



*"The More You Carry In Your Head,  
The Less You Carry On Your Back"*

---

## **Bush Lore Is The Combination Of Nature Knowledge And Bushcraft. Passing It On Is The Basis of Our Programs.**

Nature knowledge is an understanding of the natural world, including plants, fungi, lichens, animals, birds, fish, mollusks, insects, amphibians, reptiles, rocks, minerals, soil, water, ice, weather, celestial bodies and ecology, the dynamic interaction of each with the whole. It can be learned but, in most cases, not directly taught. Experienced teachers can aid the learning process by creating study routines and providing resources. Observation and study are the keys and it's a lifetime endeavor.

Bushcraft is the active component of our interaction with nature. Both art and science, bushcraft is doing, making, crafting, traveling, building and living in the natural world using simple, low-tech tools. Static knowledge, such as how to care for tools, etc., is a small percentage of the discipline. The vast majority is active, dynamic and hands-on.

### **Bushcraft and Earth Skills Education Programs Outline**

This is a general outline of topics and skills taught by Tim Smith and Jack Mountain Bushcraft & Guide Service in the extended earth skills programs and in shorter courses. Many of the individual topics could contain outlines of their own that might be numerous pages in length were all the related items listed.

#### **Wilderness Survival**

- Basic, intermediate, and advanced survival defined
- Survival equation
- Tools of survival
- Survival plan
- Survival Kits
- Psychology of Survival

#### **Dressing for the Outdoors**

- Mechanisms of energy transfer
- General principles of clothing materials with regard to keeping warm/cool
- Principles of dressing for the elements
- Specific clothing for wet weather
- Specific clothing for the cold
- Wet cold and dry cold footwear
- Clothing for hot weather
- Importance of keeping clothing clean
- Clothing repair kit
- Sewing mukluks and moccasins

#### **Shelter**

- Campsite selection and finding natural shelters
- Mechanisms of energy transfer
- 3 ways of keeping warm

- Basic concepts of shelter
- Distinct components of a shelter
- Bush architecture
- Shelter-specific design and construction
  - The open lean-to
  - Hot coal bed
  - Quad-Pod
  - Hoop House
  - Bush Tipi
  - Large dome
  - Debris hut
  - Long tipi
- Snow shelters
  - Principles of snow as a shelter material
  - Quinzee
  - Igloo
- Parachute shelters
- Constructing mosquito-proof shelters
- Safe use of external and internal fires with shelter
- Tipping trees so as not to harm the tree
  - Laying a bough floor
  - Laying a bough bed
- Building with Cob
- Stone and clay woodstoves
- Rock Pile woodstoves
- Wattle and daub
- Log walls
- Thatching methods and principles
- Bark shingling
- Bush sauna/sweat lodge construction
  - using hot rocks
  - using a wood stove
- Sauna/sweat bath cross-cultural history
- Nylon tent selection and care
- Canvas tents; choosing, care and use with and without a wood stove
- Egyptian cotton tents; choosing, care and use with and without a wood stove



## Fire

- Fire as an agent in human culture
- Fire safety
- Choosing a fire site
- Understanding wood fire
- 5 Stages of fire
- Fire by friction
- Fire by percussion
- Fire by refraction
- Fire by parabolic reflector
- Fire by air compression
- Fire lighting with matches
- Various commercial fire-starting tools
- Twig bundle method

- Making and using feather sticks
- Burning properties of different woods
- Purpose of fire/different fire-lays
  - Fire for cooking
  - Fire for light
  - Fire for warmth
  - Signal fires
- Extinguishing a fire
- Techniques for minimizing the ecological impact of fire
- Primitive lamps
- Candle making
- Rock pile wood stoves
- Cob ovens
- Fire sinks

### **Sleep**

- The need for restful sleep
- Relevance of the sleeping bag in survival
- Sleeping bag selection
- Keeping warm in an inadequate sleeping bag
- The mattress or sleeping pad as a sleeping bag component
- Bush beds of natural materials

