

## RECOGNIZING THE THREAT

The delicate native plant communities on the Barry M. Goldwater Range – West (BMGR-W) are under constant assault by non-native intruders.

Two commonly found invasive plants on the range are Sahara mustard (*Brassica tournefortii*) and buffelgrass (*Pennisetum cillare*). Both species are native to the Old World, where they are common in North Africa and the Middle East. Both are drought-tolerant and well suited for the extreme desert environment of the BMGR-W. In addition to displacing native plants that are important to local wildlife, buffelgrass, and to a lesser extent, Sahara mustard, bring a relatively new fire potential to the Sonoran Desert. Fires carried by non-native plants can destroy important habitat and pose significant threats to military training areas and structures.



Sahara mustard infestation between roadway and fence line.

## STAY VIGILANT

The effort to control the spread of buffelgrass, Sahara mustard, and other invasive plant species will require constant vigilance from all range users. Seeds can remain dormant in the soil for several years and may germinate when conditions are favorable. Soil disturbance from off-road vehicle travel and areas cleared for military training can become reinfested by seeds from neighboring lands. You can do your part by staying on authorized range roads and by reporting any new infestations.

## REPORT SIGHTINGS TO RANGE MANGEMENT DEPARTMENT



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Barry M. Goldwater Range—West

Marine Corps Air Station—Yuma

## HOW TO REPORT AND IDENTIFY INVASIVE WEEDS

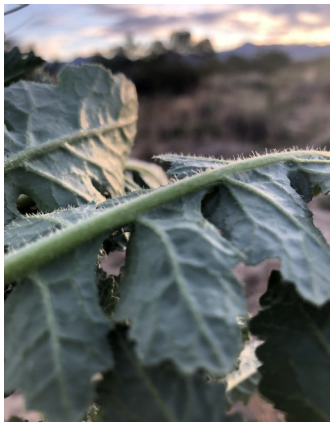


## THE ENEMY—INVASIVE WEEDS

### SAHARA MUSTARD

Sahara mustard is a non-native, winter annual that is found along roads and within disturbed areas of the range. A single plant has the potential to produce roughly 16,000 seeds. New and/or large infestations away from roads should be reported to the Range Management Department.

To identify Sahara mustard, look for:



**Cabbage-like leaves which are 1.5 to 2.5 inches long that are deeply lobed and toothed. Additionally, stems and leaf surfaces will be covered with simple hairs.**



**A large basal rosette with a large flowering stalk that can grow up to 3ft tall. Flowers are small and dull yellow, and petals consist of two pairs, forming a cross-like shape.**

### BUFELGRASS

Bufelgrass is a non-native, perennial grass that is spreading aggressively throughout the BMGR-W. It is primarily found in desert washes, along range roads, and in storm water drainages. Dense infestations should be reported to the Range Management Department.

To identify bufelgrass, look for:

**A shrubby grass that grows up from a central root crown. Stems will grow from the center giving a messy and clumpy appearance.**



**Long whitish hairs on the node where the leaf blade clasps the grass stem. Leaf blades will be roughly 1/4 inch wide, with tiny hairs along the edges of each blade.**

**Bottlebrush-shaped flowing stalks with a reddish hue or sandy brown color when stalk sets seed (left). Also pictured (right), is a big galleta grass stalk, which is a similar grass that is native to the Sonoran Desert.**



## THE FIGHT—A WAR ON WEEDS

Marine Corps Air Station Yuma (MCASY) has partnered with the University of Arizona (UA) and the National Park Service's Lake Mead Exotic Plant Management Team (LMEPMT) to map, control, and monitor noxious weeds throughout the BMGR-W. To tackle this dynamic problem over such a large geographical area, the team utilizes a suite of new technologies, leverages the special expertise of its partners, and applies a collaborative approach to battle invasive plants. Some of these technologies/approaches include:

- ◆ **Weather-Monitoring Network:** MCASY hosts five weather stations on the BMGR-W, which are integrated into a regional weather-monitoring network that includes stations hosted by neighboring federal agencies. The team uses the network to track rainfall patterns across the landscape to identify areas where subsequent germination and growth of non-native plants is likely.
- ◆ **DroughtView:** DroughtView, is a web-based remote sensing tool that displays drought conditions in the field. The team uses it to identify areas where non-native species may be growing.
- ◆ **GIS Cloud:** Using GIS Cloud, a Cloud-based mapping app, the team collects field data on smart phones using drop down menus. With standard phone service, data can be uploaded onto the GIS Cloud website and then viewed in near-real-time by all partners. Each data point can include photos, audio, and notes.
- ◆ **Targeted Control:** LMEPMT implements control treatments which may include manual removal or application of herbicide. With input from the team, LMEPMT plans and implements control using the data in GIS Cloud. UA monitors effectiveness and helps develop new management approaches.

