



## Radio Guide 2022

Updated 19 February, 2022

## THE RADIO AGREEMENT

DNR operates a statewide two-way radio system. The Federal Communications Commission (FCC) permits us to share the use of our radio system with other public safety organizations, if those organizations would otherwise be eligible for licenses in the same frequency band. Most fire, emergency medical services and law enforcement organizations are eligible. We encourage our public safety cooperators to take advantage of that system when communicating with DNR during an incident response.

To obtain current system information and apply for a frequency sharing agreement, please send us an email with the following information:

- Organization name
- Email address
- Street address
- Phone number
- Brief description of your organization

Please include the subject line 'Radio Agreement Form Submission.' In return, we will email you a Cooperators Frequency Guide and System Sharing Agreement. Annual and emergency updates will be emailed to your organization.

Our email: radio@dnr.wa.gov

Our phone: 360-902-1480

http://www.dnr.wa.gov/radio

## 1. Table of Contents

ΤH	THE RADIO AGREEMENT2		
2.	DNR Radio Services	6	
	User Training	6	
	Reporting of Radio System Performance  Field Report Message		
3.	You are a Radio Operator	8	
	NO Privacy	8	
4.	Radio Rules	9	
	DNR Business Only	9	
	Frequency Licenses	9	
	Procedure Rules	9	
	Call Signs	9	
	Programming of Radios Emergency Communications		
5.	Talking on the Radio	11	
	Radio Procedures	11	
	Plain Language	12	
	Speak to be Understood	12	
	Radio Words	12	
	Phonetic AlphabetNumbers		
	Numbers	14	
6.	Using Radio Equipment	15	
	Speak Directly Into The Microphone	15	
	The Antenna Must Be Vertical	15	
	Speaker Microphones	16	
	Hang up the Microphone	16	

	Care for Your Radio Equipment	17
	Radio Batteries	17
	Rechargeable Battery Packs	17
	Refillable Battery Packs	17
7.	. Radio Basics & Terminology	18
	Simplex Operations (Direct)	18
	Repeater Operation (Radio Relay)	19
	Multiple Site Radio Network	20
	Squelch Settings	21
	Tones	21
	Scanning Multiple Channels	21
8.	. DNR Radio Channels	22
	Annual Radio Updates	22
	Annual Channel Information	22
	Annual Programming Sticker	22
	Channel Organization	22
	Types of Radio Channels	
	Repeater Channels	
	DNR Simplex Channels	
	Interoperability Channels	
	Mutual Aid Channels	
	Weather Channels	
	CB Radio Channels	25
D	NR RADIO OPERATIONS PROGRAM	26
D	NR STATEWIDE COORDINATION	26
D	NR NORTHWEST REGION REPEATERS	29
D	NR OLYMPIC REGION REPEATERS	30
ט	NR PACIFIC CASCADE REGION REPEATERS	31
D	NR SOUTHEAST REGION	32

DNR SOUTHEAST REGION – SNAKE RIVER AREA		
DNR South Puget Region	34	

#### 2. DNR RADIO SERVICES

The DNR Radio Operations program, within the Office of Administration and Technical Services, supports radio communications technology for the agency.

The program is based at the Tumwater Compound. Local support is provided by radio technicians at Colville, Ellensburg, Chehalis, Sedro Wooley, and Forks.

Radio services are also provided to the Washington State Parks Commission and to the Washington Department of Fish & Wildlife.

During Fire Season, program personnel are routinely dispatched in support of wildfire and other incidents.

#### **USER TRAINING**

User training and information is available from the Radio Operations Program. These services can be accessed by contacting the program office in Tumwater, by contacting the local technicians, and by accessing resources posted on the DNR website.

- SharePoint Engineering & General Services > Team Sites > Radio Operations > Radio User Information
- Public Web Radio | WA DNR

#### REPORTING OF RADIO SYSTEM PERFORMANCE

The Radio Operations program maintains the DNR statewide radio system with the goal that each DNR radio user would be able to communicate effectively wherever their work requires them to travel. Because the DNR work area is so vast and involves challenging terrain, coverage gaps remain.

While the radio system performance can be analyzed with computer models, the most meaningful data comes from DNR employees reporting their experience in the field.

Field reporting of radio system performance provides invaluable information for planning radio system adjustments to improve employee safety. Please use the outline below to record your experience and identify areas where improvement is needed.

