

15 - KIZILIRMAK HAVZASI
1538 - DEVRES ÇAYI - ÇELTİKCIBAŞI

Kİİ : Kastamonu'nun İlgaz ilçesinden, Tosya'ya giden karayolunun 22.Km. sindeki Çeltikciobaşı köyüne 1 Km. mesafededir.

Ş ALANI : 1962.0 Km² **TAKRİBİ RAKIMI** : 775 m.

AT SÜRESİ : 1.Ekim.1970 - 30.Eylül.1971

ALAMA AKIMLAR : Rasat süresinde 8.473 m³/sn. (1 yıllık) 1971 Su yılında 8.473 m³/sn.

Mİ VE ASGARİ AKIMLAR 1971 Su yılında azami akım : 94.3 m³/sn. (26.3.1971)
1971 Su yılında asgarî akım : 1.39 " (3.8.1971)
Rasat süresinde azami akım : 94.3 " (26.3.1971)
Rasat süresinde asgarî akım : 1.39 " (3.8.1971)

İYE ÖLÇEĞİ : Eşel.

ÜNCELER : Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 21.2.1971 ile 28.2.1971, 1.3.1971 ile 27.3.1971, 31.3.1971 ile 18.5.1971 günleri arasında şift tatbik edilmiştir.

2. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
35	0.750	80	21.7
40	1.55	100	36.0
50	4.60	120	52.0
60	9.50	150	80.0
70	15.5	200	140.

Akımlar, 1 Ekim 1970'den 30 Eylül 1971'e kadar ve saniyede metre - küp olarak

Ün	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	2.13	3.43	3.75	20.4	4.14	8.04	19.8	14.3	13.7	2.55	1.55	3.16
2	2.13	3.43	4.14	22.7	3.75	8.48	16.7	11.9	23.1	2.55	1.55	3.52
3	2.13	3.43	4.14	15.0	4.91	9.36	16.7	9.50	23.7	2.05	1.39	8.96
4	2.13	3.43	4.52	10.7	4.91	10.7	18.6	10.1	34.5	1.80	1.39	16.1
5	2.45	3.43	4.52	9.36	4.91	10.2	16.7	8.42	18.6	1.80	1.39	13.7
6	2.45	2.45	4.52	8.48	4.91	9.36	14.9	7.88	14.9	1.55	1.39	4.24
7	2.45	3.10	4.14	8.04	4.52	8.48	17.4	8.96	18.0	1.55	1.39	6.80
8	2.45	3.10	4.52	7.22	3.75	8.92	33.8	10.1	31.5	1.80	1.39	16.1
9	2.45	3.10	4.52	6.83	3.43	9.36	22.4	8.96	19.8	2.05	1.39	5.92
10	2.45	3.10	4.14	6.83	3.43	18.1	20.5	8.42	19.2	2.05	1.39	5.04
11	2.45	3.43	3.75	18.7	3.43	22.1	16.1	8.42	14.3	2.05	1.55	4.24
12	2.45	3.43	3.75	21.0	3.43	14.5	15.5	8.96	13.1	2.05	1.55	3.52
13	2.45	3.43	3.43	17.6	3.43	11.6	23.1	9.50	9.50	2.05	1.55	3.16
14	2.45	3.43	3.10	15.0	3.75	8.48	22.4	8.96	7.34	1.80	1.55	2.80
15	2.45	3.43	3.10	9.36	3.75	7.60	34.5	10.7	6.36	1.55	1.55	2.80
16	2.45	3.43	3.10	7.60	4.14	7.60	27.8	21.1	5.92	1.80	1.55	2.55
17	2.45	3.43	3.10	6.83	4.52	11.6	23.1	45.2	5.04	1.80	1.80	2.55
18	2.45	3.43	3.43	6.83	4.91	21.0	24.4	44.4	3.88	1.80	1.80	2.30
19	2.45	3.43	3.43	6.45	6.45	22.7	28.5	43.5	3.52	1.80	1.80	2.30
20	2.13	3.43	3.10	6.06	6.45	17.6	34.5	29.3	4.24	2.30	2.05	2.05
21	2.13	3.43	2.78	5.68	5.68	14.5	34.5	21.1	3.52	3.88	2.05	2.05
22	2.45	3.43	2.45	5.68	6.45	14.0	30.0	19.2	3.16	3.16	2.05	2.05
23	2.45	3.43	2.45	5.29	7.22	16.0	26.5	18.6	3.16	2.30	2.05	2.05
24	2.45	3.75	3.43	5.29	7.22	16.5	23.7	23.7	2.80	2.30	2.05	2.05
25	2.45	5.29	3.43	4.52	7.22	42.8	21.7	23.1	2.80	2.05	2.30	2.05
26	3.10	4.91	3.75	4.14	8.48	64.3	18.6	26.5	2.80	2.05	2.30	2.05
27	3.75	4.14	3.75	4.52	8.48	50.3	16.1	27.8	2.55	1.80	2.55	2.05
28	3.75	4.14	3.75	4.52	8.48	28.5	14.9	19.8	2.30	1.80	2.80	2.05
29	3.75	4.14	3.43	4.52	4.52	21.7	14.9	17.4	2.30	1.55	2.80	2.05
30	3.43	4.52	3.43	4.52	4.52	21.7	16.1	18.0	3.16	1.55	3.16	2.05
31	3.43	4.52	5.29	4.52	4.52	30.0	13.7	13.7	1.55	1.55	3.16	2.05
Toplam	80.54	107.48	114.14	284.19	146.15	566.08	664.4	557.48	318.75	62.74	58.24	132.31
Ortalama	2.598	3.583	3.682	9.167	5.220	18.26	22.15	17.98	10.63	2.024	1.879	4.410
Sn/Km ²	1.32	1.83	1.88	4.67	2.66	9.31	11.3	9.16	5.42	1.03	0.958	2.25
m. mm.	3.55	4.73	5.03	12.5	6.44	24.9	29.3	24.5	14.0	2.76	2.56	5.83
m ³ /akım	6.96	9.29	9.86	24.6	12.6	48.9	57.4	48.2	27.5	5.42	5.03	11.4

(1971) Yıllık Toplam Akım : 267.2 Milyon m³; 136. mm; 4.32 L³/Sn/Km².

(X) Akım ölçüsünün yapıldığı günleri gösterir.

YERİ

:(34° 25' 38" D - 41° 5' 43" K) Çorum ili Kargı ilçesinin Hacıhamza bucağından Tosyaya giden yolun 2.km.sindeki Avşar yolu üzerindeki köprüdedir.

YAKLAŞIK KOT : 310 m.

İS ALANI

: 60559.6 Km²

GÖZLEM SÜRESİ

: 01/11/1965 - 30/09/1994

ORTALAMA AKIMLAR

: Gözlem süresinde 136.485 m³/sn. (28 Yıllık) 1994 Su yılında 93.639 m³/sn.

ANLIK EN ÇOK VE EN AZ AKIMLAR:

1994 Su yılında anlık ençok akım : 206. m³/sn 15/10/1993
 1994 Su yılında anlık enaz akım : 36.6 m³/sn 25/06/1994
 Gözlem süresinde anlık ençok akım : 1066. m³/sn 14/03/1968
 Gözlem süresinde anlık enaz akım : 7.40 m³/sn 10/05/1974

SEVİYE ÖLÇEĞİ

: Eşel-Limnigraf

DÖŞÜNCELER

: Su yılı içinde 12 akım ölçüsü yapılmıştır. Su yılı akım değerlendirmesinde 23 nolu (01.10.1993-26.01.1994/10.04.1994-30.09.1994) ve 20 nolu (27.01.1994-09.04.1994) akım anahtar eğrileri kullanılmıştır. Sağ ve Sol kanal akımları ilave edilmiştir.

23 . Anahtar eğrisi (Seviyeler cm. - Akımlar m³/sn.)

Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım
100	22.5	225	226.	350	474.	475	739.
125	56.3	250	274.	375	526.	500	801.
150	91.5	275	324.	400	578.		
175	134.	300	374.	425	631.		
200	178.	325	424.	450	683.		

AKIMLAR 1 EKİM 1993 'DEN 30 EYLÜL 1994 'A KADAR SANİYEDE METRE KÜP OLARAK

GÜN/AY	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	191.	141.	90.2	91.7	113.	142.	79.8	68.6	60.0	57.5	67.8	71.2
2	185.	141.	102.	90.2	112.	130.	74.2	67.4	59.7	54.8	68.0	67.3
3	185.	139.	91.7	93.2	109.	125.	67.8	66.2	61.0	56.0	52.2	68.7
4	188.	139.	99.8	107.	106.	122.	63.7	64.7	58.3	57.7	49.2	77.3
5	171.	122.	90.1	117.	106.	154.	73.1	65.7	57.3	61.4	57.6	75.9
6	154.	95.0	88.6	110.	121.	142.	90.5	65.9	57.5	58.7	60.3	75.2
7	181.	85.6	87.1	103.	104.	140.	93.7	63.0	57.5	59.7	61.6	78.3
8	196.	81.1	87.1	96.4	103.	144.	95.5	60.2	53.4	61.0	65.9	72.8
9	200.	81.1	87.1	90.1	103.	135.	113.	62.9	52.0	66.6	67.1	74.2
10	198.	81.1	88.6	75.2	103.	132.	85.5	63.0	50.5	61.8	61.3	74.3
11	198.	82.6	93.2	86.9	103.	129.	83.7	53.0	51.9	60.9	63.5	78.3
12	202.	84.2	87.2	89.9	103.	129.	66.7	79.9	53.2	59.6	66.5	80.9
13	202.	81.1	84.2	91.4	103.	152.	52.3	112.	53.2	45.2	71.3	67.3
14	202.	81.1	72.7	102.	103.	149.	66.9	105.	53.2	41.6	70.4	62.8
15	202.	84.2	70.0	91.4	103.	140.	74.9	103.	53.2	53.2	69.2	73.5
16	202.	88.8	67.3	92.9	104.	124.	74.3	90.4	53.2	56.5	65.0	76.1
17	200.	85.8	68.7	92.9	130.	122.	73.0	84.5	54.6	69.0	63.7	60.5
18	200.	87.3	76.8	91.4	149.	121.	71.5	80.4	54.8	65.1	73.2	69.0
19	200.	90.3	84.2	89.9	125.	119.	65.8	78.4	54.7	63.8	76.1	55.0
20	200.	91.8	84.1	89.9	140.	149.	57.4	76.9	54.6	66.4	63.8	52.3
21	202.	93.3	85.6	88.4	155.	145.	66.1	77.1	54.5	68.6	68.6	60.4
22	202.	85.7	85.6	89.9	138.	125.	66.1	73.5	50.4	67.4	67.4	60.3
23	202.	85.7	85.8	89.9	121.	119.	59.3	71.0	50.2	62.7	65.9	61.8
24	202.	85.7	90.3	89.9	125.	115.	62.2	69.6	48.9	61.6	66.1	61.9
25	202.	85.7	87.3	91.4	133.	113.	69.1	66.8	43.4	58.8	66.0	68.6
26	200.	82.7	87.3	89.9	119.	119.	73.3	65.3	50.4	58.9	66.0	70.0
27	200.	96.6	93.3	135.	145.	161.	71.3	66.5	60.0	56.8	71.8	68.6
28	200.	88.7	96.6	142.	138.	200.	70.0	62.4	61.6	58.2	79.2	64.6
29	200.	87.2	96.6	129.	-----	164.	70.0	62.3	61.6	58.3	80.9	61.8
30	191.	84.2	103.	124.	-----	135.	68.6	55.5	58.7	63.7	75.5	64.6
31	148.	-----	96.6	115.	-----	91.0	-----	55.9	-----	68.3	73.9	-----
TOPLAM	6000.	2839.	2708.	3075.	3307.	4182.	2199.	2237.	1643.	1860.	2075.	2053.
ORTALAMA	194.	94.6	87.4	99.2	118.	135.	73.3	72.2	54.8	60.0	66.9	68.4
LT/SN/KM ²	3.20	1.56	1.44	1.64	1.95	2.23	1.21	1.19	0.905	0.991	1.11	1.13
AKIM MM.	8.56	4.05	3.86	4.39	4.72	5.97	3.14	3.19	2.34	2.65	2.96	2.93
MİL. M3	518.	245.	234.	266.	286.	361.	190.	193.	142.	161.	179.	177.
YILI (1994) YILLIK TOPLAM AKIM	34178.	M3/SN.	2953.	MİLYON M3	48.8	MM.	1.55	LT/SN/KM ²				

15 - KIZILIRMAK HAYZASI

1536 - KIZILIRMAK NEHRİ-AVŞAR KÖPRÜSÜ

YERİ

:(34° 25' 38" D - 41° 5' 42" K) Çorlu ili Kargı ilçesinin Hacıhamza bucağından Tosyaya'ya giden yolun 2.km.sindeki Avşar yolu üzerinde ki köprüdür.

YAĞIŞ ALANI

: 60559,6 Km²

YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ

:01/11/1965 - 30/09/1993

ORTALAMA AKIMLAR

:Gözlem süresinde 138.071 m³/sn. (27 Yıllık) 1993 Su yılında 154.673 m³/sn.

ANLIK EN ÇOK VE EN AZ AKIMLAR:

1993 Su yılında anlık ençok akım : 456. m³/sn 21/05/1993
 1993 Su yılında anlık enaz akım : 52.8 m³/sn 19/11/1992
 Gözlem süresinde anlık ençok akım : 1066. m³/sn 14/03/1968
 Gözlem süresinde anlık enaz akım : 7.40 m³/sn 10/05/1974

SEVİYE ÖLÇEĞİ

:Eşel-Limnigraf

DÜŞÜNCELER

:Su yılı içinde 18 akım ölçüsü yapılmıştır. Su yılı akım değerlendirmesinde 22 nolu (01.10.1992-21.02.1993) ve 23 nolu (22.05.1993-30.09.1993) akım anahtar eğrileri kullanılmıştır. Sağ ve Sol kanal akımları ilave edilmiştir. Sulama nedeniyle memba istasyonu ile süreksizlik göstermektedir

22 . Anahtar eğrisi (Seviyeler cm. - Akımlar m³/sn.)

Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım
80	32.5	205	210.	330	436.	455	694.
105	57.6	230	252.	355	484.	480	751.
130	89.0	255	297.	380	536.		
155	126.	280	342.	405	589.		
180	167.	305	389.	430	641.		

AKIMLAR 1 EKİM 1992 'DEN 30 EYLÜL 1993 'A KADAR SANİYEDE METRE KÖP OLARAK

GÜN/AY	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	67.5	59.0	77.9	135.	172.	230.	256.	164.	263.	103.	162.	132.
2	67.5	60.1	77.8	129.	123.	217.	258.	177.	250.	80.0	165.	147.
3	67.5	57.9	109.	90.6	123.	220.	254.	194.	229.	80.1	151.	176.
4	67.5	57.9	100.	73.7	128.	213.	236.	199.	208.	76.1	152.	171.
5	67.5	55.6	102.	93.4	132.	206.	217.	186.	223.	76.1	145.	134.
6	68.7	57.9	137.	113.	135.	208.	210.	201.	215.	76.1	156.	157.
7	67.5	56.8	131.	123.	138.	213.	200.	208.	261.	76.0	152.	172.
8	66.2	55.6	110.	116.	119.	217.	194.	188.	198.	84.7	124.	176.
9	64.9	55.6	97.5	155.	105.	215.	190.	235.	204.	122.	120.	178.
10	67.5	55.6	110.	186.	92.0	217.	197.	191.	213.	124.	114.	178.
11	75.2	60.1	92.0	140.	85.3	221.	190.	229.	187.	117.	118.	178.
12	77.8	76.2	94.8	116.	89.2	201.	188.	257.	177.	114.	149.	178.
13	80.4	77.6	91.9	116.	100.	189.	190.	285.	190.	116.	168.	174.
14	70.1	85.8	91.9	127.	92.0	195.	190.	314.	172.	128.	168.	180.
15	86.9	91.3	107.	127.	105.	196.	223.	367.	167.	149.	171.	178.
16	80.4	91.0	116.	129.	94.8	181.	225.	398.	200.	157.	172.	182.
17	64.8	70.6	108.	128.	94.8	167.	232.	422.	146.	166.	160.	183.
18	62.4	67.6	93.4	122.	97.6	164.	234.	421.	124.	165.	138.	182.
19	62.5	63.9	92.0	166.	97.6	164.	234.	435.	115.	162.	121.	179.
20	80.2	65.0	94.8	90.3	100.	171.	195.	444.	134.	165.	117.	179.
21	68.6	71.4	107.	93.1	105.	179.	189.	446.	134.	166.	120.	179.
22	80.3	87.1	89.3	131.	116.	189.	243.	403.	130.	164.	124.	179.
23	76.3	102.	84.1	147.	123.	195.	248.	378.	112.	165.	117.	179.
24	66.0	88.4	81.5	145.	138.	202.	248.	365.	110.	163.	112.	181.
25	60.1	83.2	123.	135.	159.	227.	238.	377.	120.	160.	139.	183.
26	60.1	91.2	125.	125.	189.	257.	235.	382.	105.	162.	107.	185.
27	60.1	95.3	104.	113.	230.	288.	231.	387.	93.8	160.	124.	185.
28	62.5	75.3	96.2	171.	232.	301.	199.	382.	91.0	138.	165.	192.
29	60.1	95.3	84.1	198.	-----	317.	137.	336.	86.1	149.	175.	191.
30	57.9	108.	92.0	193.	-----	300.	152.	320.	78.5	159.	129.	191.
31	57.9	-----	140.	161.	-----	281.	-----	305.	-----	161.	141.	-----
TOPLAM	2123.	2219.	3154.	4026.	3513.	6741.	6430.	9594.	4933.	4085.	4383.	5254.
ORTALAMA	68.5	74.0	102.	130.	125.	217.	214.	310.	164.	132.	141.	175.
LT/ŞN/KM²	1.13	1.22	1.68	2.14	2.07	3.59	3.54	5.11	2.72	2.18	2.33	2.89
AKIM MM.	3.03	3.17	4.50	5.74	5.01	9.62	9.17	13.7	7.04	5.83	6.25	7.50
MİL. M3	183.	192.	273.	348.	304.	582.	556.	829.	426.	353.	379.	454.
SU YILI (1993) YILLIK TOPLAM AKIM	56456. M3/ŞN.					4878. MİLYON M3		80.5 MM.		2.55 LT/ŞN/KM²		

1536 - KIZILIRMAK NEHRİ-AVŞAR KÖPRÜSÜ

15 - KIZILIRMAK HAVZASI

1536 - KIZILIRMAK NEHİRİ-AVŞAR KÖPRÜSÜ

YERİ : (34° 25' 38" D - 41° 5' 43" K) Çorum İli Kargı İlçesinin Hacıhamza bucağından Tosyaya giden yolun 2.km.sindeki Avşar yolu üzerindeki köprüdedir.

YAGIŞ ALANI : 60559.6 Km² YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ : 01/11/1965 - 30/09/1992

ORTALAMA AKIMLAR : Gözlem süresinde 137.433 m³/sn. (26 Yıllık) 1992 Su yılında 101.716 m³/sn.

ANLIK EN ÇOK VE EN AZ AKIMLAR:

1992 Su yılında anlık ençok akım : 277. m³/sn 30/03/1992
1992 Su yılında anlık enaz akım : 20.8 m³/sn 09/08/1992
Gözlem süresinde anlık ençok akım : 1066. m³/sn 14/03/1968
Gözlem süresinde anlık enaz akım : 7.40 m³/sn 10/05/1974

SEVİYE ÖLÇEĞİ : Eşel-Limnigraf

DÜŞÜNKELER : Su yılı içinde 13 akım ölçüsü yapılmıştır. Su yılı akım değerlendirmesinde 22 nolu (01.10.1991-30.03.1992 ve 13.06.1992-30.09.1992) ve 21 nolu (31.03.1992-12.06.1992) akım anahtar eğrileri kullanılmıştır. Sağ ve Sol kanal akımları ilave edilmiştir.Sulama nedeniyle menba istasyonu ile süreksizlik göstermektedir

22 . Anahtar eğrisi (Seviyeler cm. - Akımlar m³/sn.)

Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım
80	32.5	205	210.	330	436.	455	694.
105	57.6	230	252.	355	484.	480	751.
130	89.0	255	297.	380	536.		
155	126.	280	342.	405	589.		
180	167.	305	389.	430	641.		

AKIMLAR 1 EKİM 1991 'DEN 30 EYLÜL 1992 'A KADAR SAĞIYEDE METRE KÖP OLARAK

GÜN/AY	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	65.8	76.9	96.7	100.	126.	153.	208.	128.	64.3	147.	75.1	97.0
2	69.6	82.1	93.0	111.	124.	136.	192.	98.6	66.4	112.	43.1	97.0
3	77.3	83.4	91.2	96.0	118.	127.	187.	92.0	64.1	159.	65.7	91.6
4	68.3	78.2	92.7	94.6	111.	103.	192.	80.7	61.9	132.	89.1	94.4
5	73.5	78.2	113.	106.	105.	115.	190.	112.	65.1	109.	90.9	94.9
6	89.0	78.2	90.2	103.	112.	98.0	187.	85.6	60.6	101.	92.1	94.9
7	74.8	80.8	117.	90.4	114.	105.	193.	82.9	57.3	90.3	73.7	97.5
8	82.5	94.0	103.	90.4	114.	97.4	209.	81.6	58.3	89.2	44.8	103.
9	89.1	94.0	101.	100.	123.	96.0	230.	81.5	59.3	111.	43.7	86.7
10	91.8	79.4	111.	94.6	121.	94.6	221.	80.3	59.3	97.5	82.2	53.1
11	89.0	78.0	113.	97.4	109.	94.6	200.	114.	63.9	89.9	90.1	72.8
12	90.3	77.9	98.8	109.	93.2	106.	209.	78.9	63.8	77.1	74.6	105.
13	81.2	76.6	93.2	100.	112.	94.6	224.	73.7	87.7	71.3	91.9	106.
14	90.4	80.5	86.4	89.0	109.	93.2	208.	71.3	76.7	69.3	89.9	79.9
15	90.9	80.5	83.8	87.7	117.	93.2	180.	61.9	120.	65.0	69.6	78.3
16	79.9	80.5	97.4	96.0	126.	92.2	162.	61.8	110.	64.5	80.6	110.
17	81.3	77.8	89.0	89.0	135.	98.1	152.	64.1	84.4	72.4	87.4	103.
18	101.	76.5	86.4	94.6	123.	116.	143.	80.1	72.7	63.5	91.5	100.
19	105.	77.8	78.6	94.6	103.	155.	149.	70.9	98.2	71.4	91.5	86.1
20	94.3	81.8	85.1	94.6	118.	209.	166.	66.2	109.	82.0	89.7	73.9
21	80.9	91.2	153.	91.0	126.	186.	163.	66.4	104.	92.2	90.2	69.2
22	75.7	84.5	140.	86.4	118.	165.	175.	64.0	125.	109.	88.9	68.7
23	75.6	89.8	127.	91.8	100.	155.	178.	65.2	126.	120.	91.3	67.4
24	75.7	87.1	106.	106.	87.7	165.	161.	68.5	108.	111.	101.	67.4
25	89.0	89.6	94.6	97.4	96.0	154.	134.	68.8	104.	79.2	113.	64.8
26	103.	87.0	90.4	114.	105.	154.	127.	68.5	97.4	72.1	104.	66.1
27	94.4	85.7	109.	121.	127.	165.	119.	65.7	106.	67.8	97.0	64.8
28	94.4	85.7	111.	100.	133.	186.	114.	66.3	108.	57.0	91.9	64.9
29	73.4	88.4	121.	103.	145.	226.	111.	66.3	121.	54.2	91.9	64.9
30	59.9	91.1	123.	126.	-----	261.	135.	65.1	149.	56.0	94.5	66.2
31	75.5	-----	109.	129.	-----	246.	-----	62.7	-----	67.2	96.2	-----

TOPLAM	2599.	2493.	3205.	3104.	3351.	4339.	5218.	2403.	2650.	2760.	2618.	2488.
ORTALAMA	83.8	83.1	103.	100.	116.	140.	174.	77.5	88.3	89.0	84.5	83.0
LT/SH/KM ²	1.38	1.37	1.71	1.65	1.91	2.31	2.87	1.28	1.46	1.47	1.39	1.37
AKIM İTİ.	3.71	3.56	4.57	4.43	4.78	6.19	7.44	3.43	3.78	3.94	3.74	3.55
MİLL. M3	225.	215.	277.	268.	290.	375.	451.	208.	229.	238.	226.	215.
SU YILI (1992)	YILLIK TOPLAM AKIM	37228.	M3/SH.	3215.	MİLYON M3	53.1 İTİ.	1.68	LT/SH/KM ²				

1536 - KIZILIRMAK NEHİRİ-AVŞAR KÖPRÜSÜ

15 - KIZILIRMAK HAVZASI

1536 - KIZILIRMAK NEHİRİ-AVŞAR KÖPRÜSÜ

YERİ : (34° 25' 30" D - 41° 5' 43" K) Çorum ili Kargı ilçesinin Hacıhamza bucağından Tosyaya giden yolun 2.km.sindaki Avşar yolu üzerindeki köprüdür.

YAGIS ALANI : 60559.6 Km²

YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ : 01/11/1965 - 30/09/1991

ORTALAMA AKIMLAR : Gözlem süresinde 139.036 m³/sn. (25 Yıllık) 1991 Su yılında 112.970 m³/sn.

ANLIK EN ÇOK VE EN AZ AKIMLAR:

1991 Su yılında anlık ençok akım : 237. m³/sn 22/02/1991
 1991 Su yılında anlık enaz akım : 45.0 m³/sn 24/07/1991
 Gözlem süresinde anlık ençok akım : 1066. m³/sn 14/03/1960
 Gözlem süresinde anlık enaz akım : 7.40 m³/sn 10/05/1974

SEVİYE ÖLÇEĞİ

:Eşel-Liannigraf

DÜŞÜNCELER

:Yıl içinde 12 akım ölçüsü yapılmıştır.Değerlendirmede 3 ayrı akım anahtar eğri si kullanılmıştır. AĞI ile menbaındaki 1520 nolu AĞI arasında çeltik tarlarına :birçok kanal ve pompajla su alınmaktadır. Bu durum menba mansap ilişkisinde su :süreksizliğe neden olmaktadır. Örneğin bir kanala 12 m³/Sn su alınabilmektedir

25 . Anahtar eğrisi (Seviyeler cm. - Akımlar m³/sn.)

Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım
70	24.7	120	79.2	220	263.	320	505.	420	840.
80	33.1	140	109.	240	309.	340	557.	440	908.
900	42.0	160	142.	260	356.	360	614.	460	978.
100	53.7	180	180.	280	405.	380	710.	480	1040.
110	65.0	200	220.	300	455.	400	774.	500	1110.

AKIMLAR 1 EKİM 1990 'DEN 30 EYLÜL 1991 'A KADAR ŞAHİYEDE METRE KUP OLARAK

GÜN/AY	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	134.	137.	135.	92.1	109.	206.	91.7	119.	124.	66.5	85.5	93.9
2	138.	131.	137.	90.5	123.	202.	95.9	146.	110.	68.0	81.8	96.6
3	123.	135.	134.	89.0	98.0	196.	92.9	143.	108.	61.8	77.4	87.0
4	124.	135.	146.	89.0	122.	194.	103.	134.	103.	75.2	70.0	74.1
5	146.	134.	124.	89.0	123.	191.	105.	126.	103.	77.6	83.7	65.4
6	131.	131.	121.	89.0	118.	184.	104.	126.	115.	102.	76.4	72.0
7	123.	100.	105.	92.1	118.	104.	99.2	124.	119.	130.	76.7	73.4
8	131.	95.0	101.	112.	118.	190.	96.2	119.	109.	144.	80.7	68.5
9	124.	94.2	96.6	109.	120.	100.	105.	105.	107.	86.1	99.0	63.7
10	126.	121.	94.0	112.	123.	104.	94.6	99.6	167.	77.3	86.3	64.8
11	139.	134.	93.2	110.	123.	102.	87.5	96.5	137.	70.4	85.0	66.3
12	126.	135.	88.5	109.	120.	144.	96.0	93.7	120.	65.7	102.	76.6
13	126.	137.	85.8	104.	114.	141.	107.	92.0	100.	73.2	105.	92.0
14	126.	119.	88.7	106.	122.	180.	111.	89.1	103.	71.5	80.5	102.
15	123.	127.	84.4	103.	133.	160.	110.	84.8	100.	70.2	105.	113.
16	123.	135.	88.6	99.7	130.	137.	119.	87.5	92.7	66.3	103.	104.
17	126.	126.	106.	106.	131.	133.	142.	91.9	80.7	60.7	80.9	70.8
18	124.	92.9	109.	99.7	141.	138.	156.	94.0	91.6	58.1	70.0	72.7
19	127.	88.4	112.	109.	157.	140.	158.	105.	80.6	57.8	85.6	72.8
20	127.	110.	132.	123.	166.	145.	144.	140.	68.5	57.9	83.4	74.1
21	124.	129.	140.	126.	214.	147.	122.	135.	72.2	60.2	72.8	70.3
22	127.	126.	144.	98.3	232.	159.	119.	111.	86.0	56.9	78.7	71.4
23	127.	131.	140.	90.5	216.	160.	179.	143.	79.3	55.8	85.0	70.0
24	131.	123.	146.	109.	210.	151.	163.	147.	81.1	55.0	86.6	69.8
25	127.	124.	146.	126.	186.	137.	167.	149.	81.2	79.8	93.1	66.1
26	115.	121.	144.	134.	172.	133.	150.	142.	90.8	74.2	92.8	64.9
27	137.	113.	144.	134.	173.	122.	140.	147.	84.7	90.7	86.4	63.7
28	137.	95.6	135.	122.	109.	120.	136.	132.	88.1	92.4	85.5	72.5
29	134.	126.	103.	114.	-----	123.	124.	127.	77.7	92.4	97.0	75.2
30	123.	134.	101.	96.4	-----	118.	121.	110.	66.3	73.4	97.0	69.7
31	123.	-----	93.6	123.	-----	102.	-----	119.	-----	77.8	90.7	-----
TOPLAM	3967.	3640.	3626.	3310.	4103.	4900.	3653.	3607.	2962.	2349.	2709.	2321.
ORTALAMA	128.	122.	117.	107.	147.	158.	122.	119.	90.7	75.8	87.4	77.4
LT/SN/KM ²	2.11	2.01	1.93	1.76	2.42	2.61	2.01	1.96	1.63	1.25	1.44	1.20
AKIM MM.	5.66	5.21	5.17	4.72	5.85	6.99	5.21	5.26	4.23	3.35	3.87	3.31
MİL. M3	343.	315.	313.	206.	354.	423.	316.	319.	256.	203.	234.	201.
SU YILI (1991) YILLIK TOPLAM AKIM	41236.	M3/SH.	3563.	MİLYON M3	50.8	MM.	1.07	LT/SN/KM ²				

1536 - KIZILIRMAK NEHİRİ-AVŞAR KÖPRÜSÜ

15 - KIZILIRMAK HAVZASI

1536 - KIZILIRMAK NEHİRİ-AVŞAR KÖPRÜSÜ

YERİ : (34° 25' 30" D - 41° 5' 43" K) Çorum İli Kargı İlçesinin Hacıhamza Lucağından Tomyaya giden yolun 2.km.sindeki Avşar yolu üzerinde ki köprüdedir.

YAGIS ALANI : 60559.6 Km²

YAKLAŞIK KÖİ : 310 m.

GÖZLEM SÜRESİ : 01/11/1965 - 30/09/1990

ORTALAMA AKIMLAR : Gözlem süresinde 140.121 m³/sn. (24 Yıllık) 1990 Su yılında 120.654 m³/sn.

ANLIK EN ÇOK VE EN AZ AKIMLAR:

1990 Su yılında anlık ençok akım	:	301.	m ³ /sn	01/03/1990
1990 Su yılında anlık enaz akım	:	49.0	m ³ /sn	03/08/1990
Gözlem süresinde anlık ençok akım	:	1066.	m ³ /sn	14/03/1968
Gözlem süresinde anlık enaz akım	:	7.40	m ³ /sn	10/05/1974

SEVİYE ÖLÇEĞİ

:Eşel-Limanigraf

ÖLÇÜNCÜLER

:Akım durumu iyi.Yıl içinde 12 akım ölçüldü yapılmıştır.Değerlendirmede 2 ayrı akım anahtar eğrisi kullanılmıştır.Kanal akımları ana yataya ilave edilmiştir.İstasyonun menbaında ki çeltik tarlalarına sulama vardır.

22 . Anahtar eğrisi (Seviyeler cm - Akımlar m³/sn.)

Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım	Seviye	Akım
80	32.5	130	09.0	220	235.	320	417.	420	620.
90	41.9	140	103.	240	270.	340	455.	440	662.
100	52.0	160	133.	260	306.	360	494.	460	704.
110	63.2	180	167.	280	342.	380	536.	480	751.
120	76.0	200	201.	300	379.	400	578.	500	801.

AKIMLAR 1 EKİM 1909 'DEN 30 EYLÜL 1990 'A KADAR SAHİYEDE METRE KUP OLARAK

GÜN/AY	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	89.5	84.1	103.	210.	106.	216.	121.	137.	153.	73.0	63.7	104.
2	94.9	100.	132.	192.	107.	263.	115.	154.	145.	69.9	58.7	104.
3	77.2	96.2	116.	169.	107.	239.	110.	174.	153.	71.2	53.3	103.
4	81.3	80.0	112.	151.	108.	208.	107.	213.	147.	72.9	76.5	104.
5	89.5	74.6	105.	145.	108.	198.	108.	268.	146.	70.0	98.4	104.
6	76.0	73.3	97.0	137.	107.	104.	105.	302.	130.	67.6	107.	104.
7	78.7	71.0	93.6	136.	106.	146.	101.	294.	125.	67.7	107.	106.
8	103.	78.6	92.3	140.	104.	156.	100.	273.	116.	66.8	98.7	108.
9	107.	77.3	99.1	120.	104.	145.	99.0	255.	110.	65.6	102.	109.
10	105.	70.7	105.	122.	104.	139.	100.	236.	107.	62.3	106.	108.
11	102.	72.1	120.	136.	113.	139.	109.	238.	101.	68.2	106.	115.
12	102.	78.9	125.	129.	125.	142.	133.	246.	95.6	83.4	104.	109.
13	113.	76.2	130.	162.	107.	131.	154.	234.	86.9	79.9	104.	119.
14	107.	69.3	124.	142.	115.	117.	168.	219.	84.7	91.3	106.	125.
15	105.	72.1	116.	147.	131.	130.	188.	210.	81.2	96.9	96.4	131.
16	105.	95.1	110.	131.	144.	133.	193.	206.	81.4	101.	93.8	124.
17	105.	88.3	107.	103.	145.	120.	181.	214.	81.4	90.2	105.	122.
18	86.7	84.3	106.	108.	139.	133.	176.	214.	81.2	95.8	104.	118.
19	89.5	80.1	107.	110.	142.	124.	174.	218.	89.6	103.	101.	116.
20	107.	70.5	108.	100.	140.	115.	169.	216.	85.9	104.	103.	119.
21	90.8	71.0	120.	110.	136.	115.	167.	228.	84.4	104.	103.	118.
22	82.7	81.3	110.	113.	131.	125.	159.	232.	81.8	96.5	103.	119.
23	81.4	93.5	111.	125.	126.	127.	150.	235.	84.2	91.0	104.	120.
24	79.9	81.3	108.	113.	123.	130.	147.	220.	82.8	90.8	103.	116.
25	78.6	85.3	106.	116.	122.	131.	142.	200.	79.7	75.1	104.	119.
26	78.6	85.3	103.	108.	120.	131.	140.	194.	79.2	76.4	103.	119.
27	78.6	100.	103.	106.	122.	131.	139.	170.	79.2	70.8	102.	119.
28	90.0	97.7	134.	103.	123.	131.	135.	168.	77.7	103.	103.	124.
29	89.4	140.	199.	104.	-----	130.	129.	156.	75.1	88.5	105.	121.
30	82.6	180.	205.	103.	-----	127.	131.	152.	76.8	80.1	106.	131.
31	99.0	-----	175.	103.	-----	124.	-----	145.	-----	73.8	105.	-----
TOPLAM	2054.	2626.	3765.	4001.	3355.	4601.	4151.	4637.	3001.	2558.	3034.	3455.
ORTALAMA	92.1	87.5	121.	129.	120.	148.	130.	214.	100.	82.5	97.9	115.
LT/SH/KM ²	1.52	1.45	2.01	2.13	1.90	2.45	2.20	3.54	1.65	1.36	1.62	1.90
AKIM MM.	4.07	3.75	5.37	5.71	4.79	6.56	5.92	9.47	4.20	3.65	4.33	4.93
MİL. M3	247.	227.	325.	346.	290.	390.	359.	573.	259.	221.	262.	298.
SU YILI (1990) YILLIK TOPLAM AKIM	44030.	M3/SN.	3005.	MİLYON M3	62.8	MM.	1.99	LT/SH/KM ²				

1536 - KIZILIRMAK NEHİRİ-AVŞAR KÖPRÜSÜ

15- KIZILIRMAK HAVZASI

1536- KIZILIRMAK METRE - AVSAR KÖP.

YERİ	:(34 25'41"D- 41 05'34"E) Çorum'un Karaman ilmesine bağlı Hacıhamza bucağın'dan Tosya'ya giden yolun 2.km.sindedir.		
YATIŞ ALANI	:60559.6	Km. ²	YAKLAŞIK KOT : 310 m.
GÖZLEM SÜRESİ	:1 Kasım 1965- 30 Eylül 1989		
ORTALAMA AKIMLAR	:Gözlem süresinde	140.827	³ m /sn. (23 yıllık) 1909 Su yılında 134.945 ³ m /sn.
EN ÇOK VE EN AZ AKIMLAR	:1989 Su yılında en çok akım	: 290.	³ m /sn. (11.11.1908)
	:1989 Su yılında en az akım	: 32.9	" (06.07.1909)
	Gözlem süresinde en çok akım	: 1066.	" (14.03.1968)
	Gözlem süresinde en az akım	: 7.40	" (10.05.1974)
SEVİYE ÖLÇEĞİ	:Eşel ve limniğraf.		
DÜŞÜNCELER	:Akım durumu iyi.Yıl içinde 2 ayrı anahtar eğrisi kullanılmış,12 akım ölçüşü yapılmıştır.Ana yatağın sol ve sağ sahilinde kanal olup,bu kanallardan yaklaşık olarak aylık ortalama akım,4.940 m ³ /sn dir.		
	21.Anahtar eğrisi (Seviyeler Cm. -Akımlar m /sn. dir.)		

Seviye	Akım	Seviye	Akım
80	27.7	150	109.
90	36.6	200	191.
100	46.0	250	204.
110	57.0	300	379.
120	68.5	400	570.

AKIMLAR 1 EKİM 1988'DEN 30 EYLÜL 1909'A KADAR SAHİYEDE METRE KÖP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMİZ	AĞUSTOS	EYLÜL
1	172.	235.	214.	201.	148.	240.	199.	105.	05.0	49.3	87.4	87.4
2	162.	165.	217.	197.	101.	274.	179.	104.	87.8	49.3	65.1	72.8
3	162.	235.	210.	186.	89.2	253.	186.	76.3	100.	51.5	67.4	76.9
4	181.	255.	212.	141.	83.6	226.	179.	71.3	95.5	51.5	73.7	100.
5	150.	255.	226.	172.	79.5	226.	159.	58.2	94.2	50.4	75.3	98.2
6	175.	255.	233.	181.	75.3	215.	111.	76.7	90.1	38.4	78.0	75.3
7	189.	265.	228.	182.	73.9	206.	94.9	82.2	87.4	54.8	78.0	78.0
8	196.	282.	215.	186.	71.3	224.	82.2	75.3	82.0	87.4	79.3	88.0
9	175.	276.	214.	184.	70.0	214.	73.9	71.3	79.3	92.0	66.2	75.3
10	189.	284.	223.	135.	67.3	210.	66.0	83.6	80.7	92.0	50.4	88.0
11	221.	296.	215.	108.	67.3	219.	66.0	86.4	75.3	96.9	40.1	80.7
12	187.	296.	233.	108.	64.7	223.	66.0	73.5	80.7	101.	54.8	79.3
13	210.	290.	235.	167.	66.0	219.	62.0	70.1	87.4	101.	73.9	95.5
14	210.	228.	224.	175.	66.0	214.	58.2	72.6	83.4	96.9	83.4	91.5
15	184.	140.	212.	175.	64.7	210.	56.9	67.3	90.1	67.4	80.7	96.9
16	215.	174.	210.	177.	64.7	201.	55.7	66.0	90.2	60.1	67.4	95.5
17	221.	226.	214.	177.	64.7	198.	59.5	66.0	92.0	63.9	67.4	91.5
18	159.	239.	219.	181.	67.3	191.	60.7	62.0	79.2	98.2	80.7	101.
19	147.	239.	239.	182.	70.0	191.	58.2	60.7	91.5	71.2	87.4	102.
20	145.	226.	235.	184.	80.9	196.	127.	59.5	72.3	80.7	90.1	96.9
21	206.	250.	210.	184.	82.2	205.	100.	58.2	75.3	62.3	92.8	96.9
22	206.	250.	221.	182.	82.2	193.	107.	60.7	63.9	80.7	95.5	96.9
23	193.	223.	219.	182.	80.9	104.	115.	60.6	63.9	83.4	87.4	91.5
24	212.	214.	217.	182.	85.0	184.	120.	80.9	66.2	87.4	73.9	92.0
25	184.	193.	215.	179.	96.3	184.	105.	72.6	60.5	84.7	80.7	90.2
26	203.	199.	214.	182.	107.	107.	96.3	66.0	65.1	65.1	90.1	102.
27	223.	203.	208.	177.	127.	190.	90.6	70.0	59.3	69.9	91.5	96.9
28	248.	206.	203.	172.	191.	205.	90.6	75.3	57.0	61.6	94.2	95.5
29	244.	214.	206.	175.	---	196.	93.5	79.5	53.7	75.3	94.2	95.5
30	257.	214.	203.	181.	---	170.	107.	82.2	50.4	84.7	87.4	95.5
31	244.	---	201.	182.	---	182.	---	83.6	---	94.2	76.6	---
TOPLAM	6070.	7027.	6745.	5379.	2387.0	6446.	3041.2	2313.6	2356.2	2304.3	2411.2	2774.0
ORTALAMA	195.8	234.2	217.6	173.5	85.25	207.9	101.4	74.63	78.54	74.35	77.78	92.47
LT/SH/KM ²	3.23	3.87	3.59	2.86	1.41	3.43	1.67	1.23	1.30	1.23	1.28	1.53
AKIM,M ³ /S	8.66	10.0	9.62	7.67	3.41	9.20	4.34	3.30	3.36	3.29	3.44	3.96
10 M AKIM	524.	607.	583.	465.	206.	557.	263.	200.	204.	199.	208.	240.
SU YILI (1989)	YILLIK TOPLAM AKIM. 4256. MİLYON M ³ . 70.3 M ³ . 2.23 LT/SH/KM ² .											

