

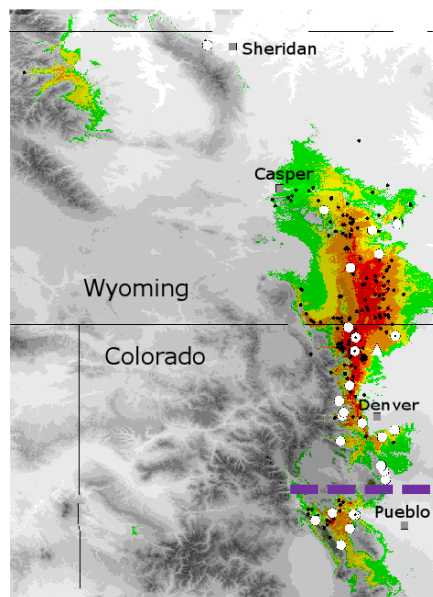
Unlocking valuable genetic diversity hidden in crop wild relatives



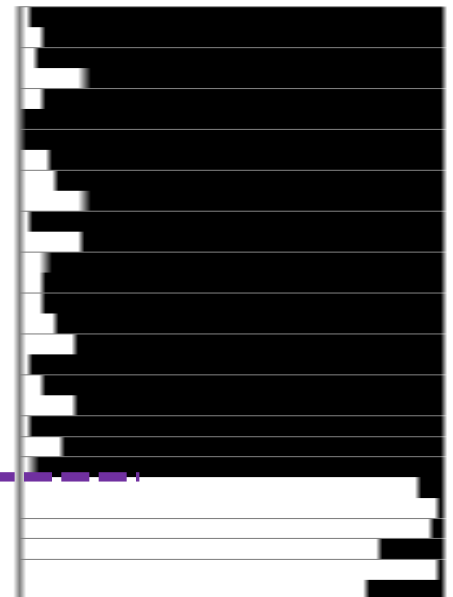
***Helianthus pumilus*, the dwarf sunflower, contains valuable genes for disease resistance, drought tolerance, and seed fatty acid profile.**

In nature, genetic variation is organized geographically, due to limited gene flow across large distances, or by the environmental conditions where a population resides, via natural selection. Molecular marker data can be used to infer the genetic structure of populations across a species range. Understanding population genetic structure permits identification of geographic regions that are likely to contain unique alleles or excess diversity. It is these regions that become the target for future collection expeditions.

Crop wild relatives contain the genetic material necessary to meet future challenges to agriculture. Acquiring agronomically relevant genetic variation from these wild species is difficult. PGPRU provides analytical tools to assist in the acquisition and distribution of these valuable resources.



Environmental suitability across the species range of *H. pumilus*.



Two distinct genetic groups are found on opposite sides of an unsuitable region.