

ultralight backpacking



course 516

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We'll cover:

- definitions & rationale
- ultralight principles
- the big ~~three~~ four
- what's in my pack?
- tips & tricks
- gear recommendations
- resources





definitions

- **base weight:** full pack weight minus food, water, fuel
- **lightweight:** base weight \leq 20 lbs
- **ultralight:** base weight \leq 10 lbs
- **super ultralight:** base weight \leq 5 lbs
- **stupid light:** not taking necessary gear given the conditions



paths to ultralight:

1. carry less stuff*
2. carry lighter stuff*

**note that these are not the goals of ultralight. They are the means to an end.*



ultralight goals

- comfort
- focus on the journey
- travel faster
- travel farther
- fewer injuries
- enable young and old
- grow skills and planning



common concerns

- price
- durability
- safety
- comfort
- fad





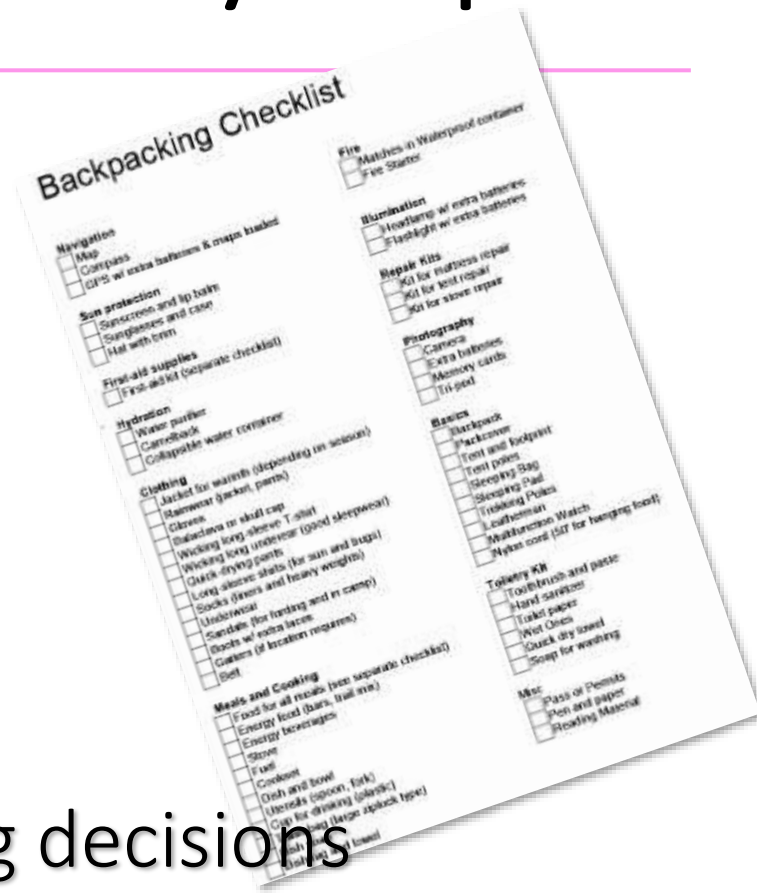
7 ultralight principles

1. know what's in your pack
2. knowledge and skills over gear
3. take only what you need
4. take lighter, smaller stuff
5. take multipurpose gear
6. limit contingencies
7. keep learning



1. know what's in your pack

- inventory
 - count
 - weight
 - volume
 - condition
- checklists
- better purchasing decisions
- quick and easy storage system





2. knowledge & skills over gear



→ I should
have bought
a floating
tent!





2. knowledge & skills over gear

- knowledge + skills = less fear
- less fear = less dependencies (i.e. gear)
- “don’t pack your fears.”
- learn your way to ultralight
- planning increases knowledge
 - conditions, distances, water sources, terrain, etc.



