

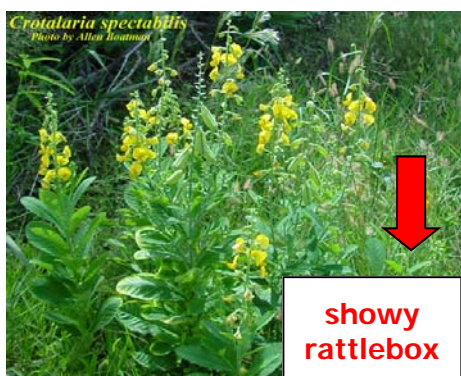
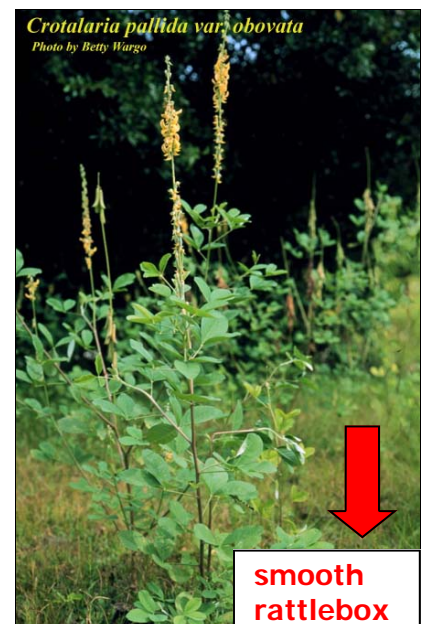
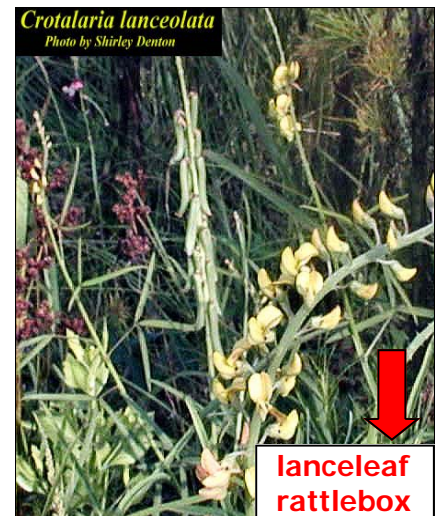
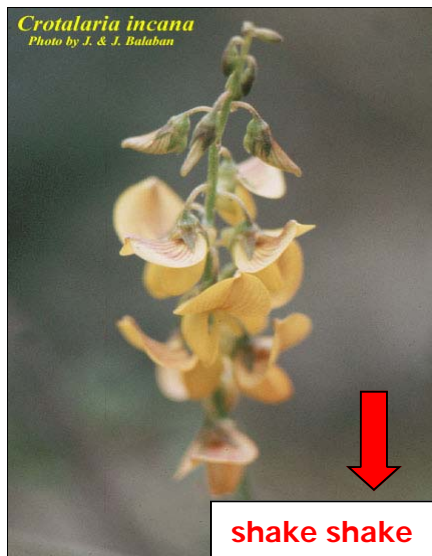
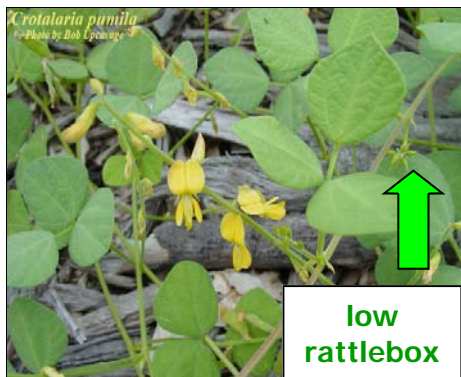


Rattlebox (Crotalaria) Species at JDSP

Worldwide, there are over 600 species in the genus *Crotalaria*, also commonly known as rattlebox, rattlepod, shake shake, or devil-bean. These plants get their name from the sound made when their pod-like fruit is shaken, causing the seeds to “rattle” around inside. As members of the pea/bean family they are good soil builders because their roots support nitrogen-fixing bacteria which improves soil quality. For that reason several species of rattlebox were brought to this country; however, it was soon discovered that the seeds of these plants were toxic to livestock. Now, these imports are considered to be noxious weeds (although some people may still use them ornamentally).

At JDSP there are seven rattlebox species, but just two are native to the park. The non-native species can spread easily and effectively through seed dispersal (each pod contains 20+ seeds). The first noted occurrence of exotic *Crotalaria* in the park was in 1975. Today, a management concern, these pest plants can be very invasive to natural areas.

