

Groundwater Dependent Ecosystems

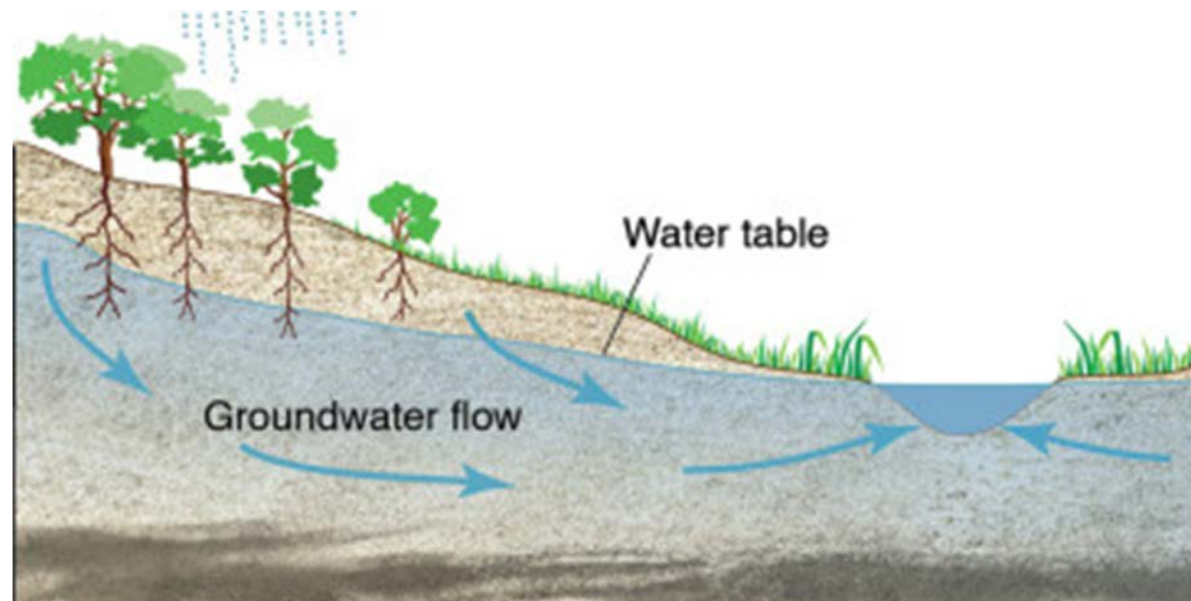
Butte Subbasin

Advisory Board Meeting

February 25, 2021

GDEs Defined

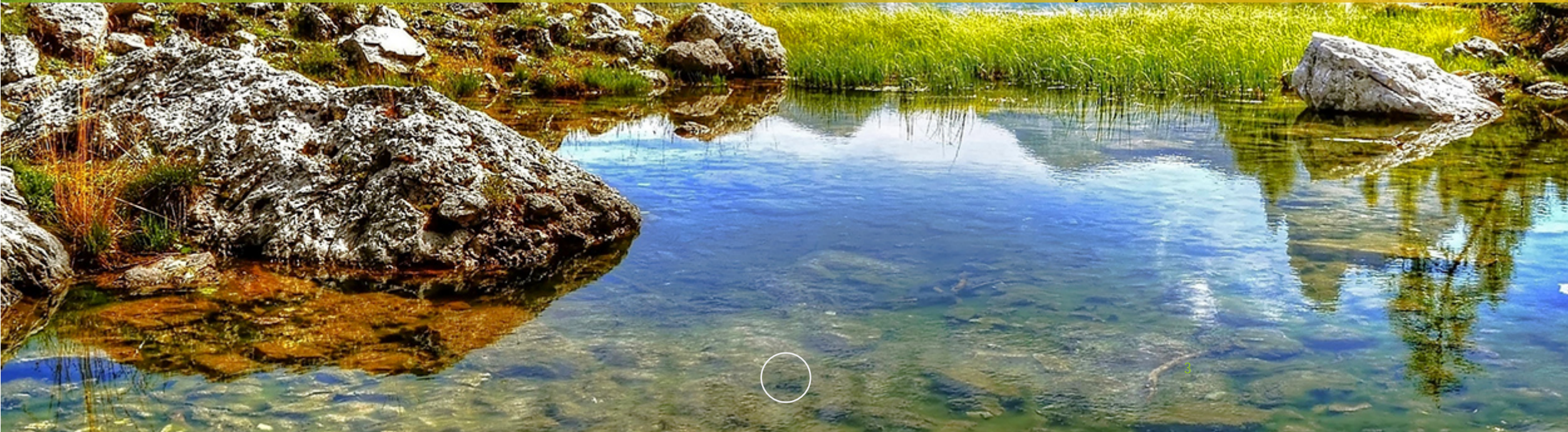
GDEs are ecological communities or species that depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface.



