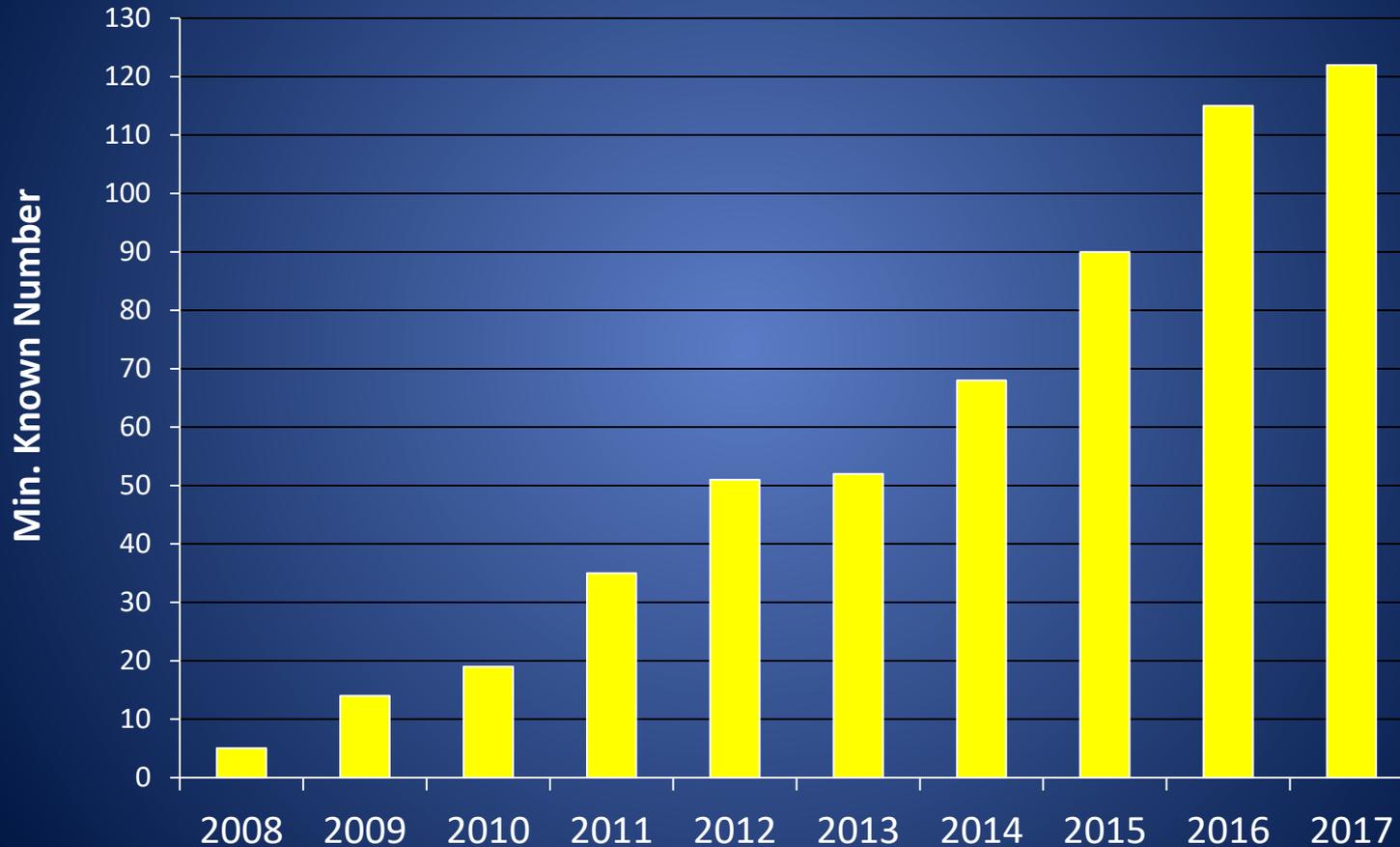
# Trend in Number of Successful Breeding Pair