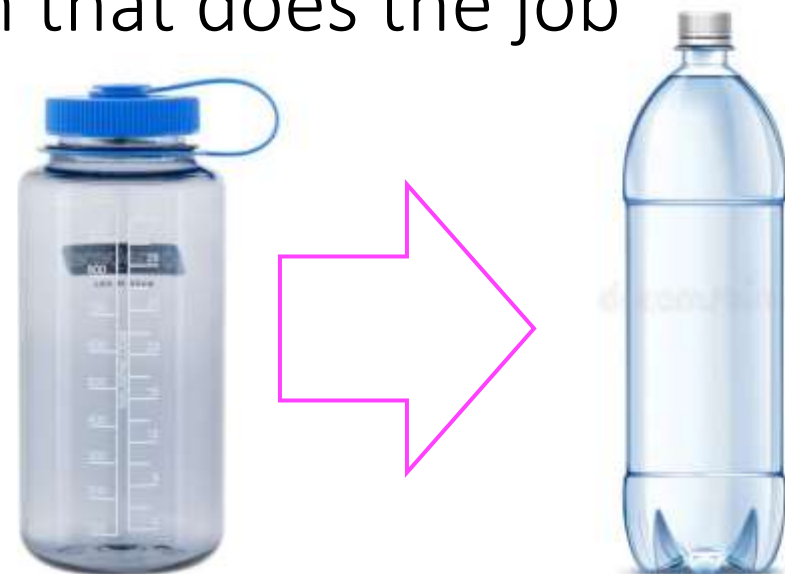
3. take only what you need

- know what you need
- varies from trip to trip
- mindful reduction
- reduce and repackage
- portion control



4. take lighter, smaller stuff

- focus on core function
- lightest item that does the job
- smallest item that does the job





5. take multi-purpose stuff

- one item, multiple uses
- don't take this too far





6. limit contingencies

- weigh probabilities
- pack for the probable, plan for the possible
- Plan better
- you and your companions are the biggest variable





7. keep learning

- experiment and adapt
- ask questions:
 - what didn't I use?
 - what worked, what didn't?
- full pack day hikes
- back yard test runs
- read and watch videos



packing light is a **skill**, one that often develops with **time**, **experience**, and lots of **mistakes**. experience will teach you how to identify the unnecessary weight—and the gear you simply cannot (and should not) do without.



Spider
Meadow
*Glacier Peak
Wilderness*
-
2019

ultralight gear

the big ~~three~~ four



shelter



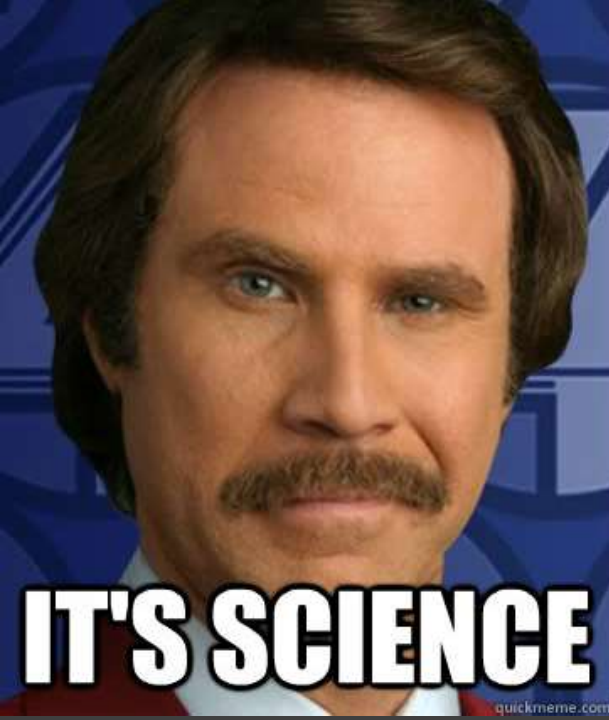
sleep system



backpack



footwear



why not boots?

- weight (actual & biomechanical)
- comfort
- no more blisters
- water management
- support vs. agility
- cost
- maintenance
- multi-purpose

the big ~~three~~ four



shelter



sleep system



backpack



footwear

item	traditional weight	UL weight	weight savings
shelter (2 person)	4-8 lbs	2-3 lbs	2-5 lbs
sleep system	4-8 lbs	2-3 lbs	2-5 lbs
backpack	3-8 lbs	1-2 lbs	2-6 lbs
footwear	3-4 lbs (15-20 lbs)	1 lb (5 lbs)	2-3 lbs (10-15 lbs)
TOTAL	14-28 lbs (15-20 lbs)	6-8 lbs (5 lbs)	8-20 lbs (10-15 lbs)



what's in my
backpack?

checklist tools



Category	Price	Weight
Backpack & Tent	\$639.00	3.13 lb
Sleep System	\$490.00	2.4 lb
Clothing	\$1047.00	4.49 lb
Cook System	\$144.00	1.21 lb
Ditties	\$38.00	0.55 lb
Other Items	\$469.50	1.43 lb
Food & Water	\$0.00	4.14 lb
Total	\$2827.50	17.35 lb
Consumable	\$11.00	4.71 lb
Worn		2.77 lb
Base Weight		9.87 lb

