



Oregon Department of Fish and Wildlife  
Area-Specific Wolf Conflict Deterrence Plan  
Rogue Pack  
5/17/2021

## General Situation

OR7 dispersed from the Imnaha Pack in northeast Oregon in September 2011 and he became resident in eastern Jackson and western Klamath Counties in 2013. He found a mate the next year and they established the Rogue Pack in 2014. The Rogue Pack wolves have been intensively monitored with remote cameras and radio-collars from 2013 - 2021. Between 2014 and 2019, the year-end counts reflected a total of four to seven wolves in the pack. The pack counted as a successful breeding pair in 2014, 2017 and 2018, meaning at least two pups and two adults survived to the end of the year.

After the disappearance of OR7 in late 2019, an uncollared gray male assumed the breeding male position. During the summer of 2020, the pack spent more time on the Klamath County side of their territory than past years. The breeding female, OR94, was radio-collared in September 2020. At the end of 2020, only three wolves remained in the pack territory. During the winter and spring of 2021, OR94 mostly traveled alone, while the other two traveled as a pair.

The Oregon Department of Fish and Wildlife (ODFW) confirmed four incidents of cattle depredation by Rogue Pack wolves in October 2016 in Klamath County. These events triggered the designation of an Area of Depredating Wolves (ADW) and the preparation of an Area-Specific Wolf Conflict Deterrence Plan (Deterrence Plan) to assist producers and landowners manage potential conflict with wolves. The ADW is intended to inform livestock owners where wolf-livestock conflicts are most likely to occur. The ADW and Deterrence Plan were designated for only a portion of the Wood River Valley area where the wolves traveled and the depredations had occurred.

The first incident of depredation by the Rogue Pack in Jackson County was confirmed by ODFW on January 4, 2018, followed closely by two subsequent depredations on the same ranch. Those confirmed depredations triggered a modification in the Rogue Pack ADW and the preparation of a revised Deterrence Plan. The ADW was modified to include all lands and livestock within the Rogue Pack Area of Known Wolf Activity (AKWA) (dated 1/22/2018) since there was depredation east and west of the Cascades, with acknowledgement that there is little risk of conflict between wolves and livestock in the wilderness areas of the Cascade Crest.

Since 2016, ODFW has confirmed that members of the Rogue Pack have been responsible for 40 confirmed depredation events resulting in the death or injury of 38 cattle and two working dogs at multiple ranches in Jackson and Klamath Counties. During 2020, the Rogue Pack was responsible for 16 confirmed depredations on five ranches. The AKWA and ADW were expanded to the southwest to include telemetry locations from OR94 on 4/7/2021 and 5/17/2021. OR94 has continued to visit historical Rogue Pack core areas in Jackson and Klamath Counties, so at this time

she is still considered a member of the group. The AKWA and ADW may be modified again based on depredation and pack movements.

Wolves in this area were removed from the Federal Endangered Species List on January 4, 2021. Before that all management related to harassment and take of wolves was regulated by the U.S. Fish and Wildlife Service (USFWS), not ODFW. Currently, all management is implemented according to the Oregon Wolf Conservation and Management Plan (Oregon Wolf Plan) and associated Oregon statute and rule. If wolves are relisted as federally endangered, a notice will be posted on the ODFW website and the USFWS will take over decisions about take and harassment, but the Deterrence Plan will not need to be updated. The pack's current depredation information, AKWA and ADW maps, and Deterrence Plan will be updated as necessary and posted on the ODFW website at <http://www.odfw.com/wolves/>.

## **Area Description**

Habitat and Landscape Conditions: In the western part of the ADW, the landscape consists of small to large acreage residences and irrigated pastures surrounded by Douglas-fir, true fir and ponderosa pine forests with dispersed natural meadows and various age stands of timber reproduction. Lower elevation areas include stands of Oregon white oak, as well as patches of chaparral dominated by wedgeleaf ceanothus or manzanita. The interior of the ADW occurs on the Rogue-Siskiyou and Fremont-Winema National Forests, and also includes the Sky Lakes Wilderness and a portion of Crater Lake National Park. This habitat is diverse, ranging from dense hardwood dominated riparian habitat, to open meadows, but is dominated by coniferous forests typical of the Cascades. In the eastern portion of the ADW, the landscape consists of medium to large acreage ranches with irrigated low-elevation meadow pastures in the Wood River Valley surrounded by mixed conifer forests.

