

KHONIN NUGA, MONGOLIA PLANT FIELD GUIDE

Khonin Nuga taiga • Season 5



TREES

EDIBLE

TOXIC

TRADITION

KNOWLEDGE • SKILL • DISCIPLINE • SURVIVAL

Independent educational field guide • verify current laws, local conditions, and expert guidance

REGION AT A GLANCE

Taiga trees, forest berries, dangerous wetland plants and documented Mongolian traditional-use species.

Filming region: Khonin Nuga valley near the Khentii Mountains, Selenge Province, northern Mongolia

Alone season(s): 5

Ecology: Siberian taiga and forest-steppe with larch, pine, birch, river meadow and rocky mountain slopes

Khonin Nuga lies where Siberian taiga meets Mongolian forest-steppe. Larch is often dominant, with pine, spruce, birch and aspen depending on slope, fire history and moisture. River meadows support rich herbs, while dry south-facing slopes shift quickly toward steppe vegetation. Autumn frost and snow can erase many identification features.

FIELD PRIORITIES

- Separate larch, spruce and the two pines by needle arrangement, cones and winter behavior.
- Never collect celery-like roots or shoots from marshes; water hemlock occurs in Eurasian wetlands.
- Learn monkshood and false hellebore before gathering leafy mountain herbs.
- Pine nuts are valuable but cone harvest may be regulated and is ecologically important to wildlife.
- Published Mongolian medicinal use does not make a plant safe for unsupervised dosing.

NON-NEGOTIABLE PLANT SAFETY

Never consume a plant from one photo, one common name or one guide. Positive identification requires multiple traits and a reliable regional source. Do not experiment with medicinal dosing. For suspected poisoning, remove plant material from the mouth, preserve a sample or photo, contact emergency services or a poison centre, and do not induce vomiting unless directed.

POSITIVE IDENTIFICATION PROTOCOL

Use a repeatable process. Confidence is built from independent features, not intuition.

- 1

1. PLACE

Record habitat, moisture, slope, elevation and nearby dominant plants.
- 2

2. FORM

Decide tree, shrub, vine, herb, grass-like plant, fern or succulent.
- 3

3. LEAVES

Check arrangement, shape, edge, veins, hairs, odor and underside.
- 4

4. STEM & BARK

Look for thorns, sap, pith, lenticels, buds, twig color and texture.
- 5

5. FLOWER / FRUIT

Count petals, inspect clusters, seed structures and fruit attachment.
- 6

6. CROSS-CHECK

Match at least three reliable sources and rule out every dangerous look-alike.

AUTOMATIC STOP LIST

No tasting to identify.
No wetland roots.
No unknown white umbels.
No unknown bulbs.
No unknown milky sap.
No medicinal experiments.

DOCUMENTATION KIT

Photograph whole plant, leaf top and bottom, stem, bark, flowers, fruit and habitat. Add a scale object. Record date, location and confidence. Never let an AI label overrule a regional botanist.

TREES AND WOODY PLANTS

Identification, practical material properties and conservation cautions.

SIBERIAN LARCH

TREE / WOODY

Larix sibirica

IDENTIFY

Deciduous conifer with soft needles in dense clusters on short spur shoots; small upright cones; needles turn yellow and fall in autumn.

HABITAT & SEASON

Cool slopes, valley forests and much of the northern taiga. Season: Year-round wood; needles spring through fall

DOCUMENTED USE

Strong resinous wood for poles, pegs and durable fuel. Fallen fine twigs can provide dry interior kindling beneath dense crowns.

CAUTION

Standing dead larch can be brittle and dangerous in wind. Resin may irritate skin. Do not mistake needle drop for a dead tree.

LOOK-ALIKES

Spruce keeps needles in winter and has sharp single needles; Siberian pine has bundles of five.

1

SIBERIAN PINE

TREE / WOODY

Pinus sibirica

IDENTIFY

Five soft needles per bundle, stout rounded crown and large egg-shaped cones with thick scales and edible seeds.

HABITAT & SEASON

Cool moist taiga slopes and mixed conifer forest. Season: Cones late summer to fall

DOCUMENTED USE

Mature seeds are a documented high-energy food. Resinous dead wood is useful for fire starting and durable small repairs.

CAUTION

Do not fell seed trees or raid all cones; seeds are critical wildlife food. Confirm five needles per bundle and mature sound seeds.

