

Water-Resource Management Monitoring Needs, State of Hawai'i



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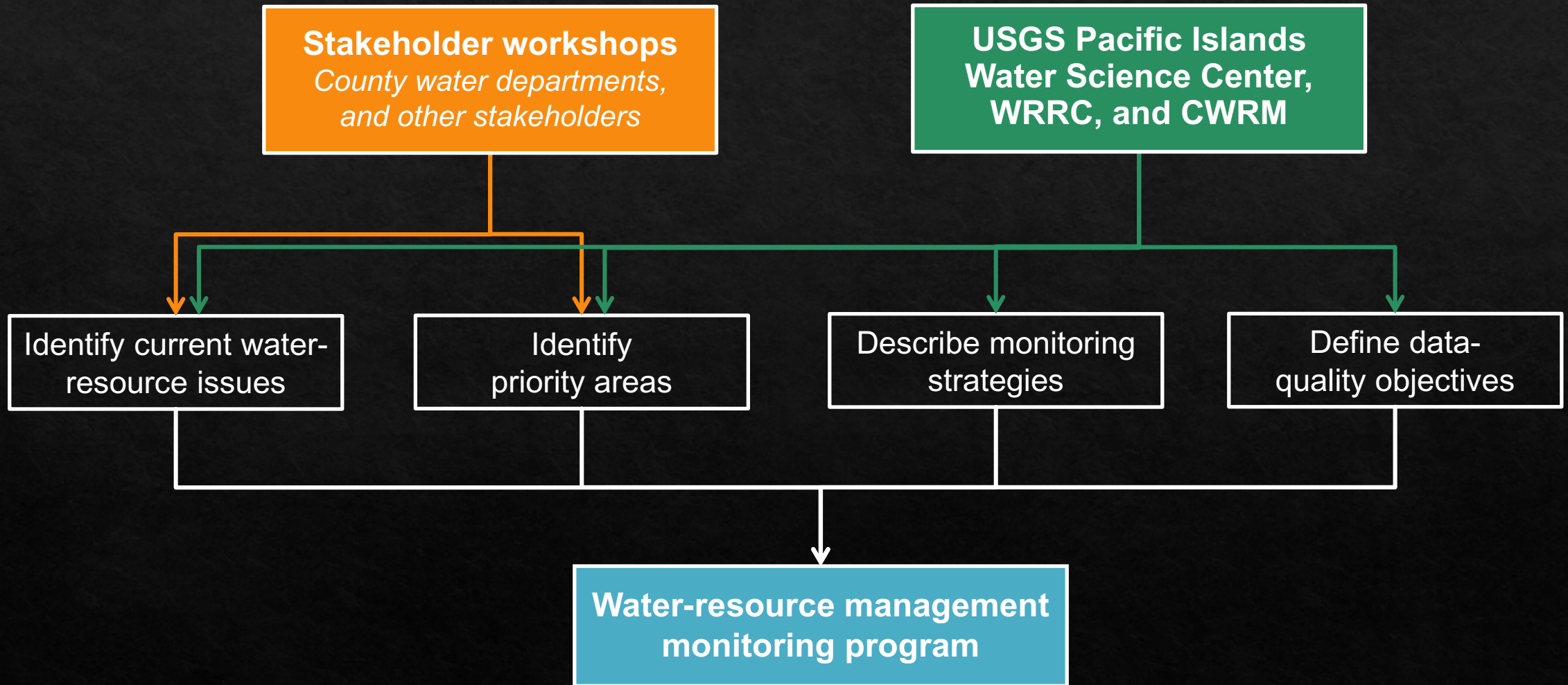
Study Objective

In cooperation with the Commission on Water Resource Management (CWRM) and in collaboration with University of Hawai'i Water Resources Research Center (UH WRRC), the USGS developed

rainfall, streamflow, and groundwater monitoring programs

that meet State needs for water-resource assessment, management, and protection in Hawai'i.

Approach



Monitoring Program

Monitoring sites were selected based on their usefulness for characterizing anthropogenic effects on water resources or representing natural conditions.

Networks

Resource management

Determine effects of water- and land-use changes on water resources.

Climate response

Determine effects of climate change on water resources in representative settings.

Strategies

Periodic intensive monitoring

Enhance spatial understanding of hydrologic conditions and address water-resource issues in priority areas.

