Preliminary transient recharge and pumping for irrigated and semi-irrigated lands

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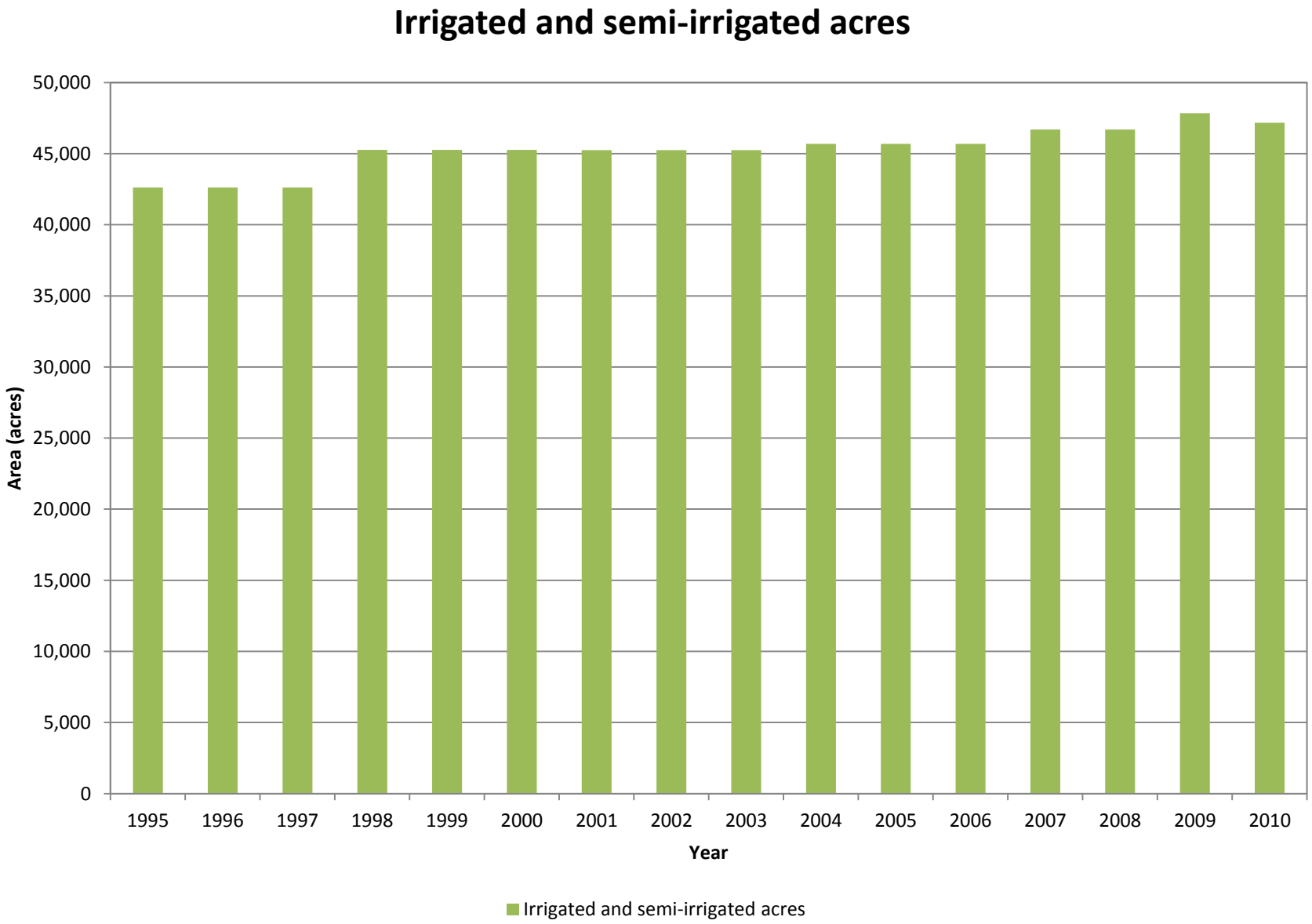
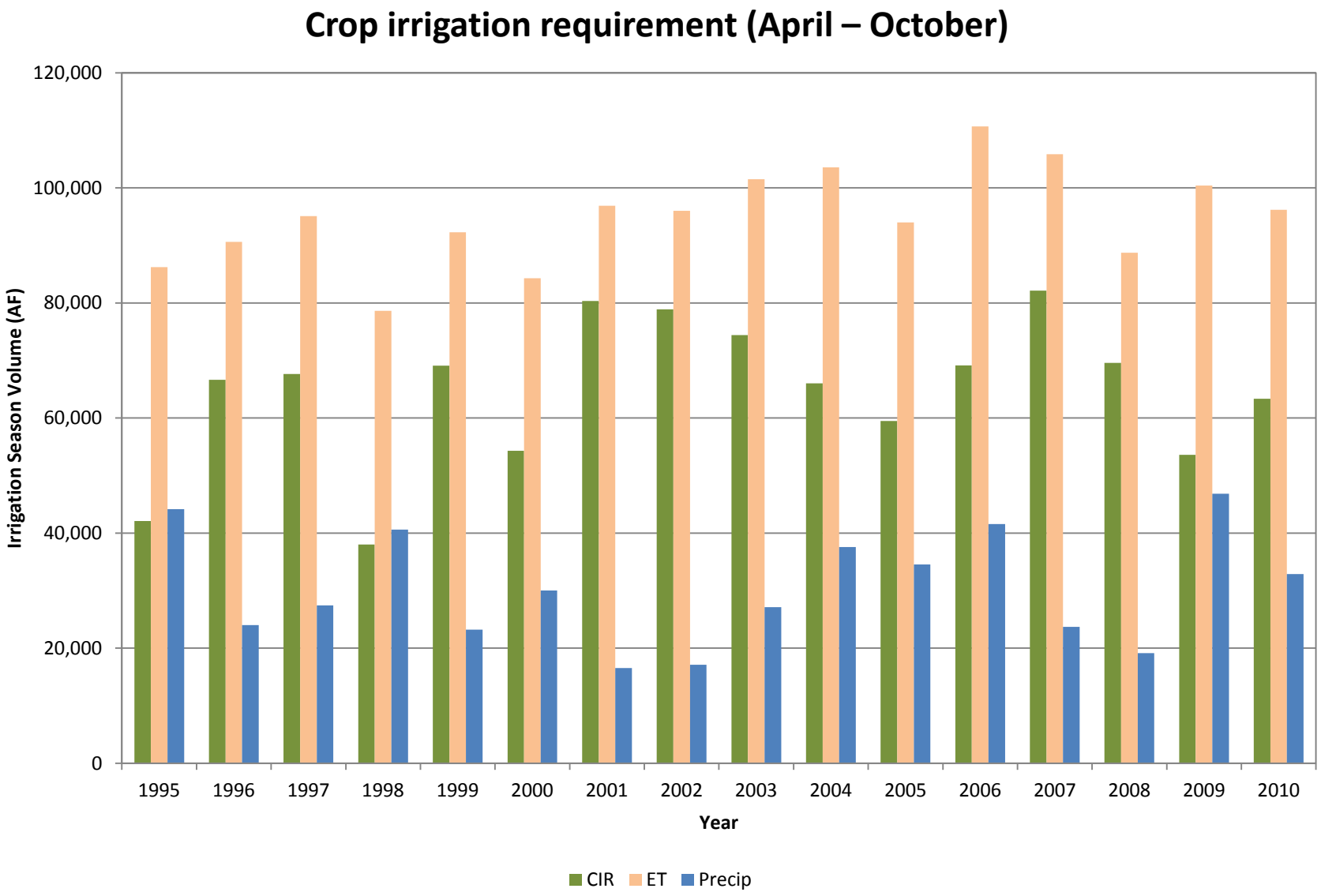
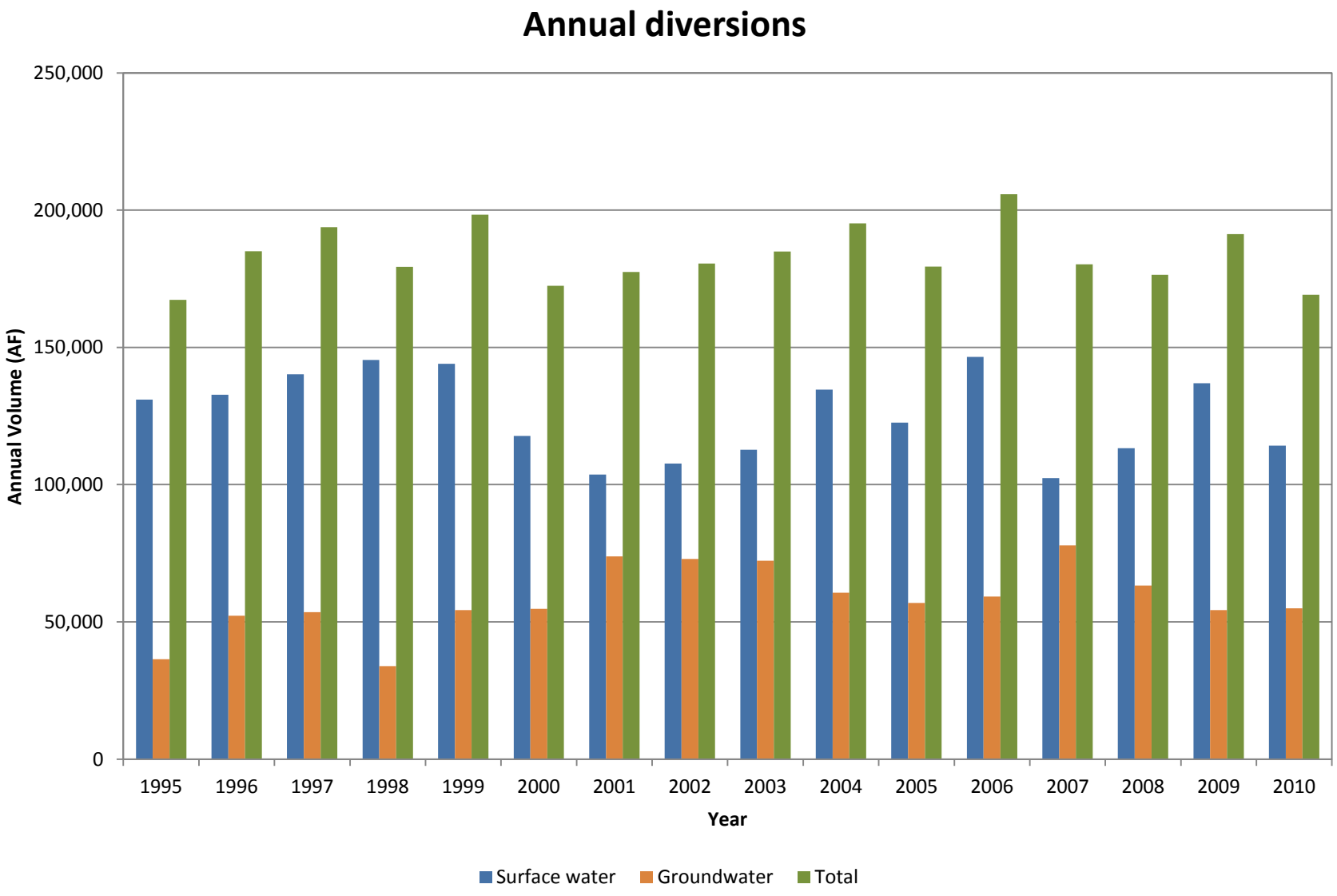
October 2, 2014

