

Challenges and Efforts to Manage Our Water Resources

Wednesday, December 3, 2008
Corning Veterans Hall

Rick Massa, Manager
Orland Unit Water Users' Association

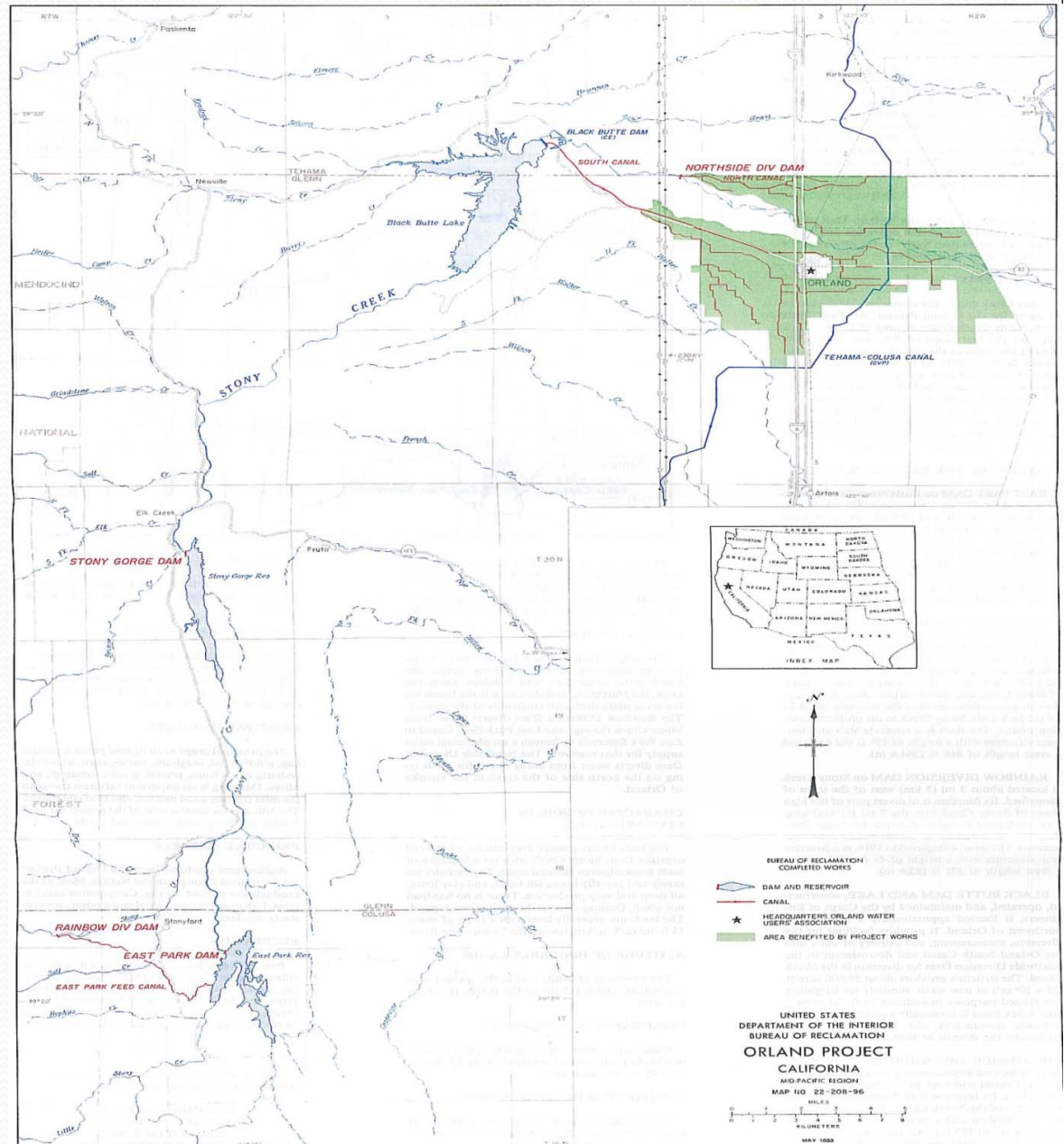
Orland Project History

- Authorized by Congress in 1907 under Reclamation Act of 1902
- Orland Unit Water Users' Association Incorporated in 1907
- Construction of First Dam Commenced in 1910
- Canal Construction Began in 1908
- Project Owned, Operated and Maintained by U.S. Bureau of Reclamation Until 1954
- Operation and Maintenance Contracted By Orland Unit Water Users' Association in 1954
- OUWUA Fully Repaid USBR in 1989