Land Uses and Ownership: In the western part of the ADW, rural residential housing, forest resource management and livestock grazing (mostly cattle), are the primary land uses within the area. Primary landownership is a mix of small to large acreage residences, cattle ranches, large private industrial timberland, and large blocks of the Rogue-Siskiyou National Forest and Bureau of Land Management. Summer and fall season livestock allotments occur on the public land while private lands utilize spring through late fall grazing. Most cattle are shipped out during the winter period, although several operations maintain livestock in medium-sized pastures throughout the year. In the eastern portion of the ADW, cattle grazing is the predominant land use. Landownership is primarily large acreage cattle ranches in the Wood River Valley adjacent to Fremont-Winema National Forest to the west and Sun Pass State Forest to the north. Cattle grazing occurs spring through fall. Almost all cattle are shipped out of the Wood River Valley during winter months.

## **Coordination**

Beginning in 2011, information regarding wolves in Jackson and Klamath County has been communicated to county leaders including the Klamath and Jackson County Commissioner's Office, Fremont-Winema National Forest, Rogue-Siskiyou National Forest, Bureau of Land Management, APHIS-Wildlife Services (WS), Oregon State University Extension Office, Klamath County Wolf Depredation Committee, and Jackson County Wolf Advisory Committee providing a current description of known local wolf activity.

In addition, because this area was within the federally listed portion of Oregon, ODFW coordinated regularly with USFWS. ODFW, USFWS and WS have coordinated with livestock owners in the area informing them about the importance of bone pile removal, and appropriate non-lethal measures to minimize wolf-livestock conflict. ODFW has communicated regarding the Oregon Wolf Plan, wolf current events, depredation investigation procedures and reporting wolf activity.

ODFW has developed a website to provide informational resources to potentially affected livestock producers and relevant interests within this and other ADWs. The website also shows maps of AKWAs, ADWs, conflict deterrence plans, and depredation investigations. Individuals can also sign up to receive email update messages when new general information is available, or to receive specific information regarding the issue of wolf/livestock conflict. ODFW and partners have held two workshops in Jackson and Klamath Counties to help affected producers learn conflict deterrence techniques from producers from eastern Oregon and the Yellowstone area who have successfully used non-lethal methods to reduce conflict with wolves.

The Wood River Valley Rogue Pack Deterrence Plan was previously shared with the potentially affected landowners, livestock producers, and interested parties in Klamath County in October, 2016. The updated Rogue Pack Deterrence Plan(1/25/2018) was shared with potentially affected livestock producers in Jackson County, Jackson County Wolf Advisory Committee, Klamath County Wolf Depredation Committee, Klamath County Commissioners, Jackson County Commissioners, Jackson County Stockman's Association, Klamath Cattlemen's Association, Oregon Cattlemen's Association, Oregon Sheep Growers Association, Oregon Farm Bureau, Oregon Department of Agriculture, U.S. Forest Service, APHIS-Wildlife Services, U.S. Fish and Wildlife Service, Bureau of Land Management, Oregon State Police, The Klamath Tribes, Oregon Wild, Cascadia Wildlands, Klamath Siskiyou Wildlands Center and Defenders of Wildlife prior to being finalized and posted. Comments were incorporated into this document. A Deterrence Plan for OR25, covering much of the same area, was previously shared with many of the same individuals and groups in March, 2017.

This modified Deterrence Plan was updated to include additional areas covered by an expanded ADW and adaptive non-lethal options for livestock producers. It is shared with livestock producers in and near the areas added to the ADW to inform them of risk to their livestock and how to reduce the risk of wolf-livestock conflict.

### **Appropriate Non-Lethal Measures (by general livestock operation type)**

The following is a list of appropriate non-lethal measures organized by which measures are likely to be most effective in a given circumstance including the nature of livestock operations, habitat, landscape conditions specific to the area, and particular times of year of livestock production. This Deterrence Plan is based on information compiled by ODFW before and during the planning effort on potentially successful conflict deterrence techniques, scientific research, and available financial resources and/or partnerships that may aid in the successful implementation of the plan.

**For more detailed description of each non-lethal standard please reference *Non-lethal measures to minimize wolf-livestock conflict document (attached to this Plan)* or at website address [http://www.dfw.state.or.us/Wolves/non-lethal\\_methods.asp](http://www.dfw.state.or.us/Wolves/non-lethal_methods.asp)**

**Removing Attractants (applicable to all operations and seasons):** Wolves are attracted to dead livestock. The presence of a single carcass can have the effect of attracting and keeping wolves in areas of livestock. The physical removal, burying or treatment of carcasses is appropriate in each of the general livestock operation types listed below, though most important in small- and medium-sized pasture situations. It is also appropriate to decrease the vulnerability of sick or injured livestock by removing them from unprotected situations.

#### **List of non-lethal measures for small pastures or penned areas with mixed livestock species**

Description: Smaller pastures include fenced and unfenced areas and livestock that are often close to the residence in a single pasture or pen. Because of the smaller area associated with these small pastures and pens, they are generally more protectable than other, more dispersed situations. There are several small pastures or penned areas in the ADW, including several small non-commercial pens of domestic sheep.

