

2022-23 Draft LADWP Operations Plan

Inyo County Water Department

Inyo County Water Commission
April 25, 2022





2021-22 Conditions and Operations

2021-22 Pumping

W.F	Laws	Bishop	Big Pine	Taboose-Aberdeen	Thibaut-Sawmill	Ind.-Oak	Symmes-Shep.	Bairs-George	Lone Pine	Total AF/year
Planned	9,400	12,000	23,000	8,800	11,000	8,800	900	2,100	900	78,980
Actual	8,978	10,969	16,490	7,325	8,998	6,242	2,047	441	1,028	62,518

2021-22 Runoff

Approximately 184,000 acre-feet or 45% of normal. Lowest on record.

Runoff forecast was 55% of normal. The forecast model is usually a better predictor.

2021-22 Water Levels

Indicator Wells: At 46 indicator wells the average DTW decline was 0.5 ft.

Average predicted decline was 1.6 ft.

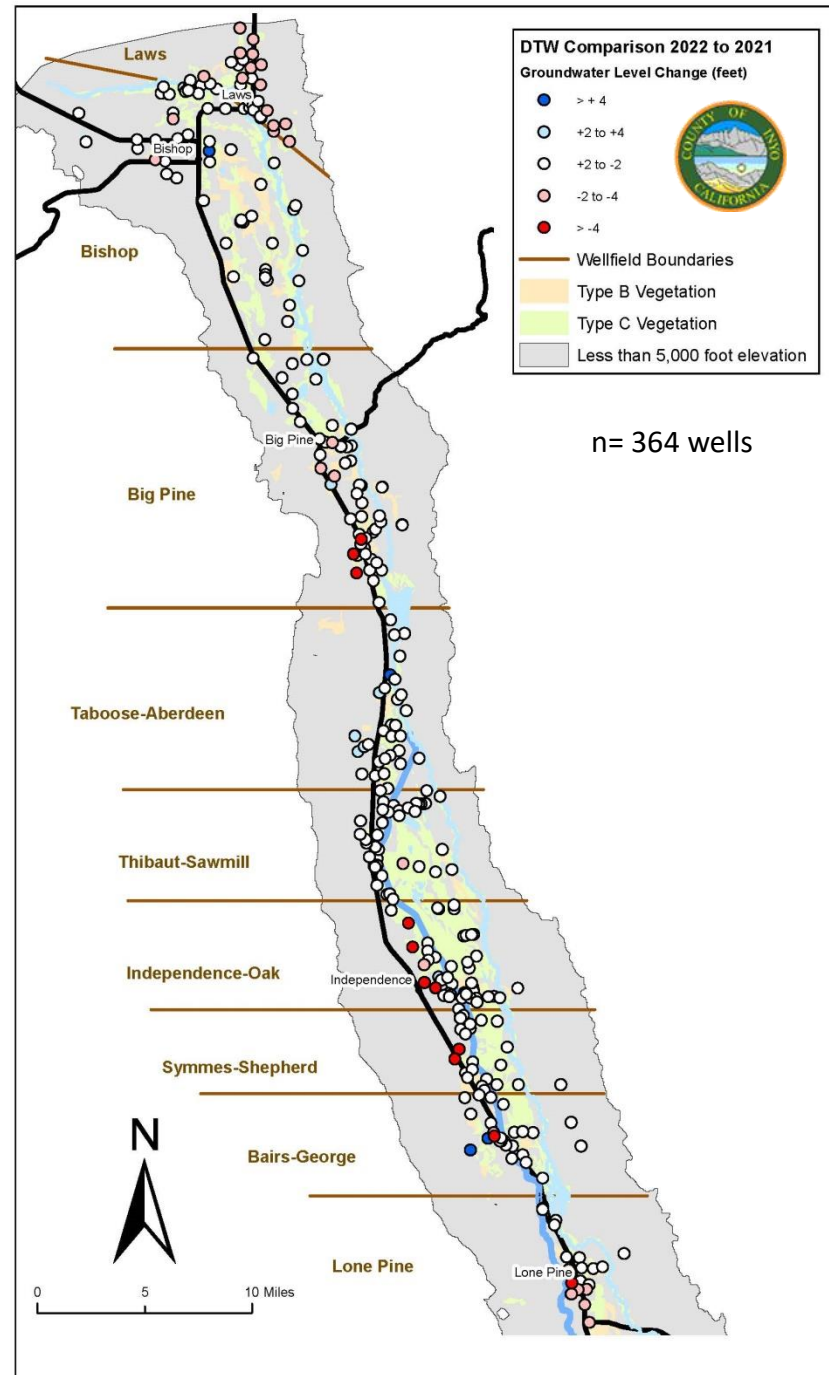
Change in DTW 2021-22

Most wells within two feet of last year
(including control areas)