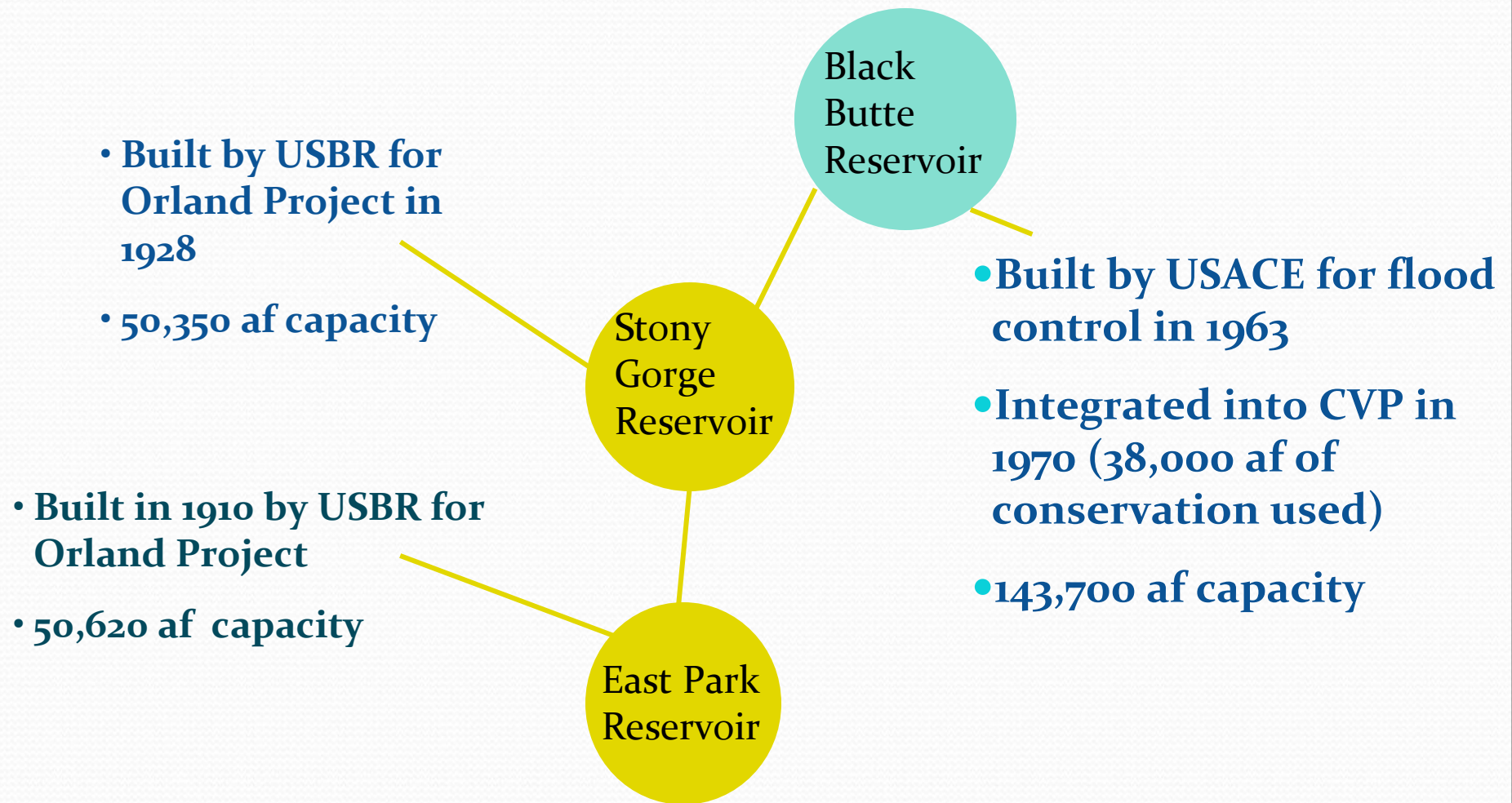
Orland Project Features

- Water Rights Held on Stony Creek
- Two Major Dams/Reservoirs—Combined Storage 100,000 acre-feet
- Two Diversion Dams on Stony Creek
- 126 Miles of Canals and Laterals In, and Around, Orland, California
- Project Serves Approximately 20,000 Acres