LOOK-ALIKES

Scots pine has two needles per bundle and smaller cones.

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TREES AND WOODY PLANTS

Identification, practical material properties and conservation cautions.

SCOTS PINE

TREE / WOODY

Pinus sylvestris

IDENTIFY

Two blue-green twisted needles per bundle; orange-red upper bark; small conical cones; open crown on dry sites.

HABITAT & SEASON

Sandy terraces, dry forest margins and fire-prone slopes. Season: Year-round

DOCUMENTED USE

Straight poles, resin-rich kindling and durable fuel. Inner resin pockets can yield dependable fire-starting shavings from dead wood.

CAUTION

Fresh resin is messy and flammable. Burning resinous wood in an enclosed shelter increases smoke and creosote.

LOOK-ALIKES

Siberian pine has five needles per bundle; larch needles occur in large clusters.

3

SIBERIAN SPRUCE

TREE / WOODY

Picea obovata

IDENTIFY

Sharp four-sided single needles attached on woody pegs; long hanging cones; narrow spire-shaped crown.

HABITAT & SEASON

Moist valley forest, north-facing slopes and stream corridors. Season: Year-round

DOCUMENTED USE

Spruce roots and straight poles have documented utility for lashings and frames after careful preparation. Dry lower twigs can remain sheltered under the crown.

CAUTION

Needles are sharp and resin can injure eyes. Root harvest damages living trees; use exposed or windthrown material.

LOOK-ALIKES

Larch has soft clustered needles; fir needles are flat and cones stand upright.

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TREES AND WOODY PLANTS

Identification, practical material properties and conservation cautions.

ASIAN WHITE BIRCH

TREE / WOODY

Betula platyphylla

IDENTIFY

White papery bark with dark horizontal marks; triangular toothed leaves; hanging catkins; slender dark twigs.

HABITAT & SEASON

Burns, forest edges, river terraces and mixed taiga. Season: Year-round bark and wood; leaves growing season

DOCUMENTED USE

Loose dead bark is excellent tinder even in damp weather. Wood is useful for utensils and moderate-quality fuel.

CAUTION

Never girdle living trees. Bark flame spreads quickly. Several birches hybridize, so use genus-level identification for material use.

LOOK-ALIKES

Aspen bark is smoother green-gray and leaves have flattened stalks; alder has persistent cone-like catkins.

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EURASIAN ASPEN

TREE / WOODY

Populus tremula

IDENTIFY

Round leaves with wavy teeth on strongly flattened stalks that tremble in light wind; smooth green-gray bark on young trees.

HABITAT & SEASON

Burns, clearings, lower slopes and river terraces. Season: Spring through fall foliage; wood year-round

DOCUMENTED USE

Light wood for carving, dry boards and quick-burning fuel. Clonal groves can mark past fire or disturbance.

CAUTION

Dead aspen can rot internally while standing. Test every pole. Concentrated bark preparations are not advised.

LOOK-ALIKES

Birch leaves are more triangular and bark peels; poplar relatives may have more pointed leaves.

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DOCUMENTED EDIBLE PLANTS

Documented foods only. Positive identification and safe preparation remain essential.

LINGONBERRYDOCUMENTED EDIBLE

Vaccinium vitis-idaea

IDENTIFY
Low evergreen shrub with leathery oval leaves, pale dotted undersides, pink urn-shaped flowers and bright red berries.

HABITAT & SEASON
Open conifer forest, mossy ground, heath and bog margins. Season: Late summer through winter

DOCUMENTED USE
Ripe berries are a documented food, often persisting after frost and suitable for cooking or drying.

CAUTION
Confirm evergreen leaves and Vaccinium fruit crown. Avoid berries from animal latrine sites.

LOOK-ALIKES
Bearberry has mealy fruit and leaves with netted veins but no pale gland dots beneath.

7

BILBERRYDOCUMENTED EDIBLE

Vaccinium myrtillus

IDENTIFY
Low shrub with green angular stems, thin finely toothed leaves and blue-black berries that stain purple throughout.

HABITAT & SEASON
Cool conifer forest, openings and moist acidic slopes. Season: Mid- to late summer

DOCUMENTED USE
Ripe berries are documented food and can be eaten fresh, cooked or dried.

CAUTION
Dark berries alone are not enough for identification. Check the green angled twigs and solitary Vaccinium flowers/fruit.