Information is subject to changes and amendments over time.
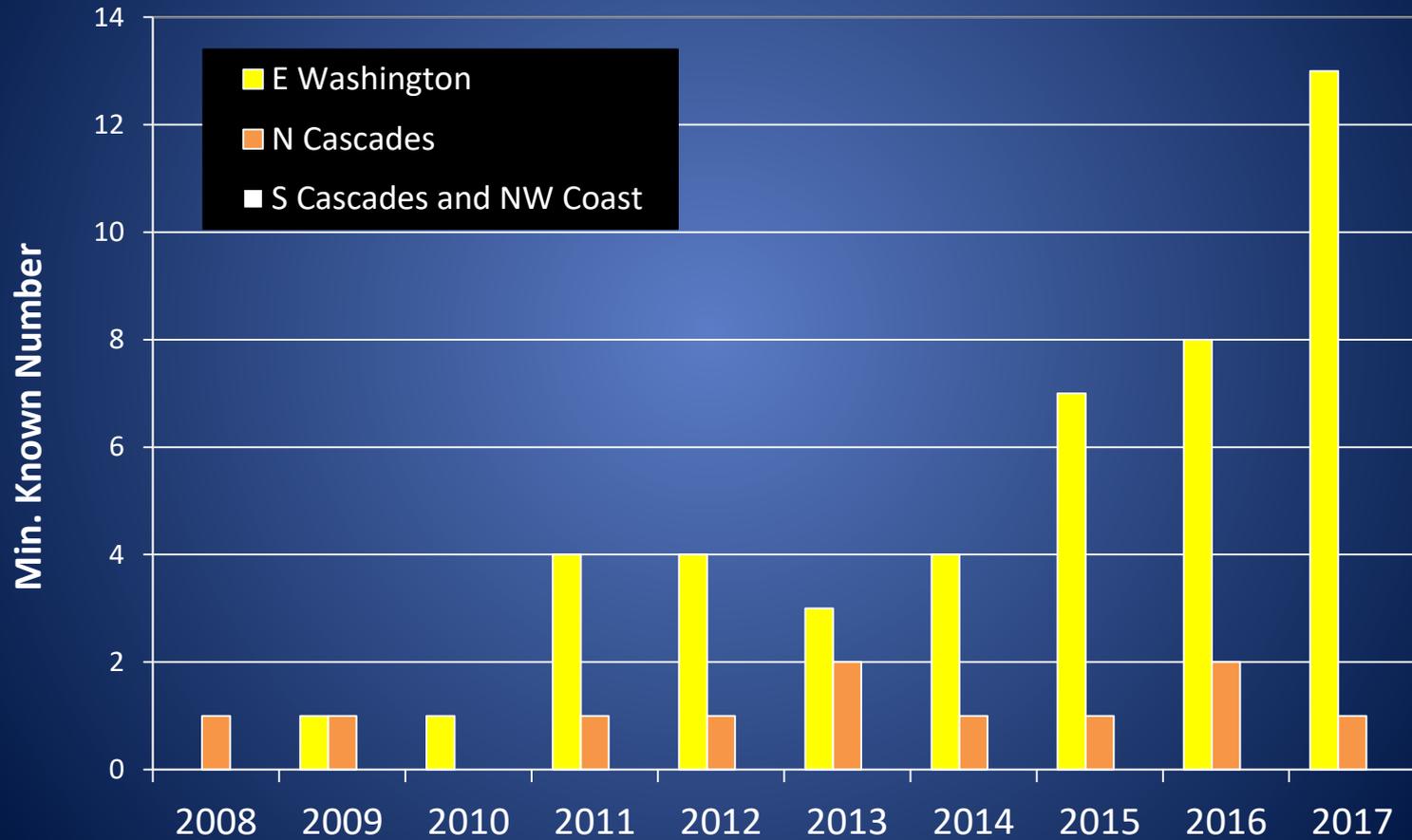
# Trend in Number of Wolf Packs



Legend:
- ■ E Washington
- ■ N Cascades
- S Cascades and NW Coast

Information is subject to changes and amendments over time.

