

# WeedUS Plus: Expanded Database of Plants Invading Natural Areas in the U.S.

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## Overview

The WeedUS Database was initiated in 1997 to address the need for current distribution information on exotic invasive plants affecting natural areas and ecosystems in the United States, including Hawaii and Alaska. This information was not readily available or compiled in an accessible manner prior to this effort. In October 2008, a much expanded version of the WeedUS database was launched at <http://www.invasive.org/weedus/index.html/>. The database was developed by the University of Georgia's Center for Invasive Species and Ecosystem Health (CISEH). For each invasive species in the database, the new WeedUS format provides an individual web page featuring images from the Center's large image database, distribution maps by county or state, and a link to native species alternatives provided by the Lady Bird Johnson Wildflower Center. Native origin also is provided in the database, which can be useful for predicting the potential spread and adaptability of invasive species. Additionally, WeedUS will soon allow users to query invasive plant lists for one or more states, national parks, or listing source. Regular updating will be performed by a designated contact for each listing source (e.g., state Exotic Pest Plant Council (EPPC), federal agency, The Nature Conservancy, etc.) who will be able to log-on to the site and add or remove species from their lists. A list-serve will be created to keep designated contacts and other WeedUS users informed of changes.

## Background

As of November 2008, WeedUS had identified 1,026 invasive plants affecting natural areas, including over 600 species affecting national parks. Unlike many state and federal weed lists, WeedUS focuses solely on natural ecosystems, excluding weeds of agricultural and other heavily managed or harvested lands or developed

landscapes. As a result, it offers a more accurate picture of the extent, impact and threat of invasive plants to the nation's natural ecosystems.

## Qualifications for Inclusion

In order to be considered for inclusion in the WeedUS database, a plant must have been introduced to the invaded area by humans rather than by wind, water, wildlife or other non-human-mediated mechanisms. In addition, the species must currently be causing a notable impact to natural habitat, native species or ecological functions. Species included on "watch lists" or those that are considered to be potentially invasive do not qualify for inclusion. Individuals requesting that species be added to the database are asked to work through a state or regional EPPC, Invasive Species Council, federal, state, or local agency or other qualified agent to ensure proper identification of the species and confirmation of the extent of its distribution.

## Taxonomic Authority

Scientific names used in WeedUS are based on the U.S. Department of Agriculture's PLANTS Database and website (<http://plants.usda.gov/index.html>).

## Information Sources

Published reports on invasive species that conformed to the qualifying conditions were gathered and evaluated. These included The Nature Conservancy's survey of exotic plants affecting TNC preserves; plant lists produced by EPPCs and related organizations, and state and federal agencies; scientific papers, and other published records. A survey of national parks was conducted by the author largely by e-mail beginning in 1998.



## Using WeedUS to Assess And Combat Invasive Plants In National Parks

The WeedUS database has proven to be a useful tool for evaluating and combating non-native invasive plant species within the National Park Service. Beginning in April 1998, a survey was initiated to ascertain the extent of exotic plant species invading national parks. This survey resulted in a fairly comprehensive list of over 600 species that was incorporated into the WeedUS Database. The full listing can be found at <http://www.nps.gov/plants/alien/list/nationalparks.htm>. In most cases, data for invasive species in national parks corroborates reports made by other agencies and organizations. This information is essential for substantiating the need for

funding to support monitoring, control, and prevention efforts and for predicting the spread of invasive species. Occurrence and distribution data from WeedUS have been used to justify funding assistance for the National Park Service's Exotic Plant Management Teams.

### Participating Parks and Their Invasive Plants

Sixty-one national parks from all over the United States participated in the survey of exotic invasive plants impacting natural areas and ecosystems. They are listed in the box to the right according to the region they represent. The state(s) the park is located in, the park's four letter code, and the number of non-native invasive plant species impacting the ecosystems of each park is provided. The number of species may be underrepresented for some parks due to differences in reporting. If you know of a species that is not in the database, you are encouraged to contact the author.

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## Results from sixty-one national parks surveyed for exotic invasive plants impacting natural areas and ecosystems, listed by region and indicating number of species causing impacts.