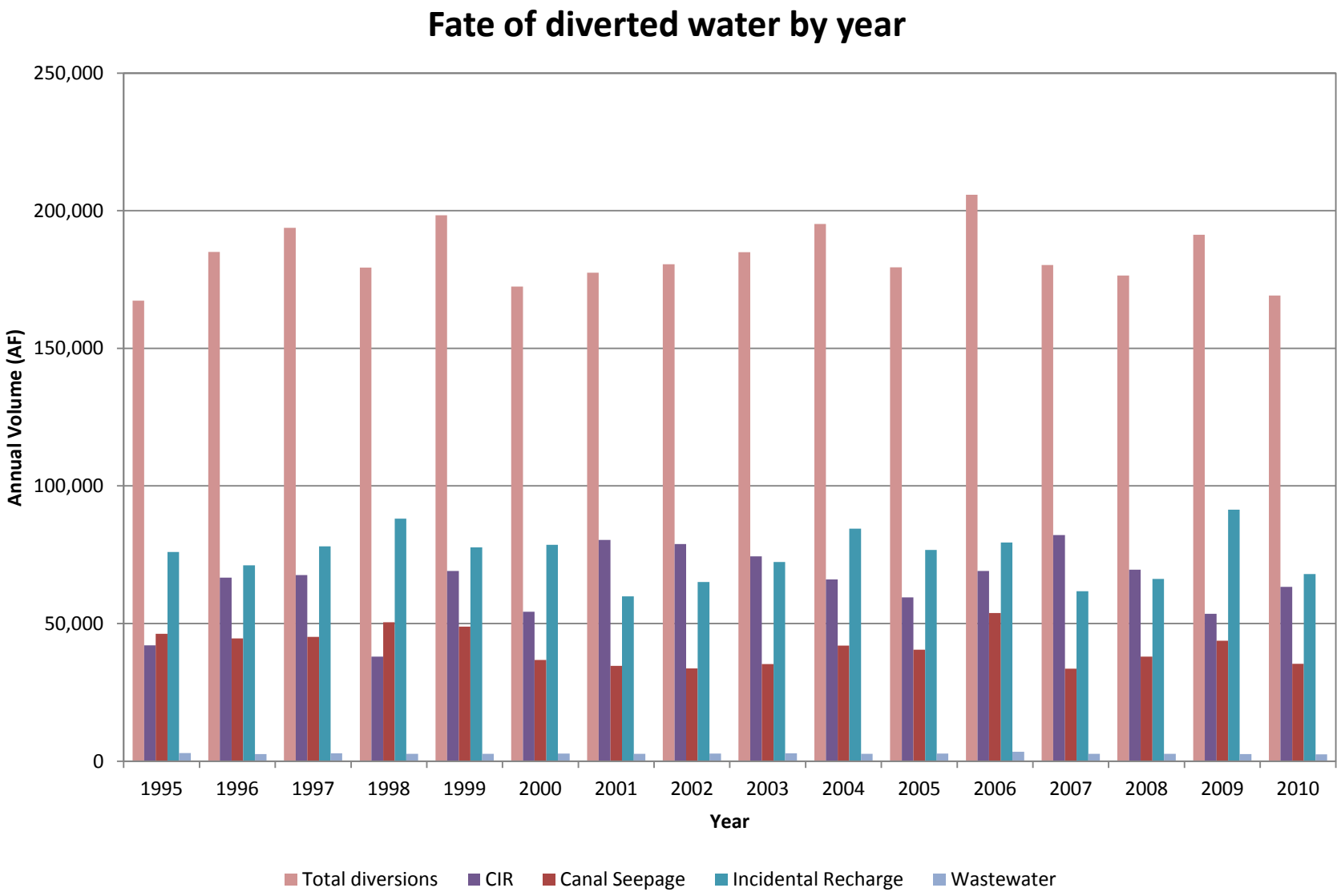
Transient recharge and pumping for irrigated and semi-irrigated lands