U. S. Orland Project



Storage System



East Park Reservoir



East Park Dam



Rainbow Diversion Dam

*Constructed in 1914
to divert S.C. Flows
to East Park
Reservoir via 7-
mile Feeder Canal*



Stony Gorge Reservoir



Black Butte Reservoir



Black Butte Dam and Lake

North Diversion Dam

*Constructed in
1913 to divert S.C.
Flows to Orland
Project Lands
Located North of
Stony Creek*



Orland Project Water Rights

Pre-1914 Direct Diversion Appropriative Rights

Pre-1914 Appropriative Storage Rights

Post-1914 Appropriative Storage Rights

Orland Project Water Rights

Pre-1914 Direct Diversion
Appropriative Rights

- 85,050 af, not to exceed 279 cfs

Orland Project Water Rights

Pre-1914 Appropriative Storage Rights

- 51,000 af for storage in East Park by diversion of Little Stony Creek*

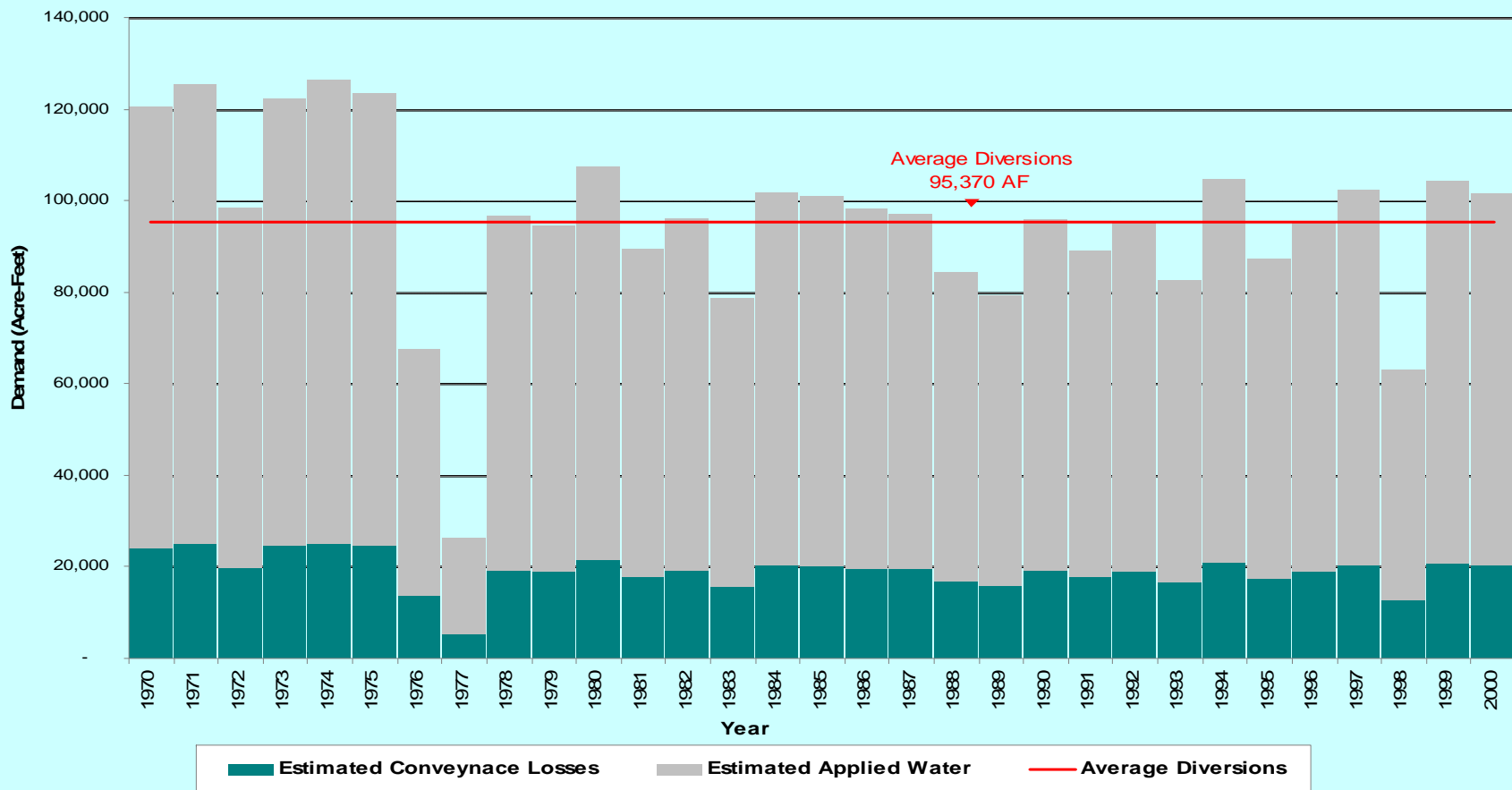
- **Pre-1914 Appropriative right to divert 250-cfs from Stony Creek at Rainbow Diversion*