15- KIZILIRMAK HAUZASI

1536- KIZILIRMAK NEVRI- AVŞAR KÖP.

YERİ : (34°25'41"D- 41°05'34"E) Çorum'un Kargılıçesine bağlı Ilacıhanza bucağın'dan Torva'ya giden yolun 2.km.sindedir.

YATIŞ ALANI : 60559.6 Km.²

YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ : 1 Kasım 1965- 30 Eylül 1988

ORTALAMA AKIMLAR : Gözlem süresinde 141.094 m³/sn. (22 yıllık) 1988 Su yılında 229.158 m³/sn.

EN ÇOK VE EN AZ AKIMLAR : 1988 Su yılında en çok akım : 505. m³/sn. (23.04.1988)
1988 Su yılında en az akım : 73.1 " (19.11.1987)
Gözlem süresinde en çok akım : 1066. " (14. 3.1968)
Gözlem süresinde en az akım : 7.40 " (10. 5.1974)

SEVİYE OLÇEĞİ : Eşel ve limniğraf.

DÜŞÜNCELER : Akım durumu iyi.Yıl içinde 3 ayrı anahtar eğrisi kullanılmış,12 akım ölçüsü yapılmıştır.Ana yatağın sol ve sağ sahilinde kanal olup,bu kanallardan yaklaşık olarak aylık ortalama akım,4.940 m³/sn dir.

20.Anahtar eğrisi (Seviyeler Cm. -Akımlar m³/sn. dir.)

Seviye	Akım	Seviye	Akım
120	60.7	200	184.
130	73.9	250	274.
140	87.8	300	374.
150	102.	350	474.
160	117.	400	570.

AKIMLAR 1 EKİM 1987 DEN 30 EYLÜL 1988'E KADAR VE SAHİYEDE METRE-KÖP OLARAK

GÜN	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	134.	108.	111.	184.	245.	310.	321.	402.	392.	335.	175.	165.
2	139.	97.0	98.7	198.	201.	314.	203.	398.	301.	303.	124.	161.
3	142.	107.	97.0	172.	176.	307.	341.	400.	373.	292.	152.	159.
4	142.	100.	98.4	123.	168.	327.	308.	393.	371.	267.	193.	156.
5	142.	116.	89.1	99.5	171.	306.	416.	387.	386.	256.	197.	149.
6	167.	115.	87.8	113.	165.	305.	431.	376.	362.	220.	195.	154.
7	187.	146.	101.	159.	163.	202.	414.	366.	343.	212.	188.	149.
8	195.	126.	107.	181.	161.	233.	412.	366.	335.	215.	193.	156.
9	213.	110.	97.1	126.	163.	259.	420.	357.	326.	210.	178.	162.
10	205.	123.	107.	113.	165.	271.	427.	353.	316.	207.	140.	150.
11	207.	92.0	136.	174.	171.	285.	424.	347.	312.	214.	158.	156.
12	190.	79.6	156.	207.	195.	339.	407.	343.	322.	226.	163.	156.
13	186.	92.0	157.	215.	177.	356.	334.	344.	303.	223.	180.	148.
14	127.	130.	154.	219.	142.	352.	334.	330.	326.	222.	195.	133.
15	134.	126.	122.	219.	149.	314.	352.	334.	356.	231.	177.	165.
16	184.	106.	113.	211.	195.	276.	374.	334.	356.	243.	125.	149.
17	187.	98.2	131.	221.	207.	297.	389.	330.	373.	238.	120.	173.
18	144.	87.5	195.	217.	195.	309.	307.	325.	350.	222.	130.	148.
19	113.	78.2	207.	213.	233.	351.	396.	319.	362.	208.	155.	154.
20	120.	111.	176.	197.	249.	380.	407.	325.	379.	172.	167.	154.
21	102.	126.	167.	193.	257.	401.	419.	315.	385.	177.	146.	130.
22	92.3	147.	147.	189.	305.	414.	433.	312.	307.	204.	98.1	142.
23	107.	137.	191.	202.	335.	317.	460.	315.	400.	173.	87.4	130.
24	114.	134.	257.	207.	291.	291.	502.	317.	378.	127.	117.	132.
25	144.	100.	223.	215.	273.	336.	474.	325.	358.	137.	148.	143.
26	147.	86.5	182.	206.	280.	364.	474.	326.	333.	127.	160.	155.
27	133.	89.1	152.	188.	278.	390.	464.	317.	334.	94.0	164.	149.
28	98.6	85.1	139.	205.	267.	405.	454.	335.	334.	118.	156.	122.
29	115.	96.6	146.	200.	301.	366.	440.	367.	337.	138.	162.	150.
30	123.	107.	177.	202.	—	309.	422.	388.	342.	169.	163.	143.
31	133.	—	152.	216.	—	313.	—	397.	—	160.	163.	—
TOPLAM	4566.9	3264.8	4474.1	5784.5	6286.	10079.	12219.	10051.	10627.	6342.0	4874.5	4503.
ORTALAMA	147.3	108.8	144.3	186.6	216.8	325.1	407.3	350.0	354.2	204.6	157.2	150.1
LT/SN/KM ²	2.43	1.80	2.38	3.08	3.58	5.37	6.73	5.78	5.05	3.38	2.60	2.48
AKIM.MM.	6.52	4.66	6.38	8.25	8.97	14.4	17.4	15.5	15.2	9.05	6.95	6.42
10 K AKIM	395.	282.	387.	500.	543.	871.	1056.	920.	910.	548.	421.	309.
SU YILI (1988)	YILLIK TOPLAM AKIM.	7247.	MİLYON M ³ .	120.	MM.	3.78	LT/SN/KM ² .					

15- KIZILIRMAK İVİZASI

1536- KIZILIRMAK MEYRİ- AÜŞAR KÖP.

YERİ

(34 25'41"D- 41 05'34"E) Çorum'un Kargılıçesine bağlı Hacıhamza bucağın'dan Tosya'ya giden yolun 2.km.sindendir.

YATIŞ ALANI

60559,6 Km²

YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ

1 Kasım 1965- 30 Eylül 1907

ORTALAMA AKIMLAR

Gözlem süresinde 136.092 ³m³/sn. (21 yıllık) 1987 Su yılında 134.250 ³m³/sn.

EN ÇOK VE EN AZ AKIMLAR

1987 Su yılında en çok akım : 497. ³m³/sn. (1. 2.1987)
 1987 Su yılında en az akım : 29.4 " (10.10.1986)
 Gözlem süresinde en çok akım : 1066. " (14. 3.1968)
 Gözlem süresinde en az akım : 7.40 " (10. 5.1974)

SEVİYE OLÇERİ

Eşel ve limniğraf.

NOTLAR

Akım durumu iyi.Yıl içinde 12 akım ölçüsü yapılmıştır.Ana yatağın sol ve sağ sahilinde kanal olup,bu kanallardan yaklaşık olarak aylık ortalama akım,4.940 m³/sn dir.19.Anahat eğrisi (Seviler Cm. -Akımlar ³m³/sn. dir.)

Seviye	Akım	Seviye	Akım
120	25.0	200	118.
130	32.5	250	205.
140	41.5	300	315.
150	51.5	350	444.
160	62.5	400	559.

AKIMLAR 1 EKİM 1986'DAN 30 EYLÜL 1987'YE KADAR SAKİYEDE METRE KÖP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAH	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	84.6	70.0	84.6	140.	449.	91.0	309.	170.	91.0	123.	161.	115.
2	79.1	66.7	109.	153.	410.	86.9	314.	176.	112.	144.	145.	92.5
3	98.0	155.	87.5	121.	303.	84.1	323.	190.	132.	159.	140.	73.8
4	153.	153.	59.9	95.0	221.	81.5	294.	203.	169.	132.	130.	114.
5	120.	104.	64.0	103.	180.	100.	247.	173.	103.	119.	131.	126.
6	81.9	96.5	64.0	227.	156.	159.	217.	163.	165.	114.	125.	135.
7	52.8	96.5	73.6	189.	138.	152.	202.	153.	199.	120.	111.	130.
8	40.0	114.	90.0	237.	127.	129.	212.	149.	190.	156.	105.	145.
9	33.6	117.	89.0	297.	125.	118.	206.	145.	171.	201.	94.3	107.
10	34.5	119.	80.5	303.	113.	118.	202.	152.	144.	176.	92.8	97.0
11	58.5	121.	55.1	259.	104.	118.	187.	152.	136.	146.	88.7	139.
12	90.5	106.	57.4	157.	99.2	119.	214.	143.	132.	155.	92.5	130.
13	119.	89.0	58.5	165.	142.	115.	293.	131.	129.	134.	94.0	90.0
14	119.	106.	66.7	124.	119.	112.	316.	127.	120.	127.	116.	83.0
15	104.	115.	62.6	111.	99.1	107.	256.	130.	115.	117.	117.	74.0
16	114.	104.	66.7	115.	92.9	101.	334.	124.	114.	102.	118.	79.0
17	131.	86.0	62.6	93.5	94.4	101.	429.	120.	111.	106.	126.	103.
18	139.	62.6	66.7	84.6	94.4	104.	421.	112.	105.	100.	119.	123.
19	142.	68.1	87.5	101.	102.	104.	323.	105.	130.	99.0	115.	127.
20	139.	68.1	133.	157.	102.	104.	270.	116.	176.	102.	89.5	128.
21	133.	90.0	133.	112.	102.	104.	245.	114.	175.	101.	96.9	128.
22	72.0	119.	101.	126.	102.	107.	214.	110.	159.	90.1	94.0	127.
23	87.5	128.	96.5	157.	99.7	116.	197.	104.	159.	93.0	117.	126.
24	99.5	119.	157.	146.	97.4	124.	192.	100.	127.	107.	109.	116.
25	101.	95.0	175.	173.	112.	149.	190.	96.7	104.	100.	110.	107.
26	101.	79.1	177.	107.	114.	185.	179.	91.4	145.	97.1	105.	101.
27	83.2	77.1	175.	79.1	106.	224.	170.	96.9	140.	113.	105.	122.
28	79.1	89.0	177.	70.0	90.7	224.	160.	101.	137.	117.	106.	134.
29	75.0	89.0	157.	119.	---	239.	173.	92.7	129.	107.	94.0	135.
30	72.2	79.1	115.	257.	---	285.	170.	80.8	129.	135.	89.5	135.
31	80.5	---	96.5	458.	---	306.	---	92.1	---	132.	100.	---
TOPLAM	2945.5	2990.6	3086.9	5117.0	4102.8	4267.5	7469.	4021.6	4248.0	3841.0	3445.2	3466.3
ORTALAMA	95.02	99.67	99.58	165.1	146.5	137.7	249.0	129.7	141.6	123.9	111.1	115.5
LT/SH/KM ²	1.57	1.65	1.64	2.73	2.42	2.27	4.11	2.14	2.34	2.05	1.83	1.91
AKIM.MM. ³	4.20	4.27	4.40	7.30	5.05	6.09	10.7	5.74	6.06	5.48	4.92	4.95
10 M AKIM ³	254.	250.	267.	442.	354.	369.	645.	347.	367.	332.	290.	299.
SU YILI (1987)	YILLIK TOPLAM AKIM.	4234.	MİLYON M ³ .	69.9	MM.	2.22	LT/SH/KM ² .					

15- KIZILIRMAK HAVZASI

1536- KIZILIRMAK NEHRİ- AVŞAR KÖP.

YERİ

(34 25'41"D- 41 05'34"E) Çorum'un Kargılıçesine bağlı Macihanra bucağın'dan Tesya'ya giden yolun 2.km.sindedir.

YATIS ALANI

160559.6 Km.

YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ

1 Kasım 1965- 30 Eylül 1986

ORTALAMA AKIMLAR

Gözlem süresinde 137.024 m³/sn. (20 yıllık) 1986 Su yılında 127.604 m³/sn.

EN ÇOK VE EN AZ AKIMLAR

1986 Su yılında en çok akım : 263. m³/sn. (11.11.1986)
 1986 Su yılında en az akım : 44.0 " (3. 7.1986)
 Gözlem süresinde en çok akım : 1066. " (14. 3.1968)
 Gözlem süresinde en az akım : 7.40 " (10. 5.1974)

SEVİYE ÖLÇEĞİ

Esel ve limniğraf.

BÜŞÜNCÜLER

Akım durumu iyi.Yıl içinde 12 akım ölçüsü yapılmıştır.Ana yatağın sol ve sağ sahillerinde kanal olup,bu kanallardan yaklaşık olarak aylık ortalama akım,4.948 m³/sn dir.18.Anahtar eğrisi (Seviyeler Cm. -Akımlar m³/sn. dir.)

Seviye	Akım	Seviye	Akım
125	32.8	200	135.
130	37.0	250	233.
140	47.0	300	333.
150	58.5	350	444.
160	70.2	400	559.

AKIMLAR 1 EKİM 1985'DEN 30 EYLÜL 1986'YA KADAR SANİYEDE METRE KÜP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NISAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	150.	154.	157.	136.	100.	131.	228.	70.0	124.	67.8	112.	67.5
2	131.	162.	161.	163.	97.5	122.	224.	70.8	112.	56.6	115.	72.8
3	124.	157.	147.	173.	97.4	112.	255.	89.3	111.	52.6	87.2	80.7
4	124.	165.	123.	142.	102.	108.	240.	95.4	102.	76.1	99.4	89.6
5	143.	167.	149.	166.	104.	108.	215.	110.	83.8	103.	114.	111.
6	141.	158.	164.	168.	120.	112.	202.	101.	100.	76.4	98.4	114.
7	142.	154.	143.	190.	132.	117.	207.	94.6	111.	73.5	105.	111.
8	151.	167.	136.	173.	112.	124.	217.	90.6	96.5	81.1	123.	92.0
9	139.	225.	153.	177.	104.	126.	138.	93.4	87.5	72.5	121.	86.0
10	148.	249.	171.	205.	100.	128.	169.	85.3	97.5	65.9	111.	86.0
11	148.	258.	132.	205.	99.7	115.	179.	94.7	93.3	69.5	102.	89.0
12	146.	240.	134.	178.	103.	110.	162.	102.	91.9	82.0	110.	87.5
13	151.	184.	161.	209.	106.	105.	167.	106.	94.2	90.3	111.	92.6
14	156.	191.	158.	219.	107.	113.	187.	99.0	120.	137.	123.	94.4
15	146.	201.	159.	169.	109.	127.	183.	100.	113.	98.3	132.	105.
16	147.	184.	165.	145.	114.	138.	107.	103.	84.7	91.5	125.	104.
17	144.	184.	171.	134.	126.	152.	119.	87.1	120.	72.3	111.	97.0
18	162.	198.	153.	187.	119.	155.	142.	84.1	116.	93.4	90.4	89.4
19	167.	192.	172.	181.	112.	150.	130.	77.2	93.0	115.	84.6	86.1
20	171.	125.	167.	178.	109.	199.	95.0	68.9	68.7	111.	95.3	92.0
21	174.	94.0	179.	149.	109.	215.	89.0	76.9	57.5	102.	82.3	87.5
22	170.	97.1	176.	138.	115.	221.	124.	75.4	57.6	127.	79.7	86.0
23	145.	167.	190.	128.	122.	211.	103.	71.7	57.4	96.3	77.4	89.0
24	132.	153.	184.	118.	133.	198.	107.	74.4	77.4	122.	94.7	89.0
25	147.	144.	136.	112.	141.	190.	107.	78.3	85.5	111.	103.	81.9
26	160.	152.	161.	106.	140.	151.	95.0	87.3	117.	117.	83.7	93.5
27	177.	116.	164.	102.	144.	185.	90.5	99.6	156.	117.	69.2	95.0
28	183.	127.	178.	100.	132.	215.	99.5	112.	114.	117.	69.5	103.
29	171.	149.	184.	100.	---	222.	92.0	95.5	118.	119.	67.7	99.5
30	150.	150.	200.	99.0	---	216.	73.6	108.	91.6	96.3	66.6	92.0
31	165.	---	185.	100.	---	231.	---	132.	---	87.0	65.0	---
TOPLAM	4705.	5066.1	5013.	4750.0	3209.6	4807.	4548.6	2833.5	2952.1	2897.4	3029.1	2764.0
ORTALAMA	151.8	168.9	161.7	153.2	114.6	155.1	151.6	91.40	98.40	93.46	97.71	92.13
LT/SH/KM ²	2.51	2.79	2.67	2.53	1.89	2.56	2.50	1.51	1.62	1.54	1.61	1.52
AKIM,KM.	6.71	7.23	7.15	6.78	4.58	6.86	6.49	4.04	4.21	4.13	4.32	3.94
10 M AKIM	407.	438.	433.	410.	277.	415.	393.	245.	255.	250.	262.	239.
SU YILI (1986)	YILLIK TOPLAM AKIM.	4024. MİLYON M ³ ,	66.4 MM,	2.11 LT/SH/KM ² .								

15- KIZILIRMAK HAVZASI

1536- KIZILIRMAK NEHİRİ- AVGAR KÖYÜ.

YER:	:(34°25'41"D- 41°05'34"E) Çorum'un Karşilçesine bağlı Hacıhanza bucağının'dan Tosya'ya giden yolun 2.km.sindedir.		
YATIS ALANI	:60559.6	Km.	YAKLAŞIK KOT : 310 m.
GOZLEM SÜRESİ:	:1 Kasım 1965- 30 Eylül 1985		
ORTALAMA AKIMLAR	:Gözlem süresinde	137.520	³ m /sn. (19 yıllık) 1985 Su yılında 122.509 ³ m /sn.
EN ÇOK VE EN AZ AKIMLAR	:1985 Su yılında en çok akım	: 389.	³ m /sn. (3. 4.1985)
	:1985 Su yılında en az akım	: 55.8	" (10. 2.1985)
	:Gözlem süresinde en çok akım	: 1066.	" (14. 3.1968)
	:Gözlem süresinde en az akım	: 7.40	" (10. 5.1974)
SEVİYE ÖLÇERİ	:Eşel ve limniograf.		
DÜŞÜNCELER	:Akım durumu iyi.Yıl içinde 12 akım ölçüsü yapılmıştır.Ana yatağın sol ve sağ sahilinde kanal olup,bu kanatlardan yaklaşıkolarak aylık ortalama akım,4.948 m ³ /sn dir.		

17.Anahtar eğrisi (Seviyeler Cu. -Akımlar m /sn. dir.)

Seviye	Akım	Seviye	Akım
125	32.8	200	128.
130	37.0	250	226.
140	47.0	300	315.
150	58.0	350	410.
160	70.0	400	505.

AKIMLAR 1 EKİM 1984'DEN 30 EYLÜL 1985'E KADAR SAHİYEDE METRE KÜP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	140.	96.5	142.	144.	73.6	64.0	197.	128.	144.	73.6	90.5	101.
2	120.	99.5	131.	153.	70.8	69.5	295.	124.	133.	90.5	75.0	89.0
3	99.5	107.	135.	131.	53.1	65.4	380.	112.	122.	77.7	69.5	119.
4	84.6	111.	133.	109.	66.1	61.2	319.	106.	144.	70.8	75.0	146.
5	106.	122.	114.	161.	56.7	59.9	257.	119.	149.	107.	72.2	151.
6	128.	117.	109.	171.	65.4	61.2	245.	117.	124.	101.	87.5	179.
7	135.	111.	119.	173.	52.6	59.9	219.	109.	122.	81.9	84.6	163.
8	131.	133.	117.	151.	61.2	64.0	217.	99.5	107.	75.3	86.0	185.
9	124.	131.	111.	117.	57.9	76.3	215.	97.5	114.	69.5	117.	201.
10	104.	120.	107.	121.	57.4	95.0	197.	106.	159.	68.1	137.	209.
11	101.	126.	122.	139.	64.0	107.	171.	90.5	128.	57.4	142.	219.
12	111.	117.	117.	119.	81.9	122.	169.	101.	93.5	61.2	117.	235.
13	103.	112.	135.	117.	92.0	121.	165.	93.5	90.5	69.5	107.	207.
14	96.5	103.	171.	142.	109.	135.	153.	104.	96.5	77.7	86.0	215.
15	90.5	98.0	169.	153.	128.	149.	146.	107.	96.5	70.8	76.3	211.
16	90.5	151.	173.	122.	148.	128.	142.	130.	107.	66.7	92.0	215.
17	92.0	157.	169.	104.	142.	151.	139.	177.	99.5	70.8	83.2	227.
18	92.0	139.	167.	111.	126.	179.	115.	183.	98.0	61.2	95.0	209.
19	114.	163.	121.	103.	119.	169.	119.	157.	90.5	103.	101.	197.
20	117.	185.	139.	104.	109.	179.	117.	124.	68.1	89.0	99.5	217.
21	114.	167.	148.	106.	96.5	193.	142.	126.	77.7	95.0	76.3	235.
22	115.	155.	153.	122.	87.5	209.	137.	101.	73.6	107.	66.7	207.
23	114.	140.	163.	128.	79.1	191.	135.	84.6	73.6	92.0	111.	167.
24	104.	144.	149.	111.	77.7	179.	104.	77.5	62.6	83.2	137.	153.
25	92.0	142.	131.	101.	72.2	167.	96.5	89.0	69.5	89.0	161.	124.
26	111.	144.	115.	96.5	72.2	167.	111.	119.	69.5	99.5	171.	121.
27	109.	124.	146.	104.	69.5	167.	112.	104.	64.0	106.	133.	142.
28	140.	109.	167.	92.0	65.4	157.	121.	107.	65.4	81.9	130.	146.
29	135.	111.	175.	83.2	—	167.	122.	98.0	69.5	83.2	86.0	149.
30	157.	133.	169.	76.3	—	165.	121.	126.	73.6	95.0	83.2	148.
31	115.	—	171.	76.3	—	169.	—	159.	—	107.	131.	—
TOPLAM	3493.6	3876.0	4388.	3741.3	2392.8	4045.4	5178.5	3566.1	2985.1	2582.5	3179.5	5287.0
ORTALAMA	112.7	129.2	141.5	120.7	85.46	130.5	172.6	115.0	99.50	83.31	102.6	176.2
LT/SH/KM ²	1.86	2.13	2.34	1.99	1.41	2.15	2.85	1.90	1.64	1.38	1.69	2.91
AKIM/MM.	4.98	5.53	6.26	5.34	3.41	5.77	7.39	5.09	4.26	3.60	4.54	7.54
10 M AKIM 302.	335.	379.	323.	207.	350.	447.	303.	250.	223.	275.	457.	—
SU YILI (1985)	YILLIK TOPLAM AKIM. 3863. MILYON M ³ 63.8 MM . 2.02 LT/SH/KM ²											

15- KIZILIRMAK HAVZASI

1536- KIZILIRMAK NEHİRİ - ANAHTAR KÖP.

YERİ	:(34 25'41''D- 41 05'34''K) Çorum'un Karşı ilçesine bağlı Hacıhazma bucağından Tosya'ya giden yolun 2.km.sindedir.		
YATIŞ ALANI	:66559.6	Km. ²	TANLAŞIK KOT : 310 m.
GÖZLEM SÜRESİ	:1 Kasım 1965- 30 Eylül 1984		

ORTALAMA AKIMLAR	:Gözlem süresinde	138.353	m ³ /sn. (18 yıllık) 1984 Su yılında	220.401	m ³ /sn.
EN ÇOK VE EN AZ AKIMLAR	:1984 Su yılında en çok akım	:	465.	m ³ /sn.	(19. 4.1984)
	:1984 Su yılında en az akım	:	32.8	"	(7. 7. 1984)
	:Gözlem süresinde en çok akım	:	1026.	"	(14. 3.1968)
	:Gözlem süresinde en az akım	:	7.40	"	(10. 5.1974)

SEVİYE ÖLÇERİ

:Eşel ve limniğraf.

DÜŞÜNCELER

:Akım durumu iyi.Yıl içinde 12 akım ölçüsü yapılmıştır.Anayatağın sol ve sağ sahilinde kanal olup,bu kanallardan vakıflık olarak aylık ortalama akım 4.948 m³/sn.dir.17.Anahtar eğrisi (Seviyeler Cm. -Akımlar m³/sn. dir.)

Seviye	Akım	Seviye	Akım
125	32.8	200	128.
130	37.0	250	220.
140	47.0	300	315.
150	58.0	350	410.
160	70.0	400	505.

AKIMLAR 1 EKİM 1983'DEN 30 EYLÜL 1984'E KADAR VE SAHİYEDE METRE-KÖP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	60.7	93.3	319.	122.	186.	165.	167.	271.	152.	88.2	115.	123.
2	74.8	76.4	337.	123.	194.	197.	173.	247.	130.	81.2	127.	97.4
3	96.8	79.7	374.	117.	214.	207.	195.	260.	137.	65.2	138.	93.8
4	95.0	98.6	292.	101.	211.	205.	161.	292.	154.	55.8	137.	96.6
5	84.8	102.	283.	93.8	218.	197.	171.	273.	174.	44.0	137.	84.0
6	70.0	132.	250.	92.4	224.	186.	165.	249.	149.	37.0	118.	75.6
7	84.8	140.	226.	93.8	184.	178.	165.	228.	122.	41.0	117.	102.
8	84.3	121.	209.	95.2	184.	193.	158.	239.	126.	74.2	79.8	92.4
9	104.	138.	214.	104.	220.	201.	150.	252.	122.	91.0	55.8	72.8
10	166.	142.	190.	112.	233.	211.	149.	239.	120.	91.0	70.0	60.4
11	145.	157.	193.	117.	254.	216.	138.	233.	117.	86.8	79.8	96.6
12	117.	174.	230.	112.	275.	249.	150.	218.	125.	71.4	86.8	111.
13	145.	170.	214.	117.	269.	205.	176.	241.	122.	96.6	95.2	108.
14	147.	164.	190.	120.	239.	178.	209.	247.	133.	95.2	92.4	109.
15	140.	119.	180.	120.	197.	176.	207.	224.	130.	99.4	70.0	115.
16	145.	95.0	190.	122.	205.	173.	306.	192.	117.	98.0	53.6	115.
17	157.	100.	167.	120.	224.	174.	402.	184.	123.	88.2	81.2	115.
18	155.	142.	114.	117.	197.	174.	423.	186.	125.	70.0	89.6	115.
19	130.	206.	118.	118.	188.	176.	452.	180.	108.	46.0	85.4	104.
20	124.	290.	123.	125.	193.	159.	382.	171.	78.4	77.0	88.2	95.2
21	121.	252.	138.	123.	186.	154.	351.	173.	74.2	105.	114.	105.
22	108.	161.	161.	120.	169.	178.	330.	154.	95.2	108.	81.2	114.
23	100.	143.	104.	115.	180.	184.	347.	140.	91.0	125.	67.6	126.
24	90.6	140.	99.4	114.	180.	192.	338.	133.	78.4	108.	115.	133.
25	98.6	152.	106.	118.	178.	201.	304.	130.	92.4	66.4	133.	130.
26	89.9	123.	109.	138.	195.	245.	287.	123.	78.4	72.8	128.	98.0
27	83.1	111.	111.	309.	201.	205.	290.	120.	72.8	117.	125.	93.8
28	136.	102.	112.	340.	188.	169.	292.	125.	68.8	125.	131.	118.
29	149.	99.4	118.	288.	156.	152.	311.	138.	92.4	128.	104.	130.
30	143.	126.	117.	266.	—	190.	302.	130.	81.2	135.	91.0	135.
31	117.	—	115.	186.	—	188.	—	120.	—	102.	99.4	—
TOPLAM	3572.6	4149.4	5703.4	4359.2	5922.	5878.	7651.	6112.	3389.2	2689.4	3116.0	3166.6
ORTALAMA	115.2	138.3	184.0	140.6	204.6	189.6	255.0	197.2	113.0	86.75	100.5	105.6
LT/ŞN/KM	1.90	2.28	3.04	2.32	3.38	3.13	4.21	3.26	1.87	1.43	1.66	1.74
AKIM.MM.	5.10	5.92	8.14	6.22	8.46	8.39	10.9	8.72	4.84	3.84	4.45	4.52
10 M AKIM	209.	359.	493.	377.	513.	508.	661.	528.	293.	232.	269.	274.

SU YILI (1984) YILLIK TOPLAM AKIM. 4814. MİLYON m³ 79.5 KM³ 2.51 LT/ŞN/KM²Yıl içinde 2. Pk Akım Değeri 420. m³/sn. Tarihi 3.12.1983
Yıl içinde 3. Pk Akım Değeri 372. " " Tarihi 27. 1.1984

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÜP.

YERİ : (34° 25' 41" D - 41° 05' 34" K) Corum'un Kargı ilçesine bağlı Hacıhamza Bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI : 60559.6 Km²

YAKLAŞIK KOT : 310

GÖZLEM SÜRESİ : 1.Kasım.1965 - 30.Eylül.1983

ORTALAMA AKIMLAR : Gözlem süresinde 137.535 m³/sn. (17 yıllık) 1983 Su yılında 127.628 m³/s

EN ÇOK VE EN AZ AKIMLAR 1983 Su yılında en çok akım : 288. m³/sn. (29.3.1983)
1983 Su yılında en az akım : 17.4 " (13.5.1983)
Gözlem süresinde en çok akım : 1066. " (14.3.1968)
Gözlem süresinde en az akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇEĞİ : Eşel ve Limnigraf.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 12 akım ölçümü yapılmıştır.

16. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
98	17.4	140	62.0
100	19.0	150	78.0
110	27.0	200	170.
120	37.0	250	265.
130	49.0	300	360.

AKIMLAR 1 EKİM 1982'DEN 30 EYLÜL 1983'E KADAR VE SANİYEDE METRE-KUP OLFAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	111.	89.9	111.	202.	166.	98.6	231.	84.8	76.4	147.	145.	36.0
2	100.	73.2	147.	221.	130.	100.	212.	66.8	91.6	115.	96.8	50.3
3	109.	86.8	166.	159.	143.	143.	212.	60.7	96.8	88.2	119.	51.6
4	109.	109.	168.	106.	161.	145.	195.	60.7	104.	100.	83.3	168.
5	195.	143.	181.	91.6	159.	124.	174.	59.4	149.	138.	65.2	142.
6	200.	172.	212.	109.	162.	157.	151.	55.5	113.	*193.	59.4	91.6
7	199.	174.	191.	185.	180.	159.	153.	51.6	149.	204.	68.4	62.0
8	199.	174.	147.	181.	140.	106.	181.	54.2	*153.	140.	96.8	65.7
9	176.	170.	193.	185.	123.	109.	216.	55.5	140.	147.	108.	83.1
10	174.	170.	191.	178.	166.	155.	244.	49.0	109.	159.	70.0	98.6
11	187.	187.	170.	140.	164.	199.	231.	40.6	84.8	115.	47.8	119.
12	168.	189.	161.	93.3	145.	237.	189.	19.8	66.8	142.	55.5	128.
13	166.	181.	178.	*108.	130.	273.	159.	23.0	60.7	98.6	91.6	119.
14	191.	151.	198.	174.	106.	261.	138.	44.2	71.6	79.7	126.	73.2
15	197.	113.	147.	162.	102.	193.	126.	39.2	102.	65.2	98.6	46.6
16	199.	117.	181.	170.	*96.8	*164.	119.	37.0	81.4	49.0	70.0	62.4
17	195.	161.	183.	191.	88.2	181.	134.	40.6	88.2	41.8	44.2	124.
18	191.	159.	161.	166.	93.3	202.	142.	40.6	98.6	40.6	49.0	109.
19	195.	152.	130.	178.	96.8	210.	136.	47.8	130.	29.0	104.	73.2
20	183.	134.	111.	172.	95.0	219.	126.	59.4	117.	23.8	121.	50.3
21	195.	111.	104.	164.	108.	206.	119.	81.4	81.4	27.0	104.	41.8
22	204.	157.	102.	176.	108.	212.	119.	95.0	58.1	60.7	81.4	54.2
23	*185.	151.	111.	195.	108.	212.	113.	100.	54.2	89.4	49.0	76.
24	136.	*109.	119.	202.	143.	223.	98.6	71.6	84.8	65.2	*47.8	96.
25	164.	138.	143.	183.	162.	229.	93.3	*84.8	91.6	59.4	44.2	169.
26	159.	149.	149.	124.	168.	252.	83.1	88.2	117.	59.4	51.6	89.
27	132.	166.	123.	185.	171.	271.	*76.4	108.	91.6	59.4	63.6	76.
28	159.	176.	151.	181.	143.	284.	76.4	98.6	78.0	63.6	65.2	*65.
29	176.	170.	143.	198.	---	284.	66.8	83.1	65.2	68.4	59.4	51.6
30	157.	145.	195.	178.	---	269.	71.6	---	73.2	79.7	---	---
31	138.	---	200.	180.	---	246.	---	71.6	---	128.	36.0	---
TOPLAM	5319.	4378.9	4898.	5117.9	3806.1	6132.6	4384.6	1953.8	2878.0	2876.6	2371.4	2467.
ORTALAMA	171.6	146.0	158.0	165.1	135.9	197.8	146.2	63.03	95.93	92.79	76.50	82.
LT/SM/KM ²	2.83	2.41	2.61	2.73	2.24	3.27	2.41	1.04	1.58	1.53	1.26	1.
AKIM,MM.	7.59	6.25	6.99	7.30	5.43	8.75	6.26	2.79	4.11	4.10	3.38	3.
10 M AKIM	460.	378.	423.	442.	329.	530.	379.	169.	249.	249.	205.	213.

SU YILI (1983) YILLIK TOPLAM AKIM. 4025. MİLYON M³, 66.5 MM, 2.11 LT/SM/KM².

(*) AKIM ÖLÇÜSÜNÜN YAPILDIĞI GÜNLERİ GÖSTERİR. Yıl içinde 2.Pik Akım Değeri 246. m³/seo. Tarihi 10.4.
Yıl içinde 3.Pik Akım Değeri 231. " Tarihi 2.1.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÖP.

YERİ : (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı İlçesine bağlı Hacıhamza bucağından
Tonya'ya giden yolun 2. Km. sındır.

YAĞIŞ ALANI : 60559.6 Km² YAKLAŞIK KOT : 310 m

GÖZLEM SÜRESİ : 1. Kasım.1965 - 30. Eylül.1982

ORTALAMA AKIMLAR : Gözlem süresinde 138.153 m³/sn. (16 yıllık) 1982 Su yılında 119.338 m³/sn

EN ÇOK VE EN AZ AKIMLAR 1982 Su yılında en çok akım : 352. m³/sn. (26.8.1982)
1982 Su yılında en az akım : 35.0 " (27.7.1982)
Gözlem süresinde en çok akım : 1066. " (14.3.1968)
Gözlem süresinde en az akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇESİ : Eşel ve Limnigraf.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 14 akım ölçüldü yapılmıştır.

16. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
130	49.0	200	170.
140	62.0	250	265.
150	78.0	300	360.
160	95.0	350	455.
180	132.	400	550.

AKIMLAR 1 EKİM 1981'DEN 30 EYLÜL 1982'E KADAR VE SANİYEDİ METRE-KÜP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	189.	104.	93.3	140.	214.	212.	142.	210.	149.	59.4	52.9	79.7
2	189.	85.1	96.8	126.	202.	195.	147.	206.	138.	71.6	60.7	84.8
3	181.	88.2	100.	111.	151.	176.	172.	149.	106.	76.4	65.2	183.
4	166.	95.0	104.	104.	161.	168.	195.	138.	111.	76.4	53.6	183.
5	166.	95.0	100.	98.6	130.	176.	191.	121.	149.	79.7	*49.0	176.
6	147.	121.	96.8	93.3	117.	164.	219.	104.	189.	62.0	50.3	161.
7	130.	104.	102.	91.2	111.	145.	191.	95.0	212.	*45.4	54.2	151.
8	134.	109.	93.3	106.	117.	149.	174.	93.3	227.	43.0	73.2	109.
9	130.	98.6	83.1	134.	117.	138.	162.	84.8	170.	44.2	58.4	130.
10	96.8	95.0	78.0	130.	113.	143.	151.	79.7	157.	59.4	65.2	142.
11	88.2	96.8	102.	117.	104.	162.	145.	74.8	138.	73.2	52.0	174.
12	88.2	100.	98.6	106.	119.	142.	138.	79.7	119.	76.4	62.0	174.
13	93.3	132.	106.	123.	115.	136.	128.	62.0	109.	54.2	62.0	174.
14	91.6	162.	100.	140.	111.	134.	*117.	55.2	93.3	49.0	55.2	176.
15	115.	132.	159.	170.	111.	136.	106.	60.7	78.0	55.5	62.0	174.
16	157.	121.	*303.	180.	108.	142.	96.8	81.4	*70.0	62.0	59.4	162.
17	174.	115.	208.	176.	*102.	164.	95.0	128.	66.8	66.8	54.2	*162.
18	151.	117.	183.	176.	96.8	216.	100.	128.	66.8	62.0	51.6	178.
19	111.	128.	147.	132.	102.	231.	96.8	117.	65.2	68.4	55.5	176.
20	93.3	159.	140.	*117.	111.	224.	88.2	106.	70.0	71.6	76.4	168.
21	*86.5	134.	128.	108.	119.	193.	*79.7	106.	63.6	63.6	119.	178.
22	84.8	100.	109.	111.	142.	189.	70.0	134.	58.1	62.0	111.	176.
23	88.2	96.8	109.	108.	130.	176.	81.4	124.	51.6	68.4	102.	181.
24	84.8	96.8	96.8	124.	126.	*155.	83.1	95.0	51.6	66.8	138.	193.
25	84.8	*93.3	93.3	136.	147.	193.	88.2	86.5	68.4	58.1	108.	195.
26	86.5	88.2	88.2	113.	126.	204.	109.	88.2	76.4	45.4	311.	185.
27	86.5	93.3	98.6	111.	126.	200.	121.	*88.2	58.1	37.0	248.	175.
28	84.8	84.8	130.	124.	128.	212.	106.	96.8	58.1	37.0	214.	172.
29	84.8	79.7	185.	164.	---	223.	93.3	91.6	54.4	40.6	197.	149.
30	84.8	79.7	193.	161.	---	197.	98.6	115.	58.1	49.0	153.	113.
31	86.5	---	147.	151.	---	143.	---	134.	---	60.7	91.6	---
TOPLAM	3661.4	3181.5	3879.8	3982.5	3556.8	5443.	3775.1	3333.2	3093.9	1845.2	2975.6	4830.5
ORTALAMA	118.1	106.1	125.2	128.5	127.0	175.6	125.8	107.5	103.1	59.52	95.99	161.0
LT/SN/KM ²	1.95	1.75	2.07	2.12	2.10	2.90	2.08	1.78	1.70	0.983	1.59	2.68
AKIM MM.	5.22	4.54	5.54	5.68	5.07	7.77	5.39	4.76	4.41	2.63	4.25	6.85
10 M AKIM	316.	275.	335.	344.	307.	470.	326.	288.	267.	159.	257.	417.

SU YILI : 1982 YILLIK TOPLAM AKIM. 3763. MİLYON M³, 62.1 MM, 1.97 LT/SN/KM².

() AKIM ÖLÇÜSÜNÜN YAPILDIĞI GÜNLERİ GÖSTERİR. Yıl içinde 2.Pik Akım Değeri 351. m³/sn. Tarihi 16.12.1981
Yıl içinde 3.Pik Akım Değeri 246. " Tarihi 8.6.1982

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÖP.

YERİ : (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı İlçesine bağlı Hacibazıbaşı bucakından Tosya'ya giden yolun 2.Km. sindedir.

YAĞIŞ ALANI : 60559.6 Km²

YAKLAŞIK KOT : 310 m.

GÖZLEM SÜRESİ : 1.Kasım.1965 - 30.Eylül.1981

ORTALAMA AKIMLAR : Gözlem süresinde 139.407 m³/sn. (15 yıllık) 1981 Su yılında 174.636 m³/sn.

EN ÇOK VE EN AZ AKIMLAR 1981 Su yılında en çok akım : 504. m³/sn. (17. 3.1981)
1981 Su yılında en az akım : 84.8 " (16.10.1980)
Gözlem süresinde en çok akım : 1066. " (14. 3.1968)
Gözlem süresinde en az akım : 7.40 " (10. 5.1974)

SEVİYE ÖLÇEĞİ : Eşel ve Limnigraf.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmış, 17 akım ölçülmüştür.

16. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
130	49.0	200	170.
140	62.0	250	265.
150	78.0	300	360.
160	95.0	350	455.
180	132.	400	550.

AKIMLAR 1 EKİM 1980'DEN 30 EYLÜL 1981'E KADAR VE SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	150.	91.2	137.	175.	315.	277.	126.	111.	115.	98.0	106.	149.
2	164.	95.3	161.	167.	336.	255.	127.	109.	104.	122.	134.	107.
3	186.	129.	123.	164.	301.	252.	200.	115.	102.	155.	111.	99.2
4	191.	149.	132.	162.	275.	259.	221.	123.	88.2	147.	89.9	123.
5	175.	133.	161.	171.	216.	266.	212.	121.	115.	132.	88.2	162.
6	162.	157.	159.	200.	274.	277.	223.	115.	138.	121.	104.	176.
7	144.	175.	116.	213.	276.	312.	116.	121.	111.	122.	140.	170.
8	111.	178.	113.	232.	270.	337.	117.	132.	95.0	113.	153.	159.
9	111.	173.	118.	241.	271.	321.	204.	132.	93.3	153.	140.	145.
10	122.	120.	135.	244.	256.	243.	195.	123.	98.6	104.	156.	159.
11	111.	162.	157.	249.	274.	272.	178.	126.	119.	127.	161.	161.
12	105.	152.	162.	252.	276.	297.	170.	124.	116.	159.	151.	167.
13	105.	115.	130.	250.	243.	321.	168.	128.	132.	151.	174.	167.
14	101.	115.	115.	254.	223.	384.	161.	128.	143.	132.	168.	183.
15	94.4	123.	122.	259.	177.	481.	155.	134.	155.	117.	138.	170.
16	38.0	133.	177.	270.	286.	459.	151.	138.	164.	115.	134.	147.
17	94.4	152.	150.	247.	336.	485.	147.	140.	153.	136.	140.	166.
18	96.0	184.	157.	310.	322.	464.	136.	140.	141.	164.	136.	183.
19	96.0	171.	161.	313.	319.	383.	143.	113.	136.	162.	126.	176.
20	97.7	177.	180.	297.	292.	355.	157.	104.	132.	140.	121.	187.
21	94.4	164.	196.	281.	334.	368.	153.	104.	130.	138.	128.	176.
22	89.6	152.	204.	299.	311.	323.	151.	106.	130.	104.	121.	142.
23	84.8	171.	180.	286.	315.	274.	147.	89.9	115.	96.8	130.	149.
24	86.4	189.	154.	272.	276.	254.	142.	113.	111.	48.6	136.	162.
25	38.0	193.	156.	288.	261.	229.	123.	113.	106.	113.	130.	180.
26	97.7	164.	154.	303.	258.	240.	119.	96.8	130.	136.	111.	170.
27	108.	143.	182.	297.	281.	242.	117.	93.3	126.	113.	109.	170.
28	96.0	156.	195.	274.	286.	237.	136.	103.	126.	117.	153.	174.
29	106.	154.	295.	304.	---	240.	126.	109.	109.	109.	170.	193.
30	127.	157.	317.	317.	---	225.	128.	115.	96.8	100.	170.	189.
31	108.	---	140.	319.	---	212.	---	119.	---	108.	162.	---
TOPLAM	3574.4	4500.0	4836.	7999.	7631.	9032.	4977.	3627.0	3677.9	4115.0	4201.1	4855.6
ORTALAMA	115.3	152.2	156.0	258.0	274.3	310.7	165.9	117.0	122.6	132.7	135.5	161.9
LT/SN/KM ²	1.90	2.51	2.58	4.26	4.53	5.13	2.74	1.93	2.02	2.19	2.24	2.67
AKIM MM.	5.10	6.51	6.70	11.4	11.0	13.7	7.10	5.17	5.25	5.87	5.99	6.93
10 M AKIM	309.	395.	418.	691.	664.	832.	430.	313.	316.	356.	363.	420.