Long-term monitoring

Evaluate long-term trends and climate-change effects in representative settings.

Priority Areas

Rainfall

- ◆ Areas with urban and agricultural lands
- ◆ Areas with high rainfall and high-rainfall gradient
- ◆ Areas within the trade-wind inversion band

Surface Water

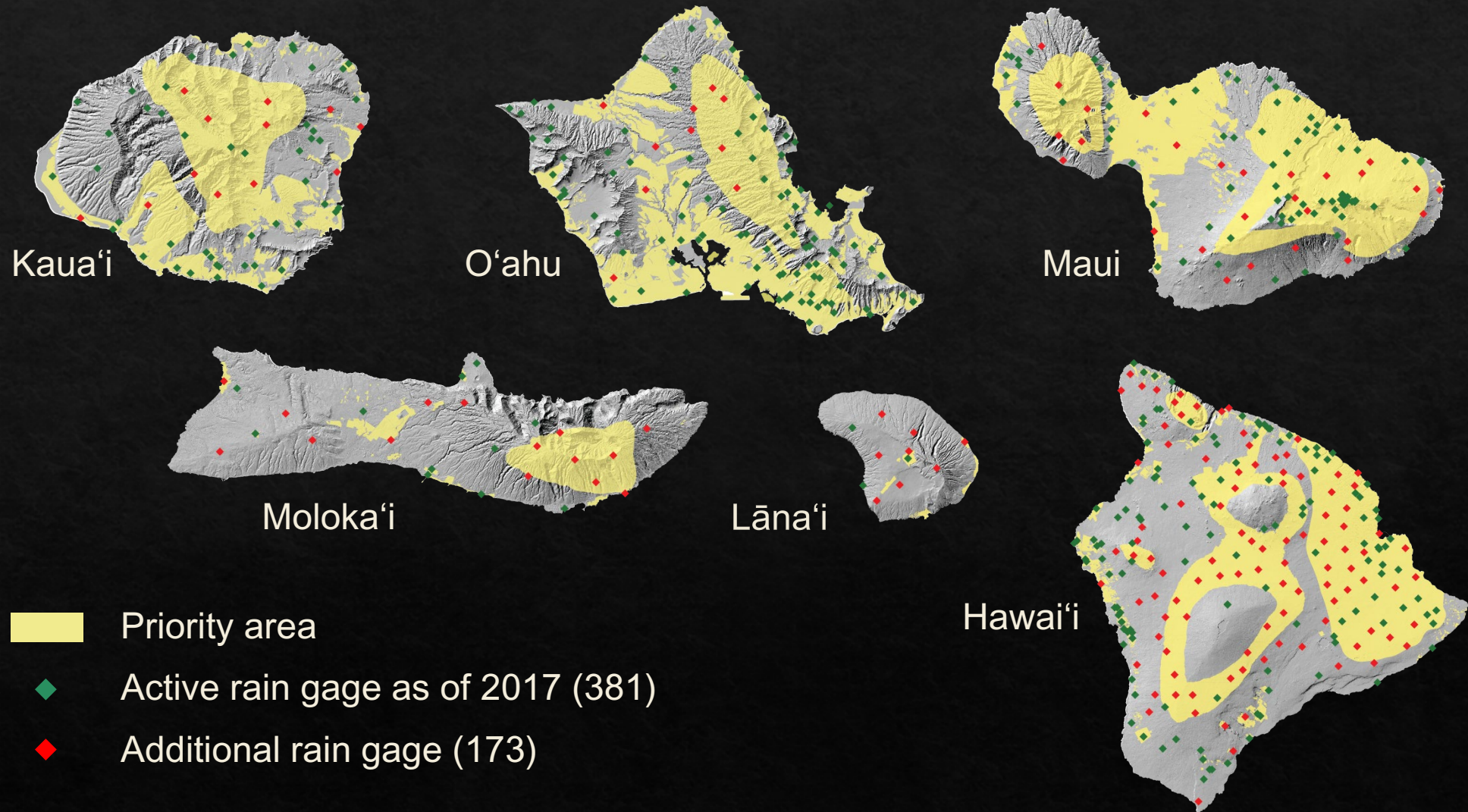
- ◆ Streams with major surface-water diversions
- ◆ Streams with established interim instream-flow standards
- ◆ Streams in surface-water management areas
- ◆ Streams that support water leases

