

ASPARAGALES

(Asparagus)

Yuccas



Agaves



Irises



Orchids



(14 Families Worldwide)

Family ASPARAGACEAE (Yuccas)

Joshua Tree (*Yucca brevifolia*)



S. Virgin Mtns; NV



Oak Creek; RRCNCA; NV



Red Rock Canyon National Conservation Area; NV



Red Rock Cyn NCA; NV



Clark Mtn Range; CA

- Flowers:** dense panicle inflorescence, 10-20"; 6-parted, lanceolate to oblong fleshy tepals; cream; 1.5-3"
- Stems:** arborescent (tree-like); branched, fibrous (lacks annual growth rings); gray; 20-50'
- Leaves:** linear; dentate; spiral at branch tips; rigid, fibrous, spine tip, rough back, blue green; 18"
- Blooms:** March to May (late winter to mid spring in CA); not every year (depending on winter freeze)
- Range:** southwestern US (Mojave Desert)
- Habitat:** gravelly/rocky soils in open flats, slopes, etc.; Lower to Upper Sonoran Life Zones

Notes:

common locally; evergreen perennial; grows to 50' (usually less) in the Mojave Desert (reportedly spreading to nw MEX) at elevations of 1,500-6,000'; deep, extensive root system; edible, 3-chambered, 2-4" capsule fruit; 2 subspecies; aka **Yucca Palm**, **Tree Yucca**; pollinated solely by the **Joshua Tree Yucca Moth** (*Tegeticula synthetica*); seeds and flower buds important food source, fibers used as cordage for basket weaving and sandals, and dye and soap made with chemicals (saponins) obtained from the roots; important host to the **Desert Night Lizard** (*Xantusia vigilis*)

Mojave presence: endemic

Comments:

Formerly placed in the now-archaic family **Agavaceae**, the long-lived (over 700 years) Joshua Tree is the signature plant of the Mojave Desert. According to desert ecologist J.W. Cornett, less than one in a million seeds grow to adulthood! Despite its name, the Joshua Tree--often found growing with **Saguaro** cactus in transition zones between the Mojave and Sonoran Deserts--is not actually a true tree (I personally refer to the plant simply as a Joshua).

Family ASPARAGACEAE (Yuccas)

Jaeger's Joshua Tree (*Yucca brevifolia jaegeriana*)



Cerbat Mtns; Mohave Co., AZ



Clark Mountain Range; San Bernardino Co.; CA



Red Rock Cyn NCA; NV



Red Rock Cyn NCA; NV



Red Rock Cyn NCA; NV

- Flowers:** dense panicle inflorescence, 10-20"; 6-parted, lanceolate to oblong fleshy tepals; cream; 1.5-3"
- Stems:** short arborescent; branched (starting lower on trunk); fibrous; gray bark; 20'
- Leaves:** linear; dentate; spiral at branch tips; rigid, fibrous, spine tip, rough back, blue green; 18"
- Blooms:** March to May; not every year (depending on winter freeze)
- Range:** eastern Mojave Desert
- Habitat:** gravelly/rocky soils in open flats, slopes, etc.; Lower to Upper Sonoran Life Zones

Notes:

common locally; evergreen perennial; grows to 20' (occasionally taller) in the eastern Mojave Desert (se CA, s NV, sw UT, nw AZ) at elevations of 2,500-6,000'; edible, 3-chambered, 2-4" **capsule** fruit; aka **Eastern Joshua Tree**; drought resistant; seeds and flower buds important food source, fibers used as cordage for basket weaving and sandles, and dye and soap made with chemicals (saponins) obtained from the roots

Mojave presence: endemic; eastern region

Comments:

This subspecies is easily recognized by its more **compact** form due to **lower branching** on the trunk. This gives it a somewhat shrubby appearance compared to its western brethren (page 4). Though the Jaeger's prevalence in the eastern portion of the Mojave Desert is also characteristic, the western variety can be spotted growing amongst them, as the "tall genes" are occasionally manifested.

