

# Progress with formulating the NPGS Plan

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# NPGS **Plan** Directed by 2018 Farm Bill

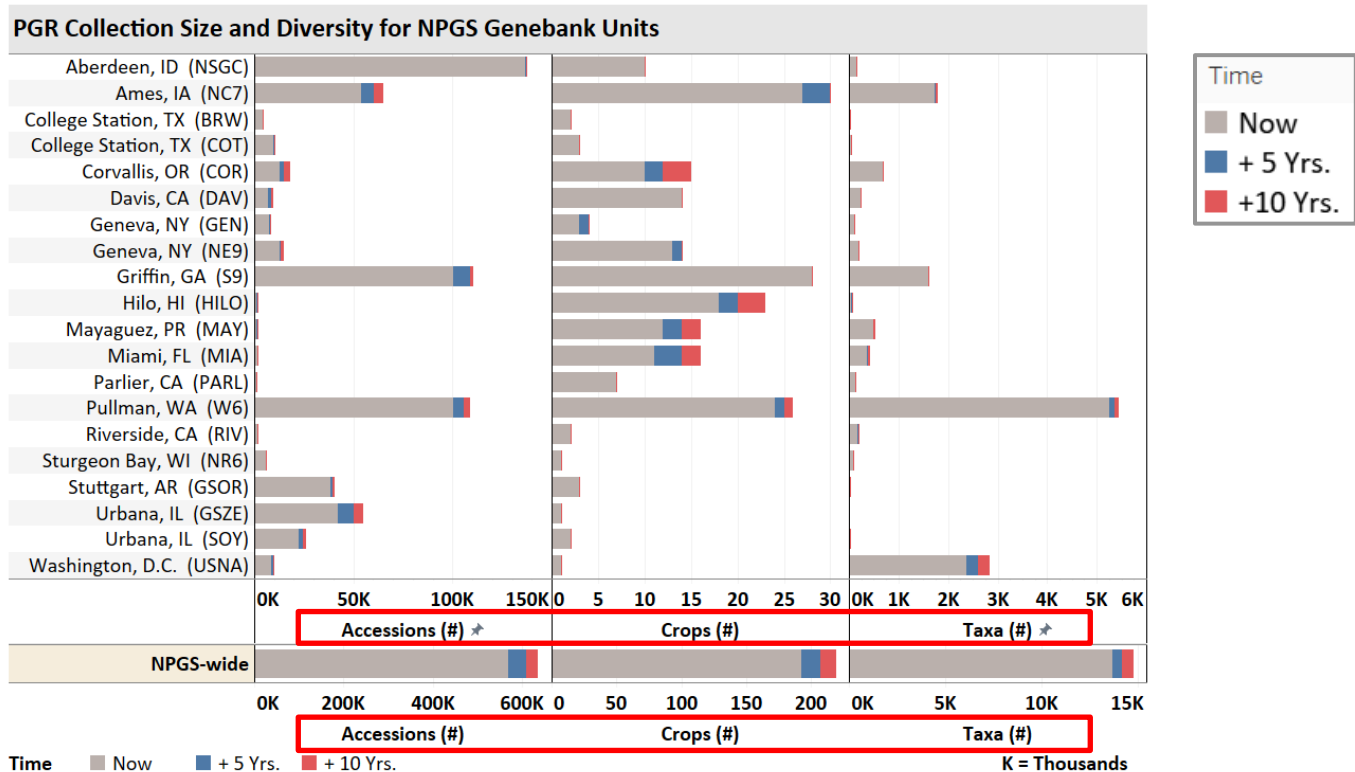
- **SEC. 7205. NATIONAL STRATEGIC GERMPLASM AND CULTIVAR COLLECTION ASSESSMENT AND UTILIZATION **PLAN**.**
- (a) **IN GENERAL.**—Section 1632(d) of the Food, Agriculture, Conservation, and Trade Act of 1990 (7 U.S.C. 6 5841(d)) is amended—
  - (1) in paragraph (5), by striking “and” at the end;
  - (2) by redesignating paragraph (6) as paragraph (7); and
  - (3) by inserting after paragraph (5) the following:
    - “(6) develop and implement a national strategic germplasm and cultivar collection assessment and utilization **plan** that takes into consideration the resources and research necessary to address the significant backlog of characterization and maintenance of existing accessions considered to be critical to preserve the viability of, and public access to, germplasm and cultivars; and”.
- (b) **PLAN PUBLICATION.**—Section 1633 of the Food, Agriculture, Conservation, and Trade Act of 1990 (723 U.S.C. 5842) is amended by adding at the end the following:
  - ‘(f) **PLAN PUBLICATION.**—On completion of the development of the **plan** described in section 1632(d)(6), the Secretary shall make the plan available to the public.’”