Many declined more than 2 ft

Average decline valley wide: 0.5 ft

Declines occurred in control and wellfield areas

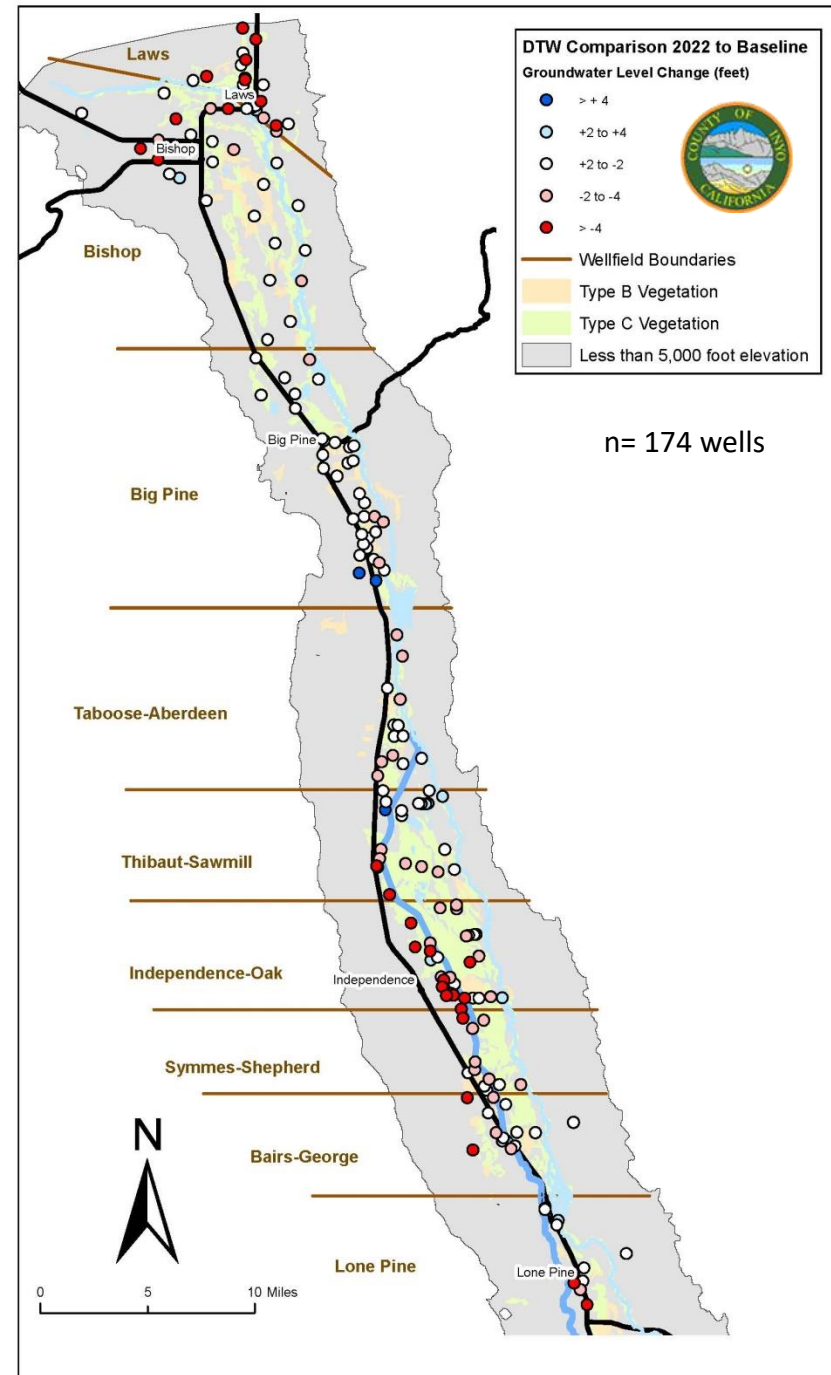


April 2022 DTW Conditions

DTW now below baseline in much of the wellfields.

Exceptions where water levels are very near or above Baseline:

- Parts of Big Pine and near northern TS (hatchery pumping reduced since Baseline)



