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WATER DEPARTMENT**

**Status of Re-Inventoried Vegetation Parcels
According to the Drought Recovery Policy, 2003**

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ABSTRACT

This report presents the water table and vegetation conditions as of 2003 for 65 re-inventoried vegetation parcels and classifies each parcel with regard to the Drought Recovery Policy (DRP). During 2003, vegetation was re-inventoried in 68 parcels; of these, the 26 which had previously been classified as still subject to the management constraints imposed by the DRP (Manning 2002) 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 26 DRP parcels were judged to be still subject to the DRP as of 2003. Three parcels were re-inventoried for the first time in 2003, and they were not classified with regard to the DRP. Of the 65 classified parcels, 18 were classified as Controls, 21 were DRPfree, and 26 were still subject to the DRP. The DRP parcels are listed in the table below. Inyo County Water Department re-inventoried fewer parcels in 2003 due to insufficient funds to hire summer field assistance.

In this report, all available precipitation data, depth to water table (DTW) estimates, and total parcel perennial cover measurements were assembled for 146 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. Precipitation in Owens Valley was relatively high prior to the 2003 growing season, so may have affected perennial cover. Simply achieving higher cover without a change in estimated DTW was an indication that the cover was precipitation-induced and could not be used, by itself, to reclassify a parcel from DRP to DRPfree. No parcels were freed from the DRP based on 2003 data, but if perennial cover achieved in 2003 is maintained through subsequent dry years for the parcels discussed in this report, this response will be considered in the future as evidence for reclassification of the parcel.

	PARCEL	WELLFIELD	ICWD DRP status2003		PARCEL	WELLFIELD	ICWD DRP status2003
1	BGP162	BP	DRP	14	IND133	SS	DRP
2	BLK009	TA	DRP	15	IND139	SS	DRP
3	BLK021	TA	DRP	16	IND231	SS	DRP
4	BLK024	TA	DRP	17	LAW052	L	DRP
5	BLK033	TA	DRP	18	LAW062	L	DRP
6	BLK075	TS	DRP	19	LAW065	L	DRP
7	BLK094	TS	DRP	20	LAW082	L	DRP
8	FSP004	BP	DRP	21	LAW085	L	DRP
9	FSP006	BP	DRP	22	LAW112	L	DRP
10	IND029	TS	DRP	23	LAW137	L	DRP
11	IND106	IO	DRP	24	MAN007	SS	DRP
12	IND111	IO	DRP	25	MAN037	BG	DRP
13	IND132	SS	DRP	26	TIN068	TA	DRP

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

INTRODUCTION

This report presents an evaluation of the 2003 water table and vegetation conditions for the purpose of categorizing each re-inventoried vegetation parcel with regard to the Drought Recovery Policy (DRP). Similar reports were prepared for 1998 (Inyo County Water Dept. staff 1999), 1999 (Manning 2000a), 2000 (Manning 2001), and 2001 (Manning 2002). Results of the DRP classification for 2002 were presented in the form of a letter (James 2003).

Classification of a parcel to a DRP category was made based on criteria developed to account for groundwater recovery and parcel perennial cover. See Manning (2002) for a detailed explanation of the criteria and their application. For each monitored parcel, the estimated water level was analyzed for its 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 or total perennial plant cover
- DRPfree - Affected by pumping during the 1987-1992 drought, but judged to have recovered in terms of water table and perennial plant cover
- More study - Additional data are needed before DRP status can be reliably assigned

To perform the analysis of 2003 conditions, the previously-assigned DRP status of each parcel (Manning 2002; James 2003) was used. 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 water table level had risen sufficient to improve perennial cover to a level equaling or exceeding the 1984-1987 baseline level.

This report presents updated 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 using the line point transect technique, total plant cover estimates generated from Landsat data, 1986-2002, 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 1982-2003). Total precipitation for fall and winter preceding the 2003 growing season (October 1, 2002 through April 30, 2003) was tabulated.

Results

More precipitation fell October 2002 through April 2003 than fell during the same months of the four previous years (Table 1). Figure 1a shows the average pre growing season precipitation for ICWD's seven rain gauges, 1993-2003. During the 2003 winter season, precipitation was slightly below average, as reported at the Bishop airport (Figure 1b). As in most years, total precipitation varied throughout the valley in water year 2003 and ranged from 137 to 264 mm (Table 1).

A relatively large amount of precipitation occurred throughout Owens Valley in November 2002. This precipitation event, in places about 50 mm (= 2 inches), was sufficient to cause prolific annual plant germination as well as shrub seed germination throughout the valley during spring 2003 (Inyo County Water Department shrub recruitment data, on file). Events of this magnitude generally affect perennial plant growth. Perennial species typically respond by producing longer stem growth and more leaves (Sorenson et al 1991 and personal observation). This growth may occur for xeric as well as phreatophytic species (Elmore et al. 2003). The ability of plants to sustain the growth throughout the growing season, however, varies. It is likely that most plants are not able to sustain all of the growth until the end of summer (personal observation).

Table 1. Precipitation amounts, in millimeters, recorded in the seven Inyo County Water Department rain gauges for water years 1993-2003. For conversion, 25.4 mm = 1 inch.

Rain Gauge	Precipitation (mm)										
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
RG-1, east of Fish Slough	151	86	193	115	118	155	46	34	57	22	137
RG-2, near Laws	160	92	198	116	125	186	64	44	83	33	139
RG-3, southeast of Bishop	183	110	225	109	174	254	61	74	118	32	167
RG-4, south of Big Pine	211	108	248	174	212	228	47	65	85	40	184
RG-5, near Goose Lake	174	55	180	143	178	190	50	20	63	19	190
RG-6, near Blackrock	229	75	220	180	221	254	48	40	74	33	264
RG-7, west of Union Wash	127	41	124	54	111	129	41	39	99	13	143
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
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

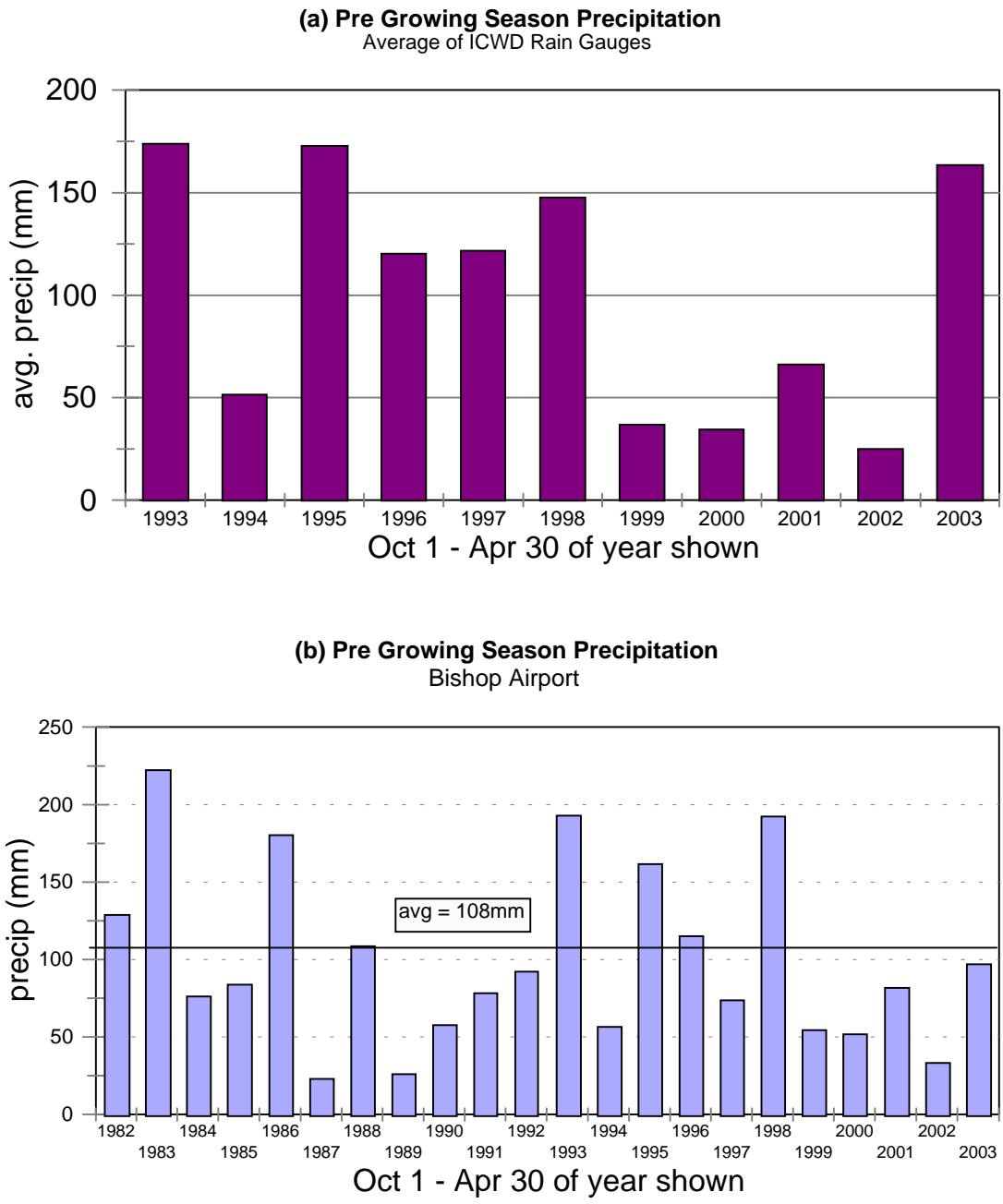


Figure 1. Pre growing season (October 1 through April 30 of year shown) precipitation: (a) average of seven ICWD rain gauges, and (b) total at the Bishop airport.

VEGETATION CONDITIONS

Methods

Line Point Transects. During 2003, no substantive changes were made in the methods for assessing vegetation conditions, including the field data collection methods, criteria for selecting parcels for re-inventory, or data entry and statistical analysis. Details of these activities were presented in earlier reports, for example Manning (2002) and Manning (2000b). 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. For perennial cover data in 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). 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 parcel groups between the 1984-87 baseline period and the present year. For both t-tests, a change was considered significant if the probability (p) that the means were different due to chance alone was ≤ 0.05 .

In summer 2003, 68 vegetation parcels were re-inventoried. Sixty-five of these parcels had been re-inventoried in 2002 and in previous years. Fewer parcels were re-inventoried during 2003 due to the Water Department's inability to fund summer field assistance as had been the practice 1992 - 2002. During 2003, three parcels were added: LAW035, LAW043, and LAW070. These parcels were added to assess vegetation conditions in more places in the Laws wellfield. LAW035 had been classified as a Type C Alkali Meadow with 35.5% perennial cover during the LADWP baseline inventory. LAW043 and LAW070 were classified as Type E (irrigated) Rush/Sedge Meadow parcels with 61.1% and 59.3% perennial cover, respectively. All three parcels are located west of Highway 6 and adjacent to areas of non Type E groundwater dependent vegetation. Because they had not been previously classified with regard to the DRP and because two are Type E parcels, these three parcels were not classified according to the DRP in this report; rather, 2003 vegetation conditions are presented here to assess cover changes in additional parcels in the Laws wellfield.

Parcel Cover Estimated with Landsat Data. Through the Water Department's collaboration on a remote sensing study led by scientists from Brown University, the Water Department acquired estimates of Owens Valley green plant cover during late summer (August or September) for the years 1986 through 2002. The green cover estimates are derived using the Spectral Mixture Analysis 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 being 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. There are several reasons why SMA cover may differ from cover estimated with transect data, 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 2. Total live plant cover measured using SMA for each parcel each year is presented in Appendix A. Both cover measurements are graphed, along with water table depths (discussed below) in Figures 2-100. (Because there are so many graphs, they are placed at the end of this report as Appendix B).

Table 2. Perennial cover in re-inventoried parcels as measured during the 1984-87 LADWP baseline period (DWP) and by Inyo County Water Department, 1991-2003. 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
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
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
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
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
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	
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 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
19 BLK021	30.67		19.67				12.67	17.42	26.00	14.42	11.43	17.86	11.50	16.03
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 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
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 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
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
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
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
28 BLK077	16.33		6.33								13.81	14.69	8.13	

Table 2, continued.

PARCEL	% COVER, PERENNIALS ONLY														
	DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	
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
30	BLK095	16.43										23.45			
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
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
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
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
43	FSP004	16.00						14.80	13.07	15.53	11.13	10.87	17.67	7.80	12.07
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
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
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	IND029	22.00											24.86	17.50	26.43
49	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
50	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	
51	IND066	12.25		10.33											
52	IND067	34.75		13.29			27.25	29.93	43.73	39.60	20.13	17.53	27.07	12.40	
53	IND087	38.00	30.44												
54	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
55	IND099*	20.00	14.00												
56	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
57	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
58	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	
59	IND122	29.33						25.94	31.56	34.63	35.00	35.69	35.63	24.88	
60	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

Table 2, continued.

PARCEL	% COVER, PERENNIALS ONLY														
	DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	
61	IND133*	13.50									9.21	8.71	6.36	17.57	
62	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
63	IND151	45.50						23.79							
64	IND156	31.00	19.00												
65	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
66	IND205*	26.25						32.00							
67	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
68	LAW030	23.08	12.00						16.25	21.16	27.25	32.07	24.50	19.57	
69	LAW035	35.50													3.06
70	LAW040	14.67		9.17				11.75	9.25	16.75	13.83	9.43			
71	LAW043	61.13													3.00
72	LAW052	27.83	4.16						4.91	7.75	8.83	4.50	4.93	2.36	2.86
73	LAW062	21.44		1.50			3.00	5.50	9.71	11.21	18.07	13.50	10.79	2.86	4.69
74	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
75	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
76	LAW070	59.33													1.00
77	LAW076	6.50		2.80							9.79				
78	LAW078	51.71		7.50					20.21	24.57	44.50	55.41	38.27	36.32	31.77
79	LAW082	16.50	5.50						2.58	5.83	4.33	5.14	3.64	2.14	3.00
80	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
81	LAW104	8.80		3.83											
82	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
83	LAW109	17.88	3.18												
84	LAW110	35.17	11.33	10.89	20.64	29.14		40.88	38.81		59.41	63.71	68.12	54.00	
85	LAW112	20.33		16.33			14.50	20.33	13.83	20.05	13.67	11.57	19.64	12.93	25.14
86	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
87	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
88	LAW137	20.42		8.63			15.25	12.43	16.00	18.36	21.86	16.50	22.86	16.94	20.33
89	LAW154	12.17		10.00				15.75							
90	LAW167	4.70		4.79				7.07							
91	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
92	LNP019	16.17		36.67				23.21	32.64	41.93	34.79	37.57	48.69	25.50	

Table 2, continued.

PARCEL	% COVER, PERENNIALS ONLY														
	DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	
93	LNP045	48.00		44.83			44.58	49.50	39.86	45.21	48.00	56.29	36.86	17.50	30.86
94	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	
95	LNP095	27.58												27.67	
96	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
97	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
98	MAN014	22.00		19.33			14.92	17.57	15.71	23.21	18.21	21.21	15.29	8.21	
99	MAN017	6.50						5.19	13.63	7.50	16.63	9.13			
100	MAN034	15.33		9.50											
101	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
102	MAN042	18.00						20.19				39.59			
103	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
104	PLC007	26.70						32.61	26.78	33.00	25.94	28.56	29.72	18.39	
105	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
106	PLC028	38.50		19.00											
107	PLC055	7.33		15.69											
108	PLC056	16.83						19.21							
109	PLC059	17.00		27.00				23.07							
110	PLC064	9.67		4.67				8.58							
111	PLC065	10.67		6.71				16.79							
112	PLC069	12.00		6.08											
113	PLC072	15.33		17.33			24.64	30.57	21.86	24.29	27.64	24.29	25.79	16.29	14.71
114	PLC092	10.50		11.80			14.92	10.47	21.00	15.53	13.60	17.67	16.13	6.87	
115	PLC097	35.17		21.28	28.00	38.17	50.38		62.50		71.36	45.21	56.14	33.00	37.86
116	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
117	PLC110	13.17		10.00											
118	PLC111	8.83		9.58											
119	PLC113	13.00		8.13			16.71	14.19	17.00	12.38	14.63	15.81	19.81	9.31	
120	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
121	PLC125	10.89		9.79				13.71							
122	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	
123	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
124	PLC187	12.83		14.21				21.86							

Table 2, continued.

PARCEL	% COVER, PERENNIALS ONLY														
	DWP	INY91	INY92	INY93	INY94	INY95	INY96	INY97	INY98	INY99	INY00	INY01	INY02	INY03	
125	PLC193	16.00	12.94				15.13								
126	PLC220	35.90	52.85												
127	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
128	PLC239	13.17	9.93												
129	PLC240	11.17	14.78												
130	PLC241	11.33	12.42												
131	PLC246	7.50	9.93												
132	PLC251	8.67	5.43				10.36								
133	PLC263	10.25	11.25												
134	TIN006*	24.00	14.06												
135	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
136	TIN030	31.42										41.78	35.17	16.36	24.05
137	TIN050	36.33									35.31	39.19	55.88	29.56	38.56
138	TIN053	35.00									61.69	61.63	35.13		
139	TIN064	32.50	22.75								33.33	28.73	33.80	18.47	19.07
140	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
141	UHL052	16.00	10.79												
142	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
143	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
144	UNW072	18.50		6.33				7.39			11.06				
145	UNW073	15.50		16.50				11.36	14.82	19.14					
146	UNW079	40.25		41.29			53.67	54.85	27.54	41.83	40.08	35.5	51.14	53.21	48.43

Shading indicates significant difference at $p \leq 0.05$

* = No LADWP baseline data so statistics not done

Sixty-five parcels re-inventoried in 2003 were classified with regard to the DRP by Manning (2002; James 2003). In both 2001 and 2002, 18 of the parcels were Controls, 21 were DRPfree, and 26 were DRP. Sorted to DRP class in this manner, a comparison of perennial cover between the 1984-87 baseline period and 2003 is presented in Table 3. The Control and DRPfree groups showed no overall significant change in cover between the baseline period and 2003, but the DRP group showed a significant decline in cover.

Table 3. Results of paired t-tests (for dependent variables) on parcels grouped according to previous DRP classifications. The difference in group-average perennial cover between the LADWP (1984-87) baseline average cover and 2003 average cover is shown. The difference was considered significant when $p \leq 0.05$. (Note actual data for these parcels can be found in Table 5, below.)

Group (based on DRP class as of 2001)	# parcels	Average baseline cover (+/- st.dev.)	Average 2003 cover (+/- st.dev.)	Average absolute difference	probability (p)
Control	18	27.15 (13.55)	30.62 (15.56)	3.48	0.1102
DRPfree	21	33.82 (14.26)	31.49 (13.37)	- 2.33	0.3204
DRP	26	25.07 (11.20)	17.87 (10.06)	- 7.20	0.0010*

DEPTH TO WATER DATA

Methods

Three methods for estimating April depth to water table (DTW) are presented in this report. The method used in previous reports by Manning (2001; 2002) relied on kriging procedures described by Harrington and Howard (2000). For 2002 and 2003, 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. For this report, all values were converted from feet to meters. Each grid cell with its center point falling within a re-inventoried parcel boundary was identified and the values for the parcel were averaged to generate an estimated average DTW associated with each parcel each April. Harrington (2003) 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 2003) DTW, and expected DTW. For the DRP classification, HH2000 estimates were evaluated for trend over time and used to compare with both the parcel's 1985-87 average "baseline" DTW and with its 2m or 4m root zone depth (Manning 2002). To evaluate conditions in 2003, OK and

KED DTW and change in these DTW estimates from 2001 to 2003, if reliable, were evaluated for recent trends.

Results

Parcel average DTW estimates developed according to the HH2000 method and OK and KED estimates judged to be reliable by Harrington (2003) are graphed in Figures 2 -100 (Appendix B). DTW data presented in the graphs is tabulated in Appendix C. Overall, for parcels in which OK and KED DTW estimates were reliable, DTW declined about 0.3 m (~= 1 foot) from April 2001 to April 2003 (Tables 4 and 5).

Table 4. Change in DTW from April 2001 to April 2003 for re-inventoried parcels with reliable OK or KED estimates (according to Harrington 2003). Changes are grouped according to previous classification with regard to the DRP (Manning 2002). 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 2003. See Table 5 for each parcel's 2003 DTW estimate and change from 2001.

Group	#OK	Change in OK DTW (m), 2001-2003	#KED	Change in KED DTW (m), 2001-2003	Average of OK and KED change (m)
all Control	14	-0.16	18	-0.11	-0.14
all DRPfree	19	-0.34	19	-0.36	-0.35
all DRP	23	-0.45	25	-0.38	-0.42
all re-inv. parcels with reliable est.	60	-0.32	66	-0.28	-0.30

PREVIOUS DRP STATUS AND CLASSIFICATION FOR PARCELS IN 2003

Methods

Only parcels classified as DRP in 2001 (and 2002, see James 2003) and only parcels for which 2003 vegetation data were available were used to evaluate 2003 parcel status with regard to the DRP. For 2003, no attempt was made to reclassify parcels previously classified as Control or DRPfree; that is, the criteria for releasing parcels from the DRP management constraints were not revised for the 2003 data. Therefore, only parcels previously classified as DRP require 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) a response in perennial cover such that it equaled or exceeded 1984-87 levels. Because precipitation on the floor of Owens Valley was relatively high prior to the 2003 growing season, 2003 perennial cover data were evaluated for precipitation response. Simply achieving higher cover without a change in estimated DTW was an indication that the cover was precipitation-induced and could not be used, by itself, to reclassify a parcel from DRP

to DRPfree. The role of precipitation was discussed previously (Inyo County Water Department staff 1999 and Manning 2002).

Results and Discussion

Table 5 lists data for all parcels listed in Table 2. Also included in Table 5 is the DRP status assigned to each parcel for 2001 by Manning (2002). Re-inventoried parcels classified as DRP for which 2003 line point transect data were collected were extracted from Table 5 and are shown in Table 6. None of these 26 parcels changed DRP status as of 2003. DTW for these 26 parcels either declined from 2001 to 2003 and/or was maintained below the root zone of the dominant species documented in the parcel during the baseline period. Perennial cover in 20 of the 26 parcels averaged below baseline. Perennial cover in 6 of the 26 parcels averaged above baseline in 2003. However, DTW for these 6 parcels either declined from 2001 to 2003 and/or was maintained below the root zone assigned to the plant community type (2 m for grass-dominated/meadow, 4 m for phreatophytic scrub, Groeneveld 1992).

Table 5. Some data for all re-inventoried parcels classified with regard to the DRP in 2001, plus data for three additional parcels re-inventoried in 2003. Parcel classifications were the same for 2002 as for 2001 (see James 2003). Shown are: the parcel plant community and type, the parcel identity, parcel DRP status in 2001 (from Manning 2002), the perennial cover during the LADWP 1984-87 baseline period, perennial cover in 2003 (if re-inventoried), the absolute difference in cover between the baseline period and 2003, DTW estimates for 2003 (according to the OK and KED methods, if available), and the change in DTW between 2001 and 2003. 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 data available. Abbreviations are shown at the end of the table.

	COMMUNITY and TYPE	PARCEL	ICWD DRP status2001	PERENNIAL % cover			2003 DTW (m) OK/KED	Change in DTW (m) from 2001 OK/KED
				DWP BASE	INYO 2003	DIFFERENCE 03-BASE		
1	45310A	BGP013	C	20.50				
2	45310C	BGP031	C	16.80	12.43	-4.37		
3	45310C	BGP047	C	45.50			nd/1.73	nd/-0.31
4	45310C	BGP086	DRPfree	19.17			nd/3.55	nd/-0.83
5	36150B	BGP088	wDRPfree	18.55				
6	45350C	BGP154	DRPfree	24.17	22.67	-1.50	5.92/5.61	-0.91/-0.73
7	35400B	BGP157	DRPfree	28.60			3.42/3.20	-0.25/-0.35
8	36150B	BGP162	DRP	30.33	13.75	-16.58	nd/6.28	nd/-0.37
9	45350C	BGP204	C	27.17				
10	45310C	BGP205	C	22.83				
11	45310C	BIS055	C	44.60	40.56	-4.04	2.81/2.85	-0.75/-0.79
12	35400B	BIS068	wDRP	15.40			2.81/2.85	-0.31/-0.34
13	45340C	BIS085	DRP	31.38			5.83/5.93	-0.21/-0.26
14	35400B	BLK002	DRP	16.00				
15	36120A	BLK006	wDRPfree	16.50			2.87/nd	-0.12/nd
16	45310C	BLK009	DRP	28.83	23.27	-5.56	4.01/3.46	-0.74/-0.48
17	45310C	BLK011	wDRP	9.25			4.93/4.63	-0.84/-0.62
18	45310C	BLK016	DRPfree	22.20	27.58	5.38	3.07/2.40	-0.65/-0.46
19	36150B	BLK021	DRP	30.67	16.03	-14.64	3.91/3.77	-0.95/-1.09
20	45350C	BLK024	DRP	25.00	29.41	4.41	4.76/5.12	-0.48/-0.42

Table 5, continued.

	COMMUNITY and TYPE	PARCEL	ICWD DRP status2001	PERENNIAL % cover			2003 DTW (m) OK/KED	Change in DTW (m) from 2001 OK/KED
				DWP BASE	INYO 2003	DIFFERENCE 03-BASE		
21	45310C	BLK033	DRP	13.67	7.27	-6.40		
22	45310C	BLK039	DRPfree	21.67	30.40	8.73		
23	36120A	BLK040	wDRP	9.00				
24	45340C	BLK044	DRPfree	23.00?	33.79	10.79		
25	36120A	BLK069	DRPfree	19.00?	10.22	-8.78	1.73/1.68	-0.22/-0.32
26	36150B	BLK074	DRPfree	30.67	49.35	18.68	1.98/1.90	-0.40/-0.29
27	45310C	BLK075	DRP	38.83	27.20	-11.63		
28	36120A	BLK077	DRP	16.33				
29	45310C	BLK094	DRP	40.56	33.71	-6.85	4.44/4.65	-0.39/-0.28
30	45310A	BLK095	wDRP	16.43			4.38/4.53	-0.27/-0.14
31	45310C	BLK099	DRPfree	48.00	42.27	-5.73	2.03/1.56	0.02/0.29
32	45310A	BLK115	C	9.58	26.88	17.30	1.72/1.37	0.09/0.12
33	45310C	BLK142	DRPfree	26.00				
34	45310C	BLK143	wDRPfree	39.83				
35	45310C	FSL051	DRPfree	58.17				
36	45310A	FSL065	DRPfree	21.33			2.07/1.98	-0.24/-0.01
37	45310C	FSL116	DRPfree	52.88				
38	35400A	FSL118	wDRP	9.58				
39	35400A	FSL122	wDRPfree	11.00			1.80/1.92	
40	45310C	FSL123	DRPfree	57.67	37.07	-20.60	1.53/1.36	
41	45340C	FSL179	wC	52.17				
42	45310A	FSL187	C	14.33	20.29	5.96		
43	45340C	FSP004	DRP	16.00	12.07	-3.93		
44	45310AC	FSP006	DRP	25.00?	15.50	-9.50	5.10/4.75	-0.64/-0.68
45	45310C	IND011	DRPfree	30.33	44.64	14.31	1.86/1.90	-0.14/-0.13
46	45310C	IND019	DRPfree	75.00			2.79/2.39	-0.43/-0.22
47	45340C	IND021	wDRPfree	68.00			1.92/1.80	-0.27/-0.22
48	45310C	IND029	DRP	22.00	26.43	4.43	3.88/5.02	-0.25/-0.72
49	45310C	IND035	DRPfree	49.50	51.50	2.00		
50	45310C	IND064	more study	38.50			2.33/2.19	-0.06/-0.07
51	36120A	IND066	wmore study	12.25			2.02/1.87	-0.05/-0.11
52	45350C	IND067	more study	34.75			1.78/1.96	0.13/0.17
53	45310C	IND087	wC	38.00				
54	36150B	IND096	C	29.33	30.28	0.95	0.32/nd	
55	36150B	IND099	wC	20.00?				
56	36150A	IND106	DRP	8.00?	19.22	11.22	5.21/5.22	-0.49/-0.64
57	45350C	IND111	DRP	40.60	27.80	-12.80	4.57/4.31	-1.26/-0.96
58	45310C	IND119	more study	33.67			1.99/2.18	0.07/0.02
59	36150B	IND122	C	29.33				
60	36150B	IND132	DRP	32.90?	32.27	-0.63	3.97/3.76	-0.18/-0.09
61	36150A	IND133	DRP	13.50?	17.57	4.07	6.43/6.39	-0.05/-0.26
62	45350C	IND139	DRP	48.50	34.68	-13.82	nd/2.14	nd/0.21
63	45310C	IND151	wC	45.50			2.53/2.49	
64	45310C	IND156	wC	31.00				
65	45310C	IND163	C	12.75	17.38	4.63		
66	45310C	IND205	wDRPfree	26.25			3.89/4.39	-1.24/-1.36
67	36150A	IND231	DRP	7.60?	12.67	5.07	6.42/6.44	0.10/0.05

Table 5, continued.

	COMMUNITY and TYPE	PARCEL	ICWD DRP status2001	PERENNIAL % cover			2003 DTW (m) OK/KED	Change in DTW (m) from 2001 OK/KED
				DWP BASE	INYO 2003	DIFFERENCE 03-BASE		
68	45310C	LAW030	DRP	23.08				
69	45310C	LAW035	-	35.50	3.06	-32.44	7.75/7.70	-0.07/-0.25
70	36150B	LAW040	wDRP	14.67				
71	45330E	LAW043	-	61.13	3.00	-58.13	5.65/6.06	-0.37/-0.67
72	45310C	LAW052	DRP	27.83	2.86	-24.97	5.63/5.77	-0.73/-0.80
73	45340C	LAW062	DRP	21.44	4.69	-16.75	6.58/6.43	-0.65/-0.48
74	36130A	LAW063	DRPfree	11.50	6.38	-5.12	6.79/6.63	-0.71/-0.56
75	45310A	LAW065	DRP	9.67	2.93	-6.74	5.98/6.18	-0.47/-0.55
76	45330E	LAW070	-	59.33	1.00	-58.33	5.94/5.01	-0.66/-0.28
77	36130A	LAW076	wDRPfree	6.50				
78	45310C	LAW078	DRPfree	51.71	31.77	-19.94	4.13/3.72	-0.40/-0.16
79	45340C	LAW082	DRP	16.50	3.00	-13.50	5.87/5.66	-0.75/-0.59
80	45310C	LAW085	DRP	30.10?	9.80	-20.30	5.12/5.20	
81	36130A	LAW104	wDRP	8.80			5.67/5.33	-0.17/0.24
82	45310C	LAW107	DRPfree	46.86	43.93	-2.93	2.70/2.68	-0.03/0.02
83	45310C	LAW109	wDRPfree	17.88				
84	45310C	LAW110	DRPfree	35.17				
85	45350C	LAW112	DRP	20.33	25.14	4.81	4.17/3.80	-0.14/0.14
86	45310C	LAW120	DRPfree	25.92	24.13	-1.79	5.09/nd	0.17/nd
87	45310C	LAW122	DRPfree	59.56	54.81	-4.75		
88	45340C	LAW137	DRP	20.42	20.33	-0.09		
89	36150A	LAW154	wDRPfree	12.17				
90	35400A	LAW167	wDRPfree	4.70				
91	45310C	LNP018	C	18.33	32.67	14.34		
92	36150B	LNP019	C	16.17				
93	45350C	LNP045	DRPfree	48.00	30.86	-17.14		
94	45310C	LNP050	C	48.00				
95	45310C	LNP095	-	27.58				
96	45310C	MAN006	DRPfree	22.75	23.11	0.36	1.56/1.43	0.24/0.25
97	36150B	MAN007	DRP	28.00	25.73	-2.27	3.42/3.35	-0.01/0.03
98	45350C	MAN014	C	22.00				
99	35400B	MAN017	wDRPfree	6.50				
100	36120A	MAN034	wDRPfree	15.33				
101	36150B	MAN037	DRP	42.00	14.60	-27.40	3.29/3.28	
102	35400B	MAN042	wDRPfree	18.00				
103	45310C	MAN060	C	59.33	75.86	16.53		
104	36150B	PLC007	DRPfree	26.70			4.62/4.56	-0.29/-0.25
105	45310C	PLC024	C	35.42	39.36	3.94		
106	45310C	PLC028	wC	38.50			3.67/3.62	-0.49/-0.43
107	36150A	PLC055	wC	7.33				
108	45340C	PLC056	wC	16.83				
109	36150B	PLC059	wC	17.00			3.83/3.83	-0.07/-0.01
110	35400A	PLC064	wC	9.67			4.50/4.17	-0.12/-0.07
111	35400A	PLC065	wC	10.67			4.23/nd	-0.16/nd
112	36130A	PLC069	wC	12.00			4.42/4.34	-0.08/-0.02
113	35400B	PLC072	C	15.33	14.71	-0.62		

Table 5, continued.

	COMMUNITY and TYPE	PARCEL	ICWD DRP status2001	PERENNIAL % cover			2003 DTW (m) OK/KED	Change in DTW (m) from 2001 OK/KED
				DWP BASE	INYO 2003	DIFFERENCE 03-BASE		
114	35400B	PLC092	C	10.50				
115	45310C	PLC097	C	35.17	37.86	2.69		
116	45340C	PLC106	C	30.00?	12.79	-17.21	3.06/3.05	-0.05/-0.02
117	35400B	PLC110	wC	13.17			2.86/2.86	-0.06/-0.08
118	35400A	PLC111	wC	8.83			3.29/3.22	-0.06/-0.10
119	35400B	PLC113	C	13.00			3.94/3.90	-0.01/0.03
120	45310C	PLC121	C	41.33	33.53	-7.80		
121	45340A	PLC125	wC	10.89				
122	45310A	PLC136	C	12.40				
123	45340C	PLC137	C	27.20	39.19	11.99		
124	35400B	PLC187	wC	12.83				
125	35400B	PLC193	wC	16.00			3.60/3.63	-0.02/-0.04
126	45310C	PLC220	wC	35.90			2.94/3.01	-0.19/-0.02
127	45310C	PLC223	C	15.00	22.27	7.27	4.62/4.44	
128	35400A	PLC239	wC	13.17			nd/3.10	nd/0.03
129	36150A	PLC240	wC	11.17			nd/3.56	nd/-0.08
130	36150A	PLC241	wC	11.33			nd/4.39	nd/0.02
131	36130A	PLC246	wC	7.50			nd/3.01	nd/0.01
132	36150A	PLC251	wC	8.67			3.08/3.02	-0.24/-0.23
133	45340A	PLC263	wC	10.25				
134	36120A	TIN006	wDRP	24.00			4.13/4.10	-0.48/-0.48
135	36130A	TIN028	DRPfree	17.50	15.14	-2.36	4.50/4.34	
136	45310C	TIN030	DRPfree	31.42	24.05	-7.37	5.48/5.48	
137	45310C	TIN050	DRPfree	36.33	38.56	2.23	nd/2.52	nd/-1.05
138	45310C	TIN053	DRPfree	35.00			3.50/3.55	-1.55/-1.84
139	45310C	TIN064	DRPfree	32.50	19.07	-13.43	nd/4.66	
140	45310A	TIN068	DRP	13.50	6.56	-6.94	3.72/3.86	
141	36130A	UHL052	wDRP	16.00				
142	45310C	UNW029	C	16.75	17.71	0.96		
143	36150B	UNW039	C	27.17	29.04	1.87		
144	36150B	UNW072	wC	18.50				
145	36150B	UNW073	wC	15.50				
146	45350C	UNW079	C	40.25	48.43	8.18		

- 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, or LAW070; therefore, their DTW estimates are shown in italics.

Table 6. Some data for parcels classified as DRP in 2001 in which vegetation was re-inventoried in 2003. This table shows the DRP status assigned to the parcel for 2003. All 26 parcels continue to be classified as DRP for reasons presented in this report. The 6 DRP parcels with perennial cover in 2003 averaging higher than baseline are shown with shading. Asterisks for 2003 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.

	COMMUNITY and TYPE	PARCEL	WELL-FIELD	ICWD DRP status2003	PERENNIAL % cover				DTW2003 m OK/KED	change in DTW, 2001-2003
					DWP BASE	INY2003	DIFFERENCE03-BASE			
							abs.	rel.		
1	36150B	BGP162	BP	DRP	30.33	13.75*	-16.58	-54.67	nd/-6.28	nd/-0.37
2	45310C	BLK009	TA	DRP	28.83	23.27	-5.56	-19.29	-4.01/-3.46	-0.74/-0.48
3	36150B	BLK021	TA	DRP	30.67	16.03*	-14.64	-47.73	-3.91/-3.77	-0.95/-1.09
4	45350C	BLK024	TA	DRP	25.00	29.41	4.41	17.64	-4.76/-5.12	-0.48/-0.42
5	45310C	BLK033	TA	DRP	13.67	7.27*	-6.40	-46.82		
6	45310C	BLK075	TS	DRP	38.83	27.20*	-11.63	-29.95		
7	45310C	BLK094	TS	DRP	40.56	33.71	-6.85	-16.89	-4.44/-4.65	-0.39/-0.28
8	45340C	FSP004	BP	DRP	16.00	12.07	-3.93	-24.56		
9	45310AC	FSP006	BP	DRP	25.00?	15.50†	-9.50	-38.00	-5.10/-4.75	-0.64/-0.68
10	45310C	IND029	TS	DRP	22.00	26.43	4.43	20.14	-3.88/-5.02	-0.25/-0.72
11	36150A	IND106	IO	DRP	8.00?	19.22†	11.22	140.25	-5.21/-5.22	-0.49/-0.64
12	45350C	IND111	IO	DRP	40.60	27.80*	-12.80	-31.53	-4.57/-4.31	-1.26/-0.96
13	36150B	IND132	SS	DRP	32.90?	32.27†	-0.63	-1.91	-3.97/-3.76	-0.18/-0.09
14	36150A	IND133	SS	DRP	13.50?	17.57†	4.07	30.15	-6.43/-6.39	-0.05/-0.26
15	45350C	IND139	SS	DRP	48.50	34.68	-13.82	-28.49	nd/-2.14	nd/0.21
16	36150A	IND231	SS	DRP	7.60?	12.67†	5.07	66.71	-6.42/-6.44	0.10/0.05
17	45310C	LAW052	L	DRP	27.83	2.86*	-24.97	-89.72	-5.63/-5.77	-0.73/-0.80
18	45340C	LAW062	L	DRP	21.44	4.69*	-16.75	-78.13	-6.58/-6.43	-0.65/-0.48
19	45310A	LAW065	L	DRP	9.67	2.93*	-6.74	-69.70	-5.98/-6.18	-0.47/-0.55
20	45340C	LAW082	L	DRP	16.50	3.00*	-13.50	-81.82	-5.87/-5.66	-0.75/-0.59
21	45310C	LAW085	L	DRP	30.10?	9.80†	-20.30	-67.44	-5.12/-5.20	
22	45350C	LAW112	L	DRP	20.33	25.14	4.81	23.66	-4.17/-3.80	-0.14/0.14
23	45340C	LAW137	L	DRP	20.42	20.33	-0.09	-0.44		
24	36150B	MAN007	SS	DRP	28.00	25.73	-2.27	-8.11	-3.42/-3.35	-0.01/0.03
25	36150B	MAN037	BG	DRP	42.00	14.60*	-27.40	-65.24	-3.29/-3.28	
26	45310A	TIN068	TA	DRP	13.50	6.56*	-6.94	-51.41	-3.72/-3.86	

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

For the 26 DRP parcels shown in Table 6, 11 showed average cover statistically significantly below baseline. Average cover in two others (FSP006 and LAW085) was well below baseline but statistics were not performed due to lack of LADWP baseline transect data. Average 2003 perennial cover in the remaining 13 parcels was not statistically significantly different from baseline; seven parcels had 2003 average cover below baseline and six had 2003 cover above baseline. As discussed by Manning (2002), the likelihood of a Type II error in results of t-tests on the parcel data is quite high. This means that a difference that is 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 be significantly different, but the test is incapable of detecting it.

Within the DRP classification criteria, it is possible for a DRP parcel to exhibit average perennial cover higher than baseline. This occurs typically in higher than normal precipitation years when the parcel water table remains below the 1985-87 baseline average DTW or below the root zone. In 2003, six DRP parcels showed average perennial cover higher than baseline, but water tables remained deep. The six parcels are: BLK024, IND029, IND106, IND133, IND231, and LAW112. Perennial cover was not statistically significantly different from baseline in any of these parcels. One or more of the following may be influencing the apparent perennial cover response in these DRP parcels: high precipitation prior to the 2003 growing season (Table 1); inadequate baseline data which characterized the site as having lower cover than what probably existed; transect placement of 2003 transects such that they did not adequately assess conditions evenly throughout the parcel (transects were selected randomly, but as a result, some microhabitats may be over-represented relative to their true proportion of land area in the parcel); other idiosyncratic sources of error such as weather conditions on the day transects were run; and inaccurate DTW estimates. Conditions in these parcels will be re-assessed following the 2004 growing season to see if increased perennial cover is sustained or if new DTW data indicates higher water tables. Specific conditions within several of these six parcels have been discussed in previous reports: IND029, IND106, and IND231 (Manning 2002); BLK024 (Manning 2000a). These brief discussions have been updated and appear in Appendix D.

Of the 26 parcels classified as DRP in 2003, three possess characteristics indicating they may soon qualify for reclassification to the DRPfree category. They are: LAW112, LAW137, and MAN007. The first two parcels are located in the Laws wellfield and MAN007 is in the Symmes Shepherd wellfield. It is possible that a relatively small rise in water level beneath these parcels, perhaps 1 m or less, could induce and perhaps sustain baseline perennial cover levels. It is possible that these parcels are being subirrigated to a limited degree by the water table, but recent data for these parcels does not rule out the possibility that precipitation is primarily responsible for 2003 average perennial cover to approximately equal baseline. In the dry year of 2002, these three parcels showed perennial cover well below and/or significantly below baseline, suggesting that supply of groundwater sufficient to maintain baseline cover levels was not occurring. Because the water table did not change very much since 2001 (Table 6), the increase in cover cannot be reasonably attributed to subirrigation. Response of perennial cover in future dry years could more reliably indicate the recovery status of these three parcels. Even if it could be argued that these three parcels should be classified as DRPfree, there are still several other parcels in these two wellfields (Laws and Symmes Shepherd) which clearly still fall within the DRP category.

Perennial cover data suggest IND132 also may be a possible candidate for release from the DRP constraints. However, this parcel, located in the former springfield south of Mazourka Canyon Road and west of the LA Aqueduct, has a fairly steep elevation gradient for a valley

floor parcel. The lower half of this parcel which lies adjacent to the aqueduct has a shallower water table and generally higher perennial cover than the upper half of the parcel, which is more similar to IND133 in terms of DTW and cover (personal observation). More even DTW and corresponding vegetation recovery at the relatively higher elevations would be needed before this parcel could be reasonably released from the DRP.

Results for the three Laws area parcels that were re-inventoried for the first time in 2003 showed very low cover in each parcel. The Alkali Meadow parcel, LAW035, showed a change in perennial cover from 35.5% (baseline) to 3.1% in 2003 (Table 2 and Figure 55). The non-native annual, Russian thistle (*Salsola tragus*, = tumbleweed), was the dominant species encountered in LAW035 in 2003. The two Type E Rush/Sedge Meadow parcels showed similarly poor 2003 perennial cover. LAW043 had 61.1% perennial cover during the baseline period but only 3.0% in 2003 (Table 2 and Figure 56). LAW070 had 59.3% baseline perennial cover but only 1.0% in 2003 (Table 2 and Figure 61). Both of these Rush/Sedge Meadows were dominated by Russian thistle in 2003, and neither rushes nor sedges were observed in either parcel. Irrigation was also not observed in the two Type E parcels in August 2003. These results suggest that loss of perennial cover relative to baseline in the Laws area, at least, occur in more parcels than simply the parcels routinely re-inventoried by ICWD.

At least one re-inventoried parcel in most wellfields remained in the DRP category as of 2003, and some wellfields contain several parcels which are DRP (Table 6). During 2003, no wellfield parcels were re-inventoried in the areas previously affected by pumping on the Bishop Cone, but as of 2002, two parcels in the Bishop area were classified as still subject to the DRP (BIS068 and BIS085, Figures 13 and 14). Based on conditions in other 2003 re-inventoried parcels and on the downward water table trend for these parcels (Table 5), the Bishop Cone parcels were not likely to have achieved improved conditions in 2003. No Lone Pine wellfield parcels have been classified as DRP. In the remaining seven wellfield areas, some parcels have failed to recover in terms of both water table and perennial cover since the 1987-1992 drought. It is impossible for the limited ICWD staff to monitor all parcels potentially still subject to the DRP, and during 2003, staffing was reduced, which further limited thorough assessment of all parcels. However, many key parcels, located in sensitive areas of wellfields where reasonably reliable DTW estimates can be made, were re-inventoried during 2003 and will be re-inventoried in the future to the extent feasible. Overall, since 2000, very few parcels classified as DRP have displayed clear evidence of water table and perennial species recovery. Furthermore, as shown in Tables 3 and 4, water tables have been declining in DRP parcels in recent years and perennial cover typically remains below the LADWP baseline value.

SUMMARY

- In 2003, 65 re-inventoried parcels had previously been classified with regard to the DRP. Twenty-six of the parcels had been classified as DRP, and data for 2003 did not clearly show recovery to baseline perennial cover and water table conditions. Therefore, the 26 parcels remain in the DRP category.

- Eighteen of the 65 previously classified 2003 re-inventoried parcels remained in the Control category, and 21 remained in the DRPfree category.
- For most parcels, April water levels have been gradually declining since 2001. For parcels with reliable DTW estimates, the decline appears greater in DRP and DRPfree parcels.
- Owens Valley precipitation prior to the 2003 growing season induced some vegetation growth throughout the valley that was measured using the line point transects during summer 2003. The relatively high precipitation was not accompanied by above-normal runoff conditions. Therefore, the effects of the 2003 precipitation probably diminished in most phreatophyte-dominated parcels by late summer, and, without water table recovery prior to the 2004 growing season, parcel perennial cover will probably decline in many parcels that in 2003 experienced a temporary increase.
- The Technical Group has not implemented new management techniques sufficient to ensure that DRPfree parcels avoid entering another cycle of pumping-induced water table declines and thus associated declines and changes in vegetation conditions. Management under the existing DRP allowed recovery of some parts of Owens Valley wellfields from pumping effects during the 1987-1992 drought.

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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	lateAUG 2001	09/12/ 2002
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

Appendix A, continued.

	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	lateAUG 2001	09/12/ 2002
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
48	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
49	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
50	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
51	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
52	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
53	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
54	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
55	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
56	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
57	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
58	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
59	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
60	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
61	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

Appendix A, continued.

	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	lateAUG 2001	09/12/ 2002
62	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
63	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
64	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
65	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
66	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
67	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
68	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
69	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
70	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
71	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
72	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
73	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
74	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
75	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
76	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
77	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
78	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
79	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
80	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
81	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
82	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
83	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
84	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
85	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
86	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
87	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
88	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
89	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
90	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
91	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
92	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
93	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

Appendix A, continued.

	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	lateAUG 2001	09/12/ 2002
94	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
95	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
96	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
97	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
98	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
99	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
100	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
101	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
102	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
103	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
104	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
105	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
106	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
107	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
108	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
109	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
110	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
111	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
112	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
113	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
114	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
115	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
116	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
117	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
118	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
119	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
120	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
121	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
122	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
123	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
124	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
125	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

Appendix A, continued.

