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Wilderness Survival & Exposure

Surviving the First Night





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**This Fire looks
so warm
and
cozy.**

**Surviving
the
First Night**



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**This Fire will
be flameless
with few
embers remaining
in less than one hour.**

**Surviving
the
First Night**



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**Dry kindling and
firewood is often
scarce or
Nonexistent.**

**Surviving
the
First Night**



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**Fire is wonderful
but don't count
on it.**

**Surviving
the
First Night**



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**Spending the
night in the
woods can be
fun if you are
prepared.**

**Surviving
the
First Night**



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**Spending the
night in the
woods is
miserable and
possibly deadly
if you are NOT
prepared.**

**Surviving
the
First Night**



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**The
Simple
Solution:
Always
be prepared.**

**Surviving
the
First Night**



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Duane Anderson, MD

Emergency Dept. Medical Director

- Board Certified, Emergency Medicine
- Snoqualmie Valley Hospital since 2005
- Chicago Medical School - 1995
- Residency: University of Massachusetts - 1998
- Pre-Med Major in Spanish
- Registered Nurse 1981-1989
- EMT/Firefighter 1977-1981
- Eagle Scout, BSA



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- Six Room 24/7 Emergency Dept
- 25 Private Inpatient rooms
- Department of Health Awarded
Level II Cardiac Care
Level III Stroke Care
- 24/7 Full-Service Lab
- State-of-the Art Imaging
- Patients requiring Surgery or ICU are stabilized and transferred to our partners in healthcare.

Top 20 Hospital for Quality



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- Snoqualmie Valley Hospital was recognized as one of the Top 20 Critical Access Hospitals for Quality by the National Rural Health Association.
- We received this award out of more than 1,300 Critical Access Hospitals across the nation.

What at the minimum do you need to ensure survival?



Glascow Coma Scale and Hierarchy of Need.

GCS is calculated based on points awarded for **Eye**, **Verbal** and **Motor** response.

Which is worth more if you are laying on the train tracks at the Glasgow station?

Motor: You can move yourself out of the way. Six points maximum.

Verbal: You can yell for somebody to help. Five points maximum. "V" is Roman Numeral Five.

Eyes: You see the train coming. 4 points maximum.

Which of the Ten Essentials will keep you alive the first night?

Hint: Probably not Sun Protection.

Ten Essentials

1. Navigation
2. Sun Protection
3. Insulation
4. Illumination
5. First-aid Supplies
6. Fire
7. Repair Kit and Tools
8. Nutrition (extra food)
9. Hydration (extra water)
10. Emergency Shelter

**Do not accept failure as an option.
Positive Mental Attitude and
Never Say Die.**



10 ESSENTIALS HIERARCHY OF NEED

FIRST: Try not to spend the night. Compass, map, GPS, Whistle, cell phone, flares, signal mirror, smoky fire, pretrip plan, flashlight.

Cold Weather Sleeping Bag
with tarp or bag to keep dry
will ensure overnight survival
the majority of the time.

Water (Average adult human can last 3 days
without water). HYDRATE HYDRATE HYDRATE!

Food (Average adult human can last 3 weeks
without food)

Ten Essentials

(Which is worth more tonight?)

1. Navigation
2. Sun Protection
3. Insulation
4. Illumination
5. First-aid Supplies
6. Fire
7. Repair Kit and Tools
8. Nutrition (extra food)
9. Hydration (extra water)
10. **Emergency Shelter**

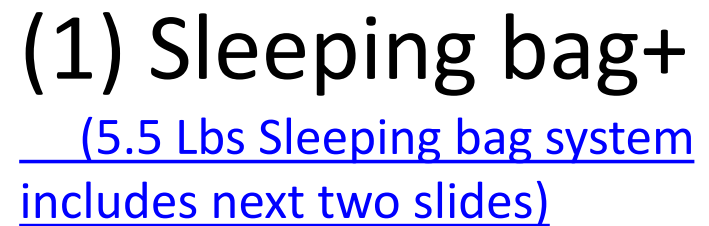


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1. Navigation
2. Sun Protection
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5. First-aid Supplies
6. Fire
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9. Hydration (extra water)
10. Emergency Shelter

- (1) Sleeping bag plus =5.5 Lbs and no fire needed.
- (2) Belt Pack Survival kit = 2.5 lbs but requires fire if cold.
- (3) Whole Bag: Above plus water, rope, supplies=14.5 Lbs

[illegible]

Inside the Sleeping bag.



