



(760) 872-1168
FAX: (760) 873-5695

EMAIL: inyowaterdept@telis.org
WEB: www.inyowater.org

163 May Street
Bishop, CA 93514

**COUNTY OF INYO
WATER DEPARTMENT**

**Status of Re-Inventoried Vegetation Parcels
According to the Drought Recovery Policy, 2005**

by Sara J. Manning, Ph.D.
Vegetation Scientist

Inyo County Water Department
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Disclaimer: This document updates some Owens Valley environmental and management conditions and reports on status with regard to the Drought Recovery Policy (DRP). Because this is an update in an ongoing analysis, the format resembles previous reports (e.g. Manning 2004, 2005). It is hoped that this consistency assists the reader in identifying and tracking trends and changes in conditions and status. Other DRP status reports are: Inyo County Water Dept. staff 1999, Manning 2000a, Manning 2001a, Manning 2002, James 2003, Manning 2004, and Manning 2005.

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ABSTRACT

This report presents the water table and vegetation conditions as of 2005 for 72 re-inventoried vegetation parcels and classifies parcels with regard to the Drought Recovery Policy (DRP). During 2005, the 29 re-inventoried parcels which had previously been classified as still subject to the management constraints imposed by the DRP (Manning 2002, 2005) were evaluated to determine if conditions had changed sufficiently to warrant reclassification to the DRPfree category (i.e., free of restrictions of the DRP). All of the 29 DRP parcels were judged to be still subject to the DRP as of 2005. Of the 70 classified parcels, 20 were classified as Controls, 21 were DRPfree, and 29 were still subject to the DRP. The DRP parcels are listed in the table below. Due to insufficient funds to hire summer field assistance, Inyo County Water Department's re-inventory program was scaled back somewhat 2003 - 2005.

	PARCEL	WELLFIELD	ICWD DRP status2004		PARCEL	WELLFIELD	ICWD DRP status2004
1	BGP162	BP	DRP	16	IND133	SS	DRP
2	BIS085	B	DRP	17	IND139	SS	DRP
3	BLK009	TA	DRP	18	IND231	SS	DRP
4	BLK021	TA	DRP	19	LAW030	L	DRP
5	BLK024	TA	DRP	20	LAW052	L	DRP
6	BLK033	TA	DRP	21	LAW062	L	DRP
7	BLK075	TS	DRP	22	LAW065	L	DRP
8	BLK077	TS	DRP	23	LAW082	L	DRP
9	BLK094	TS	DRP	24	LAW085	L	DRP
10	FSP004	BP	DRP	25	LAW112	L	DRP
11	FSP006	BP	DRP	26	LAW137	L	DRP
12	IND029	TS	DRP	27	MAN007	SS	DRP
13	IND106	IO	DRP	28	MAN037	BG	DRP
14	IND111	IO	DRP	29	TIN068	TA	DRP
15	IND132	SS	DRP				

Wellfields are: B = Bishop Cone; BG = Bairs Georges; BP = Big Pine; IO = Independence Oak; L = Laws; TA = Taboose Aberdeen; TS = Thibaut Sawmill; SS = Symmes Shepherd.

In this report, all available precipitation data, depth to water table (DTW) estimates, and total parcel perennial cover measurements were assembled for 148 parcels which have been re-inventoried at least once since 1990. Following the 2001 field season, the estimated DTW for each parcel was analyzed for proximity to its average April 1985-87 ("baseline") level and to the root zone range of the parcel's vegetation type, and the perennial cover data were analyzed for their response to precipitation and water table conditions. When a parcel located in a wellfield area showed both (1) clear evidence that the water table was high enough to recharge the rooting zone and (2) a response in perennial cover such that it equaled or exceeded 1984-87 levels, it was classified as free from the management restraints of the DRP. For reasons discussed in this and previous reports, simply achieving higher cover than the mid 1980s baseline level, without a change in estimated DTW does not justify reclassifying a parcel from the DRP to DRPfree category.

Prior to the 2005 growing season, precipitation was abundant. In general, in 2005, April water levels were similar to 2004 levels, perennial cover increased somewhat from 2004, and 2004 runoff year pumping declined slightly from the previous year. Relative to baseline, perennial cover exceeded baseline in the Control group, equaled baseline in the DRPfree group, and was significantly below baseline in the DRP group.

INTRODUCTION

Re-inventoried parcels have been classified with regard to the Drought Recovery Policy (DRP) since 1998 based on criteria developed to account for groundwater recovery and parcel perennial cover. Following the 2001 field season, Manning (2002) prepared a detailed explanation of the DRP classification criteria and their application. Briefly, for each monitored parcel, the estimated water level was analyzed for proximity to its average April 1985-1987 (“baseline”) level and to the root zone range of the parcel’s vegetation type. The perennial cover data were analyzed for cover response to precipitation and water table conditions. When a parcel located in a wellfield area showed both (1) clear evidence that the water table was high enough to recharge the rooting zone and (2) a response in perennial cover such that it equaled or exceeded cover levels measured by Los Angeles Department of Water and Power (LADWP) during the Water Agreement’s 1984-1987 vegetation baseline period, it was classified as free from the management constraints of the DRP. However, if for a given parcel either the water table remained below baseline (or the rooting zone) or the perennial cover failed to demonstrate a clear return to baseline level, the parcel was classified as still subject to the management constraints of the DRP. Parcels have been classified into one of four categories:

- Control - Not affected by pumping during the 1987-1992 drought
- DRP - Affected by pumping during the 1987-1992 drought and still not recovered in terms of water table and total perennial plant cover
- DRPfree - Affected by pumping during the 1987-1992 drought, but judged to have recovered in 1996 or after in terms of water table and perennial plant cover
- More study - Additional data are needed before DRP status can be reliably assigned

In this report on 2005 status and conditions, the previously-assigned DRP status of each parcel (Manning 2002, 2004, 2005; James 2003) was used as a starting point for classifying parcels re-inventoried in 2005. That is, all parcels previously classified as Control, DRPfree, or More study remained in those classifications. Only parcels previously classified as DRP required an analysis to determine if the water table had risen sufficient to improve perennial cover to a level equaling or exceeding the 1984-1987 baseline level.

This report presents information on the methods and results used to assess precipitation conditions, vegetation conditions, groundwater level estimates, and parcel classification with regard to the DRP. In addition to vegetation conditions measured in the field, total plant cover estimates generated from Landsat data, 1986-2005, are presented.

PRECIPITATION

Methods

Precipitation data were assembled for all seven Inyo County Water Department (ICWD) rain gauges and for the Bishop airport weather station (NCDC 1982-2005). Total precipitation during the 2005 water year (October 1, 2004 through September 30, 2005) and the cool months preceding the 2005 growing season (October 1, 2004 through April 30, 2005) was tabulated.

Results

Precipitation was relatively abundant in Owens Valley during the 2005 water year, and the average of the ICWD gauges, 233 mm (~9.2 in.), was the highest during the 13-yr period of record (Table 1). Figure 1a shows the average pre growing season precipitation for ICWD's seven rain gauges, 1993-2005. During the 2005 cool season, precipitation was above average at the Bishop airport (Figure 1b). As in most years, total precipitation varied throughout the valley, and in ICWD gauges it ranged from 149 to 289 mm (Table 1) during the 2005 water year.

Table 1. Water year precipitation amounts, in millimeters, recorded in the seven Inyo County Water Department rain gauges for water years 1993-2005. For conversion, 25.4 mm = 1 inch.

Rain Gauge	Precipitation (mm)												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
RG-1, east of Fish Slough	151	86	193	115	118	155	46	34	57	22	137	70	220
RG-2, near Laws	160	92	198	116	125	186	64	44	83	33	139	75	283
RG-3, southeast of Bishop	183	110	225	109	174	254	61	74	118	32	167	91	253
RG-4, south of Big Pine	211	108	248	174	212	228	47	65	85	40	184	104	237
RG-5, near Goose Lake	174	55	180	143	178	190	50	20	63	19	190	66	202
RG-6, near Blackrock	229	75	220	180	221	254	48	40	74	33	264	102	289
RG-7, west of Union Wash	127	41	124	54	111	129	41	39	99	13	143	45	149
Water Year Average	176.3	81.0	198.4	127.3	162.6	199.4	50.8	45.2	82.7	27.3	174.8	78.9	233.3
Avg. Precipitation Occurring Oct 1 - Apr 15 ("Winter")	173.8	51.5	172.8	120.1	121.7	147.5	36.7	34.5	66.2	25.0	163.5	72.9	196.6

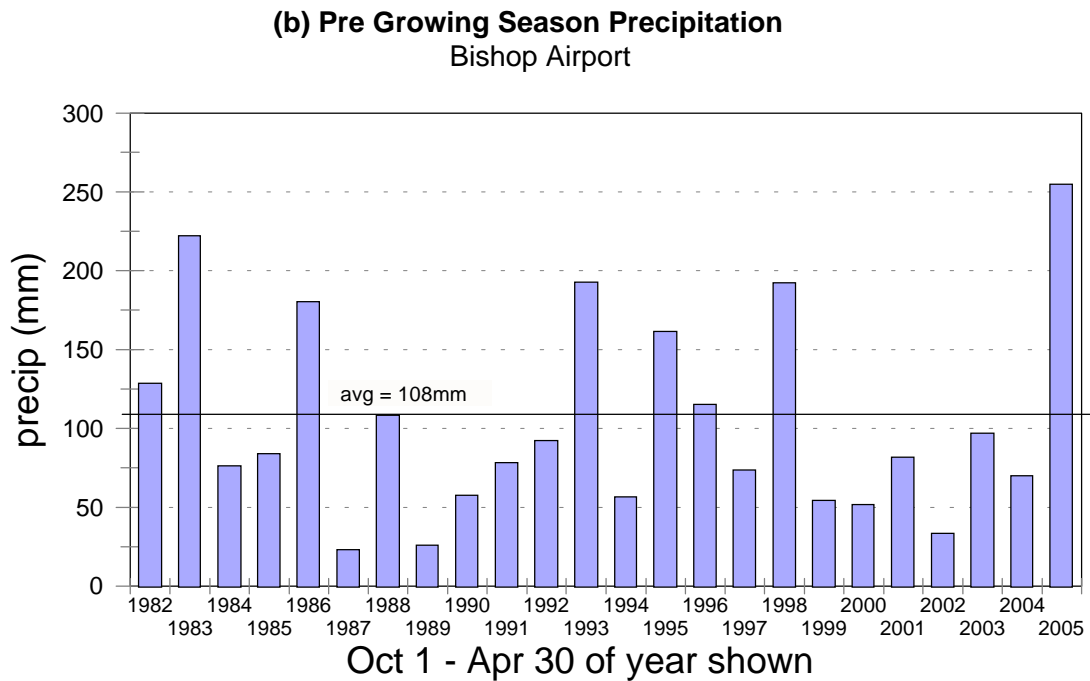
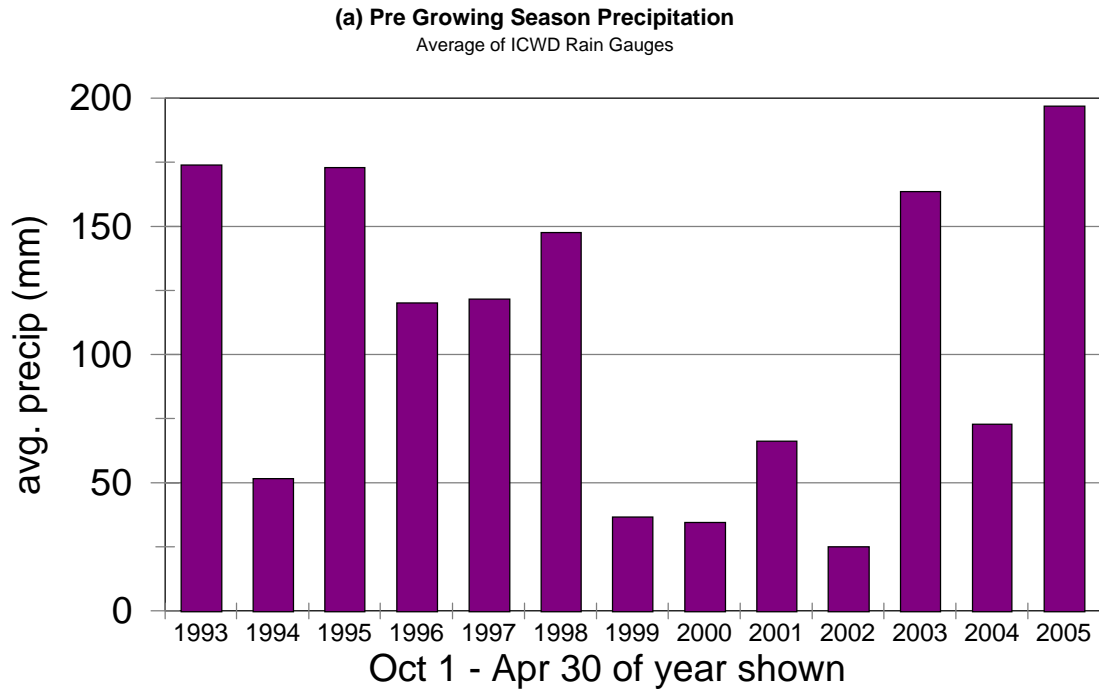


Figure 1. Pre growing season precipitation (October 1 through April 30 of year shown): (a) average of seven ICWD rain gauges, and (b) total at the Bishop airport.

VEGETATION CONDITIONS

Methods

Line Point Transects. In summer 2005, 72 vegetation parcels were re-inventoried. One of the 72 parcels was re-inventoried for the first time in 2005. Since 2001 (when the comprehensive analysis and assignment to DRP categories was performed, see Manning 2002), 6 parcels have been added to the set of parcels re-inventoried by ICWD. The parcels and their status are listed in Table 2. In 2004, 73 parcels were re-inventoried. Differences in the parcel set between 2004 and 2005 were: IND026 was added, and the two Type E parcels, LAW043 and LAW070, were not re-inventoried. The two Laws area Type E parcels were not re-inventoried because it was anticipated that water would be spread and they would be at least partly flooded during summer 2005. IND026 was added in 2005 because it was classified as a Type C Alkali Meadow parcel during the LADWP baseline inventory, and it is located in a potentially unrecovered region of the Thibaut Sawmill wellfield based on data for BLK094 and IND029.

Table 2. List of parcels added to re-inventory since 2001, years re-inventoried, and assignment to DRP category (if any).

Parcel	Years Re-Inventoried	DRP Class in 2004
IND026	2005	not classified
LAW035	2003-2005	not classified
LAW043	2003-2004	not classified
LAW070	2003-2004	not classified
LNP095	2002	Control
PLC144	2004-2005	Control*

* Reasons for assigning PLC144 to the Control category were explained by Manning (2005).

Details of methods for assessing vegetation conditions -- including the field data collection methods, criteria for selecting parcels for re-inventory, and data entry and statistical methods -- have been presented in earlier reports (for example Manning 2002; 2000b). Since 2001, no substantive changes were made. As in previous years, the parcel's average perennial cover in a given year is directly compared with baseline. In addition, the software program Statistica (StatSoft 1997) was used to perform t-tests to further evaluate the difference between baseline perennial cover and perennial cover in a subsequent year. Using transect data for each parcel, a one-tailed t-test for independent samples was used to test for statistically significant differences not only in the magnitude of change but also in direction (positive or negative) (Sokal and Rohlf 1987). A change was considered significant if the probability (p) that the means were different due to chance alone was ≤ 0.05 . Manning (2002) discussed the limitations of this statistical test and the high likelihood of incurring a Type II error (not detecting as significant difference when one exists).

A paired t-test was used to detect significant differences within management (DRP) groups between the 1984-87 baseline period and the present year. As with the independent t-tests, a change was considered significant if the probability (p) that the means were different due to chance alone was ≤ 0.05 . In this analysis, the 69 previously re-inventoried parcels were classified based on DRP status assigned by Manning (2002), with the one addition of PLC144 to the Control group. This analysis was performed to display any general cover characteristics among the three DRP categories between the baseline period and 2005. The paired t-test applied in this manner is robust and not as prone to Type II error as the independent t-tests on individual parcels; therefore the results provide a summarized view of differences from baseline cover among the parcel groups.

Parcel Cover Estimated with Landsat Data. ICWD acquired remote sensing estimates of Owens Valley green plant cover during late summer (August or September) for the years 1986 through 2005. This interpretation of Landsat data was provided by Dr. Andrew Elmore, previously of Brown University and currently of Dartmouth College. The green cover estimates are derived using the Spectral Mixture Analysis (SMA) method applied to Landsat Thematic Mapper data. Details of the method and its application to Owens Valley scenes were presented by Elmore et al. (2000) and Elmore (2003). Briefly, in this technique, the spectral data of each 28.5 m by 28.5 m pixel is viewed as a combination of the basic elements in the pixel, which in this case are chlorophyllous plant tissue, soil, and shade. These components, called endmembers, each possess a spectral signature, and SMA models each pixel as a combination of these endmembers. The proportion of pixel spectral data that can be explained by the green plant spectral signature, therefore, is a measure of percent live cover for each pixel. The SMA method of calculating percent live cover was compared with cover data measured at permanent monitoring sites and was found to be accurate within about 4% absolute live cover (Elmore et al. 2000). Because of this error in the estimate and other features of the SMA algorithm, it is possible for SMA-estimated cover at very low cover sites to be $< 0\%$ or, at very high cover sites, to be $> 100\%$.

The SMA results are presented in this report as an independent measure of total parcel plant cover and the trend in total cover over time. Note that the SMA method cannot distinguish species, thus perennial species cannot be estimated separately from the total cover, which typically includes abundant invasive annual species in some parcels in wet years. There are other reasons why SMA cover may differ from cover estimated with transect data, including the fact that the remote sensing data are collected late in the growing season, but further analysis of the SMA data is outside the scope of this report.

Results

Parcel perennial cover estimates for each year the parcel was re-inventoried using the line point transect technique are listed in Table 3. Total live plant cover measured using SMA for each parcel each year is presented in Appendix A. Field and SMA cover measurements are graphed, along with water table depths (discussed below), in Figures 2-103. (Because there are so many graphs, they are placed at the end of this report as Appendix B). Graphs were produced

only for parcels re-inventoried 2001 or after; several parcels listed in Table 3 and Appendix A were re-inventoried once or twice during the 1990s and graphs showing their data were presented in earlier reports.

Table 3. Perennial cover in re-inventoried parcels as measured during the 1984-87 LADWP baseline period (DWP) and by Inyo County Water Department, 1991-2005. Shaded cells show values that are statistically significantly different from baseline according to the one-tailed t-test at $p \leq 0.05$. The t-test is a method for measuring differences, but it is not capable of detecting all significant differences (see Manning 2002).

PARCEL	% COVER, PERENNIALS ONLY																
	DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	INY04	INY05	
1	BGP013	20.50	37.67					30.42	38.17	29.08	33.57	37.29	22.71				
2	BGP031	16.80	24.83	27.42	27.75	38.42	33.17	38.17	36.50	23.33	32.57	30.43	18.14	12.43	16.71	27.43	
3	BGP047	45.50	21.07	22.25	22.08	29.00	32.57	31.93	33.29	42.29	32.86	23.00	18.50				
4	BGP086	19.17	29.13	31.00	44.00	37.33	39.07	45.00	40.79	43.36	44.14	47.29	29.93				
5	BGP088	18.55					17.87	25.00	33.60	14.67	24.20		11.27				
6	BGP154	24.17	18.13	12.93	16.14	17.92	21.86	28.61	43.78	30.44	24.67	35.67	28.89	17.72	22.67	12.33	15.94
7	BGP157	28.60	7.73			27.25	26.67	38.00	39.67	25.25	48.71	54.00	26.14				
8	BGP162	30.33	8.44	7.08	8.04	10.15	12.21	14.47	10.90	16.20	8.50	22.47	11.80	7.91	13.75	8.31	12.81
9	BGP204	27.17	19.50			27.00	32.71	35.36	35.43	32.71	34.57	42.43	18.86				
10	BGP205	22.83	11.56	14.19	28.25	28.44	18.75	22.56	31.81	19.69	22.56	27.81	13.38				
11	BIS055	44.60									67.22	52.17	33.00	40.56	31.67	55.56	
12	BIS068	15.40	9.25			16.20	13.57	17.57		8.21	6.93		9.86				
13	BIS085	31.38	23.83								25.50	25.79	23.50		16.00	21.80	
14	BLK002	16.00					13.66			8.31	10.68	14.68	12.80				
15	BLK006	16.50	25.83								25.54						
16	BLK009	28.83	8.05	22.22	18.50	14.30	26.35	22.27	26.95	31.77	22.05	24.91	21.18	12.77	23.27	17.45	20.82
17	BLK011	9.25									20.67						
18	BLK016	22.20	15.50	10.50	17.77	12.00	19.00	17.95	29.18	21.64	22.23	33.18	39.09	25.42	27.58	22.17	28.46
19	BLK021	30.67	19.67				12.67	17.42	26.00	14.42	11.43	17.86	11.50	16.03	23.07	24.64	
20	BLK024	25.00	22.54	23.55	26.06	21.83	34.22	23.95	25.35	32.85	16.10	26.70	22.80	15.86	29.41	21.32	26.86
21	BLK033	13.67	6.83	17.75	8.50	9.75	11.87	13.93	15.27	8.47	6.27	8.47	3.13	7.27	6.87	10.13	
22	BLK039	21.67	8.33	24.64	11.29	20.86	29.93	20.53	31.87	24.13	22.93	27.80	21.00	30.40	23.33	27.80	
23	BLK040	9.00	3.42														
24	BLK044*	23.00	16.20	14.17	28.69	14.58	25.50	25.54	36.46	39.46	25.00	26.86	27.14	22.14	33.79	29.50	36.29
25	BLK069*	19.00	15.44	14.00	16.00	11.28	14.22	21.67	20.06	22.11	13.28	15.28	18.67	13.33	10.22	12.39	16.94
26	BLK074	30.67	33.10	34.30	28.70	49.65	44.85	44.10	50.25	40.25	38.30	49.35	25.35	49.35	24.85	47.05	
27	BLK075	38.83	7.83	18.14	4.06	10.33	14.50	23.20	30.20	21.20	33.35	31.37	15.10	27.20	26.15	24.80	
28	BLK077	16.33	6.33								13.81	14.69	8.13		8.19	16.75	
29	BLK094	40.56	21.83	18.56	31.11	12.06	28.67	30.80	38.20	49.70	36.60	35.15	27.35	17.21	33.71	17.75	26.63
30	BLK095	16.43									23.45						

PARCEL		% COVER, PERENNIALS ONLY															
		DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	INY04	INY05
31	BLK099	48.00	46.12	43.82	48.36	42.41	47.59	56.36	50.14	66.77	79.45	62.09	43.09	38.14	42.27	43.27	54.00
32	BLK115	9.58		22.43	17.88	15.44	15.43	27.94	30.69	23.81	20.81	24.75	21.31	13.00	26.88	13.25	20.75
33	BLK142	26.00	25.33	25.00	33.21	22.36	31.64	22.87	39.33	32.38	19.00	20.25	29.63	22.94			
34	BLK143	39.83										75.36					
35	FSL051	58.17	7.83	16.75	24.75	27.50					57.57	83.21	64.43	55.07			
36	FSL065	21.33		23.64	26.06	19.75	25.69	25.44	20.50	26.38	41.81	39.13	36.38	15.50			
37	FSL116	52.88		37.00								68.43	55.14	36.71			
38	FSL118	9.58		6.63													
39	FSL122	11.00		7.40													
40	FSL123	57.67		18.22	26.17	29.67		43.83	49.92	61.08	65.00	55.71	54.07	28.29	37.07	45.21	65.57
41	FSL179	52.17						60.83									
42	FSL187	14.33		45.64	33.43	35.64	38.57	31.14	37.29	47.36	59.43	42.14	41.71	26.86	20.29	24.36	27.36
43	FSP004	16.00						14.80	13.07	15.53	11.13	10.87	17.67	7.80	12.07	12.53	13.40
44	FSP006*	25.00	14.82	15.92	12.50	10.08	20.17	13.75	24.17	23.33	10.08	15.79	14.86	8.71	15.50	8.57	14.29
45	IND011	30.33		22.55	39.93	36.64	39.42	55.21	60.57	54.93	62.77	63.36	55.36	21.21	44.64	30.93	47.93
46	IND019	75.00		33.15	50.06	32.63	51.50	53.75	56.19	66.25	62.31	65.50	63.94	50.75			
47	IND021	68.00		37.92													
48	IND026	49.00															33.20
49	IND029	22.00											24.86	17.50	26.43	29.14	26.50
50	IND035	49.50		61.50	52.44	26.21	44.64	43.00	57.56	71.44	48.31	67.31	49.44	41.44	51.50	47.38	57.00
51	IND064	38.50		23.14	40.07	24.21	33.43	33.93	36.50	37.00	18.21	25.21	26.64	19.14			
52	IND066	12.25		10.33													
53	IND067	34.75		13.29			27.25	29.93	43.73	39.60	20.13	17.53	27.07	12.40			
54	IND087	38.00	30.44														
55	IND096	29.33	20.16	16.00	22.31	18.31	28.13	31.32	23.53	27.95	16.44	25.72	23.33	19.50	30.28	20.00	33.33
56	IND099*	20.00	14.00														
57	IND106*	8.00	14.33	10.83	16.68	10.26	23.11	14.53	19.05	23.85	14.68	17.06	14.67	11.33	19.22	13.61	17.00
58	IND111	40.60	22.56	24.55	33.95	17.11	36.21	31.21	36.47	48.11	36.95	38.89	36.50	25.80	27.80	29.20	42.45
59	IND119	33.67		13.15	18.81	11.88	19.31	22.11	13.33	16.39	8.39	14.00	13.11	10.44			
60	IND122	29.33						25.94	31.56	34.63	35.00	35.69	35.63	24.88			
61	IND132*	32.90	16.29	9.10	19.96	13.50	27.45	24.00	22.75	26.88	14.27	29.45	18.68	18.05	32.27	24.55	28.55
62	IND133*	13.50										9.21	8.71	6.36	17.57	22.64	19.50
63	IND139	48.50	10.56	12.62	19.86	8.09	28.91	24.32	16.23	38.91	20.45	24.32	26.41	18.00	34.68	25.77	40.86
64	IND151	45.50						23.79									

PARCEL		% COVER, PERENNIALS ONLY															
		DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	INY04	INY05
65	IND156	31.00	19.00														
66	IND163	12.75	8.71	10.82	14.67	7.71	18.50	16.41	18.27	23.59	15.91	16.36	12.14	8.25	17.38	6.71	13.29
67	IND205*	26.25						32.00									
68	IND231*	7.60	10.50	3.89	13.14	9.79	12.00	13.87	10.40	16.93	7.47	5.47	9.40	5.40	12.67	9.40	15.27
69	LAW030	23.08	12.00						16.25	21.16	27.25	32.07	24.50	19.57		20.50	24.19
70	LAW035	35.50													3.06	1.56	4.69
71	LAW040	14.67		9.17				11.75	9.25	16.75	13.83	9.43					
72	LAW043	61.13													3.00	2.44	
73	LAW052	27.83	4.16						4.91	7.75	8.83	4.50	4.93	2.36	2.86	3.93	5.36
74	LAW062	21.44		1.50			3.00	5.50	9.71	11.21	18.07	13.50	10.79	2.86	4.69	3.25	7.19
75	LAW063	11.50	4.54	2.44	5.31	5.50	7.92	8.75	11.37	6.31	15.13	9.88	8.75	3.75	6.38	5.44	9.63
76	LAW065	9.67		1.75	4.08	3.58	7.58	6.00	5.28	5.07	7.92	7.00	8.21	3.36	2.93	2.14	5.07
77	LAW070	59.33													1.00	1.64	
78	LAW076	6.50		2.80								9.79					
79	LAW078	51.71		7.50					20.21	24.57	44.50	55.41	38.27	36.32	31.77	27.09	38.95
80	LAW082	16.50	5.50						2.58	5.83	4.33	5.14	3.64	2.14	3.00	4.43	4.20
81	LAW085*	30.10	5.11	5.79	17.92	5.50	18.75	13.79	9.78	11.36	12.50	19.00	10.20	7.13	9.80	7.73	14.81
82	LAW104	8.80		3.83													
83	LAW107	46.86		22.08	13.08	18.08	26.25	24.66	34.83	38.00	62.25	61.71	55.43	37.57	43.93	38.21	65.07
84	LAW109	17.88	3.18														
85	LAW110	35.17	11.33	10.89	20.64	29.14		40.88	38.81		59.41	63.71	68.12	54.00			
86	LAW112	20.33		16.33			14.50	20.33	13.83	20.05	13.67	11.57	19.64	12.93	25.14	15.79	32.93
87	LAW120	25.92	14.18	12.58	19.17	11.58	29.08	28.83	29.50	41.66	33.17	41.29	47.00	17.57	24.13	21.06	27.61
88	LAW122	59.56		58.92	58.08	43.00	57.58	68.25	64.33	65.58	88.25	56.29	71.57	58.79	54.81	47.75	56.56
89	LAW137	20.42		8.63			15.25	12.43	16.00	18.36	21.86	16.50	22.86	16.94	20.33	13.06	19.05
90	LAW154	12.17		10.00				15.75									
91	LAW167	4.70		4.79				7.07									
92	LNP018	18.33		22.08	27.67	22.44	53.11	29.28	38.50	32.83	26.33	45.44	44.33	24.67	32.67	17.56	32.89
93	LNP019	16.17		36.67				23.21	32.64	41.93	34.79	37.57	48.69	25.50			
94	LNP045	48.00		44.83			44.58	49.50	39.86	45.21	48.00	56.29	36.86	17.50	30.86	24.21	45.00
95	LNP050	48.00		16.14	47.39	20.94	39.67	38.22	29.44	56.44	39.06	46.06	48.50	20.39			
96	LNP095	27.58												27.67			
97	MAN006	22.75		8.04	19.93	14.86	22.50	33.83	24.56	34.28	12.78	30.39	29.28	17.89	23.11	18.00	29.44
98	MAN007	28.00	14.94	11.92	15.54	10.04	28.75	9.68	13.85	24.38	16.40	18.30	20.84	14.60	25.73	18.53	22.03

PARCEL	% COVER, PERENNIALS ONLY																
	DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	INY04	INY05	
99	MAN014	22.00		19.33			14.92	17.57	15.71	23.21	18.21	21.21	15.29	8.21			
100	MAN017	6.50						5.19	13.63	7.50	16.63	9.13					
101	MAN034	15.33		9.50													
102	MAN037	42.00	7.36	8.06	19.00	18.22	26.28	14.92	24.08	28.67	20.88	43.68	25.43	7.52	14.60	15.64	21.16
103	MAN042	18.00						20.19				39.59					
104	MAN060	59.33		74.25	75.08	82.08	83.17	77.92	64.83	82.83	76.58	86.79	82.64	75.50	75.86	76.79	81.50
105	PLC007	26.70						32.61	26.78	33.00	25.94	28.56	29.72	18.39			
106	PLC024	35.42		34.67	46.83	41.58	51.67	41.83	38.25	59.92	30.00	51.93	53.71	25.29	39.36	40.64	44.79
107	PLC028	38.50		19.00													
108	PLC055	7.33		15.69													
109	PLC056	16.83						19.21								14.67	25.13
110	PLC059	17.00		27.00				23.07									
111	PLC064	9.67		4.67				8.58									
112	PLC065	10.67		6.71				16.79									
113	PLC069	12.00		6.08													
114	PLC072	15.33		17.33			24.64	30.57	21.86	24.29	27.64	24.29	25.79	16.29	14.71	16.71	21.43
115	PLC092	10.50		11.80			14.92	10.47	21.00	15.53	13.60	17.67	16.13	6.87			
116	PLC097	35.17		21.28	28.00	38.17	50.38		62.50		71.36	45.21	56.14	33.00	37.86	28.57	42.00
117	PLC106*	30.00	19.38	17.73	16.00	15.07	17.25	19.21	21.29	28.21	17.57	18.14	19.93	11.86	12.79	10.71	19.36
118	PLC110	13.17		10.00													
119	PLC111	8.83		9.58													
120	PLC113	13.00		8.13			16.71	14.19	17.00	12.38	14.63	15.81	19.81	9.31			
121	PLC121	41.33		35.28	48.13	43.81	43.31	63.71	54.00	46.94	62.24	47.47	44.18	38.94	33.53	44.78	50.67
122	PLC125	10.89		9.79				13.71									
123	PLC136	12.40		15.92	34.33	20.00	29.00	40.46	22.77	29.00	22.38	28.93	18.93	13.86			
124	PLC137	27.20	41.38	51.50	37.08	47.17		40.08	61.92	51.46	59.00	47.13	57.43	32.19	39.19	32.88	37.06
125	PLC144	32.17														37.53	38.00
126	PLC187	12.83		14.21				21.86									
127	PLC193	16.00		12.94				15.13									
128	PLC220	35.90	52.85														
129	PLC223	15.00	24.88	17.13	31.64	25.86	35.29	27.20	25.93	24.00	26.93	28.20	28.67	14.80	22.27	16.88	26.38
130	PLC239	13.17		9.93													
131	PLC240	11.17		14.78													
132	PLC241	11.33		12.42													

PARCEL		% COVER, PERENNIALS ONLY															
		DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	INY04	INY05
133	PLC246	7.50		9.93													
134	PLC251	8.67		5.43				10.36									
135	PLC263	10.25		11.25													
136	TIN006*	24.00	14.06														
137	TIN028	17.50	12.53	17.09	18.40	11.55	18.90	18.45	15.86	20.73	11.05	14.50	19.57	11.36	15.14	14.86	15.68
138	TIN030	31.42										41.78	35.17	16.36	24.05	25.55	28.32
139	TIN050	36.33									35.31	39.19	55.88	29.56	38.56	22.81	34.75
140	TIN053	35.00										61.69	61.63	35.13			
141	TIN064	32.50	22.75								33.33	28.73	33.80	18.47	19.07	22.67	25.33
142	TIN068	13.50		12.50	17.69	10.31	16.63	20.88	17.75	11.56	13.19	18.81	13.75	7.13	6.56	9.13	11.33
143	UHL052	16.00		10.79													
144	UNW029	16.75		20.83	22.17	18.42	28.75	23.67	19.62	24.77	17.15	26.71	19.93	10.14	17.71	9.71	17.07
145	UNW039	27.17	7.50	29.86	27.05	20.55	34.77	44.27	28.18	48.82	35.50	43.55	31.32	30.79	29.04	27.67	33.25
146	UNW072	18.50		6.33				7.39			11.06						
147	UNW073	15.50		16.50				11.36	14.82	19.14							
148	UNW079	40.25		41.29			53.67	54.85	27.54	41.83	40.08	35.5	51.14	53.21	48.43	57.00	64.50

Shading indicates significant difference at $p \leq 0.05$

* = No LADWP baseline data so statistics not done

Sixty-nine parcels re-inventoried in 2004 and 2005 were previously classified with regard to the DRP by Manning (2002, 2004, 2005; James 2003). Nineteen of the 69 had previously been classified as Controls, and, as stated in the Methods section above, PLC144 was added as a Control parcel for a total of 20 Control parcels and 70 classified parcels. From 2001- 2004, 21 parcels were DRPfree, and 29 were DRP. Sorted to DRP class in this manner, a comparison of perennial cover between the 1984-87 baseline period and 2004 and 2005 is presented in Table 4. The Control group showed no overall significant change in cover between the baseline period and 2004, a low-precipitation year (Table 1, Figure 1b), but a significant increase in cover between baseline and 2005, a wet year. The DRP group showed a significant decline in cover in both 2004 and 2005. Cover relative to baseline increased from 2004 to 2005 in the DRPfree group, and in 2005 average cover in this group of 21 parcels was not significantly different from baseline. Cover in the group of 50 re-inventoried wellfield parcels (last row of Table 4) also showed no significant change from baseline in 2005. Some individual parcels within each DRP group differed from the overall group response (Table 3 and Figures 2-103), and patterns and trends in some specific parcels will be addressed later in this report.

Table 4. Results of paired t-tests (for dependent variables) on parcels grouped according to previous DRP classifications (see text). The difference in group-average perennial cover between the LADWP (1984-87) baseline average cover and 2004 and 2005 average cover is shown. The difference was considered significant when $p \leq 0.05$. (Data for these parcels can be found in Table 6, below.)

Group (based on DRP class as of 2001)	# parcels	Average baseline cover (+/- st.dev.)	Average 2004 cover (+/- st.dev.)	Average 2005 cover (+/- st.dev.)	probability (p) 2004/2005
Control	20	26.88 (13.08)	27.24 (17.51)	35.59 (17.13)	0.8624/ 0.0000*
DRPfree	21	33.82 (14.26)	26.62 (11.90)	36.82 (16.63)	0.0003*/0.1276
DRP	29	24.92 (10.78)	14.99 (8.07)	19.67 (9.64)	0.0000*/0.0039*
all wellfield (DRP and DRPfree)	50	28.66 (13.01)	19.87 (11.34)	26.87 (15.47)	0.0000*/0.1986

DEPTH TO WATER DATA

Methods

Three methods for estimating April depth to water table (DTW) are presented in this report. The method used in earlier reports by Manning (2001a; 2002) relied on kriging procedures described by Harrington and Howard (2000). For 2002 - 2005, the methods described by Harrington and Howard (2000) were replaced with kriging procedures described by Harrington (2003). Therefore, this report on parcel status according to the DRP includes DTW estimates obtained from up to three different methods for deriving parcel average April DTW: (1) Harrington and Howard 2000, here referred to as HH2000; (2) ordinary kriging as described by Harrington (2003), referred to as OK; and (3) kriging with an external drift as described by

Harrington (2003), referred to as KED. Each kriging method utilizes DTW data from monitoring wells recorded each year, 1985 to the present. An ArcView grid coverage depicting estimated DTW throughout Owens Valley is generated. Each grid cell with its center point falling within a re-inventoried parcel boundary is used to calculate an estimated average DTW associated with each parcel each April. Harrington (2003 and personal communication) then reviewed the OK and KED estimated DTW for each re-inventoried parcel and described the reliability of the DTW estimate with regard to the 1985-87 period, recovery after the 1987-1992 drought period, recent (2002 and after) DTW, and expected DTW. For the DRP status analysis, all values were converted from feet to meters.

Manning's (2002) DRP classification used HH2000 estimates to evaluate DTW trends over time and to compare DTW with both the parcel's 1985-87 average "baseline" DTW and with its proximity to the parcel's assumed root zone depth (2m or 4m). Based on that analysis, parcels were categorized with regard to the DRP. Because general trends in DTW appear similar among the three kriging methods, and because the goal of the DRP analysis is to determine whether wellfield parcels may be freed from management constraints of the DRP, beginning in 2002, the DTW data have been used to examine water table trends from 2001 onward. That is, if a parcel was classified as DRP based on 2001 conditions, and its water table trend (OK, KED or both) was steady or downward, then it was assumed the water table had not recovered sufficient to promote vegetation cover to baseline levels. If the water table change since 2001 was upward using either method, then the magnitude of rise and the new DTW relative to the 1985-87 baseline level and to the plant root zone would be evaluated. Since 2001, however, the predominant water table trend has been steady or downward for DRP parcels. In the occasional instance in which a rise in water table was estimated, the rise was very small (typically <0.1 m).

Prior to evaluating specific DTW conditions in 2005, the grouping of parcels to DRP categories current through 2004 (Manning 2005) was used to summarize general DTW changes between 2001 and 2005. Parcels with "reliable" data from 2001 onward were used for this brief analysis, and this analysis includes some parcels for which no field vegetation data have been collected recently. The change in DTW for each qualifying parcel, 2001 - 2005, was calculated, and the average of these values was obtained. Because the purpose was to examine for overall trends, no statistics were performed.

Results

Parcel average DTW estimates developed according to the HH2000 method and OK and KED estimates judged to be reliable (Harrington 2003 and personal communication, but with a few additions as noted) are graphed in Figures 2 -103 (Appendix B). DTW data presented in the graphs are tabulated in Appendix C. Results show that water tables throughout Owens Valley generally declined since 2001.

The general pattern of decline in groundwater since 2001 remained in the DTW kriged estimates based on data from April 2005. All parcels in which OK and KED DTW estimates were reliable generally showed a decline in water table about 0.6 m (about 2 feet) from April

2001 to April 2005 (Table 5, bottom row). Among the parcel groups from 2004 - 2005, there was an average increase in water levels in the Control group, constant water level in the DRPfree group, and a decline in water level in the DRP group. Relative to 2001, in 2005, DTW in the Control group was approximately the same, water level in the DRPfree group was about 0.5 m lower, and water level in the DRP group was over 1 m lower (Table 5).

Table 5. Change in DTW from April 2001 to April 2004 and April 2005 for re-inventoried parcels with reliable OK or KED estimates (according to Harrington 2003 and personal communication). Changes are grouped according to previous classification with regard to the DRP (Manning 2002, 2005) with the exception that data for PLC144 are included here in the Control group. Also shown are the number of parcels used to derive the estimate of water table change. Not all parcels used for this analysis were re-inventoried in 2005. See Table 7 for each parcel's 2005 DTW estimate and change from 2001. See Manning (2005) for April 2004 data.

Group	#OK	Change in OK DTW (m) (+/- st.dev.) from 2001 to		# KED	Change in KED DTW (m) (+/- st.dev.) from 2001 to	
		2004	2005		2004	2005
all Control	15	-0.22 (0.18)	-0.05 (0.43)	19	-0.19 (0.21)	-0.04 (0.43)
all DRPfree	19	-0.53 (0.45)	-0.52 (0.63)	19	-0.54 (0.52)	-0.54 (0.68)
all DRP	23	-0.90 (0.41)	-1.23 (0.73)	25	-0.80 (0.36)	-1.13 (0.70)
all re-inv. parcels with reliable est.	61	-0.57 (0.44)	-0.66 (0.77)	67	-0.52 (0.44)	-0.60 (0.75)

PREVIOUS DRP STATUS AND CLASSIFICATION FOR PARCELS IN 2005

Background

The DRP (Attached as Appendix D) envisioned a comprehensive analysis of recovery of environmental conditions, and it specified using data on groundwater, soil water, and vegetation to gauge recovery. Information on water table (both on its own and as a surrogate for soil water) and vegetation recovery were analyzed and used to develop criteria for determining parcel status with regard to the DRP (Manning 2002).

Parcel status based on data from 2001 continues to be used for DRP status evaluation for several reasons. The DRP was formally adopted by the Standing Committee in 1992. That year was the sixth and last year of consecutive below-normal precipitation years on the valley floor and below-normal runoff years for the Sierra Nevada snowpack (Figure 104). During the 1980s, prior to the DRP, runoff year pumping averaged 102,743 acre-feet (runoff years 1980 through 1990) (Figure 105 and Table 6). Pumping was very high during the years prior to management according to the DRP (1987-1990). From runoff years 1991 through 1999, pumping averaged 73,616 acre-feet. Most years from 1993-1998 exhibited above-normal Owens Valley precipitation and/or above-normal runoff (Figures 1 and 104). The combination of relatively

high inputs of water combined with pumping levels reduced below 1980s amounts resulted in some recharge to shallow aquifers valley-wide (Figure 106). The upward trend in water levels continued through the 1990s, but in most parts of the valley, peaked in April 1999. By the end of the 2001 growing season (the third consecutive year of another period of below-normal precipitation and runoff), it was evident that groundwater levels would not rise until either greater amounts of runoff occurred or pumping was greatly reduced or both. From runoff years 2000 through 2004, runoff continued to be below normal but pumping amounts in the valley increased most years (Table 6 and Figures 104-105). Pumping during the 2004 runoff year was 85,803 acre-feet, which was slightly less than during the 2003 runoff year (Figure 105). The average pumping during the five runoff years preceding April 2005 was 79,277 acre-feet (Table 6).

Table 6. Average pumping for selected runoff year periods. Data for pumping within individual runoff years are graphed in Figure 105.

Runoff Years	# years (n)	Average pumping (acre-feet/yr)
1980-1990 (pre DRP)	11	102,743
1987-1989 (early in first drought)	3	186,477
1991-1999 (DRP 1990s)	9	73,616
1987-2004 (“baseline” onward)	18	94,794
1992-2004 (since Agreement signed)	13	74,848
2000-2004 (recent drought)	5	79,277

Water tables would be expected to respond to fluctuations in runoff and pumping. In the group of parcels classified as Control (in which parcels are assumed to be removed from the direct influences of pumping), there appears to be a somewhat muted response to long-term runoff patterns (Figure 106a). On average, within either the Control meadow or scrub community type, April groundwater levels fluctuated <1 m, 1985-2005. During periods of drought (e.g. 1987-1992), water levels were relatively lower. Water levels increased during the late 1990s, but declined somewhat during the more recent drought period (Figure 106a). By definition, pumping affects parcels located in wellfields. Varying annual amounts of pumping have occurred throughout the time period of study (Figure 105). Pumping increased sharply 1987-1990 (Table 6 and Figure 105), and a precipitous decline in wellfield water tables during this period is evident in Figure 106 b and c. From 1991-1999, average pumping was reduced (Table 6), and on average, wellfield water levels began to rise (Figures 106 b and c). Although these general trends in water table are similar for the DRP and DPRfree group, the two groups differ in the extent to which water tables recovered during the late 1990s. On average, neither the shallowest water levels nor the 1985-87 average water levels (not shown) were achieved in the DRP group (Figure 106 b). In contrast, both the shallowest and the 1985-87 average water

levels were achieved, on average, in the DRPfree group (Figure 106 c: Note for the meadow group, water levels were slightly less than but within 10cm of the shallowest average DTW during the baseline period). Since 2000, both the DRP and the DRPfree group have shown generally declining water levels (Figures 106 b and c).

Since 2001, water tables have generally declined in wellfield parcels. However, data for some parcels may differ from this overall trend. Both water table and vegetation must meet certain criteria for a parcel to be released from the management constraints of the DRP; therefore, data for parcels classified as still subject to the DRP as of 2004 (Manning 2005) were considered on a case by case basis.

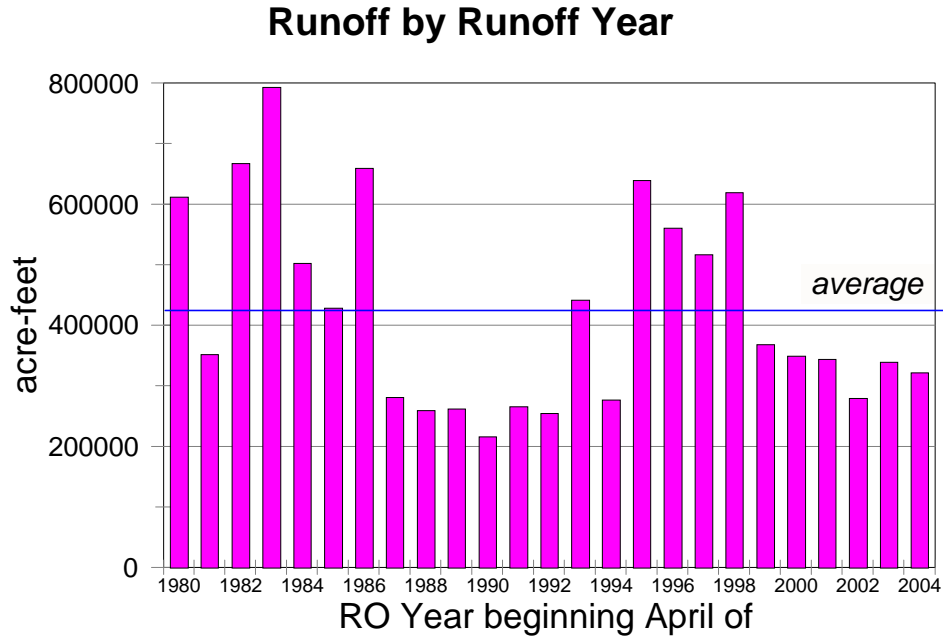


Figure 104. Owens Valley runoff by runoff year (April 1 - March 31), 1980-2004. Average runoff since 1935 was 419,273 acre-feet. Year 2004 runoff was 321,253.

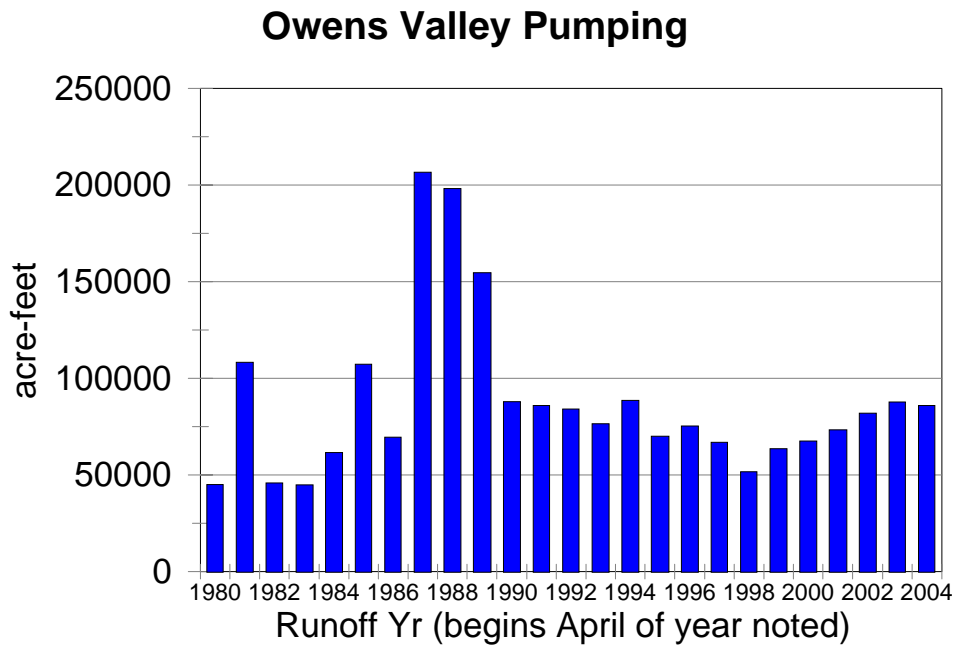


Figure 105. Total Owens Valley pumping (in acre-feet) by runoff year for runoff years 1980 through 2004. The 2004 runoff year ended March 31, 2005, prior to the 2005 growing season. Runoff year pumping during 2004 (last bar on graph) was 85,803 acre-feet.

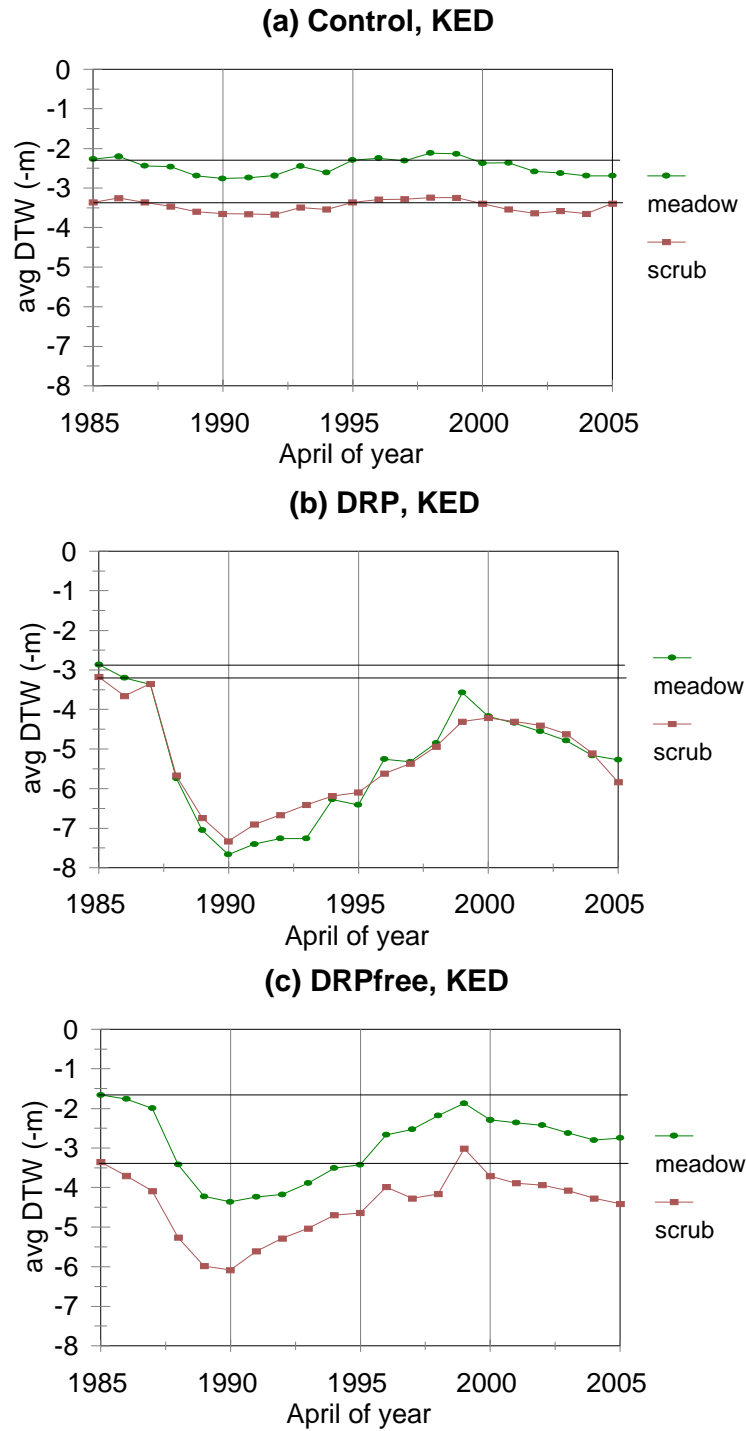


Figure 106. Average DTW (-m) using the KED method for all parcels with reliable data for April 1985-2005. Parcels were grouped according to DRP status (Table 7) and by meadow versus scrub community type (2m v. 4m root zone). Number of parcels graphed (meadow, scrub, respectively) are (a) Control: 11, 7; (b) DRP: 16, 8; and (c) DRPfree: 13, 4. Horizontal lines show shallowest 1985-87 April water level for group.

Methods

Parcels classified as DRP in 2001 (Manning 2002), 2002 (James 2003), 2003 and 2004 (Manning 2004, 2005, respectively), and parcels for which 2005 line point transect data were available, were used to evaluate 2005 parcel status with regard to the DRP. Once again, the 2005 data were not used to reclassify parcels previously classified as Control or DRPfree. Therefore, only parcels previously classified as DRP required evaluation to determine if they qualify for reclassification to the DRPfree category.

Previous criteria for releasing parcels located in a wellfield area from DRP management constraints required that a parcel show both (1) clear evidence that the water table was high enough to recharge the rooting zone and (2) evidence of a perennial cover response to the higher water table such that perennial cover equaled or exceeded 1984-87 levels. Exceptions to the criteria have been made for a few parcels due to unreliable LADWP baseline cover data or other reasons (Manning 2000a, 2002, 2004). Temporary high perennial cover levels have been measured in some parcels in years with higher than normal valley precipitation. In instances where perennial cover increases, but the increase is not accompanied by an increase in water level, the parcel continues to be assigned to its existing DRP classification until the next dry year. Typically, without a rise in water level, perennial cover drops again in the next dry year, showing that the cover spike was precipitation-induced and not a sign that the parcel has recovered in terms of water table and soil water as envisioned by the DRP. Here, data for each DRP parcel were assessed with regard to change in DTW, perennial cover relative to baseline, and the potential for a cover increase caused by 2005 precipitation and not improved access to groundwater.

Results and Discussion

There was no evidence that any of the parcels classified as DRP in 2004 and re-inventoried in 2005 experienced recovery sufficient to be classified as DRPfree. Since 2001, no parcel classified as DRP has displayed clear evidence of water table and perennial species recovery to baseline levels. Table 7 lists data for all parcels listed in Table 3. Included in Table 7 is the 2001 DRP status assigned to each parcel by Manning (2002) as well as the DRP status based on 2005 data. The 29 re-inventoried parcels classified as DRP for which 2005 line point transect data were collected were extracted from Table 7 and are shown in Table 8. None of these 29 parcels changed DRP status as of 2005. Groundwater level for all but one of these parcels declined from 2001 to 2005; the exception was BIS085 in which water levels increased slightly from 2001 levels. In all 29 parcels except MAN037, estimated 2005 water levels were below the root zone of the dominant species documented in the parcel during the baseline period. Perennial cover in 20 of the 29 parcels averaged below baseline in 2005, and perennial cover in 9 of the 29 parcels averaged above baseline. However, water levels for these 9 parcels declined from 2001 to 2005 and was 2 m or more below the root zone assigned to the plant community type (2 m for grass-dominated/meadow, 4 m for phreatophytic scrub, Groeneveld 1992).

Table 7. Some data for all re-inventoried parcels classified with regard to the DRP in 2001, plus data for additional parcels re-inventoried since 2001 (see Table 2). Shown are: the parcel plant community and type, the parcel identity, parcel DRP status in 2001 (from Manning 2002), parcel DRP status as of 2005, the perennial cover during the LADWP 1984-87 baseline period, perennial cover in 2005 (if re-inventoried), the absolute difference in cover between the baseline period and 2005, average April 1985-87 baseline DTW, DTW estimates for 2005 (according to the OK and KED methods, if available), and the change in DTW between 2001 and 2005. Negative differences indicate a decline. Question marks following the DWP baseline cover value indicate no transect data are available, "nd" in the DTW columns indicate that either OK or KED estimates are not available. Blank cells indicate no reliable data available. Abbreviations are shown at the end of the table.

	COM-MUNITY and TYPE	PARCEL	ICWD DRP status 2001	ICWD DRP status 2005	PERENNIAL % cover			DTW OK/KED in m		
					DWP BASE	INYO 2005	ABS DIFF 05-BASE	baseline Apr 85-87	2005	Change in DTW from 2001
1	45310A	BGP013	C		20.50					
2	45310C	BGP031	C	C	16.80	27.43	10.63	2.46/nd		
3	45310C	BGP047	C		45.50			nd/0.93	nd/1.58	nd/-0.16
4	45310C	BGP086	DRPfree		19.17				nd/3.67	nd/-0.94
5	36150B	BGP088	wDRPfree		18.55					
6	45350C	BGP154	DRPfree	DRPfree	24.17	15.94	-8.23	4.61/4.68	6.50/6.01	-1.49/-1.13
7	35400B	BGP157	DRPfree		28.60			4.25/4.52	3.97/3.69	-0.30/-0.15
8	36150B	BGP162	DRP	DRP	30.33	12.81	-17.52		nd/6.31	nd/-0.40
9	45350C	BGP204	C		27.17					
10	45310C	BGP205	C		22.83					
11	45310C	BIS055	C	C	44.60	55.56	10.96	1.89/1.90	2.73/2.85	-0.66/-0.79
12	35400B	BIS068	wDRP		15.40			2.08/2.10	3.33/3.93	-0.83/-1.42
13	45340C	BIS085	DRP	DRP	31.38	21.80	-9.58	4.20/4.11	5.48/5.54	0.15/0.13
14	35400B	BLK002	DRP		16.00					
15	36120A	BLK006	wDRPfree		16.50			1.76/nd	3.06/nd	-0.31/nd
16	45310C	BLK009	DRP	DRP	28.83	20.82	-8.01	3.02/2.95	4.74/4.33	-1.46/-1.35
17	45310C	BLK011	wDRP		9.25			3.45/3.83	6.31/5.90	-2.22/-1.89
18	45310C	BLK016	DRPfree	DRPfree	22.20	28.46	6.26	2.08/1.79	3.81/3.23	-1.40/-1.28
19	36150B	BLK021	DRP	DRP	30.67	24.64	-6.03		4.17/4.12	-1.22/-1.17
20	45350C	BLK024	DRP	DRP	25.00	26.86	1.86	3.64/3.84	5.77/6.00	-1.49/-1.30
21	45310C	BLK033	DRP	DRP	13.67	10.13	-3.54			
22	45310C	BLK039	DRPfree	DRPfree	21.67	27.80	6.13			
23	36120A	BLK040	wDRP		9.00					
24	45340C	BLK044	DRPfree	DRPfree	23.00?	36.29	13.29			
25	36120A	BLK069	DRPfree	DRPfree	19.00?	16.94	-2.06	1.65/1.57	1.90/1.75	0.04/0.25
26	36150B	BLK074	DRPfree	DRPfree	30.67	47.05	16.38	1.48/1.46	2.05/1.86	-0.47/-0.25
27	45310C	BLK075	DRP	DRP	38.83	24.80	-14.03			
28	36120A	BLK077	DRP	DRP	16.33	16.75	0.42	2.79/2.70		
29	45310C	BLK094	DRP	DRP	40.56	26.63	-13.93	1.64/2.08	4.88/5.10	-0.83/-0.73
30	45310A	BLK095	wDRP		16.43			1.74/2.16	4.58/4.77	-0.47/-0.38
31	45310C	BLK099	DRPfree	DRPfree	48.00	54.00	6.00	0.79/0.78	2.11/1.70	-0.06/0.15
32	45310A	BLK115	C	C	9.58	20.75	11.17		2.00/1.70	-0.19/-0.21
33	45310C	BLK142	DRPfree		26.00					
34	45310C	BLK143	wDRPfree		39.83					
35	45310C	FSL051	DRPfree		58.17					
36	45310A	FSL065	DRPfree		21.33			1.01/1.02	1.71/1.71	0.12/0.26
37	45310C	FSL116	DRPfree		52.88					
38	35400A	FSL118	wDRP		9.58					
39	35400A	FSL122	wDRPfree		11.00				1.56/1.59	
40	45310C	FSL123	DRPfree	DRPfree	57.67	65.57	7.90		1.42/1.41	
41	45340C	FSL179	wC		52.17					
42	45310A	FSL187	C	C	14.33	27.36	13.03			
43	45340C	FSP004	DRP	DRP	16.00	13.40	-2.60			
44	45310AC	FSP006	DRP	DRP	25.00?	14.29	-10.71	3.65/3.47	5.11/4.77	-0.65/-0.70
45	45310C	IND011	DRPfree	DRPfree	30.33	47.93	17.60	0.88/0.96	1.82/1.87	-0.11/-0.10

	COM- MUNITY and TYPE	PARCEL	ICWD DRP status 2001	ICWD DRP status2005	PERENNIAL % cover			DTW OK/KED in m		
					DWP BASE	INYO 2005	ABS DIFF 05-BASE	baseline Apr 85-87	2005	Change in DTW from 2001
46	45310C	IND019	DRPfree		75.00			1.41/1.42	1.94/1.71	0.42/0.46
47	45340C	IND021	wDRPfree		68.00			0.99/0.98	1.54/1.64	0.12/-0.06
48	45310C	IND026	-	-	49.00	33.20	-15.80	1.62/1.77	4.80/5.45	-0.63/-0.80
49	45310C	IND029	DRP	DRP	22.00	26.50	4.50		4.26/5.37	-0.64/-1.07
50	45310C	IND035	DRPfree	DRPfree	49.50	57.00	7.50			
51	45310C	IND064	more study		38.50			1.22/1.12	2.64/2.50	-0.37/-0.37
52	36120A	IND066	wmore study		12.25			1.09/0.96	2.36/2.17	-0.39/-0.40
53	45350C	IND067	more study		34.75			1.11/1.34	1.96/2.19	-0.05/-0.06
54	45310C	IND087	wC		38.00					
55	36150B	IND096	C	C	29.33	33.33	4.00		0.73/nd	
56	36150B	IND099	wC		20.00?					
57	36150A	IND106	DRP	DRP	8.00?	17.00	9.00	2.92/3.22	7.83/7.39	-3.11/-2.81
58	45350C	IND111	DRP	DRP	40.60	42.45	1.85	2.75/2.90	4.22/4.05	-0.91/-0.70
59	45310C	IND119	more study		33.67			1.19/1.33	2.23/2.45	-0.17/-0.24
60	36150B	IND122	C		29.33					
61	36150B	IND132	DRP	DRP	32.90?	28.55	-4.35	2.53/2.36	5.57/5.37	-1.78/-1.71
62	36150A	IND133	DRP	DRP	13.50?	19.50	6.00	4.30/4.12	8.62/8.65	-2.24/-2.52
63	45350C	IND139	DRP	DRP	48.50	40.86	-7.64	nd/2.22	nd/3.70	nd/-1.35
64	45310C	IND151	wC		45.50				2.49/2.34	
65	45310C	IND156	wC		31.00					
66	45310C	IND163	C	C	12.75	13.29	0.54			
67	45310C	IND205	wDRPfree		26.25			2.30/2.71	2.75/3.19	-0.10/-0.16
68	36150A	IND231	DRP	DRP	7.60?	15.27	7.67		8.27/7.89	-1.75/-1.40
69	45310C	LAW030	DRP	DRP	23.08	24.19	1.11			
70	45310C	LAW035	-	-	35.50	4.69	-30.81	6.18/6.09	8.25/7.90	-0.57/-0.45
71	36150B	LAW040	wDRP		14.67					
72	45330E	LAW043	-	-	61.13			2.41/2.45	6.44/6.40	-1.16/-1.01
73	45310C	LAW052	DRP	DRP	27.83	5.36	-22.47	2.40/2.27	6.61/6.48	-1.71/-1.51
74	45340C	LAW062	DRP	DRP	21.44	7.19	-14.25	3.90/3.98	6.87/6.65	-0.93/-0.71
75	36130A	LAW063	DRPfree	DRPfree	11.50	9.63	-1.87	4.87/5.15	7.28/7.05	-1.19/-0.98
76	45310A	LAW065	DRP	DRP	9.67	5.07	-4.60	4.31/4.81	6.32/6.61	-0.81/-0.99
77	45330E	LAW070	-	-	59.33			2.51/2.00	6.09/5.33	-0.81/-0.60
78	36130A	LAW076	wDRPfree		6.50					
79	45310C	LAW078	DRPfree	DRPfree	51.71	38.95	-12.76	2.12/1.92	4.67/4.32	-0.94/-0.76
80	45340C	LAW082	DRP	DRP	16.50	4.20	-12.30	3.65/3.27	6.83/6.53	-1.71/-1.46
81	45310C	LAW085	DRP	DRP	30.10?	14.81	-15.29		5.86/5.91	
82	36130A	LAW104	wDRP		8.80			4.99/5.15	6.35/5.88	-0.85/-0.31
83	45310C	LAW107	DRPfree	DRPfree	46.86	65.07	18.21	1.94/1.97	3.22/3.21	-0.55/-0.51
84	45310C	LAW109	wDRPfree		17.88					
85	45310C	LAW110	DRPfree		35.17					
86	45350C	LAW112	DRP	DRP	20.33	32.93	12.60	3.87/3.88	4.50/4.03	-0.47/-0.09
87	45310C	LAW120	DRPfree	DRPfree	25.92	27.61	1.69	4.47/nd	5.45/nd	-0.19/nd
88	45310C	LAW122	DRPfree	DRPfree	59.56	56.56	-3.00			
89	45340C	LAW137	DRP	DRP	20.42	19.05	-1.37			
90	36150A	LAW154	wDRPfree		12.17					
91	35400A	LAW167	wDRPfree		4.70					
92	45310C	LNP018	C	C	18.33	32.89	14.56			
93	36150B	LNP019	C		16.17					
94	45350C	LNP045	DRPfree	DRPfree	48.00	45.00	-3.00			
95	45310C	LNP050	C		48.00					
96	45310C	LNP095	-		27.58					
97	45310C	MAN006	DRPfree	DRPfree	22.75	29.44	6.69	1.61/1.56	2.66/2.49	-0.87/-0.80
98	36150B	MAN007	DRP	DRP	28.00	22.03	-5.97	3.01/3.03	5.11/5.05	-1.70/-1.67
99	45350C	MAN014	C		22.00					
100	35400B	MAN017	wDRPfree		6.50					
101	36120A	MAN034	wDRPfree		15.33					
102	36150B	MAN037	DRP	DRP	42.00	21.16	-20.84		3.48/3.47	
103	35400B	MAN042	wDRPfree		18.00					

	COM-MUNITY and TYPE	PARCEL	ICWD DRP status 2001	ICWD DRP status2005	PERENNIAL % cover			DTW OK/KED in m		
					DWP BASE	INYO 2005	ABS DIFF 05-BASE	baseline Apr 85-87	2005	Change in DTW from 2001
104	45310C	MAN060	C	C	59.33	81.50	22.17			
105	36150B	PLC007	DRPfree		26.70			3.75/3.72	5.08/5.01	-0.75/-0.70
106	45310C	PLC024	C	C	35.42	44.79	9.37	2.44/2.28		
107	45310C	PLC028	wC		38.50			2.62/2.63	4.51/4.61	-1.33/-1.42
108	36150A	PLC055	wC		7.33					
109	45340C	PLC056	wC	C	16.83	25.13	8.30			
110	36150B	PLC059	wC		17.00			3.20/3.12	3.64/3.78	0.12/0.04
111	35400A	PLC064	wC		9.67			4.04/3.80	4.43/4.07	-0.05/0.03
112	35400A	PLC065	wC		10.67			3.70/nd	3.96/nd	0.10/nd
113	36130A	PLC069	wC		12.00			3.99/3.97	3.93/3.73	0.41/0.59
114	35400B	PLC072	C	C	15.33	21.43	6.10			
115	35400B	PLC092	C		10.50					
116	45310C	PLC097	C	C	35.17	42.00	6.83			
117	45340C	PLC106	C	C	30.00?	19.36	-10.64	3.35/3.37	2.78/2.82	0.23/0.21
118	35400B	PLC110	wC		13.17			3.10/3.10	2.58/2.60	0.21/0.19
119	35400A	PLC111	wC		8.83			3.25/3.12	3.13/3.13	0.10/0.00
120	35400B	PLC113	C		13.00			3.92/3.88	3.78/3.77	0.15/0.16
121	45310C	PLC121	C	C	41.33	50.67	9.34			
122	45340A	PLC125	wC		10.89					
123	45310A	PLC136	C		12.40					
124	45340C	PLC137	C	C	27.20	37.06	9.86			
125	45310C	PLC144	-	C	32.17	38.00	5.83	4.27/3.16	3.27/2.40	0.31/-0.05
126	35400B	PLC187	wC		12.83					
127	35400B	PLC193	wC		16.00				3.58/3.61	0.00/-0.02
128	45310C	PLC220	wC		35.90			2.49/2.74	2.80/2.88	-0.05/0.11
129	45310C	PLC223	C	C	15.00	26.38	11.38		4.52/4.34	
130	35400A	PLC239	wC		13.17			nd/2.78	nd/2.90	nd/0.24
131	36150A	PLC240	wC		11.17			nd/3.29	nd/3.37	nd/0.10
132	36150A	PLC241	wC		11.33			nd/4.30	nd/4.27	nd/0.14
133	36130A	PLC246	wC		7.50			nd/2.80	nd/2.79	nd/0.23
134	36150A	PLC251	wC		8.67			2.35/2.41	2.96/2.88	-0.13/-0.10
135	45340A	PLC263	wC		10.25					
136	36120A	TIN006	wDRP		24.00			2.82/2.82	4.33/4.46	-0.68/-0.81
137	36130A	TIN028	DRPfree	DRPfree	17.50	15.68	-1.82		5.03/5.17	
138	45310C	TIN030	DRPfree	DRPfree	31.42	28.32	-3.10		4.72/4.80	
139	45310C	TIN050	DRPfree	DRPfree	36.33	34.75	-1.58	nd/2.12	nd/2.86	nd/-1.39
140	45310C	TIN053	DRPfree		35.00				3.62/3.87	-1.91/-2.16
141	45310C	TIN064	DRPfree	DRPfree	32.50	25.33	-7.17		nd/4.52	
142	45310A	TIN068	DRP	DRP	13.50	11.33	-2.17		3.80/3.97	
143	36130A	UHL052	wDRP		16.00					
144	45310C	UNW029	C	C	16.75	17.07	0.32			
145	36150B	UNW039	C	C	27.17	33.25	6.08			
146	36150B	UNW072	wC		18.50					
147	36150B	UNW073	wC		15.50					
148	45350C	UNW079	C	C	40.25	64.50	24.25			

- Communities are: 35400 = Rabbitbrush Scrub; 36120 = Desert Sink; 36130 = Greasewood Scrub; 36150 = Nevada Saltbush Scrub; 45310 = Alkali Meadow; 45330 = Rush/Sedge Meadow; 45340 = Rabbitbrush Meadow; 45350 = Nevada Saltbush Meadow.
- Parcels are located in the following USGS quad areas: BGP = Big Pine; BIS = Bishop; BLK = Blackrock; FSL = Fish Slough; FSP = Fish Springs; IND = Independence; LAW = Laws; LNP = Lone Pine; MAN = Manzanar; PLC = Poleta Canyon; TIN = Tinemaha Reservoir; UHL = Uhlmeier; and UNW = Union Wash
- DRP Categories are: C = Control; DRPfree = free of DRP management constraints; DRP = subject to DRP management constraints; more study = more information needed for adequate classification; "w" preceding a code indicates that perennial cover data were not available in 2001 and the classification is based on DTW and previous parcel condition.
- DTW estimates were not evaluated by Harrington (2003) for the three new Laws parcels, LAW035, LAW043, and LAW070, or for PLC144 or IND026; therefore, their DTW estimates are shown in italics. For BLK115 and IND029, actual DTW estimates may not be accurate, but trend is internally consistent (so change from 2001-2005 is judged to be reliable).