	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	lateAUG 2001	09/12/ 2002
126	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
127	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
128	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
129	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
130	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
131	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
132	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
133	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
134	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
135	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
136	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
137	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
138	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
139	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
140	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
141	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
142	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
143	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
144	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
145	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
146	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

Appendix B. Data for 99 parcels were graphed and are presented as Figures 2 - 100. There are three graphs for each parcel. The top graphs shows perennial cover measured 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, 1986-2002. 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). 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

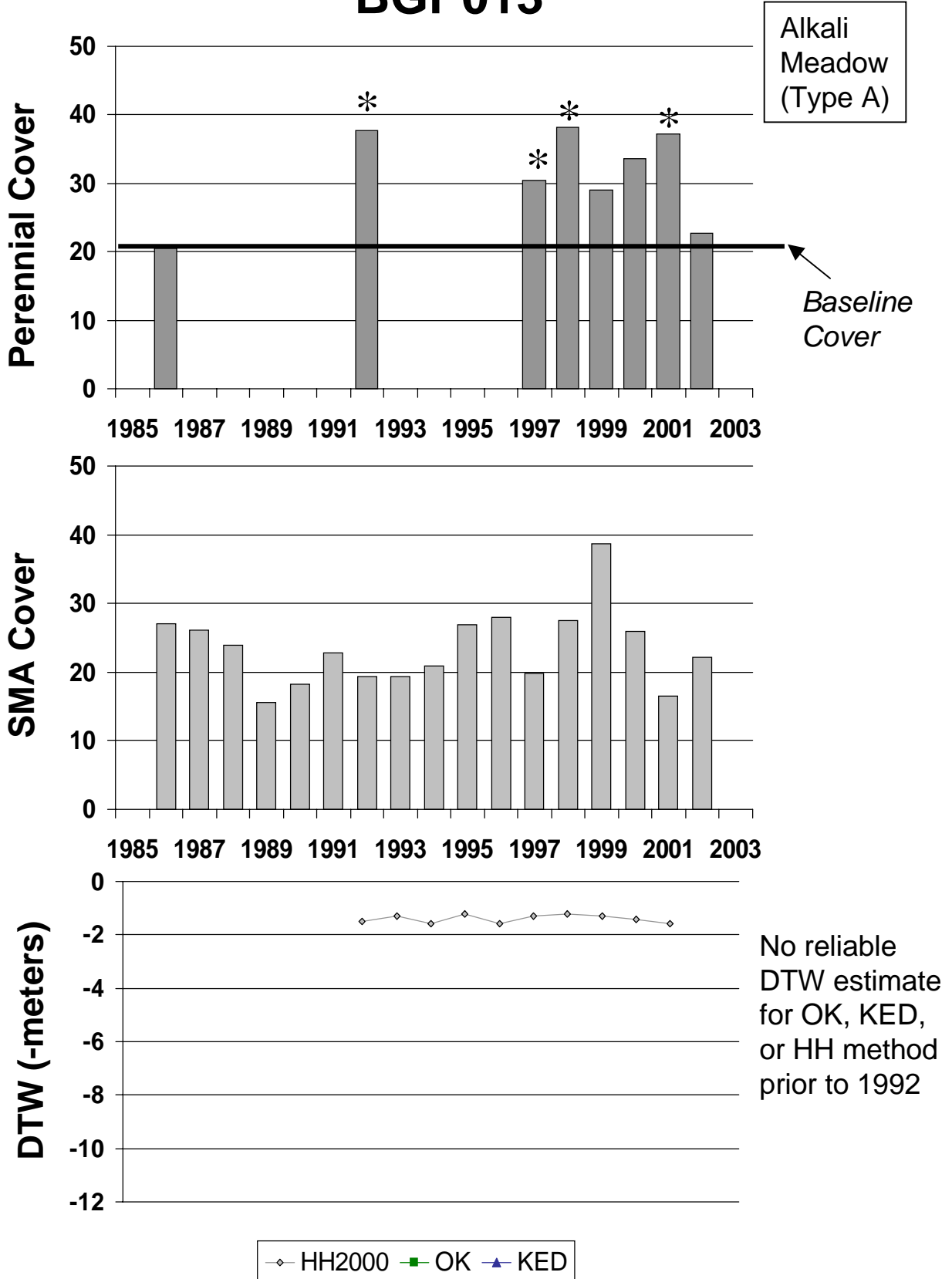


Figure 2. Status 2002: Control

BGP031

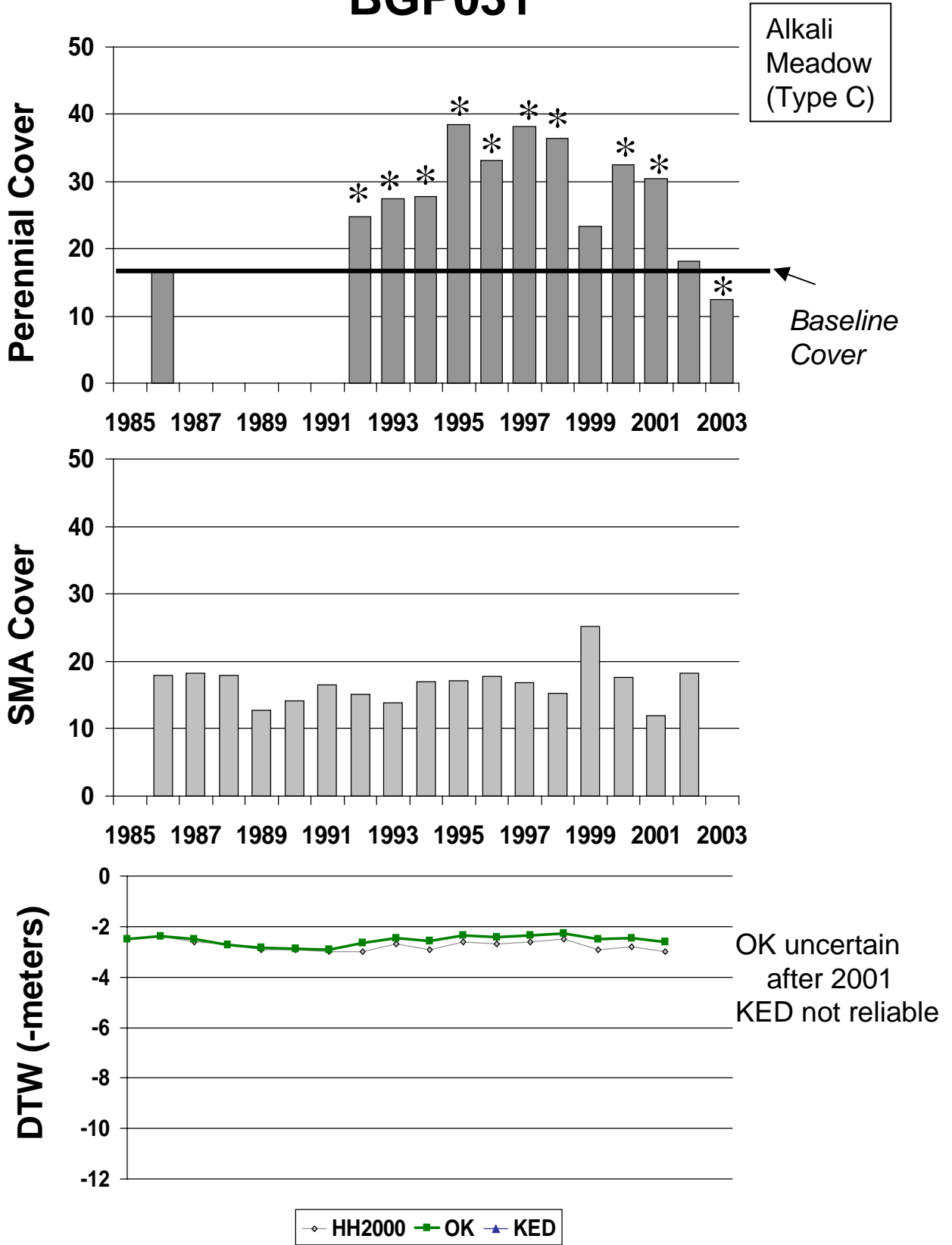


Figure 3. Status 2003: Control

BGP047

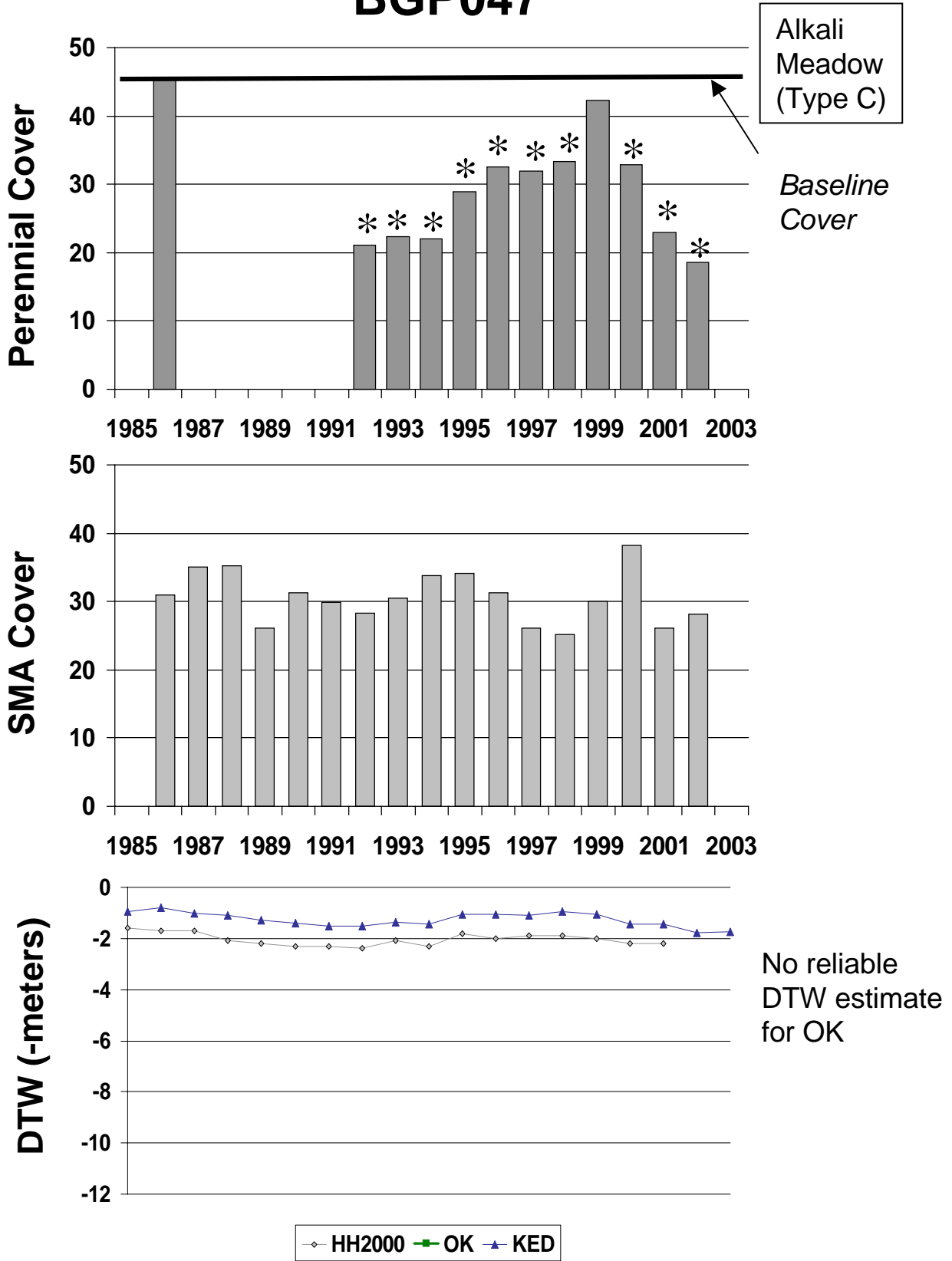


Figure 4. Status 2002: Control

BGP086

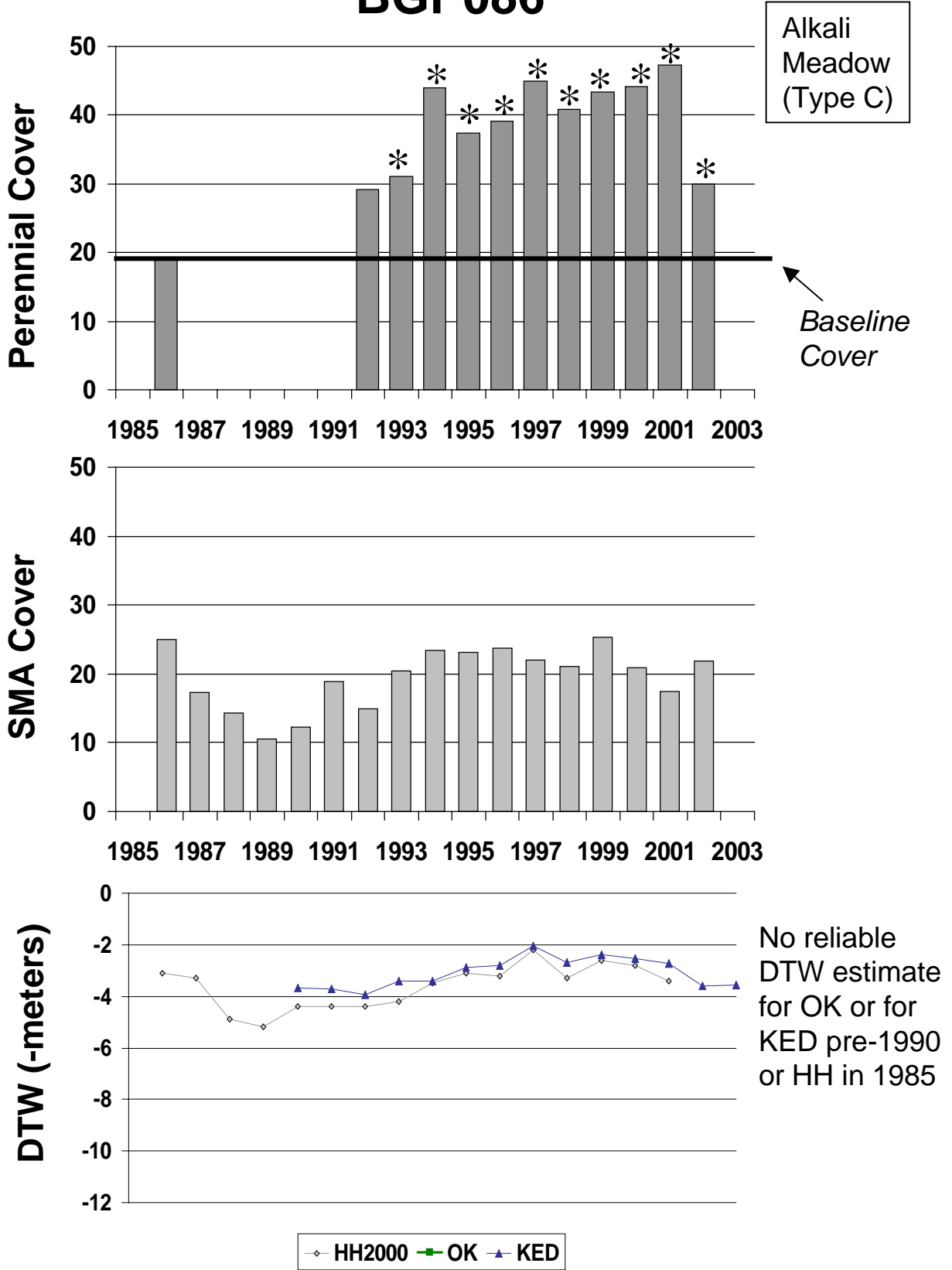


Figure 5. Wellfield: Big Pine. Status 2002: DRPfree

BGP088

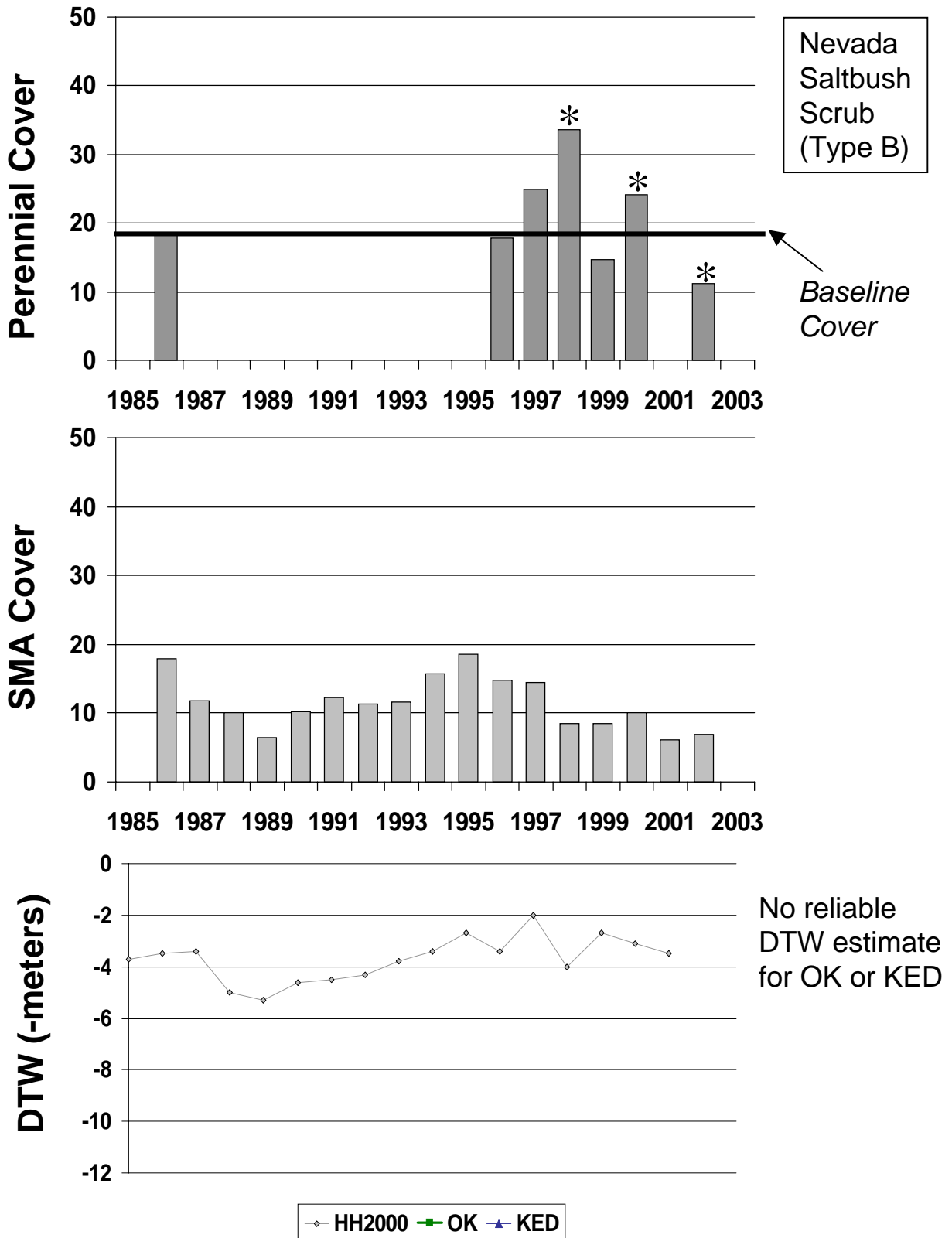


Figure 6. Wellfield: Big Pine. Status 2002: DRPfree

BGP154

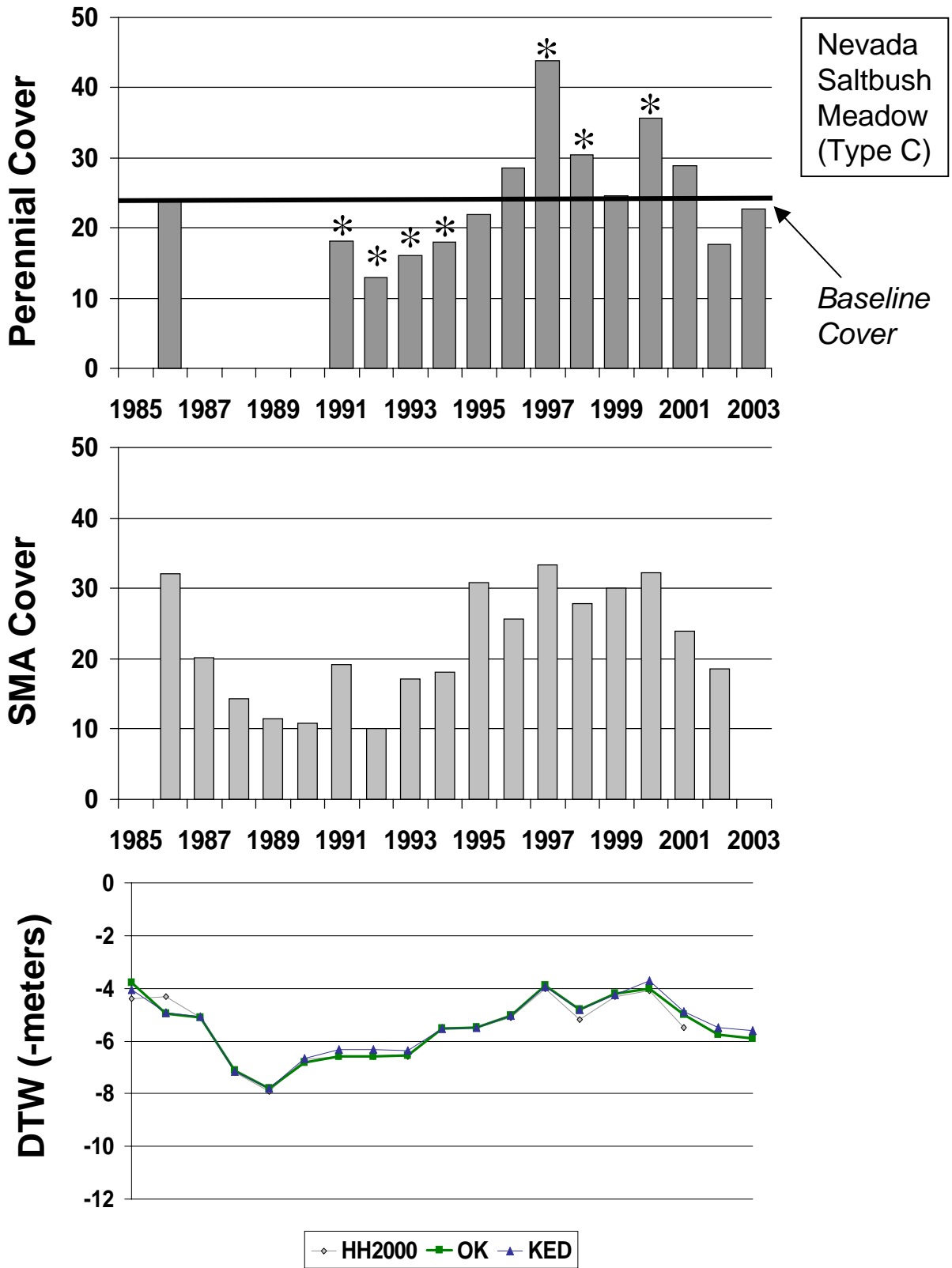


Figure 7. Wellfield: Big Pine. Status 2003: DRPfree

BGP157

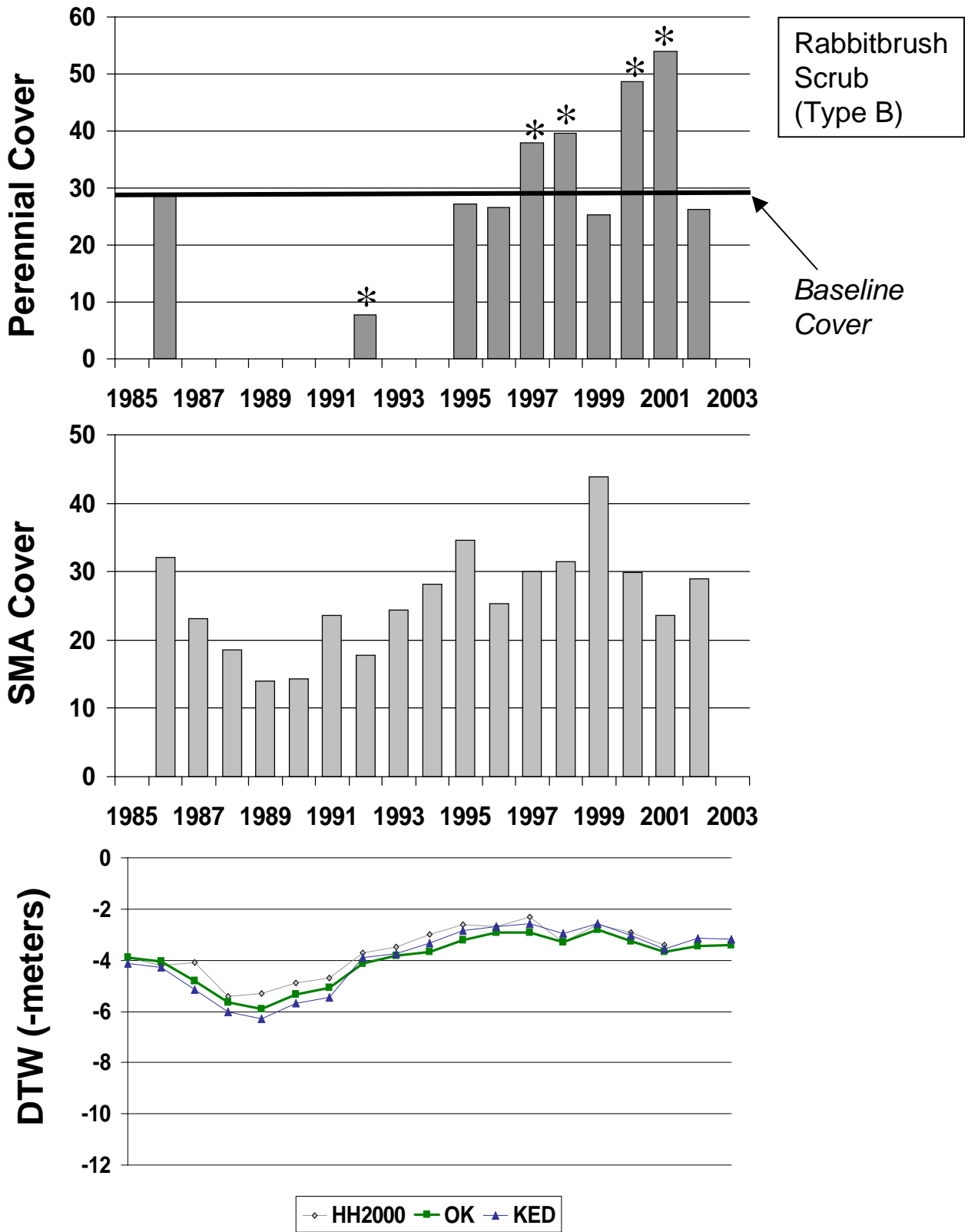


Figure 8. Wellfield: Big Pine. Status 2002: DRPfree

BGP162

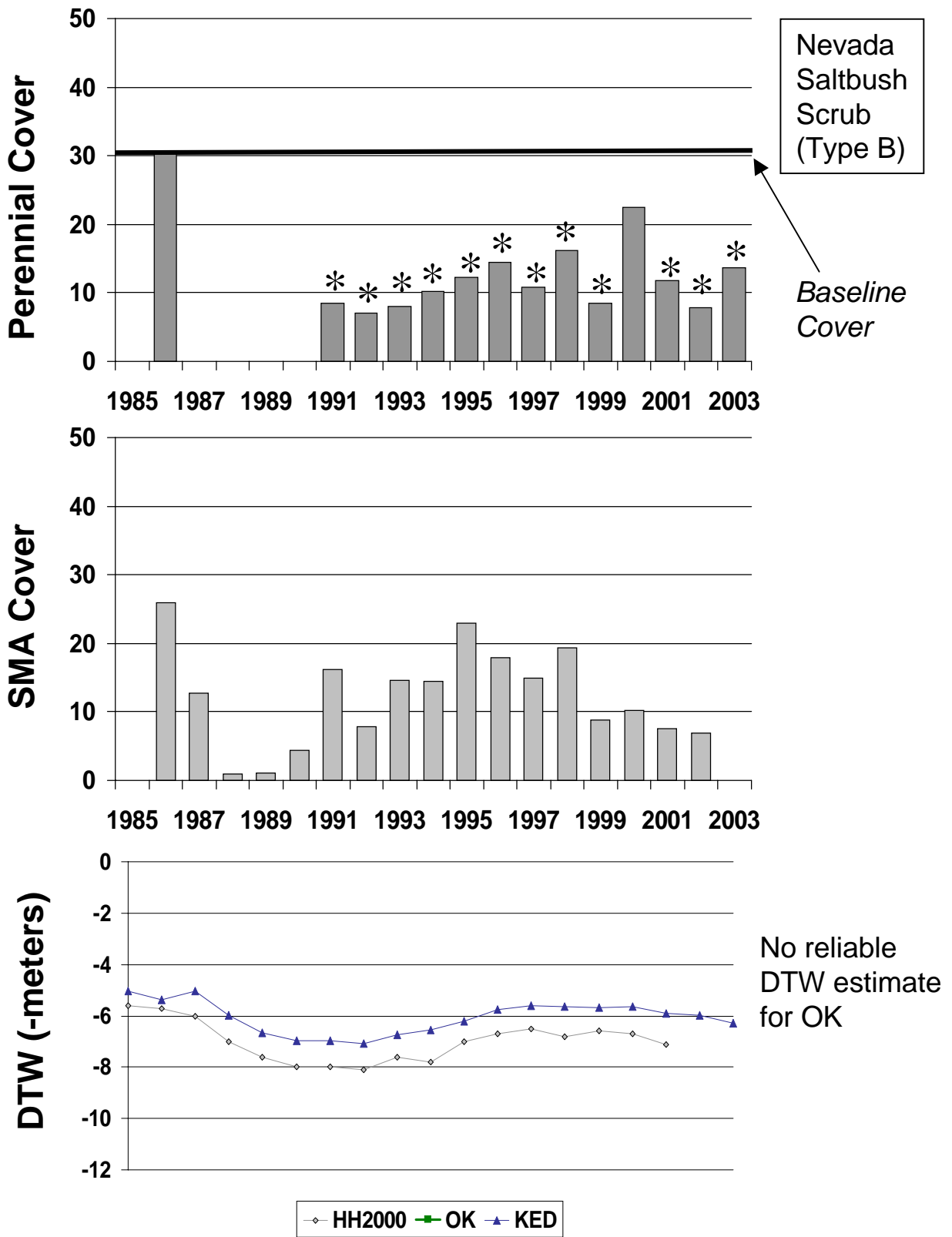


Figure 9. Wellfield: Big Pine. Status 2003: DRP

BGP204

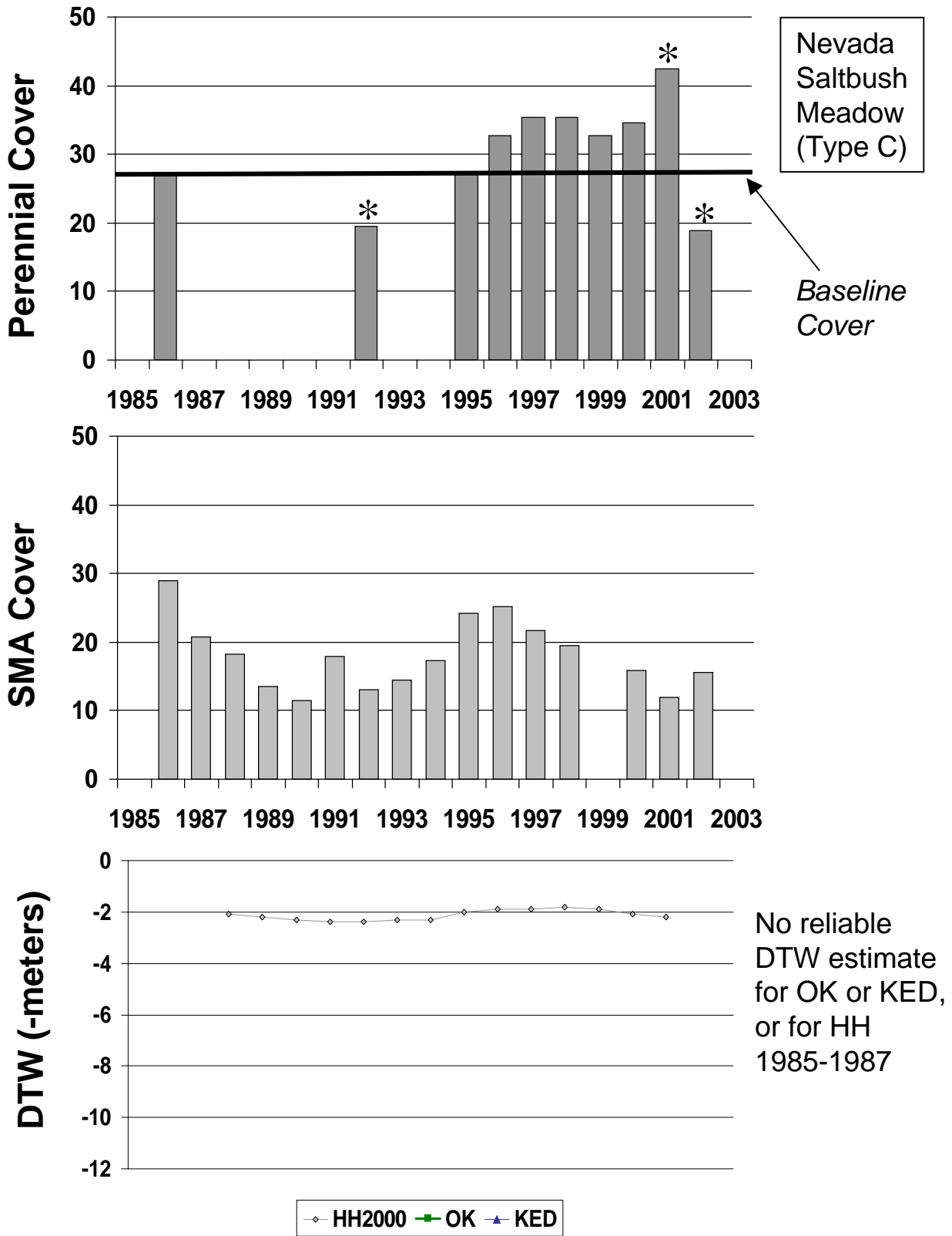


Figure 10. Status 2002: Control

BGP205

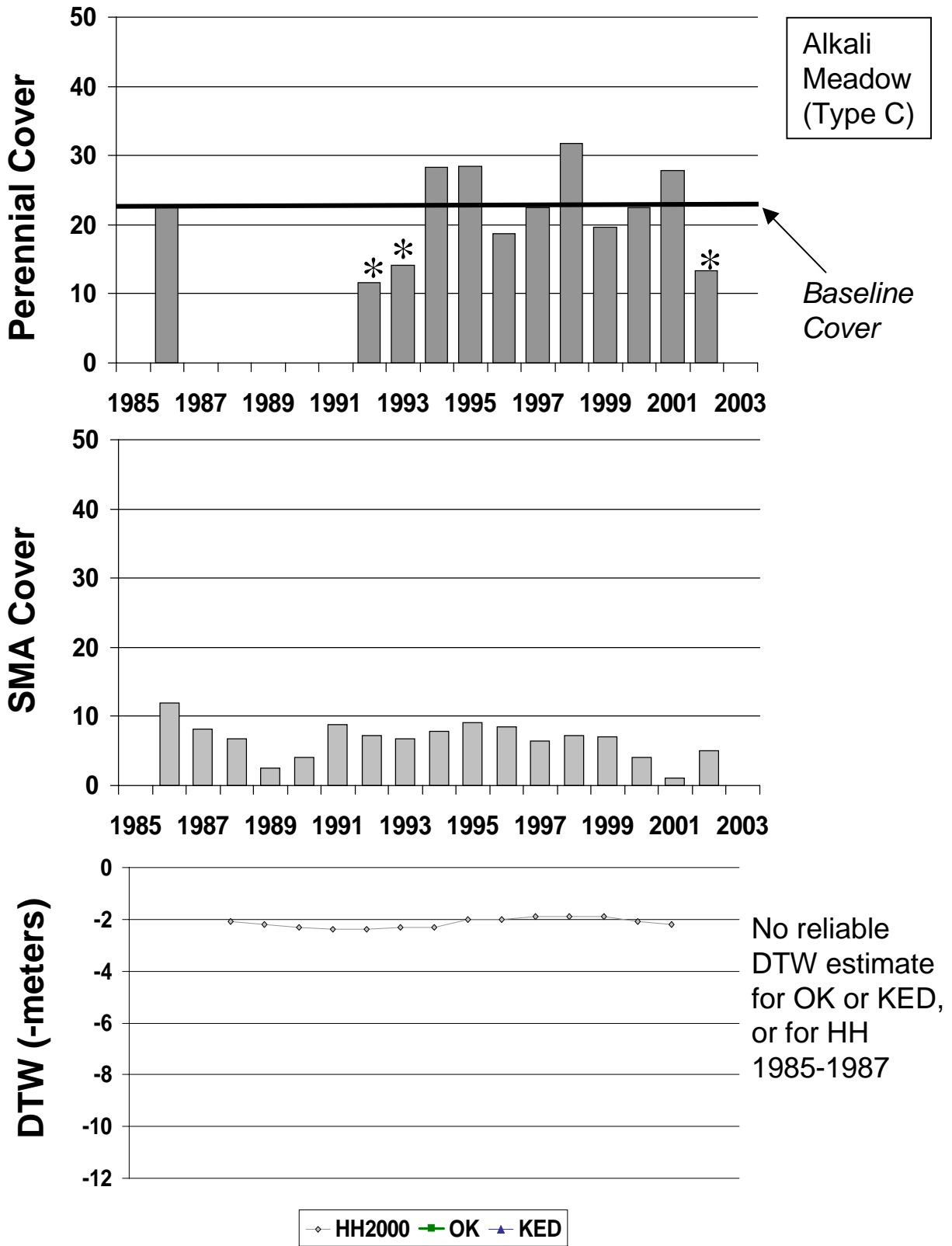


Figure 11. Status 2002: Control

BIS055

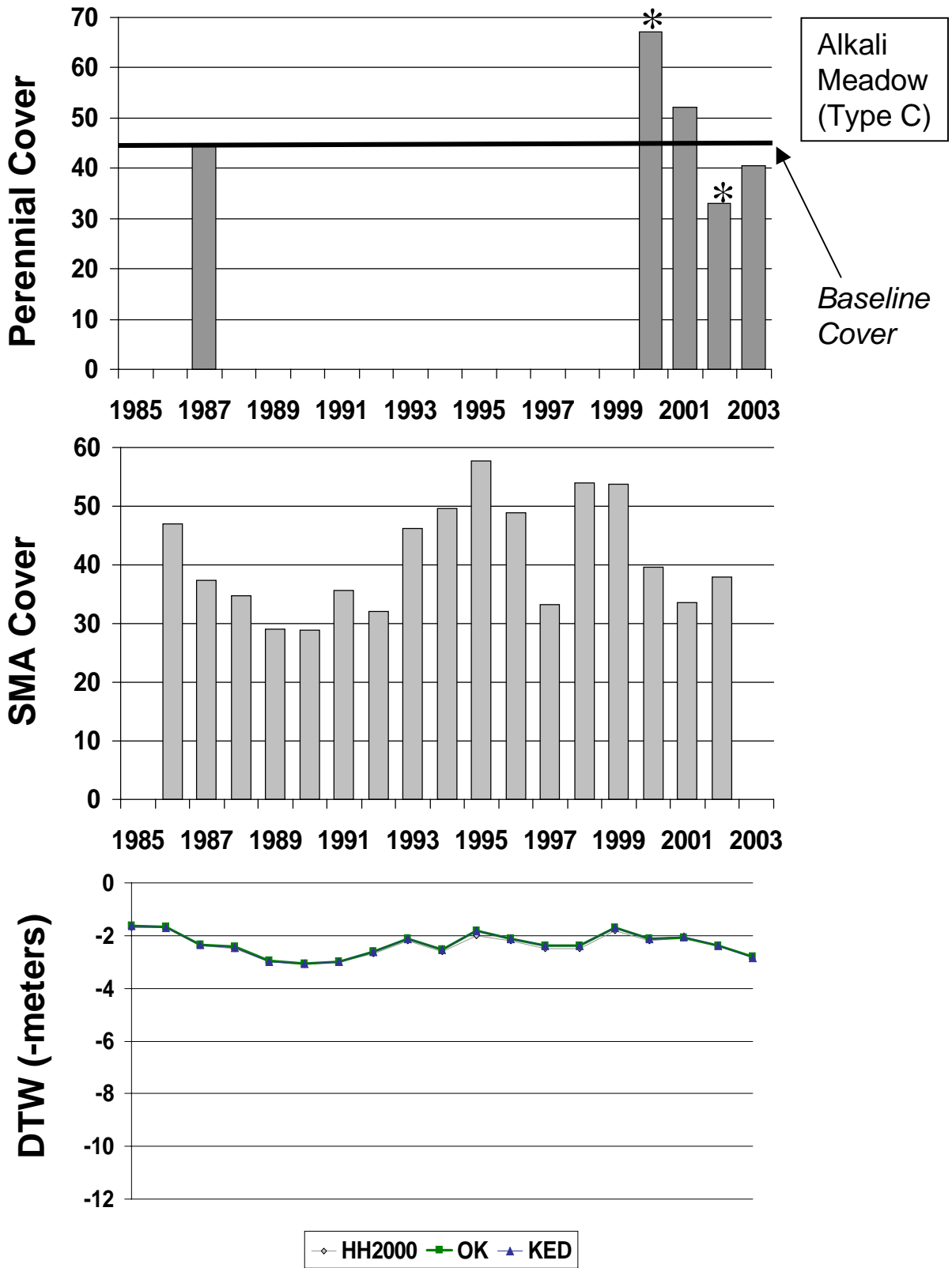


Figure 12. Status 2003: Control

BIS068

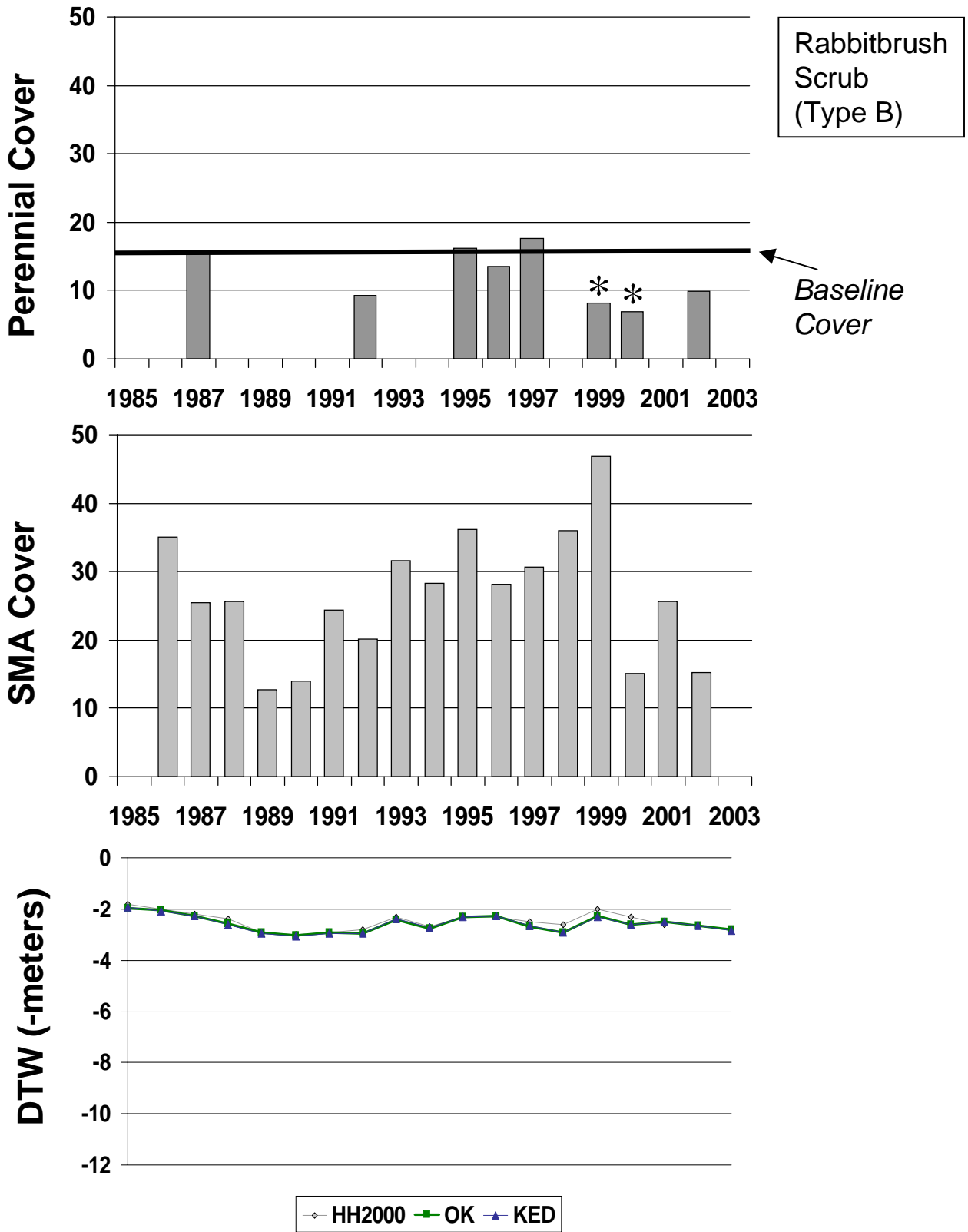


Figure 13. Wellfield: Bishop Cone. Status 2002: DRP

BIS085

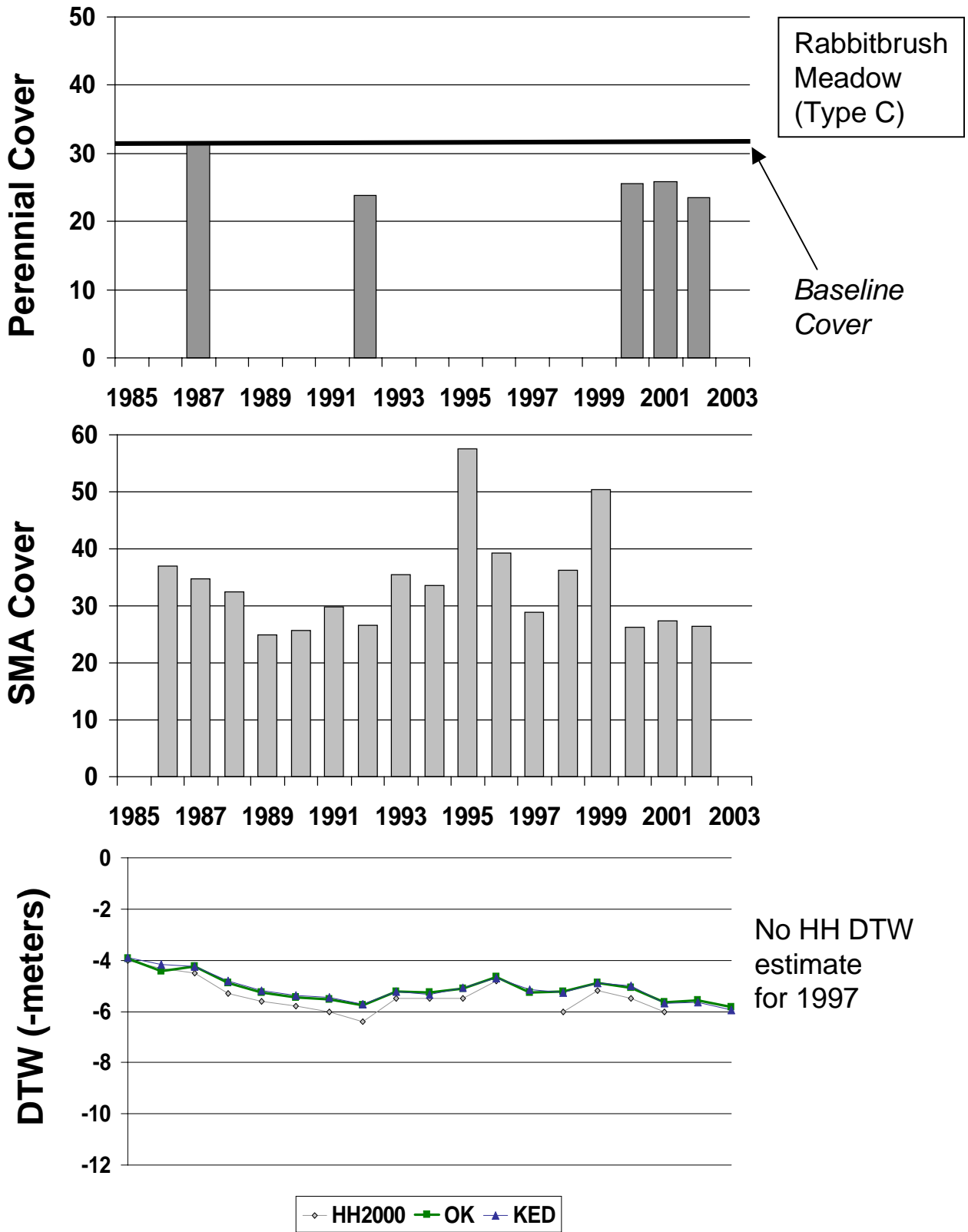


Figure 14. Wellfield: Bishop Cone. Status 2002: DRP

BLK002

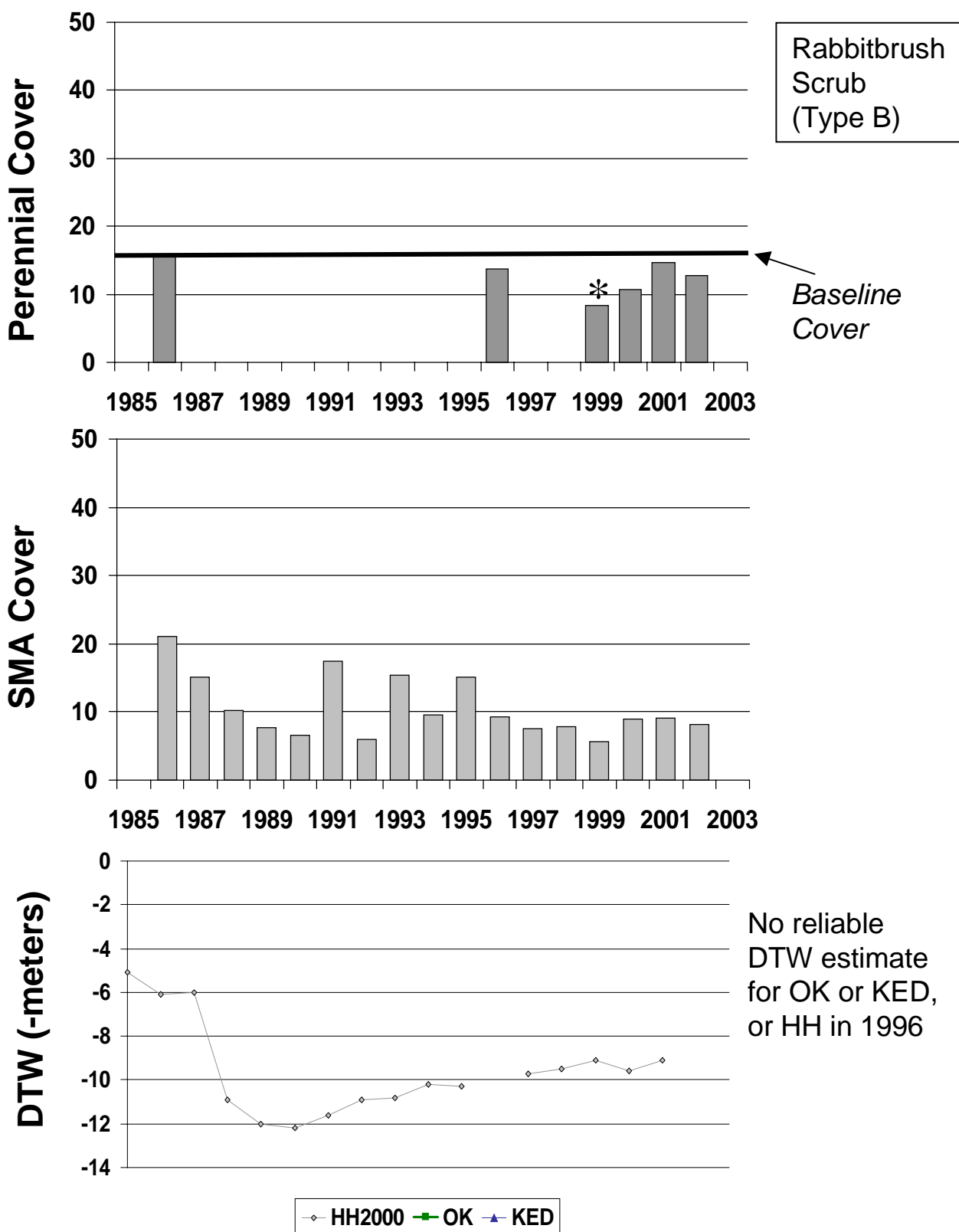


Figure 15. Wellfield: Taboose Aberdeen. Status 2002: DRP

BLK009

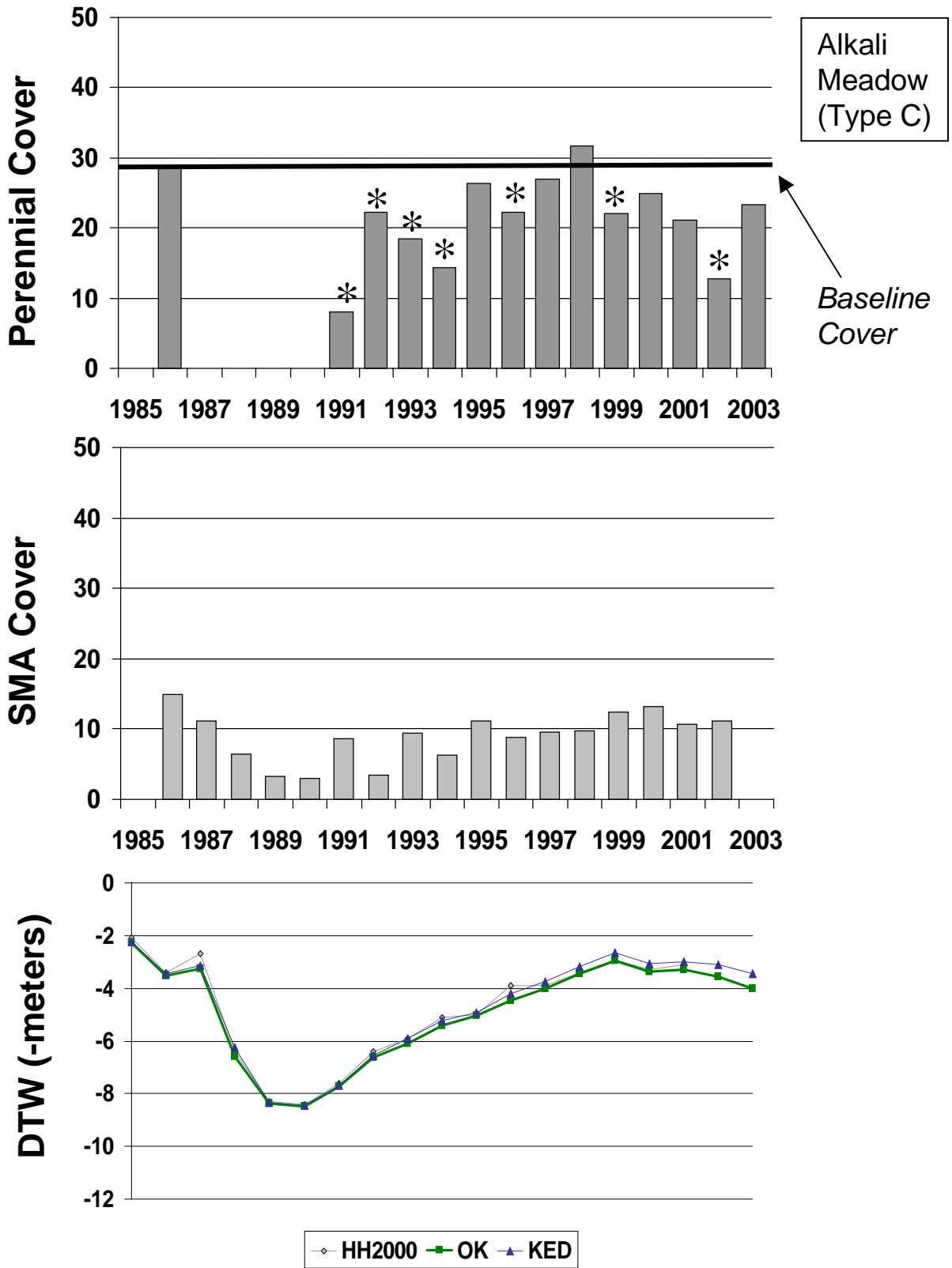


Figure 16. Wellfield: Taboose Aberdeen. Status 2003: DRP

BLK016

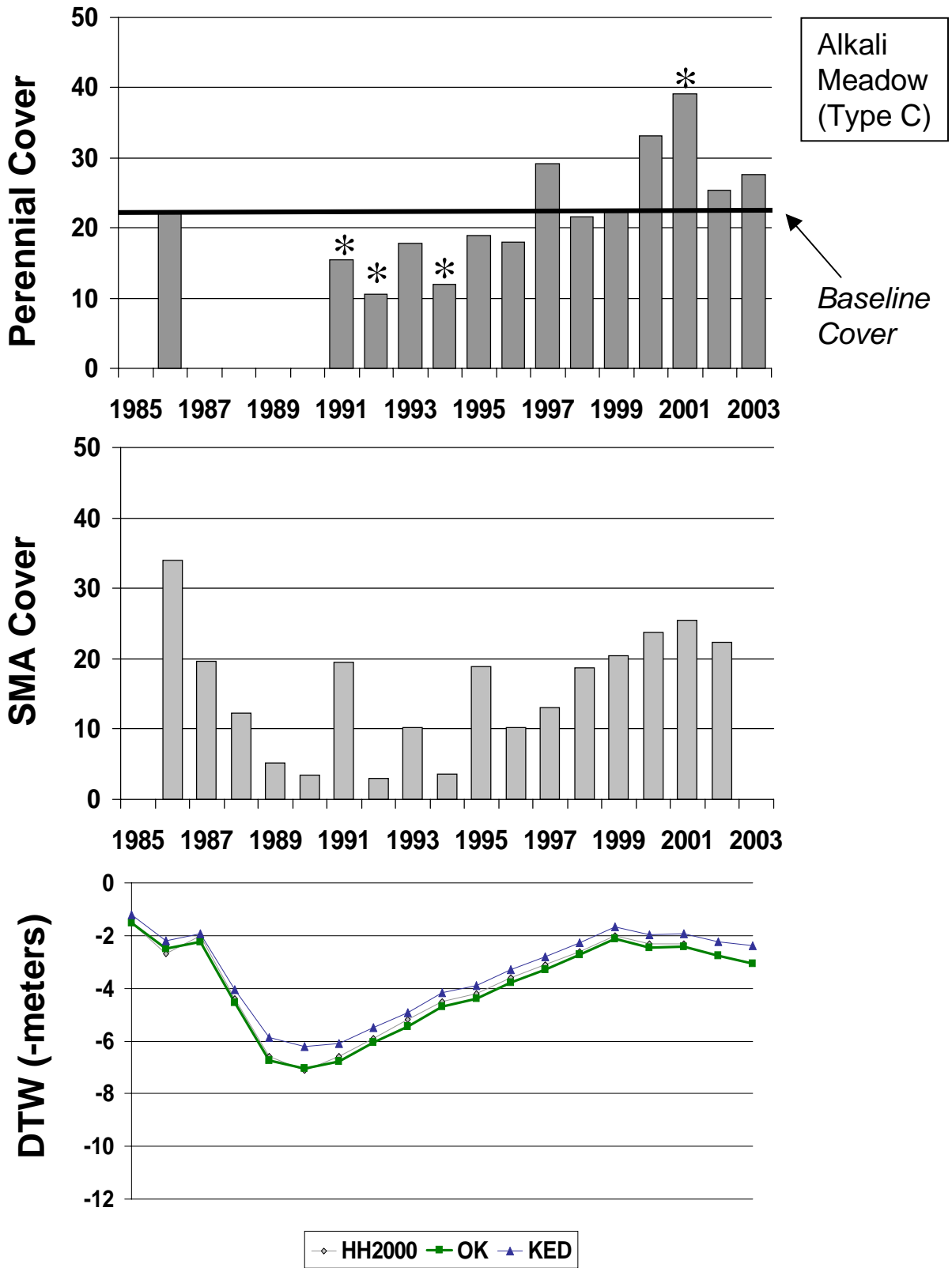


Figure 17. Wellfield: Taboose Aberdeen. Status 2003: DRPfree

BLK021

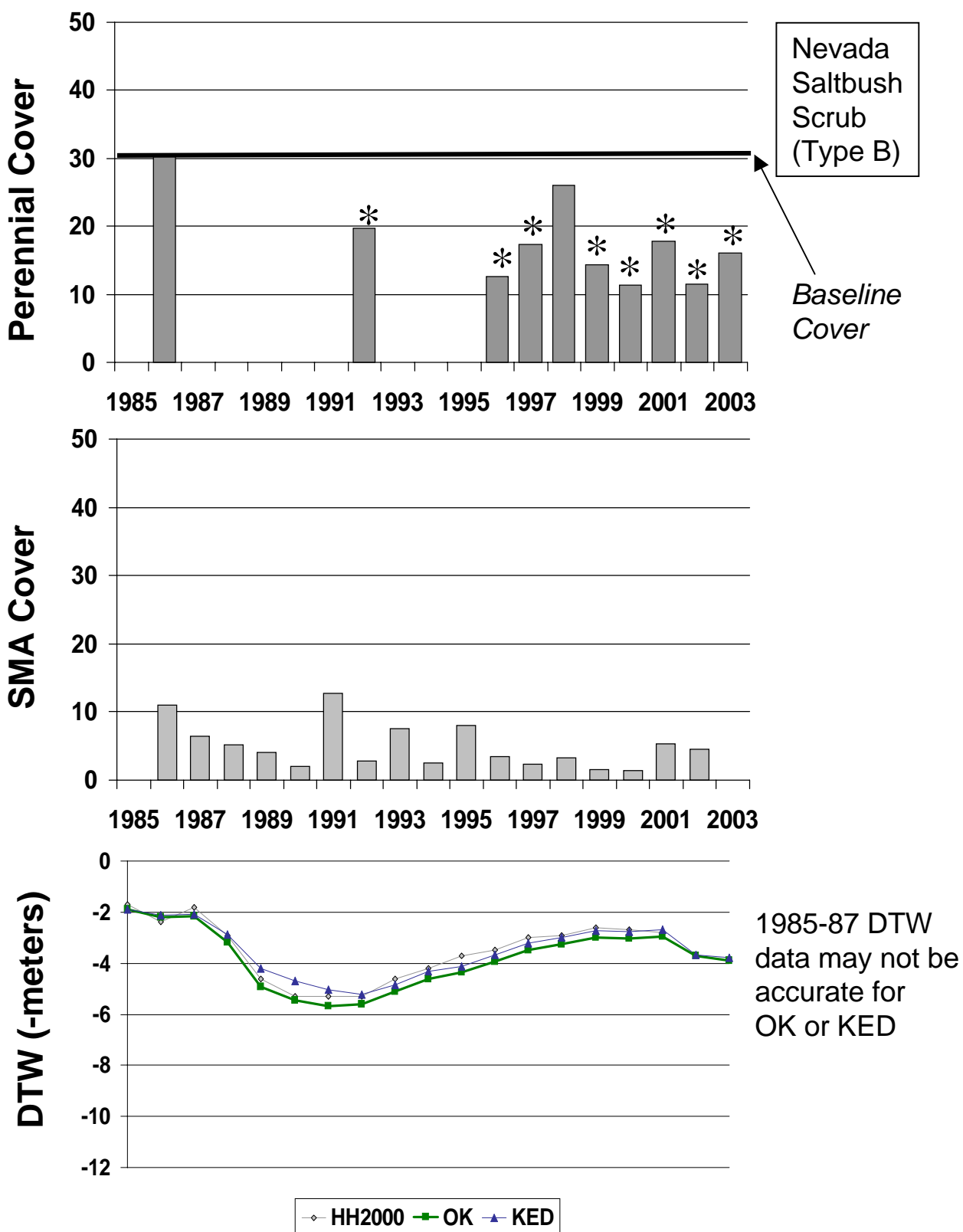


Figure 18. Wellfield: Taboose Aberdeen. Status 2003: DRP

BLK024

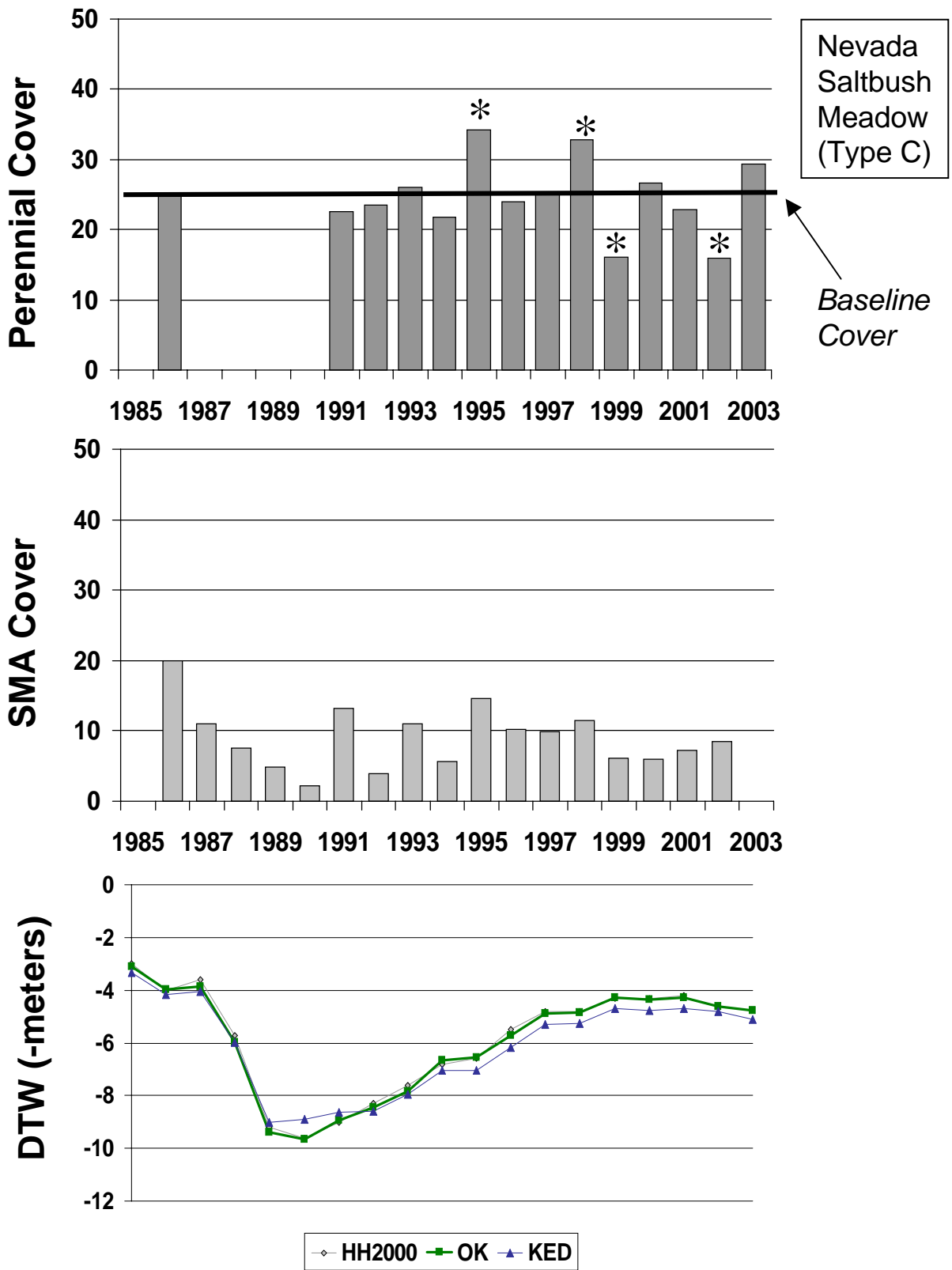


Figure 19. Wellfield: Taboose Aberdeen. Status 2003: DRP

BLK033

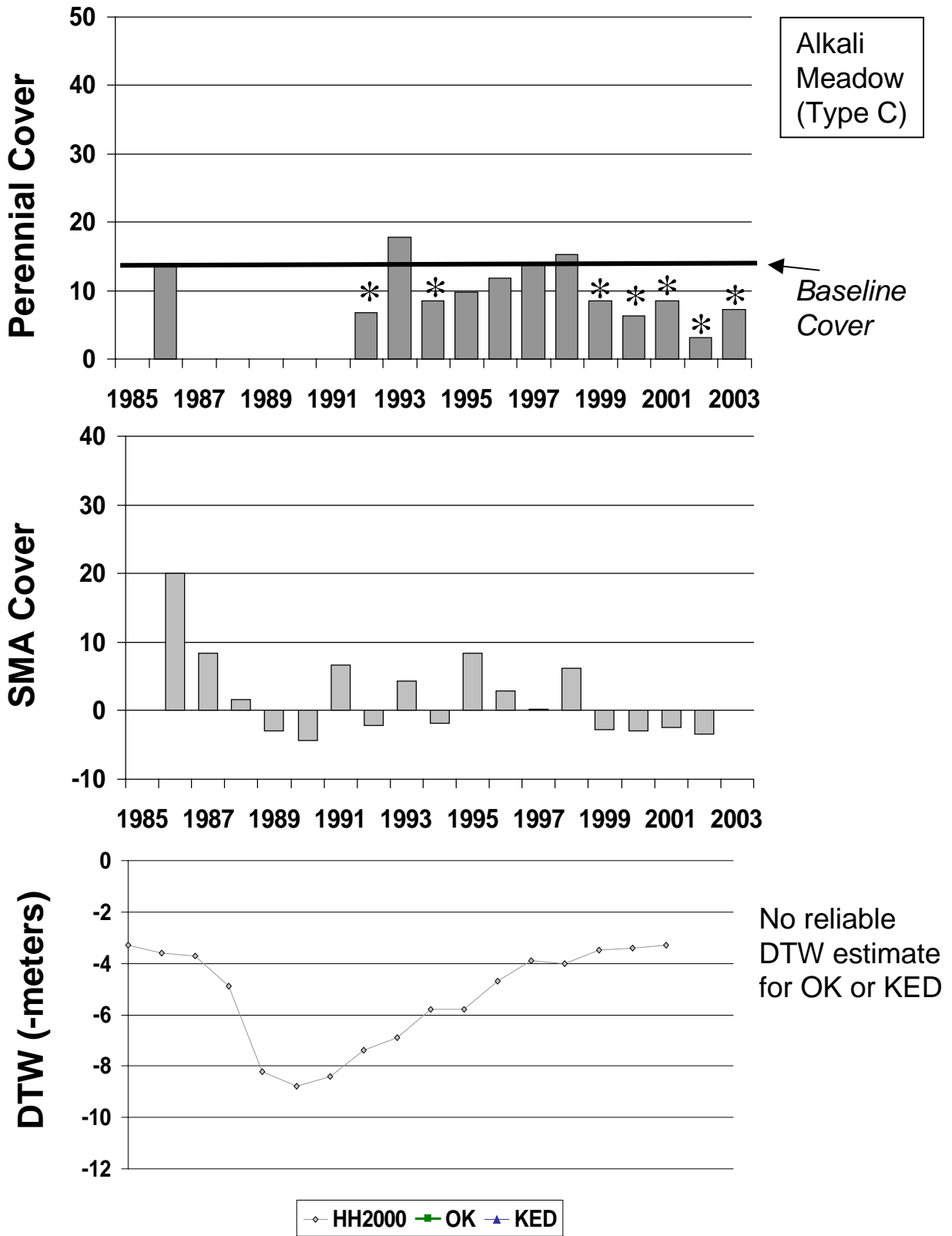


Figure 20. Wellfield: Taboose Aberdeen. Status 2003: DRP

BLK039

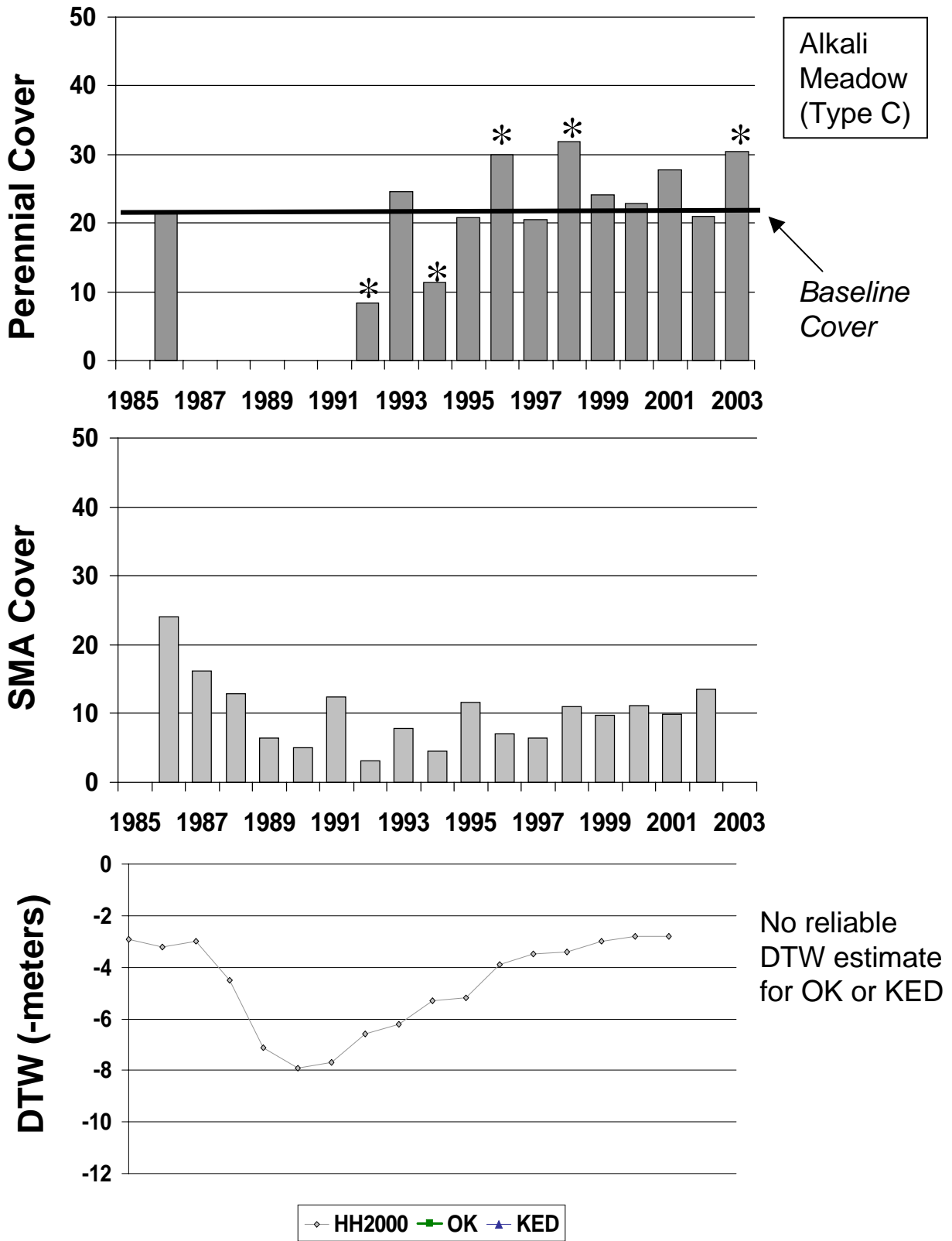


Figure 21. Wellfield: Taboose Aberdeen. Status 2003: DRPfree

BLK044

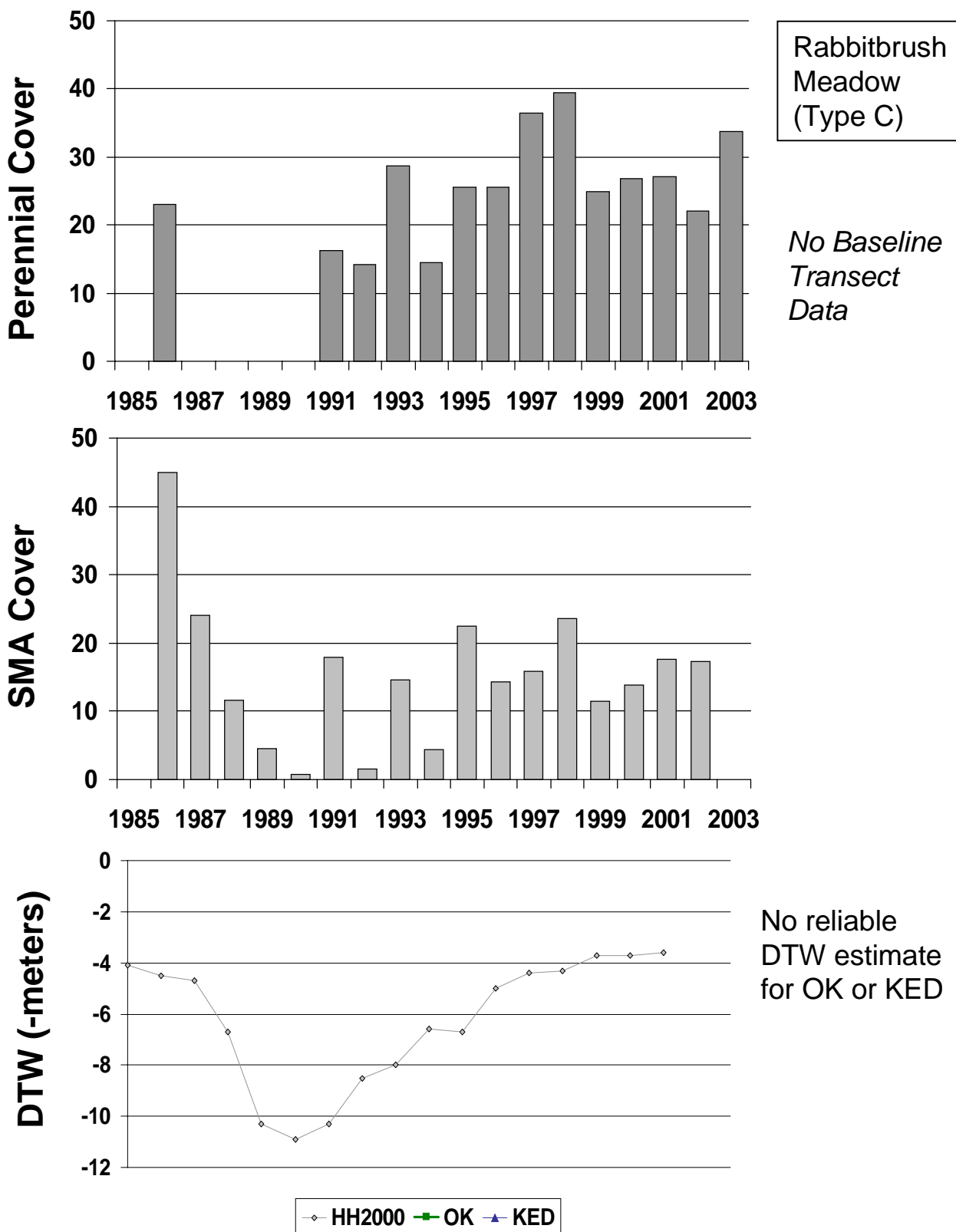


Figure 22. Wellfield: Taboose Aberdeen. Status 2003: DRPfree

BLK069

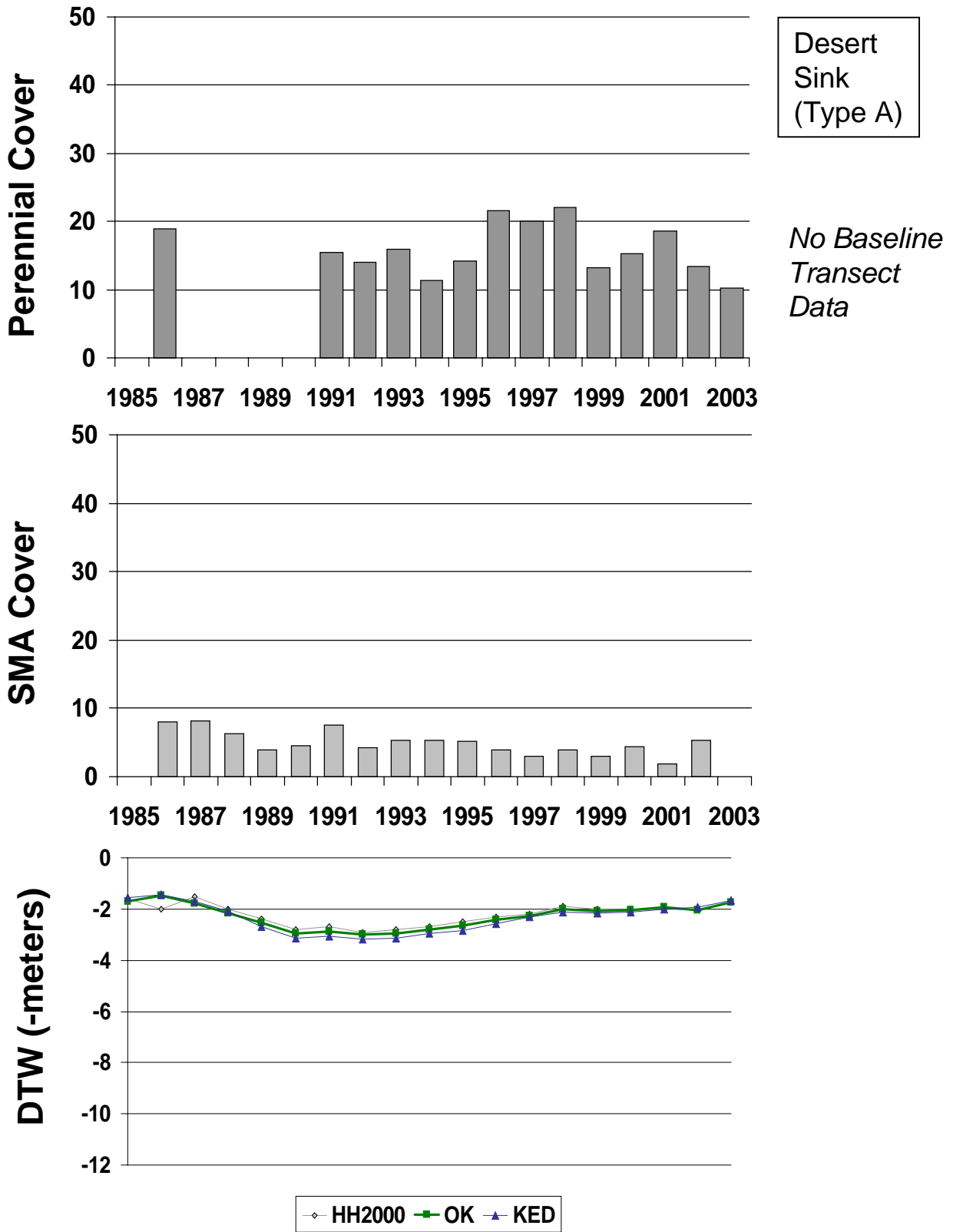


Figure 23. Wellfield: Thibaut Sawmill. Status 2003: DRPfree

BLK074

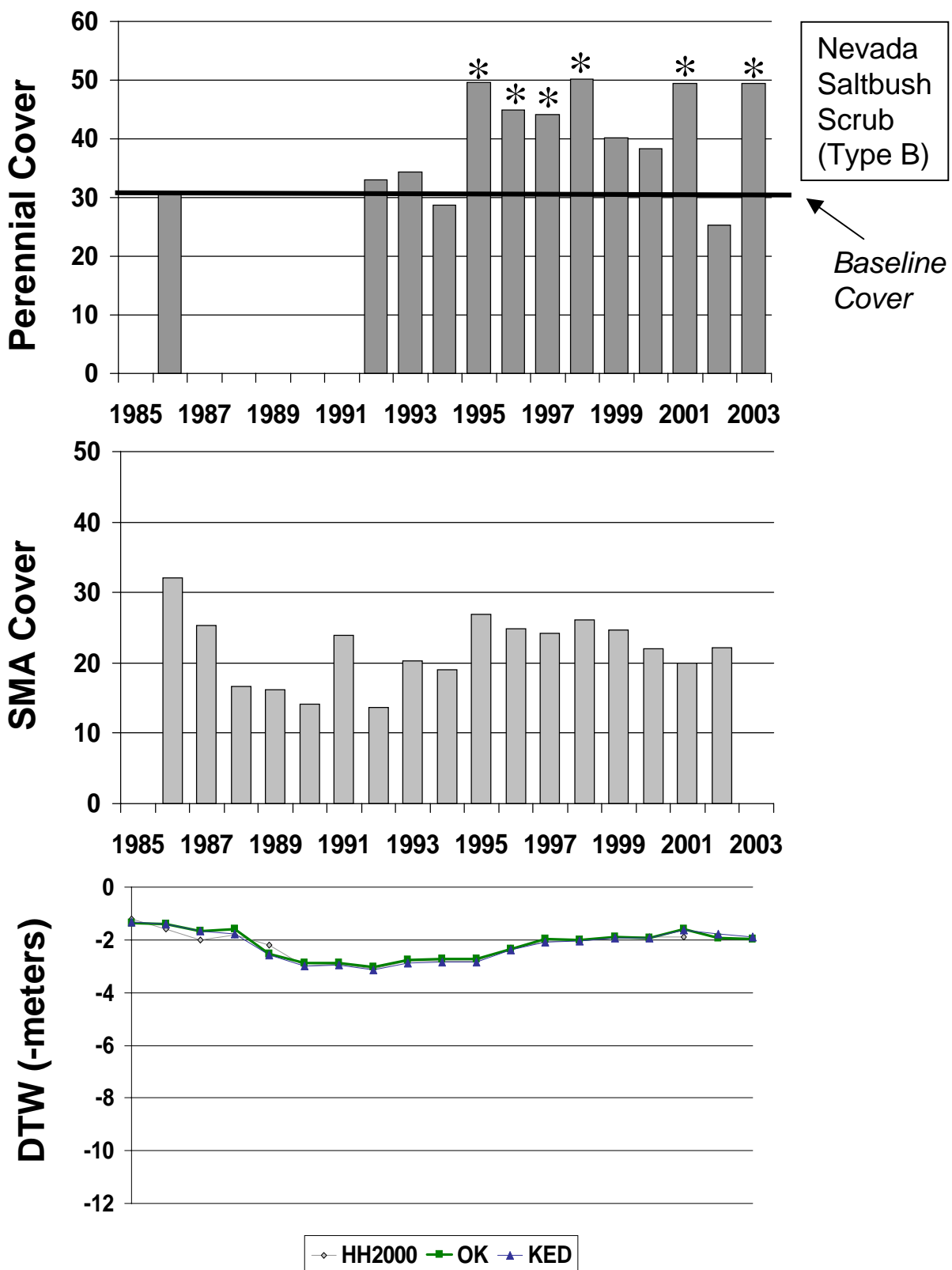


Figure 24. Wellfield: Thibaut Sawmill. Status 2003: DRPfree

BLK075

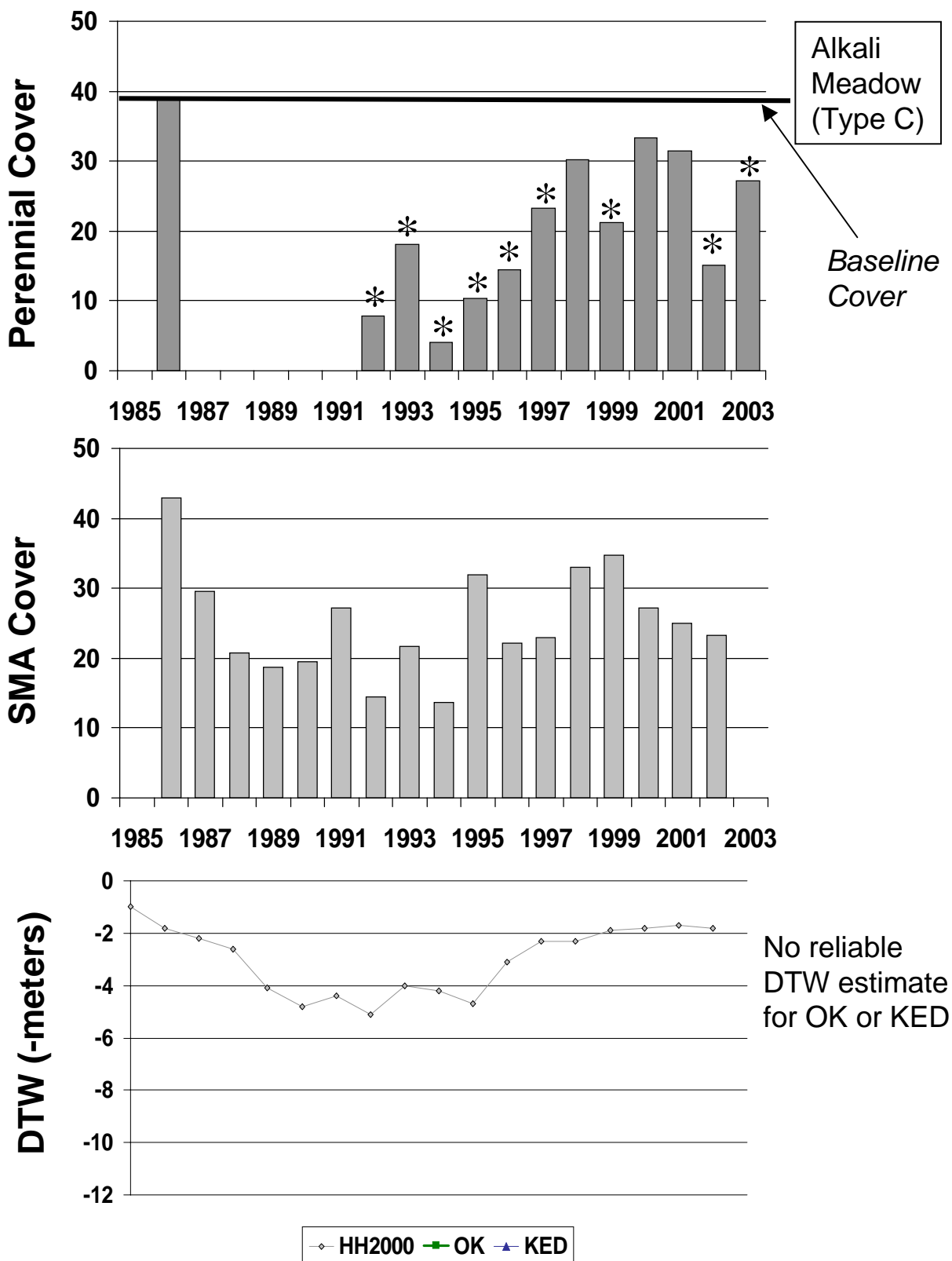


Figure 25. Wellfield: Thibaut Sawmill. Status 2003: DRP

BLK077

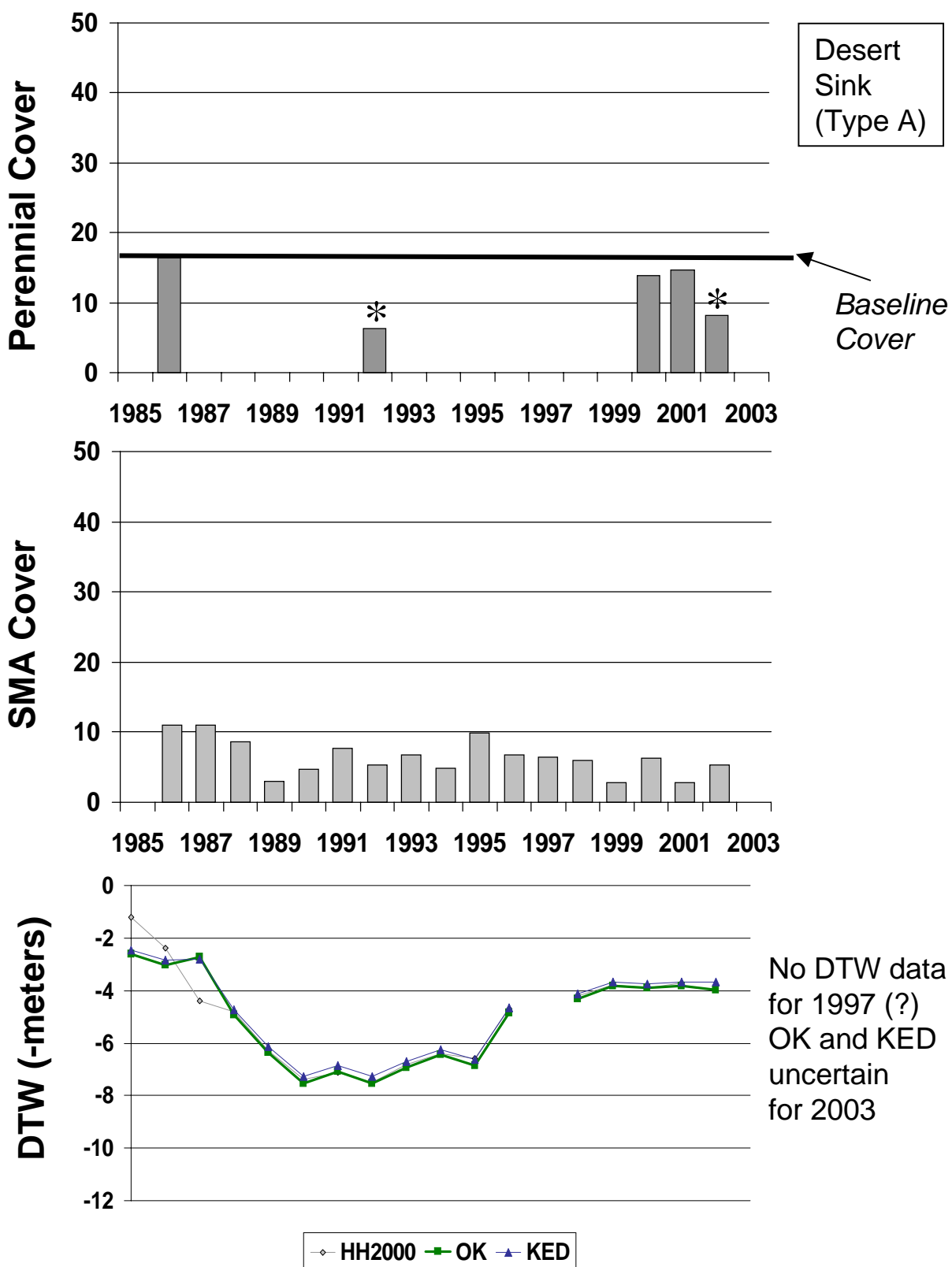


Figure 26. Wellfield: Thibaut Sawmill. Status 2002: DRP

BLK094

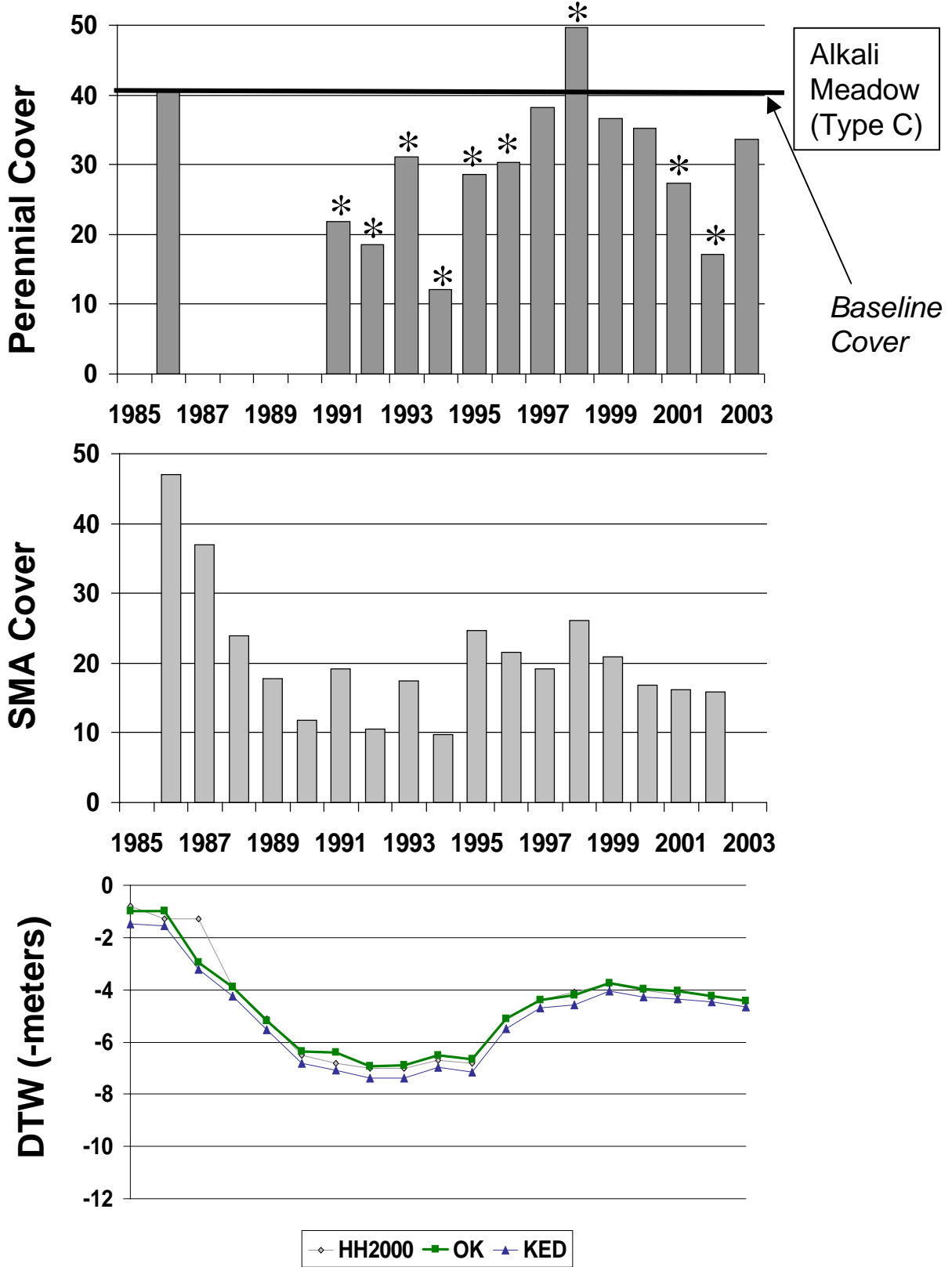


Figure 27. Wellfield: Thibaut Sawmill. Status 2003: DRP

BLK099

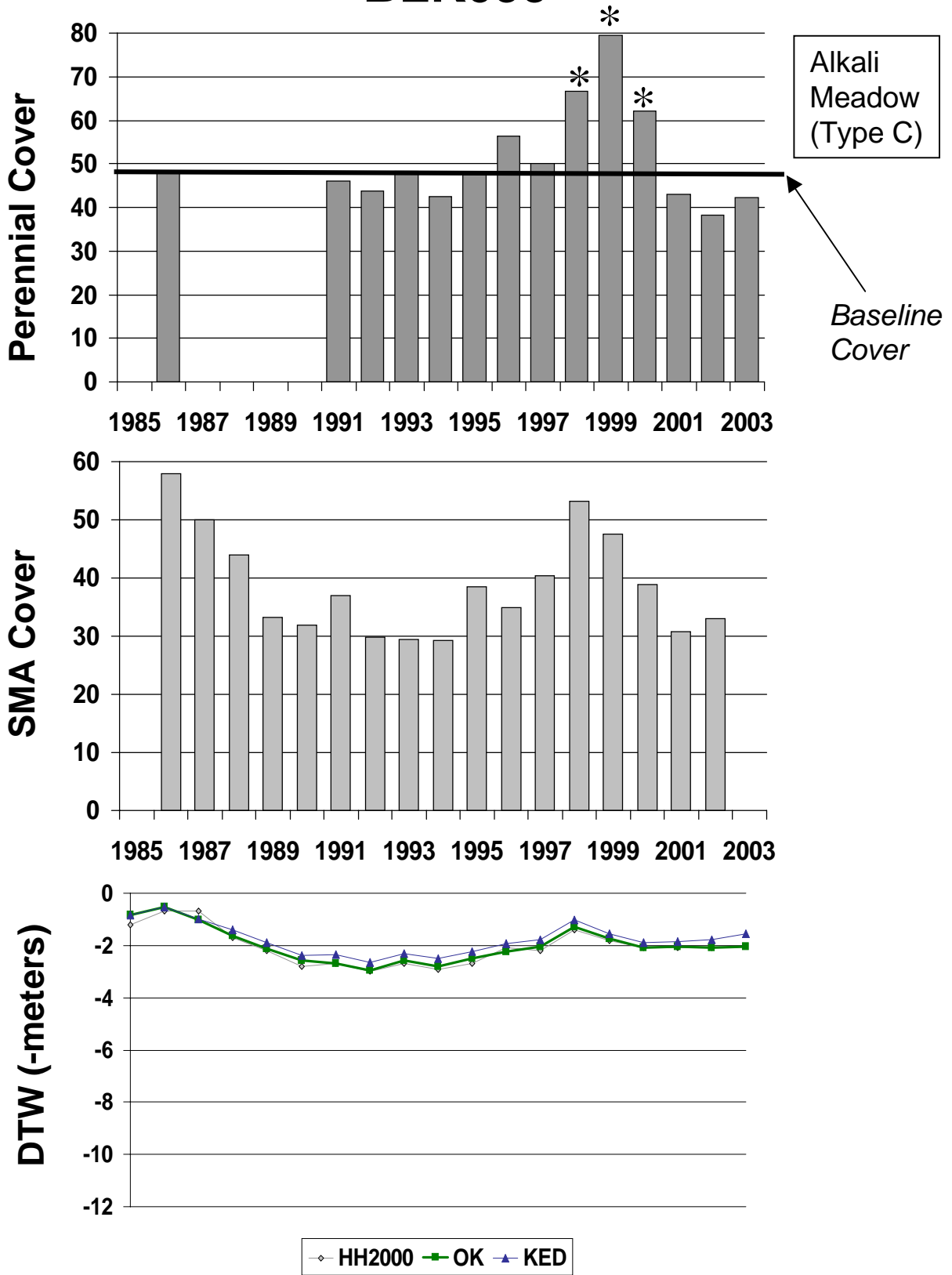


Figure 28. Wellfield: Thibaut Sawmill. Status 2003: DRPfree

BLK115

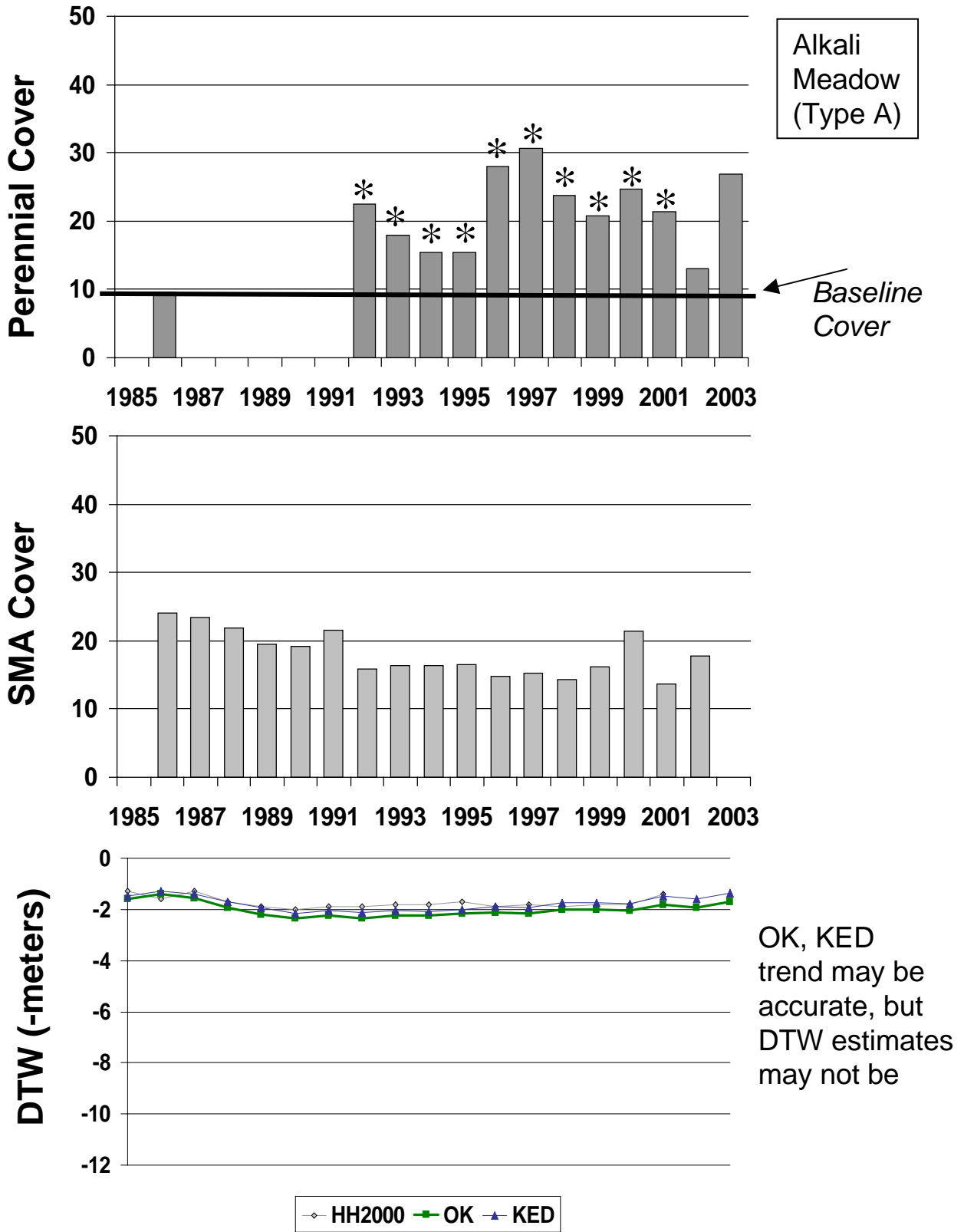


Figure 29. Status 2003: Control

BLK142

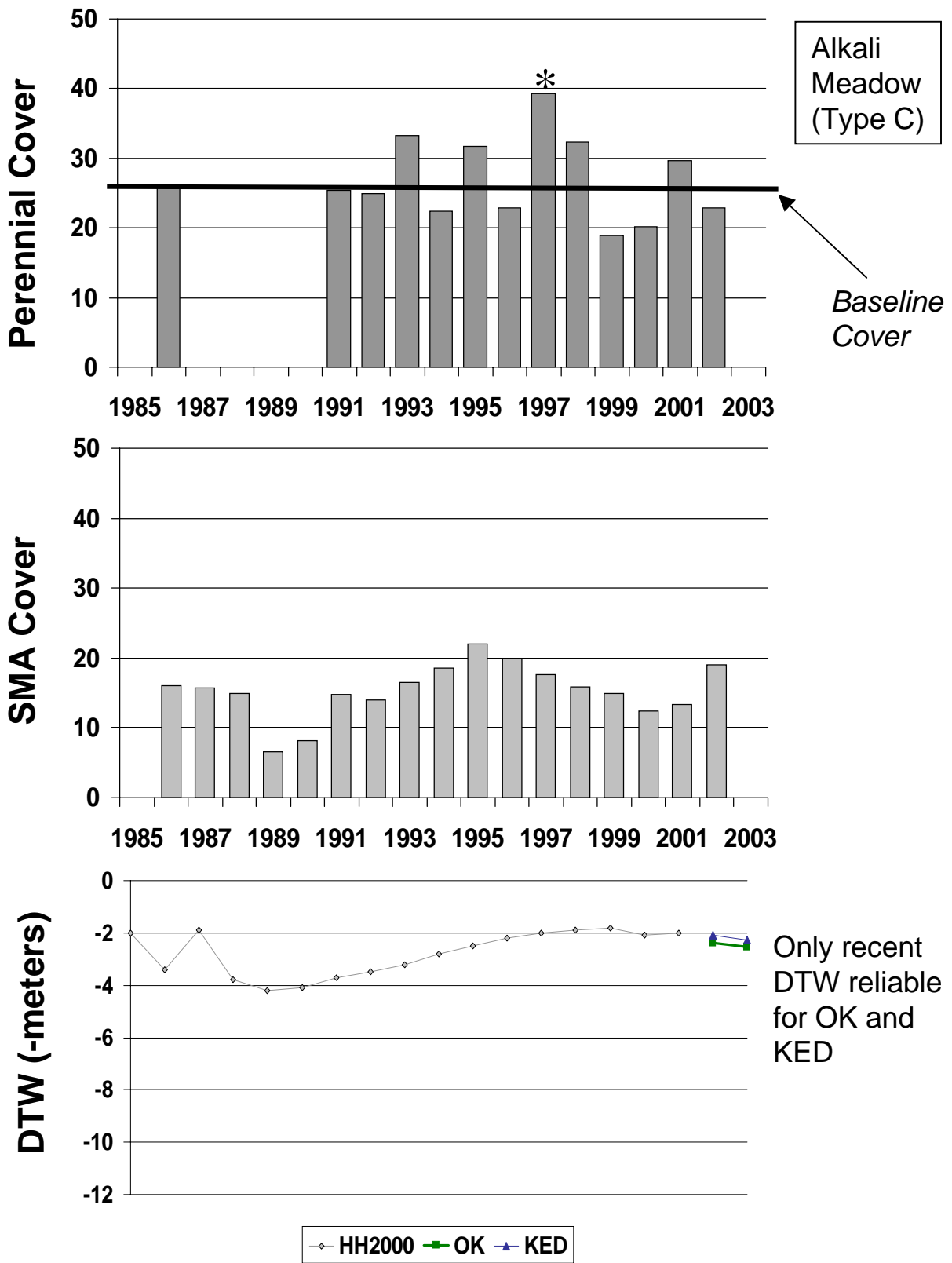


Figure 30. Wellfield: Taboose Aberdeen. Status 2002: DRPfree

FSL051

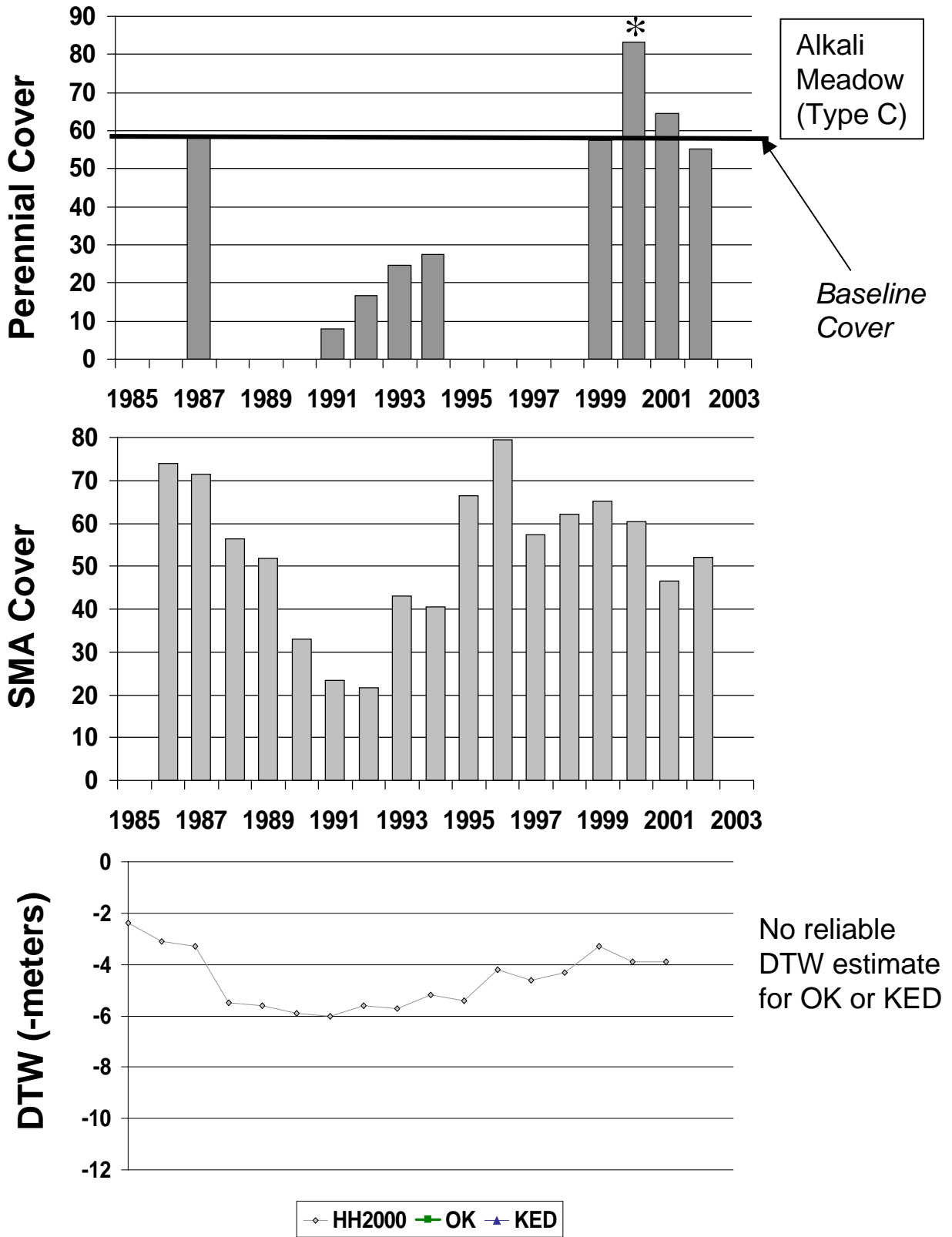


Figure 31. Wellfield: Laws. Status 2002: DRPfree

FSL065

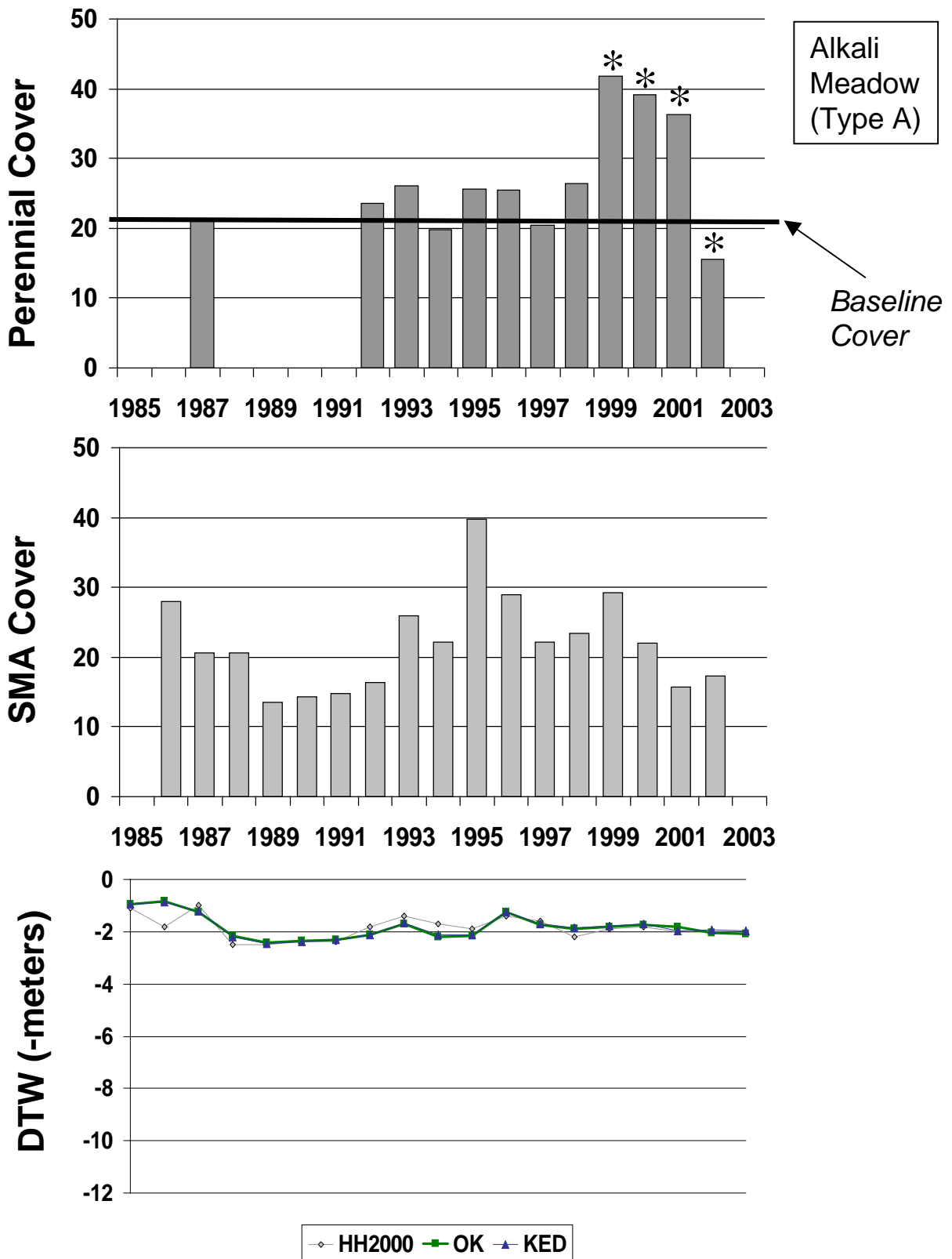


Figure 32. Wellfield: Bishop Cone. Status 2002: DRPfree

FSL116

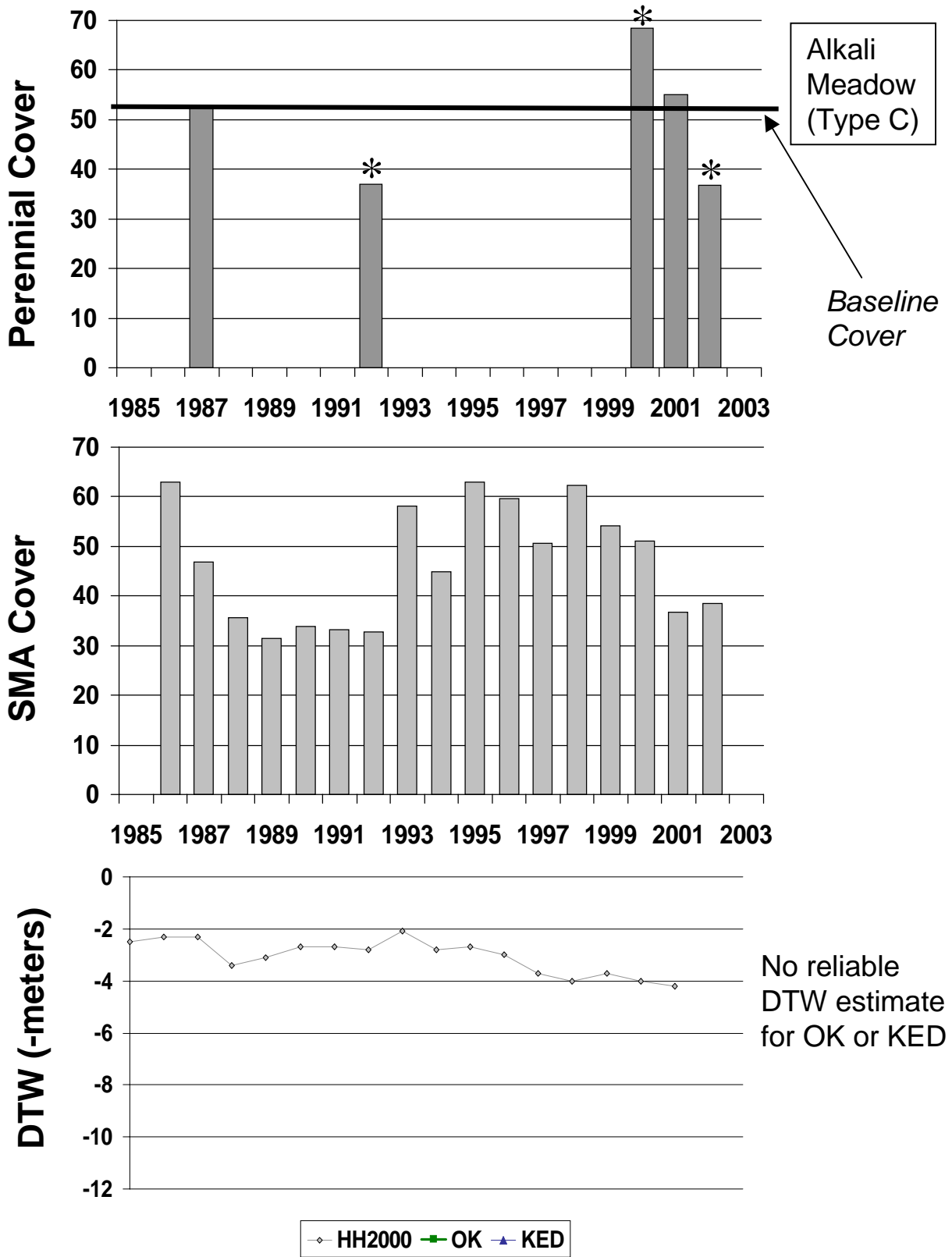


Figure 33. Wellfield: Bishop Cone. Status 2002: DRPfree

FSL123

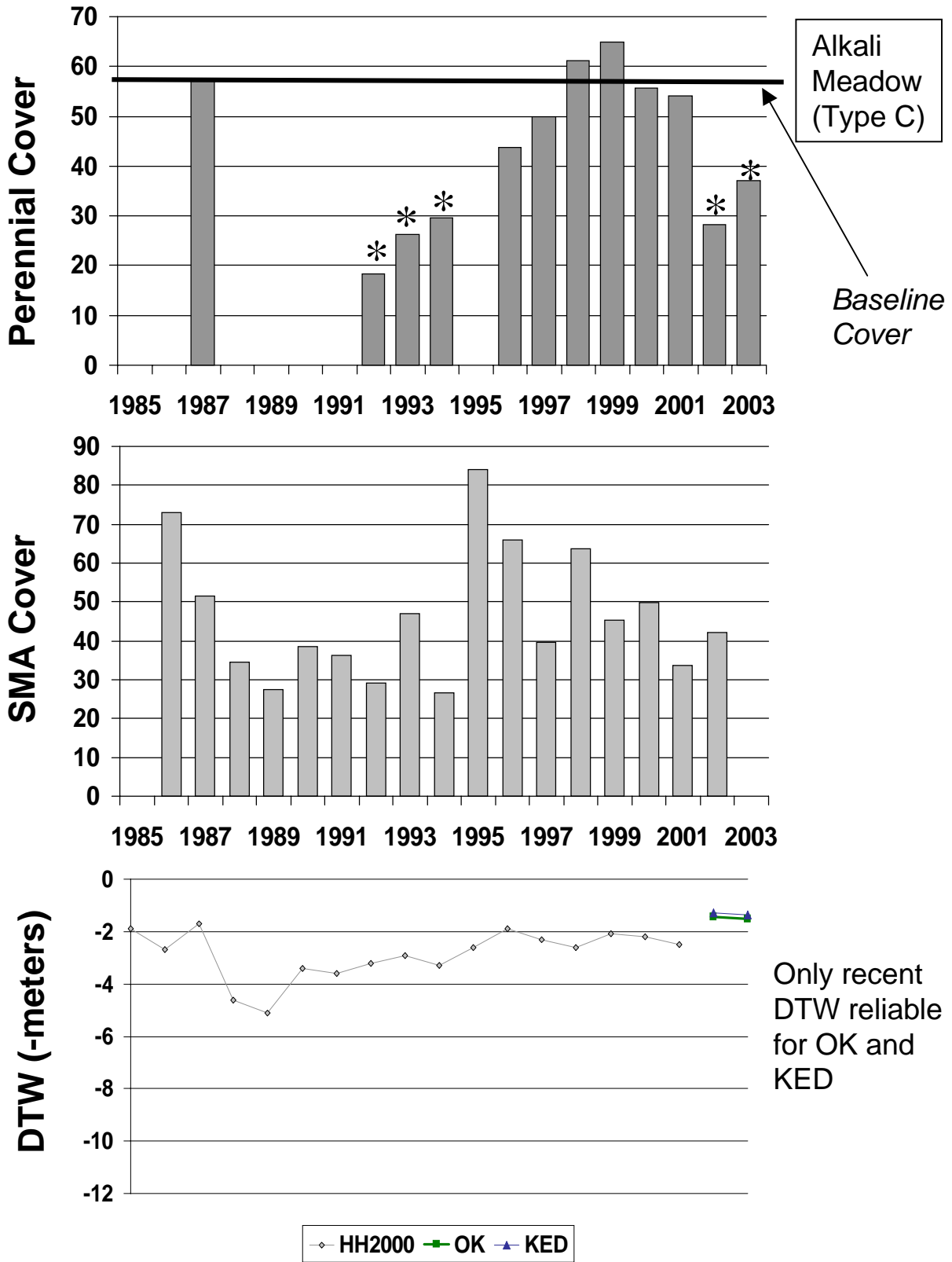


Figure 34. Wellfield: Bishop Cone. Status 2003: DRPfree