SU YILI (1981) YILLIK TOPLAM AKIM. 5507. MİLYON M³ 90.9 MM. 2.88 LT/SN/KM².

(*) AKIM ÖLÇÜSÜNÜN YAPILDIĞI GÜNLERİ GÖSTERİR. Yıl içinde 2.Pik Akım Değeri 360. m³/sn. Tarihi 16.2.1981
Yıl içinde 3.Pik Akım Değeri 342. " Tarihi 8.3.1981

15 - KIZILIRMAK HAYZASI
1536 - KIZILIRMAK NEHRI - AVŞAK KÖP.

MEVKİİ

: (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı İlçesine bağlı Hacıhamza bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI

: 60559.6 Km.²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ

: 1.Kasım.1965 - 30.Eylül.1980

ORTALAMA AKIMLAR

: Rasat süresinde 136.892 m³/sn. (14 yıllık) 1980 Su yılında 123.255 m³/sn.

AZAMİ VE ASGARİ AKIMLAR

1980 Su yılında azami akım : 820. m³/sn. (14.5.1980)
1980 Su yılında asgarî akım : 31.3 " (17.6.1980)
Rasat süresinde azami akım : 1066. " (14.3.1968)
Rasat süresinde asgarî akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇEĞİ

: Eşel ve Linnigraf.

DÜŞÜNCELER

: Akım durumu iyi. Yıl içinde 3 ayrı anahtar eğrisi kullanılmıştır. 2.3.1980 ile 27.3.1980, 4.7.1980 ile 1.8.1980, 2.9.1980 ile 28.9.1980 günleri arasında şift tatbik edilmiştir.

14. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
100	25.5	200	215.
110	37.0	250	362.
120	51.0	300	540.
130	68.0	350	745.
150	105.	400	990.

AKIMLAR 1 EKİM 1979'DAN 30 EYLÜL 1980'E KADAR VE SAKİVEDE METRE-KÖP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	ŞUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AĞUSTOS	EYLÜL
1	83.8	97.0	106.	58.4	121.	88.0	+280.	80.6	93.6	82.4	109.	95.5
2	85.6	95.2	117.	58.4	97.0	88.0	283.	77.0	89.8	78.8	129.	73.5
3	72.4	88.2	121.	59.9	77.4	91.6	277.	80.5	86.0	71.6	146.	48.2
4	70.1	75.0	121.	63.0	67.8	91.6	321.	103.	82.4	69.8	140.	61.2
5	69.2	77.6	111.	72.2	74.2	87.6	303.	131.	82.4	71.6	111.	99.3
6	69.7	82.6	102.	91.6	72.6	82.6	264.	159.	82.4	78.8	71.6	115.
7	67.6	91.6	97.0	98.8	69.4	80.8	245.	150.	73.4	80.6	64.6	119.
8	75.1	102.	97.0	97.0	74.2	80.8	223.	150.	73.4	59.5	127.	113.
9	72.4	102.	98.8	82.6	79.0	84.4	218.	168.	69.8	64.6	136.	95.5
10	69.2	93.4	95.2	77.4	79.0	88.0	759.	168.	66.3	51.0	107.	150.
11	83.8	102.	91.6	75.8	82.6	108.	280.	153.	+68.0	54.4	113.	166.
12	161.	119.	97.0	77.4	84.4	+129.	272.	151.	64.6	73.4	119.	136.
13	184.	117.	106.	80.8	89.8	156.	223.	309.	54.6	73.4	113.	178.
14	163.	+117.	212.	74.2	84.4	192.	202.	+584.	62.9	82.9	89.8	166.
15	110.	161.	154.	67.8	88.0	168.	202.	64.0	57.8	82.4	77.0	111.
16	101.	117.	102.	56.8	108.	152.	215.	732.	49.6	77.0	44.0	75.2
17	104.	101.	84.4	36.7	137.	146.	195.	536.	39.8	51.0	32.4	66.3
18	141.	95.2	77.4	32.8	172.	146.	180.	483.	38.4	56.1	35.9	111.
19	117.	88.0	71.0	35.4	234.	148.	175.	359.	37.0	68.0	38.4	113.
20	168.	98.8	66.2	40.8	133.	150.	170.	267.	38.4	61.2	52.7	109.
21	158.	97.0	59.9	47.5.	106.	150.	164.	215.	42.6	80.6	68.0	111.
22	117.	97.0	59.9	56.8	108.	161.	146.	190.	48.2	+146.	113.	129.
23	141.	83.4	61.5	64.6	113.	194.	+129.	175.	46.8	115.	95.5	136.
24	102.	95.2	55.3	+69.4	143.	263.	138.	155.	44.0	89.8	103.	+105.
25	102.	95.2	50.6	67.8	110.	334.	131.	148.	48.2	80.6	91.7	117.
26	117.	88.0	49.1	67.8	93.4	360.	123.	136.	45.4	64.6	86.0	127.
27	165.	97.0	50.6	67.8	88.0	463.	109.	131.	44.0	77.0	+73.4	121.
28	184.	98.8	47.5	93.4	88.0	620.	91.7	119.	62.9	140.	71.6	101.
29	202.	101.	50.6	207.	97.0	628.	87.9	109.	59.5	150.	103.	133.
30	168.	101.	61.5	177.	560.	84.2	99.3	71.6	127.	95.5	95.5	161.
31	108.	---	77.4	129.	---	343.	---	95.5	---	95.5	89.8	---
TOPLAM	3616.4	2979.7	2764.5	2387.9	2971.2	6429.4	6040.8	7264.0	1833.8	2534.6	2846.9	3442.6
ORTALAMA	116.7	95.31	89.18	77.03	102.5	207.4	201.4	234.3	61.13	81.76	91.84	114.8
LT/SM/KM ²	1.93	1.64	1.47	1.27	1.69	3.42	3.33	3.87	1.01	1.35	1.52	1.90
AKIM/MM.	5.16	4.25	3.94	3.41	4.24	9.17	8.62	10.4	2.62	3.62	4.06	4.91
10 ⁶ AKIM	312.	257.	239.	206.	257.	556.	522.	628.	158.	219.	246.	297.

SU YILI (1980) YILLIK TOPLAM AKIM. 3898. MİLYON M³, 64.4 MM, 2.04 LT/SM/KM².

(*) AKIM ÖLÇÜSÜNÜN YAPILDIĞI GÜNLERİ GÖSTERİR. Yıl içinde 2.Pik Akım Değeri 705. m³/sec. Tarihi 28.3.1980
Yıl içinde 3.Pik Akım Değeri 333. " Tarihi 3.4.1980

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÖP.

MEVKİİ : (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı İlçesine bağlı Hacıhamza Bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI : 60559.6 Km.² **TAKRİBİ RAKIMI** : 310 m.

RASAT SÜRESİ : 1.Kasım.1965 - 30.Eylül.1979

ORTALAMA AKIMLAR : Rasat süresinde 137.943 m³/sn. (13 yıllık) 1979 Su yılında 115.012 m³/sn.

AZAMİ VE ASGARİ AKIMLAR

1979 Su yılında azami akım	: 516.	m ³ /sn. (16.1.1979)
1979 Su yılında asgari akım	: 29.2	" (6.5.1979)
Rasat süresinde azami akım	: 1066.	" (14.3.1968)
Rasat süresinde asgari akım	: 7.40	" (10.5.1974)

SEVİYE ÖLÇEĞİ : Eşel ve Limmigraf.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 13.10.1978 ile 17.10.1978, 29.10.1978 ile 1.11.1978, 4.1.1979 ile 23.1.1979, 24.4.1979 ile 30.4.1979 17.8.1979 ile 9.9.1979 günleri arasında şift tatbik edilmiştir.

13. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
75	25.6	120	82.0
80	30.0	150	143.
90	40.0	200	282.
100	52.5	250	456.
110	66.0	300	650.

AKIMLAR 1 EKİM 1978'DEN 30 EYLÜL 1979'A KADAR VE SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	108.	150.	110.	112.	346.	106.	69.2	63.3	102.	75.6	83.8	80.
2	143.	165.	125.	110.	420.	108.	69.2	48.8	143.	66.0	66.0	86.
3	102.	146.	163.	110.	377.	108.	67.6	38.0	190.	64.7	69.2	67.
4	95.2	121.	161.	173.	302.	108.	70.1	36.0	143.	62.0	66.0	70.
5	97.0	172.	161.	302.	252.	102.	64.7	31.0	127.	50.0	64.7	91.
6	98.8	192.	170.	252.	258.	100.	63.3	29.2	100.	60.6	60.6	112.
7	102.	147.	163.	198.	243.	94.6	53.9	30.0	108.	74.0	67.6	132.
8	117.	187.	184.	184.	282.	80.4	52.5	30.0	110.	82.0	70.1	133.
9	123.	156.	202.	201.	261.	78.8	55.2	30.0	89.2	69.2	67.6	144.
10	104.	212.	182.	182.	252.	78.8	55.2	30.0	94.6	64.7	59.3	91.
11	101.	187.	161.	232.	232.	78.8	52.5	30.0	87.4	60.6	60.6	77.
12	97.0	168.	123.	203.	235.	78.8	50.0	32.0	80.4	59.3	66.0	17.
13	93.4	104.	125.	168.	223.	83.8	50.0	36.0	80.4	70.1	69.2	17.
14	91.6	82.6	163.	146.	220.	80.4	52.5	38.0	74.0	80.4	63.3	133.
15	88.0	88.0	127.	143.	212.	80.4	52.5	50.0	72.4	75.6	48.8	15.
16	89.8	88.0	261.	264.	198.	91.0	53.9	48.8	72.4	98.2	43.8	15.
17	91.6	88.0	229.	314.	173.	98.2	56.6	38.0	74.0	100.	62.0	17.
18	95.2	104.	148.	318.	163.	98.2	55.2	43.8	69.2	75.6	63.3	17.
19	91.6	125.	143.	261.	153.	94.6	57.9	56.6	64.7	60.6	69.2	133.
20	91.6	119.	146.	235.	148.	75.6	70.1	74.0	69.2	70.1	64.7	15.
21	95.2	121.	148.	201.	143.	72.4	78.8	80.4	83.8	78.8	63.3	10.
22	125.	113.	143.	201.	138.	75.6	69.2	82.0	83.8	89.2	70.1	11.
23	158.	141.	146.	171.	134.	82.0	62.0	77.2	64.7	91.0	63.3	18.
24	184.	135.	163.	153.	134.	91.0	59.3	80.4	57.9	96.4	64.7	17.
25	141.	135.	161.	151.	120.	78.8	59.3	100.	59.3	106.	78.8	11.
26	184.	137.	156.	136.	116.	75.6	56.6	108.	85.6	96.4	60.6	10.
27	192.	139.	116.	151.	116.	78.8	53.9	163.	158.	66.0	45.0	9.
28	243.	119.	125.	198.	112.	72.4	48.8	179.	82.0	67.6	34.0	9.
29	199.	111.	108.	240.	---	69.2	51.3	106.	72.4	83.8	32.0	10.
30	174.	102.	170.	270.	---	---	---	89.2	82.0	100.	48.8	8.
31	170.	---	112.	299.	---	70.1	---	83.8	---	112.	77.2	---
TOPLAM	3886.0	4094.6	4748.	6339.	5969.	2649.9	1762.6	1962.5	2778.4	2406.5	1923.6	344.
ORTALAMA	125.4	136.5	153.2	204.5	213.2	85.48	58.75	63.31	92.61	77.63	62.05	11.
LT/SN/KM ²	2.07	2.25	2.53	3.38	3.52	1.41	0.970	1.05	1.53	1.28	1.02	---
AKIM MM.	5.54	5.84	6.77	9.04	8.52	3.78	2.31	2.80	3.96	3.43	2.74	---
10 M AKIM	336.	354.	410.	548.	516.	229.	152.	170.	240.	208.	166.	---

SU YILI (1979) YILLIK TOPLAM AKIM. 3627. MILYON M³, 59.9 MM, 1.90 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GÖSTERİR. Yıl içinde 2.Pik Akım Değeri 380. m³/sec. Tarihi 5.1.1979
Yıl içinde 3.Pik Akım Değeri 339. " Tarihi 16.12.1978

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AVŞAR KÖP.

MEVKİİ : (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı İlçesine bağlı Hacıhamza Bucağından Tosya'ya giden yolun 2.Km.sindedir.

YAĞIŞ ALANI : 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ : 1.Kasım.1965 - 30.Eylül.1978

ORTALAMA AKIMLAR : Rasat süresinde 139.853 m³/sn. (12 yıllık) 1978 Su yılında 107.862 m³/sn.

AZAMI VE ASGARI AKIMLAR 1978 Su yılında azami akım : 370. m³/sn. (23.2.1978)
1978 Su yılında asgari akım : 31.7 " (9.9.1978)
Rasat süresinde azami akım : 1066. " (14.3.1968)
Rasat süresinde asgari akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇEĞİ : Eşel ve Limnigraf.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 17.3.1978 ile 30.3.1978, 20.5.1978 ile 26.5.1978 günleri arasında şift tatbik edilmiştir.

12. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
70	22.3	120	97.0
80	34.0	130	115.
90	47.5	150	156.
100	63.0	200	290.
110	79.0	250	456.

AKIMLAR 1 EKİM 1977'DEN 30 EYLÜL 1978'E KADAR VE SANİYEDİ METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SURAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	147.	93.8	140.	232.	104.	124.	104.	122.	46.2	71.0	93.4	93.4
2	217.	97.6	188.	226.	104.	122.	112.	110.	50.7	69.4	86.2	91.6
3	214.	97.6	190.	151.	124.	118.	114.	102.	55.3	63.0	79.0	93.4
4	170.	106.6	168.	154.	149.	124.	112.	90.0	58.4	63.0	80.8	98.8
5	108.	102.	93.8	163.	165.	118.	106.	82.4	50.6	61.5	84.4	101.
6	116.	106.	106.	124.	188.	120.	91.9	71.9	47.5	63.0	79.0	79.0
7	154.	106.	114.	114.	188.	118.	95.7	68.4	46.2	63.0	77.4	49.1
8	102.	95.7	173.	122.	175.	118.	99.5	66.7	43.5	59.9	79.0	35.4
9	99.5	112.	185.	114.	170.	97.6	122.	60.1	38.7	53.7	*75.8	39.4
10	90.2	165.	175.	108.	173.	106.	163.	52.3	47.5	72.6	67.8	66.2
11	*97.6	*175.	188.	114.	180.	133.	*156.	44.8	47.5	53.7	67.8	67.8
12	70.7	142.	163.	108.	165.	133.	129.	49.2	43.5	58.4	67.8	72.6
13	82.4	127.	112.	108.	144.	122.	106.	50.7	*50.6	53.7	79.0	84.4
14	106.	122.	122.	106.	127.	*112.	97.6	47.6	40.8	*61.5	82.6	86.2
15	124.	140.	204.	108.	129.	104.	91.9	53.8	47.5	71.0	82.6	86.2
16	104.	149.	212.	118.	140.	90.0	93.8	61.6	50.6	77.4	79.0	86.2
17	120.	156.	209.	110.	149.	104.	108.	60.1	71.0	74.2	71.0	88.0
18	140.	154.	209.	116.	168.	106.	91.9	53.8	64.6	67.8	71.0	93.4
19	110.	168.	204.	133.	142.	108.	84.3	53.8	59.9	58.4	77.4	102.
20	122.	158.	173.	127.	147.	110.	82.4	49.2	66.2	64.6	86.2	86.2
21	154.	151.	124.	124.	*173.	99.5	90.0	52.3	75.8	66.2	82.6	72.6
22	124.	212.	178.	118.	252.	97.6	*93.8	52.3	67.8	69.4	86.2	88.0
23	124.	211.	*180.	120.	300.	*97.6	97.6	*52.3	71.0	63.0	93.4	139.
24	163.	148.	204.	116.	229.	97.6	122.	44.8	74.2	67.8	89.8	165.
25	173.	102.	212.	112.	163.	108.	158.	46.2	77.4	84.4	93.4	117.
26	129.	82.4	180.	114.	147.	106.	168.	46.2	74.2	75.8	80.8	89.8
27	175.	61.6	120.	129.	140.	108.	151.	50.7	77.4	67.8	80.8	72.6
28	160.	68.5	104.	173.	124.	106.	147.	44.8	75.8	61.5	84.4	84.4
29	112.	67.0	127.	*160.	---	112.	149.	46.2	77.4	56.8	86.2	84.4
30	110.	54.6	158.	151.	---	108.	140.	39.2	74.2	61.5	86.2	86.2
31	95.7	---	217.	127.	---	102.	---	40.7	---	69.4	82.6	---
TOPLAM	4033.2	3804.1	5172.8	4120.	4559.	3429.9	3477.4	1866.1	1770.0	2024.4	2513.6	2599.3
ORTALAMA	130.1	126.8	166.9	132.9	162.8	110.6	115.9	60.20	59.00	65.30	81.08	86.64
LT/SN/KM ²	2.15	2.09	2.76	2.19	2.69	1.83	1.91	0.994	0.974	1.08	1.34	1.43
AKIM MM.	5.75	5.43	7.38	5.88	6.50	4.89	4.96	2.66	2.53	2.89	3.59	3.71
10 M AKIM	348.	329.	447.	356.	394.	296.	300.	161.	153.	175.	217.	225.

SU YILI (1978) YILLIK TOPLAM AKIM. 3402. MİLYON M³, 56.2 MM, 1.78 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GOSTERİR. Yıl içinde 2.Pik Akım Değeri 297. m³/sec. Tarihi 24.11.1977
Yıl içinde 3.Pik Akım Değeri 277. " Tarihi 2.10.1977

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AVŞAR KÜP.

MEVKİİ

: (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı ilçesine bağlı Hacıhamza Bucağından Tosya'ya giden yolun 2.Km. sindedir.

YAĞIŞ ALANI

: 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ

: 1.Kasım.1965 - 30.Eylül.1977

ORTALAMA AKIMLAR

: Rasat süresinde 142.759 m³/sn. (11 yıllık) 1977 Su yılında 159.462 m³/sn.

AZAMİ VE ASGARİ AKIMLAR

1977 Su yılında azamî akım : 496. m³/sn. (8.5.1977)
1977 Su yılında asgarî akım : 28.3 " (8.7.1977)
Rasat süresinde azamî akım : 1066. " (14.3.1968)
Rasat süresinde asgarî akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇEĞİ

: Eğel ve Limmigraf.

DÜŞÜNCELER

: Akım durumu iyi. 7.4.1977 ile 19.4.1977, 9.7.1977 ile 14.7.1977 günleri arasında şift tatbik edilmiştir.

11. Anahtar eğrisi (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
80	22.8	130	99.5
90	33.8	150	142.
100	47.6	200	277.
110	63.2	250	453.
120	80.5	300	650.

AKIMLAR 1 EKİM 1976'DAN 30 EYLÜL 1977'E KADAR VE SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	42.1	104.	127.	198.	204.	129.	271.	310.	114.	124.	114.	75.3
2	64.5	104.	127.	183.	209.	163.	246.	258.	138.	170.	80.5	106.
3	77.0	114.	144.	122.	214.	229.	265.	255.	163.	182.	66.7	77.0
4	106.	163.	131.	104.	223.	262.	229.	240.	110.	160.	50.7	84.3
5	116.	180.	120.	110.	212.	271.	214.	271.	91.9	86.2	53.2	88.1
6	86.2	193.	112.	127.	232.	198.	158.	310.	95.7	58.5	73.6	88.1
7	66.7	170.	108.	170.	252.	170.	140.	321.	104.	42.1	80.5	102.
8	108.	112.	97.6	154.	268.	151.	122.	398.	93.8	35.2	78.8	82.4
9	124.	102.	127.	154.	240.	142.	110.	359.	154.	53.8	80.5	88.1
10	131.	110.	151.	170.	268.	*151.	97.6	342.	170.	68.4	88.1	116.
11	140.	112.	122.	170.	255.	147.	95.7	*277.	108.	75.3	127.	144.
12	129.	114.	120.	129.	271.	156.	*104.	*297.	97.6	*78.8	168.	108.
13	102.	108.	204.	193.	321.	212.	99.5	274.	127.	61.6	97.6	97.6
14	82.4	104.	290.	212.	387.	226.	95.7	268.	*144.	44.8	158.	90.0
15	88.1	102.	321.	180.	359.	232.	95.7	204.	108.	53.8	114.	80.5
16	93.8	108.	252.	175.	284.	195.	99.5	265.	158.	70.1	*95.7	80.5
17	97.6	112.	223.	188.	255.	300.	104.	232.	163.	71.9	73.6	68.4
18	104.	116.	220.	175.	243.	294.	114.	168.	135.	77.0	73.6	78.8
19	114.	*129.	201.	151.	252.	280.	124.	188.	147.	80.5	127.	80.5
20	114.	173.	175.	234.	252.	335.	122.	168.	138.	73.6	163.	84.3
21	149.	168.	*144.	220.	195.	373.	116.	149.	84.3	66.7	154.	88.1
22	190.	173.	112.	223.	163.	*349.	122.	131.	77.0	120.	144.	122.
23	180.	175.	129.	237.	154.	324.	154.	185.	95.7	129.	118.	86.2
24	170.	173.	168.	226.	180.	335.	168.	168.	91.9	120.	102.	80.5
25	180.	190.	185.	*217.	151.	363.	*190.	144.	122.	93.8	93.8	88.1
26	223.	190.	193.	217.	135.	384.	258.	180.	135.	66.7	112.	112.
27	*212.	178.	204.	223.	127.	363.	280.	180.	104.	61.6	135.	*110.
28	183.	178.	178.	229.	122.	303.	335.	147.	110.	52.3	163.	97.6
29	170.	178.	129.	223.	---	274.	324.	138.	106.	75.3	180.	75.3
30	165.	158.	206.	206.	---	214.	342.	129.	142.	86.2	104.	82.4
31	147.	---	232.	223.	---	255.	---	124.	---	112.	71.9	---
TOPLAM	3955.8	4291.	5252.6	5743.	6428.	7780.	5199.7	7080.	3627.9	2654.2	3429.2	2762.1
ORTALAMA	127.6	143.0	169.4	185.3	229.6	251.0	173.3	228.4	120.9	85.62	110.6	92.07
LT/SN/KM	2.11	2.36	2.80	3.06	3.79	4.14	2.86	3.77	2.00	1.41	1.83	1.52
AKIM MM	5.64	6.12	7.49	8.19	9.17	11.1	7.42	10.1	5.18	3.79	4.89	3.94
10 M AKIM	342.	371.	454.	496.	555.	672.	449.	612.	313.	229.	296.	239.

SU YILI (1977) YILLIK TOPLAM AKIM. 5029. MİLYON M³, 83.0 MM, 2.63 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GÖSTERİR. Yıl içinde 2.Pik Akım Değeri 488. m³/sec. Tarihi 14.2.1977
Yıl içinde 3.Pik Akım Değeri 405. " Tarihi 26.3.1977

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRI - AVŞAR KÖP.

MEVKİİ

(34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı ilçesine bağlı Hacıhanza Ducağından Tosya'ya giden yolun 2. Km. sinde dir.

YAĞIŞ ALANI

: 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ

: 1.Kasım.1965 - 30.Eylül.1976

ORTALAMA AKIMLAR

: Rasat süresinde 141.090 m³/sn. (10 yıllık) 1976 Su yılında, 133.551 m³/sn.

AZAMI VE ASGARI AKIMLAR

1976 Su yılında azami akım : 465. m³/sn. (25.3.1976)
1976 Su yılında asgari akım : 32.7 " (24.10.1975)
Rasat süresinde azami akım : 1066. " (14.3.1968)
Rasat süresinde asgari akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇEĞİ

: Eşel ve Limmigraf.

DÜŞÜNCELER

: Akım durumu iyi. Sulama kanalı akımlara ilave edilmiştir. 13.10.1975 ile 22.10.1975, 21.11.1975 ile 23.11.1975, 18.3.1976 ile 3.4.1976 günleri arasında şift tatbik edilmiştir.

11. Anahtar ağırlı (Seviyeler Cm. — Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
80	22.8	130	99.5
90	33.8	150	142.
100	47.6	200	277.
110	63.2	250	453.
120	80.5	300	650.

AKIMLAR 1 EKİM 1975'DEN 30 EYLÜL 1976'YA KADAR VE SAHİYEDE METRE-KUP OLARAK

GÜN	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Agustos	Eylül
1	49.2	88.1	214.1	106.1	217.4	142.1	310.1	158.1	106.1	88.1	73.6	90.0
2	42.1	108.1	178.1	129.1	190.1	156.1	294.1	138.1	95.7	86.2	77.0	77.0
3	52.3	97.6	131.1	118.1	163.1	135.1	277.1	122.1	95.7	84.3	66.7	88.1
4	68.4	90.0	195.1	84.3	129.1	123.1	258.1	114.1	122.1	93.8	61.6	82.4
5	68.4	90.0	195.1	71.9	188.1	144.1	280.1	106.1	135.1	82.4	43.5	82.4
6	70.1	88.1	195.1	86.2	206.1	158.1	265.1	104.1	99.5	78.8	55.4	93.8
7	75.3	93.8	201.1	88.1	175.1	160.1	262.1	110.1	90.0	68.4	66.7	129.1
8	75.3	129.1	180.1	78.8	185.1	121.1	226.1	118.1	88.1	60.1	63.2	97.6
9	58.5	138.1	133.1	93.8	170.1	140.1	220.1	118.1	88.1	60.1	63.2	93.8
10	44.8	88.1	116.1	97.6	149.1	135.1	217.1	124.1	108.1	129.1	61.6	129.1
11	39.3	80.5	158.1	91.9	106.1	173.1	212.1	133.1	108.1	77.0	61.6	135.1
12	46.2	80.5	190.1	90.0	149.1	188.1	188.1	120.1	84.3	50.7	43.5	110.1
13	75.3	99.5	163.1	84.3	180.1	206.1	201.1	133.1	170.1	61.6	50.7	97.6
14	73.6	149.1	154.1	84.3	201.1	201.1	201.1	173.1	173.1	68.4	63.2	120.1
15	71.9	127.1	104.1	78.8	195.1	226.1	198.1	180.1	68.4	66.7	73.6	91.9
16	70.1	163.1	97.6	84.3	151.1	193.1	240.1	160.1	50.7	64.9	73.6	70.1
17	71.9	188.1	78.8	86.2	124.1	193.1	303.1	133.1	50.7	70.1	61.6	84.3
18	73.6	190.1	71.9	71.9	124.1	331.1	363.1	116.1	57.0	78.8	60.1	77.0
19	66.7	123.1	88.1	129.1	156.1	355.1	402.1	112.1	64.9	78.8	68.4	106.1
20	63.2	185.1	140.1	188.1	173.1	377.1	328.1	93.8	61.6	75.3	138.1	131.1
21	68.4	173.1	190.1	160.1	188.1	380.1	252.1	138.1	64.9	55.4	110.1	95.7
22	61.6	163.1	201.1	156.1	198.1	398.1	246.1	132.1	64.9	47.6	120.1	66.7
23	39.3	180.1	209.1	149.1	201.1	398.1	232.1	127.1	64.9	77.0	120.1	47.6
24	39.3	190.1	208.1	160.1	175.1	342.1	198.1	102.1	71.9	64.9	118.1	37.9
25	63.2	188.1	201.1	170.1	122.1	416.1	220.1	104.1	68.4	61.6	102.1	39.3
26	97.6	183.1	198.1	180.1	175.1	420.1	206.1	106.1	78.8	68.4	86.2	44.8
27	112.1	204.1	190.1	122.1	190.1	398.1	201.1	142.1	63.2	63.2	108.1	66.7
28	124.1	183.1	160.1	106.1	190.1	380.1	173.1	142.1	70.1	52.3	120.1	39.3
29	97.6	188.1	120.1	116.1	178.1	363.1	170.1	122.1	60.1	64.9	102.1	37.9
30	140.1	217.1	116.1	138.1	---	349.1	170.1	106.1	61.6	70.1	93.8	36.6
1	118.1	---	93.8	220.1	---	331.1	---	108.1	---	70.1	114.1	---
TOPLAM	2217.2	4275.2	4868.2	3645.1	4971.1	8073.1	7313.1	3888.8	2394.7	2217.4	2517.4	2498.5
ORTALAMA	71.52	142.5	157.0	117.6	171.4	260.4	243.8	125.4	79.82	71.53	81.21	83.28
LT/SN/KM ²	1.18	2.35	2.59	1.94	2.83	4.30	4.03	2.07	1.32	1.18	1.34	1.38
AKIM/MM.	3.16	6.10	6.95	5.20	7.09	11.5	10.4	5.55	3.42	3.16	3.59	3.56
10 M AKIM	192.1	369.1	421.1	315.1	429.1	698.1	632.1	336.1	207.1	192.1	218.1	216.1

SU YILI (1976) YILLIK TOPLAM AKIM: 4223.1 MİLYON M³, 69.7 MM³, 2.21 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GÖSTERİR.

YILLIK TOPLAM = 48879.5, ORTALAMA = 133.551, 1536 KIZILIRMAK-AVSAR KÖP.												
MINIMUM	39.300	80.500	71.900	71.900	106.000	133.000	170.000	93.800	50.700	47.600	43.500	36.600
MAKSİMUM	140.000	217.000	214.000	220.000	237.000	420.000	402.000	180.000	135.000	129.000	138.000	135.000

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÖP.

MEVKİİ

34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı ilçesine bağlı Hacibazma bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI

: 60559.6 Km²

TAKRİBİ RAKIMI

: 310 m.

RASAT SÜRESİ

: 1.Kasım.1965 - 30.Eylül.1975

ORTALAMA AKIMLAR

: Rasat süresinde 141.930 m³/sn. (9 yıllık) 1975 Su yılında 92.251 m³/sn.

AZAMİ VE ASGARİ AKIMLAR

1975 Su yılında azamî akım : 962. m³/sn. (2. 5.1975)
1975 Su yılında asgarî akım : 14.7 " (2.10.1974)
Rasat süresinde azamî akım : 1066. " (14. 3.1968)
Rasat süresinde asgarî akım : 7.40 " (10. 5.1974)

SEVİYE ÖLÇEĞİ

: Eşel ve Limmigraf.

DÜŞÜNCELER

: Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 1.10.1974 ile 16.10.1974, 14.11.1974 ile 28.2.1975, 1.3.1975 ile 30.9.1975 günleri arasında şift tatbik edilmiştir.

4. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
60	7.60	150	135.
70	13.0	200	277.
80	20.3	250	453.
90	30.0	300	650.
100	42.0	400	1050.

AKIMLAR 1 EKİM 1974'DEN 30 EYLÜL 1975'E KADAR VE SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NISAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	19.1	23.0	126.	34.8	41.8	85.5	99.5	608.	168.	73.8	39.6	37.2
2	17.3	23.0	128.	44.6	47.6	77.8	130.	818.	140.	51.5	40.8	50.1
3	16.5	23.6	129.5	67.3	79.5	60.4	144.	828.	116.	39.6	42.0	43.4
4	21.7	26.1	77.8	63.8	93.5	58.8	146.	760.	98.4	37.2	40.8	37.2
5	46.0	26.8	58.8	62.0	93.5	54.0	119.	562.	88.2	43.4	39.6	44.7
6	50.4	20.4	55.6	76.0	76.0	50.8	104.	488.	84.6	34.8	39.6	92.1
7	37.6	24.3	72.5	65.5	79.5	50.8	89.5	307.	86.4	32.4	39.6	165.1
8	28.1	26.8	62.0	57.2	70.8	55.6	79.5	213.	70.4	32.4	40.8	143.
9	28.1	29.4	65.5	49.2	69.0	63.8	65.5	140.	68.7	26.1	42.0	96.3
10	32.0	28.1	65.5	57.2	79.5	67.3	63.8	182.	82.8	24.2	44.7	81.0
11	41.8	26.8	60.4	85.5	65.5	77.8	63.8	204.	92.1	27.1	65.5	67.1
12	43.2	24.3	76.0	85.5	93.5	85.5	87.5	321.	92.1	26.1	55.5	70.4
13	44.6	21.7	77.8	74.3	137.	95.5	74.3	321.	105.	26.1	50.1	70.4
14	52.4	19.1	76.0	83.5	91.5	137.	54.0	359.	101.	25.2	46.1	75.6
15	60.4	17.3	85.5	63.8	63.8	149.	43.2	335.	98.4	29.0	39.6	70.4
16	65.5	19.1	91.5	55.6	63.8	156.	40.4	324.	94.2	27.1	36.0	73.8
17	60.4	23.0	81.5	62.0	65.5	151.	36.2	314.	90.0	25.2	34.8	105.
18	67.3	30.7	69.0	52.4	69.0	146.	33.4	310.	82.8	26.1	38.4	105.
19	62.0	30.7	57.2	52.4	69.0	133.	46.0	423.	75.6	22.2	33.6	101.
20	41.8	36.2	55.6	49.2	65.5	97.5	83.5	438.	77.4	18.8	36.0	94.2
21	34.8	50.8	57.2	47.6	72.5	93.5	85.5	423.	73.8	18.8	34.8	82.8
22	21.7	76.0	52.4	40.4	70.8	93.5	110.	420.	70.4	18.8	36.0	79.2
23	17.3	77.8	52.4	39.0	70.8	91.5	163.	363.	77.4	18.1	40.8	77.4
24	14.0	79.5	52.4	55.6	65.5	112.	123.	297.	82.8	20.1	44.7	73.8
25	15.6	85.5	50.8	69.0	65.5	135.	128.	310.	94.2	25.2	44.7	62.1
26	18.2	93.5	50.8	89.5	63.8	151.	171.	246.	145.	34.8	42.0	60.5
27	20.4	81.5	39.0	79.5	67.3	154.	151.	216.	143.	30.0	33.6	58.8
28	11.7	91.5	36.2	62.0	81.5	133.	320.	193.	101.	31.2	39.6	51.5
29	19.1	97.5	33.4	52.4	-----	108.	358.	155.	92.1	30.0	40.8	48.8
30	18.2	104.	34.8	44.6	-----	99.5	370.	150.	82.8	28.1	31.2	46.1
31	17.3	-----	36.2	40.4	-----	97.5	-----	216.	-----	32.4	31.2	-----
TOPLAM	1064.5	1342.0	2037.3	1861.8	2072.5	3121.6	3580.6	11274.	2874.6	936.0	1243.0	2263.9
ORTALAMA	34.34	44.73	65.72	60.06	74.02	100.7	119.4	363.7	95.82	30.19	40.10	75.46
LT/SN/KM ²	0.567	0.739	1.09	0.992	1.22	1.66	1.97	6.01	1.58	0.499	0.662	1.25
AKIM,MM.	1.52	1.91	2.91	2.66	2.96	4.45	5.11	16.1	4.10	1.34	1.77	3.23
10 M AKIM	92.0	116.	176.	161.	179.	270.	309.	974.	248.	80.9	107.	196.

SU YILI (1975) YILLIK TOPLAM AKIM. 2909. MİLYON M³, 48.0 MM, 1.52 LT/SN/KM²,

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GÖSTERİR.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AVŞAR KÖP.

MEVKİİ

: (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı ilçesine bağlı Hacıhamza bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI

: 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ

: 1. Kasım.1965 - 30. Eylül.1974

ORTALAMA AKIMLAR

: Rasat süresinde 148.135 m³/sn. (8 yıllık) 1974 Su yılında 56.011 m³/sn.

AZAMİ VE ASGARİ AKIMLAR

1974 Su yılında azami akım : 221. m³/sn. (27.5.1974)
1974 Su yılında asgarî akım : 7.40 " (10.5.1974)
Rasat süresinde azami akım : 1066. " (14.3.1968)
Rasat süresinde asgarî akım : 7.40 " (10.5.1974)

SEVİYE ÖLÇEĞİ

: Eşel ve Limmigraf.

DÜŞÜNCELER

: Akım durumu orta. Yıl içinde 3 ayrı anahtar eğrisi kullanılmıştır. 1.10.1973 ile 22.11.1973, 18.1.1974 ile 28.2.1974, 1.3.1974 ile 30.9.1974 günleri arasında çift tatbik edilmiştir.

3. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
40	6.60	90	62.0
50	11.2	100	79.5
60	19.1	110	99.5
70	32.0	120	121.
80	46.0	130	194.

AKIMLAR 1 EKİM 1973'DEN 30 EYLÜL 1974'E KADAR VE SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	92.4	53.6	55.2	45.4	62.7	55.2	29.4	14.0	40.4	50.8	37.6	67.3
2	88.3	49.3	55.2	44.0	60.0	60.0	34.8	16.5	43.2	97.5	36.2	69.0
3	66.8	52.0	50.7	41.4	52.0	64.8	32.0	17.3	54.0	95.5	46.0	55.6
4	55.0	78.2	46.7	38.7	38.7	68.0	29.4	26.8	50.8	63.8	50.8	79.5
5	66.8	88.8	45.4	38.7	31.2	63.2	26.8	18.2	49.2	60.4	55.6	91.5
6	66.8	83.3	46.7	38.7	30.1	58.4	23.0	11.9	60.4	55.6	57.2	112.
7	74.0	78.2	48.0	42.7	31.2	56.8	20.4	11.9	59.5	52.4	37.6	77.8
8	74.0	112.	48.0	42.7	34.4	53.6	20.4	10.7	72.5	62.0	34.8	60.4
9	74.0	123.	50.7	37.6	38.7	53.6	25.6	7.80	69.0	49.2	54.0	93.5
10	66.8	115.	64.8	35.5	49.3	56.8	26.8	7.40	57.2	54.0	55.6	63.8
11	66.8	115.	60.0	34.4	61.6	58.4	28.1	8.20	52.4	57.2	54.0	50.8
12	74.0	119.	53.6	38.7	64.8	58.4	26.8	11.9	43.2	58.8	57.2	37.6
13	88.3	108.	55.2	56.8	66.4	60.0	26.8	16.5	46.0	55.6	58.8	40.4
14	108.	104.	79.9	53.6	56.8	63.2	28.1	28.1	60.4	49.2	39.0	63.8
15	100.	100.	88.8	46.7	58.4	86.9	33.4	55.6	43.2	50.8	39.0	44.6
16	83.3	104.	79.9	37.6	63.2	115.	30.7	74.3	40.4	57.2	39.0	36.2
17	60.0	102.	68.0	36.6	52.0	115.	29.4	72.5	52.4	54.0	47.6	32.0
18	64.8	108.	60.0	36.6	49.3	95.5	28.1	70.8	50.8	47.6	89.5	26.8
19	125.	92.6	55.2	36.6	46.7	81.5	26.8	72.5	50.8	49.2	49.2	23.0
20	100.	83.3	49.3	44.0	45.4	70.8	36.2	69.0	76.0	50.8	43.2	18.2
21	98.3	73.1	46.7	56.8	49.3	63.8	23.0	70.8	62.0	52.4	44.6	16.5
22	102.	69.7	56.8	53.6	63.2	57.2	23.0	76.0	67.3	54.0	43.2	15.6
23	83.3	76.5	66.4	40.0	53.6	52.4	23.0	79.5	57.2	55.6	33.4	15.6
24	79.9	71.4	61.6	33.4	53.6	49.2	24.3	77.8	57.2	54.0	43.2	15.6
25	66.4	52.0	55.2	30.1	50.7	43.2	29.4	121.	57.2	52.4	52.4	15.6
26	83.3	46.7	50.7	30.1	50.7	39.0	43.2	205.	67.3	89.5	62.0	14.0
27	112.	42.7	46.7	31.2	56.8	37.6	29.4	151.	65.5	83.5	54.0	14.0
28	100.	42.7	44.0	42.7	56.8	34.8	20.4	102.	50.8	115.	44.6	14.0
29	86.9	45.4	42.7	79.9	---	32.0	17.3	72.5	47.6	89.5	72.5	13.3
30	79.9	50.7	45.4	71.4	---	30.7	15.6	55.6	39.0	67.3	135.	17.3
31	68.0	---	46.7	78.2	---	28.1	---	49.2	---	57.2	83.5	---
TOPLAM	2555.1	2440.2	1724.2	1374.4	1434.6	1863.1	811.6	1682.30	1661.3	1942.0	1660.5	1294.6
ORTALAMA	82.42	81.34	55.62	44.34	51.24	60.10	27.05	54.27	55.38	62.65	53.56	43.15
LT/SN/KM ²	1.36	1.34	0.918	0.732	0.846	0.992	0.447	0.896	0.914	1.03	0.884	0.713
AKIM MM.	3.65	3.48	2.46	1.96	2.05	2.66	1.16	2.40	2.37	2.77	2.37	1.85
10 ⁶ AKIM	221.	211.	149.	119.	124.	161.	70.1	145.	144.	168.	143.	112.

SU YILI (1974) YILLIK TOPLAM AKIM. 1766. MİLYON M³, 29.2 MM, 0.925 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GÖSTERİR.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AVŞAR KÖP.

MEVKİİ

: (34° 25' 41" D - 41° 05' 34" Çorum'un Kargı ilçesine bağlı Hacıhamza bucağından Tosya'ya giden yolun 2. Km. sındırır.

YAĞIŞ ALANI

: 60559.6 Km²

TAKRİBİ RAKIMI

: 310 m.

RASAT SÜRESİ

: 1.Kasım.1965 - 30.Eylül.1973

ORTALAMA AKIMLAR

: Rasat süresinde 161.286 m³/sn. (7 yıllık) 1973 Su yılında 109.088 m³/sn.

AZAMI VE ASGARİ AKIMLAR

1973 Su yılında azami akım : 294. m³/sn. (14.3.1973)
1973 Su yılında asgarî akım : 24.4 " (16.8.1973)
Rasat süresinde azami akım : 1066. " (14.3.1968)
Rasat süresinde asgarî akım : 22.5 " (6.7.1971)

SEVİYE ÖLÇEĞİ

: Eşel ve Limmigraf.

DÜŞÜNCELER

: Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 5.1.1973 ile 12.1.1973, 29.3.1973 ile 3.4.1973, 12.4.1973 ile 26.4.1973, 10.5.1973 ile 17.5.1973, 9.6.1973 ile 19.6.1973, 9.7.1973 ile 29.7.1973 günleri arasında şift tatbik edilmiştir.

2. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
50	24.4	100	92.4
60	31.5	110	114.
70	42.0	120	136.
80	55.0	150	202.
90	71.9	200	321.