Table 8. Some data for parcels classified as DRP in 2001 in which vegetation was re-inventoried in 2005. All 29 parcels continue to be classified as DRP based on 2005 data and reasons presented in this report. The 9 DRP parcels with perennial cover in 2005 averaging higher than baseline are shown with shading. Asterisks for 2005 perennial cover data denote statistically significant change from baseline (see Table 2 and Manning 2002 for discussion of validity of this t-test). Cross symbol, †, denotes statistics not performed for parcel due to lack of LADWP baseline transect data. These parcels also show a question mark following the baseline transect cover value. For all parcels, the proportional difference in cover, relative (rel.) to baseline, is shown in addition to the absolute (abs.) subtracted difference.

	COMM and TYPE	PARCEL	WELL-FIELD	ICWD DRP status2005	PERENNIAL % cover				DTW2005 m OK/KED	change in DTW, 2001-2005
					DWP BASE	INY2005	DIFFERENCE05-BASE			
							abs.	rel.		
1	36150B	BGP162	BP	DRP	30.33	12.81*	-17.52	-57.76	nd/6.31	nd/-0.40
2	45340C	BIS085	B	DRP	31.38	21.80	-9.58	-30.53	5.48/5.54	0.15/0.13
3	45310C	BLK009	TA	DRP	28.83	20.82*	-8.01	-27.78	4.74/4.33	-1.46/-1.35
4	36150B	BLK021	TA	DRP	30.67	24.64	-6.03	-19.66	4.17/4.12	-1.22/-1.17
5	45350C	BLK024	TA	DRP	25.00	26.86	1.86	7.44	5.77/6.00	-1.49/-1.30
6	45310C	BLK033	TA	DRP	13.67	10.13	-3.54	-25.90		
7	45310C	BLK075	TS	DRP	38.83	24.80*	-14.03	-36.13		
8	36120A	BLK077	TS	DRP	16.33	16.75	0.42	2.57		
9	45310C	BLK094	TS	DRP	40.56	26.63*	-13.93	-34.34	4.88/5.10	-0.83/-0.73
10	45340C	FSP004	BP	DRP	16.00	13.40	-2.60	-16.25		
11	45310AC	FSP006	BP	DRP	25.00?	14.29†	-10.71	-42.84	5.11/4.77	-0.65/-0.70
12	45310C	IND029	TS	DRP	22.00	26.50	4.50	20.45	4.26/5.37	-0.64/-1.07
13	36150A	IND106	IO	DRP	8.00?	17.00†	9.00	112.50	7.83/7.39	-3.11/-2.81
14	45350C	IND111	IO	DRP	40.60	42.45	1.85	4.56	4.22/4.05	-0.91/-0.70
15	36150B	IND132	SS	DRP	32.90?	28.55†	-4.35	-13.22	5.57/5.37	-1.78/-1.71
16	36150A	IND133	SS	DRP	13.50?	19.50†	6.00	44.44	8.62/8.65	-2.24/-2.52
17	45350C	IND139	SS	DRP	48.50	40.86	-7.64	-15.75	nd/3.70	nd/-1.35
18	36150A	IND231	SS	DRP	7.60?	15.27†	7.67	100.90	8.27/7.89	-1.75/-1.40
19	45310C	LAW030	L	DRP	23.08	24.19	1.11	4.81		
20	45310C	LAW052	L	DRP	27.83	5.36*	-22.47	-80.74	6.61/6.48	-1.71/-1.51
21	45340C	LAW062	L	DRP	21.44	7.19*	-14.25	-66.46	6.87/6.65	-0.93/-0.71
22	45310A	LAW065	L	DRP	9.67	5.07*	-4.60	-47.57	6.32/6.61	-0.81/-0.99
23	45340C	LAW082	L	DRP	16.50	4.20*	-12.30	-74.55	6.83/6.53	-1.71/-1.46
24	45310C	LAW085	L	DRP	30.10?	14.81†	-15.29	-50.80	5.86/5.91	
25	45350C	LAW112	L	DRP	20.33	32.93*	12.60	61.98	4.50/4.03	-0.47/-0.09
26	45340C	LAW137	L	DRP	20.42	19.05	-1.37	-6.71		
27	36150B	MAN007	SS	DRP	28.00	22.03	-5.97	-21.32	5.11/5.05	-1.70/-1.67
28	36150B	MAN037	BG	DRP	42.00	21.16*	-20.84	-49.62	3.48/3.47	
29	45310A	TIN068	TA	DRP	13.50	11.33	-2.17	-16.07	3.80/3.97	

Wellfields are: B = Bishop Cone; BG = Bairs Georges; BP = Big Pine; IO = Independence Oak; L = Laws; TA = Taboose Aberdeen; TS = Thibaut Sawmill; SS = Symmes Shepherd.

For the 29 DRP parcels shown in Table 8, 9 showed average cover statistically significantly below baseline, and one, LAW112, showed 2005 cover significantly higher than baseline. Average cover in the other 19 parcels was not statistically significantly different from baseline. This result is due in part to the fact that, for some of the parcels, insufficient baseline data rendered application of the statistical test inappropriate. For parcels in which statistics were

used, the likelihood of a Type II error in results of the t-tests is high, as discussed by Manning (2002). This means that a difference shown to be significant at $p \leq 0.05$ is very likely to be real. However, if the test does not detect a significant difference, a real difference cannot be ruled out; the change may have occurred, but due to limitations in applying this particular test to these data, the test is incapable of detecting all significant differences.

Table 8 contains the same 29 parcels classified as DRP based on 2004 data (Manning 2005), and these parcels continue to be classified as DRP because water tables never fully recovered to baseline or root zone levels since 1992. In general, perennial cover increased from 2004-2005 for the DRP group (Table 4), but higher levels of precipitation probably accounted for the overall increase. Also in general, however, average perennial cover in this group was still significantly below baseline (Table 4), and water levels were still depressed relative to 2001 (Tables 5 and 8) and to the baseline period (Table 7). Analyses from previous years have shown that the vegetation may respond to precipitation by increasing to or above baseline levels, but in the absence of water table recovery, perennial cover cannot be maintained at baseline levels or above in subsequent dry years. In contrast, the general response of Control and DRPfree parcels that maintain water levels at or near baseline (or in the root zone) has been to maintain cover at or above baseline perennial cover levels. It is likely that parcels in the DRP group are either disconnected from the water table, such that changes in DTW do not affect vegetation cover, or barely influenced by the water table, such that baseline cover levels cannot be achieved or maintained in dry years.

Besides increases in perennial cover that may have occurred due to increased precipitation, total perennial cover in parcels with a low water table may show an increase to or above baseline due to other factors. One is inadequate baseline data for a few parcels. Missing or inadequate data has been suspected of mis-representing cover levels during the 1984-87 baseline period. For example, IND106 and IND231 show extremely low baseline cover values (Table 8, Figures 46 and 54), and baseline transect data for these parcels have never been found. Another reason higher than baseline cover may be measured in a parcel without full water table recovery is the possibility that the unbiased technique for locating ICWD sampling points (transects) may result in oversampling of high cover areas within the non-homogeneous parcels delineated by LADWP during the baseline period (for example, see Manning 2001b).

Two parcels re-inventoried in 2005, LAW035 and IND026, have not been classified with regard to the DRP, but both might qualify for the DRP category. IND026 is located north of IND029. The water table trends for both parcels (Figures 40 and 41 and Appendix C) show failure of recovery to baseline levels since 1992. The actual DTW values estimated for the parcels may be inaccurate, but the relative changes for IND029 were judged adequate by Harrington (2003). Baseline perennial cover in IND026 was measured as 49%, and the dominant species was alkali sacaton (*Sporobolus airoides*). In 2005, the measured perennial cover was 33%, and the dominant species was Nevada saltbush (*Atriplex lentiformis* ssp. *torreyi*). In 2005, alkali sacaton accounted for <2% cover in this parcel. Based on this information, a conversion from meadow to scrub has occurred in this parcel. The water table information for LAW035, if

accurate, showed a spike to “baseline” levels in 1999 (Figure 56 and Appendix C). Since 1999, the water table has declined, and, if accurate, persists below baseline and the root zone. LAW035 has been re-inventoried since 2003. In all three years, perennial cover has been significantly below baseline. Baseline perennial cover was measured at 32.5%, and the dominant species was saltgrass (*Distichlis spicata*). Since 2003, perennial cover measurements have ranged from 2 - 7%, and in each year, the non-native tumbleweed species, *Salsola tragus*, has dominated.

In 2005, at least one re-inventoried parcel in eight of the nine wellfields remained in the DRP category, and some wellfields contain several parcels which are DRP (Table 8). No Lone Pine wellfield parcels have been classified as DRP. From 2003 through 2005, budget cuts precluded hiring seasonal staff, so the number of parcels re-inventoried was reduced during recent years. However, ICWD succeeded in re-inventoried key parcels in each wellfield and in control areas throughout the valley. ICWD intends to continue re-inventoried this group of parcels to continue to monitor trends and changes. In 2005, no changes were made to Green Book On/Off or other monitoring and management procedures. If some changes were made in wellfield management, it should be possible to facilitate water table recovery under the DRP parcels and perhaps subsequently recover perennial vegetation cover in these parcels to levels commensurate with baseline. Unfortunately, it is also possible that two decades of below-normal water availability will have compromised site productivity and the ability of species present during baseline to recover.

SUMMARY

- A total of 72 parcels were re-inventoried in 2005. All but one had been re-inventoried in 2004.
- The 2004 runoff year, which ended just prior the 2005 growing season, was above average, and thus ended five consecutive years of below-average Owens Valley runoff. Valley precipitation was also abundant during the 2005 water year. LADWP pumping during the 2004 runoff year was slightly less than it had been during the 2003 runoff year. Regardless, DTW changed very little from April 2004 to 2005, and in the wellfield areas, it tended to decline.
- Of the 72 re-inventoried parcels, 29 had previously been classified as still subject to the management constraints of the DRP. Data for 2005 did not clearly show recovery to baseline perennial cover and water table conditions. Therefore, the 29 parcels remain in the DRP category.
- Twenty of the 72 parcels re-inventoried in 2005 were classified as Controls, and 21 remained in the DRPfree category.
- When parcels were grouped by management (DRP) category, vegetation response in 2005

with regard to baseline was as follows: (1) in Control parcels, perennial cover was significantly higher; (2) in DRPfree parcels, perennial cover was about the same as baseline; and (3) in DRP parcels, perennial cover was significantly less than baseline.

- Two parcels re-inventoried in 2005 have not been assigned DRP status. Water levels and cover in 2005 in both parcels were below the mid 1980s baseline levels.
- The Technical Group has not implemented new management techniques, and because of this, all wellfield parcels -- including those classified as DRPfree -- entered another cycle of pumping-induced water table declines accompanied by declines and changes in groundwater dependent vegetation from 1999-2004. As of the 2005 growing season, recovery remained incomplete in DRP areas, and declines persisted in many DRPfree parcels.

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Appendix A. Total percent plant cover measured in each parcel in late summer each year using the Spectral Mixture Analysis (SMA) technique applied to Landsat Thematic Mapper data. Blanks below indicate missing Landsat data or visible georeferencing errors. A more thorough analysis of these data is needed, but is beyond the scope of this report. SMA cover is shown in the figures in Appendix B.

PARCEL	08/23/ 1986	09/29/ 1987	09/13/ 1988	08/31/ 1989	09/03/ 1990	09/22/ 1991	09/08/ 1992	08/26/ 1993	09/14/ 1994	09/17/ 1995	09/03/ 1996	09/06/ 1997	08/08/ 1998	09/04/ 1999	09/06/ 2000	late 8/ 2001	09/12/ 2002	09/23/ 2003	09/25/ 2004	09/12/ 2005
1 BGP013	26.7	26.2	23.9	15.5	18.2	22.8	19.3	19.4	20.9	26.9	28.0	19.7	27.6	38.7	25.9	16.6	22.1	28.4	17.1	19.5
2 BGP031	18.2	18.2	18.0	12.8	14.2	16.6	15.1	13.8	16.9	17.2	17.8	16.8	15.2	25.1	17.6	12.0	18.2	18.2	13.7	9.1
3 BGP047	30.8	35.0	35.1	26.0	31.3	29.9	28.3	30.6	33.7	34.2	31.3	26.1	25.2	30.1	38.2	26.1	28.1	28.3	24.6	22.7
4 BGP086	24.6	17.3	14.3	10.5	12.2	18.9	14.9	20.4	23.5	23.2	23.7	22.0	21.1	25.3	20.9	17.4	21.8	25.4	15.2	18.1
5 BGP088	17.6	11.7	10.0	6.4	10.2	12.2	11.4	11.6	15.8	18.6	14.8	14.4	8.5	8.5	10.1	6.1	7.0	12.6	4.9	6.1
6 BGP154	31.9	20.1	14.3	11.4	10.9	19.1	10.0	17.2	18.1	30.9	25.6	33.3	27.9	30.1	32.3	23.9	18.5	23.7	10.0	15.8
7 BGP157	32.2	23.1	18.6	14.0	14.4	23.7	17.8	24.4	28.1	34.5	25.4	30.1	31.4	43.9	29.9	23.6	28.9	31.2	18.6	29.2
8 BGP162	26.4	12.8	1.0	1.1	4.5	16.1	7.9	14.6	14.5	22.9	18.0	14.9	19.3	8.8	10.2	7.5	7.0	18.2	7.9	14.2
9 BGP204	28.7	20.8	18.2	13.5	11.5	17.9	13.0	14.5	17.2	24.3	25.1	21.7	19.5		15.9	11.9	15.5	22.6	12.6	10.5
10 BGP205	12.1	8.1	6.7	2.5	4.1	8.9	7.3	6.8	7.9	9.1	8.5	6.4	7.2	7.1	4.1	1.0	5.1	7.9	3.6	1.5
11 BIS055	47.1	37.4	34.7	29.0	28.9	35.7	32.2	46.2	49.6	57.7	48.9	33.3	54.0	53.8	39.6	33.6	37.9	16.9	25.5	36.2
12 BIS068	34.7	25.5	25.7	12.8	14.0	24.3	20.1	31.6	28.3	36.1	28.1	30.7	36.1	46.9	15.1	25.6	15.2	24.9	14.4	23.4
13 BIS085	36.6	34.7	32.5	24.8	25.8	29.8	26.5	35.5	33.6	57.5	39.2	28.8	36.2	50.4	26.3	27.3	26.3	32.1	20.5	29.7
14 BLK002	20.5	15.1	10.2	7.7	6.7	17.4	6.0	15.4	9.5	15.0	9.3	7.6	7.8	5.6	9.0	9.1	8.2	13.7	8.8	10.9
15 BLK006	37.6	33.8	30.2	24.7	23.6	34.5	30.2	35.1	30.3	40.0	32.1	31.1	30.8	31.9	30.3	25.1	28.0	32.7	30.7	33.1
16 BLK009	15.2	11.2	6.4	3.3	3.0	8.7	3.5	9.4	6.3	11.2	8.9	9.6	9.8	12.5	13.2	10.6	11.2	14.1	8.9	7.2
17 BLK011	38.9	12.1	1.9	-2.3	-4.8	22.4	2.3	7.0	-2.1	26.2	11.0	10.7	16.7	8.2	13.9	24.4	11.6	41.9	15.8	19.7
18 BLK016	33.8	19.7	12.2	5.3	3.5	19.5	2.9	10.3	3.6	18.8	10.2	13.0	18.7	20.4	23.7	25.5	22.3	29.3	14.3	10.7
19 BLK021	11.4	6.5	5.1	4.1	2.0	12.8	2.9	7.6	2.4	8.0	3.4	2.3	3.3	1.5	1.4	5.4	4.6	12.0	6.0	4.6
20 BLK024	19.7	11.0	7.6	4.9	2.2	13.2	4.0	11.1	5.7	14.6	10.2	10.0	11.5	6.2	6.0	7.2	8.5	18.4	9.3	9.6
21 BLK033	20.3	8.3	1.6	-2.9	-4.4	6.6	-2.1	4.4	-1.8	8.4	2.9	0.2	6.2	-2.7	-2.9	-2.5	-3.5	8.8	2.4	4.3
22 BLK039	23.9	16.2	13.0	6.4	5.0	12.4	3.2	7.8	4.5	11.6	7.1	6.4	11.0	9.7	11.2	9.9	13.4	17.8	10.3	9.9
23 BLK040	9.4	7.1	5.7	3.6	3.3	8.7	3.9	5.5	4.0	7.1	4.8	4.8	5.9	3.4	5.7	2.4	5.9	9.7	5.6	4.3
24 BLK044	44.9	24.1	11.6	4.5	0.8	18.0	1.6	14.6	4.4	22.5	14.3	15.9	23.7	11.4	13.9	17.6	17.3	39.2	19.8	24.8
25 BLK069	7.9	8.2	6.3	3.9	4.6	7.6	4.3	5.4	5.4	5.2	4.0	3.0	4.0	2.9	4.4	1.9	5.4	8.0	4.2	2.2
26 BLK074	32.3	25.3	16.7	16.2	14.1	23.9	13.7	20.3	19.0	26.9	24.8	24.2	26.1	24.6	22.1	20.0	22.1	30.2	17.4	19.9
27 BLK075	42.6	29.6	20.8	18.7	19.6	27.2	14.4	21.7	13.6	32.0	22.2	22.9	33.0	34.7	27.2	24.9	23.3	35.0	19.8	23.1
28 BLK077	10.7	11.0	8.6	3.0	4.7	7.6	5.4	6.7	4.9	9.9	6.8	6.5	6.0	2.8	6.3	2.8	5.4	7.7	5.0	3.9
29 BLK094	46.8	37.0	23.9	17.8	11.7	19.2	10.5	17.5	9.7	24.7	21.5	19.2	26.2	20.9	16.9	16.3	15.8	25.9	12.6	17.4
30 BLK095	17.9	15.6	12.4	8.1	6.6	7.3	6.8	8.5	7.5	11.7	8.9	10.5	14.6	11.7	12.2	8.3	9.1	12.7	7.1	14.5
31 BLK099	57.8	50.0	43.9	33.3	31.9	37.0	29.7	29.4	29.3	38.4	34.9	40.3	53.1	47.6	38.9	30.8	32.9	38.7	27.4	50.4
32 BLK115	23.6	23.4	21.9	19.4	19.1	21.6	16.0	16.4	16.4	16.4	14.7	15.2	14.3	16.2	21.4	13.7	17.8	25.0	16.5	14.6

Appendix A, continued.

	PARCEI	08/23/ 1986	09/29/ 1987	09/13/ 1988	08/31/ 1989	09/03/ 1990	09/22/ 1991	09/08/ 1992	08/26/ 1993	09/14/ 1994	09/17/ 1995	09/03/ 1996	09/06/ 1997	08/08/ 1998	09/04/ 1999	09/06/ 2000	late 8/ 2001	09/12/ 2002	09/23/ 2003	09/25/ 2004	09/12/ 2005
33	BLK142	16.0	15.7	14.9	6.5	8.1	14.7	14.0	16.5	18.5	22.0	20.0	17.6	15.9	14.9	12.5	13.3	19.0	12.6	13.7	9.8
34	BLK143	50.4	53.0	50.0	28.2	29.1	38.9	36.5	40.9	43.3	62.4	59.8	67.2	72.6	71.2	66.0	68.8	73.3	53.8	48.1	42.5
35	FSL051	74.2	71.5	56.4	51.9	32.9	23.3	21.6	43.0	40.6	66.5	79.6	57.3	62.1	65.3	60.5	46.5	52.1	49.1	37.6	58.4
36	FSL065	28.2	20.6	20.6	13.6	14.3	14.8	16.3	25.9	22.1	39.8	29.0	22.1	23.4	29.2	22.0	15.8	17.3	18.4	11.5	17.1
37	FSL116	63.0	46.8	35.7	31.5	34.0	33.2	32.9	58.2	44.9	63.0	59.5	50.6	62.4	54.1	51.0	36.7	38.5	34.0	22.3	34.1
38	FSL118	24.7	14.4	13.0	9.8	11.9	11.1	13.0	19.7	15.7	28.0	20.1	17.3	21.3	18.4	17.6	14.3	13.3	17.7	9.3	13.0
39	FSL122	20.2	13.5	11.6	5.6	8.6	13.0	9.9	16.1	10.8	31.9	20.5	13.1	17.6	18.0	10.9	9.3	9.2	16.8	9.2	13.4
40	FSL123	72.5	51.5	34.6	27.4	38.5	36.2	29.1	47.1	26.6	84.1	66.0	39.6	63.7	45.3	49.9	33.8	42.1	46.8	29.9	48.2
41	FSL179	42.2	45.2	51.6	56.0	50.1	49.0	51.8	55.4	63.8	68.7		63.3	60.8	67.6	64.1	51.9	64.7	67.5	55.4	60.6
42	FSL187	34.8	33.5	34.9	33.6	31.7	38.1	35.0	32.1	35.9	38.5		37.7	36.9	47.8	39.6	31.1	39.7	45.3	32.9	29.6
43	FSP004	37.3	16.2	12.1	8.8	9.1	12.7	4.9	14.4	6.0	22.8	16.5	8.6	16.7	13.0	10.5	5.2	6.9	9.3	7.2	8.4
44	FSP006	20.1	11.3	5.4	0.5	0.3	6.5	1.5	5.2	1.1	7.7	4.6	2.0	2.2	4.3	0.4	-2.8	-0.8	4.4	-1.8	2.2
45	IND011	67.2	43.5	36.2	25.3	11.6	23.4	18.6	24.2	25.2	34.3	45.9	46.5	67.5	68.8	45.1	32.3	36.2	39.6	22.3	29.7
46	IND019	62.8	51.7	32.8	26.8	24.1	38.4	26.9	34.9	27.9	42.6	52.9	58.0	65.6	69.0	47.8	40.6	40.2	43.4	25.7	49.9
47	IND021	70.0	42.8	37.1	30.1	27.3	39.6	28.2	35.8	31.2	38.3	47.1	46.4	77.0	76.6	54.1	39.3	44.8	51.1	31.9	46.7
48	IND026	59.2	48.7	33.0	23.1	19.7	31.7	11.8	18.5	13.3	26.2	19.4	19.0	24.8	17.7	17.8	18.6	14.5	30.7	16.6	24.2
49	IND029	32.0	23.9	7.7	15.9	8.6	22.8	10.7	14.5	10.8	31.7	19.1	20.4	28.3	20.9	19.0	16.0	17.8	23.5	13.1	20.5
50	IND035	74.7	70.3	54.6	37.1	28.3	38.6	24.2	24.5	19.7	36.4	29.2	38.3	42.8	39.5	39.8	35.1	34.9	41.4	24.6	31.1
51	IND064	32.6	26.8	21.4	13.4	14.3	24.3	13.1	16.2	16.3	24.7	19.1	15.8	15.7	13.9	14.4	11.8	14.6	27.8	15.2	15.0
52	IND066	20.7	17.2	15.0	8.8	8.8	11.8	4.8	9.1	6.7	12.2	10.8	10.0	9.4	8.2	13.5	8.4	4.7	20.7	11.5	15.6
53	IND067	47.0	33.9	24.1	10.9	9.6	12.1	4.3	8.7	6.3	17.8	23.8	18.5	14.7	-2.6	0.5	-0.3	1.2	12.8	4.5	11.9
54	IND087	32.0	23.9	18.8	10.7	10.0	17.7	11.5	13.0	10.9	19.1	16.4	15.7	20.6	21.2	32.1	27.9	18.5	31.2	16.8	18.9
55	IND096	15.0	13.3	13.3	8.5	8.6	13.2	10.0	11.1	9.7	15.6	11.0	10.0	14.1	13.7	13.5	14.5	15.9	28.8	14.5	18.6
56	IND099	31.5	31.0	21.2	11.5	11.5	12.0	6.1	5.0	5.7	5.8	4.0	3.6	6.4	6.0	6.0	3.1	5.5	11.5	4.7	4.4
57	IND106	21.9	8.2	6.0	1.0	-0.5	9.9	0.1	3.3	-0.6	9.5	2.5	0.5	4.6	1.8	1.6	1.3	-0.9	15.4	3.6	7.6
58	IND111	48.7	35.5	29.1	21.5	13.4	21.1	15.1	19.2	16.7	38.1	31.4	33.4	40.6	35.5	28.6	22.0	27.0	38.9	22.5	30.5
59	IND119	18.3	17.4	14.8	9.0	9.2	12.3	7.5	8.0	6.8	10.8	8.0	8.3	8.1	6.4	6.6	2.9	6.5	13.5	6.6	7.4
60	IND122	27.0	19.5	8.2	7.2	8.8	15.3	12.8	17.0	15.1	27.7	19.3	21.2	24.5	24.4	21.3	18.3	19.5	33.2	17.4	22.4
61	IND132	39.6	28.2	18.9	10.2	9.3	14.6	4.6	10.7		19.5	9.5	9.3	14.8	11.2	13.7	14.4	10.1	28.5	15.6	19.4
62	IND133	38.5	20.7	13.0	4.5	2.8	10.4	-0.6	2.0		7.8	0.6	-2.2	1.9	-0.7	0.4	0.6	-2.5	15.7	5.5	7.7
63	IND139	29.0	22.3	14.8	6.3	6.2	12.8	4.4	10.4	5.5	14.5	7.7	7.1	9.9	13.0	13.6	14.0	13.4	32.2	16.4	18.0
64	IND151	58.5	40.2	30.1	18.5	20.1	25.0	19.2	20.3	26.1	27.6	26.7	25.4	29.1	39.7	30.3	25.2	25.8	29.9	17.5	17.9
65	IND156	33.8	9.6	15.0	9.3	11.2	13.8	13.6	15.8	16.0	19.6	18.6	21.0	52.0	52.3	37.2	19.2	20.6	22.8	12.1	9.6
66	IND163	15.7	13.2	10.0	5.4	7.0	8.2	6.8	6.8		8.4	6.2	5.4	7.7	7.7	7.5	3.0	6.6	10.6	4.7	5.3

Appendix A, continued.

	PARCEI	08/23/ 1986	09/29/ 1987	09/13/ 1988	08/31/ 1989	09/03/ 1990	09/22/ 1991	09/08/ 1992	08/26/ 1993	09/14/ 1994	09/17/ 1995	09/03/ 1996	09/06/ 1997	08/08/ 1998	09/04/ 1999	09/06/ 2000	late 8/ 2001	09/12/ 2002	09/23/ 2003	09/25/ 2004	09/12/ 2005
67	IND205	68.3	53.0	35.8	30.8	10.7	22.2	18.0	16.7	11.0	57.1	47.1	56.7	79.6	78.5	51.4	46.6	64.0	79.2	46.9	74.6
68	IND231	19.4	9.7	8.0	8.7	4.7	10.5	2.0	5.7	0.9	9.6	3.5	-1.1	4.3	-0.2	-0.6	-0.9	-1.5	15.1	3.7	8.5
69	LAW030	47.1	33.6	21.0	14.6	15.5	11.2	8.4	16.2	11.8	27.6	22.0	16.0	16.4	12.3	14.8	11.9	16.2	17.6	8.8	28.3
70	LAW035	33.3	15.0	3.7	6.5	8.3	6.4	0.6	14.6	3.1	30.7	17.1	16.3	52.6	24.6	12.5	0.6	1.7	0.9	-1.9	15.5
71	LAW040	16.9	11.2	11.7	6.6	8.8	10.3	8.6	12.1	9.4	21.2	13.1	10.5	17.3	6.0	8.3	3.7	4.5	10.1	4.9	16.1
72	LAW043	48.1	27.8	13.6	10.4	12.6	11.1	5.5	15.5	7.8	33.7	20.5	11.8	61.7	30.9	17.3	5.7	7.0	5.2	3.2	12.9
73	LAW052	42.6	22.1	10.5	5.3	5.6	6.6	4.9	9.5	3.9	22.7	15.0	8.8	32.1	21.7	9.7	3.7	4.2	5.6	3.4	14.7
74	LAW062	31.0	18.1	12.1	8.2	6.6	5.9	3.2	11.2	6.4	28.7	19.1	11.8	17.7	17.5	9.7	3.6	4.6	8.7	3.1	19.9
75	LAW063	28.6	14.9	12.3	8.0	7.3	7.4	6.3	17.0	10.5	24.6	12.8	11.9	13.4	14.7	7.9	2.8	4.8	8.4	3.5	16.6
76	LAW065	30.9	14.6	12.2	8.0	9.2	12.4	8.9	18.4	10.1	24.3	13.1	12.5	12.1	16.3	11.3	6.2	8.8	14.5	7.7	19.2
77	LAW070	55.0	33.7	19.5	9.2	6.6	5.6	4.4	29.4	14.8	57.4	31.7	15.1	42.2	29.0	15.4	3.9	5.6	8.6	1.6	43.8
78	LAW076	23.8	10.3	6.6	3.1	2.4	3.8	3.0	8.6	6.6	27.4	14.3	5.4	20.6	34.4	9.4	3.4	6.7	11.5	6.3	15.0
79	LAW078	87.2	57.7	44.3	24.4	20.9	13.3	6.8	16.7	7.0	38.1	50.7	31.9	78.6	46.2	37.7	20.3	20.7	25.3	14.5	32.5
80	LAW082	14.4	11.4	6.8	5.0	6.7	8.1	6.2	11.2	5.0	17.1	11.0	8.0	11.3	12.5	3.5	1.1	2.4	5.7	4.0	15.3
81	LAW085	19.5	18.9	16.3	14.5	12.0	9.0	5.1	7.0	5.0	7.2	5.3	3.2	5.6	8.7	5.5	1.7	4.6	6.1	2.9	11.5
82	LAW104	18.3	13.3	10.3	5.6	4.8	6.9	1.7	8.9	3.8	13.5	6.1	3.3	7.5	6.7	-2.9	-5.5	0.0	5.7	0.8	18.5
83	LAW107	96.7	76.0	58.7	39.3	38.7	32.5	20.7	25.8	20.2	47.2	69.2	46.1	64.6	82.8	56.9	35.0	42.3	45.1	31.1	48.8
84	LAW109	51.4	48.9	34.6	18.1	11.0	7.8	7.5	25.0	20.3	44.7	49.2	42.0	44.4	52.0	40.1	33.4	42.9	37.9	23.4	28.5
85	LAW110	80.9	72.9	62.1	52.9	38.7	26.9	26.6	37.5	38.8	69.4	81.7	57.2	66.5	57.8	60.7	49.0	55.1	54.9	40.5	58.6
86	LAW112	27.7	28.3	23.8	18.4	12.6	10.5	5.1	6.0	4.2	10.4	5.6	3.1	10.6	22.8	9.5	8.7	11.5	18.8	11.4	18.6
87	LAW120	51.0	42.2	33.9	14.7	12.0	16.5	12.0	17.3	16.7	41.5	36.6	28.3	40.3		24.9	16.8	5.7	16.2	14.9	31.3
88	LAW122	72.4	66.7	65.8	52.8	43.4	53.6	49.2	67.0	70.0	86.9	86.2	74.8	73.1	98.5	73.9	56.6	61.4	68.7	61.0	61.5
89	LAW137	35.5	26.2	24.0	14.4	12.5	18.6	10.8	17.1	12.5	32.1	20.7	15.4	23.9	28.6	15.5	15.9	19.6	25.8	15.1	19.5
90	LAW154	33.5	17.2	17.4	15.9	9.4	11.8	12.5	27.3	26.5	27.3	23.0	23.2	19.4		15.5	16.2	31.1	33.4	21.0	35.2
91	LAW167	5.0	1.9	3.8	-1.3	0.5	5.1	4.0	12.5	7.6	11.3	6.5	3.0	7.4	5.6	0.8	0.5	0.0	4.9	1.6	8.1
92	LNP018	9.7	11.8	12.6	14.2	15.8	22.4	21.9	20.5	25.1	37.9	37.3	26.7	25.9	27.6	25.2	24.9	30.4	29.0	16.4	19.4
93	LNP019	18.6	19.5	21.2	24.5	26.6	33.1	31.9	31.0	36.7	50.7	46.1	36.5	32.8	36.2	32.7	32.7	38.7	37.8	23.1	26.6
94	LNP045	56.0	43.1	34.7	30.7	30.6	33.7	29.1	27.7	29.5	52.1	51.1	46.6	54.4	53.7	43.0	36.7	36.7	36.8	22.4	30.1
95	LNP050	68.4	56.3	38.4	32.5	26.9	30.5	30.2	29.1	26.8	57.1	56.5	47.7	52.3	50.7	36.9	28.3	31.1	33.1	17.4	25.1
96	LNP095	25.5	25.8	28.6	26.8	34.1	38.2	34.2	31.9	31.2	33.8	28.3	23.7	28.2	29.2	25.5	22.3	26.8	28.5	20.6	20.7
97	MAN006	23.9	21.9	16.6	9.3	10.0	13.3	8.6	13.8	9.7	18.9	11.2	13.4	15.8	17.7	17.3	16.7	17.0	29.7	16.2	17.1
98	MAN007	26.8	20.0	18.6	10.1	8.9	20.9	10.0	16.7	10.6	26.5	17.1	11.4	14.8	13.0	12.4	17.9	13.1	29.5	13.0	17.2
99	MAN014	19.4	18.3	12.2	7.7	8.0	14.4	10.2	13.5	11.1	14.7	9.8	8.1	14.6	15.7	12.2	9.8	12.7	21.6	12.1	14.2
100	MAN017	40.4	20.2	13.2	5.1	5.9	23.3	5.6	10.5	6.9	30.7	17.4	8.1	12.2	7.2	6.8	9.6	7.5	27.5	7.9	13.2

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	PARCEI	08/23/ 1986	09/29/ 1987	09/13/ 1988	08/31/ 1989	09/03/ 1990	09/22/ 1991	09/08/ 1992	08/26/ 1993	09/14/ 1994	09/17/ 1995	09/03/ 1996	09/06/ 1997	08/08/ 1998	09/04/ 1999	09/06/ 2000	late 8/ 2001	09/12/ 2002	09/23/ 2003	09/25/ 2004	09/12/ 2005
101	MAN034	19.9	23.2	16.1	8.6	6.9	9.8	10.9	13.4	11.8	16.5	15.2	18.8	17.2	20.5	18.3	15.6	12.9	22.7	11.7	15.6
102	MAN037	34.2	25.0	15.3	6.6	6.5	16.1	8.5	18.4	12.7	30.8	22.4	17.5	25.3	23.9	18.2	21.0	6.4	32.2	14.4	22.3
103	MAN042	52.3	32.3	26.2	17.9	18.5	24.4	15.9	23.3	20.1	40.0	30.1	26.5	36.0	33.2	25.1	25.1	23.5	36.7	17.8	26.7
104	MAN060	53.3	39.9	46.9	55.8	51.2	62.5	62.8	60.7	63.1	67.1	51.2	54.6	71.8	60.6	39.8	35.4	40.7	45.2	20.7	29.4
105	PLC007	36.9	24.7	29.2	22.5	21.9	29.7	25.1	32.3	32.5	42.8	32.1	28.9	32.2		20.8	21.9	20.8	27.9	17.8	28.4
106	PLC024	25.5	23.0	21.6	16.8	19.3	23.0	20.7	24.4	24.6	35.7	27.9	24.6	30.0	23.4	27.0	21.2	23.4	20.3	17.1	21.9
107	PLC028	61.9	45.7	46.6	37.8	31.1	40.0	32.6	48.6	43.6	57.7	56.0	47.6	58.9	56.6	43.6	36.1	34.5	34.7	20.2	34.9
108	PLC055	12.1	12.6	13.5	7.2	13.0	14.5	12.2	15.3	14.0	17.9	14.9	8.4	13.4	11.2	12.5	10.9	9.7	9.1	6.5	9.2
109	PLC056	14.1	11.3	11.9	7.1	10.9	13.8	11.6	13.7	14.4	18.6	15.7	9.5	16.2	10.9	13.9	10.5	10.0	9.7	7.2	11.1
110	PLC059	18.1	13.4	14.7	12.6	12.4	15.5	13.9	19.2	20.3	23.0	18.0	15.6	17.8		12.5	12.5	16.4	17.2	12.8	14.2
111	PLC064	11.2	7.2	7.9	2.4	6.0	12.0	10.5	17.3	15.9	18.8	13.1	11.9	13.2	7.9	6.5	13.2	6.5	15.1	9.7	10.8
112	PLC065	5.4	4.3	3.1	0.1	2.9	5.7	5.8	11.6	9.6	13.5	8.3	4.5	8.9	2.1	3.1	5.0	3.0	8.5	3.7	5.6
113	PLC069	1.8	-0.0	0.7	-3.0	-1.6	2.1	1.9	3.9	3.7	6.2	3.2	-0.5	1.6	2.9	-1.0	-0.5	-0.3	0.2	-0.3	-1.7
114	PLC072	11.3	9.8	10.6	7.1	11.1	12.6	11.2	16.5	16.2	20.4	14.3	10.2	13.2	11.0	8.8	9.1	10.0	12.2	6.5	9.2
115	PLC092	13.2	8.3	9.4	7.0	9.9	12.3	9.8	13.5	15.4	18.7	13.2	10.2	16.2		12.7	9.7	11.3	19.4	11.9	12.6
116	PLC097	31.2	26.6	23.4	19.8	21.4	23.2	17.7	24.3	24.5	36.4	41.4	34.0	47.3	47.5	35.8	27.7	31.9	28.7	21.2	23.0
117	PLC106	6.5	3.3	3.5	0.9	2.3	5.0	5.0	6.3	6.8	8.9	7.0	4.8	6.0	5.5	3.3	1.8	3.3	4.8	1.2	1.9
118	PLC110	2.2	2.5	2.3	1.4	3.7	5.2	3.6	4.8	5.9	6.5	4.7	2.2	2.9	3.6	2.0	1.5	3.0	4.1	2.0	0.5
119	PLC111	9.2	7.3	6.9	2.7	8.7	10.2	6.8	12.1	10.2	14.3	10.4	5.8	9.1	5.0	6.0	4.9	5.1	7.0	4.5	6.8
120	PLC113	7.6	3.7	5.7	5.4	7.6	11.7	8.1	12.2	12.1	13.0	9.9	7.2	9.5		5.9	6.7	4.5	9.4	4.3	5.8
121	PLC121	39.5	36.2	36.7	30.1	30.2	33.1	27.5	32.1	34.5	40.8	39.1	33.7	39.0	43.4	33.7	30.3	34.7	36.5	27.6	33.5
122	PLC125	5.3	4.4	3.6	2.2	4.9	6.8	4.7	6.8	6.5	9.1	5.6	3.3	4.3	3.3	4.7	3.2	4.1	6.0	2.8	2.0
123	PLC136	10.5	9.5	8.8	7.2	9.9	12.3	10.9	11.0	11.4	13.5	11.2	6.4	10.2		8.5	6.1	8.5	10.0	7.0	7.3
124	PLC137	26.0	22.8	20.6	19.5	26.0	29.1	25.8	23.5	25.6	26.7	27.8	20.8	31.4	29.9	29.5	24.5	29.0	33.6	24.6	22.6
125	PLC144	19.4	16.2	16.8	15.5	17.4	21.7	18.9	20.0	21.9	22.0	22.0	16.6	19.6	28.7	18.9	15.8	23.5	30.0	21.8	22.4
126	PLC187	10.7	6.1	4.8	2.5	5.2	7.7	5.1	7.4	5.8	10.5	6.9	3.6	4.1	1.4	1.5	0.6	2.5	4.0	1.4	0.5
127	PLC193	14.5	12.0	11.6	8.1	13.3	17.0	13.6	13.7	14.0	21.3	12.9	10.3	10.5	4.7	8.1	4.2	5.8	8.8	5.7	4.9
128	PLC220	38.5	29.4	31.6	27.2	28.8	34.6	30.6	36.0	37.9	44.4	39.3	33.8	39.6	43.9	30.6	28.8	32.0	38.6	26.4	34.1
129	PLC223	13.0	10.8	11.5	9.1	9.6	12.2	10.7	12.1	15.3	15.4	12.6	12.7	13.7		10.8	9.2	12.7	15.3	9.5	11.2
130	PLC239	6.5	3.7	3.0	-0.7	1.6	5.0	4.6	6.7	5.7	8.9	6.2	4.1	8.5	4.1	2.1	0.3	1.0	2.8	0.6	4.3
131	PLC240	7.9	2.8	3.1	-1.7	0.9	5.6	4.8	9.0	6.6	9.4	6.7	3.3	8.2	0.6	0.7	-0.4	-0.9	3.1	1.0	3.9
132	PLC241	11.5	3.0	4.4	-0.6	1.9	8.3	6.1	10.0	8.1	10.7	7.3	5.1	11.2	2.0	1.4	-0.5	-1.6	4.0	1.3	6.8
133	PLC246	3.2	1.7	1.4	-2.4	-1.0	1.6	1.3	3.8	3.0	4.7	3.3	-0.2	1.9	-1.2	-1.7	-3.0	-1.2	0.8	-0.8	-1.8
134	PLC251	9.4	-0.1	-0.9	-5.4	-4.3	1.4	2.8	5.5	6.4	9.9	5.9	2.0	6.8	-1.6	-4.3	-3.0	-4.2	1.2	3.5	1.3

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	PARCEI	08/23/ 1986	09/29/ 1987	09/13/ 1988	08/31/ 1989	09/03/ 1990	09/22/ 1991	09/08/ 1992	08/26/ 1993	09/14/ 1994	09/17/ 1995	09/03/ 1996	09/06/ 1997	08/08/ 1998	09/04/ 1999	09/06/ 2000	late 8/ 2001	09/12/ 2002	09/23/ 2003	09/25/ 2004	09/12/ 2005
135	PLC263	12.0	4.5	4.4	1.5	4.8	10.8	8.9	6.6	13.7	9.9	6.3	3.4	5.9		2.3	-0.4	2.1	4.8	2.1	0.3
136	TIN006	1.2	1.7	-1.1	-3.9	-1.9	0.1	-1.2	-0.6	-0.5	-0.2	-1.2	-1.5	-2.8	-2.3	-2.8	-5.0	-2.1	-1.5	-3.1	-3.4
137	TIN028	9.5	5.8	3.2	0.2	0.9	4.7	1.4	4.1	2.9	7.8	3.8	4.1	2.5	1.3	0.6	-0.0	0.5	5.9	0.7	1.9
138	TIN030	36.3	22.1	17.0	14.5	15.5	22.1	11.4	21.8	20.5	31.9	21.5	25.8	21.9		28.1	22.3	20.3	30.4	16.5	23.4
139	TIN050	30.1	31.4	23.1	11.4	9.7	16.2	5.8	15.7	14.2	36.2	33.8	36.6	25.6	31.2	34.8	28.0	30.1	30.1	17.8	15.8
140	TIN053	36.4	34.7	28.7	15.5	13.8	22.2	11.6	22.8	23.4	38.0	34.2	38.7	32.2	37.1	35.9	31.1	37.5	37.2	25.0	21.8
141	TIN064	24.7	16.2	13.0	8.6	8.0	15.2	3.5	9.7	8.4	16.0	15.2	20.5	18.5	17.2	18.6	16.5	13.5	20.9	13.8	14.0
142	TIN068	11.1	11.0	9.6	5.5	3.0	10.9	8.3	14.0	9.8	14.8	10.8	10.1	10.9	9.8	3.2	2.7	7.5	6.0	3.4	2.8
143	UHL052	1.4	1.8	-0.3	-2.0	-1.1	0.8	-0.2	1.4	1.5	0.8	0.4	0.3	-1.4	-2.7	-2.9	-5.0	-1.2	0.1	-2.0	-2.7
144	UNW029	28.9	24.8	16.3	9.1	9.2	15.3	11.4	13.0	15.4	20.9	17.9	14.9	24.0	18.5	21.9	19.8	14.2	19.6	10.9	16.7
145	UNW039	23.0	23.8	18.6	13.1	12.7	19.7	18.1	26.3	22.7	34.2	28.0	28.7	28.8	35.6	31.9	28.8	30.1	36.5	25.9	31.1
146	UNW072	1.8	0.4	-0.6	-3.9	-3.9	-2.3	-0.1	0.5	-2.0	3.8	0.9	-2.9	2.0	2.3	0.2	1.9	1.3	6.8	0.4	3.3
147	UNW073	10.1	7.9	5.9	3.1	2.8	5.2	7.1	5.3	5.6	16.3	10.7	7.3	13.3	16.3	14.6	17.9	13.2	20.8	9.0	11.7
148	UNW079	56.8	51.1	46.5	44.3	56.8	56.9	47.8	54.5	65.4	63.8	54.3	50.1	53.2	68.5	57.9	59.3	61.5	83.4	59.9	60.6

Appendix B. Data for 102 parcels were graphed and are presented as Figures 2 - 103. Graphs were prepared only for parcels re-inventoried in 2001 or afterwards. There are three graphs for each parcel. The top graph shows perennial cover measured in the field during the baseline period and in all years re-inventoried by ICWD. Changes in perennial cover that were statistically significantly different from baseline according to the one-tailed t-test for independent samples are indicated with an asterisk. (See report text and Manning 2002 for a discussion of this statistical test.) The middle graph shows the parcel's total green plant cover estimated using the Spectral Mixture Analysis (SMA) technique applied to data collected by Landsat Thematic Mapper once in late summer each year, 1986-2005. These data are presented for visual trend and comparison with baseline and ICWD perennial cover data; a more thorough analysis of the similarities and differences has yet to be performed. The bottom graph shows all estimates of parcel average April depth to water (DTW) that were judged to be reliable according to Harrington and Howard (2000) and Harrington (2003 and personal communication, with additions as noted). The three techniques used for estimating DTW are: HH2000, OK and KED; these methods are described briefly in the text, but for a more thorough explanation see the referenced reports.

