



What is Cross Country (XC) Skiing?

Three basic forms of XC skiing:

- 1. Nordic * also called 'Classic' or 'Groomed'
- Metal Edge Touring * also called 'Light Touring'
- 3. Skate

What is <u>not</u> XC skiing?

Backcountry skiing also called 'Ski Mountaineering'

* This presentation covers these two forms of XC skiing





- 1. Nordic non-metal edge XC skis are designed for:
- ✓ Groomed tracks
- ✓ Flat and gentle rolling terrain
- 2. <u>Metal Edge</u> Touring skis are designed for:
- ✓ Non-groomed * flat and hilly terrain, e.g. logging roads, meadows

* Skis wider than 65mm, in most cases, will not fit inside Nordic groomed tracks

Disclaimer: Given the vast differences in terrain, conditions, skiing styles, and skier abilities, one size and type does not fit all.





- 1. <u>New Nordic Norm (NNN)</u> binding developed by Rottefella and licensed to <u>Rossignol</u>, <u>Madshus</u> and <u>Fischer</u>. These bindings have subtypes: NNN-BC (Backcountry), R3 Skate, R3 Classic, and R4 NIS (Nordic Integrated System).
- 2. <u>R4 NIS (Nordic Integrated System)</u> binding, made by Rottefella and Rossignol, is the newest variant of the NNN binding. These bindings are compatible with any NNN boot, but can only be used on skis that come with the permanently bonded plate, presently made only by Rossignol, Madshus, and Fischer.
- 3. <u>Salomon Nordic System (SNS)</u> bindings made by <u>Salomon</u> and <u>Atomic</u>. Boots that are compatible with the SNS Profil system are made by Salomon, Atomic, Adidas, Hartjes and Botas. SNS Profil bindings are used for both Skating and Classic. Fischer was for many years synonymous with SNS but switched to the more widely used NNN for the 2007/2008 season and beyond.

There is much debate over which is the superior binding system: SNS or NNN. Overall, the differences between the NNN and SNS binding systems are minuscule to the average skier; the choice should come down to which bindings are compatible with boots which best fit (comfort-wise) the skier.

Source: www.wikipedia.com



Clothing and Comfort

How cold will you be while XC skiing in Washington?

- ✓ West of and on the Cascades crest, depending on elevation, temps range from 10° 40°F
- ✓ East of the Cascades crest, depending on elevation, temps range as low as 0° 20° F

Keys to avoiding hypothermia:

- 1. Dress in layers
- 2. While skiing, avoid overheating by slowing your pace and heart rate
- 3. While resting, add a layer and seek protection from the wind
- 4. Eat and drink frequently

Ideal clothing:

- 1. Cotton-free
- 2. Breathable, windproof, and waterproof (or water resistant, e.g. Soft Shell)
- 3. "Zipable" (pant side zippers, jacket armpit zippers)
- 4. "Rollable" (hat, balaclava, sleeves, socks)

My gear list for XC Skiing Amabilis Mountain (10 miles roundtrip with 2,000' of elevation gain)



Madshus Voss MGV+ Skis	Mid-Layer Shirt: Wicking Long Sleeve		
Rottefella NNN BC Bindings	Additional Layer Shirt: Micro fleece (during extreme cold conditions)		
Alpina BC 2250 Boots and Boot Gaiters	Hooded Soft Shell Jacket		
Poles	Parka: Lightweight / Packable (used during rest breaks)		
Sunglasses / Lightweight goggles	Soft Shell Pants (Rain pants stowed in backpack)		
Glide Wax	Wool Blend Socks		
Daypack	Wool/Fleece Hat		
Hand Warmers	Balaclava or Ski Face Mask		
Gloves: Lightweight / Windproof / Water resistant	Thermos: coffee		
Mittens: Waterproof	Snacks: Gel Cubes, Nuts, Chocolates, and Lunch		
Base layer Shirt: Wicking Short Sleeve	Water: Insulated Hydration Bag & Water Bottle (inside insulated bag)		

Cardio Conditioning, Hydration, and Calorie Consumption



Good cardio conditioning:

- 1. Reduces chances of overheating thus reduces chances of hypothermia
- 2. Increases opportunities to ski a wider variety of terrain
- 3. Increases enjoyment of skiing

To stay comfortable, hydrated, and fed, bring a small backpack for:

- 1. Clothing layers, e.g hat, gloves, hand warmers, etc.
- 2. Snacks to consume every 30 to 60 minutes
- 3. Water sufficient for the duration of the outing
- 4. Thermos of (or stove for) soup, coffee or tea *

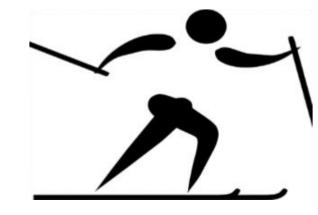
* There are many conflicting studies regarding caffiene and its dehydration effects

Disclaimer: I am neither an MD nor a Sports Physiologist

Cardio conditioning, hydration, and calorie consumption cont.