- Fencing or Fladry: Includes night penning or putting animals into an existing protected area at night when depredation is likely to occur. Multiple strand electric fencing or woven wire permanent fences are especially effective, and cost may be ameliorated over time. Especially applicable for protecting sheep and goats year-round and during lambing or calving periods.
- Human Presence: See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for appropriate application of human presence.
- Livestock protection dogs: Use of specific breeds of guarding dogs or other animals to help protect livestock from wolf depredation and to warn livestock owners of wolf presence.
- Alarm or scare devices: Radio-Activated-Guard (RAG) devices may be limited in availability and are only appropriate where radio-collared wolves are in the area. Other scare devices, such as Air Dancers, may be experimental and producers should coordinate with biologists for applicable use.
- Hazing or harassment of wolves when near livestock: Only applicable when wolves are found to be near livestock. All producers are encouraged to non-injurious haze wolves from livestock when observed. See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for considerations and regulations when applying hazing or harassment.
- Experimental practices: Consult with USFWS, ODFW or WS for applicability.

#### **List of non-lethal measures for medium-sized (single or multiple) pastures**

Description: This type generally consists of medium acreages with higher numbers of livestock; primarily cattle but sheep and other species as well. It also may include smaller pastures with landscape features (i.e., heavy timber or ravines) which are less protectable than a backyard pasture. Multiple pastures are common and livestock may be dispersed using different pastures during some seasons, and more confined during others. Many pastures within this type serve as seasonal “home” pastures for winter and spring feeding and/or calving, often with relatively large numbers of livestock. They may also be used during fall months as gathering and holding areas prior to shipping or sale. These pastures are usually privately owned and are sometimes associated with ranch residences. In these situations, livestock may be more protectable than at other times when livestock are more dispersed in large pastures. These types of operations are dispersed throughout the ADW.

- Fencing or fladry: Many land areas within this type may be large enough to render permanent fencing or fladry impractical or ineffective. However, in situations where livestock are concentrated into smaller areas, such as during calving, lambing, and night penning (sheep), fencing or fladry may be the best option. Temporary fencing could also be used to artificially concentrate livestock into smaller more defensible areas.
- Human presence: See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for appropriate application of human presence.
- Alarm or scare devices: Radio-Activated-Guard (RAG) devices may be limited in availability and are only appropriate where radio-collared wolves are in the area. Other scare devices, such as Air-dancers, may be experimental and producers should coordinate with biologists for applicable use.
- Livestock protection dogs: Use of specific breeds of guarding dogs to help protect livestock from wolf depredation and to warn livestock owners of wolf presence.
- Hazing or harassment of wolves when near livestock: Only applicable when wolves are found to be near livestock. All producers are encouraged to non-injurious haze wolves from livestock when observed. See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for considerations and regulations when applying hazing or harassment.
- Livestock management or husbandry changes: Night feeding near homes, night penning near homes, or shifting pasture use to avoid wolves where appropriate. Concentrating livestock by increasing stocking levels and pasture rotations can also be effective. See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for additional ideas.
- Experimental practices: Consult with USFWS, ODFW or WS for applicability.

**List of non-lethal measures for large pasture areas with dispersed or open-range cattle grazing**

Description: Large pastures, generally not associated with homes or residences. The cattle grazing is on leased or privately-owned lands or on federally permitted allotments, and most is open-range and dispersed cattle during summer and fall months. These allotments are most common in the western portion of the ADW. The following is a list of non-lethal measures which are likely to be most effective in this circumstance:

- Human presence: See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for appropriate application of human presence.
- Fencing or fladry: Usually only applicable in particular (and smaller) portions of pastures where specific protection is needed and possible (e.g., branding, weaning, loading/hauling). Fencing is not expected to be practical across larger areas.
- Alarm or scare devices: Usually only applicable in particular (and smaller) portions of pastures where specific protection is needed. Radio-activated guard devices are only useful if a radio-collared wolf is present.
- Hazing or harassment of wolves when near livestock: Only applicable when wolves are found to be near livestock. All producers are encouraged to non-injurious haze wolves from livestock when observed. See attached document titled “**Non-Lethal Measures to Minimize Wolf-Livestock Conflict**” for considerations and regulations when applying hazing or harassment.

- Livestock management or husbandry changes: Pasture rotation to avoid wolf activity may be helpful in some areas. See attached document titled “**Non-lethal measures to minimize wolf-livestock conflict**” for additional ideas.
- Experimental practices: Consult with USFWS, ODFW or WS for applicability.