BGP013

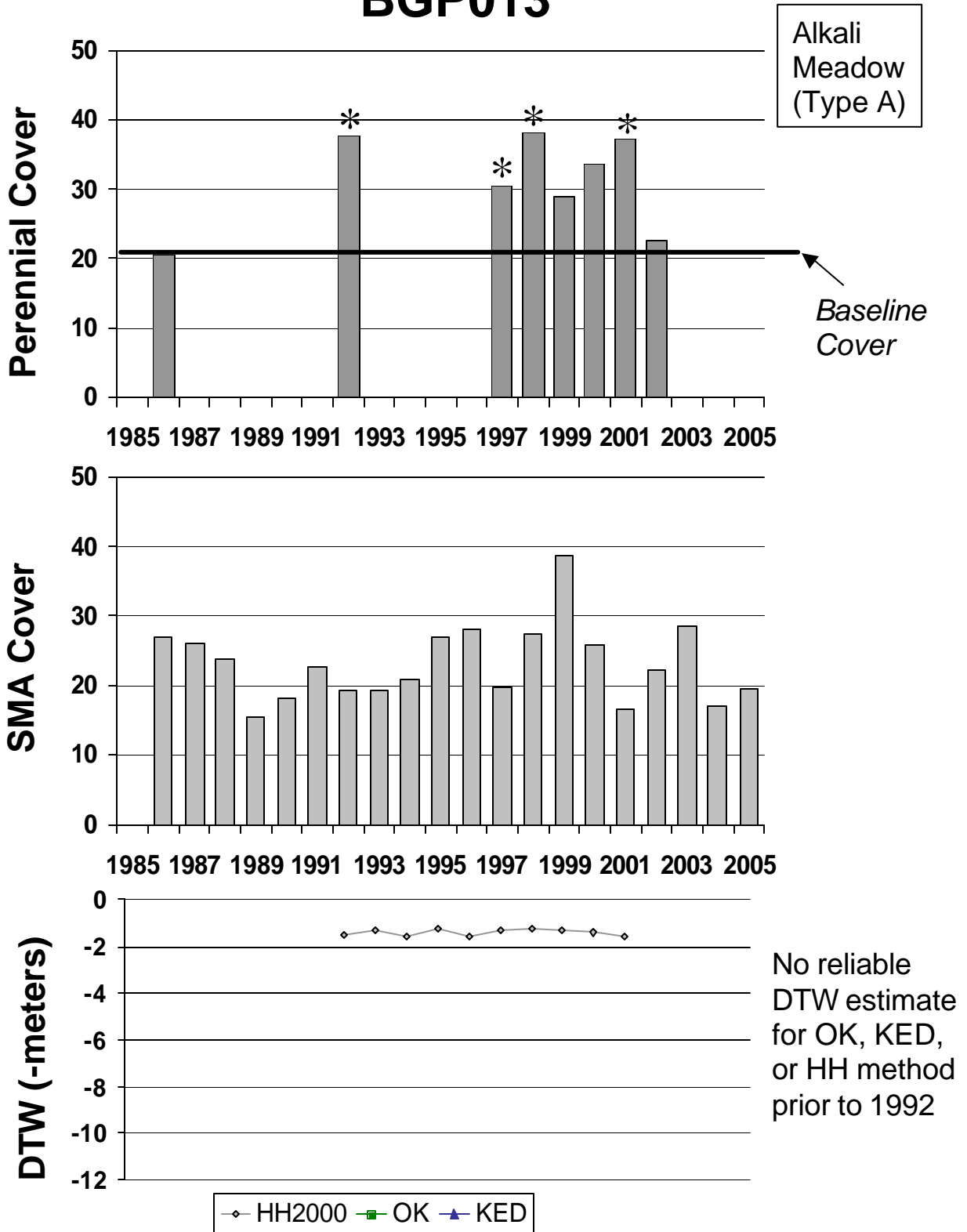


Figure 2. Status 2002: Control

BGP031

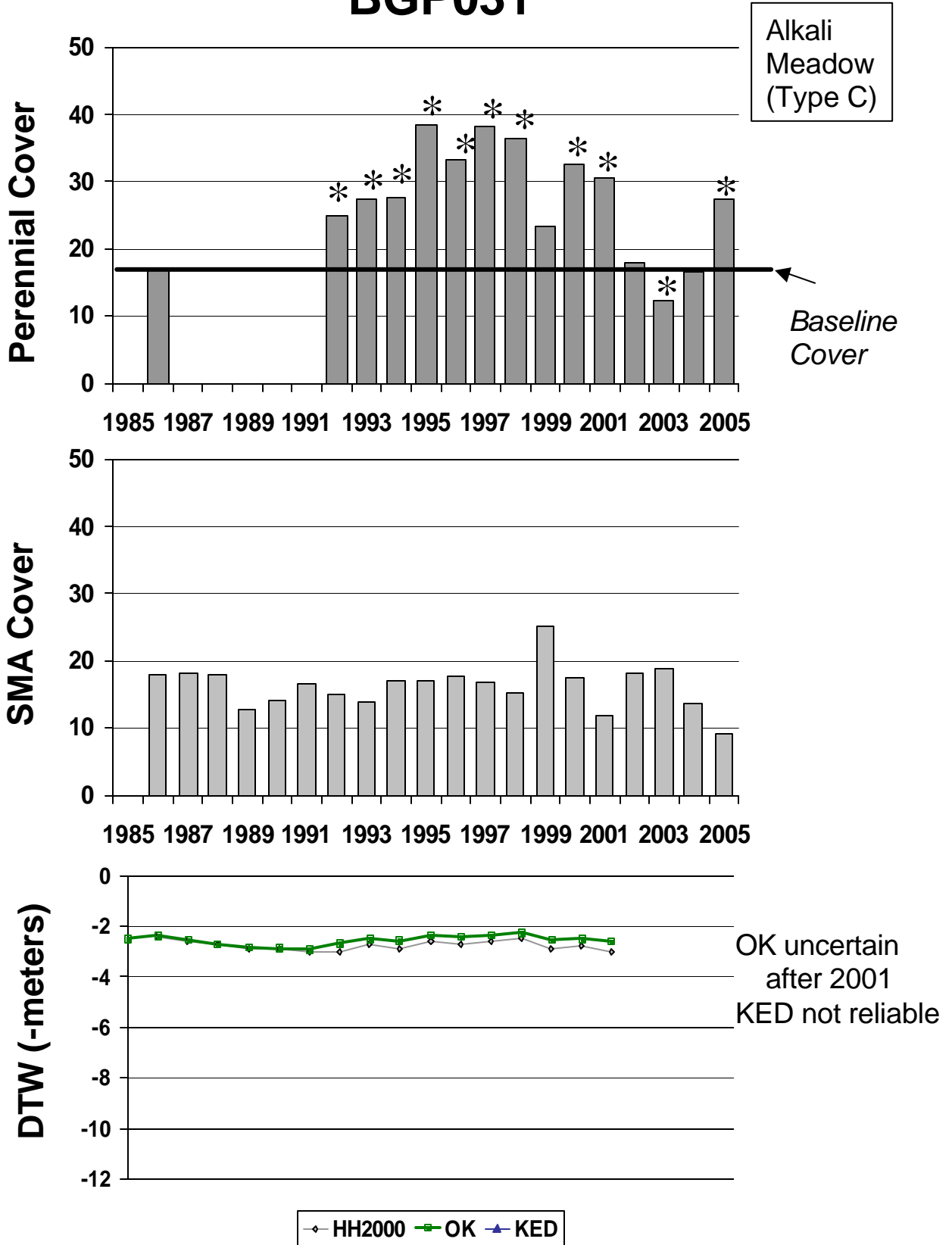


Figure 3. Status 2005: Control

BGP047

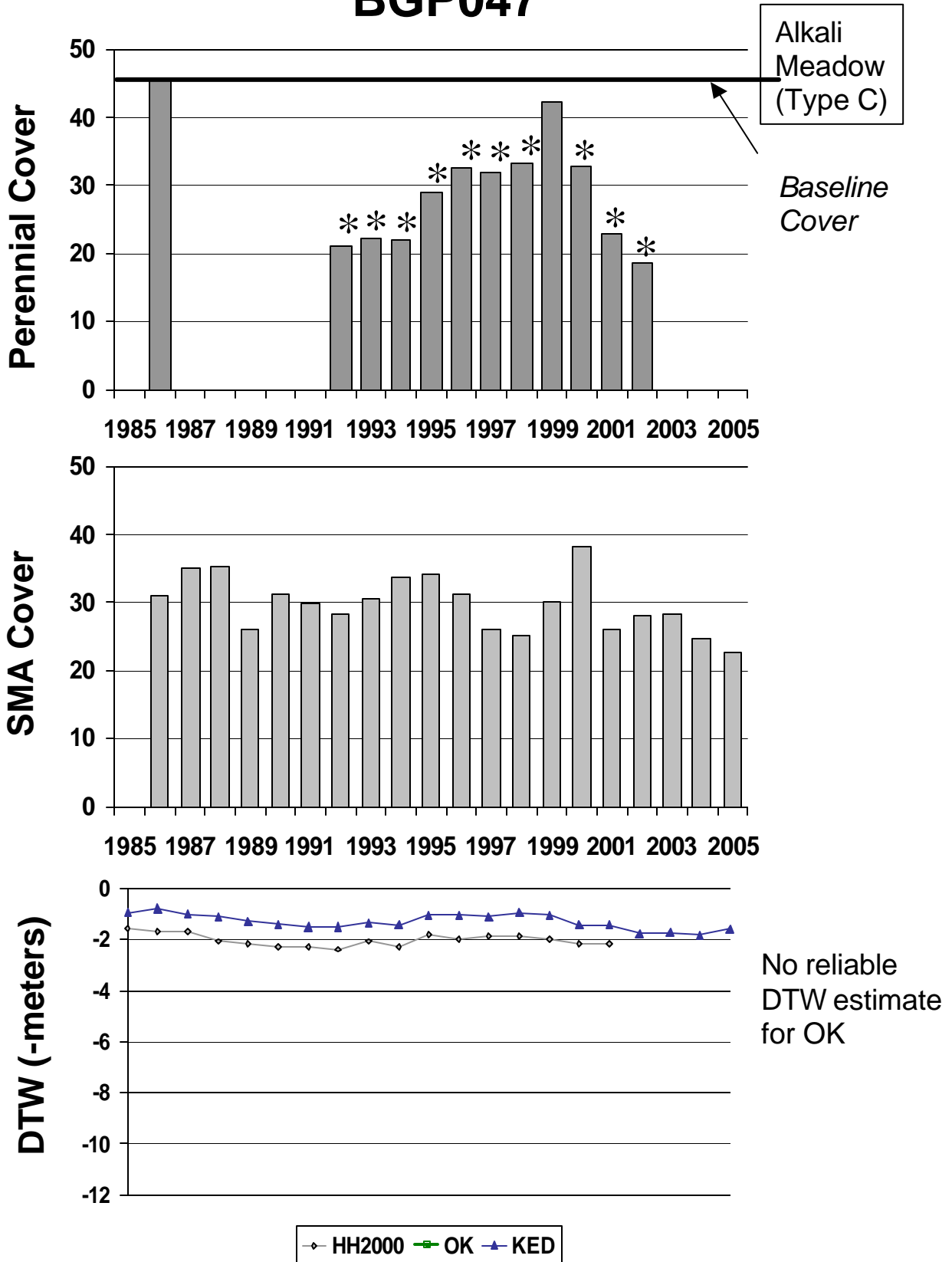


Figure 4. Status 2002: Control

BGP086

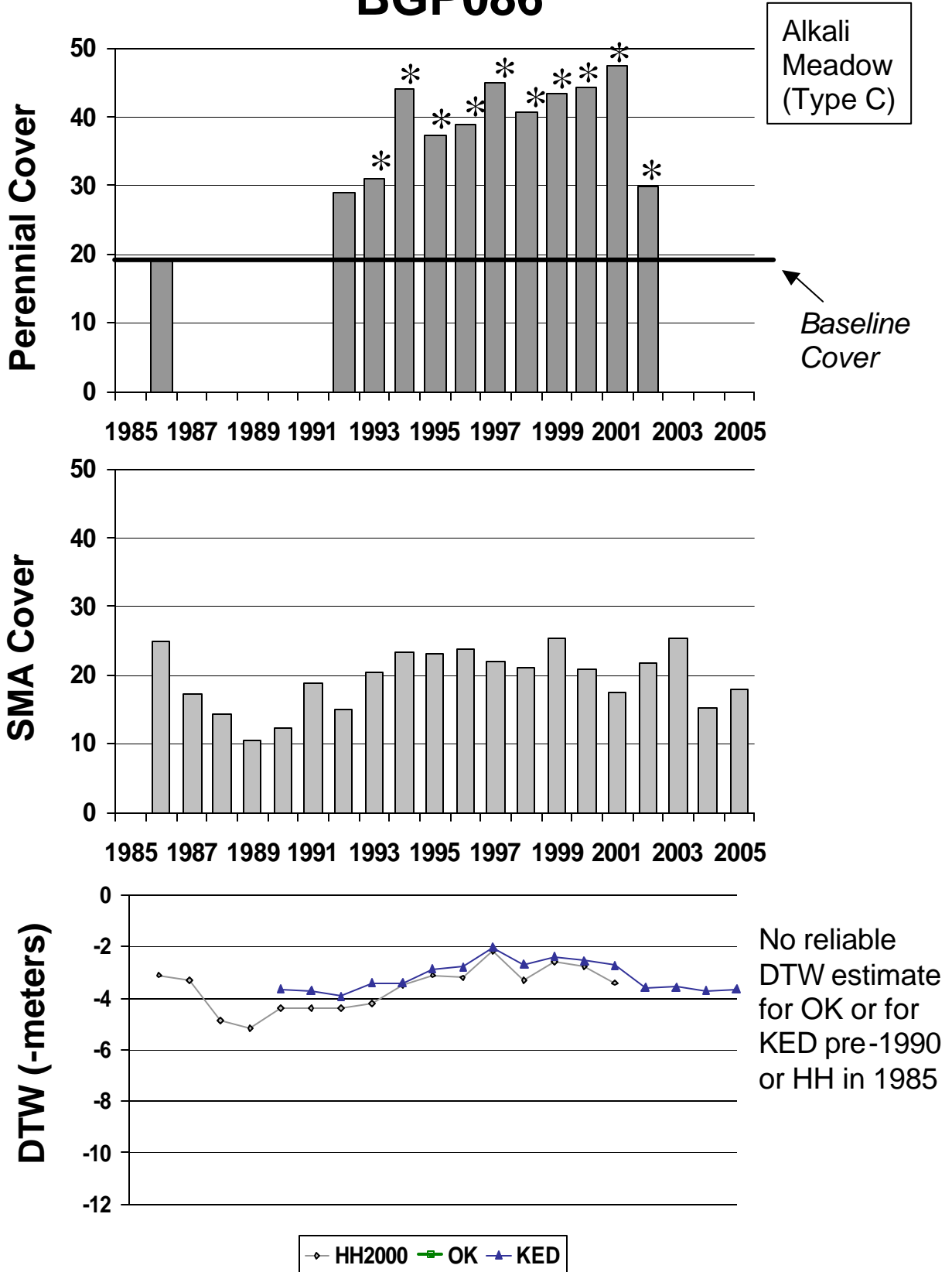


Figure 5. Wellfield: Big Pine. Status 2002: DRPfree

BGP088

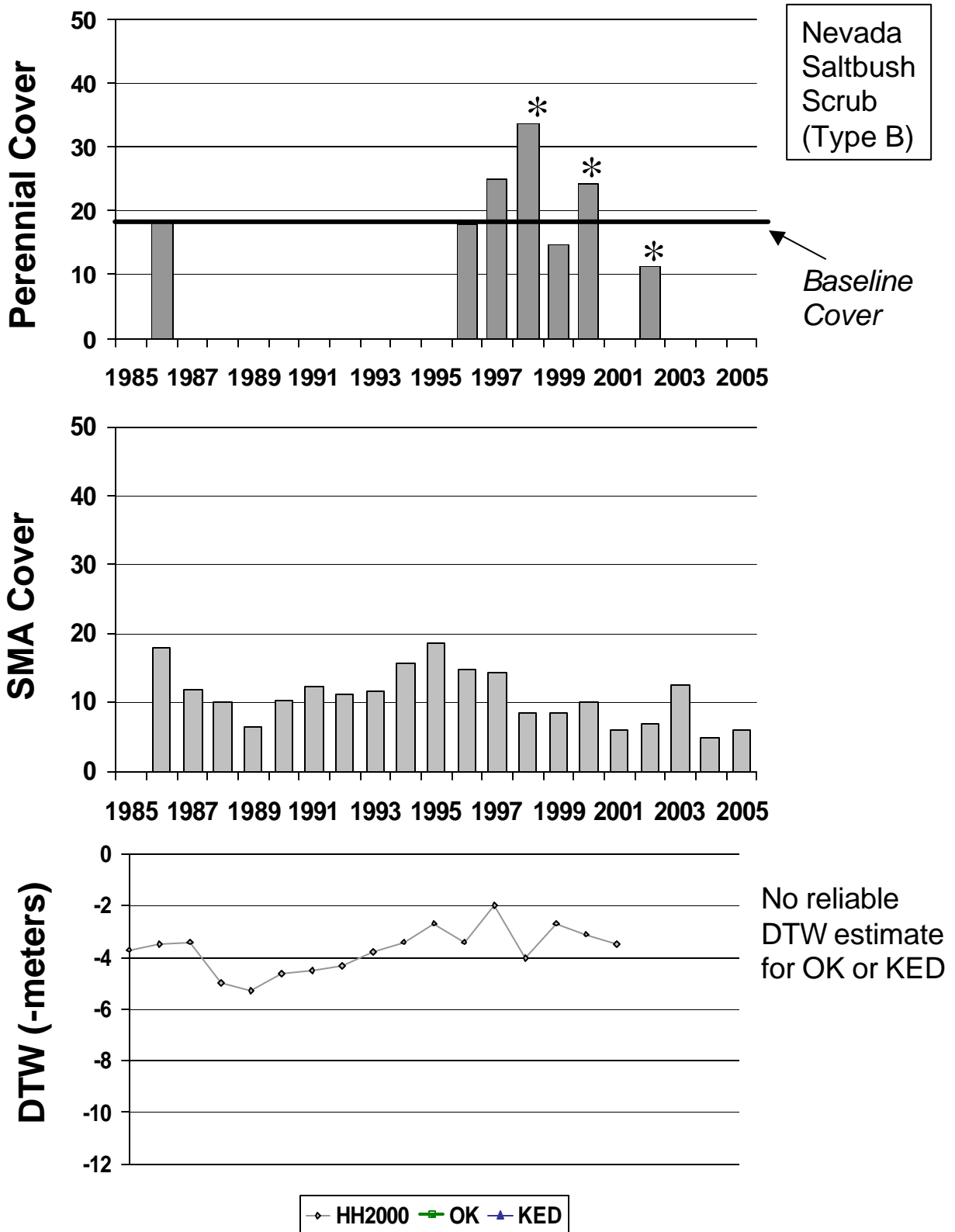


Figure 6. Wellfield: Big Pine. Status 2002: DRPfree

BGP154

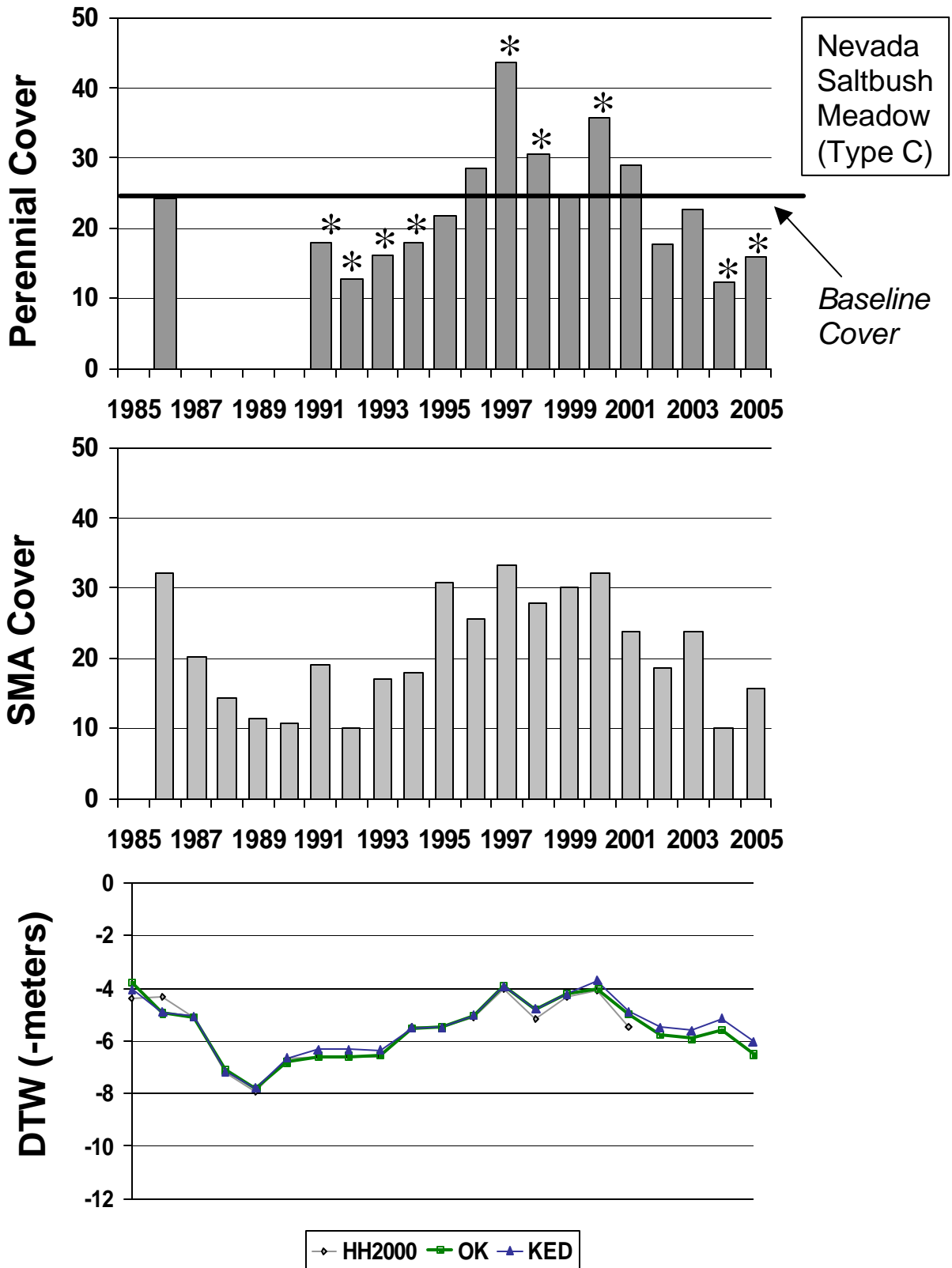


Figure 7. Wellfield: Big Pine. Status 2005: DRPfree

BGP157

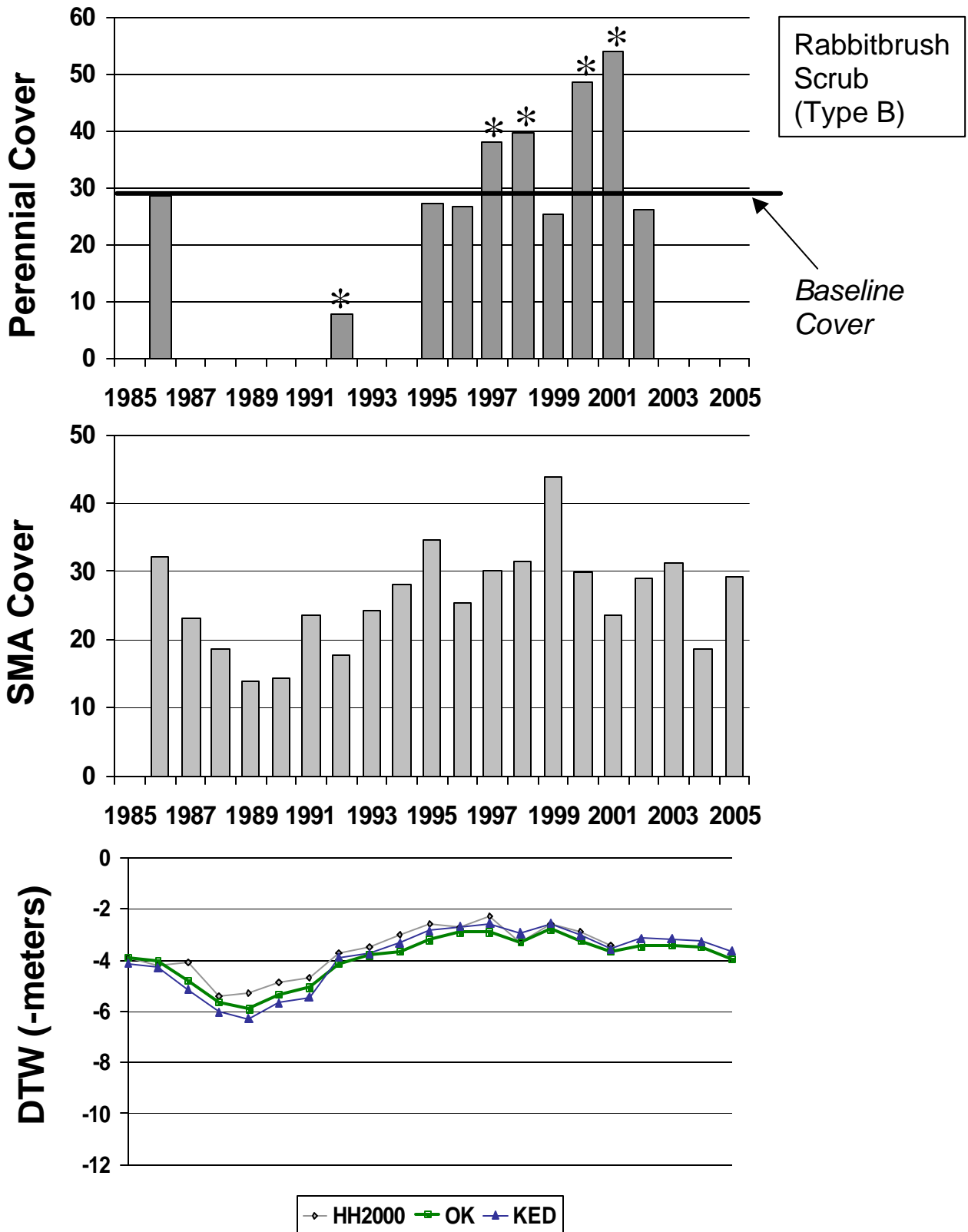


Figure 8. Wellfield: Big Pine. Status 2002: DRPfree

BGP162

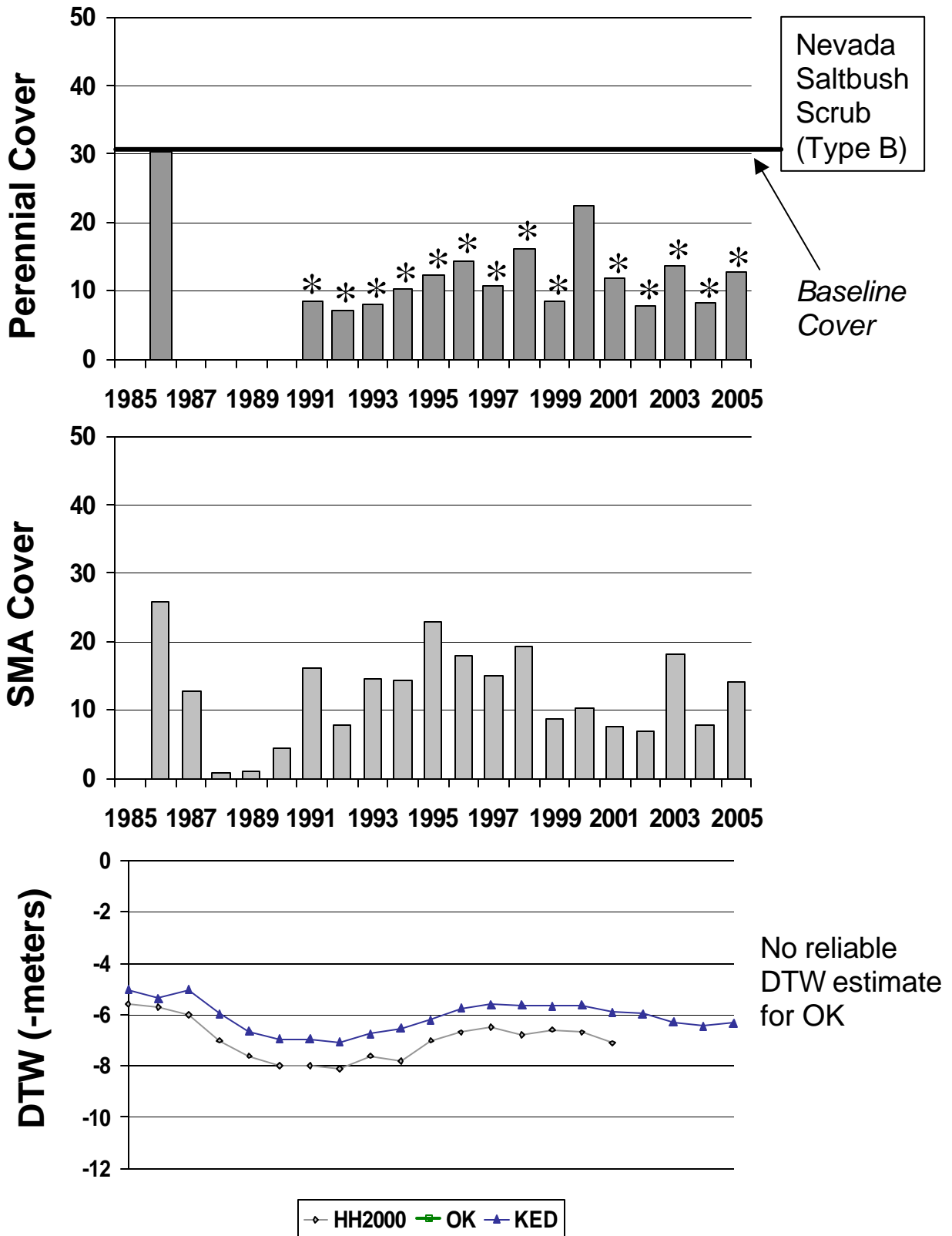


Figure 9. Wellfield: Big Pine. Status 2005: DRP

BGP204

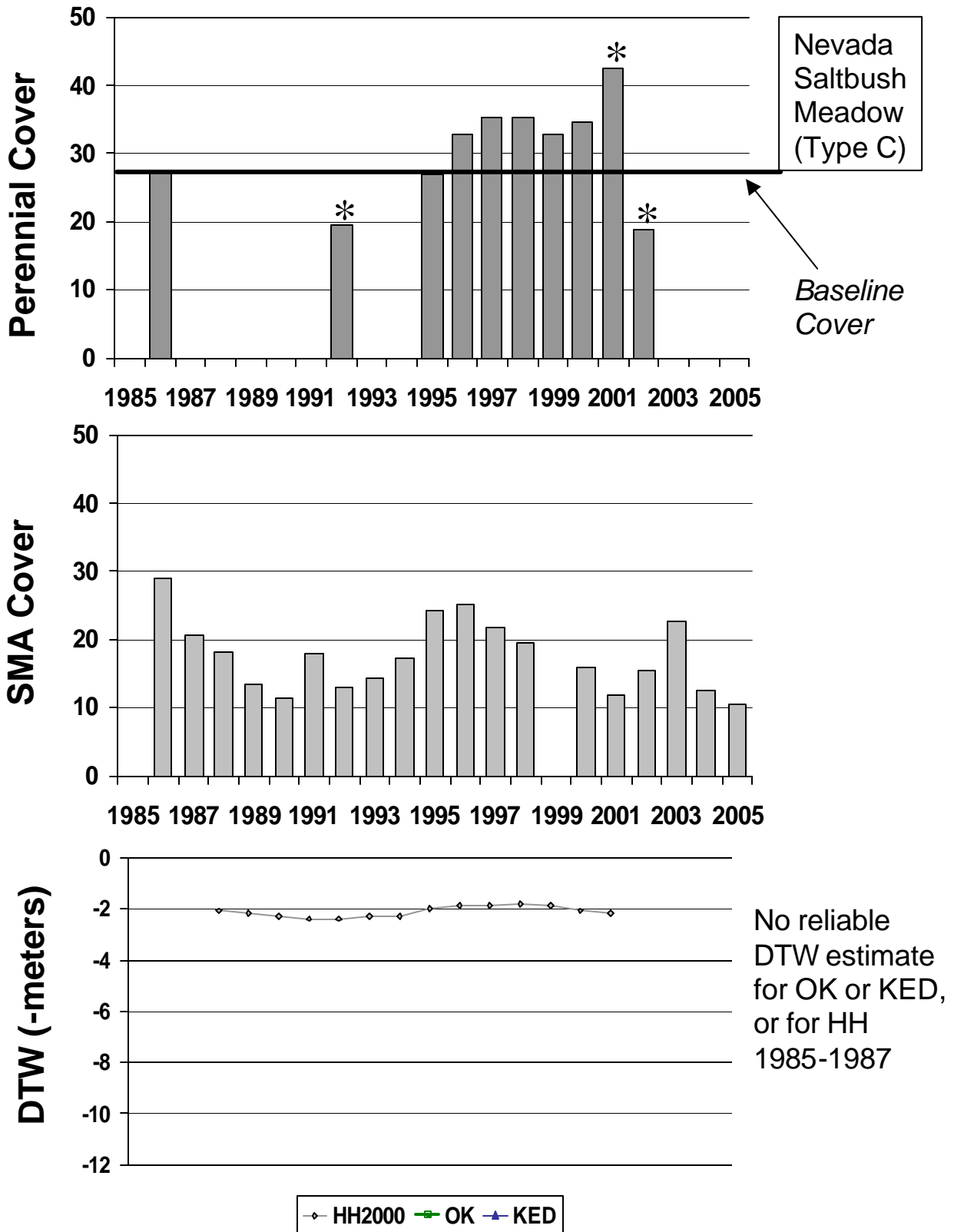


Figure 10. Status 2002: Control

BGP205

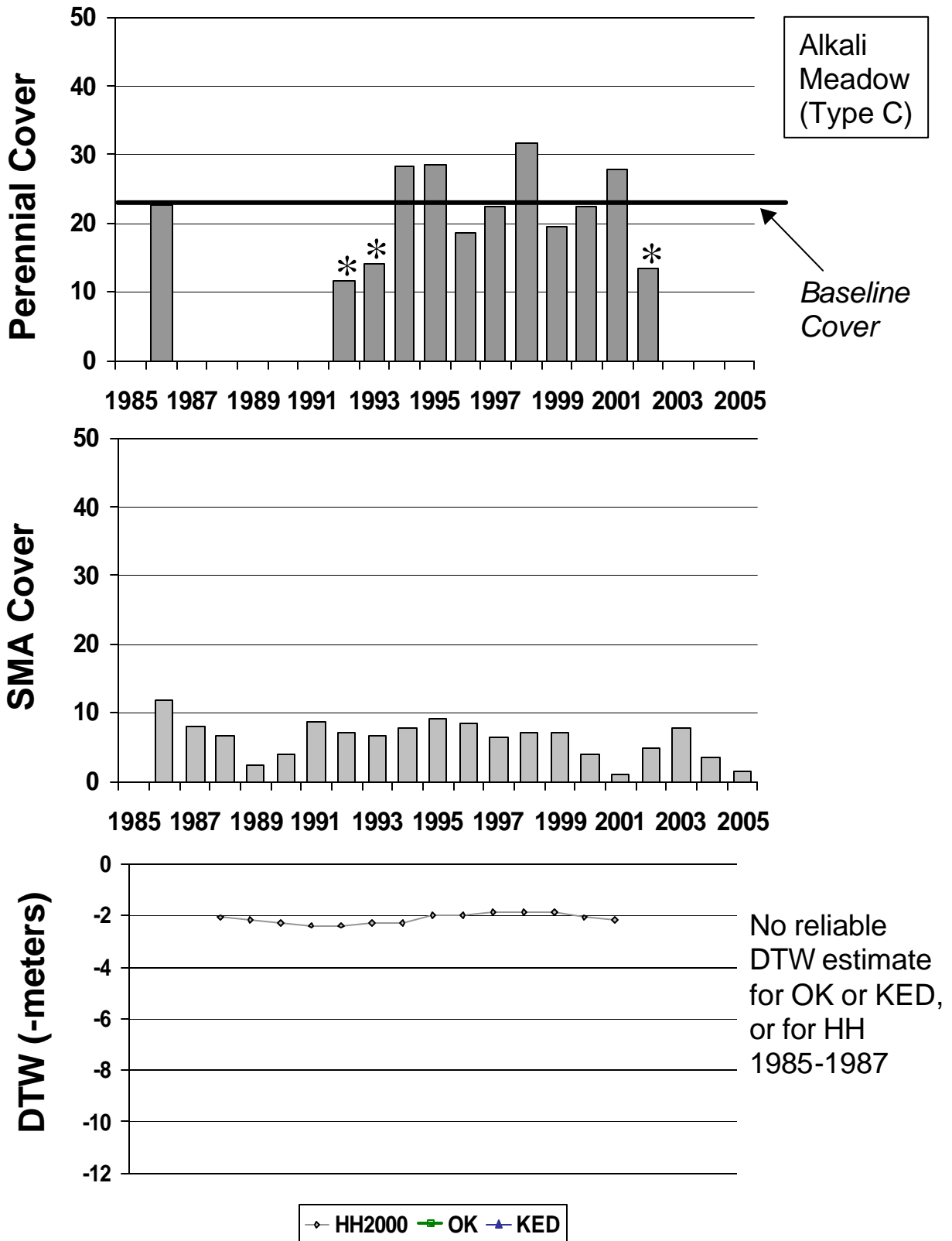


Figure 11. Status 2002: Control

BIS055

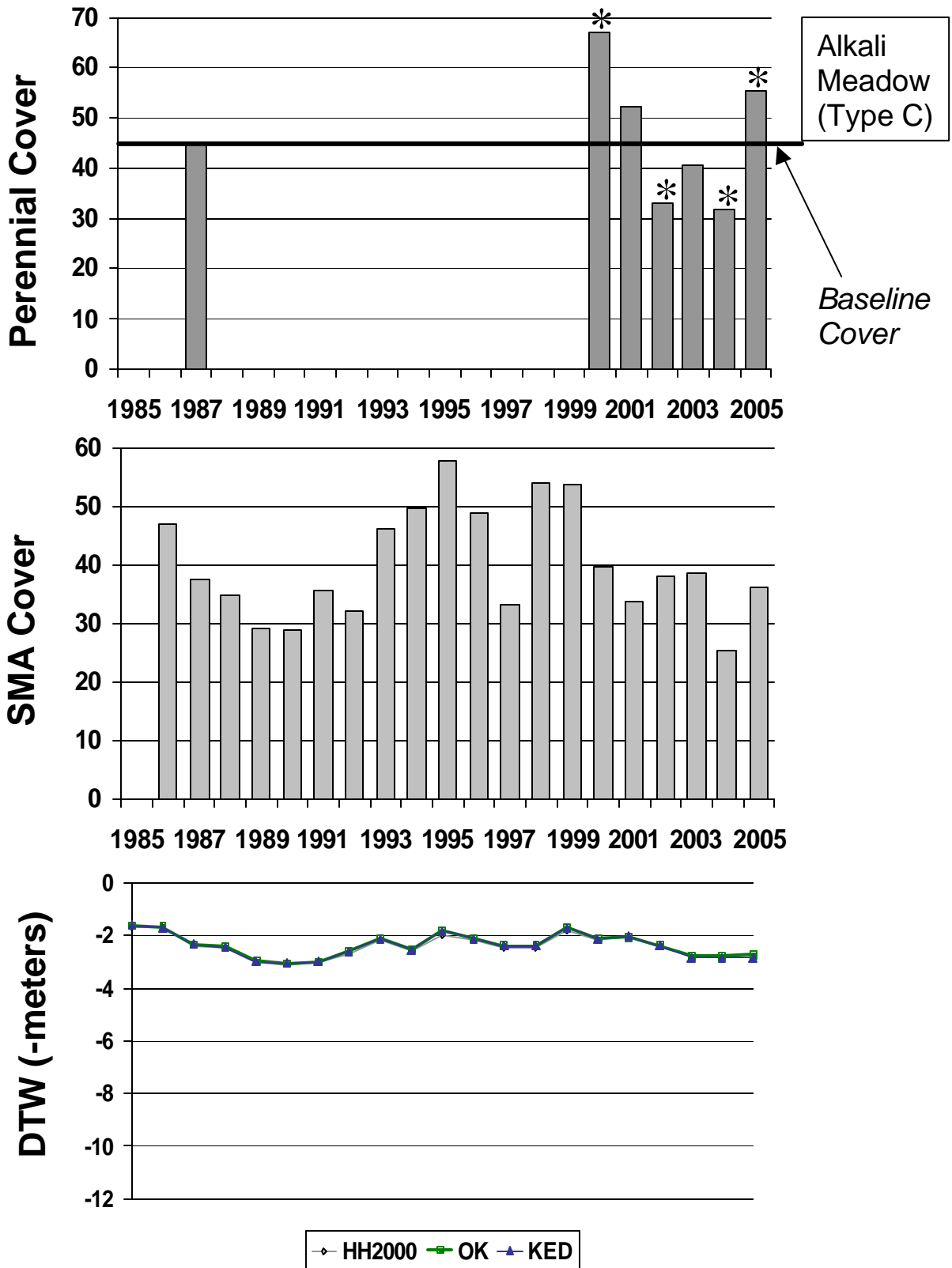


Figure 12. Status 2005: Control

BIS068

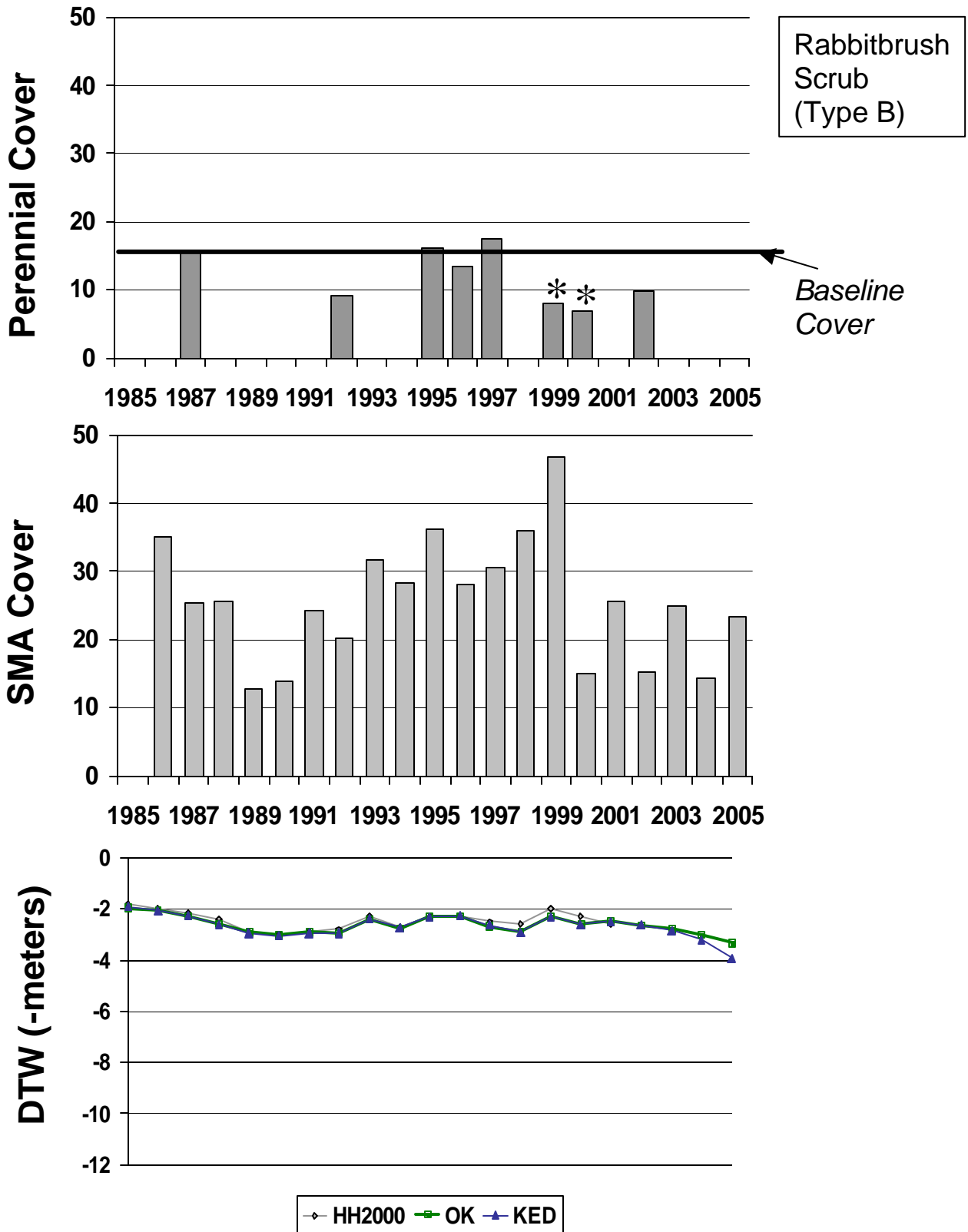


Figure 13. Wellfield: Bishop Cone. Status 2002: DRP

BIS085

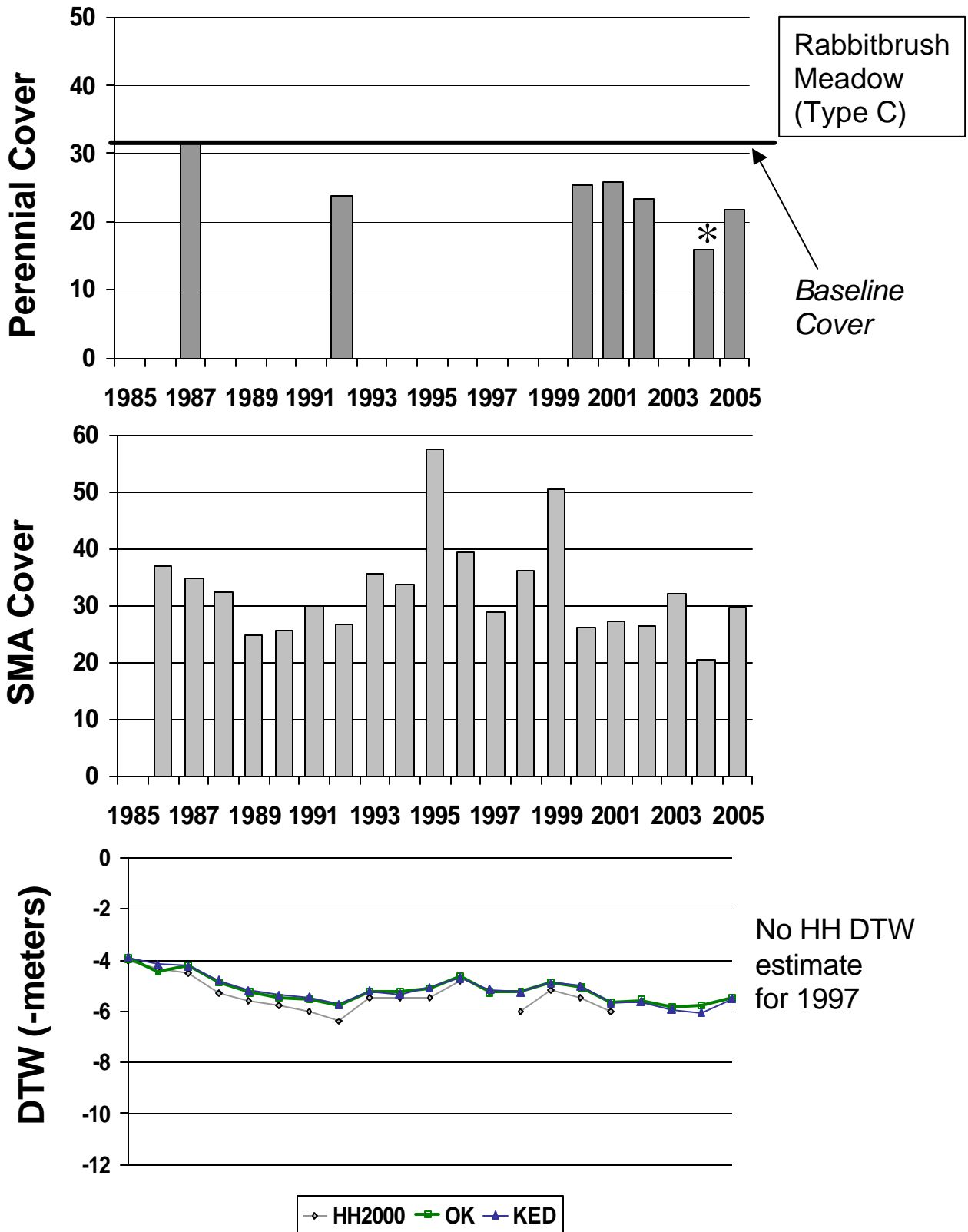


Figure 14. Wellfield: Bishop Cone. Status 2005: DRP

BLK002

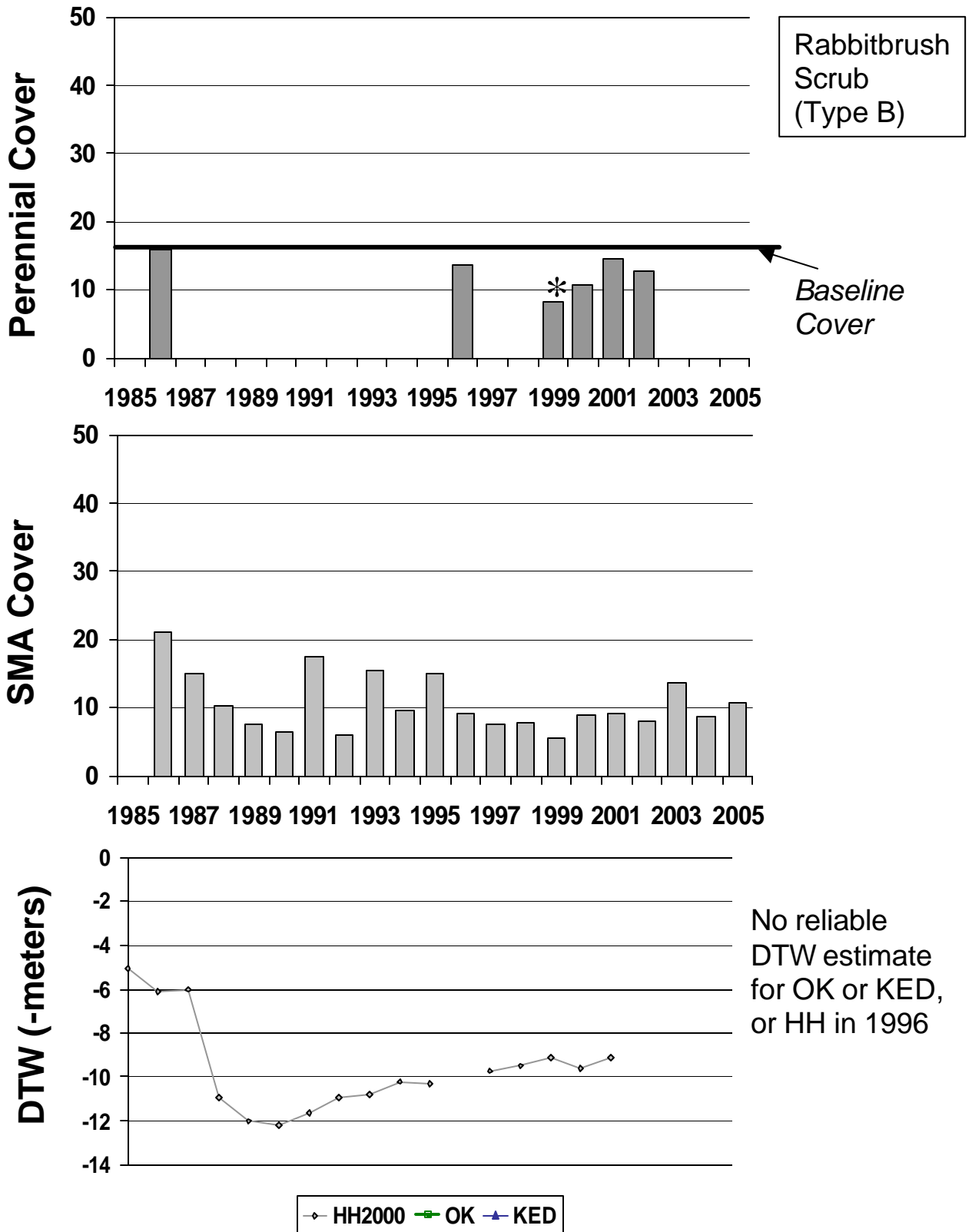


Figure 15. Wellfield: Taboose Aberdeen. Status 2002: DRP

BLK009

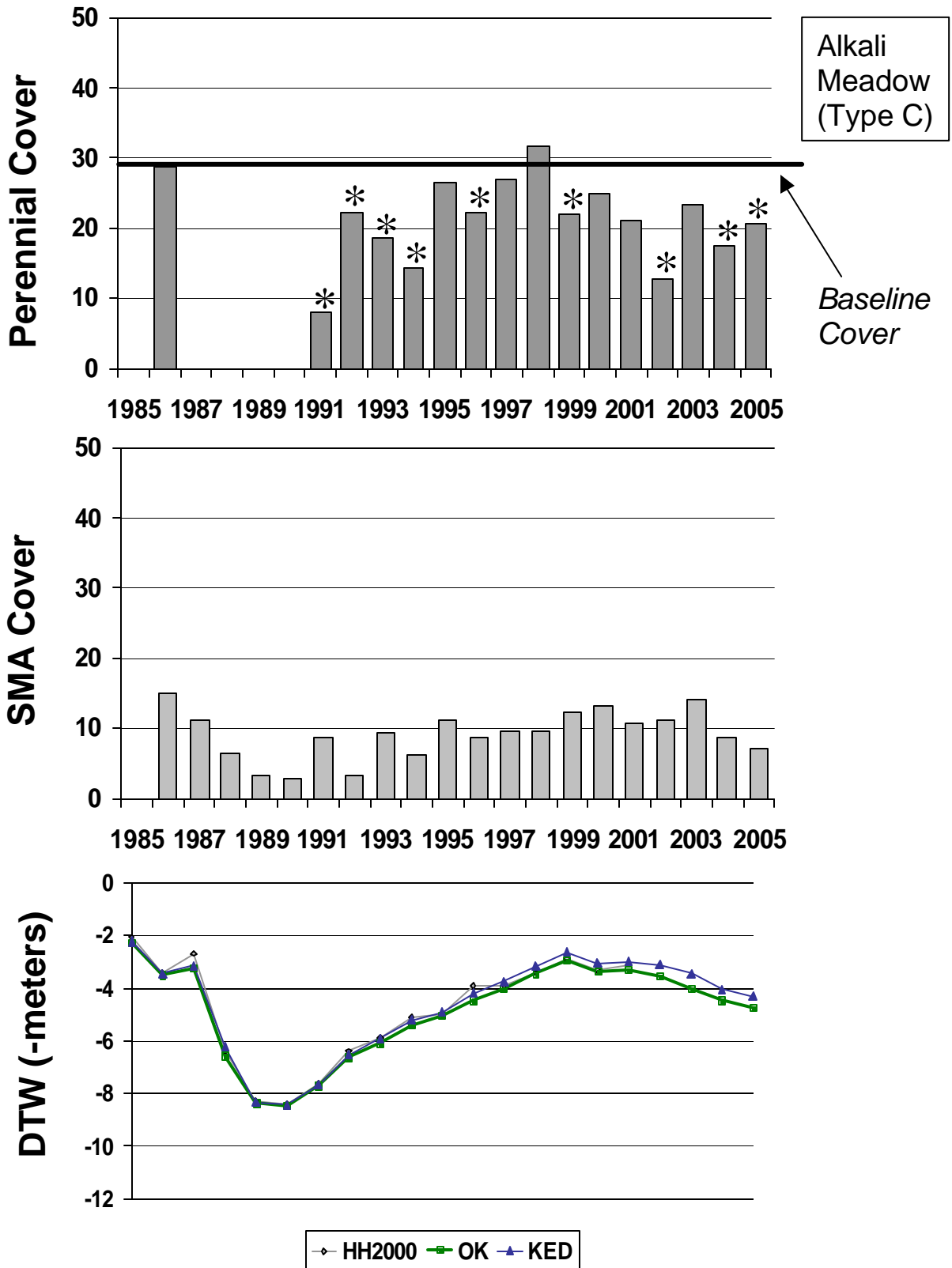


Figure 16. Wellfield: Taboose Aberdeen. Status 2005: DRP

BLK016

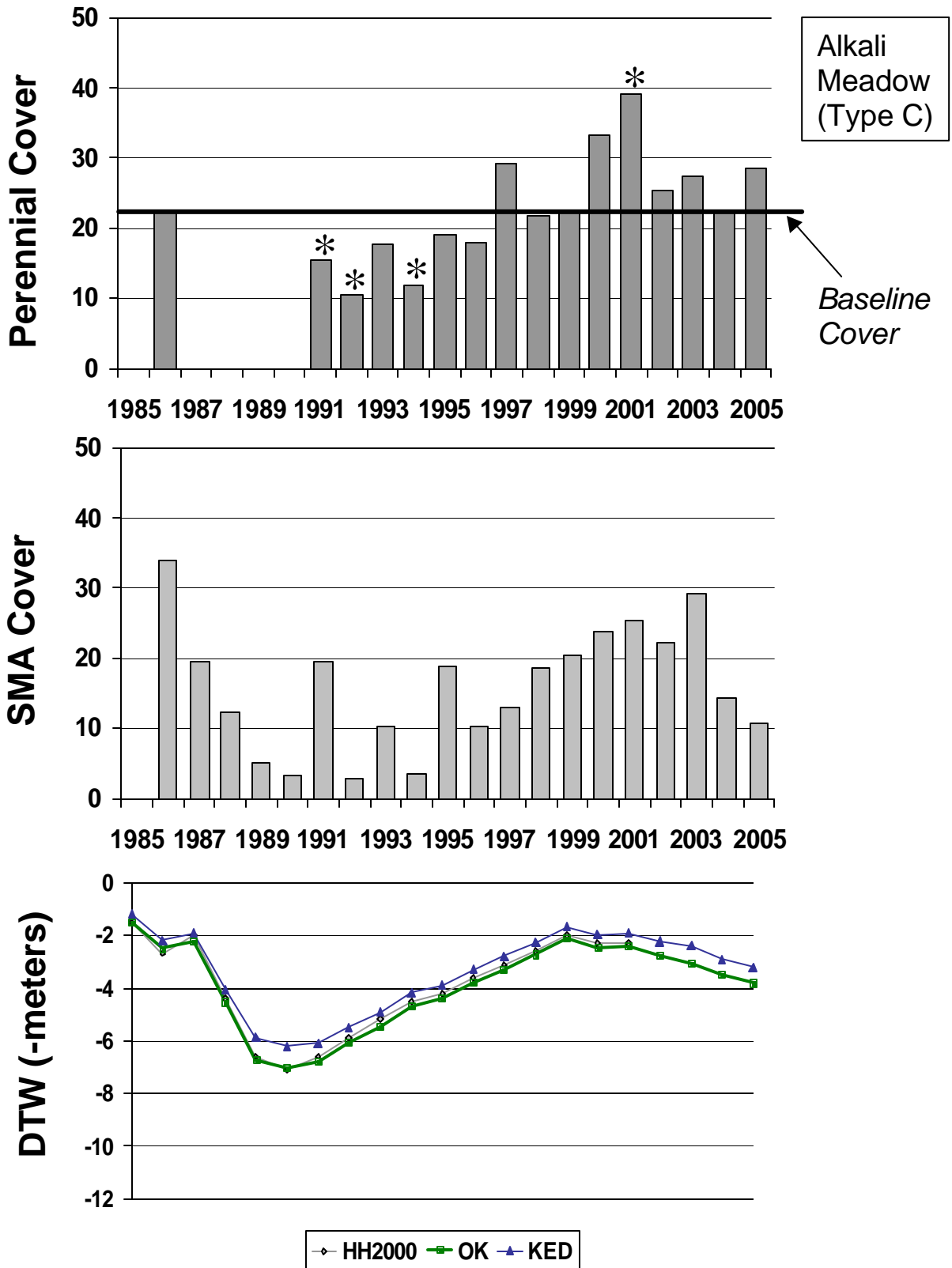


Figure 17. Wellfield: Taboose Aberdeen. Status 2005: DRPfree

BLK021

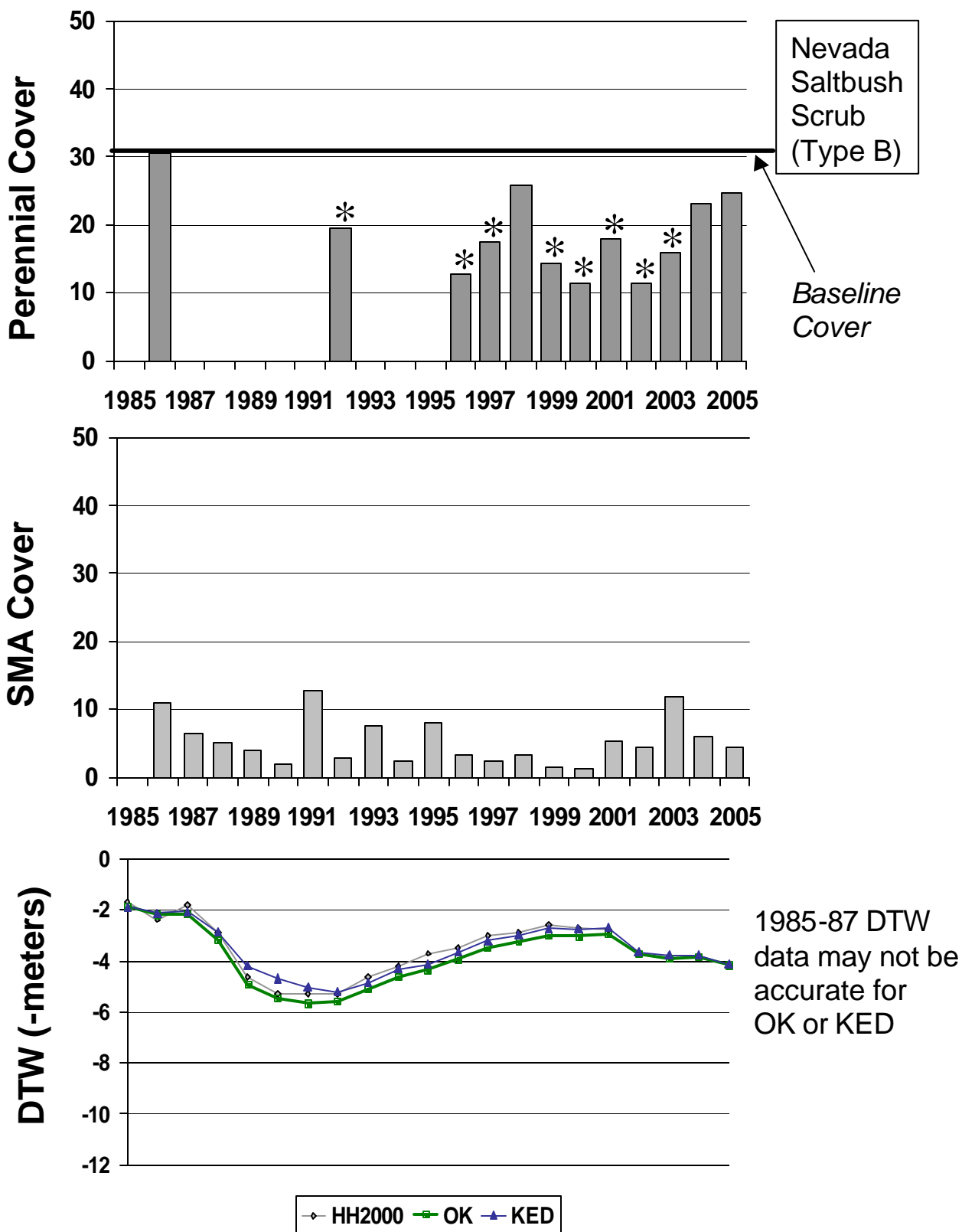


Figure 18. Wellfield: Taboose Aberdeen. Status 2005: DRP

BLK024

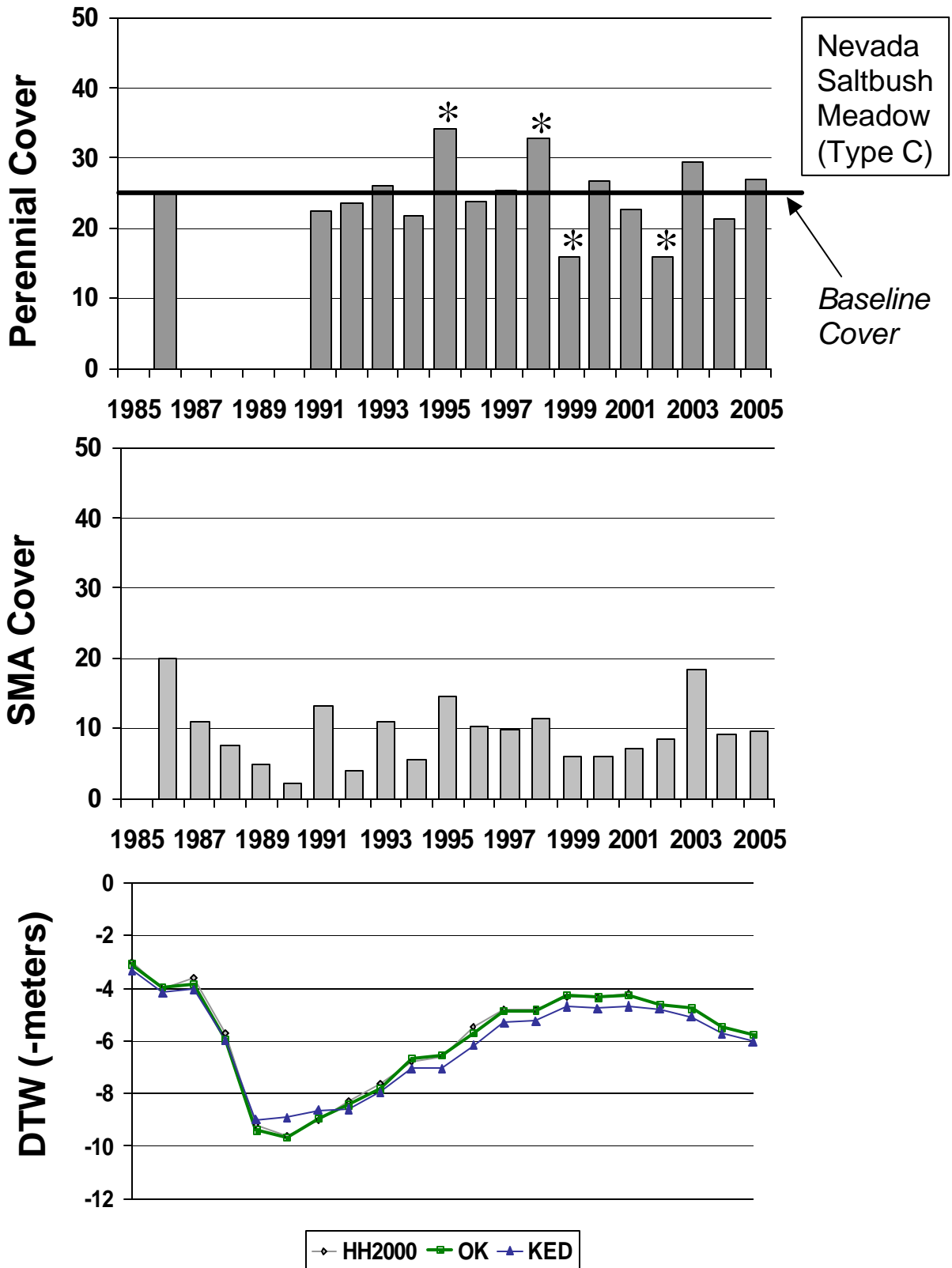


Figure 19. Wellfield: Taboose Aberdeen. Status 2005: DRP

BLK033

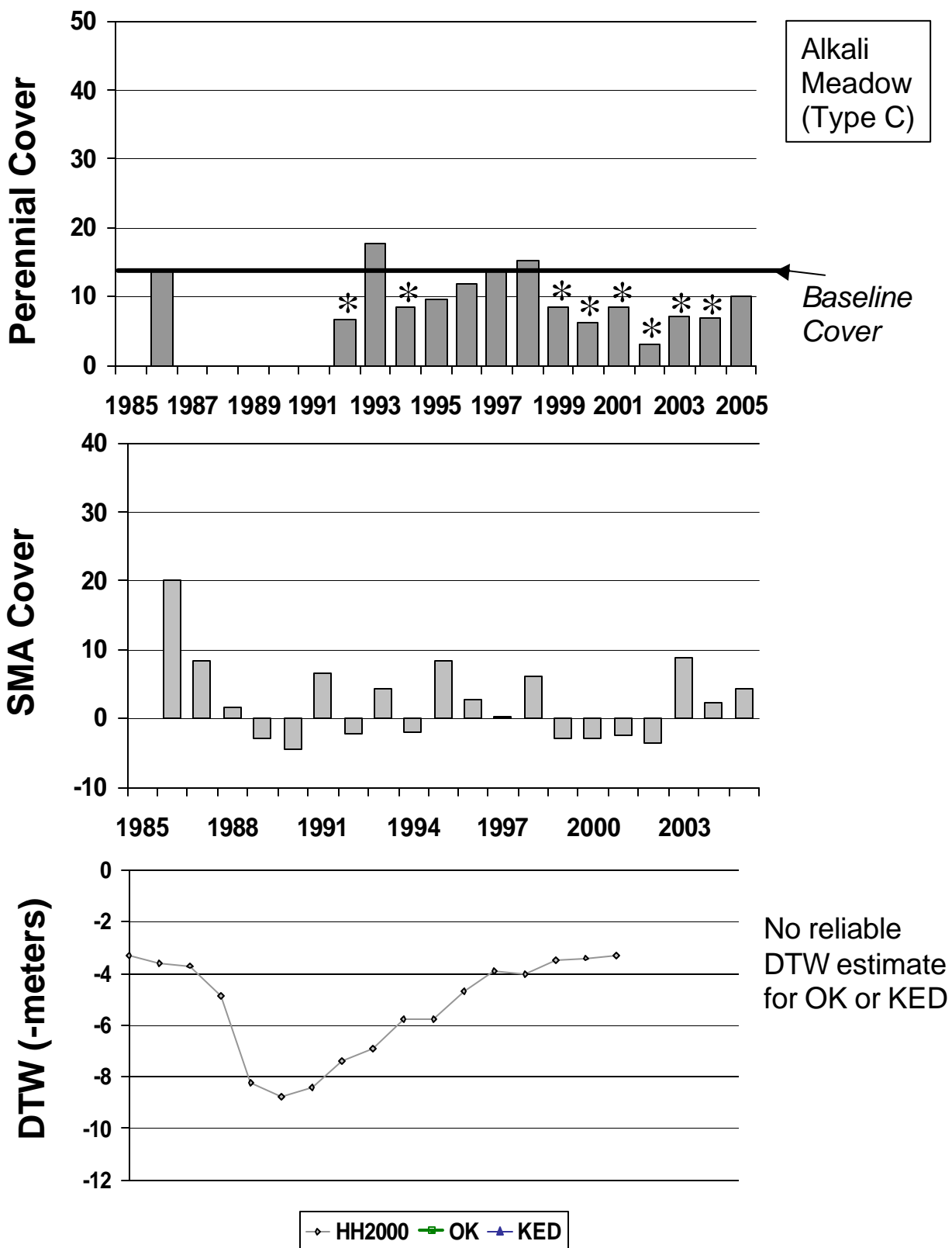


Figure 20. Wellfield: Taboose Aberdeen. Status 2005: DRP

BLK039

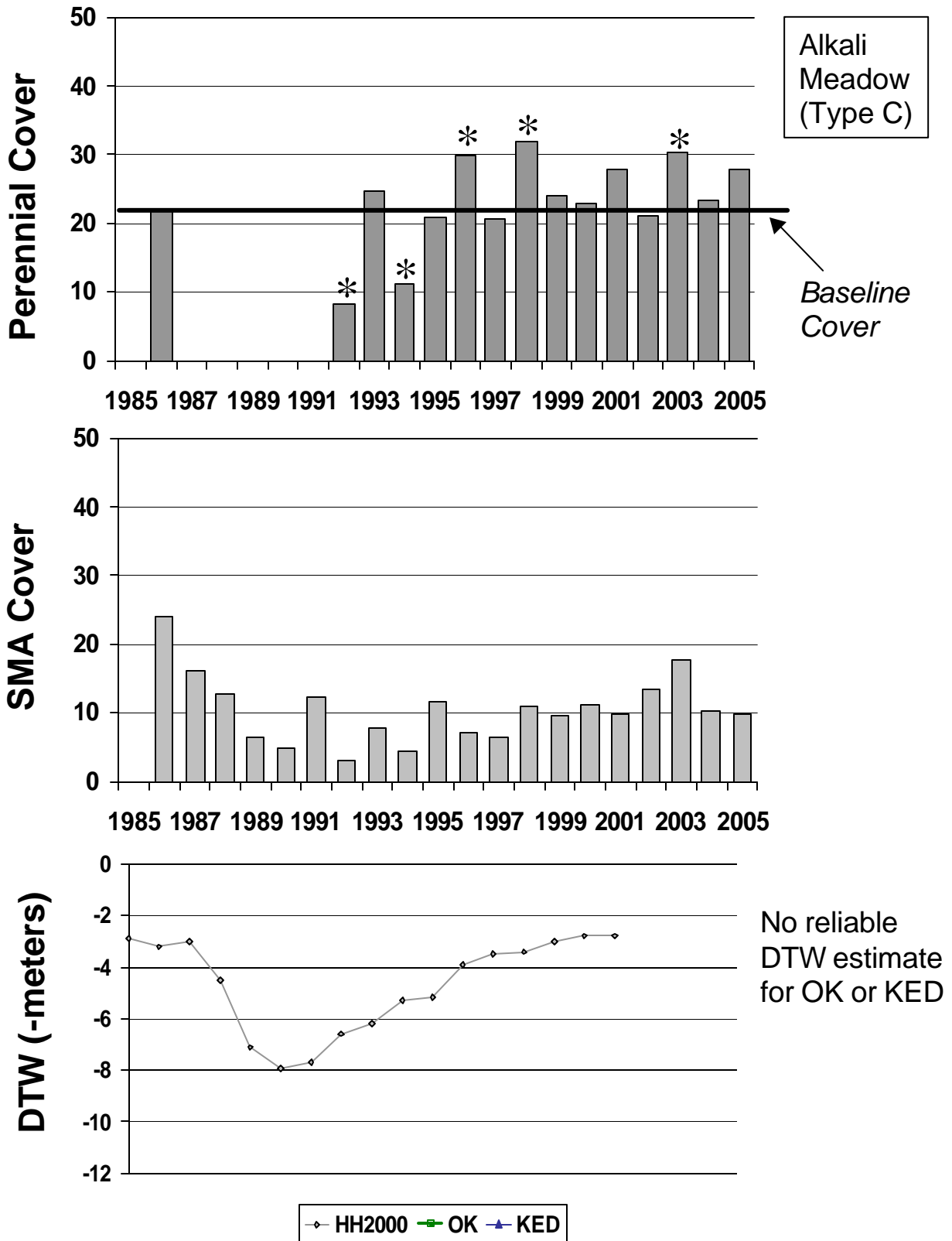


Figure 21. Wellfield: Taboose Aberdeen. Status 2005: DRPfree

BLK044

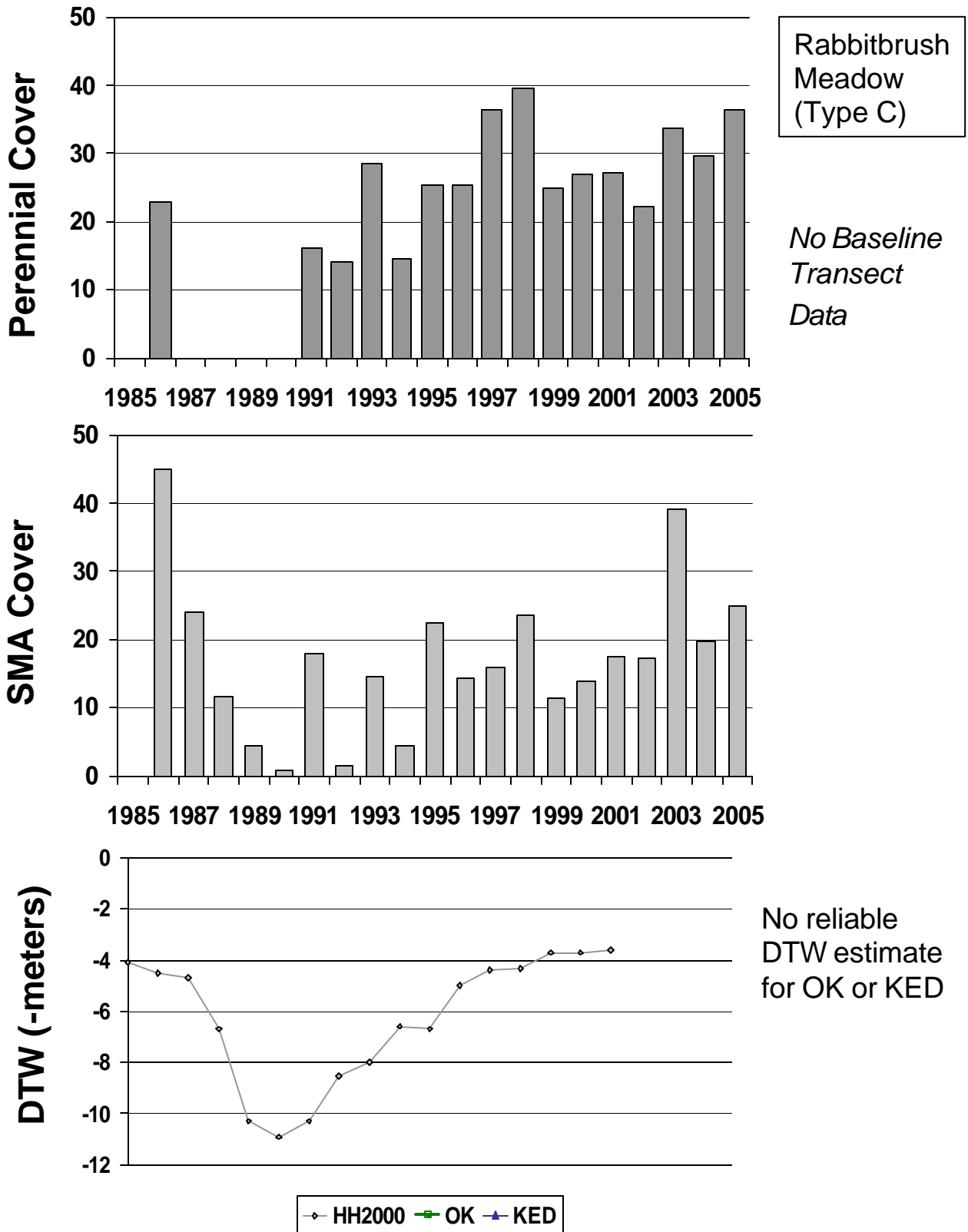


Figure 22. Wellfield: Taboose Aberdeen. Status 2005: DRPfree

BLK069