GDEs are found in almost all groundwater basins in California.

TYPES of GDEs

- Wetlands
- Rivers
- Streams
- Estuaries
- Seeps
- Springs
- Terrestrial vegetation (w/o access to surface water)



Importance of GDEs

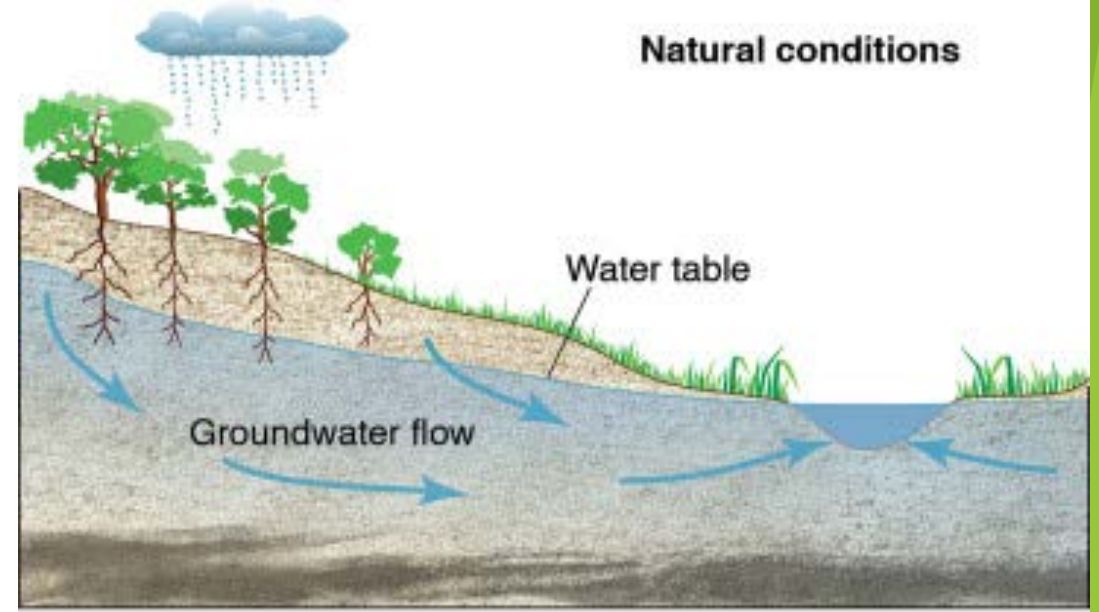
- Habitat
- Supports Biodiversity including T&E Species
- Water Supply including Base Flow in Waterways
- Water Purification
- Flood Mitigation
- Erosion Control
- Recreational Opportunities