#### Field Report Message

Please provide the following information to identify radio system performance issues. Send the report by email to <radio@dnr.wa.gov> or ask your dispatcher to submit the report

- Reporting Unit field unit name / number
- Date / Time indicate when the observation occurred
- User Location indicate where the observation was made. Identify the location by latitude / longitude or section / range / township and road location.

- Radio Channel / Repeater Name indicate which radio channel was being used.
- Message Quality —use the following rating scale to describe radio system performance:
  - 0 = message <u>not received</u>
  - 1 = message <u>unusable</u>, <u>heard but not understood</u>
  - **2** = message **usable** with great effort; repetition often required
  - **3** = message **usable** with slight effort; some repetition required
  - 4 = message easily understood; little noise or distortion present
  - 5 = message is <u>perfect</u>; no noise or distortion
- Talk-Out / Talk-In indicate which the report relates to:
  - How well the dispatcher is heard by the field unit (Talk-Out)
  - How well the field unit is heard by the dispatcher (Talk-In)
  - Or communications in both directions.
- **Portable or Mobile** indicate the type of radio being used.

#### 3. YOU ARE A RADIO OPERATOR

In the United States, the Federal Communications Commission (FCC) regulates the use of radio devices. Every DNR employee that uses our radio does so in keeping with the FCC rules.

Whether using a portable radio, a mobile radio, or a dispatch console, **you are Operating a <u>Radio Station</u>**. Realize that everyone is listening: your coworkers, your boss, other agencies, the news media, and the public. As a radio operator, your professionalism and skill are on display every day.

This manual is your guide to the DNR radio system and the use of DNR radios. The information in this manual will enable you to effectively communicate with your coworkers and coordinate assistance in an emergency.

#### NO PRIVACY

Always keep in mind that every message you send by radio is open to the public. There is no expectation of privacy.

- Always keep messages short and directly related to DNR business. Radio capacity is limited, make the best use of it.
- Never discuss the medical information of an individual. The federal HIPAA rules place significant limits on the disclosure of private medical information.
  - Do <u>NOT</u> say: "[Name] has a leg wound." Instead say: "A male subject has a leg wound."

Pro Tip: Always consider how the message you are about to send will play on the evening news.

#### 4. RADIO RULES

DNR radio use is governed by the Code of Federal Regulations, Title 47, specifically Part 90, known as the FCC Rules.

Your duty as a Radio Operator is to understand and follow the FCC rules that relate to how radios are used. Proper radio operation is not difficult; the rules define an expected level of professionalism and common courtesy.

#### **DNR BUSINESS ONLY**

As a condition of FCC frequency licensing, DNR is required to Exercise direction and control to ensure that radios are used only for the permitted purpose, only in a permissible manner, and only by persons with authority to use and operate the equipment." [§90.403 (a)]

#### As a DNR employee:

- You are authorized to operate radio equipment.
- You must only use the radio for DNR business.
- You must only use the radio according to FCC rules and DNR procedures.

#### FREQUENCY LICENSES

DNR radios are programmed with a large number of frequencies (channels). Specific frequencies are authorized for use within specific service areas. Transmitting on a frequency outside the licensed service area is an FCC violation and may interfere with another radio user. For instance, you are not authorized to transmit on "DNR Common" outside Washington State.

#### **PROCEDURE RULES**

All Radio Operators follow procedures that are defined in FCC rules.

- Keep radio messages as short as possible. [§90.403 (c)]
- Emergency communications has priority. [§90.403 (d)]
- Listen for other users before transmitting. [§90.403 (e)]
- ldentify yourself and the radio station you are using. [§90.425 (a)]

#### CALL SIGNS

FCC rules require that all Radio Operators regularly identify the radio station they are operating [§90.425 (a)]. Among other reasons, this is the most effective way to identify and thereby coordinate the resolution of any radio interference issues.

All DNR radio stations – repeaters, mobile radios, and portable radios – are identified with a single call sign: K E 9 6 6 9.

For consistency, the following guidelines will apply:

- If a Dispatcher is involved in the message exchange, whether the call was initiated by a field unit or by the dispatcher, the dispatcher is responsible for announcing the call sign.
- 2. If a Dispatcher is not involved in the message exchange, the last unit to transmit will end their message by announcing the call sign.
- 3. The call sign may be omitted during periods of continuous radio messages, but must be announced at least once every 30 minutes. (If you don't recall hearing the call sign for a while, send it at the end of the next call.