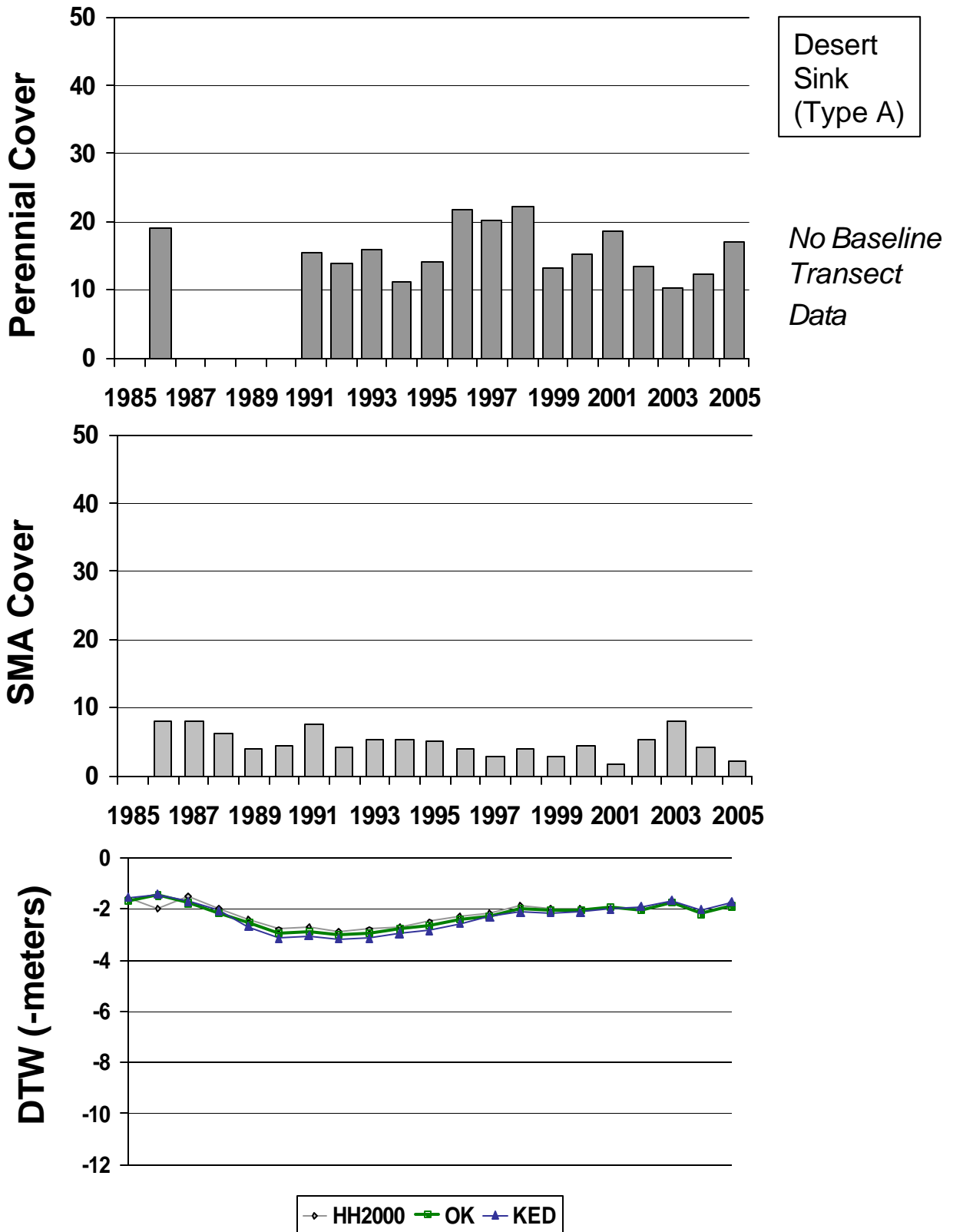


Figure 23. Wellfield: Thibaut Sawmill. Status 2005: DRPfree

BLK074

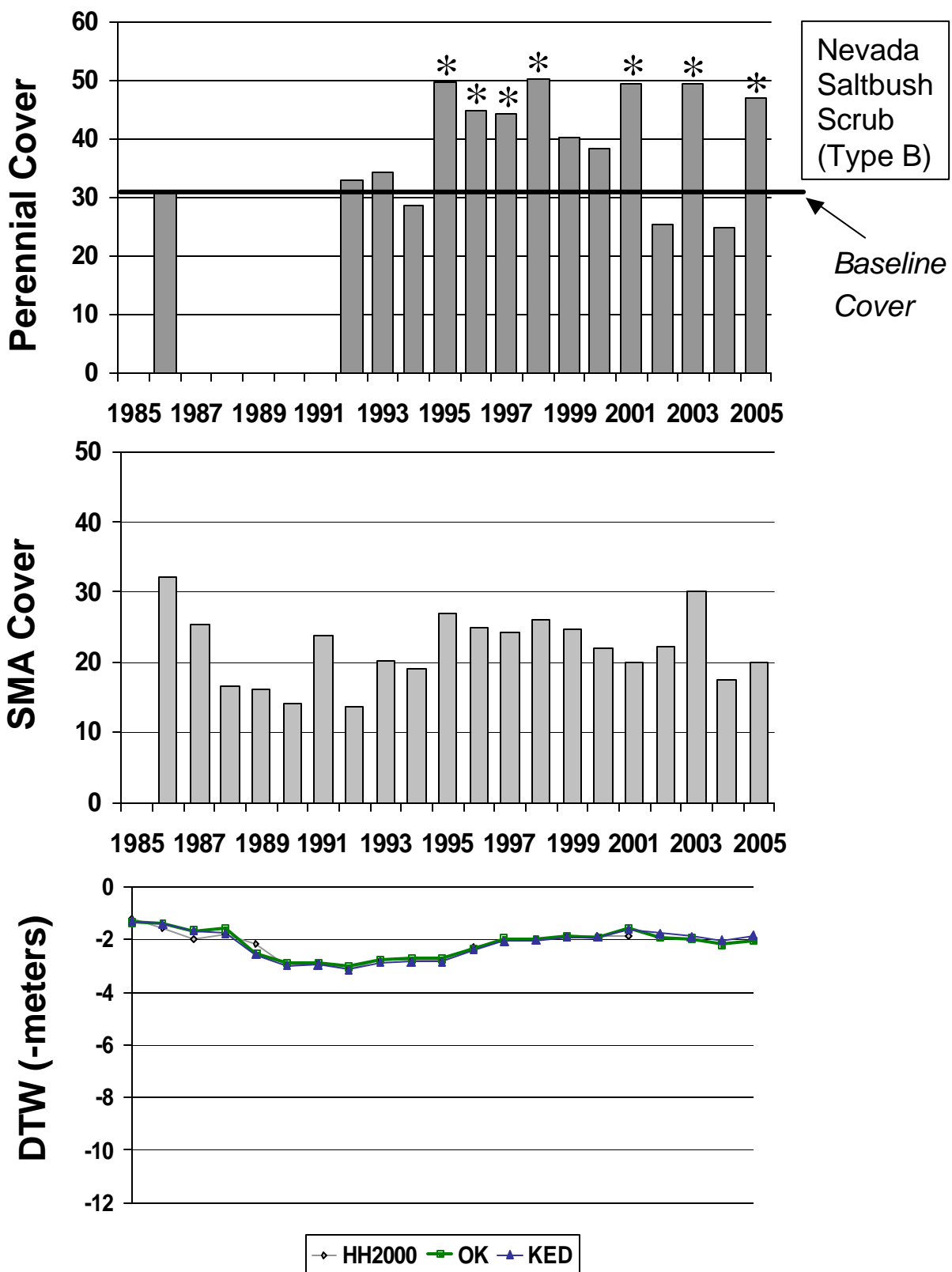


Figure 24. Wellfield: Thibaut Sawmill. Status 2005: DRPfree

BLK075

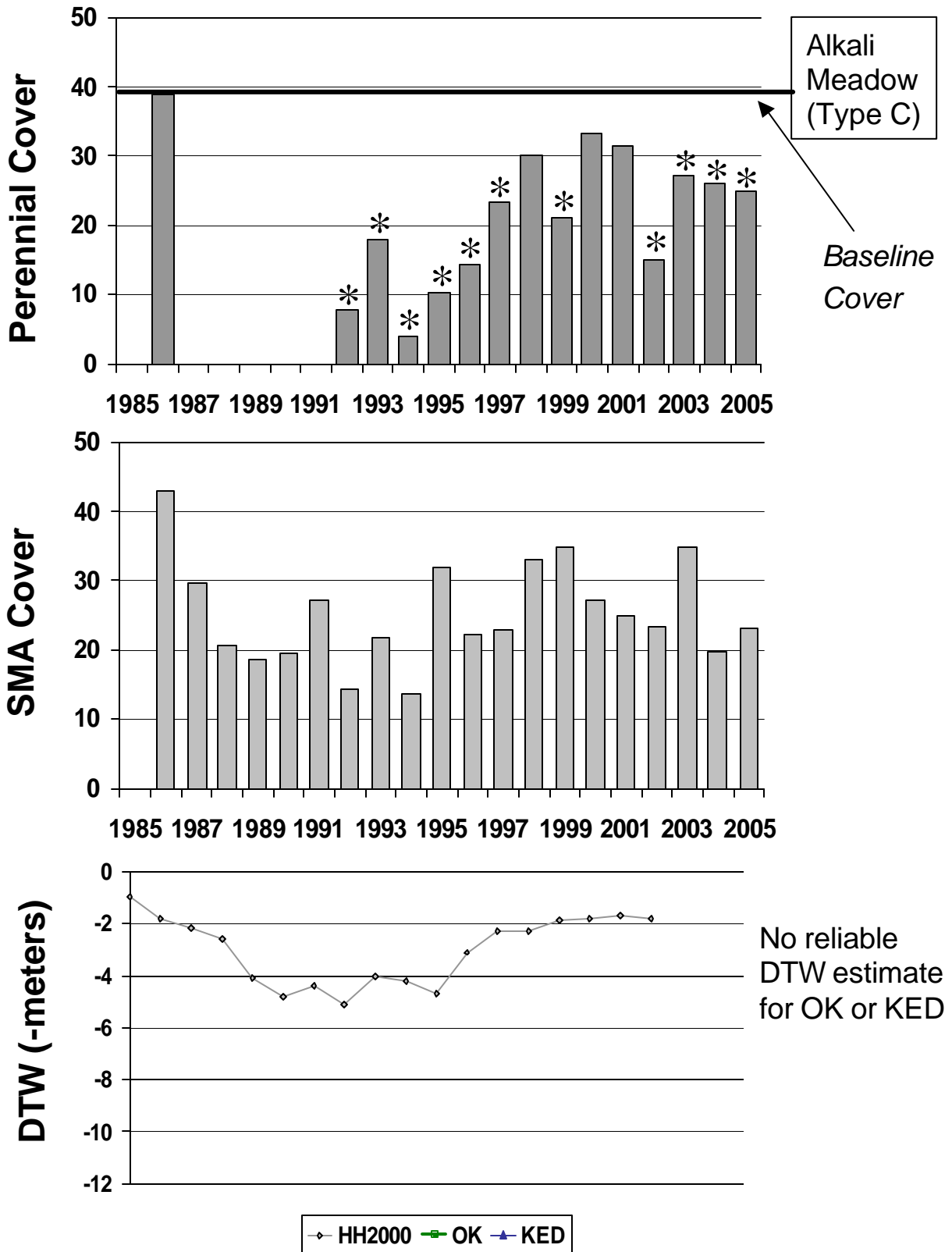


Figure 25. Wellfield: Thibaut Sawmill. Status 2005: DRP

BLK077

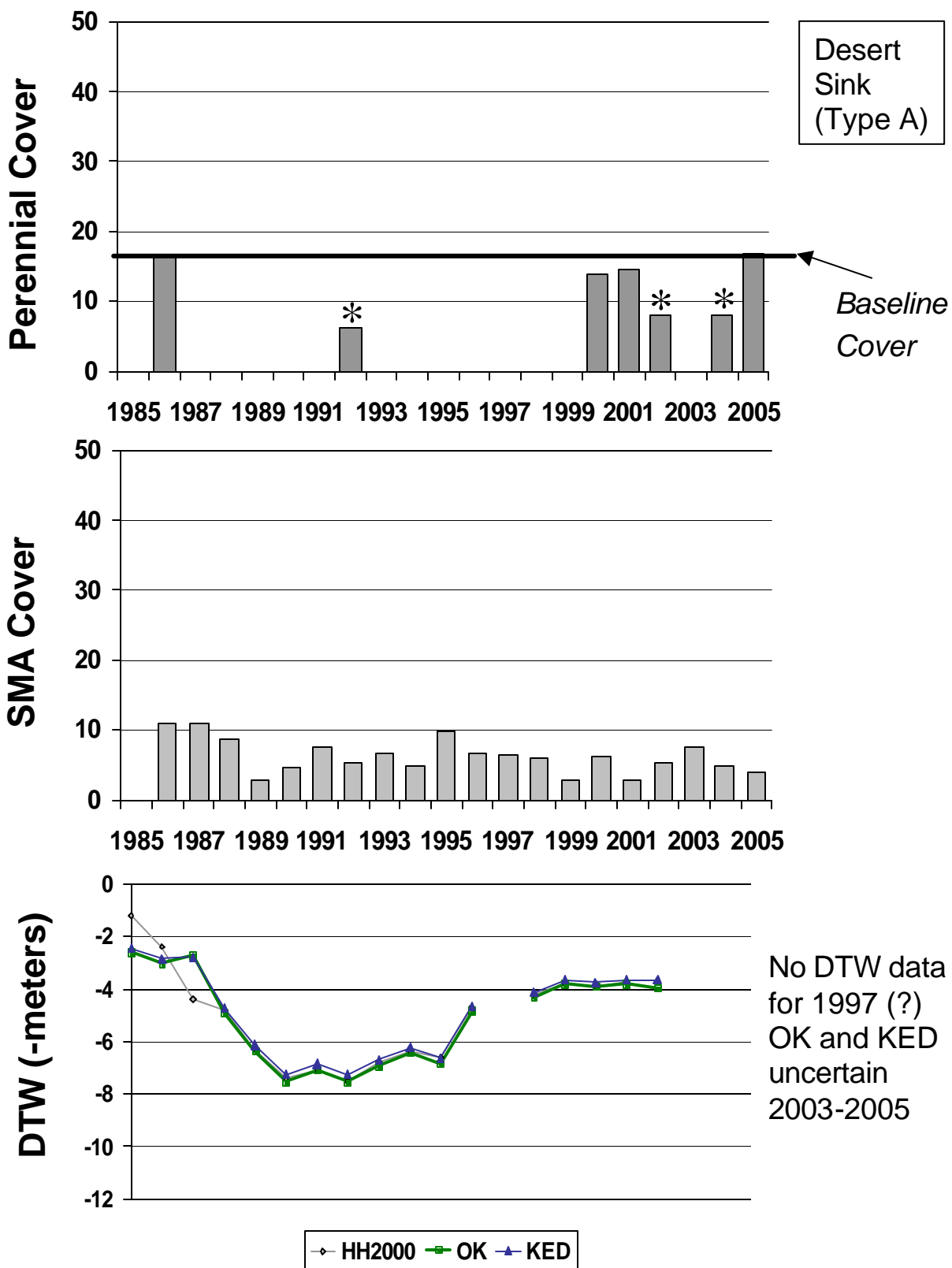


Figure 26. Wellfield: Thibaut Sawmill. Status 2005: DRP

BLK094

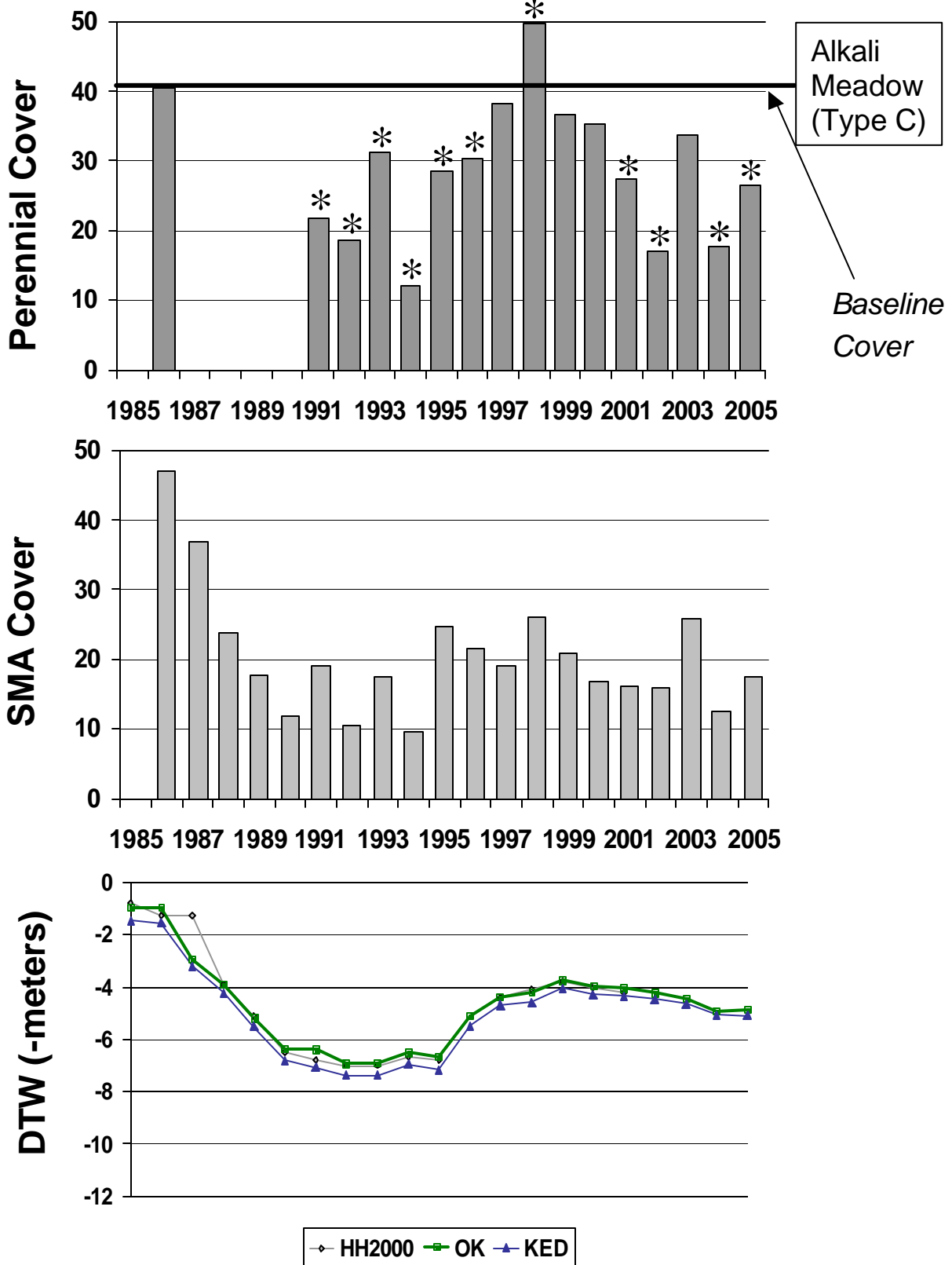


Figure 27. Wellfield: Thibaut Sawmill. Status 2005: DRP

BLK099

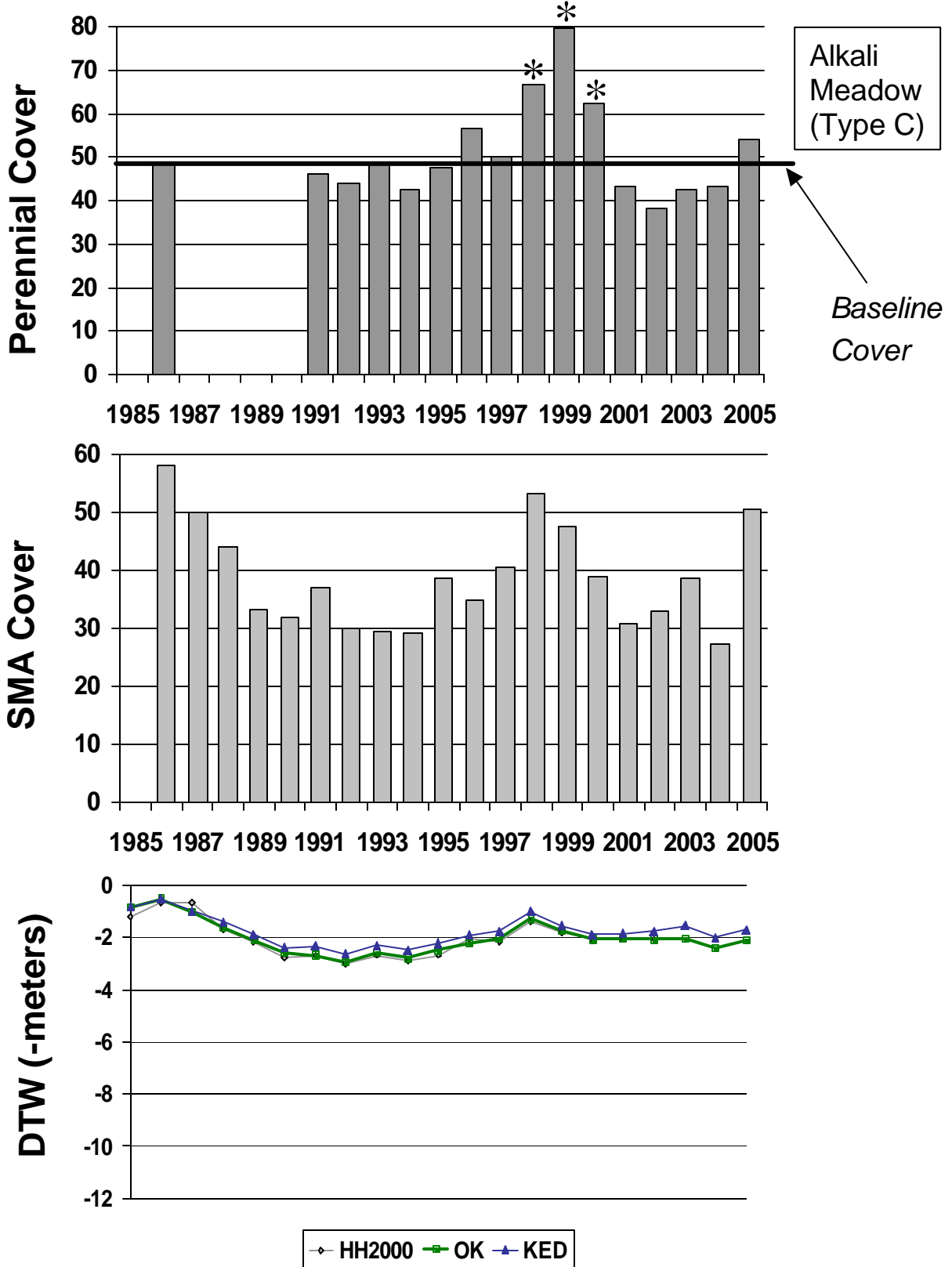


Figure 28. Wellfield: Thibaut Sawmill. Status 2005: DRPfree

BLK115

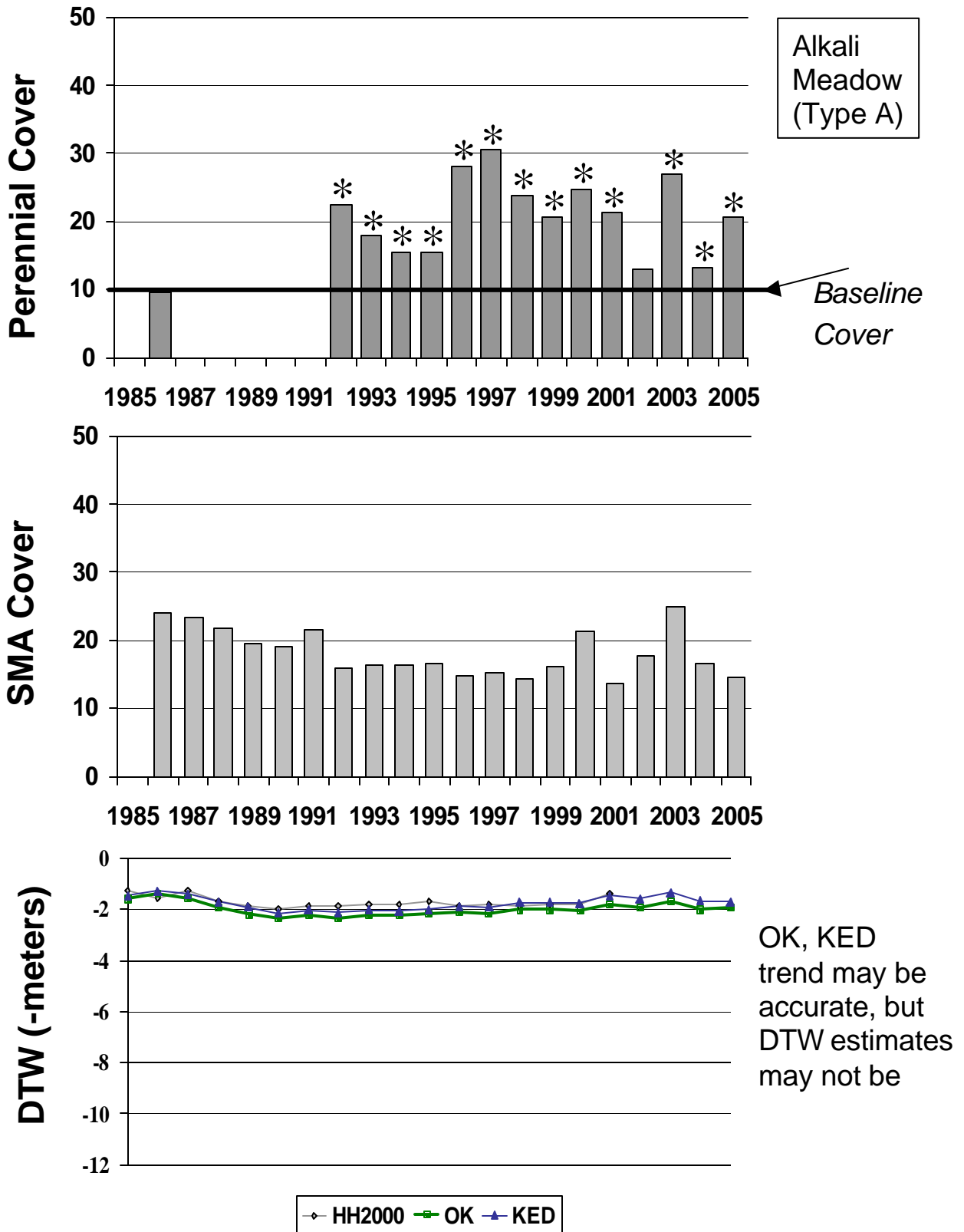


Figure 29. Status 2005: Control

BLK142

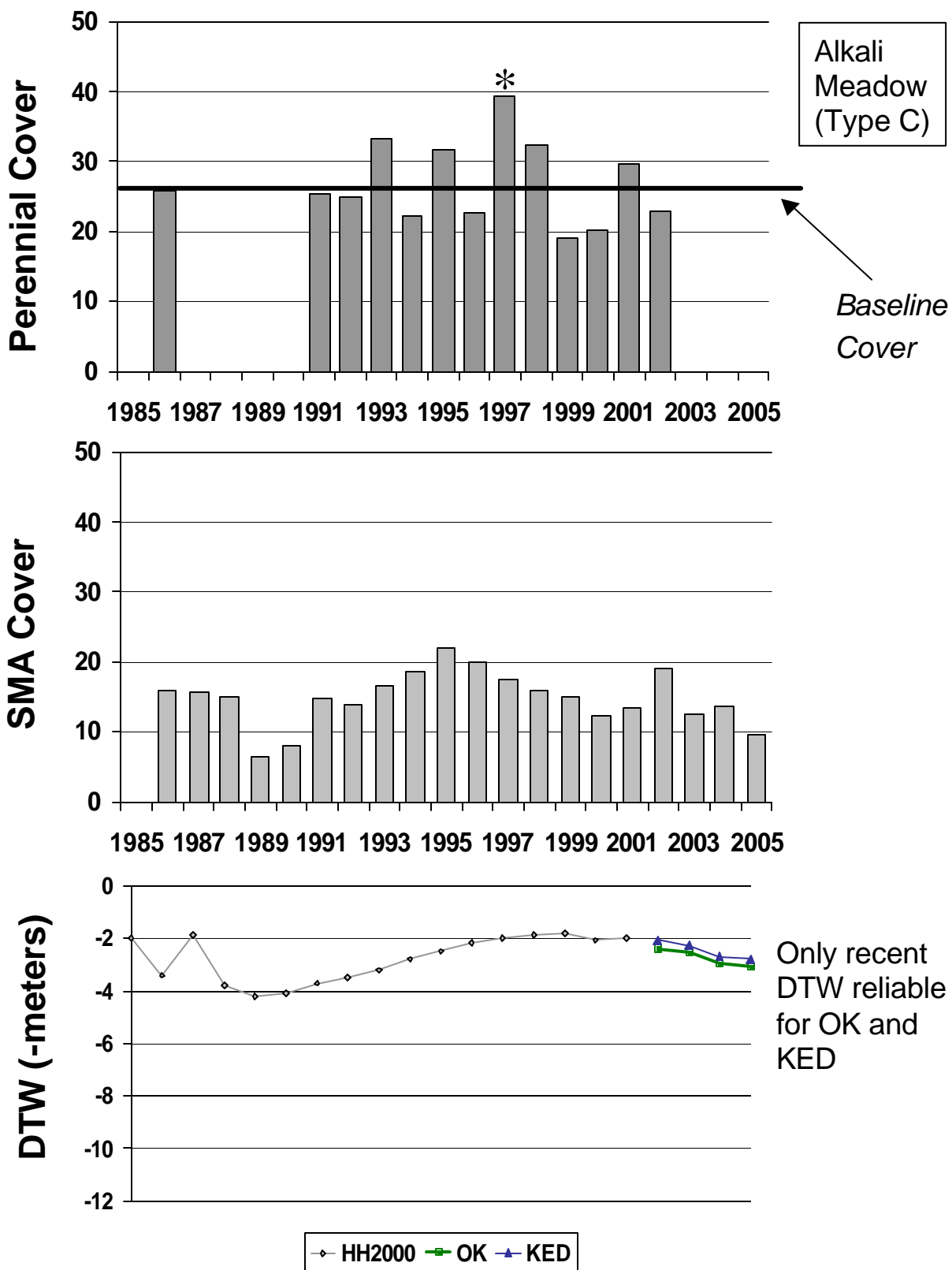


Figure 30. Wellfield: Taboose Aberdeen. Status 2002: DRPfree

FSL051

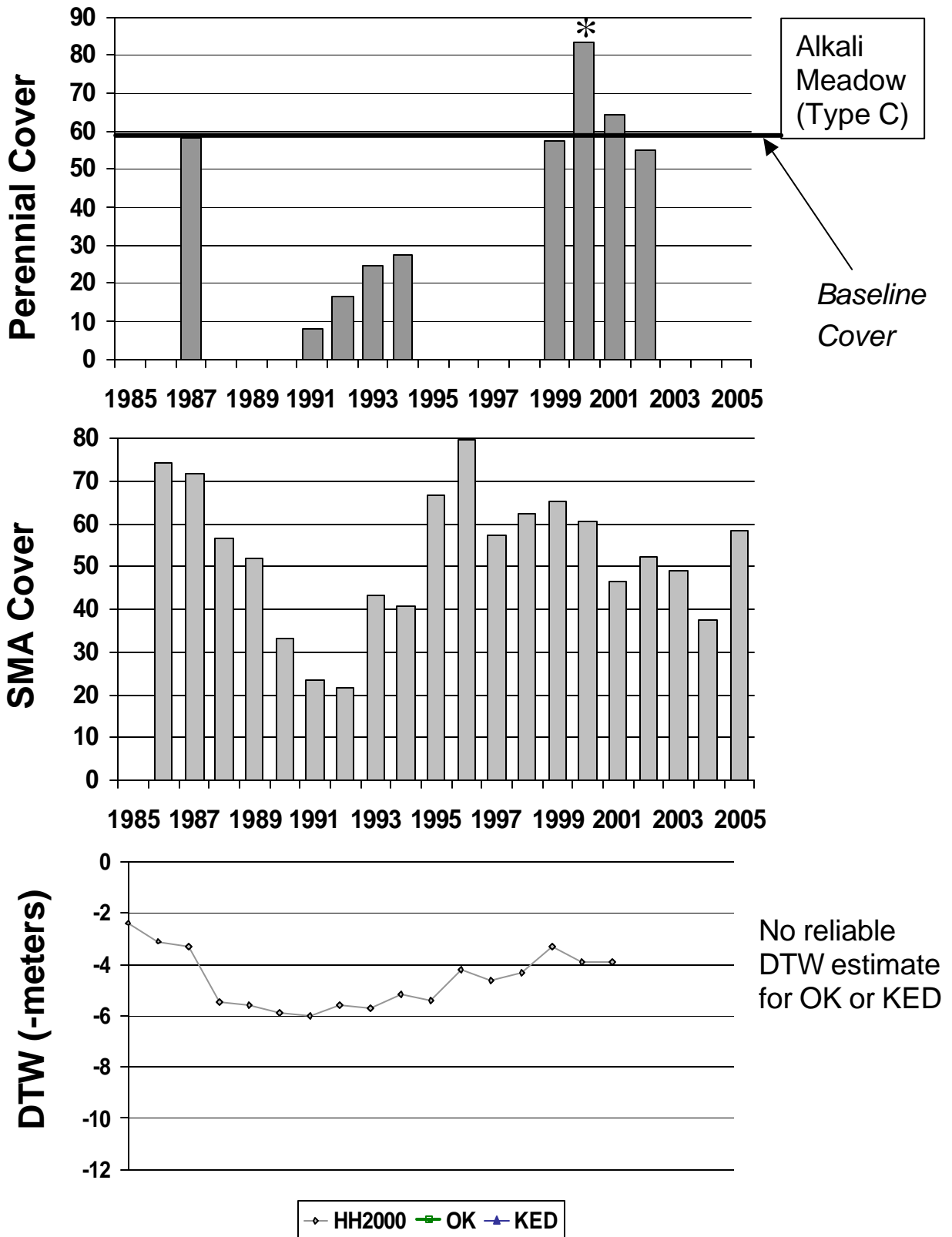


Figure 31. Wellfield: Laws. Status 2002: DRPfree

FSL065

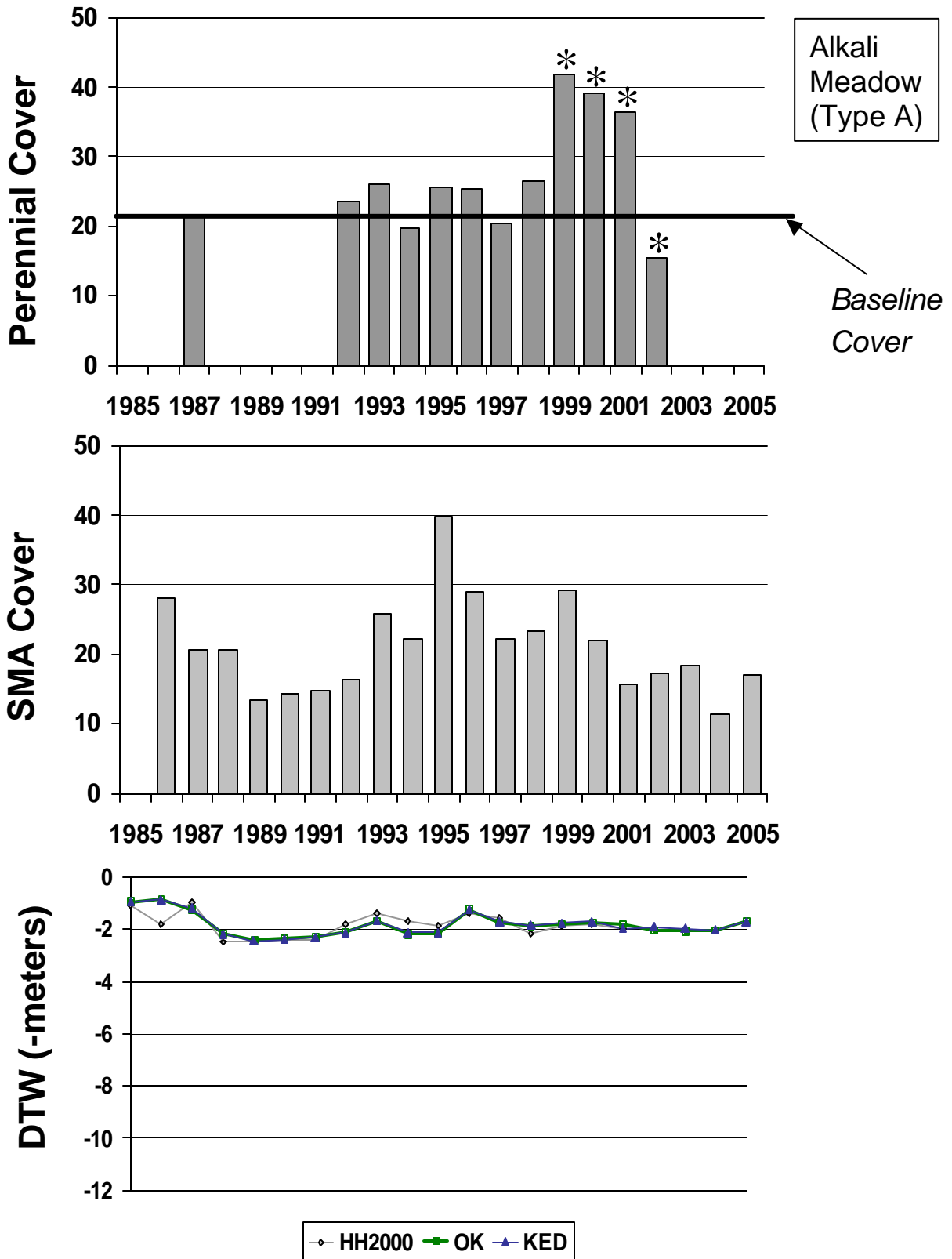


Figure 32. Wellfield: Bishop Cone. Status 2002: DRPfree

FSL116

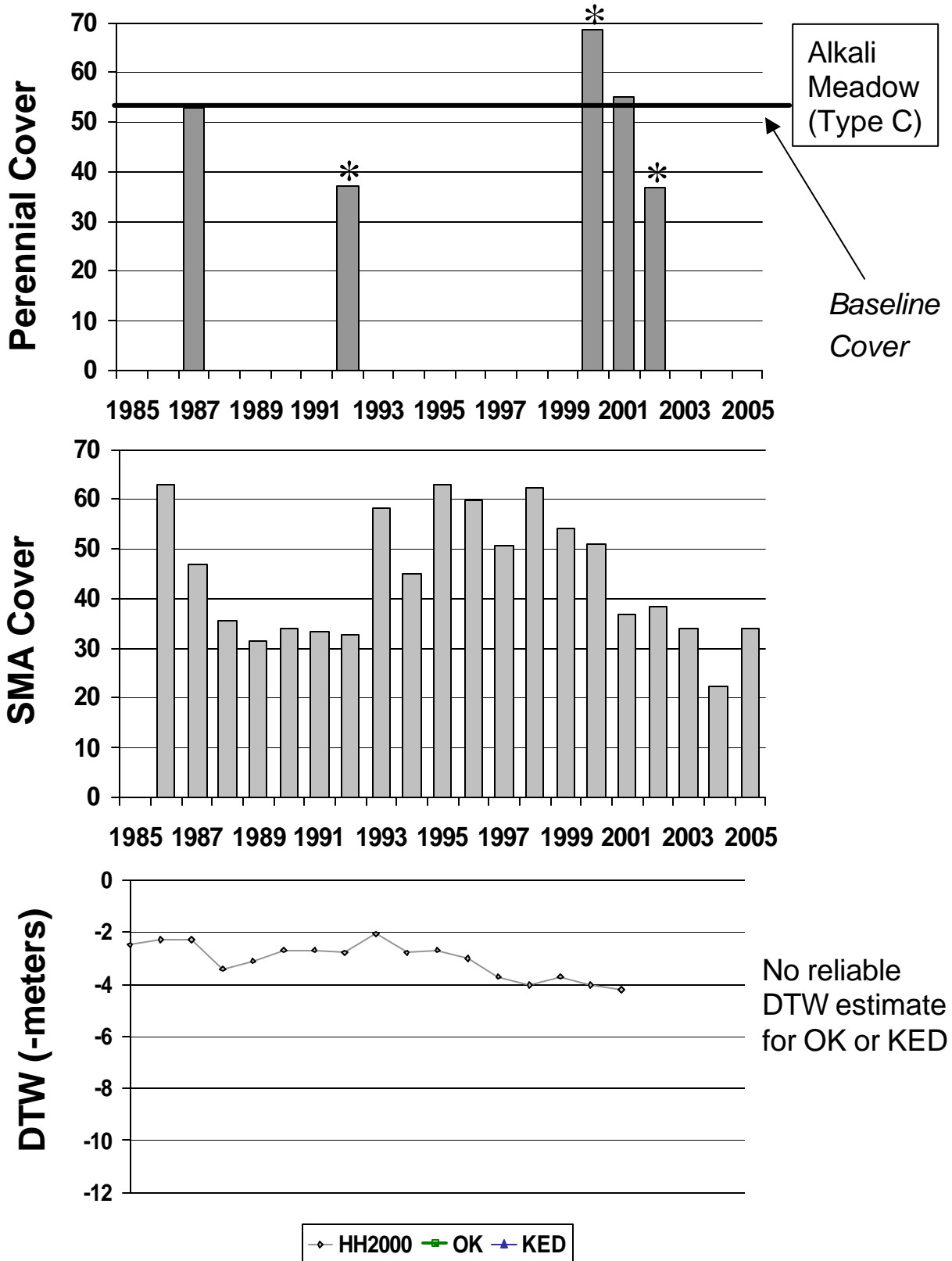


Figure 33. Wellfield: Bishop Cone. Status 2002: DRPfree

FSL123

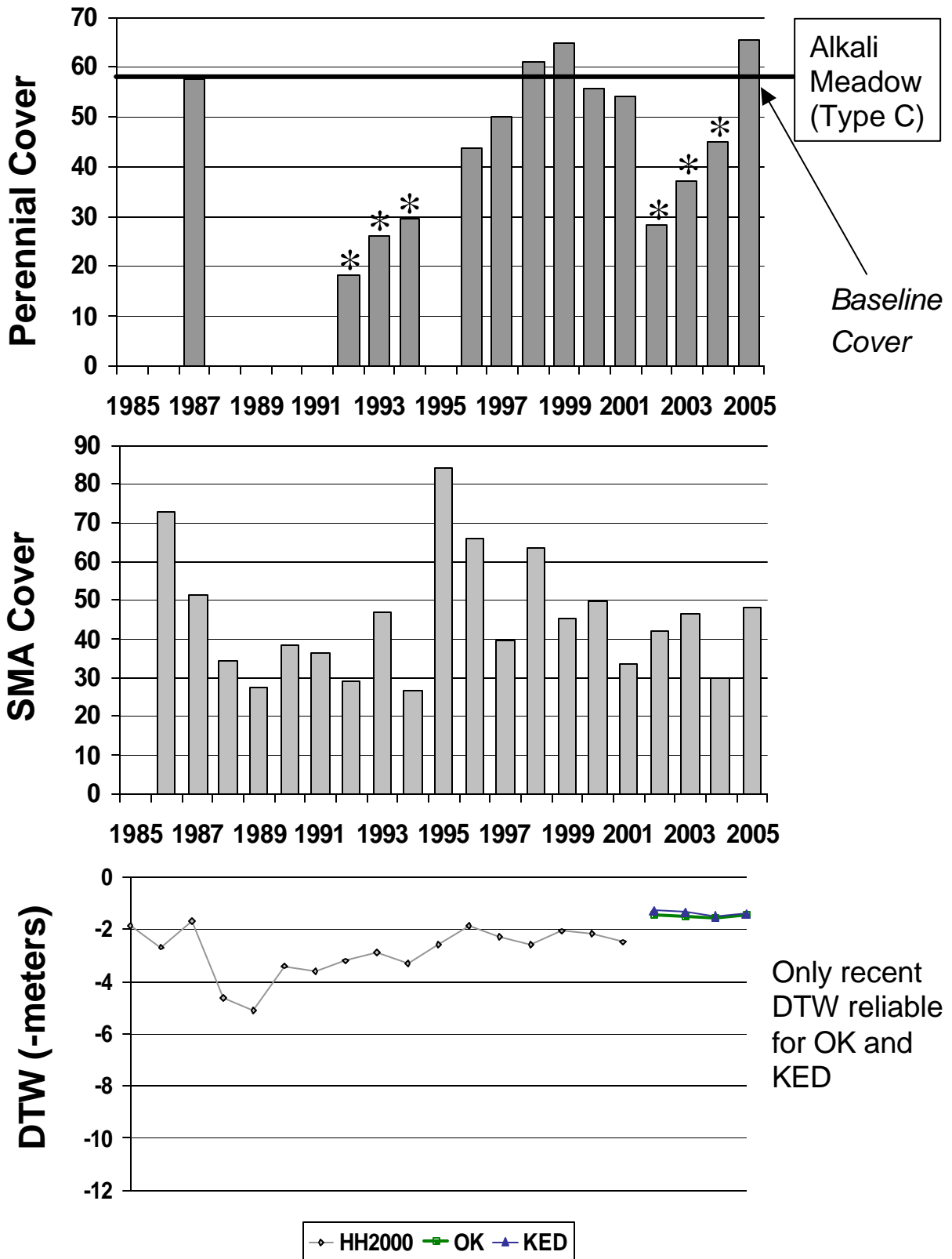


Figure 34. Wellfield: Bishop Cone. Status 2005: DRPfree

FSL187

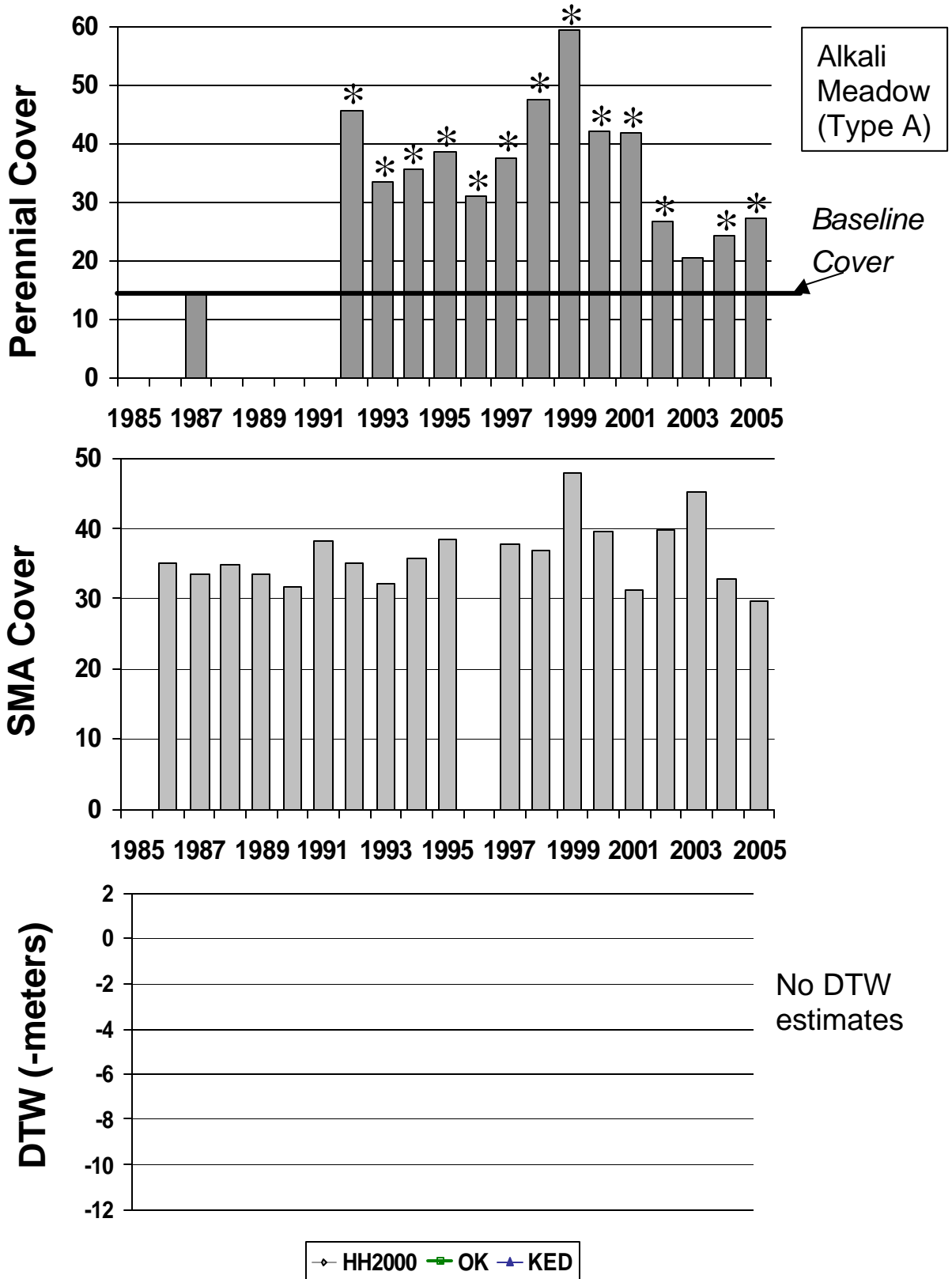


Figure 35. Status 2005: Control

FSP004

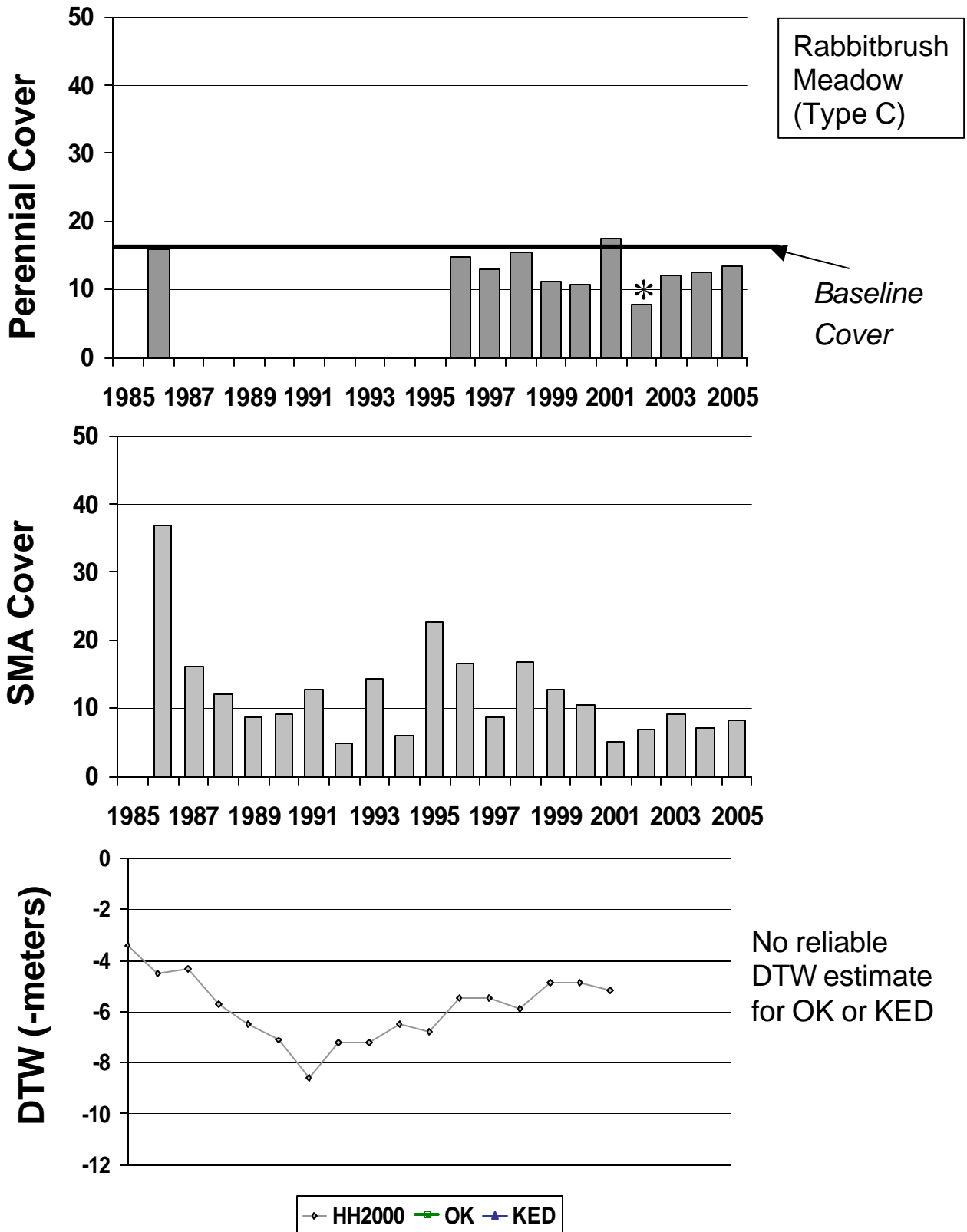


Figure 36. Wellfield: Big Pine. Status 2005: DRP

FSP006

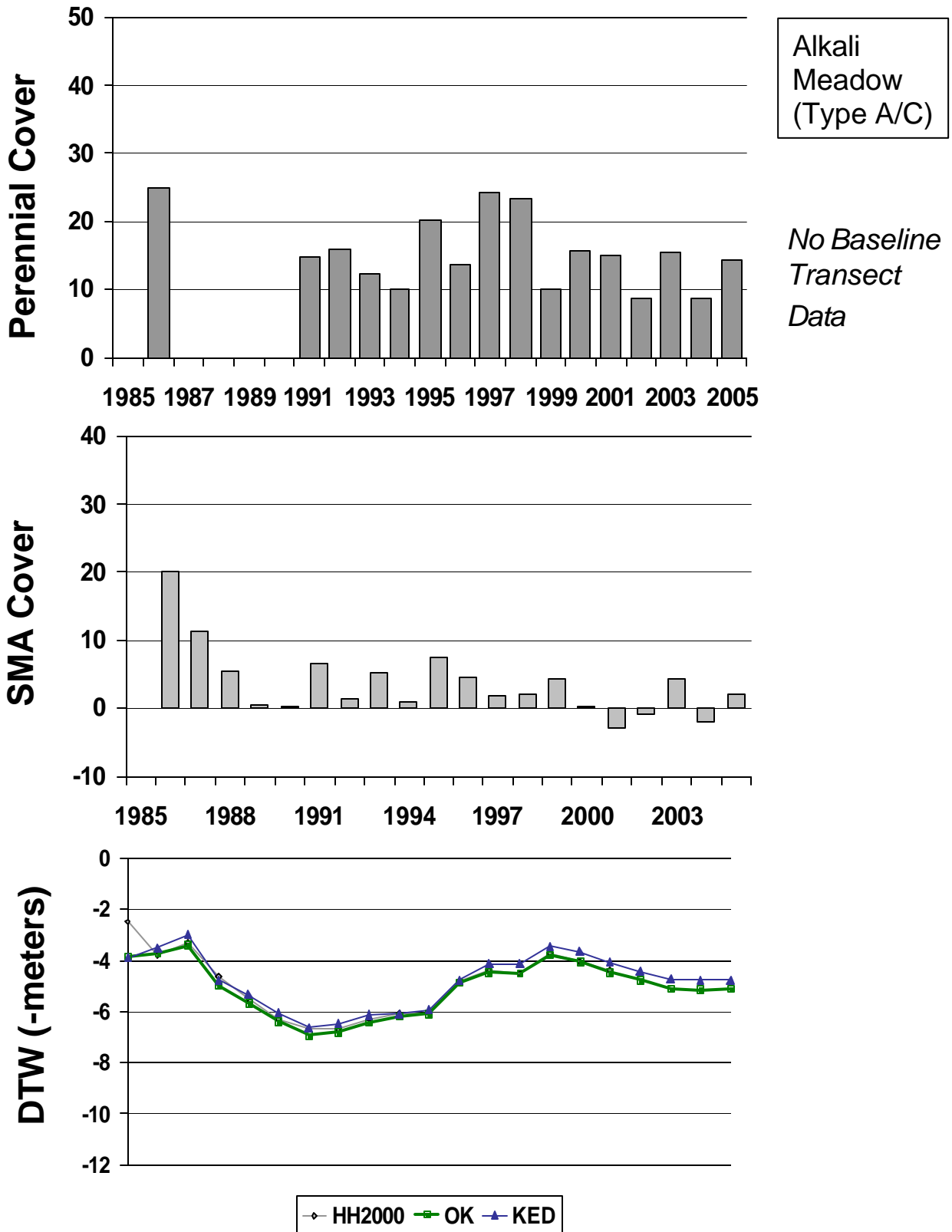


Figure 37. Wellfield: Big Pine. Status 2005: DRP

IND011

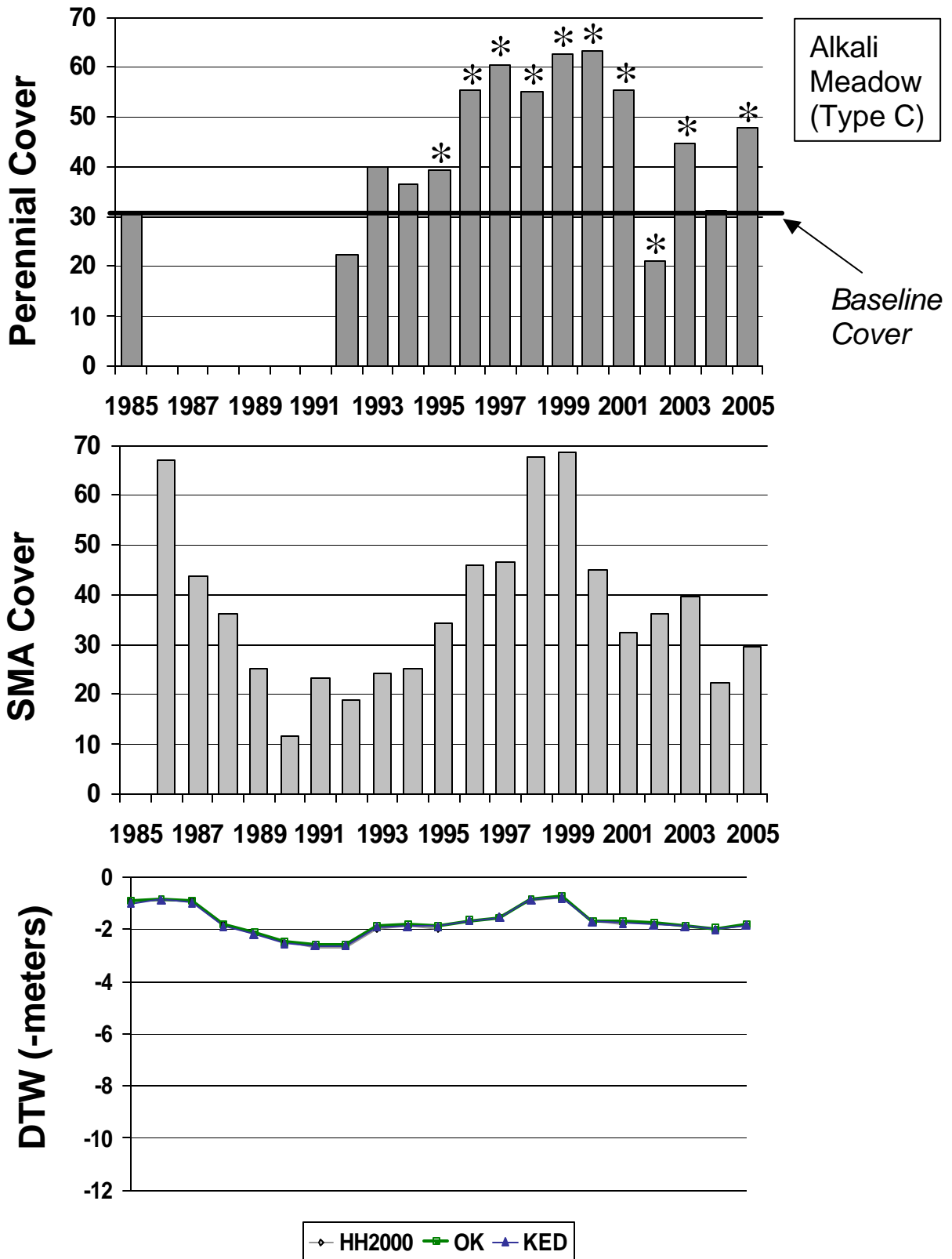


Figure 38. Wellfield: Independence Oak. Status 2005: DRPfree

IND019

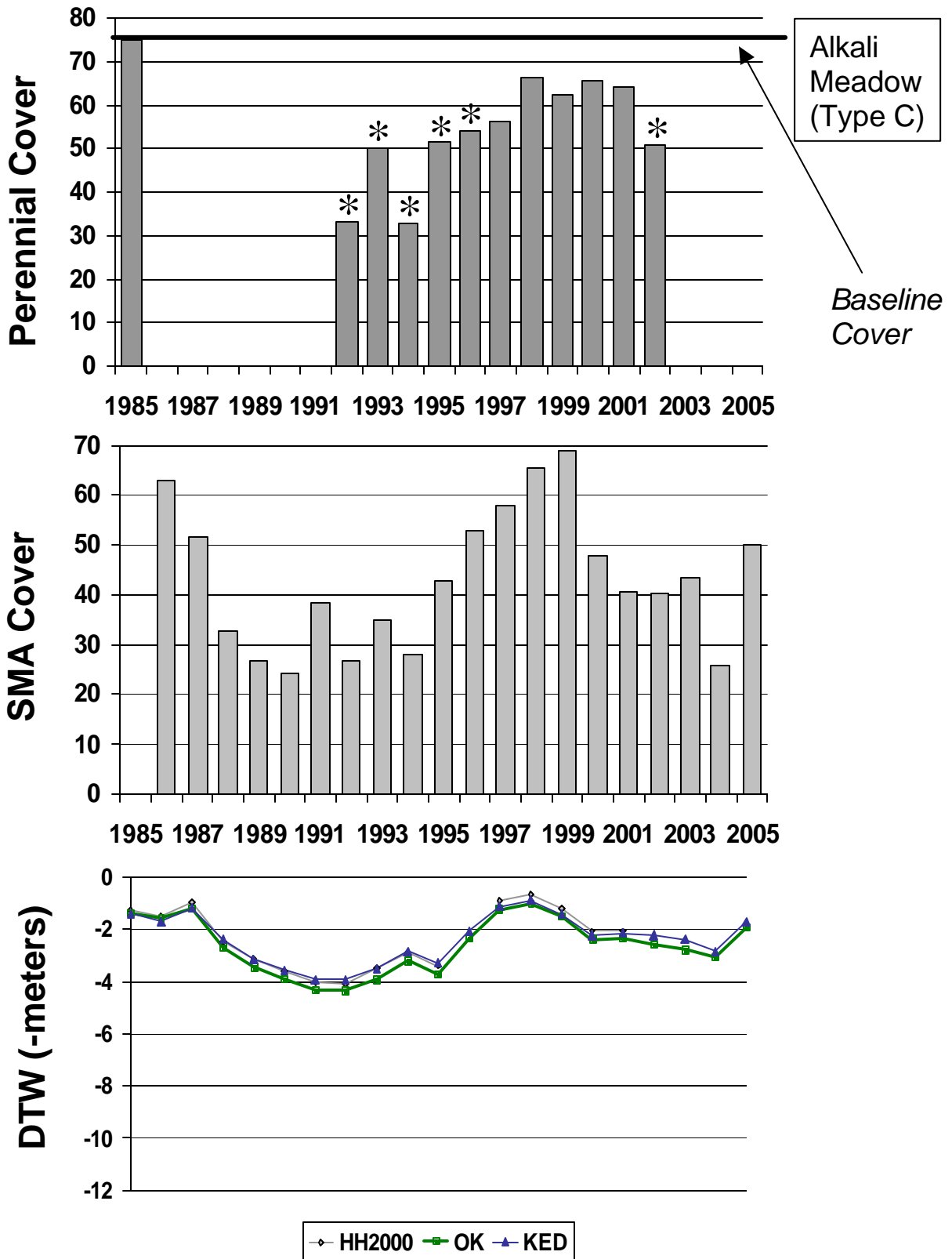


Figure 39. Wellfield: Independence Oak. Status 2002: DRPfree

IND026

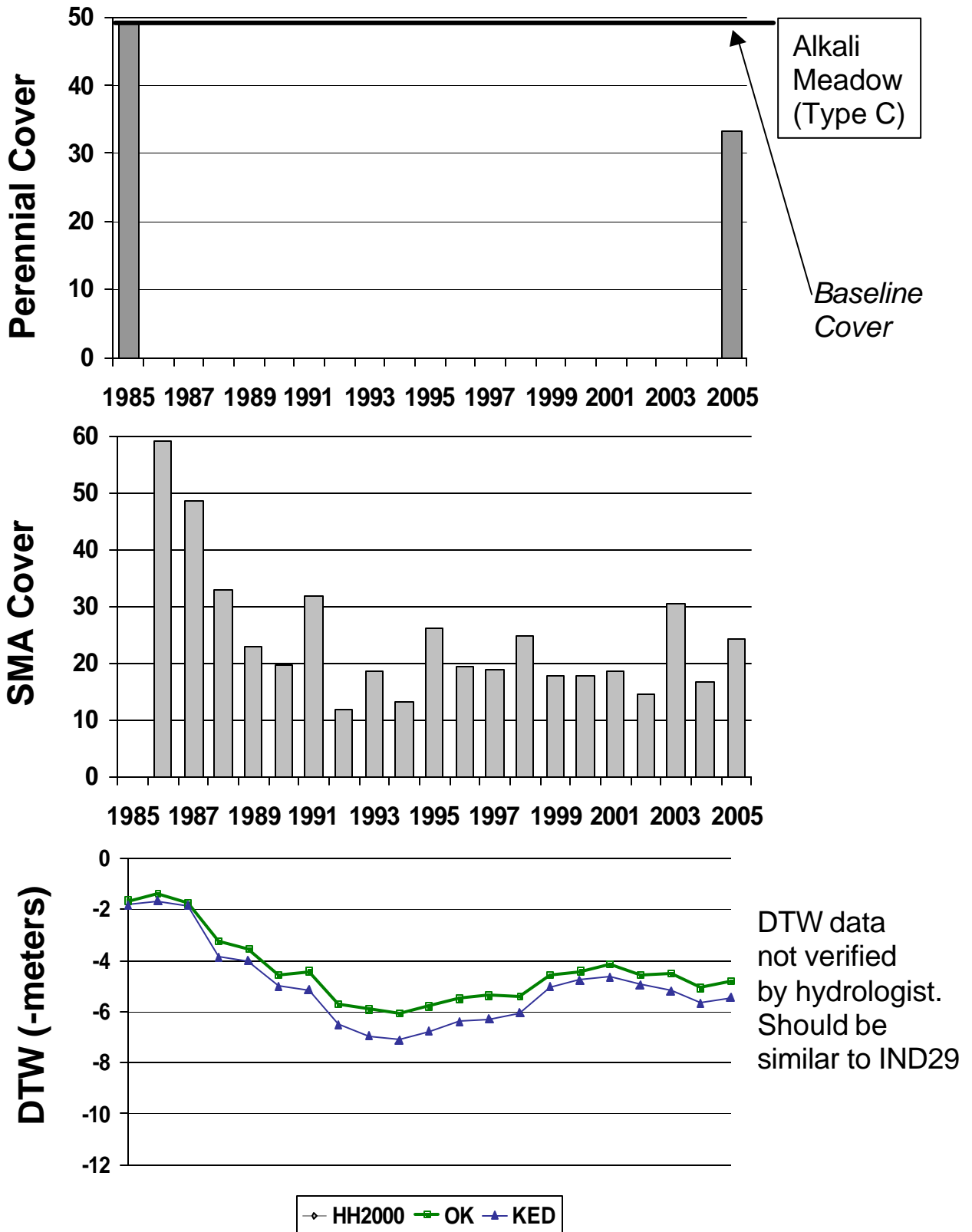


Figure 40. Wellfield: Thibaut Sawmill. Status 2005: Not classified.

IND029

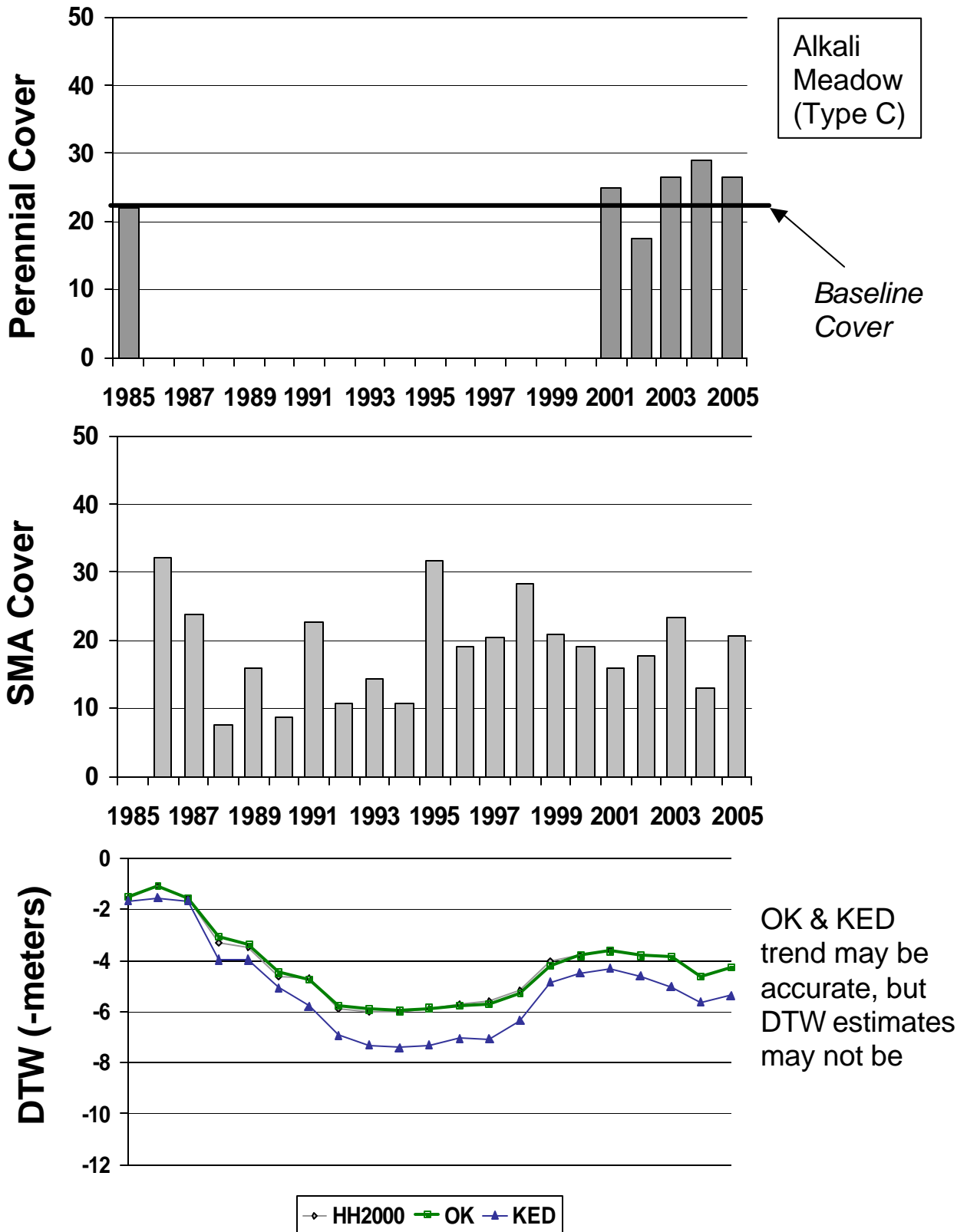


Figure 41. Wellfield: Thibaut Sawmill. Status: DRP

IND035

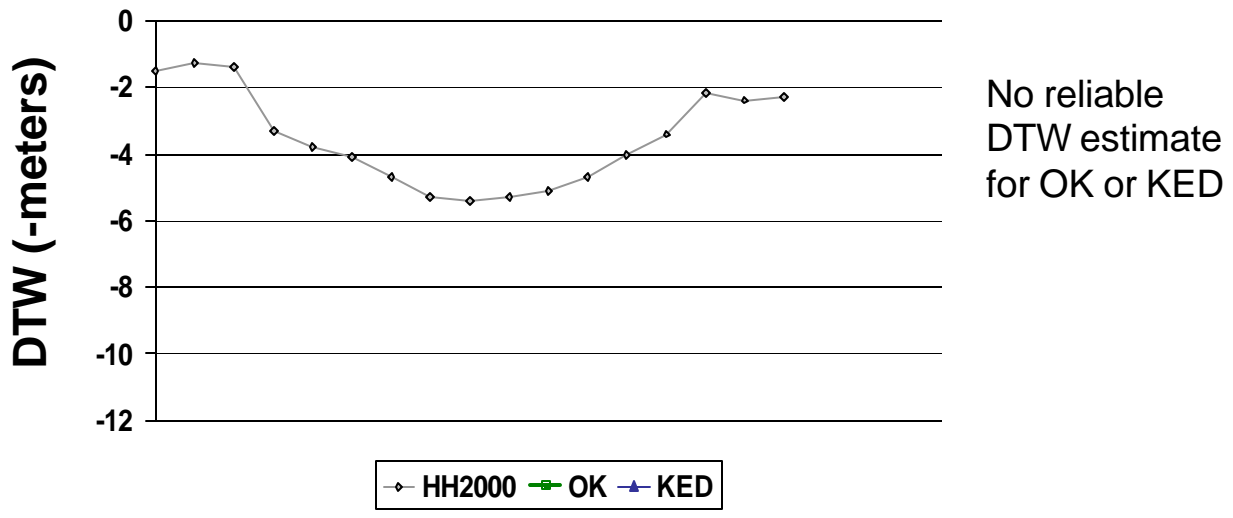
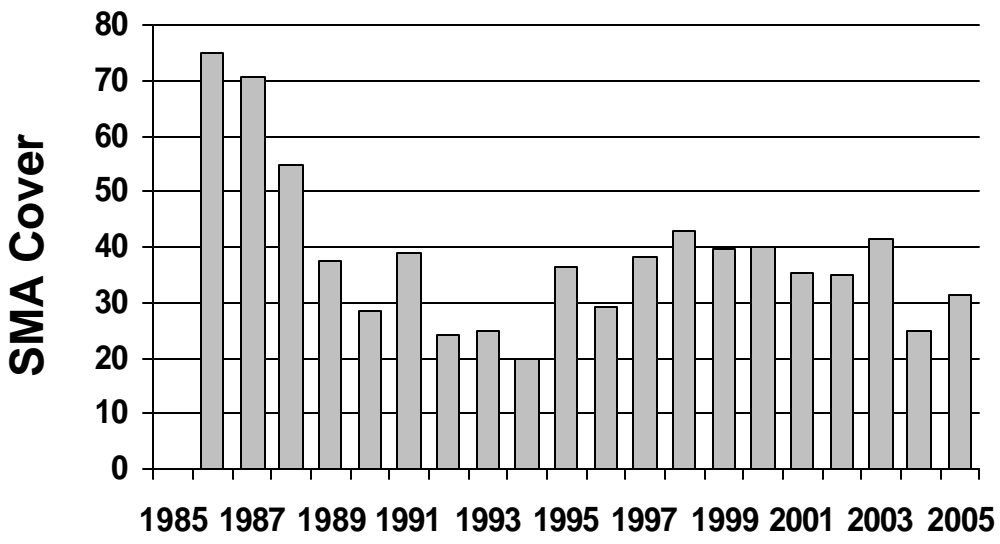
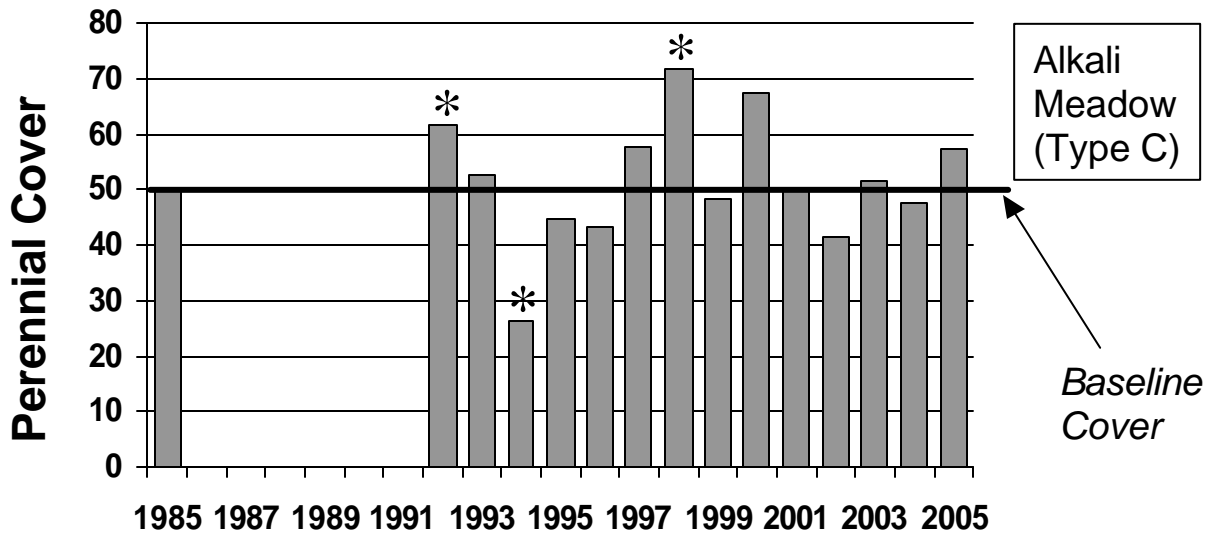