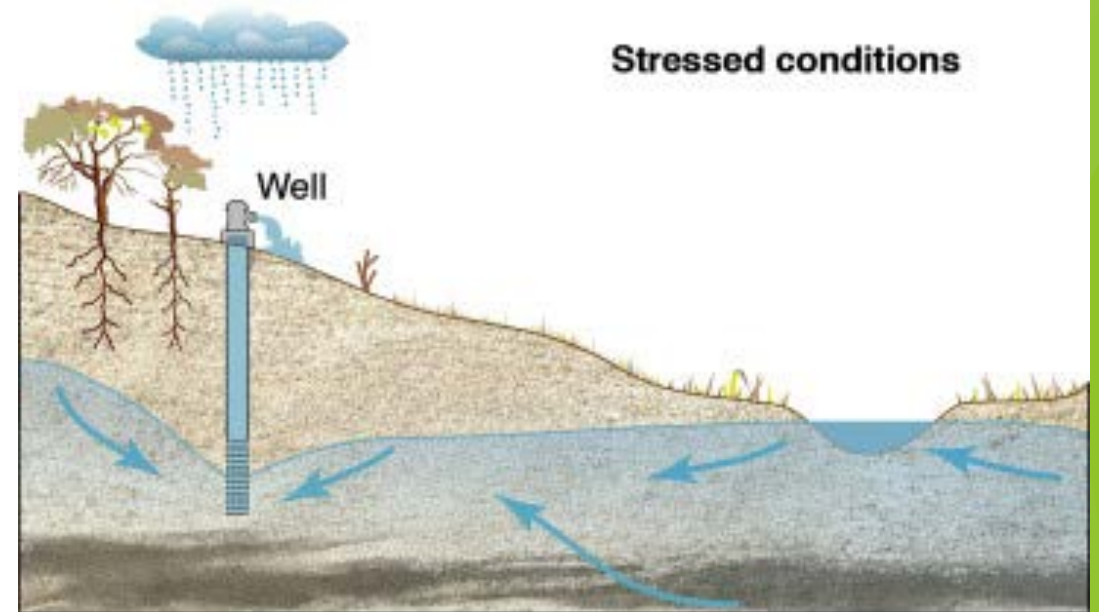
Impacts to GDEs

GDEs and beneficial uses of groundwater associated with GDEs can be affected by:

- chronic lowering of groundwater levels
- depletions of interconnected surface waters



[Image Credit](#)



GDE Analysis - Resources

NCCAG / iGDE Dataset

Statewide spatial database to ID potential GDEs was developed with inclusive technical collaboration.

Database development underwent expert review from numerous local water agencies, state agencies, academics, and technical consultants.



GDE Analysis - Resources / Steps

Step 1. Identify GDEs



DWR's **Natural**
Communities Commonly
Associated with
Groundwater (NCCAG)
Dataset Viewer

Step 1 Identify GDE's & Create Local Map

Database is not a determination of GDEs only potential GDEs, should be used as a starting point.