March 16-17, 2018, WDFW Commission Meeting Presentation

# Known Wolf Mortalities

# 2017 Known Wolf Dispersal
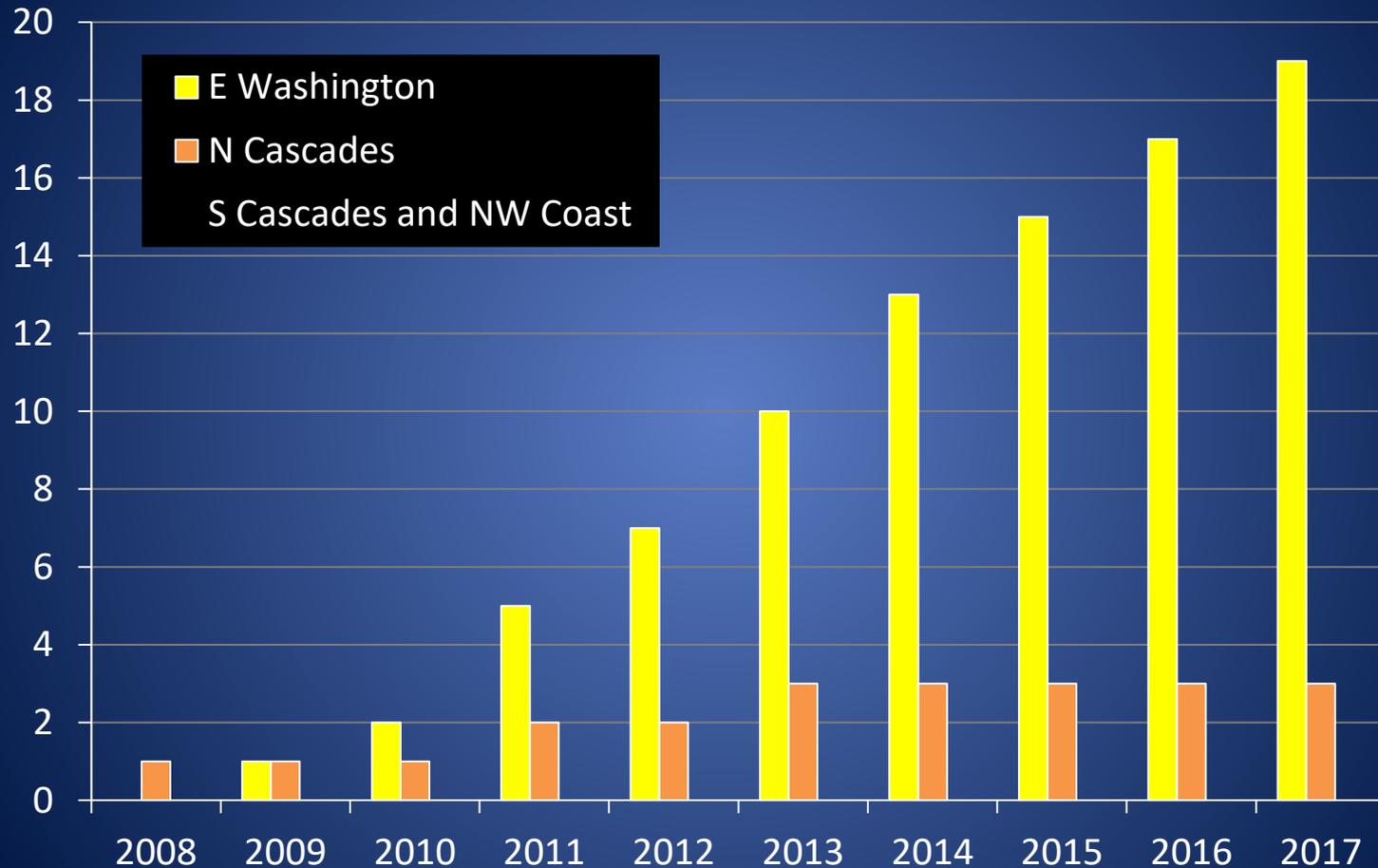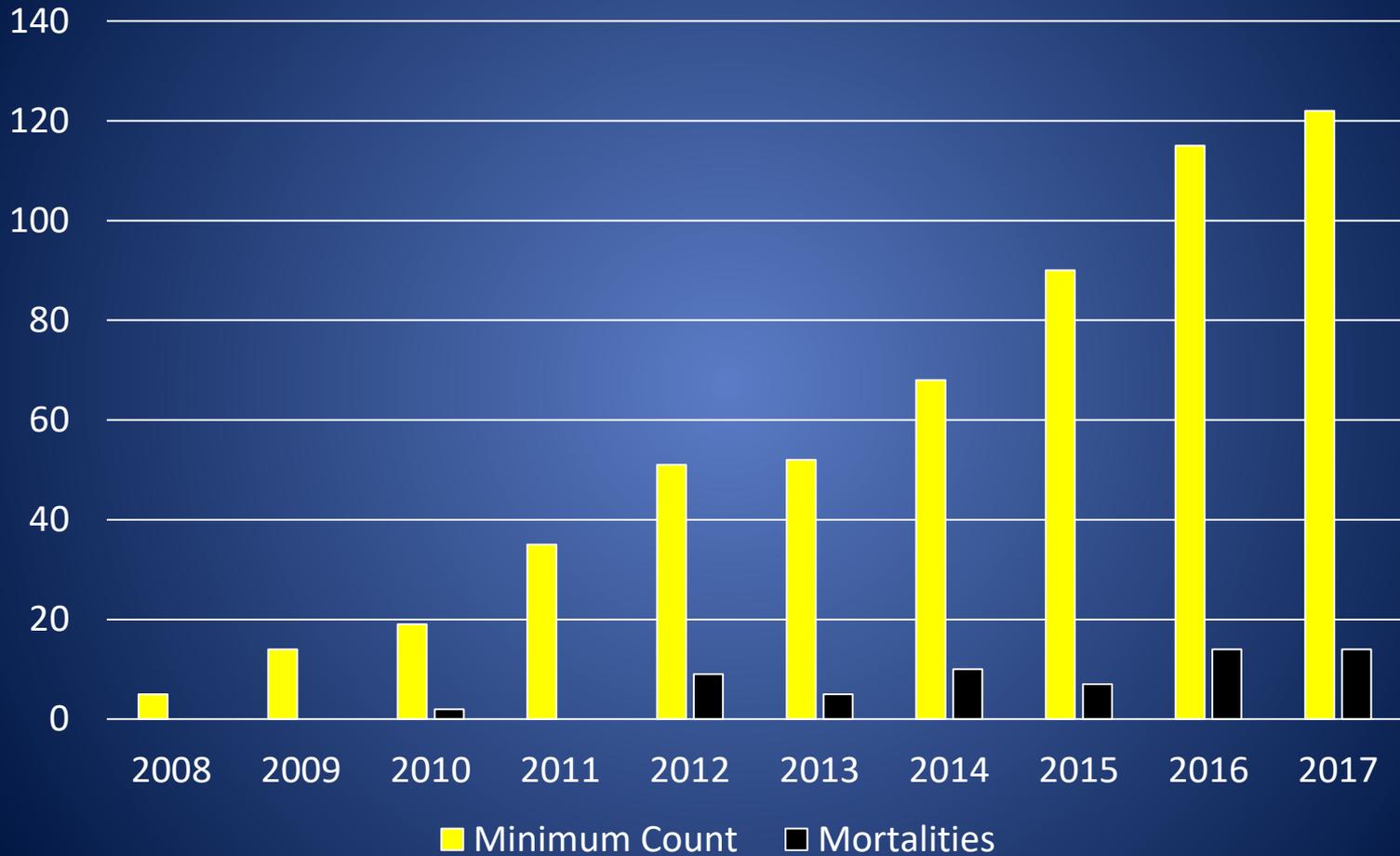
# Washington Wolf Population Summary