Figure 42. Wellfield: Thibaut Sawmill. Status 2005: DRPfree

IND064

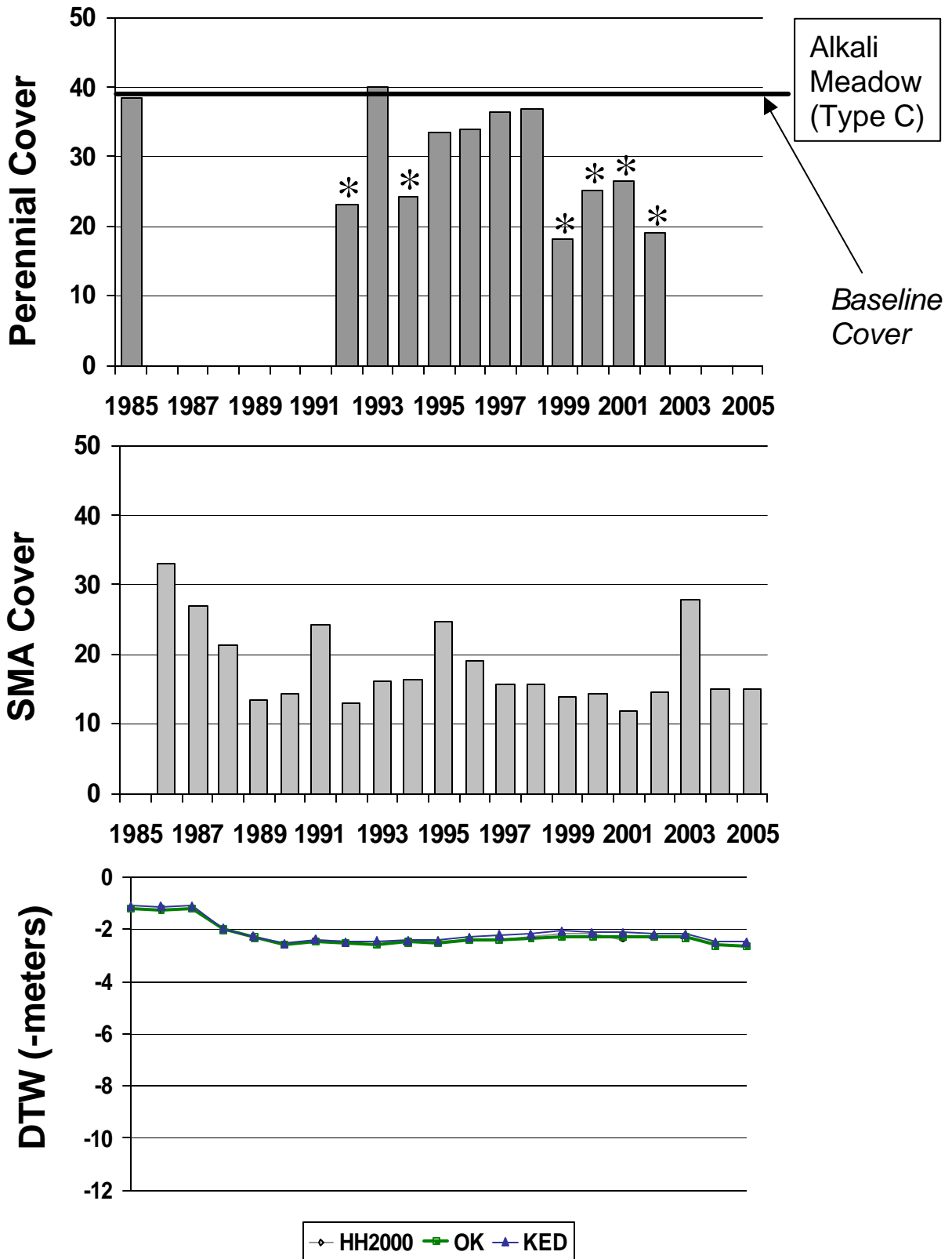


Figure 43. Wellfield: Independence Oak. Status 2002: more study

IND067

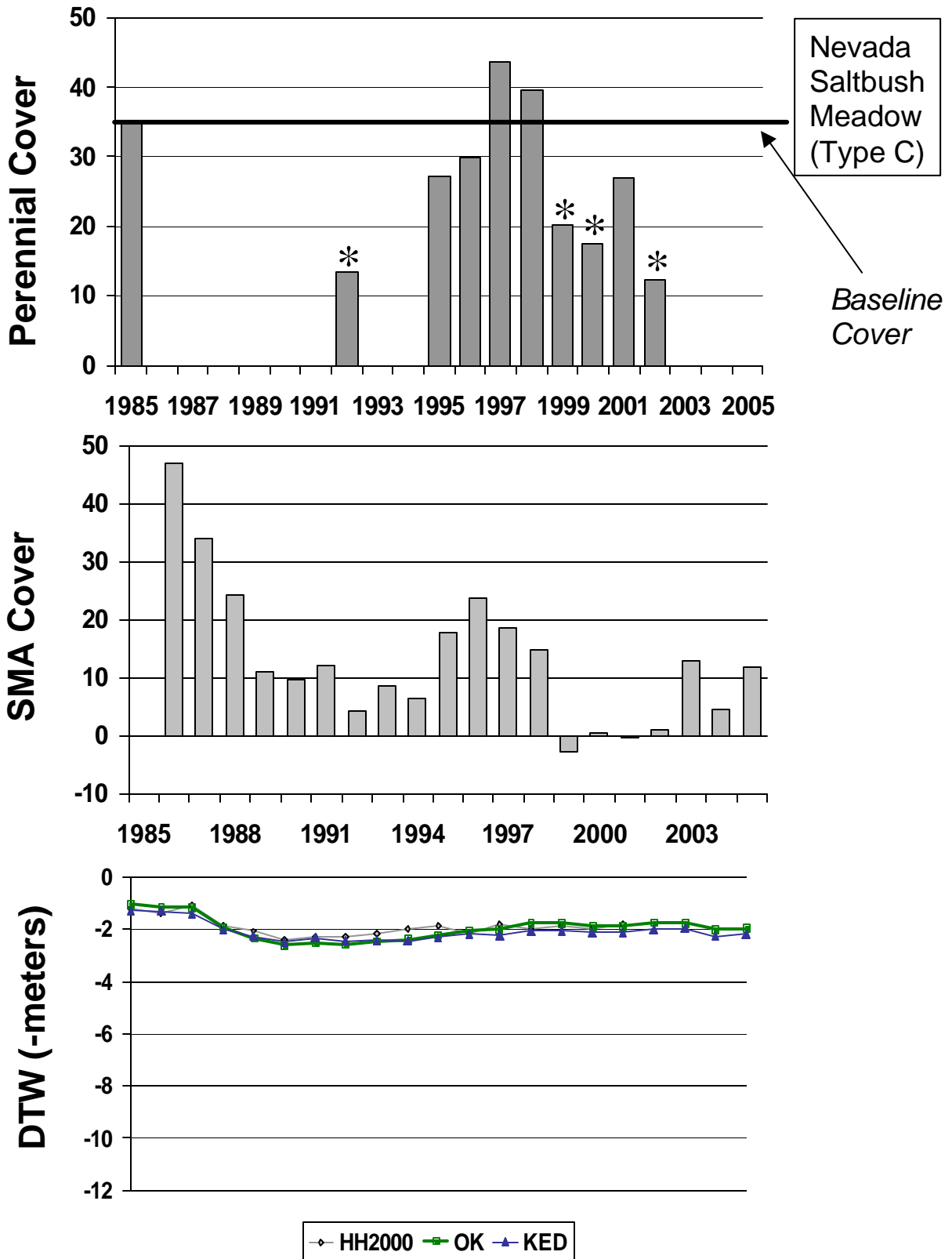


Figure 44. Wellfield: Independence Oak. Status 2002: more study

IND096

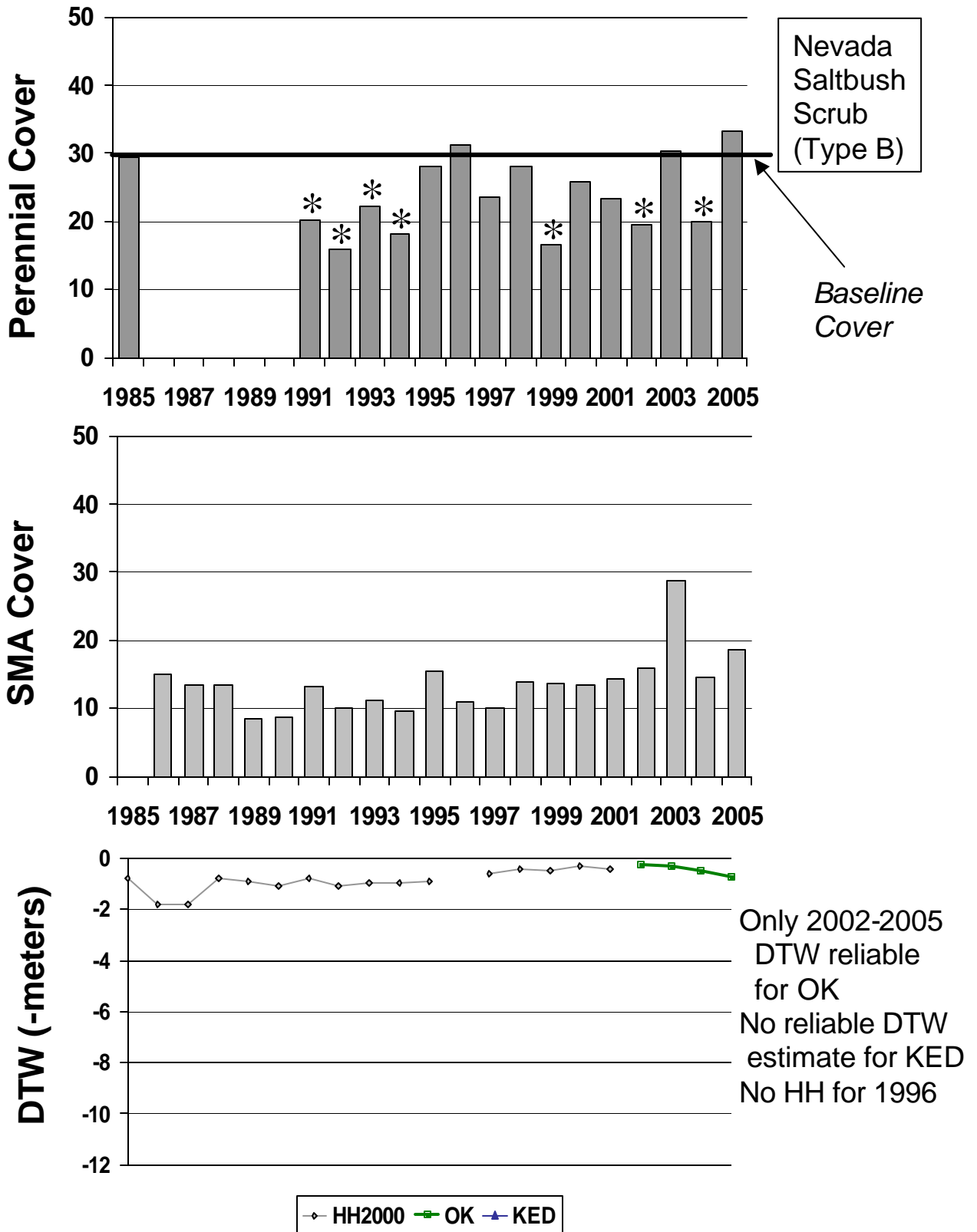


Figure 45. Status 2005: Control

IND106

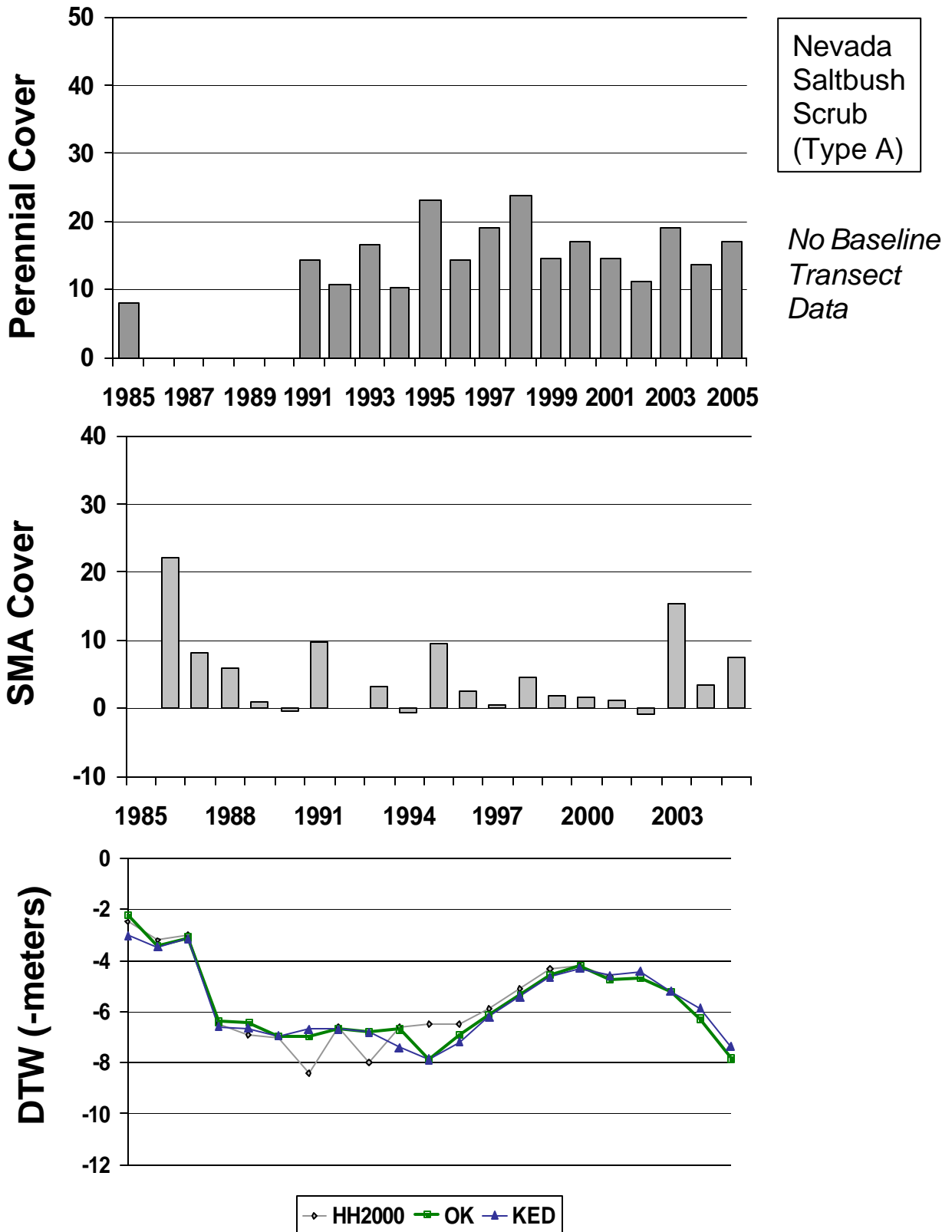


Figure 46. Wellfield: Independence Oak. Status 2005: DRP

IND111

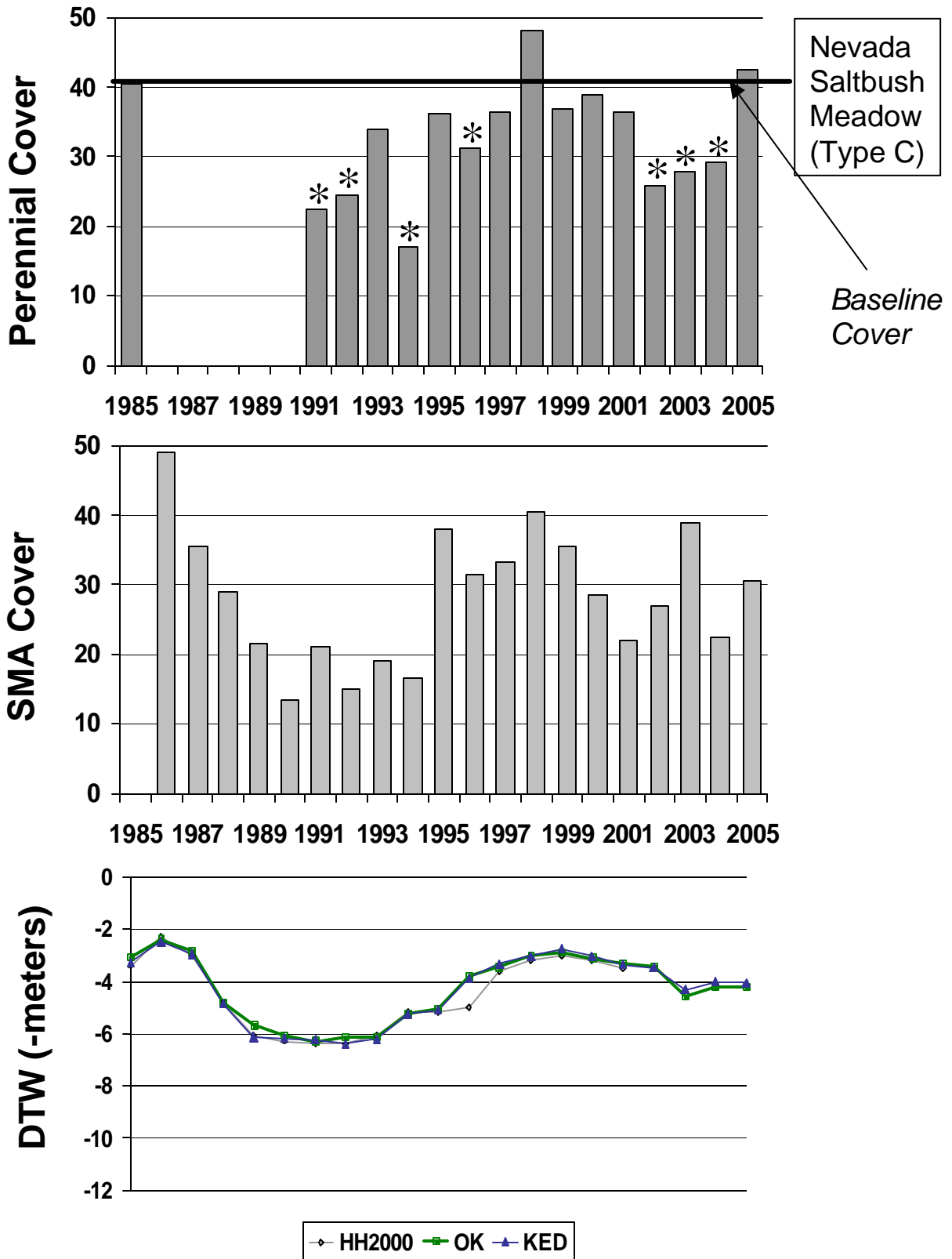


Figure 47. Wellfield: Independence Oak. Status 2005: DRP

IND119

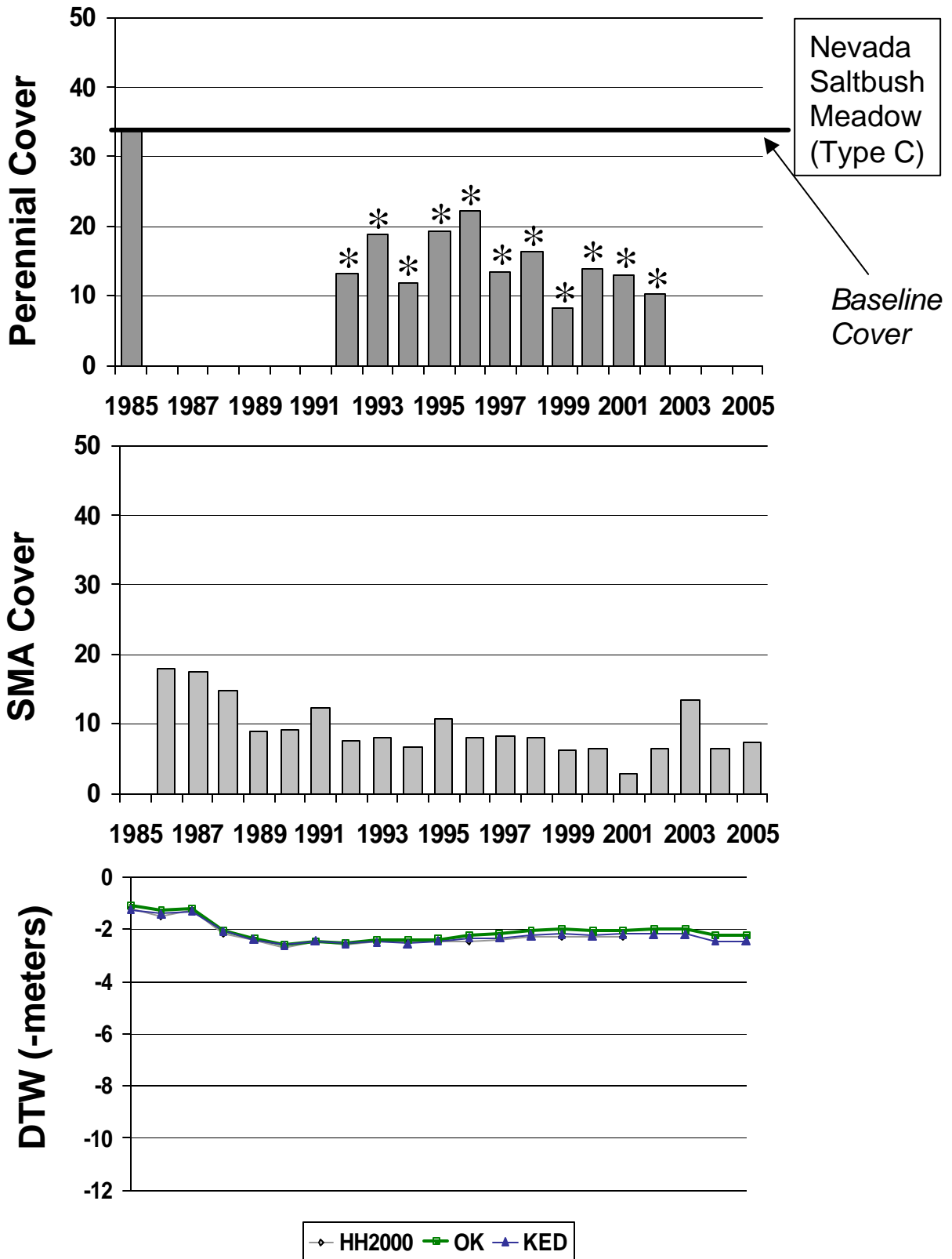


Figure 48. Wellfield: Independence Oak. Status 2002: more study

IND122

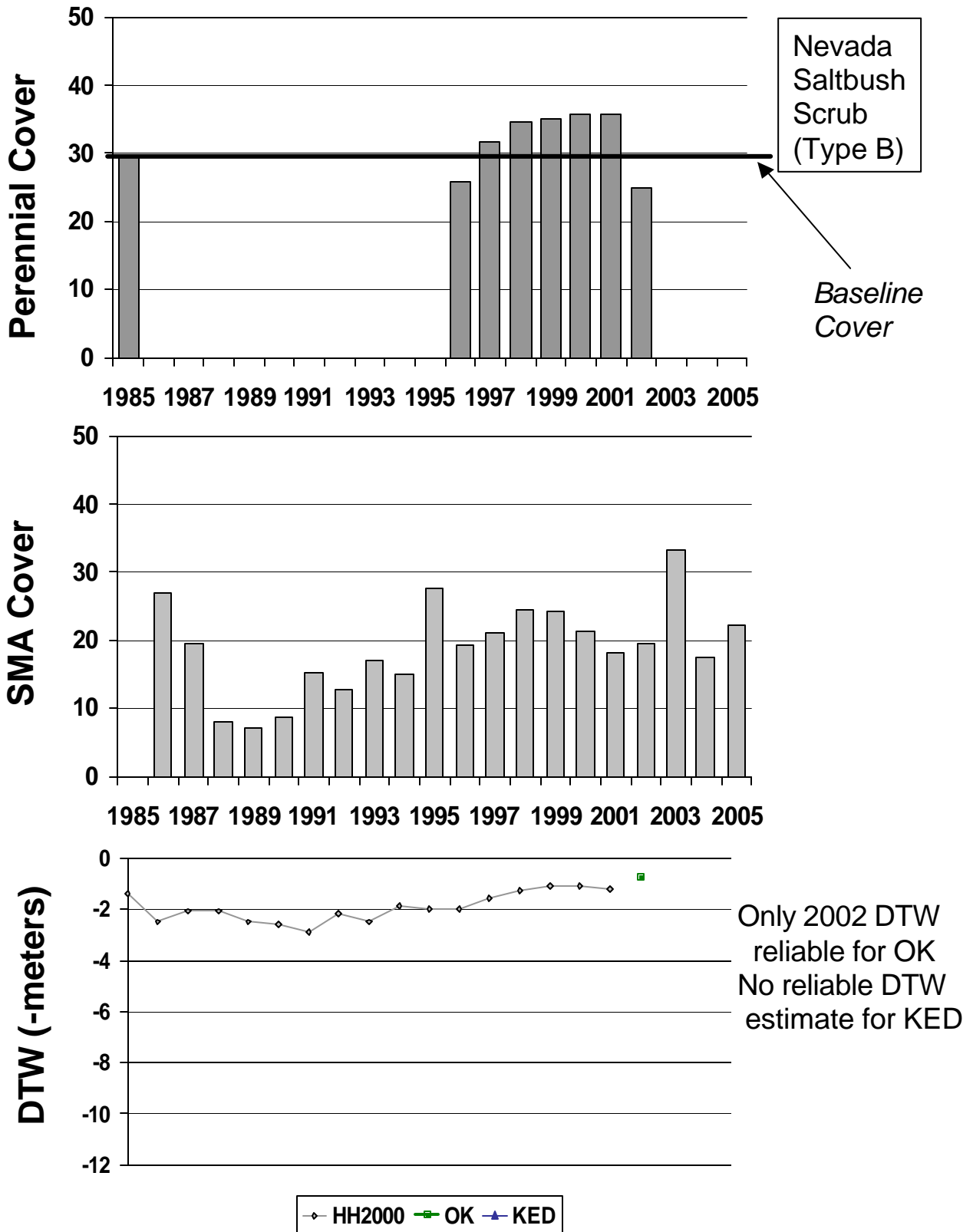


Figure 49. Status 2002: Control

IND132

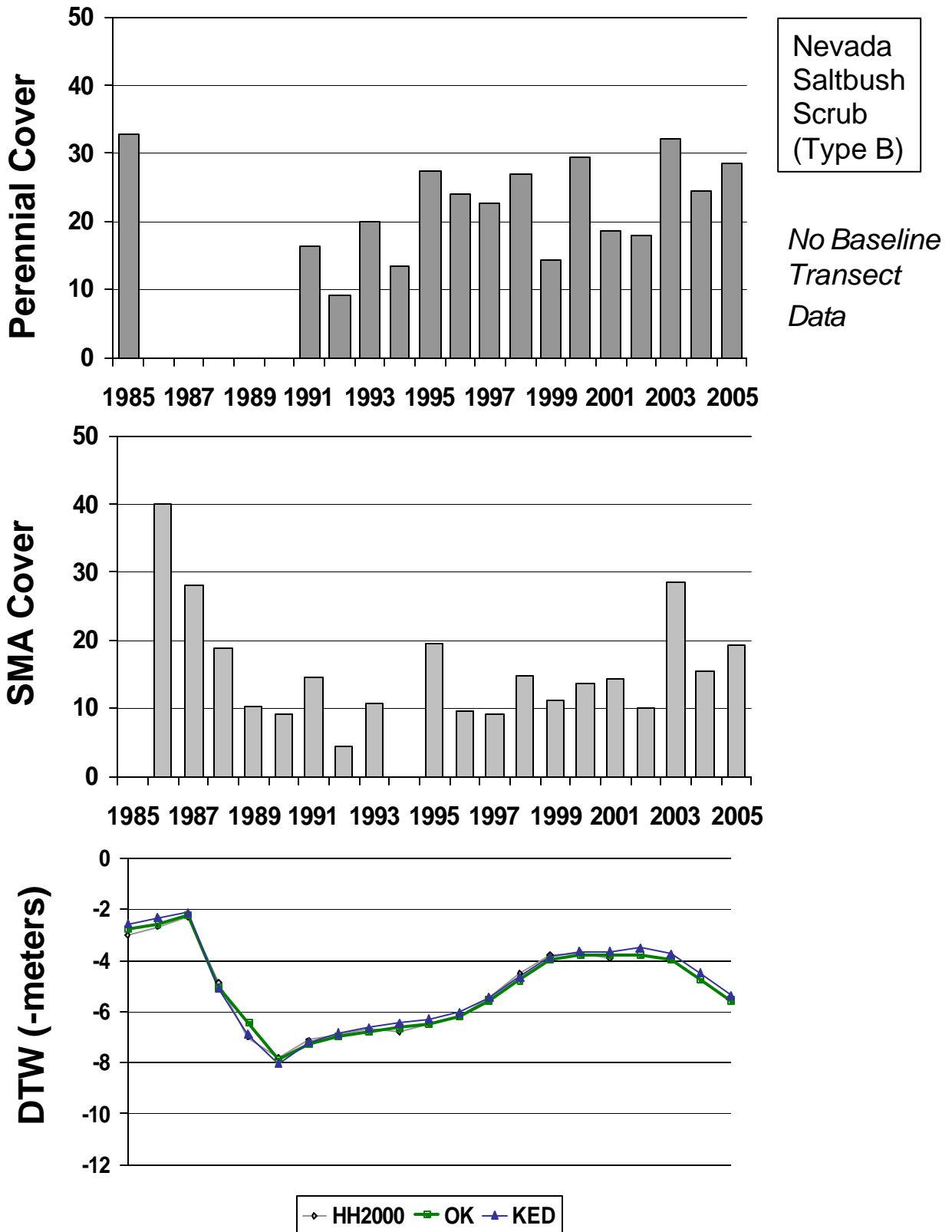


Figure 50. Wellfield: Symmes Shepherd. Status 2005: DRP

IND133

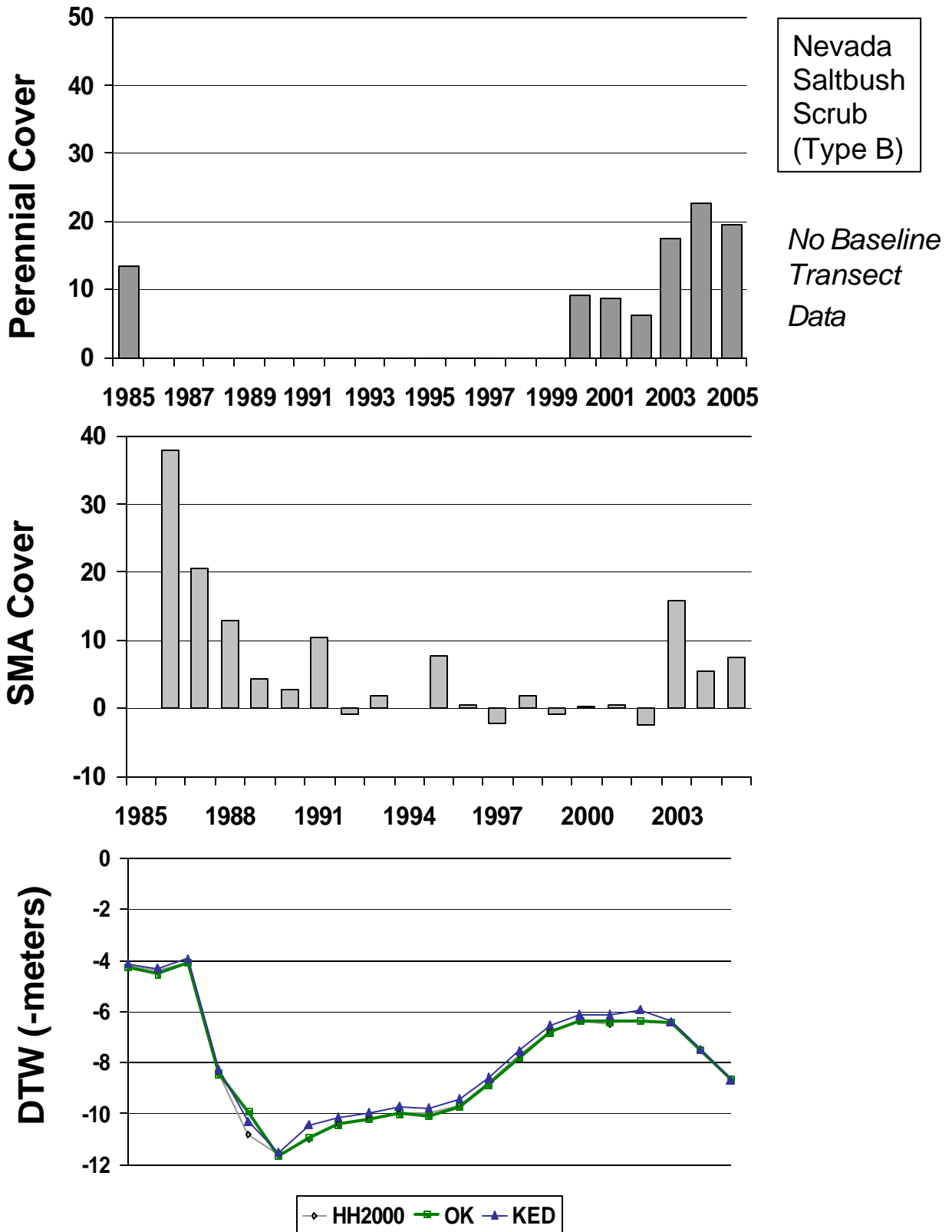


Figure 51. Wellfield: Symmes Shepherd. Status 2005: DRP

IND139

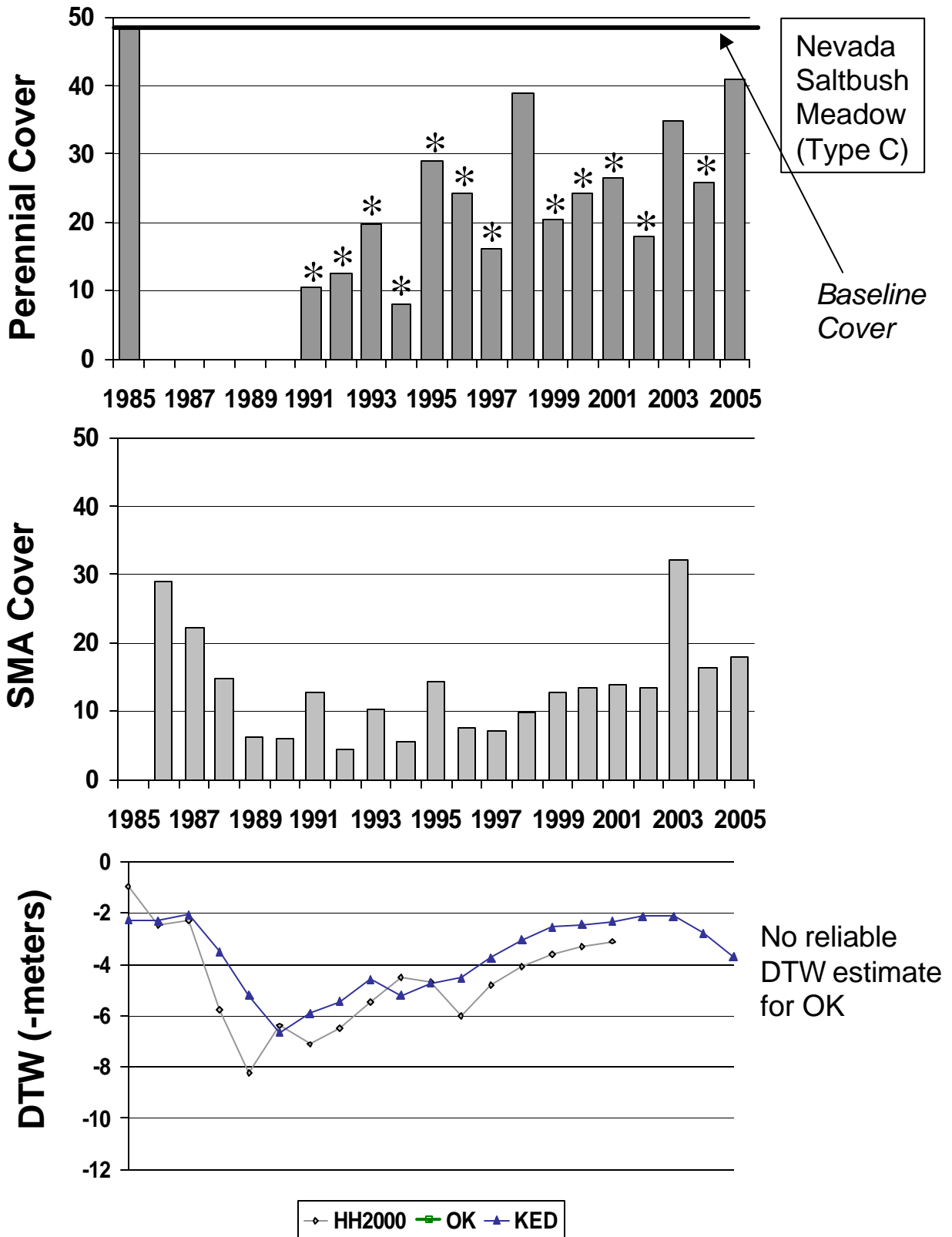


Figure 52. Wellfield: Symmes Shepherd. Status 2005: DRP

IND163

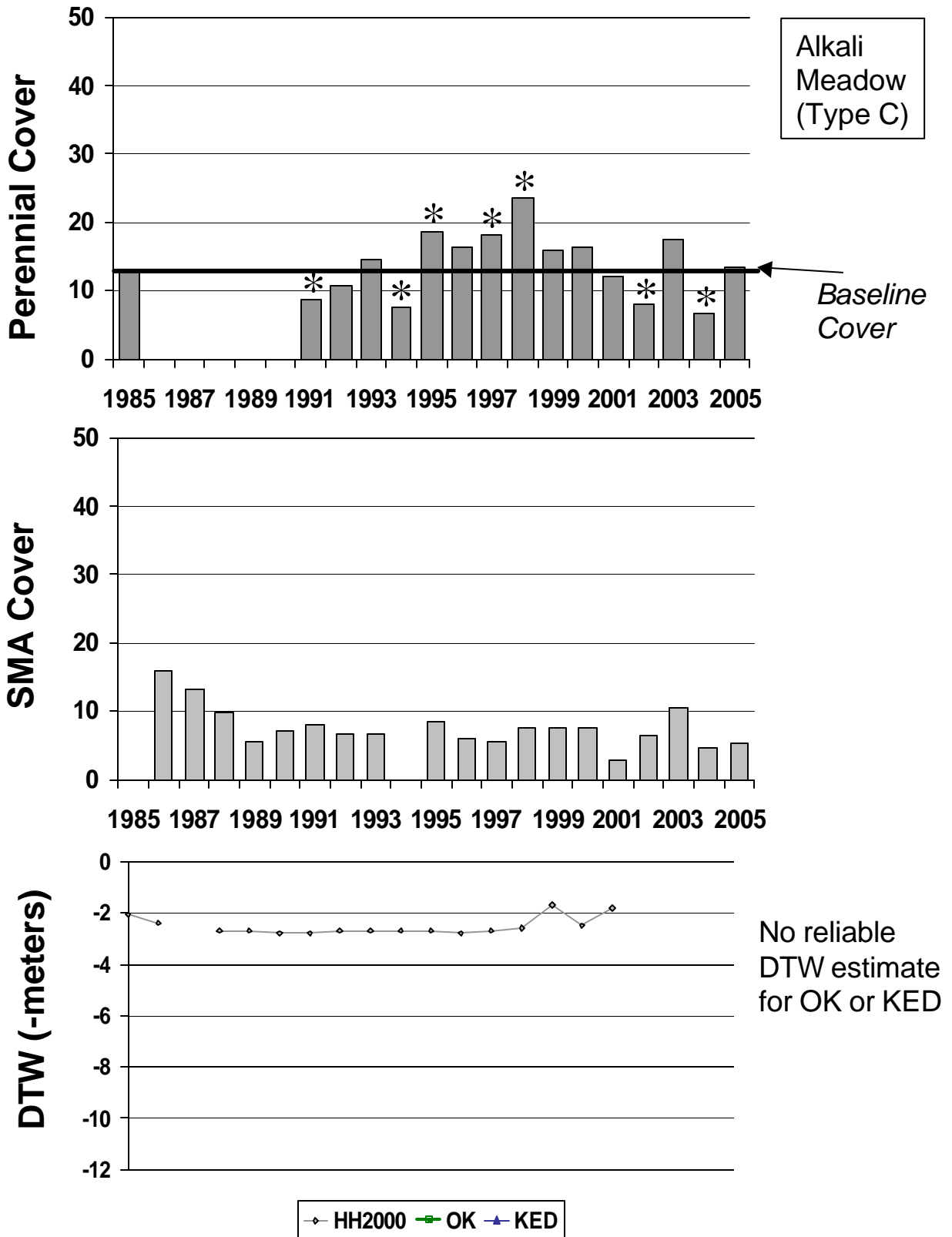


Figure 53. Status 2005: Control

IND231

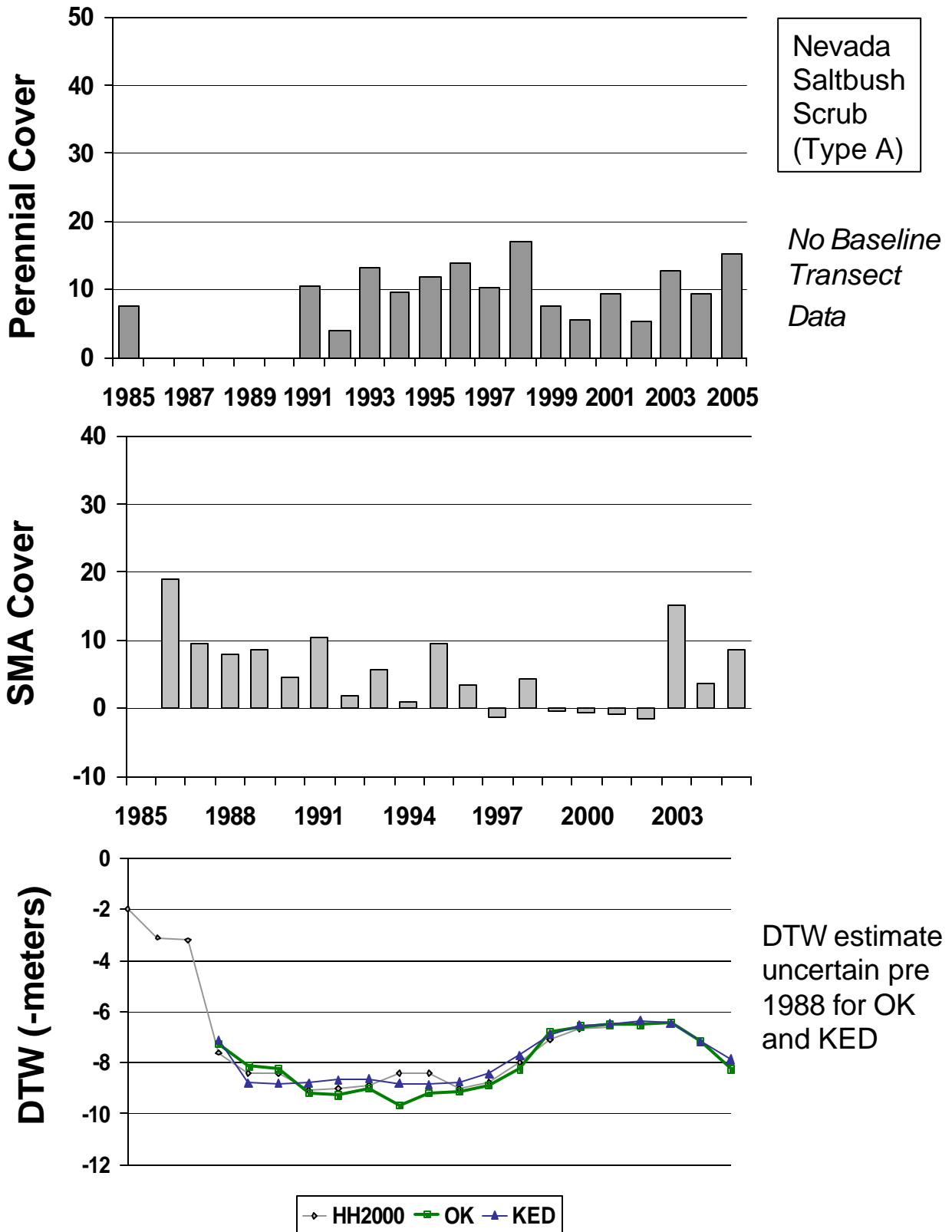


Figure 54. Wellfield: Symmes Shepherd. Status 2005: DRP

LAW030

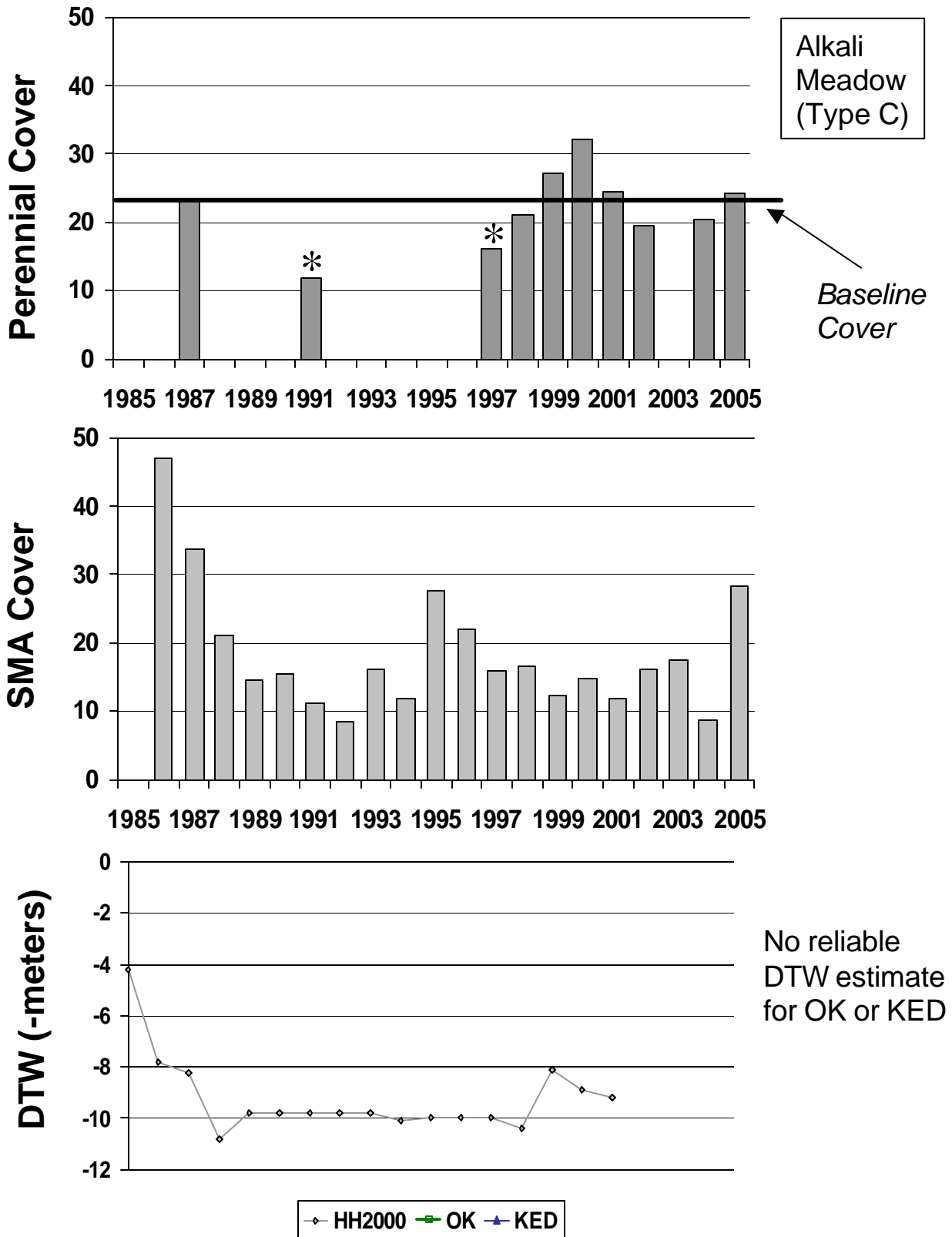


Figure 55. Wellfield: Laws. Status 2005: DRP

LAW035

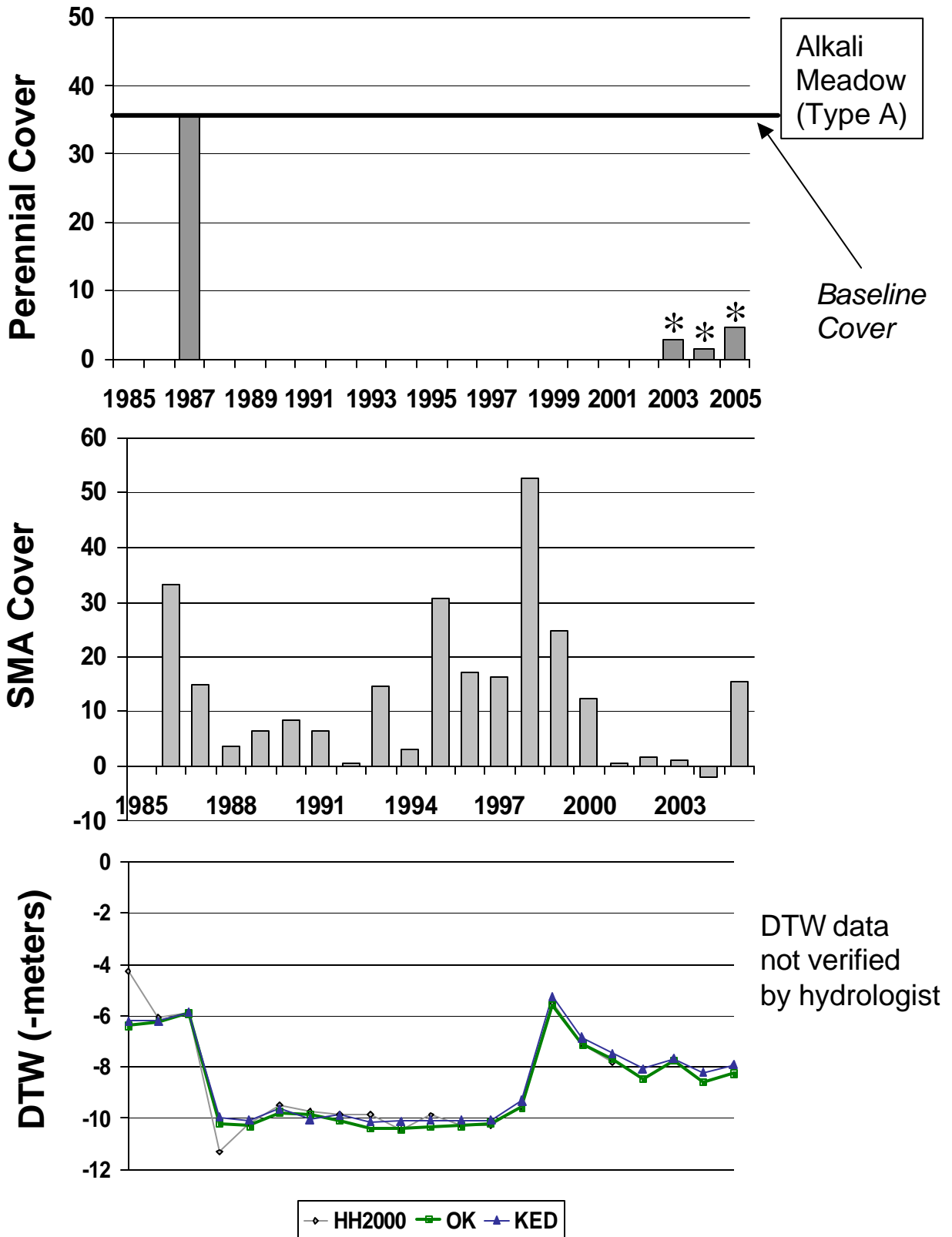


Figure 56. Wellfield: Laws. Status: Not classified

LAW043

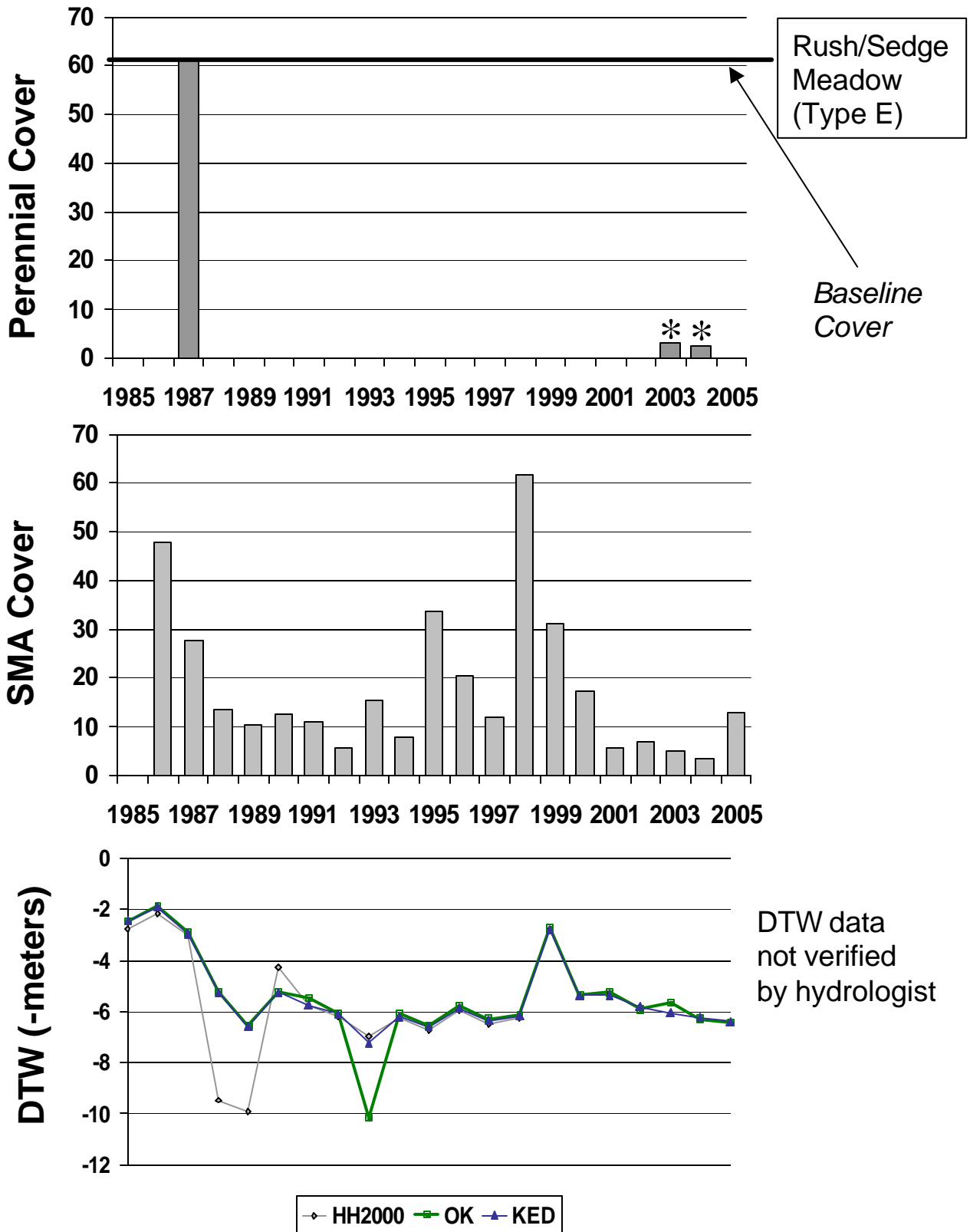


Figure 57. Wellfield: Laws. Status: Not classified

LAW052

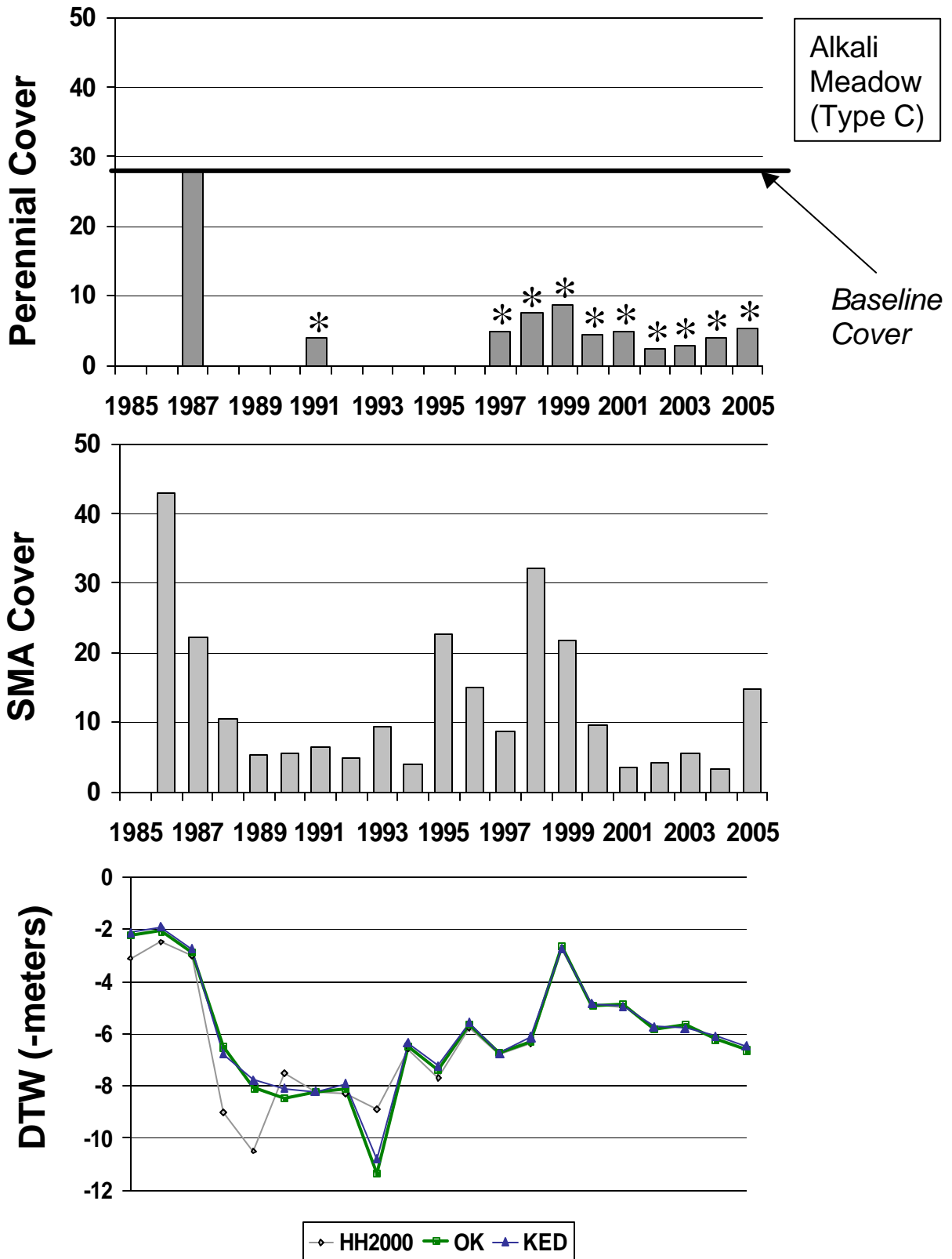


Figure 58. Wellfield: Laws. Status 2005: DRP

LAW062

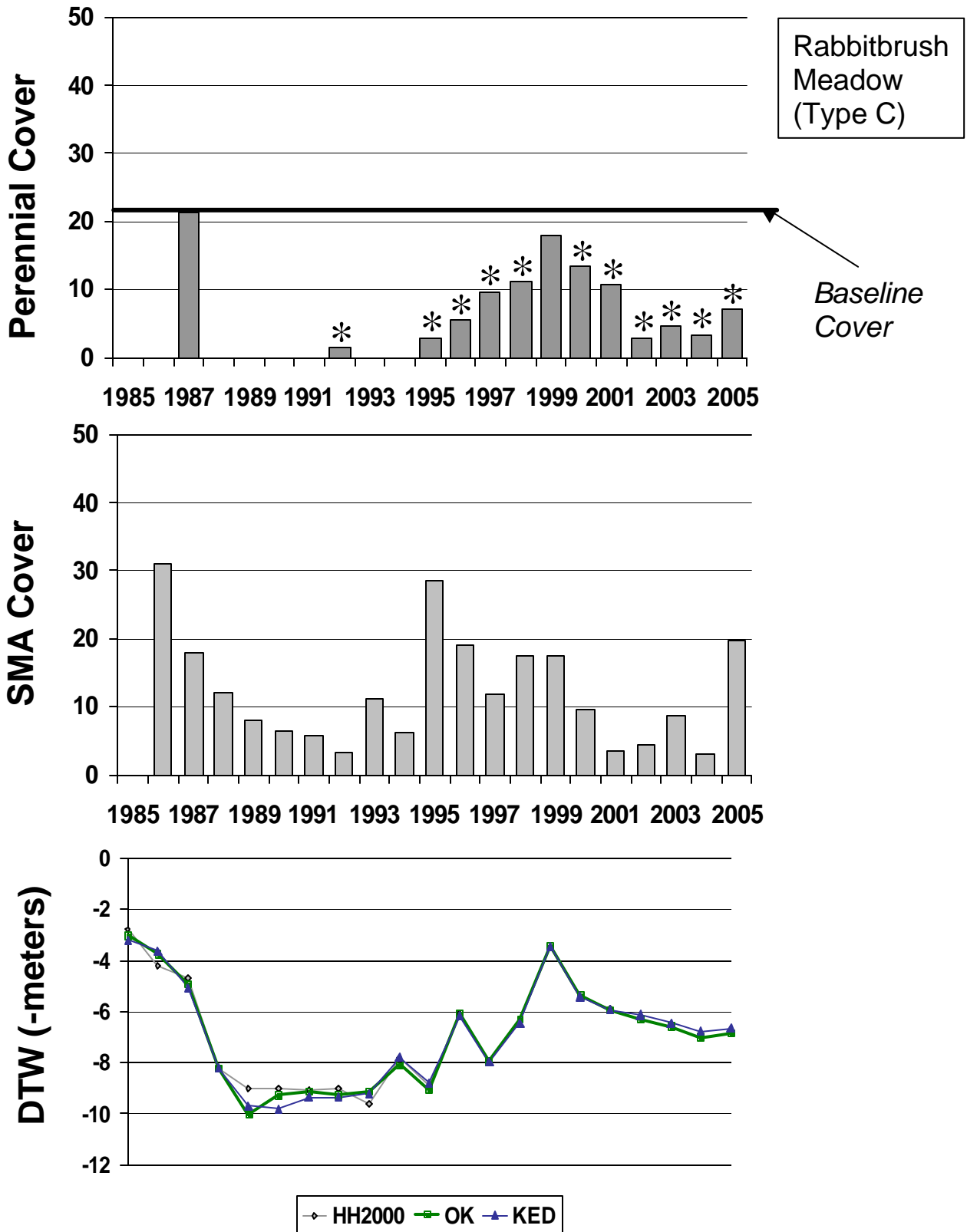


Figure 59. Wellfield: Laws. Status 2005: DRP

LAW063

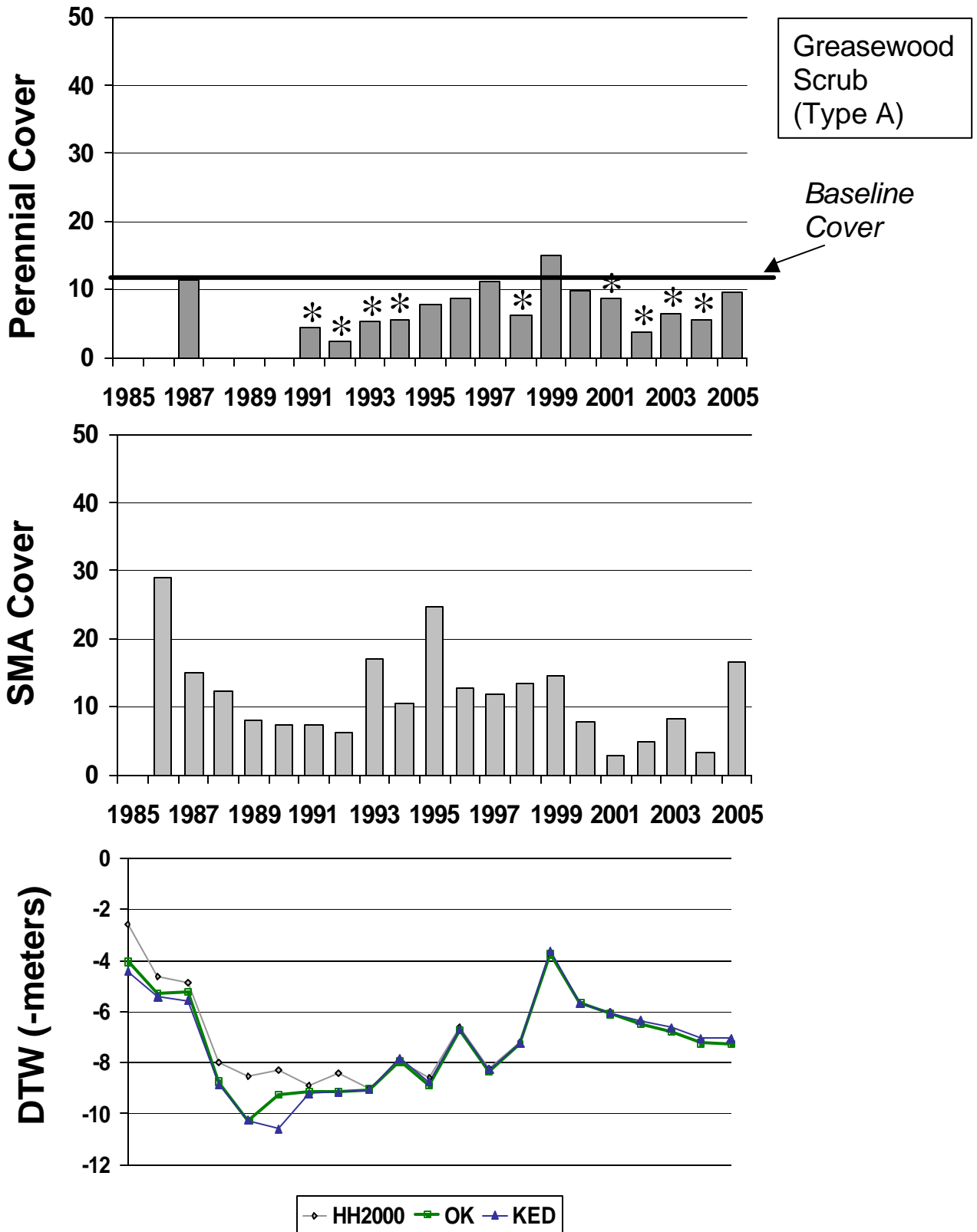


Figure 60. Wellfield: Laws. Status 2005: DRPfree

