

# WASHOE COUNTY SEARCH & RESCUE TRAINING

FITNESS NAVIGATION FIELD CRAFT MEDICAL SURVIVAL

## THE RULE OF THREE'S . . . EXPANDED

**3 SECONDS** . . . ONE MUST HAVE A POSITIVE MENTAL ATTITUDE IMMEDIATELY.

**3 MINUTES** . . . WE NEED TO BREATHE. VENTILATE THE SNOW SHELTER AND BE-WARE OF CARBON DIOXIDE.

**3 HOURS** . . . WARMTH . . . MUST MAINTAIN HEAT BEING LOST TO THE COLD ENVIRONMENT. CONDUCTION, RADIATION, EVAPORATION, CONVECTION AND RESPIRATION.

. . . SHELTER . . . OUT OF WIND, SHIELDED FROM DIRECT CONTACT WITH RAIN OR SNOW.

**3 DAYS** . . . WATER, MUST REPLACE URINE, SWEAT & RESPIRATION OR THE BODY AND MIND WILL CEASE TO FUNCTION AT A SURVIVING LEVEL.

. . . REST OR SLEEP, WITHOUT REST THE BODY BECOMES EXHAUSTED . . . FROM SHELTER BUILDING, GATHERING FIRE WOOD, . . . ANXIETY.

**3 WEEKS** . . . FOOD. WHILE THE HEALTHY BODY MAY SUSTAIN ITSELF FOR UP TO 3 WEEKS, SNACKS AND ENRICHED LIQUIDS HELP MAINTAIN FUEL FOR WARMTH AND STAMINA. FOOD AND FIRE ARE PSYCHOLOGICAL BOOSTS ALSO.

## COLD

**CLOTHES CLEAN** . . . TO MAINTAIN INSULATING AIR LAYER.

**OVERHEATING(AVOID)** . . . SWEAT COOLS THE BODY.

**LOOSE & LAYERED** . . . MAINTAIN INSULATING AIR LAYERS & TEMPERATURE CONTROL BY ADDING OR REMOVING LAYERS.

**DRY** . . . STAY DRY, WET CLOTHES LOSE INSULATING PROPERTIES. SHAKE OFF SNOW INSTEAD OF RUBBING. IF IMMERSED, ROLL IN SNOW TO ABSORB WATER FROM YOUR CLOTHING.

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## Clothing

Winter weather is unpredictable and can be severe. Proper clothing is your first and last defense against the elements. A layering system is most commonly recommended and consists of three parts. If there is any rule in winter camping, it is to NEVER wear COTTON. Cotton is great for desert hiking and around town, but since it stores water in its fibers, and water lowers the temperature as it evaporates, it cools the wearer. In the winter, your prime objective is to Conserve heat, not lose it.

1. **Wicking Layer** - The layer next to the skin to wick moisture away. The most important part of your layering system because it is closest to you. This can be a natural fiber like wool or silk, or a synthetic fiber like Polypropylene, Thermastat, Capeline, or BiPolar. The synthetics are preferred to natural fibers because they wick moisture better, dry faster, and last longer. Although silk is very comfortable, it does absorb water and dries slowly. Wool was the standard until synthetics were developed and although it still is an alternative for those that can't tolerate synthetics, all except Marino Wool are scratchy, all are slow to dry and smell when wet. A word of caution regarding Polypro. It is cheaper and does wick very well, but it retains odor and if accidentally thrown in the dryer, it will shrink to doll clothes size. The other synthetics are more expensive (\$30 to \$100) but well worth their higher price tag.
2. **Insulating Layer** - This layer traps warm air that your body has heated up. Modern winter travelers rely on polar fleece and Down or Synthetic lofting fibers like Quallofil, Polarguard or Primaloft as insulation. Commonly combined with the protective layer in ski parkas and jackets used in the city, in the backcountry it is better to keep this separate from the shell to allow for changable conditions. When you start going up a hill, it is a good idea to remove a layer of insulation to prevent overheating, and then replacing them as you cool down. This isn't possible if your shell and insulation are combined in one piece. For moderate conditions, a Polartec Fleece jacket is the best choice, and in extreme cold a down sweater can be added. In camp you might find yourself wearing all your layers since you are not working as hard and generating as much heat. A low cost alternative to the high tec garmets is an acrylic sweater. Much cheaper than a down or fleece jacket they will provide the necessary air space to insulate you provided you have a good quality shell over it.
3. **Protective layer** - Next to the wicking layer, this is the most important part of your clothing system. The outer layer protects the two inner layers from wind, rain, and snow. The best type of fabric for this layer is Gore-Tex or other waterproof-breathable material. Since you will encounter a wide variety of conditions, you will need an outer shell that will keep you dry, protect you from wind, and still let the perspiration that you will be generating evaporate. That means it has to let moisture vapor pass through but keep water droplets out. A waterproof-breathable fabric allows moisture vapor to pass through but keeps water droplets out. The fabric has millions of microscopic holes in it which are large enough to allow water vapor through but are too small to let liquid water in. Perspiration evaporates through the shell but rain and snow stays out. If you are on a low budget, some less expensive alternatives are light weight nylon shell jacket and pants that cost under \$40 each. This will work in a pinch. Some campers even use PVC coated rainsuits, but use caution with this type of gear and stay close to shelter, it may not protect you in really nasty conditions.