Ten Essentials

(Inside Sleeping bag 5.5 lbs)

1. Navigation
2. Sun Protection
3. Insulation
4. Illumination
5. First-aid Supplies
6. Fire
7. Repair Kit and Tools
8. Nutrition (extra food)
9. Hydration (extra water)
10. Emergency Shelter

Inside the Sleeping bag.



Ten Essentials

(Inside Sleeping bag 5.5 lbs)

1. Navigation
2. Sun Protection
3. Insulation
4. Illumination
5. First-aid Supplies
6. Fire
7. Repair Kit and Tools
8. Nutrition (extra food)
9. Hydration (extra water)
10. Emergency Shelter

Three parts to the final system:

- (1) Sleeping bag plus =5.5 Lbs and no fire needed.
- (2) Belt Pack Survival kit = 2.5 lbs but requires fire if cold.
- (3) Whole Bag: Above plus water, rope, supplies=14.5 Lbs



(2) Belt Pack

(This version 2.5 lbs)

Alum cook tin containing:

- Whistle match compass tool
- Flashlight, 1200 Kcal SOLAS bar,
- Triangular bandage; roll tape
- Meds: Tylen, Motrin, Benadryl
- Band-aids, **Space bag**, Fish hooks and leader,, **Water purification tabs**, **Mini Filter straw**, Cable saw, Leatherman tool, **Waterproof matches**, **Hexamine fire starter**.
- This is a great kit but you will get cold if no fire.

This bag is rated 30 degrees F for “comfort”, but -13 F for Survival. Inside a Space bag It will be dry and even warmer.

Insulation

- Bring it with you or make your own.
- Sleeping Bag and way to keep it dry (this bag weighs less than 2 lbs).
- Vs
- Natural Insulation with or without fire.



If No fire and No Sleeping bag, you will need
“Thick Insulation” all around. Leaves, Newspapers, etc.
Much of your natural insulation can also be used to start a
Fire. Fresh boughs don't burn well but do insulate.



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Insulation

- Natural Insulation needs to be thick and **dry**.
- Burrow into a pile of dry leaves or grasses under branches laid in such a way as to protect against wet. This takes time and daylight.

Dang. I left my less than 2 lb sleeping bag at home



- Insulate from the ground and air.
- Sitting up limits ground contact.
- Think happy thoughts.
- If you are lost with a partner share body warmth. The heart and liver are constantly generating heat.
- Gather way more insulation than you can possibly use.
- Wear a Hat.

This dog weighs more than 2 pounds



- But it can keep me warm.
- Other Options: Layer System, Space Blankets or bags, Contractor Garbage bags, Blizzard Bag, Hand warmers.
- Consider weight and bulk. At what point would you be better off to just carry a sleeping bag and ?

Survival Insulation options



- Sleeping bag in Space Bag wrapped in poncho weighs 3.8 lbs.
- Blizzard Bag weighs 500grams = 1.1 lbs.
- Space Blankets weigh very little but can tear easily and insulate little.
- New ideas? Inflatables?

Ok. I'm warm. What Happens if I Drink the water?



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- Giardia, Cryptosporidia, E Coli, Shigella, and Camphylobacter can lead to dehydration.
- WHO Rehydration formula works on the principal that Sodium Glucose Transport Channels may still work to hydrate.
- Sweet and Salty taste

What Happens if you Drink the water? “N/V/D”.

CDC Water Pathogen List

- Cryptosporidium
- Giardia
- Campylobacter
- Shigella
- E Coli
- Viruses like Rota, Norwalk, Hepatitis

cdc.gov/healthywater/pdf/drinking/Backcountry_Water_Treatment.pdf

CDC

Fact Sheet for Healthy Drinking Water

Drinking Water Treatment Methods for Backcountry and Travel Use

This document should only serve as a guide for individuals intending to use untreated or poorly treated water as a drinking water source. This document may also aid travelers and backcountry water users in researching drinking water treatment methods. Except for boiling, few of the water treatment methods are 100% effective in removing all pathogens.

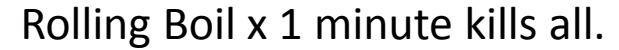
Contaminant	Potential Health Effects from Ingestion of Water	Sources of Contaminant in Drinking Water	Methods that may remove some/all of the contaminant				
			Boiling (Rolling boil for 1 minute minimum) *	Filtration **	Disinfection ***		Combination Filtration and Disinfection ****
					Iodine or Chlorine	Chlorine Dioxide	
Protozoa- Cryptosporidium	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	+++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)	—	+ to ++	++++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)
Protozoa- Giardia intestinalis (aka Giardia lamblia)	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	+++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)	+ to ++	+++	++++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)
Bacteria- (e.g., Campylobacter, Salmonella, Shigella, E. coli)	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	++ Absolute ≤ 0.3 micron filter	+++	+++	++++ Absolute ≤ 0.3 micron filter
Viruses- (e.g., enterovirus, hepatitis A, norovirus, rotavirus)	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	—	+++	+++	+++

Treatment methods listed above:

* Boiling can be used as a pathogen reduction method that should kill all pathogens. Water should be brought to a rolling boil for 1 minute (at altitudes greater than 6,562 feet (>2,000 m), boil water for 3 minutes.)