LAW065

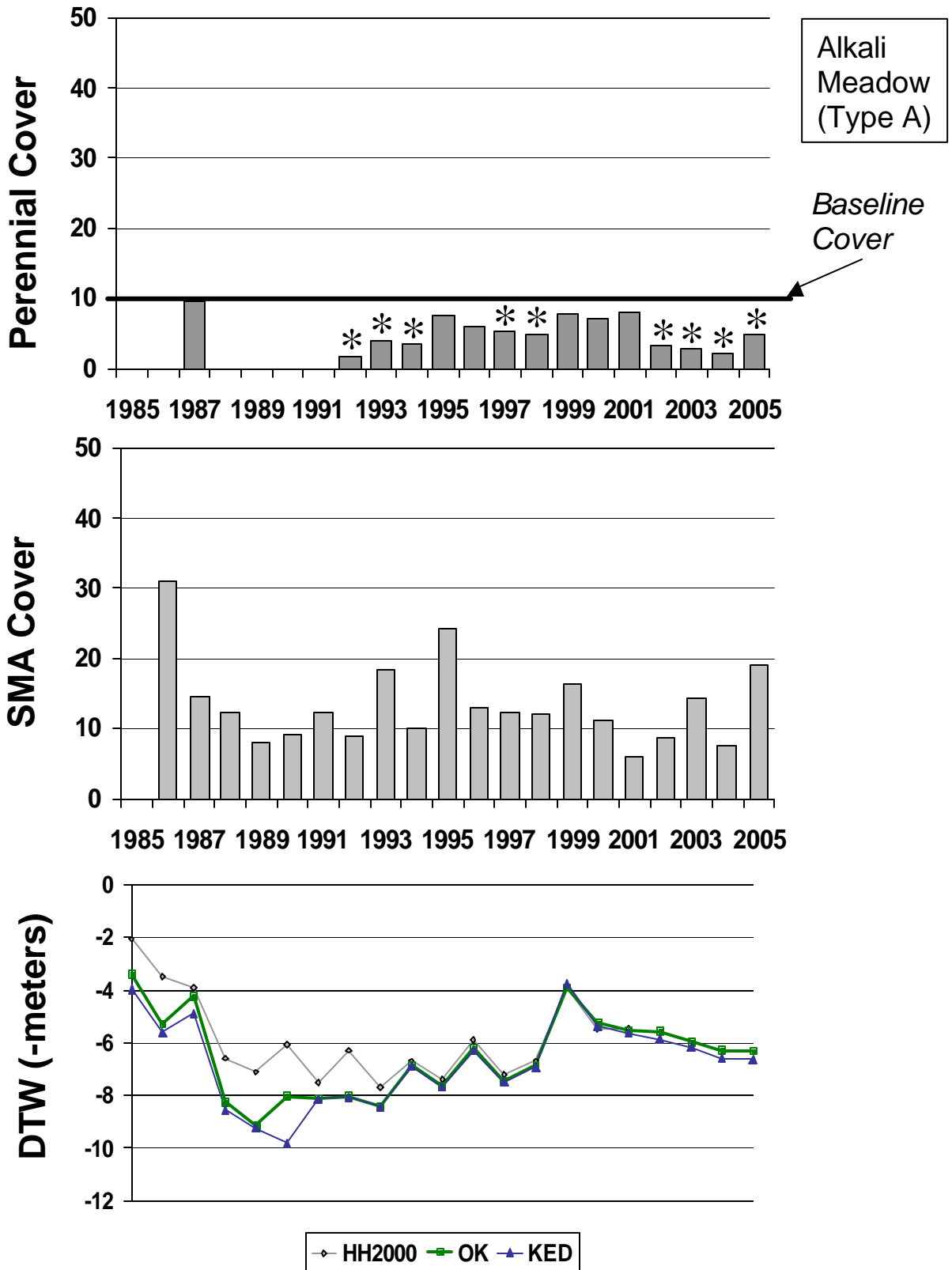


Figure 61. Wellfield: Laws. Status 2005: DRP

LAW070

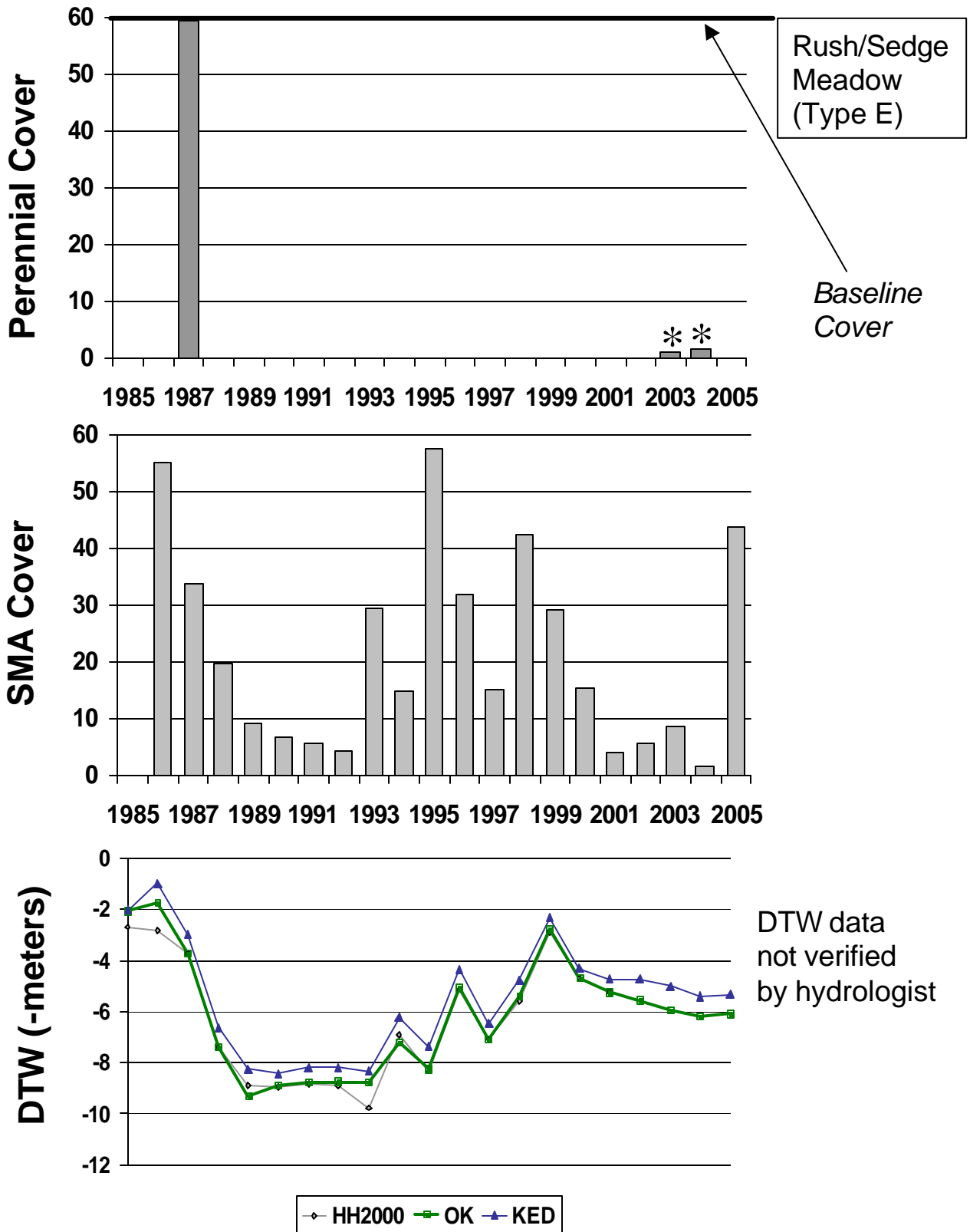


Figure 62. Wellfield: Laws. Status: Not classified

LAW078

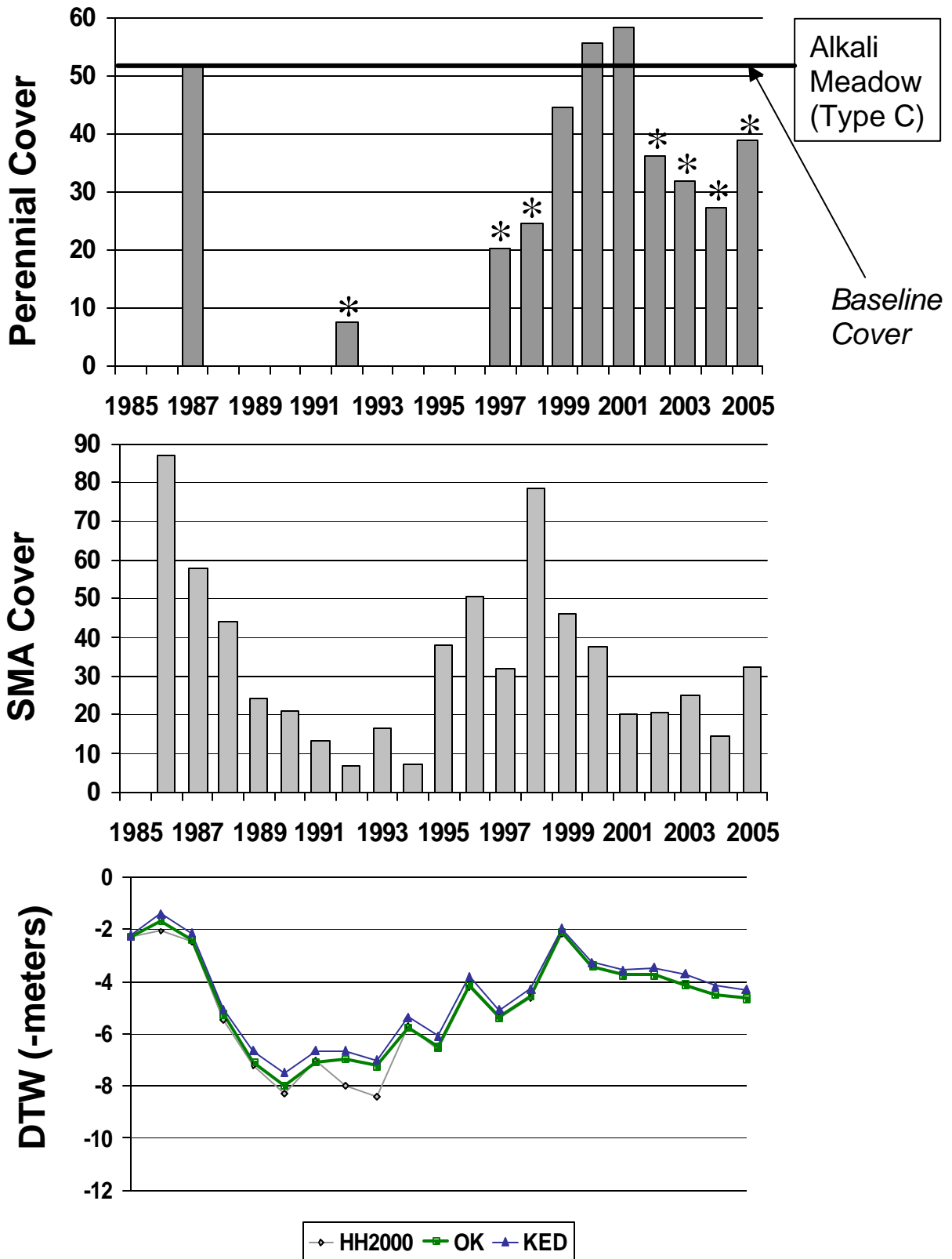


Figure 63. Wellfield: Laws. Status 2005: DRPfree

LAW082

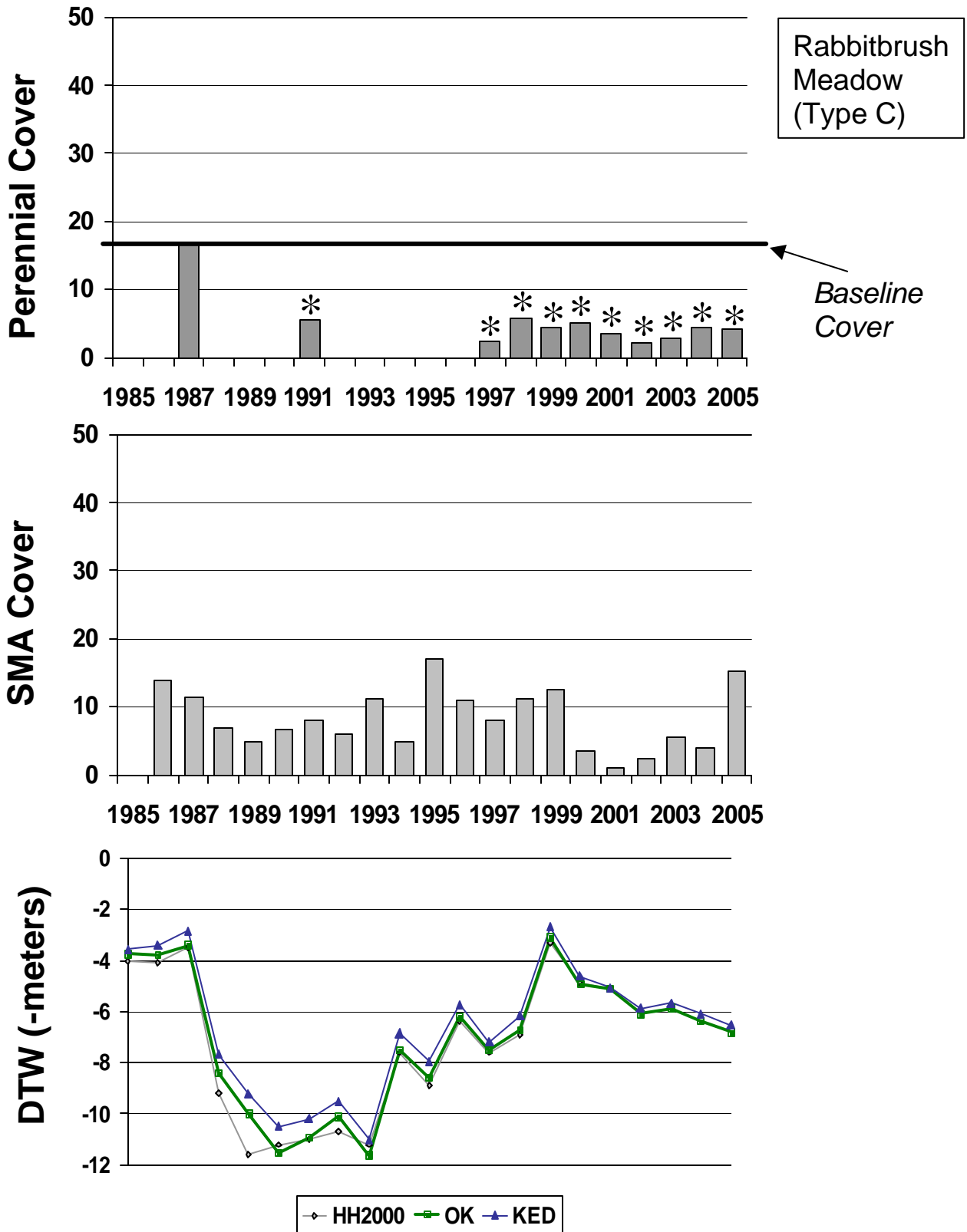


Figure 64. Wellfield: Laws. Status 2005: DRP

LAW085

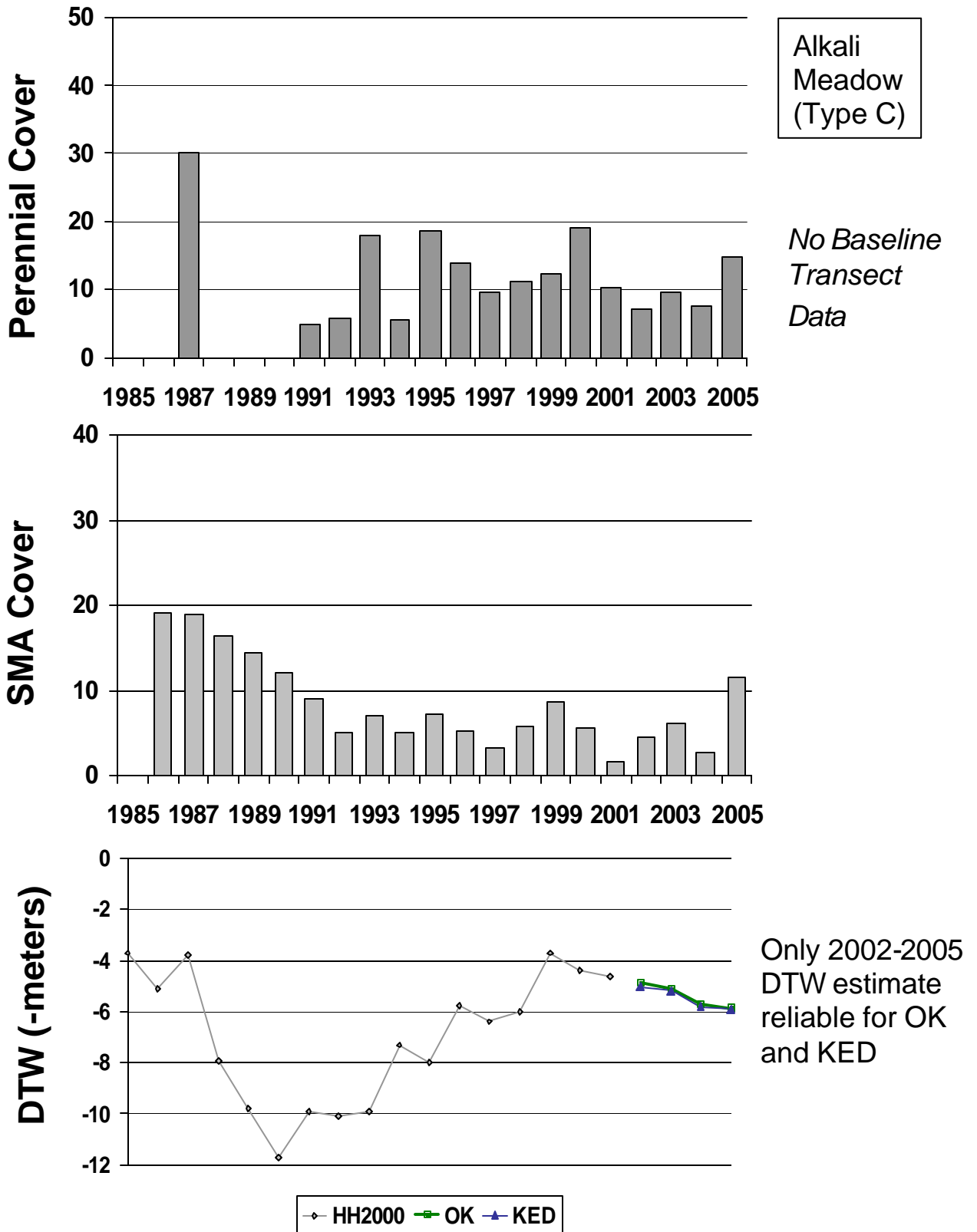


Figure 65. Wellfield: Laws. Status 2005: DRP

LAW107

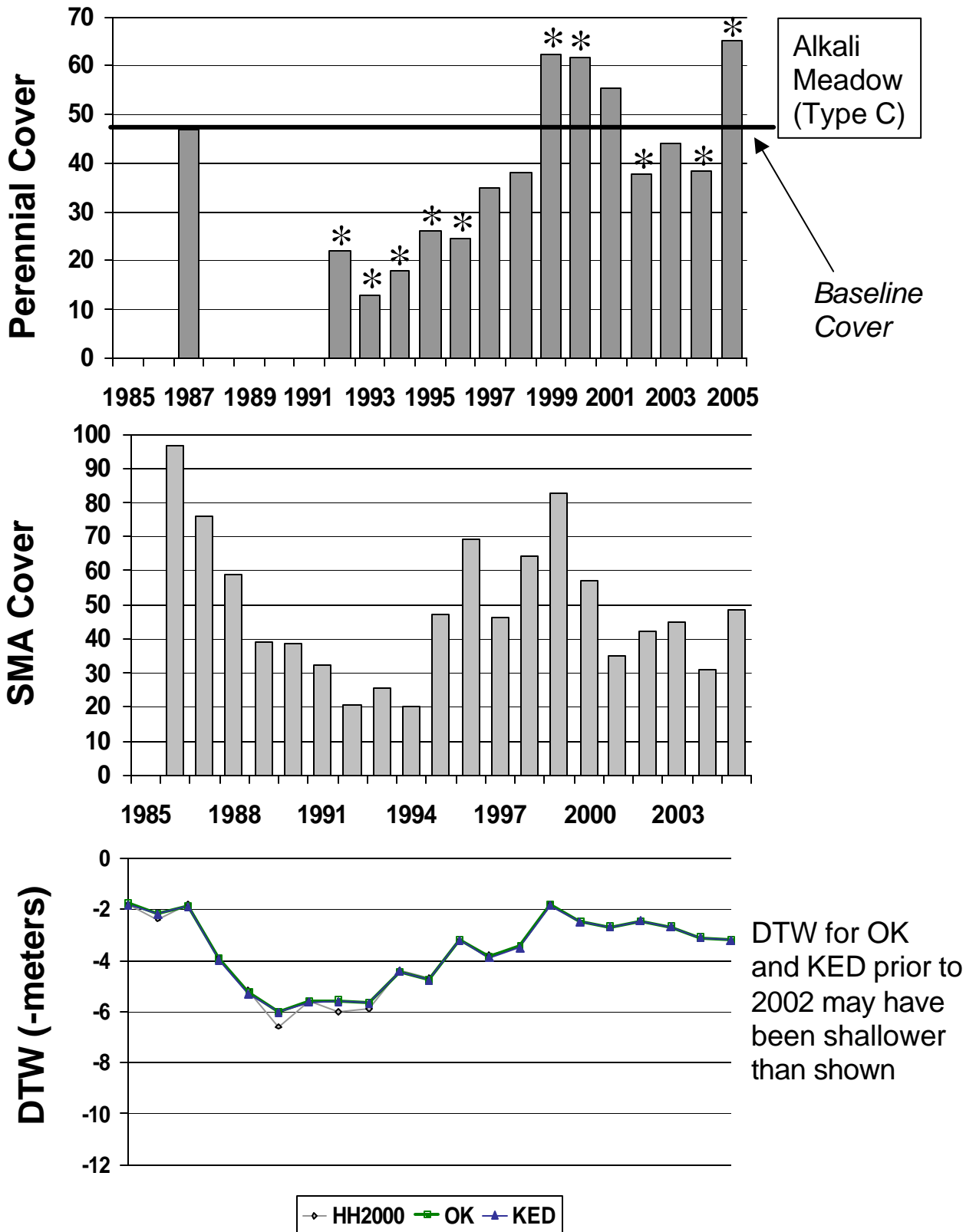


Figure 66. Wellfield: Laws. Status 2005: DRPfree

LAW110

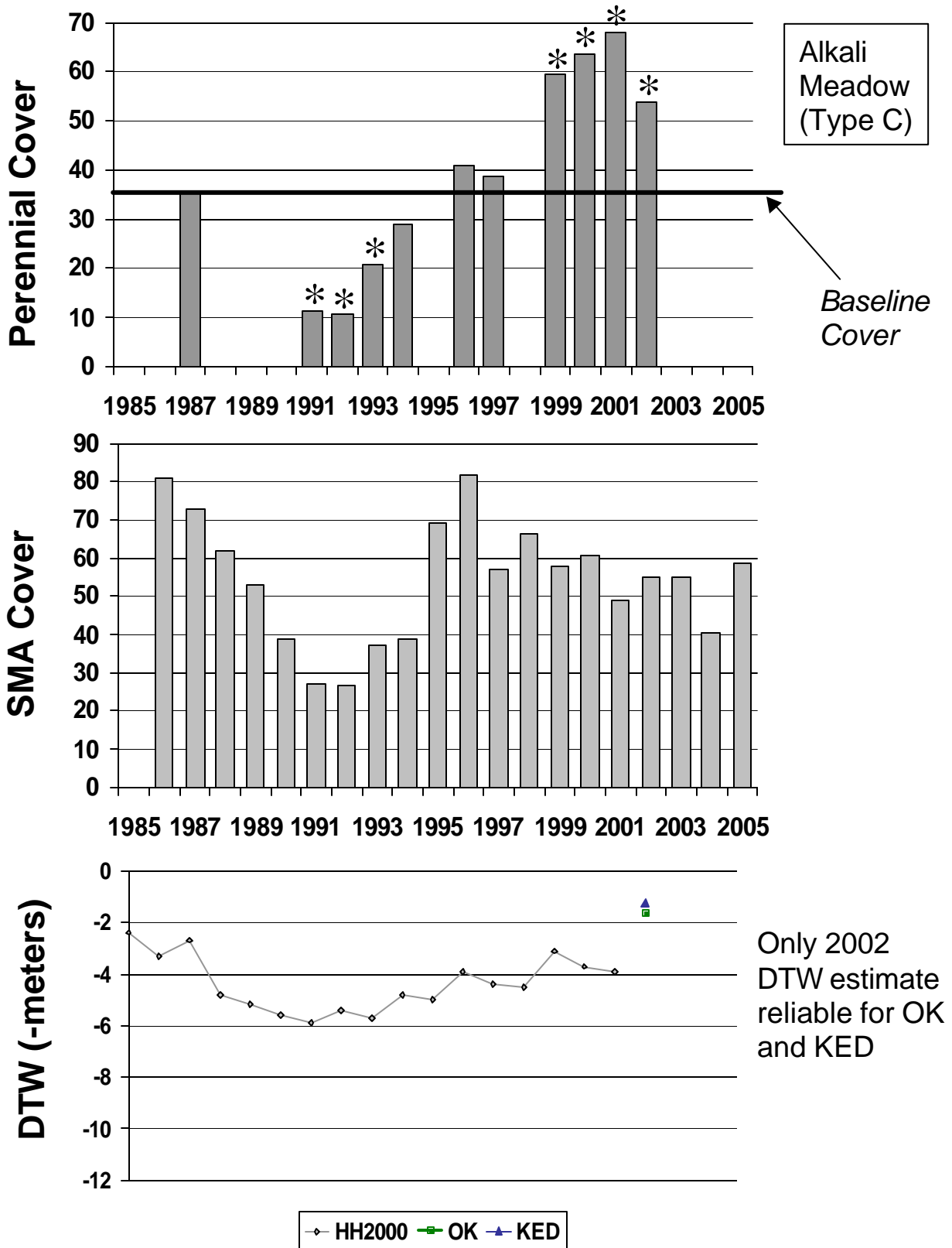


Figure 67. Wellfield: Laws. Status 2002: DRPfree

LAW112

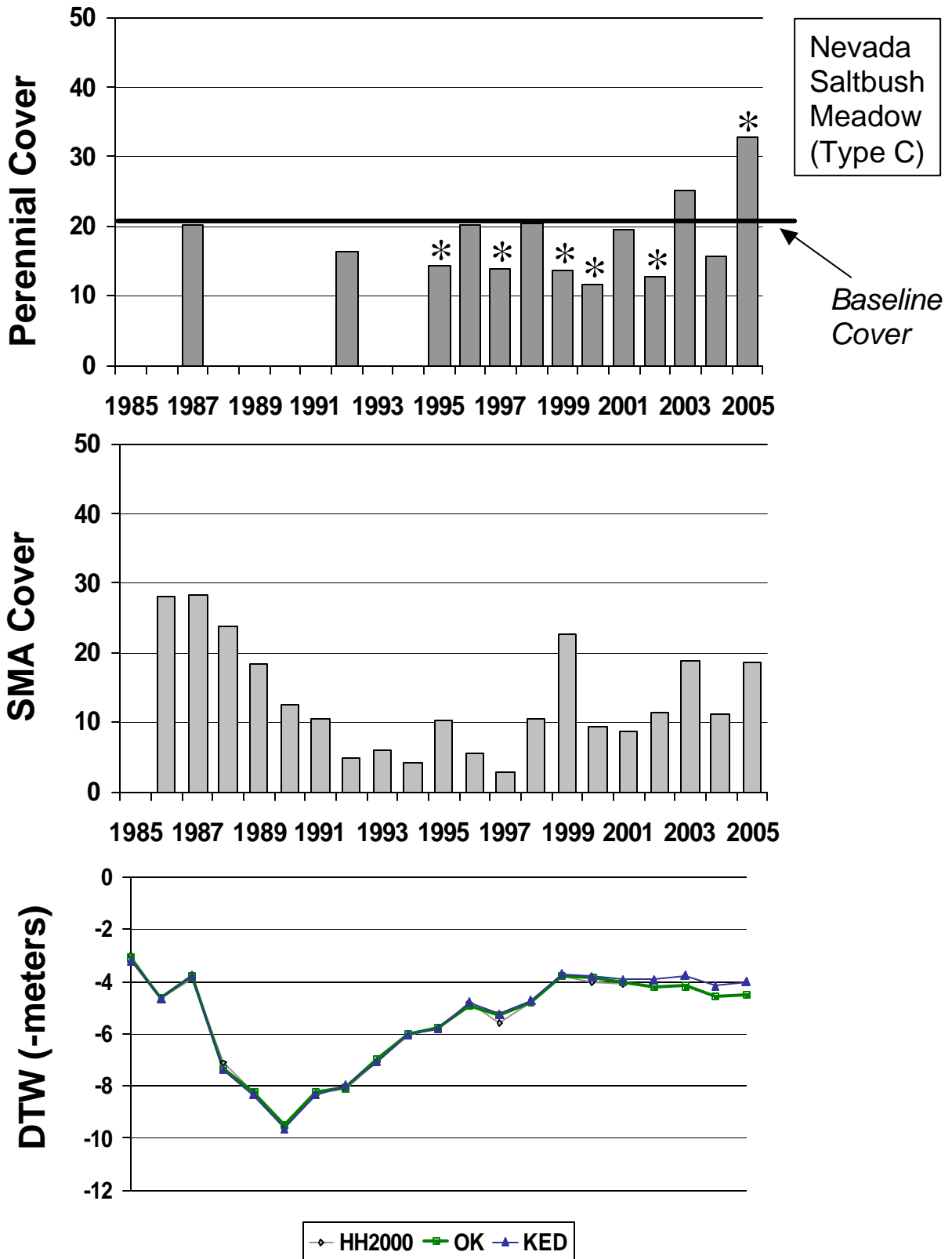


Figure 68. Wellfield: Laws. Status 2005: DRP

LAW120

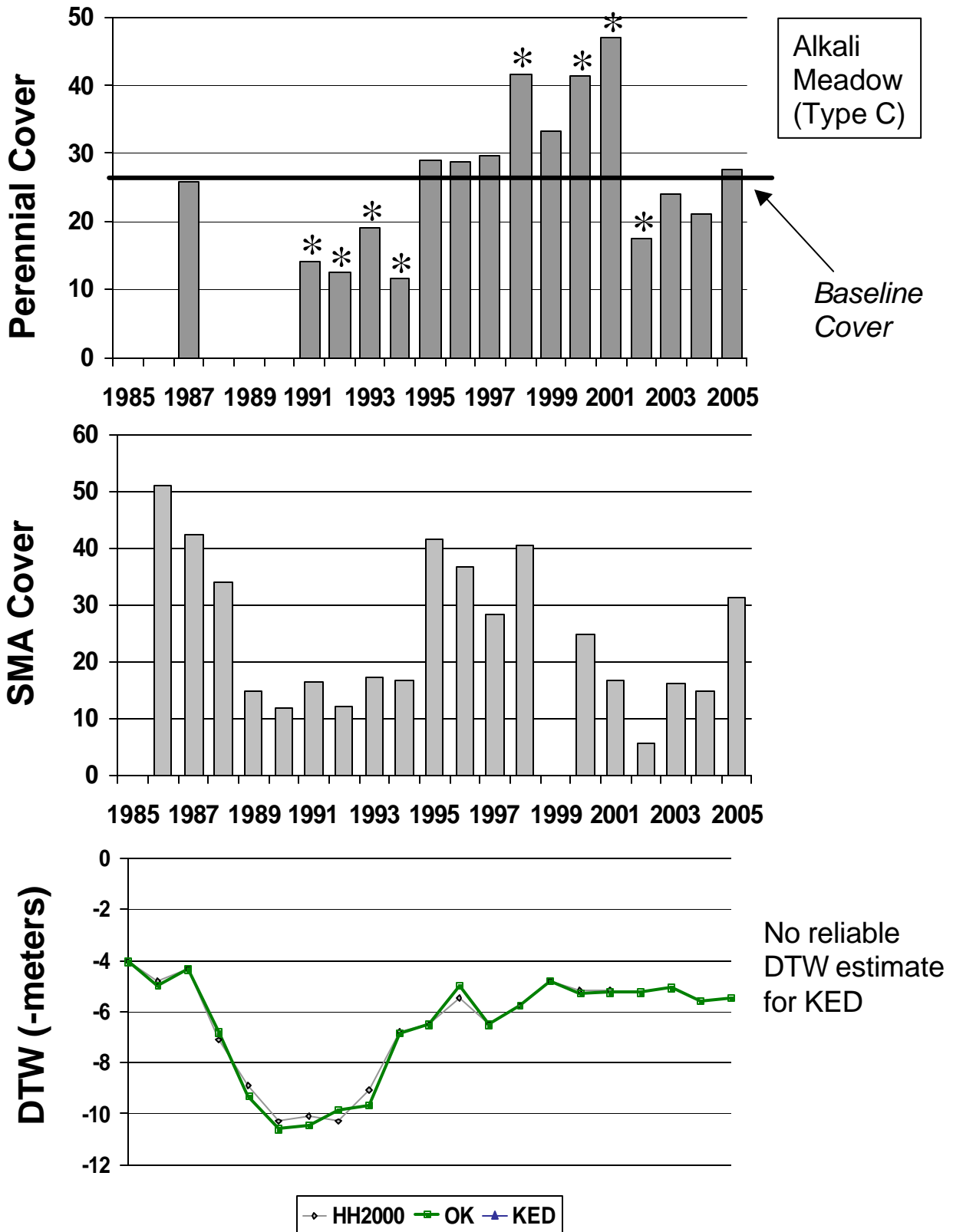


Figure 69. Wellfield: Laws. Status 2005: DRPfree

LAW122

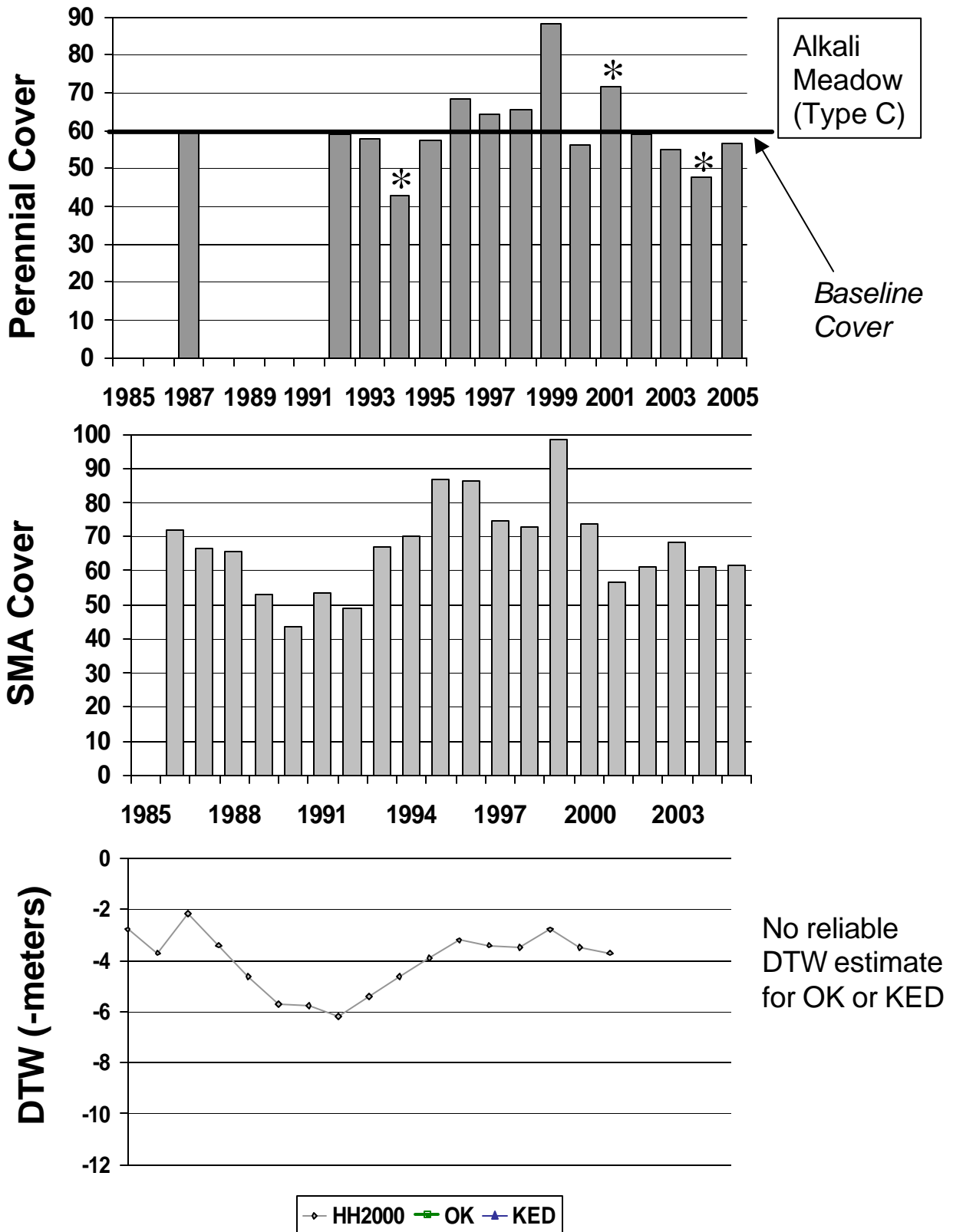


Figure 70. Wellfield: Laws. Status 2005: DRPfree

LAW137

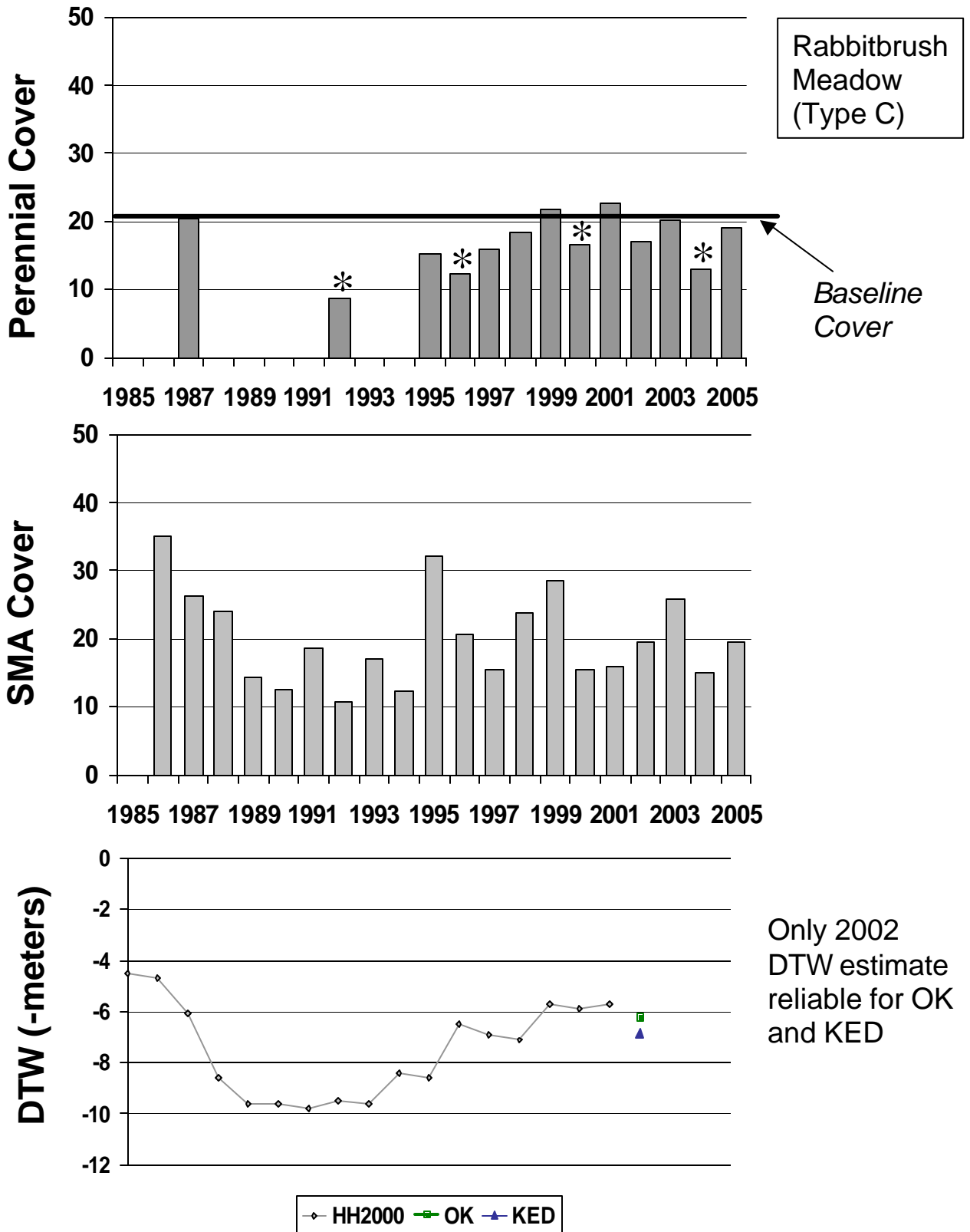


Figure 71. Wellfield: Laws. Status 2005: DRP

LNP018

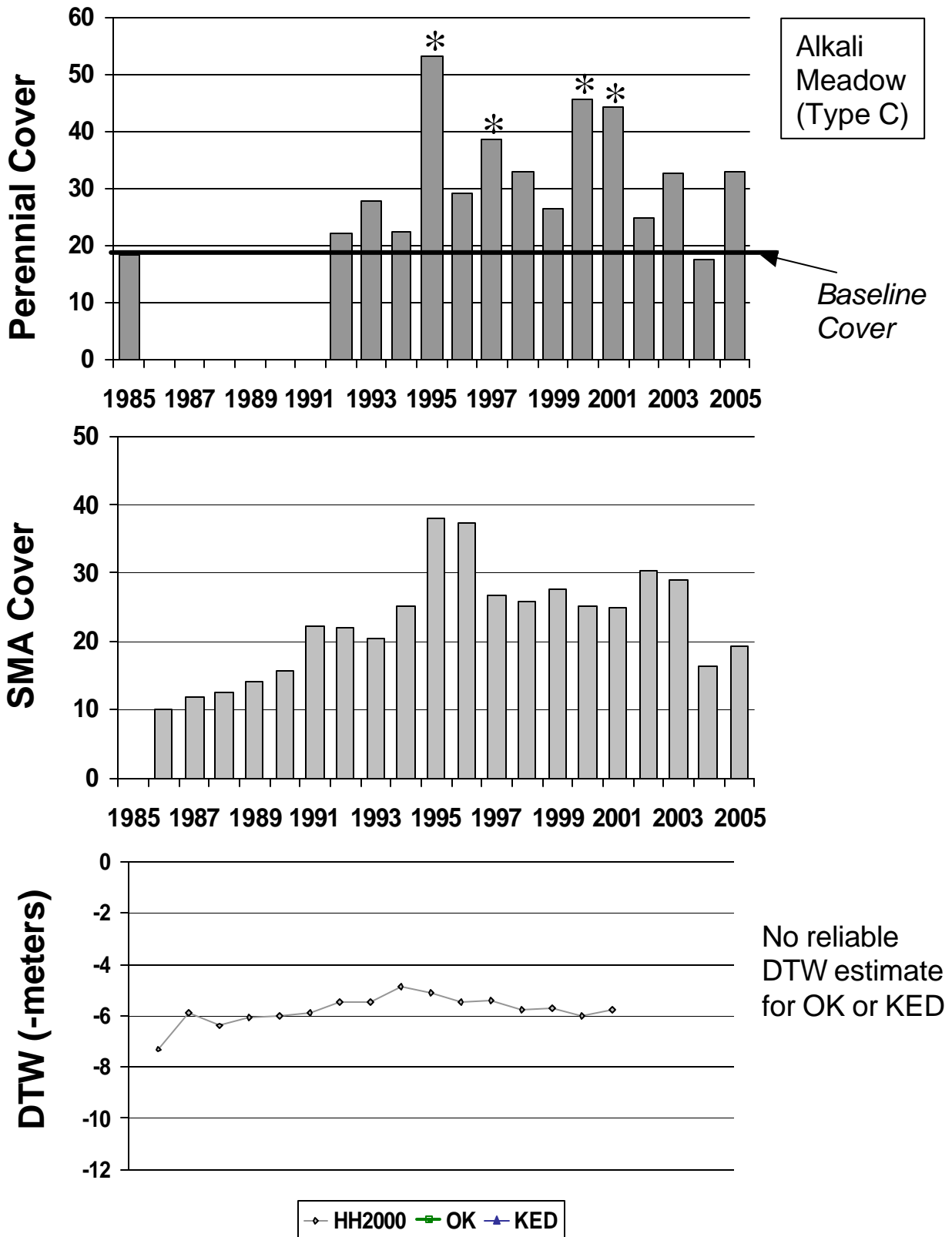


Figure 72. Status 2005: Control

LNP019

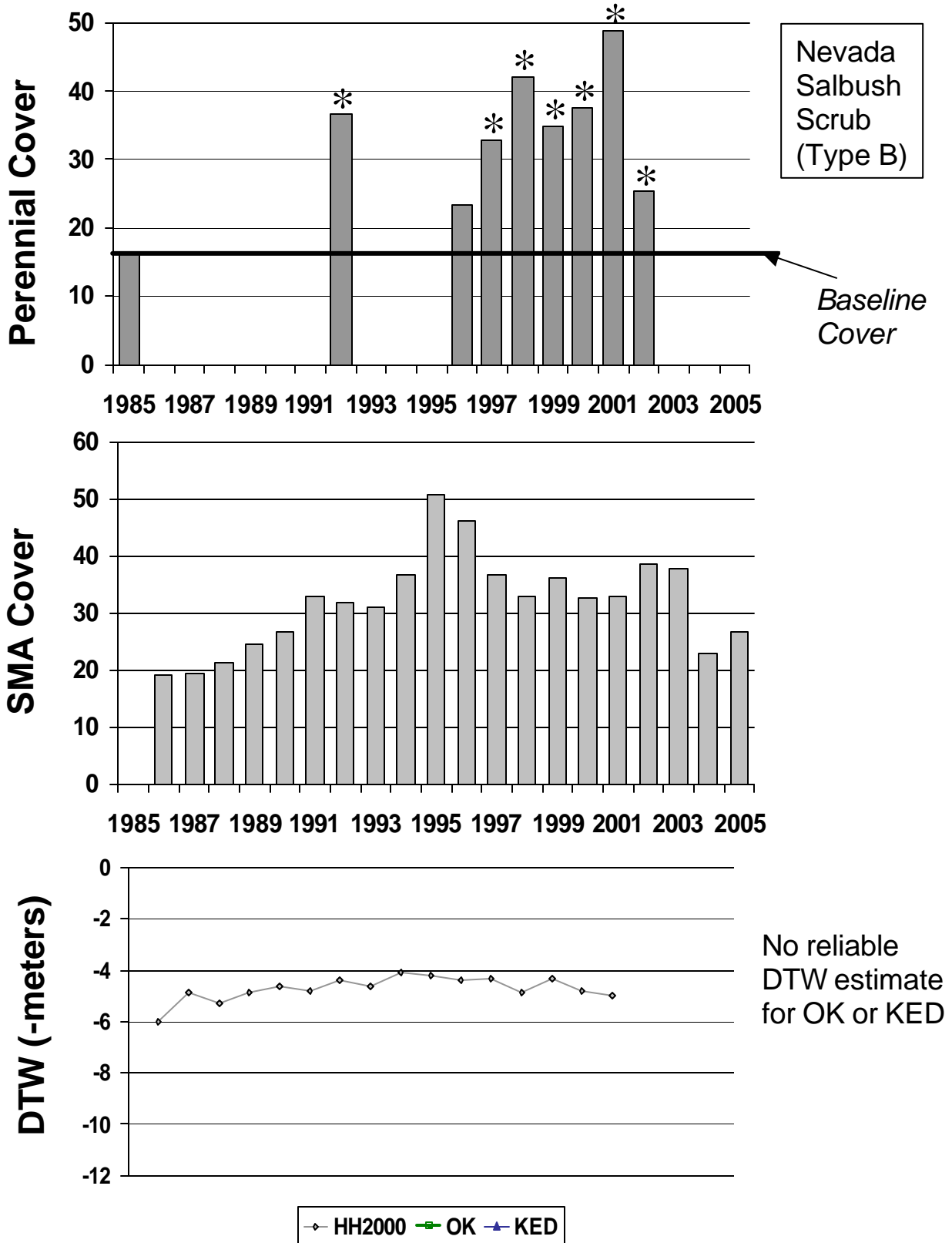


Figure 73. Status 2002: Control

LNP045

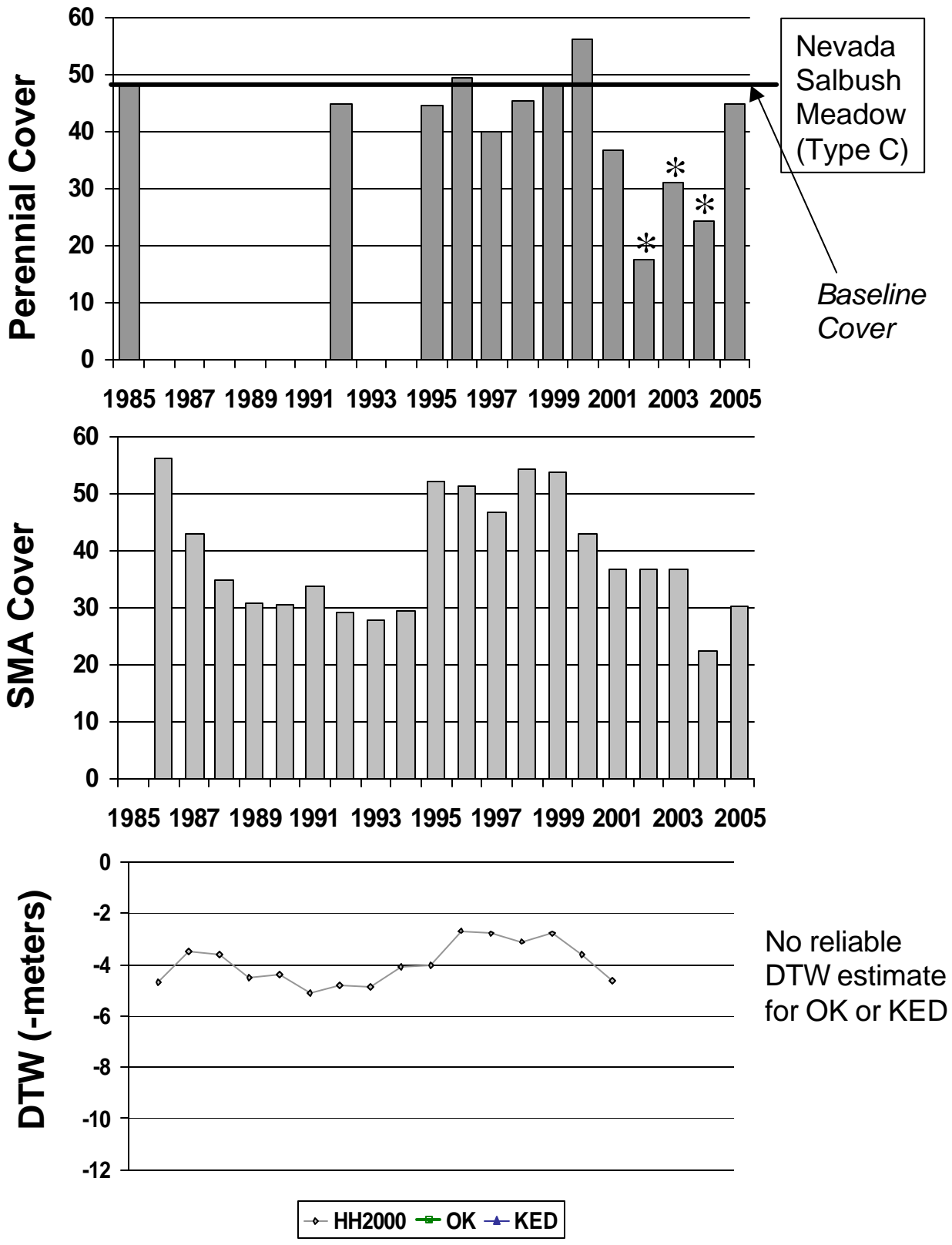


Figure 74. Wellfield: Lone Pine. Status 2005: DRPfree

LNP050

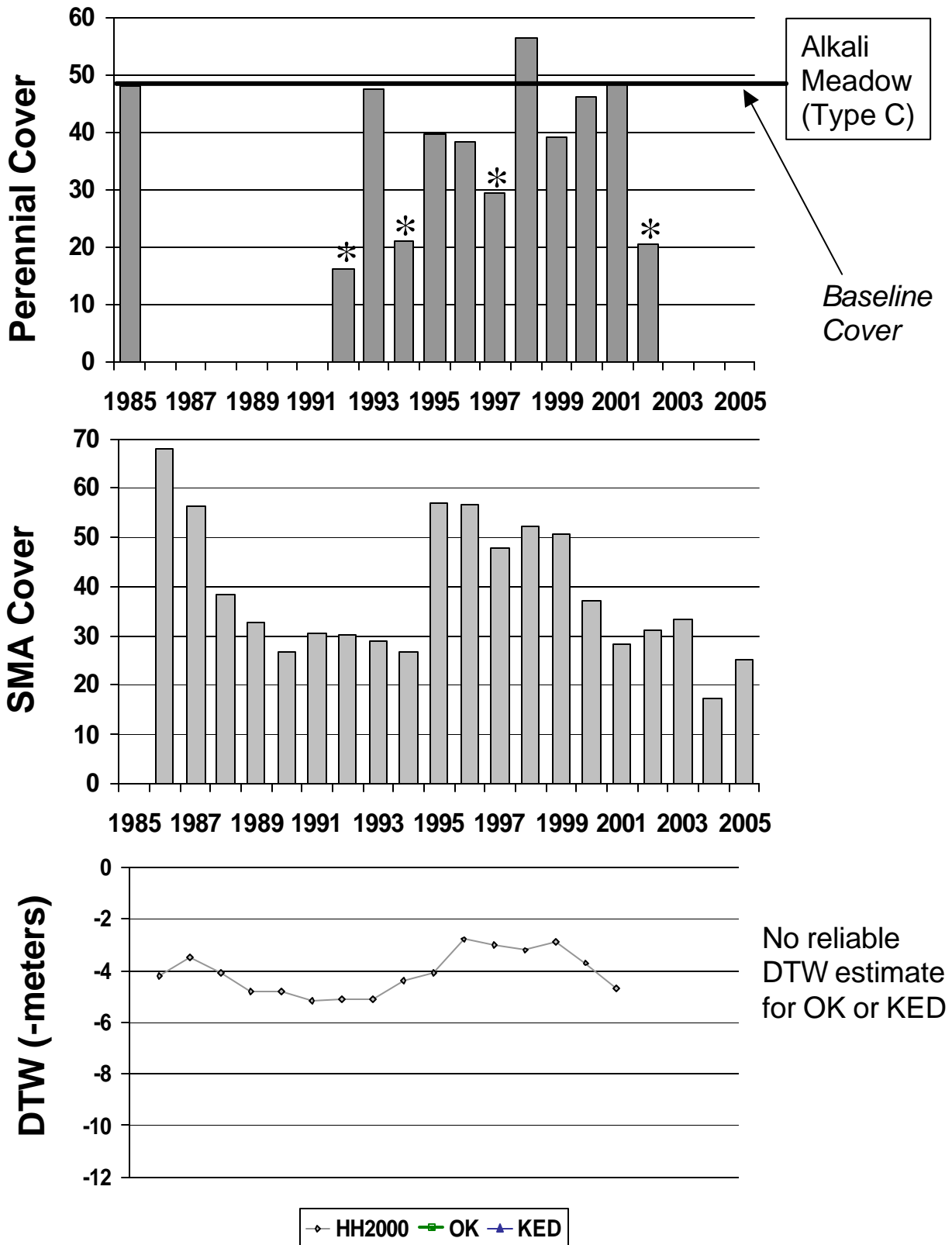


Figure 75. Status 2002: Control

LNP095

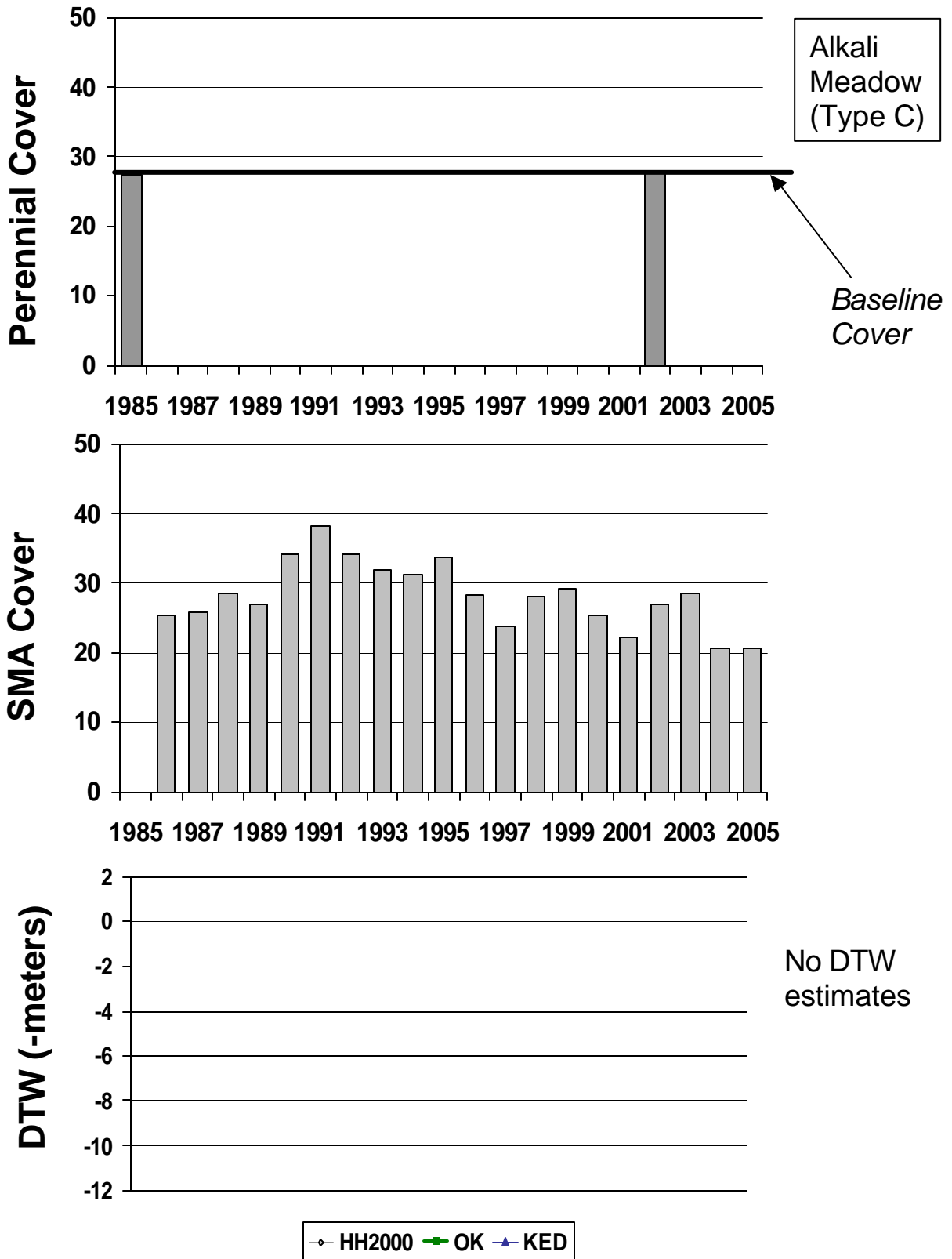


Figure 76. Status 2002: Control

MAN006

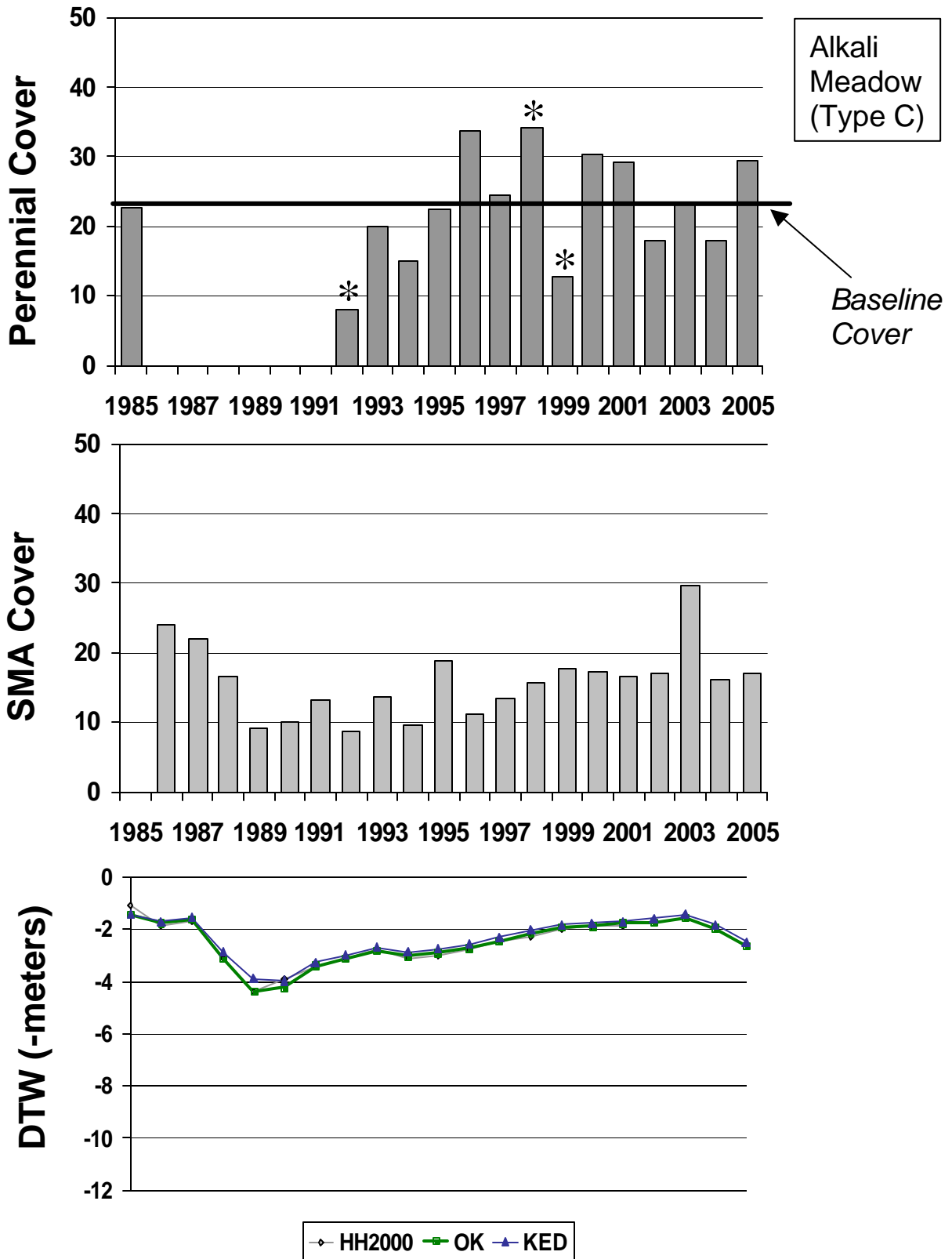


Figure 77. Wellfield: Symmes Shepherd. Status 2005: DRPfree

MAN007

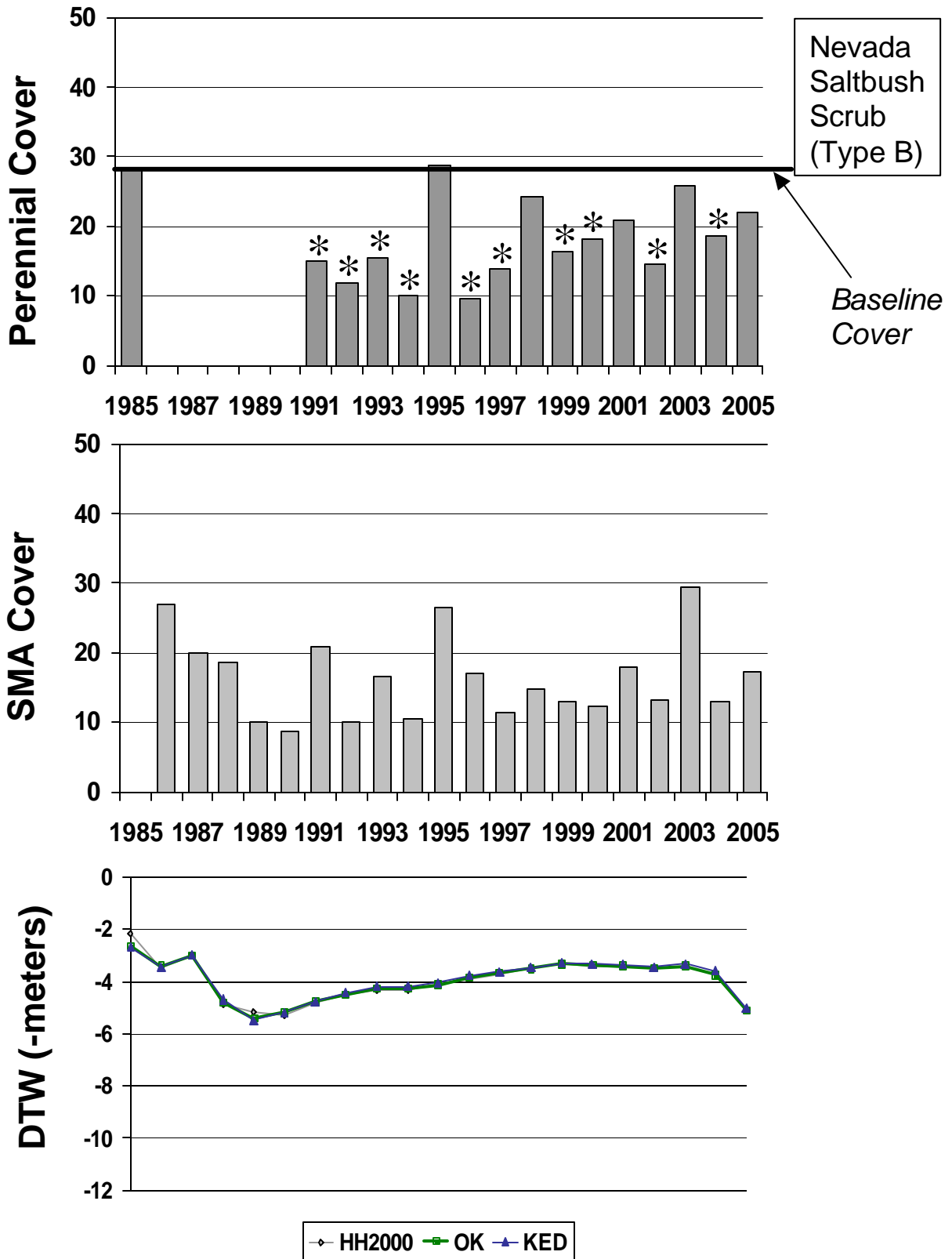


Figure 78. Wellfield: Symmes Shepherd. Status 2005: DRP

MAN014

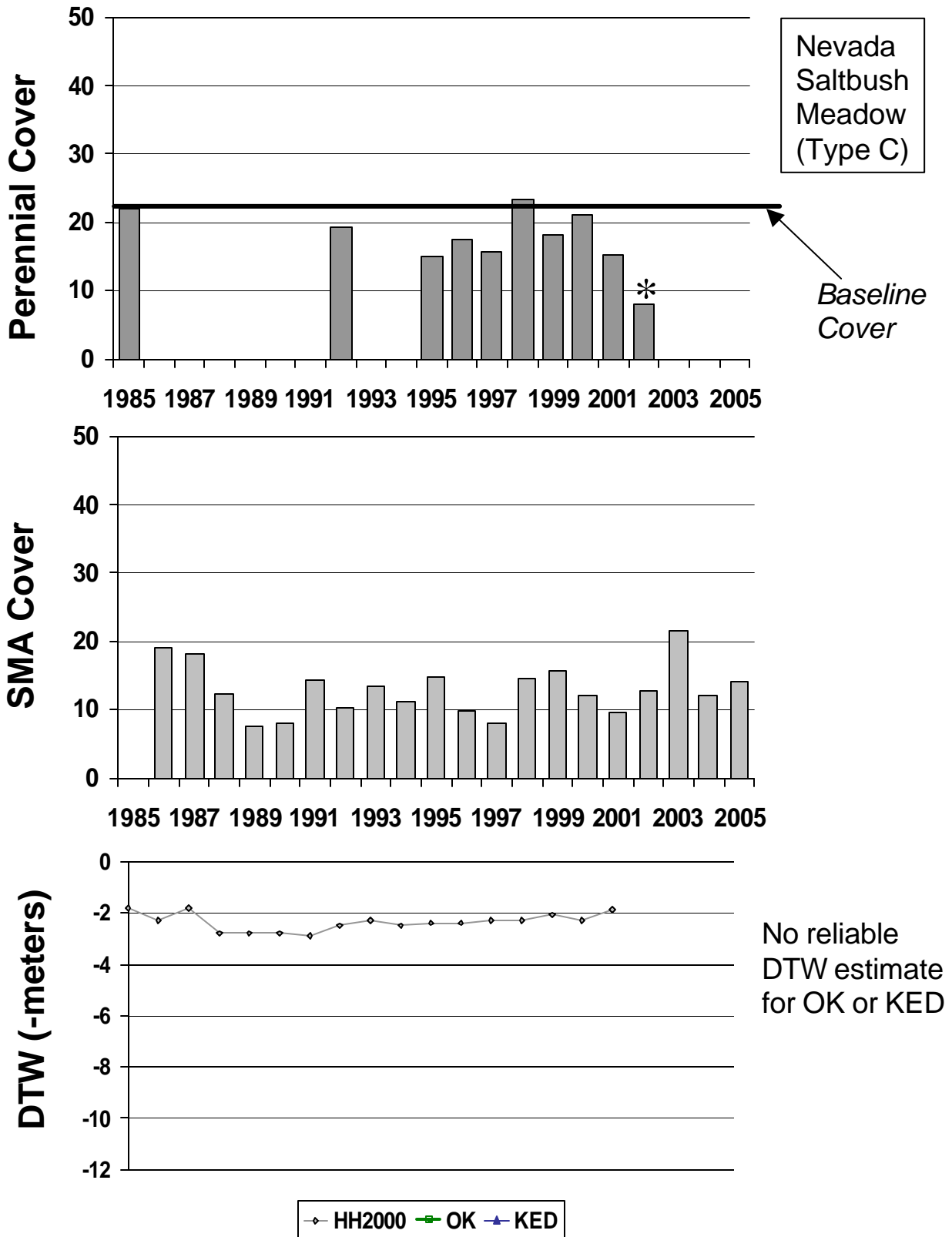


Figure 79. Status 2002: Control

MAN037

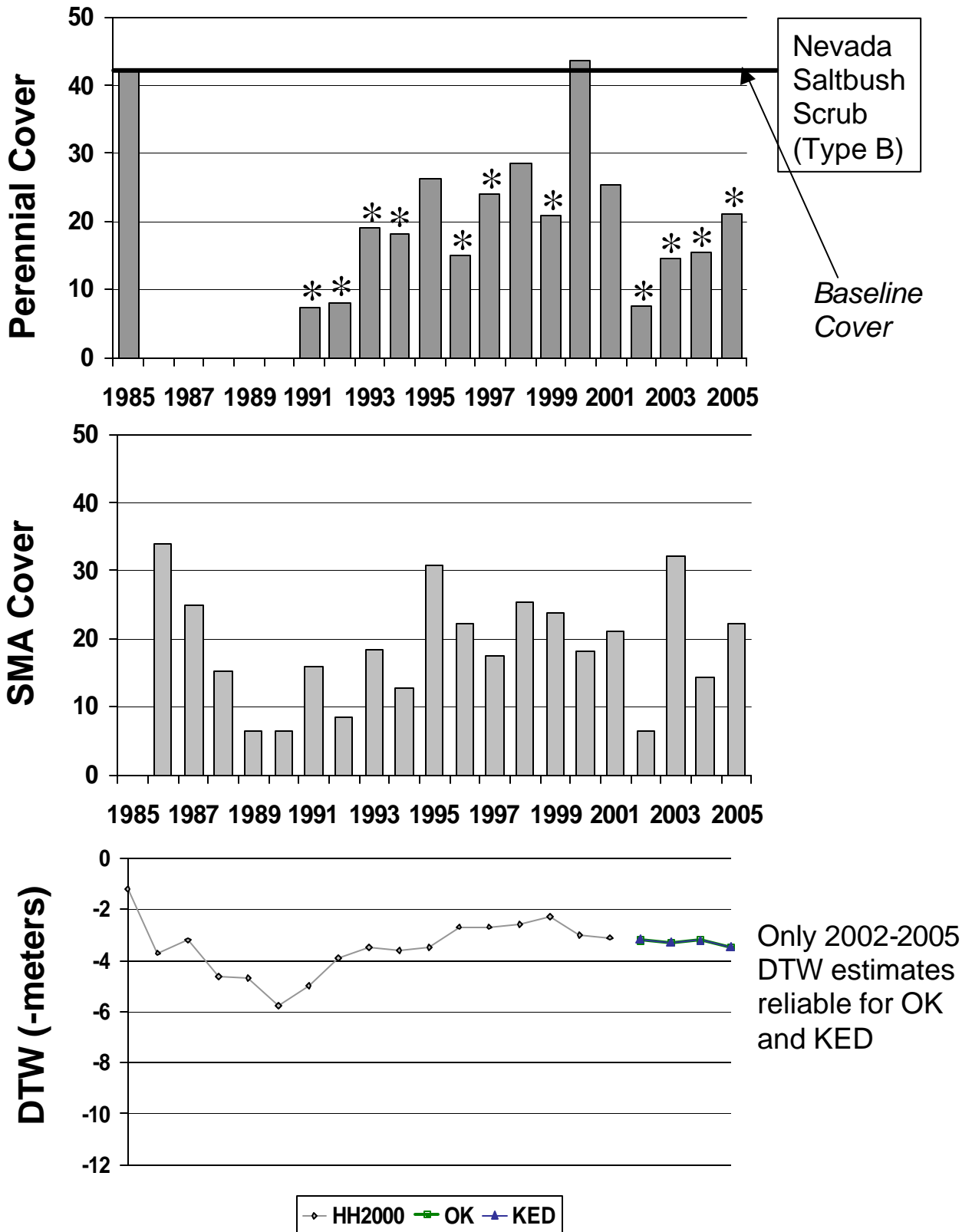