#### PROGRAMMING OF RADIOS

FCC rules authorize DNR to only program radio frequencies according to the licenses authorized by the Commission.

Except for frequencies used in accordance with §90.417, no person shall program into a transmitter frequencies for which the licensee using the transmitter is not authorized. [§90.427 (b)]

#### **Emergency Communications**

The emergemcy exception provides for a message to be sent by any means during serious emergencies.

Any station licensed under this part may communicate with any other station without restriction as to type, service, or license when the communications involved relate directly to the imminent safety-of-life or property. [§90.417 (a)]

This broad exception allows any means necessary to communicate when there is immediate danger. It does require that the exceptional use must cease promptly when the imminent danger ends.

#### 5. TALKING ON THE RADIO

Talking on the radio is different than speaking with someone by telephone or face-to-face. Differences in audio quality and noise can make understanding difficult. Thus, how you speak will improve how well someone else understands your message. Using well-established radio procedures ensures that your message has the best chance of being understood by the receiving radio station.

#### RADIO PROCEDURES

Radio operators worldwide follow international procedures that define the process of communicating on the radio. Practicing proper radio procedures will mark you as a professional radio operator.

When making a telephone call you (1) dial a number, (2) wait for the other party to answer, (3) then information is exchanged, and finally (4) you hang-up to end the call. Radio procedures follow a similar pattern.

DNR uses the following radio procedure, which follows the international standard. In which most calls have three parts:

**Establish the Call** — the calling station initiates the call.

1- Station Called 2-Station Calling 3-Radio Channel
"Engine 12" "This is Engine 24" "On Capitol"

Respond to the Call — the station being called confirms contact.

1-Station Called 2-Station Calling 3-Acknowledge
"Engine 24" "This is Engine 12" "Go Ahead"

- Exchange Information one or more short messages are exchanged.
  - Formally, Station ID is included.
  - Informally, the sequence may be abbreviated, only sending the message part.

1-Station Called 2-Message 3-End
"Engine 24" "Meet me at XYZ" "Over"

➤ End the Call — this tells other radio uses that the call is complete and the channel is available for use.

1-Station ID 2-End Contact 3-Call Sign "Engine 24" "Clear" "KE9669"

#### PLAIN LANGUAGE

Speaking in plain language is the best way to communicate clearly.

Remember that profanity has no place in professional radio use.

#### **SPEAK TO BE UNDERSTOOD**

As a Radio Operator, how you speak can significantly improve how well the receiving station understands the message.



- Think before Talking formulating the message in your mind as you reach for the microphone helps ensure a smooth and clear delivery.
- **Listen before Talking** if you start talking while someone else is sending a message neither message will be understood.
- **PTT and Then Inhale** begin to inhale as you press the push-to-talk (PTT) button; this fraction of a second gives the radio system time to activate.
- Speak Slowly using an even pace, slower than you would in face-to-face conversation, improves clarity and allows the other operator to make notes.
- Enunciate Clearly pronounce each syllable clearly and distinctly.
- Avoid Contractions saying, "I am going," is easier to understand on the radio than, "I'm going."
- Use Standard Words even when there is interference, standard words are more readily recognized by the listener.

#### RADIO WORDS

Certain words and phrases are international standards for radio communications and have very definite meanings. They are used to improve understanding.

For example, the choice of phonetic words for the alphabet was made after thousands of comprehension tests involving 31 nationalities. The choice was based on the likelihood of a code word being understood in the context of other words and the presence of background noise.

Law enforcement units use a different phonetic alphabet (Adam, Boy, Charles, David, etc.). In practice, even if you misspeak, using phonetic spelling helps get the message across.

The following words and phrases are used in radio communications for clarity and to keep messages short.

- Affirmative Yes
- Break Signals a pause during a long transmission to open the channel for other transmissions, especially emergency traffic, to get through.

- **Break-Break** Signals to all listeners on the frequency, the message to follow is priority. Almost always reserved for emergency traffic.
- Clear I have finished talking to you and do not expect a reply.
- **Come in** You may begin speaking now
- **Copy** I heard what you just said; ok; all right. (See: Rodger)
- **Disregard** cancel the message I was sending
- Go ahead Send your transmission.
- Mayday International signal of life-threatening emergency.<sup>1</sup> (The call is always given three times in a row — "Mayday Mayday Mayday" — to prevent its being mistaken for some similar-sounding phrase under noisy conditions.)
  - DNR users should rely on "plain language" and would make the following call: "<u>Disptach this is Engine 12</u>, I have an Emergency."
  - NOTE: Making a false distress call is a Federal Felony.
- **Negative** No. (It is longer and more easily understood in a noisy message.)
- **Ready to Copy?** Write down (i.e. "Are you prepared to copy".)
  - o "Go Ahead," is the response when ready to write.
  - o "Standby" is the response if not ready to write.
- Repeat resend your last message; i.e. the message was not understood or received clearly.
- Standby pause for the next transmission.
  - o I can't respond right now, please wait and I'll get back to you.
  - I do not have the answer or information at hand, I will attempt to get the answer or information requested shortly.