## Available Resources

Jackson County Wolf Advisory Committee (<http://jacksoncountyor.org/hhs/Services/For-Animals/Wolves>) and Klamath County Wolf Depredation Committee: The Oregon Department of Agriculture (ODA) implements the Wolf Depredation Compensation and Financial Assistance Grant Program according to Oregon Administrative Rule 603-019. The county committees apply to ODA for grants to compensate producers for losses to depredation and provide funds and/or supplies to livestock producers for implementing recommended non-lethal measures.

ODFW: ODFW works with livestock producers and county compensation committees to provide information, technical assistance, funds and supplies to minimize wolf-livestock conflict. In appropriate circumstances ODFW can provide fladry, fencing, RAG boxes and other non-lethal tools. Financial resources may be available for cooperative agreements to assist removal of bone piles, fund range riders and other practices. ODFW assistance is contingent upon funds and supply availability.

USFWS: USFWS continues to work with livestock producers and county compensation committees to provide information, technical assistance, funds and supplies to minimize wolf-livestock conflict. Financial resources may be available for cooperative agreements to assist removal of bone piles, fund range riders and other practices. USFWS assistance is contingent upon funds, supply availability and may be more limited now that wolves are federally delisted.

APHIS-Wildlife Services: WS works closely with county compensation committees and ODFW to coordinate non-lethal resources as well as work directly with livestock producers by providing technical assistance and direct assistance with deploying non-lethal methods. WS assistance is contingent upon funds and the availability of non-lethal supplies and equipment. In recent years, APHIS- Wildlife Services has hired conflict deterrence specialists with specific funding to use non-lethal techniques to reduce conflict with wolves and livestock.



## ODFW Non-Lethal Measures to Minimize Wolf-Livestock Conflict

1/4/2021

The following is a list of non-lethal or preventative measures which are intended to help landowners or livestock producers minimize the risk of wolf predation on livestock. It is not intended to be a list of mandatory prescriptions applicable to all producers or situations. Rather it is a guide for appropriate non-lethal measures which are likely to be most effective in different circumstances. Producers are encouraged to work with ODFW and APHIS-Wildlife Services (WS) to determine which non-lethal measures may be most effective. More information is on the ODFW website at [www.odfw.com/wolves/non-lethal\\_methods.asp](http://www.odfw.com/wolves/non-lethal_methods.asp).

There may be other non-lethal deterrents not included on this list which may be reasonably expected to minimize wolf-livestock conflict. ODFW may periodically update this list based on new research, information, and experience in working with wolves, landowners, and wolf-livestock conflict.

### Reducing Attractants – Bone Piles, Carcass Disposal Sites, or Other Known Carcasses

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**Description and Intent:** The physical removal or treatment of dead livestock carcasses (or portions of) which may attract wolves. This is most important in areas where livestock are concentrated in medium-sized wintering and birthing pastures or in open range situations near ponds, salt licks, or bedding areas. Removal may occur by hauling carcasses to disposal in a landfill or other appropriate location, or by burying in some situations (see Considerations and Limitations below). In situations where removal or burying is not an option, treatment of carcasses may include covering or protecting by fladry or temporary fences. It is also appropriate to decrease the vulnerability of sick or injured livestock by removing them from unprotected situations.

**Application:** General Removal – Prior to Wolf Use: Wolves and many predators are attracted to dead animals and the presence of a single carcass can have the effect of attracting and keeping wolves in areas of livestock. When wolves become accustomed to an easily attained food source they often return to the area which may increase the risk of depredation. In Oregon, the removal of several identified bone piles in one area resulted in a subsequent decrease of wolf use (and depredation) in the immediate area. Dispersing radio-collared wolves often travel long distances only to stop once they have found a bone pile or carcass. As a general practice, carcasses should be removed prior to wolf use whenever possible. Carcass and bone pile removal may be the single best action to keep from attracting wolves to areas of livestock.

Identified Circumstances Which Attract Wolf/Livestock Conflict: These are situations in which there is information that wolves are using a particular dead animal carcass or other attractant. It may also be a situation in which a carcass has been placed intentionally to attract other scavengers like coyotes.

**Documentation:** Land owners or livestock producers should document all carcass removal or treatment actions, and final disposition of carcass. All documentation should include date(s) of actions taken.

**Appropriate Season & Area:** Year-round in all areas where possible (see below).

**Considerations and Limitations:** Not all carcasses can be physically removed due to terrain or the condition of the carcass. In situations where a carcass cannot be removed, other options to discourage wolf use of these carcasses such as burying, or barrier fencing should be considered. However, some of these measures must comply with other land-use policies (e.g., U.S. Forest Service and Oregon Department of Agriculture regulation) and may not be allowed in certain situations. In addition, some landfills may not be authorized to accept dead animal carcasses.