AKIMLAR 1 EKİM 1972'DEN 30 EYLÜL 1973'E KADAR SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NİSAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	* 181.	137.	144.	159.	224.	160.	148.	66.8	49.8	42.0	38.9	90.4
2	170.	129.	157.	122.	213.	195.	148.	61.8	51.1	34.7	32.6	68.5
3	159.	186.	200.	98.0	211.	171.	131.	56.7	49.8	70.2	23.2	61.8
4	133.	204.	170.	84.0	198.	173.	92.0	53.7	49.8	92.4	32.6	145.5
5	115.	229.	120.	63.8	195.	162.	92.0	58.4	45.9	49.8	35.7	65.1
6	137.	193.	104.	148.	167.	125.	111.	74.0	52.4	37.8	52.4	80.1
7	159.	157.	146.	184.	154.	116.	119.	61.8	49.8	63.5	74.0	101.
8	113.	170.	157.	* 162.	171.	118.	118.	56.7	41.0	118.	39.9	140.
9	107.	177.	173.	157.	167.	132.	* 124.	51.1	47.2	78.1	38.9	116.
10	102.	148.	193.	153.	171.	157.	104.	45.9	56.7	61.8	31.5	105.
11	84.0	92.0	168.	148.	173.	181.	90.0	45.9	* 96.7	61.8	31.5	96.7
12	92.0	67.4	* 148.	166.	* 162.	144.	120.	44.6	118.	58.4	33.6	90.4
13	133.	63.8	98.0	195.	136.	* 122.	120.	39.9	105.	43.3	30.9	71.9
14	146.	69.2	107.	166.	129.	135.	111.	* 39.9	80.1	82.2	31.5	90.4
15	173.	* 92.0	151.	153.	173.	209.	100.	43.3	88.3	116.	26.5	151.
16	144.	118.	200.	140.	156.	195.	96.0	42.0	70.2	70.2	24.4	306.9
17	135.	115.	168.	113.	136.	186.	90.4	49.8	82.2	* 48.5	26.5	98.9
18	122.	142.	151.	120.	125.	148.	74.0	76.0	121.	41.0	26.5	74.0
19	140.	181.	142.	116.	127.	135.	* 58.4	80.1	98.9	36.8	37.8	63.5
20	211.	140.	113.	110.	114.	120.	56.7	88.3	74.0	38.9	* 36.8	* 51.1
21	218.	113.	162.	145.	103.	92.0	58.4	78.1	63.5	35.7	51.1	71.9
22	188.	92.0	172.	189.	102.	102.	58.4	66.8	58.4	38.9	44.6	70.2
23	186.	84.0	195.	209.	173.	* 107.	56.7	45.9	58.4	86.3	31.5	65.1
24	157.	135.	197.	209.	156.	107.	58.4	45.9	60.1	49.8	31.5	53.7
25	153.	155.	188.	222.	158.	107.	61.8	36.8	52.4	35.7	36.8	52.4
26	211.	170.	168.	217.	156.	98.0	94.6	71.9	47.2	30.1	52.4	63.5
27	166.	148.	151.	213.	149.	102.	105.	78.1	39.9	27.2	51.1	56.7
28	159.	115.	155.	234.	140.	109.	114.	53.7	36.8	28.0	53.7	105.
29	173.	107.	173.	202.	---	120.	90.4	48.5	116.8	39.9	49.8	96.7
30	218.	124.	190.	167.	---	131.	78.1	51.1	70.2	45.9	45.9	96.7
31	188.	---	181.	184.	---	140.	---	48.5	---	37.8	66.8	---
TOPLAM	4753.0	4053.4	4947.0	4990.8	4391.9	4299.0	2878.3	1749.7	2024.8	1700.7	1229.9	2798.7
ORTALAMA	153.3	135.1	159.6	161.0	156.9	138.7	95.94	56.44	67.49	54.86	39.67	93.29
LT/SN/KM ²	2.53	2.23	2.64	2.66	2.59	2.29	1.58	0.932	1.11	0.906	0.655	1.54
AKIM/MM.	6.78	5.78	7.06	7.12	6.27	6.13	4.11	2.50	2.89	2.43	1.75	3.99
10 M AKIM	411.	350.	427.	431.	379.	371.	249.	151.	175.	147.	106.	242.

SU YILI (1973) YILLIK TOPLAM AKIM. 3440. MİLYON M³, 56.8 MM, 1.80 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GÖSTERİR.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÖP.

MEVKİİ : (34° 25' 41" D - 41° 05' 34" K) Çorum'un Kargı ilçesine bağlı Hacıhamza bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI : 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ : 1.Kasım.1965 - 30.Eylül.1972

ORTALAMA AKIMLAR : Rasat süresinde 169.977 m³/sn. (6 yıllık) 1972 Su yılında 112.763 m³/sn.

AZAMİ VE ASGARİ AKIMLAR 1972 Su yılında azamî akım : 471. m³/sn. (6.7.1972)

1972 Su yılında asgarî akım : 34.7 " (21.1.1972)

Rasat süresinde azamî akım : 1066. " (14.3.1968)

Rasat süresinde asgarî akım : 22.5 " (6.7.1971)

SEVİYE ÖLÇEĞİ : Eşel ve Limmigraf.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 3 ayrı anahtar eğrisi kullanılmıştır. 3.4.1972 ile 10.4.1972, 13.4.1972 ile 23.4.1972, 9.9.1972 ile 21.9.1972 günleri arasında çift tatbik edilmiştir.

3. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
60	25.7	120	122.
70	34.0	150	188.
80	46.0	200	306.
90	62.0	250	432.
100	80.0	300	571.

AKIMLAR 1 EKİM 1971'DEN 30 EYLÜL 1972'YE KADAR VE SANİYEDE METRE-KUP OLARAK

GÜN	EKİM	KASIM	ARALIK	OCAK	SUBAT	MART	NISAN	MAYIS	HAZİRAN	TEMMUZ	AGUSTOS	EYLÜL
1	78.7	75.5	52.8	50.3	102.	104.	180.	193.	101.	110.	141.	102.
2	84.1	59.1	54.1	52.8	26.6	104.	182.	171.	108.	112.	80.5	136.
3	85.9	66.0	57.8	54.1	22.8	109.	160.	189.	118.	114.	72.3	169.
4	85.9	72.3	56.6	55.3	54.1	121.	143.	* 202.	140.	88.3	* 62.8	164.
5	82.3	66.0	54.1	56.6	66.0	149.	* 127.	* 220.	118.	129.	66.0	146.
6	66.0	61.6	50.3	59.1	70.8	204.	125.	220.	116.	329.	61.6	89.6
7	64.4	59.1	48.2	64.4	82.3	180.	139.	244.	112.	184.	69.2	171.
8	106.	54.1	48.2	72.3	78.7	189.	154.	236.	98.9	140.	64.4	194.
9	196.	50.3	46.1	64.4	67.6	202.	147.	191.	167.	118.	52.8	202.
10	164.	47.2	45.1	64.4	59.1	211.	138.	167.	209.	112.	50.3	166.
11	99.2	44.0	* 89.6	* 61.6	59.1	220.	123.	171.	235.	112.	49.3	139.
12	82.3	* 43.0	* 239.	55.3	61.6	204.	123.	169.	249.	96.7	51.6	184.
13	* 77.1	44.0	25.1	54.1	66.0	204.	105.	178.	200.	80.1	67.6	171.
14	70.8	49.3	19.1	55.3	77.1	* 191.	110.	182.	156.	96.7	78.7	93.2
15	80.5	60.3	131.	52.8	95.0	184.	118.	162.	156.	96.7	72.3	114.
16	89.6	77.1	102.	51.6	111.	180.	134.	129.	167.	94.6	55.3	134.
17	84.1	69.2	106.	54.1	* 131.	178.	* 143.	105.	* 134.	98.9	50.3	126.
18	91.0	60.3	99.2	55.3	151.	173.	* 136.	98.9	138.	108.	60.3	129.
19	96.8	48.2	91.4	41.9	169.	176.	125.	154.	129.	98.9	70.8	134.
20	82.3	46.1	87.8	39.0	176.	156.	136.	215.	147.	* 92.4	73.9	99.2
21	106.	46.1	80.5	34.7	176.	136.	149.	217.	123.	108.	69.2	104.
22	141.	47.2	72.3	38.1	164.	129.	158.	* 211.	118.	140.	72.3	122.
23	126.	46.1	67.6	50.3	144.	134.	160.	226.	127.	98.9	72.3	162.
24	80.5	45.1	67.6	54.1	121.	171.	171.	143.	112.	90.4	70.8	179.
25	77.1	45.1	73.9	66.0	111.	180.	169.	136.	129.	88.3	96.8	162.
26	82.3	47.2	66.0	80.5	111.	176.	136.	140.	187.	76.0	189.	131.
27	73.9	48.2	60.3	61.6	106.	143.	160.	121.	178.	73.7	236.	100.
28	60.1	54.1	57.8	57.8	104.	134.	171.	127.	103.	63.5	209.	133.
29	77.1	51.6	54.1	62.8	106.	125.	178.	125.	90.4	86.3	119.	151.
30	91.4	51.6	51.6	70.8	---	125.	187.	103.	98.9	91.4	96.8	179.
31	121.	---	50.3	91.4	---	149.	---	96.7	---	104.	104.	---
TOPLAM	2903.6	1635.0	2603.3	1782.8	2929.8	5063.	4386.	5242.6	4294.2	3411.8	2786.2	4233.0
ORTALAMA	93.66	54.50	83.98	57.51	101.0	163.3	146.2	169.1	143.1	110.1	89.88	141.1
LT/SN/KM ²	1.55	0.900	1.39	0.950	1.67	2.70	2.41	2.79	2.36	1.82	1.48	2.33
AKIM,MM.	4.14	2.33	3.71	2.54	4.18	7.22	6.26	7.48	6.13	4.87	3.98	6.04
10 ⁶ AKIM	251.	141.	225.	154.	253.	437.	379.	453.	371.	295.	241.	366.

SU YILI (1972) YILLIK TOPLAM AKIM. 3566. MİLYON M³, 58.9 MM, 1.86 LT/SN/KM².

(*) AKIM OLCUSUNUN YAPILDIĞI GÜNLERİ GOSTERİR.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AVŞAR KÜP.

MEVKİİ : Çorum'un Kargı ilçesine bağlı Hacıhamza bucağından Tosya'ya giden yolun 2. Km.sindendir.

YAĞIŞ ALANI : 60559.6 Km² **TAKRİBİ RAKMI** : 310 m.

RASAT SÜRESİ : 28.Ekim.1965 - 30.Eylül.1971

ORTALAMA AKIMLAR : Rasat süresinde 181.445 m³/sn. (5 yıllık) 1971 Su yılında 120.778 m³/sn.

AZAMİ VE ASGARİ AKIMLAR 1971 Su yılında azamî akım : 269. m³/sn. (2.1.1971)

1971 Su yılında asgarî akım : 22.5 " (6.7.1971)

Rasat süresinde azamî akım : 1066. " (14.3.1968)

Rasat süresinde asgarî akım : 22.5 " (6.7.1971)

SEVİYE ÖLÇEĞİ : Eşel.

DÜŞÜNCELER : Akım durumu orta. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 1.10.1970 ile 17.11.1970, 1.3.1971 ile 8.3.1971, 17.5.1971 ile 8.6.1971, 30.8.1971 ile 14.9.1971 günleri arasında çift tatbik edilmiştir.

2. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
45	21.3	90	71.9
50	24.4	100	92.4
60	31.5	120	136.
70	42.0	150	202.
80	55.0	200	321.

Akımlar, 1 Ekim 1970'den 30 Eylül 1971'e kadar ve saniyede metre - küp olarak

Gün	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	67.6	109.	131.	244.	199.	219.	119.	129.	116.	29.4	39.9	96.8
2	73.9	102.	121.	264.	151.	216.	119.	116.	127.	27.2	37.8	78.7
3	84.1	96.8	106.	231.	131.	x 189.	124.	101.	103.	25.1	x 42.0	67.6
4	89.6	104.	104.	154.	184.	219.	126.	92.4	x 134.	24.4	x 42.0	66.0
5	99.2	102.	119.	136.	206.	211.	131.	71.9	x 160.	23.8	55.0	80.5
6	89.6	104.	144.	141.	224.	231.	x 129.	74.0	156.	25.8	98.9	87.8
7	60.3	111.	236.	184.	174.	236.	x 119.	116.	154.	38.9	88.3	89.6
8	52.8	114.	226.	206.	121.	204.	116.	165.	165.	39.9	63.5	87.8
9	60.3	111.	166.	199.	85.9	139.	136.	140.	204.	34.7	58.4	x 99.2
10	77.1	111.	201.	174.	77.1	126.	141.	129.	217.	32.6	55.0	126.
11	84.1	114.	211.	204.	64.4	139.	141.	121.	206.	32.6	44.6	106.
12	95.0	x 104.	224.	x 204.	59.1	189.	124.	108.	162.	x 35.7	39.9	73.9
13	96.8	x 104.	216.	x 156.	70.8	196.	106.	90.4	147.	x 34.7	44.6	72.3
14	99.2	102.	209.	206.	144.	139.	102.	88.3	127.	39.9	63.5	66.0
15	91.4	116.	x 194.	221.	154.	119.	119.	86.3	118.	58.4	65.1	55.3
16	89.6	161.	151.	244.	146.	99.2	156.	x 88.3	108.	49.8	60.1	46.1
17	89.6	146.	146.	249.	124.	89.6	179.	94.6	88.3	45.9	49.8	41.9
18	89.6	131.	159.	236.	161.	93.2	184.	101.	84.2	42.0	41.0	46.1
19	x 91.4	146.	186.	201.	x 171.	139.	179.	132.	92.4	43.3	36.8	60.3
20	x 93.2	141.	205.	166.	171.	171.	176.	156.	80.1	47.2	30.8	66.0
21	91.4	156.	206.	221.	159.	156.	166.	173.	71.9	45.9	31.5	64.4
22	91.4	226.	176.	226.	124.	146.	184.	151.	65.1	45.9	36.8	52.8
23	93.2	169.	111.	224.	109.	141.	221.	145.	58.4	70.2	52.4	50.3
24	96.8	159.	104.	224.	102.	124.	x 234.	149.	53.7	68.5	70.2	59.1
25	104.	171.	104.	186.	87.8	139.	239.	138.	42.0	65.1	55.0	73.9
26	141.	246.	126.	149.	109.	174.	198.	132.	38.9	56.7	42.0	78.7
27	169.	241.	186.	123.	131.	209.	160.	127.	35.7	53.7	49.8	80.5
28	121.	219.	176.	106.	184.	191.	143.	121.	34.7	43.3	65.1	84.1
29	116.	236.	171.	121.	—	171.	134.	154.	33.6	38.9	84.2	75.5
30	114.	209.	179.	141.	—	149.	138.	127.	32.6	39.9	82.3	59.1
31	114.	—	194.	196.	—	134.	—	108.	—	41.0	146.	—
Toplam	2926.2	4361.8	5188.	5937.	3824.1	5098.0	4543.	3725.2	3215.6	1300.4	1772.3	2192.3
Ortalama	94.39	145.4	167.4	191.5	136.6	164.5	151.4	120.2	107.2	41.95	57.17	73.08
Lt/Sn/Km ²	1.56	2.40	2.76	3.16	2.26	2.72	2.50	1.98	1.77	0.693	0.944	1.21
Akım, mm.	4.17	6.22	7.40	8.47	5.46	7.27	6.48	5.31	4.59	1.86	2.53	3.13
10 ⁶ m ³ akım	253.	377.	448.	513.	330.	440.	393.	322.	278.	112.	153.	189.

Su yılı (1971) Yıllık Toplam Akım : 3809. Milyon m³; 62.9 mm; 1.99. Lt/Sn/Km².

(X) Akım ölçüsünün yapıldığı günleri gösterir.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK MESEİ - AVŞAR KÜP.

MEVKİİ : Çorlu'nun Karga ilçesine bağlı Hacıhanza bucağından Tosya'ya giden yolun 2. Km.sindedir.

YAGIŞ ALANI : 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ : 28.Ekim.1965 - 30.Eylül.1970

ORTALAMA AKIMLAR : Rasat süresinde 196.602 m³/sn. (4 yıllık) 1970 Su yılında 166.019 m³/sn.

AZAMİ VE ASGARİ AKIMLAR 1970 Su yılında azamî akım : 573. m³/sn. (13.2.1970)
1970 Su yılında asgarî akım : 37.1 " (8.5.1970)
Rasat süresinde azamî akım : 1066. " (14.3.1968)
Rasat süresinde asgarî akım : 37.1 " (8.5.1970)

SEVİYE ÖLÇEĞİ : Eşel.

DÜŞÜNCELER : Akım durumu orta. Sulama kanallı akımları ana yatağa ilâve edilmiştir. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 19.1.1970 ile 3.2.1970, 26.2.1970 ile 28.2.1970, 1.3.1970 ile 17.3.1970, 7.4.1970 ile 23.4.1970, 27.9.1970 ile 30.9.1970 günleri arasında çift tatbik edilmiştir.

6. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
70	35.5	120	125.
80	49.0	150	197.
90	65.0	200	331.
100	84.0	250	489.
110	104.	300	660.

Akımlar, 1 Ekim 1969'dan 30 Eylül 1970'e kadar ve saniyede metre - küp olarak

Gün	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	170.	182.	298.	132.	180.	334.	166.	70.8	94.2	94.2	110.	72.6
2	172.	215.	263.	132.	195.	361.	155.	83.4	102.	122.	110.	68.8
3	180.	218.	207.	146.	228.	323.	157.	81.6	102.	141.	110.	63.4
4	180.	205.	268.	180.	223.	306.	180.	70.8	85.2	137.	100.	65.0
5	187.	187.	260.	177.	236.	352.	222.	50.5	104.	116.	90.6	82.1
6	202.	239.	254.	167.	249.	323.	251.	43.4	137.	110.	74.4	86.0
7	226.	244.	257.	150.	257.	298.	207.	38.3	133.	114.	85.0	90.0
8	210.	246.	260.	143.	263.	290.	194.	47.5	116.	81.6	104.	96.0
9	226.	249.	254.	167.	249.	276.	198.	85.2	104.	65.8	137.	94.0
10	236.	252.	246.	177.	257.	265.	177.	76.2	90.6	74.4	110.	63.4
11	249.	231.	298.	172.	260.	257.	157.	85.2	87.0	81.6	98.0	63.4
12	249.	175.	314.	162.	349.	252.	161.	78.0	96.0	88.8	83.4	63.4
13	257.	197.	257.	148.	553.	252.	159.	69.0	104.	88.8	62.6	63.4
14	236.	257.	112.	139.	542.	241.	135.	72.6	112.	81.6	88.8	66.9
15	170.	263.	98.0	141.	469.	220.	129.	83.4	102.	64.2	92.4	72.6
16	215.	273.	137.	146.	373.	202.	129.	85.2	100.	65.8	79.8	78.3
17	207.	249.	306.	150.	337.	192.	137.	83.4	96.0	96.0	59.5	86.0
18	200.	228.	300.	162.	311.	190.	133.	85.2	108.	129.	61.0	86.0
19	192.	200.	314.	190.	290.	189.	137.	90.6	108.	124.	61.0	78.3
20	200.	257.	257.	205.	260.	207.	133.	90.6	118.	131.	56.5	96.0
21	213.	268.	279.	236.	244.	182.	116.	78.0	108.	102.	67.4	88.0
22	172.	265.	337.	295.	246.	217.	94.2	76.2	98.0	90.6	79.8	57.0
23	244.	263.	346.	252.	241.	285.	90.6	61.0	94.2	79.8	85.2	49.0
24	249.	257.	295.	233.	236.	258.	108.	83.4	81.6	78.0	88.8	44.8
25	249.	254.	303.	218.	244.	196.	104.	85.2	79.8	127.	79.8	52.2
26	239.	228.	314.	190.	292.	168.	79.8	90.6	120.	133.	72.6	94.0
27	241.	246.	257.	170.	323.	173.	78.0	83.4	120.	124.	70.8	117.
28	213.	276.	244.	148.	328.	171.	88.8	70.8	118.	139.	98.0	115.
29	162.	306.	215.	155.	—	177.	78.0	74.4	90.6	127.	88.0	98.0
30	177.	298.	158.	167.	—	175.	64.2	69.0	94.2	118.	70.7	88.0
31	177.	—	141.	175.	—	173.	—	62.6	—	114.	72.6	—
Toplam	6500.	7228.	7849.0	5425.	8235.	7505.	4218.6	2305.5	3103.4	3239.2	2649.7	2338.6
Ortalama ²	209.7	240.9	253.2	175.0	264.1	242.1	140.6	74.37	103.4	104.5	85.47	77.95
Lt/Sn/Km ²	3.46	3.98	4.18	2.89	4.86	4.00	2.32	1.23	1.71	1.73	1.41	1.29
Akım ³ , mm.	9.27	10.3	11.2	7.74	11.7	10.7	6.02	3.29	4.43	4.62	3.78	3.34
10 ³ m ³ akım	562.	624.	678.	469.	712.	648.	364.	199.	268.	280.	229.	202.

Su yılı (1970) Yıllık Toplam Akım : 5236. Milyon m³; 86.5 mm; 2.74 Lt/Sn/Km².

(X) Akım ölçüşünün yapıldığı günleri gösterir.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEİRİ - AVŞAR KÖP.

MEVKİİ : Çorum'un Kargı İlçesine bağlı Hacıhamza bucağından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI : 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ : 28.Ekim.1965 - 30.Eylül.1969

ORTALAMA AKIMLAR : Rasat süresinde 206.787 m³/sn. (3 yıllık) 1969 Su yılında 234.786 m³/sn.

AZAMİ VE ASGARİ AKIMLAR 1969 Su yılında azamî akım : 720. m³/sn. (28.4.1969)
1969 Su yılında asgarî akım : 74.5 " (13.7.1969)
Rasat süresinde azamî akım : 1066. " (14.3.1968)
Rasat süresinde asgarî akım : 51.0 " (26.8.1966)

SEVİYE ÖLÇEĞİ : Eşel.

DÜŞÜNCELER : Akım durumu orta. 4.10.1968 ile 18.10.1968, 10.11.1968 ile 17.11.1968, 5.12.1968 ile 7.2.1969, 23.3.1969 ile 11.4.1969, 17.4.1969 ile 10.6.1969, 6.7.1969 ile 18.7.1969, 14.8.1969 ile 24.8.1969, 18.9.1969 ile 29.9.1969 günleri arasında gıft tatbik edilmiştir.

6. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
90	65.0	150	197.
95	74.5	200	331.
100	84.0	250	489.
110	104.	300	660.
120	125.	350	850.

Akımlar, 1 Ekim 1968'den 30 Eylül 1969'a kadar ve saniyede metre - küp olarak

Gün	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	125.	160.	303.	207.	165.	386.	398.	380.	303.	134.	117.	98.0
2	134.	182.	306.	167.	182.	377.	380.	395.	303.	121.	123.	112.
3	143.	177.	268.	170.	210.	361.	373.	386.	x 276.	112.	119.	121.
4	155.	172.	192.	146.	x 141.	334.	367.	355.	226.	110.	117.	132.
5	160.	182.	236.	132.	137.	355.	367.	386.	220.	123.	119.	150.
6	162.	187.	241.	141.	167.	383.	373.	424.	228.	127.	108.	143.
7	141.	192.	246.	146.	226.	377.	x 370.	408.	226.	141.	98.0	125.
8	127.	197.	252.	137.	246.	383.	x 377.	370.	231.	148.	104.	108.
9	132.	197.	260.	x 146.	249.	421.	373.	358.	215.	119.	98.0	98.0
10	170.	244.	249.	x 162.	252.	411.	373.	358.	180.	100.	100.	90.0
11	x 190.	244.	210.	127.	231.	355.	x 383.	361.	153.	80.2	104.	88.0
12	182.	220.	197.	185.	197.	273.	x 377.	377.	127.	76.4	102.	92.0
13	162.	x 180.	177.	271.	249.	311.	383.	414.	134.	x 78.3	96.0	104.
14	155.	228.	197.	260.	300.	320.	370.	506.	207.	94.0	102.	112.
15	146.	257.	254.	220.	290.	325.	370.	519.	223.	98.0	106.	121.
16	141.	287.	x 249.	236.	257.	337.	370.	x 414.	228.	94.0	104.	110.
17	172.	281.	195.	223.	260.	328.	395.	389.	223.	86.0	100.	108.
18	202.	276.	127.	228.	303.	367.	405.	386.	200.	92.0	x 104.	119.
19	236.	246.	170.	241.	164.	x 459.	424.	389.	218.	104.	x 123.	167.
20	249.	233.	165.	239.	361.	x 246.	430.	386.	239.	123.	153.	170.
21	249.	228.	158.	218.	309.	x 515.	443.	380.	260.	127.	153.	165.
22	244.	223.	153.	241.	298.	x 456.	440.	370.	239.	127.	141.	x 153.
23	213.	231.	143.	239.	295.	x 434.	434.	364.	218.	112.	155.	134.
24	220.	257.	117.	228.	295.	414.	414.	346.	200.	132.	155.	132.
25	200.	281.	117.	228.	281.	364.	386.	334.	158.	134.	158.	134.
26	182.	263.	137.	223.	271.	323.	443.	320.	167.	134.	121.	141.
27	182.	210.	165.	205.	323.	402.	594.	311.	160.	134.	96.0	153.
28	249.	265.	236.	153.	389.	380.	685.	323.	150.	125.	92.0	162.
29	303.	273.	241.	141.	395.	594.	317.	317.	148.	125.	90.0	167.
30	290.	292.	228.	180.	414.	512.	311.	143.	117.	117.	92.0	160.
31	223.	---	220.	170.	---	411.	---	303.	---	102.	94.0	---
Toplam	5839.	6865.	6409.	6010.	7248.	11917.	12603.	11660.	6203.	3529.9	3544.0	3869.0
Ortalama	188.4	228.8	206.7	193.9	258.9	384.4	420.1	376.1	206.8	113.9	114.3	129.0
Lt/Sn/Km ²	3.11	3.78	3.41	3.20	4.28	6.35	6.94	6.21	3.41	1.88	1.89	2.13
Akım, mm.	8.33	9.79	9.14	8.57	10.3	17.0	18.0	16.6	8.85	5.04	5.06	5.52
10 ³ m ³ akım	504.	593.	554.	519.	626.	1030.	1089.	1007.	536.	305.	306.	334.
Su yılı	(1969)	Yıllık	Toplam Akım : 7404. Milyon	m ³	122. mm.	3.88 Lt/Sn/Km ²						

(X) Akım ölçüsünün yapıldığı günleri gösterir.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AŞŞAR KÖP.

MEVKİİ : Çorum'un Kargı ilçesine bağlı Hacıhanza bucağından Tosya'ya giden yolun 2. Km.sindedir.

YAĞIŞ ALANI : 60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ : 28.Ekim.1965 - 30.Eylül.1968

ORTALAMA AKIMLAR : Rasat süresinde 192.806 m³/sn. (2 yıllık) 1968 Su yılında 224.236 m³/sn.

AZAMI VE ASGARİ AKIMLAR 1968 Su yılında azami akım : 1066. m³/sn. (14. 3.1968)
1968 Su yılında asgarî akım : 69.4 " (2.11.1967)
Rasat süresinde azami akım : 1066. " (14. 3.1968)
Rasat süresinde asgarî akım : 51.0 " (26. 8.1966)

SEVİYE ÖLÇEĞİ : Eşel.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 3 ayrı anahtar eğrisi kullanılmıştır. 16.10.1967 ile 18.10.1967, 27.4.1968 ile 30.4.1968, 2.7.1968 ile 12.7.1968 günleri arasında şift tatbik edilmiştir.

6. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
90	65.0	250	489.
100	84.0	300	660.
120	125.	350	850.
150	197.	400	1050.
200	331.	450	1275.

Akımlar, 1 Ekim 1967'den 30 Eylül 1968'e kadar ve saniyede metre - küp olarak

Gün	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	113.	88.7	176.	184.	124.	234.	355.	459.	440.	165.	82.1	172.
2	113.	79.9	178.	178.	141.	240.	344.	463.	405.	160.	100.	125.
3	109.	115.	165.	178.	146.	229.	361.	441.	386.	141.	115.	121.
4	99.8	130.	140.	178.	131.	229.	370.	420.	383.	182.	127.	141.
5	92.4	140.	148.	201.	124.	236.	384.	406.	386.	162.	107.	172.
6	96.1	150.	154.	260.	110.	243.	387.	411.	392.	165.	100.	170.
7	111.	126.	187.	260.	110.	248.	381.	405.	366.	192.	165.	162.
8	115.	122.	182.	255.	135.	253.	387.	402.	392.	172.	148.	162.
9	124.	124.	173.	251.	133.	260.	387.	393.	386.	160.	158.	170.
10	142.	126.	176.	243.	127.	272.	393.	375.	364.	148.	158.	155.
11	130.	117.	171.	243.	124.	314.	420.	378.	337.	146.	158.	155.
12	120.	111.	154.	243.	118.	364.	438.	378.	320.	141.	143.	158.
13	113.	109.	140.	260.	120.	610.	423.	370.	331.	170.	132.	175.
14	109.	109.	138.	251.	127.	940.	408.	358.	314.	170.	127.	172.
15	105.	103.	146.	231.	146.	629.	408.	344.	309.	139.	141.	165.
16	115.	90.5	144.	200.	173.	490.	393.	347.	300.	121.	170.	146.
17	136.	97.9	156.	196.	182.	438.	390.	370.	284.	90.0	158.	132.
18	134.	103.	159.	187.	212.	405.	414.	367.	226.	90.0	167.	139.
19	146.	126.	156.	175.	265.	396.	417.	361.	210.	92.0	162.	139.
20	148.	128.	138.	157.	370.	387.	399.	411.	233.	106.	153.	153.
21	136.	119.	154.	159.	364.	384.	405.	402.	239.	115.	137.	162.
22	132.	113.	161.	159.	330.	364.	447.	375.	239.	132.	117.	165.
23	173.	120.	171.	155.	298.	355.	481.	347.	231.	132.	170.	150.
24	167.	173.	176.	159.	253.	347.	500.	341.	190.	134.	175.	139.
25	119.	182.	163.	161.	210.	347.	528.	327.	162.	130.	160.	110.
26	120.	154.	144.	157.	203.	352.	547.	306.	146.	134.	123.	132.
27	126.	148.	130.	148.	198.	370.	506.	306.	200.	141.	119.	202.
28	126.	134.	138.	177.	203.	358.	497.	317.	226.	117.	100.	180.
29	128.	142.	159.	180.	224.	350.	487.	327.	223.	119.	120.	158.
30	119.	154.	210.	168.	---	347.	478.	370.	165.	100.	155.	127.
31	105.	---	191.	146.	---	358.	---	414.	---	84.0	160.	---
Toplam	3320.3	3735.0	4978.	6100.	5401.	11357.	12735.	11693.	5805.	4270.0	4567.1	4603.
Ortalama	123.2	124.5	160.6	196.8	186.2	366.4	424.5	377.2	293.5	137.1	147.1	153.6
Lt/Sn/Km ²	2.03	2.06	2.65	3.25	3.07	6.05	7.01	6.23	4.95	2.27	2.43	2.54
Akım, mm.	5.45	5.33	7.10	8.70	7.71	16.2	18.2	16.7	12.6	6.09	6.52	6.56
10 ⁶ m ³ akım	330.	323.	430.	527.	467.	981.	1100.	1010.	761.	369.	395.	398.

Su yılı (1968) Yıllık Toplam Akım : 7091. Milyon m³; 117. mm; 3.70 Lt/Sn/Km².

(X) Akım ölçüşünün yapıldığı günleri gösterir.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHRİ - AVŞAR KÖP.

MEVKİİ

Çorum'un Kargı ilçesine bağlı Hacıhamza Bucagından Tosya'ya giden yolun 2. Km. sindedir.

YAĞIŞ ALANI

60559.6 Km²

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ

28.Ekim.1965 - 30.Eylül.1967

ORTALAMA AKIMLAR

Rasat süresinde 161.290 m³/sn. (1 yıllık) 1967 su yılında 161.290 m³/sn.

AZAMI VE ASGARİ AKIMLAR

1967 Su yılında azami akım : 577. m³/sn. (14.5.1967)
1967 Su yılında asgarî akım : 61.0 " (3.8.1967)
Rasat süresinde azami akım : 890. " (27.1.1966)
Rasat süresinde asgarî akım : 51.0 " (26.8.1966)

SEVİYE ÖLÇECİ

Eşel.

DÜŞÜNCELER

Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 1.10.1966 ile 2.10.1966, 17.3.1967 ile 21.3.1967, 7.4.1967 ile 21.4.1967, 17.5.1967 ile 23.5.1967, 9.8.1967 ile 15.8.1967 günleri arasında çift tatbik edilmiştir.

4. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
90	56.0	160	191.
100	72.8	180	239.
110	90.5	200	288.
120	109.	250	437.
140	148.	300	610.

Akımlar, 1 Ekim 1966'dan 30 Eylül 1967'ye kadar ve saniyede metre - küp olarak

	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1	89.4	92.7	112.	124.	118.	124.	208.	336.	138.	134.	76.3	92.4
2	101.	79.5	126.	122.	120.	114.	235.	330.	136.	124.	74.6	90.5
3	124.	91.0	137.	116.	130.	158.	298.	318.	126.	119.	66.1	88.7
4	142.	92.9	142.	114.	135.	261.	375.	292.	150.	113.	79.9	96.1
5	137.	94.8	130.	122.	139.	354.	427.	286.	152.	109.	81.7	113.
6	110.	98.6	126.	128.	144.	292.	424.	289.	161.	111.	78.1	96.1
7	106.	96.7	126.	137.	137.	249.	437.	312.	148.	115.	78.1	90.5
8	124.	101.	124.	158.	120.	211.	407.	303.	152.	120.	81.7	90.5
9	137.	104.	120.	214.	132.	216.	378.	318.	152.	120.	79.9	97.9
10	146.	96.7	122.	174.	144.	235.	357.	348.	142.	120.	76.3	94.2
11	139.	114.	126.	167.	174.	247.	333.	369.	128.	107.	72.8	88.7
12	116.	130.	126.	167.	176.	205.	327.	421.	120.	97.9	71.1	88.7
13	106.	137.	122.	167.	171.	203.	309.	510.	120.	99.8	76.3	81.7
14	126.	128.	102.	158.	162.	203.	295.	562.	124.	107.	74.6	67.8
15	130.	114.	94.8	126.	160	203.	283.	534.	130.	109.	76.3	81.7
16	116.	98.6	116.	108.	158.	283.	306.	506.	126.	120.	76.3	96.1
17	110.	98.6	126.	101.	165.	348.	295.	421.	124.	122.	78.1	94.2
18	112.	118.	126.	106.	153.	357.	277.	378.	128.	97.9	87.0	92.4
19	112.	135.	124.	146.	126.	318.	295.	363.	120.	96.1	81.7	87.0
20	110.	126.	118.	162.	108.	318.	309.	354.	120.	92.4	78.1	78.1
21	108.	120.	112.	174.	96.7	292.	298.	351.	120.	109.	76.3	90.5
22	101.	116.	110.	155.	81.1	272.	295.	329.	140.	138.	78.1	92.4
23	98.6	106.	132.	128.	79.5	181.	312.	288.	159.	115.	78.1	94.2
24	94.8	126.	135.	112.	101.	181.	327.	271.	144.	105.	78.1	88.7
25	92.9	122.	126.	102.	120.	200.	348.	273.	156.	99.8	78.1	88.7
27	74.5	118.	135.	108.	165.	233.	318.	263.	146.	87.0	78.1	88.7
28	76.2	120.	139.	108.	178.	235.	318.	253.	144.	90.5	78.1	81.7
29	96.7	120.	144.	110.	162.	195.	363.	222.	140.	97.9	85.2	72.8
30	98.6	120.	137.	128.	144.	208.	375.	217.	138.	102.	96.1	88.7
31	101.	110.	132.	144.	144.	219.	360.	163.	136.	96.1	94.2	96.1
31	101.	128.	142.	142.	208.	208.	132.	132.	136.	87.0	90.5	90.5
Toplam	3436.7	3325.1	3875.8	4228.	3855.3	7323.	9889.	10312.	4120.	3361.4	2455.9	2688.8
Ortalama	110.9	110.8	125.0	136.4	137.7	236.2	329.6	332.6	137.3	108.4	79.22	89.63
Lt/Sn/Km ²	1.83	1.83	2.06	2.25	2.27	3.90	5.44	5.49	2.27	1.79	1.31	1.48
Akım, mm.	4.90	4.74	5.53	6.03	5.50	10.4	14.1	14.7	5.88	4.80	3.50	3.84
10 ³ m ³ akım	297.	287.	335.	365.	333.	633.	854.	891.	356.	290.	212.	232.

Su yılı (1967) Yıllık Toplam Akım : 5086. Milyon m³ ; 84.0 mm ; 2.66 Lt/Sn/Km²

(X) Akım ölçüsünün yapıldığı günleri gösterir.

15 - KIZILIRMAK HAVZASI
1536 - KIZILIRMAK NEHİRİ - AVŞAR KÖP.

MEVKİİ : Çorum'un Kargı ilçesine bağlı Hacıhamza Bucağından Tosya'ya giden yolun 2.km. sındır.

YAĞIŞ ALANI : 60559.6 km².

TAKRİBİ RAKIMI : 310 m.

RASAT SÜRESİ : 28.Ekim.1965 - 30.Eylül.1966

ORTALAMA AKIMLAR : Rasat süresinde

AZAMI VE ASGARI AKIMLAR 1966 Su yılında azami akım : 890. m³/sn. (27. 1.1966)
1966 Su yılında asgari akım : 51.0 " (26. 8.1966)
Rasat süresinde azami akım : 890. " (27. 1.1966)
Rasat süresinde asgari akım : 51.0 " (26. 8.1966)

SEVİYE ÖLÇEĞİ : Eşel.

DÜŞÜNCELER : Akım durumu iyi. Yıl içinde 2 ayrı anahtar eğrisi kullanılmıştır. 22.1.1966 ile 20.4.1966, 19.6.1966 ile 21.6.1966, 14.7.1966 ile 22.7.1966, 7.9.1966 ile 22.9.1966 günleri arasında şift tatbik edilmiştir.

2. Anahtar eğrisi (Seviyeler Cm. - Akımlar m³/Sn. dir.)

Seviye	Akım	Seviye	Akım
90	52.0	160	162.
100	62.0	200	252.
110	74.0	250	392.
120	89.0	300	570.
140	123.	370	890.

Akımlar, 1 Ekim 1965'den 30 Eylül 1966'ya kadar ve saniyede metre - küp olarak

Gün	Ekim	Kasım	Aralık	Ocak	Şubat	Mart	Nisan	Mayıs	Haziran	Temmuz	Ağustos	Eylül
1		116.	177.	91.2	124.	158.	218.	202.	71.6	94.1	62.0	86.0
2		85.8	175.	94.8	288.	156.	230.	197.	66.8	95.8	62.0	78.5
3		74.7	169.	106.	265.	146.	225.	174.	65.6	90.7	62.0	71.6
4		78.8	177.	98.0	235.	154.	182.	140.	71.6	78.5	61.0	68.0
5		87.2	179.	131.	211.	148.	172.	134.	68.0	84.5	60.0	68.0
6		112.	168.	162.	193.	152.	174.	162.	69.2	95.8	63.2	65.6
7		117.	166.	158.	180.	148.	195.	172.	71.6	90.7	65.6	65.6
8		120.	151.	147.	172.	144.	206.	162.	65.6	99.2	65.6	64.4
9		133.	127.	145.	170.	142.	220.	125.	63.2	106.	63.2	65.6
10		120.	133.	133.	162.	134.	216.	111.	71.6	95.8	61.0	80.0
11		83.0	153.	117.	162.	144.	211.	97.5	78.5	95.8	86.0	86.0
12		129.	142.	106.	162.	176.	245.	97.5	101.	89.0	184.	94.1
13		149.	140.	101.	168.	202.	270.	125.	90.7	74.0	113.	97.5
14		160.	153.	104.	170.	216.	222.	136.	78.5	69.2	x 106.	95.8
15		138.	175.	112.	168.	191.	225.	121.	74.0	65.6	80.0	83.0
16		114.	124.	124.	166.	172.	x 230.	120.	64.4	66.8	71.6	92.4
17		91.6	116.	147.	166.	174.	225.	106.	66.8	64.4	61.0	95.8
18		117.	124.	162.	178.	191.	220.	95.8	69.2	65.6	59.0	104.
19		131.	126.	181.	191.	191.	242.	81.5	77.0	74.0	56.0	x 106.
20		129.	109.	314.	186.	178.	240.	131.	74.0	63.2	57.0	x 103.
21		147.	x 98.0	501.	184.	170.	209.	174.	x 75.5	x 69.2	60.0	97.5
22		144.	88.6	596.	186.	162.	216.	144.	72.8	x 90.7	60.0	80.0
23		119.	74.7	641.	184.	144.	211.	160.	66.8	97.5	53.0	87.0
24		101.	93.2	618.	189.	146.	180.	158.	69.2	92.4	53.0	101.
25		103.	129.	679.	186.	158.	216.	150.	70.4	78.5	54.0	108.
26		147.	144.	828.	178.	168.	189.	125.	77.0	83.0	51.0	118.
27		153.	195.	864.	x 170.	176.	162.	134.	73.5	75.5	52.0	115.
28	x 63.0	142.	179.	697.	164.	213.	154.	121.	89.0	69.2	56.0	92.4
29		138.	175.	520.	222.	189.	189.	99.2	109.	62.0	69.2	87.0
30		153.	177.	442.	184.	195.	195.	80.0	83.0	59.0	95.8	89.0
31		135.	111.	380.	182.	182.	182.	72.8	60.0	60.0	111.	
Toplam		3694.1	4391.5	9502.0	5358.	5242.	6289.	4108.3	2250.1	2495.7	2214.2	2645.8
Ortalama		123.1	141.7	306.5	191.4	169.1	209.6	132.5	75.00	80.51	71.43	88.19
Lt/Sn/Km ²		2.03	2.34	5.06	3.16	2.79	3.46	2.19	1.24	1.33	1.18	1.46
Akım, mm.		5.27	6.27	13.6	7.64	7.48	8.97	5.86	3.21	3.56	3.16	3.77
10 ⁶ m ³ akım		319.	379.	821.	463.	453.	543.	355.	194.	216.	191.	229.
Su yılı	()	Yıllık	Toplam	Akım	Milyon	m ³	mm	Lt/Sn/Km ²				

(X) Akım ölçüsünün yapıldığı günleri gösterir.