The following guide explains how to differentiate between the individual rattlebox species and how to tell the desirable **natives**  from the undesirable **nonnatives**. 



Rattlebox (Crotalaria) Key for JDSP

All 7 species have yellow flowers and inflated fruits (resembling pea-pods)

Is it a simple leaf?

rabbitbells or
showy rattlebox or
rattleweed

-OR-
(see botanical
illustrations p. 10)

A compound leaf? (looks like 3 leaves)

low rattlebox or
lanceleaf rattlebox or
shake shake (velvety rattlebox) or
smooth rattlebox

simple (single) leaf rattleboxes

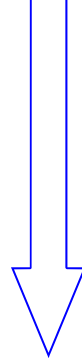
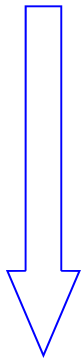
compound leaf (3 leaflets) rattleboxes

Is it low-growing w/small flowers (1/4" - 1/2")?

YES: rabbitbells—see p. 3 (native)
NO: continue (upright & flowers 3/4" - 1" long)

Is it low growing or does it form a mat?

YES: low rattlebox—see p. 6 (native)
NO: continue (plant form is upright)

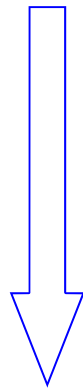


Are the stems and sepals smooth & do the leaves end in a tiny sharp tip?

YES: showy rattlebox—see p. 4 (nonnative)
NO: rattleweed—see p. 5 (nonnative)

Are the leaves long and narrow (lance-shaped)?

YES: lanceleaf rattlebox—see p. 7 (nonnative)
NO: continue (leaves are oval)



Also note: Nonnative rattleboxes most commonly occur in disturbed and developed areas, while natives are found in the scrub, scrubby flatwoods, and wet flatwoods.

Also note: The 2 native rattlebox species in the park are **low-growing or mat-forming**. Therefore, an upright growing (over 1' tall) rattlebox is **nonnative**.

Do the seedpods have very long, shaggy hairs?

YES: shake shake—see p. 8 (nonnative)
NO: smooth rattlebox—see p. 9 (nonnative)

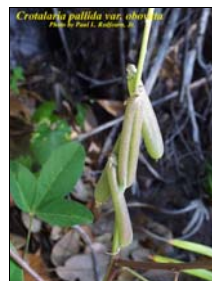


Photo by Forest and Kim Star

Rabbitbells (native) (*Crotalaria rotundifolia*)

- ☑ low-growing to 1' high, trailing or upright; branched stems are hairy
- ☑ simple leaves (1/4" to 3/8" long) are alternate and spine-tipped
- ☑ named for their round leaves (*rotundifolia*) but shape can vary
- ☑ upper leaf surface hairy
- ☑ yellow flowers may have red streaks
- ☑ flowers have very small petals, 1/4" - 1/2" long
- ☑ lower petals turn at a sharp right angle
- ☑ flowers all year
- ☑ fruits (seed pods) are smooth and about 1" long



Showy Rattlebox (Southern Asia) (*Crotalaria spectabilis*)

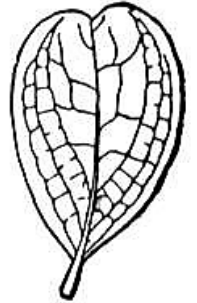
- ☑ upright to 6' tall; stems have ridges and are smooth or nearly so
- ☑ 2" - 6" leaves are simple, alternate, and widest at the apex (tip)
- ☑ the leaf apex usually ends in a tiny, sharp tip
- ☑ leaves are smooth on top, with dense hairs below
- ☑ large stipules
- ☑ stem terminates in elongated flower spike
- ☑ yellow flower petals ($\frac{3}{4}$ " - 1") may have dark lines on the upper petals
- ☑ sepals are smooth (green part under the flower)
- ☑ flowers all year
- ☑ $1\frac{1}{4}$ "—2" fruits (seed pods) are smooth
- ☑ approximately 22 seeds per pod



Rattleweed (Asia) (*Crotalaria retusa*)

- ☑ upright to 4' tall; stems have ridges and short hairs
- ☑ simple leaves 1 1/3—3 1/2" long; 1/2" - 1 1/2" wide; smooth above, hairy below
- ☑ leaf apex usually retuse
- ☑ small stipules
- ☑ yellow flower petals (3/4" - 1" long) may have red-orange streaks
- ☑ sepals have sharp, straight, hair-like growths
- ☑ flowers in the summer and fall
- ☑ 1" - 1 1/2" fruits (seed pods) are smooth
- ☑ approximately 23 seeds per pod

example of retuse
apex on leaf



Marco Schmidt



Low Rattlebox (native) (*Crotalaria pumila*)