FSL187

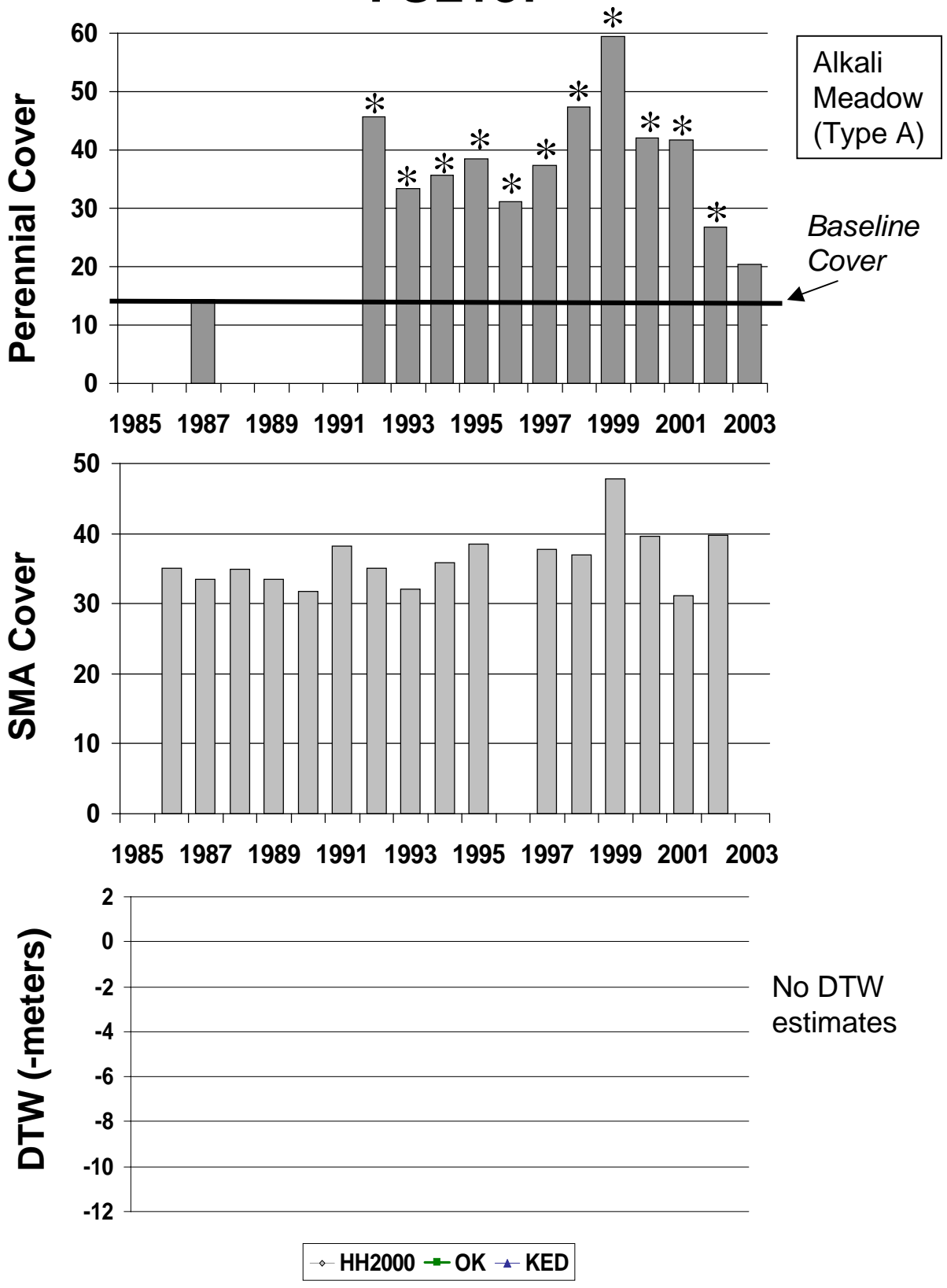


Figure 35. Status 2003: Control

FSP004

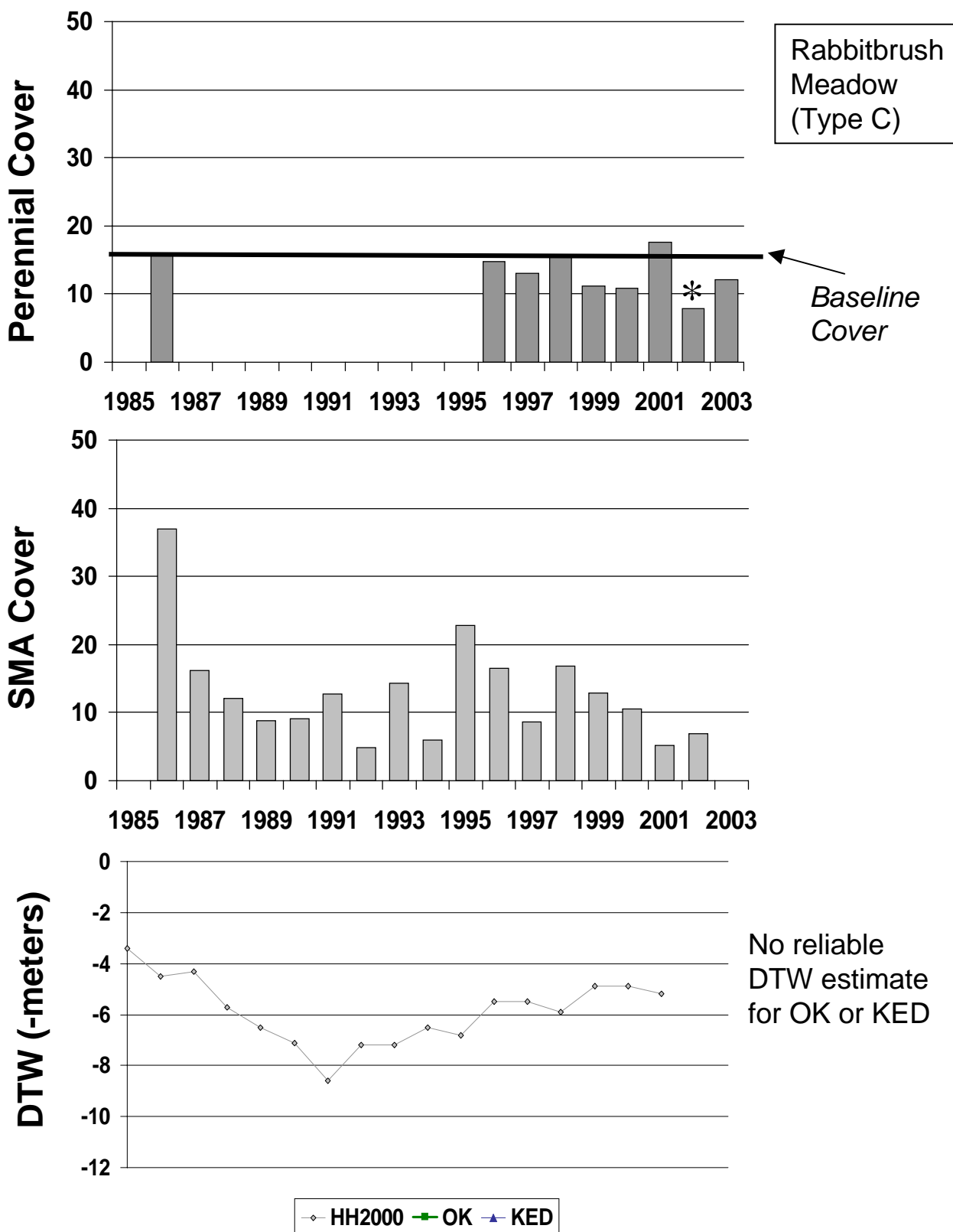


Figure 36. Wellfield: Big Pine. Status 2003: DRP

FSP006

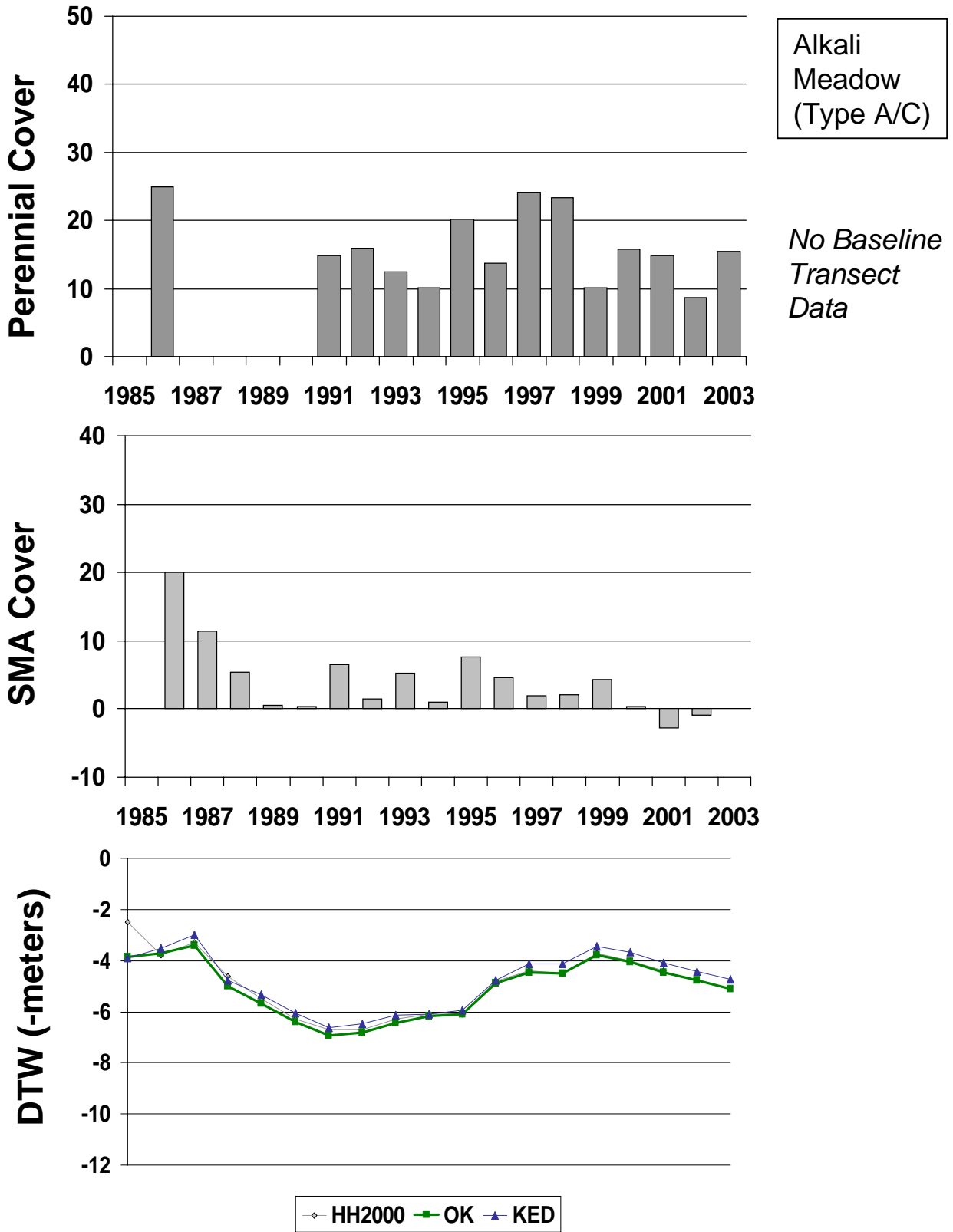


Figure 37. Wellfield: Big Pine. Status 2003: DRP

IND011

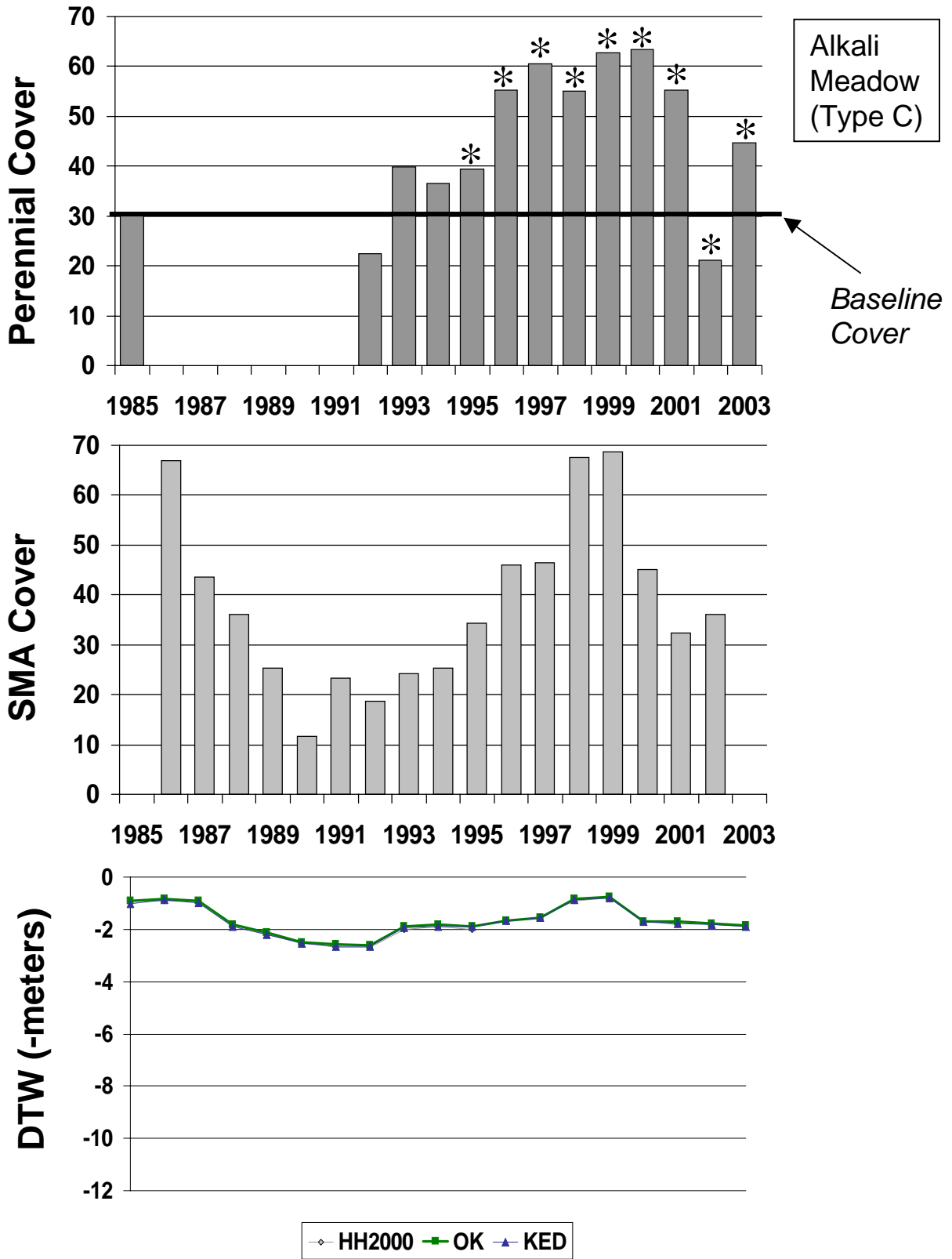


Figure 38. Wellfield: Independence Oak. Status 2003: DRPfree

IND019

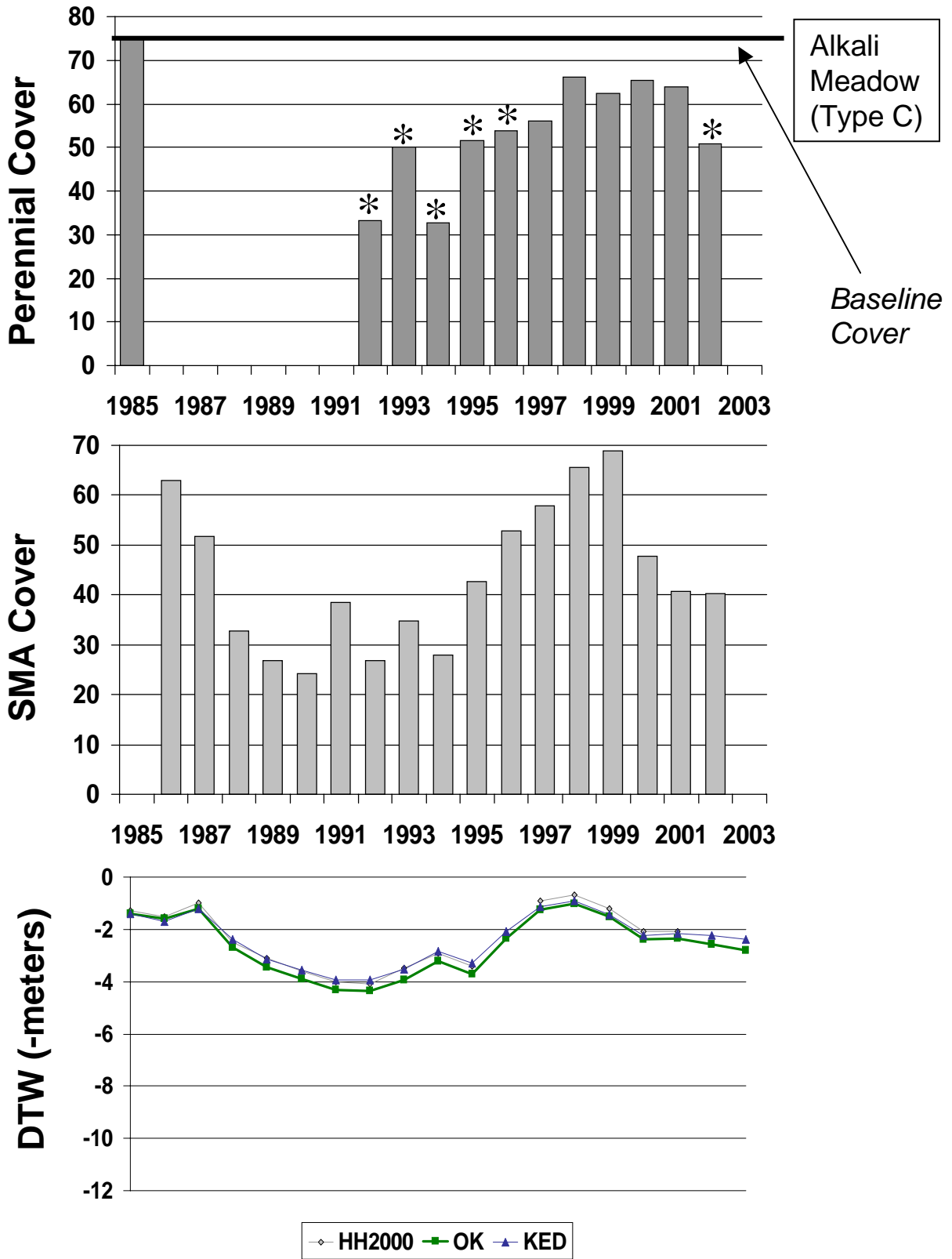


Figure 39. Wellfield: Independence Oak. Status 2002: DRPfree

IND029

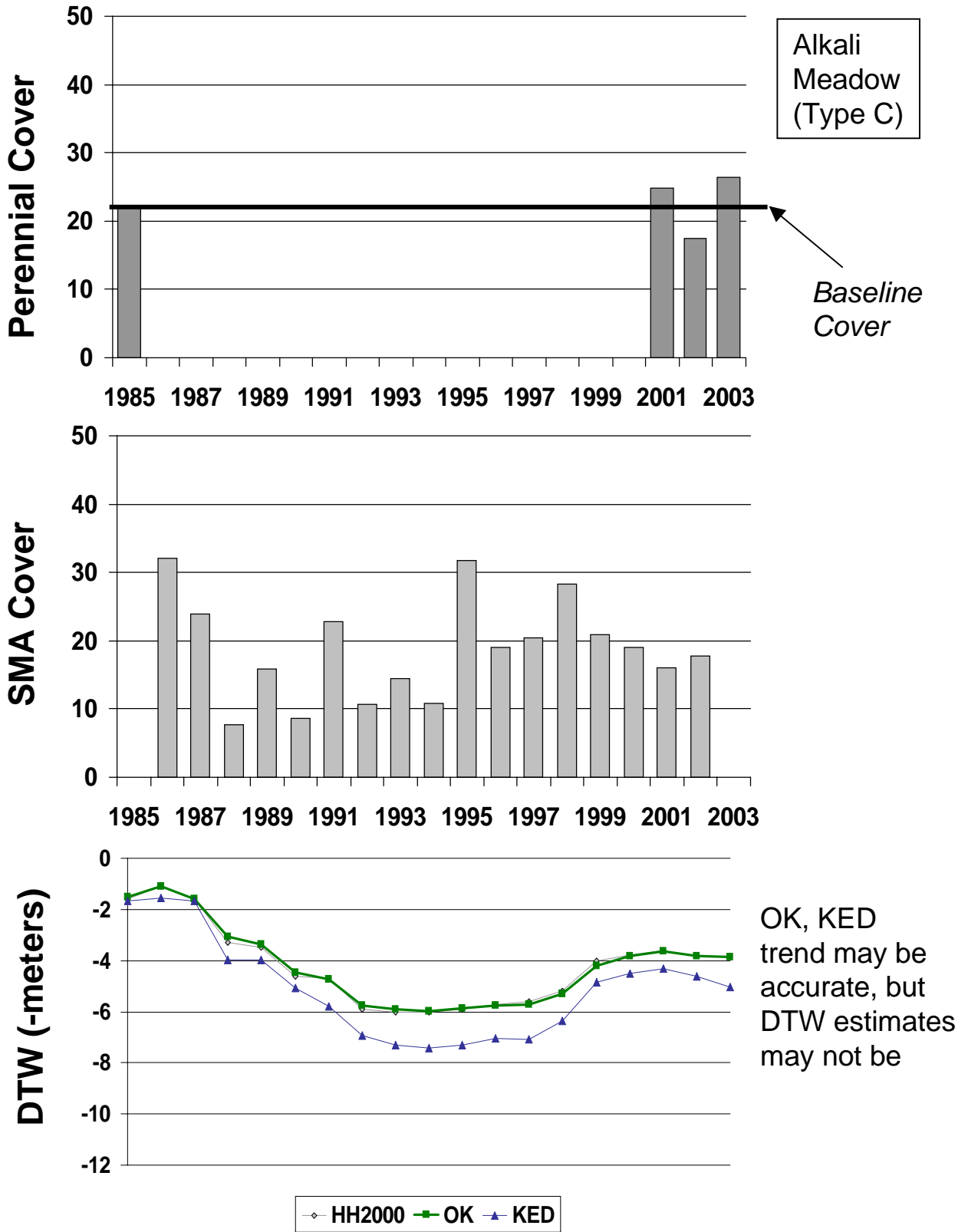


Figure 40. Wellfield: Thibaut Sawmill. Status 2003: DRP

IND035

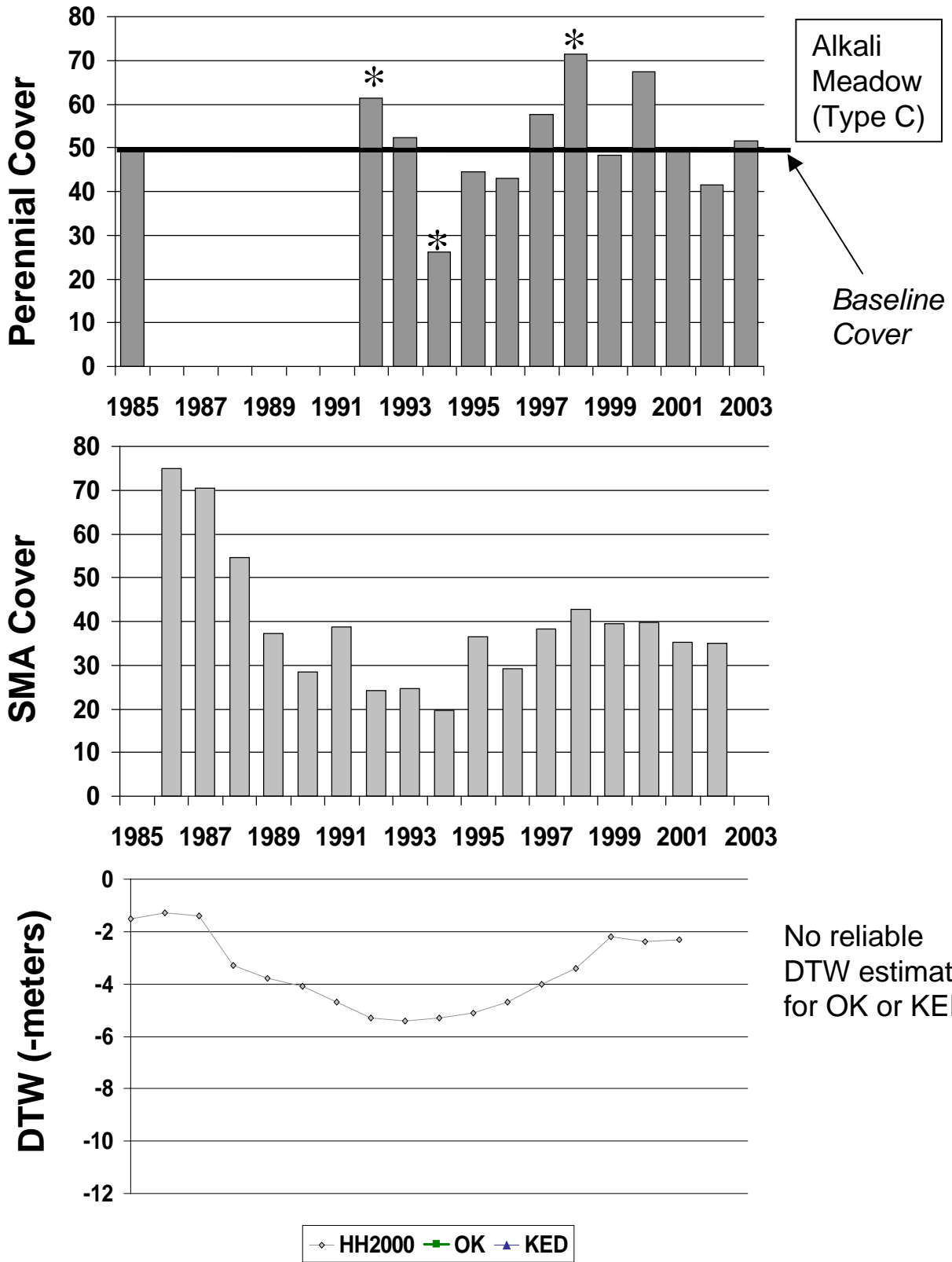


Figure 41. Wellfield: Thibaut Sawmill. Status 2003: DRPfree

IND064

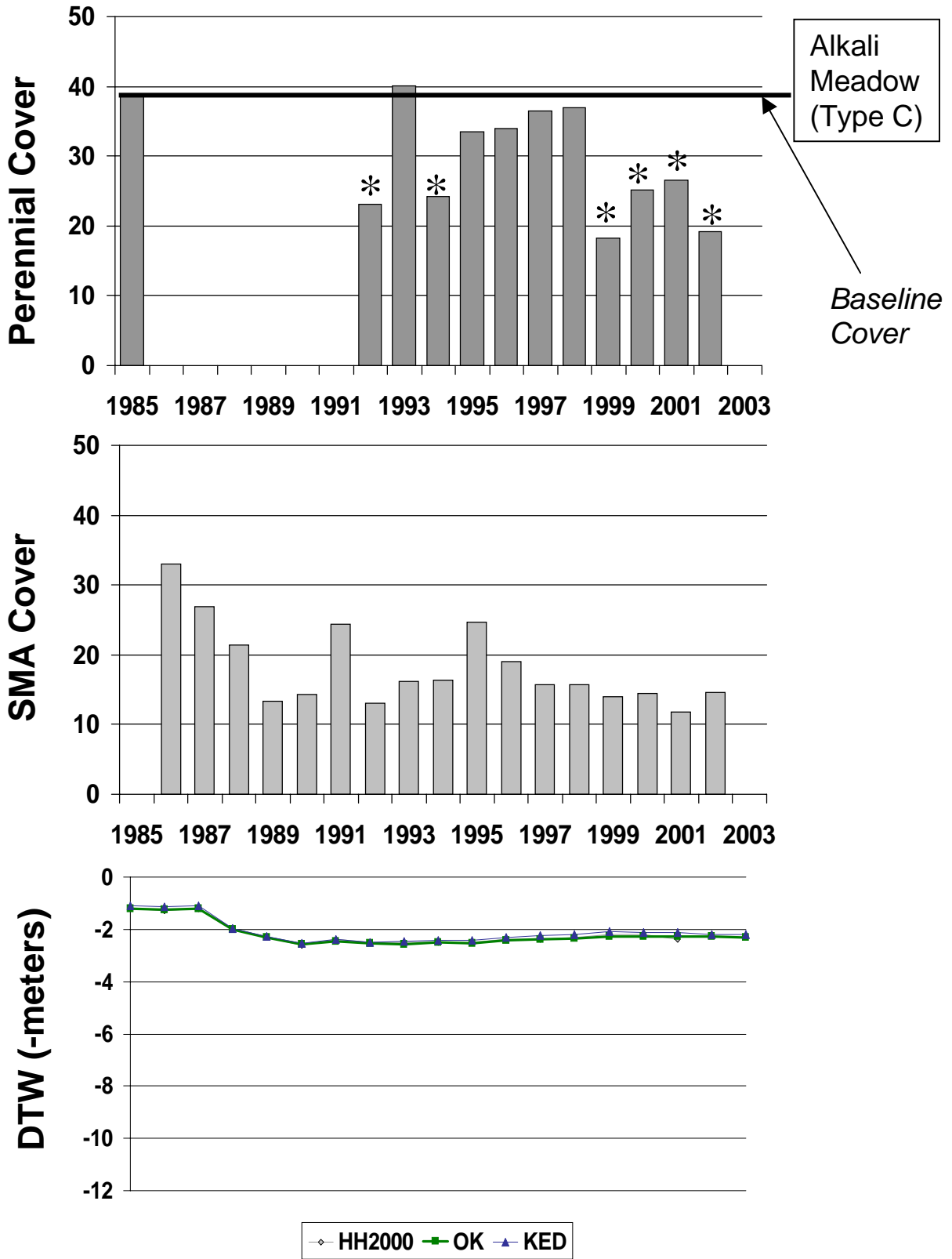


Figure 42. Wellfield: Independence Oak. Status 2002: more study

IND067

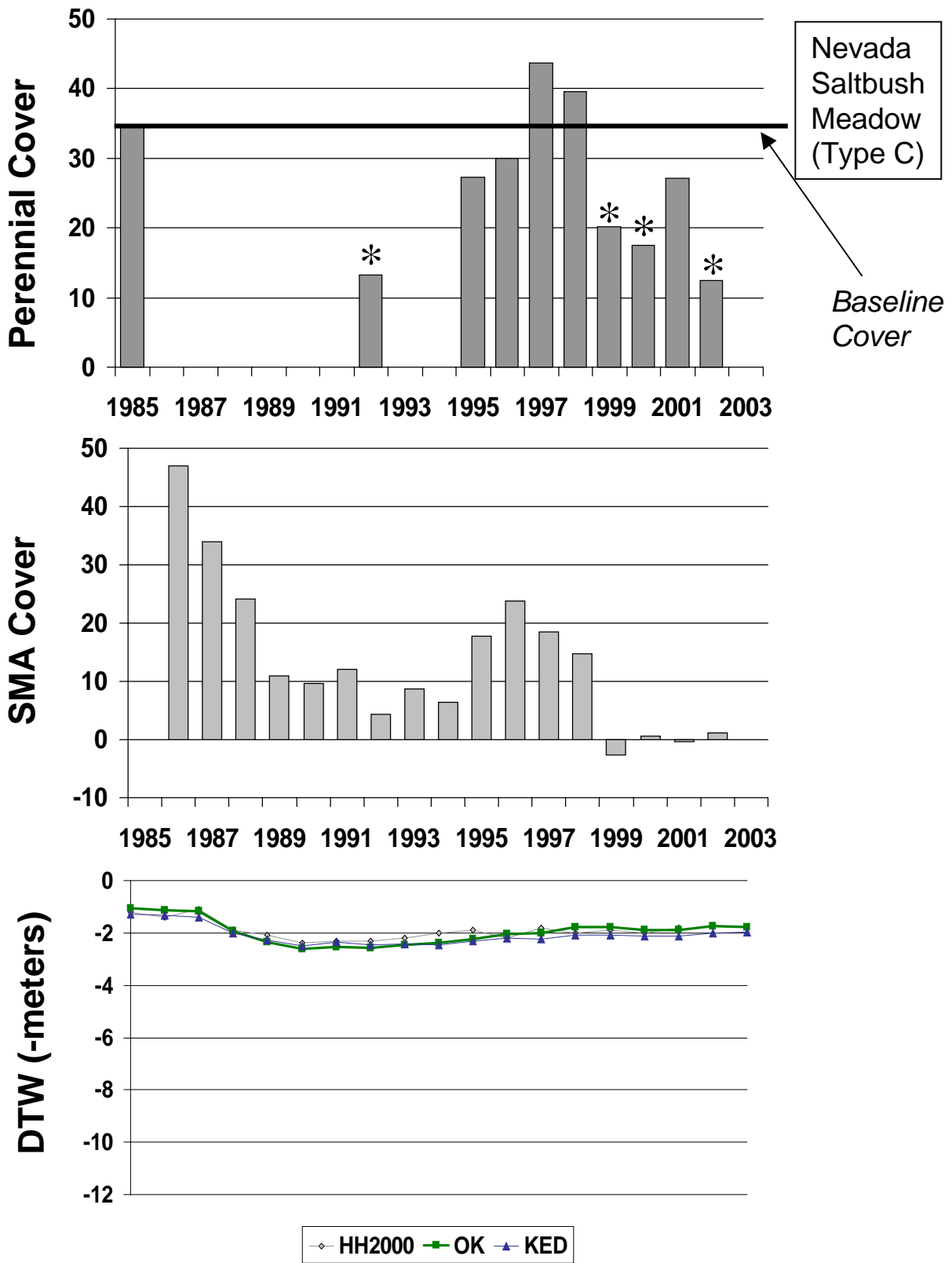


Figure 43. Wellfield: Independence Oak. Status 2002: more study

IND096

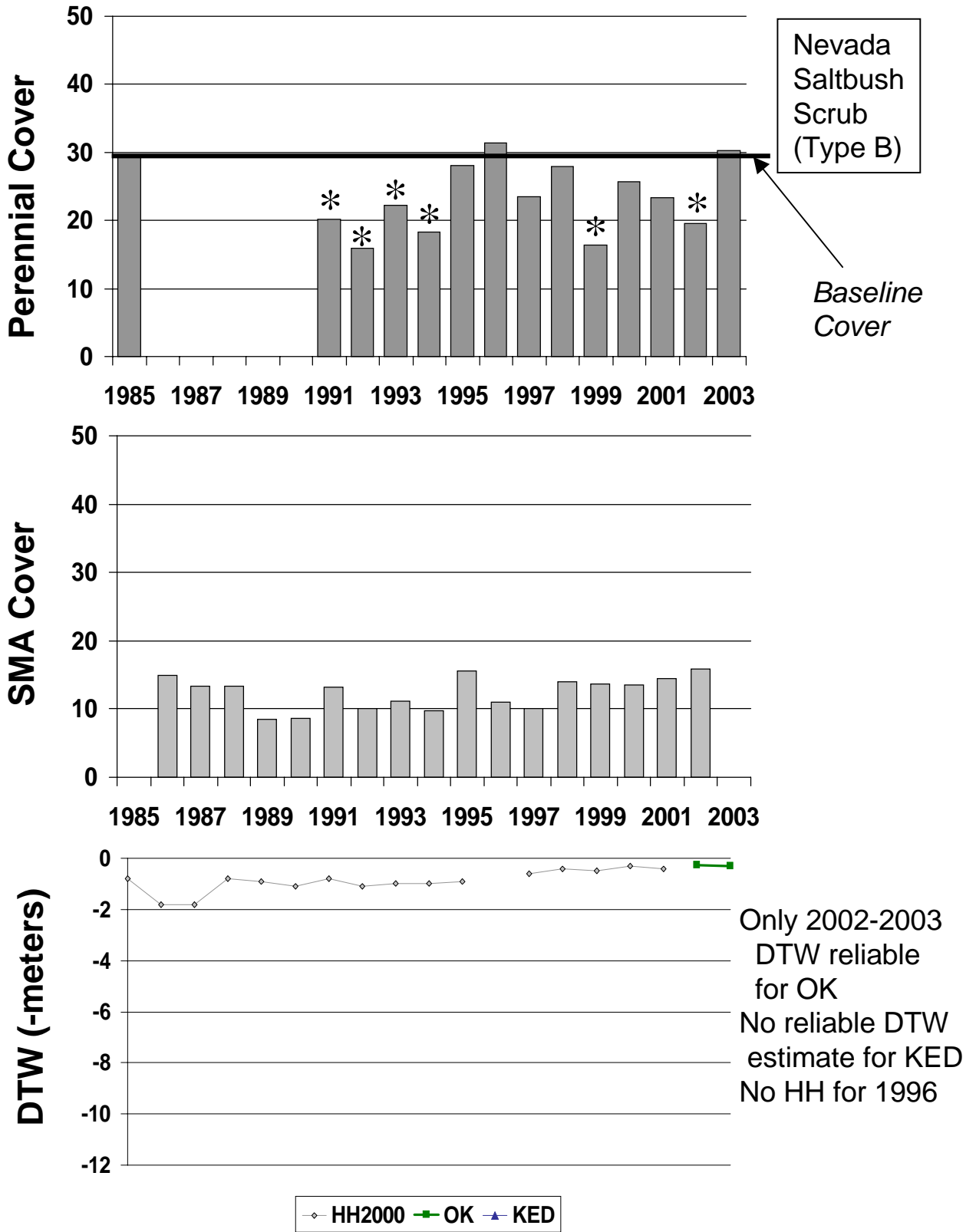


Figure 44. Status 2003: Control

IND106

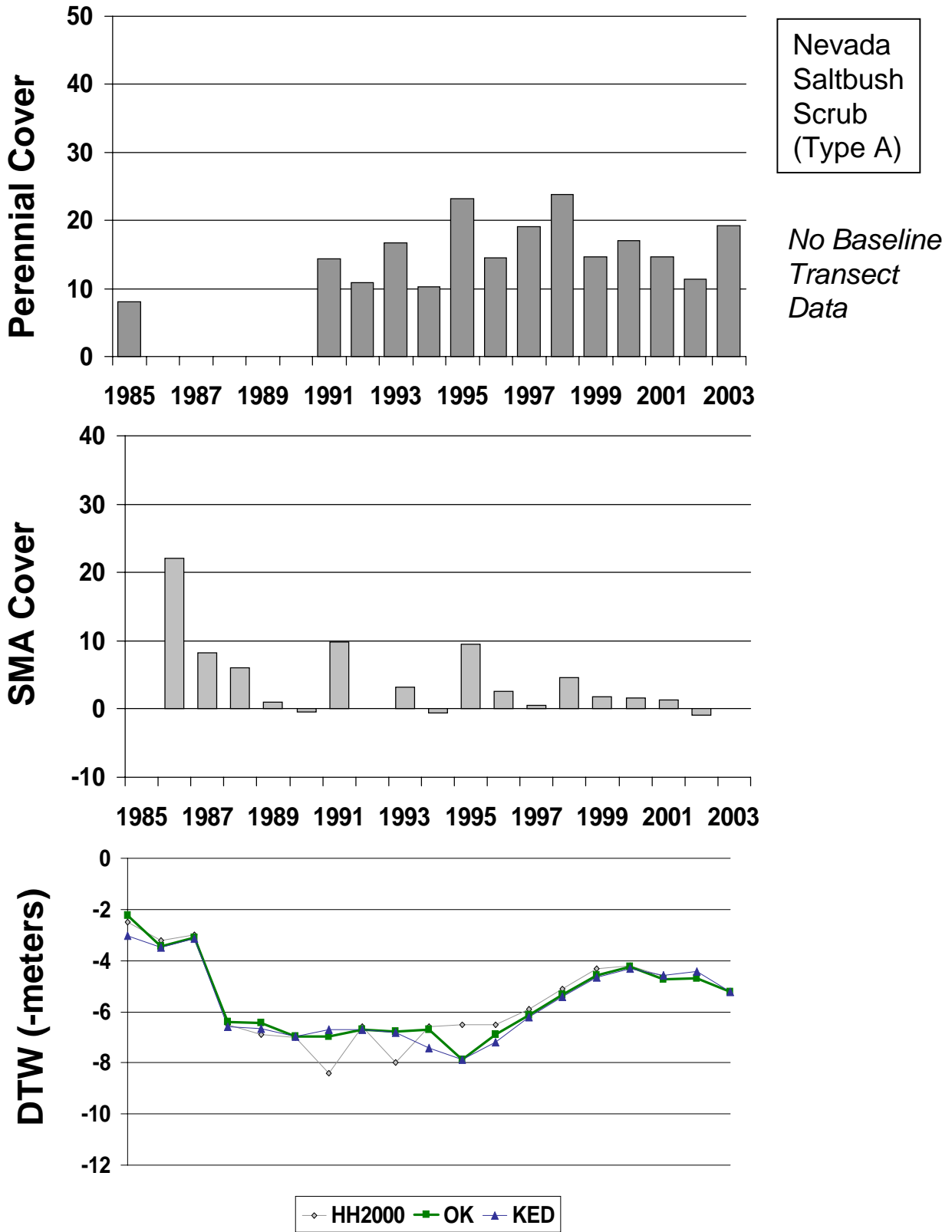


Figure 45. Wellfield: Independence Oak. Status 2003: DRP

IND111

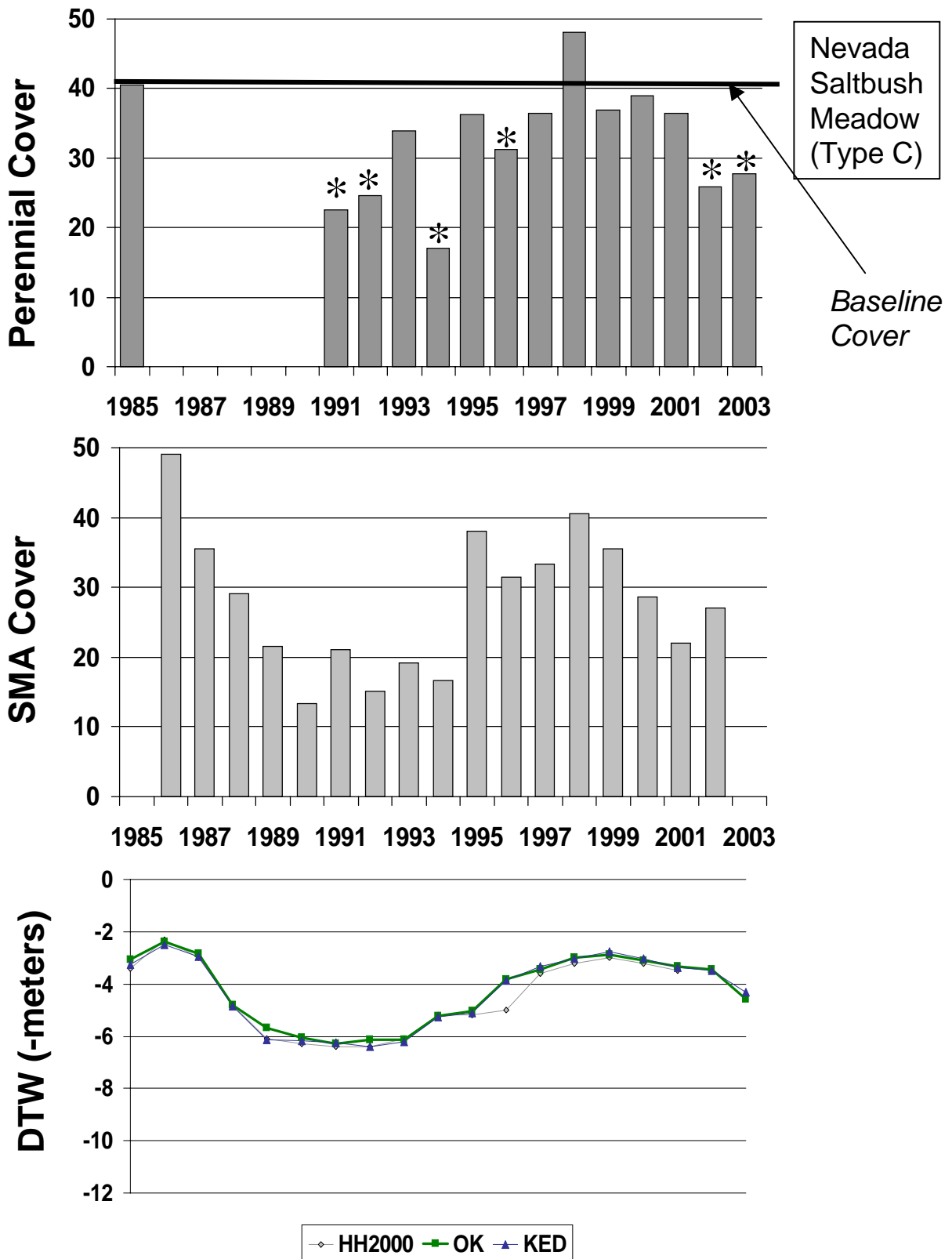


Figure 46. Wellfield: Independence Oak. Status 2003: DRP

IND119

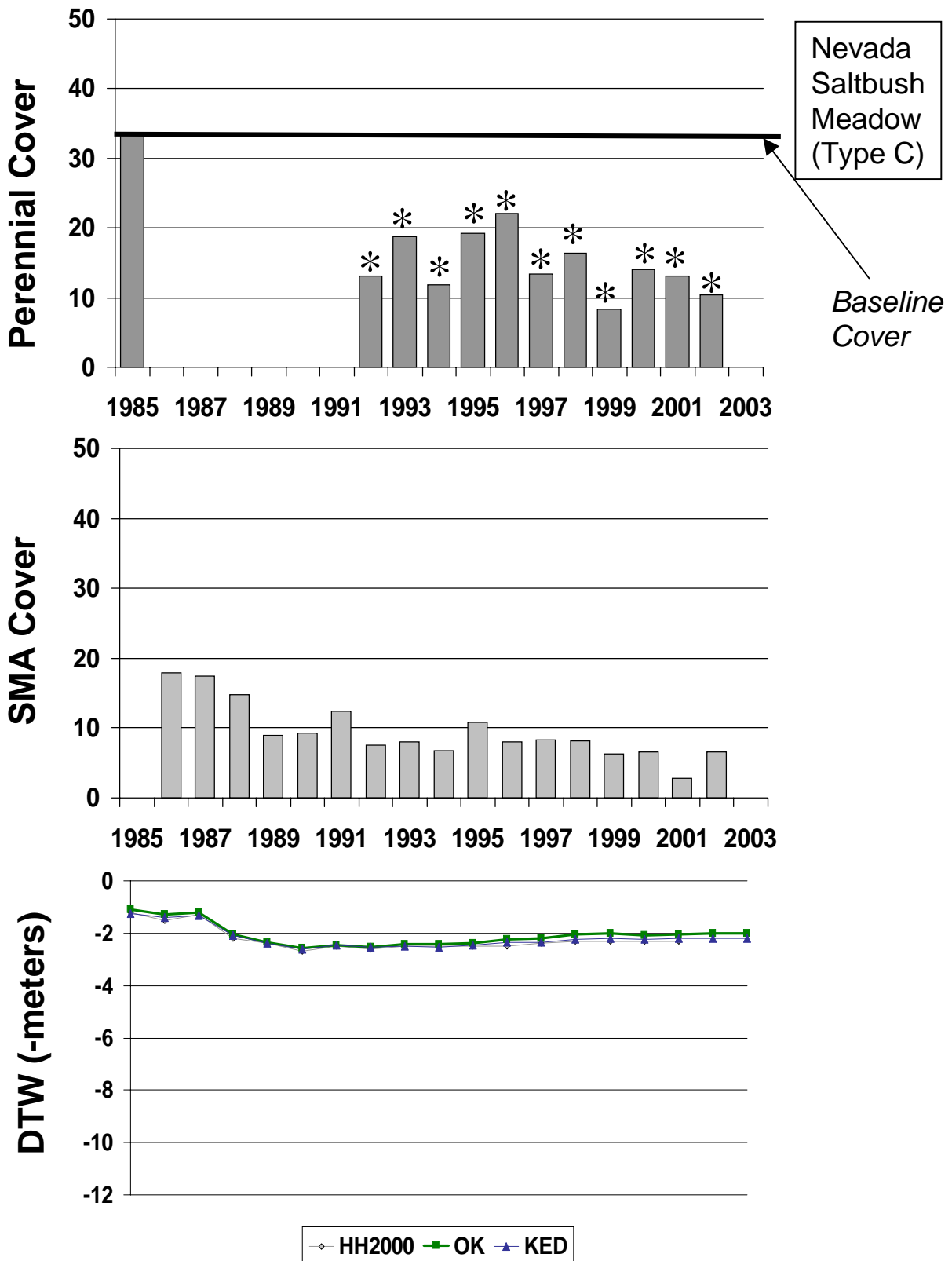


Figure 47. Wellfield: Independence Oak. Status 2002: more study

IND122

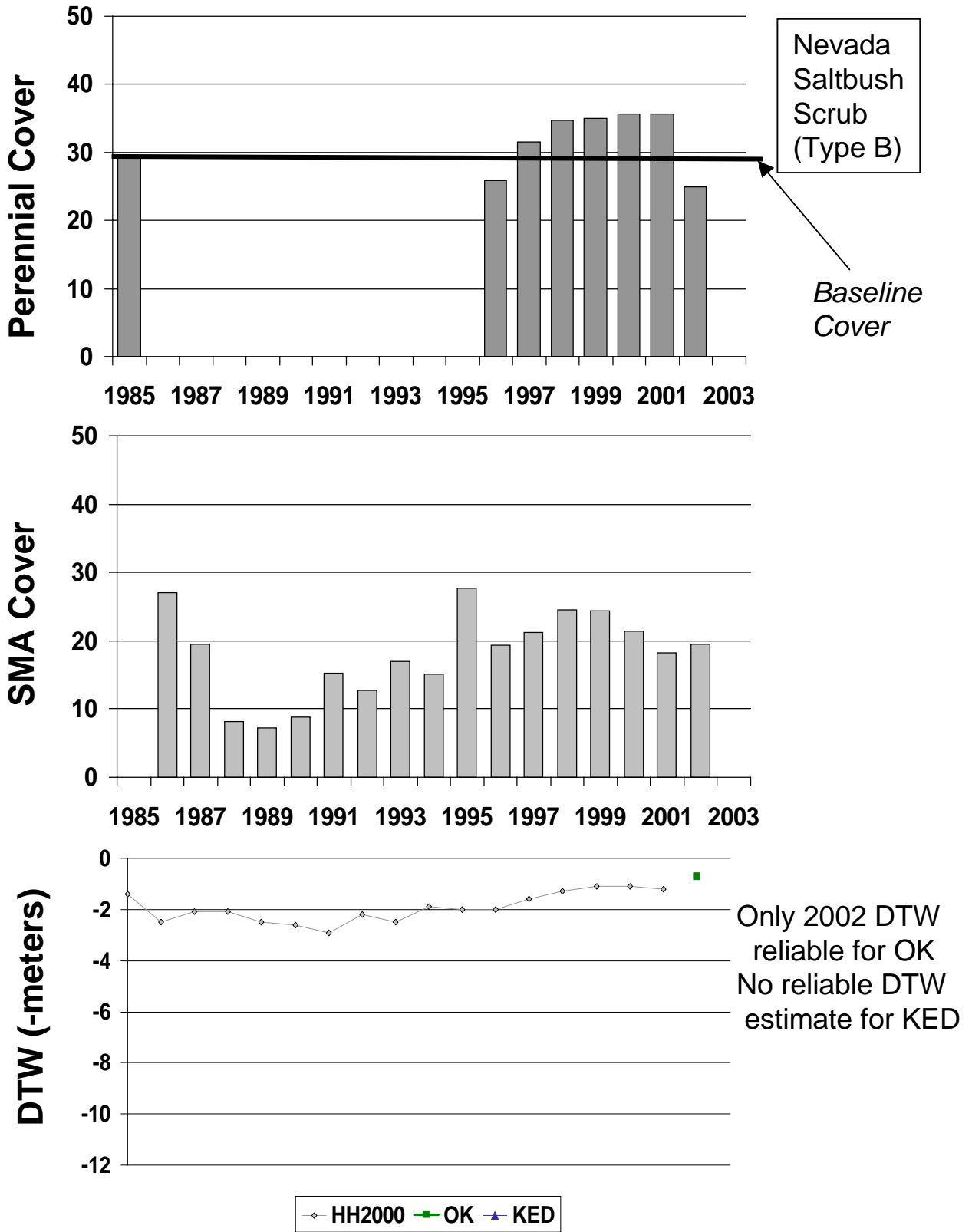


Figure 48. Status 2002: Control

IND132

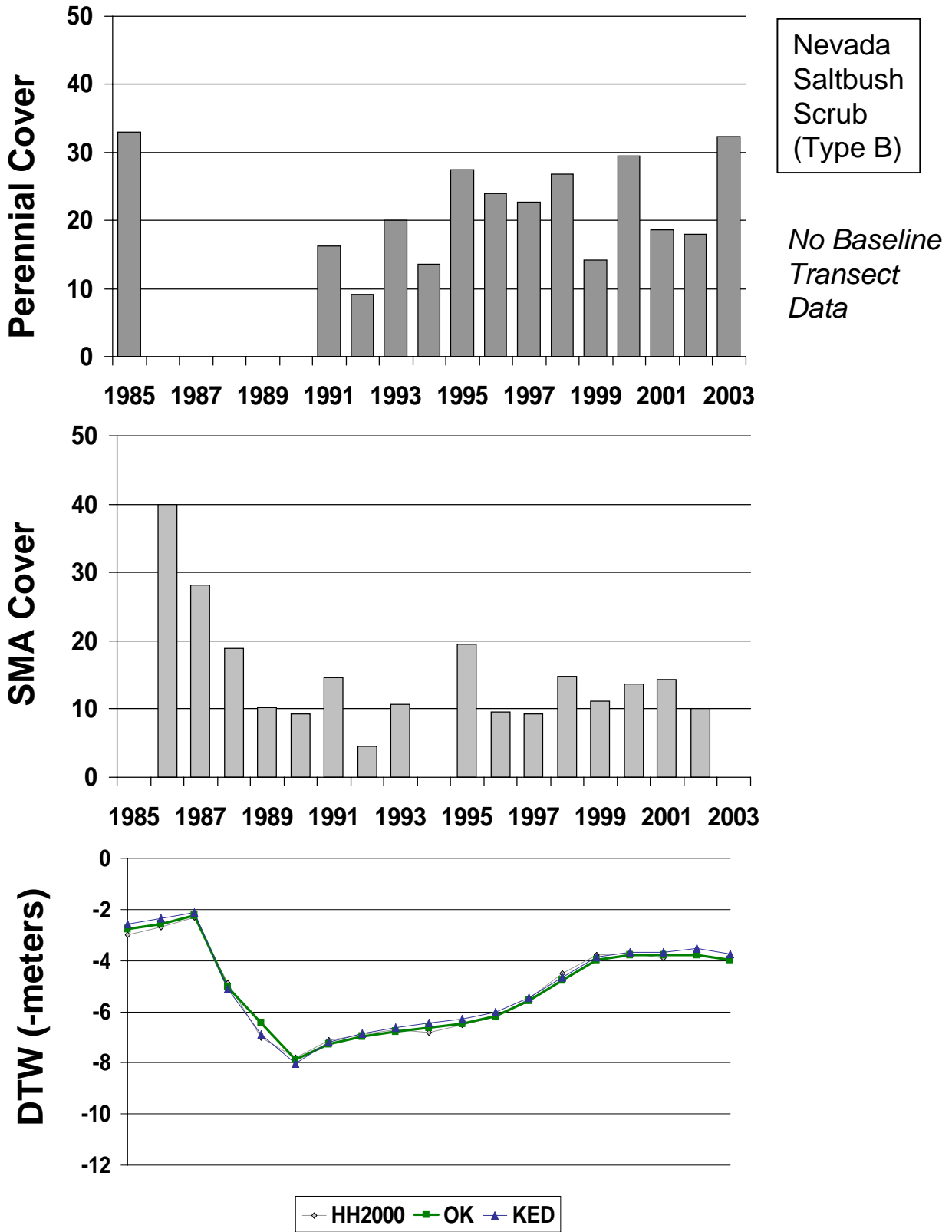


Figure 49. Wellfield: Symmes Shepherd. Status 2003: DRP

IND133

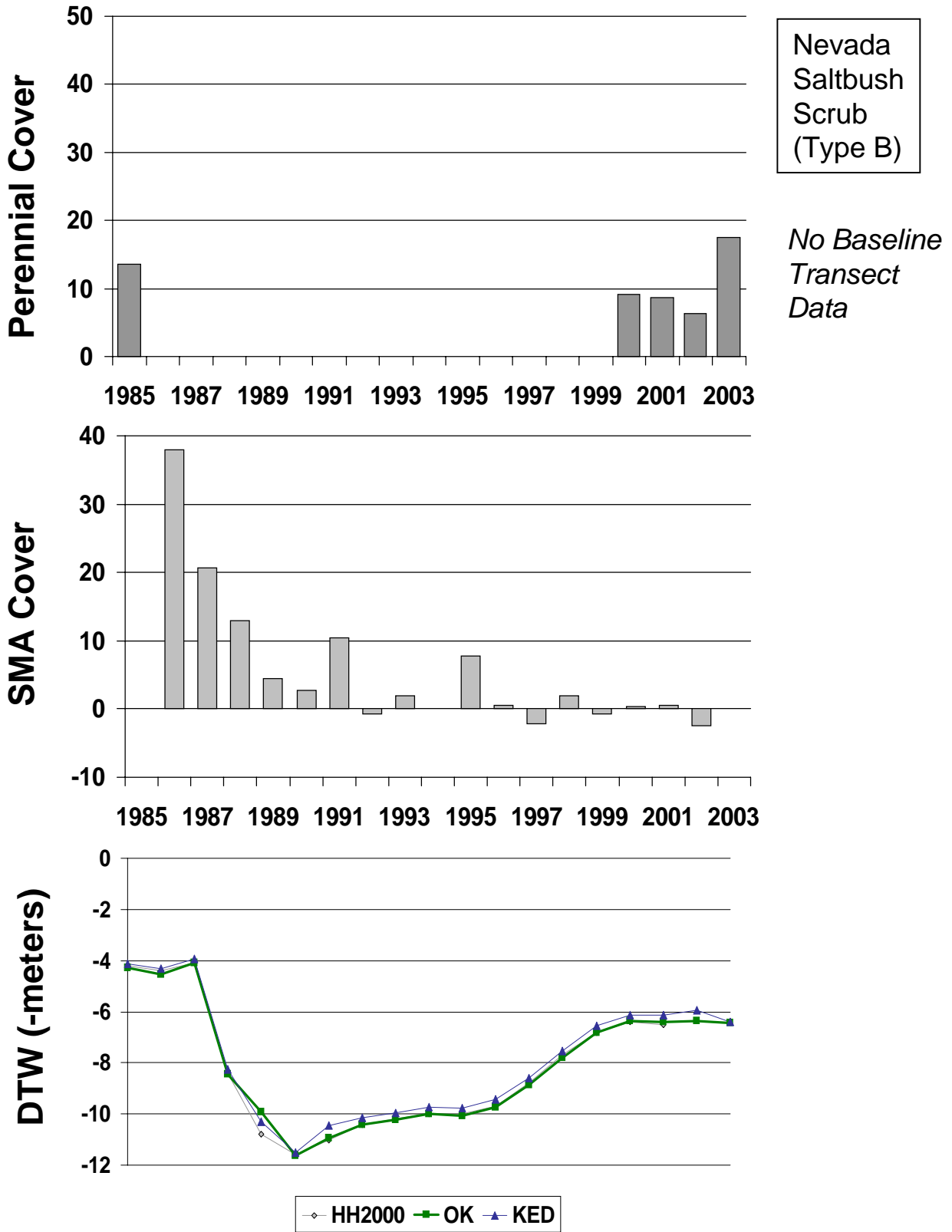


Figure 50. Wellfield: Symmes Shepherd. Status 2003: DRP

IND139

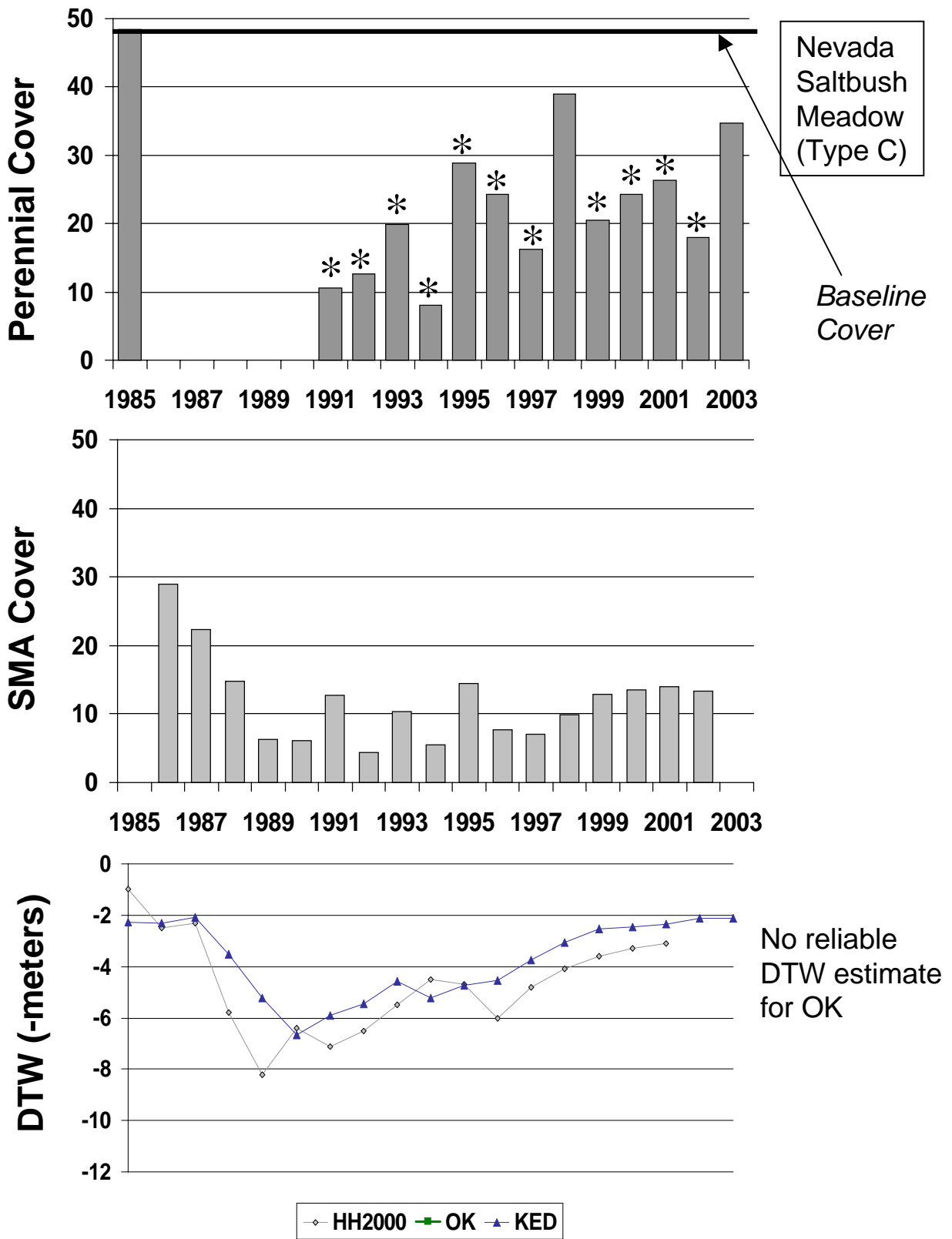


Figure 51. Wellfield: Symmes Shepherd. Status 2003: DRP

IND163

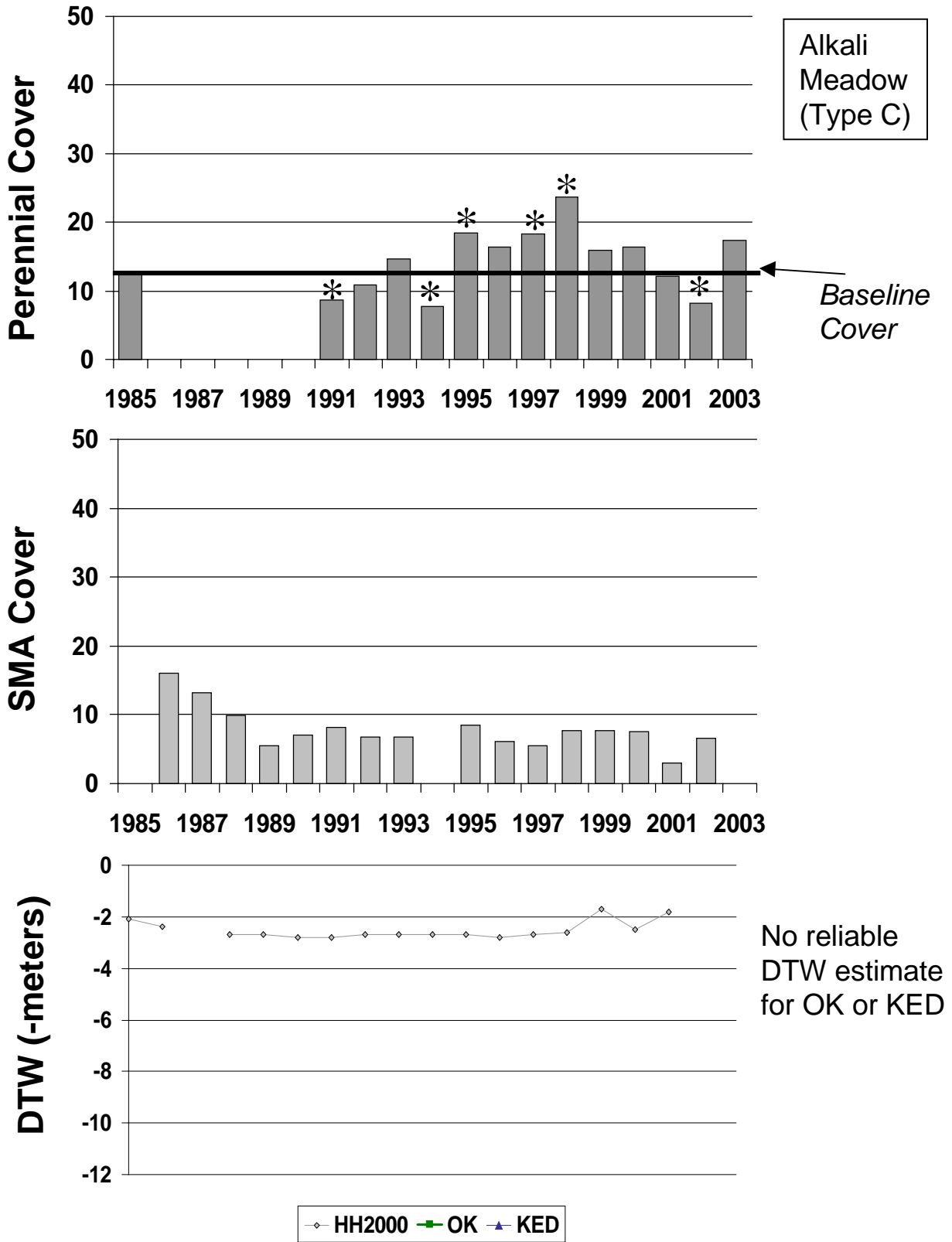


Figure 52. Status 2003: Control

IND231

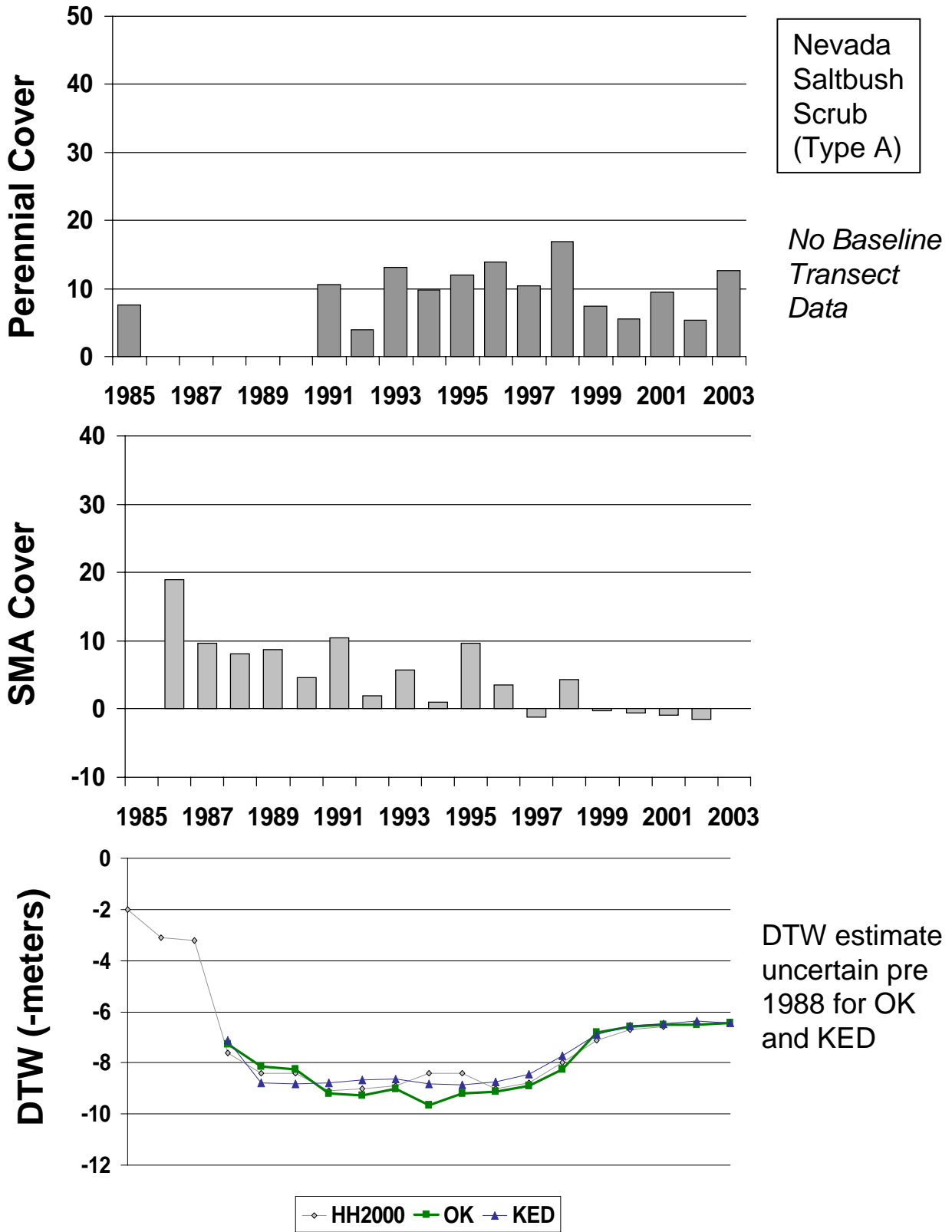


Figure 53. Wellfield: Symmes Shepherd. Status 2003: DRP

LAW030

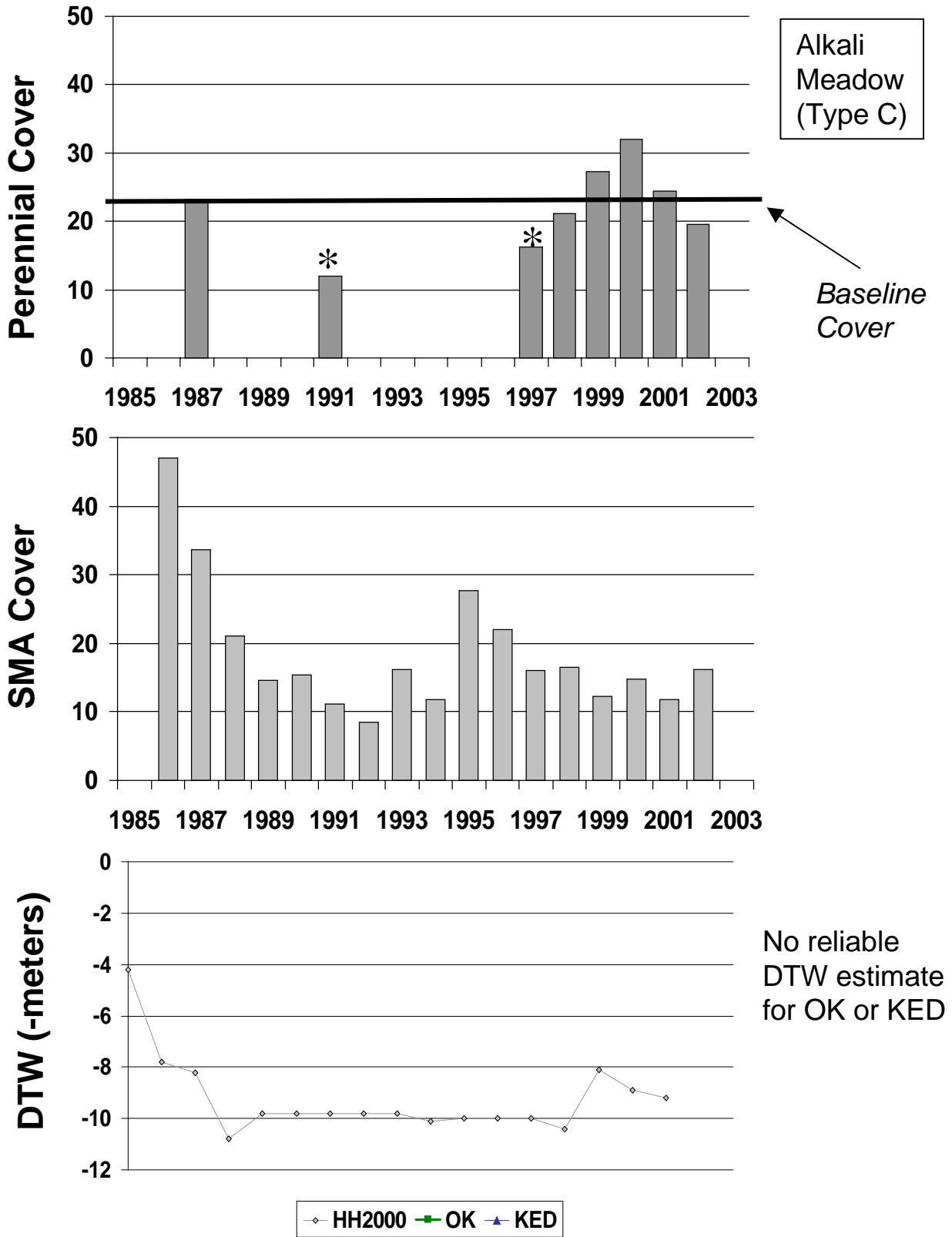


Figure 54. Wellfield: Laws. Status 2002: DRP

LAW035

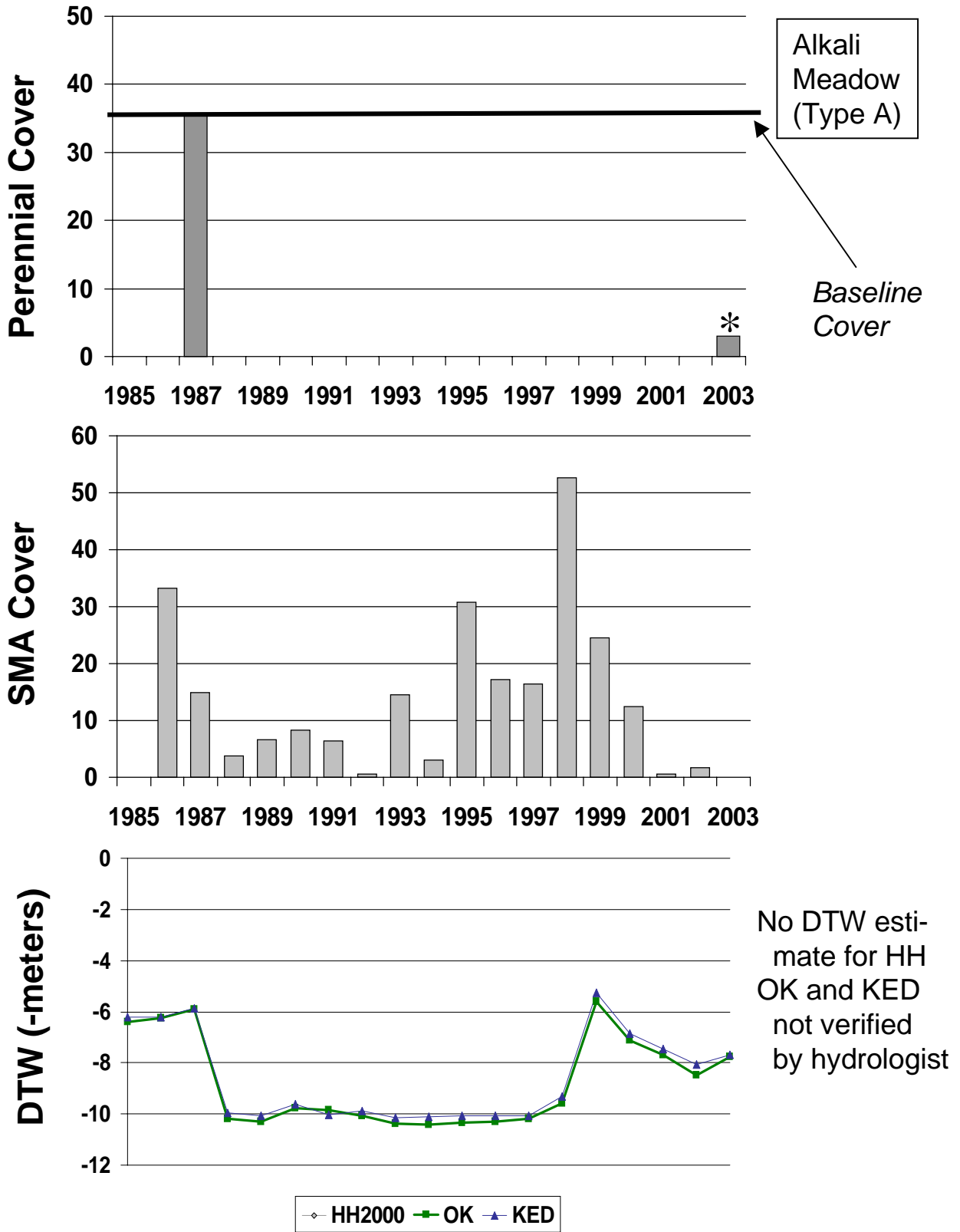


Figure 55. Wellfield: Laws. Status 2003: Not classified

LAW043

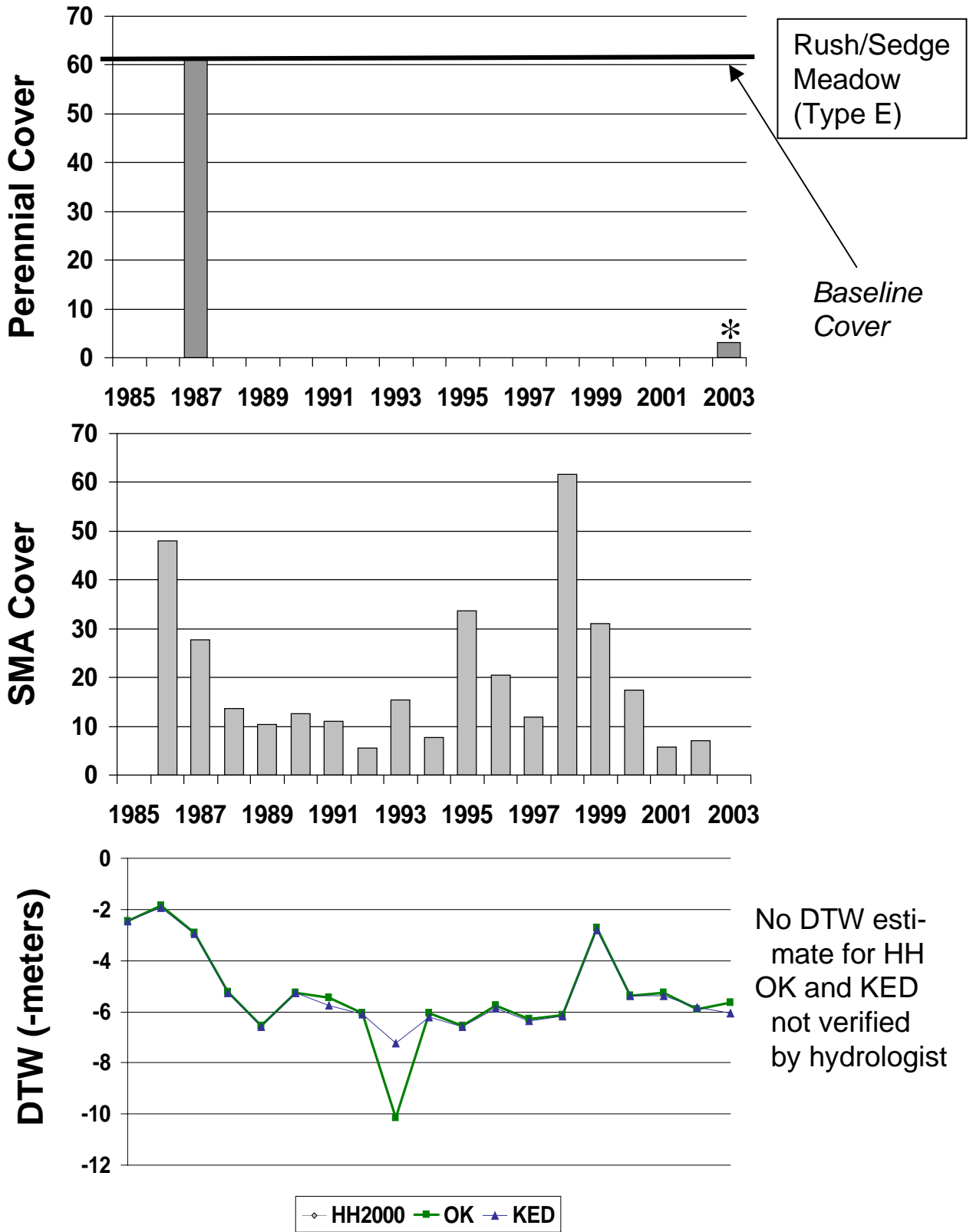


Figure 56. Wellfield: Laws. Status 2003: Not classified

LAW052

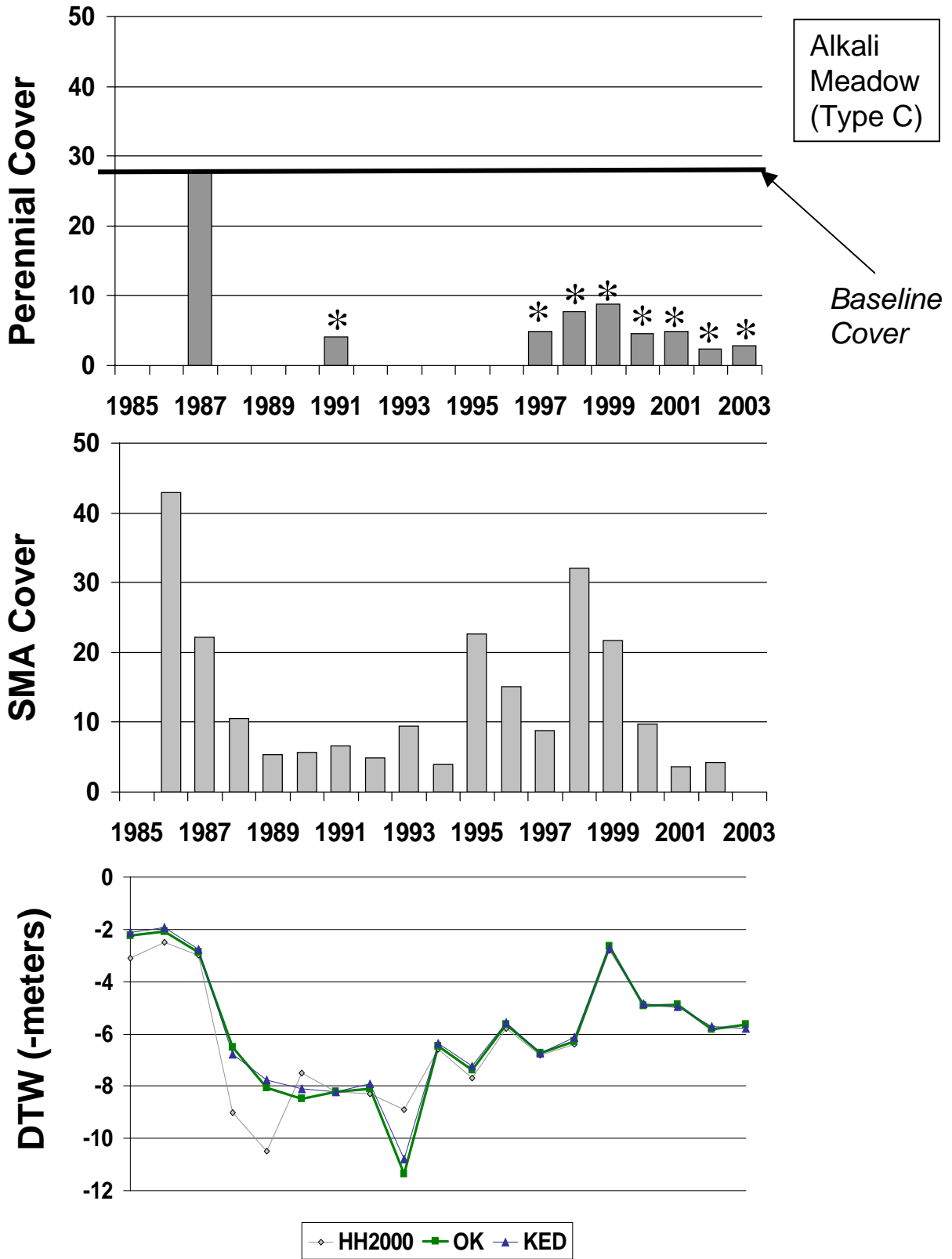


Figure 57. Wellfield: Laws. Status 2003: DRP

LAW062

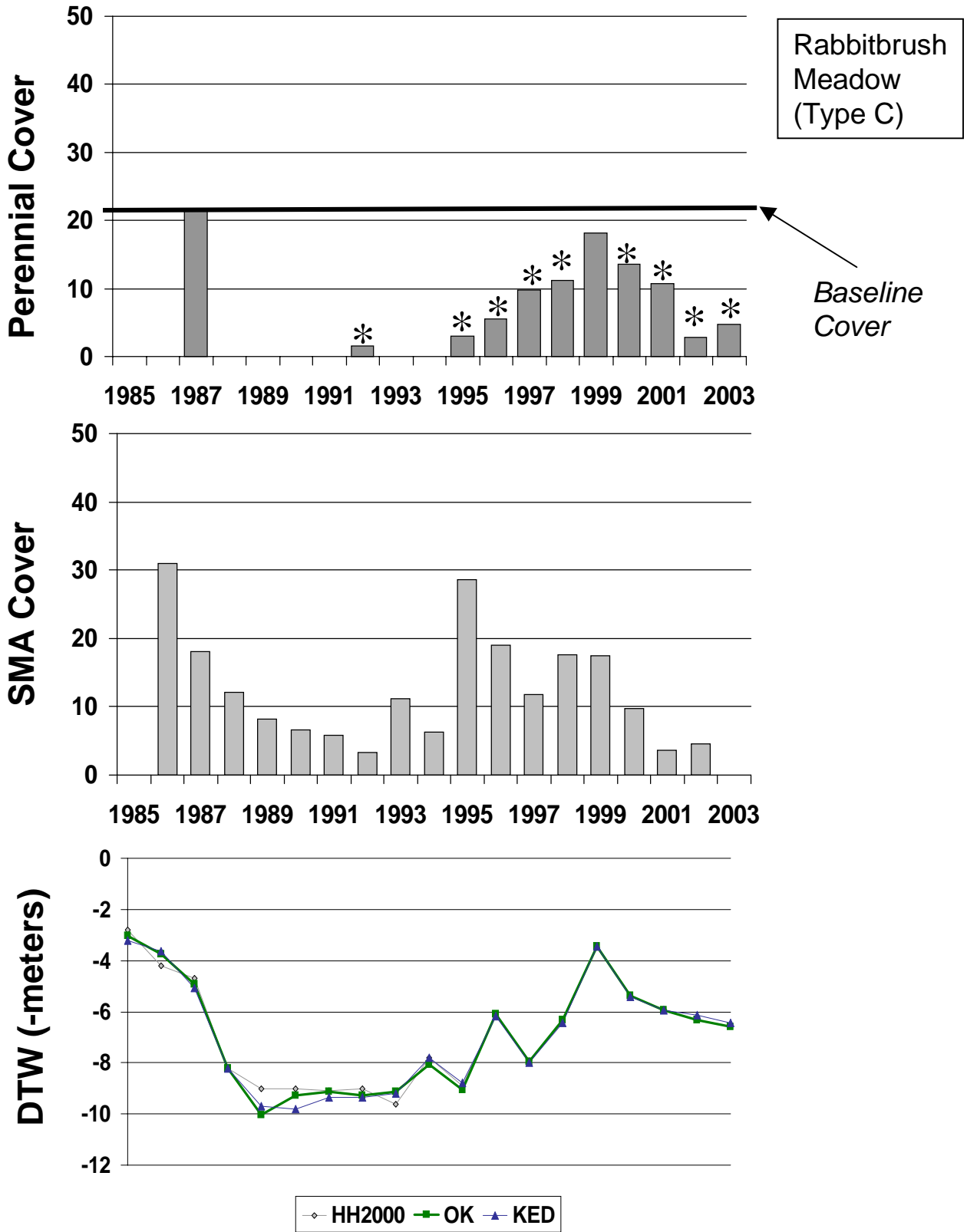


Figure 58. Wellfield: Laws. Status 2003: DRP

LAW063

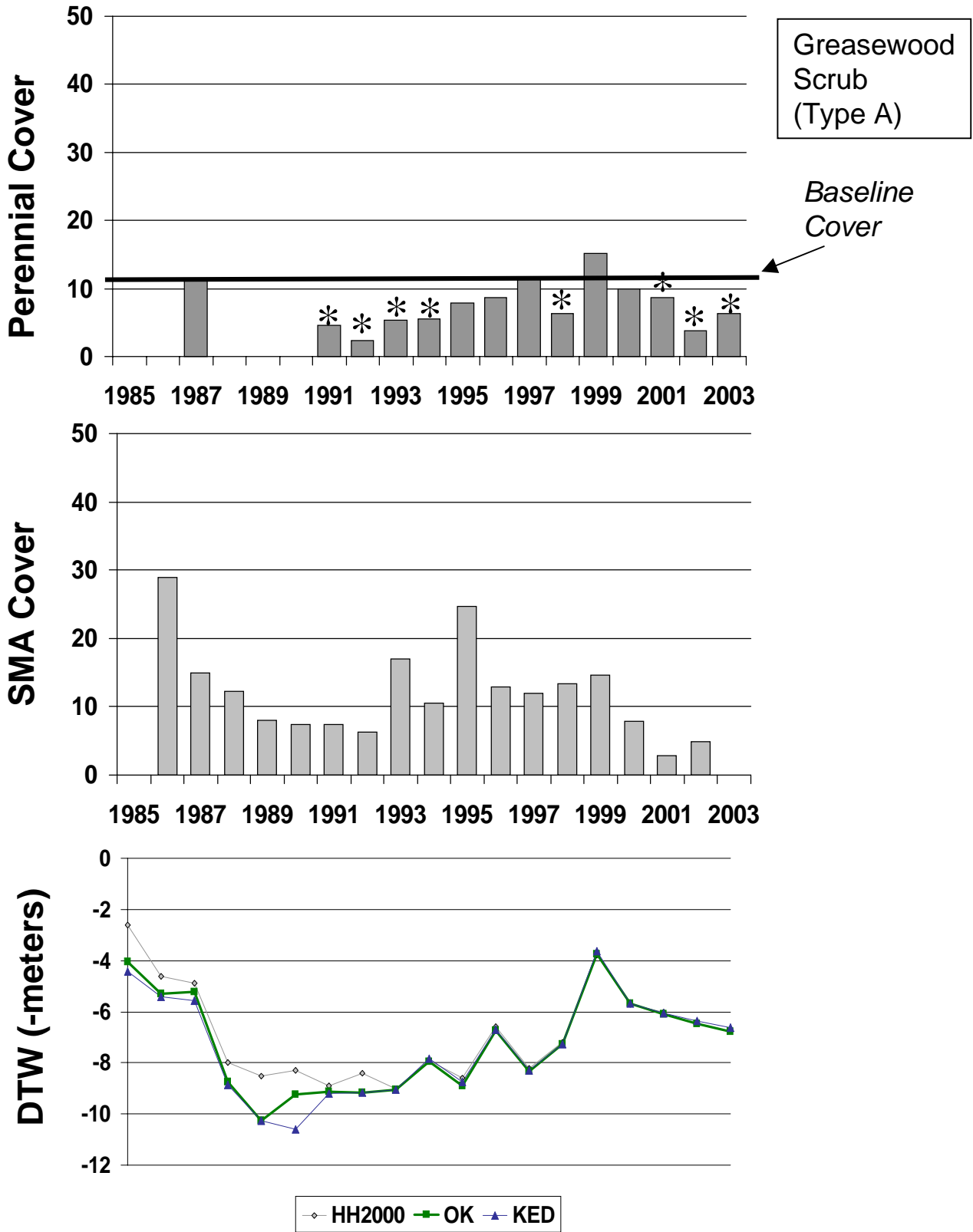


Figure 59. Wellfield: Laws. Status 2003: DRPfree

LAW065

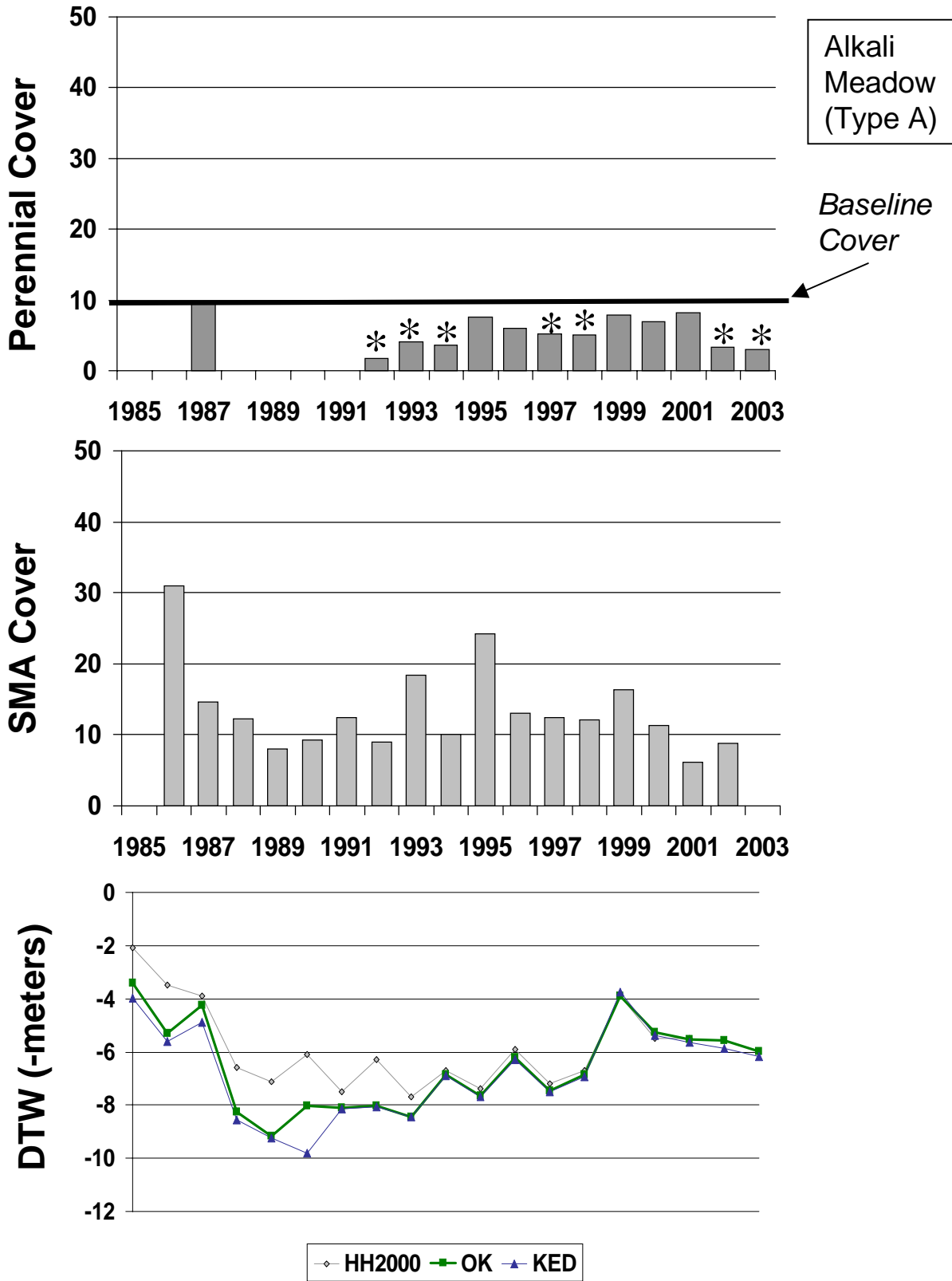


Figure 60. Wellfield: Laws. Status 2003: DRP

LAW070

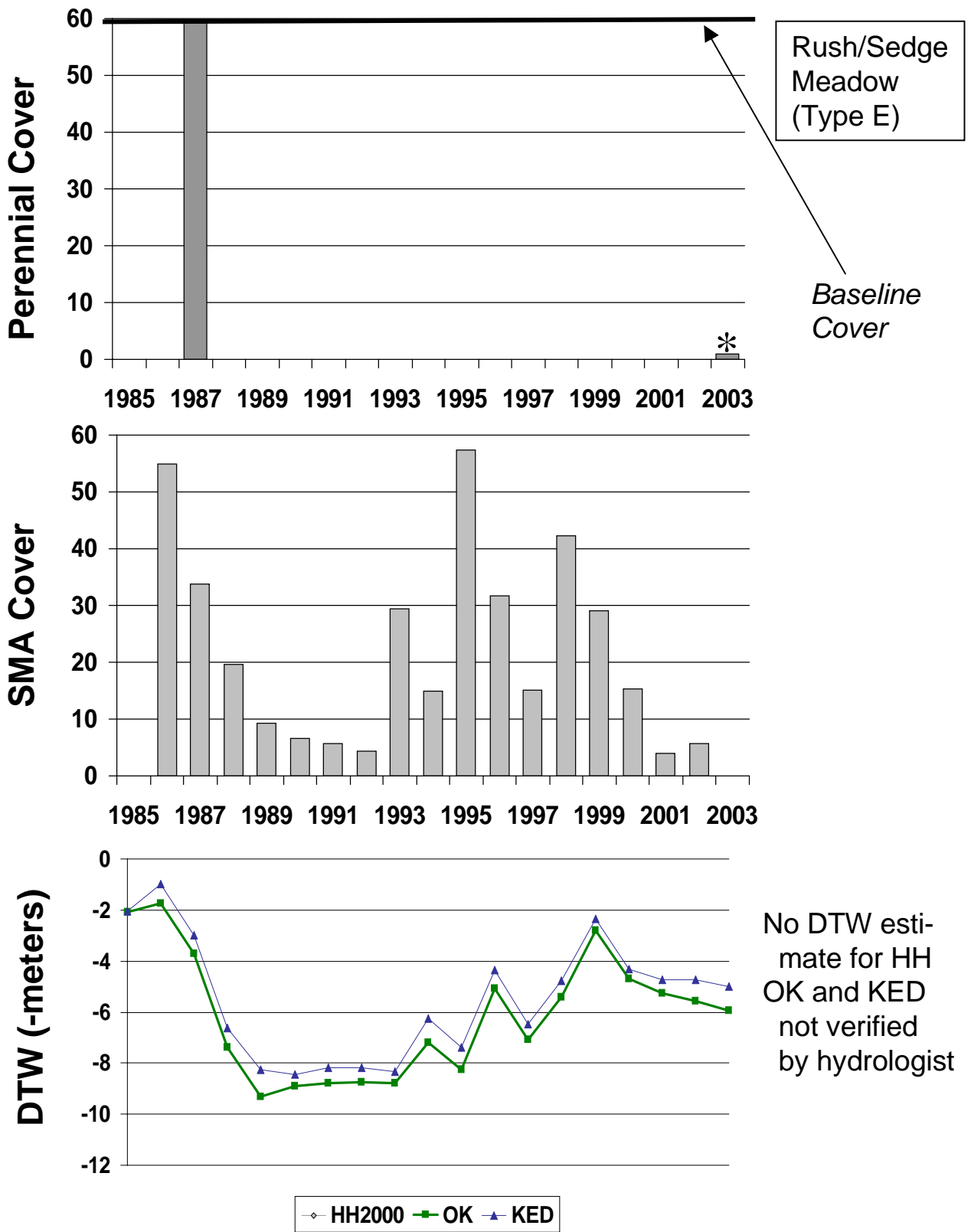


Figure 61. Wellfield: Laws. Status 2003: Not classified

LAW078

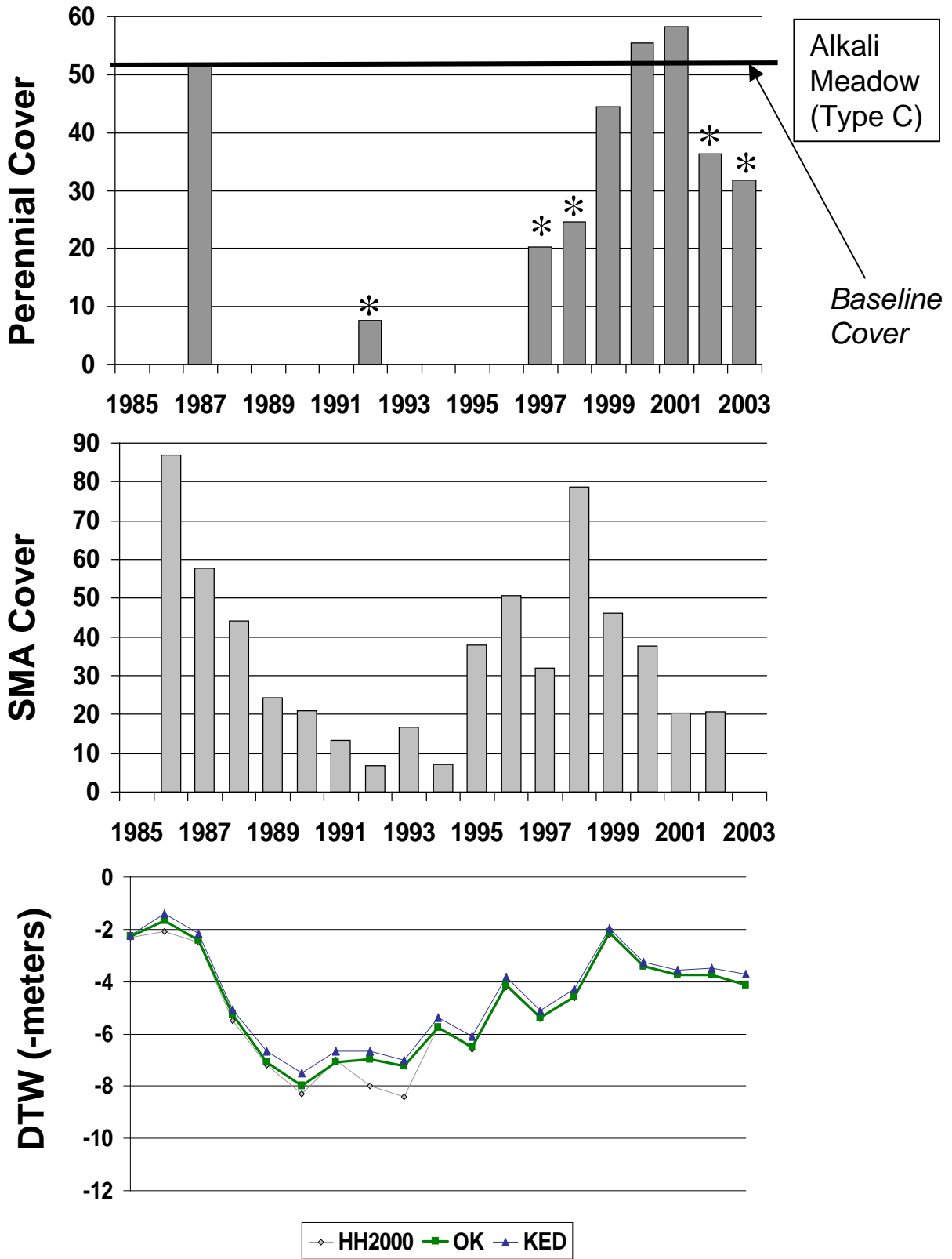


Figure 62. Wellfield: Laws. Status 2003: DRPfree

LAW082

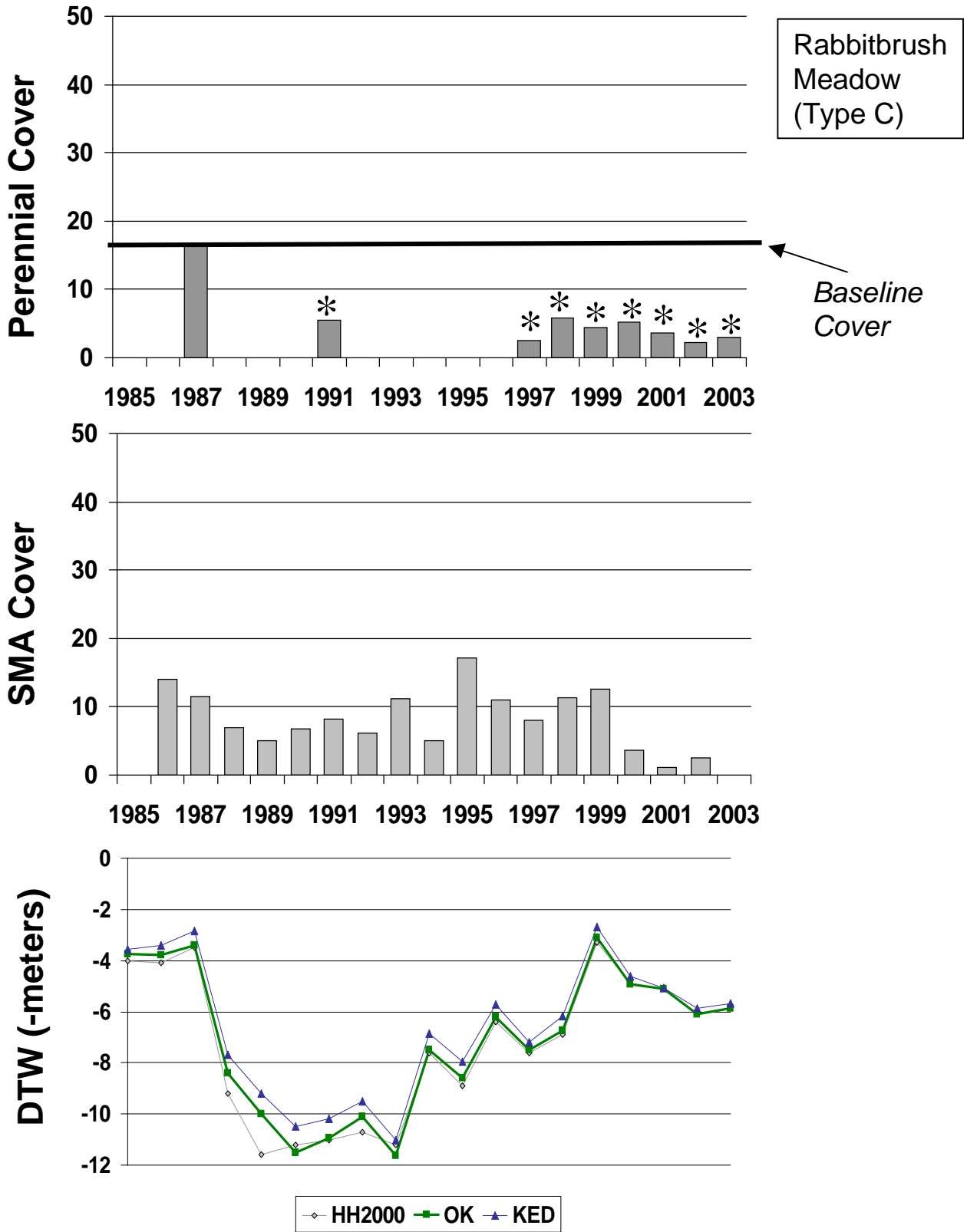


Figure 63. Wellfield: Laws. Status 2003: DRP

LAW085

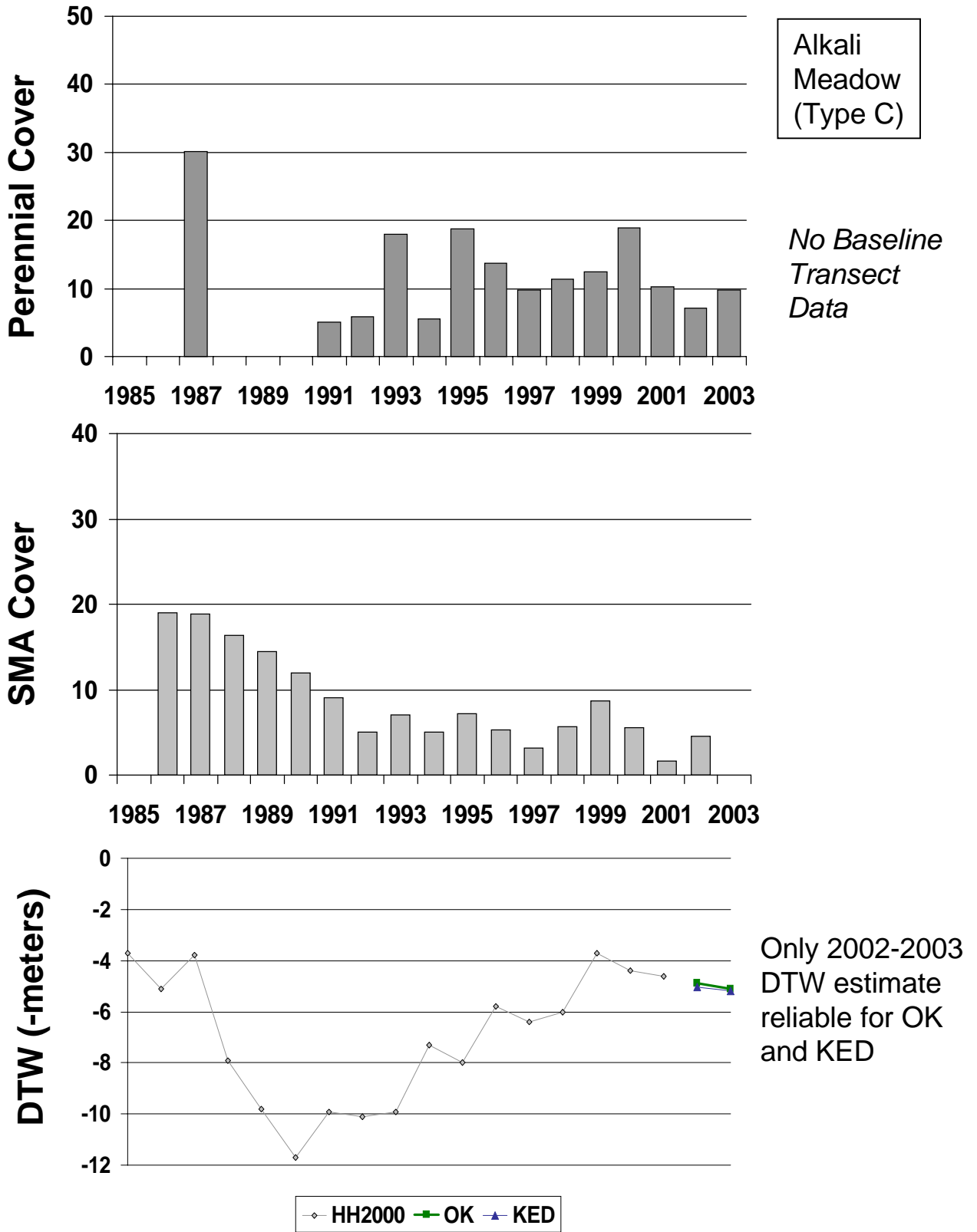


Figure 64. Wellfield: Laws. Status 2003: DRP

LAW107

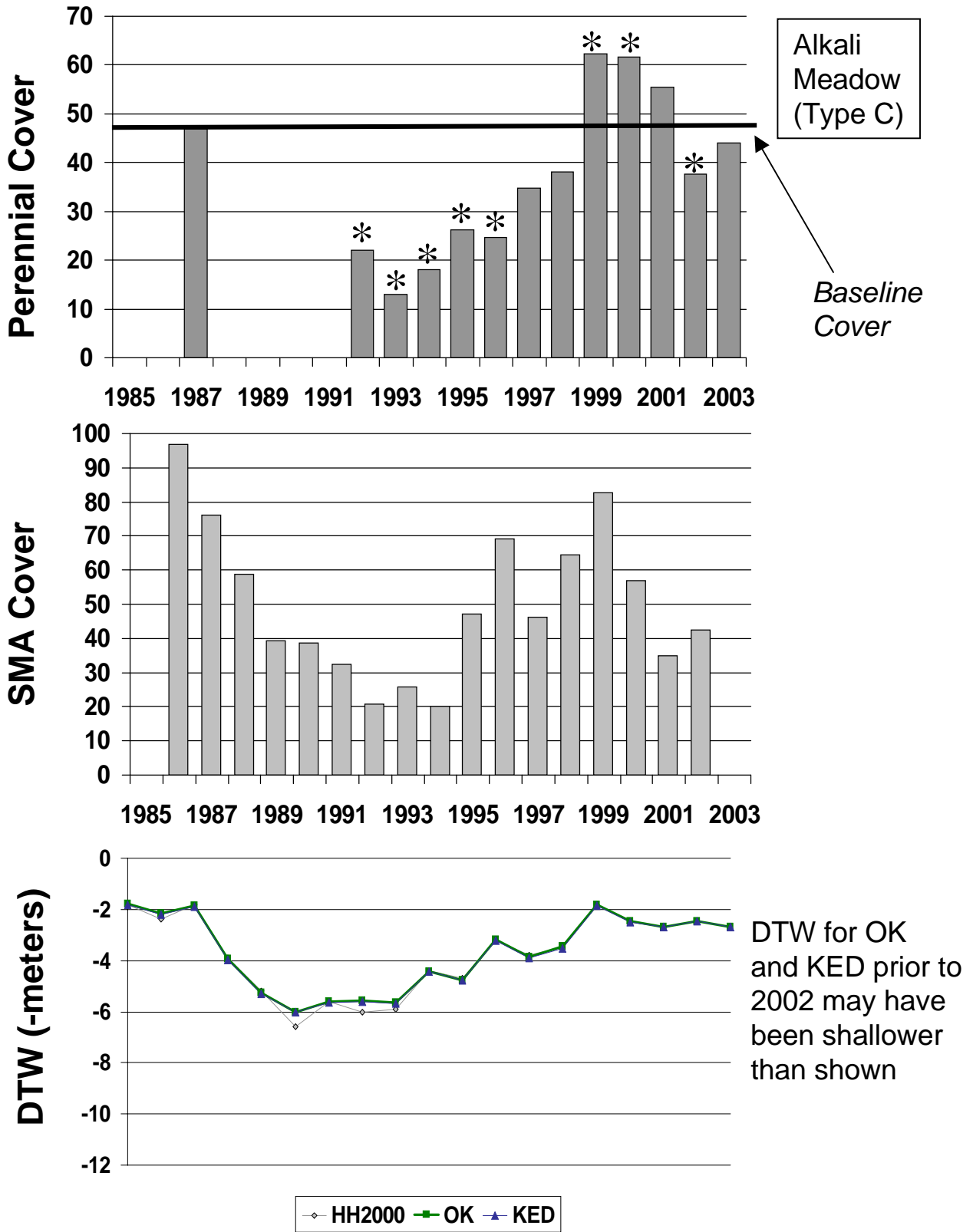


Figure 65. Wellfield: Laws. Status 2003: DRPfree

LAW110

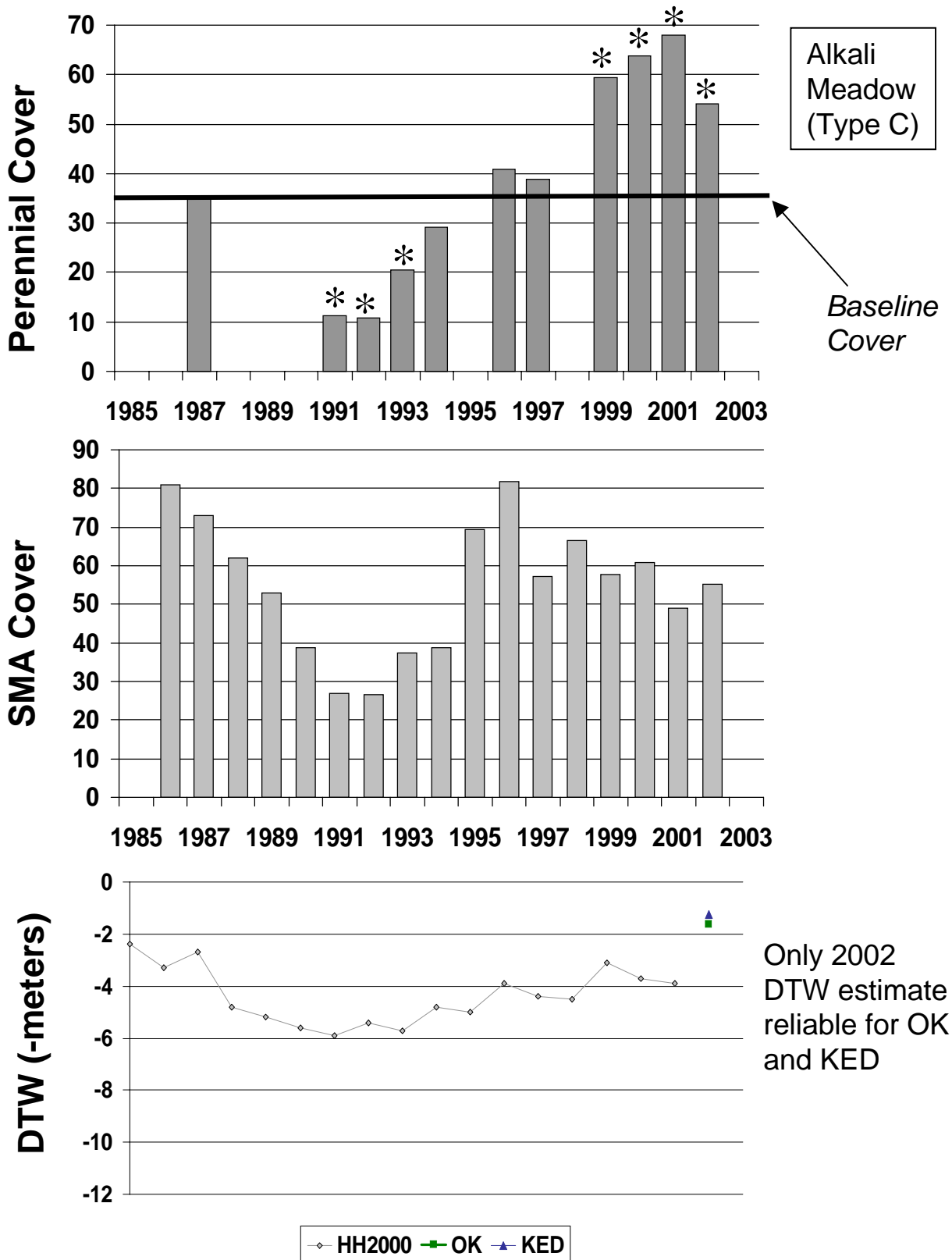


Figure 66. Wellfield: Laws. Status 2002: DRPfree

LAW112

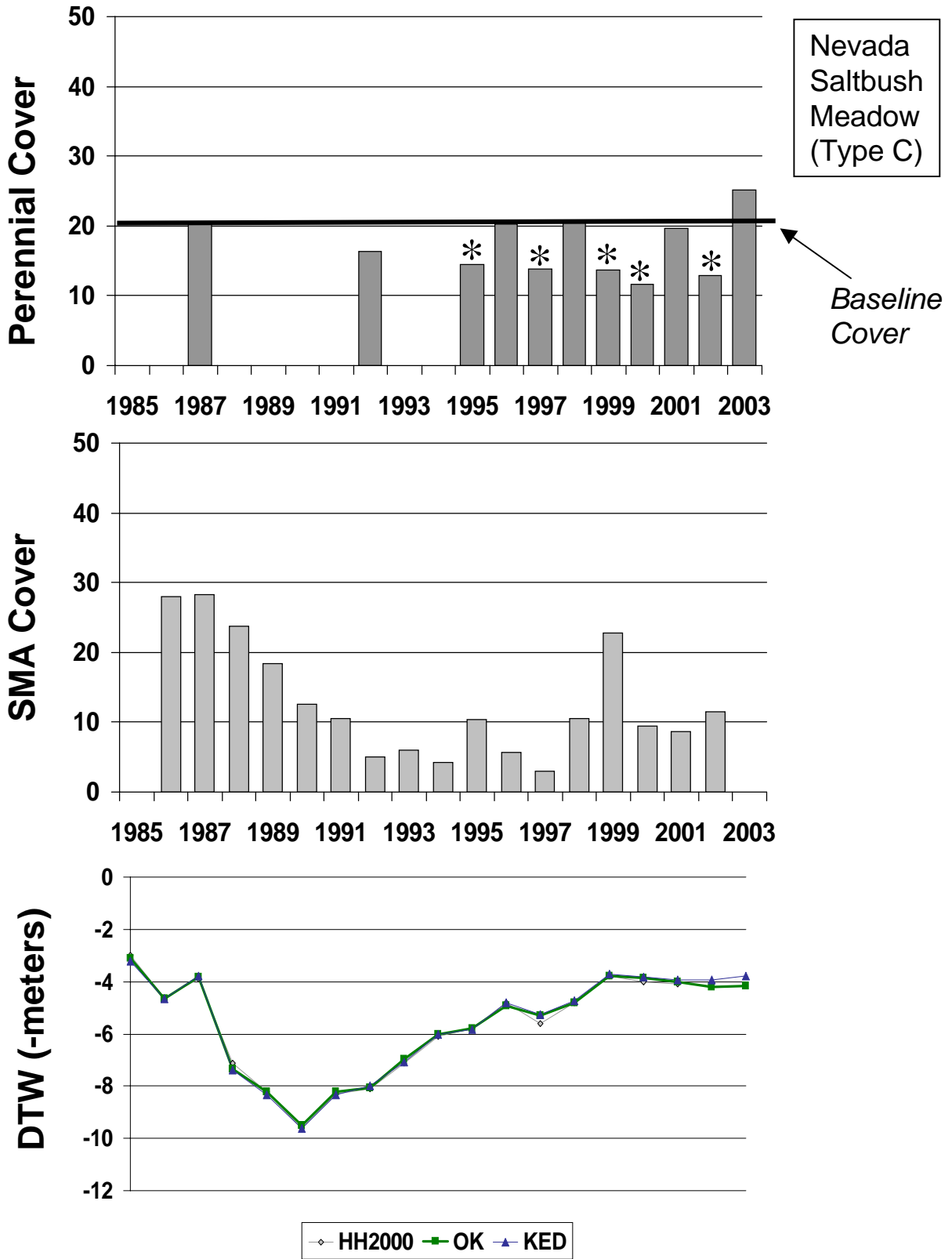


Figure 67. Wellfield: Laws. Status 2003: DRP

LAW120

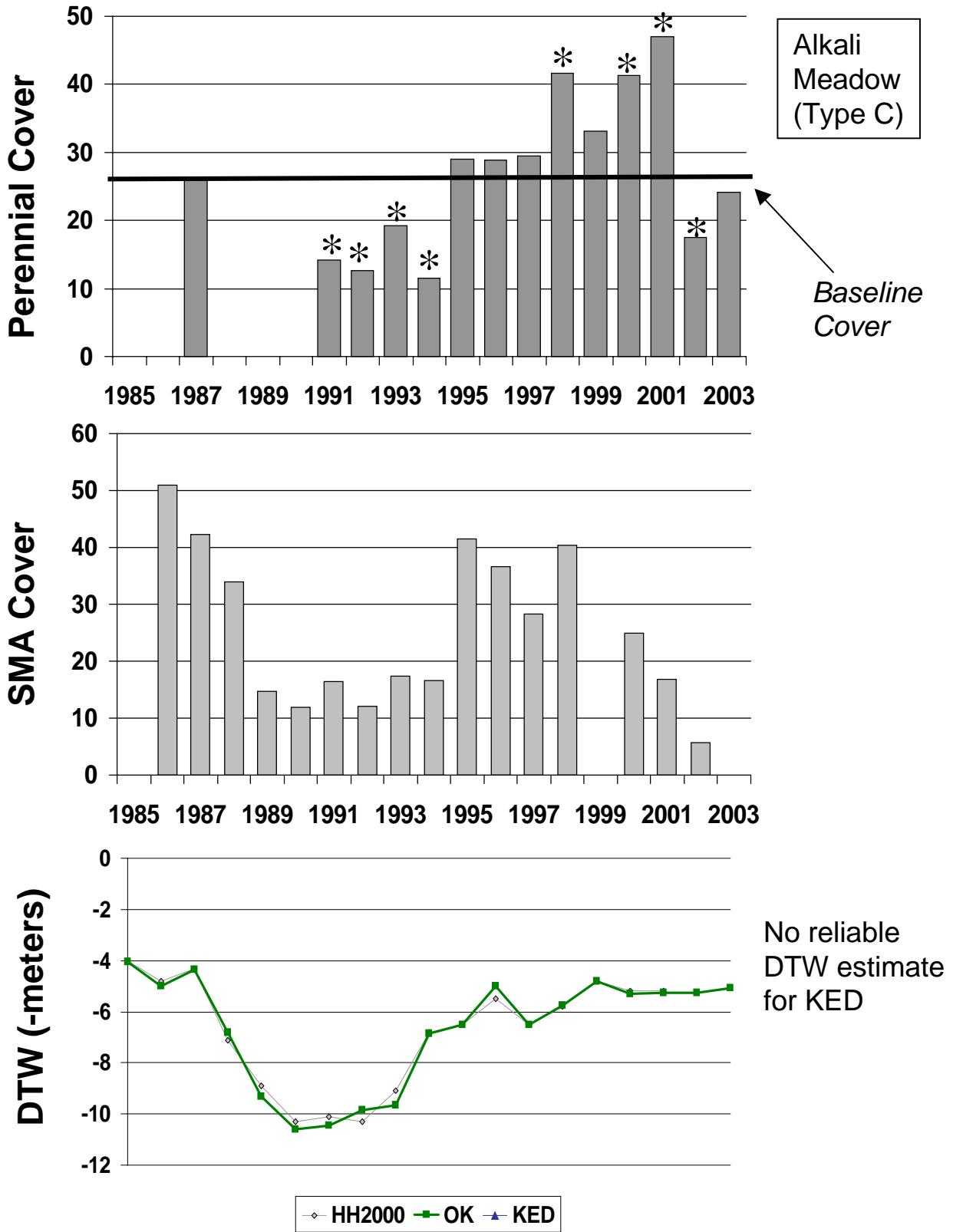


Figure 68. Wellfield: Laws. Status 2003: DRPfree

LAW122

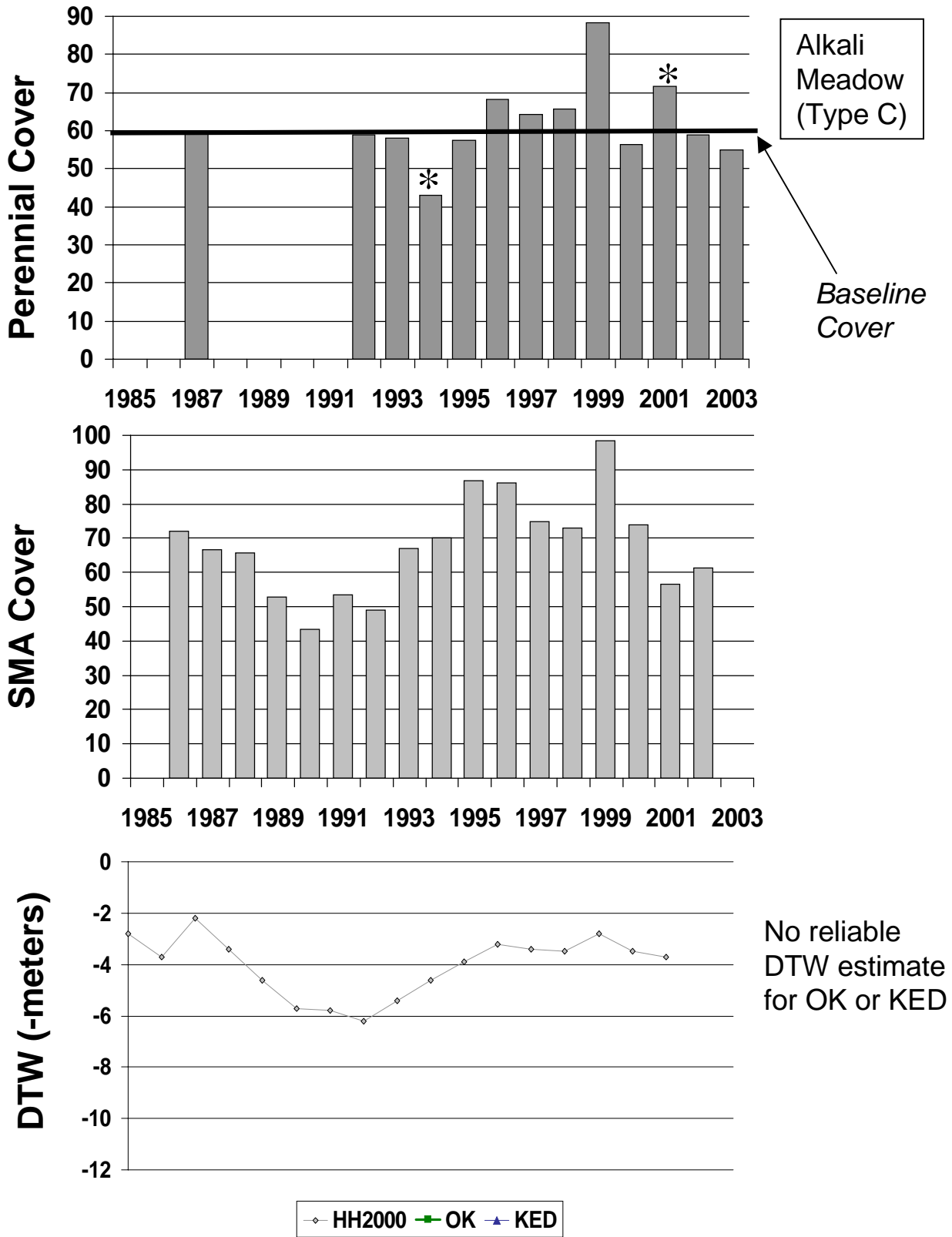


Figure 69. Wellfield: Laws. Status 2003: DRPfree

LAW137

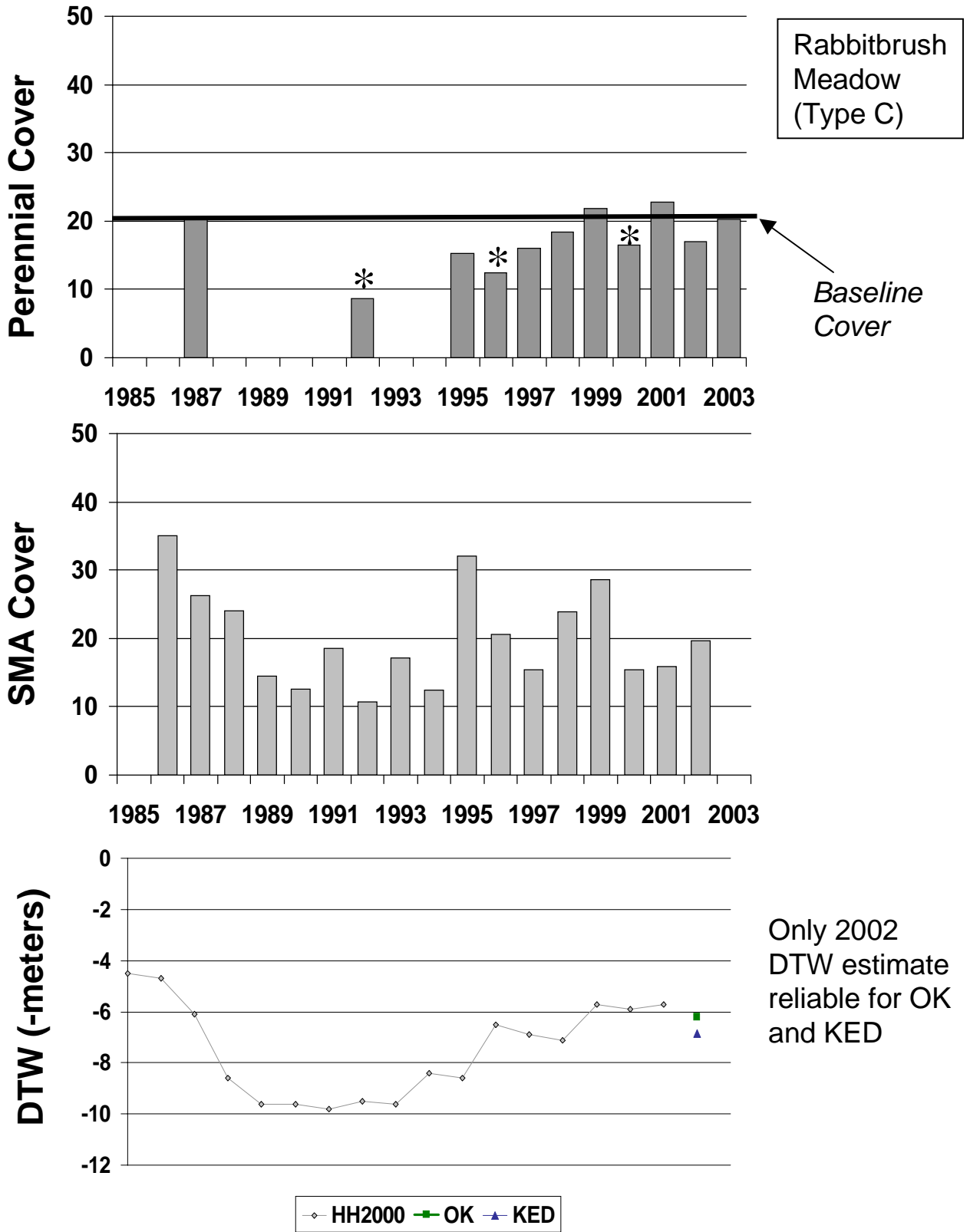


Figure 70. Wellfield: Laws. Status 2003: DRP

LNP018

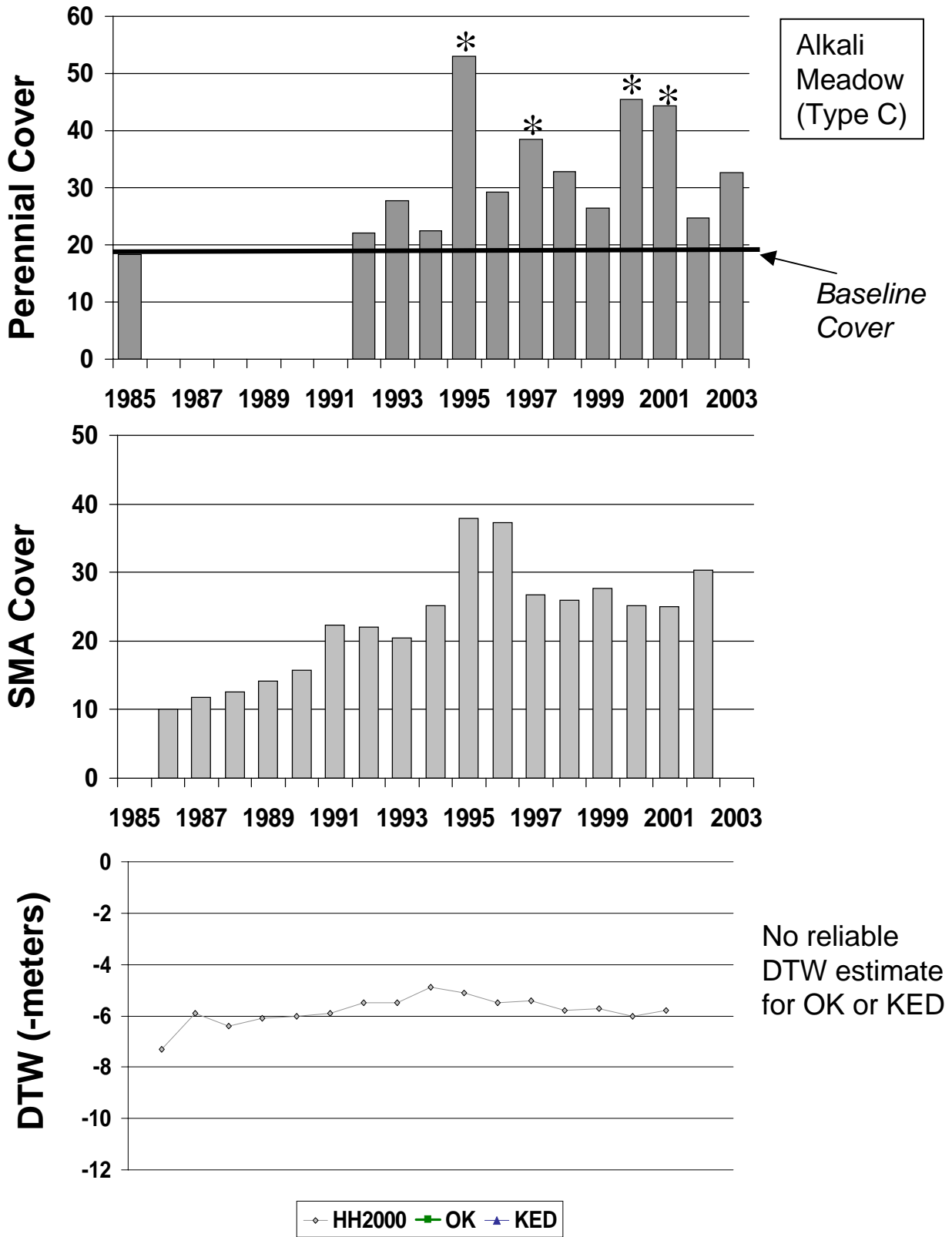


Figure 71. Status 2003: Control

LNP019

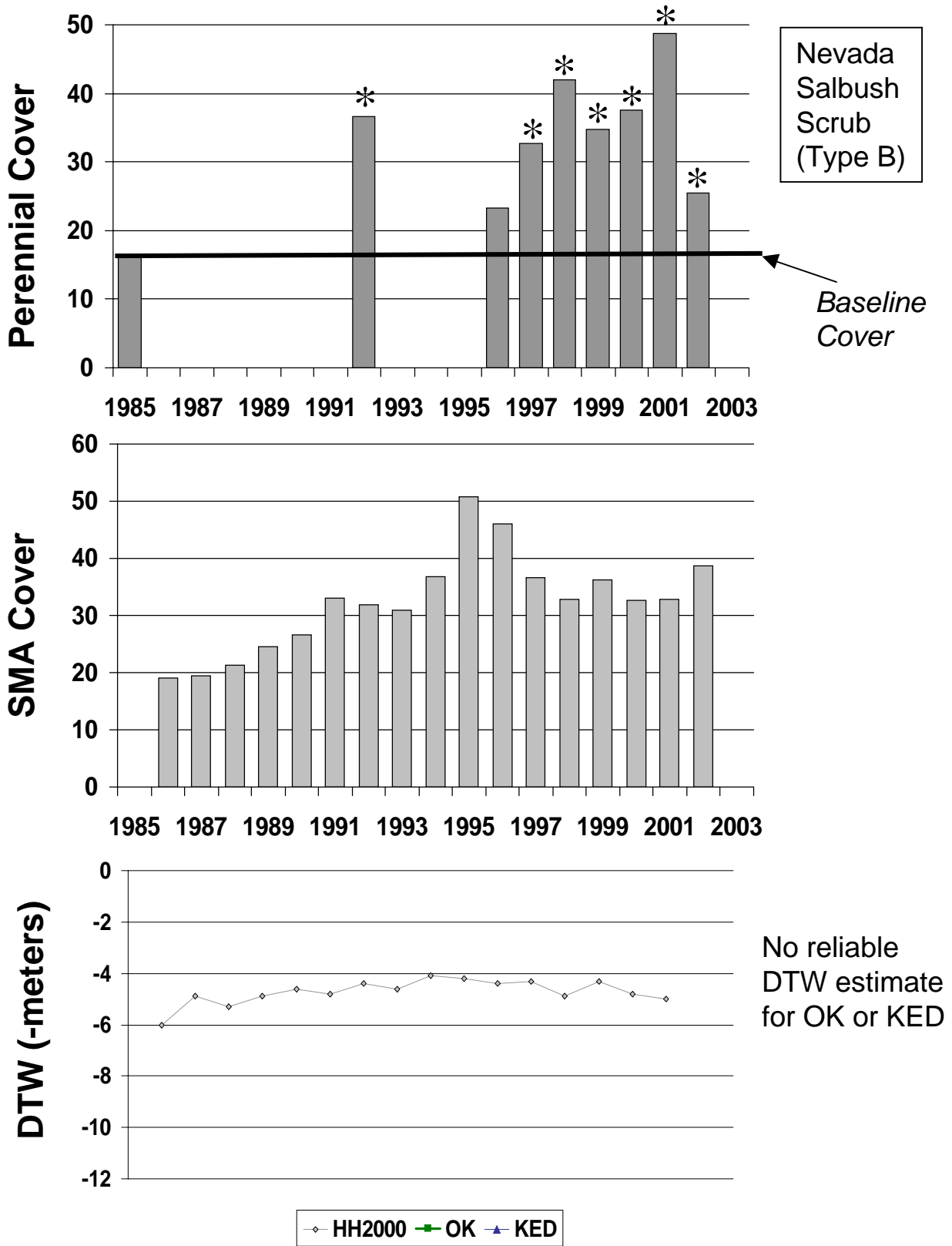


Figure 72. Status 2002: Control

LNP045

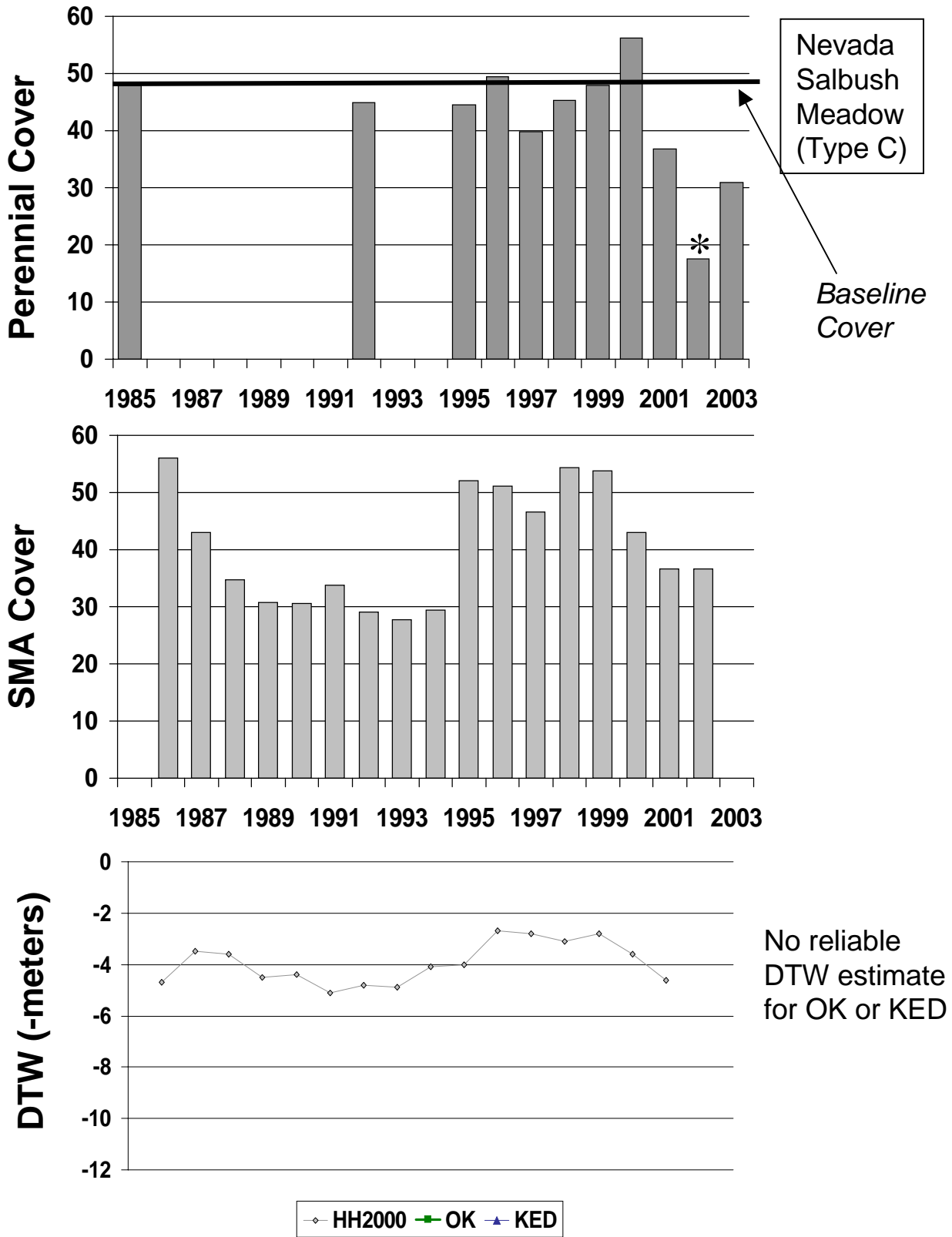


Figure 73. Wellfield: Lone Pine. Status 2003: DRPfree

LNP050

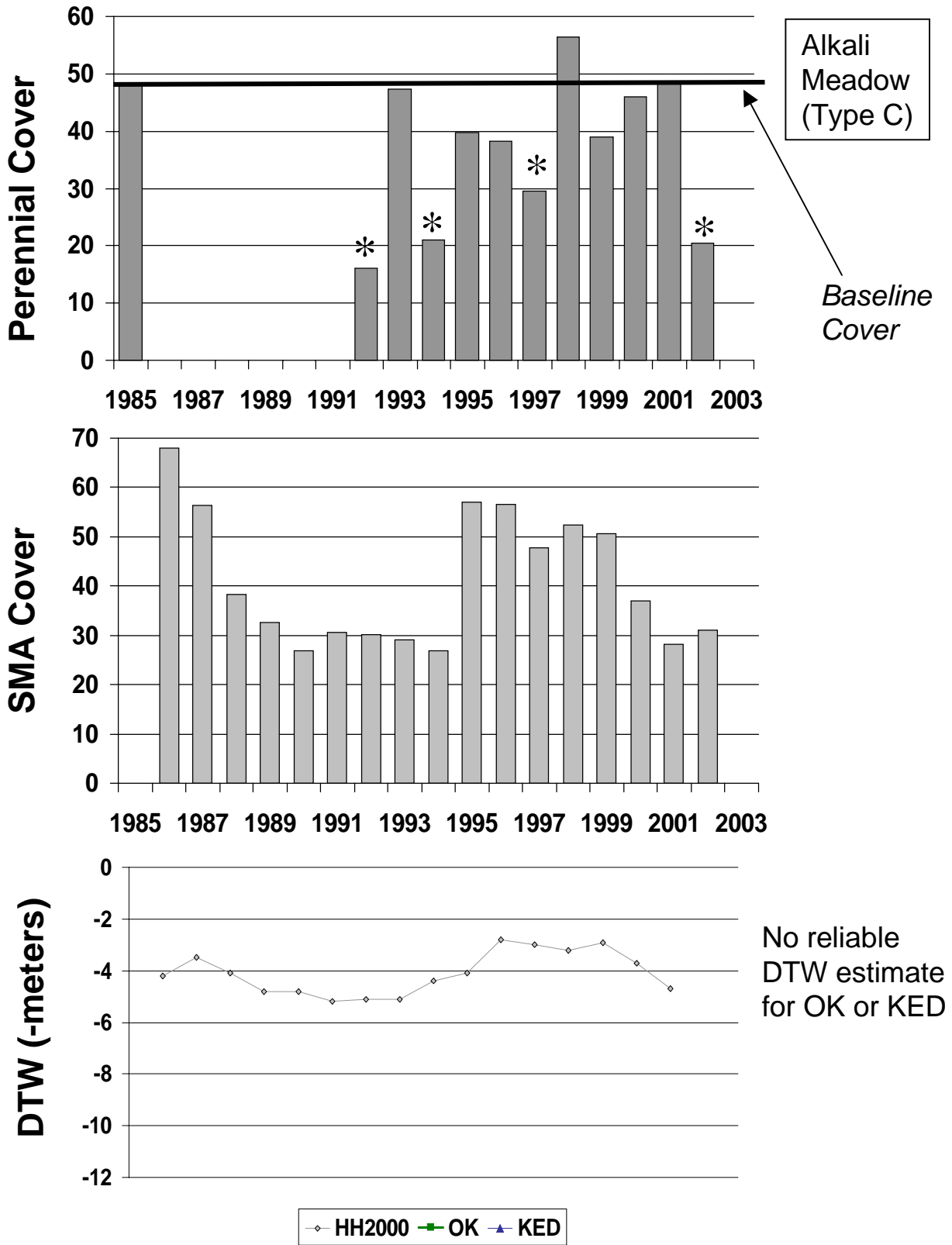


Figure 74. Status 2002: Control

LNP095

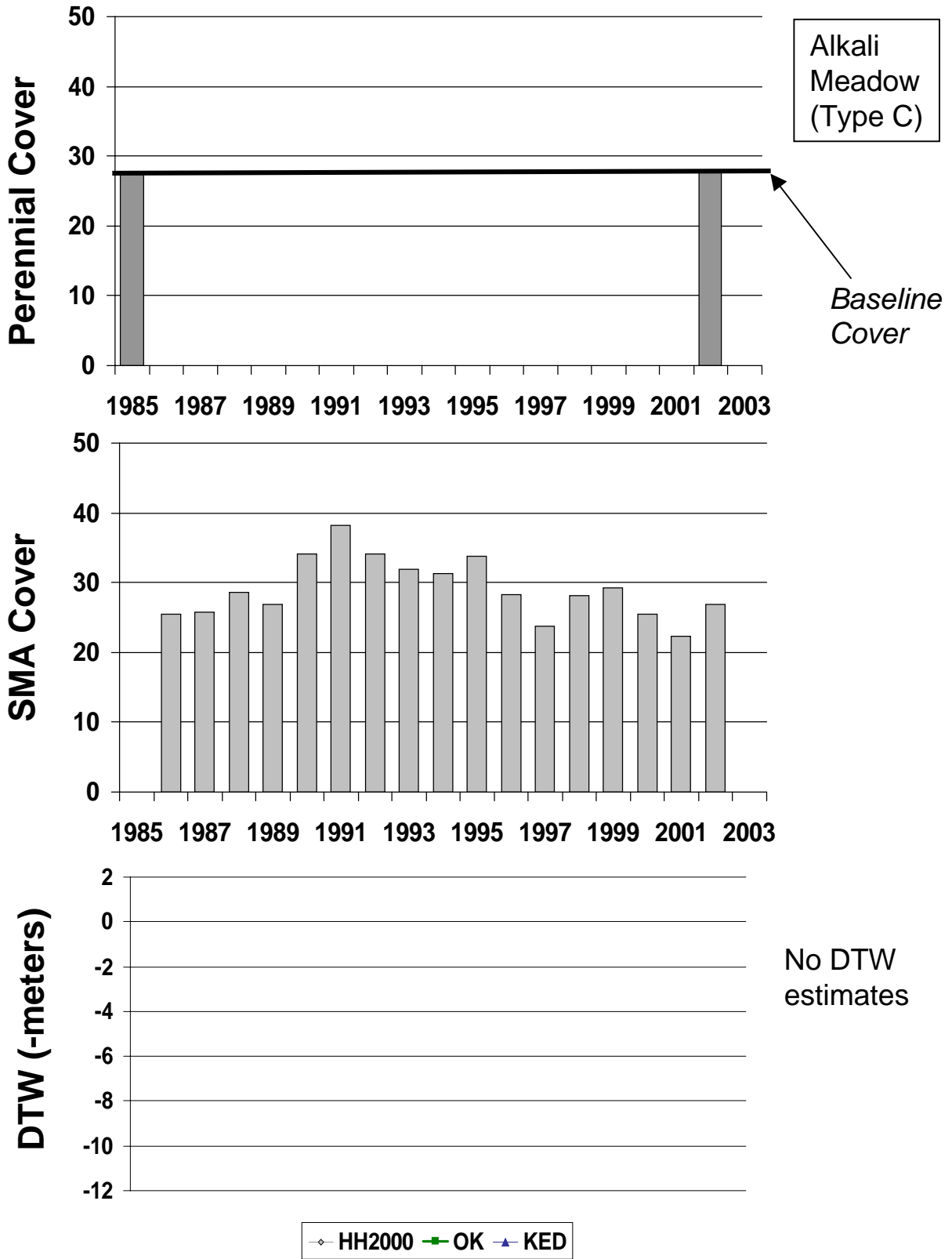


Figure 75. Status 2002: Control

MAN006

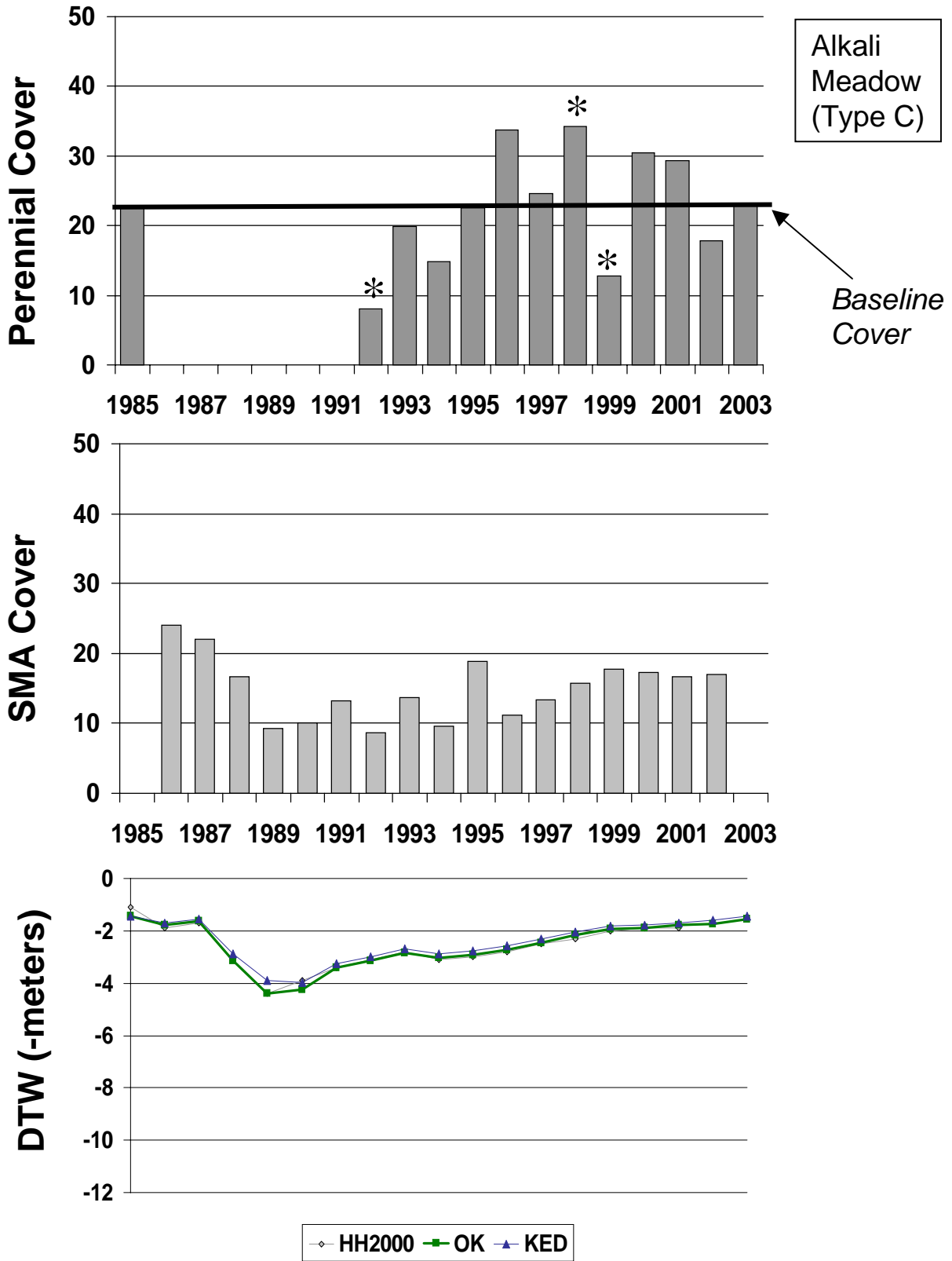


Figure 76. Wellfield: Symmes Shepherd. Status 2003: DRPfree

MAN007

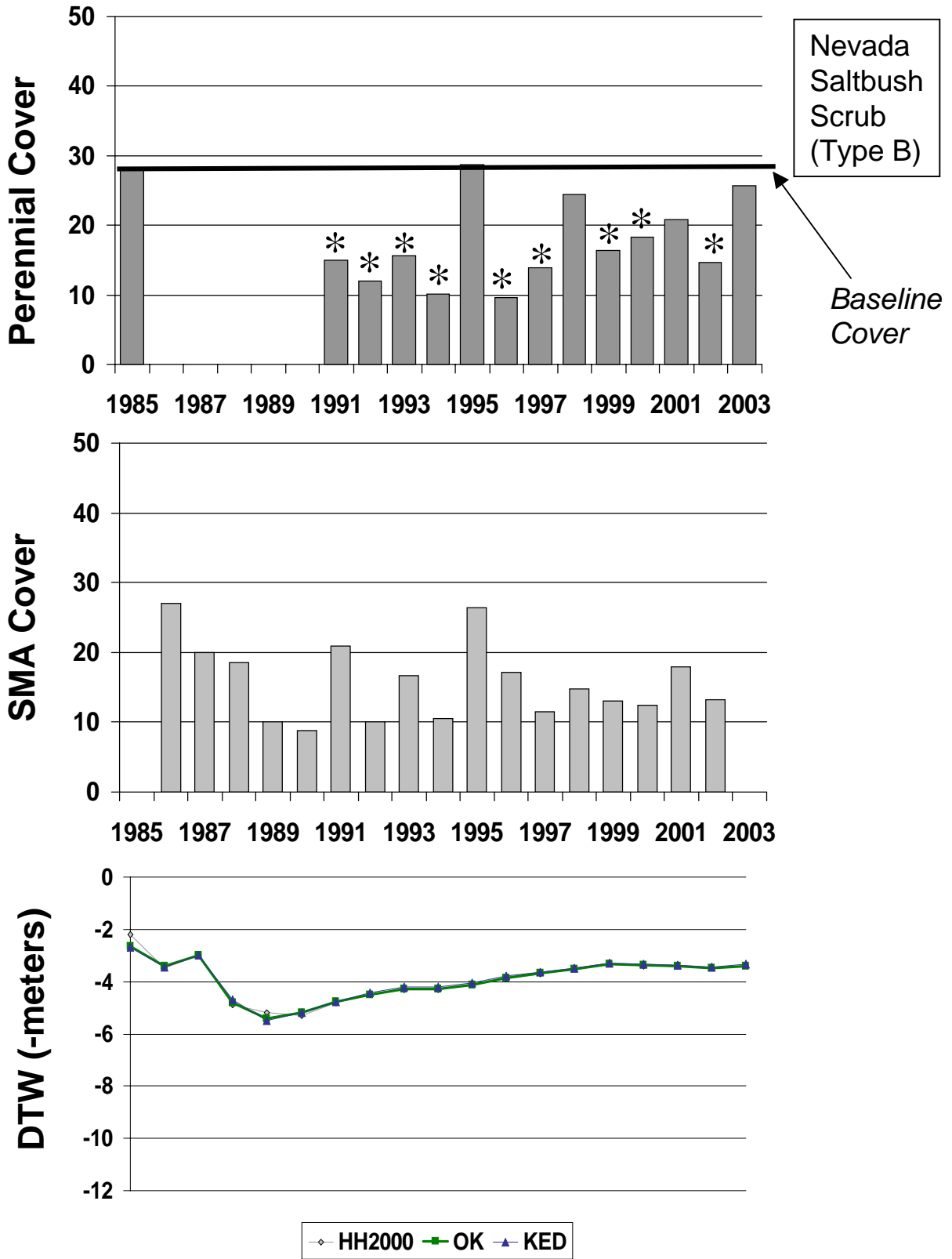


Figure 77. Wellfield: Symmes Shepherd. Status 2003: DRP

MAN014

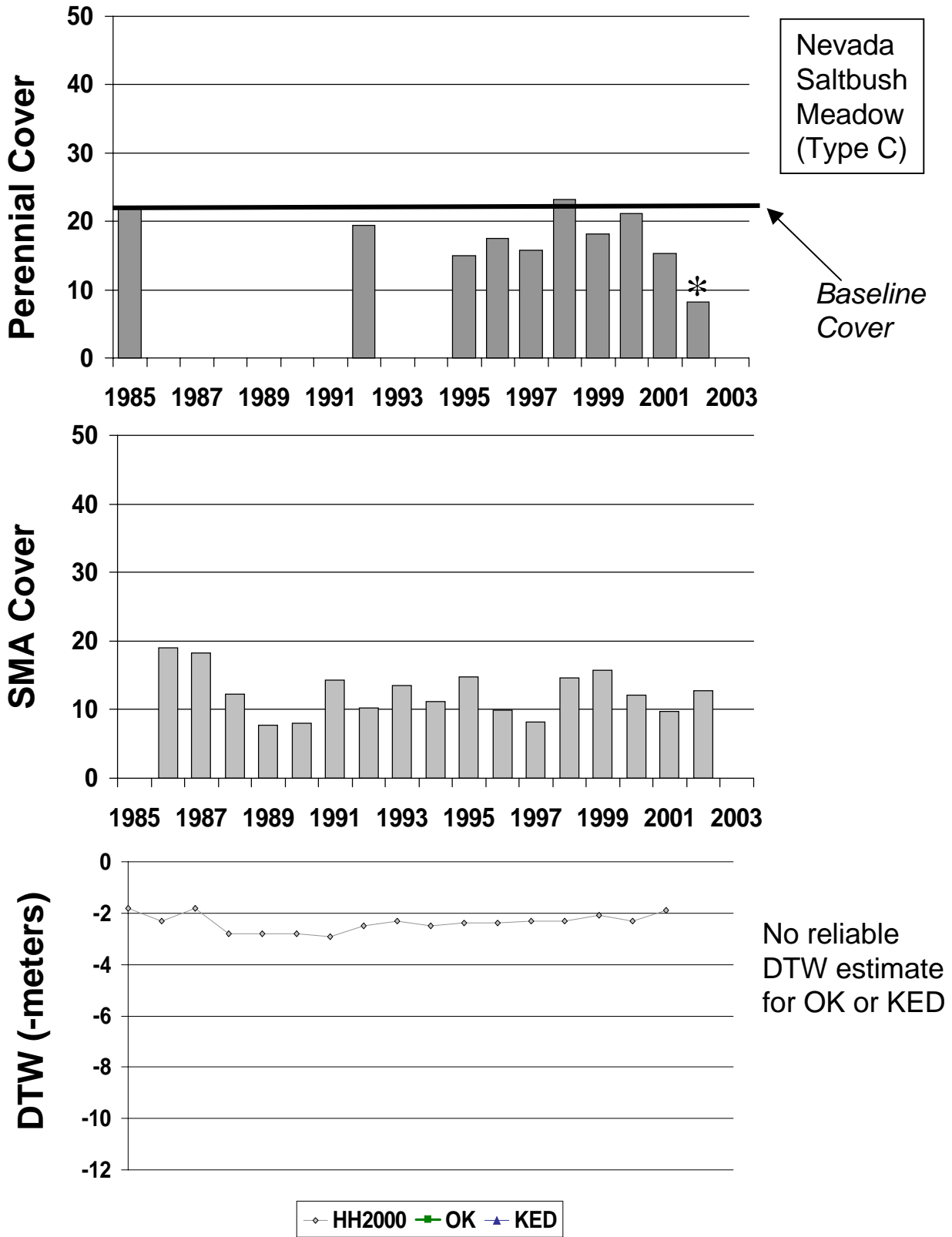


Figure 78. Status 2002: Control

MAN037

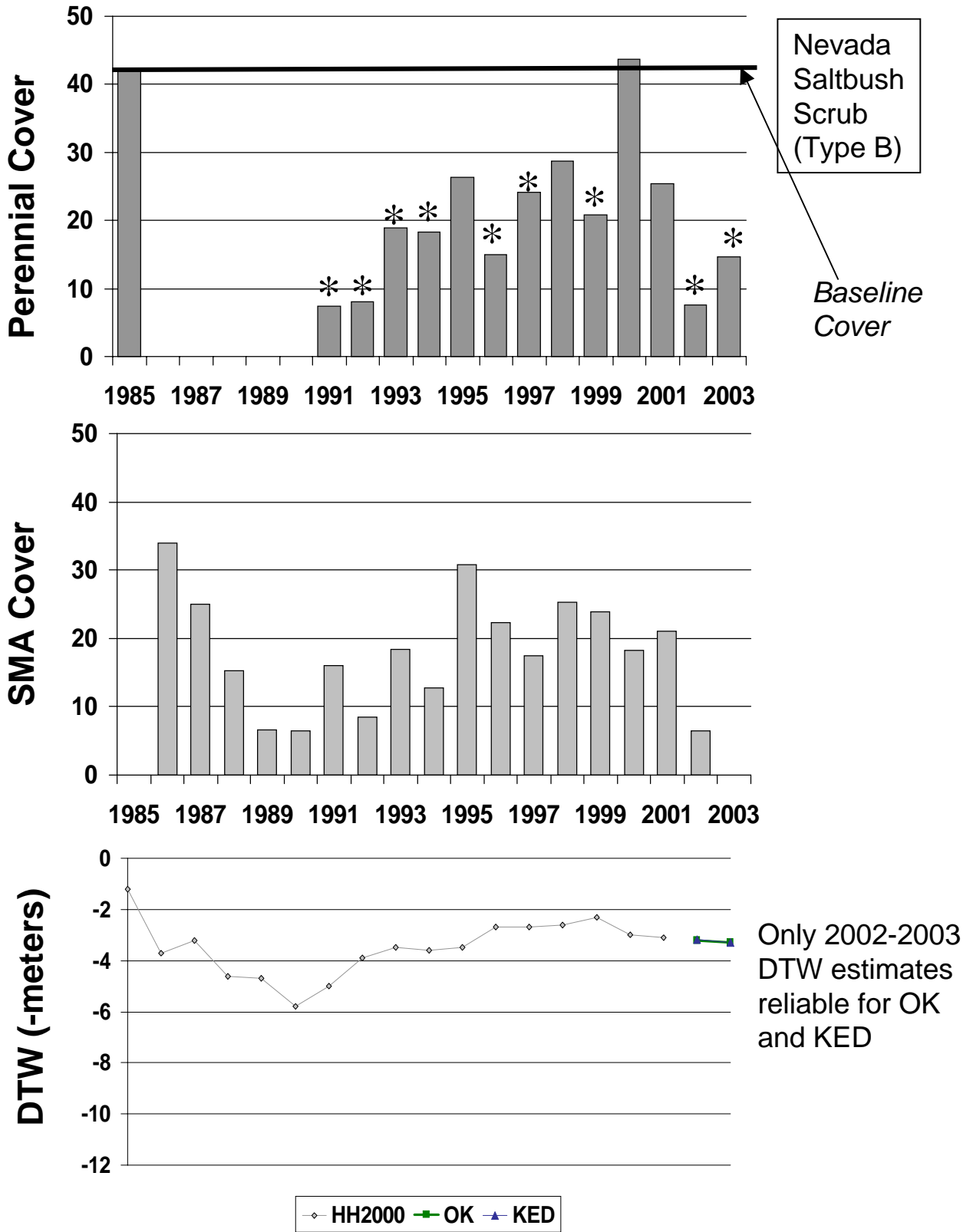


Figure 79. Wellfield: Bairs Georges. Status 2003: DRP

MAN060

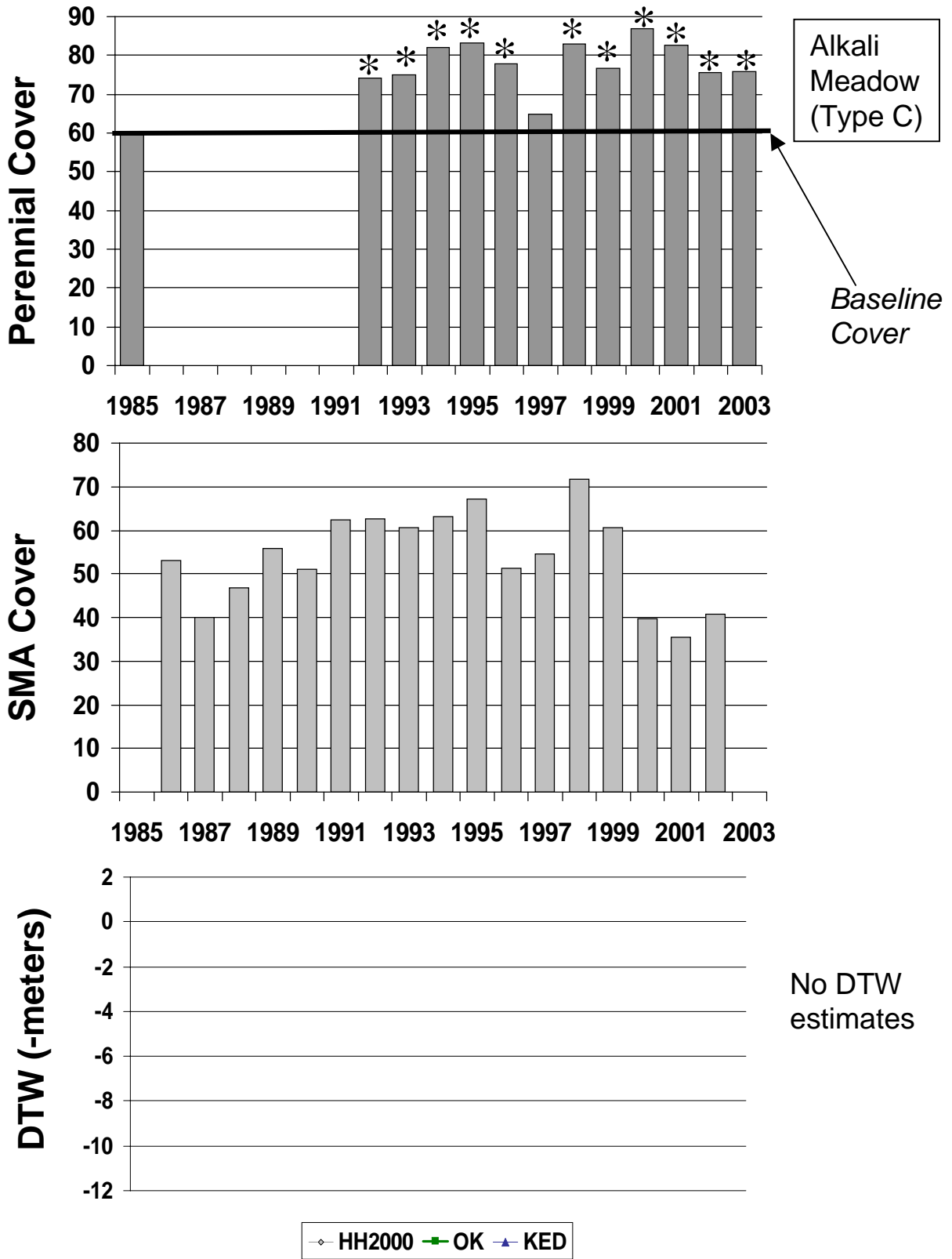


Figure 80. Status 2003: Control

PLC007

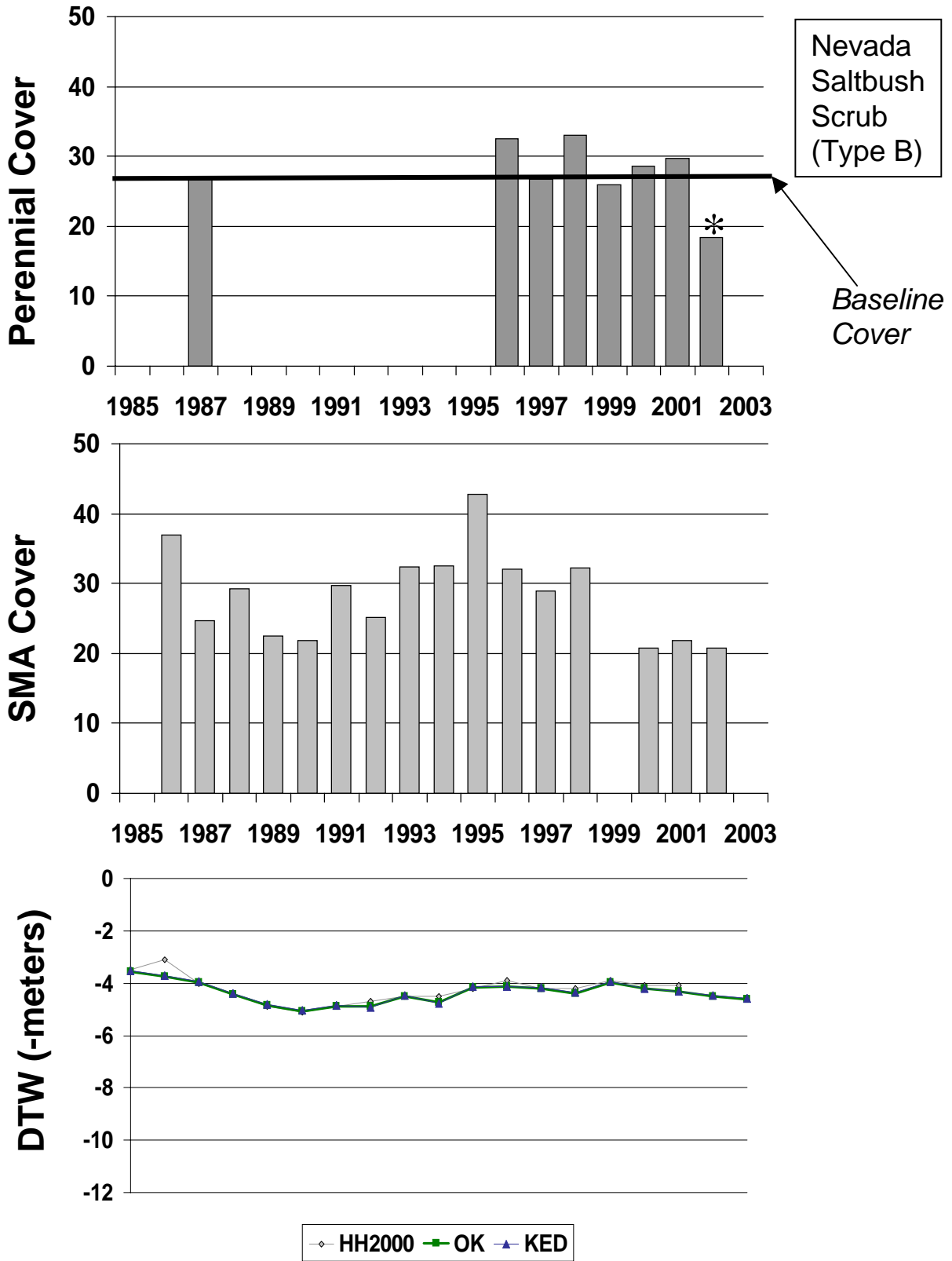


Figure 81. Wellfield: Bishop Cone. Status 2002: DRPfree

PLC024

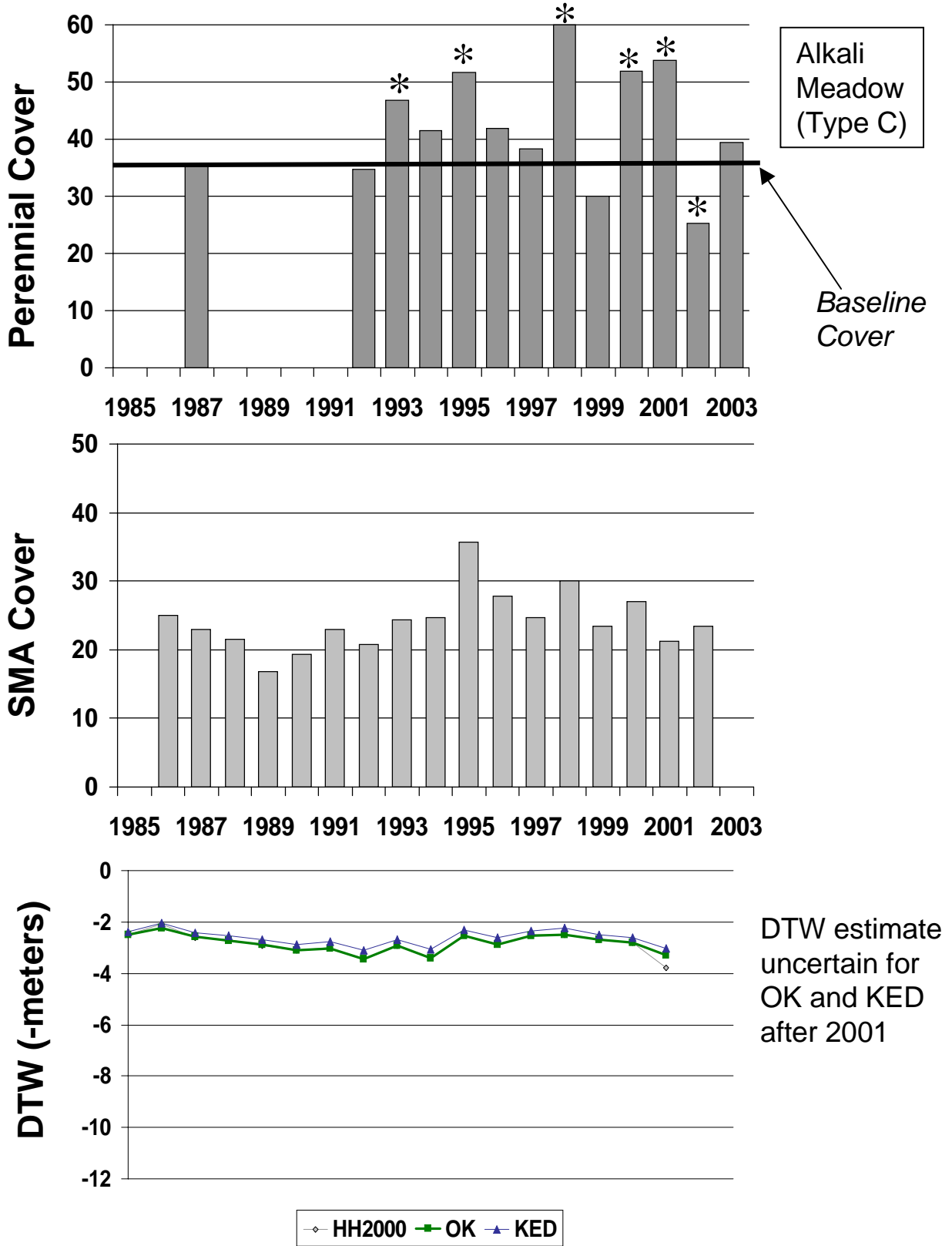


Figure 82. Status 2003: Control

PLC072

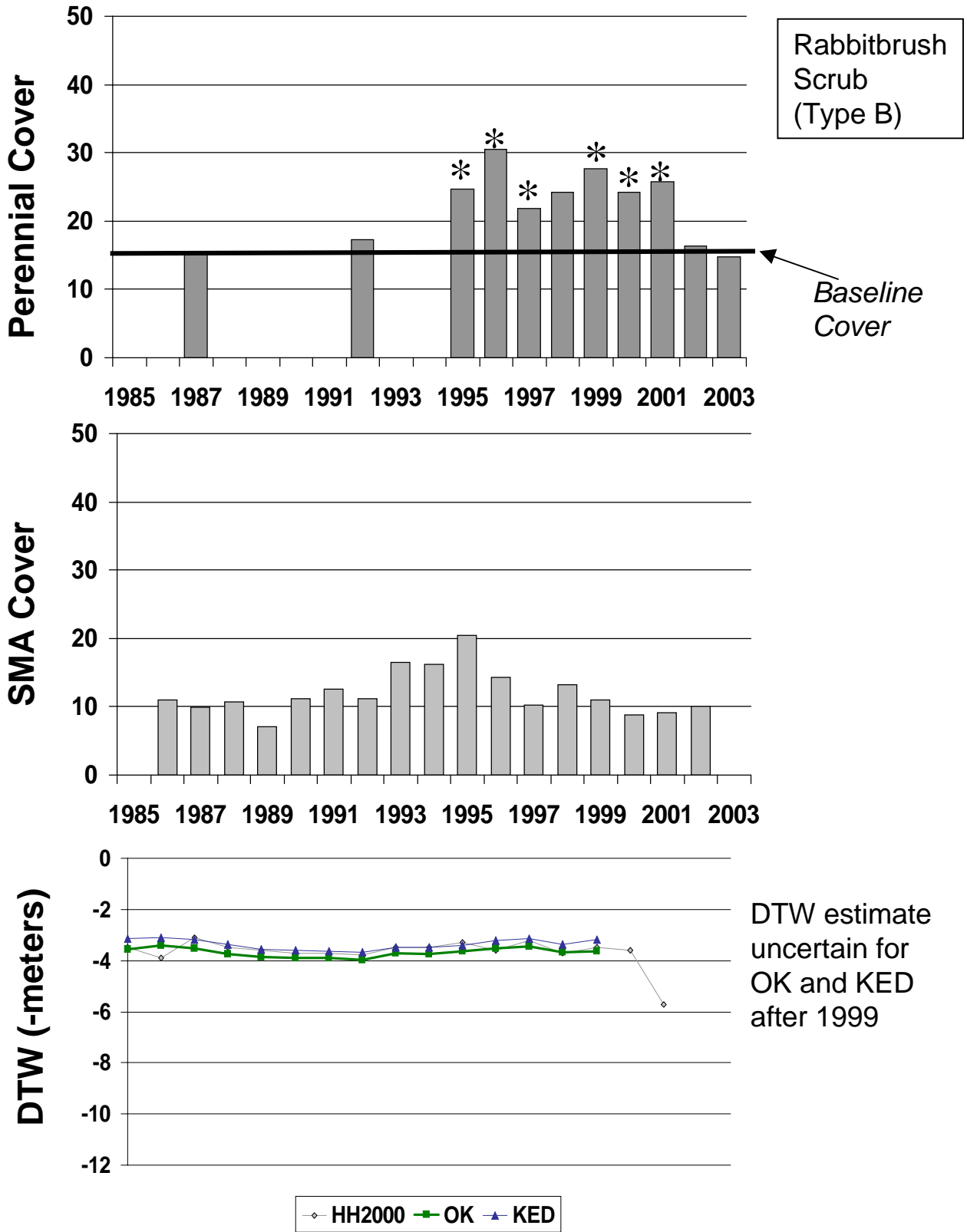


Figure 83. Status 2003: Control

PLC092

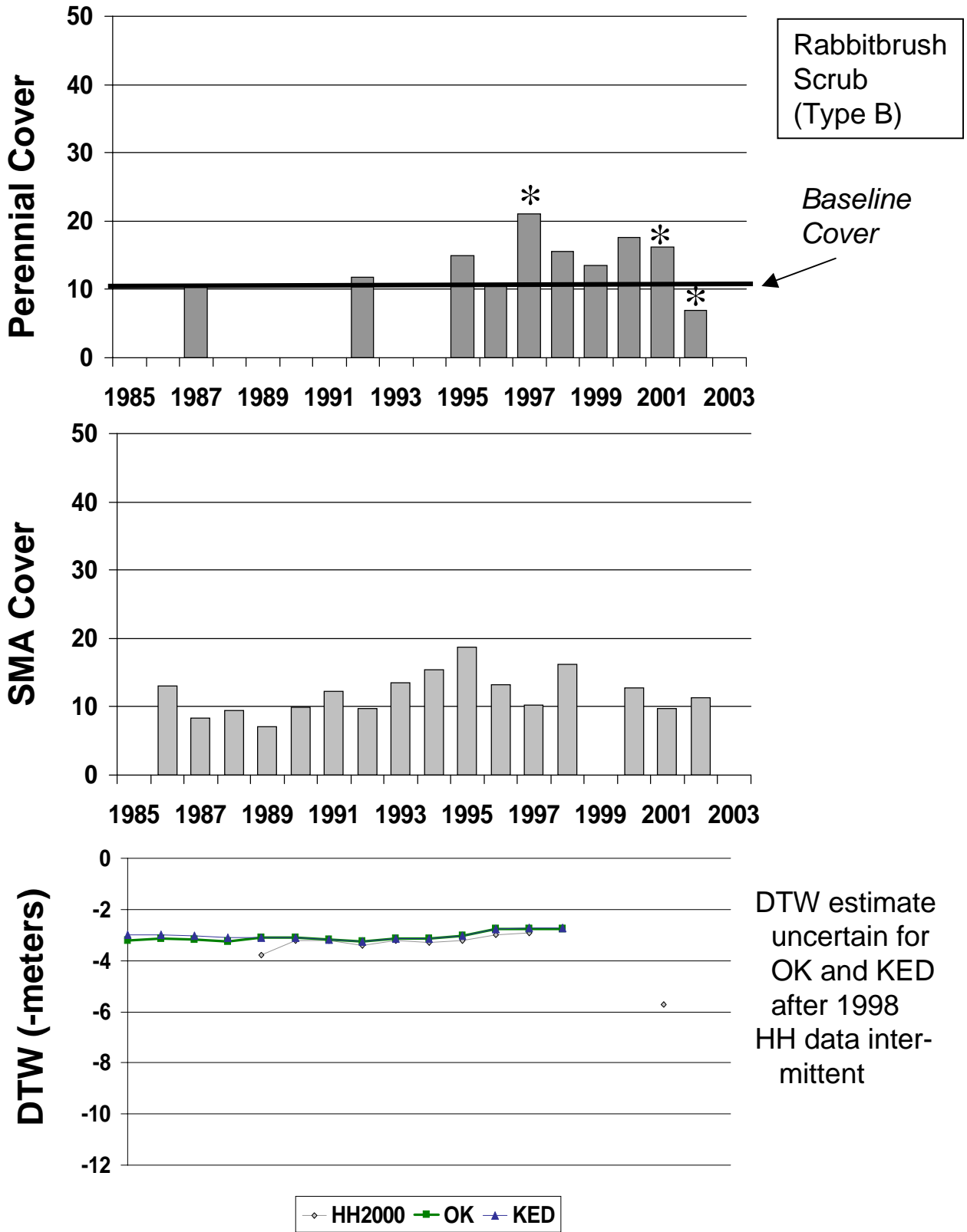


Figure 84. Status 2002: Control

PLC097

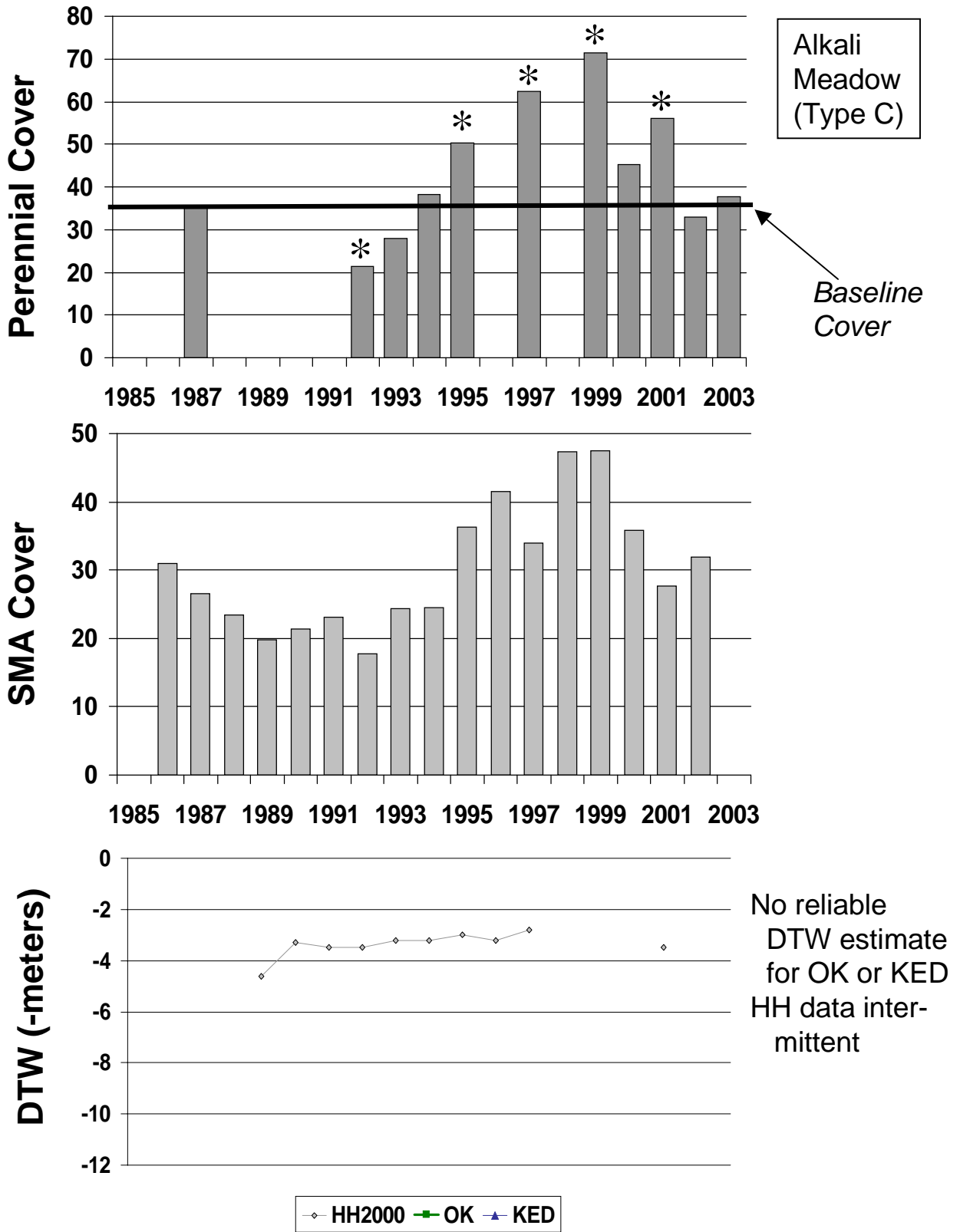