| Year | Min Count | Known No. of Packs | SBP | Growth Rate | Known Wolf Mortality | Depredating Packs (%) |
|------|-----------|--------------------|----|-------------|----------------------|-----------------------|
| 2008 | 5 | 1 | 1 | -- | 0 | 0% |
| 2009 | 14 | 2 | 2 | -- | 0 | 0% |
| 2010 | 19 | 3 | 1 | 36% | 2 | 0% |
| 2011 | 35 | 7 | 5 | 84% | 0 | 0% |
| 2012 | 51 | 9 | 5 | 46% | 9 | 33% |
| 2013 | 52 | 13 | 5 | 2% | 5 | 8% |
| 2014 | 68 | 16 | 5 | 31% | 10 | 13% |
| 2015 | 90 | 18 | 8 | 32% | 7 | 22% |
| 2016 | 115 | 20 | 10 | 28% | 14 | 20% |
| 2017 | 122 | 22 | 14 | 6% | 14 | 23% |
| Ave | | | | 31% | | 12% |

# Conflict Management

# Wolf – Livestock Interactions

- Wildlife Conflict Specialists
  - Coordination w/ producers
  - DPCA-Ls
  - Contract Range Riders
  - Deterrence measures
- Lethal Removal
- Compensation

# Packs Depredating on Livestock



Number Packs (y-axis): 0 to 24

Legend:
- # known packs (yellow)
- # depredating packs (orange)