ANNEX 4

WATER QUALITY DATA

LIST OF TABLES IN ANNEX 4

Table A4.1.	Water Quality Data for Inozu Station No: 1533 (EIE)
Table A4.2.	Water Quality Data for Yahsihan Station No: 1503 (EIE)
Table A4.3.	Water Quality Data for Yahsihan Sampling Station (DSI)
Table A4.4.	Water Quality Data for Inozu Sampling Station (DSI)
Table A4.5.	Comparison of Water Quality Data of Yahsihan and Inozu Sampling Stations
Table A4.6.	Water Quality Data for Station 1
Table A4.7.	Water Quality Data for Station 2
Table A4.8.	Water Quality Data for Station 3
Table A4.9.	Water Quality Data for Station 4
Table A4.10.	Water Quality Measurements at Sampling Stations on Kizilirmak

Water Quality Data Collected by DSI and EIE

Table A4.1. Water Quality Data for Inozu Station No: 1533 (EIE)

Date	Flow (m3/s)	Temp. (°C)	Sed. Conc. (ppm)	pH	EC (µmhos/cm)	Cations (Me/Lt)			Anions (Me/Lt)				Boron (ppm)
						Na ⁺	K ⁺	Ca ²⁺ + Mg ²⁺	CO3 ²⁻	HCO3 ⁻	Cl ⁻	SO4 ²⁻	
Aug-83	98.526		17641	7.5	1920	6.70	0.15	13.00	0.00	4.60	5.00	10.25	0.25
Sep-83	142.185		1460	8.1	1500	7.25	0.13	8.00	0.20	3.00	5.90	6.28	0.30
Dec-83	187.147	3	-	7.7	1340	6.00	0.09	7.60	0.00	4.55	4.60	4.54	0.15
Feb-84	244.706	9	1625	7.2	1745	8.75	0.12	9.40	0.00	3.75	6.00	8.52	0.20
Mar-84	244.7	9	-	7.6	1386	6.35	0.11	8.10	0.00	3.90	4.90	5.76	0.20
Apr-84	373.813	11	-	7.5	1220	5.60	0.10	7.10	0.00	3.65	4.10	5.05	0.10
May-84	270	12	2279	7.3	1006	4.30	0.09	6.50	0.00	3.80	3.40	3.69	0.20
Jun-84	167.385	18	1491	7.6	1321	6.05	0.10	7.60	0.00	3.60	5.60	4.55	0.10
Jul-84	104.61	22	512	7.6	1321	6.05	0.10	7.70	0.00	3.55	5.70	4.60	0.10
Aug-84	162.576	20	418	7.9	1200	5.65	0.09	6.40	0.00	2.50	4.30	5.34	0.85
Sep-84	165.055	20	534	7.9	1503	7.20	0.11	7.90	0.00	2.60	5.90	6.71	0.75
Oct-84	126.36	13	207	7.9	1500	7.40	0.10	7.50	0.00	2.75	5.80	6.45	0.75
Nov-84	139.197	7	402	8	1600	7.90	0.10	8.80	0.20	3.40	6.55	6.65	0.35
Dec-84	131.943	8	590	8	1600	7.90	0.10	8.50	0.10	3.50	6.45	6.45	0.35
Jan-85	122.071	8	573	8	1863	7.90	0.10	9.40	0.20	4.40	7.25	7.55	0.70
Feb-85	157.92	8	1358	8.3	1348	6.95	0.10	7.70	0.60	3.95	4.90	5.30	0.15
Mar-85	170.558	4	1045	8	1693	9.20	0.11	8.20	0.10	3.70	6.60	7.11	0.00
Apr-85	272.029	12	2077	8.1	980	4.40	0.08	5.80	0.30	3.00	3.12	2.86	0.55
May-85	148.298	17	2654	7.9	1471	8.05	0.10	7.80	0.00	3.60	5.20	7.15	0.60
Jun-85	236.64	19	5632	8.1	1632	9.00	0.11	8.40	0.30	3.20	6.00	8.01	0.30
Jul-85	97.437	24	318	7.5	1539	7.78	0.12	8.40	0.00	3.00	6.00	7.30	0.50
Aug-85	121.139	20	645	7.8	1398	6.52	0.11	8.00	0.00	2.65	5.20	6.78	0.15
Sep-85	243.143	18	2231	7.5	1392	6.30	0.11	7.50	0.00	2.60	5.10	6.21	0.50
Oct-85	186.773	14	546	7.5	1380	6.30	0.10	7.40	0.00	2.80	5.00	6.00	0.20
Nov-85	138.063	12	650	8	1366	7.17	0.10	7.70	0.10	2.95	5.05	6.87	0.10
Dec-85	169.6	5	358	7.2	1502	7.56	0.10	9.00	0.00	4.10	5.75	6.81	0.00
Jan-86	255.055	4	1557	8.1	1434	8.00	0.10	7.40	0.20	3.15	5.15	7.00	0.10
Feb-86	166.65	6	762	7.6	1437	7.44	0.08	8.00	0.00	4.25	5.45	5.82	0.30
Mar-86	203.021	8	841	8.3	454	1.08	0.05	3.90	0.50	2.80	0.44	1.29	0.15
Apr-86	147.491	16	675	8.1	1265	6.52	0.10	6.70	0.20	1.70	5.25	6.17	0.20
May-86	170.52	10	1514	8.1	1288	5.73	0.08	7.10	0.20	8.40	4.25	0.06	0.10
Jun-86	160.475	22	1930	7.9	1432	6.26	0.10	8.20	0.00	3.20	5.00	6.36	0.10
Jul-86	130.934	19	777	8	1646	7.52	0.10	9.30	0.10	3.05	6.25	7.52	0.50
Aug-86	90.047	28	196	7.9	1503	6.52	0.10	8.50	0.00	2.90	5.70	6.52	0.30
Sep-86	128.406	17	11944	8.1	1612	7.04	0.13	9.10	0.20	2.45	6.15	7.47	0.60
Oct-86	89.788	13	430	7.9	1534	7.52	0.11	8.80	0.00	3.20	6.30	6.33	0.30
Nov-86	104.442	8	685	8.1	1534	6.79	0.10	8.80	0.30	2.85	6.00	6.54	0.30
Dec-86	83.361	8	157	8.1	1600	7.79	0.10	9.40	0.30	3.45	6.25	2.29	0.30
Average													
83-86	157.820	12	1884	7.7	1483	6.91	0.05	8.09	0.06	3.25	5.49	6.18	0.34
Summer	141.249	21.33	1324.33	7.81	1443.56	6.82	0.10	8.06	0.04	3.07	5.53	6.33	0.32
Fall	146.803	13.56	1958.78	7.88	1491.22	7.07	0.11	8.17	0.09	2.84	5.76	6.58	0.43
Winter	152.280	6.25	729.50	7.88	1547.42	7.59	0.10	8.60	0.18	3.75	5.85	5.43	0.26
Spring	222.270	11.00	1231.67	7.88	1195.89	5.69	0.09	6.80	0.14	3.84	4.14	4.35	0.23

Table A4.2. Water Quality Data for Yahsihan Station No: 1503 (EIE)

Date	Flow (m3/s)	Temp. (°C)	Sed. Conc. (ppm)	pH	EC (µmhos/cm)	Cations (Me/Lt)			Anions (Me/Lt)				Boron (ppm)
						Na ⁺	K ⁺	Ca ²⁺ + Mg ²⁺	CO ₃ ²⁻	HCO ₃ ⁻	Cl ⁻	SO ₄ ²⁻	
Sep-83	89.338	16	-	7.6	1390	6.50	0.11	7.90	0.00	2.35	5.00	7.16	0.30
Oct-83	98.632	13	-	7.2	1500	6.50	0.11	8.50	0.00	2.90	5.00	7.21	0.40
Nov-83	38.982	8	-	7.4	1500	6.50	0.11	8.50	0.00	2.80	4.90	7.41	0.30
Dec-83	19.918	5	-	7.8	1500	6.50	0.11	8.40	0.00	2.65	4.80	7.56	0.55
Jan-84	14.561	6	-	7.3	1470	6.20	0.12	8.80	0.00	3.60	4.70	6.82	0.10
Feb-84	47.528	5	-	7.5	1290	5.40	0.11	7.90	0.00	3.00	4.50	5.91	0.00
Apr-84	56.158		-	8.0	1460	6.20	0.12	9.00	0.20	2.75	5.00	7.37	0.25
May-84	64.137		-	7.7	1520	6.35	0.13	9.50	0.00	3.35	5.06	7.57	0.25
Jun-84	87.265	15	-	8.1	1287	5.65	0.12	8.00	0.20	2.35	4.90	6.32	0.10
Jul-84	75.687	23	-	7.8	1650	7.00	0.12	9.90	0.00	2.75	2.36	11.91	0.40
Aug-84	25.082	18	-	7.3	1258	5.40	0.10	8.10	0.00	2.75	4.80	6.05	0.30
Sep-84	91.220	17	-	7.9	1258	6.05	0.11	7.80	0.00	2.35	4.70	6.64	0.25
Oct-84	48.331	12	-	8.1	1200	6.00	0.11	6.00	0.30	2.40	4.50	4.91	0.75
Nov-84	55.059	10	-	8.0	1501	6.50	0.10	8.20	0.10	1.80	5.30	7.60	0.50
Dec-84	90.890	5	-	8.0	1258	6.00	0.14	7.10	0.10	1.65	4.70	6.79	0.00
Jan-85	37.071	2	-	8.1	1360	6.50	0.11	8.30	0.30	2.30	4.80	8.53	0.45
Feb-85	11.631	1	-	7.7	1501	6.50	0.14	8.60	0.00	3.35	5.10	6.79	0.50
Mar-85	48.975	7	-	8.1	1473	6.50	0.10	8.70	0.30	2.50	4.80	7.70	0.60
Apr-85	52.312	13	-	8.1	1625	7.65	0.12	9.70	0.30	2.45	5.50	9.22	0.40
May-85	91.225	16	-	8.0	1405	5.70	0.13	8.80	0.20	2.00	4.90	7.53	0.15
Jun-85	113.037	17	-	8.1	1400	6.00	0.11	8.10	0.20	2.30	5.00	6.71	0.40
Jul-85	113.656	18	-	8.0	1307	6.30	0.11	8.20	0.10	2.25	4.80	7.46	0.35
Aug-85	148.735	21	-	7.9	1307	6.00	0.10	8.10	0.00	2.40	4.80	7.00	0.50
Sep-85	212.250	17	-	8.0	1297	6.30	0.10	7.60	0.20	2.15	4.64	7.01	0.15
Oct-85	104.914	13	-	7.6	1258	5.43	0.10	7.70	0.00	2.20	4.70	6.33	0.00
Nov-85	23.287	11	-	7.6	1398	5.78	0.11	8.00	0.00	2.50	4.40	6.99	0.15
Dec-85	81.283	5	-	8.0	1497	6.52	0.12	9.00	0.10	2.40	5.30	7.84	0.00
Jan-86	92.121	12	-	8.0	1502	7.56	0.12	8.30	0.20	2.35	5.40	8.03	0.75
Feb-86	10.478		-	8.3	1830	9.06	0.14	11.00	0.70	3.30	5.50	10.70	0.25
Mar-86	165.733	7	-	8.0	1371	6.30	0.10	7.80	0.10	2.15	5.00	6.95	0.40
May-86	73.078	13	-	8.2	1495	6.91	0.11	8.80	0.50	2.00	5.65	7.67	0.15
Jun-86	19.600		-	7.9	1500	6.52	0.11	9.10	0.00	2.70	5.30	7.73	0.05
Jul-86	76.868	21	-	8.2	1437	6.52	0.11	8.60	0.30	2.00	5.15	7.78	0.35
Aug-86	158.021	20	-	7.5	1339	6.04	0.11	8.20	0.00	2.45	5.00	6.90	0.35
Sep-86	124.421	20	-	8.1	1258	5.78	0.10	6.70	0.20	0.75	5.00	6.63	0.00
Oct-86	136.720	15	-	7.7	1392	5.91	0.10	8.10	0.00	2.40	4.90	6.81	0.40
Nov-86	95.415	8	-	8.0	1466	6.50	0.11	8.40	0.10	2.10	5.00	7.81	0.60
Dec-86	62.373	4	-	7.8	1172	3.49	0.55	9.70	0.00	8.65	1.75	3.34	0.70
Average													
83-86	77.789	12	-	7.9	1411	6.28	0.12	8.40	0.12	2.61	4.81	7.28	0.32
Summer	90.883	17.00	-	7.87	1387.22	6.16	0.11	8.48	0.09	2.44	4.68	7.54	0.31
Fall	93.214	13.33	-	7.77	1368.17	6.15	0.11	7.78	0.08	2.23	4.84	6.88	0.32
Winter	49.383	4.42	-	7.84	1393.67	5.89	0.23	8.88	0.12	4.21	4.17	6.58	0.39
Spring	61.291	6.22	-	6.23	1149.89	5.07	0.09	6.92	0.18	1.91	3.99	6.00	0.24

Table A4.3. Water Quality Data for Yahsihan Sampling Station (DSI)

Parameter	1994		
	April	July	AVG
DO (mg/l)	10.8	7.9	9.4
BOD (mg/l)	2.4	1.2	1.8
Turbidity (NTU)	4	1	2.5
NH3-N (mg/l)	0.06	0.06	0.06
NO2-N (mg/l)	0.009	0.012	0.011
NO3-N (mg/l)	1	0.6	0.8
O-PO4 (mg/l)	0.06	0.07	0.07
Hardness (mg/l as CaCO ₃)	510	450	480
Parameter	1995		
DO (mg/l)	8.0	6.0	7.0
BOD (mg/l)	2.7	2.8	2.8
Turbidity (NTU)	1	12	6.5
NH3-N (mg/l)	0.1	0.15	0.13
NO2-N (mg/l)	0.018	0.016	0.017
NO3-N (mg/l)	0.8	0	0.4
O-PO4 (mg/l)	0.04	0.07	0.06
Hardness (mg/l as CaCO ₃)	462	445	454

Table A4.4. Water Quality Data for Inozu Sampling Station (DSI)

Parameter	1994						
	January	March	May	July	September	November	Avg.
DO (mg/l)	14.2	12.0	-	8.1	8.8	10.0	10.6
BOD (mg/l)	-	1.0	-	-	-	-	1.0
Turbidity (NTU)	-	-	-	-	-	-	-
NH3-N (mg/l)	0.20	0.15	-	0.30	0.15	0.05	0.17
NO2-N (mg/l)	0.045	0.081	-	0.047	0.070	0.012	0.123
NO3-N (mg/l)	4.00	1.50	-	1.40	1.60	1.40	1.98
O-PO4 (mg/l)	0.00	0.39	-	0.02	0.02	-	0.11
Hardness (mg/l as CaCO ₃)	405	380	-	397	387	397	394
Parameter	1995						
DO (mg/l)	12.0	12.4	10.4	10.0	9.1	11.2	10.9
BOD (mg/l)	-	1.5	1.2	0.3	1.4	2.4	1.4
Turbidity (NTU)	-	-	-	-	-	-	-
NH3-N (mg/l)	0.20	0.05	0.05	0.10	0.50	0.50	0.23
NO2-N (mg/l)	0.033	0.01	0.013	0.062	0.000	0.019	0.071
NO3-N (mg/l)	1.45	1.05	1.40	1.45	1.50	1.65	1.42
O-PO4 (mg/l)	0.07	0.02	0.00	0.00	0.04	0.15	0.05
Hardness (mg/l as CaCO ₃)	375	417	395	425	385	387	398

Table A4.5. Comparison of Water Quality Data of Yahsihan and Inozu Sampling Stations

Parameter	Average		
	Yahsihan	Inozu	General
DO (mg/l)	8.2	10.7	9.45
BOD (mg/l)	2.3	1.3	1.8
Turbidity (NTU)	5	-	5
NH ₃ -N (mg/l)	0.09	0.2	0.145
NO ₂ -N (mg/l)	0.014	0.095	0.0545
NO ₃ -N (mg/l)	0.6	1.67	1.135
O-PO ₄ (mg/l)	0.06	0.07	0.065
Hardness (mg/l as CaCO ₃)	467	396	431.5

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Table A4.6. Water Quality Data for Station 1

Parameter	May-92	Jun-92	Aug-92	Sep-92	Oct-92
Temperature(°C)	14.0	16.0	16.5	15.0	15.0
pH	7.7	7.6	7.8	7.8	7.5
Na (mg/l)	120	130	127	140	125
Mg (mg/l)	5.90	6.05	6.00	6.09	6.02
Cl (mg/l)	151.9	170.0	157.1	140.0	165.9
SO ₄ (mg/l)	50.0	50.0	44.0	52.0	55.0
Boron (mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1
DO (mg/l)	16.0	14.0	13.0	19.0	17.0
BOD ₅ (mg/l)	9.7	11.0	9.6	12.0	10.0
NH ₄ -N (mg/l)	2.26	2.28	2.27	2.28	2.27
NO ₃ -N (mg/l)	0.80	0.90	0.89	0.91	0.85
TKN (mg/l)	2.68	2.65	2.66	2.69	2.68
T-PO ₄ -P (mg/l)	<0.02	<0.02	<0.02	<0.02	<0.02
TC (N/100 ml)	2000	2500	2000	2500	2400
FC (N/100 ml)	690	740	710	770	760
COD (mg/l)	50	51	54	56	61
TDS (mg/l)	739	850	788	900	893
SS (mg/l)	6.0	8.0	7.0	8.0	8.0
Cd (µg/l)	<0.5	<0.5	<0.5	<0.5	<0.5
Pb (µg/l)	<15	<15	<15	<15	<15
Cu (µg/l)	<10	<10	<10	<10	<10
Total Cr (µg/l)	<10	<10	<10	<10	<10
Zn (µg/l)	<100	<100	<100	<100	<100
Ni (µg/l)	<50	<50	<50	<50	<50
Fe (µg/l)	<100	<100	<100	<100	<100
Mn (µg/l)	<100	<100	<100	<100	<100
S (µg/l)	<1	<1	<1	<1	<1

Table A4.7. Water Quality Data for Station 2

Parameter	May-92	Jun-92	Aug-92	Sep-92	Oct-92
Temperature(°C)	15	17	17	16	16
pH	8.4	8.1	8.0	8.3	8.7
Na (mg/l)	6.2	6.0	1.6	6.6	3.5
Mg (mg/l)	24.3	17.0	31.6	36.5	13.4
Cl (mg/l)	3.9	3.5	6.4	7.4	2.1
SO ₄ (mg/l)	77.7	33.6	99.8	78.2	43.7
Boron (mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1
DO (mg/l)	9.0	11.0	13.0	10.4	9.5
BOD ₅ (mg/l)	9.0	7.0	8.8	10.5	8.9
NH ₄ -N (mg/l)	0.01	0.06	0.18	0.10	0.09
NO ₃ -N (mg/l)	0.01	0.01	1.00	0.04	0.06
TKN (mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1
T-PO ₄ -P (mg/l)	<0.02	<0.02	<0.02	<0.02	<0.02
TC (N/100 ml)	2200	2200	2200	2200	2200
FC (N/100 ml)	1185	1215	1180	1230	1230
COD (mg/l)	40	38	44	51	57
TDS (mg/l)	370	400	396	388	365
SS (mg/l)	35.8	39.4	10.0	63.0	41.0
Cd (µg/l)	<0.5	<0.5	<0.5	<0.5	<0.5
Pb (µg/l)	<15	<15	<15	<15	<15
Cu (µg/l)	11	12	11	11	12
Total Cr (µg/l)	<10	<10	<10	<10	<10
Zn (µg/l)	<100	<100	<100	<100	<100
Ni (µg/l)	<50	<50	<50	<50	<50
Fe (µg/l)	<100	<100	<100	<100	<100
Mn (µg/l)	<100	<100	<100	<100	<100
S (µg/l)	<1	<1	<1	<1	<1

Table A4.8. Water Quality Data for Station 3

Parameter	May-92	Jun-92	Aug-92	Sep-92	Oct-92
Temperature(°C)	16	15	18	16	17
pH	7.0	7.3	7.4	7.5	7.4
Na (mg/l)	130	145	139	147	135
Mg (mg/l)	5.95	6.20	6.10	6.45	6.30
Cl (mg/l)	184.6	170.9	169.8	189.4	184.9
SO4 (mg/l)	110.0	123.0	115.0	130.9	108.0
Boron (mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1
DO (mg/l)	10	12	13	9	9
BOD5 (mg/l)	4.0	4.6	4.9	5.0	4.0
NH4-N (mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1
NO3-N (mg/l)	0.94	0.89	0.74	1.00	0.92
TKN (mg/l)	1.10	0.70	1.09	0.90	0.89
T-PO4-P (mg/l)	0.045	0.069	0.055	0.079	0.060
TC (N/100 ml)	12000	12000	12000	12000	12000
FC (N/100 ml)	1250	1270	1300	1290	1200
COD (mg/l)	44	44	44	44	44
TDS (mg/l)	90	79	87	104	100
SS (mg/l)	6.0	9.0	11.0	13.0	4.0
Cd (µg/l)	<0.5	<0.5	<0.5	<0.5	<0.5
Pb (µg/l)	<15	<15	<15	<15	<15
Cu (µg/l)	<10	<10	<10	<10	<10
Total Cr (µg/l)	<10	<10	<10	<10	<10
Zn (µg/l)	<100	<100	<100	<100	<100
Ni (µg/l)	<50	<50	<50	<50	<50
Fe (µg/l)	<100	<100	<100	<100	<100
Mn (µg/l)	<100	<100	<100	<100	<100
S (µg/l)	<1	<1	<1	<1	<1

Table A4.9. Water Quality Data for Station 4

Parameter	May-92	Jun-92	Aug-92	Sep-92	Oct-92
Temperature(°C)	18	19	17	18	17
pH	7.3	7.1	7.7	7.2	7.2
Na (mg/l)	210	195	205	188	190
Mg (mg/l)	6.02	6.11	6.07	6.03	6.15
Cl (mg/l)	370.8	380.1	350.4	389.4	364.8
SO4 (mg/l)	109.0	120.8	101.0	124.9	110.0
Boron (mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1
DO (mg/l)	15.0	14.0	13.0	14.0	10.0
BOD5 (mg/l)	7.0	8.0	4.0	9.0	6.0
NH4-N (mg/l)	0.4	0.8	0.9	1.0	0.2
NO3-N (mg/l)	1.40	1.37	1.45	1.43	1.30
TKN (mg/l)	0.50	0.75	0.30	0.45	0.40
T-PO4-P (mg/l)	0.210	0.220	0.199	0.223	0.202
TC (N/100 ml)	8000	8000	8000	8000	8000
FC (N/100 ml)	19	20	32	14	17
COD (mg/l)	51	53	41	43	44
TDS (mg/l)	140	149	150	139	153
SS (mg/l)	9.0	11.0	11.2	13.4	10.0
Cd (µg/l)	<0.5	<0.5	<0.5	<0.5	<0.5
Pb (µg/l)	<15	<15	<15	<15	<15
Cu (µg/l)	12	12	12	12	12
Total Cr (µg/l)	<10	<10	<10	<10	<10
Zn (µg/l)	<100	<100	<100	<100	<100
Ni (µg/l)	<50	<50	<50	<50	<50
Fe (µg/l)	<100	<100	<100	<100	<100
Mn (µg/l)	<100	<100	<100	<100	<100
S (µg/l)	<1	<1	<1	<1	<1

Water Quality Studies Performed in the Project Area in 1997

Table A4.10. Water Quality Measurements at Sampling Stations on Kizilirmak

St. No.	Date	Water depth (cm)		Secchi depth (cm)	pH	DO (mg/L)		Salinity (ppt)		EC (µmhos/cm)		Air	Temperature (°C)	
		min.	max.			S*	B*	S*	B*	S*	B*		S*	B*
1	23.05.97	20	150	20	6.5	8.5	8.1	1.0	1.0	1800	1790	23.2	21.9	22.0
2	23.05.97	20	50	20	6.5	8.6	8.8	1.0	1.0	1650	1800	25.0	22.0	22.0
3	23.05.97	50	200	20	7.0	8.3	8.4	1.0	1.0	1800	1800	26.0	23.0	23.0
4	23.05.97	10	40	20	7.0	8.8	9.5	1.0	1.0	1800	1850	34.0	24.0	24.0
5	23.05.97	20	60	10	7.0	8.5	8.0	1.2	1.2	1900	1910	34.2	24.2	24.2
6	23.05.97	20	60	10	6.5	7.9	7.8	1.1	1.1	1950	1950	35.0	24.5	24.5
7	23.05.97	10	180	10	6.0	8.0	8.0	1.1	1.1	2000	2000	31.0	24.5	24.5
8	25.05.97	60	130	10	6.0	7.5	7.4	1.0	1.0	1700	1810	22.5	21.5	21.5
9	24.05.97	65	120	10	6.5	8.1	8.1	1.1	1.1	2100	2100	32.1	23.1	23.1
1	14.06.97	10	170	10	6.0	8.0	8.0	0.8	0.8	1350	1350	22.0	22.5	22.5
2	14.06.97	50	80	4	6.5	8.0	8.1	0.9	0.9	1480	1480	21.2	22.3	22.3
3	14.06.97	20	90	4	6.0	8.4	8.3	0.9	0.9	1400	1400	23.5	22.5	22.5
4	14.06.97	20	60	3	6.0	8.3	8.3	0.9	0.9	1400	1400	26.2	22.5	22.5
5	15.06.97	20	100	2	6.5	8.7	8.7	1.0	1.0	1520	1530	22.0	21.5	21.5
6	15.06.97	20	60	2	6.0	8.3	8.4	1.0	1.0	1550	1550	29.0	22.0	22.0
7	15.06.97	30	180	2	6.0	8.6	8.6	1.0	1.0	1600	1600	32.5	22.5	22.5
8	15.06.97	60	130	2	6.0	8.3	8.3	1.0	1.0	1560	1560	29.5	23.0	23.0
9	15.06.97	20	130	3	6.0	8.5	8.5	1.0	1.0	1520	1520	31.0	23.5	23.5
1	05.07.97	--	200-300	10	6.0	7.7	6.2	1.2	1.2	2025	2025	20.0	23.0	22.8
2	05.07.97	30	50	4	--	7.4	7.4	1.1	1.1	2000	2000	20.0	23.0	23.0
3	05.07.97	30	120	4	7.4	8.3	7.8	1.1	1.1	2000	2000	23.0	23.0	23.0
4	05.07.97	30	70	4	8.1	7.0	7.0	1.1	1.1	2050	2050	31.5	24.5	24.5
5	05.07.97	--	130-140	7	8.0	9.2	9.2	1.1	1.1	2100	2100	32.0	24.5	24.5
6	05.07.97	30	150	6	8.0	8.0	7.4	1.1	1.1	2100	2100	28.0	25.5	25.5
7	05.07.97	50	110	6	8.1	7.3	7.3	1.1	1.1	2150	2150	30.0	25.5	25.5
8	05.07.97	30	180	6	8.0	8.0	7.8	1.1	1.1	2150	2150	32.0	25.5	25.5
9	05.07.97	20	120	6	8.0	8.3	7.9	1.1	1.1	2150	2150	32.0	25.5	25.5

* S : Surface, B : Bottom

Table A4.10. (continued)

St. No.	Date	Water depth (cm)		Secchi depth (cm)	pH	DO (mg/L)		Salinity (ppt)		EC ($\mu\text{mhos/cm}$)		Temperature ($^{\circ}\text{C}$)		
		min.	max.			S*	B*	S*	B*	S*	B*	Air	S*	B*
1	30.07.97	60	300-400	13	8.08	8.5	8.5	1.1	1.0	1950	1950	25.0	24.0	23.9
2	30.07.97	20	50	15	7.98	8.2	8.2	1.8	1.8	1950	1950	21.0	23.5	23.5
3	30.07.97	--	--	18	8.12	8.2	8.2	1.1	1.1	1970	1970	19.2	23.3	23.3
4	29.07.97	--	--	13	8.15	8.0	8.0	1.0	1.0	2030	2030	24.0	25.3	25.3
5	29.07.97	30	100	13	7.95	8.5	8.7	1.0	1.0	2090	2090	28.5	25.5	25.5
6	29.07.97	20	70	13	7.72	8.8	8.8	1.1	1.1	2100	2100	32.0	26.0	26.0
7	29.07.97	30	100	15	7.92	9.2	8.8	1.0	1.0	2100	2050	32.0	26.0	26.0
8	29.07.97	30	100	20	7.95	8.9	8.7	1.1	1.0	2100	2100	29.7	26.0	26.0
9	29.07.97	20	150	23	8.30	8.6	9.0	1.0	1.1	2050	2080	38.5	26.0	26.0
1	28.08.97	100	300	8	8.02	7.0	7.0	1.0	1.0	1750	1750	23.0	22.2	22.2
2	28.08.97	20	100	10	7.85	7.0	7.0	1.0	1.0	1750	1750	23.5	22.2	22.2
3	28.08.97	--	--	10	8.06	8.0	8.0	0.9	0.9	1780	1780	25.5	22.5	22.5
4	28.08.97	--	--	10	8.04	8.2	8.2	1.0	1.0	1820	1820	28.0	23.2	23.2
5	27.08.97	20	100	10	7.98	8.0	8.0	1.0	1.0	1800	1800	26.0	23.6	23.6
6	27.08.97	20	100	10	8.30	8.3	8.3	1.0	1.0	1820	1820	29.0	23.8	23.8
7	27.08.97	--	--	10	8.06	8.4	8.4	0.9	1.0	1830	1840	28.1	23.5	23.1
8	27.08.97	--	--	10	8.05	9.0	8.6	0.9	0.9	1810	1810	33.0	23.7	23.2
9	27.08.97	--	300	10	8.02	10.2	10.2	0.9	0.9	1800	1800	32.0	22.8	22.8
1	20.09.97	50	200	6	7.92	9.4	10.7	1.0	0.9	1580	1580	22.3	19.0	18.9
2	20.09.97	20	100	12	7.92	8.7	8.7	1.0	1.0	1620	1620	22.0	20.2	20.2
3	20.09.97	40	150	10	7.94	8.8	8.8	1.0	1.0	1580	1580	22.0	19.5	19.5
4	20.09.97	30	120	10	7.86	10.2	10.2	1.0	1.0	1510	1510	22.0	20.1	20.1
5	20.09.97	30	100	10	7.97	10.9	10.9	0.9	0.9	1510	1510	22.0	21.0	21.0
6	20.09.97	30	150	10	7.96	8.9	8.9	0.9	0.9	1530	1530	25.1	20.5	20.5
7	20.09.97	20	150	8	7.79	8.9	8.9	0.9	0.9	1510	1510	23.5	21.0	21.0
8	21.09.97	90	120	4	7.83	7.7	7.4	0.9	0.9	1350	1350	20.0	20.5	20.5
9	21.09.97	90	120	6	7.86	8.4	8.4	0.9	0.9	1500	1500	20.0	20.5	20.5

* S : Surface, B : Bottom

ANNEX 5

DATA ON BIOLOGICAL ENVIRONMENT

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Table A5.1. Flora List of the Boyabat Project Area

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
EQUISETACEAE					
<i>Equisetum ramosissimum</i> Desf.	Horsetail			nt	0-1900
ASPLENIACEAE					
<i>Phyllitis scolopendrium</i> (L.) Newm.				nt	0-2100
ATHYRIACEAE					
<i>Athyrium filix-foemina</i> (L.) Roth				nt	100-1700
PINACEAE					
<i>Pinus brutia</i> Ten	Reddish pine	E.Medit		nt	0-1200
CUPRESSACEAE					
<i>Juniperus oxycedrus</i> L. subsp. <i>oxycedrus</i>	Juniper			nt	0-1300
<i>J. excelsa</i> Bieb.	Juniper			nt	300-2300
EPHEDRACEAE					
<i>Ephedra major</i> Host	Shrubby horsetail			nt	300-3000
RANUNCULACEAE					
<i>Helleborus orientalis</i> Lam.	Hellebore	Euxin		nt	0-2200
<i>Nigella segetalis</i> Bieb.	Love in a mist			nt	0-1600
<i>Delphinium venulosum</i> Boiss	Larkspur	Ir-Tur	End	nt	200-1200
<i>Consolida orientalis</i> (Gay) Schröd				nt	0-1900
<i>C. hellespontica</i> (Boiss) Chater				nt	0-1100
<i>Clematis vitalba</i> L.	Virgin's bower			nt	0-1500
<i>C. orientalis</i> L.	Virgin's bower			nt	0-2000
<i>Adonis annua</i> L.	Adonis	Medit		nt	0-500
<i>Ranunculus arvensis</i> L.	Crow-foot			nt	0-1850
<i>R. ficaria</i> L. subsp. <i>ficariiformis</i> Raui et Fouc	Crow-foot			nt	0-800
<i>Ceratocephalus falcatus</i> (L.) Pers.				nt	0-1800

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
PAPAVERACEAE					
<i>Chelidonium majus</i> L.	Celandine	Euro-Sib		nt	0-1450
<i>Glaucium corniculatum</i> (L.) Rud. subsp. <i>corniculatum</i>	Horn poppy			nt	0-1350
<i>Papaver rhoeas</i> L.	Poppy			nt	0-1400
<i>P. dubium</i> L.	Poppy			nt	0-1000
<i>Hypecoum imberbe</i> sibth. et Sm.	Cumin			nt	0-1800
<i>Fumaria officinalis</i> L.	Fumitory			nt	0-700
CRUFIFERAE (Brassicaceae)					
<i>Raphanus raphanistrum</i> L.	Radish			nt	0-400
<i>Crambe orientalis</i> L. var. <i>orientalis</i>	Sea kale	Ir-Tur		nt	500-2800
<i>Rapistrum rugosum</i> (L.) All.	Rapistre			nt	0-1000
<i>Conringia orientalis</i> (L.) Andr.	Perfoliate cabbage			nt	50-2000
<i>Lepidium perfoliatum</i> L.	Cress			nt	0-1400
<i>L. latifolium</i> L.	Cress			nt	0-1500
<i>Aethionema arabicum</i> (L.) Andr.	Candy mustard			nt	0-2000
<i>Capsella bursa-pastoris</i> (L.) Medik	Mother's heart				
<i>Boreava orientalis</i> Jaub. et Spach				nt	300-1600
<i>Myagrum perfoliatum</i> L.				nt	0-1000
<i>Alyssum linifolium</i> Steph ex. Willd. var. <i>linifolium</i>	Madwort			nt	100-2700
<i>A. desertorum</i> Staph. var. <i>desertorum</i>	Madwort			nt	0-2000
<i>A. pateri</i> Nyar. subsp. <i>pateri</i>	Madwort	Ir-Tur	End	nt	500-3000
<i>A. sibiricum</i> Willd	Madwort			nt	100-2200
<i>A. condensatum</i> Boiss. et Hausskn subsp. <i>condensatum</i>	Madwort			nt	400-3000
<i>Clypeola janthlaspi</i> L.				nt	0-1500
<i>Erophila verna</i> (L.) Chevall subsp. <i>verna</i>				nt	0-2300
<i>Rorippa sylvestre</i> (L.) Bess.				nt	0-1800

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Cardamine hirsuta</i> L.	Cuckoo flower			nt	0-2000
<i>Malcolmia africana</i> (L.) R. Br.				nt	0-2800
<i>Erysimum crassipes</i> Fisch. et Mey.	Alpine wallflower			nt	0-2100
<i>E. repandum</i> L.	Alpine wallflower			nt	0-1500
<i>Sisymbrium officinale</i> (L.) Scop.	Hedge mustard			nt	0-1000
<i>S. altissimum</i> L.	Hedge mustard			nt	0-1400
<i>S. loeselii</i> L.	Hedge mustard			nt	0-1800
<i>Descurainia sophia</i> (L.) Webb ex Prantl				nt	300-1700
<i>Camelina rumelica</i> Vel.	Camelina			nt	300-1100
RESEDACEAE					
<i>Reseda inodora</i> Reichb.	Mignonette			nt	400-1500
<i>R. lutea</i> L. var. <i>lutea</i>	Mignonette			nt	0-2000
CISTACEAE					
<i>Cistus creticus</i> L.	Rock rose	Medit		nt	0-1000
<i>Helianthemum salicifolium</i> (L.) Miller	Sun rose			nt	0-1100
<i>Fumana arabica</i> (L.) Spach var <i>arabica</i>	Wild rose			nt	0-1700
<i>F. paphlagonica</i> Bornm. et Janchen	Wild rose	Ir-Tur	End	nt	250-1300
VIOLACEAE					
<i>Viola odorata</i> L.	Violet			nt	0-1600
<i>V. sieheana</i> Becker	Violet			nt	50-1800
POLYGALACEAE					
<i>Polygala supina</i> Schreb.	Milk-wort				
<i>P. anatolica</i> Boiss. et Heldr.	Milk-wort			nt	30-2500
CARYOPHYLLACEAE					
<i>Minuartia hamata</i> (Hauskn.) Mattf.	Wood herb			nt	300-2200
<i>M. hybrida</i> (Vill.) Schischk. subsp. <i>hybrida</i>	Wood herb			nt	0-2200

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Stellaria media</i> (L.) Vill. subsp. <i>media</i>	Stellaria			nt	0-2000
<i>Cerastium anomalum</i> Waldst. et Kit.	Mouse-ear chickweed			nt	0-2500
<i>C. dichotomum</i> L. subsp. <i>dichotomum</i>	Mouse-ear chickweed			nt	500-2500
<i>Moenchia mantica</i> (L.) Bartl. subsp. <i>mantica</i>				nt	0-1200
<i>Telephium imperati</i> L.				nt	400-2200
<i>Dianthus anatolicus</i> Boiss.	Clove		End	nt	500-2200
<i>D. calocephalus</i> Boiss.	Clove			nt	400-2300
<i>Velezia rigida</i> L.				nt	0-2000
<i>Saponaria orientalis</i> L.	Soap wort			nt	400-2000
<i>Silene otites</i> (L.) Wibel	Catch-fly			nt	0-1600
<i>S. supina</i> Bieb. subsp. <i>pruinosa</i> (Boiss.) Chowdh	Catch-fly			nt	100-2100
<i>S. compacta</i> Fischer	Catch-fly			nt	0-2100
<i>S. alba</i> (Miller) Krause subsp. <i>ericalycina</i> (Boiss.) Walters	Catch-fly			nt	500-2000
<i>S. dichotoma</i> Ehrh. subsp. <i>dichotoma</i>	Catch-fly			nt	0-2100
<i>S. conica</i> L.	Catch-fly			nt	0-1600
<i>Cucubalus baccifer</i> L.	Berry bearing campion			nt	0-1400
ILLECEBRACEAE					
<i>Herniaria incana</i> Lam.				nt	0-2200
<i>Paronychia kurdica</i> Boiss. subsp. <i>kurdica</i> var. <i>kurdica</i>	Tyme leafed nailwort			nt	200-1400
POLYGONACEAE					
<i>Polygonum lapathifolium</i> L.	Knot weed			nt	0-1500
<i>P. aviculare</i> L.	Knot weed			nt	0-700
<i>Rumex acetosella</i> L.	Herb patience			nt	0-2300
<i>R. crispus</i> L.	Herb patience			nt	0-2300
CHENOPODIACEAE					
<i>Chenopodium botrys</i> L.	Good king Henry			nt	0-1900

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>C. murale</i> L.	Good king Henry			nt	0-400
<i>C. album</i> L. subsp. <i>album</i> var. <i>album</i>	Good king Henry			nt	0-2000
<i>Atriplex laslantha</i> Boiss	Orache			nt	0-1800
<i>Salsola ruthenica</i> Ilgin				nt	0-1750
AMARANTHACEAE					
<i>Amaranthus retroflexus</i> L.	Velvet-flower			nt	0-1900
TAMARICACEAE					
<i>Tamarix tetrandra</i> Pallas ex. Bieb.	Tamarisk			nt	0-1300
<i>T. smymensis</i> Bunge	Tamarisk			nt	0-1000
GUTTIFERAE (Hypericaceae)					
<i>Hypericum androsaemum</i> L.	Aaron's beard			nt	250-1300
<i>H. montbretii</i> Spach	Aaron's beard			nt	200-1750
<i>H. orientale</i> L.	Aaron's beard			nt	0-2300
<i>H. origanifolium</i> Willd	Aaron's beard			nt	0-2500
<i>H. perforatum</i> L.	Aaron's beard			nt	0-1000
MALVACEAE					
<i>Hibiscus trionum</i> L.	Blacking plant			nt	0-1000
<i>Malva sylvestris</i> L.	Musk mallow			nt	0-500
<i>M. neglecta</i> Wallr.	Musk mallow			nt	0-2000
<i>Malvella sherardiana</i> (L.) Joub. et Spach				nt	0-1000
<i>Lavatera punctata</i> All.	Tree mallow			nt	0-1200
<i>Alcea setosa</i> (Boiss) Alef.		E. Medit		nt	0-700
<i>A. pallida</i> Waldst. et Kit.				nt	300-1500
<i>Althaea cannabina</i> L.	Hollyhock			nt	0-1250
<i>A. hirsuta</i> L.	Hollyhock			nt	0-1700

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
TILIACEAE					
<i>Tilia rubra</i> DC. subsp. <i>caucasica</i> (Rupr.) V.Engler	Linden	Euxin		nt	300-1500
LINACEAE					
<i>Linum mucranotum</i> Bertol. subsp. <i>armenum</i> (Bordz.) Davis	Flax	Ir-Tur		nt	600-3000
<i>L. flavum</i> L. subsp. <i>scabrineri</i> (Davis) Davis	Flax	Ir-Tur	End	nt	500-1000
<i>L. nodiflorum</i> L.	Flax	Medit		nt	0-1100
<i>L. tenuifolium</i> L.	Flax			nt	200-1700
<i>L. bienne</i> Miller	Flax	Medit		nt	0-1900
GERANIACEAE					
<i>Geranium lucidum</i> L.	Crane's-bill			nt	0-1700
<i>G. robertianum</i> L.	Crane's-bill			nt	0-2000
<i>G. dissectum</i> L.	Crane's-bill			nt	0-400
<i>G. tuberosum</i> L. subsp. <i>tuberosum</i>	Crane's-bill			nt	0-2500
<i>G. pyrenacium</i> Burm.	Crane's-bill			nt	50-2400
<i>Erodium hoefftianum</i> C.A. Meyer	Heron's-bill			nt	0-1400
<i>E. ciconium</i> (L.) L'Herit	Heron's-bill			nt	0-1500
<i>E. cicutarium</i> (L.) L'Herit subsp. <i>cuticularium</i>	Heron's-bill			nt	0-1000
ZYGOPHYLLACEAE					
<i>Zygophyllum fabago</i> L.	Syrian bean caper	Ir-Tur		nt	50-1000
<i>Tribulus terrestris</i> L.	Caltrop			nt	0-1200
<i>Peganum harmala</i> L.	Harmel			nt	0-1500
RUTACEAE					
<i>Haplophyllum thesioides</i> (Fich. ex DC) G. Don				nt	300-900
STAPHYLEACEAE					
<i>Staphylea pinnata</i> L.	Bladder nut			nt	0-1500