Orland Project Water Rights

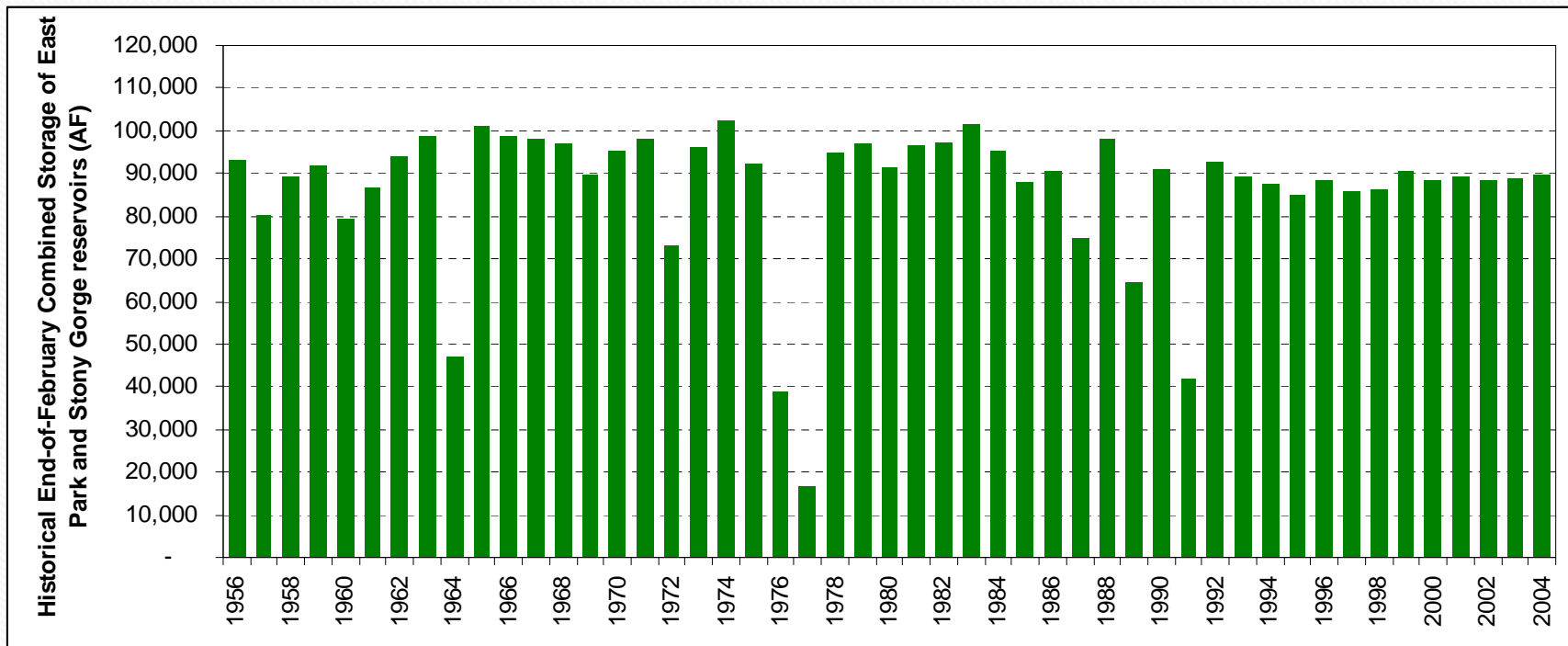
Post-1914 Appropriative Storage Rights