LOOK-ALIKES
Bog bilberry has rounder bluish leaves and berries with paler flesh; poisonous black-berried herbs lack woody green twigs.

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DOCUMENTED EDIBLE PLANTS

Documented foods only. Positive identification and safe preparation remain essential.

ORIENTAL STRAWBERRY

DOCUMENTED EDIBLE

Fragaria orientalis

IDENTIFY
Low runner-forming herb with three toothed leaflets, white five-petaled flowers and small red aggregate fruits.

HABITAT & SEASON
Meadows, forest edges, river terraces and disturbed ground. Season: Summer

DOCUMENTED USE
Fully ripe fruits are documented food.

CAUTION
Wash or cook fruit where animal contamination is likely. Confirm the external seeds and three-leaflet growth habit.

LOOK-ALIKES
Cinquefoils may have similar leaves but dry seed heads rather than fleshy strawberries.

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STONE BRAMBLE

DOCUMENTED EDIBLE

Rubus saxatilis

IDENTIFY
Low creeping bramble with three leaflets, small white flowers and a few large bright red drupelets forming a loose berry.

HABITAT & SEASON
Moist forest, rocky slopes and stream edges. Season: Summer

DOCUMENTED USE
Ripe fruit is documented food, tart and small but easy to recognize once the loose cluster is learned.

CAUTION
Sparse prickles can snag skin. Do not confuse red fruit with upright clusters of baneberry-like toxic herbs.

LOOK-ALIKES
Wild strawberry has many external seeds and no separate large drupelets.

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DOCUMENTED EDIBLE PLANTS

Documented foods only. Positive identification and safe preparation remain essential.

PRICKLY ROSE

DOCUMENTED EDIBLE

Rosa acicularis

IDENTIFY
Arching prickly stems, pinnate leaves with toothed leaflets, pink five-petaled flowers and red oval hips.

HABITAT & SEASON
Open forest, river terraces, thickets and burns. Season: Hips late summer through winter

DOCUMENTED USE
Fleshy hip walls are documented food after hairs and seeds are removed; they can be simmered or dried.

CAUTION
Internal seed hairs are strongly irritating. Avoid moldy hips and plants exposed to livestock chemicals.

LOOK-ALIKES
Hawthorn has woody thorns and lobed simple leaves; rose leaves are compound.

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WILD ONION

DOCUMENTED EDIBLE

Allium senescens

IDENTIFY
Clumping narrow leaves with a clear onion odor, round heads of pink-purple flowers and small bulbs or rhizomes.

HABITAT & SEASON
Dry meadows, rocky slopes and forest-steppe openings. Season: Spring through fall

DOCUMENTED USE
Leaves and bulbs of positively identified Allium are documented food and seasoning.

CAUTION
Onion smell must be present in all sampled parts, but odor alone is not sufficient. Avoid plants from contaminated grazing areas.

LOOK-ALIKES
False hellebore and iris relatives lack onion odor and have broader folded leaves.

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TOXIC PLANTS - AVOID

High-consequence species to recognize before any gathering begins.

NORTHERN MONKSHOOD

TOXIC - AVOID

Aconitum septentrionale

IDENTIFY

Tall herb with deeply divided palmate leaves and blue-violet hood-shaped flowers on an upright spike.

HABITAT & SEASON

Moist forest, mountain meadows and stream valleys. Season: Summer

DOCUMENTED USE

No food or field medicinal use.

CAUTION

All parts contain potent aconitine-type alkaloids; handling damaged roots or sap can be hazardous. Ingestion can cause fatal heart and nerve effects.

LOOK-ALIKES

Larkspurs have spurred flowers but not the distinctive helmet; leafy roots should never be tasted.

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NORTHERN WATER HEMLOCK

TOXIC - AVOID

Cicuta virosa

IDENTIFY

Wetland perennial with divided leaves, white umbrella flower clusters and thick hollow-chambered roots; often at water edges.

HABITAT & SEASON

Marshes, oxbows, slow streams and wet meadows. Season: Spring through fall

DOCUMENTED USE

No use. Make wetland root gathering a prohibited activity unless a qualified botanist is present.

CAUTION

One of the most poisonous Eurasian plants. Roots are especially dangerous and can cause seizures and death.

LOOK-ALIKES

Angelica and other edible Apiaceae can appear similar; never distinguish by taste.