#### **Phonetic Alphabet**

The 26 phonetic words in the International Radio Spelling Alphabet are:

Alfa	Bravo	Charlie	Delta	Echo	Foxtrot
Golf	Hotel	India	Juliet	Kilo	Lima
Mike	November	Oscar	Papa	Quebec	Romeo
Sierra	Tango	Uniform	Victor	Whiskey	X-ray
Yankee	Zulu				

#### **Numbers**

Numbers can be difficult to hear and understand on the radio. It is important to speak numbers <u>slowly</u> and to <u>over-emphasize</u> the syllables.

For example: "Thu-ree, Six, Ze-ro" is the area code for Olympia.

Remember, "zero" is a number"; "O" (oh) is a letter.

#### 6. Using Radio Equipment

As a Radio Operator you are responsible for the care and proper use of radio equipment. Your life and the lives of your coworkers may depend on that equipment functioning properly in a crisis. Your professionalism is on display in the handling and use of radio equipment.

#### **SPEAK DIRECTLY INTO THE MICROPHONE**

Speaking close to the microphone greatly increases the audio quality. The sound level increases **four times** when you cut the distance in **half**.



#### THE ANTENNA MUST BE VERTICAL

DNR radios antennas are vertically polarized. Holding the antenna horizontally reduces the received signal by **half**.



#### SPEAKER MICROPHONES

Speaker Microphones are an accessory that allows the Radio Operator to receive and transmit without removing the portable radio from its carry case. This is convenient, particularly when moving around obstacles and working with both hands.

However, the effectiveness of the radio antenna is affected by being carried against the body. The body acts as a shield to radio signals, absorbing more than 75% of the transmit energy<sup>2</sup>.

In many situations this loss of transmit energy will not hinder communications. The signal loss will be significant for locations where coverage is marginal.

If you experience difficulty communicating, getting the radio out of the carry case and into your hand will provide a very noticeable improvement in communications.



#### HANG UP THE MICROPHONE

Unintentional transmissions will tie up a radio system and prevent other users from communicating. While frustrating and annoying during routine operations, jamming the radio system in this way can be life-threatening in an emergency.

Radio operators neglecting to return the microphone to its proper hanger is the leading cause of unintended transmit that jam radio systems.

A radio microphone left on the truck seat can easily be squeezed by other stuff, which presses the push-to-talk switch. This unintentional transmission has two avoidable consequences:

- Unintended transmit allows everyone to listen to the conversation taking place in the truck. It may be regrettable that others overhear a conversation that was not intended for broadcast
- Far more important, unintended transmit may jeopardize the lives of other DNR employees or jeopardize public safety by preventing use of the radio system when needed.

Unfortunately, because their radio is transmitting rather than receiving, the Radio Operator responsible for the jamming is the only one who cannot hear the interference. It is important that you hang up the microphone.

<sup>&</sup>lt;sup>2</sup> While impacting radio communications, this energy absorption is NOT a health risk because the transmit energy level of a portable radio is far below the risk level.

#### **CARE FOR YOUR RADIO EQUIPMENT**

Keep your radio equipment safe. Avoid setting your equipment where it could fall or be damaged. Carrying cases, chest packs, and other protective holders are recommended for portable radios.

#### DO NOT USE A PORTABLE RADIO ANTENNA AS A HANDLE

- Keep your radio equipment clean. While it is true that hard-work and dirt go together, protecting your equipment and periodic cleaning will extend its life. Gentle brushing and wiping with a damp cloth is usually sufficient.
- Keep your radio equipment secure. Because of its value, radio equipment can be attractive to thieves. Be aware of your surroundings and the location of your equipment to avoid creating an opportunity for theft.

#### RADIO BATTERIES

Portable radios are completely dependent on batteries; a bad battery will render a good radio useless.