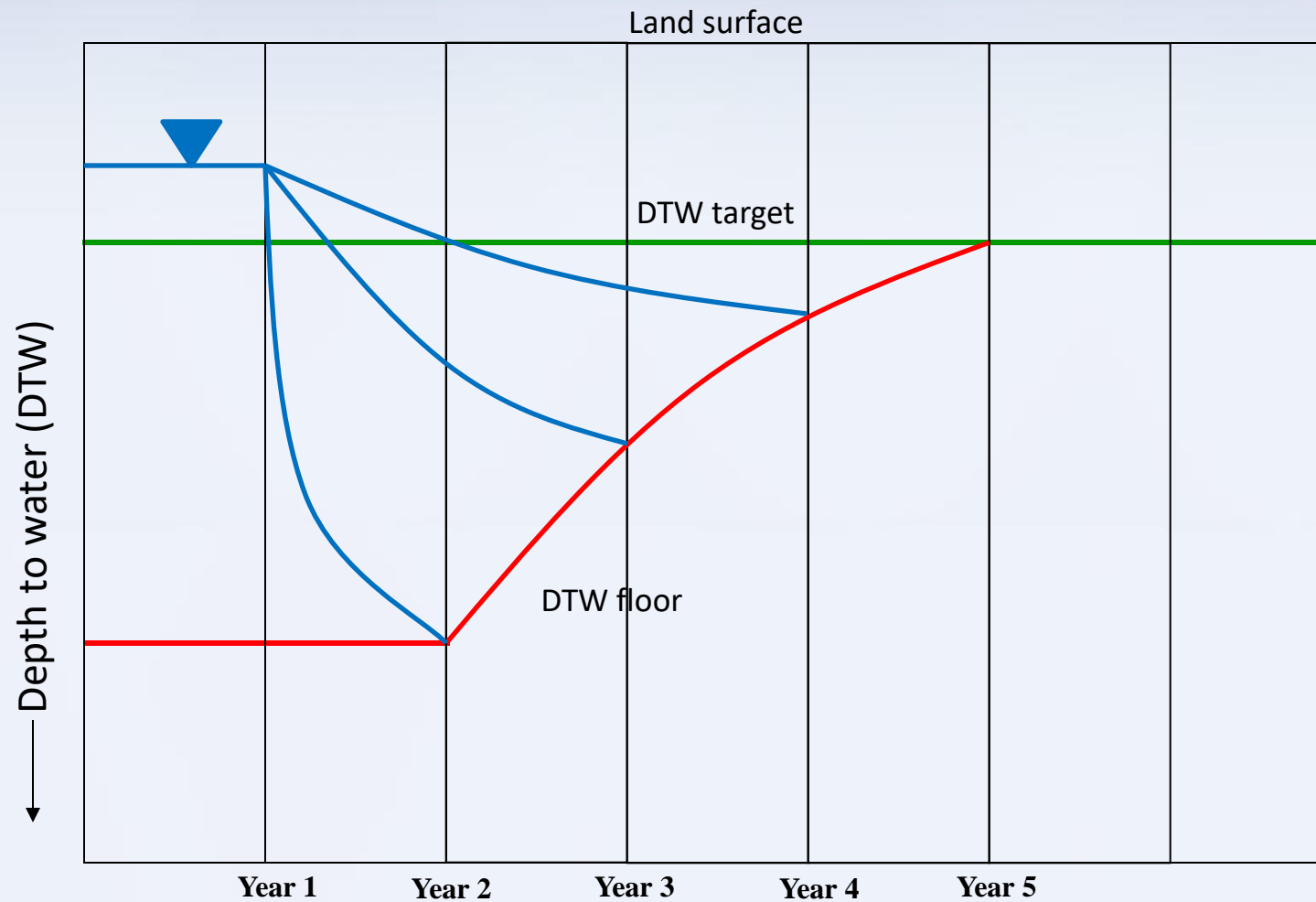


April 2022 Groundwater Levels at Indicator Wells

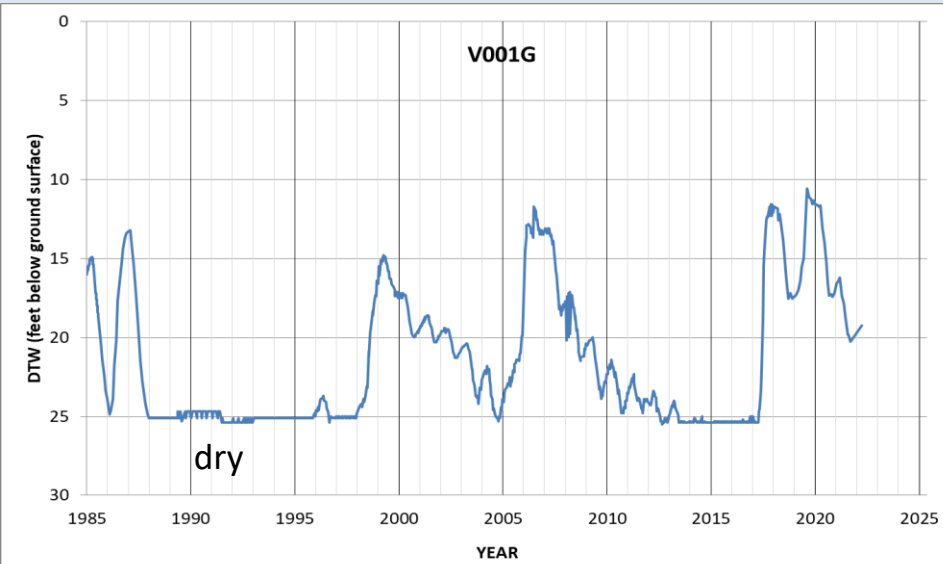
Wellfield	2021-2022 change	2022 average from baseline
	ft	ft
Laws	-1.5	-2.2
Big Pine	-0.1	0.8
Taboose-Aberdeen	0.4	-1.1
Thibaut-Sawmill	-0.8	2.2
Independence-Oak	-0.6	-4.4
Symmies-Shepherd	-0.1	-5.5
Bairs-George	-1.2	-2.0
Average of all ind. wells	-0.5	-1.9