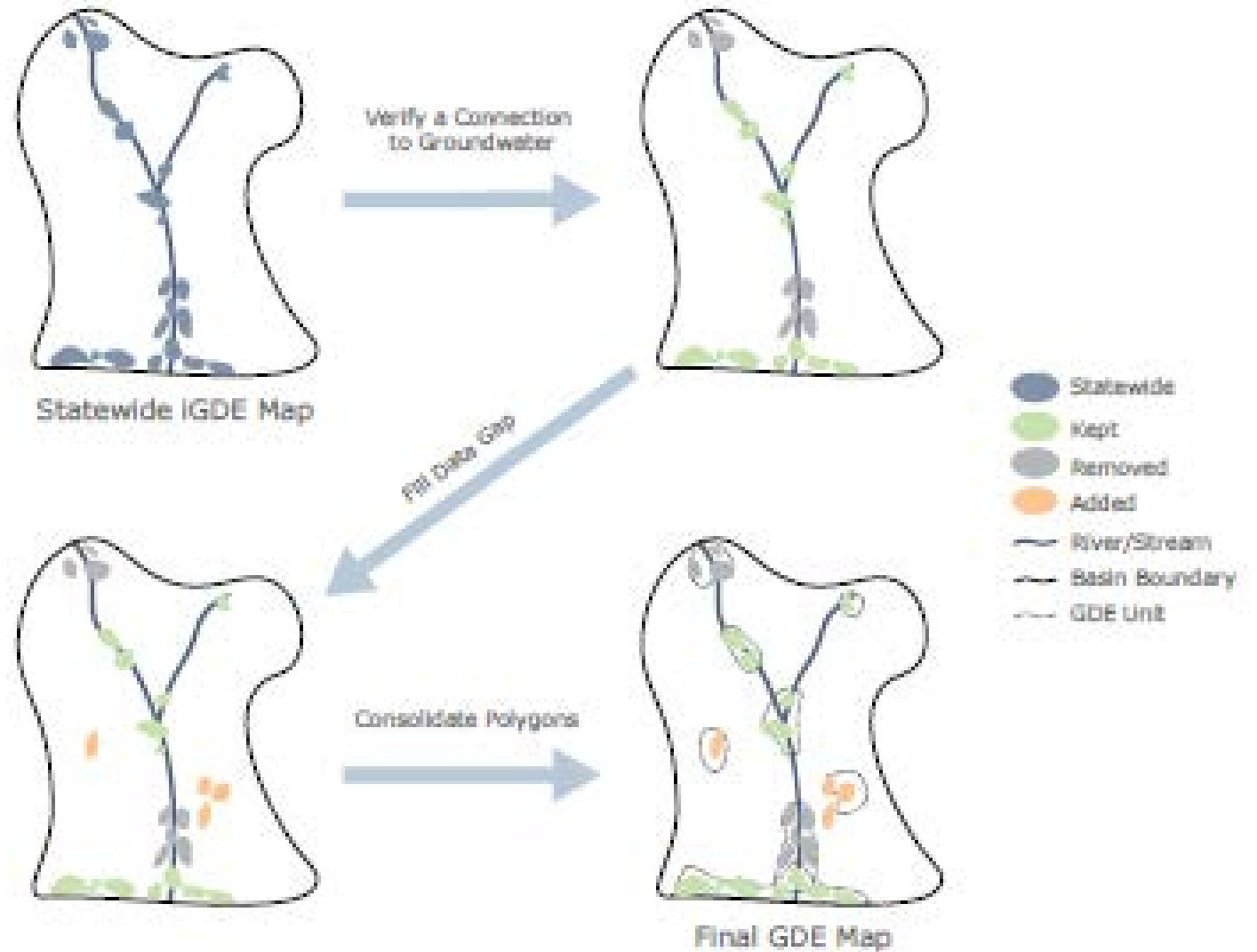


Figure 2. Creating a local GDE map using local information (Step 1.1).