Years: 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017
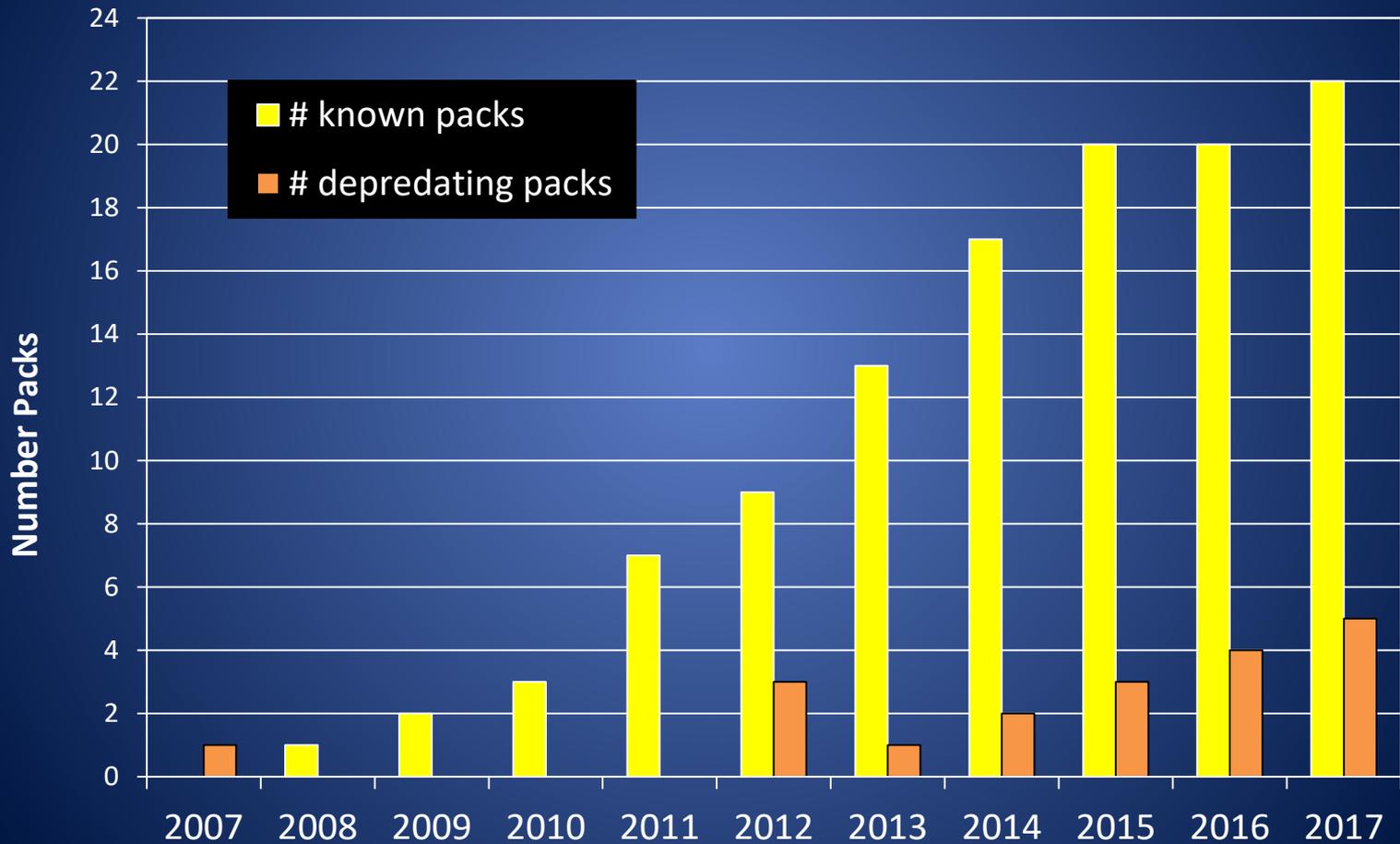
# Wolf Depredations in Washington

Information is subject to changes and amendments over time.