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
VITACEAE					
<i>Vitis sylvestris</i> Gmelin	Vine			nt	0-1600
RHAMNACEAE					
<i>Paliurus spina-christi</i> Miller				nt	0-1400
<i>Rhamnus rhodopeus</i> Velenovsky	Buckthorn			nt	100-900
ANACARDIACEAE					
<i>Cotinus coggyria</i> Scop.	Smoke-tree			nt	0-1300
<i>Rhus coriaria</i> L.	Sumach			nt	600-1900
<i>Pistacia terebinthus</i> L. subsp. <i>palaestina</i> (Boiss.) Engler	Pistachio	E. Medit		nt	50-1500
LEGUMINOSAE (Fabaceae)					
<i>Chamaecytisus supinus</i> (L.) Link		Euro-Sib		nt	100-1600
<i>C. austriacus</i> (L.) Link		Euro-Sib		nt	200-1020
<i>Genista tinctoria</i> L.	Needle furze	Euro-Sib		nt	0-2200
<i>Galega officinalis</i> L.	Goat's rue	Euro-Sib		nt	0-1200
<i>Colutea cilicica</i> Boiss. et Bal.	Bladder senna			nt	100-2000
<i>Astragalus homosus</i> L.	Vetch			nt	0-1300
<i>A. brachypterus</i> Fischer	Vetch	Ir-Tur	End	nt	600-2130
<i>A. ornithopodioides</i> Lam.	Vetch	Ir-Tur		nt	700-2300
<i>A. lycius</i> Boiss.	Vetch		End	nt	400-1800
<i>A. squalidus</i> Boiss. et Noe	Vetch		End	nt	500-2350
<i>A. elongatus</i> Willd. subsp. <i>elongatus</i>	Vetch			nt	300-1500
<i>A. spruneri</i> Boiss.	Vetch			nt	300-2100
<i>A. sigmoides</i> Bunge	Vetch		End	nt	400-1200
<i>Glycyrrhiza glabra</i> L. var. <i>glandulifera</i> (Waldst. et Kit) Boiss	Liquorice plant			nt	0-1800
<i>Cicer pinnatifidum</i> Jaub. et Spach	Chick-pea				250-1400
<i>Vicia croceae</i> (Desf.) B. Fedtsch.	Vetch	Hyr. Euxin		nt	30-2000

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>V. hirsuta</i> (L.) S.F. Gray	Vetch				0-800
<i>V. narbonensis</i> L. var. <i>narbonensis</i>	Vetch			nt	0-1500
<i>Lens ervoides</i> (Brign.) Grande	Lentil	Medit		nt	20-600
<i>L. orientalis</i> (Boiss.) Hand-Mazz	Lentil			nt	400-1300
<i>Lathyrus aureus</i> (Stev.) Brandza	Everlasting pea	Euxin		nt	15-2000
<i>L. digitatus</i> (Bieb.) Fiori	Everlasting pea	E. Medit		nt	200-1500
<i>L. laxiflorus</i> (Desf.) O. Kuntze subsp. <i>laxiflorus</i>	Everlasting pea			nt	0-1900
<i>L. cicera</i> L.	Everlasting pea			nt	5-1500
<i>Ononis viscosa</i> L. subsp. <i>breviflora</i> (DC.) Nyman				nt	0-900
<i>O. pusilla</i> L.		Medit		nt	0-1700
<i>Trifolium nigrescens</i> Viv. subsp. <i>petrisavii</i> (Clem.) Holmboe	Clover			nt	0-1750
<i>T. speciosum</i> Willd.	Clover			nt	50-1100
<i>T. pratense</i> L. var. <i>pratense</i>	Clover			nt	0-2300
<i>T. scabrum</i> L.	Clover			nt	0-1100
<i>T. arvense</i> L. var. <i>arvense</i>	Clover			nt	0-2300
<i>Melilotus officinalis</i> (L.) Desr.	Rock clover			nt	0-1750
<i>M. alba</i> Desr.	Rock clover			nt	0-1750
<i>Trigonella brachycarpa</i> (Fisch.) Moris	Fenugreek	Ir-Tur		nt	350-2100
<i>T. monantha</i> C.A. Meyer subsp. <i>monantha</i>	Fenugreek	Ir-Tur		nt	300-1800
<i>T. monspeliaca</i> L.	Fenugreek	Medit		nt	0-1500
<i>Medicago lupulina</i> L.	Lucerne			nt	0-2000
<i>M. falcata</i> L.	Lucerne			nt	100-2100
<i>M. minima</i> (L.) Bart. var. <i>minima</i>	Lucerne			nt	0-1700
<i>Dorycnium graecum</i> (L.) Ser.				nt	0-2000
<i>Lotus corniculatus</i> L. var. <i>corniculatus</i>	Lotus	Euxin		nt	0-2500
<i>Coronilla varia</i> L. subsp. <i>varia</i>	Crown vetch			nt	250-2150

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Hippocrepis unisiliquosa</i> L. subsp. <i>unisiliquosa</i>				nt	0-900
<i>Scorpiurus muricatus</i> L. subsp. <i>subvillosus</i> (L.) Fiar	Scorpion's tail	Medit		nt	0-800
<i>Hedysarum varium</i> Willd.	French honeysuckle	Ir-Tur		nt	300-2100
<i>Onobrychis caput-galli</i> (L.) Lam.	Sainfoin	Medit		nt	0-800
<i>O. armena</i> Boiss. et Huet	Sainfoin		End	nt	100-2000
<i>O. hypargyrea</i> Boiss.	Sainfoin			nt	300-1200
<i>Alhagi pseudalhagi</i> (Bieb.) Desv.		Ir-Tur		nt	0-1200
ROSACEAE					
<i>Spiraea crenata</i> L.	Meadow sweet			nt	400-650
<i>Cerasium vulgare</i> Miller	Sour cherry			nt	
<i>C. mahaleb</i> (L.) Miller var. <i>mahaleb</i>	Cherry			nt	300-1850
<i>Prunus amygdala communis</i> L.	Almond			nt	150-1850
<i>P. armeniaca</i>	Apricot			nt	-
<i>P. domestica</i> L.				nt	0-1900
<i>P. persica vulgare</i> Miller	Peach			nt	-
<i>P. spinosa</i> L. subsp. <i>dasyphylla</i> (Schur) Damin	Plum	Euro-Sib		nt	0-1700
<i>Filipendula vulgare</i> Moench	Dropwort	Euro-Sib		nt	0-1950
<i>Rubus sanctus</i> Schreber	Raspberry			nt	0-1250
<i>R. canescens</i> DC. var. <i>canescens</i>	Raspberry			nt	0-2150
<i>Potentilla recta</i> L.	Cinquefoil			nt	0-2300
<i>P. supina</i> L.	Cinquefoil			nt	200-2500
<i>P. reptans</i> L.	Cinquefoil			nt	0-2300
<i>Fragaria vesca</i> L.	Strawberry			nt	200-2450
<i>Geum urbanum</i> L.	Avens			nt	0-1700
<i>Agrimonia eupatoria</i> L.	Agrimony			nt	0-2300
<i>Sanguisorba minor</i> Scop. subsp. <i>muricata</i> (Spach) Brig				nt	250-2100

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Rosa canina</i> L.	Rose			nt	30-1700
<i>Mespilus germanica</i> L.	Medlar	Hyr. Euxin		nt	0-1650
<i>Cotoneaster nummularia</i> Fisch. et Mey.	Rose box			nt	300-2300
<i>Crataegus pentagyna</i> Waldst. et Kit. ex Willd.	Haw thorn	Euro-Sib		nt	0-1700
<i>C. tanacetifolia</i> (Lam.) Pers.	Haw thorn		End	nt	800-1800
<i>C. curvisepala</i> Lindman	Haw thorn			nt	50-1800
<i>Sorbus torminalis</i> (L.) Crantz var. <i>torminalis</i>	Rowan	Euro-Sib		nt	200-1800
<i>Cydonia oblonga</i> Miller	Quince			nt	10-1000
<i>Malus sylvestris</i> Miller	Apple tree			nt	150-2000
<i>Pyrus communis</i> L. subsp. <i>communis</i>	Pear			nt	0-1650
<i>P. elaeagnifolia</i> Pallas subsp. <i>elaeagnifolia</i>	Pear			nt	0-1700
MYRTACEAE					
<i>Myrtus communis</i> L. subsp. <i>communis</i>	Myrtle			nt	0-550
PUNICACEAE					
<i>Punica granatum</i> L.	Pomegranate			nt	250-600
LYTHRACEAE					
<i>Lythrum salicaria</i> L.	Purple loose-strife	Euro-Sib		nt	100-200
ONAGRACEAE					
<i>Epilobium hirsutum</i> L.	Willow herb			nt	0-2300
CUCURBITACEAE					
<i>Ecballium elaterium</i> (L.) A. Rich.	Squirting cucumber	Medit		nt	0-600
DATISCEAE					
<i>Datisca cannabina</i> L.	False hemp			nt	20-1700
CRASSULACEAE					
<i>Sedum album</i> L.	Stone-crop			nt	100-2500
<i>S. hispanicum</i> L. var. <i>hispanicum</i>	Stone-crop			nt	0-2400

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
SAXIFRAGACEAE					
<i>Saxifraga tridactylites</i> L.	Rockfoil			nt	0-2300
UMBELLIFERAE(Apiaceae)					
<i>Eryngium creticum</i> Lam.	Sea holly	E .Medit		nt	0-750
<i>E. bithynicum</i> Boiss.	Sea holly	Ir-Tur	End	nt	100-1400
<i>Echinophora tournefortii</i> Jaub. et Spach		Ir-Tur		nt	500-1750
<i>Anthriscus caucalis</i> Bieb.	Chervil			nt	50-1200
<i>Scandix stellata</i> Banks. et Sol.	Venus comb			nt	300-2100
<i>S. pecten-veneris</i> L.	Venus comb			nt	0-980
<i>Foeniculum vulgare</i> Miller	Fennel			nt	0-1200
<i>Bupleurum sulphureum</i> Boiss. et Bal.	Hase's ear	Ir-Tur	End	nt	400-1500
<i>Falcaria vulgaris</i> Bernh.	Falcaria			nt	80-2300
<i>Johrenia tortuosa</i> (Fisch. et Mey.) Chamberlain				nt	200-1700
<i>Opopanax hispidus</i> (Friv.) Gris.				nt	50-1700
<i>Peucedanum palimbioides</i> Boiss.	Hog's fennel	Ir-Tur	End	nt	400-1300
<i>Malabaila secacul</i> Banks et Sol.				nt	100-2000
<i>Heracleum platytaenium</i> Boiss.	Giant cow parsnip	Euxin	End	nt	0-1500
<i>Laser trilobum</i> (L.) Borkh.				nt	0-1800
<i>Torilis arvensis</i> (Huds.) Link subsp. <i>arvensis</i>				nt	0-1200
<i>Turgenia latifolia</i> (L.) Hoffm.				nt	0-3000
<i>Orlaya daucooides</i> (L.) Greuter		Medit		nt	0-1000
<i>Daucus carota</i> L.	Carrot			nt	0-2000
<i>Artedia squamata</i> L.				nt	0-1500
ARALIACEAE					
<i>Hedera helix</i> L.	Ivy			nt	0-1500

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
CORNACEAE					
<i>Cornus sanguinea</i> L. subsp. <i>australis</i> (C.A. Meyer) Jav.	Dogwood	Euro-Sib		nt	0-1400
<i>C. mas</i> L.	Dogwood	Euro-Sib		nt	20-1500
CARRIFOLIACEAE					
<i>Lonicera etrusca</i> Santi var. <i>etrusca</i>	Honey suckle	Medit		nt	250-1200
VALERIANACEAE					
<i>Centranthus longiflorus</i> Stev. subsp. <i>longiflorus</i>	Red valerian	Ir-Tur		nt	0-2300
<i>Valerianella vesicaria</i> (L.) Moench	Cretan spikenard			nt	0-2000
<i>V. pumila</i> (L.) DC. et Lam.	Cretan spikenard			nt	50-1800
DIPSACACEAE					
<i>Dipsacus laciniatus</i> L.	Teasel			nt	50-1800
<i>Scabiosa argentea</i> L.	Scabious			nt	0-2500
<i>S. rotata</i> Bieb.	Scabious	Ir-Tur		nt	350-2440
<i>Pterocephalus plumosus</i> (L.) Coulter				nt	0-1700
COMPOSITAE (Asteraceae)					
<i>Helianthus annuus</i> L.	Sun flower				
<i>Bidens tripartita</i>	Bur marigold tick			nt	0-1950
<i>Xanthium spinosum</i> L.				nt	10-1750
<i>X. strumarium</i> L. subsp. <i>strumarium</i>				nt	0-1750
<i>Asteriscus aquaticus</i> (L.) Less.	Starwort	Medit		nt	0-250
<i>Inula vulgaris</i> (Lam.) Trevisan	Flea-bane	Euro-Sib		nt	25-1800
<i>I. germanica</i> L.	Flea-bane	Euro-Sib		nt	0-2000
<i>Pulicaria dysenterica</i> (L.) Bernh				nt	0-1600
<i>Helichrysum arenarium</i> (L.) Moench subsp. <i>aucherii</i> (Boiss.) Davis et Kupicha	Everlasting-flower	Ir-Tur		nt	250-3200
<i>Filago pyramidata</i> L.	Honewort			nt	0-1200

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Logfia arvensis</i> (L.) Holub				nt	0-3000
<i>Bellis perennis</i> L.	Daisy	Euro-Sib		nt	0-2000
<i>Senecio vulgaris</i> L.	Jacoleaea			nt	0-700
<i>Tussilago farfara</i> L.	Cough-wort	Euro-Sib		nt	0-2400
<i>Calendula arvensis</i> L.	Pot marigold			nt	0-2000
<i>Anthemis cretica</i> L. subsp. <i>tenuiloba</i> (DC.) Grierson	Chamomile			nt	300-2100
<i>A. cotula</i> L.	Chamomile			nt	0-1300
<i>A. tinctoria</i> L. var. <i>tinctoria</i>	Chamomile			nt	0-1830
<i>A. triumfettii</i> (L.) All.	Chamomile			nt	300-2200
<i>A. wiedemanniana</i> Fisch. et Mey.	Chamomile		End	nt	400-1800
<i>Achillea setacea</i> Waldst. et Kit.	Milfoil	Euro-Sib		nt	0-2300
<i>A. biebersteinii</i> Afan	Milfoil	Ir-Tur		nt	350-3450
<i>Tanacetum poterifolium</i> (Ledeb.) Grierson	Semmon tansy	Euxin		nt	20-1500
<i>Tripleurospermum oreades</i> (Boiss.) Rech. var. <i>oreades</i>				nt	30-3200
<i>Artemisia absinthium</i> L.	Wormwood			nt	0-2600
<i>A. spicigera</i> C. Koch	Wormwood	Ir-Tur		nt	300-2000
<i>Cirsium vulgare</i> (Savi) Ten.	Thistle			nt	0-2000
<i>C. arvense</i> (L.) Scop. subsp. <i>arvense</i>	Thistle			nt	15-2500
<i>Picnemon acarna</i> (L.) Cass		Medit		nt	100-1600
<i>Carduus nutans</i> L. subsp. <i>nutans</i>	Thistle			nt	100-2130
<i>C. pycnocephalus</i> L. subsp. <i>albidus</i> (Bieb.) Kazmi	Thistle			nt	0-1450
<i>Jurinea consanguinea</i> DC.				nt	0-1950
<i>J. pontica</i> Hausskn. et Freyn ex Hausskn		Ir-Tur	End	nt	50-1450
<i>Centaurea virgata</i> Lam.	Cornflower			nt	100-2000
<i>C. patula</i> DC.	Cornflower	Ir-Tur		nt	400-1400
<i>C. solstitialis</i> L. subsp. <i>solstitialis</i>	Cornflower			nt	0-1900

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>C. iberica</i> Trev. ex Sprengel	Cornflower			nt	0-2300
<i>C. urvillei</i> DC. subsp. <i>urvillei</i>	Cornflower	E. Medit		nt	0-2000
<i>C. depressa</i> Bieb.	Cornflower			nt	0-1800
<i>Crupina vulgaris</i> Cass.				nt	0-2000
<i>C. crupinastrum</i> (Moris) Vis.				nt	100-1400
<i>Carthamus lanatus</i> L.	Distaff thistle			nt	0-2290
<i>Carlina lanata</i> L.	Carline thistle	Medit		nt	10-800
<i>Xeranthemum annuum</i> L.	Immortell			nt	0-1950
<i>Echinops microcephalus</i> Sm.	Globe thistle	Medit		nt	0-900
<i>E. galaticus</i> Freyn	Globe thistle	Euxin		nt	0-1800
<i>E. orientalis</i> Trautv.	Globe thistle	Ir-Tur		nt	0-1980
<i>Scolymus hispanicus</i> L.	Golden thistle	Medit		nt	0-1600
<i>Cichorium intybus</i> L.	Succory			nt	0-3050
<i>Scorzonera laciniata</i> L. subsp. <i>laciniata</i>	Viper's grass			nt	0-2300
<i>S. cana</i> (C.A. Meyer) Hoffm var. <i>cana</i>	Viper's grass			nt	200-4000
<i>S. elata</i> Boiss.	Viper's grass	E. Medit		nt	0-1600
<i>Tragopogon longirostris</i> Bisch. ex Schultz var. <i>abbreviatus</i>	Salsify			nt	0-2300
<i>T. dubius</i> Scop.	Salsify			nt	400-1840
<i>Leontodon tuberosus</i> L.	Lion's tooth	Medit		nt	0-1200
<i>Picris pauciflora</i> Willd.		Medit		nt	0-700
<i>Rhagadiolis angulosus</i> (Jaub. et Spach) Kupicha		Ir-Tur		nt	30-1500
<i>Sonchus asper</i> (L.) Hill subsp. <i>glaucescens</i> (Jordan) Ball	Sow thistle			nt	0-1920
<i>Reichardia glauca</i> Matthews		Ir-Tur		nt	150-1700
<i>Hieracium paphlagonicum</i> Freyn et Sint. (Lokalend 115-47)	Mouse-ear		End	R	300-900
<i>Pilosella piloselloides</i> (Vill.) Sojak subsp. <i>megalomastrix</i> (NP.) Sell et Wes				nt	100-2300

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Steptorhampus tuberosus</i> (Jacq.) Grossh				nt	0-1900
<i>Lactuca serriola</i> L.	Flowering & edible lettuce	Euro-Sib		nt	0-1750
<i>Lapsana communis</i> L. subsp. <i>intermedia</i> (Bieb) Hayek				nt	100-2400
<i>Taraxacum serotinum</i> (Waldst. et Kit.) Poiret	Dandelion			nt	400-2400
<i>T. butleri</i> van Soest	Dandelion			nt	150-2300
<i>Crepis pulchra</i> L. subsp. <i>pulchra</i>	Hawk's beard			nt	0-1890
<i>C. foetida</i> L. subsp. <i>foetida</i>	Hawk's beard			nt	0-1300
CAMPANULACEAE					
<i>Campanula lyrata</i> Lam. subsp. <i>lyrata</i>	Bellflower		End	nt	0-1700
<i>C. glomerata</i> L. subsp. <i>hispida</i> (Witasek) Hayek		Euro-Sib		nt	0-2700
<i>A. syneuma virgatum</i> (Labill.) Bomm. subsp. <i>virgatum</i>				nt	400-2800
<i>Legousia speculum - veneris</i> (L.) Charix		Medit		nt	0-1900
<i>L. pentagonia</i> (L.) Thellung		E. Medit		nt	0-2000
ERICACEAE					
<i>Arbutus andrachne</i> L.	Strawberry - tree			nt	0-800
<i>Vaccinium arctostaphylos</i> L.	Whortle berry	Euxin		nt	0-1830
PRIMULACEAE					
<i>Androsace maxima</i> L.	Rock jasmine			nt	300-1850
<i>Arbutus andrachne</i> L.	Pimpernel			nt	0-1400
<i>A. foemina</i> Miller		Medit		nt	0-1250
OLEACEAE					
<i>Jasminum fruticans</i> L.	Jasmine	Medit		nt	0-1500
<i>Fontenesia philliraeoides</i> Labill. subsp. <i>philliraeoides</i>	Fontenesia	E. Medit		nt	150-1550
<i>Olea europaea</i> L. var. <i>sylvestris</i> (Miller) Lehr.	Olive	Medit		nt	50-750
<i>Phillyrea latifolia</i> L.	Jasmine box	Medit		nt	10-1350

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
APOCYNACEAE					
<i>Trachomitum venetum</i> (L.) Woodson subsp. <i>sarmatiense</i> (Woodson) Avelisio		E. Medit		nt	0-1800
ASCLEPIADACEAE					
<i>Periploca graeca</i> L. var. <i>graeca</i>	Silk	E. Medit		nt	0-1200
<i>Cynanchum acutum</i> L. subsp. <i>acutum</i>				nt	0-1500
<i>Vincetoxicum canescens</i> (Willd.) Decne	Tame-potion			nt	300-1900
<i>Cionura erecta</i> (L.) Griseb		E. Medit		nt	0-1100
GENTIANACEAE					
<i>Blackstonia perfoliata</i> (L.) Hudson subsp. <i>perfoliata</i>	Bitterling			nt	0-900
<i>Centaurium erythraea</i> Rafn subsp. <i>erythraea</i>		Euro-Sib		nt	0-900
<i>C. pulchellum</i> (Swartz)				nt	0-2600
CONVOLVULACEAE					
<i>Convolvulus cantabrica</i> L.	Bindweed			nt	0-1700
<i>C. arvensis</i> L.				nt	0-3000
<i>Calystegia sepium</i> (L.) R.Br. subsp. <i>sepium</i>	Bind-weed			nt	0-800
CUSCUTACEAE					
<i>Cuscuta approximata</i> Babington var. <i>approximata</i>	Dodder			nt	0-2000
BORAGINACEAE					
<i>Heliotropium europaeum</i> L.	Heliotrope			nt	0-1400
<i>H. dolosum</i> De Not.				nt	0-1600
<i>Lappula squarrosa</i> (Retz.) Dumort.	Cotton seed			nt	380-2270
<i>Asperugo procumbens</i> L.	Madderwort	Euro-Sib		nt	80-2200
<i>Myosotis stricta</i> Link	Forget me not	Euro-Sib		nt	100-2100
<i>M. arvensis</i> (L.) Hill subsp. <i>arvensis</i>		Euro-Sib		nt	0-1400
<i>Paracaryum calycinum</i> Boiss. et Bal.			End	nt	400-2000

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Cynoglossum creticum</i> Miller	Cynoglossum			nt	0-1000
<i>Buglossoides arvensis</i> (L.) Johnston				nt	0-2500
<i>Neotostema apulum</i> (L.) Johnston		Medit		nt	0-1100
<i>Echium italicum</i> L.	Vipers bugloss	Medit		nt	0-1950
<i>E. plantagineum</i> L.		Medit		nt	0-870
<i>Onosma isauricum</i> Boiss. et Heldr.	Golden drop	Ir-Tur	End	nt	300-3000
<i>O. bornmuelleri</i> Hausskn.		Ir-Tur	End	nt	60-2700
<i>Cerithe minor</i> L. subsp. <i>auriculata</i> (Ten.) Domac	Horewort			nt	150-2400
<i>Anchusa undulata</i> L. subsp. <i>hybrida</i> (Ten.) Coutinho	Alkanet	Medit		nt	0-900
<i>Nonea caspica</i> (Willd.) G. Don		Ir-Tur		nt	0-1700
<i>Alkanna orientalis</i> (L.) Boiss. var. <i>orientalis</i>		Ir-Tur		nt	0-2400
SOLANACEAE					
<i>Solanum alatum</i> Moench				nt	0-1300
<i>S. dulcamara</i> L.		Euro-Sib		nt	0-2300
<i>S. tuberosum</i> L.	Potato				
<i>S. melongena</i> L.	Eggplant				
<i>Capsicum annuum</i> L.	Cayenne pepper				
<i>Lycopersicon esculentum</i> Miller	Tomato				
<i>Lycium depressum</i> Stocks	Box-thorn	Ir-Tur		nt	160-1150
<i>Datura stramonium</i> L.	Thorn apple			nt	0-950
<i>Hyoscyamus reticulatus</i> L.		Ir-Tur		nt	10-1700
SCROPHULARIACEAE					
<i>Verbascum blattaria</i> L.	Mullein			nt	0-1300
<i>V. glomeratum</i> Boiss.		Ir-Tur		nt	0-1800
<i>V. lasianthum</i> Boiss. ex Benth				nt	0-1700
<i>Scrophularia xanthoglossa</i> Boiss. var. <i>decipiens</i>		Ir-Tur		nt	0-2000

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Linaria corifolia</i> Desf.	Toad-flax	Ir-Tur	End	nt	0-2200
<i>L. simplex</i> (Willd.) DC.		Medit		nt	0-1700
<i>Veronica polita</i> Fries	Speedwell			nt	0-1800
<i>V. persica</i> Poiret				nt	0-700
<i>V. triloba</i> (Opiz) Kerner				nt	100-1900
<i>V. multifida</i> L.			End	nt	100-2300
OROBANCHACEAE					
<i>Orobanche cernua</i> L.				nt	0-2700
GLOBALIACEAE					
<i>Globularia trichosantha</i> Fisch. et Mey.	Globe daisy			nt	200-2470
VERBENACEAE					
<i>Verbena officinalis</i> L.	Vervain			nt	0-1800
<i>Vitex agnus-castus</i> L.	Chaste tree	Medit		nt	0-750
LABIATAE (Lamiaceae)					
<i>Ajuga salicifolia</i> (L.) Schreber	Bugle	Ir-Tur		nt	0-1800
<i>A. chamaepitys</i> (L.) Schreber subsp. <i>chia</i> (Screber) var. <i>chia</i>				nt	0-2000
<i>Teucrium orientale</i> L. var. <i>puberulens</i> T.Ekim	Germander	Ir-Tur		nt	300-2400
<i>T. chamaedrys</i> L. subsp. <i>chamaedrys</i>		Euro-Sib		nt	0-1600
<i>T. polium</i> L.				nt	0-2000
<i>Scutellaria orientalis</i> L. subsp. <i>pinnatifida</i> Edmondson	Helmet flower skull cap			nt	400-2200
<i>Lamium amplexicaule</i> L.	Dead nettle	Euro-Sib		nt	0-2200
<i>Sideritis lanata</i> L.	Iranwort	E. Medit		nt	0-1600
<i>S. montana</i> L. subsp. <i>montana</i>		Medit		nt	0-2000
<i>Stachys cretica</i> L. subsp. <i>anatolica</i> Rech.	Woundwort	Ir-Tur	End	nt	100-2900
<i>S. byzantina</i> C. Koch		Euro-Sib		nt	30-2000
<i>S. annua</i> (L.) L. subsp. <i>annua</i> var. <i>lycaonica</i> Bhattacharjee		Ir-Tur		nt	50-2050

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Nepeta italica</i> L.	Cat-mint			nt	0-1300
<i>Prunella vulgaris</i> L.		Euro-Sib		nt	0-2900
<i>Origanum vulgare</i> L. subsp. <i>viride</i> (Boiss.) Hayek	Sweet marjoram			nt	0-2500
<i>Acinos rotundifolius</i> Pers.				nt	0-2200
<i>Mikromeria myrtifolia</i> Boiss. et Hohen	Mikromeria	E. Medit		nt	0-1900
<i>Thymus sipyleus</i> Boiss. subsp. <i>rosulans</i> (Borbais) Jalas	Garden thyme			nt	400-2300
<i>Mentha pulegium</i> L.				nt	0-1300
<i>Lycopus europaeus</i> L.	Water horehound	Euro-Sib		nt	10-1680
<i>Ziziphora capitata</i> L.		Ir-Tur		nt	0-2200
<i>Salvia bracteata</i> Banks et. Sol.	Sage, clary	Ir-Tur		nt	50-2000
<i>S. syriaca</i> L.		Ir-Tur		nt	450-1850
<i>S. viridis</i> L.		Medit		nt	0-1300
<i>S. ceratophylla</i> L.		Ir-Tur		nt	300-2150
<i>S. forskahlei</i> L.		Euxin		nt	10-1900
<i>S. virgata</i> Jacq.				nt	0-2300
<i>S. verticillata</i> L. subsp. <i>verticillata</i>		Euro-Sib		nt	0-2300
PLUMBAGINACEAE					
<i>Plumbago europaea</i> L.		Euro-Sib		nt	10-1900
<i>Acantholimon acerosum</i> (Willd.) Boiss. var. <i>acerosum</i>		Ir-Tur		nt	20-1800
PLANTAGINACEAE					
<i>Plantago major</i> L. subsp. <i>major</i>	Leadwort			nt	0-2440
<i>P. lanceolata</i> L.				nt	0-3050
THYMELAEACEAE					
<i>Daphne pontica</i> L.	Laurel	Euxin		nt	0-2200
<i>D. sericea</i> Vahl		E. Medit		nt	0-1500
<i>Thymelaea passerina</i> Cosson et. Germ.				nt	10-2000

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
ELAEAGNACEAE					
<i>Hippophae rhamnoides</i> L. subsp. <i>caucasica</i> Rousi				nt	0-3000
<i>Elaeagnus angustifolia</i> L.				nt	0-3000
Lauraceae					
<i>Laurus nobilis</i> L.	Bay tree	Medit		nt	0-1200
SANTALACEAE					
<i>Thesium arvense</i> Horvatovszky		Euro-Sib		nt	0-2200
<i>Osyris alba</i> L.		Medit		nt	0-500
LORANTHACEAE					
<i>Viscum album</i> L. subsp. <i>album</i>	Mistletoe			nt	300-1500
RAFFLESACEAE					
<i>Cytinus hypocistis</i> L. subsp. <i>kermesinus</i> (Guss.) Wettst.		Medit		nt	0-700
ARISTOLOCHACEAE					
<i>Aristolochia mauroorum</i> L.	Aristoloch	Ir-Tur		nt	40-1560
AUPHORBIACEAE					
<i>Andrachne telephoides</i> L.				nt	0-1800
<i>Chrozophora tinctoria</i> (L.) Rafin.				nt	0-1650
<i>Mercurialis annua</i> L.	French mercury			nt	0-1100
<i>Euphorbia aleppica</i> L.				nt	150-1350
<i>E. cardiophylla</i> Boiss. et Heldr.	Spurge		End	nt	20-2100
<i>E. falcata</i> L. subsp. <i>falcata</i> var. <i>falcata</i>				nt	0-1900
<i>E. helioscopia</i> L.				nt	0-1400
<i>E. hirsuta</i> L.				nt	0-1400
<i>E. ledebourii</i> Boiss.				nt	500-800
<i>E. macroclada</i> Boiss.		Ir-Tur		nt	250-2500
<i>E. stricta</i> L.		Euro-Sib		nt	0-2100

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
BUXACEAE					
<i>Buxus sempervirens</i> L.	Box-tree	Euro-Sib		nt	100-2000
URTICACEAE					
<i>Urtica pilulifera</i> L.	Nettle	Medit		nt	5-365
<i>U. dioica</i> L.		Euro-Sib		nt	500-2700
<i>Parietaria judaica</i> L.	Lich-wort			nt	0-2000
MURACEAE					
<i>Morus alba</i> L.	Mulberry				
<i>M. nigra</i> L.					
<i>Ficus carica</i> L. subsp. <i>carica</i>	Fig-tree				
ULMACEAE					
<i>Ulmus minor</i> Miller subsp. <i>minor</i>	Elm tree			nt	0-1300
<i>Celtis australis</i> L.	Nettle tree	Medit		nt	50-700
JUGLANDACEAE					
<i>Juglans regia</i> L.	Walnut tree			nt	0-1550
PLATANACEAE					
<i>Platanus orientalis</i> L.	Plane tree			nt	0-1100
FAGACEAE					
<i>Quercus infectoria</i> Oliver subsp. <i>infectoria</i>	Oak tree	Euro-Sib		nt	150-850
<i>Q. pubescens</i> Willd.					
<i>Q. coccifera</i> L.		Medit		nt	0-1500
CORYLACEAE					
<i>Carpinus orientalis</i> Miller subsp. <i>orientalis</i>	Hornbeam			nt	0-1400
SALICACEAE					
<i>Salix triandra</i> L. subsp. <i>bormuelleri</i> (Hauskn.) A. Skv.	Willow	Ir-Tur		nt	100-1950
<i>Populus alba</i> L.	Poplar	Euro-Sib		nt	10-1100

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>P. nigra</i> L. subsp. <i>nigra</i>	Black poplar				
RUBIACEAE					
<i>Sherardia arvensis</i> L.	Field maddler	Medit		nt	0-1500
<i>Crucianella bithynica</i> Boiss.		E. Medit		nt	0-1250
<i>Asperula pestalozzae</i> Boiss.	Woodruff	Euxin	End	nt	300-2300
<i>A. tenella</i> Heuffel ex Degen				nt	0-1300
<i>A. arvensis</i> L.		Medit		nt	0-1900
<i>Galium rivale</i> (Sm.) Griseb.	Galium	Euro-Sib		nt	0-2300
<i>G. verum</i> L. subsp. <i>verum</i>		Euro-Sib		nt	100-2400
<i>G. fissurense</i> Ehrend. et Schönb. Tem.		Euxin	End	nt	150-2200
<i>G. subuliferum</i> Somm. et Lev.				nt	200-2200
<i>G. floribundum</i> Sm. subsp. <i>floribundum</i>				nt	0-1600
<i>Callipetis cucullaria</i> (L.) Steven		Ir-Tur		nt	300-2000
<i>Cruciata taurica</i> (Pallax ex Willd.) Ehrend.		Ir-Tur		nt	300-3300
<i>Rubia tinctorum</i> L.	Madder	Ir-Tur		nt	400-2000
LILIACEAE					
<i>Smilax excelsa</i> L.	Sarsaparilla plant	Euxin		nt	0-760
<i>Ruscus aculeatus</i> L. subsp. <i>angustifolius</i> Boiss.	Butcher's broom			nt	30-1000
<i>Asparagus verticillatus</i> L.	Asparagus			nt	10-1200
<i>A. officinalis</i> L.				nt	0-1770
<i>Asphodeline lutea</i> (L.) Reichb.		Medit		nt	0-1650
<i>Allium ampeloprasum</i> L.		Medit		nt	0-1300
<i>A. atroviolaceum</i> Boiss.				nt	5-2000
<i>A. cepa</i> L.	Onion				
<i>A. paniculatum</i> L. subsp. <i>paniculatum</i>		Medit		nt	0-2000
<i>A. sativum</i> L.					

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>A. scorodoprasum</i> L. subsp. <i>rotundum</i> (L.) Stearn		Medit		nt	50-2300
<i>Ornithogalum sphaerocarpum</i> Kerner	Star bethlehem			nt	0-1800
<i>O. comosum</i> L.				nt	0-2500
<i>O. orthophyllum</i> Ten.				nt	0-2170
<i>Muscari tenuiflorum</i> Tausch	Grape hyacinth			nt	0-2400
<i>M. neglectum</i> Guss.				nt	0-2300
<i>Gaega villosa</i> (Bieb.) Duby var. <i>villosa</i>		Medit		nt	350-2300
IRIDACEAE					
<i>Iris orientalis</i> Miller	Flag	E. Medit		nt	150-1400
ORCHIDACEAE					
<i>Epipactis microphylla</i> (Ehrh.) Swartz	Epipactis	Euro-Sib		nt	200-1700
<i>Orchis anatolica</i> Boiss.	Orchis	E. Medit		nt	0-1650
TYPHACEAE					
<i>Typha laxmannii</i> Lepechin	Reed mace	Euro-Sib		nt	0-2000
<i>T. domingensis</i> Pers.				nt	0-1300
JUNCACEAE					
<i>Juncus gerardi</i> Luisel. subsp. <i>libanoticus</i> (Thieb.) Snog	Rush	Ir-Tur		nt	50-2500
<i>J. bofonius</i> L.				nt	0-2350
<i>J. articulatus</i> L.		Euro-Sib		nt	0-3000
CYPERACEAE					
<i>Cyperus longus</i>	Galingale			nt	0-1860
<i>Eleocharis palustris</i> (L.) Roemer et Schultes				nt	0-2400
<i>E. mitracarpa</i> Steudel				nt	0-2400
<i>Schoenoplectus lacustris</i> (L.) Palla subsp. <i>lacustris</i>				nt	0-1950
<i>Bulboschoenus maritimus</i> (L.) Palla var. <i>maritimus</i>				nt	0-2000
<i>Carex divulsa</i> Stokes subsp. <i>divulsa</i>	Blue-grass	Euro-Sib		nt	0-2400

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>C. hirta</i> L.		Euro-Sib		nt	0-2050
<i>C. distans</i> L.		Euro-Sib		nt	0-2150
GRAMINEAE (Poaceae)					
<i>Oryza sativa</i> L.	Rice				
<i>Brachypodium sylvaticum</i> (Hudson) P. Beauv.		Euro-Sib		nt	10-2440
<i>Trachynia distachya</i> (L.) Link		Medit		nt	0-1250
<i>Elymus repens</i> (L.) Gould subsp. <i>repens</i>	Wild rye			nt	0-2350
<i>Aegilops speltoides</i> Tausch var. <i>speltoides</i>				nt	100-1200
<i>Ae. umbellulata</i> Zhukovsky subsp. <i>umbellulata</i>		Ir-Tur		nt	0-1500
<i>Secale cereale</i> L. var. <i>cereale</i>	Common rye			nt	0-1800
<i>Hordeum murinum</i> L. subsp. <i>glaucum</i> (Steudel) Tzvelev	Barley			nt	0-1750
<i>H. bulbosum</i> L.				nt	0-2250
<i>Bromus arvensis</i> L.				nt	0-2900
<i>B. japonicus</i> Thunb. subsp. <i>japonicus</i>				nt	0-2300
<i>B. scoparius</i> L.				nt	0-2250
<i>Gaudiniopsis macra</i> (Bieb.) Eig subsp. <i>macra</i>		Ir-Tur		nt	0-1750
<i>Koeleria cristata</i> (L.) Pers.				nt	0-3000
<i>Apera intermedia</i> Hackel		Ir-Tur		nt	0-2000
<i>Agrostis stolonifera</i> L.	Bent grass	Euro-Sib		nt	0-2390
<i>Alopecurus arundinaceus</i> Poir.	Foxtail grass	Euro-Sib		nt	0-3050
<i>Phleum exaratum</i> Hochst. ex Griseb subsp. <i>exaratum</i>	Cat's tail			nt	0-2300
<i>Festuca arundinacea</i> Schreber subsp. <i>arundinacea</i>	Fescue grass			nt	300-2100
<i>Lolium perenne</i> L.	English ray grass	Euro-Sib		nt	0-2050
<i>Poa annua</i> L.	Meadow grass			nt	0-2200
<i>P. pratensis</i> L.				nt	0-2800
<i>Catabrosa aquatica</i> (L.) P. Beauv				nt	0-2600

Table A5.1. (continued)

TAXON	Common Name	Phytogeographic Region	Endemism	Threat Status	Elevation (m)
<i>Dactylis glomerata</i> L. subsp. <i>hispanica</i> (Roth) Nyman	Orchard grass			nt	0-2900
<i>Briza humilis</i> Bieb.	Quaking grass			nt	350-1800
<i>Echinaria capitata</i> (L.) Desf.				nt	400-1650
<i>Melica ciliata</i> L. subsp. <i>ciliata</i>				nt	400-2800
<i>Stipa lessingiana</i> Trin. et Rypr.	Feather grass			nt	100-3000
<i>Piptatherum coerulescens</i> (Desf.) P. Beauv.				nt	0-1420
<i>Phragmites australis</i> (Cav.) Trin. ex Steudel	Reed	Euro-Sib		nt	0-2400
<i>Eragrostis minor</i> Hast	Lower grass			nt	10-2700
<i>Cynodon dactylon</i> (L.) Pers. var. <i>villosus</i> Regel	Dog's tooth			nt	0-3050
<i>Echinochloa crus-galli</i> (L.) P. Beauv	Japanese millet			nt	0-2080
<i>Setaria viridis</i> (L.) P. Beauv				nt	0-2300
<i>Pennisetum orientale</i> L.C.M. Richard	Penisetum	Ir-Tur		nt	0-2135
<i>Sorghum bicolor</i> (L.) Moench	Great millet			nt	0-1200
<i>Chrysopogon gryllus</i> (L.) Trin subsp. <i>gryllus</i>				nt	0-1550
<i>Bothriochloa ischaemum</i> (L.) Keng				nt	15-2100

Table A5.2. Mammals Identified in the Study Area

MAMMALIA	MAMMALS	BERN ¹	E.R.L. ²	HABITATS
ERINACEIDAE				
<i>Erinaceus europeus</i>	Western hedgehog	App. 3	—	Woods, gardens, near settlements, humid areas
SORICIDAE				
<i>Sorex minutus</i>	Pygmy shrew	App. 3	—	Forests, meadows, near lakes and seas, among shrubs and grass
TALPIDAE				
<i>Talpa europea</i>	Common mole	—	—	
VESPERTILINIDAE				
<i>Nyctalus noctula</i>	Early flying bat	App. 2	—	
CANIDAE				
<i>Canis aureus</i> *	Golden jackal	—	—	Dense forests, oak woods, shrubs, maquis
<i>Canis lupus</i> *	Gray wolf	App. 2	—	Tundras, steppes with trees, open areas, mountainous areas
<i>Vulpes vulpes</i>	Red fox	—	—	Shrubs, forests with plenty of underbrush
MUSTELIDAE				
<i>Mustela nivalis</i>	Weasel	App. 3	—	Open areas, fields, cavities and holes in buildings
<i>Meles meles</i> *	Badger	App. 3	—	
SUIDAE				
<i>Sus scrofa</i>	Wild boar	—	—	Forest areas
SCIURIDAE				
<i>Citellus citellus</i>		—	—	
<i>Sciurus vulgaris</i>	Squirrel	App. 3	—	On trees in forest areas, woods
MICROTINAE				
<i>Arvicola terrestris</i>	Northern water vole	—	—	Near water in dense forests, meadows
<i>Microtus nivalis</i>		App. 3	—	

Table A5.2. (continued)

MAMMALIA	MAMMALS	BERN ¹	E.R.L. ²	HABITATS
MURIDAE				
<i>Mus musculus</i>	House mouse	---	---	In houses
<i>Rattus rattus</i>	Black rat	---	---	In houses
LEPORIDAE				
<i>Lepus europaeus</i>	Brown hare	App. 3	---	

* Included in the list upon communication with inhabitants

¹ BERN Convention

Appendix 2 : Strictly protected
fauna species

Appendix 3 : Protected fauna
species

² E.R.L. (European Red List)

E : Endangered
V : Vulnerable
R : Rare
I : Indeterminate
K : Insufficiently Known

Table A5.3 Bird Species Identified in the Study Area

No	AVES	BIRDS	Abundance in study area	Status ¹	BERN ²	E.R.L. ³
	CICONIIFORMES	HERONS, STORKS AND IBISES				
	ARDEIDAE	HERONS AND BITTERNS				
1	<i>Casmerodius albus (Egretta alba)</i>	Great white egret	Casual	R,W	App. 2	--
2	<i>Ardea cinerea</i>	Grey heron	Scarce (One)	R	App. 3	--
3	<i>A. purpurea</i>	Purple heron	Casual (One)	S	App. 2	--
	CICONIIDAE	STORKS				
4	<i>Ciconia nigra</i>	Black stork	Scarce (One)	S,T	App. 2	--
5	<i>C. ciconia</i>	White stork	Common, breeder	R,S,T	App. 2	--
	ACCIPITRIFORMES	BIRDS OF PREY				
	ACCIPITRIDAE	VULTURES, EAGLES, BUZZARDS, HAWKS, KITES, etc.				
6	<i>Accipiter nisus</i>	Sparrowhawk	Casual	R,W	App. 2	--
7	<i>Buteo buteo</i>	Buzzard	Scarce	R,W,T	App. 2	--
8	<i>B. rufinus</i>	Long-legged buzzard	Scarce	R,W	App. 2	--
9	<i>Neophron percnopterus</i>	Egyptian vulture	Scarce, breeder	S	App. 2	--
10	<i>Aquila chrysaetos</i>	Golden eagle	Scarce	R,W	App. 2	--
	FALCONIFORMES					
	FALCONIDAE	FALCONS				
11	<i>Falco tinnunculus</i>	Kestrel	Uncommon	R	App. 2	--
12	<i>F. vespertinus</i>	Red-footed falcon	Scarce, transit	T,S	App. 2	--
	GALLIFORMES	GALLINACEOUS BIRDS				
	PHASIANIDAE	PARTRIDGES AND PHEASANTS				
13	<i>Alectoris chukar</i>	Chukar	Uncommon, breeder	R	App. 3	--
	CHARADRIIFORMES	WADERS; GULLS AND AUKS				
	SCOLOPACIDAE	SANDPIPERS				
14	<i>Actitis hypoleucos</i>	Common sandpiper	Scarce	S,W,T	App. 2	--
	LARIDAE	GULLS				
15	<i>Larus argentatus</i>	Herring gull	Casual	R	--	--