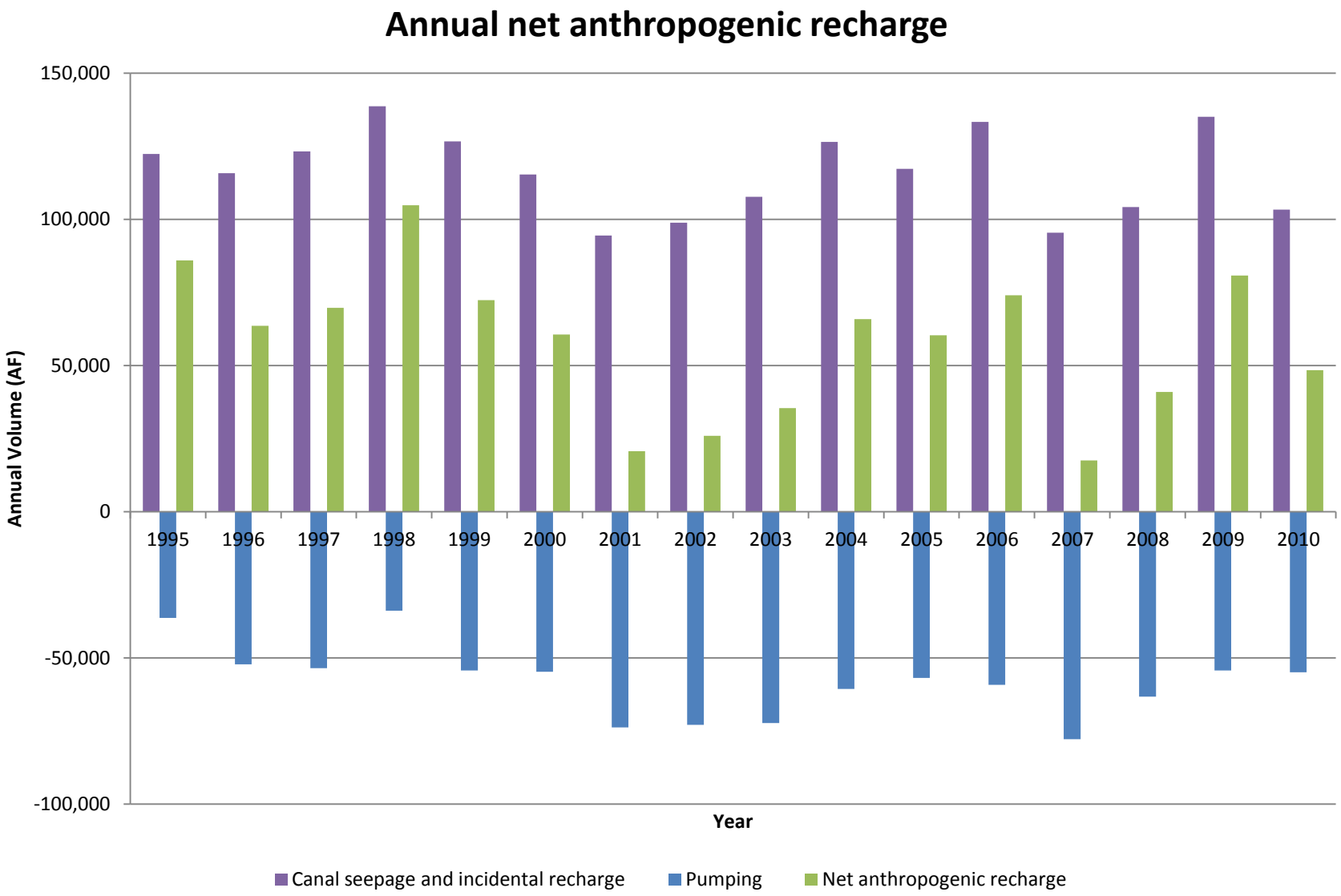
- ALL VALUES ARE PRELIMINARY DATA FROM 9/6/2014
- Annual volumes for calendar years 1995-2010
  - Volumes summed over model domain
  - Area classified as irrigated or semi-irrigated
  - ET, precipitation, and crop irrigation requirement
  - Surface water and groundwater diversions
  - Fate of diverted water
  - Net recharge
- Monthly volumes for average, wet, and dry years
- Monthly time-series for 1995-2010

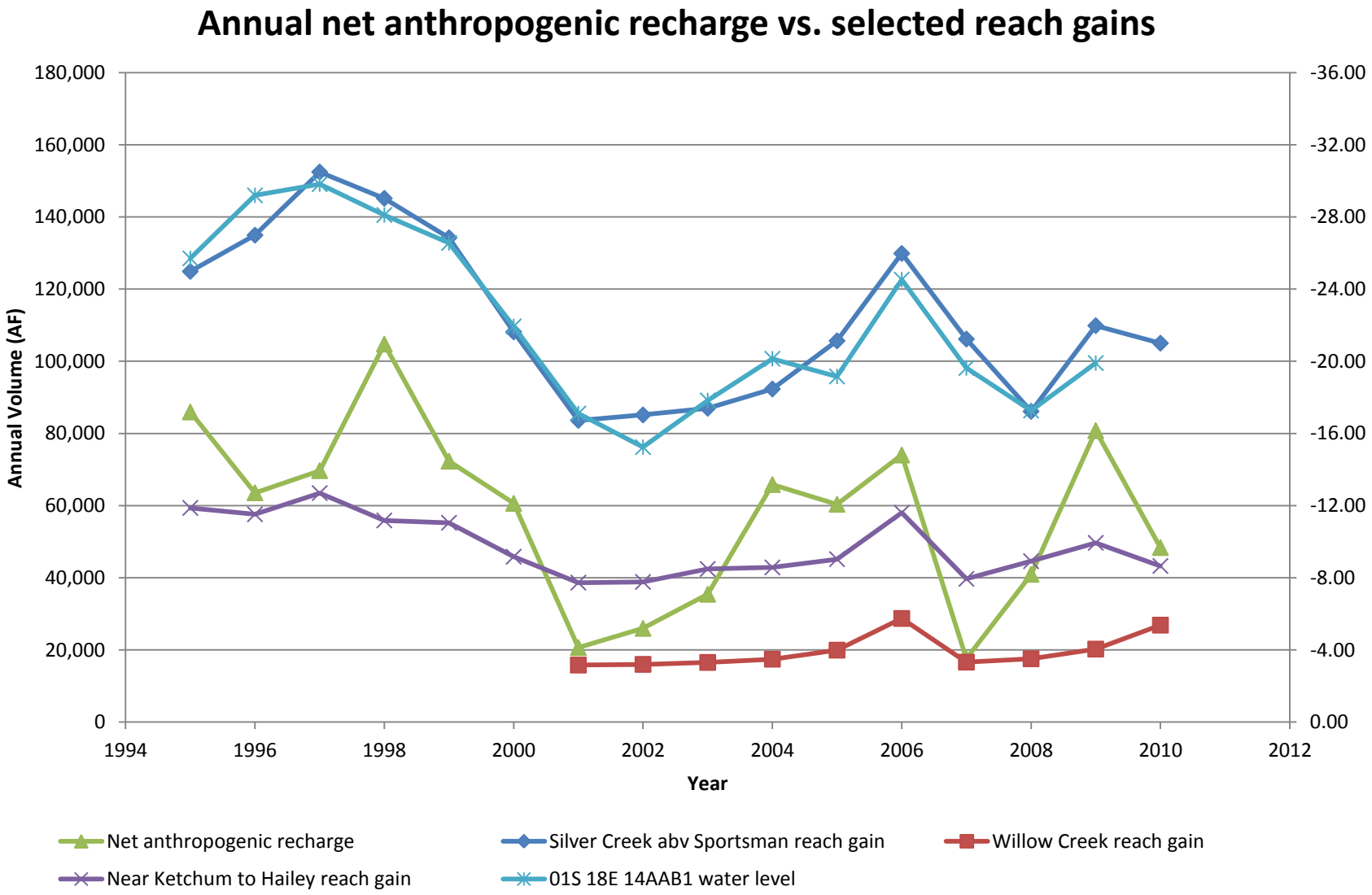

Irrigated and semi-irrigated acres
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Area (acres)
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year
Irrigated and semi-irrigated acres