Groundwater

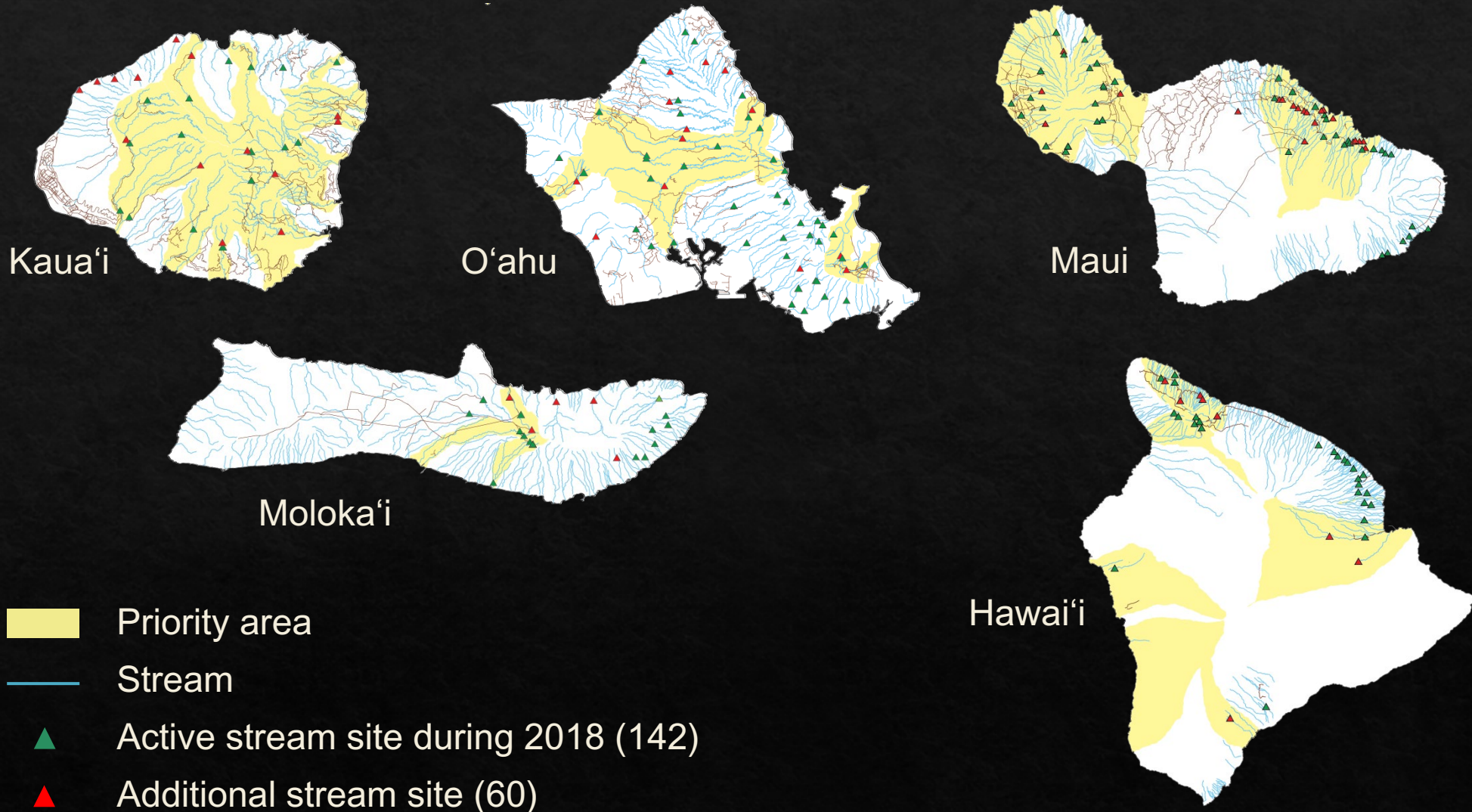
Aquifer systems with:

- ◆ high withdrawal
- ◆ declining freshwater storage
- ◆ declining discharge
- ◆ potential for future recharge reduction
- ◆ no alternative sources
- ◆ hydrogeologic uncertainties