- 50,200 af for storage at Stony Gorge Reservoir

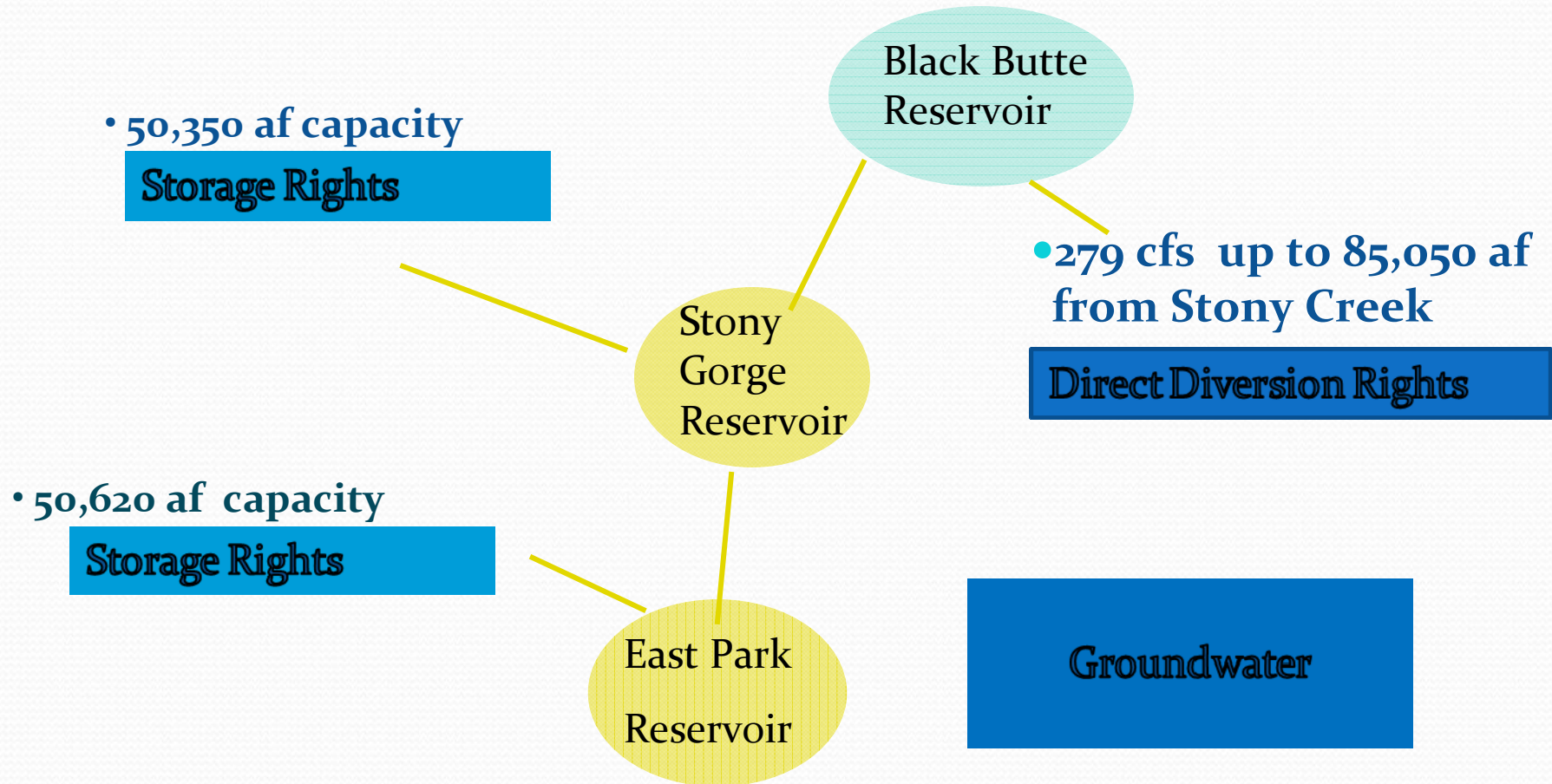
Orland Project Historical Water Use (1970 – 2000)



