



FIELD IDENTIFICATION CARDS FOR INVASIVE NON-NATIVE PLANT SPECIES KNOWN TO THREATEN ARIZONA WILDLANDS.

PACKET CONTAINS INFORMATION ON 74 INVASIVE NON-NATIVE PLANTS INCLUDING:

- morphologic descriptions
- photos of flowers, fruits, leaves & seedlings
- ecology & distribution text
- AZ map showing county boundaries & ecotypes invaded



Colorado Plateau Cooperative Ecosystem Studies Unit

How to use these cards

These cards are intended to be used as field guides for some invasive non-native plants threatening Arizona's wildlands. They were designed to provide quick and concise information to aid in accurate identification.

Each front page shows color photos of key parts of each plant; flowers, bark, leaves etc. The colored border at the base of each card corresponds to flower color, and the life form (shrub, tree etc) is symbolized in the top right corner above the accepted taxonomical (ITIS) code. The text provides key characteristics about leaves, flower shape, lengths and arrangement, fruit type and much more.

Information on the back of the card includes elevational range and ecological distribution in Arizona showing suitable habitat for each species.

When applicable we have included ways to distinguish these invasive plants apart from other species similar in appearance or from related native species. Every effort has been made to provide correct botanical descriptions. For complete descriptions refer to local floras.

A glossary of common botanical terms is provided at the back of this packet. Symbols are used for quick and easy recognition.



Aquatic species



Herbaceous species/
forbs



Grass species



Shrub life form



Tree life form



Maps are color coded to represent areas that can or cannot potentially support each species based on elevation and ecotypes.



Impact risk; Low, Medium or High. These levels refer to the severity of impacts on ecosystems, plant and animal communities, and vegetation structure. It also loosely correlates to the ecological amplitude and distribution of the species.



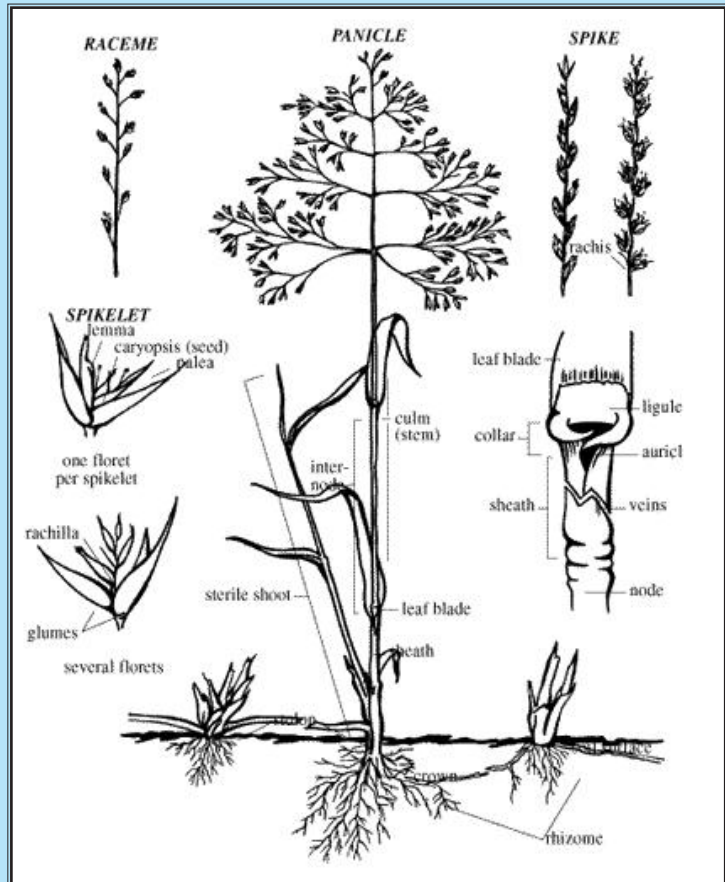
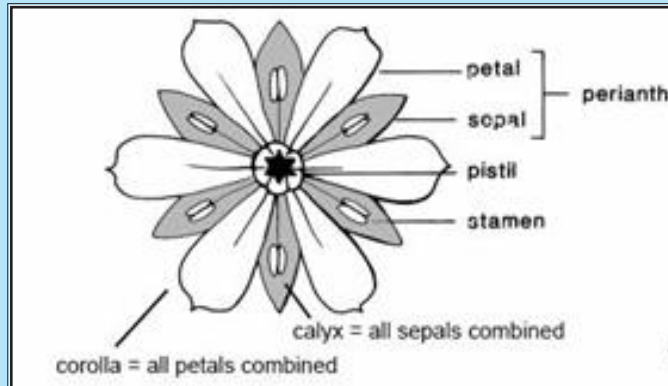
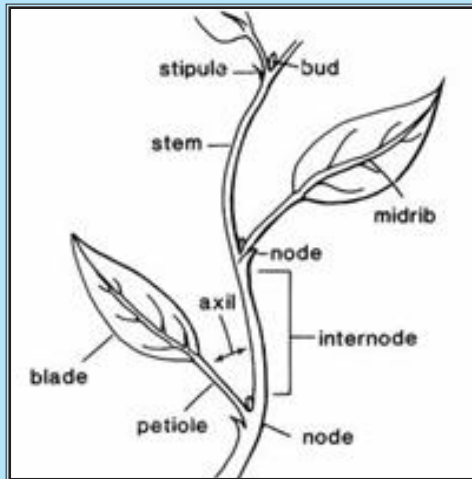
This symbol implies the potential for these species to alter fire regimes, most commonly by providing large amounts of dry fuel.