Figure 85. Status 2003: Control

PLC106

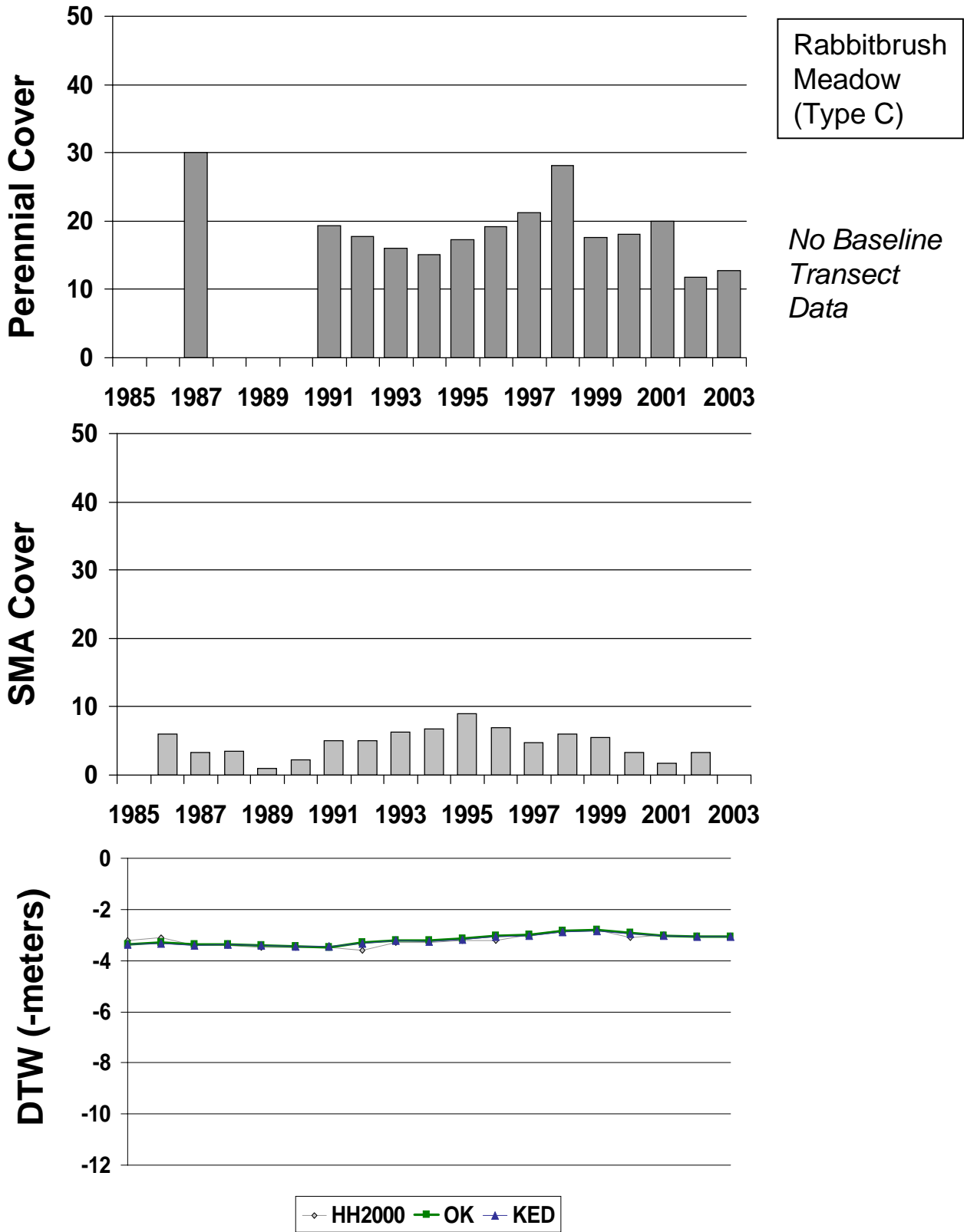


Figure 86. Status 2003: Control

PLC113

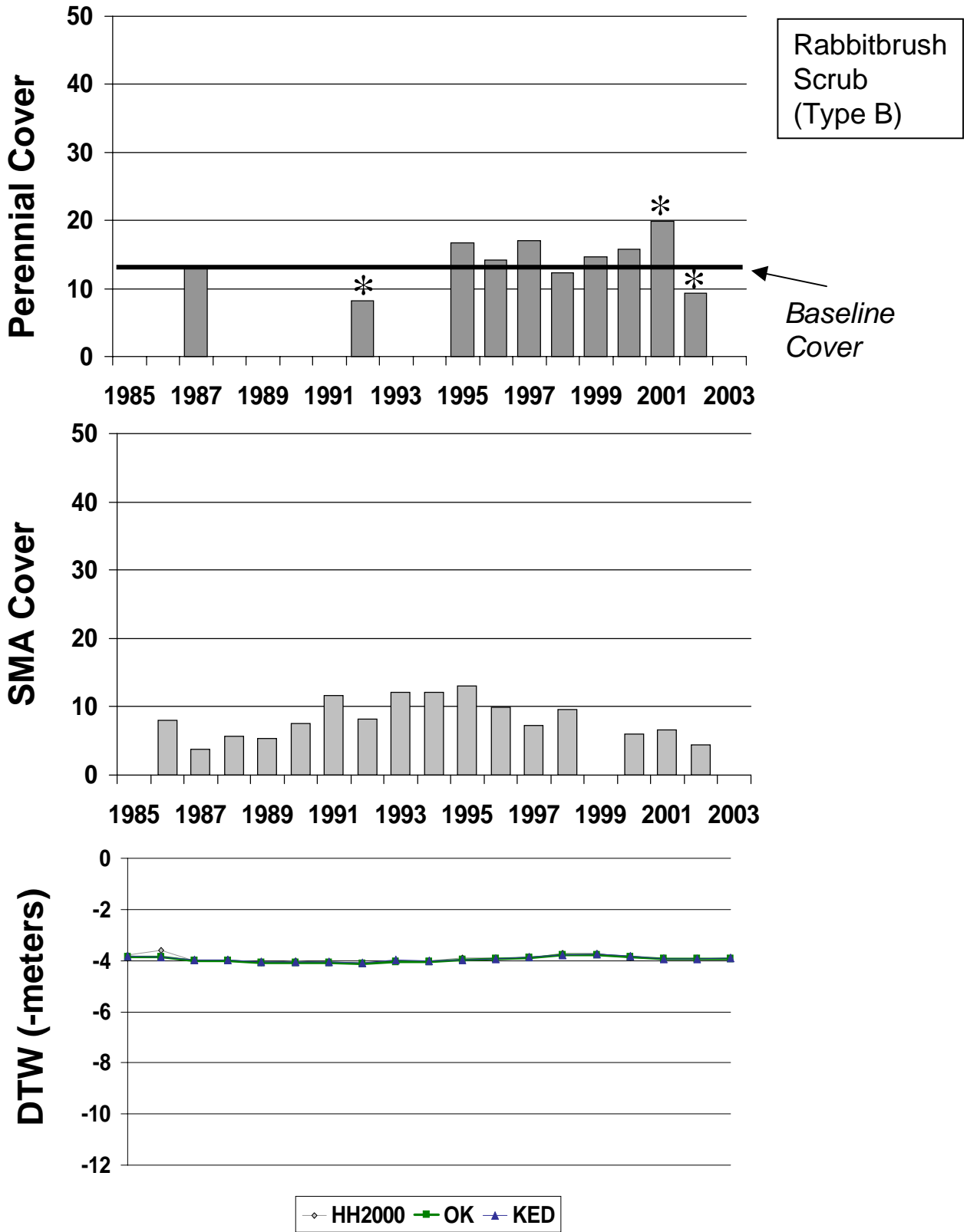


Figure 87. Status 2002: Control

PLC121

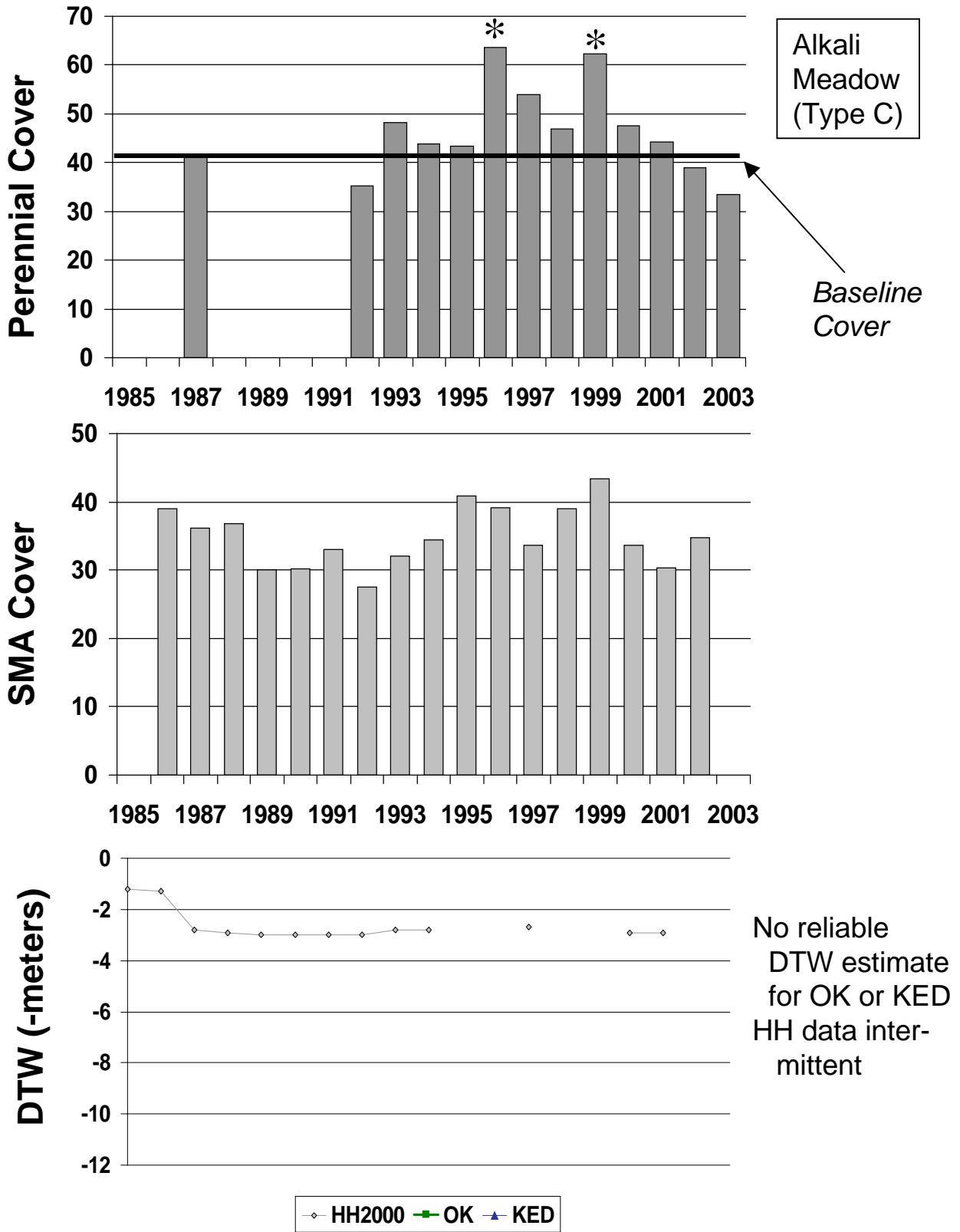


Figure 88. Status 2003: Control

PLC136

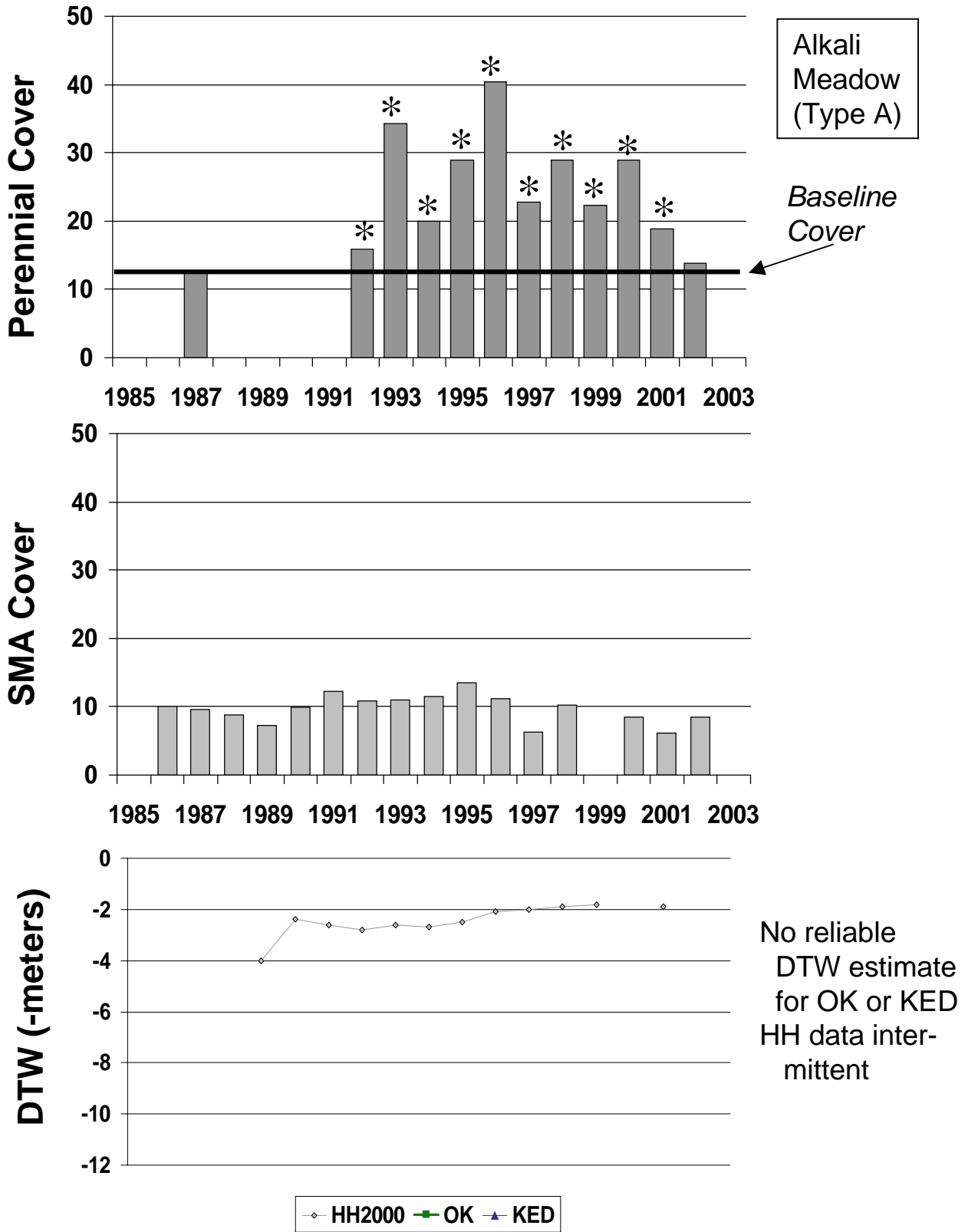


Figure 89. Status 2002: Control

PLC137

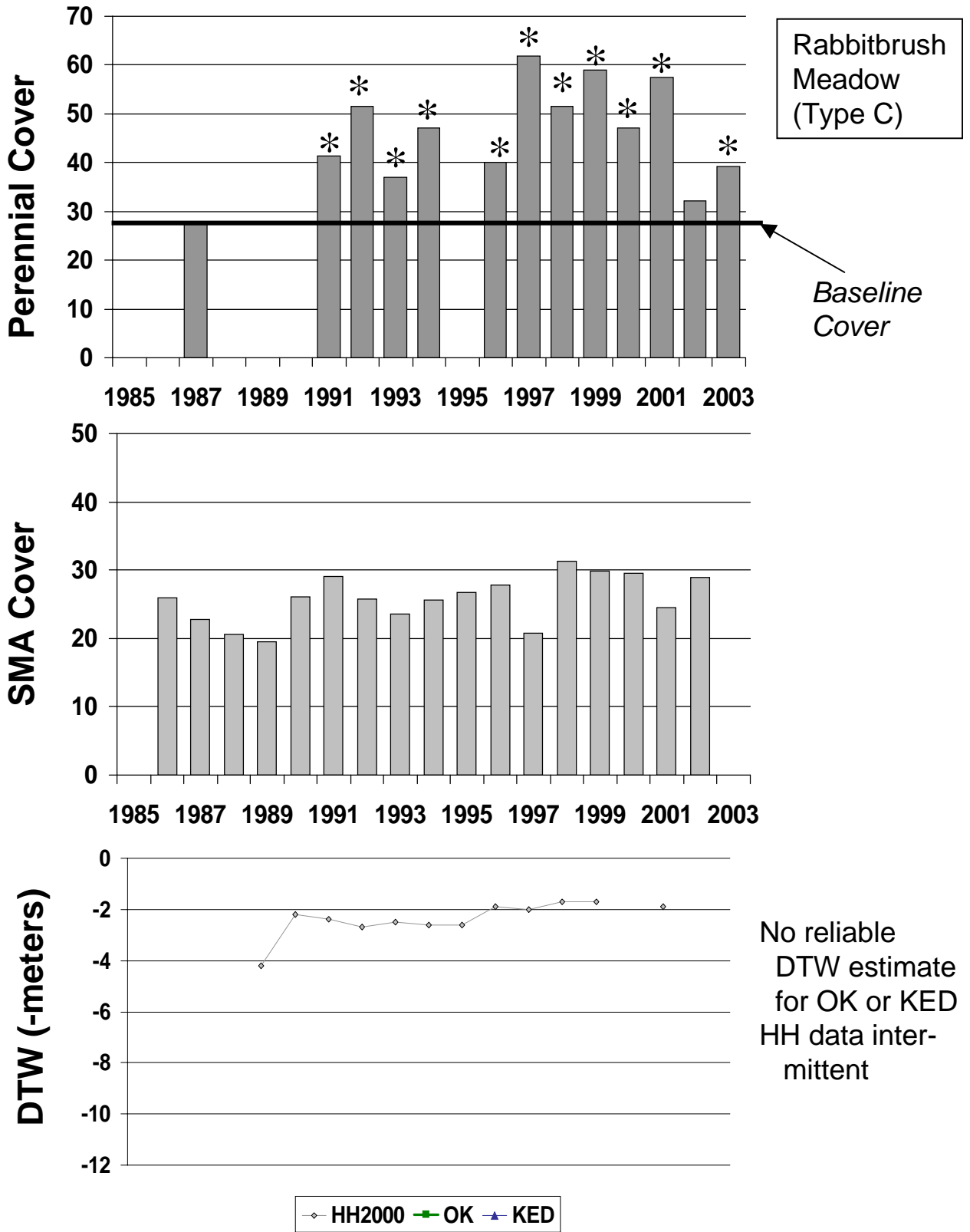


Figure 90. Status 2003: Control

PLC223

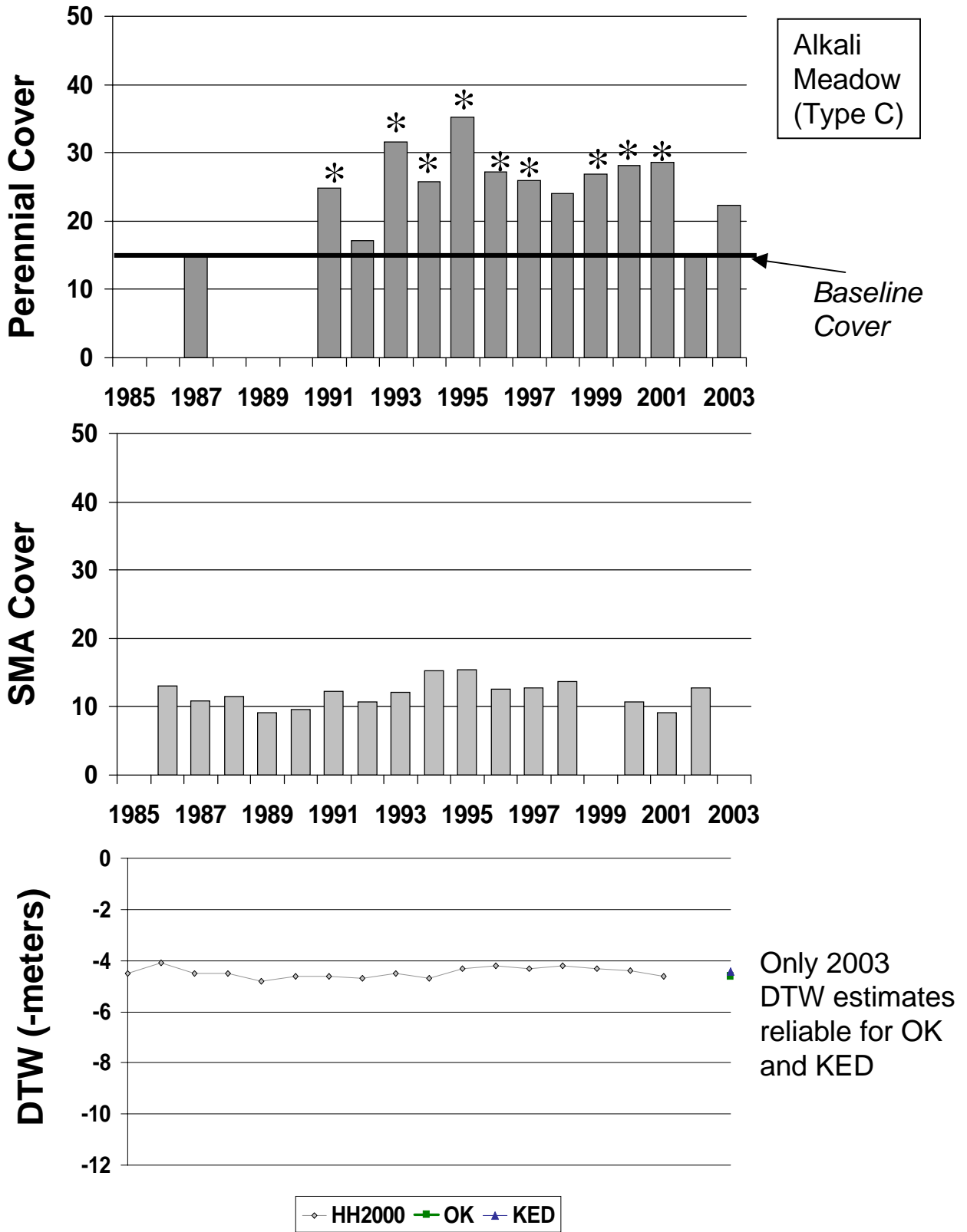


Figure 91. Status 2003: Control

TIN028

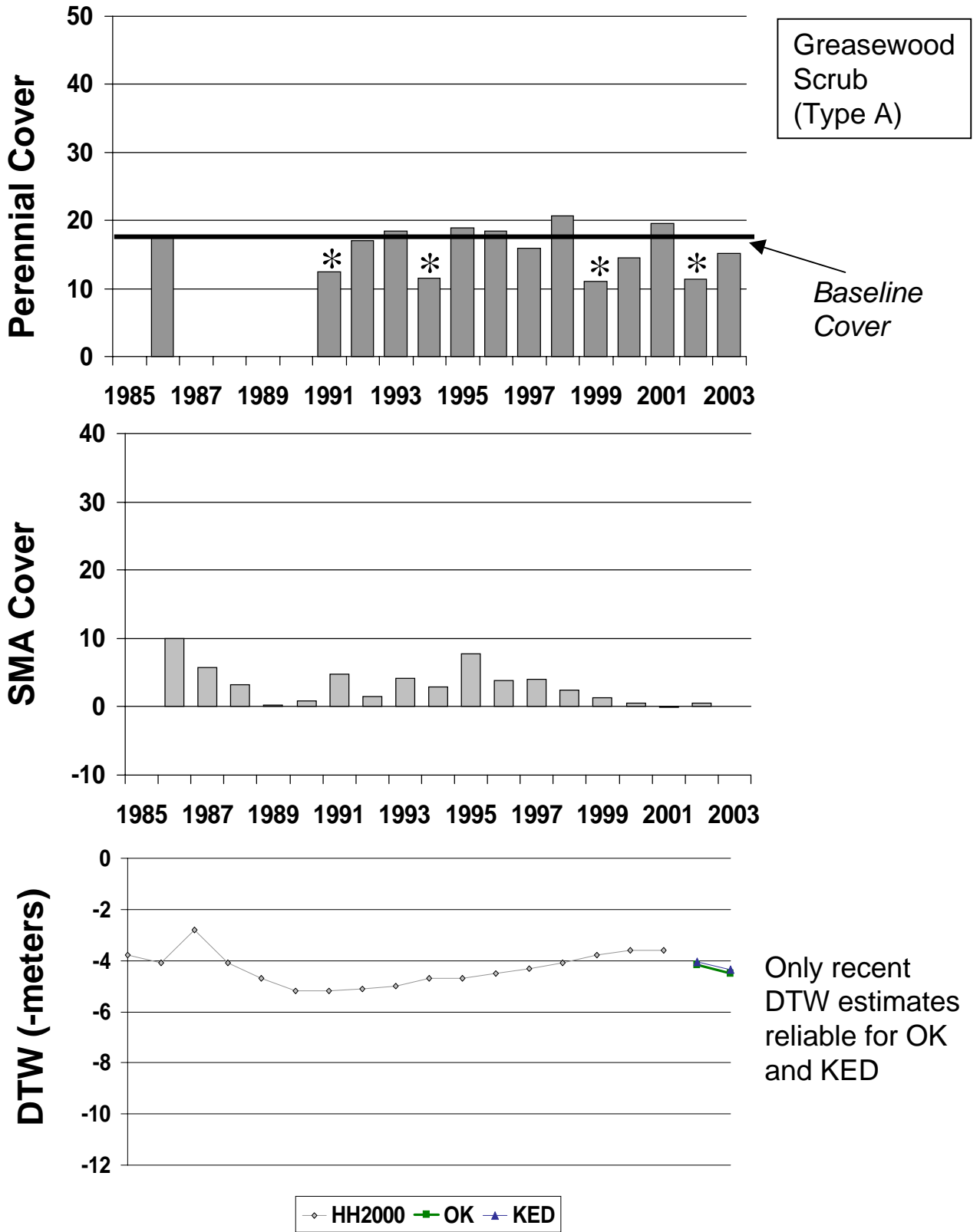


Figure 92. Wellfield: Big Pine. Status 2003: DRPfree

TIN030

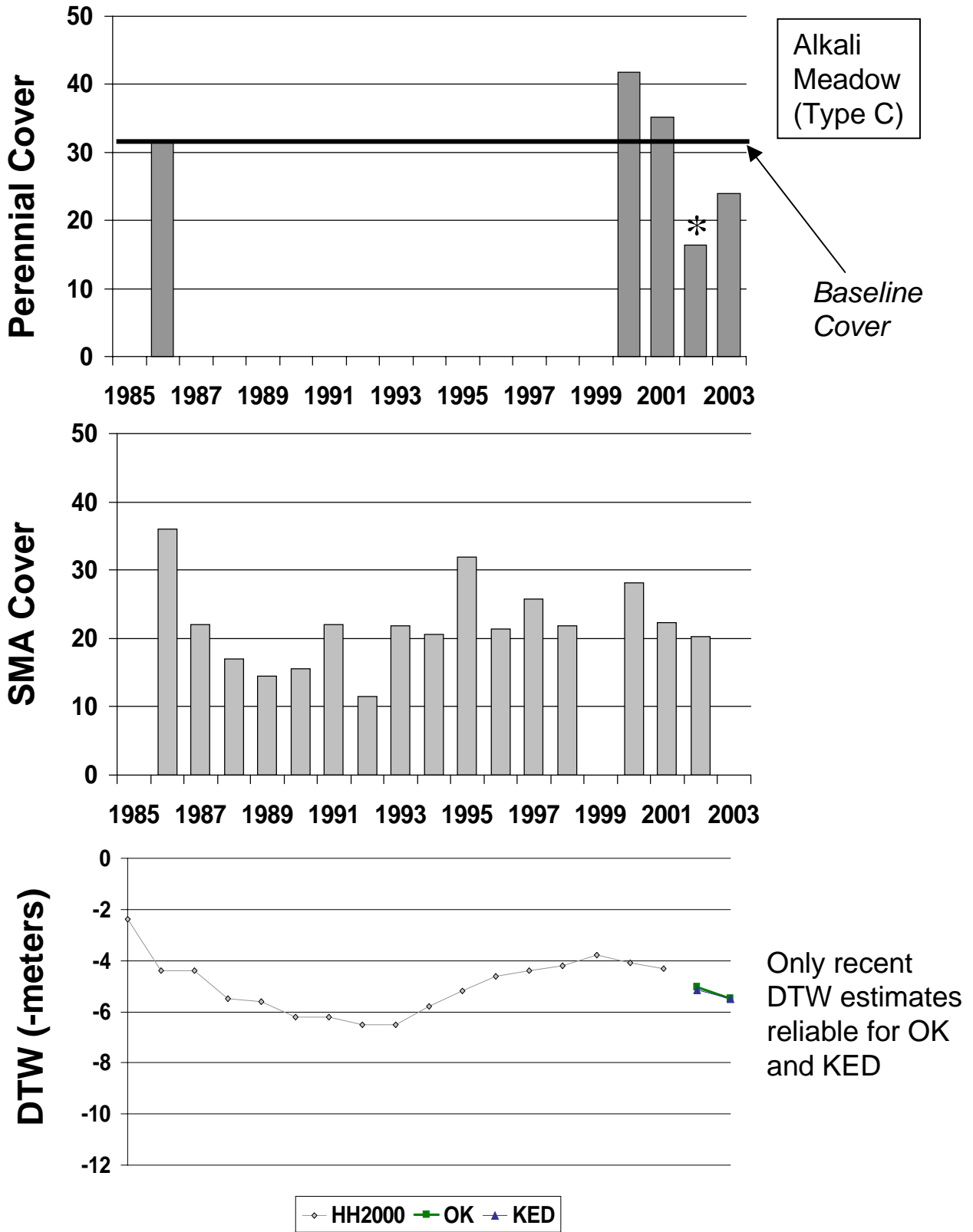


Figure 93. Wellfield: Big Pine. Status 2003: DRPfree

TIN050

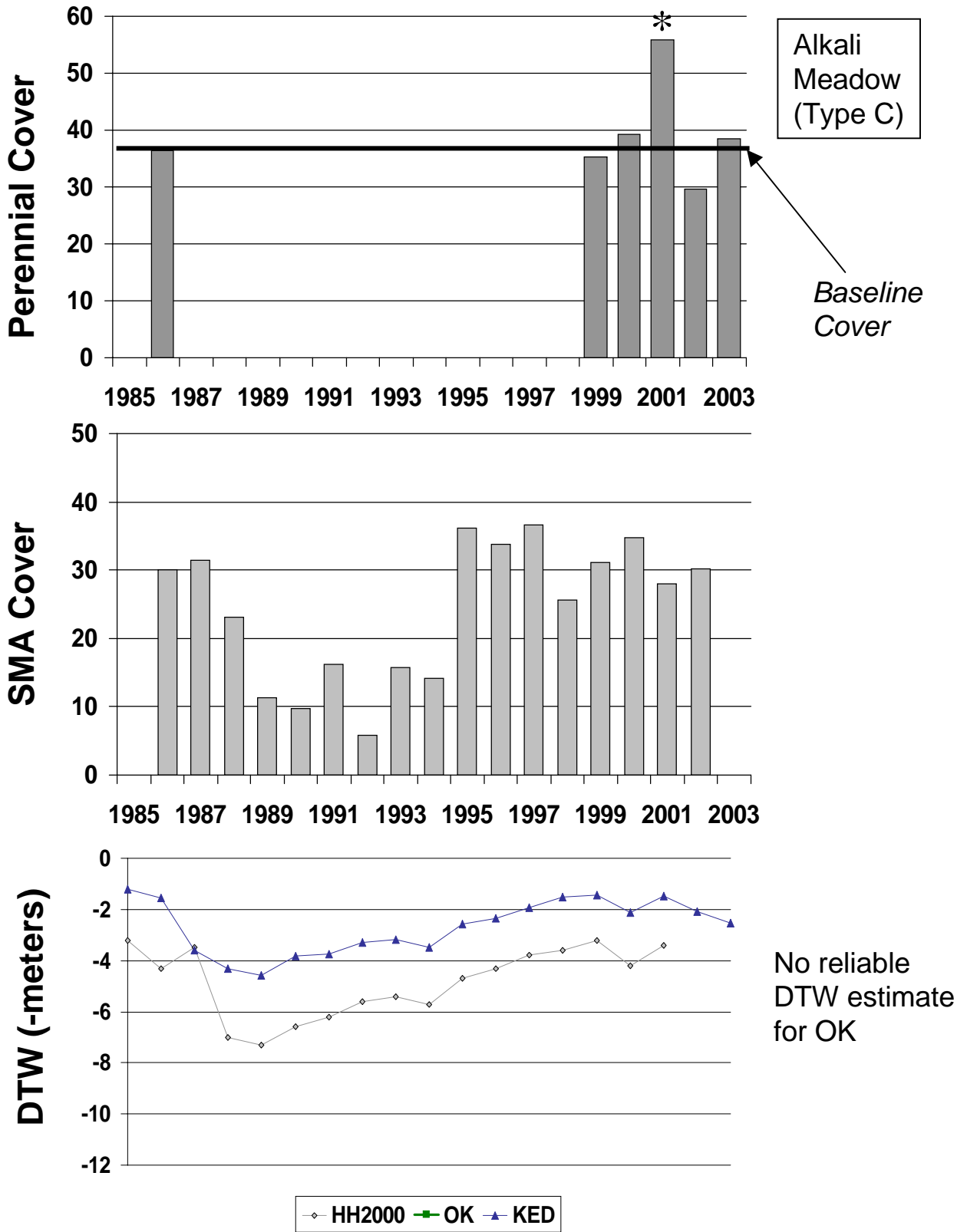


Figure 94. Wellfield: Taboose Aberdeen. Status 2003: DRPfree

TIN053

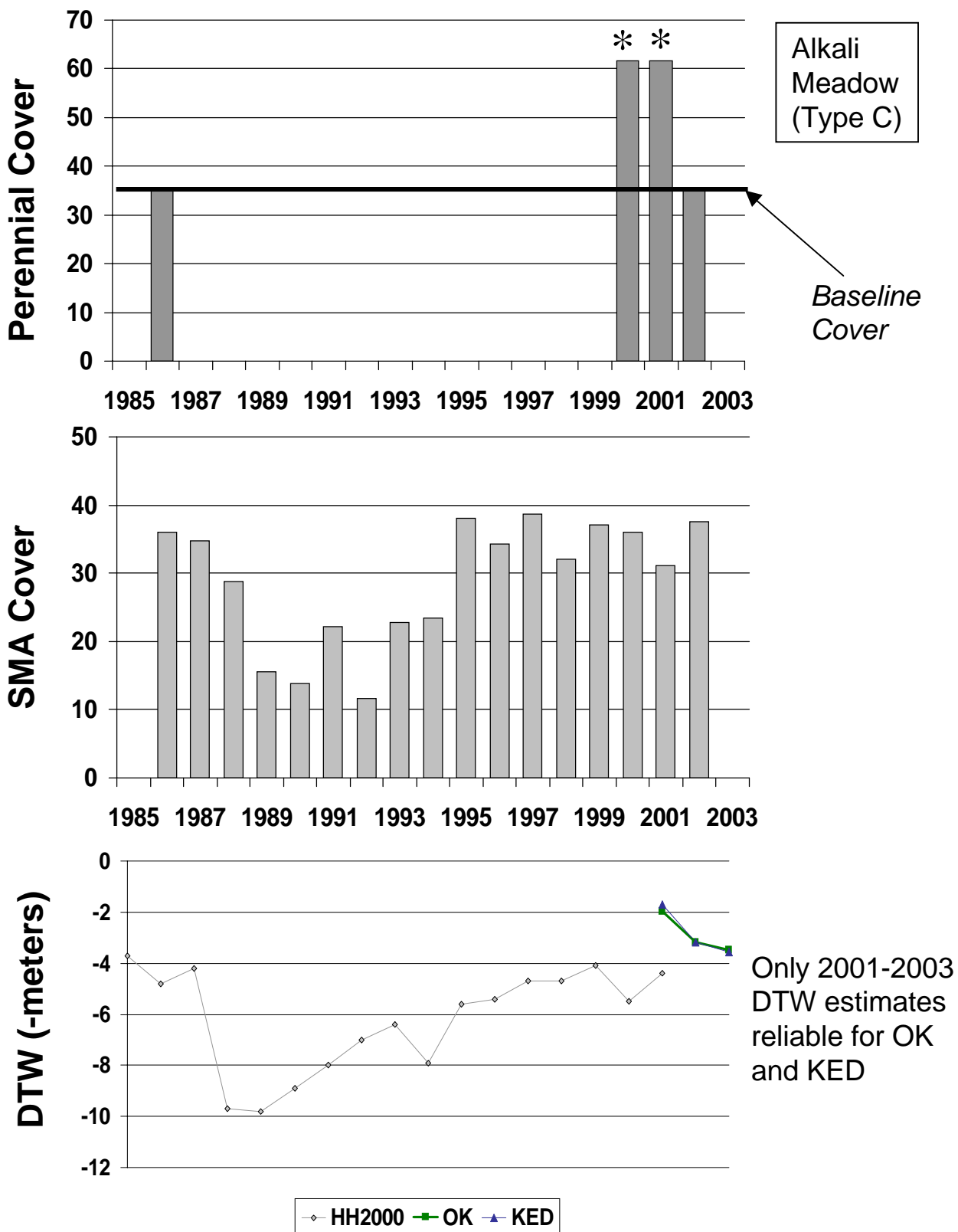


Figure 95. Wellfield: Taboose Aberdeen. Status 2002: DRPfree

TIN064

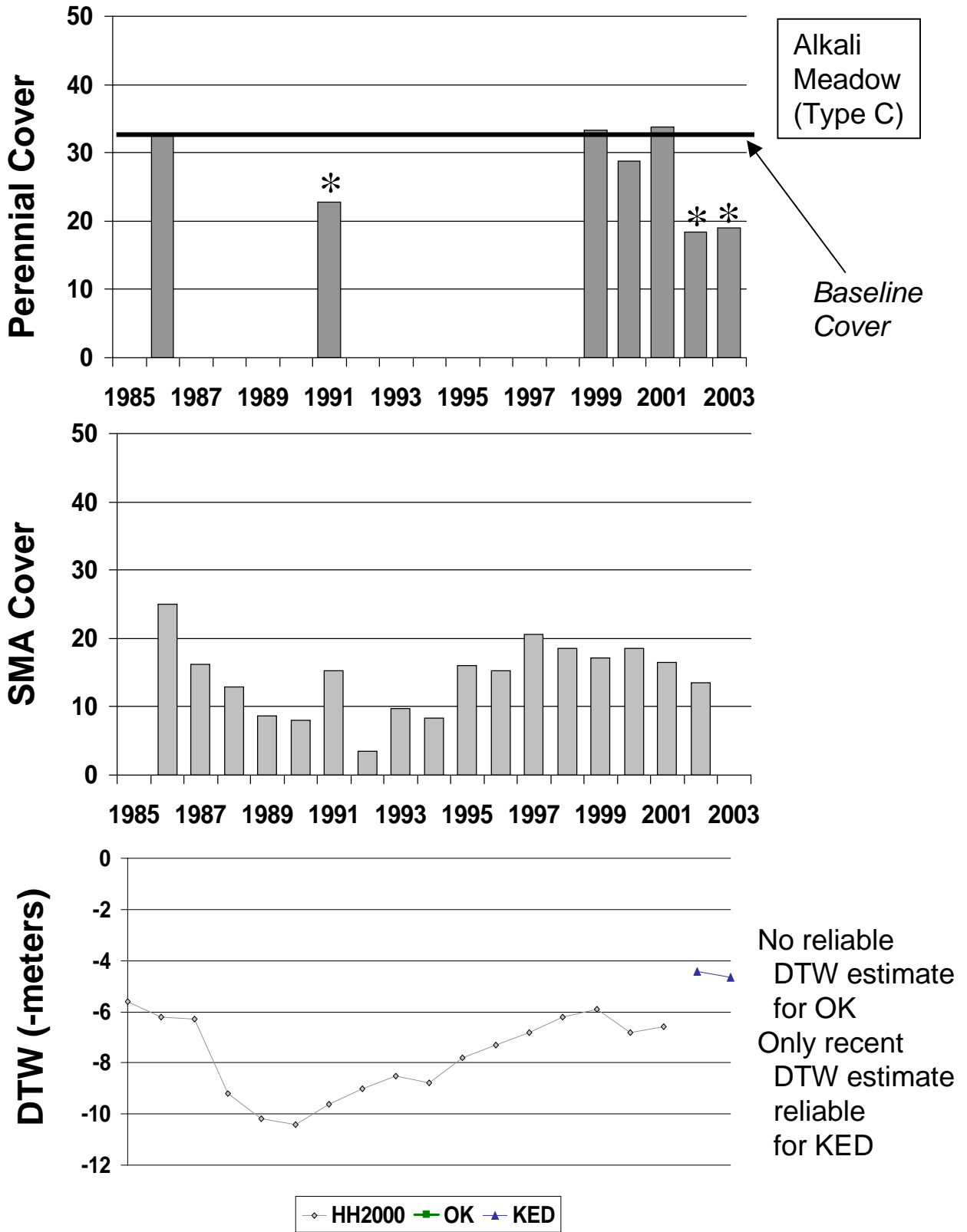


Figure 96. Wellfield: Taboose Aberdeen. Status 2003: DRPfree

TIN068

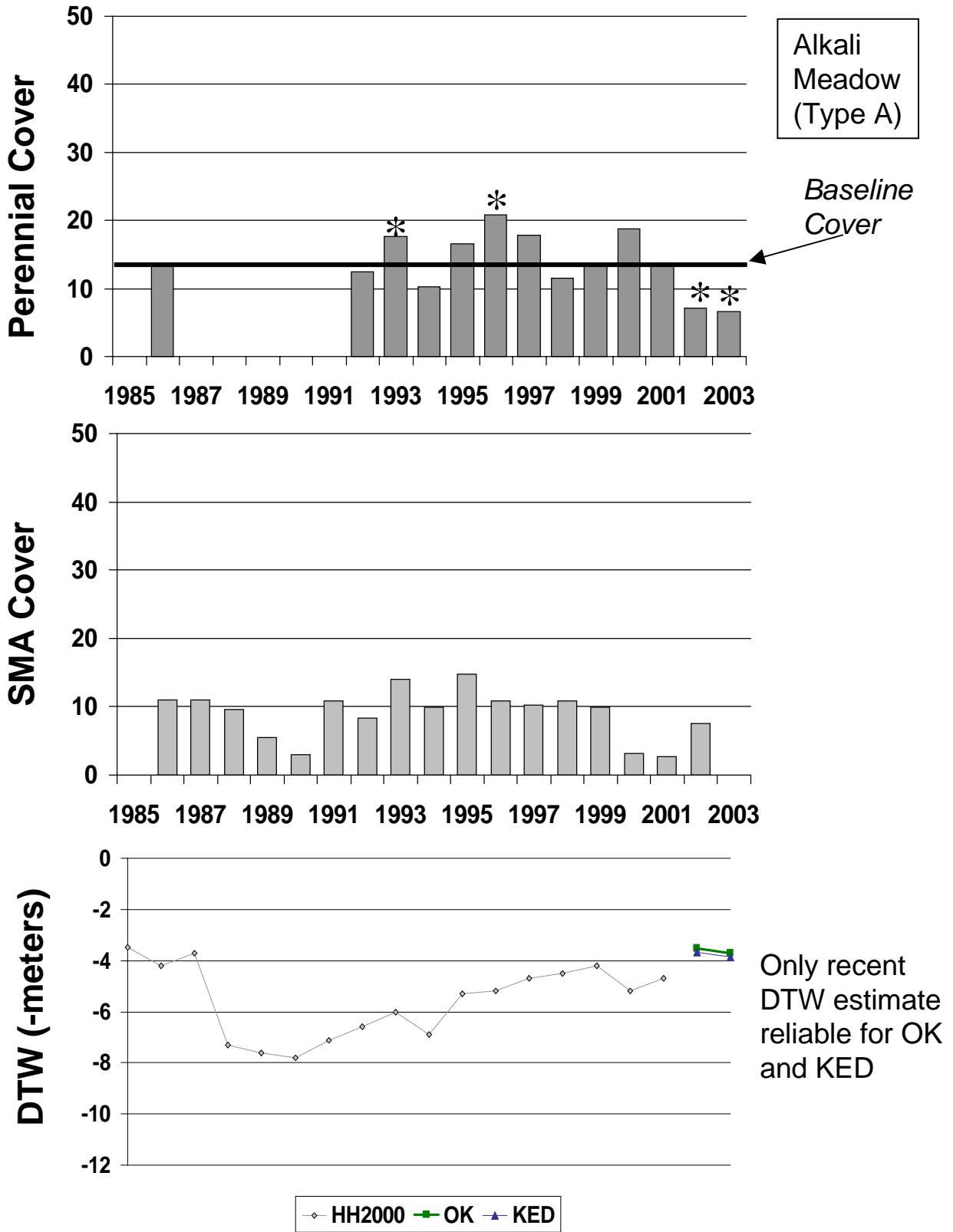


Figure 97. Wellfield: Taboose Aberdeen. Status 2003: DRP

UNW029

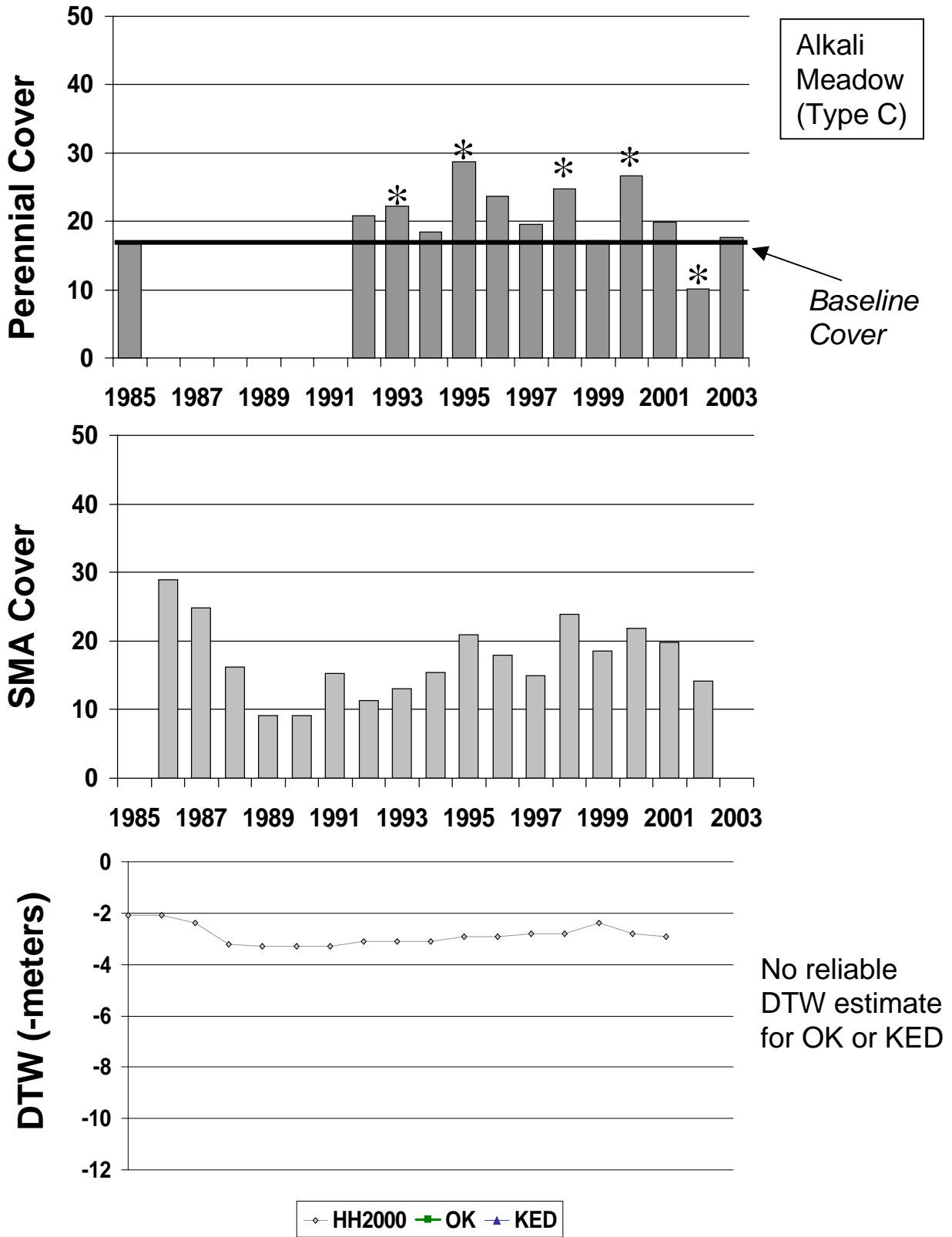


Figure 98. Status 2003: Control

UNW039

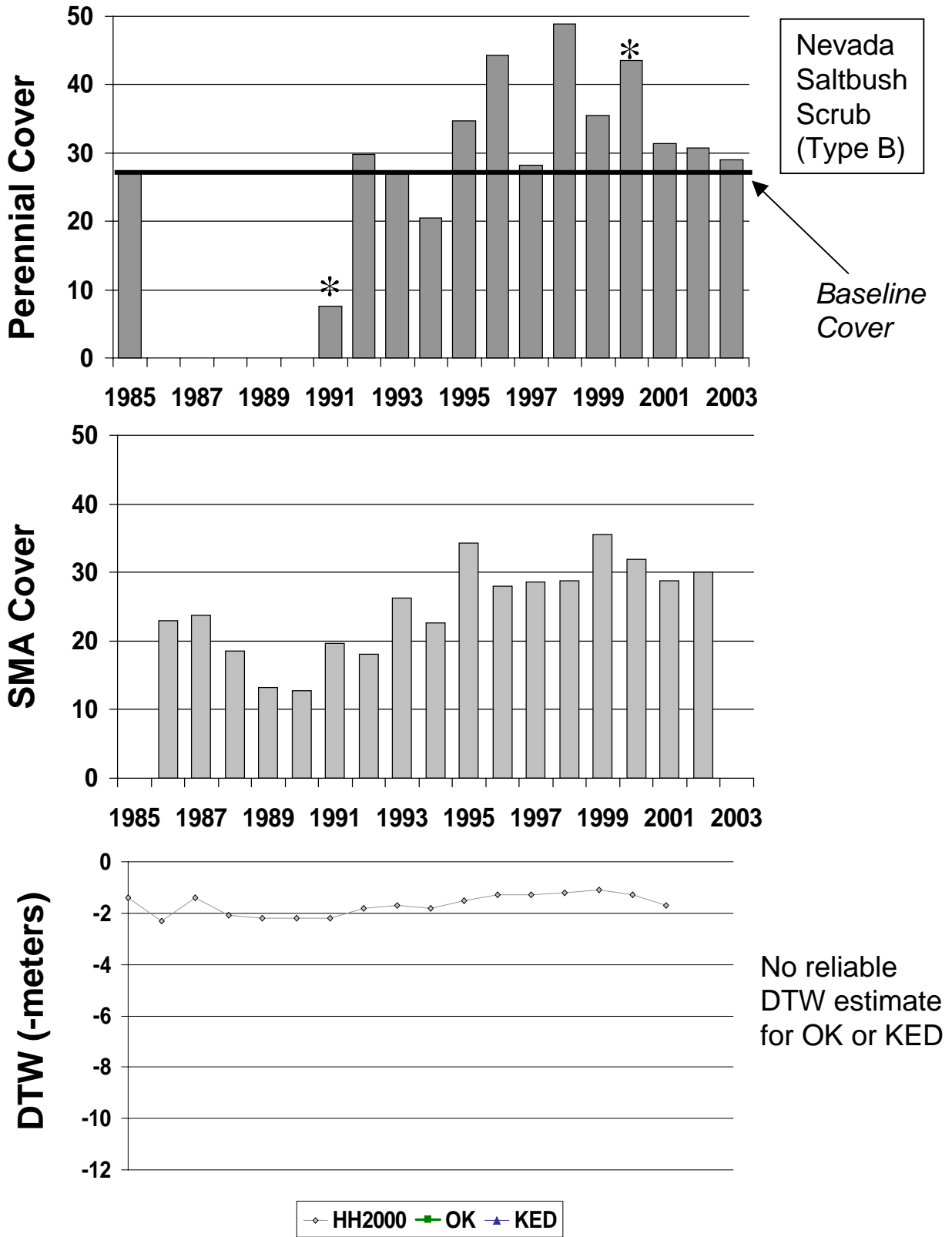


Figure 99. Status 2003: Control

UNW079

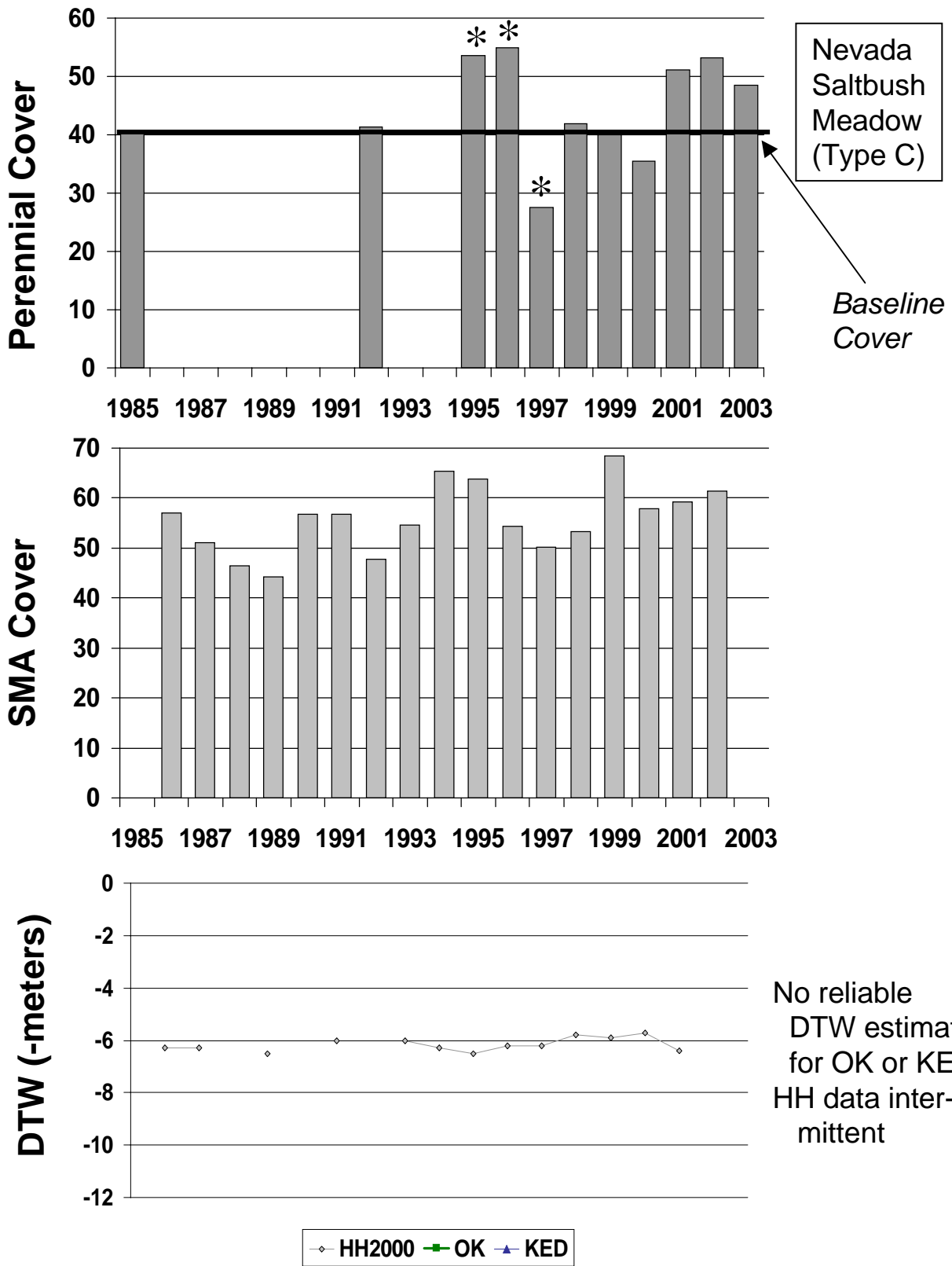


Figure 100. Status 2003: Control

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 in 2002 and 2003.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
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	
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	
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	
	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	
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	
	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	
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	
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	
	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	
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	
	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	
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		-6.0	-5.2	-5.5	-6.0			
	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	
	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	

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
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
	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
	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
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
	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
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
	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
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	-2.7	-2.7	-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
	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
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
	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
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
	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
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
	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
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	
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	
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	
	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	
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	
	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	
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	
	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	-1.8	-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	
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	
	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
BLK143	KED																			-2.09	-2.28
	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
FSL051	KED																			-0.92	-1.20
	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	
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	
	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
FSL123	KED																			-1.87	-1.92
	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
FSL179 FSL187 FSP004	KED																			-1.29	-1.36
	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			
	OK																				
FSP006	HH2000	-2.5	-3.8	-3.3	-4.6	-5.5	-6.3	-6.7	-6.7	-6.3	-6.1	-6.1	-4.8	-4.4	-4.5	-3.7	-4.0	-4.4			

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
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
	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
	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
IND019	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
	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
IND021	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
	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