Table A5.3. (continued)

No	AVES	BIRDS	Abundance in study area	Status ¹	BERN ²	E.R.L. ³
	COLUMBIFORMES					
	COLUMBIDAE	PIGEONS AND DOVES				
16	<i>Columba livia</i>	Rock dove	Uncommon	R	App. 3	--
17	<i>C. palumbus</i>	Woodpigeon	Scarce	R	--	--
18	<i>Streptopelia decaocto</i>	Collared dove	Common	R	App. 3	--
19	<i>S. turtur</i>	Turtle dove	Abundant, breeder	S	App. 3	--
	CUCULIFORMES					
	CUCULIDAE	CUCKOOS				
20	<i>Cuculus canorus</i>	Cuckoo	Uncommon	S	App. 3	--
	STRIGIFORMES					
	STRIGIDAE	OWLS				
21	<i>Athene noctua</i>	Little owl	Casual	R	App. 2	--
	APODIFORMES					
	APOIDAE	SWIFTS				
22	<i>Apus apus</i>	Swift		S,T	App. 3	--
	CORACIIFORMES	KINGFISHERS AND THEIR ALLIES				
	ALCEDINIDAE	KINGFISHERS				
23	<i>Alcedo atthis</i>	Kingfisher	Uncommon	R	App. 2	--
	MEROPIIDAE	BEE-EATERS				
24	<i>Merops apiaster</i>	Bee-eater	Scarce	S	App. 2	--
	CORACIIDAE	ROLLERS				
25	<i>Coracias garrulus</i>	Roller	Uncommon	S	App. 2	--
	UPUPIIDAE	HOOPOE				
26	<i>Upupa epops</i>	Hoopoe	Scarce	S	App. 2	--
	PICIFORMES					
	PICIDAE	WOODPECKERS				
27	<i>Dendrocopos syriacus</i>	Syrian woodpecker	Uncommon	R	App. 2	--

Table A5.3. (continued)

No	AVES	BIRDS	Abundance in study area	Status ¹	BERN ²	E.R.L. ³
	PASSERIFORMES	PASSERINES				
	ALAUDIDAE	LARKS				
28	<i>Calandrella rufescens</i>	Lesser short-toed lark	Scarce	R,S	App. 2	--
29	<i>Galerida cristata</i>	Crested lark	Uncommon	R	App. 3	--
30	<i>Lullula arborea</i>	Woodlark	Scarce	R	App. 3	--
	HIRUNDINIDAE	SWALLOWS				
31	<i>Riparia riparia</i>	Sand martin	Uncommon, breeder	S	App. 2	--
32	<i>Ptyonoprogne rupestris</i>	Crag martin	Abundant, breeder	S	App. 2	--
33	<i>Hirundo rustica</i>	Swallow	Common	S	App. 2	--
34	<i>Delichon urbica</i>	House martin	Common, breeder	S	App. 2	--
	MOTACILLIDAE	WAGTAILS AND PIPITS				
35	<i>Anthus campestris</i>	Tawny pipit	Scarce	S	App. 2	--
36	<i>Motacilla alba</i>	White wagtail	Common	R	App. 2	--
	TROGLODYTIDAE	WRENS				
37	<i>Troglodytes troglodytes</i>	Wren	Scarce	R	App. 2	--
	CINCLIDAE	DIPPERS				
38	<i>Cinclus cinclus</i>	Dipper	Rare	R	App. 2	--
	TURDIDAE	TRUSHES				
39	<i>Cercotrichas galactotes</i>	Rufous bush robin	Scarce	S	App. 2	--
40	<i>Erithacus rubecula</i>	Robin	Uncommon	R	App. 2	--
41	<i>Luscinia megarhynchos</i>	Nightingale	Uncommon, breeder	S	App. 2	--
42	<i>L. (Cyanosylvia) svecica</i>	Blue throat	Scarce	S	App. 2	--
43	<i>Phoenicurus ochruros</i>	Black redstart	Scarce	S	App. 2	--
44	<i>P. phoenicurus</i>	Red start	Uncommon	R	App. 2	--
45	<i>Saxicola rubetra</i>	Whinchat	Uncommon	R	App. 2	--
46	<i>Oenanthe hispanica</i>	Black-eared wheatear	Uncommon, breeder	S,T	App. 2	--
47	<i>O. oenanthe</i>	Wheatear	Scarce	S	App. 2	--
48	<i>Monticola solitarius</i>	Blue rock thrush	Common, breeder	S	App. 2	--

Table A5.3. (continued)

No	AVES	BIRDS	Abundance in study area	Status ¹	BERN ²	E.R.L. ³
49	<i>Turdus merula</i>	Blackbird	Uncommon	R	App. 3	--
50	<i>T. viscivorus</i>	Mistle thrush	Scarce	R	App. 3	--
	SYLVIDAE	WARBLERS				
51	<i>Sylvia communis</i>	White throat	Uncommon, breeder	S	App. 2	--
52	<i>S. borin</i>	Garden warbler	Scarce	T	App. 2	--
53	<i>S. atricapilla</i>	Blackcap	Uncommon	S	App. 2	--
54	<i>Phylloscopus sibilatrix</i>	Wood warbler	Scarce	S,T	App. 2	--
55	<i>P. collybita</i>	Chiffchaff	Common	R,S,T	App. 2	--
	MUSCICAPIDAE	FLYCATCHERS				
56	<i>Muscicapa striata</i>	Spotted flycatcher	Uncommon	S	App. 3	--
57	<i>Ficedula albicollis</i>	Collared flycatcher	Scarce	S,T	App. 2	--
	AEGITHALIDAE	LONG-TAILED TITS				
58	<i>Aegithalos caudatus</i>	Long-tailed tit	Casual	R	App. 2	--
	PARIDAE	TITS				
59	<i>Parus lugubris</i>	Sombre tit	Casual	R	App. 2	--
60	<i>P. caeruleus</i>	Blue tit	Scarce	R	App. 2	--
61	<i>P. major</i>	Great tit	Scarce, breeder	R	App. 2	--
	SITTIDAE	NUTHATCHES				
62	<i>Sitta neumayer</i>	Rock nuthatch	Scarce, breeder	R	App. 2	--
	ORIOLIDAE	ORIOLES				
63	<i>Oriolus oriolus</i>	Golden oriole	Casual	S	App. 2	--
	LANIIDAE	SHRIKES				
64	<i>Lanius collurio</i>	Red-backed shrike	Uncommon, breeder	S	App. 2	--
65	<i>L. minor</i>	Lesser grey shrike	Scarce, breeder	T,S	App. 2	--
66	<i>L. excubitor</i>	Great grey shrike	Casual	T,W	App. 2	--
	CORVIDAE	CROWS				
67	<i>Garrulus glandarius</i>	Jay	Casual	R	--	--
68	<i>Pica pica</i>	Magpie	Casual	R	--	--

Table A5.3. (continued)

No	AVES	BIRDS	Abundance in study area	Status ¹	BERN ²	E.R.L. ³
69	<i>Corvus monedula</i>	Jackdaw	Uncommon	R	--	--
70	<i>Corvus corone cornix</i>	Hooded crow	Common, breeder	R	--	--
71	<i>C. corax</i>	Raven	Scarce	R	App. 3	--
	STURNIDAE	STARLINGS				
72	<i>Sturnus vulgaris</i>	Starling	Uncommon	R	--	--
73	<i>S. roseus</i>	Rose-coloured starling	Scarce	S	App. 2	--
	PASSERIDAE	SPARROWS				
74	<i>Passer domesticus</i>	House sparrow	Abundant	R	--	--
75	<i>P. hispaniolensis</i>	Spanish sparrow	Uncommon, breeder	R	App. 3	--
76	<i>P. montanus</i>	Tree sparrow	Abundant	R	App. 3	--
	FRINGILLIDAE	FINCHES				
77	<i>Fringilla coelebs</i>	Chaffinch	Uncommon	R	App. 3	--
78	<i>F. montifringilla</i>	Brambling	Scarce	W	App. 3	--
79	<i>Serinus serinus</i>	Serin	Casual	R	App. 2	--
80	<i>Carduelis chloris</i>	Greenfinch	Uncommon, breeder	R	App. 2	--
81	<i>C. carduelis</i>	Goldfinch	Common, breeder	R	App. 2	--
	EMBERIZIDAE	BUNTINGS				
82	<i>Emberiza citrinella</i>	Yellowhammer	Scarce	W,T	App. 2	--
83	<i>E. cia</i>	Rock bunting	Casual	R,S	App. 2	--
84	<i>E. melanocephala</i>	Black-headed bunting	Local, common	S	App. 2	--
85	<i>E. cirius</i>	Girl bunting	Scarce	W,T	App. 2	--
86	<i>Miliaria calandra</i>	Corn bunting	Scarce	R	App. 3	--

¹ Status

R : Resident (breeding)
S : Summer visitor (breeding)
W : Winter visitor
T : Transit

² BERN Convention

Appendix 2 : Strictly protected
fauna species
Appendix 3 : Protected fauna
species

³ E.R.L. (European Red List)

E : Endangered
V : Vulnerable
R : Rare
I : Indeterminate
K : Insufficiently Known

Table A5.4. Reptiles Identified in the Study Area

REPTILIA	REPTILES	BERN ¹	E.R.L. ²	HABITATS
TESTUDINIDAE				
<i>Testudo graeca graeca</i>	Spur-thighed tortoise	App. 2	V	Shrubs, stony areas
LACERTIDAE				
<i>Lacerta saxicola</i>	Caucasian rock lizard	App. 3	—	
<i>Lacerta trilineata</i>	Balkan green lizard	App. 2	—	Stony areas, shrubs, gardens and fields
COLUBRIDAE				
<i>Coluber caspius</i>		App. 3	—	Under stones, in cavities
<i>Natrix natrix</i>	Grass snake	App. 3	—	Stony areas and meadows near water
<i>Natrix tessellata</i>		App. 2	—	Stony areas and meadows near water

Table A5.5. Amphibians Identified in the Study Area

AMPHIBIA	AMPHIBIANS	BERN ¹	E.R.L. ²	HABITATS
BUFONIDAE				
<i>Bufo viridis</i>	Green toad	App. 2	—	Stony areas in gardens and open fields
RANIDAE				
<i>Rana ridibunda</i>	Marsh frog	App. 3	—	Deciduous forests, under leaves and damp meadows.

¹ BERN Convention

Appendix 2 : Strictly protected
fauna species
Appendix 3 : Protected fauna
species

² E.R.L. (European Red List)

E : Endangered
V : Vulnerable
R : Rare
I : Indeterminate
K : Insufficiently Known

Table A5.6. Algae Species Observed in Kizilirmak

Family	Species	Abundance ¹
Cyanophyta	<i>Raphidiopsis</i> sp.	D
	<i>Merismepoedia glauca</i>	B
	<i>Spirulina major</i>	A
	<i>Spirulina</i> sp.	A
	<i>Spirulina</i> sp.	D
	<i>Spirulina</i> sp.	A
	<i>Oscillatoria amphibia</i>	D
	<i>Oscillatoria formasa</i>	D
	<i>Oscillatoria tenuis</i>	D
	<i>Oscillatoria</i> sp.	A
	<i>Lyngbya lagerheimi</i>	A
	<i>Phormidium ambiguum</i>	C
	<i>Phormidium foveolarium</i>	A
	<i>Phormidium molle</i>	A
Chlorophyta	<i>Carteria</i> sp.	D
	<i>Chlamydomonas polyprenoideum</i>	A
	<i>Pediastrum dublex</i>	A
	<i>Pediastrum</i> sp.	A
	<i>Scenedesmus acuminatus</i>	A
	<i>Scenedesmus quadricauda</i>	A
	<i>Scenedesmus</i> sp.	A
	<i>Oocytis solitaria</i>	A
	<i>Chlorhormidium flaccidum</i>	D
	<i>Stigeoclonium</i> sp.	D
	<i>Stigeoclonium</i> sp.	B
	<i>Stigeoclonium tenue</i>	D
	<i>Cladophora fracta</i>	D
	<i>Cladophora glomerata</i>	B
	<i>Cosmarium formosulum</i>	A
	<i>Cosmorium</i> sp.	A
	<i>Mougeotia</i> sp.	B
	<i>Mougeotia</i> sp.	B
	<i>Spirogyra</i> sp.	A
Euglenophyta	<i>Euglena elongata</i>	B
	<i>Euglena gracilis</i>	A
	<i>Euglena</i> sp.	D
	<i>Phacus</i> sp.	B
Chrysophyta	<i>Vaucheria</i> sp.	E

¹ Abundance

- A : Very scarce
 B : Scarce
 C : Moderately abundant
 D : Abundant
 E : Very abundant

Table A5.7. Diatom Species in Kizilirmak

No	Species
1	<i>Melosira granulata</i>
2	<i>Cyclotella kützingiana</i>
3	<i>Cyclotella meneghiniana</i>
4	<i>Cyclotella ocellata</i>
5	<i>Diatoma elongatum</i>
6	<i>Diatoma teneu</i>
7	<i>Diatoma vulgare</i>
8	<i>Meridion circulare</i>
9	<i>Fragilaria construens</i>
10	<i>Fragilaria pinnata</i>
11	<i>Fragilaria vaucheriae</i>
12	<i>Hannaea arcus</i>
13	<i>Synedra acus</i>
14	<i>Synedra capitata</i>
15	<i>Synedra ulna</i>
16	<i>Synedra ulna</i> var. <i>biceps</i>
17	<i>Synedra ulna</i> var. <i>oxyrhychus</i>
18	<i>Cocconeis pediculus</i>
19	<i>Cocconeis plancetula</i> var. <i>euglypta</i>
20	<i>Cocconeis</i> sp.
21	<i>Achnanthes lanceolata</i>
22	<i>Achnanthes lanceolata</i> var. <i>rostrata</i>
23	<i>Achnanthes minutissima</i>
24	<i>Rhoicosphenia curvata</i>
25	<i>Frustilia vulgaris</i>
26	<i>Gyrosigma acuminatum</i>
27	<i>Gyrosigma attenuatum</i>
28	<i>Anomoeoneis costata</i>
29	<i>Stauroneis smithii</i>
30	<i>Neidium dubium</i>
31	<i>Diploneis elliptica</i>
32	<i>Navicula atomus</i>
33	<i>Navicula capitata</i>
34	<i>Navicula cryptocephala</i>
35	<i>Navicula cryptocephala</i> var. <i>venata</i>
36	<i>Navicula cuspidata</i>
37	<i>Navicula exigua</i>
38	<i>Navicula graciloides</i>
39	<i>Navicula gregaria</i>
40	<i>Navicula indifferent</i>
41	<i>Navicula lanceolata</i>
42	<i>Navicula menisculus</i>
43	<i>Navicula mutica</i>
44	<i>Navicula mutica</i> var. <i>undulata</i>
45	<i>Navicula nivalis</i>
46	<i>Navicula pygmaea</i>

Table A5.7. (continued)

No	Species
47	<i>Navicula pupula</i>
48	<i>Navicula radiosa</i>
49	<i>Navicula radiosa</i> var. <i>parva</i>
50	<i>Navicula tripunctata</i>
51	<i>Navicula subtilissima</i>
52	<i>Caloneis alpestris</i>
53	<i>Caloneis vacillum</i>
54	<i>Caloneis ventricosa</i>
55	<i>Caloneis ventricosa</i> var. <i>alpina</i>
56	<i>Pinnularia biceps</i>
57	<i>Pinnularia borealis</i>
58	<i>Pinnularia breidissonii</i>
59	<i>Pinnularia breidissonii</i> var. <i>diminuta</i>
60	<i>Pinnularia mesolepta</i>
61	<i>Pinnularia viridis</i>
62	<i>Amphipleura alata</i>
63	<i>Amphora ovalis</i>
64	<i>Amphora pediculus</i>
65	<i>Cymbella affinis</i>
66	<i>Cymbella amphicephala</i>
67	<i>Cymbella cistula</i>
68	<i>Cymbella cymbiformis</i>
69	<i>Cymbella helvetica</i>
70	<i>Cymbella lanceolata</i>
71	<i>Cymbella microscephala</i>
72	<i>Cymbella naviculiformis</i>
73	<i>Cymbella prostrata</i>
74	<i>Cymbella sinuata</i>
75	<i>Cymbella ventricosa</i>
76	<i>Gomphonema augur</i>
77	<i>Gomphonema intricatum</i>
78	<i>Gomphonema intricatum</i> var. <i>calcaria</i>
79	<i>Gomphonema olivaceum</i>
80	<i>Gomphonema olivaceum</i> var. <i>calcaria</i>
81	<i>Gomphonema parvulum</i>
82	<i>Denticula elegans</i>
83	<i>Epithemia sorex</i>
84	<i>Epithemia turgida</i>
85	<i>Epithemia zebra</i>
86	<i>Rhopalodia gibba</i>
87	<i>Rhopalodia gibberula</i>
88	<i>Bacillaria paradoxa</i>
89	<i>Hantzschia amphioxys</i>
90	<i>Nitzschia acicularis</i>
91	<i>Nitzschia amphibia</i>
92	<i>Nitzschia apiculata</i>

Table A5.7. (continued)

No	Species
93	<i>Nitzschia clausii</i>
94	<i>Nitzschia dissipata</i>
95	<i>Nitzschia fasciculata</i>
96	<i>Nitzschia hungarica</i>
97	<i>Nitzschia linearis</i>
98	<i>Nitzschia obtusa</i>
99	<i>Nitzschia palea</i>
100	<i>Nitzschia recta</i>
101	<i>Nitzschia romana</i>
102	<i>Nitzschia rostellata</i>
103	<i>Nitzschia sigma</i>
104	<i>Nitzschia sigmoidea</i>
105	<i>Nitzschia subcapitellata</i>
106	<i>Nitzschia subtibucola</i>
107	<i>Nitzschia trylionella</i>
108	<i>Cymatopleura elliptica</i>
109	<i>Cymatopleura solea</i>
110	<i>Surirella angustata</i>
111	<i>Surirella capronii</i>
112	<i>Surirella ovalis</i>
113	<i>Surirella ovata</i>
114	<i>Surirella ovata</i> var. <i>pinnata</i>
115	<i>Surirella ovata</i> var. <i>salina</i>
116	<i>Surirella</i> sp.
117	<i>Campylodiscus</i> sp.

Table A5.8. Plankton Species Observed in Altinkaya Reservoir

Plankton species		March 1988	October 1988	June 1989
PHYTOPLANKTON				
Bacillariophyceae	Amphora	x		
	Asterionella	x		x
	Campylodiscus	x		
	Centric Diatoma			x
	Cocconeis	x	x	
	Coloneis		x	
	Cyclotella	x	x	x
	Cymatoplaura	x		
	Cymbella	x	x	x
	Diatoma	x	x	x
	Fragilaria	x	x	
	Gomphonema	x		
	Gyrosigma			x
	Melosira	x	x	
	Navicula	x	x	x
	Nitzschia	x	x	x
	Pinnularia	x		x
	Stephanodiscus		x	
	Surirella	x	x	
	Synedra	x	x	x
	Tabellaria	x	x	x
Chlorophyceae	Closterium	x	x	
	Coleastrum	x	x	x
	Colcochaeta	x		
	Cosmarium	x		
	Microsterias	x		
	Mougeotia	x		
	Oocystis	x	x	
	Pediastrum	x	x	x
	Scenedesmus	x	x	x
	Sphaerocystis	x	x	
	Staurostrum	x	x	x
	Tetraedron			x
	Ulotrix	x	x	x
	Volvox	x	x	
	Zygnema	x		
Cyanophyceae	Gomphsphaeria		x	x
	Gleocapsa		x	x
	Anabaena		x	x
	Cystodinium		x	
	Anacystis		x	
Dinophyceae	Ceratium	x	x	
	Peridinium	x	x	
Euglenophyceae	Trachelomonas	x		

Table A5.8 (continued)

Plankton species		March 1988	October 1988	June 1989
PHYTOPLANKTON				
Rhodophyceae	Lemanea		x	x
Xanthophyceae	Ophiocythium			x
	Tribonema	x		
ZOOPLANKTON				
Ciliata	Codonella		x	
	Frontonia		x	
	Vorticella	x	x	
Cladocera	Bosmina	x		x
	Ceriodaphnia		x	x
	Daphnia	x		x
	Diaphanosoma		x	
	Ephippium			x
Copepoda	Canthocamptus			x
	Cyclops	x	x	x
	Diaptomus	x	x	x
	Metanauplius	x	x	x
	Nauplius	x	x	x
Rotifera	Asplanchna	x	x	x
	Brachionus			x
	Chromogaster	x		
	Epiphanes	x		x
	Gastropus	x		x
	Keratella	x	x	x
	Lecane	x		x
	Notholca	x		
	Ploesoma	x		
	Polyarthra	x	x	x
	Synchaeta	x		x
	Testudinella	x		
	Trichocerca	x		

x: The species was observed on that date

Table A5.9. Fish Species Identified in the Study Area

PISCES	FISH	BERN ¹	E.R.L. ²
CYPRINIDAE			
<i>Barbus plebejus esherichi</i>	Barb	App. 3	—
<i>Capoeta capoeta sieboldi</i>	Siraz	—	—
<i>Capoeta tinca</i>	Siraz	—	—
<i>Chalcalburnus chalcooides</i>	Chub mackerel	App. 3	—
<i>Cyprinus carpio</i>	Carp	—	—
<i>Leuciscus cephalus</i>	Chup	—	—
SILURIDAE			
<i>Silurus glanis</i>	Wels	App. 3	—
PERCIDAE			
<i>Stizostedion lucioperca</i>	Zander	—	—

¹ BERN Convention

Appendix 2 : Strictly protected fauna species

Appendix 3 : Protected fauna species

² E.R.L. (European Red List)

E : Endangered

V : Vulnerable

R : Rare

I : Indeterminate

K : Insufficiently Known

Table A5.10. Distribution of Fish Species According to Sampling Stations

Station No.		1	2	3	4	5	6	7	8	9	Species'
River km		118	123.5	125.5	135	149.5	157.7	168.2	172	175	Total
<i>Barbus plebejus esherichi</i>	n	2	10	16	26	63	10	27	29	13	196
	%	16.7	90.9	57.1	89.7	90	100	96.4	80.5	100	82.7
<i>Capoeta capoeta sieboldi</i>	n			10		2		1	3		16
	%			35.7		2.9		3.6	8.3		6.7
<i>Capoeta tinca</i>	n	1	1	1	1	3					7
	%	8.3	9.1	3.6	3.4	4.2					3
<i>Chalcalburnus chalcooides</i>	n			1							1
	%			3.6							0.4
<i>Cyprinus carpio</i>	n	2							1		3
	%	16.7							2.8		1.3
<i>Leuciscus cephalus</i>	n								1		1
	%								2.8		0.4
<i>Silurus glanis</i>	n	3			2	2			2		9
	%	25			6.9	2.9			5.6		3.8
<i>Stizostedion lucioperca</i>	n	4									4
	%	33.3									1.7
Station's	n	12	11	28	29	70	10	28	36	13	237
Total	%	5.1	4.7	11.8	12.2	29.5	4.2	11.8	15.2	5.5	100

Table A5.11. Morphometric Measurements of the Fish Species Captured in Kizilirmak

Date	Station (river km)	Species	Fish No	Weight (g)	Length (cm)			Age
					Standard	Fork	Total	
23.05.97	118.0	<i>Stizostedion lucioperca</i>	1	87.0	19.0	21.2	22.8	2
23.05.97	118.0	<i>Stizostedion lucioperca</i>	2	80.0	18.3	20.6	22.0	3
23.05.97	125.5	<i>B. plebejus esherichi</i>	1	46.0	15.7	17.2	19.0	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	1	8.0	9.0	9.8	11.0	1
23.05.97	135.0	<i>B. plebejus esherichi</i>	2	13.0	10.5	11.3	12.4	1
23.05.97	135.0	<i>B. plebejus esherichi</i>	3	22.0	12.4	13.3	15.1	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	4	27.0	12.8	13.4	15.6	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	5	20.0	12.5	13.5	14.8	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	6	24.0	13.1	14.2	15.7	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	7	26.0	13.9	14.8	16.3	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	8	26.0	14.1	15.0	16.7	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	9	28.0	14.4	15.2	17.0	2
23.05.97	135.0	<i>B. plebejus esherichi</i>	10	28.0	14.5	15.5	17.1	2
23.05.97	149.5	<i>B. plebejus esherichi</i>	1	29.0	13.0	13.6	16.1	2
23.05.97	149.5	<i>B. plebejus esherichi</i>	2	35.0	14.1	15.2	16.7	2
23.05.97	149.5	<i>B. plebejus esherichi</i>	3	76.0	18.7	20.0	22.5	2
23.05.97	149.5	<i>B. plebejus esherichi</i>	4	122.0	20.7	22.7	25.0	3
23.05.97	149.5	<i>Silurus glanis</i>	1	110.0	23.8	—	26.2	
23.05.97	157.7	<i>B. plebejus esherichi</i>	1	22.0	12.5	13.5	15.1	2
23.05.97	157.7	<i>B. plebejus esherichi</i>	2	32.0	13.6	14.4	15.9	2
23.05.97	168.2	<i>B. plebejus esherichi</i>	1	30.0	14.1	15.0	16.6	1
23.05.97	168.2	<i>B. plebejus esherichi</i>	2	34.0	14.3	15.2	16.9	2
23.05.97	123.5	<i>B. plebejus esherichi</i>	1	42.0	15.1	16.2	18.6	2
23.05.97	123.5	<i>B. plebejus esherichi</i>	2	160.0	23.6	25.6	27.7	4
24.05.97	118.0	<i>Capoeta tinca</i>	1	212.0	25.4	27.5	29.4	3
24.05.97	118.0	<i>Cyprinus carpio</i>	1	1880.0	45.5	49.5	54.5	6
24.05.97	118.0	<i>Cyprinus carpio</i>	2	2855.0	50.0	54.5	58.0	6
24.05.97	118.0	<i>Silurus glanis</i>	1	197.0	30.1	—	31.9	
24.05.97	118.0	<i>Silurus glanis</i>	2	215.0	31.3	—	33.2	
24.05.97	118.0	<i>Stizostedion lucioperca</i>	1	56.0	17.3	18.8	20.2	3
24.05.97	118.0	<i>Stizostedion lucioperca</i>	2	43.0	16.4	17.9	19.2	3
24.05.97	172.0	<i>B. plebejus esherichi</i>	1	42.0	15.0	16.0	17.5	2
24.05.97	172.0	<i>B. plebejus esherichi</i>	2	44.0	15.2	16.2	18.0	2
24.05.97	172.0	<i>B. plebejus esherichi</i>	3	115.0	21.5	23.0	25.4	3
14.06.97	125.5	<i>C. capoeta sieboldi</i>	1	31.0	13.5	14.8	16.8	1
14.06.97	125.5	<i>C. capoeta sieboldi</i>	2	55.0	17.4	19.1	20.9	2
14.06.97	125.5	<i>C. capoeta sieboldi</i>	3	37.0	15.2	16.3	17.8	2
14.06.97	125.5	<i>C. capoeta sieboldi</i>	4	102.0	20.3	22.4	24.4	3
14.06.97	125.5	<i>C. capoeta sieboldi</i>	5	77.0	19.2	21.0	22.9	3
14.06.97	125.5	<i>C. capoeta sieboldi</i>	6	42.0	15.0	16.6	18.3	3
14.06.97	125.5	<i>C. capoeta sieboldi</i>	7	60.0	17.5	19.0	21.1	3
14.06.97	125.5	<i>Chalcalburnus chalcoides</i>	1	17.0	9.8	10.8	11.5	
14.06.97	135.0	<i>B. plebejus esherichi</i>	1	64.0	17.0	18.3	20.6	3
14.06.97	135.0	<i>B. plebejus esherichi</i>	2	580.0	30.4	32.7	36.0	5
14.06.97	123.5	<i>B. plebejus esherichi</i>	1	34.0	13.8	15.1	16.5	2
15.06.97	149.5	<i>B. plebejus esherichi</i>	1	52.0	15.4	16.5	18.2	2

Table A5.11. (continued)

Date	Station (river km)	Species	Fish No	Weight (g)	Length (cm)			Age
					Standard	Fork	Total	
15.06.97	149.5	<i>B. plebejus esherichi</i>	2	62.0	15.7	16.8	18.8	2
15.06.97	149.5	<i>B. plebejus esherichi</i>	3	81.0	17.7	19.0	20.8	3
15.06.97	149.5	<i>B. plebejus esherichi</i>	4	92.0	18.3	19.3	21.7	3
15.06.97	149.5	<i>B. plebejus esherichi</i>	5	101.0	18.4	19.6	21.6	4
15.06.97	149.5	<i>B. plebejus esherichi</i>	6	135.0	20.2	21.5	24.2	4
15.06.97	149.5	<i>B. plebejus esherichi</i>	7	262.0	24.7	26.4	29.0	5
15.06.97	149.5	<i>B. plebejus esherichi</i>	8	365.0	27.4	29.0	32.3	5
15.06.97	149.5	<i>C. capoeta sieboldi</i>	1	42.0	15.8	17.0	19.0	2
15.06.97	149.5	<i>Capoeta tinca</i>	1	53.0	15.7	17.0	18.5	3
15.06.97	157.7	<i>B. plebejus esherichi</i>	1	54.0	15.0	16.2	18.0	2
15.06.97	157.7	<i>B. plebejus esherichi</i>	2	98.0	18.7	20.0	22.2	3
15.06.97	157.7	<i>B. plebejus esherichi</i>	3	125.0	19.5	21.0	23.3	4
15.06.97	168.2	<i>B. plebejus esherichi</i>	1	26.0	12.7	13.6	15.5	2
15.06.97	168.2	<i>B. plebejus esherichi</i>	2	31.0	12.8	13.8	15.4	2
15.06.97	168.2	<i>B. plebejus esherichi</i>	3	34.0	13.6	14.7	16.4	2
15.06.97	168.2	<i>B. plebejus esherichi</i>	4	39.0	14.4	15.2	17.3	2
15.06.97	168.2	<i>B. plebejus esherichi</i>	5	64.0	16.3	17.5	20.0	2
15.06.97	168.2	<i>B. plebejus esherichi</i>	6	86.0	18.2	19.5	22.0	2
15.06.97	168.2	<i>B. plebejus esherichi</i>	7	118.0	19.9	21.4	23.8	3
15.06.97	172.0	<i>B. plebejus esherichi</i>	1	32.0	13.5	14.8	16.4	2
15.06.97	172.0	<i>B. plebejus esherichi</i>	2	148.0	21.7	23.6	25.7	4
15.06.97	172.0	<i>Leuciscus cephalus</i>	1	25.0	12.8	14.0	15.1	3
15.06.97	175.0	<i>B. plebejus esherichi</i>	1	32.0	13.0	14.0	15.7	2
05.07.97	125.5	<i>B. plebejus esherichi</i>	1	28.1	13.2	14.0	15.7	2
05.07.97	125.5	<i>B. plebejus esherichi</i>	2	33.5	13.8	14.6	16.4	2
05.07.97	125.5	<i>B. plebejus esherichi</i>	3	60.5	15.7	16.7	19.2	3
05.07.97	125.5	<i>B. plebejus esherichi</i>	4	86.8	18.5	19.8	22.0	4
05.07.97	125.5	<i>C. capoeta sieboldi</i>	1	106.8	21.0	22.7	25.3	4
05.07.97	125.5	<i>C. capoeta sieboldi</i>	2	67.0	18.3	19.9	22.1	4
05.07.97	135.0	<i>Silurus glanis</i>	1	62.8	21.0	—	22.8	
05.07.97	149.5	<i>B. plebejus esherichi</i>	1	45.9	14.8	16.0	17.8	2
05.07.97	149.5	<i>B. plebejus esherichi</i>	2	43.5	15.3	16.5	18.2	2
05.07.97	149.5	<i>B. plebejus esherichi</i>	3	60.5	16.2	17.6	19.3	2
05.07.97	149.5	<i>B. plebejus esherichi</i>	4	45.4	15.5	16.6	18.5	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	5	49.5	15.6	16.6	18.6	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	6	50.8	15.6	16.8	18.7	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	7	54.4	16.1	17.0	19.0	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	8	60.0	15.9	17.0	19.2	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	9	53.0	15.8	17.2	19.0	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	10	54.2	16.1	17.2	19.3	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	11	57.9	16.5	17.7	19.8	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	12	63.3	16.8	18.0	20.1	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	13	63.4	17.0	18.0	20.1	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	14	63.6	17.0	18.0	20.2	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	15	68.2	17.2	18.2	20.4	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	16	67.7	17.4	18.4	20.4	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	17	75.4	17.3	18.4	20.6	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	18	76.8	17.5	18.5	20.9	3

Table A5.11. (continued)

Date	Station (river km)	Species	Fish No	Weight (g)	Length (cm)			Age
					Standard	Fork	Total	
05.07.97	149.5	<i>B. plebejus esherichi</i>	19	82.1	17.8	18.8	21.2	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	20	85.0	18.8	20.0	22.2	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	21	97.8	19.2	20.3	22.7	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	22	103.1	19.2	20.3	22.5	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	23	119.7	19.6	21.3	23.2	3
05.07.97	149.5	<i>B. plebejus esherichi</i>	24	52.5	16.2	17.3	19.4	4
05.07.97	149.5	<i>B. plebejus esherichi</i>	25	94.4	19.1	20.1	22.5	4
05.07.97	149.5	<i>B. plebejus esherichi</i>	26	92.4	19.1	20.2	22.5	4
05.07.97	149.5	<i>B. plebejus esherichi</i>	27	148.2	22.2	22.6	25.1	4
05.07.97	149.5	<i>B. plebejus esherichi</i>	28	212.0	23.4	25.5	28.0	5
05.07.97	149.5	<i>Silurus glanis</i>	1	84.2	23.5	—	25.4	
05.07.97	157.7	<i>B. plebejus esherichi</i>	1	50.5	15.8	16.8	18.9	3
05.07.97	157.7	<i>B. plebejus esherichi</i>	2	77.6	18.2	19.4	21.6	3
05.07.97	168.2	<i>B. plebejus esherichi</i>	1	24.6	12.2	13.2	14.6	1
05.07.97	168.2	<i>B. plebejus esherichi</i>	2	37.7	14.6	15.7	17.5	2
05.07.97	168.2	<i>B. plebejus esherichi</i>	3	109.5	19.9	21.1	23.7	4
05.07.97	168.2	<i>B. plebejus esherichi</i>	4	125.3	21.0	22.8	25.3	4
05.07.97	168.2	<i>C. capota sieboldi</i>	1	47.9	16.2	17.3	19.3	2
05.07.97	172.0	<i>B. plebejus esherichi</i>	1	23.6	13.1	14.0	15.6	2
05.07.97	172.0	<i>B. plebejus esherichi</i>	2	52.2	15.8	17.0	19.1	2
05.07.97	172.0	<i>B. plebejus esherichi</i>	3	67.3	18.0	19.0	21.2	2
05.07.97	172.0	<i>B. plebejus esherichi</i>	4	57.7	17.1	18.2	20.6	3
05.07.97	172.0	<i>B. plebejus esherichi</i>	5	89.3	19.4	20.7	23.1	3
05.07.97	172.0	<i>Cyprinus carpio</i>	1	2900.0	42.5	55.0	59.0	7
05.07.97	175.0	<i>B. plebejus esherichi</i>	1	18.8	11.8	12.6	14.2	2
05.07.97	175.0	<i>B. plebejus esherichi</i>	2	29.2	13.6	14.5	16.0	2
05.07.97	175.0	<i>B. plebejus esherichi</i>	3	34.4	14.5	15.4	16.8	3
05.07.97	175.0	<i>B. plebejus esherichi</i>	4	57.0	17.0	18.0	20.2	3
05.07.97	175.0	<i>B. plebejus esherichi</i>	5	96.7	19.9	21.0	23.2	3
05.07.97	175.0	<i>B. plebejus esherichi</i>	6	95.6	19.7	21.1	23.1	3
05.07.97	175.0	<i>B. plebejus esherichi</i>	7	181.3	23.8	25.4	28.2	4
29.07.97	135.0	<i>B. plebejus esherichi</i>	1	11.8	10.0	10.8	12.1	1
29.07.97	135.0	<i>B. plebejus esherichi</i>	2	21.1	11.7	12.6	13.9	1
29.07.97	135.0	<i>B. plebejus esherichi</i>	3	23.6	12.1	13.1	14.6	2
29.07.97	135.0	<i>B. plebejus esherichi</i>	4	51.6	16.0	17.0	19.0	3
29.07.97	135.0	<i>B. plebejus esherichi</i>	5	65.3	16.8	18.1	20.3	3
29.07.97	135.0	<i>B. plebejus esherichi</i>	6	110.8	20.1	21.3	23.8	3
29.07.97	135.0	<i>B. plebejus esherichi</i>	7	123.4	21.0	22.5	25.1	4
29.07.97	149.5	<i>B. plebejus esherichi</i>	1	87.0	18.0	19.2	21.7	4
29.07.97	157.7	<i>B. plebejus esherichi</i>	1	18.6	11.4	12.1	13.5	1
29.07.97	157.7	<i>B. plebejus esherichi</i>	2	28.8	13.3	14.1	15.7	2
29.07.97	157.7	<i>B. plebejus esherichi</i>	3	57.8	15.6	16.8	19.2	2
29.07.97	168.2	<i>B. plebejus esherichi</i>	1	30.7	14.6	15.5	17.4	2
29.07.97	168.2	<i>B. plebejus esherichi</i>	2	42.7	14.9	15.8	17.7	2
29.07.97	168.2	<i>B. plebejus esherichi</i>	3	49.2	15.9	16.8	19.1	3
29.07.97	168.2	<i>B. plebejus esherichi</i>	4	53.0	16.3	17.5	19.4	3
29.07.97	168.2	<i>B. plebejus esherichi</i>	5	60.7	17.0	18.0	20.2	3
29.07.97	172.0	<i>B. plebejus esherichi</i>	1	14.5	10.5	11.3	12.5	1

Table A5.11. (continued)