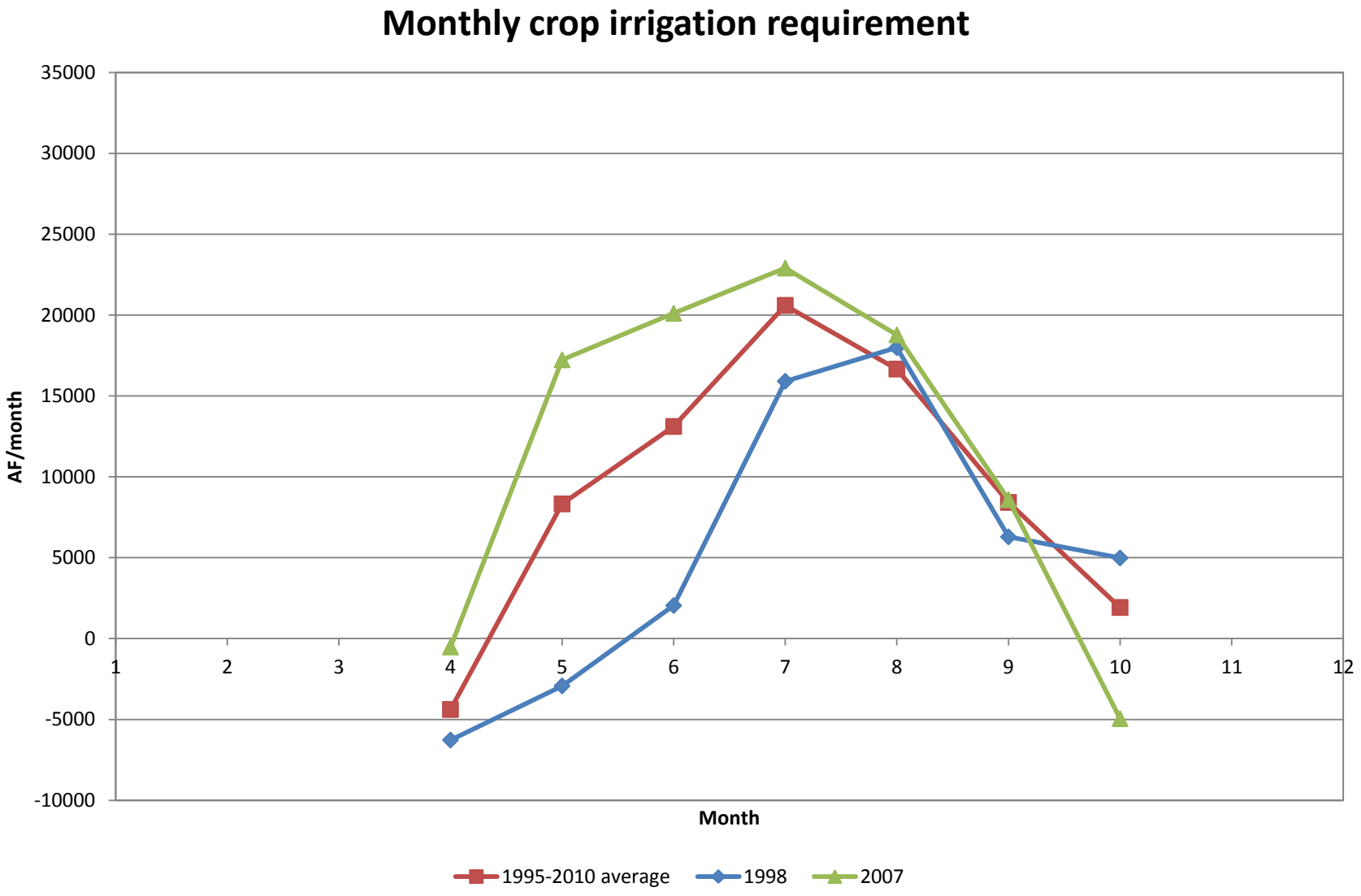

Crop irrigation requirement (April – October)
120,000
100,000
80,000
60,000
40,000
20,000
0
Irrigation Season Volume (AF)
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year
CIR
ET
Precip

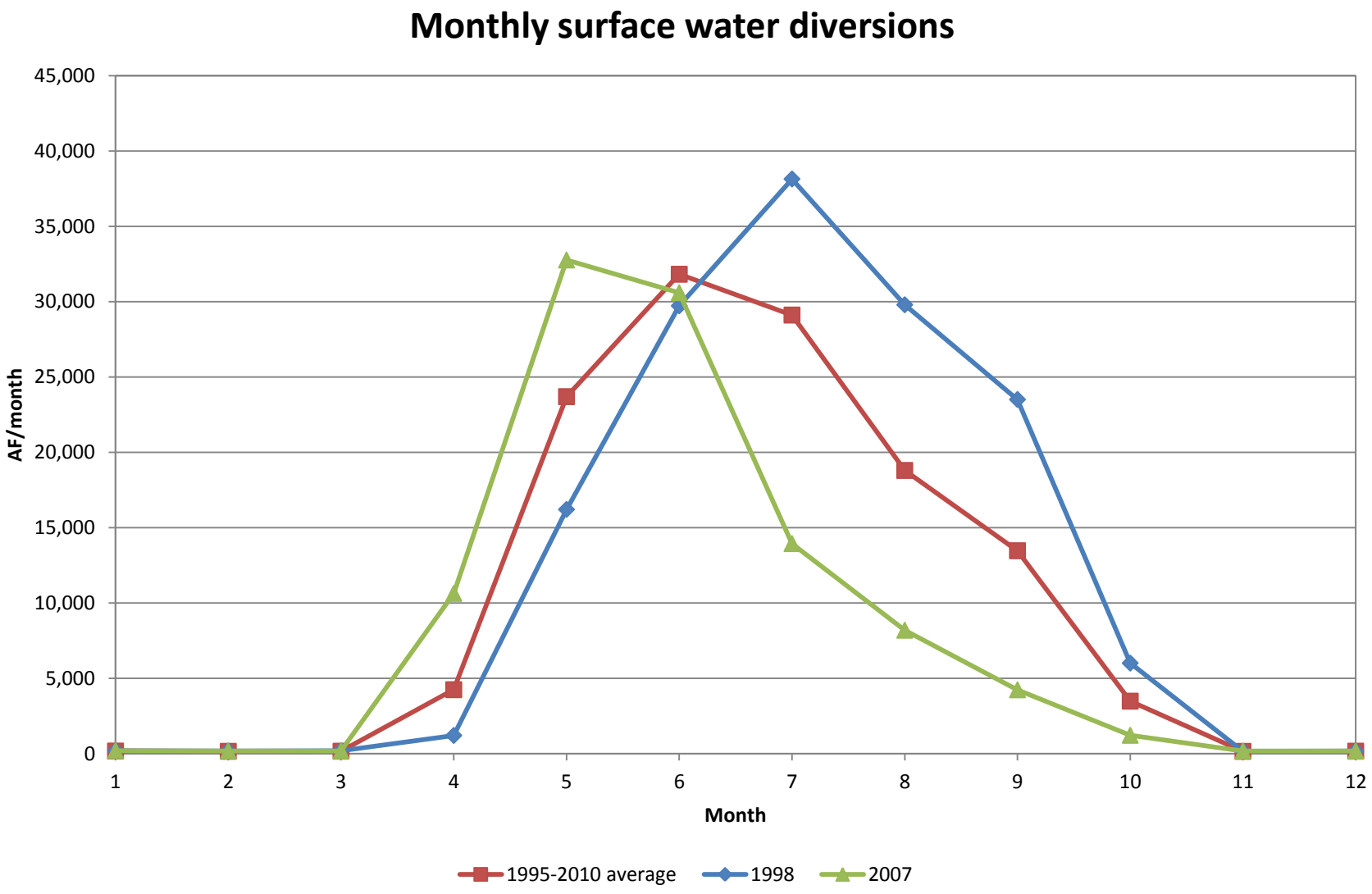

Annual diversions
250,000
200,000
150,000
100,000
50,000
0
Annual Volume (AF)
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year
Surface water
Groundwater
Total