13 of 46 indicator wells are above baseline in April 2022

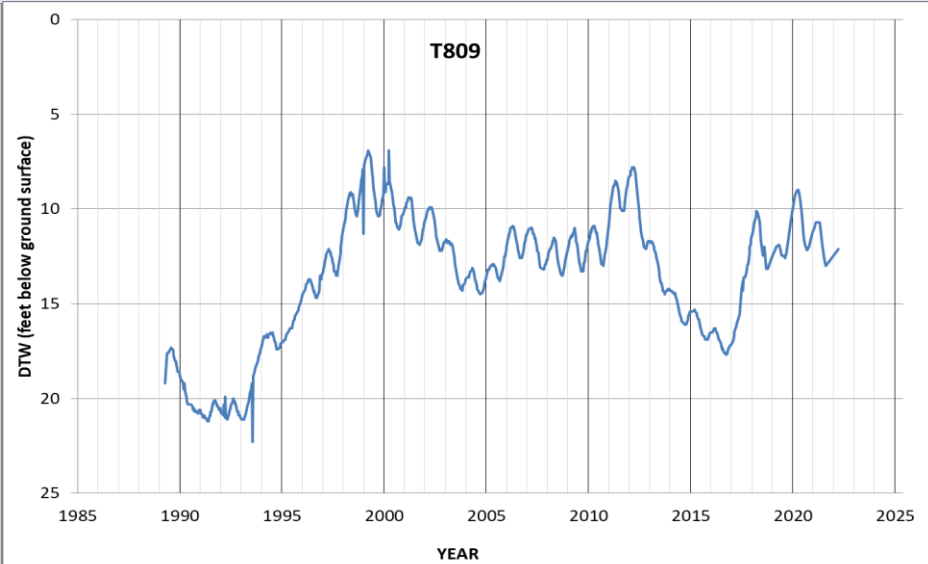
Water Table Management Model



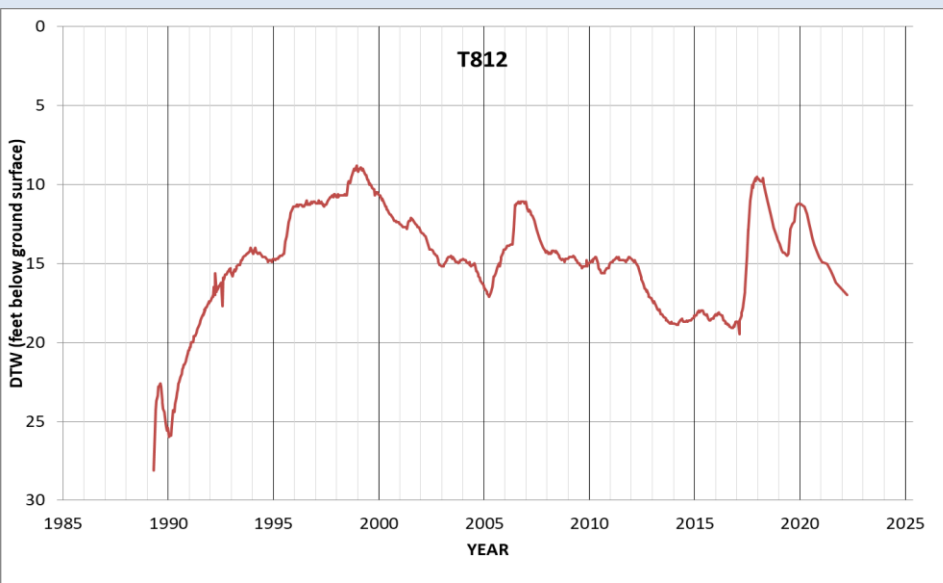
Laws



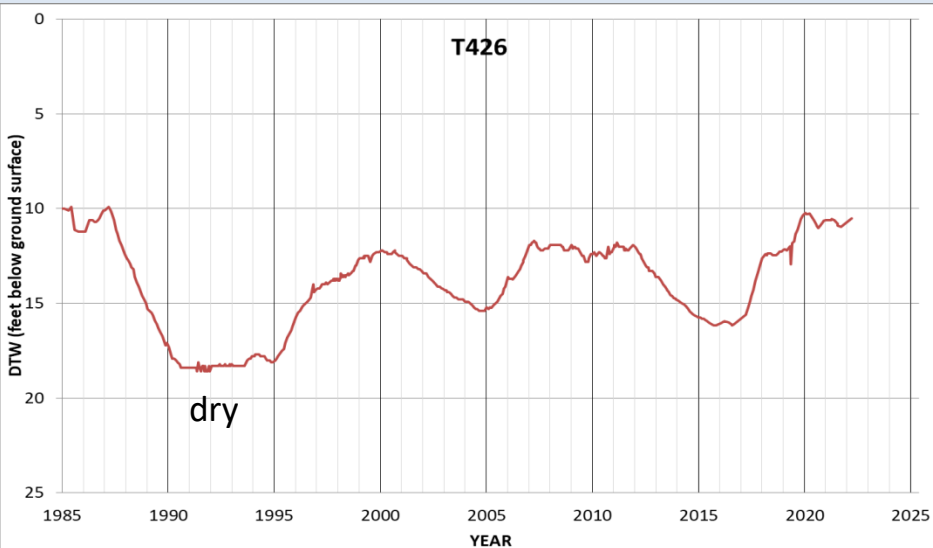
Independence



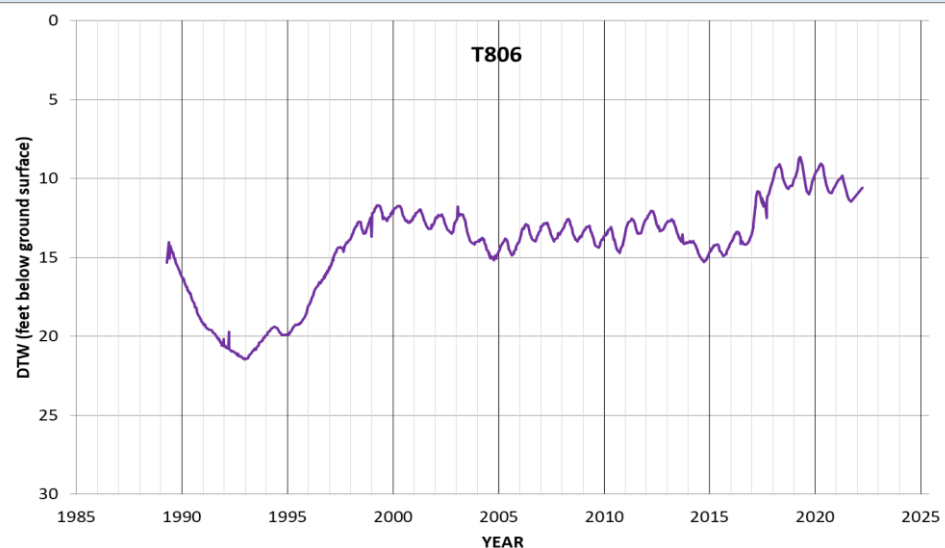
Bairs George



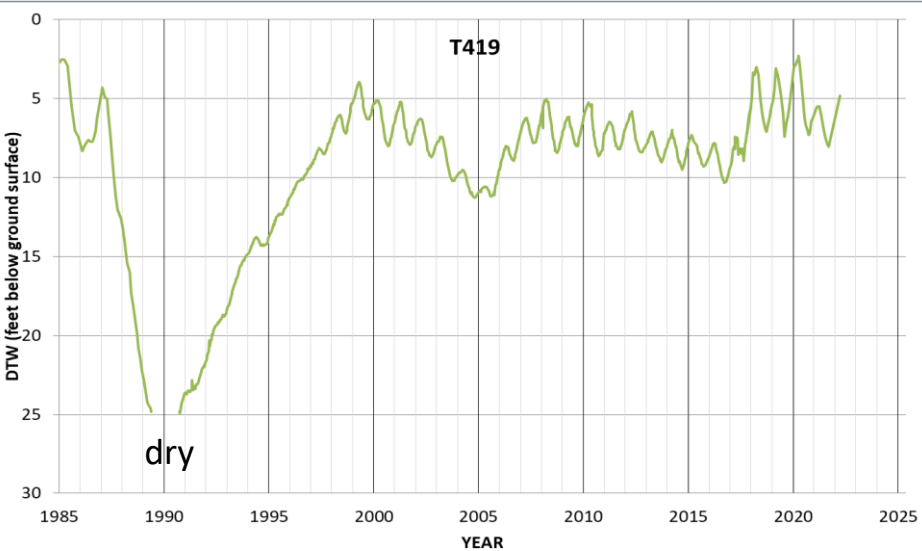
Big Pine



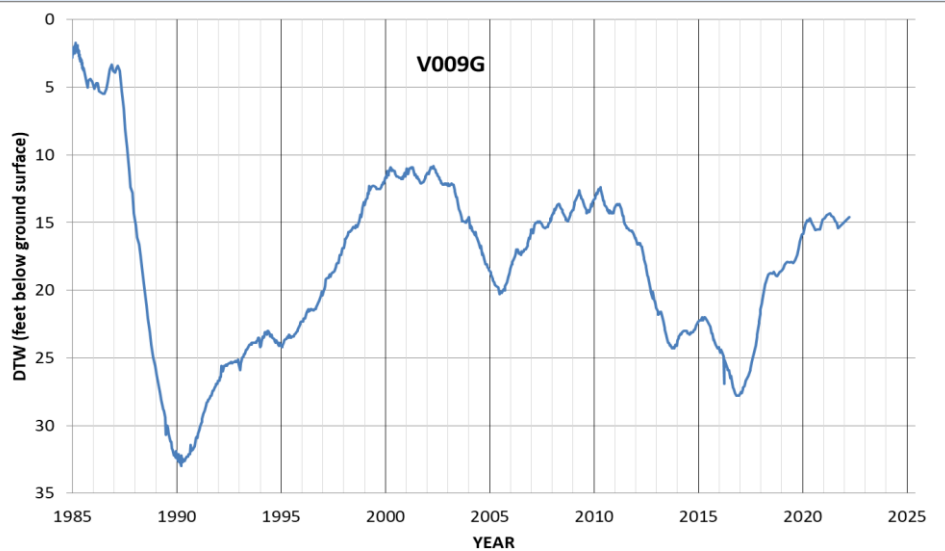
Thibaut-Sawmill



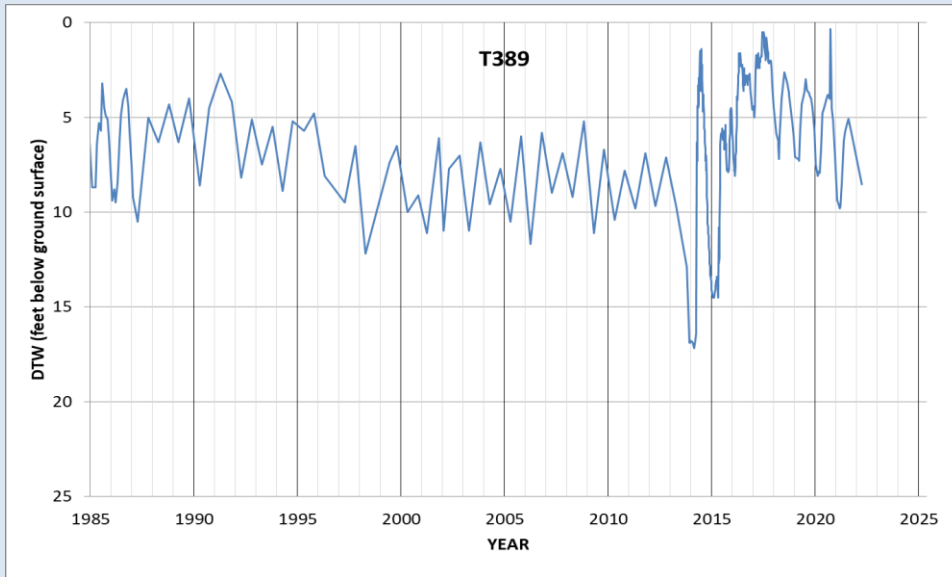
Taboose-Aberdeen



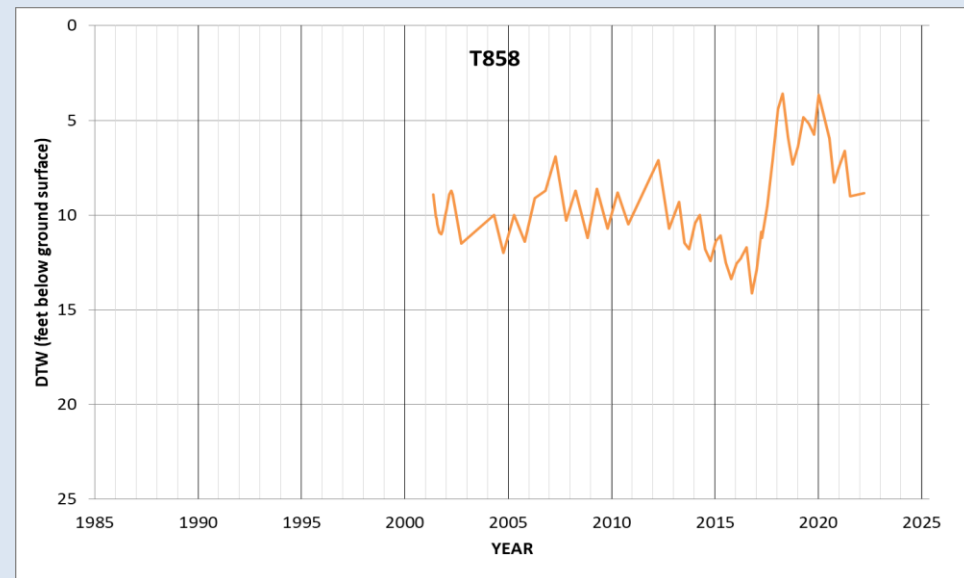