March 16-17, 2018, WDFW Commission Meeting Presentation
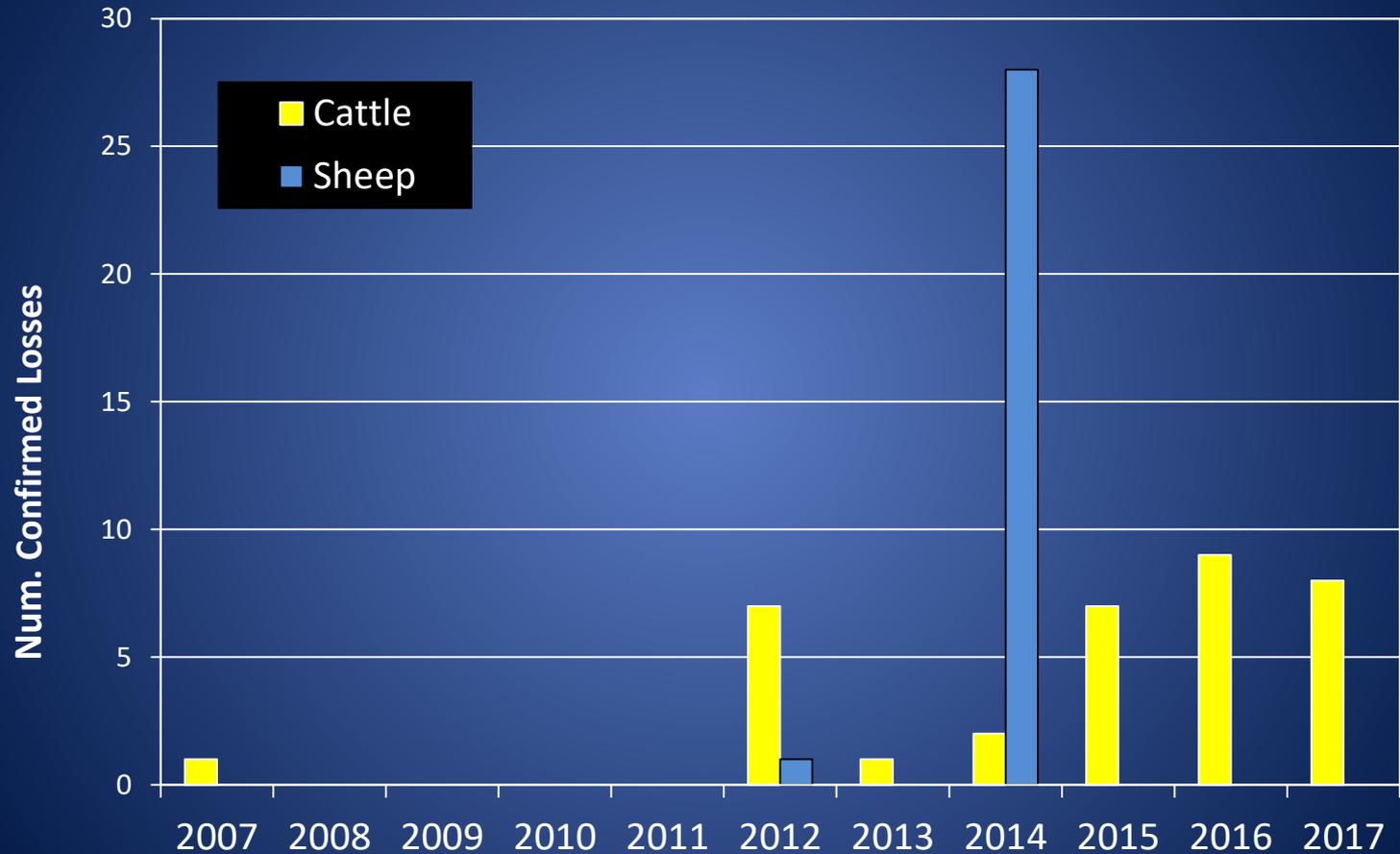
# 2017 Wolf-Caused Livestock Loss and Injury By Month

March 16-17, 2018, WDFW Commission Meeting Presentation

# Wolf – Livestock Interaction Protocol



Figure 1. Federal classification of gray wolves in Washington State, 2017.

# Wolf Lethal Removal Action Reports

# Cost – Share Contracts
# Promoting Deterrence Measures

- Sanitation
- Sick and injured livestock
- Calving and lambing areas
- Turnout
- Range Riders and sheepherders
- Fencing
- Fladry
- Foxlights
- Other techniques

# Contracted Range Riders

# Uptake and Use of Proactive Deterrence
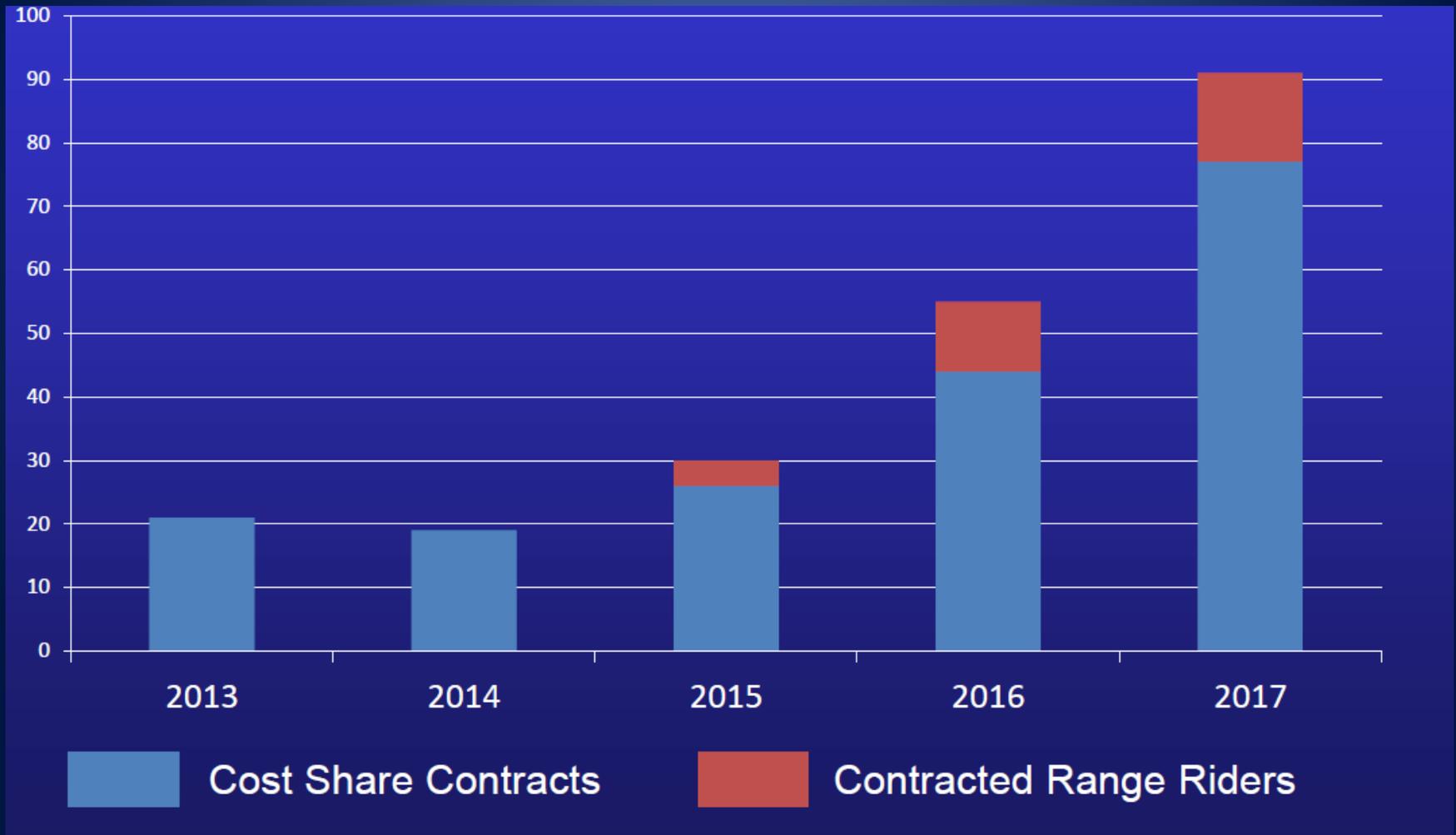
# Wolf Expenditures
## July 1, 2016 – June 30, 2017