Historical Orland Project Storage



Water Sources





Ouwua's Current Challenges

- Conversion of project lands into non-agricultural uses
- An aged infrastructure in need of rehabilitation
- A Rotational Delivery System incapable of meeting current crop needs and certainly not supporting modern efficient on-farm irrigation practices
- Infrequent Droughts
- Threatened Water Rights

Ouwua Challenges

Issue

- Conversion of project lands into non-agricultural uses
- An aged infrastructure in need of rehabilitation
- A Rotational Delivery System incapable of meeting current crop needs and certainly not supporting modern efficient on-farm irrigation practices
- Infrequent Droughts
- Threatened Water Rights

Action

- Working with USBR in petitioning federal court to allow annexation of agricultural lands into Project
- Water Conservation & Rehabilitation Efforts
- Exploring Conjunctive Water Management
- Involvement in Local, Regional and Statewide Water Issues



Water Conservation & Rehabilitation Efforts

Two studies completed in 2003 utilizing Prop. 13 Funds

1. Modernization of the Distribution System

- a. Considered converting open ditch system to pressurized, piped system; and

- b. Considered improvements to existing distribution facilities to provide system and on-farm efficiencies

2. Evaluated supply benefits derived from system improvements, from the reoperation of its reservoir system, and from conjunctively managing groundwater supplies with existing surface supplies