Backpack & Tent

			Price	Weight	qty
Backpack	Zpacks Arc Blast w/added pockets	link	★ 325.00	19 oz ▾	1
Tent	Tarptent Notch w/ground sheet + stakes	camera link up list	★ 314.00	31 oz ▾	1 up down x
+ Add new item			\$639.00	3.13 lb	2

Sleep System

			Price	Weight	qty
Sleeping Quilt	EE Enigma (custom)	link	★ 295.00	19.4 oz ▾	1
Pad	Nemo Tensor (regular, insulated)	link	★ 130.00	15 oz ▾	1
Pillow	Sea to Summit UL	link	★ 40.00	2.5 oz ▾	1
Dry Bag	S2S 13L dry sack (for sleeping bag, pillow and clo	link	★ 25.00	1.5 oz ▾	1
+ Add new item			\$490.00	2.4 lb	4

Clothing

			Price	Weight	qty
Rain Shell	EE Visp with pit zips (L)	link	★ 190.00	6.2 oz ▾	1
Puffy	EE Torrid APEX	link	★ 170.00	8.4 oz ▾	1
Buff	CoolNet UV+	link	★ 25.00	1.2 oz ▾	1
Sleep Top	Nike, Dri-Fit, Long sleeve		★ 45.00	4.7 oz ▾	1
Sleep Bottom	Nike running shorts (knee length)		★ 40.00	5.2 oz ▾	1
Mittens	EE Visp Rain Mitts	link	★ 30.00	0.7 oz ▾	1
Socks	Darn Tough - Vertex 1/4 Ultra-Light Cushion	link	★ 18.00	1.2 oz ▾	1

gear bag storage system

Bag 1: Clothes & Sleeping

- 1 Underwear
- 1-2 socks
- 1 Insulating layer
- 1 Sleeping top
- 1 Sleeping bottom
- 1 T-shirt
- Sleeping bag
- Inflatable pillow

Bag 2: Ditties

- Hygiene kit
- First aid kit
- Sunscreen
- Bug repellent
- Fire starter

Bag 3: TP

- 1 Toilet Paper
- 1 Hand sanitizer

Bag 4: Cooking Kit

- 1 Stove*
- 1 Fuel*
- 1 Pot*
- 1 Fire starter

* Group gear items

Bag 5: Food

- # Breakfasts
- # Lunches
- # Dinners
- # Snack bags

Bag 6: Tent

- 1 Tent (or part)*
- Stakes*

* Group gear items

gear worn

item

shirt (long sleeve)

shorts or pants (zip-off legs are great!)

underwear

socks

hat (with brim)

shoes

running gaiters (optional)

trekking poles



gear stored separately

item	recommended location
1 sleeping pad	main compartment
1 rain shell	top of main compartment or outer mesh pocket
1 gloves/mittens	inside rain shell pocket
1 bandana	inside pot or an outer pocket
1-2 water containers	side pockets
1 water filter*	side or mesh pocket
2-5 ziploc bags (1-gallon size)	main compartment
1 knife	shorts/pants pocket
1 headlamp	shoulder pocket
1 map	outer mesh pocket
1 gps*	shoulder strap
snacks for the day	hip belt pocket

* one per patrol, so scouts may carry one but not all, of these items.

let's pack my
backpack!





tips & tricks

Cloudy Pass
*Lyman Lakes
Basin*
-
2019

tips & tricks



top tips

- ✧ buy a scale—weigh everything
- ✧ ask “what didn’t I use?” at the end of each trip
- ✧ experiment and learn on short trips

food & water

- ✧ carry less water (know your water sources)
- ✧ replace Nalgene with 1 liter plastic bottles
- ✧ drink-up at water sources
- ✧ carry less water in food
- ✧ only cook dinner (less fuel)
- ✧ don’t cook (lose the stove and fuel)
- ✧ choose calorie-dense foods
- ✧ replace water filter with tablets
- ✧ snacks in labeled ziplocs
- ✧ remove packaging

clothing & gear

- ✧ single set of pants/shirt
- ✧ replace pots with a mug
- ✧ short sleeping pad
- ✧ small, custom first aid kit
- ✧ use clothes bag for a pillow
- ✧ castile soap for toothpaste, washing everything

other ultralight hacks

- ✧ limit amounts—do you need the whole thing?
- ✧ leave deodorant at home
- ✧ pack fresh (not extra) batteries
- ✧ leave unnecessary bags
- ✧ layer proactively to sweat less
- ✧ share the load
- ✧ dry/shake out wet gear