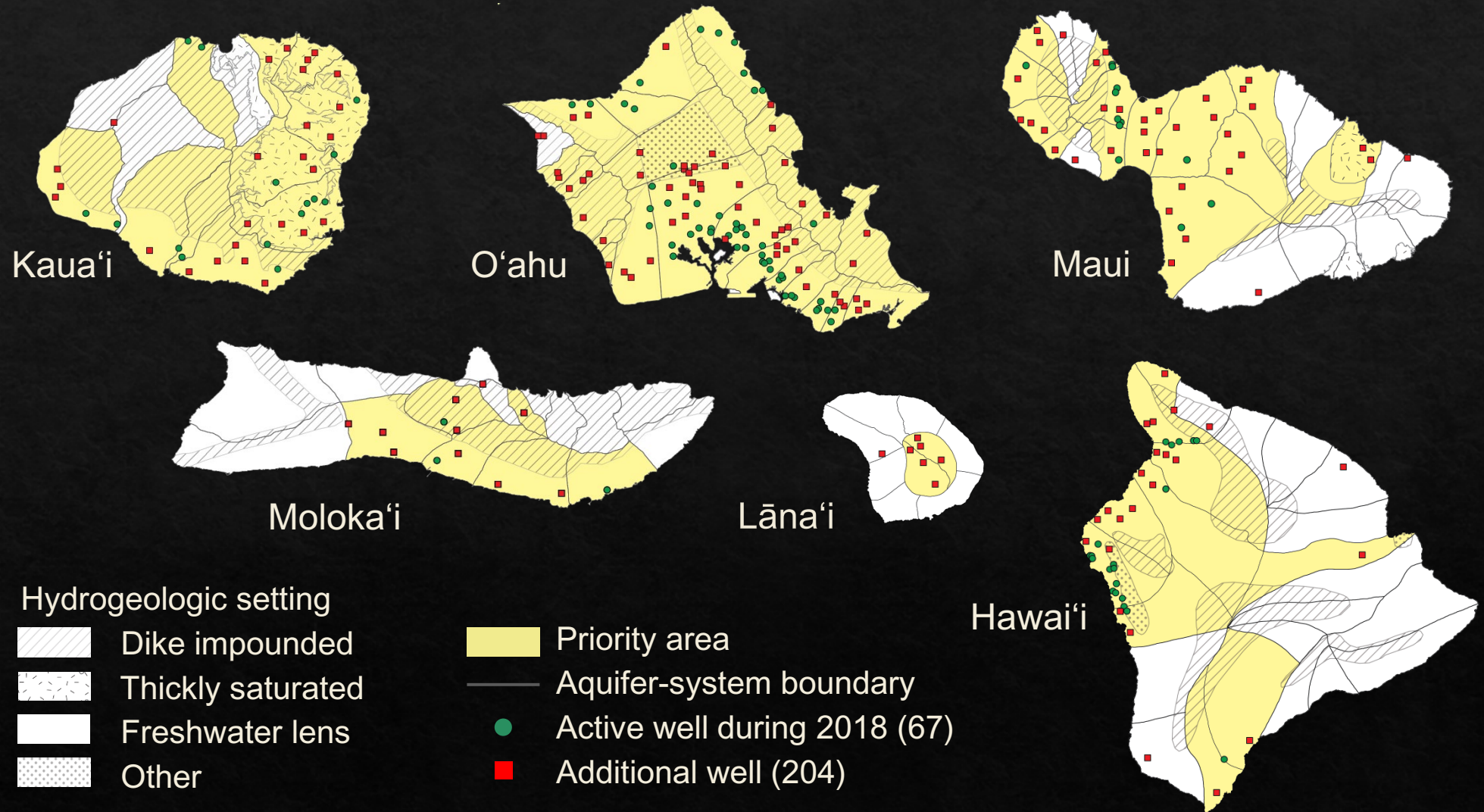
Rainfall Monitoring Program



Surface-Water Monitoring Program



Groundwater Monitoring Program





State and County

- Water-resource issues
- Management goals and priorities
- Priority areas
- Data collection

USGS and WRRC

- Data collection
- Technical expertise
- Decision-support tools



Prepared in cooperation with the State of Hawai'i Commission on Water Resource Management and in collaboration with the University of Hawai'i Water Resources Research Center

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