Canal Improvements

Construction of Long-Crested Weirs



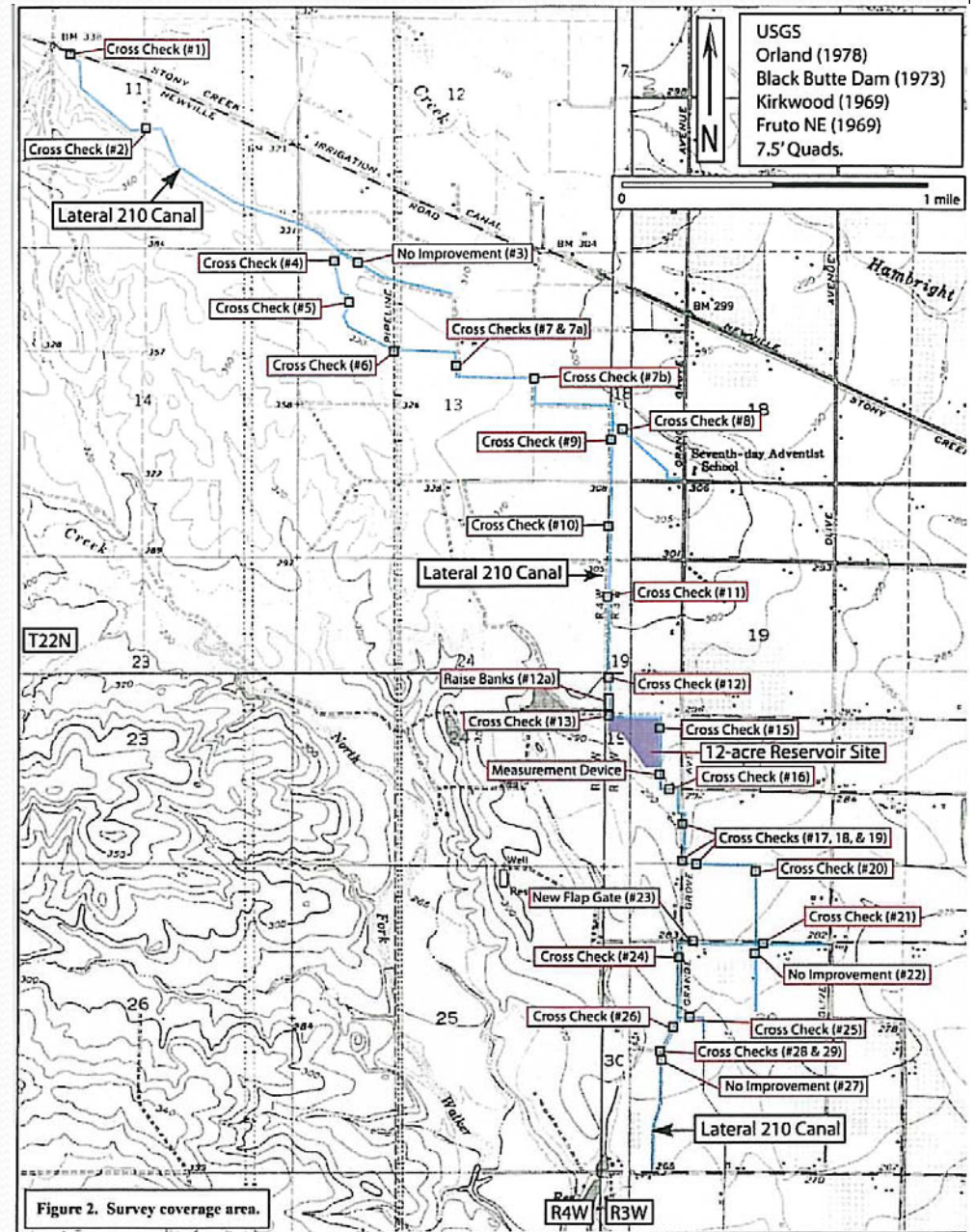
Canal Improvements

Flap Gate & SCADA Monitoring Site



Current Canal Improvement Project

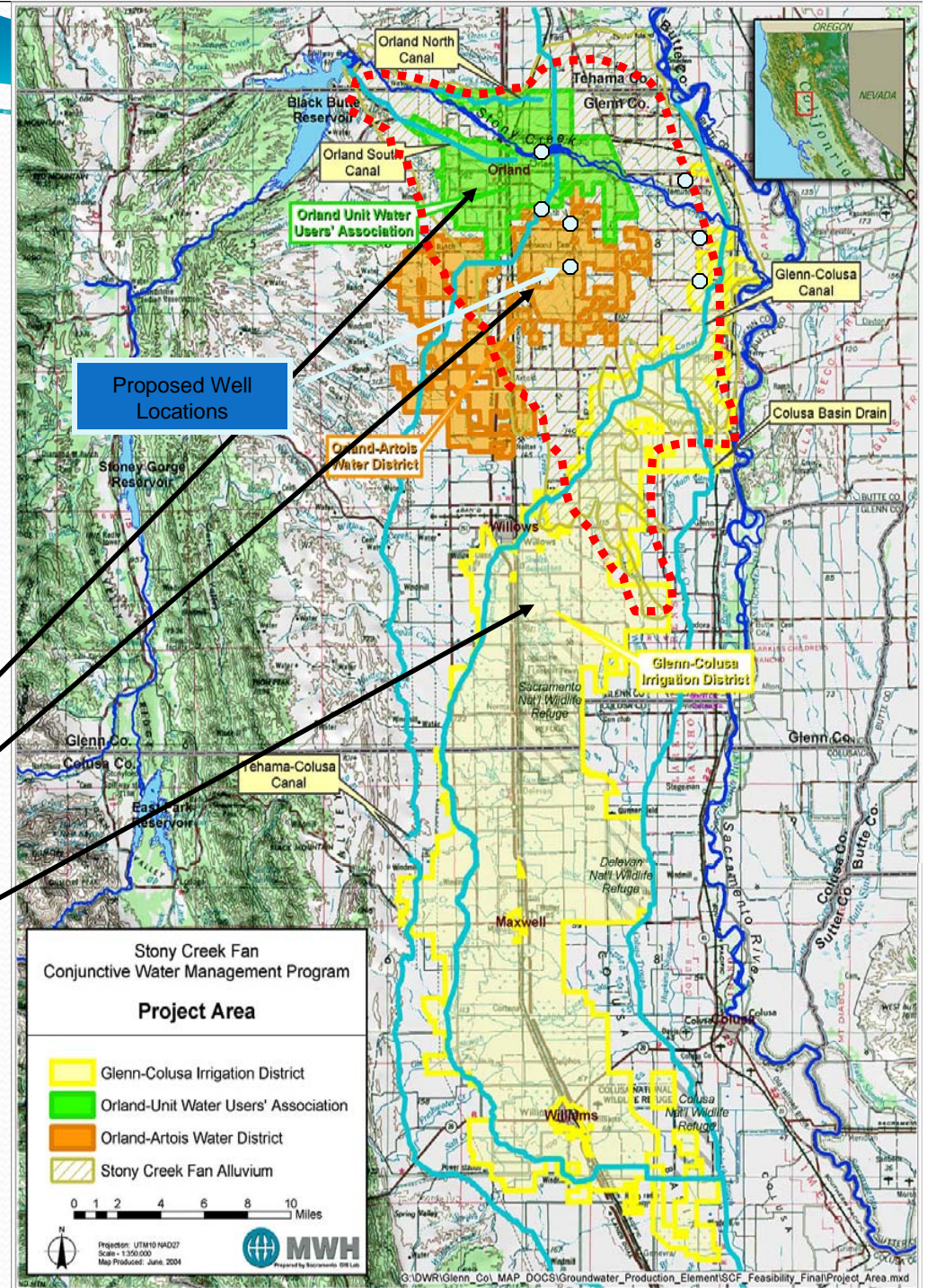
Beat Two Regulating Reservoir Project



Stony Creek Fan Conjunctive Management Program

The SCF Partners

- OUWUA
- OAWD
- GCID



SCF Partnership History

- Phase 1 Agreement (2001)
- Feasibility Investigation (2002 - 2004)
 - Analysis of historical data & operations
 - Baseline conditions
 - GW recharge & aquifer tests
 - Stony Creek Fan IGSM model
- Phase 2 Agreement (2007)
- Groundwater Production Element
 - More aquifer characterization
 - Focus on the Lower Tuscan Formation
 - Identify Wells in Orland Project for Drought Protection

SCF Phase 2—Aquifer Exploration & Characterization Program

- Drill six test holes to better define extent and depth of Lower Tuscan in relation to other aquifers
- Construct up to 7 test production wells to enable aquifer testing
- Provide supporting legal and technical services
- Prepare CEQA/NEPA environmental documentation
- Coordinate with DWR on monitoring and aquifer testing protocols
- Identify Wells in Orland Project for Drought Protection