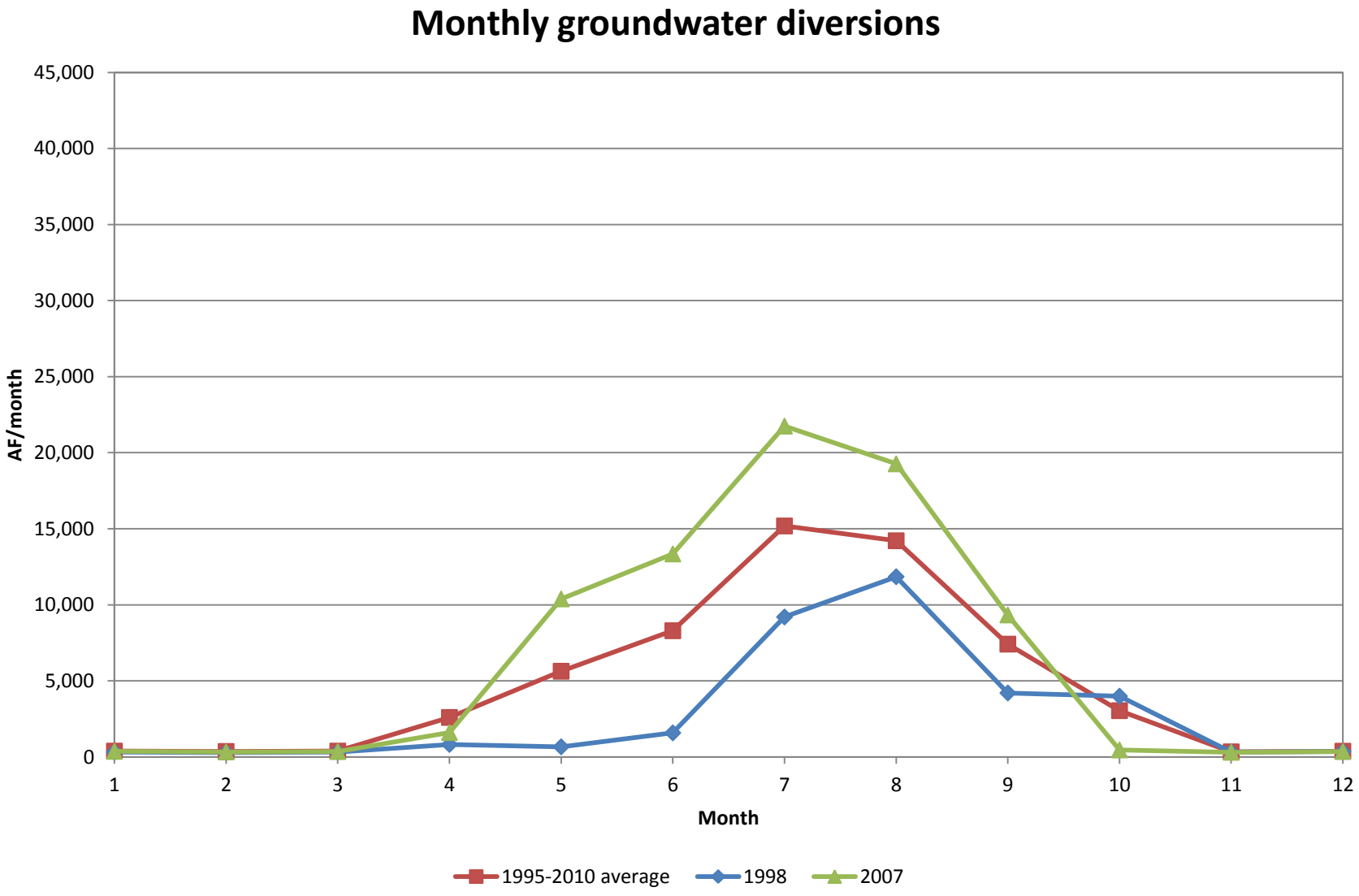

Fate of diverted water by year
250,000
200,000
150,000
100,000
50,000
0
Annual Volume (AF)
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year
Total diversions
CIR
Canal Seepage
Incidental Recharge
Wastewater

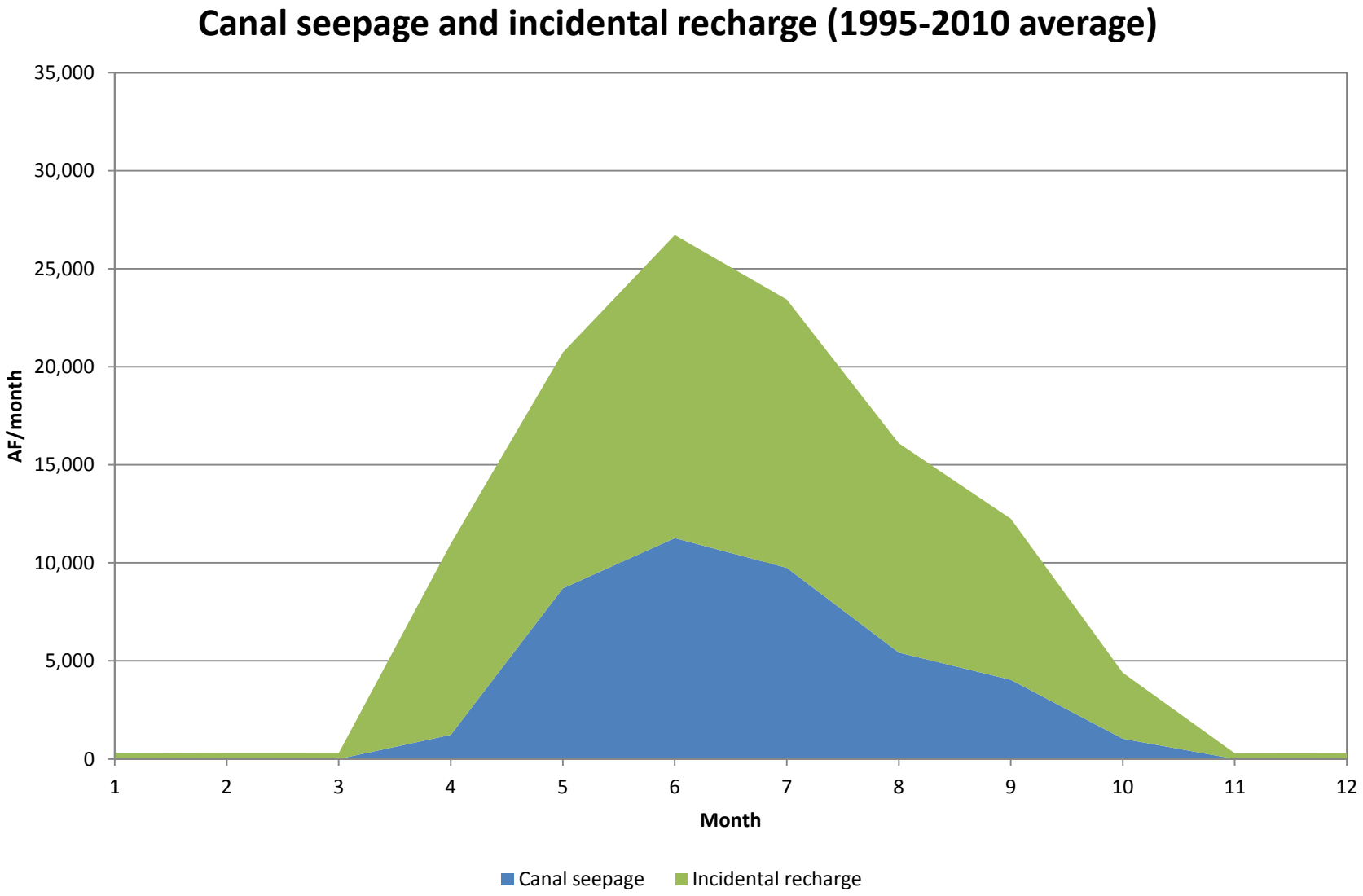

Annual net anthropogenic recharge
150,000
100,000
50,000
0
-50,000
-100,000
Annual Volume (AF)
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
Year
Canal seepage and incidental recharge
Pumping
Net anthropogenic recharge

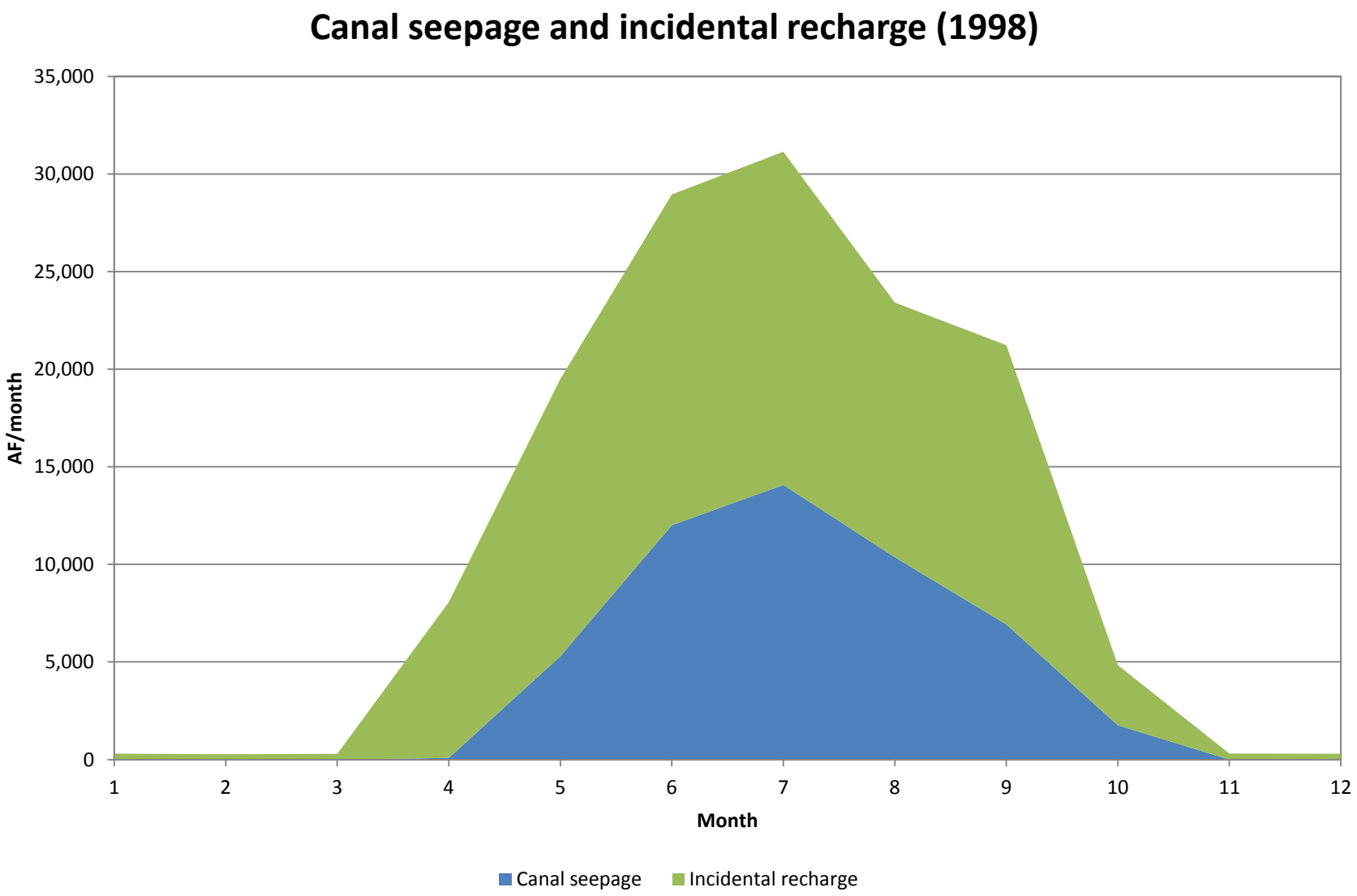

Annual net anthropogenic recharge vs. selected reach gains
Annual Volume (AF)
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
-36.00
-32.00
-28.00
-24.00
-20.00
-16.00
-12.00
-8.00
-4.00
0.00
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
Year
Net anthropogenic recharge
Silver Creek abv Sportsman reach gain
Willow Creek reach gain
Near Ketchum to Hailey reach gain
01S 18E 14AAB1 water level