Family ASPARAGACEAE (Yuccas)

Western Joshua Tree (*Yucca brevifolia brevifolia*)



Meadview, AZ

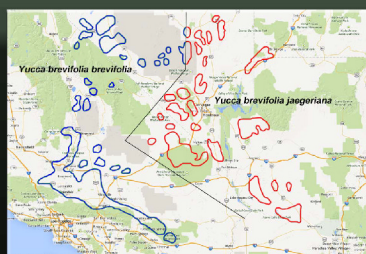


Joshua Forest; Meadview, AZ



Meadview, AZ

- Flowers:** dense panicle inflorescence, 10-20"; 6-parted, lanceolate to oblong fleshy tepals; cream; 1.5-3"
- Stems:** tall arborescent (tree-like); branched higher on trunk; fibrous; gray bark; to 50'
- Leaves:** linear; dentate; spiral at branch tips; rigid, fibrous, spine tip, rough back, blue green; 18"
- Blooms:** February to May; not every year (depending on winter freeze)
- Range:** western Mojave Desert
- Habitat:** gravelly/rocky soils in open flats, slopes, etc.; Lower to Upper Sonoran Life Zones



Range Map

Notes:

common locally; evergreen perennial; grows to 50' (usually less) in the western Mojave Desert (s CA) at elevations of 1,500-6,000'; edible, 3-chambered, 2-4" **capsule** fruit; seeds and flower buds important food source, fibers used as cordage for basket weaving and sandals, and dye and soap made with chemicals (saponins) from the roots

Mojave presence: endemic; western region

Comments:

This subspecies is recognized by its tall, open form, **unbranched** until higher up the trunk. This gives it a more arborescent appearance than its smaller eastern brethren (page 3). Though the western variety can occasionally be seen mingling with its Jaeger cousin to the east, its primary residence is in the western Mojave Desert in California.

Family ASPARAGACEAE (Yuccas)

Mojave Yucca (*Yucca schidigera*)



long "hula" skirts

Valley of Fire SP; NV



February

South Virgin Mountains; Mesquite; NV



April

large creamy flowers

Christmas Tree Pass; NV



filiferous leaf margins

Dolan Springs; Arizona



July

edible fruit

Clark Mtn Range; CA

- Flowers:** dense, bulbous inflorescence; bell shaped, 6 incurved segments, fleshy, waxy; cream; 1-2"
- Stems:** **trunk:** solitary/branched, fibrous; 3-15'; **flower stalk** (scape): erect, branched, leafless; gray; 2-4'
- Leaves:** convex linear; filiferous curls; spiral; rigid, fibrous, spine tip, rough back, yellow green; 1-5'
- Blooms:** April to May
- Range:** southwestern US, northwestern Mexico
- Habitat:** dry, rocky soils; open flats, bajadas, etc.; Lower to Upper Sonoran Life Zones

Notes:

common; rhizomatous, evergreen perennial; grows to 15' in creosote scrub to pinyon-juniper woodlands of the Mojave, Sonoran, and Chihuahuan deserts of the sw US and nw MEX at elevations of 1,000-5,000'; edible, fibrous, 2-5" **capsule** berry fruit; aka **Spanish Dagger**; important food source for moth larvae (in return, adult moths pollinate the plant); many important uses by indigenous people: 1) fibers used for cordage, cloth, sandle making, etc., 2) flowers and fruit eaten raw or cooked, seeds ground into flour, 3) used medicinally to treat headaches, bleeding, arthritis, etc., 4) chemicals in roots used to make soap; contemporaneously used as a deodorizer, dog food additive

Mojave presence: native

Comments:

More common and widespread than most other yuccas, it is readily recognized by its tuft of rigid leaves atop a dead-leaf-covered pedestal, unlike the closely related **Banana Yucca** (*Yucca baccata*) that lacks such a trunk. BEWARE: spines on leaf tips are dangerously sharp!

Family ASPARAGACEAE (Yuccas)

Banana Yucca (*Yucca baccata*)



RR Escarpment; RRCNCA; NV



Calico Basin; Red Rock Canyon NCA; NV



First Creek; RRCNCA; NV



Potosi Mtn; southern NV



Potosi Mtn; southern NV

- Flowers:** short, erect panicle, 20-30"; **monoecious**, 5-parted, drooping; cream tinged with **purple**; 2-5"
- Stems:** nearly trunkless to stacks of short ascending stems; solitary to colonial; **green**; 4'
- Leaves:** convex linear; filiferous curls; rosette; rigid, fibrous, rough back, spine tip; **blue green**; 18-30"
- Blooms:** April to July
- Range:** southwestern US, northwestern Mexico
- Habitat:** dry, sandy to gravelly soils; open flats, slopes, mesas, etc.; Lower to Upper Sonoran Life Zones