In some situations, weather conditions (i.e., frozen, deep snow or extreme wet/muddy) may prevent the removal or burial of carcasses. When this occurs, carcasses should be removed as soon as possible, and temporary barrier fencing or fladry may be appropriate as an interim measure.

Under the Wolf Plan, carcasses of natural prey species (i.e., deer and elk) are not generally considered unnatural attractants. However, in some cases wildlife carcass disposal sites may be identified as attractants and these should also be addressed by the appropriate entity.

## **Barriers – Fladry and Fencing**

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**Description and Intent:** Fencing used specifically to deter wolves from livestock, may be permanent or temporary, and may be from a variety of fencing materials, depending on each situation. In general, fencing is considered when attempting to protect livestock in a small pasture, enclosure, or when stock is gathered in a reasonably protectable area (i.e., sheep nighttime bedding area). It is generally not applied to larger or dispersed grazing operations. The type of barriers used is highly dependent on the type of livestock and conditions, but includes two general types as follows.

Fencing: May be effective, and often a good option for small numbers of livestock and/or small acreages or pens. Types of fencing vary and may include multiple-strand electric or electric mesh, woven wire mesh, panels, or other hard barriers. In some cases, existing fences may be augmented (e.g., by increasing effective height or by adding fladry) to protect against wolves at a lower cost than new permanent fencing. Fencing may also be used to create small temporary or permanent pens to protect livestock at night and may be used in conjunction with other measures such as noisemakers, guard animals, or lighting.

Fladry and Electrified Fladry: A rope or electric wire with evenly spaced red flags that hang down. Highly portable and can be installed relatively quickly, fladry can be used for a variety of livestock operations –sheep night penning, and some calving areas. It may be applied to certain open range situations but is best used as mobile protection on a short term basis. Producers are encouraged to work with biologists to determine if fladry is appropriate. Fladry requires regular maintenance for effective use. In general, fladry is not intended for use over long periods of time in the same location because wolves may become habituated, and thereby reduce effectiveness. ODFW or other organizations may develop cooperative fladry projects to assist producers with installing and maintaining fladry protection.

**Application:** Sheep: Electrified hard fencing is recommended for all small protectable areas that have sheep. Open range night penning of sheep in portable electric net fenced areas or fladry fences in areas of wolf use is highly recommended. Even with herders present, fladry may reduce depredation risk. Defined areas of lambing when wolves are present would also be an appropriate application for fladry.

Cattle: Fencing options are generally used where cattle are confined to small pastures or pens. Some operators calve in smaller areas which could be appropriate for fladry or other fencing. Prioritization of fencing or fladry as a deterrent should consider wolf use of the area, and the ability to install and maintain it.

Livestock Working Animals: In areas of regular wolf use, fencing or other protective barriers to protect livestock working dogs should also be considered. This is especially important if dogs are left unattended in areas of wolf use during non-working periods.

**Documentation:** Producers should document the dates, areas, type, and amount of fencing used as a non-lethal measure to reduce wolf depredation.

**Appropriate Season & Area:** Sheep; all seasons for hard fences, but fladry or electrified mesh is most appropriate for temporary and movable night pens on open range in areas of wolf use. Cattle; specific cattle pens or small pastures (often during winter months) or calving areas (calving season) within areas of wolf use.

**Considerations and Limitations:** Permanent fencing, though long lasting, is usually expensive and can often only be affordably applied to small areas. Fladry installation is also expensive and fladry is often limited in availability. Fladry, when determined to be an appropriate deterrent, is generally effective on a short-term basis, requiring the use of other tools for longer term deterrence. Livestock animals which are fenced in smaller pastures or pens may require additional feeding which can increase the cost to the producer. Some livestock may not respond well to confinement which may also increase management costs. Fencing on allotments must comply with grazing permit requirements, and may not be allowable in some cases.

## Human Presence as a Non-Lethal Measure

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**Description and Intent:** The underlying concept of increasing human presence as a deterrent to wolf depredation is that wolves tend to avoid humans. When human presence occurs in an area of simultaneous use by wolves and livestock, it is expected that wolves will move away and depredation will be reduced. Human presence actions are often conducted with the primary intent of reducing or deterring wolf depredation, though in some situations it may be passive or secondary to other ranching operations (e.g., all-night presence for the purpose of calving while wolves are in the area would be expected to minimize wolf-livestock conflict).

**Application:** Two approaches to using human presence as a deterrent are; 1) Regular or planned presence using range riders, hazers, herders, or other planned human guarding of livestock, and 2) Presence in response to alerts (i.e., notification by ODFW, tracks, observations of wolf activity, abnormal livestock behavior), or during susceptible depredation times (i.e., night, when wolves are known to be present in areas of livestock, etc.). Monitoring for signs of wolf activity, though not considered a non-lethal measure by itself, is important to help prioritize effective wolf-detering human presence.

