NATIONAL *fish, wildlife & plants*
CLIMATE ADAPTATION STRATEGY

Project Title: Tracking Climate Change and Assisted Migration: Maintaining Resilient Landscapes

Headline Title (2-5 words): Climate Change and Assisted Migration

Brief Summary (Abstract): R&D compiled a literary database about native plant transfer guidelines, climate change, and assisted migration. The database identifies knowledge gaps and provides a central foundation for collaboration in generating research questions, conducting studies, transferring and acquiring data, expanding studies to key species and geographic regions, and guiding native plant transfer.

Project Location: Moscow, ID

Partners: Michigan Technological University; Rocky Mountain Research Station, Grassland, Desert and Shrubland Ecosystems Program; and National Center for Reforestation, Nurseries and Genetic Resources.

Background: By the turn of the Century, and under the current rate of climate change, many landscapes in the U.S. may have climates incompatible with current vegetation. One adaptation strategy at the nexus of native plant transfer guidelines and climate change is assisted migration, also known as managed relocation, defined as the intentional movement of plants in response to climate change. Although researchers propose frameworks and guidelines on how to apply assisted migration of native plants, no consensus exists on implementation in the U.S. because of ecological and economic concerns and lack of supporting research.

Project Goals: The database connects all pieces of information from peer-review journal articles to decision-support tools. The process of producing the guide included knowledge transfer among scientists, land managers, and university students about climate change and assisted migration, covering historical, biological, social, legal, and ethical aspects of assisted migration. This research has and will continue to transfer current information to land managers, policymakers and the general public on adaptive strategies that maintain resilient and functional native plant ecosystems across landscapes as the climate changes.

Strategy Goals Implemented: Goal 2, Strategy 2.2, Action 2.2.2 Develop criteria and guidelines that foster the appropriate use, and discourage inappropriate use of translocation, assisted relocation, and captive breeding as climate adaptation strategies.

Climate Impacts Addressed: Impact of climate change on native plants

Status of Project Implementation (Timeline, Milestones, Next Steps): Ongoing

Project Outcomes: Though mostly focused on North America, the 800+ publications incorporated into this database includes work from around the world and the resource could be applicable anywhere. Scientists, land managers, and university students are informed about climate change and assisted migration through presentations and publications, including co-hosting a holistic-approach workshop that covers the historical, biological, social, legal, and ethical aspects of assisted migration.

NATIONAL *fish, wildlife & plants* CLIMATE ADAPTATION STRATEGY

Funding Sources: US Forest Service, State & Private Forestry, Research & Development; Michigan Technological University

Photos/ Attachments:

Photo/Figure Credits (do we have permission to print):Mary Williams. Yes, permission is granted.

Suggested Photo Caption:

*Under the canopy of contemporary climate change, some native plant species, such as western larch, will be unable to adapt or migrate fast enough to track the projected changes.*

See link for photo and caption: http://www.fs.fed.us/rmrs/docs/research-highlights/climate-change/Tracking%20Climate%20Change%20and%20Assisted%20Migration.pdf

For more information:

http://www.rngr.net/publications/assisted-migration

http://www.treesearch.fs.fed.us/pubs/43883

http://www.treesearch.fs.fed.us/pubs/44260

http://www.treesearch.fs.fed.us/pubs/45634

This one is being uploaded to Treesearch as we speak: Williams MI, Dumroese RK. 2014. Role of climate change in reforestation and nursery practices. Western Forester 59(1):11–13.

Contact: Mary Williams and Kas Dumroese, miwilliams@fs.fed.us, kdumroese@fs.fed.us