- ☑ low growing herb with narrow stem; often forms mats
- ☑ leaflets of three (1/4" - 3/8" long) are alternate and stalked
- ☑ leaflets are of equal size or middle one may be largest
- ☑ rounded leaflets and leaf tips
- ☑ stipules under each petiole
- ☑ yellow flowers clustered in short stalks
- ☑ flowers all year
- ☑ fruits (seed pods) to 1/2" long with short hairs



Lanceleaf Rattlebox (Africa) (*Crotalaria lanceolata*)

- ☑ upright, height to 4', branched stem with very small hairs
- ☑ stem terminates in elongated flower spike
- ☑ leaflets of three are alternate and 2½" - 4" long; 1/8" - 1/3" wide
- ☑ leaves are long and narrow or lance-shaped and are sharp-tipped
- ☑ small, yellow flowers (< ½" long) may have reddish streaks
- ☑ flowers all year
- ☑ fruits (inflated pods) are 1½" long with short hairs and curve up at the tip
- ☑ approximately 20—50 seeds per pod



Shake Shake, Velvety Rattlebox (Africa) (*Crotalaria incana*)

- ☑ upright to 6' tall
- ☑ leaflets of three are 1" - 2" long; ¼" - 1¾" wide
- ☑ yellow flowers may have reddish streaks
- ☑ flowers in summer and fall
- ☑ 1" - 1½" fruits (seed pods) distinctive because they have long, soft, shaggy hair
- ☑ approximately 40 seeds per pod



Smooth Rattlebox (Africa) (*Crotalaria pallida* var. *obovata*)

- ☑ upright, multi-branched stem grows to 9' tall
- ☑ stem terminates in elongated flower spike
- ☑ flattened hairs may be seen on stem or leaf
- ☑ leaflets of three are alternate and 1" - 2¾" long; up to 1½" wide
- ☑ leaves are oval with a rounded apex (tip) that may end in a sharp point
- ☑ stipules are usually absent
- ☑ ½" yellow flowers may have reddish-brown streaks
- ☑ flowers all year
- ☑ fruits (seed pods) about 1½" long, with very short hairs
- ☑ approximately 36 seeds per pod
- ☑ most common rattlebox seen along Park Drive and camping/cabin areas



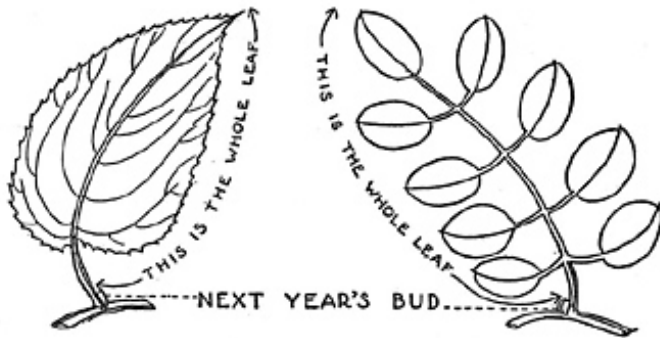
Wunderlin, R. P., and B. F. Hansen. 2008. *Atlas of Florida Vascular Plants* (<http://www.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

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Note: Besides Jonathan Dickinson State Park, this key would be appropriate for use in the counties of Martin, Palm Beach, St. Lucie, and Broward because they have the same seven species present. Other counties may have a greater or lesser number of *Crotalaria* species than the ones listed here.

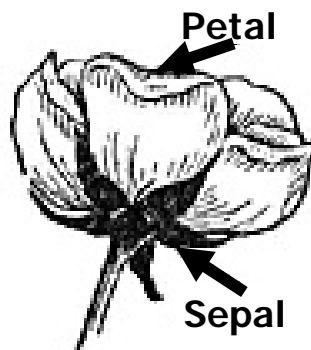
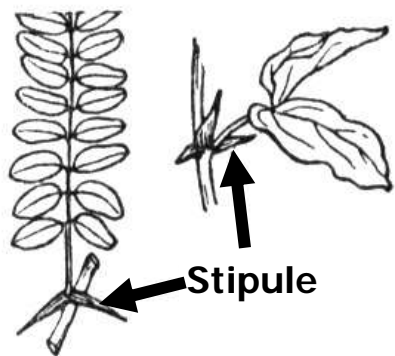


Simple Leaf

Compound Leaf



Leaves Opposite



Leaves Alternate