Notes:

common; evergreen perennial; grows to 30" (usually much less) in the sw US from CA east to w TX, south into nw MEX in desert scrub to pinyon-juniper communities at elevations of 1,000-7,500'; edible, succulent, roughly banana-shaped, 7" fruit bearing wingless, black, .25" seeds; 3 subspecies; aka **Broadleaf Yucca**, **Spanish Bayonet***, **Blue Yucca**, **Datil**; closely related to **Mojave Yucca**; traditionally important food and materials source for southwestern American native peoples; host to several skipper and moth species

(*not to be confused with **Hesperoyucca whipplei** and others)

Mojave presence: native

Comments:

CAUTION: leaves can be dangerous daggers to unwary hikers! More than once I learned this the hard way, and it's much more painful--and bloodier--than a flu shot! PS: though the fruit is technically **edible**, that doesn't mean it tastes good! I've tried baking, barbequing, and frying

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(almost everything tastes good fried!). Nope!

Family ASPARAGACEAE (Agaves)

Utah Agaves (*Agave utahensis*)



monocarpic

West Rim; Grand Canyon



March

Hualapai Reservation; West Rim; Grand Canyon; AZ



marginal thorns

Cerbat Mtns; Arizona

- Flowers:** branched, spicate, raceme inflorescence; bulbous, waxy; light yellow; 1.5" (2-12 per cluster)
- Stems:** trunkless; short central stem; solitary/cespitose; single, monocarpic* flower stalk; yellowish; 6-15'
- Leaves:** linear; marginal spines*; basal rosette; rigid, concave tips, spiny tip; yellow green; 20", 2+" wide
- Blooms:** April to August (depending on subspecies)
- Range:** southwestern US (Mojave Desert)
- Habitat:** mainly limestone ridges, slopes, canyons, etc.; Lower to Upper Sonoran Life Zones

Notes:

common locally; succulent, evergreen perennial; grows up to 2' (15' including flower stalk) in desert scrublands to pinyon-juniper woodlands of the Mojave Desert at elevations of 2,500-6,000'; generally grows at higher elevations than yuccas; most cold-tolerant of all agaves; 1" capsule fruit bearing black seeds; 4 subspecies; aka **Century Plant**; used traditionally by native peoples as a source of food, and fibers utilized for cordage, making blankets, etc.

(*marginal spines characteristic of all agaves; *monocarpic, i.e. blooms once, then the plant dies)

Mojave presence: native

Comments:

The aged stems make superb walking sticks; super lightweight, yet exceptionally strong, and best of all, absolutely free! Find one that is no longer green, cut it to about shoulder high in length, and wrap duct tape around the bottom and top for grip and to resist splintering. When it wears out, just go get another one. I've had several that lasted for years before needing replacement.

Family ASPARAGACEAE (Agaves)

Utah Agave (*Agave utahensis utahensis*)



Cerbat Mtns; Arizona



Cerbat Mtns; Arizona



Cerbat Mountains; Dolan Springs, AZ



West Rim; Grand Canyon



West Rim; Grand Canyon

- Flowers:** narrow, raceme inflorescence; spicate arrangement; bulbous, waxy; pale yellow; 1.5"
- Stems:** trunkless; short central stem; cespitose; single, monocarpic flower stalk (scape); yellowish; 6-12'
- Leaves:** linear; .1" marginal spines, 3" apical spines; basal rosette; rigid, concave tips; blue green; 18"
- Blooms:** April to July (depending on elevation)
- Range:** eastern Mojave Desert (Lake Mead area, southern Spring Mountains, sw UT, nw AZ)
- Habitat:** rocky; canyons, slopes, etc.; Upper Sonoran Life Zone

Notes:

uncommon; succulent multiannual; grows to about 1.5' (12' including flower stalk) in the mid-elevations of eastern Mojave Desert mountains and the Colorado Plateau Province from 4,000-6,000'; 1" oblong capsule fruit bearing black seeds; one of the lesser-common subspecies; lives for 7-10 years before blooming and dying; aka **Utah Century Plant**; hearts traditionally roasted in what has become known as "agave roasting pits"

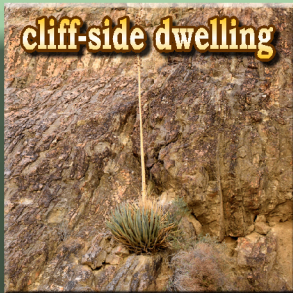
Mojave presence: native

Comments:

This and the other subspecies were called "century plants," because it was once thought that it took a century before the plants would bloom (actually about 5 years). *A. u. utahensis* is differentiated from other subspecies by 1) smallest marginal and apical spines, 2) gray to brown apical spines, 3) location, and 4) from *A. u. kaibabensis* by smaller rosette and narrower leaves (about 1"). **CAUTION:** dangerously sharp apical spines

Family ASPARAGACEAE (Agaves)

Clark Mountain Utah Agave (*Agave utahensis nevadensis*)



S. Virgin Mtns; NV



S. Virgin Mtns; NV



S. Virgin Mountains; Clark County; NV



S. Virgin Mtns; NV

- Flowers:** raceme inflorescence; spicate arrangement; bulbous, waxy; lt. yellow; 1.5"
Stems: very short; solitary to colonial; single, fibrous, monocarpic flower stalk (scape); yellowish; 5-13'
Leaves: linear; .25" marginal spines, 3" apical spines; basal rosette; rigid, concave tips; blue green; 12"
Blooms: April to July
Range: eastern Mojave Desert (San Bernardino Co., CA, to Clark Co., NV)
Habitat: rocky; canyons, slopes, etc.; Upper Sonoran Life Zone

Notes:

common; succulent multiannual; grows to about 2' (13' including flower stalk) in the mid-elevations of eastern Mojave Desert mountains from 4,000-6,000'; dry, 1" oblong capsule fruit bearing black seeds; most common subspecies; aka **Century Plant**, **Pygmy Agave**

Mojave presence: native

Comments:

A. u. nevadensis is differentiated from other subspecies by 1) .25" long marginal teeth (curved or straight), 2) brown to white apical spines that grow up to 3" long, and 3) location. **CAUTION:** dangerously sharp apical spines

Family ASPARAGACEAE (Agaves)

Desert Spoon (*Dasyliirion wheeleri*)



tall scape

Coyote Springs; Clark Co.; NV



November

Coyote Springs; Clark County; NV



female plant

Coyote Springs; Clark Co.; NV



trunkless basal rosettes

Coyote Springs; Clark Co.; NV



marginal spines

Coyote Springs; Clark Co.; NV

Flowers: dense inflorescence; **monoecious** (unisexual plants); 6 tepals; **M:** white to cream, **F:** pinkish; 1"

Stems: **trunk:** branchless, subterranean caudex, 5'; **flower stalk (scape):** green; 16'

Leaves: narrow linear; curved marginal spines; basal rosette; flexible; brown, fibrous tip; **L:** 40' **W:** .5"

Blooms: May to August

Range: southwestern US, northern Mexico

Habitat: arid, rocky; desert scrub, flats, slopes, etc.; Upper Sonoran Life Zone

Notes:

rare (common locally); rounded, evergreen perennial; grows to 5' (16' including scape) in sw US from AZ east to w TX, south into n MEX at elevations of 4,000-6,000'; dry, 3-winged, .3" **capsule** with solitary seed; aka **Common Soto**; inner cores (hearts) fermented to produce sotol, an alcoholic drink similar to tequila and mescal (mezcal); used by native peoples for food, fiber for basket making and bedding, etc.

Mojave presence: native; extreme eastern

Comments:

Desert Spoon is not native to NV, but is a hardy plant that finds great success in landscape applications. This explains the specimen pictured above growing at the Coyote Springs Golf Course off of US 93 about 40 miles northwest of Las Vegas.

Family ASPARAGACEAE (Nolinas)

Beargrass Nolina (*Nolina microcarpa*)