Stony Creek Fan Conjunctive Management Program

- OUWUA's Interest
 - Supply Enhancement
 - Drought Protection
 - Extensive, aging infrastructure/urban growth impacts
 - Operational flexibility

OUWUA Influences/Involvement

- Bay-Delta Proceedings following the Raccanelli Decision in 1986
- State Water Resources Control Board adopted the Water Quality Control Plan (Bay-Delta Plan) to meet water quality & environmental objectives in the Delta—1995
- CALFED Bay-Delta Program Programmatic Record of Decision (ROD)—2000
- Sites Reservoir Memorandum of Understanding Signatory Dec. 2000
- Sacramento Valley Water Management Plan—Signatory to the Short Term Settlement Agreement (Phase 8) Dec. 2002
- Sacramento Valley Regional Water Management Plan—2006
- Water Shortages/Drought Conditions/Global Warming
- Delta Vision—Current

The image features a solid blue background. At the top, there are several decorative, wavy lines in various shades of blue and cyan, creating a sense of movement and depth. The word "Questions?" is centered in a large, bold, black font.

Questions?

PRODUCE OF U.S.A.

NORTHERN
CALIFORNIA
ORANGES



ORLAND

BRAND



GROWN BY

Orland Orange Growers
Association, Inc.
ORLAND, CALIFORNIA.