#### Rechargeable Battery Packs

Lithium-ion battery packs provide greater energy capacity with smaller size and weight than the nickel-cadmium batteries that were used in the past.

Lithium-ion battery packs should be recharged regularly. This is better for the battery than draining it completely. "Battery memory" is no longer an issue. If you do drain the battery completely, place it in the charger for the full charge-cycle.

Your local Radio Technician will help determine when your battery should be replaced and will help you with the proper recycling of rechargeable batteries.

#### **Refillable Battery Packs**

Also referred to as clam-shell batteries, refillable battery packs use disposable AA batteries. These are used extensively during fire operations.

Alkaline AA batteries have a long shelf life, so carrying a clam-shell is a good backup for a rechargeable battery pack. Carrying extra AA batteries in your pack is a prudent precaution.

#### 7. RADIO BASICS & TERMINOLOGY

A two-way radio, a cell phone, a television, or a garage door opener are all radios that do the same thing. Various devices differ only in the <u>type</u> of information they send and receive and how they convey the information.

#### SIMPLEX OPERATIONS (DIRECT)

The most basic configuration of radios is when all radios transmit and receive on the same frequency. It's called simplex because it uses a single frequency and communicates in one direction at a time.

The advantage of simplex operations is that it does not rely on additional devices. Simplex works well for unit-to-unit communications over short to moderate distances.

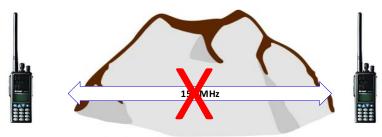
**DNR Common** is a standard simplex channel in all DNR radios. Information about this and other simplex channels is provided in chapter 0 of this booklet.



This illustration shows two units communicating with each other on a simplex channel. Both radios send and receive on the same frequency.

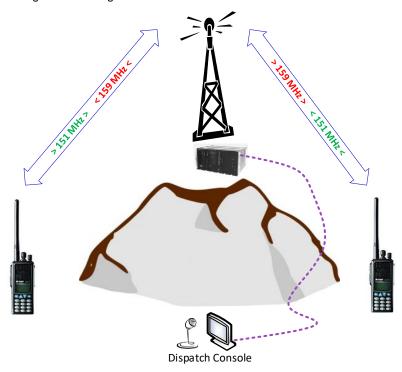
Simplex channels are appropriate for line-of-sight operations. In some situations a simplex channel may communicate for many miles, or even more than 100 miles; in other situations the range of simplex channel could be less than a mile.

The limitation of simplex operation, as illustrated below, is that terrain can block communications between two user radios. While radio will penetrate forest cover and bend around some obstructions, significant terrain cannot be overcome with simplex radio channels.



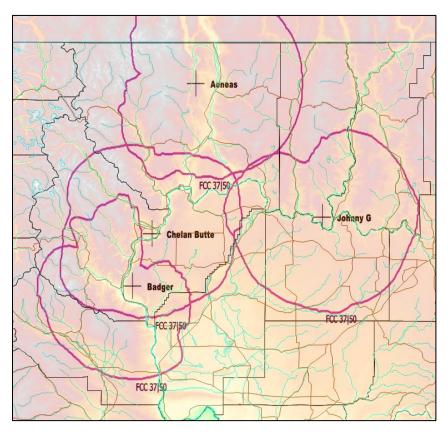
#### REPEATER OPERATION (RADIO RELAY)

A radio that receives on one frequency and simultaneously retransmits on another frequency is a radio repeater. This is called duplex operations because it is sending and receiving at the same time.



This illustration shows the advantage of the repeater in overcoming a terrain obstacle. All radios that can communicate with the repeater can communicate with each other. A repeater provides communications where a simplex channel would be blocked by terrain.

However, every repeater has a limited coverage area, we use many different repeater locations to overcome that problem.



As an illustration of the need for multiple radio sites, this map shows the service contours of four radio sites. (This is a computer model that predicts radio performance.)

The DNR statewide radio system is a network of radio repeaters that are connected to dispatch centers that support each region and to the Emergency Operation Centers (EOC) in Olympia and the backup EOC in Tumwater.

You will need to change radio channels depending on location to access the appropriate radio repeater.

Specific information on how to access the channels in the radios used by DNR is provided in chapters 8, 9, and 10 of this booklet

Information on selecting the correct radio channel for a given location is included in the annual radio channel information documents, which is available on SharePoint, from the Radio Operations program, and from your local Radio Technicians.