| Description | Wolf expenditures |
|---|---|
| **Population monitoring** | |
| • Captures, monitoring, surveys | $68,806 |
| • Staff time | $194,970 |
| • **Total** | **$263,775** |
| **Conflict Management** | |
| • Staff time | $242,069 |
| • Deterrence measures (cost-share, range riders, other) | $543,575 |
| • USDA Wildlife Services non-lethal deterrence assistance | $30,048 |
| • Compensation | $57,752 |
| • Lethal removal | $135,094 |
| • **Total** | **$1,008,538** |
| TOTAL | $1,272,314 |

Fund source: WLS/SGF/PLP/Orca $1,086,864 /Federal $185,450

# Research

- Completed Projects:
  - Hanley (2017 - PhD Dissertation) Forecasting Livestock Depredation Risk by wolves
  - Spence (2017 - MS Thesis) Wolf Predation on Livestock in WA

- Ongoing Projects:
  - A. Valerio - Risk effects of wolves on livestock productivity in WA
  - Predator Prey Project

# Predator-Prey Project: Ungulates

- Examine the impact of wolf predation on co-occurring deer and elk populations

- Data collection of…

  - survival and causes of mortality

  - reproduction and recruitment of young

  - age class structure

  - geographic distribution relative to resources and predators

# Predator-Prey Project: Ungulates

- Collar adult female elk and white-tailed deer in NE WA, and mule deer in north-central WA



Ungulate Location Data for the Predator-Prey Project

**Collar GPS Locations 2017**
☐ Counties
● Mule Deer
● White-tailed Deer
● Elk

# Predator-Prey Project: Ungulates

- Capture efforts began winter 2017

- Target sample sizes: 100 mule deer, 50 elk, 65 white-tailed deer

- All targets met this winter except white-tailed deer



Previously collared white-tailed doe

Trapped doe

MOULTRIE ☽ 14°F        MOULTRIECAM        21 FEB 2018  09:59 am

# Predator-Prey Project: Ungulates

- Preliminary results from 2017:

| Species | # Collared | % Pregnant | Survival Prob. (95% CI) | Known predation by wolves | Cause of death unknown* |
|---------|-----------|-----------|------------------------|--------------------------|------------------------|
| Mule Deer | 20 | 95 | 0.1 (0.03, 1) | N/A | N/A |
| Elk | 34 | 85 | 0.82 (0.02, 1) | 0 | 0 |
| White-tail | 19 | 94 | 0.63 (0.37, 0.89) | 0 | 5 |

* Indeterminate cause of death due to the absence of clear evidence at the mortality site usually due to scavenging, decomposition of tissues, and lack of hemorrhage