### **Water**

- Water purification - boiling, filtration, chemicals, and the use of the still
- Summer water sources
- Winter water sources and melting snow
- Avoiding dehydration
- Transporting water

### **First Aid and Long Term Medical Concerns**

- Dealing with common outdoor medical concerns
- Managing cuts - short and long term
- Understanding and treating hypothermia
- Understanding and treating frostbite
- Dealing with breaks, strains, and sprains - splinting and immobilization
- Improvised traction splint construction
- Construction of a stretcher for transportation of the sick and injured
- Personal first aid kit components, sized to fit in shirt pocket
- Traditional bush medicine

### **Navigation – Map and Compass**

- Use of a topographical map alone
  - Common map scales
  - What a map tells us
- Use of a compass alone
  - History of compass
  - Factors that effect accuracy

- Declination, variation and the agonic line
- Compass nomenclature
- Finding directions
- Taking and following a bearing
- Returning to the original location
- Triangulation and returning to precise points
- Overcoming obstacles
- Use of topographical map and compass together
  - Four steps of traveling by map and compass
- Use of Global Positioning System (GPS)

### **Navigation - Barehand**

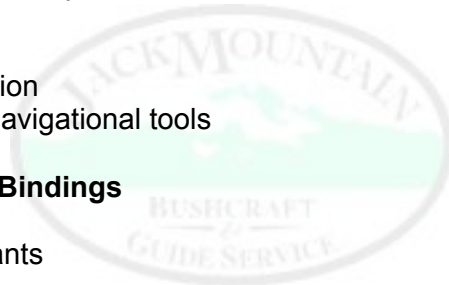
- Understanding the movement of the celestial bodies
- Telling direction from the sun
- Telling direction from the moon
- Telling direction from the stars
- Constellations useful for determining direction
- Telling direction from weather patterns
- Determining latitude by the stars
- Traveling in a straight line in the woods
- Traveling in a straight line in open country
- Bush geometry and trigonometry
- Determining distances
- Angling off
- Myths of barehand navigation
- Making and using simple navigational tools

### **Cordage, Rope, Knots and Natural Bindings**

- Cordage raw materials; plants
- Reverse wrap cordage
- Leg rolling cordage
- Use of the drop spindle to make cordage
- Braiding
- Preparing and using sinew
- Essential bush knots
- Tumpline knots for carrying canoe and wannigan
- Winches and windlasses for moving large objects
- Net making
- Selection of cordage to be carried when outdoors
- Binding with locally available materials
- Making and using spinners to make rope
- Making rope with a rope machine

### **Camp Crafts and Comforts**

- Building tables
- Building chairs
- Building benches
- Building other furniture and useful camp items



## Travel Equipment and Strategies

- Packframe construction and use
- Emergency snowshoe construction and use
- Traditional snowshoe use and principles
- Building traditional snowshoes
- Building traditional toboggans
- Travois
- Net bags
- Tumplines
- Making rucksacks

## Observational Weather Forecasting

- Understanding weather patterns
- Understanding high and low pressure air masses
- Clouds and what they tell us
- Predominant winds, winds aloft, and local winds
- Finding the center of a storm
- Fronts and precipitation

## Wild Plants and Their Uses

- Edible, Medicinal and otherwise useful plants - summer and winter
- Making and keeping an herbarium (plant collection)
  - Several methods of pressing plants
- Herbalism and herbal preparations
- Tapping trees, gathering sap, and making syrup
- Ethnobotany and historical use of plants

## Mycology

- Mushrooms considered to be edible, poisonous, and magical
- Mushrooms in history and folklore

## Signals and Signaling

- Audible signals and what they mean
  - Making an aluminum whistle
- Visual signals and their appropriate use
  - Use of the signal mirror
  - Basic ground to air signaling code
  - The signal fire

## Camp Sanitation

- Washing cooking and eating utensils to clean and sterilize
- Dealing with human waste
  - Thermophillic composting of human manure
  - Building group latrines
- Getting by without toilet paper
- Laundering clothing

- The construction and use of the bush sauna
- Natural soap making
- Bush hair care