#### **SQUELCH SETTINGS**

"Squelch" mutes unwanted signals and interference. Modern radios use an automated squelch system; our radios do not have squelch knobs.

#### **TONES**

You may hear a channel referred to as being "**toned**", which means tone coded squelch or digitally coded squelch has been implemented. Essentially, the radio needs to have not only the correct frequency programmed, but also the correct 'tone'.

#### SCANNING MULTIPLE CHANNELS

The ability to receive multiple channels is very helpful in maintaining awareness of activity in your work area and to ensure you do not miss important messages. Detailed scanning configuration guides are available on https://dnr.wa.gov/radio or from your radio tech.

#### 8. DNR RADIO CHANNELS

As stated above, the DNR radio system is a series of repeaters that are connected to the dispatch centers. It is your responsibility as a Radio Operator to select the correct radio channel in order to access the correct repeater.

Whether operating in the field or serving as a dispatcher you need to:

- Understand the location and coverage area of DNR radio repeaters.
- Understand the function and use of DNR radio channels.
- Understand the organization of DNR radio channels and how to access those channels in the various models of radios used by DNR.

Repeater coverage maps and channel listings are available on <a href="https://dnr.wa.gov/radio">https://dnr.wa.gov/radio</a> or from rour local Radio Technician.

#### **ANNUAL RADIO UPDATES**

Each year in preparation for Fire Season the Radio Operations program publishes radio channel information.

#### **Annual Channel Information**

- Statewide Channel card and booklet.
- Regional Channel cards and booklets.

These are available on https://dnr.wa.gov/radio

If your radio or vehicle does not have a sticker showing the radio has programming for the current year, contact your local Radio Technician to update your radio.

#### **Annual Programming Sticker**

Mobile radios that have received their annual reprogramming will have a sticker with the 2 digits of the year.

#### CHANNEL ORGANIZATION

A combination of transmit and receive frequencies, along with other configuration settings, are referred to as a **channel**.

Channels are assigned a **channel name**, which can be abbreviated depending on the number of characters available on the radio display.

Channels are usually organized in sets of 16, the number of settings available on a typical channel knob. The sets are known either as **Groups** or **Zones**.

Instructions for accessing the Channels and Groups/Zones in each model of radio are provided in the model specific sections at https://dnr.wa.gov/radio

#### TYPES OF RADIO CHANNELS

Every DNR radio will be programmed with different types of radio channels. Each type of radio channel has a specific function, specific operating characteristics, and in many cases specific licensing limitations that must be followed.

It is important to recognize the distinction between radio channels available for routine in daily operations and channels that are designated for emergency operations, incident response, and interagency coordination.

Your local Radio Technician is available to help you in choosing the right radio channel for your work area and situation.

#### **Repeater Channels**

The DNR statewide radio system has a large number of radio repeaters. These radios are licensed for a specific service area.

There are two types of repeater channels:

#### AREA Repeater Channels

The primary day-to-day channels for DNR business are referred to as the "Area Repeaters." Area repeaters are installed to provide radio coverage areas where DNR has land management and firefighting responsibility.

These channels use different frequency sets, which allow neighboring repeaters to be used at the same time without interference.

All DNR radios will be programmed with Area Repeaters for other regions. These channels are provided in the event a radio user needs to travel to other parts of the state. Thus, these are referred to as **Guest Groups**.

Area repeaters are used during initial-attack fire operations. Additional repeaters may be established for extended operations, which makes the Area Repeater available for continued routine operations.

#### STATE Repeater Channels

The State Repeaters are deployed as a second channel at many radio sites and are deployed in areas where DNR has limited daily operations. The "State Repeaters" are shared with the Washington Department of Fish & Wildlife and the State Parks Commission.

State Repeaters may be used during fire operations. There is a procedure for notifying other Fish & Wildlife and State Parks users that must be followed before using a State Repeater for fire operations.

#### **DNR Simplex Channels**

As described above, simplex channels are appropriate for short range unit-to-unit communications. These channels are licensed for statewide operation.

DNR simplex channels include:

#### **DNR Common**

As the name implies, this is the statewide common simplex channel used by all DNR radio operators as a unit-to unit working channel.

In most cases this is programmed as Channel #1 in each radio group/zone. This allows a Radio Operator to select DNR Common without looking by rotating rotate the channel knob all away counterclockwise..

#### DNR TAC 1 & TAC 2

These two channels are statewide unit-to unit tactical channels. They are used heavily for initial-attack fire operations. They are also used when it is desirable to move from DNR Common due to communications volume.