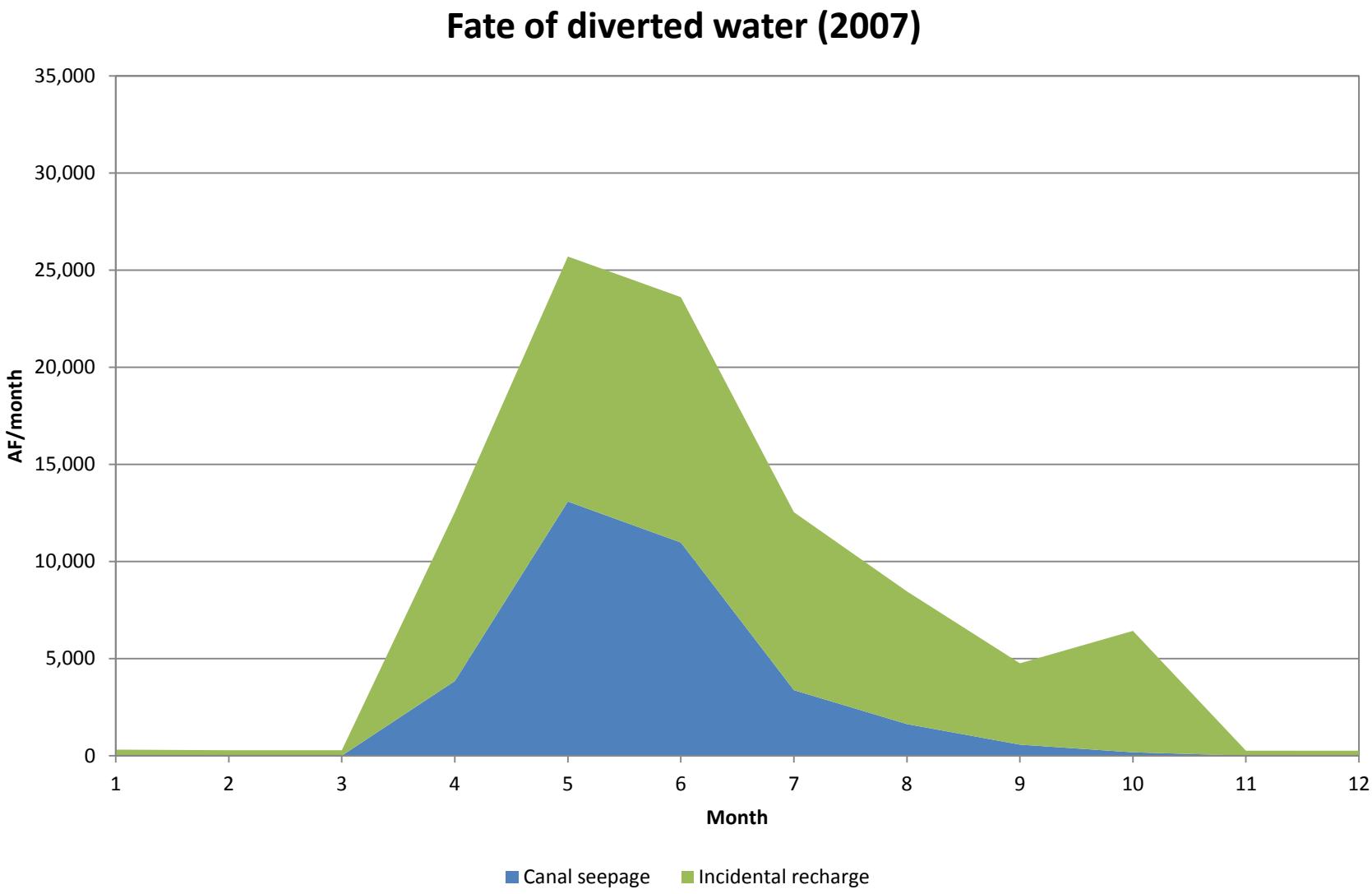

Monthly crop irrigation requirement
35000
30000
25000
20000
15000
10000
5000
0
-5000
-10000
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
1995-2010 average
1998
2007

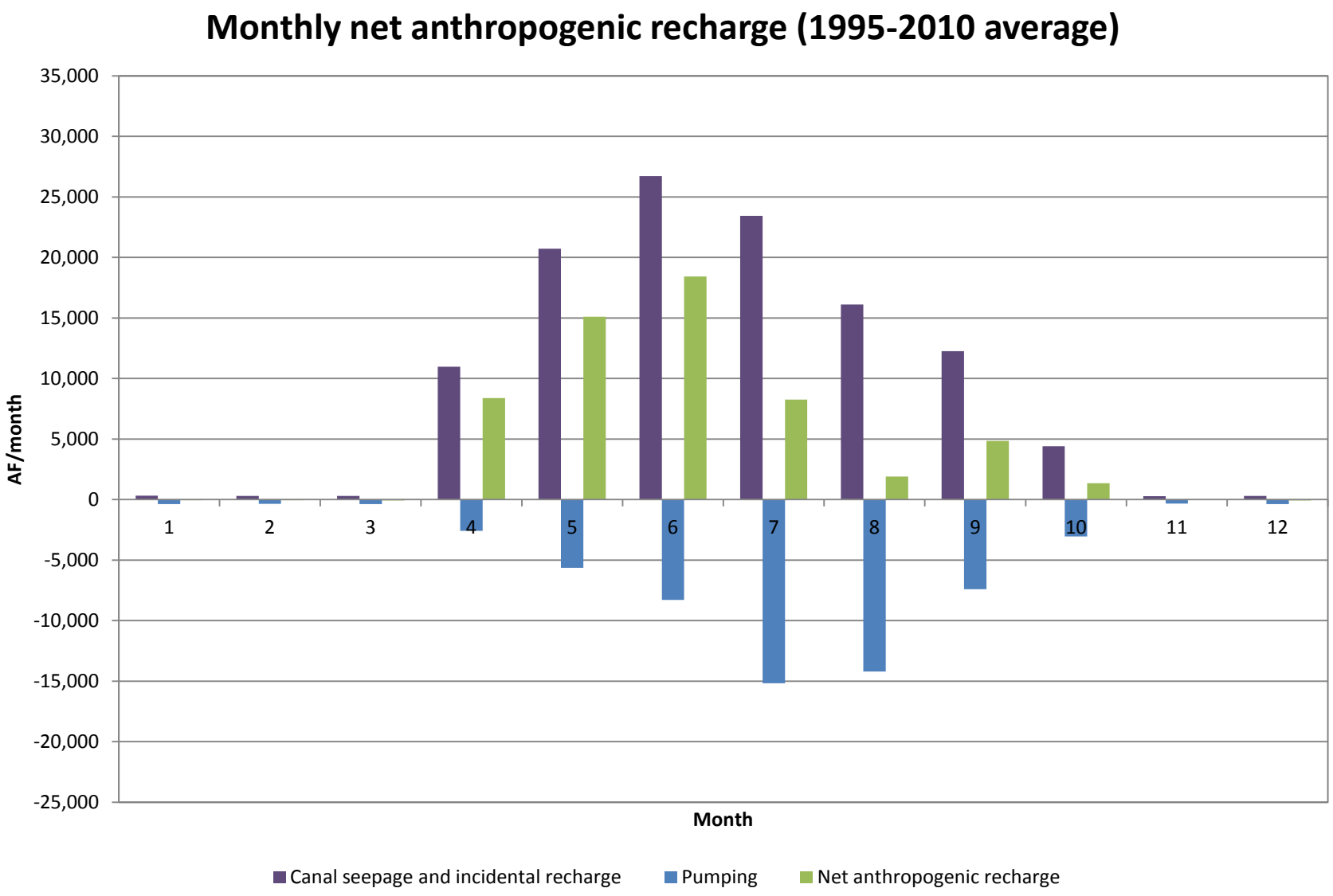

Monthly surface water diversions
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
1995-2010 average
1998
2007