Figure 80. Wellfield: Bairs Georges. Status 2005: DRP

MAN060

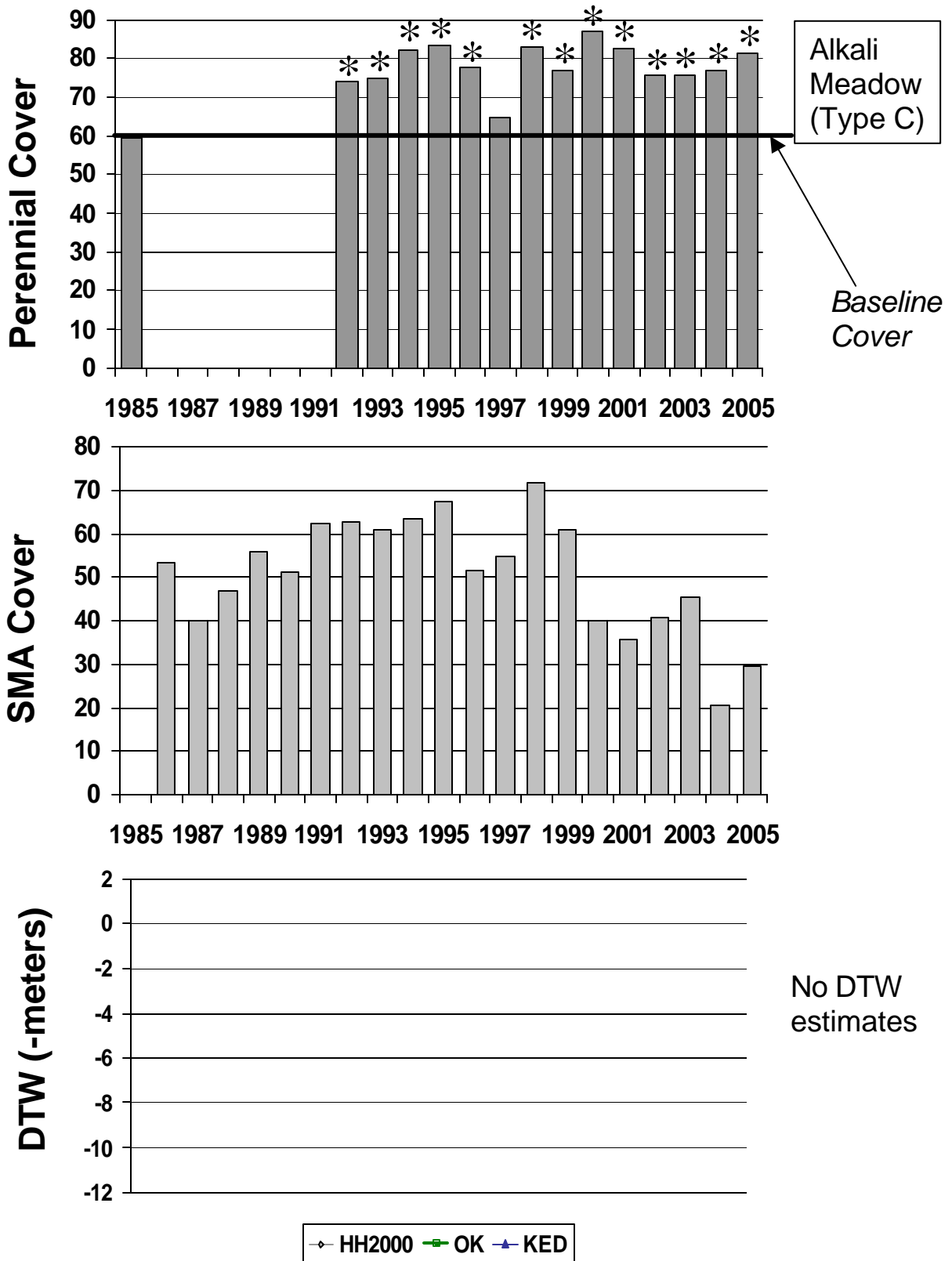


Figure 81. Status 2005: Control

PLC007

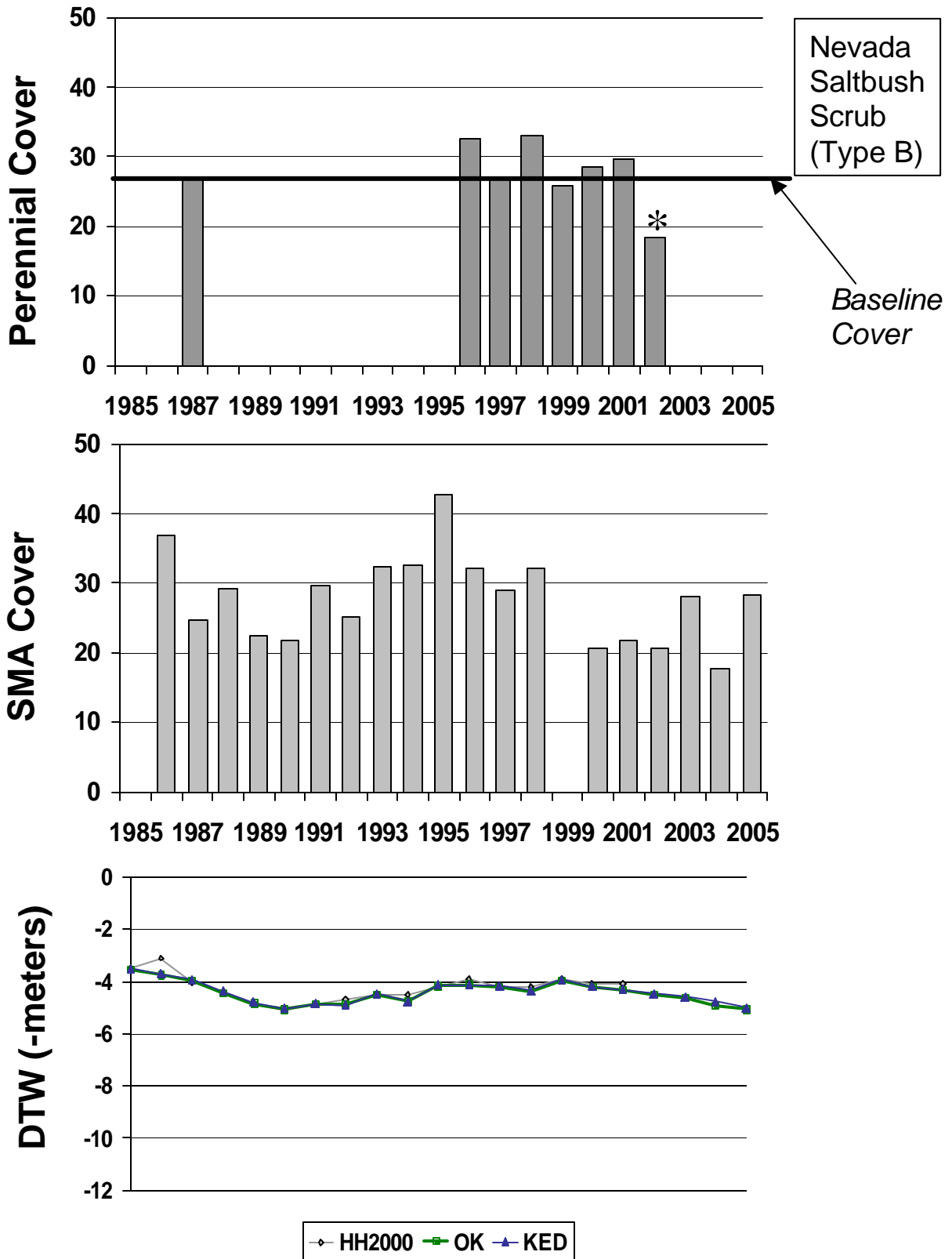


Figure 82. Wellfield: Bishop Cone. Status 2002: DRPfree

PLC024

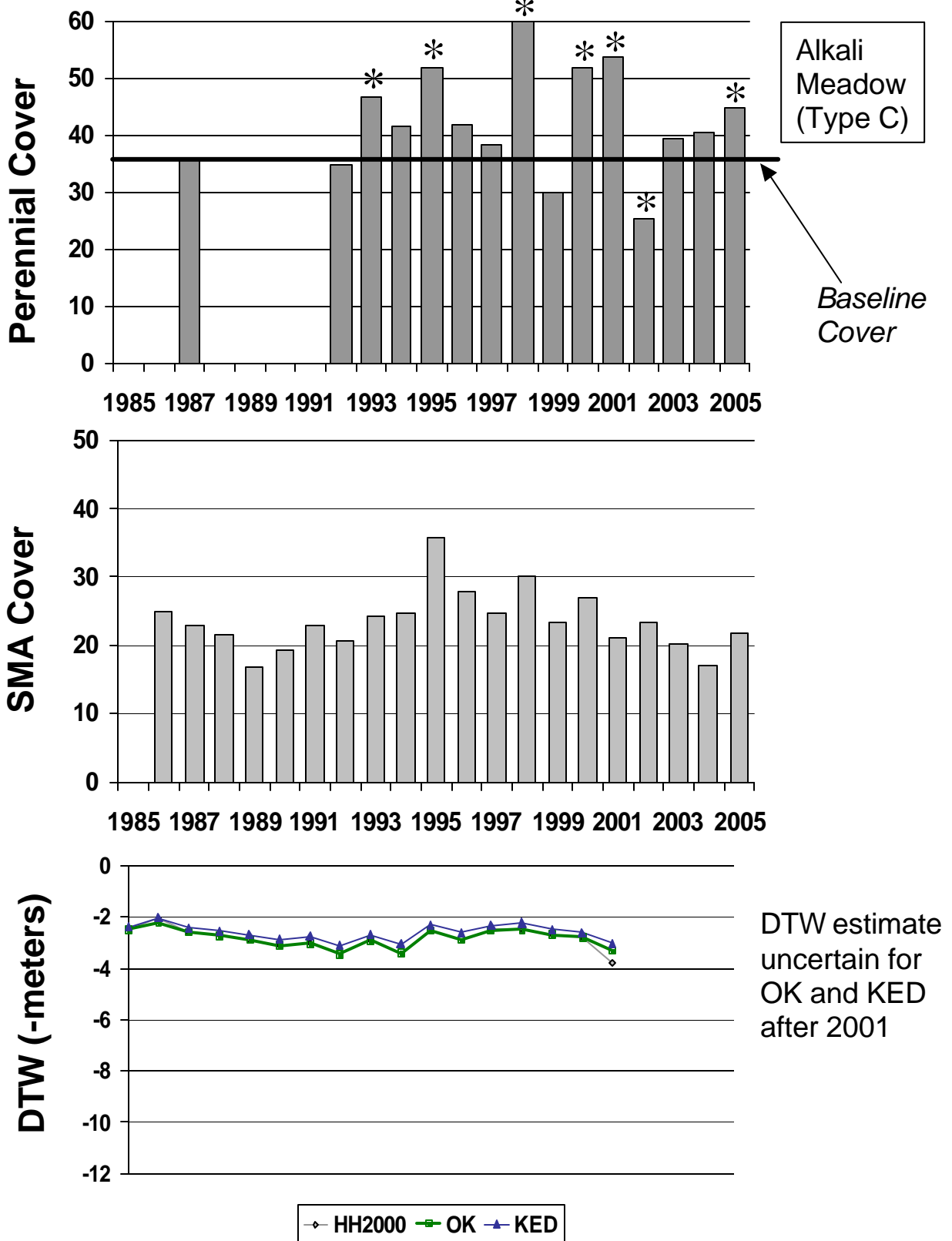


Figure 83. Status 2005: Control

PLC056

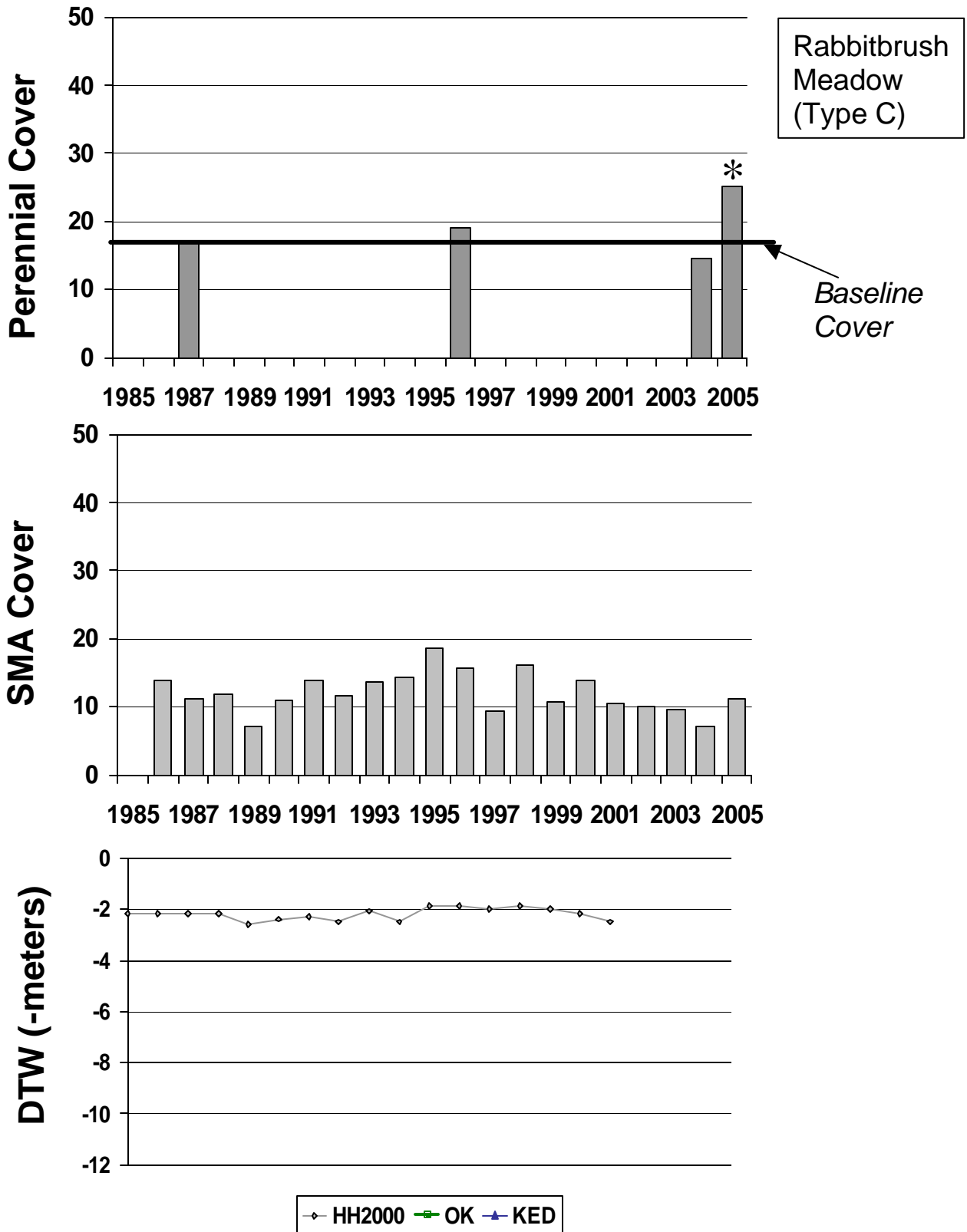


Figure 84. Status 2005: Control

PLC072

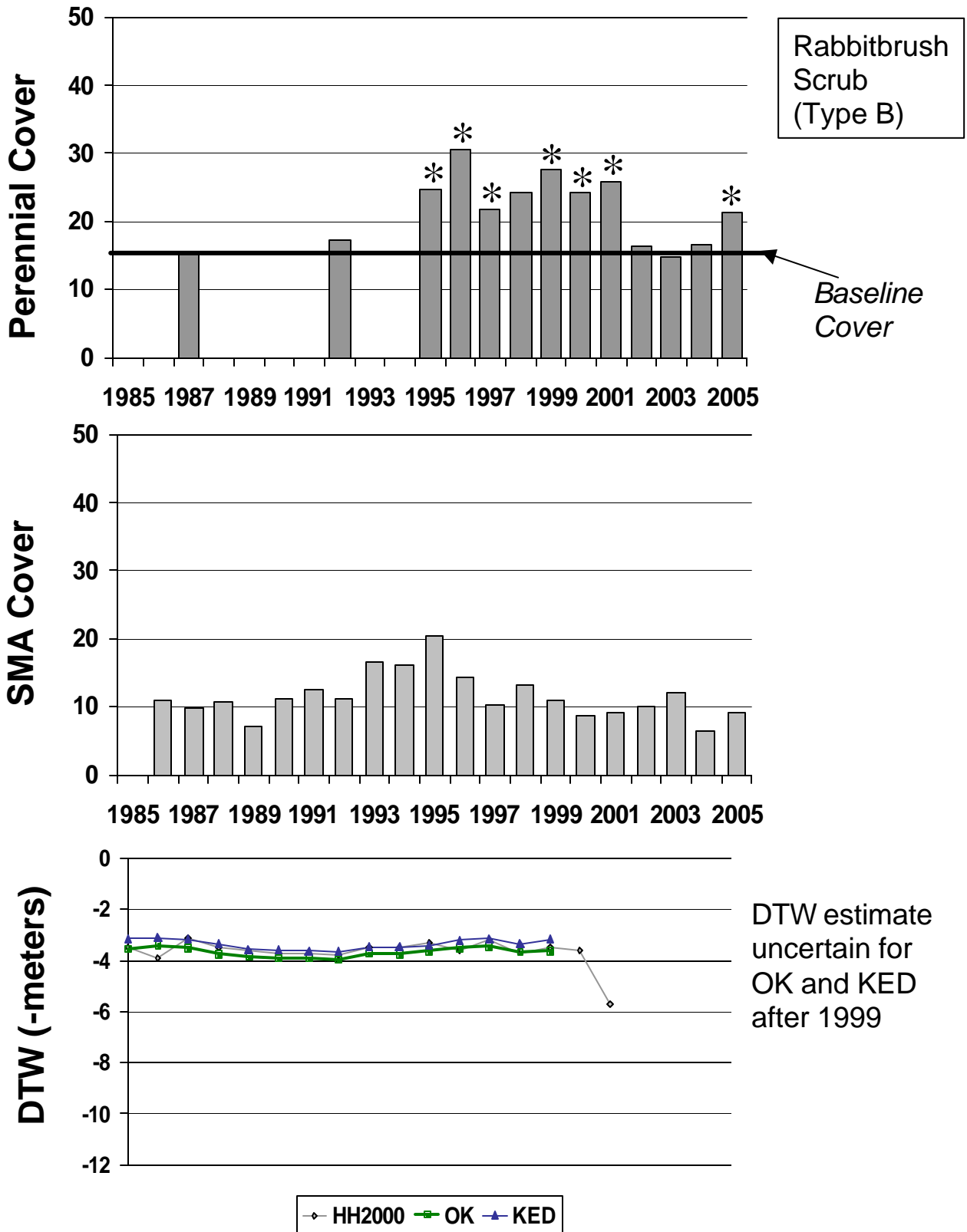


Figure 85. Status 2005: Control

PLC092

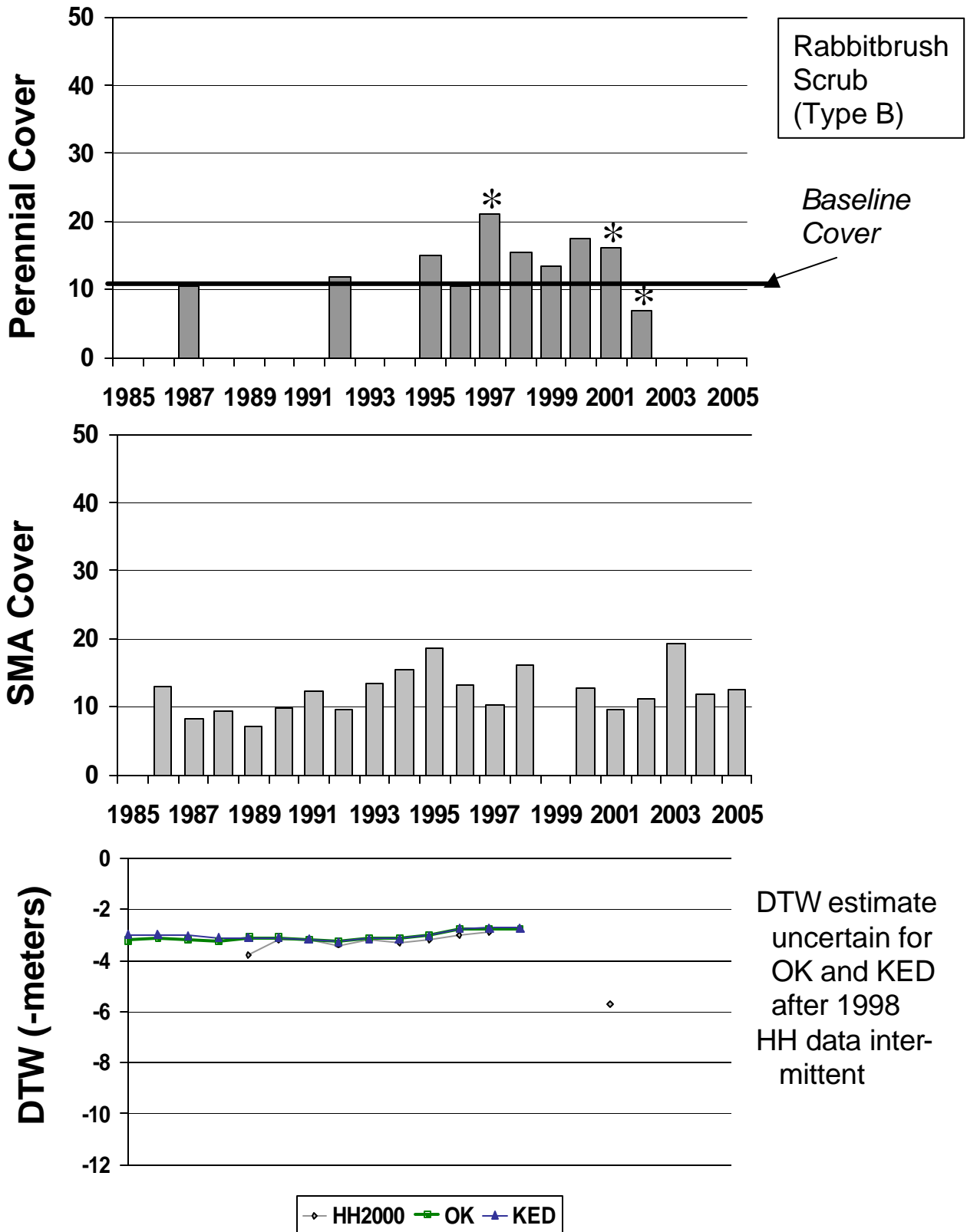


Figure 86. Status 2002: Control

PLC097

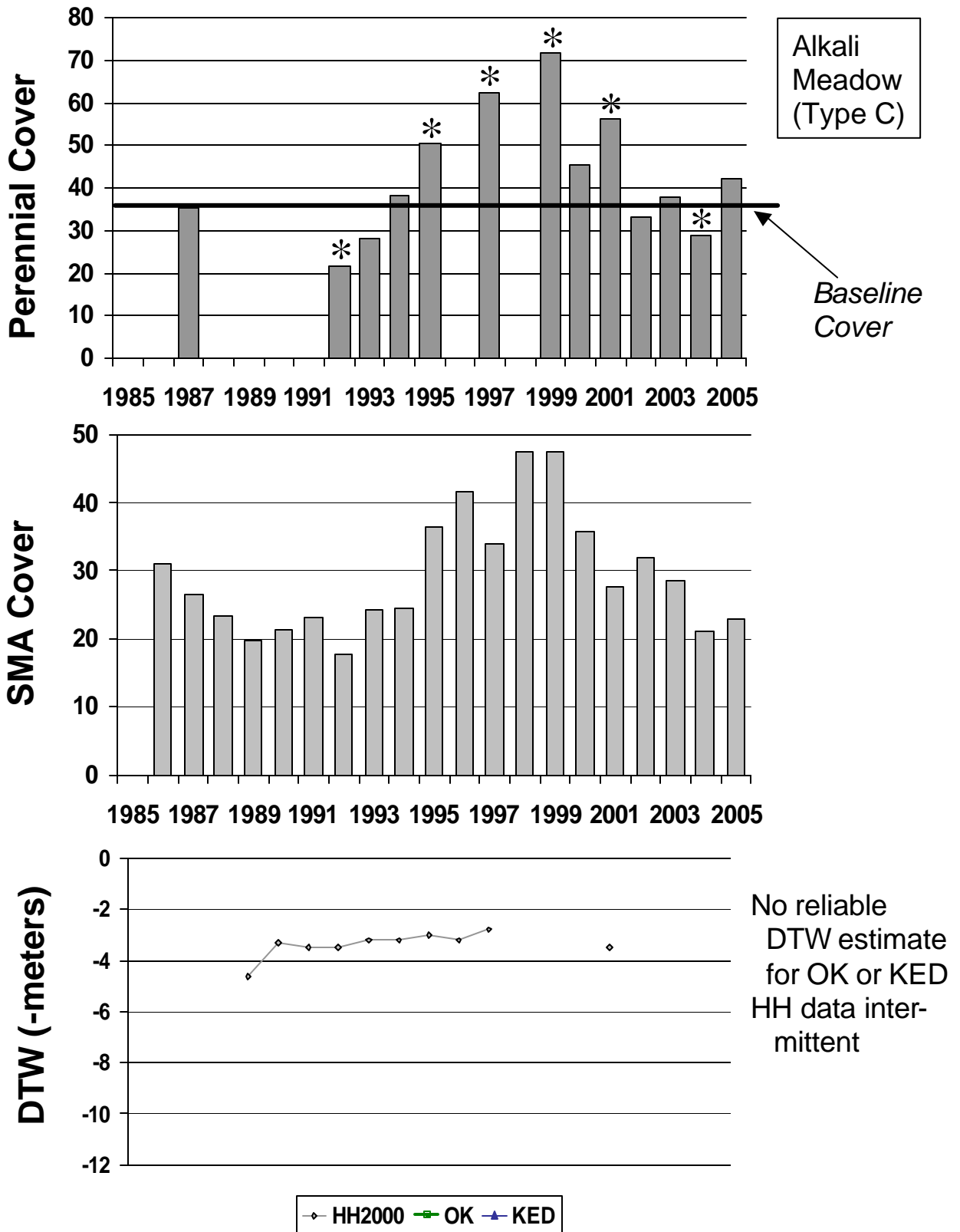


Figure 87. Status 2005: Control

PLC106

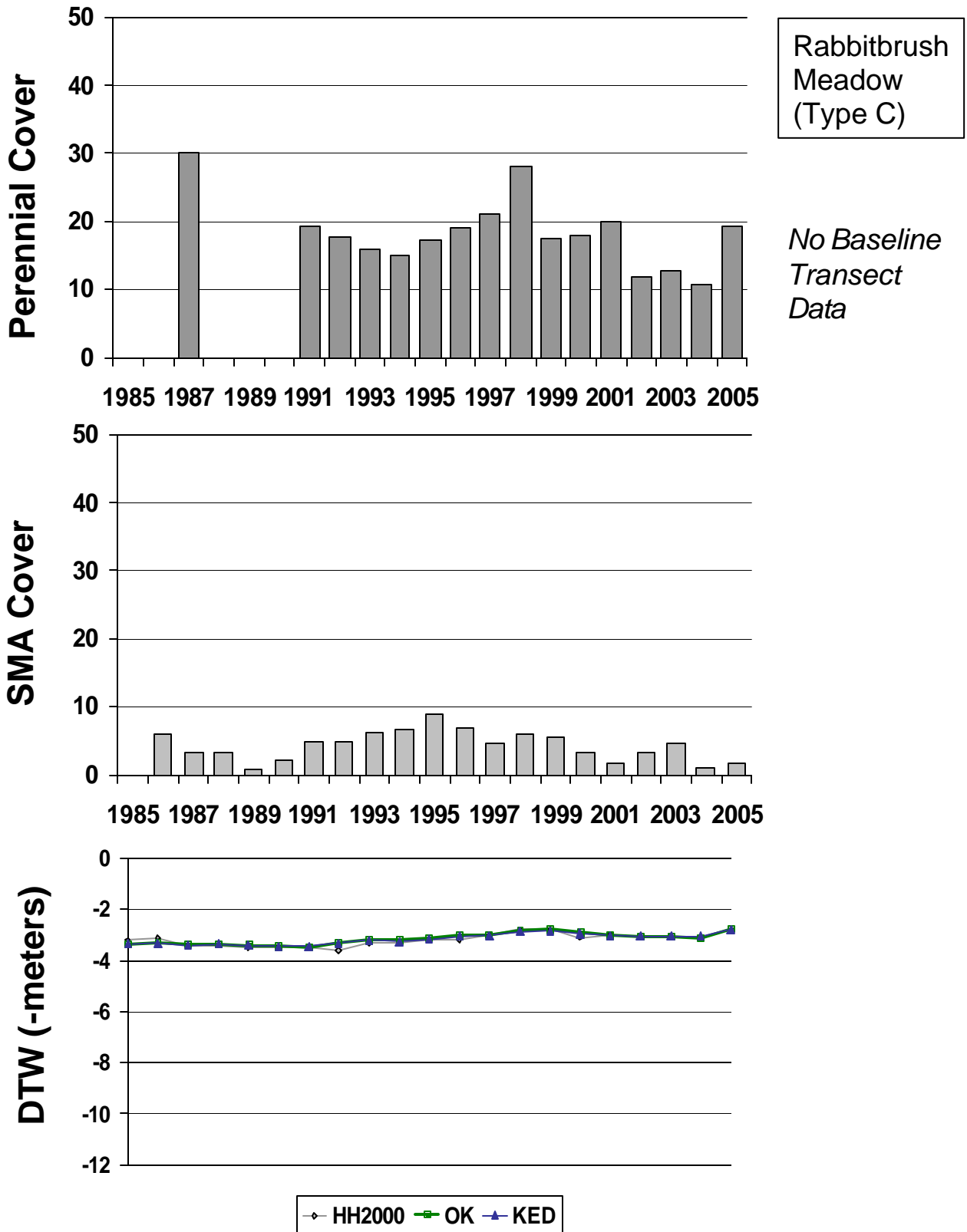


Figure 88. Status 2005: Control

PLC113

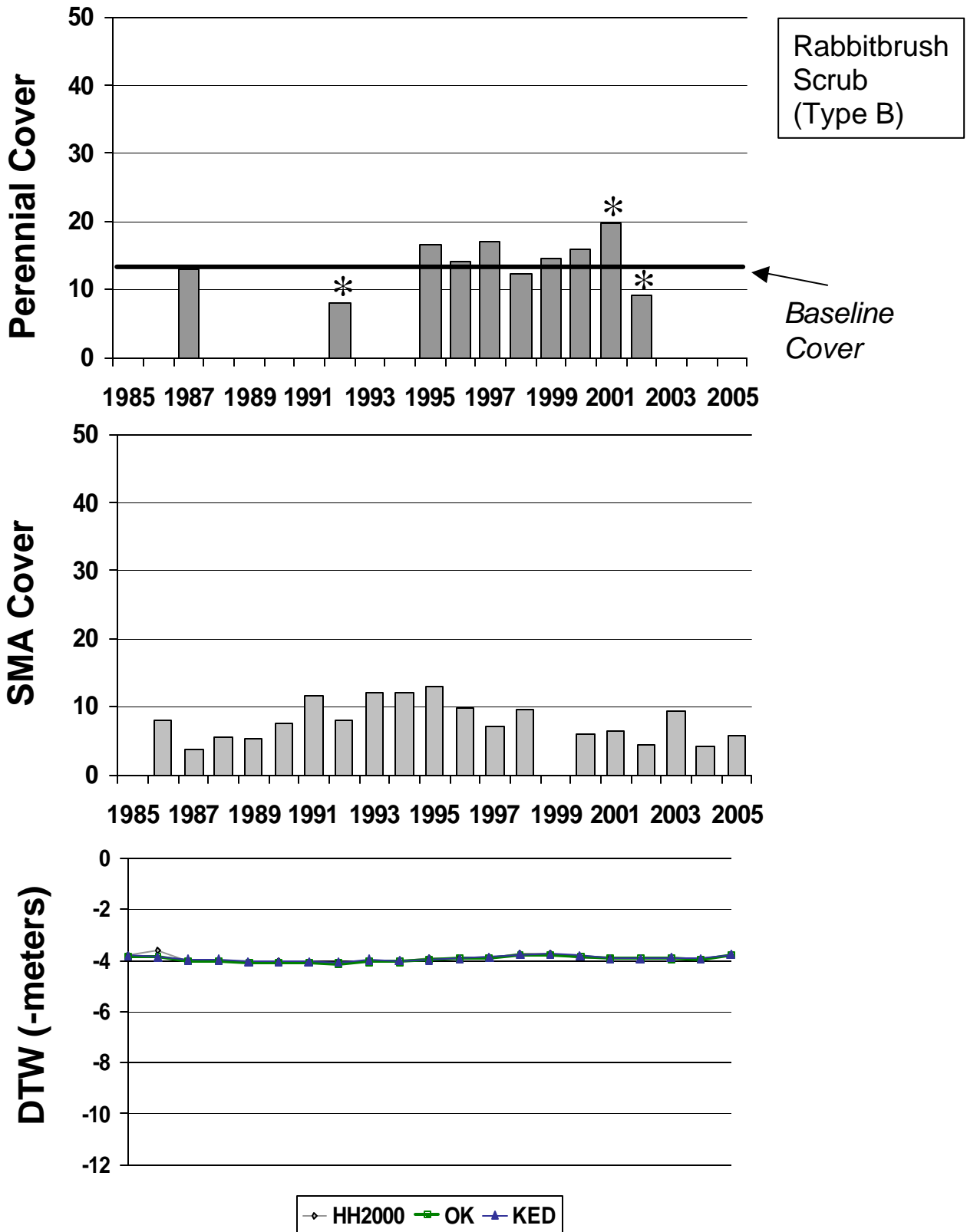


Figure 89. Status 2002: Control

PLC121

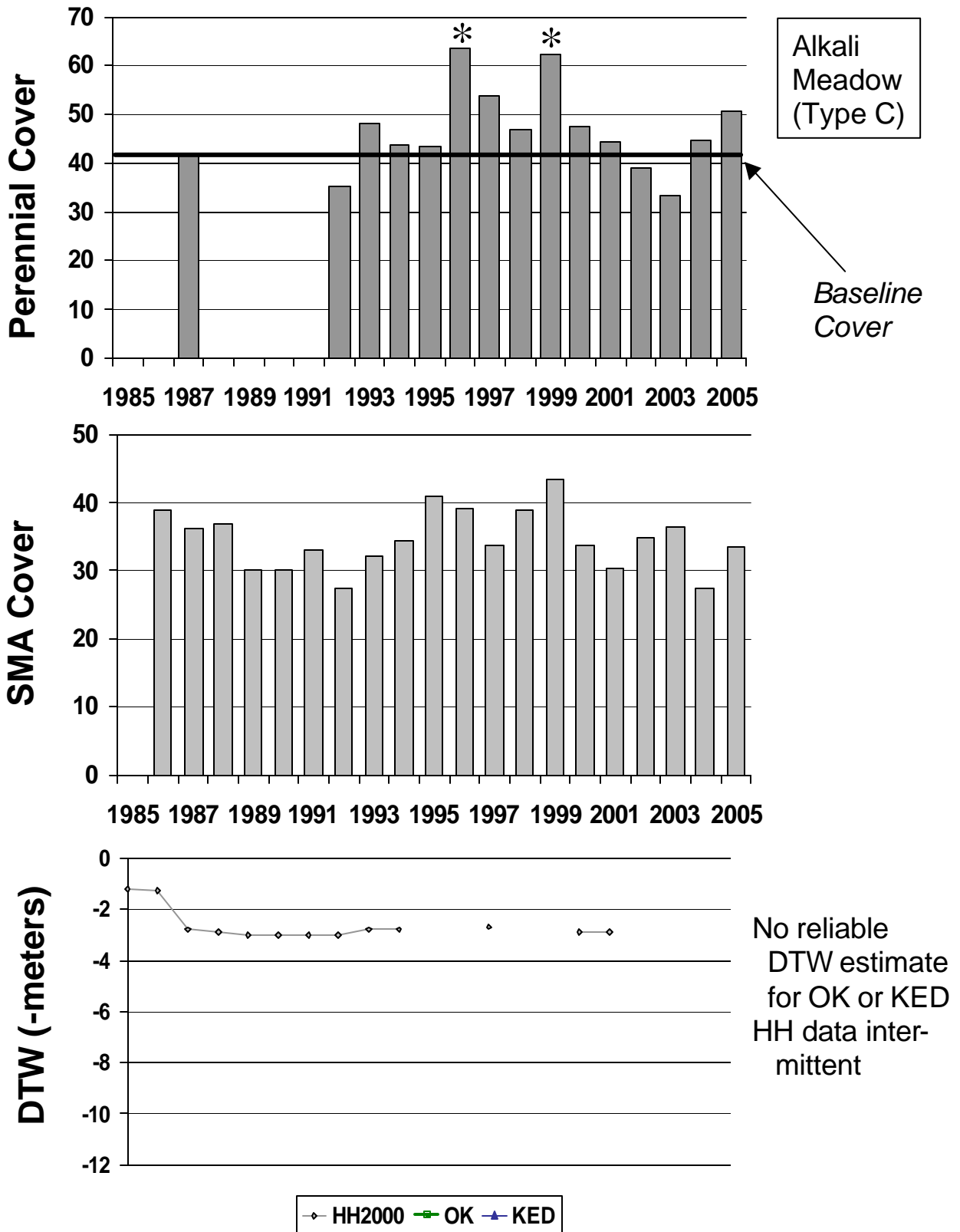


Figure 90. Status 2005: Control

PLC136

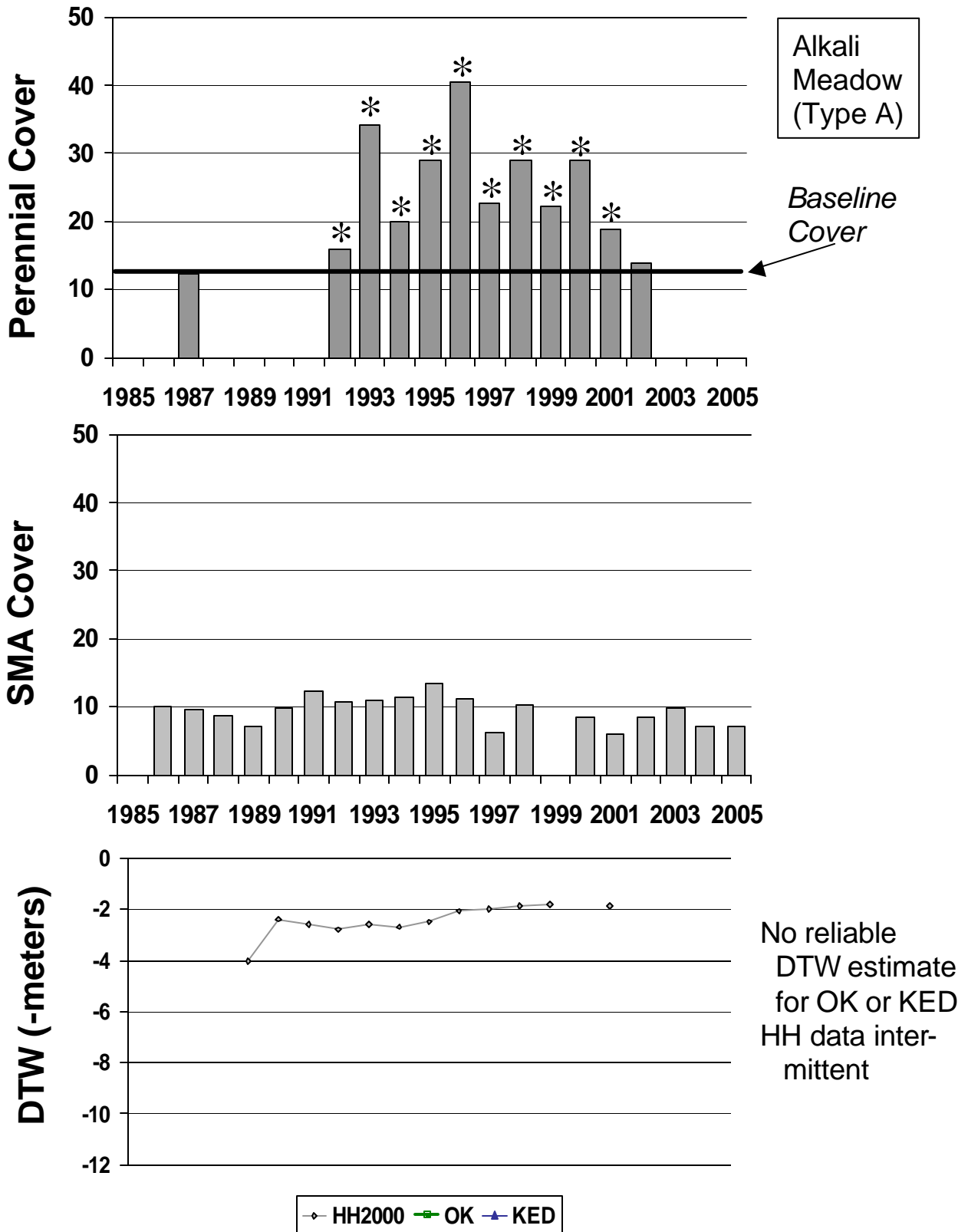


Figure 91. Status 2002: Control

PLC137

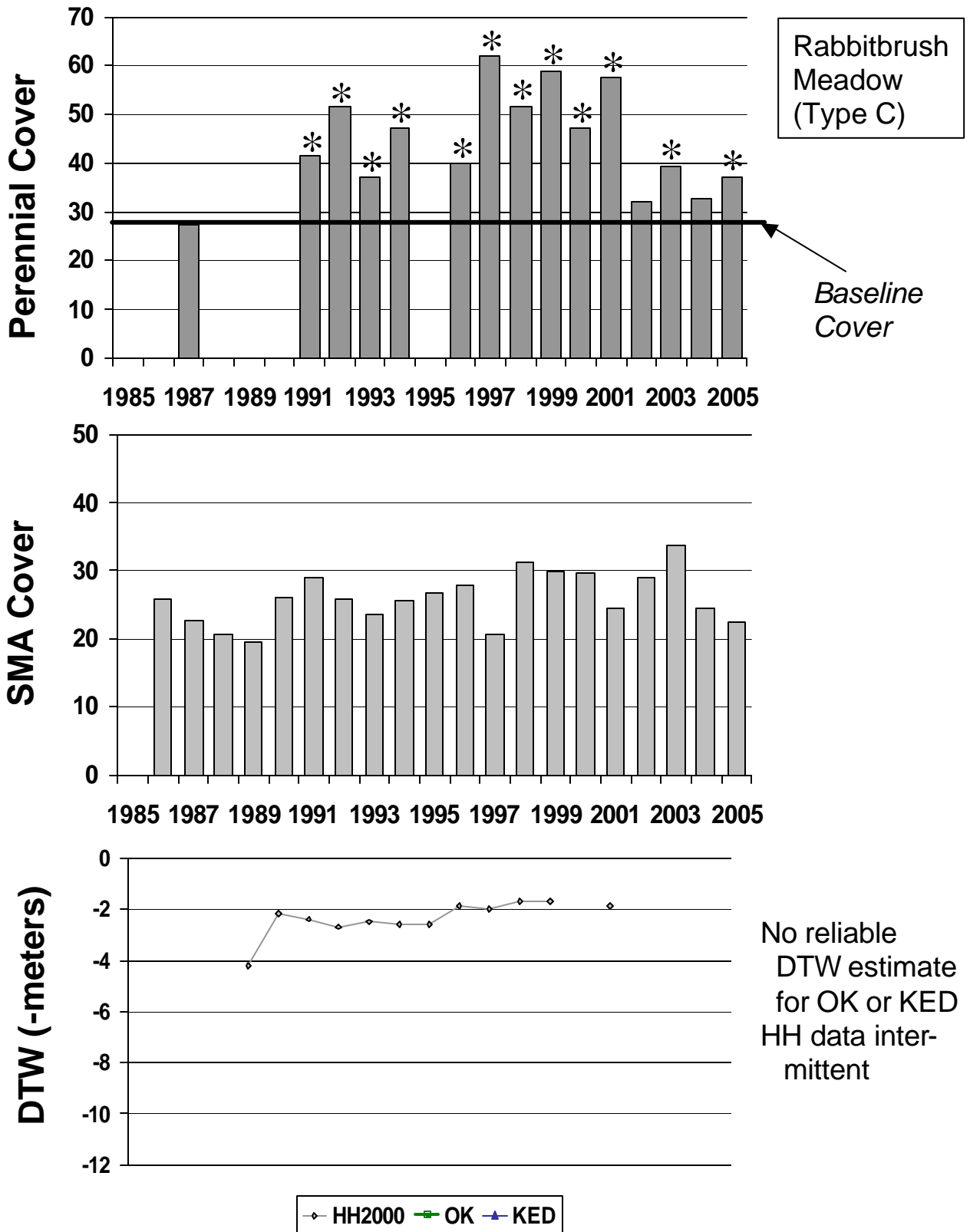


Figure 92. Status 2005: Control

PLC144

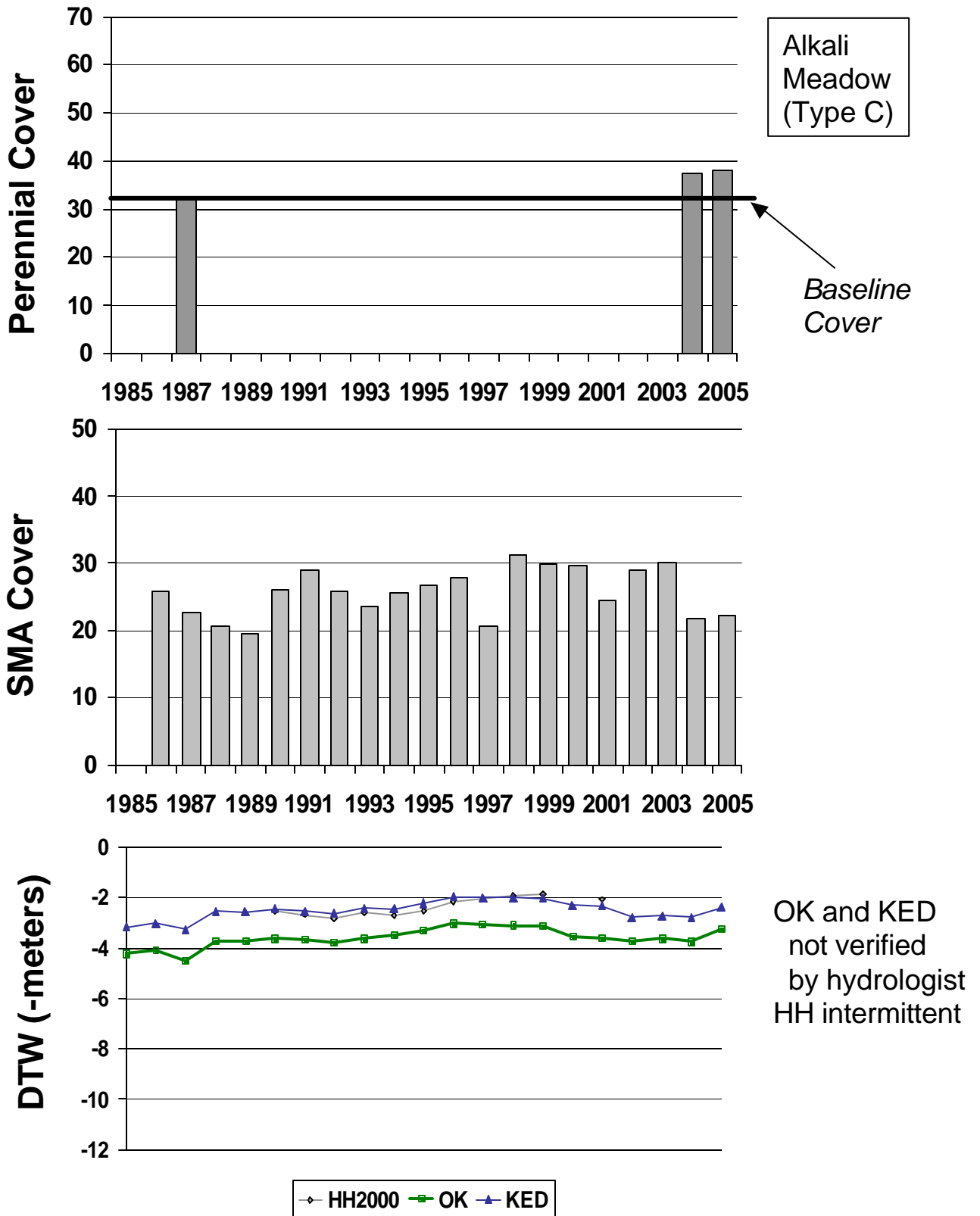


Figure 93. Control

PLC223

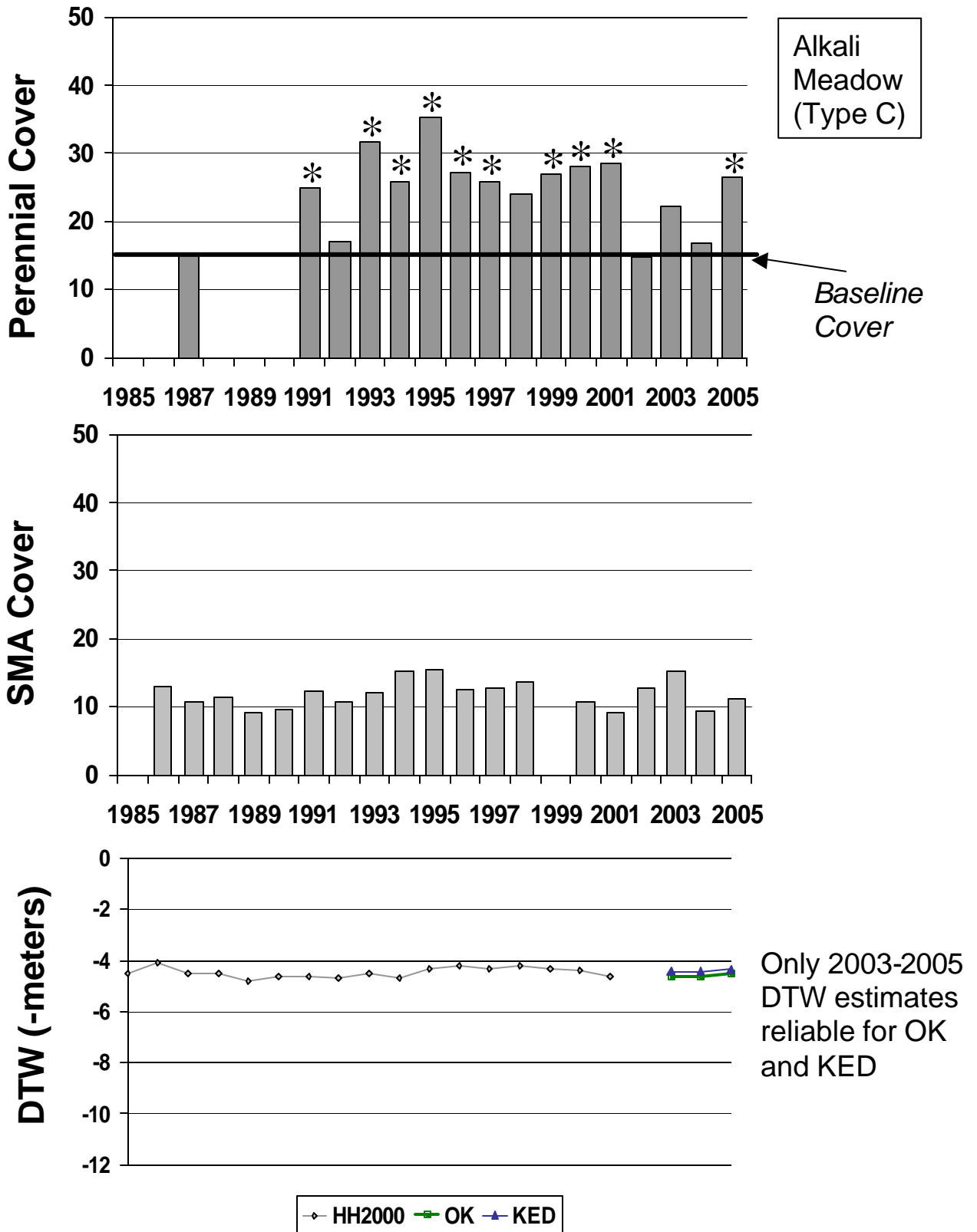


Figure 94. Status 2005: Control

TIN028

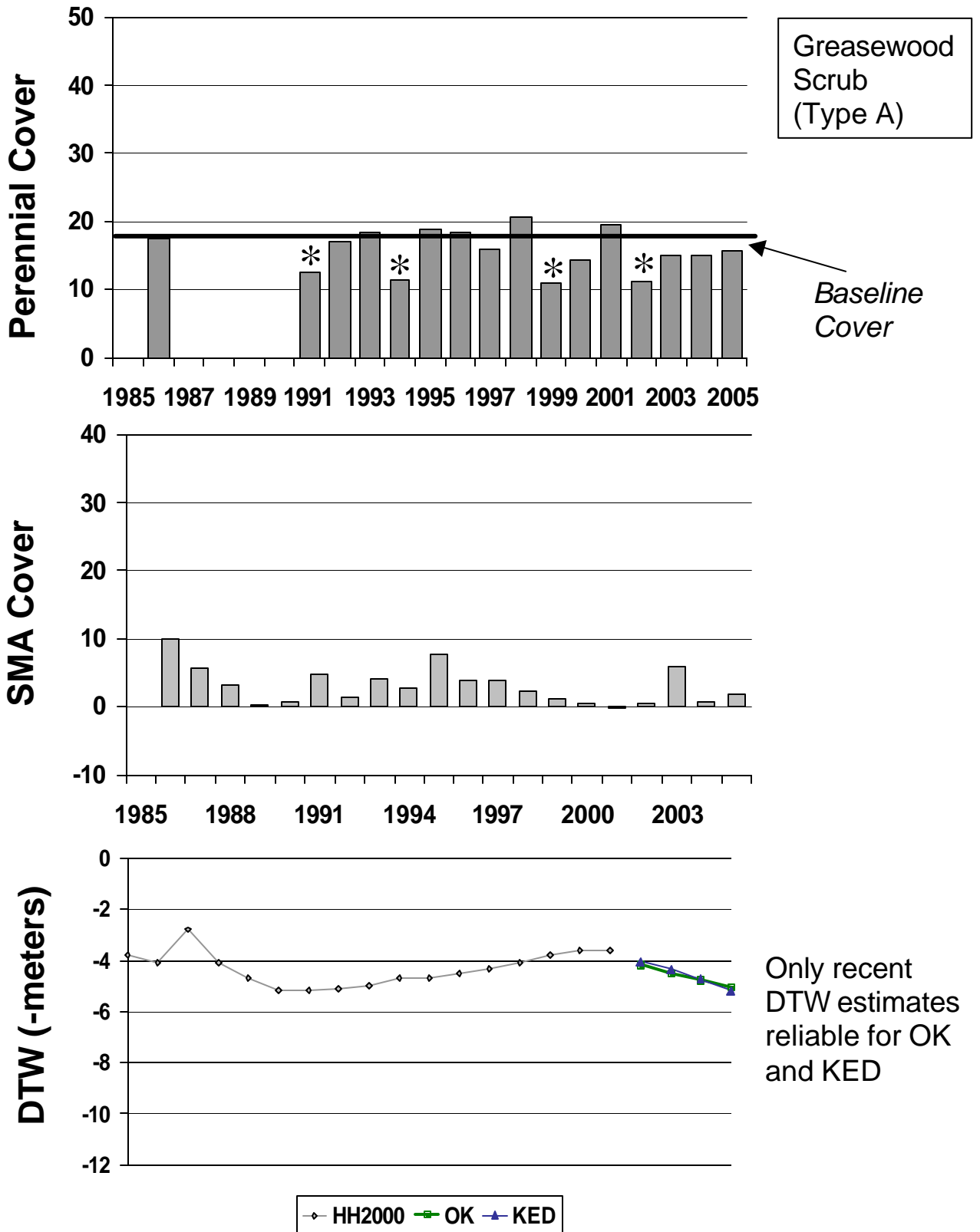


Figure 95. Wellfield: Big Pine. Status 2005: DRPfree

TIN030

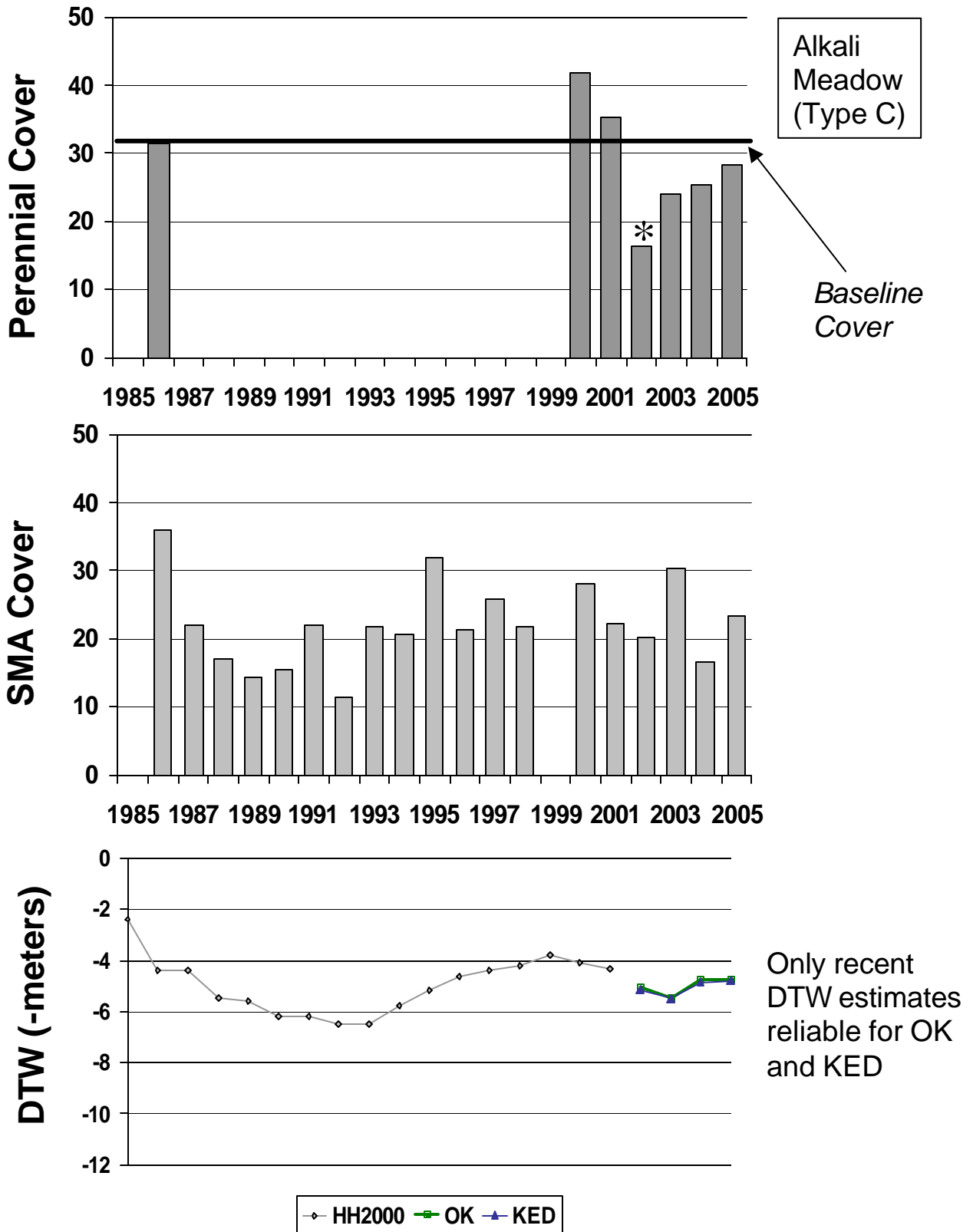


Figure 96. Wellfield: Big Pine. Status 2005: DRPfree

TIN050

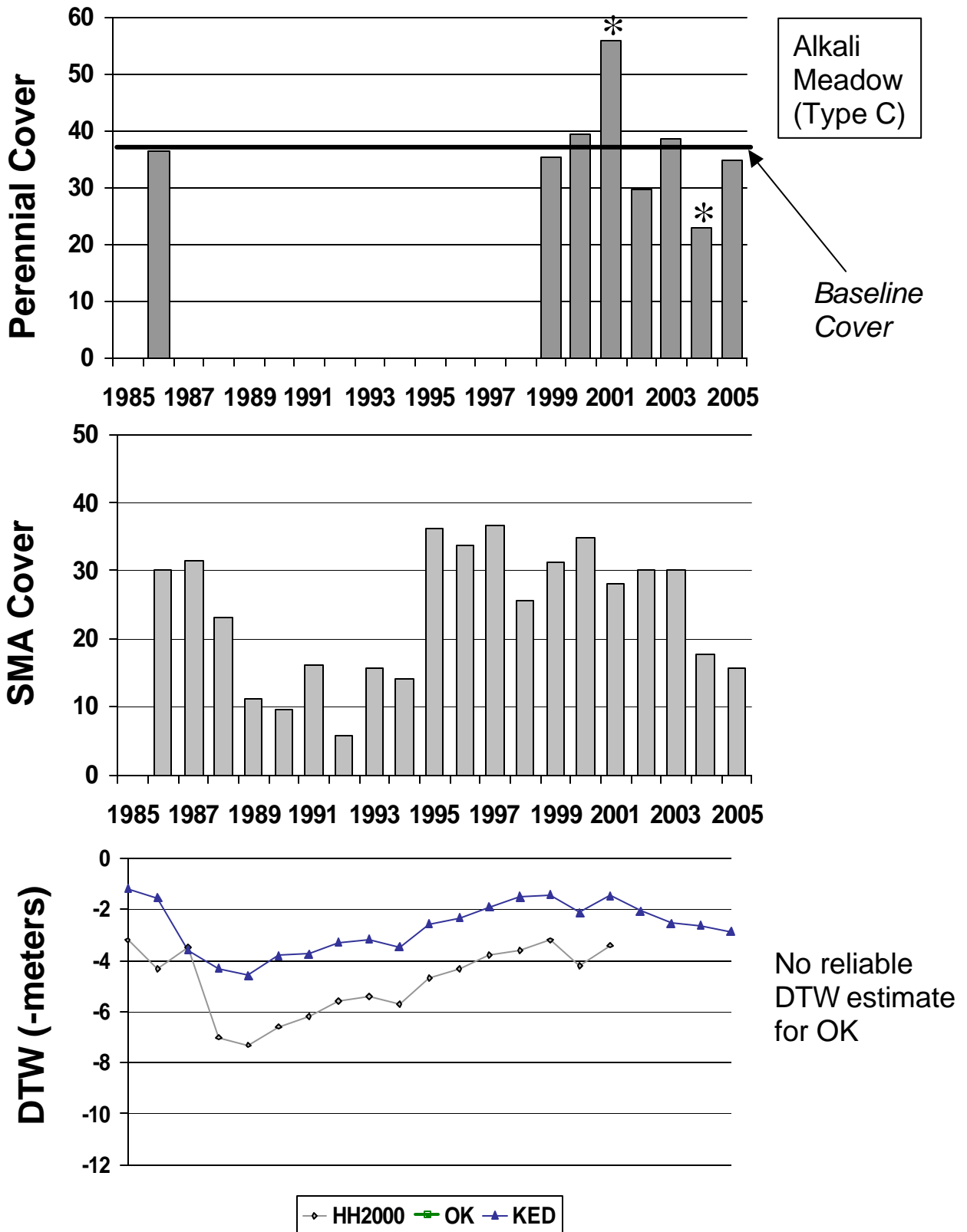


Figure 97. Wellfield: Taboose Aberdeen. Status 2005: DRPfree

TIN053

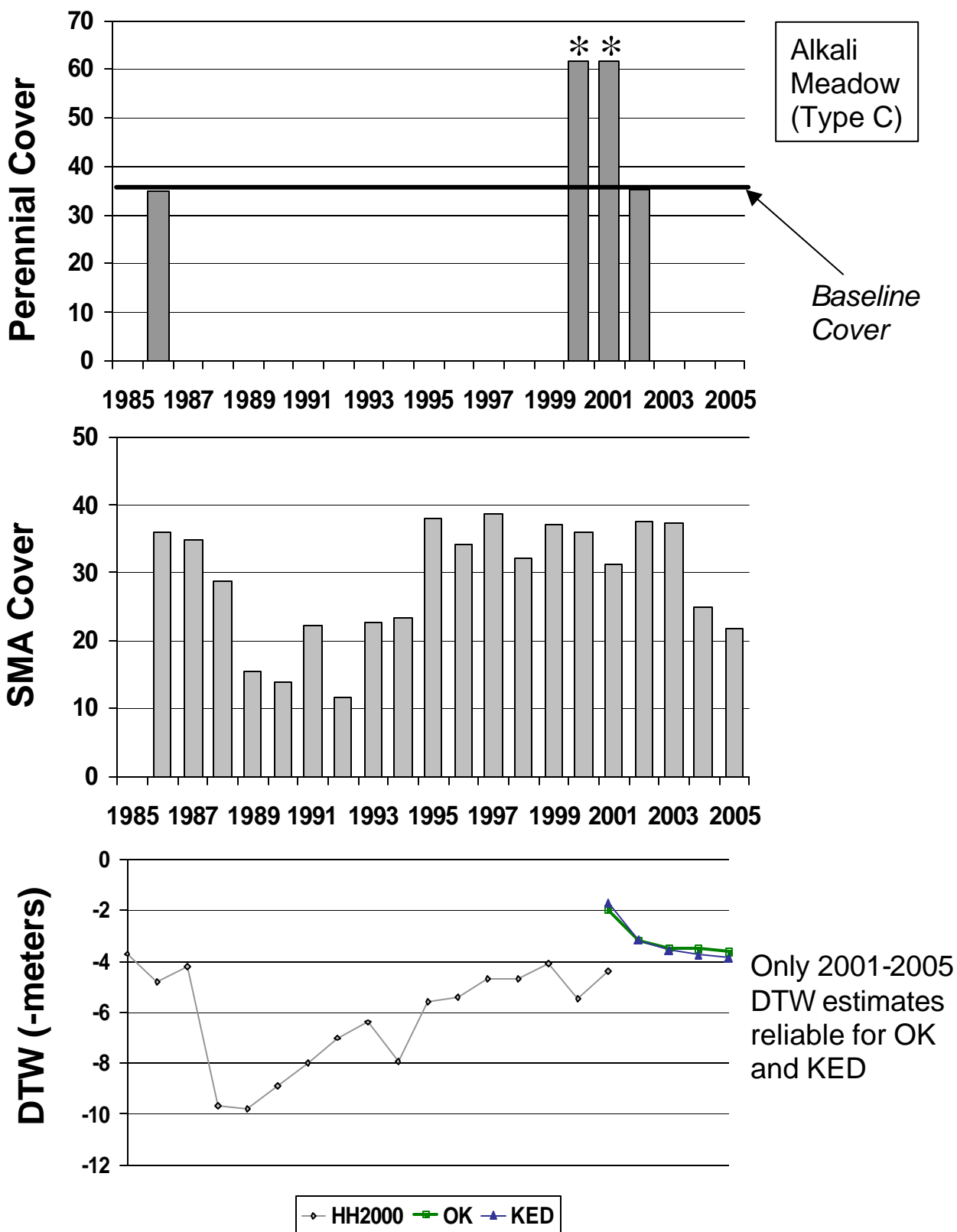


Figure 98. Wellfield: Taboose Aberdeen. Status 2002: DRPfree

TIN064

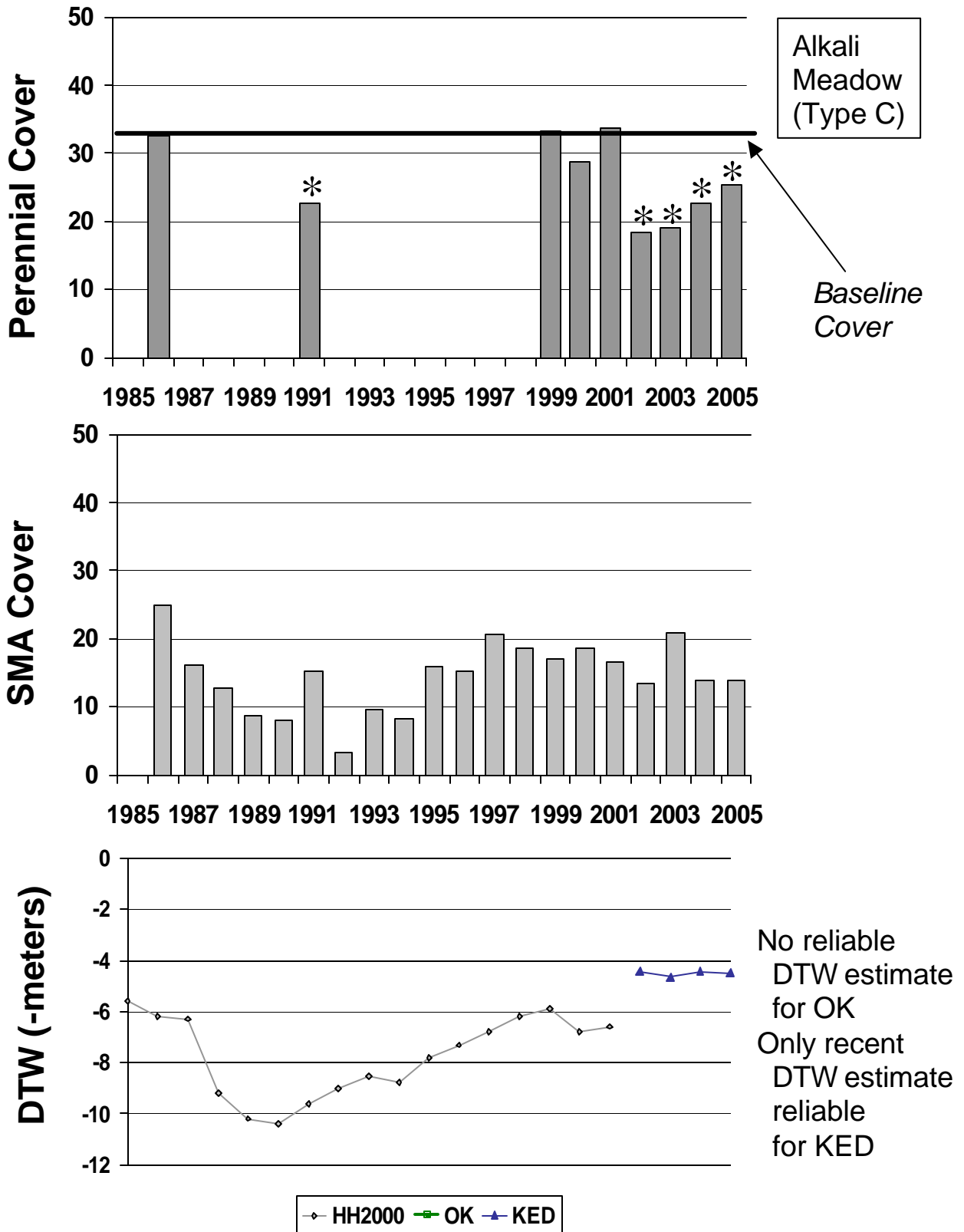


Figure 99. Wellfield: Taboose Aberdeen. Status 2005: DRPfree

TIN068

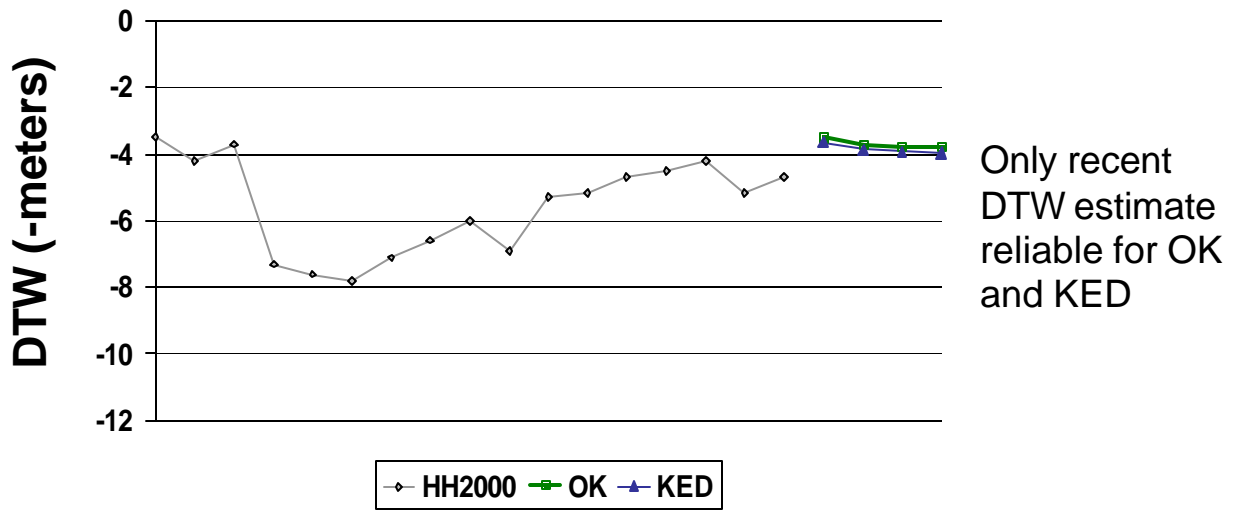
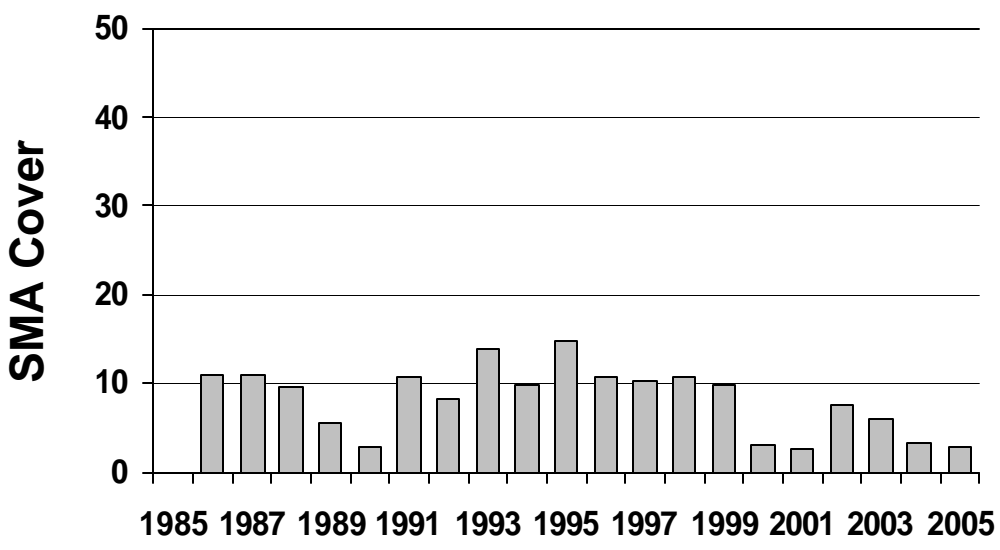
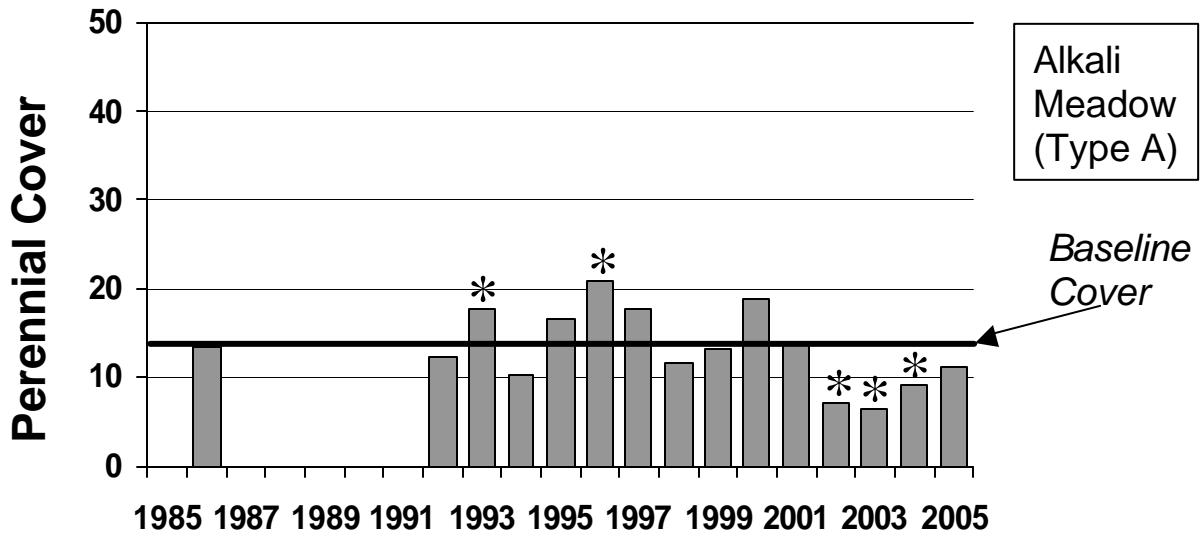