### **Tanning Skins and Furs**

- Skinning and case skinning game
- Wet scrape brain tan buckskin
- Dry scrape brain tan buckskin
- Brain tanning fur
- Using substitutes for brains

### **Spinning and Weaving**

- Use of the drop spindle to make yarn (1 ply) and cordage (2 ply)
- Making simple looms
- Card weaving

### **Felting**

- Making felt from raw wool
- Using felt for clothing, bags, etc.
- Making felt boot liners

### **Natural Basketry**

- The coil basket
- The twined basket
- The plaited basket
- The birch bark bowl, bucket, and basket
- Brown Ash basketry
- Pack Baskets
- Root baskets
- Half-round baskets



### **Primitive Pottery**

- Finding and testing natural clays
- Preparation of natural clays
- Selection of tempers
- Pinch pots
- Coiled pots
- Form-made pots
- The ocarina or clay flute
- Firing in an outdoor fire

### **Traditional Canoe Skills**

- Water safety
- Adjusting trim for wind and current
- The various strokes
- Poling and Snubbing

- Reading the river
- River morphology
- Running whitewater
- Portaging strategies
- Considerations in canoe camping
- Carving a canoe paddle and pole
- Building a wood and canvas canoe

### **Kayak Skills**

- Water safety
- Basic paddling skills
- Crossing open water
- Considerations in kayak camping

### **Building Simple Boats**

- Coracle
- Raft

### **Backpacking Skills**

- Minimum/positive impact camping skills
- Setting up and using backpacking tents
- Use of backpacking stoves

### **Flintknapping and Stone Tools**

- Tools and safety
- Basic flintknapping
- Bi-polar percussion
- Hertzian cone
- Percussion flaking with hammer stones
- Pressure flaking
- Making and using stone tools



### **Making and Using Projectiles**

- Bow Making
  - Making a selfbow - unbacked wooden longbow
  - Making a backed bow
  - Making a quickie bow
  - Making bowstrings by hand
  - Making Flemish bowstrings
- Arrow making
- Making an atlatl
- Making a baton de comandement
- Making a sling
- Making a fustibal
- Making an arrow thong
- Making a rabbit stick - a form of boomerang

## The Art and Science of Tracking

- Basic, Systematic and Speculative Tracking
- Three perspectives of the tracker
- Three disciplines of tracking
- Animal locomotion, movement and biology
- Animal habits, tendencies and behavior
- Weathering and track aging
- Pressure releases - how foot and substrate interact dynamically
- Substrates and tracking mediums
- Use of the tracking stick
- Use of the tracking box
- Making plaster track casts
- Historical role of tracking in human development of abstract thought

## Primitive Music

- The didgeridoo
- The ocarina
- The drum
- The whistle
- The flute

## Campfire and Outdoor Cooking

- Primitive
  - Rock Boiling
  - Natural Vessels
  - Planking
  - Stick-woven grilling
  - Steam Pit
  - Stone/cob oven construction
- Traditional
  - Cook kit components
  - Pot selection and materials
  - Skillet selection and materials
  - Reflector oven construction and use
  - The Dutch oven
- Cast iron cooking and care
- Sourdough and other leavenings
- Pot suspension systems
- Pot hooks
- Bean Hole
- Fire-lays useful for cooking
- Germination and sprouting
- Bear avoidance
- Garbage disposal and transport



## Fasting

- Role of fasting in wilderness survival
- Role of fasting in the cleansing of toxins



- Historical significance of fasting

## **Outdoor Fitness and Health**

- Stretching
- Hydration
- Perspiration
- Meditation

## **Living off the Land**

- Survival vs. living off the land
- Hydration
- Caloric requirements
- Plant foods
- Animal foods

## **Angling and Fishing**

- Fishing vs. Angling
- Recreational vs. Survival fishing and angling
- Understanding fish in their environment
- Angling strategies – lakes
- Angling strategies – rivers
- Net making
- Setting nets – lakes
- Setting nets – rivers
- Setting nets – under ice
- Fish traps
- Fish spears
- Fish Wheels
- Mollusks
- Other edible aquatic life
- Ice angling with modern and improvised gear
- Set Lines
- Fly Fishing
  - Selection of gear
  - Fly casting
  - Where fish live and why