#### Air-to-Ground Channels

DNR- Air/Ground and NIFC Air/Ground channels (DNR A/G-1, etc.) are used for tactical coordination with aircraft. Coordinating helicopter water drops or landing zone operations are typical examples.

#### Air Guard

The National Air Guard frequency is used for emergency aviation communications. It is authorized for emergency air-to-air initial communications, emergency ground-to-air communications, and initial call, recall, and redirection of aircraft when no other frequency is available.

#### **Interoperability Channels**

National and Statewide channels are designated for interagency communications to facilitate joint operations. These channels should only be used for their specified purpose. Region, District, and Incident leaders will specify when and how these channels will be used.

#### National Interoperability Channels

The FCC has designated a set of standard interoperability channels in each of the frequency bands utilized for public safety (Low-band, VHF, UHF, 700 MHz, and 800 MHz). Each set of channels has a "Calling" channel and several "Tactical" channels. These channels are intended to support interagency communications during critical incidents.

The VHF channels are: VCALL10, VTAC11, VTAC12, VTAC13, and VTAC14.

#### **OSCCR**

Washington State agencies have coordinated a statewide interoperability channel. OSCCR, which stands for On Scene Command and Coordination Radio, is used for interagency incident response.

#### Red Net — WA & OR

Red Net is a statewide interagency channel available to coordinate operation between fire agencies.

There is a Red Net channel for Washington and a Red Net channel for Oregon.

#### <u>LERN</u>

The Law Enforcement Radio Network is a statewide interagency channel available to coordinate operations between police agencies.

#### **Mutual Aid Channels**

DNR Radios have a large number of channels that are licensed to other agencies and authorized to DNR under the terms of mutual aid agreements. There are

procedures and call signs that are to be used with mutual aid channels. Your radio technician will provide specific instructions on the use of mutual aid channels.

#### **Weather Channels**

The National Weather Service provides a continuous broadcast of weather information using radio transmitters located throughout the state. There are six weather channels; selecting between them will locate a broadcast for your area.

#### **CB Radio Channels**

Many DNR vehicles are equipped with CB radios as an aid to safety. These radios support communications with log trucks and other equipment drivers that operate on forest roads. As you travel on forest roads, look for signs indicating which channel is being used for that area. A loaded truck coming downhill has the right-of-way; they should announce their presence to allow you an opportunity to safely pull over.

### 9. DNR Region Frequencies

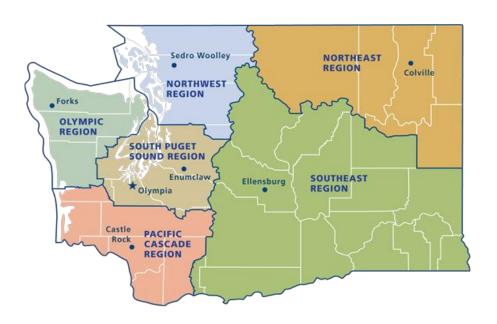
#### **DNR RADIO OPERATIONS PROGRAM**

Radio Operations is the technical support program for the DNR statewide radio system. The program is headquartered at the Tumwater Compound. Technical staff are assigned to support each region and located accordingly.

Radio Operations 360-902-1480 815 88th Ave SE Tumwater, WA 98501

#### **DNR STATEWIDE COORDINATION**

Wildfire Division 360-902-1300 1111 Washington St SE Olympia, WA 98504



#### **DNR Statewide Simplex Channels**

For unit to unit communications, without repeaters. Generally useable within a few miles and 'near line of sight' conditions.

Channel Name	Notes
DNR Common	Statewide unit-to-unit
DNR A/G 1	Statewide air to ground
DNR A/G 2	Statewide air to ground
DNR A/G LOW	Statewide air to ground (LOW POWER ONLY)
DNR TAC 1	Statewide unit-to-unit
DNR TAC 2	Statewide unit-to-unit

#### NW region prefers DNR A/G2

#### **DNR Northeast Region Repeaters**

Region Office 509-684-7474 225 S Silke Road Colville, WA

Dispatch Northeast Interagency Center Communications Center

Dispatch **509-685-6900** 

Phone

Call Sign "Northeast Dispatch"