IND029: trend may be accurate, but DTW ests. may not be	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
	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
IND035	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
	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																			
IND064	KED																			
	HH2000	-1.2	-1.3	-1.2	-2.0	-2.3	-2.6	-2.4	-2.5	-2.5	-2.5	-2.5	-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
IND066	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
	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
IND067	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
	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
IND087	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
	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																		-1.16	
IND096	KED																			-1.18
	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																		-0.26	-0.32
IND099	KED																			
	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																			
IND106	KED																			
	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
IND111	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
	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		
	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
IND119	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
	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	-1.99

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
IND122	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	-2.18
	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																		-0.72	
IND132	KED																			
	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	-3.97
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
	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	-6.43
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
	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
	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		
	OK																		-2.55	-2.53
IND156	KED																		-2.52	-2.49
	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		
	OK																			
IND163	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		
	OK																			
IND205	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		
	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
IND231	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
	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		
	OK				-7.25	-8.14	-8.24	-9.19	-9.27	-9.02	-9.65	-9.20	-9.14	-8.88	-8.26	-6.82	-6.57	-6.52	-6.49	-6.42
LAW030	KED				-7.13	-8.78	-8.80	-8.77	-8.65	-8.63	-8.81	-8.84	-8.73	-8.44	-7.70	-6.90	-6.55	-6.49	-6.36	-6.44
	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		
	OK																			
LAW035: OK, KED not verified by hydrologist	KED																			
	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
LAW040	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
	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																			
LAW043: OK, KED not verified by hydrologist	KED																			
	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
LAW052	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
	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
LAW062	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
	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		

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
LAW063	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
	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
	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
LAW065	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
	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
LAW070: OK, KED not verified by hydrologist	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
	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
LAW076	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
	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		
LAW078	OK																			
	KED																			
	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		
LAW082	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
	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
	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		
LAW085	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
	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
	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		
LAW104	OK																		-4.90	-5.12
	KED																		-5.02	-5.20
	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		
LAW107: OK, KED prior to 2002 may be shallower than shown	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
	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
	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		
LAW109	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
	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
	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		
LAW110	OK																		-2.13	