# Example of PGR management metrics for 22 NPGS genebank units

ARS Crop Genebank Site	Griffin, GA	Griffin, GA	Griffin, GA
Genebank code	S9	S9	S9
<b>1 Infrastructure, capacity and support for NPGS PGR and information management</b>	<b>Now</b>	<b>+ 5 Yrs.</b>	<b>+ 10 Yrs.</b>
<b>A) Overall genebank collection size and diversity</b>			
# of genebank taxa	1602	1602	1602
# of genebank accessions	100,181	108,726	110,435
# of different crops	28 Maintenance Groups	28	28
<b>B) Financial support</b>			
Annual operational budget (\$; ARS and off-the-top)	2,911,541	4,050,115	4,299,024
<b>C) Staffing</b>			
# FTEs permanent	24	31	31
# FTEs temporary	1.5	3.5	3.5
<b>D) Physical resources</b>			
Cold storage space (ft3); +41F; 0F; cryo conditions	33,600	85,000	85,000

# Data analyzed and presented by infographics

## Example: NPGS PGR collection size and diversity



**NPGCC, ARS leadership, and NGRAC (National Genetic Resources Advisory Council) reviewed draft NPGS Plan (ca. 300 pp.)**

**NATIONAL STRATEGIC GERMPLASM AND CULTIVAR COLLECTION ASSESSMENT AND UTILIZATION PLAN**



# Timeline for reviews of draft NPGS Plan

- **NPGCC and ARS leadership reviewed the Plan during the summer of 2021; comments and edits were incorporated into revisions.**
- **NGRAC was inactive from January-August 2021. They reviewed the Plan during the autumn-winter of 2021/2022; comments and edits were incorporated into revisions.**
- **NGRAC completed and submitted a formal report about the Plan to USDA in mid-February 2022. USDA's formal response to NGRAC Report is in the clearance process.**

# Major recommendations/suggestions from the reviews

- **The 300 pp. Plan is a valuable internal guide and blueprint for addressing NPGS operational backlogs, but it is too lengthy and detailed for non-technical audiences (e.g., the Congress).**
- **Develop a much briefer version for general audiences and also a 2 pp. hand-out.**
- **Develop a schedule for the major Plan milestones.**
- **Conduct formal internal and external assessments of the Plan's progress and results at +5 and +10 years.**

# Major recommendations/suggestions from the reviews

- **More extensive explanations for operational priorities and greater focus on efficient plant genetic resource management operations.**
- **More balanced coverage of backlogs/needs for characterization, evaluation, and genetic enhancement relative to plant genetic resource maintenance.**
- **Continue focus on GRIN-Global, recruitment, training, and partnerships with public and private-sectors.**



# Brief (32 pp.) synopsis of overall NPGS Plan completed

**SYNOPSIS OF THE NATIONAL STRATEGIC GERMPLASM AND  
CULTIVAR COLLECTION ASSESSMENT AND UTILIZATION PLAN**



# Infographic 2 pp. “hand-out” in development

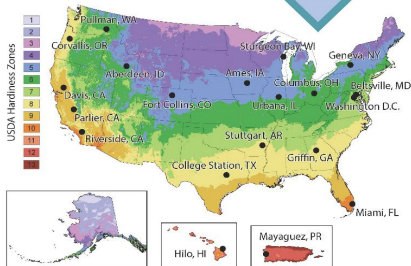
## National Plant Germplasm System

### CONSERVING CROP GENETIC RESOURCES IN THE U.S.

The National Plant Germplasm System (NPGS) is the network of USDA genebanks that safeguards our nation's precious plant germplasm (also termed genetic resources)—living material from which plants are grown.

#### NPGS conserves world-class collections of plant genetic resources

Collections include approximately 200 crops and their wild relatives. These are maintained across the country at 20+ locations suited to the biological and environmental needs of each crop.



#### Diverse collections are key to agricultural security

Genetic diversity can be used to improve crop quality, yield, pest and disease resistance, tolerance to environmental extremes, and more.

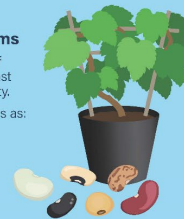
NPGS distributes living plant material to researchers and plant breeders working to develop and improve crops for a growing population and changing climate.

#### Plant germplasm is conserved in many forms

Curators must balance ease of maintenance, protection against loss, longevity, and accessibility.

They maintain living collections as:

- Plants growing in the field, greenhouse, screenhouse, or tissue culture
- Seeds or frozen tissue in cold storage



Watch a video overview of the NPGS



#### NPGS conserves the crops that sustain our everyday lives. These plants are essential to the future of global agriculture.

NPGS conserves germplasm from **16,000+** plant species

NPGS distributes **200,000+** items for research each year

NPGS safeguards **601,000+** unique kinds of germplasm



#### Food and Beverage

Most of NPGS's collections are food crops. This includes fruits and nuts, vegetables, grains, oilseeds, herbs, beverage crops, and more.



#### Fiber

Certain crops are cultivated for fiber, such as cotton, hemp, and flax.



#### Industrial and Medicinal

Some crops have industrial applications and are used in biofuels, lubricants, cosmetics, and medicines.



#### Feed

A variety of crops are used for feeding livestock such as cattle, pigs, and poultry.



#### Ornamental

Some plants are grown for their aesthetic interest and role in environmental quality.

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To learn more about plant genetic resources, visit [GRIN-U.org](http://GRIN-U.org)



# Next steps?

- **Brief USDA leadership regarding the NPGS Plan and the NGRAC report about it.**
- **Clearance of USDA response to NGRAC report about the NPGS Plan.**
- **Further revisions to the NPGS Plan based on USDA leadership's input and direction?**
- **“Publication” and transmission to Congress of the NPGS Plan, brief synopsis, and 2 pp. infographic hand-out?**