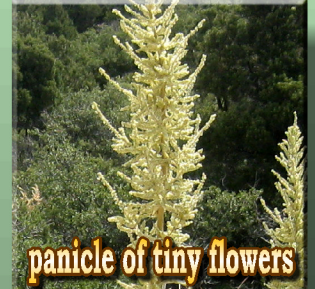
typical habitat

Big Wash Rd; Mohave Co.; AZ



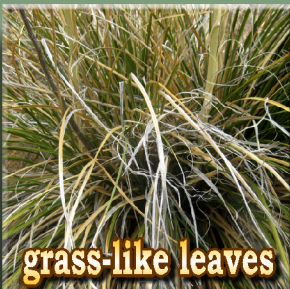
June

Big Wash Road; Cerbat Mountains; Mohave Co.; AZ



panicle of tiny flowers

Big Wash Rd; Mohave Co.; AZ



grass-like leaves

Big Wash Rd; Mohave Co.; AZ



short scape

Big Wash Rd; Mohave Co.; AZ

- Flowers:** dense clusters on paniculate inflorescence; **dioecious** (bisexual plants); tiny yellow-white tepals
- Stems:** trunkless; stemless; scape (flower stalk) to 6'; rounded grouping of leaves up to 5' tall and wide
- Leaves:** narrow linear, fibrous; serrulate; basal rosette; grass-like appearance; **greenish**; **L:** 3-4' **W:** to .5"
- Blooms:** May to June (sometimes later depending on elevation and precipitation)
- Range:** southwestern US, northern Mexico
- Habitat:** rocky; slopes, chaparral, woodlands, etc; Lower Sonoran to Transition Life Zones

Notes:

uncommon (except locally); perennial shrub; grows to 6' (including flower stalk) in desert grasslands to pinyon-juniper woodlands of the eastern Mojave Desert (nw AZ, sw UT) east to NM and south into n MEX at elevations of 2,500-7,000'; grows from a woody, underground caudex (rootstock); 3-sided, papery, .4" **capsule** fruit; aka **Sacahuista**, **Palmilla**; grazed on by deer; used by native peoples for cordage, thatching, food, making soap, treatment for various ailments (e.g. rheumatism), and more.

Mojave presence: native; far eastern region

Comments:

These are not common plants, unless you find yourself during the spring bloom in the Cerbat Mountains north of Chloride, Arizona. Here you will find the slopes adorned in multitudes of conspicuous specimens that are easily identified when they show off their tall scapes clustered with small flowers waving in the breeze.

Family ASPARAGACEAE (Nolinas)

Parry's Nolina (*Nolina parryi*)



typical foothills habitat

Kingston Mtn Range; CA



June

Kingston Mountain Range; San Bernardino Co.; CA



dense flower clusters

Kingston Mtn Range; CA



dead stalks

Kingston Mtn Range; CA



short, thick trunk

Kingston Mtn Range; CA

- Flowers:** large, dense clusters on 10' stalk with massive 2-4'-wide inflorescence; 6 parted; cream; .25"
- Stems:** 1.5' thick trunk; branched; fibrous; gray 15'
- Leaves:** linear; dentate; dense rosettes of up to 200 leaves; erect, gray green; **L:** 2-5' **W:** 1.5"
- Blooms:** April to June
- Range:** s CA (Laguna Mountains, Kingston Range, Kern Plateau; Joshua Tree NP; Colorado Desert)
- Habitat:** well-drained granitic soils; foothills, bajadas, etc.; Lower to Upper Sonoran Life Zones

Notes:

uncommon to rare; evergreen perennial; grows to ~15' in Joshua and pinyon-juniper woodlands within limited areas of the Mojave and Sonoran deserts at elevations of 3,500-7,000'; highly variable in appearance from tall in some areas (e.g. Kingston Range) to short in others; 3-compartmented, 5" capsule fruit; aka **Giant Nolina**, **Parry's Beargrass**; pollinated by moths of the **Mesepiola** genus (related to yucca moths), various bee species

Mojave presence: native

Comments:

To say this plant is impressive is like saying Mt Everest is tall! It certainly dominates its neighborhood, towering above all visitors (center photo), and making an indelible first impression!

Family **IRIDACEAE** (Irises)

Blue-Eyed Grass (*Sisyrinchium demissum*)



singular flowers

Red Spring RRCNCA; NV



April

Kingston Mountain Range; San Bernardino Co.; CA



grass-like leaves

Red Spring RRCNCA; NV



Red Spring

Red Spring RRCNCA; NV



typical habitat

Red Spring RRCNCA; NV

- Flowers:** solitary; 6 sharp-pointed tepals, dark purple veins; yellow throat;; **blue**, violet, white (rare); 1"
- Stems:** erect; branched inflorescence arises from a bulb; **green**; **L:** 20" **W:** .25"
- Leaves:** narrow linear; entire; basal; grass like; **green**; 12"
- Blooms:** April to June
- Range:** western Texas to Nevada
- Habitat:** alkaline moist meadows, springs, streams, etc.; Upper Sonoran to Transition Life Zones

Notes:

rare; herbaceous perennial; not a true grass; grows to 1.5' in higher-elevation riparian environments (e.g. alpine meadows, springs) at 3,000-7,500'; can propagate by **seeds** or division of **rhizome**; aka **Dwarf Blue-Eyed Grass**, **Blue Star Grass**; infusion made from roots and leaves used to treat indigestion; considered to be threatened

Mojave presence: native

Comments:

Though relatively rare and of conservation concern, this species of blue-eyed grass can be common locally, such as in the spring-fed meadow at Red Spring in the Calico Basin section of **Red Rock Canyon National Conservation Area**.