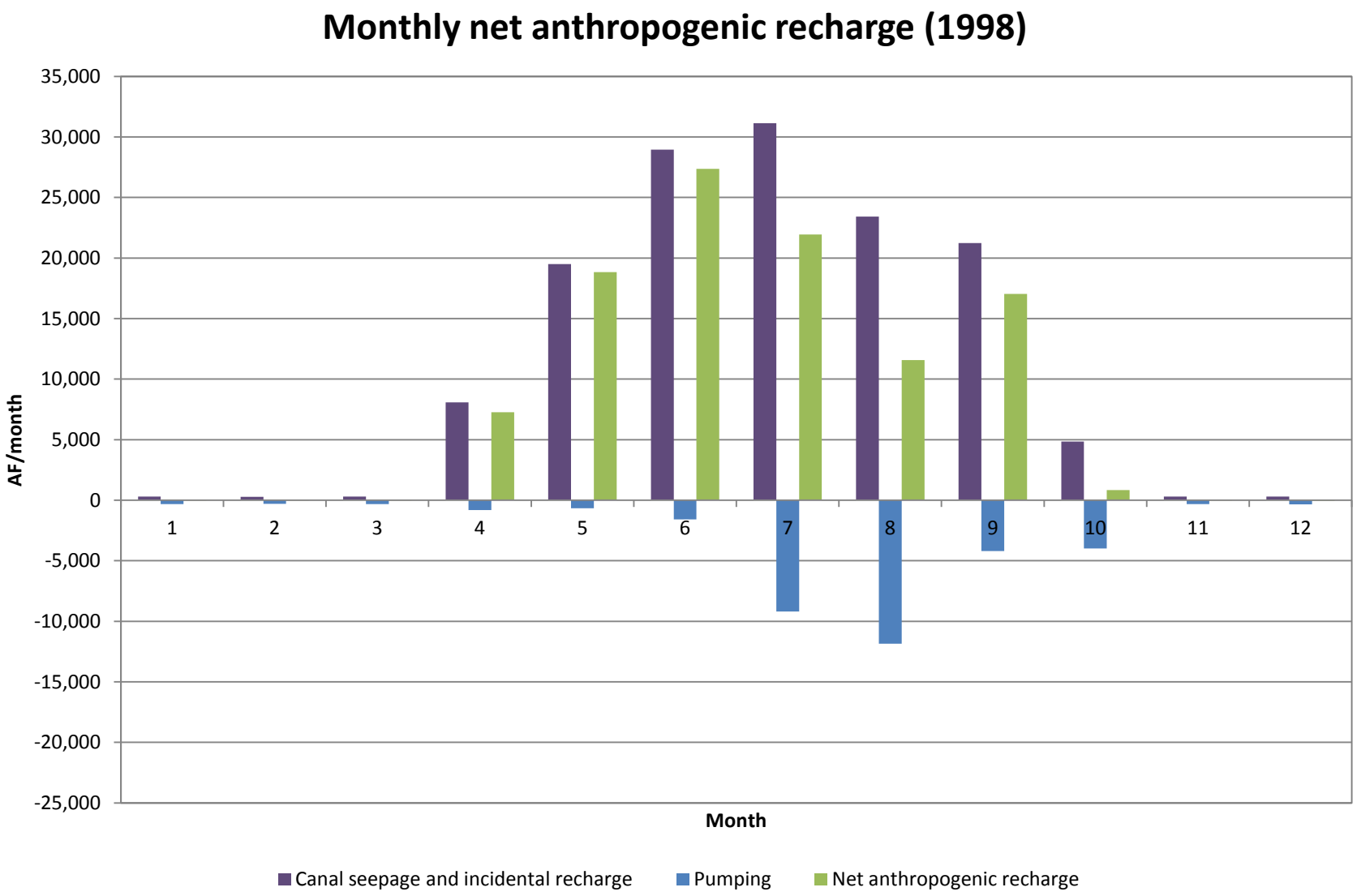

Monthly groundwater diversions
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
1995-2010 average
1998
2007

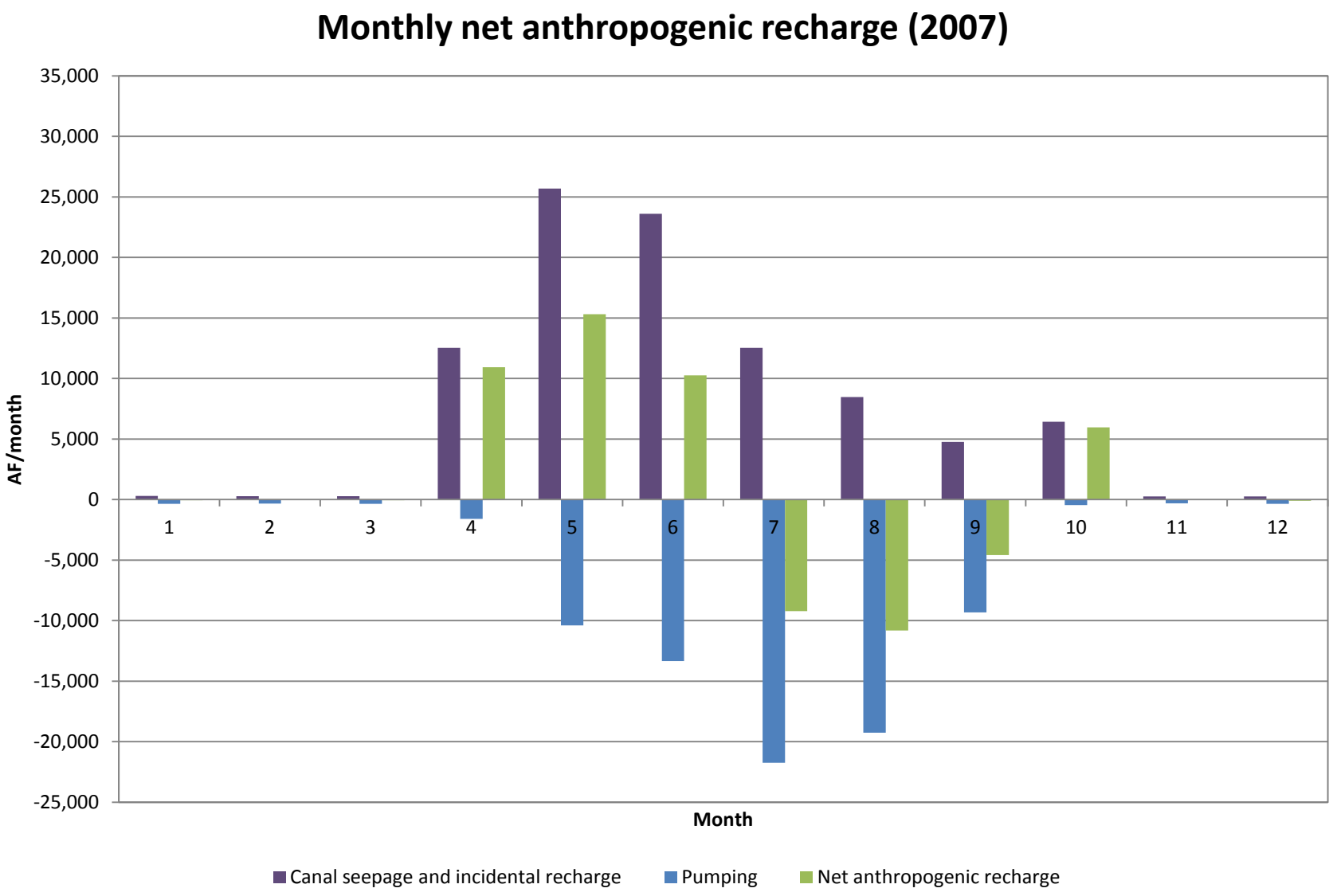

Canal seepage and incidental recharge (1995-2010 average)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
Canal seepage
Incidental recharge