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TOXIC PLANTS - AVOID

High-consequence species to recognize before any gathering begins.

FALSE HELLEBORE

TOXIC - AVOID

Veratrum lobelianum

IDENTIFY

Tall plant with broad pleated leaves arranged alternately around a stout stem and a branched cluster of greenish flowers.

HABITAT & SEASON

Moist meadows, forest seeps and stream margins. Season: Spring through summer

DOCUMENTED USE

No food use.

CAUTION

All parts are poisonous and may cause severe vomiting, slow heart rate, low blood pressure and collapse.

LOOK-ALIKES

Young shoots can resemble wild leek or other edible greens, but false hellebore leaves are broad, strongly pleated and lack onion odor.

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MEZEREON

TOXIC - AVOID

Daphne mezereum

IDENTIFY

Small shrub with fragrant pink-purple flowers appearing on bare twigs before leaves and bright red berries close to the stem.

HABITAT & SEASON

Open forest, rocky slopes and thickets. Season: Flowers spring; fruit summer

DOCUMENTED USE

No food or medicine use.

CAUTION

Berries and bark are highly irritant and poisonous. Sap can blister skin and eyes.

LOOK-ALIKES

Red currants hang in clusters and have lobed leaves; mezereon fruit sits close to an unbranched leafy stem.

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TRADITIONAL-USE PLANTS

Published cultural or historical uses - not prescriptions or dosing advice.

SIBERIAN BERGENIA

TRADITIONAL-USE

Bergenia crassifolia

IDENTIFY

Thick evergreen rounded leaves in basal clumps, creeping woody rhizomes and pink flower clusters on leafless stalks.

HABITAT & SEASON

Rocky forest slopes, cliffs and talus. Season: Year-round leaves; flowers spring

DOCUMENTED USE

A major documented Siberian and Mongolian traditional plant. Naturally fermented overwintered leaves have been used as tea in some regions.

CAUTION

Do not improvise fermentation or concentrated extracts. Tannin-rich preparations may upset the stomach and interact with medicines.

LOOK-ALIKES

Other saxifrages are smaller and lack the large leathery leaves.

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GOLDEN ROOT

TRADITIONAL-USE

Rhodiola rosea

IDENTIFY

Fleshy blue-green leaves on upright stems, yellow flower clusters and a thick aromatic rhizome; often forms clumps.

HABITAT & SEASON

Cold rocky slopes, streambanks and alpine meadows. Season: Summer

DOCUMENTED USE

Widely documented in Eurasian traditional medicine and modern herbal commerce.

CAUTION

Wild populations can be overharvested. Do not dig roots. Concentrated products may affect mood, sleep and medications; no survival dosing is provided.

LOOK-ALIKES

Other *Rhodiola* and *Sedum* species are similar; flower sex and leaf shape require expert confirmation.

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TRADITIONAL-USE PLANTS

Published cultural or historical uses - not prescriptions or dosing advice.

FRINGED SAGEWORT

TRADITIONAL-USE

Artemisia frigida

IDENTIFY

Low silvery aromatic mat with finely divided leaves and small yellowish flower heads; woody at the base.

HABITAT & SEASON

Dry steppe, rocky slopes and disturbed campsites. Season: Summer through fall

DOCUMENTED USE

Documented Mongolian and steppe traditions include aromatic smoke and external or digestive preparations.

CAUTION

Artemisia oils can be neurotoxic in concentration and may affect pregnancy or medications. Do not use as a substitute for medical care.

LOOK-ALIKES

Several wormwoods occur together; identification to species can be difficult without flowers.

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BROADLEAF PLANTAIN

TRADITIONAL-USE

Plantago major

IDENTIFY

Basal rosette of broad leaves with strong parallel ribs and long leafless spikes of tiny green flowers and seeds.

HABITAT & SEASON

Trails, camps, trampled meadows and settlement edges. Season: Spring through fall

DOCUMENTED USE

Published traditional use includes clean crushed leaves applied externally to minor skin irritation; young leaves are also documented food when properly identified and cooked.

CAUTION

Do not apply dirty leaves to open wounds. Avoid internal use if taking anticoagulants or if seeds may obstruct the gut.

LOOK-ALIKES

Young dock leaves have netted veins; plantain veins run strongly from the leaf base.