## **Trapping and Snaring**

- Furbearer population management
- Population dynamics
- Traditional deadfalls
- Traditional snares
- Modern trap use
  - Leghold traps
  - Body-gripping traps
- Modern snare use
  - Building snares
- Trapping specific animals

- Avoiding non-target catches

## Hunting

- Strategies for specific animals
  - Deer
  - Moose
  - Bear
  - Turkey
  - Small game

## Firearms

- Safety
- Ballistics
- Actions
- Marksmanship
- Handguns
- Rifles
- Shotguns

## Provisioning and Menu Planning

- Meal Planning for low cost and high nutrition
  - Seasonal considerations in meal planning
- Buying in Bulk
- Meal Packaging and repackaging
- Two-meal day
- Value of appropriate condiments

## Hazards of Specific Importance

- Ticks and diseases they carry
- Bears
- Giardia
- Fire
- Cold
- Heat
- Carbon monoxide in winter shelters

## Hand Sewing

- The various sewing stitches
  - Stitch sample

## Outdoor Leadership

- Decision making
- Effective communication
- Conflict resolution
- Team building
- Expedition Behavior

## Guide Training and Other Topics Related to the Guiding Profession

- Finding a lost person
- Liability Insurance
- Risk management
- Trip planning and preparations
  - Use of checklists

## Environmental Education Core Topics

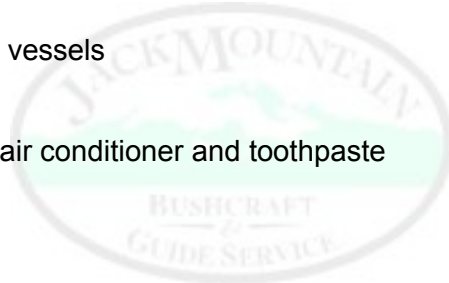
- The flow of energy
- The cycling of matter
- The interrelating of life
- The changing of forms

## Crafting and Building Traditional Northwoods Gear

- Wooden toboggan
- Plastic trail toboggan
- Komatik sled
- Mukluks – snowshoe moccasins
- Pack Basket – reed or pounded brown ash
- Birch bark basketry
- Burned bowls, spoons and vessels
- Didgeridoo
- Bullroarer
- Natural cosmetics: soap, hair conditioner and toothpaste
- Snowshoes
- Packframes
- Wooden Bow and Arrows
- Atlatl and Dart
- Fibers, string and rope; cordage
- Fishing nets and hammocks
- Wooden canoe paddle
- Traditional canoe pole
- Whistles

## The Bushcraft Tool Kit

- Axe
- Knife
- Saw blades – saw frame is built when needed
- Draw knife
- Spoke shave
- Rasp
- 1/2" chisel
- Auger gimlet
- Crooked knife or gouge
- Cabinet scraper
- Awl
- Sand paper



- Tool roll or other way to carry your kit
- Ice chisel
- Sharpening kit
- Shave horse or other traditional vise

### **The Knife**

- Choosing an appropriate knife for the outdoors
  - litmus test for a good bush knife
- Sharpening the knife to a shaving edge
- Safety in knife use
- Cutting poles
- Felling trees
- Making replacement knife sheaths
- Assorted carving projects

### **The Axe**

- Choosing an appropriate axe
- Axe safety
- Sharpening the axe
- Use of the axe
  - Felling
  - Sectioning
  - Limbing
  - Splitting

### **The Saw**

- Choosing an appropriate saw
  - Types of saw teeth and how a saw cuts
- Construction of the bush bucksaw when only the blade is carried
- Using small folding saws
- Using crosscut saws
- Sharpening saws

### **Movement and Awareness**

- Moving quietly in the bush
  - Different ways of walking
- Sensory awareness
  - Different types of vision
  - Focused hearing
- Sensory awareness of other creatures
- Stalking game animals

### **Metal Working and the arts of the Blacksmith**

- Making tools and blades