gear recommendations

Gothic Basin

-
2020

gear recommendations



six moon designs
deschutes plus



budget setup
gossamer gear
kumo 36



item	pick	weight	price	details
shelter	six moon designs – deschutes plus	1 lb 0 oz	\$195	tarp shelter with vestibule, mesh skirt
backpack	gossamer gear – kumo 36	1 lb 5 oz	\$165	36L, mesh shoulder strap pockets
sleeping bag	enlightened equipment – revelation apex	1 lb 8 oz	\$190	Quilt, 30° EN rating, synthetic fill
sleeping pad	outdoorsman lab - UL pad	0 lb 14 oz	\$39	2.2 R value, 2.2 inches thick
rain shell	frogg togs – ultra-lite2	0 lb 6 oz	\$15	waterproof, not breathable or durable
water filter	potable aqua - purification tablets	0 lb 0.2 oz	\$11	two 50 tablet bottles
stove	brs - 3000T	0 lb 0.9 oz	\$17	low efficiency, low weight, low price
TOTAL		5 lb 3.1 oz	\$632	

gear recommendations



tarptent notch

zpacks arc blast



my setup



katadyn befree



item	pick	weight	price	details
shelter	tarptent - notch	1 lb 15 oz	\$314	silnylon, fully enclosed, two vestibules
backpack	zpacks – arc blast	1 lb 3 oz	\$325	55L, dcf, hybrid external frame
sleeping quilt	enlightened equipment - enigma	0 lb 19 oz	\$295	900 fill down, sewn in foot box
sleeping pad	nemo - tensor	0 lb 15 oz	\$160	3.5 r-value, 3-inch thickness
rain shell	enlightened equipment - visp	0 lb 6.2 oz	\$190	pit zips, mvtr = 75,000 g/m ² /24hr
water filter	katadyn - befree	0 lb 2.2 oz	\$35	1 liter, fast flow, easy to clean
stove	msr – pocketrocket deluxe	0 lb 2.9 oz	\$69	fuel efficient, built-in piezo igniter
TOTAL		5 lb 15.3oz	\$1,388	

gear recommendations



zpacks
nero



fantasy setup

zpacks
duplex



item	pick	weight	price	details
shelter	zpacks - duplex	1 lb 3 oz	\$599	CDF, 2 person, fully enclosed
backpack	zpacks - nero	0 lb 10.7 oz	\$199	38L, DCF, frameless
sleeping quilt	katabatic gear – flex 22	1 lb 6 oz	\$395	Quilt, 22° EN rating, 900 fill down,
sleeping pad	therm-a-rest - uberlite	0 lb 8.8 oz	\$195	2.3 r-value, prone to punctures
rain shell	enlightened equipment - visp	0 lb 5.9 oz	\$190	pit zips, mvtr = 75,000 g/m ² /24hr
water filter	katadyn - befree	0 lb 2.2 oz	\$35	1 liter, fast flow, easy to clean
stove	msr – pocketrocket deluxe	0 lb 2.9 oz	\$69	fuel efficient, built-in piezo igniter
TOTAL		4 lb 7.5oz	\$1,682	



Mt. Rainier
*from second
burroughs*


-
2016

resources

my favorite ultralight retailers*

- ✧ [enlightened equipment](#)
- ✧ [gossamer gear](#)
- ✧ [hyperlite mountain gear](#)
- ✧ [katabatic gear](#)
- ✧ [mountain laurel designs](#)
- ✧ [six moon designs](#)
- ✧ [tarptent](#)
- ✧ [ula equipment](#)
- ✧ [zpacks](#)

** this is by no means an exhaustive list.*

A young boy is sitting on a rocky mountain peak, smiling at the camera. He is wearing a blue long-sleeved shirt, red shorts, a green bucket hat, and a backpack. He is holding a white water bottle. The background shows a mountain range with green trees and a blue sky with white clouds.

silver peak
snoqualmie
pass area
-
2020

resources

❖ cleverhiker.com



❖ outdoorgearlab.com



❖ backpackinglight.com



❖ adventurealen.com



❖ backpackingnorth.com



❖ darwinonthetrail.com



copper lake
trail
west fork foss
river
-
2018



thank you!