Symmes-Shepherd



West Bishop

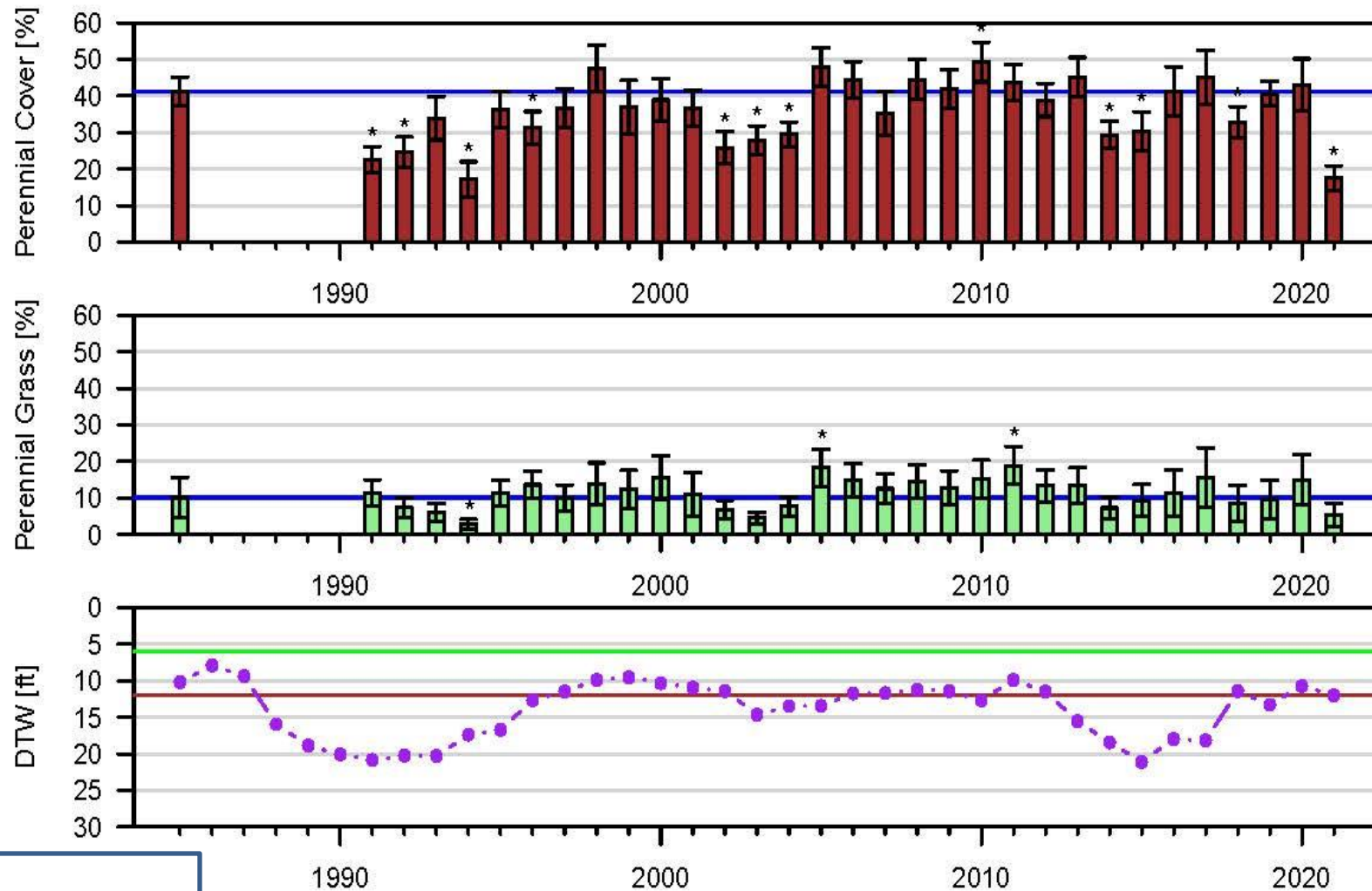


Lone Pine

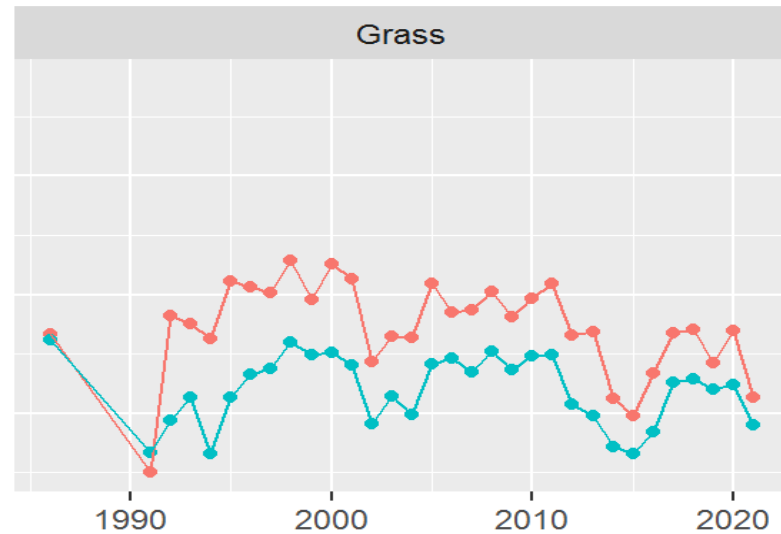
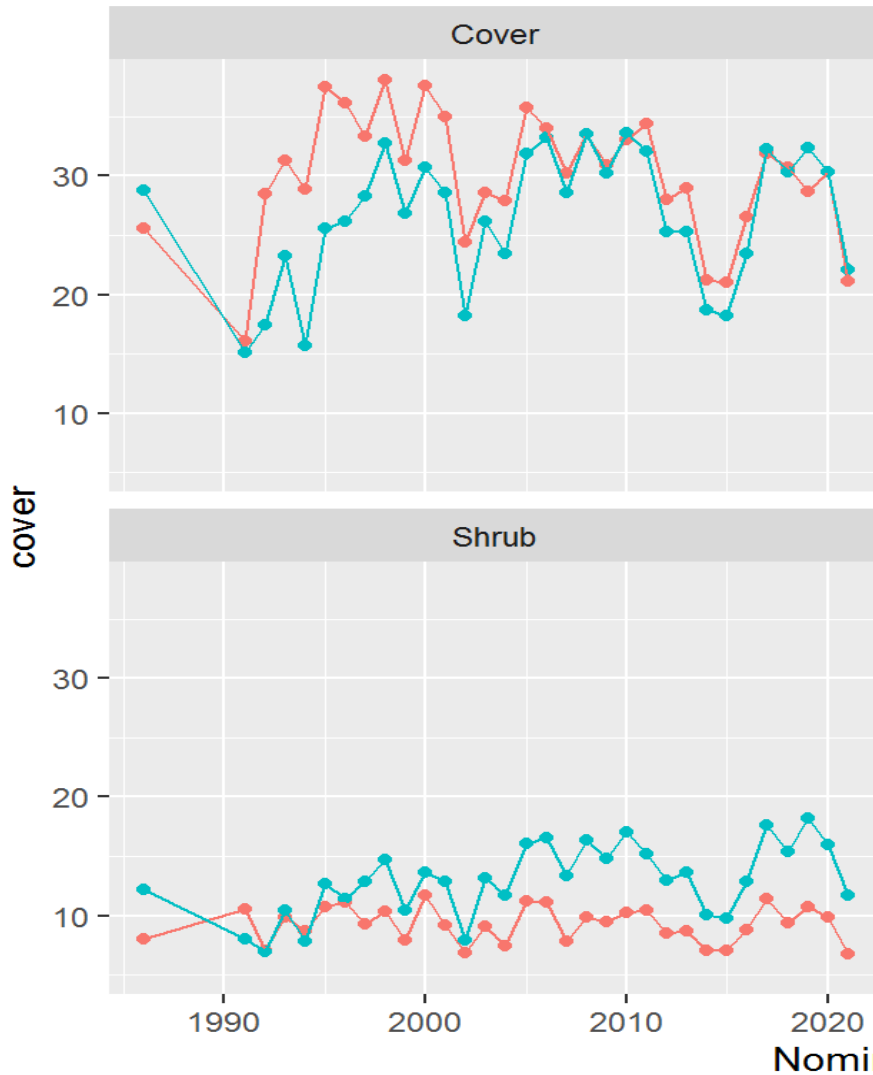




IND111 (W/C): W | Type: C | Nevada Saltbush Meadow
Histosols Rindge family | ESD: Wetland
Geomorphic: fan terraces, stream terraces



2022 Conditions



Type
 C
 W

Avg. wellfield perennial cover
below baseline

Avg. wellfield grass cover below
baseline

Average shrub same as baseline



Water Agreement Process

Inyo/LA Water Agreement Section IV.D "Annual Operations Plan"

- Draft plan provided by April 20th each year
- County has 10 days to review and provide comments
- Technical Group meeting within 10 days to review County's comments (May 9, 2022)
- A program providing for reasonable reductions in irrigation requires approval of the Standing Committee (May 12, 2022)
- LADWP has 10 days to finalize the Operations Plan (May 19)



2022-2023 LADWP Operations Plan

2022 EASTERN SIERRA RUNOFF FORECAST April 1, 2022

APRIL THROUGH SEPTEMBER RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1971 - 2020)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	56,200	56%	69%	43%	100,307
OWENS RIVER BASIN:	117,200	39%	52%	26%	300,298

APRIL THROUGH MARCH RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1971 - 2020)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	70,900	60%	74%	46%	118,170
OWENS RIVER BASIN:	194,300	47%	60%	35%	409,364

MOST PROBABLE - That runoff which is expected if median precipitation occurs after the forecast date.