Regular or Planned Human Presence – Hazers and Range riders: Generally considered to be regular or sometimes continuous presence for the specific purpose of protecting livestock, range riders should patrol areas with wolves and livestock at hours when wolves are most active (dawn, dusk, night). The rider should use any information available to patrol in livestock areas with current wolf activity and should be equipped to actively haze wolves away from livestock when found. See below for harassment considerations. In areas of active depredation and in large areas with dispersed livestock, more than one range rider may be necessary to provide adequate protection.

Herders or other Guarding: Directly applicable to sheep operations where herding is a normal part of sheep ranching. During the daytime herders can keep the sheep bunched, this makes the sheep more protectable and helps sheep from becoming separated from the band. Herders need to be present and active at night when sheep are gathered or in bedding areas – and effectiveness is increased if a herder is working with guarding animals and/or fladry to protect sheep. Additional herders may be needed in areas of high wolf activity to specifically work at night when depredation is most likely to occur.

Human Presence – Individual Response: This is human presence which may be additional to regular ranch operation and with the intent of deterring wolf-livestock conflict if wolves are present. Human presence should be flexible in approach, but should be tailored to situations when wolves are in proximity to livestock (i.e., may not be practical or expected when wolves are known to be in another area). Presence may be conducted by patrolling during active wolf periods such as dawn and dusk, and in situations such as calving or lambing periods, may be best conducted at night when depredation is most likely to occur. It should also include monitoring and responding to information of wolf activity in areas of livestock.

In Oregon, several incidents of depredation have occurred following significant changes related to cattle and sheep bands. Specifically, the gathering and moving of livestock often creates a great deal of noise and activity that may attract wolves to the area. In addition, the herding or weaning of livestock creates stress, noise and a lack of maternal protection. In the spring calves are often put into large pastures and allotments, often before elk calves and deer fawns are born. Producers are highly encouraged to increase human presence in association with these particular activities.

Though increased human presence may not prevent all wolf-livestock conflicts, it should be conducted in a manner which would reasonably be expected to deter wolf-livestock conflict, and this would be determined based on frequency of wolf use in the area, depredation patterns (i.e., depredation around calving areas), seasonal patterns of wolf and livestock use, and in conjunction with other known presence (i.e., range rider was in area last night so producer did not go out).

**Documentation:** Producers should document activities when human presence is used. ODFW or other agency/individual presence which meets the above applicability standards should also be documented. Documentation could include, but is not limited to the following: dates, times, specific location, action taken, purpose or intent of action, and results.

**Appropriate Season and Area:** All seasons, but should be tailored to livestock areas which are being used by wolves. Lambing and calving areas and periods should especially be prioritized if wolves are known to be in the area.

**Considerations and Limitations:** Wolves can travel fast and far and may be hard to locate. With dispersed livestock grazing, range riders will need to cover as much area as possible or focus on the area where the wolves are and may not always be in the right location to protect livestock. All increased human presence activities (i.e., range riders, herders, and individual producers) should consider information of wolf activity, areas of livestock use, and recent depredation patterns to prioritize areas and times to best apply human presence. Costs associated with any kind of increased presence will have the effect of increasing production costs. Agencies and other participants should consider pooling resources to increase human presence most effectively based on the situation.

## **Livestock Protection Dogs and Other Guarding Animals**

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**Description and Intent:** Use of specific breeds of guarding dogs or other animals with intent to protect livestock from wolf depredation and alert the producer to wolf presence.

**Application:** Guard Dogs: Breeds such as Pyrenees, Anatolian, Akbash, or other established guarding breeds. Livestock protection dogs are normally used in conjunction with herded livestock such as sheep, but may be used in some situations for cattle or other livestock species. Multiple trained adult dogs are usually recommended, but may depend on the level of wolf activity in the area, size of grazing area, and behavioral characteristics of the dogs. Some guarding breeds used in the United States were selected decades ago to protect livestock from coyote predation and may not

be as successful at protecting livestock from wolves. Preliminary findings by the National Wildlife Research Center (NWRC), part of WS, have found additional breeds of large guarding dogs that show some promise in their ability to deter wolves. Consultation with ODFW, WS or other professionals may be necessary to evaluate the most effective guard dog strategy.

**Other Animals:** This may include the use of non-guarding dog breeds used to specifically alert herders of wolf presence. With this type of use, dogs must be protected from wolf attack and are only effective if followed by human presence. Other aggressive breeds of animals (i.e., donkeys, etc.) may help protect against wolves but should be considered experimental.

**Documentation:** Producers should keep records of guarding dog use including numbers of animals, dates, areas, species protected, etc. Experimental use of other guarding animals should be documented and coordinated with ODFW so that their effectiveness can be evaluated.