Channel Name	Notes
Brewster	5 mi WSW of Pateros
Cheney	16 mi SE of Spokane
Chewelah	15 mi SW of Chewelah
Colville	5 mi W of Northport
Deer Park	7 mi east of Chewelah
Lincoln	14 mi NNW of Davenport
Okanogan	15 mi W of Okanogan
Republic	13 mi WNW of Republic
Tonasket	9 mi WNW ofTonasket
Twisp	9 mi ENE of Twisp

#### **DNR Northwest Region Repeaters**

Region Office 360-856-3500

919 N Township Sedro Woolley, WA 98284

Dispatch Center Northwest Region Headquarters

Dispatch

360-854-2825

Phone

Call Sign

"Northwest"

Channel Name	Notes
Arlington	9 mi NNE of Arlington
Lyman	6 mi NE of Sedro-Woolley
Orcas	E side of Orcas Island
Sauk	5 mi S of Concrete
Snohomish	20 mi W of Port Townsend
Stevens	2 mi S of Skykomish
Sultan	8 mi NE of Sultan
Sumas	12 mi NE of Bellingham

#### **DNR OLYMPIC REGION REPEATERS**

Region Office **360-374-2800** 

411 Tillicum Lane Forks, WA 98331

Dispatch Center **Olympic Region Headquarters** 

Dispatch

360-374-2811

Phone

Call Sign "Olympic"

Channel Name	Notes
Canal	11 mi SSE of Brinnon
Discovery	10 mi SW Port Townsend
Hoh	17 mi SE of Forks
Ozette	13 mi NNE of Forks
Quinault	29 mi NNW Aberdeen
Straits	11 mi W of Port Angeles
Wishkah	24 mi N of Montesano
Harbor	5 mi SE of Aberdeen

#### DNR PACIFIC CASCADE REGION REPEATERS

Region Office **360-577-2025** 

601 Bond Road Castle Rock, WA

Dispatch Center **Pacific Cascade Region** 

Headquarters

Dispatch

360-274-2089

Phone

Call Sign "Cascade"

Channel Name	Notes
Abernathy	9 mi NW of Castle Rock
Baw Faw	13 mi W of Winlock
Burley	9 mi SSE of Randle
Capitol	12 mi SW of Olympia
Defiance	10 mi WSW of Hood River
Hopkins	4 mi W of Morton
Kalama	3 mi ENE of Kalama
Larch	11 mi SW of Battle Ground
Mitchell	5 mi E of Cougar
Naselle	4 mi N of Naselle
Nicolai	5 mi SSW of Westport
Signal Peak	7 mi SE of Toutle

#### DNR SOUTHEAST REGION

Region Office 509-925-8510

**Central Washington** 

Notes

Dispatch **Interagency Communications** Center

Center

Dispatch

**Channel Name** 

509-884-3473

Phone

Call Sign "Wenatchee"

713 Bowers Road Ellensburg, WA 98926 3796 Airport Way East Wenatchee, WA

	<del>,</del>
Badger	4 mi NE of Wenatchee
Brewster	10 mi SSW of Brewster
Chelan	2 mi S of Chelan
Cleman	20 mi NW of Yakima
SE Defiance	10 mi WSW of Hood River
Grayback	15 mi NW of Goldendale
Juniper	7 mi SE of Goldendale
Naneum	17 mi N of Ellensburg
Peoh	3 mi S of Cle Elum
Sedge	22 mi SW of Yakima

#### **DNR SOUTHEAST REGION - SNAKE RIVER AREA**

Region Office 509-925-8510 713 Bowers Road

Dispatch Blue Mountain Interagency 59973 Downs Rd.

Center Dispatch Center LaGrande, OR 98750

Dispatch 541-963-7171

Phone

Call Sign "LaGrande"

Notes	
5 mi WSW of Anatone	
5 mi ESE of Dayton	
10 mi SSW of Pasco	
7 mi SW of Washtucna	

## **DNR South Puget Region**

Region Office 360-825-1631 950 Farman Ave N Enumclaw, WA 98022

Dispatch South Puget Sound Region

Center Headquarters

Dispatch **360-802-7080** 

Phone

Call Sign "South Puget"

Channel Name	Notes
Belfair	5 mi WSW of Bremerton
Capitol	12 mi SW of Olympia
Carbon	9 mi SW of Enumclaw
Eatonville	11 mi ESE of Eatonville
Enumclaw	8 mi East of Enumclaw
North Bend	2 mi SE of North Bend
Shelton	12 mi NW of Shelton

# Washington Department of Natural Resources Radio Operations Program 360-902-1480 radio@dnr.wa.gov