	KED																		-1.91	
	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		
LAW112	OK																		-1.64	
	KED																		-1.25	
	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		
LAW120	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
	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
	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		
LAW122	OK	-4.06	-4.99	-4.35	-6.83	-9.32	-10.59	-10.45	-9.86	-9.66	-6.84	-6.53	-5.01	-6.50	-5.75	-4.82	-5.29	-5.26	-5.26	-5.09
	KED																			
	HH2000	-2.8	-3.7	-2.2	-3.4	-4.6	-5.7	-5.8	-6.2	-5.4	-4.6	-3.9	-3.2	-3.4	-3.5	-2.8	-3.5	-3.7		
LAW122	OK																			

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
LAW137	KED																				
	HH2000	-4.5	-4.7	-6.1	-8.6	-9.6	-9.6	-9.8	-9.5	-9.6	-8.4	-8.6	-6.5	-6.9	-7.1	-5.7	-5.9	-5.7			
	OK																			-6.20	
LAW154	KED																			-6.83	
	HH2000	-3.0	-3.5	-2.1	-3.0	-3.7	-4.3	-4.0	-4.5	-3.6	-3.3	-2.4	-2.8	-2.5	-3.1	-2.6	-2.9	-2.9			
	OK																				
LAW167	KED																				
	HH2000	-3.1	-3.4	-2.5	-3.3	-3.9	-4.5	-4.2	-4.5	-3.8	-3.6	-2.8	-3.2	-3.0	-3.7	-3.0	-3.3	-3.1			
	OK																				
LNP018	KED																				
	HH2000		-7.3	-5.9	-6.4	-6.1	-6.0	-5.9	-5.5	-5.5	-4.9	-5.1	-5.5	-5.4	-5.8	-5.7	-6.0	-5.8			
	OK																				
LNP019	KED																				
	HH2000		-6.0	-4.9	-5.3	-4.9	-4.6	-4.8	-4.4	-4.6	-4.1	-4.2	-4.4	-4.3	-4.9	-4.3	-4.8	-5.0			
	OK																				
LNP045	KED																				
	HH2000		-4.7	-3.5	-3.6	-4.5	-4.4	-5.1	-4.8	-4.9	-4.1	-4.0	-2.7	-2.8	-3.1	-2.8	-3.6	-4.6			
	OK																				
LNP050	KED																				
	HH2000		-4.2	-3.5	-4.1	-4.8	-4.8	-5.2	-5.1	-5.1	-4.4	-4.1	-2.8	-3.0	-3.2	-2.9	-3.7	-4.7			
	OK																				
MAN006	KED																				
	HH2000	-1.1	-1.9	-1.7	-3.1	-4.4	-3.9	-3.4	-3.1	-2.8	-3.1	-3.0	-2.8	-2.5	-2.3	-2.0	-1.9	-1.9			
	OK	-1.44	-1.76	-1.64	-3.16	-4.40	-4.22	-3.41	-3.14	-2.83	-3.04	-2.92	-2.71	-2.45	-2.17	-1.94	-1.89	-1.79	-1.75	-1.56	
MAN007	KED																				
	HH2000	-2.2	-3.5	-3.0	-4.9	-5.2	-5.3	-4.8	-4.5	-4.3	-4.3	-4.1	-3.9	-3.7	-3.5	-3.3	-3.4	-3.4			
	OK	-2.66	-3.40	-2.97	-4.80	-5.40	-5.18	-4.78	-4.50	-4.27	-4.30	-4.11	-3.85	-3.69	-3.50	-3.34	-3.36	-3.41	-3.47	-3.42	
MAN014	KED																				
	HH2000	-2.68	-3.43	-2.99	-4.71	-5.47	-5.19	-4.79	-4.42	-4.22	-4.21	-4.05	-3.80	-3.65	-3.46	-3.30	-3.33	-3.38	-3.43	-3.35	
	OK	-1.8	-2.3	-1.8	-2.8	-2.8	-2.8	-2.9	-2.5	-2.3	-2.5	-2.4	-2.4	-2.3	-2.3	-2.1	-2.3	-1.9			
MAN017	KED																				
	HH2000	-2.5	-3.6	-3.7	-7.1	-9.1	-6.9	-6.0	-5.7	-5.5	-5.8	-5.7	-5.0	-4.7	-4.0	-3.7	-3.7	-4.0			
	OK																				
MAN034	KED																				
	HH2000	-1.6	-3.1	-2.6	-3.1	-3.3	-4.5	-3.7	-3.5	-3.1	-3.3	-3.1	-2.7	-2.7	-2.4	-2.1	-2.6	-2.8			
	OK																				
MAN037	KED																				
	HH2000	-1.2	-3.7	-3.2	-4.6	-4.7	-5.8	-5.0	-3.9	-3.5	-3.6	-3.5	-2.7	-2.7	-2.6	-2.3	-3.0	-3.1			
	OK																			-3.23	-3.29
MAN042	KED																			-3.16	-3.28
	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																				
MAN060	KED																				
	OK																				

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
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
	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
PLC024	HH2000	-2.5	-2.1	-2.6	-2.7	-2.9	-3.1	-3.0		-2.9		-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
	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
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
	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
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
	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
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
	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
	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
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
	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
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		
	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
	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
PLC111	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

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
PLC113	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
	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
PLC121	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
	HH2000	-1.2	-1.3	-2.8	-2.9	-3.0	-3.0	-3.0	-3.0	-2.8	-2.8							-2.9	-2.9	
	OK																			
PLC125	KED																			
	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																			
PLC136	KED																			
	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																			
PLC137	KED																			
	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																			
PLC187	KED																			
	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																			
PLC193	KED																			
	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
PLC220	KED																			