**Appropriate Season and Area:** All seasons, but not recommended near wolf den sites and summer pup rendezvous locations. Wolves may be more aggressive towards dogs in these areas as wolves may consider the dogs to be a threat to their young pups. If dogs are used within a few miles of these sites, additional deterrents to help protect the dogs and livestock are recommended.

**Considerations and Limitations:** Guard dogs work best in combination with human presence. The dogs can be exceedingly effective at detecting the presence of wolves near livestock, but in certain situations they may not be effective at repelling the wolves without human presence.

Guard dogs and other types of guarding animals must be appropriate for each grazing application. For example, a single guard dog in a large-area dispersed grazing situation would not be expected to provide adequate protection.

Guard animals are expensive and require specific training, care, and precautions. Producers should seek advice on the use of this method from other professionals or producers with experience using these animals.

## **Alarm or Scare Devices**

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**Description and Intent:** This includes any combination of alarm system with lights and/or loud sounds which are used for the purpose of scaring wolves from areas of livestock. Primarily used for protection of defined/enclosed areas or small pastures, but in certain situations may be used to deter wolves from using a more general area (esp. calving pastures).

**Application:** Radio-Activated-Guard (RAG) Devices: These are scare devices which are triggered by the signal from an approaching radio-collared wolf. When activated they emit strobe light flashes and varying loud sounds designed to deter the wolf. RAG devices can also be used as an alarm device to alert a producer that radio-collared wolves are in the area. RAG devices may be available

through ODFW or other organizations. Coordinate with ODFW for information on placement and use.

Other Light and Sound Making Devices: These may be warranted in situations similar to above but where wolves are uncollared and could include a variety of lighting devices (e.g., Fox Lights), radios, music players, etc. Varying the sounds and frequently changing positions of the device will increase effectiveness and reduce the chance that wolves become habituated. Techniques such as lighted pastures or pens may be considered experimental (depending on situation) and should be coordinated through ODFW to determine if applicable.

**Documentation:** Producers should track use of devices, dates, times, locations, etc. In addition, proper function and effects of devices (on wolves) should be monitored and documented.

**Appropriate Season and Area:** Any season, but generally not expected to be effective in large areas, or areas with widely dispersed livestock.

**Considerations and Limitations:** RAG devices require the presence of a radio-collared wolf to activate. Depredation may occur by uncollared wolves, since wolf packs do not always travel together, even in the presence of a properly functioning device.

Scare devices are generally only effective for short-term use in small areas. Wolves can easily become habituated to any type of fixed scare device, and devices should be varied by moving or changing the response.

## **Hazing or Harassment of Wolves**

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**Description and Intent:** This is direct harassment of wolves with the intent to use human actions to actively scare wolves away from livestock and may include loud noises (e.g., air horns), firing shots in the air, spotlights or other confrontation with wolves.

**Application:** There are two types of harassment recognized by Oregon Administrative Rule; non-injurious and non-lethal injurious.

Non-Injurious Harassment: This is harassment which does not cause bodily harm to a wolf. It is allowed without a permit for livestock producers, agents, or grazing permittees on land they own or lawfully occupy and is encouraged any time wolves are observed testing, chasing or in close proximity to livestock. To qualify as non-injurious harassment a person must encounter the wolves unintentionally (pursuit is not allowed without a permit).

Non-lethal Injurious Harassment: This is harassment which may result in injury (not death) to a wolf. Injurious harassment may entail the same actions as above but wolves may also be intentionally pursued or chased. In addition, the use of non-lethal ammunition (rubber bullets, cracker shells, beanbag shells, etc.) may be used.

East of Hwys 97-20-395 ODFW regulates injurious harassment under OAR 635-110-0030 as follows. Injurious harassment is allowed without a permit on private land by livestock producers on land they own or lawfully occupy as long as no identified circumstance exists that attracts wolf-livestock conflict. If ODFW confirms wolf depredation on livestock or other wolf-livestock conflict and if no identified circumstances exist, injurious harassment is allowed by permit on public land by grazing permittees under valid grazing allotments. West of Hwys 97-20-395 ODFW regulated injurious harassment under OAR 635-110-0010 as follows. Injurious harassment is allowed by permit on private and public land by livestock producers on land they own or lawfully occupy as long as no identified circumstance exists that attracts wolf-livestock conflict. Permits for non-lethal injurious harassment remain valid for the livestock grazing season in which issued, provided the livestock operator complies with all applicable laws, including permit conditions.

**Documentation:** Any type of harassment of wolves must be reported to ODFW within 48 hours. All types of harassment or actions taken with intent to harass (e.g., wolves were seen in pasture of cows and producer drove out to haze them off ...) should be documented. Record dates, times, location, actions taken, and results of actions.