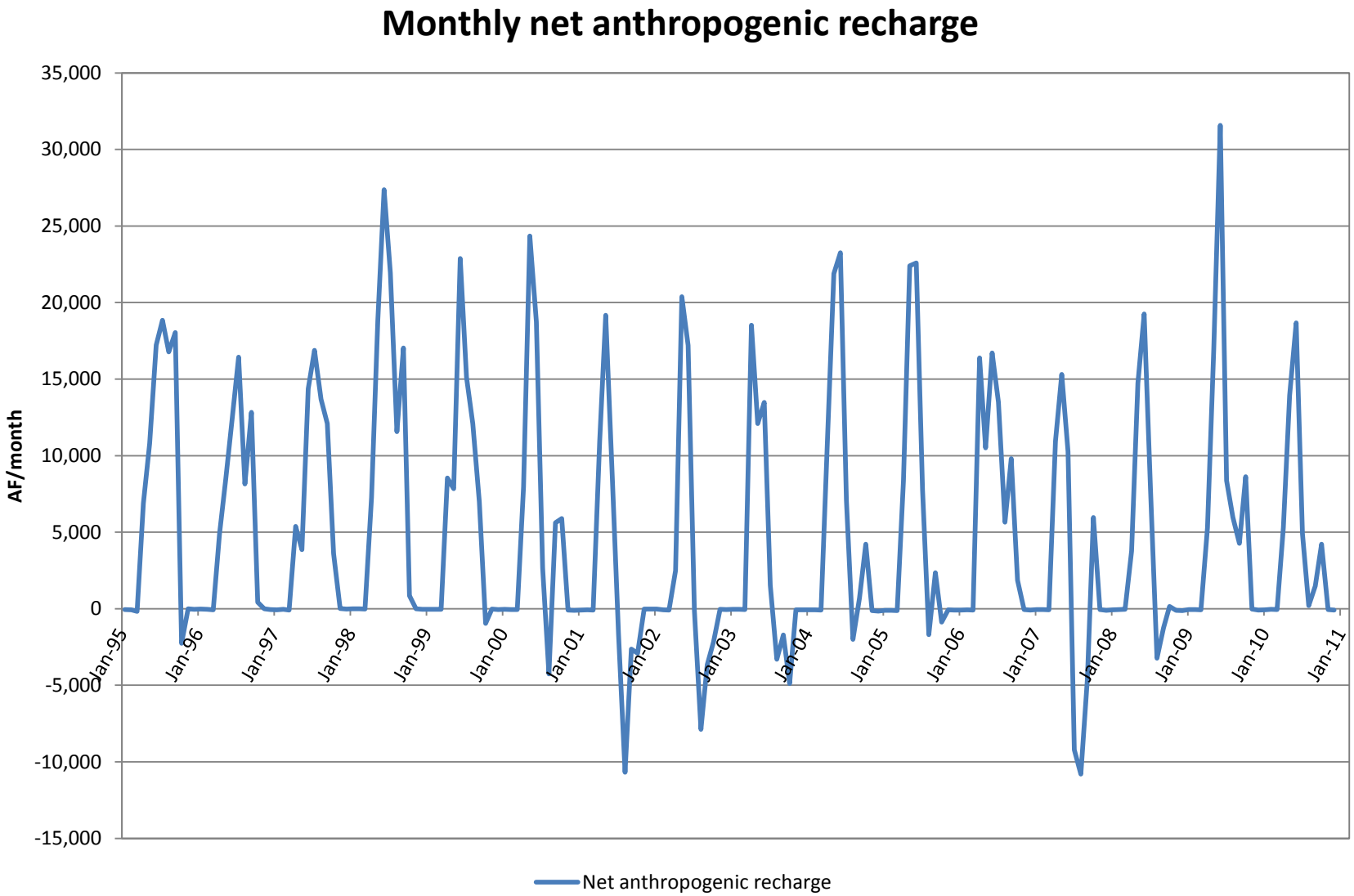
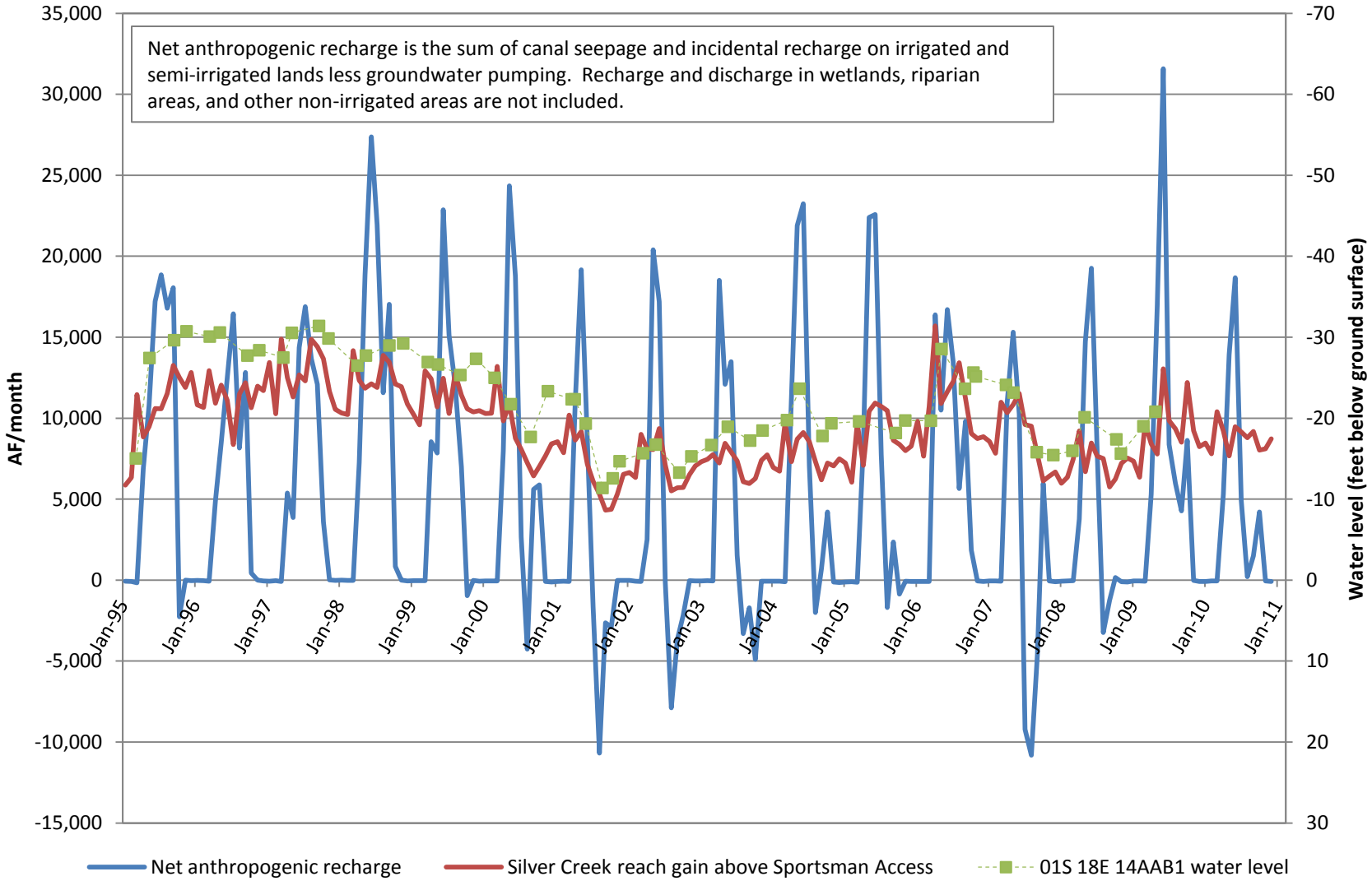

Canal seepage and incidental recharge (1998)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
Canal seepage
Incidental recharge


Fate of diverted water (2007)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
Canal seepage
Incidental recharge


Monthly net anthropogenic recharge (1995-2010 average)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
-10,000
-15,000
-20,000
-25,000
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
Canal seepage and incidental recharge
Pumping
Net anthropogenic recharge


Monthly net anthropogenic recharge (1998)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
-10,000
-15,000
-20,000
-25,000
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
Canal seepage and incidental recharge
Pumping
Net anthropogenic recharge


Monthly net anthropogenic recharge (2007)
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
-10,000
-15,000
-20,000
-25,000
AF/month
1
2
3
4
5
6
7
8
9
10
11
12
Month
Canal seepage and incidental recharge
Pumping
Net anthropogenic recharge


Monthly net anthropogenic recharge
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
-5,000
-10,000
-15,000
AF/month
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Net anthropogenic recharge

Monthly net anthropogenic recharge