Figure 100. Wellfield: Taboose Aberdeen. Status 2005: DRP

UNW029

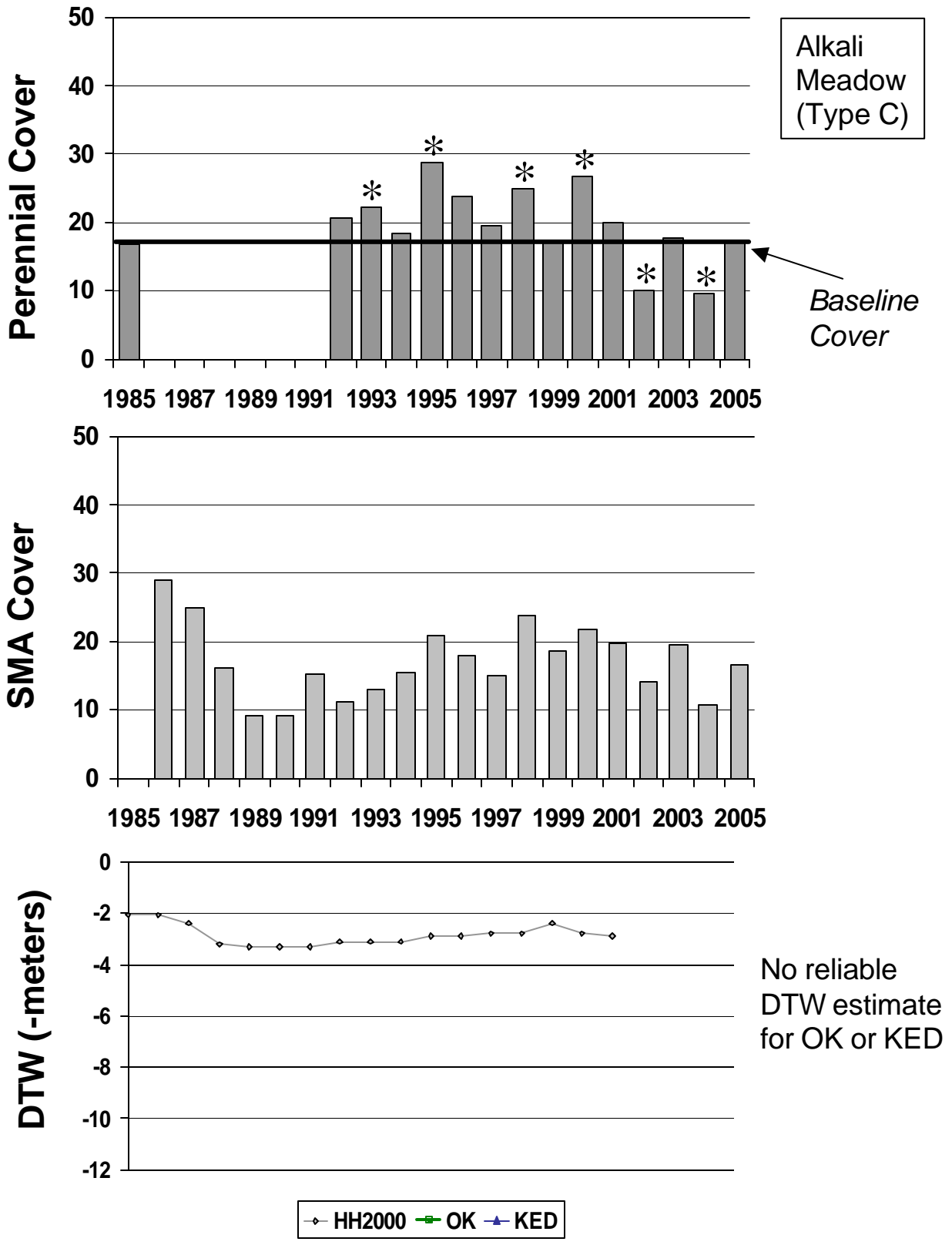


Figure 101. Status 2005: Control

UNW039

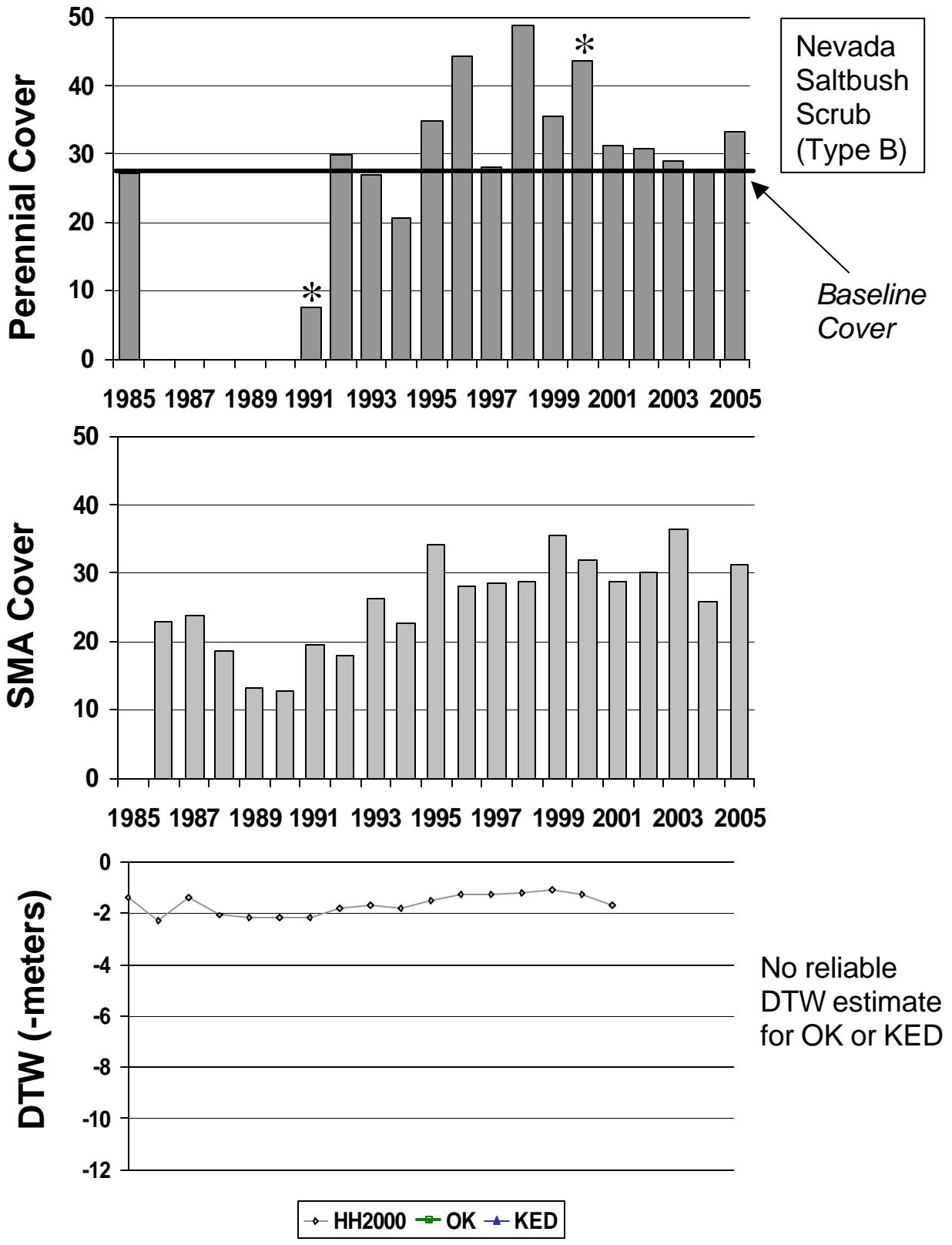


Figure 102. Status 2005: Control

UNW079

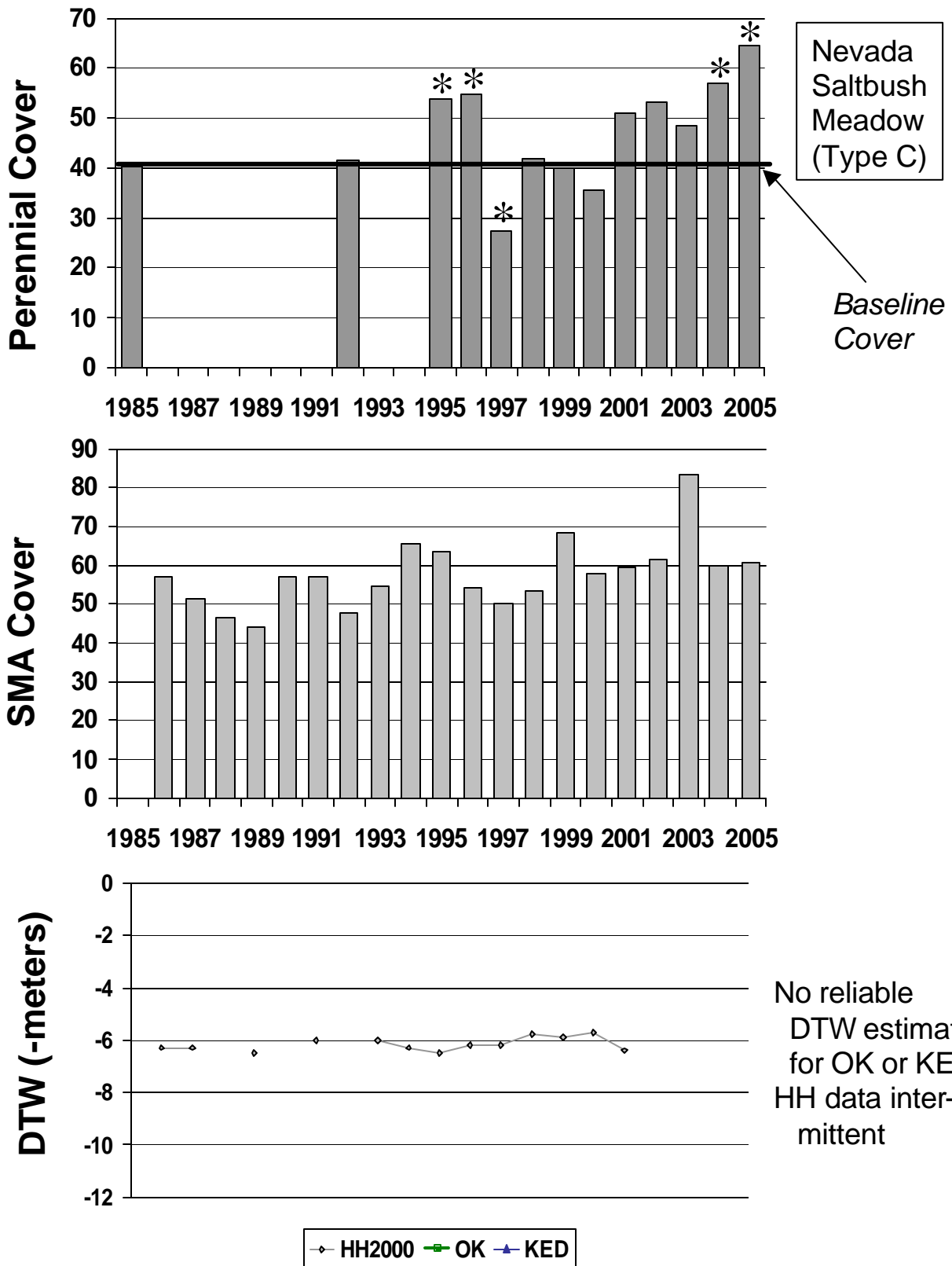


Figure 103. Status 2005: Control

Appendix C. Parcel estimates of average water table level relative to land surface. From 1985-2001, DTW was estimated according to methods described by Harrington and Howard (2000): HH2000. DTW estimation methods were updated by Harrington (2003) and two methods resulted: OK (ordinary kriging) and KED (kriging with external drift). All values are in meters. Blank cells indicate no reliable estimate. Values are graphed in Appendix B for parcels re-inventoried since 2001.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
BGP013	HH2000								-1.5	-1.3	-1.6	-1.2	-1.6	-1.3	-1.2	-1.3	-1.4	-1.6					
	OK																						
	KED																						
BGP031	HH2000		-2.4	-2.6	-2.7	-2.9	-2.9	-3.0	-3.0	-2.7	-2.9	-2.6	-2.7	-2.6	-2.5	-2.9	-2.8	-3.0					
	OK	-2.50	-2.37	-2.52	-2.71	-2.83	-2.86	-2.92	-2.67	-2.47	-2.58	-2.34	-2.43	-2.34	-2.27	-2.51	-2.48	-2.61					
	KED																						
BGP047	HH2000	-1.6	-1.7	-1.7	-2.1	-2.2	-2.3	-2.3	-2.4	-2.1	-2.3	-1.8	-2.0	-1.9	-1.9	-2.0	-2.2	-2.2					
	OK																						
	KED	-0.93	-0.81	-1.04	-1.11	-1.28	-1.40	-1.50	-1.52	-1.35	-1.42	-1.04	-1.05	-1.08	-0.93	-1.07	-1.44	-1.42	-1.79	-1.73	-1.81	-1.58	
BGP086	HH2000		-3.1	-3.3	-4.9	-5.2	-4.4	-4.4	-4.4	-4.2	-3.5	-3.1	-3.2	-2.2	-3.3	-2.6	-2.8	-3.4					
	OK																						
	KED						-3.66	-3.71	-3.92	-3.40	-3.41	-2.87	-2.79	-2.05	-2.70	-2.39	-2.53	-2.73	-3.59	-3.55	-3.69	-3.67	
BGP088	HH2000	-3.7	-3.5	-3.4	-5.0	-5.3	-4.6	-4.5	-4.3	-3.8	-3.4	-2.7	-3.4	-2.0	-4.0	-2.7	-3.1	-3.5					
	OK																						
	KED																						
BGP154	HH2000	-4.4	-4.3	-5.1	-7.2	-7.9	-6.7	-6.6	-6.6	-6.6	-5.5	-5.5	-5.1	-4.0	-5.2	-4.3	-4.1	-5.5					
	OK	-3.77	-4.96	-5.10	-7.12	-7.80	-6.80	-6.58	-6.59	-6.56	-5.53	-5.47	-5.02	-3.91	-4.81	-4.21	-4.00	-5.01	-5.75	-5.92	-5.58	6.50	
	KED	-4.03	-4.93	-5.07	-7.15	-7.81	-6.66	-6.31	-6.31	-6.35	-5.54	-5.49	-5.04	-3.93	-4.82	-4.22	-3.72	-4.88	-5.49	-5.61	-5.15	-6.01	
BGP157	HH2000	-3.9	-4.2	-4.1	-5.4	-5.3	-4.9	-4.7	-3.7	-3.5	-3.0	-2.6	-2.7	-2.3	-3.3	-2.6	-2.9	-3.4					
	OK	-3.91	-4.04	-4.81	-5.64	-5.91	-5.32	-5.07	-4.12	-3.81	-3.69	-3.22	-2.93	-2.93	-3.29	-2.80	-3.24	-3.67	-3.46	-3.42	-3.48	-3.97	
	KED	-4.11	-4.28	-5.16	-6.00	-6.27	-5.69	-5.45	-3.90	-3.76	-3.34	-2.85	-2.71	-2.56	-2.95	-2.58	-3.02	-3.54	-3.15	-3.20	-3.26	-3.69	
BGP162	HH2000	-5.6	-5.7	-6.0	-7.0	-7.6	-8.0	-8.0	-8.1	-7.6	-7.8	-7.0	-6.7	-6.5	-6.8	-6.6	-6.7	-7.1					
	OK																						
	KED	-5.03	-5.37	-5.02	-5.98	-6.68	-6.97	-6.97	-7.09	-6.74	-6.55	-6.22	-5.76	-5.59	-5.63	-5.67	-5.65	-5.91	-5.99	-6.28	-6.42	-6.31	
BGP204	HH2000				-2.1	-2.2	-2.3	-2.4	-2.4	-2.3	-2.3	-2.0	-1.9	-1.9	-1.8	-1.9	-2.1	-2.2					
	OK																						
	KED																						
BGP205	HH2000				-2.1	-2.2	-2.3	-2.4	-2.4	-2.3	-2.3	-2.0	-2.0	-1.9	-1.9	-1.9	-2.1	-2.2					
	OK																						
	KED																						
BIS055	HH2000	-1.7	-1.7	-2.4	-2.5	-3.0	-3.1	-3.0	-2.7	-2.2	-2.6	-2.0	-2.2	-2.5	-2.5	-1.8	-2.2	-2.1					
	OK	-1.64	-1.67	-2.34	-2.44	-2.96	-3.06	-2.98	-2.62	-2.11	-2.54	-1.82	-2.12	-2.38	-2.40	-1.70	-2.11	-2.07	-2.38	-2.81	-2.82	-2.73	
	KED	-1.64	-1.69	-2.35	-2.46	-2.99	-3.08	-3.01	-2.61	-2.12	-2.55	-1.83	-2.12	-2.38	-2.40	-1.70	-2.11	-2.06	-2.37	-2.85	-2.85	-2.85	
BIS068	HH2000	-1.8	-2.0	-2.2	-2.4	-2.9	-3.0	-2.9	-2.8	-2.3	-2.7	-2.3	-2.3	-2.5	-2.6	-2.0	-2.3	-2.6					
	OK	-1.96	-2.04	-2.26	-2.58	-2.92	-3.03	-2.92	-2.95	-2.42	-2.75	-2.32	-2.29	-2.67	-2.93	-2.29	-2.59	-2.50	-2.64	-2.81	-2.99	-3.33	
	KED	-1.93	-2.08	-2.27	-2.59	-2.96	-3.06	-2.96	-2.95	-2.40	-2.73	-2.30	-2.26	-2.66	-2.93	-2.30	-2.60	-2.51	-2.65	-2.85	-3.20	-3.93	
BIS085	HH2000	-4.0	-4.3	-4.5	-5.3	-5.6	-5.8	-6.0	-6.4	-5.5	-5.5	-5.5	-4.8										
	OK	-3.93	-4.43	-4.26	-4.89	-5.26	-5.46	-5.54	-5.74	-5.23	-5.27	-5.11	-4.67	-5.26	-5.23	-4.90	-5.07	-5.63	-5.55	-5.83	-5.75	-5.48	
	KED	-3.91	-4.16	-4.25	-4.81	-5.17	-5.37	-5.46	-5.71	-5.23	-5.33	-5.07	-4.71	-5.16	-5.26	-4.89	-5.00	-5.67	-5.62	-5.93	-6.05	-5.54	

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BLK002	HH2000	-5.1	-6.1	-6.0	-10.9	-12.0	-12.2	-11.6	-10.9	-10.8	-10.2	-10.3		-9.7	-9.5	-9.1	-9.6	-9.1				
	OK																					
	KED																					
BLK006	HH2000	-1.9	-2.5	-1.8	-2.5	-3.1	-3.7	-3.4	-3.4	-3.3	-3.2	-3.1	-2.7	-2.7	-2.5	-2.5	-2.7	-2.8				
	OK	-1.66	-1.98	-1.65	-2.31	-2.83	-3.31	-3.26	-3.23	-3.06	-3.04	-2.69	-2.51	-2.48	-2.36	-2.40	-2.66	-2.75	-2.93	-2.87	-2.98	-3.06
	KED																					
BLK009	HH2000	-2.1	-3.4	-2.7	-6.4	-8.3	-8.4	-7.6	-6.4	-5.9	-5.1	-5.0	-3.9	-3.9	-3.4	-2.9	-3.3	-3.1				
	OK	-2.28	-3.53	-3.25	-6.60	-8.35	-8.48	-7.74	-6.64	-6.09	-5.39	-5.03	-4.46	-4.01	-3.46	-2.96	-3.35	-3.28	-3.54	-4.01	-4.47	-4.74
	KED	-2.23	-3.46	-3.16	-6.24	-8.32	-8.46	-7.67	-6.56	-5.90	-5.21	-4.91	-4.21	-3.74	-3.17	-2.64	-3.08	-2.98	-3.11	-3.46	-4.05	-4.33
BLK011	HH2000	-1.7	-3.6	-2.8	-7.7	-10.4	-10.9	-9.6	-8.6	-7.9	-7.1	-6.8	-4.0	-5.0	-4.8	-4.0	-4.5	-4.5				
	OK	-2.71	-3.96	-3.68	-7.71	-9.91	-9.88	-9.27	-8.21	-7.52	-6.60	-6.19	-5.60	-4.99	-4.33	-3.55	-4.17	-4.09	-4.83	-4.93	-6.07	-6.31
	KED	-3.09	-4.39	-4.01	-7.12	-10.51	-10.53	-9.69	-8.51	-7.44	-6.69	-6.43	-5.57	-4.94	-4.26	-3.46	-4.10	-4.01	-4.42	-4.63	-5.53	-5.90
BLK016	HH2000	-1.5	-2.7	-2.0	-4.4	-6.6	-7.1	-6.6	-5.9	-5.2	-4.5	-4.2	-3.6	-3.1	-2.6	-2.0	-2.3	-2.3				
	OK	-1.51	-2.49	-2.23	-4.53	-6.72	-7.04	-6.76	-6.07	-5.43	-4.68	-4.38	-3.79	-3.28	-2.74	-2.11	-2.46	-2.41	-2.78	-3.07	-3.48	-3.81
	KED	-1.22	-2.19	-1.94	-4.06	-5.86	-6.21	-6.11	-5.50	-4.91	-4.17	-3.90	-3.30	-2.80	-2.28	-1.67	-1.98	-1.95	-2.23	-2.40	-2.90	-3.23
BLK021 baseline may not be accurate	HH2000	-1.7	-2.4	-1.8	-2.9	-4.6	-5.3	-5.3	-4.6	-4.2	-3.7	-3.5	-3.0	-2.9	-2.6	-2.6	-2.8	-2.8				
	OK*	-1.90	-2.18	-2.14	-3.18	-4.93	-5.47	-5.68	-5.59	-5.13	-4.63	-4.37	-3.94	-3.49	-3.26	-2.98	-3.04	-2.95	-3.73	-3.91	-3.85	-4.17
	KED*	-1.89	-2.11	-2.07	-2.87	-4.19	-4.70	-5.05	-5.24	-4.86	-4.32	-4.11	-3.68	-3.23	-3.00	-2.73	-2.76	-2.68	-3.67	-3.77	-3.78	-4.12
BLK024	HH2000	-3.0	-4.0	-3.6	-5.7	-9.2	-9.6	-9.0	-8.3	-7.6	-6.8	-6.6	-5.5	-4.8	-4.8	-4.3	-4.3	-4.2				
	OK	-3.10	-3.96	-3.88	-5.96	-9.37	-9.66	-8.95	-8.44	-7.84	-6.66	-6.55	-5.73	-4.90	-4.84	-4.29	-4.34	-4.28	-4.61	-4.76	-5.50	-5.77
	KED	-3.31	-4.17	-4.05	-5.97	-9.01	-8.90	-8.63	-8.61	-7.96	-7.03	-7.05	-6.17	-5.32	-5.24	-4.68	-4.77	-4.70	-4.80	-5.12	-5.71	-6.00
BLK033	HH2000	-3.3	-3.6	-3.7	-4.9	-8.2	-8.8	-8.4	-7.4	-6.9	-5.8	-5.8	-4.7	-3.9	-4.0	-3.5	-3.4	-3.3				
	OK																					
	KED																					
BLK039	HH2000	-2.9	-3.2	-3.0	-4.5	-7.1	-7.9	-7.7	-6.6	-6.2	-5.3	-5.2	-3.9	-3.5	-3.4	-3.0	-2.8	-2.8				
	OK																					
	KED																					
BLK040	HH2000	-2.2	-2.6	-2.2	-3.2	-5.2	-6.0	-6.2	-5.7	-5.2	-4.6	-4.3	-3.6	-3.1	-3.1	-2.8	-2.7	-2.7				
	OK																					
	KED																					
BLK044	HH2000	-4.1	-4.5	-4.7	-6.7	-10.3	-10.9	-10.3	-8.5	-8.0	-6.6	-6.7	-5.0	-4.4	-4.3	-3.7	-3.7	-3.6				
	OK																					
	KED																					
BLK069	HH2000	-1.6	-2.0	-1.5	-2.0	-2.4	-2.8	-2.7	-2.9	-2.8	-2.7	-2.5	-2.3	-2.2	-1.9	-2.0	-2.0	-2.0				
	OK	-1.70	-1.49	-1.77	-2.15	-2.53	-2.97	-2.86	-2.99	-2.96	-2.80	-2.65	-2.43	-2.25	-2.01	-2.07	-2.05	-1.94	-2.03	-1.73	-2.19	-1.90
	KED	-1.57	-1.45	-1.69	-2.06	-2.69	-3.15	-3.05	-3.18	-3.13	-2.96	-2.83	-2.56	-2.29	-2.12	-2.15	-2.13	-2.00	-1.92	-1.68	-2.06	-1.75
BLK074	HH2000	-1.2	-1.6	-2.0	-1.8	-2.2	-3.0	-2.9	-3.1	-2.8	-2.8	-2.8	-2.3	-2.1	-2.0	-1.9	-1.9	-1.9				
	OK	-1.37	-1.41	-1.65	-1.59	-2.52	-2.86	-2.86	-3.03	-2.77	-2.74	-2.74	-2.33	-1.96	-2.01	-1.89	-1.91	-1.58	-1.93	-1.98	-2.19	-2.05
	KED	-1.34	-1.39	-1.66	-1.78	-2.58	-2.98	-2.96	-3.13	-2.86	-2.82	-2.83	-2.38	-2.09	-2.05	-1.92	-1.95	-1.61	-1.78	-1.90	-2.03	-1.86
BLK075	HH2000	-1.0	-1.8	-2.2	-2.6	-4.1	-4.8	-4.4	-5.1	-4.0	-4.2	-4.7	-3.1	-2.3	-2.3	-1.9	-1.8	-1.7				
	OK																					
	KED																					
BLK077	HH2000	-1.2	-2.4	-4.4	-4.8	-6.3	-7.4	-7.1	-7.5	-6.8	-6.4	-6.6	-4.7		-4.2	-3.8	-3.9	-3.7				
	OK	-2.61	-3.04	-2.72	-4.92	-6.37	-7.54	-7.06	-7.52	-6.92	-6.44	-6.85	-4.83		-4.30	-3.84	-3.90	-3.83	-3.98			

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
BLK094	KED	-2.46	-2.84	-2.80	-4.74	-6.12	-7.28	-6.86	-7.28	-6.70	-6.23	-6.63	-4.65		-4.12	-3.68	-3.74	-3.68	-3.67			
	HH2000	-0.8	-1.3	-1.3	-3.9	-5.1	-6.5	-6.8	-7.0	-7.0	-6.7	-6.8		-4.4	-4.1	-3.8	-4.0	-4.2				
	OK	-0.99	-0.99	-2.95	-3.89	-5.18	-6.36	-6.41	-6.95	-6.90	-6.50	-6.66	-5.11	-4.39	-4.19	-3.75	-3.99	-4.05	-4.24	-4.44	-4.93	-4.88
BLK095	KED	-1.47	-1.56	-3.21	-4.25	-5.53	-6.83	-7.08	-7.38	-7.38	-6.98	-7.15	-5.49	-4.71	-4.58	-4.07	-4.27	-4.37	-4.45	-4.65	-5.09	-5.10
	HH2000	-1.5	-1.3	-1.1	-3.8	-4.5	-5.7	-5.8	-6.0	-5.9	-5.7	-5.9		-4.3	-4.1	-3.8	-4.1	-4.1				
	OK	-1.30	-0.91	-3.01	-3.76	-4.70	-5.28	-5.71	-5.94	-5.88	-5.71	-5.83	-4.75	-4.22	-3.87	-3.77	-4.03	-4.11	-4.20	-4.38	-4.73	-4.58
BLK099	KED	-1.73	-1.45	-3.29	-4.09	-4.98	-5.79	-6.12	-6.37	-6.44	-6.22	-6.45	-4.99	-4.58	-4.36	-4.02	-4.27	-4.39	-4.36	-4.53	-4.88	-4.77
	HH2000	-1.2	-0.7	-0.7	-1.7	-2.2	-2.8	-2.7	-3.0	-2.7	-2.9	-2.7	-2.1	-2.2	-1.4	-1.8	-2.1	-2.1				
	OK	-0.83	-0.53	-1.02	-1.62	-2.12	-2.57	-2.67	-2.97	-2.59	-2.79	-2.50	-2.24	-2.04	-1.28	-1.75	-2.09	-2.05	-2.08	-2.03	-2.41	-2.11
BLK115: trend may be accurate, but DTW ests. may not be	KED	-0.84	-0.53	-0.97	-1.42	-1.89	-2.38	-2.35	-2.66	-2.31	-2.49	-2.23	-1.91	-1.77	-1.03	-1.54	-1.89	-1.85	-1.78	-1.56	-2.01	-1.70
	HH2000	-1.3	-1.6	-1.3	-1.7	-1.9	-2.0	-1.9	-1.9	-1.8	-1.8	-1.7	-1.9	-1.8	-1.9	-1.8	-1.8	-1.4				
	OK*	-1.58	-1.39	-1.53	-1.91	-2.20	-2.34	-2.24	-2.34	-2.25	-2.24	-2.16	-2.14	-2.18	-2.00	-2.00	-2.04	-1.81	-1.92	-1.72	-2.00	-1.94
BLK142	KED*	-1.49	-1.28	-1.38	-1.69	-1.93	-2.14	-2.03	-2.11	-2.04	-2.07	-1.99	-1.91	-1.94	-1.74	-1.75	-1.77	-1.49	-1.59	-1.37	-1.68	-1.70
	HH2000	-2.0	-3.4	-1.9	-3.8	-4.2	-4.1	-3.7	-3.5	-3.2	-2.8	-2.5	-2.2	-2.0	-1.9	-1.8	-2.1	-2.0				
	OK																		-2.37	-2.55	-2.95	-3.06
BLK143	KED																		-2.09	-2.28	-2.68	-2.79
	HH2000	-2.1	-3.5	-2.0	-3.6	-4.3	-3.9	-3.4	-3.3	-2.9	-2.6	-2.3	-2.0	-1.7	-1.4	-1.2	-1.6	-1.5				
	OK																		-1.80	-2.15	-2.47	-2.56
FSL051	KED																		-0.92	-1.20	-1.44	-1.50
	HH2000	-2.4	-3.1	-3.3	-5.5	-5.6	-5.9	-6.0	-5.6	-5.7	-5.2	-5.4	-4.2	-4.6	-4.3	-3.3	-3.9	-3.9				
	OK																					
FSL065	KED																					
	HH2000	-1.1	-1.8	-1.0	-2.5	-2.5	-2.4	-2.4	-1.8	-1.4	-1.7	-1.9	-1.4	-1.6	-2.2	-1.9	-1.8	-2.0				
	OK	-0.96	-0.81	-1.24	-2.15	-2.44	-2.33	-2.32	-2.11	-1.70	-2.19	-2.15	-1.25	-1.74	-1.91	-1.80	-1.74	-1.83	-2.05	-2.07	-2.06	-1.71
FSL116	KED	-0.96	-0.86	-1.23	-2.21	-2.46	-2.38	-2.31	-2.12	-1.67	-2.12	-2.14	-1.24	-1.72	-1.87	-1.77	-1.69	-1.97	-1.94	-1.98	-2.05	-1.71
	HH2000	-2.5	-2.3	-2.3	-3.4	-3.1	-2.7	-2.7	-2.8	-2.1	-2.8	-2.7	-3.0	-3.7	-4.0	-3.7	-4.0	-4.2				
	OK																					
FSL118	KED																					
	HH2000	-4.7	-3.5	-4.4	-5.2	-5.9	-5.1	-5.0	-5.4	-3.9	-4.9	-4.1	-4.4	-5.4	-5.5	-5.4	-6.0	-6.4				
	OK																					
FSL122	KED																					
	HH2000	-1.9	-2.5	-1.7	-4.4	-4.4	-3.0	-3.3	-2.9	-2.6	-3.0	-2.2	-1.6	-2.0	-2.3	-1.9	-2.0	-2.3				
	OK																		-1.73	-1.80	-1.85	-1.56
FSL123	KED																		-1.87	-1.92	-1.92	-1.59
	HH2000	-1.9	-2.7	-1.7	-4.6	-5.1	-3.4	-3.6	-3.2	-2.9	-3.3	-2.6	-1.9	-2.3	-2.6	-2.1	-2.2	-2.5				
	OK																		-1.42	-1.53	-1.56	-1.42
FSL179	KED																		-1.29	-1.36	-1.50	-1.41
	FSL187																					
	FSP004	HH2000	-3.4	-4.5	-4.3	-5.7	-6.5	-7.1	-8.6	-7.2	-7.2	-6.5	-6.8	-5.5	-5.5	-5.9	-4.9	-4.9	-5.2			
FSP006	OK																					
	KED																					

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
IND011	OK	-3.87	-3.70	-3.39	-4.99	-5.70	-6.39	-6.92	-6.82	-6.45	-6.16	-6.11	-4.87	-4.47	-4.49	-3.79	-4.06	-4.46	-4.79	-5.10	-5.13	-5.11
	KED	-3.89	-3.52	-2.99	-4.77	-5.34	-6.07	-6.64	-6.48	-6.12	-6.09	-5.95	-4.76	-4.13	-4.11	-3.43	-3.67	-4.07	-4.41	-4.75	-4.77	-4.77
	HH2000	-0.9	-0.9	-0.9	-1.8	-2.2	-2.5	-2.7	-2.7	-2.0	-1.9	-2.0		-1.5	-0.9	-0.8	-1.7	-1.8				
	OK	-0.92	-0.81	-0.92	-1.83	-2.12	-2.48	-2.59	-2.61	-1.88	-1.83	-1.88	-1.65	-1.55	-0.85	-0.76	-1.69	-1.71	-1.79	-1.86	-1.96	-1.82
	KED	-1.01	-0.86	-0.99	-1.89	-2.18	-2.55	-2.64	-2.66	-1.94	-1.88	-1.91	-1.67	-1.55	-0.88	-0.78	-1.72	-1.77	-1.83	-1.90	-1.99	-1.87
IND019	HH2000	-1.3	-1.5	-1.0	-2.5	-3.1	-3.6	-4.0	-4.1	-3.5	-2.9	-3.4		-0.9	-0.7	-1.2	-2.1	-2.1				
	OK	-1.40	-1.60	-1.21	-2.69	-3.44	-3.89	-4.33	-4.34	-3.94	-3.22	-3.71	-2.37	-1.24	-1.02	-1.50	-2.39	-2.36	-2.58	-2.79	-3.07	-1.94
	KED	-1.38	-1.69	-1.19	-2.38	-3.14	-3.55	-3.95	-3.93	-3.50	-2.83	-3.30	-2.09	-1.13	-0.92	-1.45	-2.23	-2.17	-2.25	-2.39	-2.86	-1.71
IND021	HH2000	-1.0	-0.9	-0.9	-1.7	-2.0	-2.4	-2.7	-2.7	-1.9	-1.7	-1.8		-1.2	-0.7	-0.8	-1.7	-1.7				
	OK	-1.04	-1.01	-0.93	-1.74	-2.05	-2.33	-2.69	-2.66	-1.83	-1.77	-1.67	-1.33	-1.32	-0.69	-0.89	-1.78	-1.66	-1.71	-1.92	-1.85	-1.54
	KED	-1.03	-1.00	-0.91	-1.64	-1.92	-2.22	-2.60	-2.57	-1.72	-1.67	-1.57	-1.26	-1.25	-0.61	-0.82	-1.69	-1.58	-1.59	-1.80	-1.91	-1.64
IND026: DTW ests. not verified by hydrologist	HH2000																					
	OK	-1.68	-1.39	-1.78	-3.25	-3.56	-4.56	-4.42	-5.70	-5.90	-6.06	-5.78	-5.50	-5.36	-5.41	-4.59	-4.43	-4.17	-4.59	-4.50	-5.06	-4.80
	KED	-1.80	-1.68	-1.84	-3.88	-4.00	-5.00	-5.14	-6.53	-7.00	-7.11	-6.77	-6.39	-6.27	-6.06	-5.03	-4.77	-4.65	-4.98	-5.18	-5.67	-5.45
IND029: trend may be accurate, but DTW ests. may not be	HH2000	-1.6	-1.1	-1.6	-3.3	-3.5	-4.6	-4.7	-5.9	-6.0	-6.0	-5.9	-5.7	-5.6	-5.2	-4.0	-3.8	-3.6				
	OK*	-1.50	-1.09	-1.58	-3.06	-3.37	-4.47	-4.74	-5.76	-5.92	-6.00	-5.87	-5.75	-5.70	-5.32	-4.19	-3.82	-3.62	-3.82	-3.88	-4.63	-4.26
	KED*	-1.68	-1.56	-1.68	-3.98	-3.99	-5.08	-5.79	-6.94	-7.31	-7.41	-7.29	-7.05	-7.06	-6.37	-4.84	-4.52	-4.30	-4.62	-5.02	-5.64	-5.37
IND035	HH2000	-1.5	-1.3	-1.4	-3.3	-3.8	-4.1	-4.7	-5.3	-5.4	-5.3	-5.1	-4.7	-4.0	-3.4	-2.2	-2.4	-2.3				
	OK																					
	KED																					
IND064	HH2000	-1.2	-1.3	-1.2	-2.0	-2.3	-2.6	-2.4	-2.5	-2.5	-2.5	-2.4	-2.4	-2.4	-2.3	-2.2	-2.2	-2.4				
	OK	-1.21	-1.26	-1.20	-2.02	-2.32	-2.58	-2.45	-2.53	-2.56	-2.51	-2.52	-2.42	-2.40	-2.36	-2.26	-2.27	-2.27	-2.28	-2.33	-2.63	-2.64
	KED	-1.11	-1.15	-1.10	-1.95	-2.27	-2.55	-2.40	-2.48	-2.47	-2.41	-2.42	-2.29	-2.24	-2.18	-2.08	-2.13	-2.13	-2.18	-2.19	-2.49	-2.50
IND066	HH2000	-1.1	-1.0	-1.2	-1.8	-2.1	-2.3	-2.2	-2.3	-2.3	-2.3	-2.3	-2.2	-2.2	-2.1	-2.0	-2.0	-2.1				
	OK	-1.12	-0.96	-1.19	-1.85	-2.12	-2.35	-2.20	-2.26	-2.30	-2.28	-2.24	-2.15	-2.13	-2.07	-2.00	-1.98	-1.97	-2.00	-2.02	-2.34	-2.36
	KED	-0.98	-0.83	-1.06	-1.90	-2.23	-2.44	-2.28	-2.24	-2.23	-2.16	-2.11	-1.96	-1.90	-1.81	-1.75	-1.78	-1.77	-1.83	-1.87	-2.14	-2.17
IND067	HH2000	-1.2	-1.4	-1.1	-1.9	-2.1	-2.4	-2.3	-2.3	-2.2	-2.0	-1.9	-2.2	-1.8	-2.0	-1.9	-2.0	-1.8				
	OK	-1.05	-1.12	-1.15	-1.94	-2.35	-2.61	-2.52	-2.59	-2.47	-2.40	-2.24	-2.03	-1.99	-1.80	-1.77	-1.89	-1.91	-1.73	-1.78	-2.00	-1.96
	KED	-1.30	-1.34	-1.39	-2.02	-2.25	-2.49	-2.35	-2.45	-2.44	-2.47	-2.31	-2.20	-2.22	-2.07	-2.10	-2.12	-2.13	-2.00	-1.96	-2.29	-2.19
IND087	HH2000	-1.5	-1.6	-1.5	-1.7	-1.7	-1.8	-1.7	-1.7	-1.9	-2.1	-1.7	-1.8	-1.5	-1.3	-1.4	-1.4	-1.4				
	OK																					
	KED																					
IND096	HH2000	-0.8	-1.8	-1.8	-0.8	-0.9	-1.1	-0.8	-1.1	-1.0	-1.0	-0.9		-0.6	-0.4	-0.5	-0.3	-0.4				
	OK																					
	KED																					
IND099	HH2000	-0.1	-0.4	-0.4	-0.8	-0.9	-1.2	-1.0	-1.0	-1.0	-1.0	-0.9		-0.7	-0.6	-0.7	-0.5	-0.4				
	OK																					
	KED																					
IND106	HH2000	-2.5	-3.2	-3.0	-6.5	-6.9	-7.0	-8.4	-6.6	-8.0	-6.6	-6.5	-6.5	-5.9	-5.1	-4.3	-4.2	-4.6				
	OK	-2.22	-3.44	-3.10	-6.41	-6.42	-6.95	-6.98	-6.71	-6.78	-6.68	-7.88	-6.87	-6.12	-5.34	-4.57	-4.24	-4.72	-4.68	-5.21	-6.30	-7.83
	KED	-3.03	-3.48	-3.15	-6.59	-6.65	-6.98	-6.72	-6.71	-6.80	-7.41	-7.86	-7.21	-6.19	-5.43	-4.66	-4.30	-4.58	-4.44	-5.22	-5.87	-7.39
IND111	HH2000	-3.4	-2.3	-3.0	-4.8	-6.1	-6.3	-6.4	-6.4	-6.1	-5.2	-5.2	-5.0	-3.6	-3.2	-3.0	-3.2	-3.5				

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
IND119	OK	-3.06	-2.38	-2.82	-4.81	-5.70	-6.07	-6.30	-6.11	-6.13	-5.24	-5.05	-3.83	-3.46	-2.98	-2.87	-3.12	-3.31	-3.45	-4.57	-4.22	-4.22	
	KED	-3.25	-2.49	-2.96	-4.83	-6.14	-6.15	-6.26	-6.41	-6.20	-5.26	-5.09	-3.86	-3.33	-3.02	-2.77	-3.03	-3.35	-3.47	-4.31	-4.00	-4.05	
	HH2000	-1.2	-1.5	-1.3	-2.2	-2.4	-2.7	-2.5	-2.6	-2.5	-2.5	-2.5	-2.5	-2.4	-2.3	-2.3	-2.3	-2.3					
	OK	-1.09	-1.27	-1.21	-2.03	-2.36	-2.59	-2.47	-2.52	-2.44	-2.42	-2.40	-2.23	-2.19	-2.06	-2.00	-2.06	-2.06	-2.00	-2.00	-1.99	-2.23	-2.23
	KED	-1.25	-1.41	-1.34	-2.10	-2.38	-2.60	-2.47	-2.53	-2.51	-2.52	-2.47	-2.35	-2.35	-2.25	-2.21	-2.22	-2.21	-2.21	-2.21	-2.18	-2.46	-2.45
IND122	HH2000	-1.4	-2.5	-2.1	-2.1	-2.5	-2.6	-2.9	-2.2	-2.5	-1.9	-2.0	-2.0	-1.6	-1.3	-1.1	-1.1	-1.2					
	OK																						
IND132	KED																			-0.72			
	HH2000	-3.0	-2.7	-2.3	-4.9	-7.0	-7.8	-7.1	-6.9	-6.7	-6.8	-6.5	-6.2	-5.5	-4.5	-3.8	-3.7	-3.9					
	OK	-2.77	-2.57	-2.25	-5.02	-6.42	-7.86	-7.29	-6.98	-6.77	-6.61	-6.48	-6.17	-5.58	-4.78	-3.97	-3.78	-3.79	-3.78	-3.78	-3.97	-4.75	-5.57
IND133	KED	-2.57	-2.36	-2.14	-5.10	-6.90	-8.04	-7.20	-6.84	-6.61	-6.45	-6.30	-6.01	-5.44	-4.65	-3.85	-3.66	-3.66	-3.50	-3.76	-4.51	-5.37	
	HH2000	-4.2	-4.4	-4.1	-8.4	-10.8	-11.6	-11.0	-10.4	-10.2	-10.0	-10.0	-9.7	-8.8	-7.7	-6.8	-6.4	-6.5					
	OK	-4.28	-4.52	-4.09	-8.45	-9.93	-11.62	-10.93	-10.39	-10.23	-9.98	-10.06	-9.72	-8.88	-7.79	-6.80	-6.36	-6.38	-6.38	-6.38	-6.43	-7.48	-8.62
IND139	KED	-4.12	-4.32	-3.92	-8.24	-10.28	-11.49	-10.43	-10.13	-9.94	-9.71	-9.77	-9.43	-8.60	-7.54	-6.55	-6.12	-6.13	-5.95	-6.39	-7.45	-8.65	
	HH2000	-1.0	-2.5	-2.3	-5.8	-8.2	-6.4	-7.1	-6.5	-5.5	-4.5	-4.7	-6.0	-4.8	-4.1	-3.6	-3.3	-3.1					
	OK																						
IND151	KED	-2.26	-2.33	-2.08	-3.51	-5.23	-6.65	-5.90	-5.46	-4.60	-5.23	-4.73	-4.53	-3.74	-3.05	-2.55	-2.45	-2.35	-2.12	-2.14	-2.78	-3.70	
	HH2000	-2.0	-2.5		-2.5	-2.7	-2.6	-2.7	-2.6	-2.4	-2.7	-2.4	-2.6	-2.4	-2.3	-1.7	-2.3	-1.7					
IND156	OK																						
	KED																						
	HH2000	-1.3	-2.0		-2.0	-2.0	-2.0	-2.1	-2.0	-1.9	-2.0	-1.7		-1.8	-1.9	-1.4	-1.9	-1.5					
IND163	OK																						
	KED																						
	HH2000	-2.1	-2.4		-2.7	-2.7	-2.8	-2.8	-2.7	-2.7	-2.7	-2.7	-2.8	-2.7	-2.6	-1.7	-2.5	-1.8					
IND205	OK																						
	KED																						
	HH2000	-2.9	-2.1	-2.4	-3.6	-6.4	-6.1	-6.0	-6.3	-6.3	-5.1	-4.6	-3.6	-3.0	-2.3	-2.6	-2.7	-3.1					
IND231	OK	-2.63	-2.06	-2.21	-4.44	-5.59	-5.75	-6.53	-6.06	-6.10	-5.25	-4.36	-3.29	-2.87	-1.98	-2.51	-2.71	-2.65	-2.49	-3.89	-3.09	-2.75	
	KED	-2.82	-2.55	-2.75	-5.38	-6.44	-6.24	-6.48	-6.82	-6.47	-5.68	-4.88	-3.62	-3.20	-2.42	-2.88	-3.03	-3.03	-2.91	-4.39	-3.71	-3.19	
	HH2000	-2.0	-3.1	-3.2	-7.6	-8.4	-8.4	-9.1	-9.0	-8.9	-8.4	-8.4	-9.0	-8.8	-8.0	-7.1	-6.7	-6.6					
LAW030	OK																						
	KED																						
	HH2000	-4.2	-7.8	-8.2	-10.8	-9.8	-9.8	-9.8	-9.8	-9.8	-10.1	-10.0	-10.0	-10.0	-10.4	-8.1	-8.9	-9.2					
LAW035: OK, KED not verified by hydrologist	HH2000																						
	OK*	-6.38	-6.25	-5.90	-10.17	-10.30	-9.78	-9.85	-10.08	-10.38	-10.40	-10.33	-10.29	-10.20	-9.57	-5.61	-7.10	-7.68	-8.48	-7.75	-8.58	-8.25	
	KED*	-6.22	-6.20	-5.85	-9.96	-10.06	-9.63	-10.04	-9.89	-10.15	-10.12	-10.07	-10.07	-10.08	-9.31	-5.25	-6.85	-7.45	-8.05	-7.70	-8.20	-7.90	
LAW040	HH2000	-3.7	-7.3	-6.8	-11.1	-9.1	-8.9	-9.1	-9.0	-9.0	-10.9	-9.1	-9.4	-10.1	-9.1	-5.0	-6.9	-7.3					
	OK																						
	KED																						
LAW043: OK, KED not verified by hydrologist	HH2000																						
	OK*	-2.45	-1.85	-2.92	-5.24	-6.56	-5.25	-5.47	-6.07	-10.13	-6.07	-6.53	-5.76	-6.30	-6.15	-2.72	-5.36	-5.28	-5.91	-5.65	-6.29	-6.44	
	KED*	-2.46	-1.93	-2.96	-5.25	-6.57	-5.26	-5.76	-6.10	-7.22	-6.20	-6.60	-5.88	-6.37	-6.16	-2.79	-5.37	-5.39	-5.84	-6.06	-6.24	-6.40	

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
LAW052	HH2000	-3.1	-2.5	-3.0	-9.0	-10.5	-7.5	-8.2	-8.3	-8.9	-6.6	-7.7	-5.8	-6.8	-6.4	-2.8	-4.9	-5.0					
	OK	-2.24	-2.08	-2.89	-6.50	-8.05	-8.47	-8.21	-8.09	-11.34	-6.46	-7.38	-5.63	-6.73	-6.30	-2.65	-4.93	-4.90	-5.82	-5.63	-6.20	-6.61	
	KED	-2.12	-1.95	-2.75	-6.77	-7.77	-8.09	-8.23	-7.92	-10.77	-6.37	-7.24	-5.58	-6.73	-6.14	-2.71	-4.83	-4.97	-5.72	-5.77	-6.09	-6.48	
LAW062	HH2000	-2.8	-4.2	-4.7	-8.2	-9.0	-9.0	-9.1	-9.0	-9.6	-7.8	-8.9	-6.1	-7.9	-6.4	-3.5	-5.4	-5.9					
	OK	-3.03	-3.74	-4.91	-8.20	-10.05	-9.29	-9.13	-9.28	-9.13	-8.05	-9.05	-6.11	-7.96	-6.31	-3.46	-5.38	-5.94	-6.33	-6.58	-6.99	-6.87	
	KED	-3.22	-3.63	-5.08	-8.20	-9.70	-9.80	-9.35	-9.35	-9.18	-7.80	-8.79	-6.15	-8.01	-6.43	-3.46	-5.41	-5.94	-6.15	-6.43	-6.79	-6.65	
LAW063	HH2000	-2.6	-4.6	-4.9	-8.0	-8.5	-8.3	-8.9	-8.4	-9.0	-7.9	-8.6	-6.6	-8.2	-7.2	-3.8	-5.7	-6.0					
	OK	-4.05	-5.32	-5.23	-8.76	-10.24	-9.24	-9.12	-9.17	-9.05	-7.96	-8.90	-6.72	-8.32	-7.27	-3.74	-5.66	-6.09	-6.49	-6.79	-7.23	-7.28	
	KED	-4.44	-5.42	-5.58	-8.87	-10.25	-10.59	-9.19	-9.17	-9.06	-7.85	-8.75	-6.70	-8.27	-7.27	-3.62	-5.67	-6.07	-6.34	-6.63	-7.02	-7.05	
LAW065	HH2000	-2.1	-3.5	-3.9	-6.6	-7.1	-6.1	-7.5	-6.3	-7.7	-6.7	-7.4	-5.9	-7.2	-6.7	-3.9	-5.5	-5.5					
	OK	-3.39	-5.28	-4.26	-8.24	-9.17	-8.04	-8.12	-8.02	-8.44	-6.84	-7.65	-6.22	-7.46	-6.85	-3.89	-5.28	-5.51	-5.58	-5.98	-6.29	-6.32	
	KED	-3.97	-5.59	-4.87	-8.57	-9.22	-9.82	-8.12	-8.06	-8.45	-6.89	-7.69	-6.29	-7.50	-6.92	-3.73	-5.38	-5.62	-5.86	-6.18	-6.59	-6.61	
LAW070: OK, KED not verified by hydrologist	HH2000																						
	OK*	-2.07	-1.75	-3.71	-7.38	-9.30	-8.89	-8.79	-8.76	-8.80	-7.20	-8.27	-5.06	-7.06	-5.42	-2.79	-4.68	-5.28	-5.58	-5.94	-6.17	-6.09	
	KED*	-2.03	-0.97	-2.99	-6.63	-8.27	-8.43	-8.16	-8.16	-8.32	-6.23	-7.40	-4.34	-6.49	-4.76	-2.36	-4.31	-4.73	-4.75	-5.01	-5.40	-5.33	
LAW076	HH2000	-2.1	-3.5	-2.6	-5.4	-6.0	-5.0	-6.0	-5.6	-6.3	-5.1	-5.9	-4.3	-5.1	-5.2	-2.8	-4.0	-4.2					
	OK																						
	KED																						
LAW078	HH2000	-2.3	-2.1	-2.5	-5.5	-7.2	-8.3	-7.0	-8.0	-8.4	-5.7	-6.6	-4.2	-5.4	-4.6	-2.2	-3.4	-3.7					
	OK	-2.26	-1.66	-2.42	-5.27	-7.09	-7.97	-7.07	-6.95	-7.23	-5.77	-6.52	-4.14	-5.38	-4.58	-2.12	-3.39	-3.73	-3.75	-4.13	-4.51	-4.67	
	KED	-2.22	-1.39	-2.14	-5.07	-6.68	-7.51	-6.66	-6.64	-7.00	-5.37	-6.09	-3.82	-5.10	-4.28	-1.95	-3.25	-3.56	-3.47	-3.72	-4.17	-4.32	
LAW082	HH2000	-4.0	-4.1	-3.5	-9.2	-11.6	-11.2	-11.0	-10.7	-11.2	-7.6	-8.9	-6.4	-7.6	-6.9	-3.3	-4.9	-5.1					
	OK	-3.76	-3.80	-3.39	-8.39	-9.99	-11.50	-10.92	-10.10	-11.62	-7.50	-8.59	-6.22	-7.49	-6.76	-3.12	-4.92	-5.12	-6.09	-5.87	-6.36	-6.83	
	KED	-3.56	-3.40	-2.84	-7.67	-9.19	-10.50	-10.19	-9.50	-11.02	-6.84	-7.94	-5.71	-7.20	-6.18	-2.70	-4.63	-5.07	-5.86	-5.66	-6.09	-6.53	
LAW085	HH2000	-3.7	-5.1	-3.8	-7.9	-9.8	-11.7	-9.9	-10.1	-9.9	-7.3	-8.0	-5.8	-6.4	-6.0	-3.7	-4.4	-4.6					
	OK																		-4.90	-5.12	-5.71	-5.86	
	KED																		-5.02	-5.20	-5.83	-5.91	
LAW104	HH2000	-3.9	-5.7	-5.0	-8.7	-10.0	-11.7	-10.3	-9.6	-9.0	-7.5	-7.7	-6.6	-7.3	-6.8	-5.2	-5.5	-5.4					
	OK	-3.89	-6.03	-5.05	-9.18	-10.05	-11.56	-10.37	-9.43	-9.08	-7.83	-7.94	-6.64	-7.42	-6.55	-5.21	-5.03	-5.50	-5.52	-5.67	-6.16	-6.35	
	KED	-4.14	-6.10	-5.21	-9.26	-10.80	-12.15	-11.12	-9.91	-9.71	-8.08	-8.16	-6.80	-7.58	-6.80	-5.36	-5.25	-5.57	-5.58	-5.33	-5.99	-5.88	
LAW107: OK, KED prior to 2002 may be shallower than shown	HH2000	-1.8	-2.4	-1.8	-3.9	-5.2	-6.6	-5.6	-6.0	-5.9	-4.4	-4.7	-3.2	-3.8	-3.5	-1.8	-2.5	-2.7					
	OK*	-1.79	-2.18	-1.85	-3.95	-5.26	-6.01	-5.62	-5.57	-5.63	-4.42	-4.76	-3.17	-3.86	-3.46	-1.82	-2.48	-2.67	-2.45	-2.70	-3.10	-3.22	
	KED*	-1.80	-2.20	-1.91	-3.99	-5.30	-6.01	-5.65	-5.59	-5.66	-4.44	-4.78	-3.21	-3.89	-3.51	-1.84	-2.51	-2.70	-2.46	-2.68	-3.10	-3.21	
LAW109	HH2000	-2.3	-3.1	-3.1	-5.3	-5.5	-5.7	-6.0	-5.6	-5.8	-5.2	-5.5	-4.2	-4.8	-4.5	-3.3	-3.9	-4.1					
	OK																		-2.13				
	KED																		-1.91				
LAW110	HH2000	-2.4	-3.3	-2.7	-4.8	-5.2	-5.6	-5.9	-5.4	-5.7	-4.8	-5.0	-3.9	-4.4	-4.5	-3.1	-3.7	-3.9					
	OK																		-1.64				
	KED																		-1.25				
LAW112	HH2000	-3.0	-4.6	-3.9	-7.1	-8.2	-9.6	-8.3	-8.1	-7.1	-6.1	-5.8	-4.8	-5.6	-4.8	-3.8	-4.0	-4.1					
	OK	-3.11	-4.66	-3.83	-7.33	-8.23	-9.50	-8.22	-8.05	-6.98	-6.03	-5.81	-4.91	-5.31	-4.80	-3.79	-3.88	-4.03	-4.22	-4.17	-4.58	-4.50	
	KED	-3.23	-4.64	-3.77	-7.39	-8.34	-9.61	-8.33	-8.00	-7.07	-6.03	-5.82	-4.81	-5.24	-4.72	-3.72	-3.81	-3.94	-3.95	-3.80	-4.16	-4.03	
LAW120	HH2000	-4.0	-4.8	-4.3	-7.1	-8.9	-10.3	-10.1	-10.3	-9.1	-6.8	-6.5	-5.5	-6.5	-5.8	-4.8	-5.2	-5.2					

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
MAN042	HH2000	-2.1	-4.2	-4.7	-7.1	-7.4	-8.0	-6.2	-5.6	-5.7	-5.5	-5.7	-4.8	-4.9	-4.3	-4.2	-4.5	-4.9				
	OK																					
	KED																					
MAN060																						
PLC007	HH2000	-3.5	-3.1	-4.0	-4.4	-4.9	-5.1	-4.9	-4.7	-4.5	-4.5	-4.2	-3.9	-4.2	-4.2	-3.9	-4.1	-4.1				
	OK	-3.55	-3.74	-3.97	-4.41	-4.83	-5.08	-4.88	-4.89	-4.49	-4.75	-4.17	-4.12	-4.21	-4.41	-3.99	-4.20	-4.33	-4.49	-4.62	-4.92	-5.08
	KED	-3.51	-3.72	-3.95	-4.39	-4.80	-5.05	-4.85	-4.92	-4.45	-4.76	-4.13	-4.14	-4.15	-4.36	-3.93	-4.19	-4.31	-4.46	-4.56	-4.78	-5.01
PLC024	HH2000	-2.5	-2.1	-2.6	-2.7	-2.9	-3.1	-3.0		-2.9		-2.5		-2.5	-2.5	-2.7	-2.8	-3.8				
	OK	-2.49	-2.25	-2.58	-2.72	-2.88	-3.11	-3.02	-3.45	-2.90	-3.40	-2.52	-2.88	-2.55	-2.50	-2.69	-2.80	-3.30				
	KED	-2.37	-2.06	-2.42	-2.52	-2.68	-2.88	-2.78	-3.12	-2.68	-3.08	-2.30	-2.60	-2.34	-2.24	-2.50	-2.62	-3.04				
PLC028	HH2000	-2.7	-2.9	-3.3	-3.5	-3.9	-4.0	-3.9	-3.7	-3.5	-3.7	-3.6	-3.1	-3.4		-3.1	-3.3	-3.2				
	OK	-2.47	-2.64	-2.76	-3.05	-3.39	-3.55	-3.51	-3.43	-2.96	-3.38	-2.96	-2.91	-2.95		-2.83	-3.10	-3.18	-3.48	-3.67	-3.66	-4.51
	KED	-2.46	-2.65	-2.78	-3.08	-3.42	-3.58	-3.53	-3.40	-2.94	-3.36	-2.93	-2.89	-2.93		-2.79	-3.08	-3.19	-3.46	-3.62	-3.60	-4.61
PLC055	HH2000	-2.6	-2.9	-2.5	-2.8	-3.2	-3.0	-2.9	-2.9	-2.7	-2.7	-2.4	-2.5	-2.5	-2.8	-2.7	-2.8	-2.7				
	OK																					
	KED																					
PLC056	HH2000	-2.2	-2.2	-2.2	-2.2	-2.6	-2.4	-2.3	-2.5	-2.1	-2.5	-1.9	-1.9	-2.0	-1.9	-2.0	-2.2	-2.5				
	OK																					
	KED																					
PLC059	HH2000	-3.5	-3.3	-3.3	-3.6	-3.8	-3.8	-3.8	-3.8	-3.6	-3.4	-3.3	-3.5	-3.4	-3.6	-3.6	-3.6	-3.4				
	OK	-3.20	-3.13	-3.29	-3.40	-3.67	-3.68	-3.67	-3.87	-3.63	-3.76	-3.47	-3.46	-3.31	-3.19	-3.16	-3.32	-3.76	-3.82	-3.83	-3.89	-3.64
	KED	-3.13	-3.05	-3.18	-3.29	-3.56	-3.57	-3.56	-3.74	-3.55	-3.68	-3.41	-3.37	-3.24	-3.21	-3.16	-3.27	-3.82	-3.83	-3.83	-4.01	-3.78
PLC064	HH2000	-3.8	-3.3	-3.8	-3.9	-4.2	-4.3	-4.3	-4.4	-4.3	-4.2	-4.3	-3.9	-4.0	-3.8	-3.7	-4.0					
	OK	-4.07	-4.02	-4.03	-4.24	-4.48	-4.59	-4.64	-4.67	-4.54	-4.53	-4.46	-4.33	-4.25	-4.35	-4.16	-4.22	-4.38	-4.52	-4.50	-4.65	-4.43
	KED	-3.82	-3.80	-3.78	-3.98	-4.24	-4.36	-4.40	-4.44	-4.32	-4.30	-4.22	-4.10	-4.01	-4.13	-3.88	-3.92	-4.10	-4.16	-4.17	-4.40	-4.07
PLC065	HH2000	-3.6	-3.0	-3.7	-3.8	-4.0	-4.0	-4.0	-4.0	-4.0	-3.9	-3.9	-3.7	-3.8	-3.6	-3.6	-3.7	-3.7				
	OK	-3.68	-3.62	-3.79	-3.91	-4.09	-4.15	-4.15	-4.19	-4.09	-4.06	-3.95	-3.82	-3.79	-3.69	-3.70	-3.78	-4.06	-4.22	-4.22	-4.28	-3.96
	KED																					
PLC069	HH2000	-3.7	-3.3	-3.8	-3.8	-4.1	-4.1	-4.2	-4.2	-4.2	-4.2	-4.2	-3.8	-3.9	-3.5	-3.5	-3.6	-4.0				
	OK	-4.03	-3.92	-4.02	-4.17	-4.29	-4.35	-4.37	-4.41	-4.33	-4.33	-4.24	-4.05	-4.02	-4.07	-4.01	-4.14	-4.34	-4.44	-4.42	-4.49	-3.93
	KED	-4.01	-3.90	-4.00	-4.14	-4.27	-4.33	-4.35	-4.39	-4.27	-4.28	-4.19	-4.05	-3.97	-4.03	-3.95	-4.00	-4.32	-4.34	-4.34	-4.44	-3.73
PLC072	HH2000	-3.5	-3.9	-3.1	-3.5	-3.6	-3.7	-3.7	-3.8	-3.5	-3.5	-3.3	-3.6	-3.2	-3.7	-3.5	-3.6	-5.7				
	OK	-3.56	-3.42	-3.53	-3.75	-3.85	-3.90	-3.91	-3.97	-3.72	-3.73	-3.63	-3.50	-3.44	-3.68	-3.65						
	KED	-3.14	-3.10	-3.18	-3.37	-3.58	-3.61	-3.63	-3.68	-3.48	-3.50	-3.39	-3.22	-3.15	-3.37	-3.19						
PLC092	HH2000					-3.8	-3.2	-3.2	-3.4	-3.2	-3.3	-3.2	-3.0	-2.9				-5.7				
	OK	-3.24	-3.13	-3.18	-3.26	-3.10	-3.10	-3.17	-3.26	-3.14	-3.16	-3.04	-2.76	-2.74	-2.75							
	KED	-2.98	-2.99	-3.03	-3.11	-3.10	-3.10	-3.16	-3.26	-3.14	-3.16	-3.04	-2.75	-2.74	-2.72							
PLC097	HH2000					-4.6	-3.3	-3.5	-3.5	-3.2	-3.2	-3.0	-3.2	-2.8				-3.5				
	OK																					
	KED																					
PLC106	HH2000	-3.2	-3.1	-3.4	-3.4	-3.5	-3.5	-3.5	-3.6	-3.3	-3.3	-3.2	-3.2	-3.0	-2.8	-2.8	-3.1	-3.0				
	OK	-3.36	-3.31	-3.38	-3.38	-3.41	-3.45	-3.46	-3.30	-3.21	-3.22	-3.14	-3.04	-3.00	-2.84	-2.82	-2.92	-3.01	-3.06	-3.06	-3.13	-2.78
	KED	-3.38	-3.34	-3.40	-3.36	-3.41	-3.44	-3.46	-3.32	-3.23	-3.25	-3.17	-3.06	-3.02	-2.88	-2.84	-2.94	-3.03	-3.06	-3.05	-3.07	-2.82
PLC110	HH2000	-3.1	-3.0	-3.3	-3.3	-3.4	-3.4	-3.4	-3.5	-3.1	-3.2	-2.7	-2.7	-2.9	-2.6	-2.5	-3.0	-2.9				

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
PLC111	OK	-3.16	-3.08	-3.07	-3.24	-3.29	-3.30	-3.33	-3.23	-2.98	-2.88	-2.71	-2.56	-2.59	-2.43	-2.43	-2.62	-2.79	-2.87	-2.86	-2.90	-2.58
	KED	-3.16	-3.08	-3.06	-3.19	-3.24	-3.25	-3.28	-3.10	-2.85	-2.87	-2.70	-2.55	-2.58	-2.43	-2.43	-2.61	-2.79	-2.88	-2.86	-2.90	-2.60
	HH2000	-3.0	-3.0	-3.6	-3.6	-3.7	-3.7	-3.7	-3.7	-3.5	-3.4	-3.0	-3.1	-3.3	-2.9	-2.9	-3.4	-3.3				
	OK	-3.19	-3.15	-3.41	-3.53	-3.58	-3.59	-3.61	-3.51	-3.36	-3.11	-3.02	-2.94	-2.95	-2.82	-2.82	-2.96	-3.23	-3.30	-3.29	-3.35	-3.13
	KED	-3.06	-3.03	-3.27	-3.35	-3.40	-3.43	-3.43	-3.28	-3.00	-3.02	-2.89	-2.82	-2.84	-2.73	-2.73	-2.88	-3.13	-3.24	-3.22	-3.27	-3.13
PLC113	HH2000	-3.8	-3.6	-4.0	-4.0	-4.1	-4.0	-4.1	-4.1	-4.0	-4.0	-3.9	-3.9	-3.9	-3.7	-3.7	-3.9	-3.9				
	OK	-3.86	-3.87	-4.01	-4.03	-4.09	-4.08	-4.09	-4.12	-4.06	-4.04	-3.98	-3.95	-3.89	-3.80	-3.77	-3.88	-3.93	-3.95	-3.94	-3.97	-3.78
	KED	-3.83	-3.85	-3.97	-3.98	-4.05	-4.05	-4.05	-4.08	-3.98	-4.01	-3.96	-3.92	-3.86	-3.79	-3.76	-3.83	-3.93	-3.92	-3.90	-3.94	-3.77
PLC121	HH2000	-1.2	-1.3	-2.8	-2.9	-3.0	-3.0	-3.0	-3.0	-2.8	-2.8			-2.7			-2.9	-2.9				
	OK																					
	KED																					
PLC125	HH2000	-2.5	-2.6	-3.1	-3.2	-3.3	-3.3	-3.3	-3.3	-3.0	-3.0			-2.8			-2.9	-2.8				
	OK																					
	KED																					
PLC136	HH2000					-4.0	-2.4	-2.6	-2.8	-2.6	-2.7	-2.5	-2.1	-2.0	-1.9	-1.8		-1.9				
	OK																					
	KED																					
PLC137	HH2000					-4.2	-2.2	-2.4	-2.7	-2.5	-2.6	-2.6	-1.9	-2.0	-1.7	-1.7		-1.9				
	OK																					
	KED																					
PLC144 not verified by hydrologist	HH2000						-2.54	-2.67	-2.85	-2.61	-2.73	-2.54	-2.14	-2.08	-1.93	-1.86						
	OK	-4.25	-4.07	-4.50	-3.70	-3.72	-3.62	-3.68	-3.79	-3.65	-3.50	-3.30	-3.03	-3.06	-3.12	-3.14	-3.58	-3.58	-3.72	-3.64	-3.76	-3.27
	KED	-3.19	-3.04	-3.25	-2.52	-2.56	-2.46	-2.52	-2.65	-2.41	-2.48	-2.24	-1.96	-2.01	-2.01	-2.05	-2.30	-2.35	-2.80	-2.73	-2.82	-2.40
PLC187	HH2000	-2.8	-2.5	-3.0	-3.1	-3.2	-3.2	-3.2	-3.3	-3.0	-3.1				-2.7		-2.8	-2.8				
	OK																					
	KED																					
PLC193	HH2000	-2.8	-2.6	-2.8	-3.0	-3.1	-3.1	-3.2	-3.1	-2.9	-3.0	-2.6	-2.7	-2.8	-2.5	-3.1	-2.9	-3.0				
	OK																	-3.58	-3.67	-3.60	-3.64	-3.58
	KED																	-3.59	-3.68	-3.63	-3.67	-3.61
PLC220	HH2000	-2.6	-2.7	-2.6	-2.8	-3.1	-3.0	-2.9	-3.0	-2.7	-3.0	-2.5	-2.6	-2.5	-2.7	-2.8	-2.8	-2.9				
	OK	-2.55	-2.33	-2.61	-2.74	-2.98	-2.91	-2.84	-2.91	-2.73	-2.86	-2.55	-2.46	-2.52	-2.44	-2.53	-2.69	-2.75	-2.92	-2.94	-2.90	-2.80
	KED	-2.77	-2.59	-2.86	-3.00	-3.26	-3.20	-3.13	-3.17	-3.03	-3.13	-2.85	-2.72	-2.81	-2.73	-2.77	-2.94	-2.99	-3.00	-3.01	-2.98	-2.88
PLC223	HH2000	-4.5	-4.1	-4.5	-4.5	-4.8	-4.6	-4.6	-4.7	-4.5	-4.7	-4.3	-4.2	-4.3	-4.2	-4.3	-4.4	-4.6				
	OK																			-4.62	-4.61	-4.52
	KED																			-4.44	-4.43	-4.34
PLC239	HH2000	-2.0	-1.8	-2.1	-2.2	-2.4	-2.5	-2.5	-2.5	-2.2	-2.4	-2.0	-1.9	-2.1	-2.0	-2.2	-2.4	-2.6				
	OK																					
	KED	-2.85	-2.66	-2.82	-2.91	-3.06	-3.17	-3.16	-3.16	-3.04	-3.12	-2.86	-2.79	-2.84	-2.81	-2.92	-3.08	-3.14	-3.17	-3.10	-3.12	-2.90
PLC240	HH2000	-1.9	-1.6	-2.2	-2.3	-2.4	-2.6	-2.6	-2.6	-2.3	-2.4	-2.0	-1.9	-2.2	-1.9	-2.1	-2.5	-2.6				
	OK																					
	KED	-3.41	-3.19	-3.27	-3.33	-3.46	-3.54	-3.54	-3.56	-3.44	-3.51	-3.29	-3.23	-3.27	-3.23	-3.29	-3.50	-3.47	-3.68	-3.56	-3.58	-3.37
PLC241	HH2000	-2.0	-1.7	-2.1	-2.2	-2.3	-2.5	-2.4	-2.5	-2.2	-2.3	-1.9	-1.9	-2.1	-1.9	-2.1	-2.4	-2.5				
	OK																					
	KED	-4.38	-4.23	-4.30	-4.37	-4.43	-4.52	-4.54	-4.55	-4.48	-4.50	-4.37	-4.31	-4.28	-4.25	-4.24	-4.53	-4.41	-4.59	-4.39	-4.42	-4.27

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
PLC246	HH2000	-2.0	-1.5	-2.3	-2.4	-2.5	-2.7	-2.6	-2.7	-2.4	-2.6	-2.1	-2.0	-2.4	-2.1	-2.4	-2.7	-2.8				
	OK																					
	KED	-2.88	-2.70	-2.83	-2.89	-3.01	-3.08	-3.07	-3.15	-2.98	-3.06	-2.81	-2.79	-2.84	-2.77	-2.86	-3.04	-3.02	-3.11	-3.01	-3.04	-2.79
PLC251: overall uncertainty is large	HH2000																					
	OK*	-2.35	-2.17	-2.51	-2.66	-2.78	-2.84	-2.85	-2.88	-2.63	-2.55	-2.22	-2.23	-2.35	-2.23	-2.55	-2.73	-2.83	-3.14	-3.08	-3.11	-2.96
	KED*	-2.43	-2.28	-2.50	-2.63	-2.77	-2.84	-2.85	-2.88	-2.50	-2.60	-2.28	-2.24	-2.35	-2.26	-2.42	-2.68	-2.78	-3.08	-3.02	-3.04	-2.88
PLC263																						
TIN006	HH2000	-2.8	-2.9	-2.7	-3.6	-4.3	-5.0	-5.1	-5.1	-5.1	-5.1	-5.0	-4.2	-3.8	-3.7	-3.5	-3.5	-3.6				
	OK	-2.86	-2.86	-2.74	-3.59	-4.34	-4.98	-5.01	-5.12	-5.04	-5.01	-4.98	-4.18	-3.86	-3.76	-3.51	-3.51	-3.65	-3.87	-4.13	-4.29	-4.33
	KED	-2.86	-2.83	-2.76	-3.58	-4.28	-4.99	-5.01	-4.94	-5.01	-4.99	-4.96	-4.19	-3.83	-3.73	-3.48	-3.49	-3.62	-3.90	-4.10	-4.32	-4.46
TIN028	HH2000	-3.8	-4.1	-2.8	-4.1	-4.7	-5.2	-5.2	-5.1	-5.0	-4.7	-4.7	-4.5	-4.3	-4.1	-3.8	-3.6	-3.6				
	OK																					
	KED																					
TIN030	HH2000	-2.4	-4.4	-4.4	-5.5	-5.6	-6.2	-6.2	-6.5	-6.5	-5.8	-5.2	-4.6	-4.4	-4.2	-3.8	-4.1	-4.3				
	OK																					
	KED																					
TIN050	HH2000	-3.2	-4.3	-3.5	-7.0	-7.3	-6.6	-6.2	-5.6	-5.4	-5.7	-4.7	-4.3	-3.8	-3.6	-3.2	-4.2	-3.4				
	OK																					
	KED	-1.21	-1.54	-3.60	-4.30	-4.60	-3.83	-3.75	-3.30	-3.20	-3.50	-2.59	-2.34	-1.93	-1.52	-1.45	-2.13	-1.47	-2.08	-2.52	-2.64	-2.86
TIN053	HH2000	-3.7	-4.8	-4.2	-9.7	-9.8	-8.9	-8.0	-7.0	-6.4	-7.9	-5.6	-5.4	-4.7	-4.7	-4.1	-5.5	-4.4				
	OK																					
	KED																					
TIN064	HH2000	-5.6	-6.2	-6.3	-9.2	-10.2	-10.4	-9.6	-9.0	-8.5	-8.8	-7.8	-7.3	-6.8	-6.2	-5.9	-6.8	-6.6				
	OK																					
	KED																					
TIN068	HH2000	-3.5	-4.2	-3.7	-7.3	-7.6	-7.8	-7.1	-6.6	-6.0	-6.9	-5.3	-5.2	-4.7	-4.5	-4.2	-5.2	-4.7				
	OK																					
	KED																					
UHL052	HH2000	-2.0	-5.1	-5.3	-6.0	-6.3	-6.9	-7.1	-7.1	-6.7	-6.7	-6.9	-6.1	-5.8	-6.1	-6.0	-6.2	-6.1				
	OK																					
	KED																					
UNW029	HH2000	-2.1	-2.1	-2.4	-3.2	-3.3	-3.3	-3.3	-3.1	-3.1	-3.1	-2.9	-2.9	-2.8	-2.8	-2.4	-2.8	-2.9				
	OK																					
	KED																					
UNW039	HH2000	-1.4	-2.3	-1.4	-2.1	-2.2	-2.2	-2.2	-1.8	-1.7	-1.8	-1.5	-1.3	-1.3	-1.2	-1.1	-1.3	-1.7				
	OK																					
	KED																					
UNW072	HH2000		-4.0	-3.9	-3.9	-3.5	-3.5	-3.5	-3.6	-3.5	-3.3	-3.4	-3.1	-3.2	-3.1	-3.2	-3.6	-3.8				
	OK																					
	KED																					
UNW073	HH2000		-6.0	-5.2	-5.0	-4.6	-4.6	-4.9	-5.0	-4.9	-4.6	-4.7	-4.2	-4.1	-4.2	-4.6	-5.0	-5.5				
	OK																					
	KED																					
UNW079	HH2000		-6.3	-6.3		-6.5		-6.0		-6.0	-6.3	-6.5	-6.2	-6.2	-5.8	-5.9	-5.7	-6.4				

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	
	OK																						
	KED																						

Drought Recovery Policy

Inyo County/ Los Angeles Standing Committee

Recognizing the experimental nature of the management and mitigation techniques, and under the severe conditions of the current drought, it has been agreed by LADWP and Inyo County to conservatively manage groundwater pumping during this drought and during a period of recovery following the drought, LADWP and Inyo County have agreed that the following policy will govern future groundwater pumping:

Recognizing the current extended drought, the Standing Committee establishes a policy for annual management of groundwater pumping during this drought. The goal of this policy is that soil water within the rooting zone recover to a degree sufficient so that the vegetation protection goals of the Agreement are achieved. To this end, groundwater pumping during this drought, as well as the period of recovery, will be conducted in an environmentally conservative manner, taking into consideration soil water, water table, and vegetation conditions. It is recognized that soil water in the rooting zone is naturally replenished by precipitation and from the water table. Further, soil water, water tables, and vegetation conditions will be monitored by the Technical Group to ensure that the goal of this policy is being achieved and for purposes of evaluating the effectiveness of the existing well turn-off / turn-on provisions.

This policy is to provide guidance to the Standing Committee for establishing annual pumping programs during the current drought as well as during a period of recovery. It is intended that groundwater pumping will continue to be conducted in an environmentally conservative manner as was done during the 1990-91 and 1991-92 runoff years until there has been a substantial recovery in soil moisture and water table conditions in areas of Types B, C, and D vegetation that have been affected by groundwater pumping. The Standing Committee will establish annual pumping programs based on an evaluation of current conditions, including soil moisture level, water table depth, degree of water table recovery, soil type, vegetation conditions, the results of studies pertaining to vegetation recovery, and compliance with the goals of the Agreement. It is probable that this policy will result in reduced annual pumping programs as compared to annual pumping programs based solely on soil moisture conditions.