Our Approach Step 1

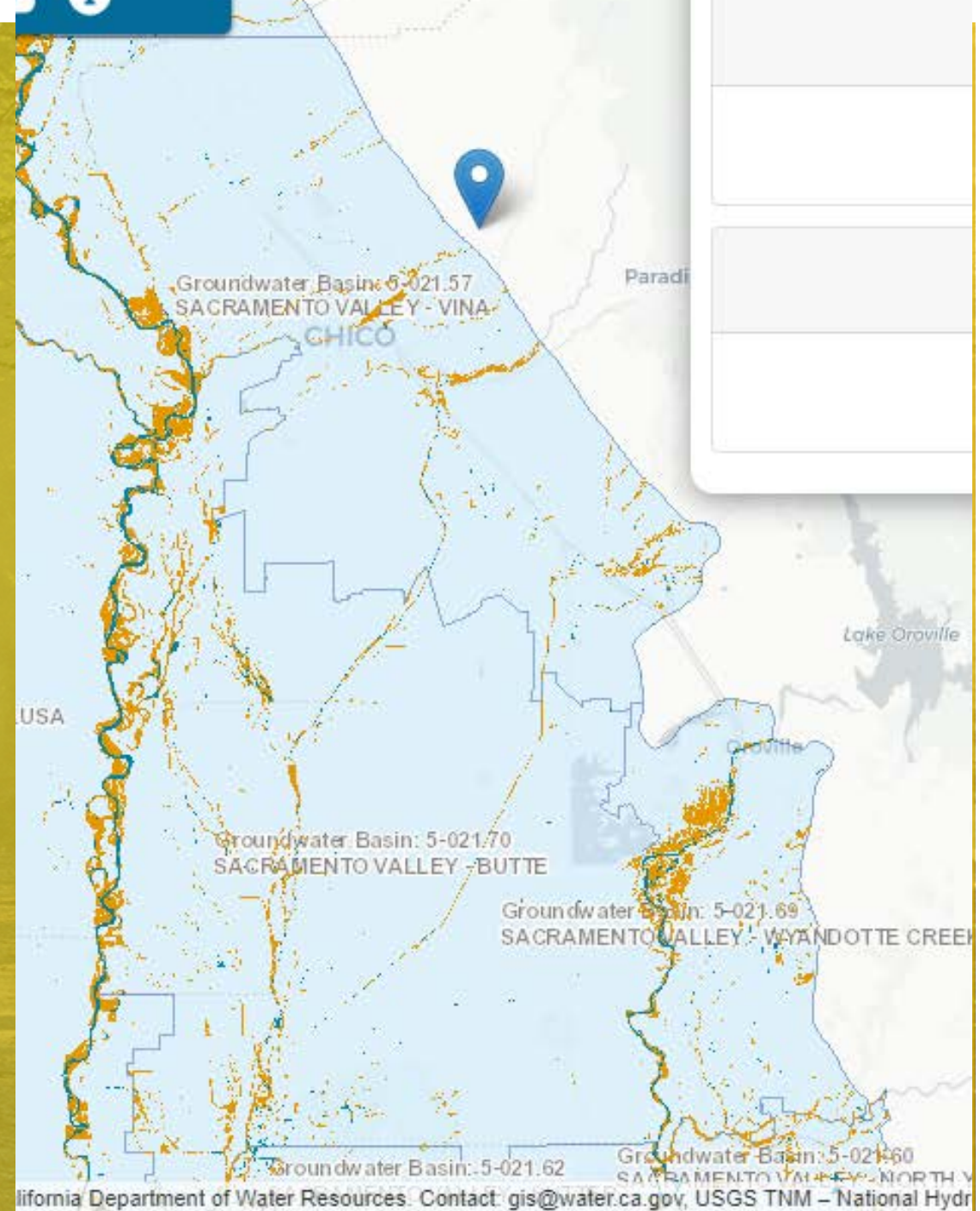
Gathered & assessed data

Vina ~ 1,200

Butte ~ 2,400

W. Crk ~ 1,000

Over 4,600 polygons



Collaboration - Yuba GSA and TNC

- ▶ Review of Draft GSP - Yuba
- ▶ Staff Feedback
- ▶ Website, Guidance Document, Workshops
- ▶ Coordinated with Kirk Klausmeyer, TNC's GDE lead



Group Roles

GSA Managers completed detailed work

GDE Working Group provided feedback on approach to GDE analyses

GSA Advisory Committees review / make recommendations to GSA Boards on draft and final chapters of the GSPs

GSA Boards approve final GSPs

First Analysis by Managers (Phase I)

Workshops and Individual Work

Used set criteria to answer questions:

- Land use change
- Conditions during drought
- Proximity to irrigated agriculture
- Proximity to surface water

Produced database and maps ○



Phase II Analysis (other 80%)

Move ahead without further similar GDE-specific analysis

Designate all remaining iGDEs not evaluated by the GSA Managers as “likely GDEs”

- except those near irrigated agriculture and rice

Conclusions reached for the 20% of iGDEs analyzed by GSA Managers will be carried forward

Draft maps are under development

Next Steps

- Dataset with conclusions for all ~ 4,600 under revision and will be provided to consultant teams
- As SMC discussions begin, monitoring network, groundwater levels & GDEs will be considered and further refined as needed by consultant teams



THANK YOU!

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