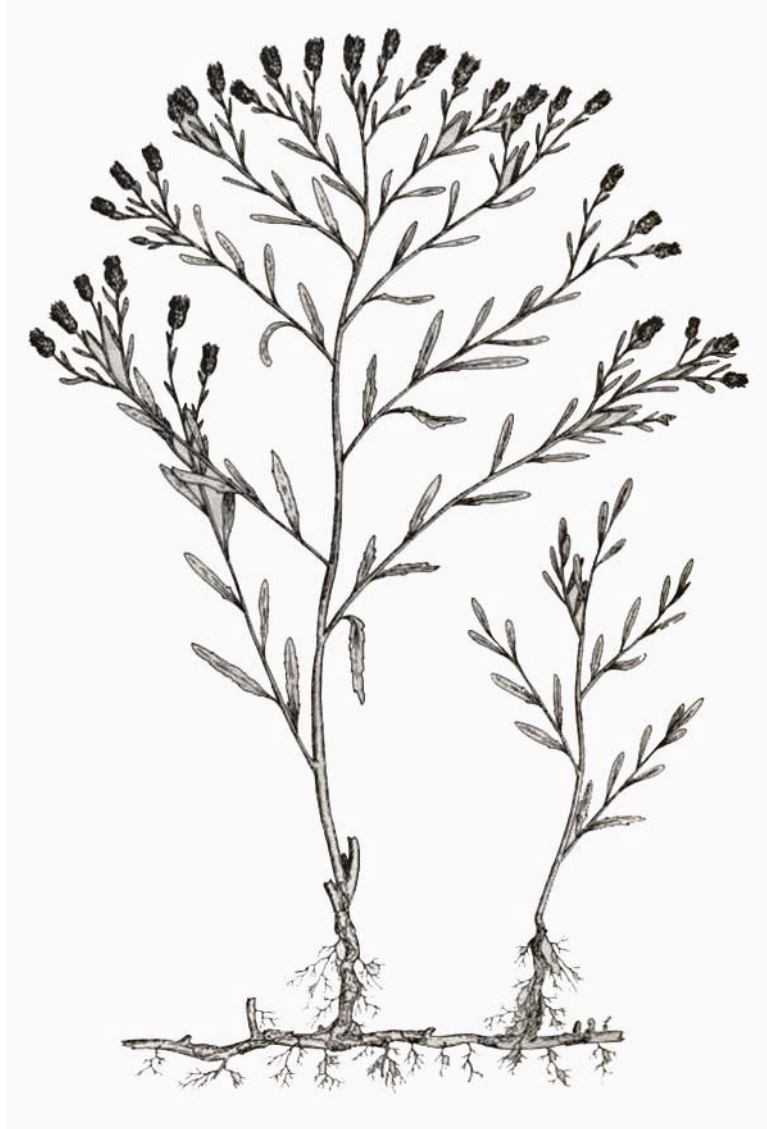


Key to 21 Invasive Weeds of Utah



By: Chad Dewey

This key is designed to help students, grades 9-12, learn how to use a dichotomous key, while also learning some of the invasive weeds that are becoming an increasing problem in our state. The key was created in the simplest form possible, minimizing the use of highly technical terms. Therefore, the key was not created to be used to key out all the weeds of Utah, but to be used in a classroom setting (pressed plants, pictures, or field trips) where the teacher can give students a plant from the key list and have them practice identifying it. This will give students the opportunity to learn how dichotomous keys work without being overwhelmed with unknown terms that tend to confuse them and deter them from using dichotomous keys in the future. Words in capitalized, bold font are defined in the “Terminology” section. A noxious weed field guide should be used with this key.

Three species have been added to the key that are not on the Utah noxious weed list. They are cheatgrass (*Bromus tectorum*), Russian olive (*Elaeagnus angustifolia*), and saltcedar (*Tamarix ramosissima*). These have been added to the list because they are invasive weeds that are very prevalent throughout the state. Because all the weeds on the Utah noxious weed list aren't found in every county of the state, this allows teachers the opportunity to familiarize students with a few other weeds that may be closer to home but are still causing problems and major changes in the ecosystem.