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SEASONAL AND HABITAT PLANNING

Availability is local and variable. Use these patterns to plan observation, not to assume harvest.

PHASE	WHAT TO EXPECT	FIELD EMPHASIS
SPRING / THAW	New shoots, flowers, catkins and wetland hazards become visible.	Learn leaves and flowers before fruit; avoid roots and bulbs.
SUMMER / PEAK GROWTH	Maximum foliage; most edible greens and traditional-use herbs are identifiable.	Photograph multiple traits; note habitat and abundance.
AUTUMN / FRUIT & FROST	Most berries, hips, cones and seed structures mature.	Confirm entire plant; leave food for wildlife and regeneration.
WINTER / PERSISTENT	Evergreen shrubs, bark, twigs, cones and persistent fruit remain.	Rely on woody traits; snow and frost obscure herb identification.

HABITAT FORECAST

HABITAT	LIKELY PLANTS	PRIMARY RISK
Dry ridge / exposed slope	Siberian larch, Siberian pine, Scots pine	Windthrow, fire, protected slow-growing plants
Moist forest / sheltered valley	Siberian spruce, Asian white birch, Eurasian aspen	Look-alikes, falling timber, poor visibility
Wetland / peat / stream edge	Northern monkshood, Northern water hemlock	Water hemlock or toxic bog shrubs; unstable ground
Open disturbance / camp edge	Lingonberry, Bilberry, Oriental strawberry, Stone bramble	Contamination, invasive species, human chemicals

SEASONAL REALITY

A late frost, drought, fire, flood, browsing pressure or poor flowering year can remove an expected food source. Build plans around several independent resources and assume that every crop may fail.

LOOK-ALIKE AND HAZARD MATRIX

The most important plant knowledge is often knowing what not to touch, taste or dig.

HAZARD	FIELD CUE	RULE
Northern monkshood	Tall herb with deeply divided palmate leaves and blue-violet hood-shaped flowers on an upright spike.	All parts contain potent aconitine-type alkaloids; handling damaged roots or sap can be hazardous. Ingestion can cause fatal heart and nerve effects.
Northern water hemlock	Wetland perennial with divided leaves, white umbrella flower clusters and thick hollow-chambered roots; often at water edges.	One of the most poisonous Eurasian plants. Roots are especially dangerous and can cause seizures and death.
False hellebore	Tall plant with broad pleated leaves arranged alternately around a stout stem and a branched cluster of greenish flowers.	All parts are poisonous and may cause severe vomiting, slow heart rate, low blood pressure and collapse.
Mezereon	Small shrub with fragrant pink-purple flowers appearing on bare twigs before leaves and bright red berries close to the stem.	Berries and bark are highly irritant and poisonous. Sap can blister skin and eyes.

SUSPECTED POISONING

1. Stop exposure.

2. Remove material from mouth; rinse.

3. Do not induce vomiting.

4. Save a sample/photo.

5. Call emergency services or poison control.

6. Monitor breathing and consciousness.

HARVEST ETHICS

Take the common, leave the rare.

Never girdle a tree.

Avoid roots and whole plants.

Leave wildlife food.

Follow Indigenous and protected-area rules.

Restore disturbed ground.

SOURCES, SCOPE AND LIMITATIONS

Taxonomy and regional occurrence change. Verify the current name, distribution and legal status before publication or field use.

1. Plants of the World Online

Royal Botanic Gardens, Kew - taxonomy and distribution

<https://powo.science.kew.org/>

2. Flora of China

Missouri Botanical Garden and Harvard University Herbaria - scientific flora

http://www.efloras.org/flora_page.aspx?flora_id=2

3. Key to the Vascular Plants of Mongolia and modern Mongolian floristic literature

V. I. Grubov and Mongolian botanical institutions - regional flora

<https://powo.science.kew.org/>

4. Khonin Nuga Research Station and northern Mongolian forest research

University of Goettingen and Mongolian partners - regional ecology

<https://www.uni-goettingen.de/en/khonin+nuga/171572.html>

5. Medicinal Plants in Mongolia

World Health Organization, Western Pacific Region - medicinal plant monograph

<https://iris.who.int/handle/10665/207609>

6. Toxic-plant records in Flora of China, Kew POWO and veterinary literature of Mongolia

Multiple scientific sources - toxicology support

<https://powo.science.kew.org/>

INDEPENDENT PUBLICATION NOTICE

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