	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
PLC223	KED																			
	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
PLC239	KED																			
	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																			
PLC240	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
	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																			
PLC241	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
	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																			
PLC246	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
	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																			
PLC251: overall uncertainty is large	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
	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
PLC263	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

Appendix C, continued.

Parcel	Method	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
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	
	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	
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																		-4.15	-4.50	
	KED																		-4.07	-4.34	
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																		-5.04	-5.48	
	KED																		-5.17	-5.48	
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	
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																		-1.95	-3.18	-3.50
	KED																		-1.71	-3.18	-3.55
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																		-4.41	-4.66	
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																		-3.53	-3.72	
	KED																		-3.65	-3.86	
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			
	OK																				
	KED																				

Appendix D. The four parcels discussed in this appendix commonly show average perennial cover equal to or above baseline measurements. Despite this result, the parcels continue to be classified as DRP. Reasons for this seeming contradiction are discussed. In addition to the reasons presented, preliminary results of ongoing research investigating the role of water table versus precipitation on Owens Valley phreatophytic vegetation (Manning 2004, draft report) show that some of these parcels may have experienced a conversion from groundwater to precipitation dependent.

IND029: This parcel is located west of well 382 in the Thibaut Sawmill wellfield. DTW during the 1985-87 baseline period ranged from 1.1 to about 1.7 m (Appendix C). The parcel's water table declined during the drought and has risen somewhat since the drought. In 2001, DTW was the highest it had been since 1989 (about 3.6 to 4.3 m, Figure 40 and Appendix C). However, this level is well below both the baseline levels and the 2 m root zone range for this type C Alkali Meadow parcel. Since 2001, the water table has not risen further. IND029 was first re-inventoried in 2001, so line point transect data from 1986 through 2000 are lacking. Data for only one baseline transect were found. Baseline perennial cover was 22% and two-thirds of this cover was phreatophytic grass (*Sporobolus airoides*) (14% absolute cover). Transects run in the parcel since 2001 have shown far less grass, and the 14 transects from 2003 showed 26.4% perennial cover, but only 3% was accounted for by *S. airoides*. During 1986, a fire burned across the parcel. The parcel is now dominated by sagebrush (*Artemisia tridentata*, 13.2% cover in 2003); this shrub species was not even recorded as being present during baseline. It is possible that low water table levels in combination with high precipitation during the mid and late 1990's promoted germination and establishment of nearby alluvial fan species in this parcel. That is, IND029 transitioned from a type C Alkali Meadow to a type A Sagebrush Scrub due to lack of water table recovery. To remain consistent with the parcel evaluation criteria, IND029 should be considered still subject to the DRP. Note: another nearby re-inventoried parcel, IND035, also burned during the 1986 fire, but it has remained an Alkali Meadow. IND035 is classified as DRPfree (Figure 41).

IND231: This parcel is in the Symmes Shepherd wellfield, south of Mazourka Canyon Road and a short distance west of the LA Aqueduct. The 1985-87 baseline average DTW for this parcel was 2.8 m (according to the HH2000 estimates, Appendix C and Figure 53). The water table declined about 6 m beneath this parcel during the drought, then rose only about 2 m following the drought. Although the water table continues to show a gradually rising trend, the trend has flattened since 1999, and in 2003, the water level was about 6.4 m (Figure 53 and Appendix C). The root zone for this Nevada Saltbush Scrub parcel would be 4 m. Baseline perennial cover was reported to be 7.6%, the lowest perennial cover of all the re-inventoried parcels. No actual baseline transect data exist for IND231, and it has long been suspected that the reported baseline cover is erroneous (Manning 1992). Permanent monitoring site SS2 is located in this parcel. Its transect was first run in 1987, and 34.4% cover was recorded. Since 1987, the transect cover has been trending downward; in 2003, it increased somewhat, but was still only 17.1%. Since IND231 was first re-inventoried in 1991, perennial cover has ranged from 3.9 to 16.9% and it tends to be higher in wetter years (1991, 1993, 1995, 1996, 1998, 2001, and 2003) (Table 2 and