Terminology

Alternate- One leaf or bud to a node, alternating on a stem or shoot.

Annual- A plant that lives for only one year.

Awn- A slender, threadlike structure coming off the tip of grass seed structures.

Biennial- A plant which lives two years.

Bract- A small leaf-like structure below a flower.

Creeping root system- A horizontal root system that is capable of sending up shoots.

Deciduous- Leaves falling at maturity or the end of a growing season.

Evergreen- Woody plants that retain their leaves throughout the year.

Fibrous root- Consisting mostly of fine, dispersed roots, not a main central root.

Glabrous- Smooth, without hair.

Herbaceous- Not woody, dying back each year.

Inflorescence- The flowering part of a plant, specifically the arrangement of the flowers.

Lanceolate- A leaf that is shaped like the head of a spear or lance.

Linear- A leaf that is long and narrow.

Midvein- Central vein of a leaf.

Opposite- Two leaves to a node, directly across from one another.

Palmate- Arranged like a hand or the spokes of a wheel.

Panicle- A compound cluster of flowers with a main axis and re-branched branches.

Perennial- A plant living more than two years.

Pubescent- Covered with hair.

Rhizome- Underground stem, usually lateral, sending out shoots above ground and roots below.

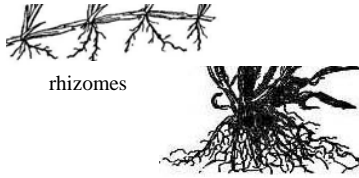
Seed capsule- A dry, dehiscent fruit that holds the seeds.

Spike- An un-branched inflorescence where the flowers are directly attached to the central axis.

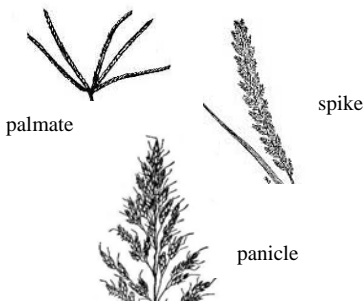
Taproot- A vertical, usually stout root where the main root is readily identified.

A Key to 21 Invasive Weeds of Utah

1. Is it a grass? If yes, go to 2.
-OR-
Is it a broad leaf plant? If yes, go to 5.

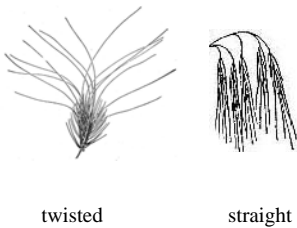


2. Does it have **RHIZOMES**? If yes, go to 3.
-OR-
Are the roots **FIBROUS**? If yes, go to 4.



3. Is the **INFLORESCENCE**:
PALMATE? If yes, it's bermudagrass – *Cynodon dactylon*.
-OR-
a **SPIKE** (wheat-like)? If yes, it's quackgrass – *Elytriga repens*.
-OR-
a **PANICLE**? If yes, it's Johnsongrass – *Sorghum halepense*.

If none of the above, it's not on the weed list.



4. Are the **AWNS** twisted, usually longer than 2 inches, and the inflorescence erect? If yes, it's medusahead – *Taeniatherum caput-medusae*.
-OR-
Are the awns straight, usually less than 1 inch, and the inflorescence drooping? If yes, it's downy brome – *Bromus tectorum*.

If neither, it's not on the weed list.

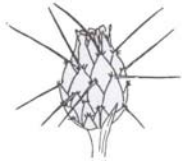
5. Is it a woody plant? If yes, go to 6.
-OR-
Is it an **HERBACEOUS** plant? If yes, go to 7.



6. Does it have a yellow flower and a silvery leaf? (Hint: The stems have thorns) If yes, it's Russian olive – *Elaeagnus angustifolia*.
-OR-
Does it have a pink or white flower and a small green, scale-like leaf? If yes, it's saltcedar – *Tamarix ramosissima*.