# Predator-Prey Project: Ungulates

## Preliminary Results as of March 2018



Legend:
- Unknown Fate
- General Season Harvest
- Depredation Tag
- Illegally Killed
- Disease
- Vehicle Collision
- Non-wolf Predation*
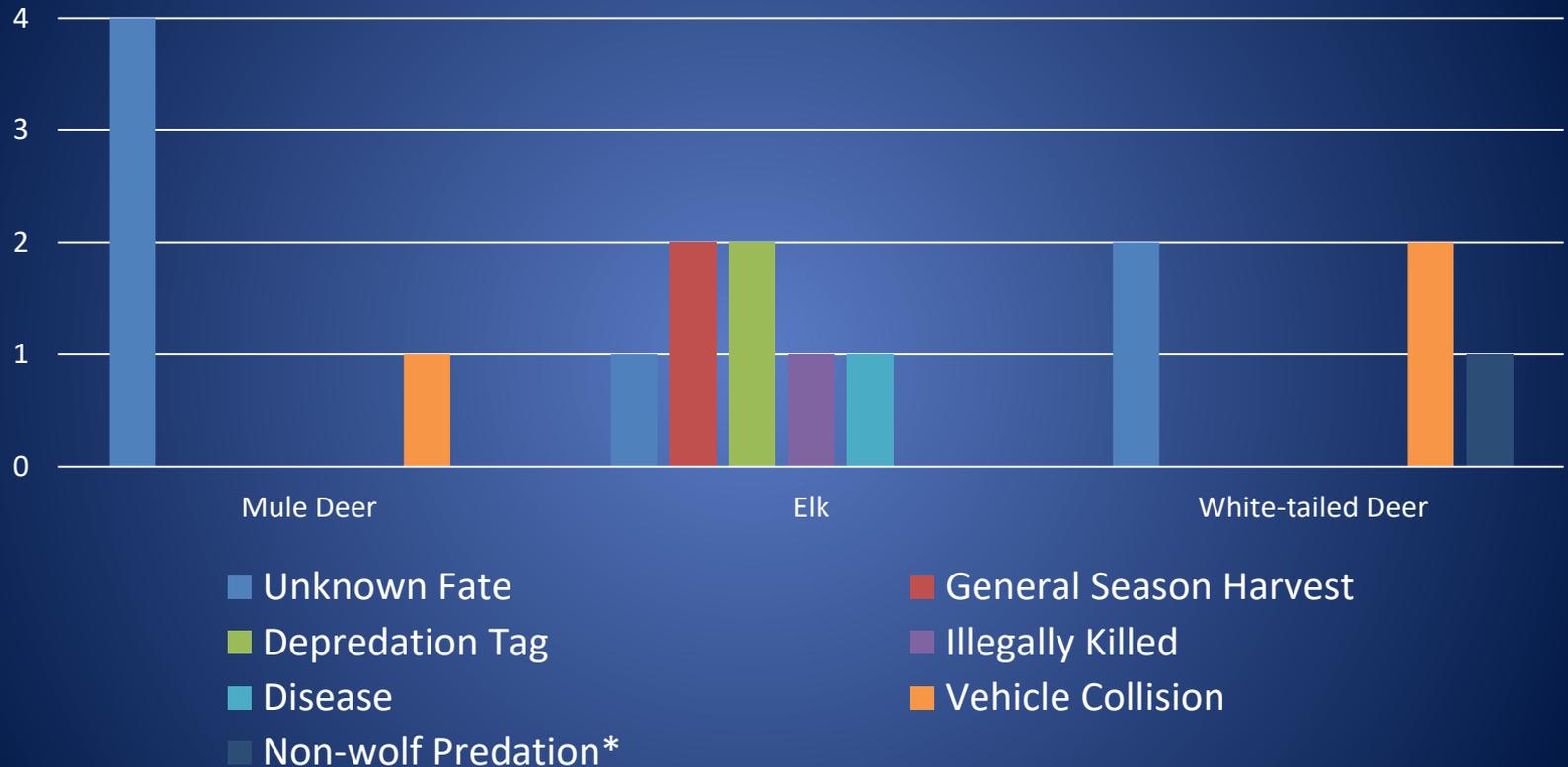
* Non-wolf predation (n = 1 coyote predation)

# Predator-Prey Project: Ungulates

- Too early to do rigorous analyses
- Use statistical models to quantify the impact of wolf predation on each species' population growth rate
- Data collection and analyses slated through 2021
- Collaborating with the University of Washington – four graduate students:
  - Taylor Ganz (ungulate, Ph.D.)
  - Lauren Satterfield (carnivore, Ph.D.)
  - Sarah Bassing (quantitative methods, Ph.D.)
  - Kate Orlofsky (mesocarnivore, Ph.D.)

# Questions?