Search the web and Windows

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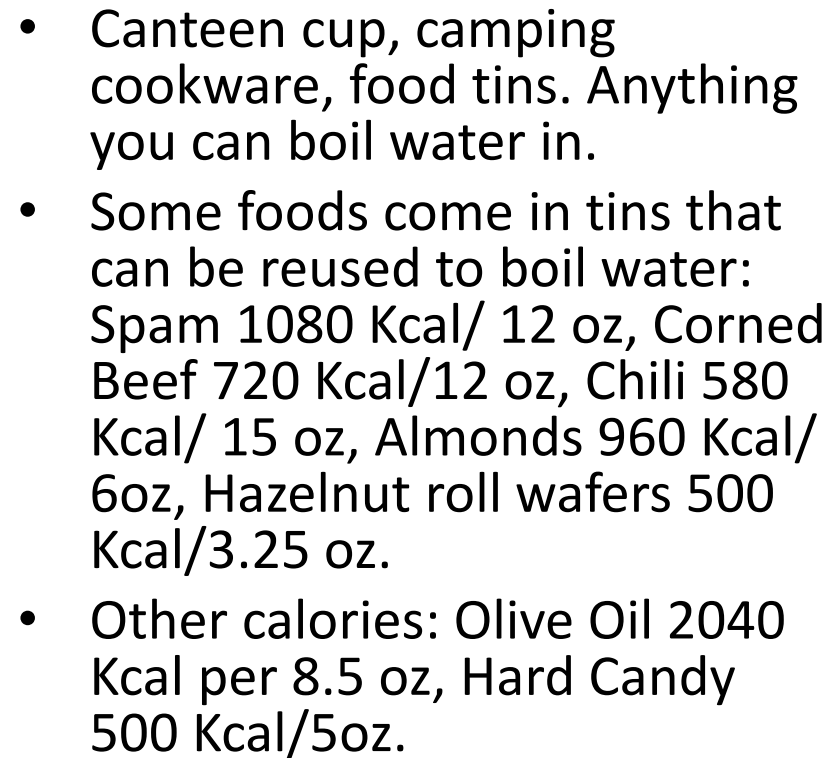


Filters protect against Giardia, Cryptosporidia, less against bacteria. Not against viruses.

UV Light (“Steri-Pen”)

MIOX system (uses electricity plus table salt to chlorinate)

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Food Calories compared to carrying weight.



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High calorie food options:

- **Canned Almonds** 960 Kcal/6 oz best of the **tins**. Short shelf life.
- Hard candy 500Kcal/5 oz. Long shelf life.
- Olive Oil 2040 Kcal/8.5 oz. Burns. Long shelf life
- SOLAS Ration: 2400 Kcal /18 oz (1200/9 oz). Long shelf life 5 years.

Wilderness survival



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- I guess I wasn't the only one thinking of this subject!
- This is this month's edition of Field and Stream.
- Sad things can happen if you don't think about it (see next page).

In the wilderness it's very easy to get in over your head.



- **June 10, 2008 Seattle PI: Rainier death, 2 exposure victims survive.**
- “Regardless of the season, hikers heading into the mountains should carry the necessities for surviving a night in the woods, said Richard Barringer, spokesman for The Mountaineers, a Seattle outdoors club.
- **Without passing judgment on the stranded hikers**, Barringer said hikers sometimes forgo packing extra clothing and food when the weather appears to be mild.
- At elevation, though, changes come quickly and hikers should carry supplies needed to make it through the night.
- **"Weather can change. Your situation can change,"** Barringer said.
"Basically, it's expecting the unexpected."
-
- Summary:
- **The Sleeping Bag system will save you. Anything less will require a lot of luck and hard work.**

To borrow from the Boy Scouts: “Be Prepared”!



- When prepared, spending the night in the woods is fun.
- When unprepared it can be scary, miserable, and deadly.
- The simple solution: ALWAYS be ready!



Questions?



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Practice in advance



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(Today's version)

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