### Great Lakes Region (IL, IN, MI, OH, WI)

- Indiana Dunes National Lakeshore (Indiana) INDU 23
- Saint Croix National Scenic Riverway (Wisconsin) SACN 10

### Mid-Atlantic Region (DC, DE, MD, NJ, PA, VA, WV)

- Antietam National Battlefield (Maryland) ANTI 83
- Appomattox Court House National Historical Park (Virginia) APCO 11
- Booker T Washington National Monument (Virginia) BOWA 9
- Catoctin Mountain Park (Maryland) CATO 15
- Chesapeake and Ohio Canal National Historical Park (Maryland, Washington, D.C., and West Virginia) CHOH 29
- Colonial National Historical Park (Virginia) COLO 110
- Delaware Water Gap National Recreation Area (Pennsylvania) DEWA 10
- Eisenhower National Historic Site (Pennsylvania) EISE 5
- Fredericksburg & Spotsylvania National Military Park (Virginia) FRSP 11
- Gettysburg National Military Park (Pennsylvania) GETT 12
- George Washington Birthplace National Monument (Virginia) GEWA 15
- George Washington Memorial Parkway (Virginia) GWMP 18
- Harpers Ferry National Historical Park (Maryland, Virginia, West Virginia) HAFE 51
- Manassas National Battlefield Park (Virginia) MANA 18
- Monocacy National Battlefield Park (Maryland) MONO 49
- National Capital Parks Central (Washington, D.C.) NACC 1 \*\*Change to NAMA
- National Capital Parks East (Washington, D.C.) NACE 144
- Petersburg National Battlefield (Virginia) PETE 27
- Prince William Forest Park (Virginia) PRWI 10
- Richmond National Battlefield Park (Virginia) RICH 20
- Rock Creek National Park (Washington, D.C.) ROCR 41
- Shenandoah National Park (Virginia) SHEN 29
- Thomas Stone National Historic Site (Maryland) THST 6
- Wolf Trap National Park (Virginia) WOTR 5

### North Central Region (IA, MN, ND, NE, SD)

- Badlands National Park (South Dakota) BADL 39
- Scotts Bluff National Monument (Nebraska) SCBL 8
- Theodore Roosevelt National Park (North Dakota) THRO 28

### Northeast Region (CT, MA, ME, NH, NY, RI, VT)

- Acadia National Park (Maine) ACAD 13
- Minute Man National Historical Park (Massachusetts) MIMA 15
- Weir Farm National Historical Park (Connecticut) WEFA 6

### Northwest Region (ID, MT, OR, WA, WY)

- Craters of the Moon National Monument (Idaho) CRMO 16
- Devils Tower National Monument (Wyoming) DETO 2
- Glacier National Park (Montana) GLAC 5
- Yellowstone National Park (Wyoming) YELL 114

### Pacific Islands (HI)

- Haleakala National Park (Hawaii) HALE 291

### South Central Region (AR, KS, LA, MO, OK, TX)

- Lake Meredith National Recreation Area (Texas) LAMR 4
- San Antonio Missions National Historical Park (Texas) SAAN 7

### Southeast Region (AL, FL, GA, KY, MS, NC, SC, TN)

- Big Cypress National Preserve (Florida) BICY 2
- Blue Ridge Parkway (North Carolina) BLRI 28
- Dry Tortugas DRTO 1
- Everglades National Park (Florida) EVER 9
- Great Smoky Mountains National Park (North Carolina & Tennessee) GRSM 41
- Kings Mountain National Military Park (South Carolina) KIMO 11
- Stones River National Battlefield (Tennessee) STRI 71
- Vicksburg National Military Park (Mississippi) VICK 12

### Southwest Region (AZ, CA, CO, NM, NV, UT)

- Chiricahua National Monument (Arizona) CHIR 45
- Death Valley National Park (California) DEVA 82
- Dinosaur National Monument (Colorado) DINO 21
- Fort Bowie National Historic Site (Arizona) FOBO 21
- Glen Canyon National Recreation Area (Utah) GLCA 19
- Grand Canyon National Park (Arizona) GRCA 61
- Lake Mead National Park (Nevada) LAME 45
- Organ Pipe National Monument (Arizona) ORPI 23
- Presidio National Park (California) PRES 22
- Redwood National Park (California) REDW 24
- Rocky Mountains National Park (Colorado) ROMO 31
- Sequoia and Kings Canyon National Parks (California) SEKI 15
- Wupatki National Monument (Arizona) WUPA 3
- Yosemite National Park (California) YOSE 18