Family **IRIDACEAE** (Iris)

Western Blue Flag (*Iris missouriensis*)



Kaibab Lake; Williams, AZ



Kaibab Lake; Williams, AZ



Kaibab Lake; Williams, Arizona



Kaibab Lake; Williams, AZ



Kaibab Lake; Williams, AZ

- Flowers:** inflorescence of 1-4 flowers (3 spread sepals, 3 erect petals, purple veins); lilac, blue, violet; 3"
Stems: erect, reed-like; rhizomatous; leafless, unbranched scape; solitary to dense clumps; green; 1-2'
Leaves: linear; entire; basal; stiff, light green with whitish base; L: 1-2' W: .5"
Blooms: May to July
Range: western North America
Habitat: wetlands, alpine meadows, seeps, open woodlands, etc.; Lower Sonoran to Transition Life Zones

Notes:

common; drought-resistant, herbaceous perennial; grows to 2' in western NA from Pacific Coast east to the Great Plains, and s British Columbia, CAN, south to n MEX at elevations of 2,500-10,000'; pods produce numerous small, indented, whitish seeds; several years before flowers and bulbs develop; aka **Rocky Mountain Iris**, **Missouri Flag**; 3 subspecies; only iris species west of the Sierra Nevada range; source of fiber for cordage, and chemicals in roots once used by some native peoples to treat toothache

Mojave presence: native; high elevations

Comments:

While common as a species in western North America, it is rather uncommon in the Mojave region. Though drought tolerant, this iris is not a desert plant, so don't look for it in the arid lowers elevations. It only grows in riparian areas (springs, streams, ponds, etc.) in the higher montane habitats. The specimens shown here made their home along Kaibab Lake on the Coconino Plateau south of the

Grand Canyon in April of 2018.

Family **IRIDACEAE** (Iris)

Yellow Flag (*Iris pseudacorus*)



typical habitat

Cornerstone Pk; Hend., NV



April

Cornerstone Park; Henderson, Nevada



classic iris form

Cornerstone Pk; Hend., NV



long, erect leaves

Cornerstone Pk; Hend., NV



submerged, pale base

Cornerstone Pk; Hend., NV

- Flowers:** panicle; 1-3 per stem; 3 drooped sepals, 3 erect petals; **yellow** with brown-striped throat; 4"
- Stems:** erect, reed-like; rhizomatous (submerged); glabrous, unbranched scape; dense stands; **green**; to 5'
- Leaves:** linear; entire; basal, whorled; **green** to **blue-green** with pale base; **L:** 3' **W:** 1-3"
- Blooms:** January to July
- Range:** Europe, western Asia, northwestern Africa; invasive elsewhere
- Habitat:** riparian margins (wetlands, ponds, marshes, etc.); Lower Sonoran Life Zone

Notes:

common; aquatic, herbaceous perennial; native to Europe, w Asia, nw Africa where it grows to 5' in riparian habitats at elevations up to ~3,500'; dry, 3-sided, 1.5-3" **capsule** fruit producing many light-brown seeds; escaped cultivation in US and elsewhere to become an invasive/naturalized species; adaptable and aggressive, spreading by rhizomes or seeds; aka **Yellow Iris**, **Water Flag**; somewhat toxic to wildlife; used in herbal medicine, as a decorative plant in garden ponds, and to absorb dissolved heavy metals

Mojave presence: invasive/naturalized

Comments:

This iris is cultivated in North America as an ornamental, but as with many other non-native plants, often escapes into the wild where it outcompetes native species. Fortunately, it seems to be restricted in the Mojave to urban wet environments, such as small community lakes and ponds. An example is Cornerstone Park in Henderson, NV, where I encountered the specimens above in April of 2021; the

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only place I have encountered the species so far!