REASONABLE MAXIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average once in 10 years.

REASONABLE MINIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average 9 out of 10 years.

Runoff Forecast

Owens Valley runoff: 47% of normal (194,300 ac-ft)

Lowest runoff in consecutive years, ever



2022-2023 LADWP Operations Plan

Planned Uses in the Owens Valley

Table 1.8. Water Uses on City Owned Lands in Owens Valley – Actual Use in 1981-82 and Planned Use in RY 2022-23 (AF)

Use	1981-82	<u>2022-2023</u>						TOTAL			
		August		September		TOTAL		Apr-Sep			
		2022	1981	2022	1981	2022	1981	2022	1981	2022	
Irrigation	3	7,230	8,295	6,430	6,321	3,130	46,403	34,580			
Stockwater	2	990	1,219	860	1,319	770	7,487	5,280			
E / M		1,090	0	910	0	860	0	6,460			
LORP		2,800	0	2,400	0	2,600	0	13,000			
Rec. & Wildlife		770	1,381	550	1,406	560	6,585	3,610			
1600 ACFT Proj.		100	0	50	0	50	0	430			
Total	5	12,980	10,895	11,200	9,046	7,970	60,475	63,360			

Use	1981-82	<u>1981-1982</u>						TOTAL			
		February		March		TOTAL		Oct-Mar		TOTAL	
		2023	1982	2023	1982	2023	1982	81-82	21-22	81-82	22-23
Irrigation	3	0	0	0	14	140	277	170	46,680	34,750	
Stockwater	2	720	1,010	630	1,098	820	6,275	4,730	13,762	10,010	
E / M		290	0	270	0	320	0	1,880	0	8,340	
LORP		300	0	400	0	600	0	5,100	0	18,100	
Rec. & Wildlife		240	342	240	447	230	3,326	2,480	9,911	6,090	
1600 ACFT Proj.		200	0	200	0	220	0	1,170	0	1,600	
Total	2	1,750	1,352	1,740	1,559	2,330	9,878	15,530	70,353	78,890	

Irrigation: 34,750
Stockwater: 10,010

Irrigation: 46,680
Stockwater: 13,762

2021 irrigation: 38,493



2022-2023 LADWP Proposed Pumping

Between 67,210 and 86,300 AF pumping planned for 2022-2023

Wellfield	LADWP Low 67,210 AF	LADWP High 86,300AF	In-Valley Min 55,900 AF
Laws	8,900	10,710	8,000
Bishop	12,000	12,000	12,000
Big Pine	20,500	23,100	18,120
Taboose-Aberdeen	5,300	14,850	300
Thibaut-Sawmill	8,000	10,920	8,400
Independence-Oak	7,000	8,800	6,420
Symmes-Shepherd	1,200	2,900	1,200
Bairs-George	800	2,100	460
Lone Pine	900	900	1,000



2022-2023 LADWP Operations Plan

Indicator Well Predictions (n =46)

Pumping: 67,210 AF

Indicator wells predict an average 1.1 foot decline in DTW
DTW declines in 36 indicator wells
DTW above baseline in 4 wells in central BP, TA, and TS

Pumping: 86,300 AF

Indicator wells predict an average 1.9 foot decline in DTW
DTW declines in 42 indicator wells
DTW only above baseline in 3 wells in Big Pine and TS
DTW predicted to be 3.8 ft below baseline on average



April 2023 Groundwater Levels at Indicator Wells

2023 average change in water level

Wellfield	LADWP Low 67,210 AF	LADWP High 86,300AF	ICWD Uses or stable DTW
	ft	ft	ft
Laws	-2.6	-3.1	-2.4
Big Pine	-1.9	-2.3	-1.6
Taboose-Aberdeen	-0.8	-2.7	0.0
Thibaut-Sawmill	-0.5	-0.8	0.0
Ind.-Oak	-0.7	-1.2	-0.5
Symmes-Shepherd	-0.1	-5.9	0.0
Bairs-George	-0.2	-0.9	0.0



2022-2023 LADWP Proposed Pumping

Wellfield	LADWP Low 67,210 AF	LADWP High 86,300AF	In-Valley Min 55,900 AF	ICWD Recommended 59,540AF
Laws	8,900	10,710	8,000	8000
Bishop	12,000	12,000	12,000	12,000
Big Pine	20,500	23,100	18,120	18,120
Taboose-Aberdeen	5,300	14,850	300	2,500
Thibaut-Sawmill	8,000	10,920	8,400	8,800
Independence-Oak	7,000	8,800	6,420	6,420
Symmes-Shepherd	1,200	2,900	1,200	1,500
Bairs-George	800	2,100	460	1,200
Lone Pine	900	900	1,000	1,000

ICWD recommended pumping 59,540 AF

- Prudent considering entering third year of potentially severe drought
- Supplies local uses and minimizes water level declines near vegetation which is now below baseline in many places
- Some Pumping for LAA uses if water levels will be stable



2021-2022 LADWP Operations Plan

Summary

- Reduced irrigation requested (and anticipating reduced creek flows due to low runoff). Projects fully supplied.
- LADWP pumping between 67,210 and 86,300 AF
 - High range: water levels decline 1 to several feet in Laws, BP, TA and 0-2 feet elsewhere.
- ICWD recommended pumping 59,377 AF
 - Prudent considering entering third year of potentially severe drought
 - Supplies local uses and minimizes water level declines near vegetation which is now below baseline in many places
 - Pumping for LAA uses if water levels will be stable