GLOSSARY OF TERMS

Acute	Sharply pointed
Achene	A small, dry and hard, indehiscent fruit, usually of one carpel and one seeded.
Alternate	Leaves that are arranged singly up the stem; not opposite each other.
Annual	A plant that completes its life cycle in one year and reproduces only by seed.
Auricle	Lobelike structures at the collar region of a grass leaf blade.
Awn	Slender bristle at the tip of grass seed structures.
Basal	At the base of a plant or plant part.
Biennial	Completes its life cycle in two years; forms a rosette of basal leaves the first year, sends up fruiting structure the second year. It reproduces only by seed.
Bract	Leaflike structure at the base of a flower or leaf.
Calyx	All the flower leaves together, normally green in color.
Clasping	Leaves whose bases appear to wrap around the stem.
Corolla	The inner floral envelope (typically petals), when differentiated from the calyx in texture and color.
Cymes	A broad and flattened inflorescence with flowers opening successively from the center outward.
Dissected	Deeply and repeatedly divided into smaller parts.
Glume	In grasses the one or two empty, scalelike bracts at the base of the spikelets.
Imbricate	Having phyllaries (bracts) on the involucre that overlap like roof shingles.
Inflorescence	Flowers collectively when not solitary; their arrangement on the axis as in racemes, umbels etc.
Involucre	A ring or rings of bracts, united or distinct, surrounding a group of flowers.
Lemma	The scale or bract of a grass spikelet above the glumes
Ligule	The structure at the collar of a grass leaf between the sheath and the stem.
Linear	Long and slender.
Lobed	A cut into a leaf from the edge toward the center; deeper cut than "toothed."
Margin	The edge of a leaf.
Membranous	Thin and flexible, usually not green.
Obtuse	With the end rounded or blunt.
Opposite	Leaves situated directly across the stem from each other.
Panicle	A many-branched inflorescence.
Pappus	Bristles, scales, awns, or feathery appendage on the seed of members of the sunflower family.

GLOSSARY OF TERMS

Perennial	A plant that lives for more than two years as a result of some form of a vegetative reproductive structure. Spread and reproduction is both sexual (seed) and asexual (vegetative).
Perianth	The outer envelope of the flower comprised of both calyx and corolla, especially when these are hard to differentiate.
Petiole	A leaf stalk.
Phyllary	One of the bracts of the involucre, in Asteraceae.
Pilose	Hairy with distinct, soft, more or less spreading hairs.
Pinnate	Of a compound leaf when the leaflets are arranged along a rachis or stalk.
Pubescence	The hairs on a leaf, stem, or flower. The degree of pubescence is an important characteristic.
Raceme	An unbranched, indeterminate, more or less elongate inflorescence with stalked flowers.
Rhizome	A creeping, underground stem.
Rosette	A circular, basal cluster of leaves on biennial plants.
Sessile	Attached directly, without a supporting stalk.
Sheath	The extension of the leaf that surrounds the stem.
Silique	The fruit of Brassicaceae, with the two halves separating at maturity from the frame or replum
Serrate	Saw-toothed.
Stolon	A creeping stem on the surface of the soil.
Taproot	A thick, central root having little or no branching.
Toothed	With teeth-like projections along a margin, (as on a leaf) the teeth directed outward rather than forward.
Uniseriate	In one horizontal row or circle.
Utricles	Like an achene but with a loose outer envelope.
Vegetative	Asexual reproductive structures such as rhizomes, crowns, and stolons that are found in perennial plants.



Thanks and recognition

These cards were borne out of a need for a concise, comprehensive, field-friendly plant identification companion. They are the result of the hard work and dedication of many people and organizations who wish to protect and maintain Arizonas diverse and unique ecosystems. We intend them to complement the work of the Arizona Wildlands Invasive Plant Working Groups who identified this list of invasive species.

Many thanks to the Sonoran Desert Network of the National Park Service and the Sonoran Institute for supporting this project. Thanks to The Nature Conservancy and many other individuals who contributed fantastic photographs. Special mention also goes to those who helped review the cards prior to publication.

Additional printing funds were provided by the Colorado Plateau Cooperative Ecosystem Studies Unit and the Arizona Native Plant Society.



Any comments or questions can be directed to:

The Sonoran Institute
Ecologist, Ecosystem Science
7650 E. Broadway Blvd, Suite 203
Tucson, AZ. 85710
520- 290-0828
or
National Park Service, Sonoran Desert Network
Ecologist
7660 E. Broadway Blvd, Suite 303,
Tucson, AZ. 85710
520-731-3420 x 5