If neither, it's not on the weed list.

7. Is it a thistle-like plant with obvious spines? If yes, go to 8.
-OR-
Is it spineless? If yes, go to 11.



spines on seed head only

8. Are the spines absent on the leaves and only on the seed head? (Hint: They also have a yellow flower) If yes, it's yellow starthistle – *Centaurea solstitialis*.

-OR-

Are the spines on the leaves? If yes, go to 9.

9. Are the leaves **PUBESCENT** and gray? (Hint: Leaves near the ground can be 1-2 ft long). If yes, it's Scotch thistle – *Onopordum acanthium*.

-OR-

Are the leaves **GLABROUS**, and dark green? If yes, go to 10.



erect seed heads



Solitary, drooping heads

10. Does it have a **CREEPING ROOTSTOCK** and small (1/2-3/4 inch), erect seed heads? If yes, it's Canada thistle – *Cirsium arvense*.

-OR-

Does it have a **TAP ROOT** and large (1-3 inches), solitary, drooping flower heads? If yes, it's musk thistle – *Carduus nutans*.

If neither, it's not on the weed list.



flower head

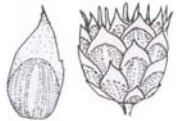


linear

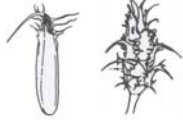
11. Does the plant have a flower head? (Hint: Leaves are generally small and **LINEAR**) If yes, go to 12.

-OR-

Does the plant have a different flower type? If yes, go to 13.



Russian knapweed



squarrose knapweed

12. Do the floral **BRACTS** have:

papery, see-through tips? If yes, it's Russian knapweed – *Acroptilon repens*.

-OR-

spiny tips that curve outward? If yes, it's squarrose knapweed – *Centaurea virgata*.

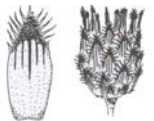
-OR-

spiny tips that are dark in color? If yes, it's spotted knapweed – *Centaurea maculosa*.

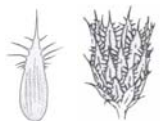
-OR-

spiny tips that don't curve (hint: it's the only knapweed with white flowers)? If yes, it's diffuse knapweed – *Centaurea diffusa*.

If none of the above, it's not on the weed list.



spotted knapweed



diffuse knapweed



opposite



alternate

13. Are the leaves **OPPOSITE** and stems square? (Hint: also has purple flowers with 5-7 petals) If yes, it's purple loosestrife – *Lythrum salicaria*.

-OR-

Are the leaves **ALTERNATE** and stems round? If yes, go to 14.



heart-shaped bracts

14. Does it have yellow flowers with heart-shaped bracts? (Hint: Also has a milky liquid that seeps out when the leaf or stem is damaged) If yes, it's leafy spurge – *Euphorbia esula*.

-OR-

Does it have a white or yellow flower without heart-shaped bracts? (Hint: a clear liquid (or no liquid) seeps out when the leaf or stem is damaged) If yes, go to 15.

If neither, it's not on the weed list.



trumpet

15. Are the flowers shaped like a trumpet? If yes, it's field bindweed – *Convolvulus arvensis*.

-OR-

Are there four petals on each flower? If yes, go to 16.

If neither, it's not on the weed list.

16. Are the flowers yellow with 1 seed per **SEED CAPSULE** (hint: capsules are black to purplish-brown and hang from stems)? If yes, it's dyer's woad – *Isatis tinctoria*.

-OR-

Are the flowers white with 2 seeds per seed capsule? If yes, go to 17.



lanceolate shaped



clasping

17. Are the leaves blue-green, **LANCEOLATE**, with the upper leaves appearing to clasp the stem? If yes, it's hoary cress – *Cardaria draba*.

-OR-

Are the leaves bright green or gray-green, lanceolate, with the leaves meeting the stem at a single point, without clasping the stem? If yes, it's perennial pepperweed – *Lepidium latifolium*.

If neither, it's not on the weed list.



not clasping

Drawing Credits:

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