Average number of		Skier's Weight		
calories burned per hour	130 lbs.	155 lbs.	190 lbs.	
Aerobics	354	422	518	
Hiking	354	422	518	
Backpacking	413	493	604	
Jogging	413	493	604	
XC Skiing, slow or light effort	413	493	604	
Bicycling, moderate effort	472	563	690	
XC Skiing, moderate effort	472	563	690	
Snowshoeing	472	563	690	
XC Skiing, vigorous effort	531	633	776	
XC Skiing, uphill, max effort	974	1161	1423	



Are XC Ski lessons worth the money?

Speaking from personal experience, absolutely, yes!

While it is possible to teach yourself or learn from a friend...

... you will advance more quickly through instruction from a certified instructor *





- Snoqualmie Pass Nordic Center *
- 2. Stevens Pass Nordic Center *
- 3. Mountaineers Foothills Branch Courses **
- 4. Mountaineers Meany Lodge courses **

* On-site rental equipment available

** On-site rental equipment is not available and Membership is required for some courses



Ski Package (boots, bindings, skis, and poles):

- 1. Used Nordic (non-metal edge): \$50 to \$200 or more
- 2. New Nordic (non-metal edge): \$200 to \$400 or more
- 3. New Metal Edge Touring: \$300 to \$600 or more

Marmot Mountain Works offers a try-before-you-buy program.



Buying versus renting decision... if I were to start over again, knowing what I know now, I would:



- ✓ Visit a retail outlet and speak with an Employee experienced in XC skiing. In my experience, on the Eastside, Marmot Mountain Works employs many experienced XC and Backcountry Skiers and offers the largest selection of XC skis. Seattle REI carries a fairly good selection of metal-edge XC skis.
- ✓ Rent Nordic metal-edge skis, boots, and bindings
- ✓ Take a lesson
- ✓ Buy a used copy of 100 Best Cross Country Ski Trails in Washington (\$7 on amazon.com)
- ✓ Pool funds with friends to purchase a Sno-Park pass with groomed sticker (\$80/annual)
- ✓ Ski several times at groomed areas, e.g. Crystal Springs, Cabin Creek, etc.
- ✓ Possibly take another lesson to improve upon what I've learned
- ✓ Ski some hilly terrain to get a feel for more difficult terrain, e.g. Amabilis Mtn, Windy Pass, etc.
- ✓ Join Washington Ski Touring Club and/or The Cascades Cross Country Skiing Meetup

Follow most or all of the steps, above, then ask myself, do I want to...

- ✓ Learn to Skate ski?
- ✓ Ski only Nordic groomed terrain?
- ✓ Ski moderately steep terrain, for example, logging roads?
- ✓ Ski terrain requiring advanced skills including avalanche safety training?

Answers to these questions will help you decide which type gear to buy. Of course, desires change as skills progress so your preferences will likely change as you gain experience.





Non-Motorized and Motorized (Snowmobile) * Sno-Parks

- ✓ Non-groomed permit: \$40 annual
- ✓ Groomed permit: additional \$40 annual

100 Best Cross Country Ski Trails in Washington **

* Weekends are crowded with noisy smelly snowmobiles; weekdays are less so

** Book was published in 2002 therefore some trail and Sno-Park info is outdated





Ski Organizations

- 1. <u>Cascades Cross Country Ski Meetup</u> (Free)
- 2. Washington Ski Touring Club (\$20/annual)
- 3. Mountaineers (\$73/annual plus initial signup fee of \$35)

Online Tutorials

- 1. XC Ski diagonal stride instructional video
- 2. <u>Sierra Trading Post.com Nordic Skiing Guide</u>
- 3. REI Nordic Skiing Guide
- 4. Guide for Wax and Waxless Ski Equipment

Online Resources

Retail Stores for Purchase and/or Rental

- 1. REI
- 2. Strutevant's
- 3. Marmot Mountain Works
- 4. Second Ascent

Gear and Clothing Online Stores

- 1. <u>Backcountry.com Outlet</u>
- 2. GearTrade.com
- 3. <u>SierraTradingPost</u>
- 4. Oregon Mountain Community
- 5. <u>Camp Saver</u>
- 6. OSR Cross Country Ski Direct



Online Resources

- 1. Weather and Avalanche Forecasts
- 2. Mountain Pass Weather and Conditions
- 3. Trip Reports:

Turns-All-Year.com

WA Trails Association

NWHikers.net

Free Avalanche Awareness Courses

- 1. <u>REI</u>
- 2. <u>David Pettigrew Memorial Foundation</u>





Your feedback and questions are welcome <u>here</u>

Photos

Slide 1: Apr 2009 Mt Shuksan near Artists Point

Slide 20: Jan 2010 Windy Pass/Windy Acres near Snoqualmie Pass