Figure 53). With its very low water table, uncertain baseline perennial cover, poor permanent monitoring site conditions (especially relative to the mid 1980s), and perennial cover fluctuations corresponding with precipitation, IND231 cannot be regarded as recovered from the DRP.

IND106: This parcel is located east of Independence and straddles Mazourka Canyon Road. This parcel is similar in topographic setting to IND132 in that there is a pronounced slope. The lower elevations probably have a shallower water table, and perennial shrubs in the low parts appeared more robust in 2003 (personal observation), but water table and vegetation recovery throughout this large parcel had not occurred. Parcel average DTW during the 1985-87 baseline period ranged from 2.2 to about 3.5 m (Appendix C). During the 1987-92 drought, the water table declined, and following the drought, it began rising. However, water table recovery peaked in 2000 at about 4.3 m, and it has been gradually declining since that time. The root zone range for this Nevada Saltbush Scrub parcel is 4 m. No LADWP baseline transect data exist for IND106, and the reported very low baseline cover value of 8% has long been questioned (Manning 1992). Because non-drought conditions prevailed during 1984-85 when this parcel was supposed to have been originally inventoried, and because 8% has been exceeded in all years IND106 has been monitored, both through the drought and since the drought ended, the 8% cover must be regarded with skepticism. Since 1991, the perennial cover has exceeded 20% in the high precipitation years, 1995 and 1998, and in 2003, perennial cover was measured at 19.2% (Table 2). Thus, there is evidence that vegetation cover at the site is being primarily influenced by precipitation, not groundwater. Perennial cover for this parcel has consistently averaged above baseline in all years monitored, 1991-2003 (Table 2 and Figure 45). However, with the low cover values measured in recent years (11 - 17%), and the lack of a pronounced perennial cover response to the “higher” water levels since 1999, it is not obvious that the plant roots have reconnected with the water table throughout the parcel. IND106 contains permanent monitoring site IO2. Although vegetation cover along the permanent transect was high (28%) when first monitored in 1987 (a dry year), cover has dropped severely; in 2003, it rebounded somewhat and was measured at 13.5%. Because of its average DTW below the root zone, a questionable assigned baseline cover, generally low perennial cover since the late 1980s, poor conditions at the permanent monitoring site, an apparent vegetation cover response to precipitation, and no apparent vegetation response to water table changes, IND106 continues to be classified as subject to the DRP.

BLK024: This parcel is located southeast of Aberdeen, east of highway 395 and west of the LA Aqueduct. Vegetation cover data for BLK024, which was classified as a Nevada Saltbush Meadow, typically show a response to precipitation and no response to changes in groundwater. Parcel average DTW during the 1985-87 baseline period ranged between 3 and 4 m (Appendix C and Figure 19). During the 1987-92 drought, water tables dropped at least 5 m. From about 1991 to 1999, the water table gradually rose, and it more or less stabilized just beyond 4 m from 1999 to 2001. Since 2001, it has been gradually declining (Appendix C and Figure 19). The root zone for this vegetation type is 2 m. In 2001, BLK024 was classified as DRP because it failed to meet the criteria for being moved to the DRP-free category (Manning 2002). In the wet years, 1995 and 1998, perennial cover was statistically significantly greater than baseline (Table 2 and

Figure 19), but in the dry years 1999 and 2002, perennial cover was significantly less than baseline. In 2000, 2001, and 2003, perennial cover was not significantly different from baseline. From 1999 onward, the water table has been about 1 m deeper than estimated during the 1985-87 baseline period, but perennial cover has failed to show a clear response to the water table, most likely because it is still too deep to recharge the grass root zone under this meadow parcel. Because of the parcel's failure to meet criteria for release from the DRP (Manning 2002), perennial cover fluctuations that appear to respond to precipitation, failure of vegetation to clearly respond to the water table, and failure of the water table to achieve baseline levels, BLK024 remains in the DRP classification.