**Appropriate Season and Area:** All seasons or situations when wolves are testing, chasing or in close proximity to livestock. ODFW will consider the location of known den sites when permitting injurious harassment on public land.

**Considerations and Limitations:** Producers should coordinate with ODFW to determine if injurious harassment is an option. It is challenging to locate wolves in order to haze. Some types of hazing tools may not be appropriate in some seasons.

## **Livestock Management/Husbandry Changes**

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**Description and Intent:** These are husbandry actions taken specifically to help avoid wolf-livestock conflicts. Actions taken may be tailored to each ranching situation and thus, not all actions used will be appropriate for all. Management actions may include but are not limited to switching or changing pasture use to avoid areas of wolf activity, night feeding, calving season changes, changing herd structure, and possibly others. Actions should be considered individually for each producer and in some cases may be experimental.

**Application:** Changing pastures or grazing sites to avoid wolf use areas may be an option when wolf use data or recent depredation indicates area-specific problems. This may be most applicable when wolves show seasonal use of a particular area.

Some changes to herd structure may minimize conflict. Producers may choose to put cows with small calves and weaned calves in more protectable situations or areas that have less wolf use, and dry cows, cows with larger calves, and ewe only bands in areas that have documented more wolf use.

When practical, producers may choose to wait to put calves in forested pastures and allotments until after the elk and deer have produced their young for the year, greatly increasing the wolf's natural food sources.

Evening feeding can have the effect of bunching cows and calves into a common area where they would be less vulnerable to night predation. Evening feeding may also affect birthing times of livestock (some animals do not give birth while their stomach is full).

Livestock operations are at increased risk during the calving and lambing seasons. Several management actions may reduce risk to young livestock. Calving and lambing in more protectable situations can reduce loss from wolves and other causes versus calving in large forested pastures or open range allotments. Birthing earlier to have larger calves on allotments and reducing the length of the calving period have appeared to be effective for some producers.

Low-stress livestock handling is a technique developed for working with cattle to efficiently move or handle cattle while minimizing animal stress. Traditional livestock handling can be stressful to cattle, which may lead to poor animal health, less efficient movement, and creates noise when calves are separated from their cows. Wolves in the area can be attracted to the noise and vulnerable calves. One of the main features of low-stress livestock handling is creating herd movement through the least amount of energy and pressure as necessary. With respect to predation risk, low-stress livestock handling offers several benefits. First, cattle moved in this manner are more likely to remain in a herd and cows are less likely to be separated from their calves. Calves that remain with their mothers and cattle standing their ground in a herd are less vulnerable to predation. Secondly, cattle placed through low-stress livestock handling are less likely to scatter after being moved, allowing the producer to place the cattle in an appropriate area and be more confident that the herd will remain there even in the producer's absence.

Techniques such as adjusting birthing seasons or shifting to more protective or aggressive breeds are typically long-term changes and may not be appropriate to solve immediate depredation situations. The purpose here is to encourage producers to explore options to better protect herds and to coordinate those efforts with ODFW so that all may continue to develop workable solutions.

**Documentation:** Producers should track and document changes in herd management practices and coordinate closely with ODFW on how a particular husbandry practice may reduce wolf depredation.

**Appropriate Season and Area:** All seasons and areas. However, practices associated with birthing livestock or management of newborn/young livestock should receive priority.

**Considerations and Limitations:** The effects of any particular action may be unknown in some cases and will be dependent on many factors. In some cases a practice may be experimental and close communication between producers and ODFW (for the purpose of reducing risk of wolf predation) will be important.

There may be increased production costs associated with alternative practices used to reduce wolf risk. Producers are encouraged to coordinate with ODFW and local Compensation Committees to determine resources available for implementing any changes.

Not all producers have grazing pasture options, or options may be dependent on other allotment plans. Individual producer coordination will be necessary to evaluate appropriate actions.

## **Experimental Practices**

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**Description and Intent:** There may be a number of non-lethal and preventative practices (i.e., bio-fencing, belling cattle, using wolf-savvy cattle, shock collars, and possibly others) which may reduce depredation risk, but are not yet known to be effective. Experimental practices are encouraged but may require additional use to determine if they are practical, useful, and the conditions in which they would be most effective.

**Application:** Development and implementation of any unproven non-lethal action would require close coordination with ODFW. Experimental practices will be evaluated based on their reasonable expectation to reduce depredation risk.

**Documentation:** Documentation of experimental practices will vary depending on the practice. Producers who implement experimental practices are encouraged to coordinate with ODFW to track use and effectiveness.

**Appropriate Season and Area:** May be implemented during any season or area.

**Considerations and Limitations:** Some experimental practices such as bio-fencing require active involvement by ODFW to implement.