appendix a

gear recommendations
(2019)



shelter recommendations

*tarptent
stratospire li*



*tarptent
notch*



*Zpacks
duplex 2*



pick

shelter

sleeps

material

weight

price

best buy	tarptent - notch	1	silnylon	1 lb 11 oz	\$314
high-end choice	zpacks – duplex 2	2	DCF	1 lb 5 oz	\$599
best freestanding	big agnes – tiger wall UL2	2	silnylon, nylon	2 lb 3 oz	\$399
honorable mention	tarptent – StratoSpire Li	2	DCF	1 lb 10 oz	\$689
best hammock	hennessy hammock - hyperlite	1	silnylon, nylon	1 lb 12 oz*	\$260

tent vs. hammock



big agnes
tiger wall UL2

pros

- space--can sit, kneel, move around in it
- privacy
- sleeps more than one

cons

- flat ground required
- setup in the mud
- large footprint

hennessy
hyperlight



pros

- setup anywhere (there are trees)
- lack of privacy, space
- comfort

cons

- trees required
- sleeps one person
- comfort (for some)

given an ultralight, three-season setup, a hammock setup generally weighs slightly more than a tent and costs about the same.

backpack recommendations

gossamer gear
Gorilla 40



zpacks
arc blast



osprey
exos 48



hyperlight mountain gear
2400 junction



	pick	pack	volume	weight	price
best overall	gossamer gear	gorilla 40	40L	1 lb 14 oz	\$215
high-end choice	zpacks	arc blast	55L	1 lb 5 oz	\$325+
best buy	osprey	exos 48	48L	2 lbs 8 oz	\$190
honorable mention	hyperlight mountain gear	2400 southwest	40L	1 lb 13 oz	\$310
honorable mention	katabatic	onni liteskin	50L	1 lb 13 oz	\$325+

jacket recommendations

enlightened equipment
visp



zpacks
vertice



montbell
versalite



outdoor research
helium II



jacket	waterproof	breathability	layers	weight	price
zpacks - vertice	20,000 mm	56,000 g/m ² /24hr	3	6.2 oz	\$260
enlightened equipment - visp	20,000 mm	75,000 g/m ² /24hr	3	5 oz	\$200
montbell - versalite	30,000 mm	43,000 g/m ² /24hr	2	6.2 oz	\$200
outdoor research – helium II	15,000 mm	20,000 g/m ² /24hr	2.5	6.4 oz	\$160
frogg toggs - ultra-lite2	yep	nope	1	5.5 oz	\$19



bag/quilt recommendations

rei
magma 10



katabatic gear
Flex 22



western mountaineering
ultralight 20



zpacks
solo down 20



enlightened equipment
enigma 20



pick	sleeping bag/quilt	EN rating	weight	price
best high-end quilt	katabatic gear – flex 22	22°	1 lb 8 oz	\$350
Best high-end bag	western mountaineering – ultralight 20	20°	1 lb 13 oz	\$500
best overall	enlightened equipment – enigma 20	20°	1 lb 3 oz	\$290
honorable mention	zpacks – solo down 20	20°	1 lb 4 oz	\$359
honorable mention	rei – magma 10	10°	1 lb 14 oz	\$310



pad recommendations

therm-a-rest
neoair xlite



nemo
tensor insulated



big agnes
insulated axl air



therm-a-rest
neoair uberlite



	pick	pad	r-value	weight	price
best overall	nemo	– tensor insulated	15°-20°	14 oz	\$160
gold standard	therm-a-rest	- neoair xlite	3.2	12 oz	\$150
risky option	therm-a-rest	- neoair uberlite	2	8.8 oz	\$160
honorable mention	big agnes	– insulated axl air	20°-25°	12 oz	\$135



shoe recommendations

altra
lone peak



inov-8
TerraUltra g 260



saucony
peregrine iso



pick	shoes	weight	price
thru-hiker favorite	altra – lone peak	12 oz	\$120
innovative option	inov-8 - terraUltra g 260	11.1 oz	\$150
much loved option	saucony – peregrine iso	11.5 oz	\$120
comparative (boot) option	asolo - TPS 520 GV evo	66 oz	\$315

stove recommendations

snow peak
litemax



msr
pocket rocket deluxe



brs 3000t
ultralight



	pick	stove	type	weight	price
best overall		msr – pocket rocket deluxe	canister	2.9 oz	\$75
good option		snow peak - litemax	canister	1.9 oz	\$55
best buy		brs - 3000t ultralight	canister	0.9 oz	\$16
comparative option		jetboil - minimo	canister system	14 oz	\$135

note: alcohol stoves are not allowed on scout trips and so are not featured or recommended here.



filter recommendations

katadyn
micropur tablets



katadyn
befree 3L



hydroblu
versa flow



	pick	filter	weight	price
best non-filter		katadyn – micropur tablets	.5 oz	\$40
best group filter		Katadyn – befree 3L	3.5 oz	\$55
best buy		hydroblu – versa flow	2 oz	\$19