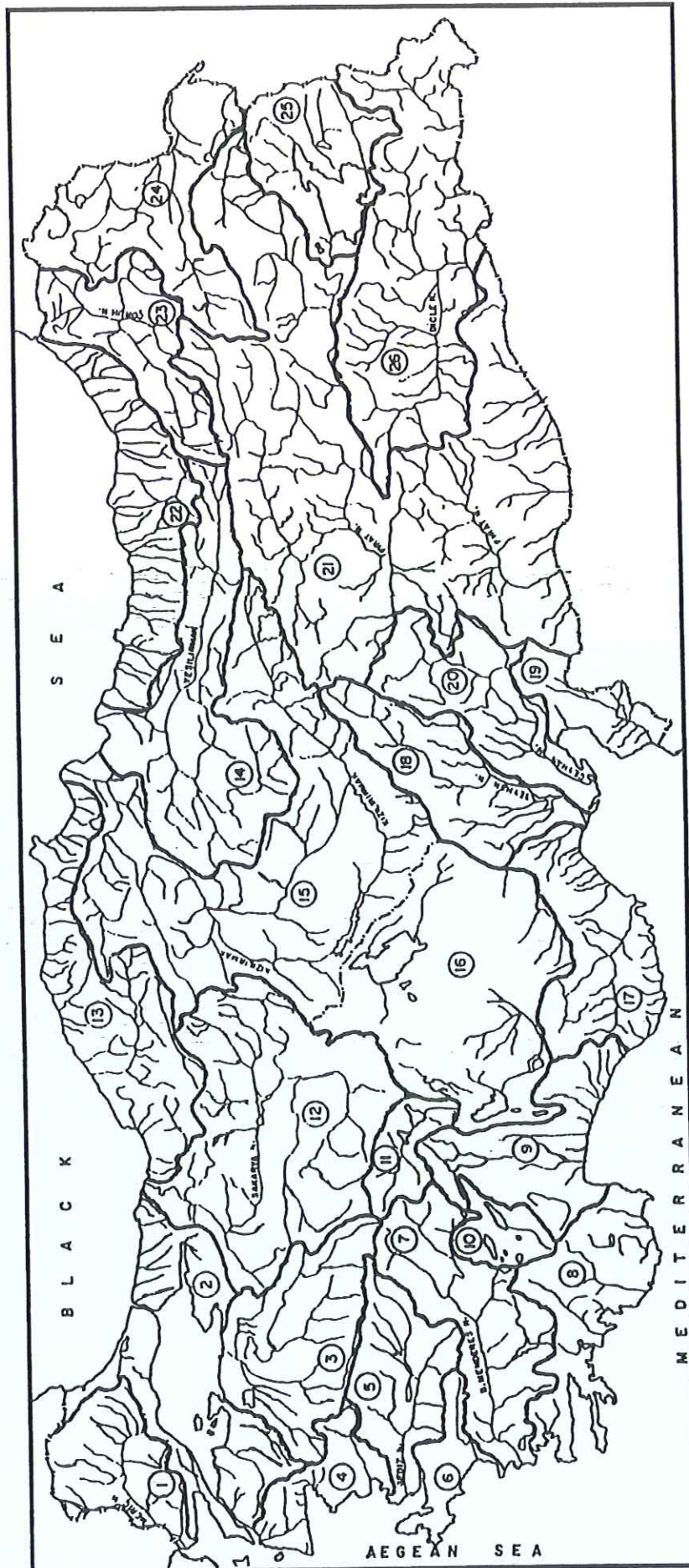
Date	Station (river km)	Species	Fish No	Weight (g)	Length (cm)			Age
					Standard	Fork	Total	
29.07.97	172.0	<i>B. plebejus esherichi</i>	2	16.3	10.9	11.7	13.2	1
29.07.97	172.0	<i>B. plebejus esherichi</i>	3	20.8	12.3	13.0	14.6	1
29.07.97	172.0	<i>C. capoeta sieboldi</i>	1	18.5	10.0	10.9	12.0	1
29.07.97	172.0	<i>C. capoeta sieboldi</i>	2	54.5	14.5	15.7	17.3	2
29.07.97	172.0	<i>Silurus glanis</i>	1	88.9	23.8		26.0	
29.07.97	172.0	<i>Silurus glanis</i>	2	17.7	18.8		14.9	
30.07.97	118.0	<i>B. plebejus esherichi</i>	1	35.0	14.4	15.6	17.5	2
30.07.97	125.5	<i>B. plebejus esherichi</i>	1	107.8	19.5	21.0	23.2	4
30.07.97	123.5	<i>B. plebejus esherichi</i>	1	70.5	17.5	18.7	20.8	2
27.08.97	149.5	<i>B. plebejus esherichi</i>	1	20.3	12.1	12.8	14.3	1
27.08.97	149.5	<i>B. plebejus esherichi</i>	2	22.4	12.1	12.9	14.5	1
27.08.97	149.5	<i>B. plebejus esherichi</i>	3	26.7	13.1	14.1	15.8	2
27.08.97	149.5	<i>B. plebejus esherichi</i>	4	28.8	13.2	14.3	16.0	2
27.08.97	149.5	<i>B. plebejus esherichi</i>	5	31.8	13.6	14.7	16.5	2
27.08.97	149.5	<i>B. plebejus esherichi</i>	6	30.3	13.8	14.8	16.8	2
27.08.97	149.5	<i>B. plebejus esherichi</i>	7	54.9	16.6	17.6	19.4	2
27.08.97	149.5	<i>B. plebejus esherichi</i>	8	41.5	15.3	16.1	17.8	3
27.08.97	149.5	<i>B. plebejus esherichi</i>	9	45.0	15.5	16.5	18.3	3
27.08.97	149.5	<i>B. plebejus esherichi</i>	10	52.6	16.6	17.8	19.6	3
27.08.97	149.5	<i>B. plebejus esherichi</i>	11	61.5	17.2	18.2	20.4	3
27.08.97	149.5	<i>B. plebejus esherichi</i>	12	59.6	17.5	18.6	20.6	3
27.08.97	149.5	<i>B. plebejus esherichi</i>	13	131.7	21.8	23.5	26.3	4
27.08.97	149.5	<i>C. capoeta sieboldi</i>	1	50.0	14.8	16.0	17.5	2
27.08.97	149.5	<i>Capoeta tinca</i>	1	49.6	15.0	16.2	17.5	2
27.08.97	149.5	<i>Capoeta tinca</i>	2	30.1	13.1	14.2	16.5	2
27.08.97	168.2	<i>B. plebejus esherichi</i>	1	16.8	11.2	12.1	13.6	1
27.08.97	168.2	<i>B. plebejus esherichi</i>	2	51.8	16.0	17.0	19.0	3
27.08.97	168.2	<i>B. plebejus esherichi</i>	3	58.2	16.6	17.8	20.0	3
27.08.97	168.2	<i>B. plebejus esherichi</i>	4	86.6	18.0	18.8	22.6	4
27.08.97	168.2	<i>B. plebejus esherichi</i>	5	96.0	19.4	20.6	23.0	4
27.08.97	168.2	<i>B. plebejus esherichi</i>	6	107.6	20.0	21.3	24.0	4
27.08.97	168.2	<i>B. plebejus esherichi</i>	7	181.1	23.0	24.5	27.7	4
27.08.97	172.0	<i>B. plebejus esherichi</i>	1	14.6	10.5	11.4	12.8	1
27.08.97	172.0	<i>B. plebejus esherichi</i>	2	21.1	11.8	12.7	14.2	1
27.08.97	172.0	<i>B. plebejus esherichi</i>	3	24.2	12.2	13.2	14.7	1
27.08.97	172.0	<i>B. plebejus esherichi</i>	4	22.3	12.3	13.2	14.6	2
27.08.97	172.0	<i>B. plebejus esherichi</i>	5	28.7	13.2	14.2	15.8	2
27.08.97	172.0	<i>B. plebejus esherichi</i>	6	37.6	14.1	15.2	17.0	2
27.08.97	172.0	<i>B. plebejus esherichi</i>	7	83.5	18.2	19.4	21.5	2
27.08.97	172.0	<i>B. plebejus esherichi</i>	8	42.3	14.9	16.0	18.0	3
27.08.97	172.0	<i>B. plebejus esherichi</i>	9	45.0	15.3	16.3	18.2	3
27.08.97	172.0	<i>B. plebejus esherichi</i>	10	61.7	16.6	17.8	19.8	3
27.08.97	172.0	<i>B. plebejus esherichi</i>	11	65.3	17.2	18.2	20.5	3
27.08.97	172.0	<i>B. plebejus esherichi</i>	12	65.0	17.8	18.9	21.3	4
27.08.97	172.0	<i>B. plebejus esherichi</i>	13	105.3	20.3	21.6	24.2	4
27.08.97	172.0	<i>B. plebejus esherichi</i>	14	115.0	20.5	21.6	24.6	4
27.08.97	172.0	<i>C. capoeta sieboldi</i>	1	100.0	18.5	19.9	21.8	3
27.08.97	175.0	<i>B. plebejus esherichi</i>	1	18.4	11.6	12.6	14.0	1

Table A5.11. (continued)

Date	Station (river km)	Species	Fish No	Weight (g)	Length (cm)			Age
					Standard	Fork	Total	
27.08.97	175.0	<i>B. plebejus esherichi</i>	2	21.5	12.0	12.7	14.2	1
27.08.97	175.0	<i>B. plebejus esherichi</i>	3	19.9	12.6	13.8	14.3	1
27.08.97	175.0	<i>B. plebejus esherichi</i>	4	22.8	12.3	13.1	15.0	2
27.08.97	175.0	<i>B. plebejus esherichi</i>	5	68.3	16.7	17.9	20.2	3
28.08.97	118.0	<i>Silurus glanis</i>	1	159.7	27.6		29.6	
28.08.97	125.5	<i>B. plebejus esherichi</i>	1	17.2	11.5	12.5	13.8	1
28.08.97	125.5	<i>B. plebejus esherichi</i>	2	23.3	12.6	13.4	15.1	2
28.08.97	125.5	<i>B. plebejus esherichi</i>	3	23.4	12.8	13.6	15.4	2
28.08.97	125.5	<i>B. plebejus esherichi</i>	4	46.5	15.6	17.0	18.9	3
28.08.97	125.5	<i>B. plebejus esherichi</i>	5	50.8	16.2	17.2	19.4	3
28.08.97	125.5	<i>B. plebejus esherichi</i>	6	91.3	19.2	20.7	23.0	3
28.08.97	125.5	<i>B. plebejus esherichi</i>	7	150.9	22.1	23.6	26.2	4
28.08.97	125.5	<i>B. plebejus esherichi</i>	8	158.2	22.2	24.0	27.0	4
28.08.97	125.5	<i>C. capoeta sieboldi</i>	1	37.8	14.0	15.0	16.6	2
28.08.97	135.0	<i>B. plebejus esherichi</i>	1	33.0	13.7	14.5	16.0	2
28.08.97	135.0	<i>B. plebejus esherichi</i>	2	37.4	14.8	15.7	17.2	2
28.08.97	135.0	<i>B. plebejus esherichi</i>	3	42.4	15.2	16.2	17.8	3
28.08.97	135.0	<i>B. plebejus esherichi</i>	4	78.9	18.0	19.2	21.6	3
28.08.97	135.0	<i>B. plebejus esherichi</i>	5	162.5	22.5	24.2	26.7	4
28.08.97	135.0	<i>Capoeta tinca</i>	1	66.8	16.3	17.7	19.2	2
28.08.97	123.5	<i>B. plebejus esherichi</i>	1	16.7	11.0	11.7	13.2	1
28.08.97	123.5	<i>B. plebejus esherichi</i>	2	58.2	16.6	17.7	19.6	2
28.08.97	123.5	<i>B. plebejus esherichi</i>	3	57.7	16.1	17.2	19.4	3
28.08.97	123.5	<i>B. plebejus esherichi</i>	4	79.0	18.3	19.7	21.9	4
20.09.97	118.0	<i>B. plebejus esherichi</i>	5	160.6	22.0	24.0	26.5	4
20.09.97	125.5	<i>B. plebejus esherichi</i>	1	42.7	15.0	16.5	18.0	2
20.09.97	125.5	<i>B. plebejus esherichi</i>	2	117.9	21.0	22.5	25.5	4
20.09.97	125.5	<i>Capoeta tinca</i>	1	210.0	24.0	26.5	28.5	2
20.09.97	135.0	<i>B. plebejus esherichi</i>	1	23.7	12.0	13.0	15.0	2
20.09.97	135.0	<i>B. plebejus esherichi</i>	2	51.3	15.0	16.5	18.0	2
20.09.97	135.0	<i>Silurus glanis</i>	1	4.7	8.5		9.5	
20.09.97	149.5	<i>B. plebejus esherichi</i>	1	17.9	11.0	12.0	13.5	1
20.09.97	149.5	<i>B. plebejus esherichi</i>	2	19.4	11.5	12.5	14.0	1
20.09.97	149.5	<i>B. plebejus esherichi</i>	3	20.3	12.0	13.0	14.5	1
20.09.97	149.5	<i>B. plebejus esherichi</i>	4	41.9	15.0	16.0	18.0	2
20.09.97	149.5	<i>B. plebejus esherichi</i>	5	42.6	15.0	16.0	17.5	2
20.09.97	149.5	<i>B. plebejus esherichi</i>	6	47.5	15.0	16.5	18.5	2
20.09.97	149.5	<i>B. plebejus esherichi</i>	7	47.5	15.5	17.0	19.0	2
20.09.97	149.5	<i>B. plebejus esherichi</i>	8	67.4	16.5	18.5	20.5	3
20.09.97	149.5	<i>B. plebejus esherichi</i>	9	79.9	19.0	20.0	22.0	3
20.09.97	168.2	<i>B. plebejus esherichi</i>	1	19.1	11.5	12.5	13.5	1
20.09.97	168.2	<i>B. plebejus esherichi</i>	2	28.9	13.0	14.0	16.0	2
20.09.97	123.5	<i>B. plebejus esherichi</i>	1	38.1	14.0	15.5	17.0	2
20.09.97	123.5	<i>B. plebejus esherichi</i>	2	105.9	20.0	21.5	24.5	3
20.09.97	123.5	<i>Capoeta tinca</i>	1	240.0	24.5	27.5	29.5	2
21.09.97	172.0	<i>B. plebejus esherichi</i>	1	24.7	12.5	13.5	15.0	2
21.09.97	172.0	<i>B. plebejus esherichi</i>	2	37.4	14.0	15.5	17.0	2

Table A5.12. The Distribution of the Identified Fish Species in Turkey

Species	Basins where the species is observed
<i>Barbus plebejus</i>	Meric, Marmara, Susurluk, Gediz, Menderes, Coruh, Aras, West Mediterranean, Sakarya, West & East Black Sea, Yesilirmak
<i>Capoeta capoeta</i>	Marmara, West & East Black Sea, Sakarya, Yesilirmak, Coruh
<i>Capoeta tinca</i>	Marmara, Sakarya, West & East Black Sea, Yesilirmak, Coruh
<i>Chalcalburnus chalchoides</i>	Meric, Marmara, Susurluk, Sakarya, West & East Black Sea, Yesilirmak, Coruh
<i>Cyprinus carpio</i>	Marmara, Sakarya, West & East Black Sea, Yesilirmak
<i>Leuciscus cephalus</i>	All basins in Turkey
<i>Silurus glanis</i>	Marmara, Susurluk, Menderes, West Mediterranean, Sakarya, West & East Black Sea, Yesilirmak, Seyhan, Ceyhan, Firat, Aras
<i>Stizostedion luciopera</i>	Marmara, Gediz, Menderes, Antalya, Sakarya, West Black Sea, Yesilirmak, Konya closed basin



Catchment Areas: (1) Meriç, (2) Marmara, (3) Şusurluk, (4),(5) Gediz, (6), (7) B. Menderes, (8) West Mediterranean, (9) Antalya, (10) Burdur Lakes, (11) Akarçay, (12) Sakarya, (13) West Black Sea, (14) Yesilirmak, (15) Kizilirmak, (16) Konya closed basin, (17) East Mediterranean, (18) Ceyhan, (19) Asi, (20) Ceyhan, (21) Fırat, (22) East Black Sea, (23) Çoruh, (24) Aras, (25) Van Lake, (26) Dicle.

Figure A5.1. Catchment Areas in Turkey

Table A5.13. Dominance Index Results of Benthic Organisms

Station (river km)	May	June	Early July	Late July	August	September
118.0	—	Gyrinus natator (CDE) Gammarus Gyraulus albus	Gammarus	O. forcipatus Gerris Gammarus	O. forcipatus	O. forcipatus
123.5	—	Gammarus	Gammarus Baetis O. forcipatus Hydropsyche	Gammarus	Gammarus	Gammarus
125.5	Gyraulus albus	Gammarus	Gammarus	Gammarus O. forcipatus	Gammarus	Hydropsyche Gammarus Baetis
135.0	Gammarus	Baetis Gammarus	O. forcipatus	Gammarus	Gammarus	Gammarus
149.5	Gammarus %50 Perla %40	Hydropsyche	Gyrinus marinus Gammarus	Gammarus Rithogena	Baetis Gammarus O. forcipatus Gyrinus natator Corixa geoffreyi	G. marinus
157.7	—	Hydropsyche Gammarus	Hydropsyche	Hydropsyche Gammarus	Habroleptoides	Hydropsyche Gammarus
168.2	Gammarus	Gammarus	Theodoxus fluviatilis	Gammarus Gerris	Gammarus	Gammarus O. forcipatus
172.0	Gammarus	Ephemeroptera	Gammarus	O. forcipatus Gammarus	Physa acuta	Physa acuta
175.0	Gyraulus albus (GASTROPODA)	Gammarus O. forcipatus	Hydropsyche	Physa acuta O. forcipatus Hydropsyche	G. marinus	Physa acuta

Table A5.14. Diversity Index Results of Benthic Organisms

Station (river km)	May	June	Early July	Late July	August	September
118.0	—	1.27	0.49	1.51	0.34	0
123.5	—	1.27	1.72	0.64	0.30	1.88
125.5	1.52	1.54	1.68	1.49	1.26	1.50
135.0	1.10	1.46	1.23	0.65	0.90	1.05
149.5	1.00	0	1.62	1.10	1.53	0.40
157.7	—	1.44	0.31	0.89	0.93	0.70
168.2	0.96	1.29	1.25	1.57	1.45	1.21
172.0	0.82	1.18	1.11	1.74	0.88	1.20
175.0	0.99	1.14	1.58	1.59	0.20	1.80

Key for the Field Observations in Table A5.15

The following scales were used for field observations of current, wind, weather, etc.

Current	1 still 2 slow 3 medium 4 fast
Weather	1 clear, sunny 2 partly cloudy 3 overcast 4 light rain 5 heavy rain
Wind	1 calm 2 light 3 moderate 4 heavy
Wind direction	1 N 2 NW 3 W 4 SW 5 S 6 SE 7 E 8 NE
Water color	1 clear 2 brown 3 blue-green
River bottom	1 plant detritus 2 clay 3 silt 4 sand 5 gravel 6 cobble 7 boulder 8 bedrock

Table A5.15. Field Observations at Sampling Stations on Kizilirmak

St. No	River km	Date	Time	Duration of fishing	Area of sampling	Station characteristics	Coast	River bottom	Current	Weather	Wind direction	Water color
1	118	23.05.97	07:30-08:00	30 min	100x10 m ²	Run+Pool	Soil	2	1	1	--	2
2	123.5	23.05.97	09:10-10:10	30 min	200x20 m ²	Rapid	Sand	6	4	1	--	2
3	125.5	23.05.97	10:45-12:45	30-60 min	200x20 m ²	Pool+Wetland	Tree, marsh	4	3	1	--	2
4	135	23.05.97	13:20-13:50	30 min	200x20 m ²	Run+Pool	Sand	7,6	4	1	4	2
5	149.5	23.05.97	15:15-15:45	60 min	200x20 m ²	Run+Pool	Wood	4,2	4 (3)	2	--	2
6	157.7	23.05.97	17:20-18:00	60 min	200x20 m ²	Rapid	Sandy	7,6	4	1	--	2
7	168.2	23.05.97	18:35-19:00	30 min	200x20 m ²	Run	Sandy	4,2	2	1	--	2
8	172	25.05.97	13:20-14:10	60 min	200x20 m ²	Rapid+Pool	Sandy	4,6	1(3)	2	--	2
9	175	24.05.97	11:30-01:00	40 min	100x10 m ²	Riffle	Tree, rock	6,2	3	1	6	2
1	118	14.06.97	18:55-21:00	120 min	300x10 m ²	Run+Pool	Soil, marsh	2	2 (1)	2	--	2
2	123.5	14.06.97	18:05-18:45	30 min	100x10 m ²	Rapid	Sand, rubble	6,4,2	3 (4)	2	8	2
3	125.5	14.06.97	16:15-17:15	60 min	200x10 m ²	Pool+Wetland	Tree, marsh	6,2	2 (3)	3	8	2
4	135	14.06.97	15:10-15:55	45 min	100x10 m ²	Run+Pool	Tree, marsh	7,6,2	2,3,4	4	4	2
5	149.5	15.06.97	09:15-10:15	60 min	300x10 m ²	Run+Pool	Tree	4,2	3	1	7	2
6	157.7	15.06.97	10:35-10:45	30 min	100x10 m ²	Rapid	Sandy-rock	7,6	4	1	--	2
7	168.2	15.06.97	12:15-13:15	60 min	100x10 m ²	Run	Sandy, tree, marsh	4,2	2	2	--	2
8	172	15.06.97	13:20-14:00	60 min	200x20 m ²	Rapid+Pool	Sandy	4,6,2	2 (4)	2	--	2
9	175	15.06.97	14:10-14:40	30 min	100x10 m ²	Riffle	Tree, rock	6,2	3	2	--	2
1	118	05.07.97	06:20-07:00	30 min	200x10 m ²	Run+Pool	Mud, mire	3,2	2 (1)	2	--	2
2	123.5	05.07.97	08:00-08:30	30 min	200x10 m ²	Rapid	Sand, rubble	6,4,3	3 (4)	2	--	2
3	125.5	05.07.97	08:45-09:15	45 min	200x10 m ²	Pool+Wetland	Tree, marsh	6,2	2 (3)	1	--	2
4	135	05.07.97	11:00-12:00	45 min	300x10 m ²	Run+Pool	Tree, marsh, shrub, grass	7,6,2	3,2,4	1	--	2
5	149.5	05.07.97	12:30-13:15	30 min	300x10 m ²	Run+Pool	Trees	4,2	3,4	1	--	2
6	157.7	05.07.97	19:30-20:15	30 min	100x10 m ²	Rapid	Sandy-rock	7,6	4	1	8	2
7	168.2	05.07.97	18:20-19:00	30 min	200x10 m ²	Run	Sandy, tree, shrub	4,2,6	2 (3)	1	3	2
8	172	05.07.97	17:20-18:00	60 min	100x10 m ²	Rapid+Pool	Sandy	6,4	1,4,3,2	2	7	2
9	175	05.07.97	16:10-17:00	30 min	200x20 m ²	Riffle	Tree, rock	6,2	3	1	8	2

Table A5.15. (continued)

St. No	River km	Date	Time	Duration of fishing	Area of sampling	Station characteristics	Coast	River bottom	Current	Weather	Wind direction	Wind	Water color
1	118	30.07.97	08:40-09:40	45 min	200×20 m ²	Run+Pool	Mud, mire	3,2	2,3,1	1	2	2	2
2	123.5	30.07.97	07:40-08:30	45 min	200×20 m ²	Rapid	Sand, rubble	6,4,3	3,2	1	1	2	2
3	125.5	30.07.97	06:15-07:30	45 min	200×20 m ²	Pool+Wetland	Tree, marsh	6,2	3,2,1,4	1	1	2	2
4	135	29.07.97	18:10-19:10	45 min	200×20 m ²	Run+Pool	Tree,marsh, shrub,grass	7,6,2	1,2,3,4	2	1	2	2
5	149.5	29.07.97	16:30-17:30	45 min	200×20 m ²	Run+Pool	Trees	4,2	3,2,4	2	1	2	2
6	157.7	29.07.97	15:30-16:20	45 min	200×20 m ²	Rapid	Sandy-rock	7,6	4	2	3	2	2
7	168.2	29.07.97	14:00-15:00	45 min	200×20 m ²	Run	Sandy,tree, shrub	4,2,6	3,2	1	1	2	2
8	172	29.07.97	13:00-13:50	45 min	200×20 m ²	Rapid+Pool	Sandy	6,4	1,2,3,4	2	2	2	2
9	175	29.07.97	11:40-12:10	30 min	200×20 m ²	Riffle	Tree, rock	6,2	3	2	2	2	2
1	118	28.08.97	09:10-10:00	30-45 min	200×20 m ²	Run+Pool	Mud, mire	3,2	2	1	1	2	2
2	123.5	28.08.97	10:10-10:50	30-45 min	200×20 m ²	Rapid	Sand, rubble	6,4,3	3,2	1	1	2	2
3	125.5	28.08.97	11:00-12:00	30-45 min	200×20 m ²	Pool+Wetland	Tree, marsh	6,2	2,3,4,1	1	1	2	2
4	135	28.08.97	12:15-13:15	30-45 min	200×20 m ²	Run+Pool	Tree,marsh, shrub,grass	7,6,2	1,2,3,4	1	1	2	2
5	149.5	27.08.97	17:00-18:00	30-45 min	200×20 m ²	Run+Pool	Trees	4,2	3,4	2	1	2	2
6	157.7	27.08.97	16:00-16:50	30-45 min	200×20 m ²	Rapid	Sandy-rock	7,6	4	2	1	2	2
7	168.2	27.08.97	15:00-15:45	30-45 min	200×20 m ²	Run	Sandy,tree, shrub	4,2,6	3	2	2	2	2
8	172	27.08.97	14:15-14:50	30-45 min	200×20 m ²	Rapid+Pool	Sandy	6,4	2,1,4,3	1	1	2	2
9	175	27.08.97	13:10-14:00	30-45 min	200×20 m ²	Riffle	Tree, rock	6,2	3	1	1	2	2
1	118	20.09.97	08:30-09:30	45 min	200×20 m ²	Run+Pool	Mud, mire	3,2	2	3	1	2	2
2	123.5	20.09.97	10:45-11:45	45 min	200×20 m ²	Rapid	Sand, rubble	6,4,3	3,2	3	1	2	2
3	125.5	20.09.97	12:15-13:15	45 min	200×20 m ²	Pool+Wetland	Tree, marsh	6,2	3,4,2,1	2	1	2	2
4	135	20.09.97	13:30-14:20	45 min	200×20 m ²	Run+Pool	Tree,marsh, shrub,grass	7,6,2	3,2,1,4	3	1	2	2
5	149.5	20.09.97	14:30-15:30	45 min	200×20 m ²	Run+Pool	Trees	4,2	4,3,2	2	1	2	2
6	157.7	20.09.97	16:30-17:00	30 min	200×20 m ²	Rapid	Sandy-rock	7,6	4	1	3	2	2
7	168.2	20.09.97	17:30-18:30	45 min	200×20 m ²	Run	Sandy,tree, shrub	4,2,6	3	2	3	2	2
8	172	21.09.97	10:00-11:00	45 min	200×20 m ²	Rapid+Pool	Sandy	6,4	4	2	1	2	2
9	175	21.09.97	11:30-12:30	45 min	200×20 m ²	Riffle	Tree, rock	6,2	4	2	1	2	2

Table A5.16. Characteristics of the Sampling Stations on Kizilirmak

Station		Date	Description of the location
No	River km		
1	118	23.05.97	Pool type, still water body
2	123.5	23.05.97	Rapid flow, gravel on the bottom, between rocks, right bank
3	125.5	23.05.97	With oleaster trees, a small bay is formed, bank is marshy, there is rapid flow away from the bank
4	135	23.05.97	Under the Asagidaricay Village Bridge, rapid flow, stones on the bottom, small irrigation channels, barrier and pool
5	149.5	23.05.97	Rapid flow, bend, trees on the bank, reverse current section and the flow velocity is "3"
6	157.7	23.05.97	Overflowing rocky section, barrier and pool
7	168.2	23.05.97	Under a bridge, right bank
8	172	25.05.97	Rapid flow, barrier and pool, tributaries formed on the sides
9	175	24.05.97	Right bank is rocky, left bank stony and covered with trees, rapid flow and pooling sections
1	118	14.06.97	Pool type, still water body (Note: Heavy rain on the previous days, therefore water level rise and high turbidity was observed, fish must have gone to Altinkaya since no fish was caught.)
2	123.5	14.06.97	Rapid flow, gravel on the bottom, between rocks, right bank is rocky
3	125.5	14.06.97	With oleaster trees, a small bay is formed, bank is marshy, there is rapid flow away from the bank
4	135	14.06.97	Under the Asagidaricay Village Bridge, rapid flow, stones on the bottom, small irrigation channels, barrier and pool
5	149.5	15.06.97	Rapid flow, bend, trees on the bank, reverse current section and the flow velocity is "3"
6	157.7	15.06.97	Overflowing rocky section, barrier and pool
7	168.2	15.06.97	Under a bridge, right bank
8	172	15.06.97	Rapid flow, barrier and pool, tributaries formed on the sides
9	175	15.06.97	Right bank is rocky, left bank stony and covered with trees, rapid flow and pooling sections
1	118	05.07.97	Pool type, still water body (Note: Water level was about 1 m less than that of the previous visit)
2	123.5	05.07.97	Rapid flow, gravel on the bottom, between rocks, right bank is rocky
3	125.5	05.07.97	With oleaster trees, a small bay is formed, bank is marshy, there is rapid flow away from the bank
4	135	05.07.97	Under the Asagidaricay Village Bridge, rapid flow, stones on the bottom, small irrigation channels, barrier and pool
5	149.5	05.07.97	Rapid flow, bend, trees on the bank, reverse current section and the flow velocity is "3"
6	157.7	05.07.97	Overflowing rocky section, barrier and pool
7	168.2	05.07.97	Under a bridge, right bank
8	172	05.07.97	Rapid flow, barrier and pool, tributaries formed on the sides
9	175	05.07.97	Right bank is rocky, left bank stony and covered with trees, rapid flow and pooling sections

Table A5.16. (continued)

Station		Date	Description of the location
No	River km		
1	118	30.07.97	Pool type, still water body (Note: Water level was about 1-1.5 m less than that of the previous visit. Turbidity is also lower.)
2	123.5	30.07.97	Rapid flow, gravel on the bottom, between rocks, right bank is rocky
3	125.5	30.07.97	With oleaster trees, a small bay is formed, bank is marshy, there is rapid flow away from the bank
4	135	29.07.97	Under the Asagidaricay Village Bridge, rapid flow, stones on the bottom, small irrigation channels, barrier and pool
5	149.5	29.07.97	Rapid flow, bend, trees on the bank, reverse current section and the flow velocity is "3"
6	157.7	29.07.97	Overflowing rocky section, barrier and pool
7	168.2	29.07.97	Under a bridge, right bank
8	172	29.07.97	Rapid flow, barrier and pool, tributaries formed on the sides
9	175	29.07.97	Right bank is rocky, left bank stony and covered with trees, rapid flow and pooling sections
1	118	28.08.97	Pool type, still water body
2	123.5	28.08.97	Rapid flow, gravel on the bottom, between rocks, right bank is rocky
3	125.5	28.08.97	With oleaster trees, a small bay is formed, bank is marshy, there is rapid flow away from the bank
4	135	28.08.97	Under the Asagidaricay Village Bridge, rapid flow, stones on the bottom, small irrigation channels, barrier and pool
5	149.5	27.08.97	Rapid flow, bend, trees on the bank, reverse current section and the flow velocity is "3"
6	157.7	27.08.97	Overflowing rocky section, barrier and pool
7	168.2	27.08.97	Under a bridge, right bank
8	172	27.08.97	Rapid flow, barrier and pool, tributaries formed on the sides
9	175	27.08.97	Right bank is rocky, left bank stony and covered with trees, rapid flow and pooling sections
(Note : The water level at the base of the bridge near DSI facilities has dropped by 4-5 m this month.)			
1	118	20.09.97	Pool type, still water body
2	123.5	20.09.97	Rapid flow, gravel on the bottom, between rocks, right bank is rocky
3	125.5	20.09.97	With oleaster trees, a small bay is formed, bank is marshy, there is rapid flow away from the bank
4	135	20.09.97	Under the Asagidaricay Village Bridge, rapid flow, stones on the bottom, small irrigation channels, barrier and pool
5	149.5	20.09.97	Rapid flow, bend, trees on the bank, reverse current section and the flow velocity is "3"
6	157.7	20.09.97	Overflowing rocky section, barrier and pool
7	168.2	20.09.97	Under a bridge, right bank
8	172	21.09.97	Rapid flow, barrier and pool, tributaries formed on the sides
9	175	21.09.97	Right bank is rocky, left bank stony and covered with trees, rapid flow and pooling sections

ANNEX 6

**LIST OF PERSONS, AGENCIES &
NON-GOVERNMENTAL ORGANIZATIONS
CONTACTED**

PERSONS, AGENCIES AND NON-GOVERNMENTAL ORGANIZATIONS CONTACTED

In order to obtain the opinions of the related governmental, non-governmental agencies and affected parties, several consultation sessions were held. In addition, other persons and agencies were contacted to obtain data. A list of these persons and agencies, and the brief records of the sessions are provided in this Annex.

Scoping Sessions Held

The list of scoping sessions is as follows:

Chamber of Environmental Engineers, Ankara
Duragan Governorate, Duragan
Electricity Works Survey Administration (EIE), Ankara
General Directorate of Forestry
General Directorate of Mining Research and Exploration, Ankara
General Directorate of Rural Affairs (KHGM), Ankara
Department of Seismic Research, Ankara
General Directorate of State Hydraulic Works (DSI), Ankara
Ministry of Agriculture and Village Affairs, Ankara
Ministry of Culture, Ankara
Ministry of Energy and Natural Resources, Ankara
Ministry of Environment (MOE), Ankara
Ministry of Health, Ankara
Ministry of Tourism, Ankara
Seventh Regional Directorate of State Hydraulic Works, Samsun
State Hydraulic Works, Directorate of Boyabat Project, Samsun
State Planning Organization, Ankara
The Society for the Protection of Nature, Istanbul and Bafra
Turkish Electricity Authority (TEAS), Ankara
Twelfth Regional Directorate of Rural Affairs, Samsun
Undersecretariat for Treasury, Ankara
Villagers living in the project area

SESSIONS

The persons contacted were informed about the topic prior to and at the beginning of the meetings, and the main characteristics of the Boyabat Project were explained. Also, they were informed about the preparation of the environmental assessment study. Their opinions related to the project were asked and their ideas were taken into account in the preparation of the report.

SESSION 1. Chamber of Environmental Engineers, Ankara, 22 January 1996

A representative of the Chamber of Environmental Engineers was met on 22 January 1996 by Huseyin TEKIN. The representative stated that they had to investigate the project in detail in the future to give their opinion.

SESSION 2. Duragan Governorate, Duragan,

Date : 16 January 1996

The participants were:

Mr. Yakup CANBOLAT	Governor of Duragan
Mr. Ibrahim YAGMUR	DSI, Seventh Regional Directorate, Planning Director
Mr. Sebahattin SENOL	DSI, Seventh Regional Directorate, Boyabat Project Director
Mr. Murtaza CALISKAN	DSI, Seventh Regional Directorate, Geological Engineer
Ms. Ilksen CINEL	DSI, Seventh Regional Directorate, Environmental Engineer
Mr. Nasih ARKAN	DOGUS, Project Coordinator
Mr. John MELDRIM	HARZA
Mr. Peter AMES	HARZA
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

In this session the present status of the project and the importance of realizing such an investment as quickly as possible was discussed. The governor of Duragan stated his opinions in favor of the construction of this project.

SESSION 3. Electricity Works Survey Administration, Ankara,

Date: 27 December 1995

The participants were:

Mr. Vahap TURAN	Electricity Works Survey Administration, Civil Engineer
Mr. Adil ALISIK	Electricity Works Survey Administration
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

In this session, the responsibilities of the EIE, the collection of hydrological data (who collects them and how they are collected), and the planning process for water resources projects and their development were discussed. Flow and water quality data were also obtained from this agency. EIE is the basic administration that starts and develops projects, such as dams and hydroelectric power plants, on rivers. This was the case for the Boyabat Project as well. First studies on the possible areas for the project were done by EIE. This agency has several sampling stations on rivers gauging the flowrates and the quality of water and the data from some of these stations were used in the report.

SESSION 4. General Directorate of Forestry, Ankara,

First session

Date: 31 January 1996

The participants were:

Mr. Mustafa YILMAZ	General Directorate of Forestry, General Director
Mr. Ahmet ARAT	General Directorate of Forestry, Head
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

The General Director, Mustafa Yilmaz, had stated that State Hydraulic Works had applied for permission on 1986 and that the General Directorate of Forestry gave this permission as energy sector is a crucial sector for Turkish economy.

Second session

Date: 8 February 1996

The participants were:

Mr. Niyazi CETIN	General Directorate of Forestry, Head of Planning Department
Mr. Tarhan ZIK	General Directorate of Forestry, Director of Forestry Management
Mr. Ulvi US	Ministry of Forestry, Forestry Engineer
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

In this session the forestry maps of the area were examined and the state of forests in the area were evaluated. It was seen that there is no planned reforestation for the area to be filled by the reservoir.

SESSION 5. General Directorate of Mining Research and Exploration, Ankara,

Date: 4 January 1996

The participants were:

Mr. Bahadir SAHIN	General Directorate of Mining Research and Exploration, Head of Mining Research Department
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

On January 1996, a session was held in the Ankara Office of the General Directorate of Mining Research and Exploration. A written application was also made requesting information about the existence of mineral resources and mines in the project area. Mr. Sahin stated that, to his knowledge, there are no mineral resources, or operating mines in the project area. In addition, he stated that they will make an investigation to answer the written request.

SESSION 6. General Directorate of Rural Affairs, Ankara,

Date: 1 February 1996

The participants were:

Mr. Fikret Ciftci	General Directorate of Rural Affairs, Head of Land Acquisition Department
Mr. Kutfettin AYDEMİR	General Directorate of Rural Affairs, Land Acquisition Department, Project Director
Mr. Ramazan Gurkan	General Directorate of Rural Affairs, Land Acquisition Department, Agricultural Engineer
Ms. Melahat ERASLAN	General Directorate of Rural Affairs, Land Acquisition Department, Agricultural Engineer
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKİN	ENCON

In this session, the resettlement issue was discussed. The representatives from the Directorate gave information about the Turkish policy and procedures on resettlement. This information was used in the preparation of the report. It was stated that expropriation is not their responsibility, but after expropriation is done by the related agency (DSI in this case), the settlement of the affected people is the responsibility of the General Directorate of Rural Affairs for the people requesting assistance from the government.

SESSION 7. Department of Seismic Research, Ankara,

Date: 5 February 1996

The participants were:

Mr. Ruchan YILMAZ	Department of Seismic Research
Mr. Huseyin TEKİN	ENCON

The seismic records show the earthquakes that took place in the 20th century in the vicinity of the project area. Information about the seismicity in Turkey was obtained from Mr. Yilmaz. He stated that Turkey is located in an area with high seismic activity. The project area is in a second degree seismic risk zone. The maximum magnitude of earthquakes recorded in the vicinity of the site was 5.9. Mr. Yilmaz stated that this is a moderate sized earthquake.

SESSION 8. General Directorate of State Hydraulic Works (DSI), Ankara,

First session

Date: 14 December 1995

The participants were:

Mr. Turan HAZAR	General Directorate of State Hydraulic Works, Department of Land Acquisition, Vice Head
Mr. Mehmet ECEVIT	M. E. T. U. Department of Sociology
Mr. Huseyin TEKIN	ENCON

In this session, Mr. Hazar gave information about how expropriation and resettlement is conducted, and the steps in this process. He stated that this project was initiated by DSI and expropriation will be done by this agency. DSI estimates the area of expropriation first (already done in this case) and then evaluated the land and property in this area to judge the appropriate compensation. The compensation payments are the responsibility of DSI, when this agency conducts the expropriation. However, DSI does not take part in the resettlement of the affected people. It was stated that this is the responsibility of the General Directorate of Rural Affairs.

Second session

Date: 30 January 1996

The participants were:

Mr. Huseyin YAVUZ	General Directorate of State Hydraulic Works, Dept. of Investigation and Planning, Head
Mr. Kenan BAYTAS	General Directorate of State Hydraulic Works, Dept. of Investigation and Planning, Director
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

Mr. Yavuz pointed out the necessity for hydropower projects in Turkey and stated that DSI wants to see this project in operation as soon as possible. Also it was stated in this session that, during the planning and design studies of Boyabat Project, the feasibility reports, prepared by JICA, and the designs, prepared by EPDC and the Turkish Firms, were carefully evaluated by DSI and found to be appropriate. Mr. Yavuz and Baytas provided their help in collection of information on the background of this project.

Third session

The participants were:

Ms. Isil SALIHOGLU	DSI, Department of Drinking Water and Sewage Works, Director
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

In this session, the water quality of the Kizilirmak, the sampling stations of DSI on the river and the reliability of the measurements were discussed. The stations that can provide representative data for water quality at the project site were evaluated. The important water quality parameters measured at DSI stations in the last two years were obtained for the selected stations.

SESSION 9. Ministry of Culture, Ankara

Date: 29 January 1996

The participants were:

Ms. Nermin BESBAS	Ministry of Culture, General Directorate of the Protection of Natural and Cultural Resources, Vice General Director
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

In this session, Ms. Besbas stated that there are no cultural, natural or historical sites in the project area and vicinity in their records. From the view of The Ministry of Culture there is no problem about the development of the project.

SESSION 10. Ministry of Energy and Natural Resources, Ankara

Date: 31 January 1996

The participants were:

Mr. Ibrahim SEN	Ministry of Energy and Natural Resources, Department of Investments and Privatization, Department Head
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

The Ministry of Energy is the agency that decides how energy projects should be developed. The decision was made by this Ministry to construct the Boyabat Project by the BOT model. The BOT model, and the role of The Ministry of Energy and the Department of Investments and Privatization in this model, were the topics of this session. Mr. Sen provided information on the procedure in carrying out energy projects by this model. Also, the advantages and difficulties of this model was summarized by Mr. Sen. He stated that the Ministry of Energy wishes to see this project in operation as soon as possible.

SESSION 11. Ministry of Environment, Ankara

First Session

Date: 1 February 1996

The participants were:

Ms. Serap KULELI	MOE, General Directorate of Environmental Conservation, Vice General Director
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

Ms. Kuleli stated an application should be made to the General Directorate of Environmental Impact Assessment (EIA) and Planning. Then, in the normal procedure of evaluation of the environmental impact assessment report, the representatives of General Directorate of Environmental Conservation would participate in this evaluation and make their comments. However, it should be noted that the preparation of an EIA report for this project is not required under Turkish Environmental Impact Assessment Regulation, because the Project predates the EIA Regulation, since it was initiated before February 1993.

Second session

Date: 5 February 1996

The participants were:

Ms. Sema ACAR	MOE, Foreign Relations Department, Director
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

Ms. Acar stated that they do not have any review role in international agreements about the environment for development projects, including water development and energy projects. In this project, environmental concerns will certainly be taken into account as there is an attempt for getting funding from Project Lenders.

Third session

Date: 5 February 1996

The participants were:

Ms. Umit OZDILER

MOE, General Directorate of Environmental
Impact Assessment (EIA) and Planning,
Department of EIA, Department Head

Mr. Haluk CERIBASI

ENCON

Mr. Huseyin TEKIN

ENCON

Ms. Umit Ozdiler pointed out that an EIA is not required for this project as it was initiated before February 1993. However, if the investor wishes to prepare an EIA, the Ministry of Environment would evaluate the report and make comments on the report and the project

Therefore, an EIA report for the Boyabat Project was prepared according to the EIA regulation in Turkey. This report was submitted to the Ministry of Environment in April 1997, reviewed by the evaluation committee and approved.

SESSION 12. Ministry of Health, Ankara

Date: 2 February 1996

The participants were:

Ms. Sakine CAGLAYAN

Ministry of Health, General Directorate of
Environmental Health

Mr. Huseyin TEKIN

ENCON

Information and comments were obtained from the Ministry of Health in assessing the risk of waterborne diseases. It was stated by Ms. Caglayan that there is no risk of waterborne diseases in the project area that may arise from the impounding of water in the reservoir. Only malaria is seen in Turkey as a parasitic waterborne disease. In this region there is almost no possibility of seeing this disease because of weather conditions, so there will not be any health problems.

SESSION 13. Ministry of Tourism, Ankara

Date: 26 January 1996

The participants were:

Mr. Gurkan ERTAS

Ministry of Tourism, General Directorate of
Investments, General Director

Mr. Haluk CERIBASI

ENCON

Mr. Huseyin TEKIN

ENCON

This session was held to get information about the touristic sites in the project area. Mr. Ertas stated that there are no known touristic sites in the vicinity of the project area. Upon our request, a written statement was also provided by the Ministry of Tourism which deals with the touristic conditions of the project area.

SESSION 14. Seventh Regional Directorate of State Hydraulic Works, Samsun

First session

Date: 20 December 1995

The participants were:

Ms. Nalan ERDEMIR	DSI, Seventh Regional Directorate, Land Acquisition Section, Director
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

In this session the socio-economic setting in the project area and the studies previously done by DSI were discussed.

Second session

Date: 15 January 1996

The participants were:

Mr. Unal MESCI	DSI, Seventh Regional Directorate, Regional Director
Ms. Nalan ERDEMIR	DSI, Seventh Regional Directorate, Land Acquisition Section, Director
Mr. Ibrahim YAGMUR	DSI, Seventh Regional Directorate, Planning Section Director
Mr. Sebahattin SENOL	DSI, Seventh Regional Directorate, Boyabat Project Director
Mr. Erol ALANYA	DSI, Seventh Regional Directorate, Section Director
Ms. Ilksen CINEL	DSI, Seventh Regional Directorate, Environmental Engineer
Mr. Nasih ARKAN	DOGUS, Project Coordinator
Mr. John MELDRIM	HARZA
Mr. Peter AMES	HARZA
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

The aim of this session was to get the opinions of the related departments of DSI Seventh Regional Directorate. Also, to collect information about the background and development stages of the Boyabat Project. Some of the baseline data were obtained in this session from the Regional Directorate. The comments of all of the participants were noted and considered in the preparation of the report.

SESSION 15. State Hydraulic Works, Directorate of Boyabat Project, Samsun

First session

Date: 16 January 1996

The participants were:

Mr. Ibrahim YAGMUR	DSI, Seventh Regional Directorate, Planning Section Director
Mr. Sebahattin SENOL	DSI, Seventh Regional Directorate, Boyabat Project Director
Ms. Ilksen CINEL	DSI, Seventh Regional Directorate, Environmental Engineer
Mr. Nasih ARKAN	DOGUS, Project Coordinator
Mr. John MELDRIM	HARZA
Mr. Peter AMES	HARZA
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

This session was held at the site facilities. The project site was visited as a group by all the participants of this session and information about the conditions and characteristics of the site were provided by the participants. Also, information about the present status of the project and site were obtained. Comments of the participants were noted for preparation of the environmental assessment report.

Second session

Date: 17 February 1996

The participants were:

Mr. Ibrahim YAGMUR	DSI, Seventh Regional Directorate, Planning Section Director
Mr. Murtaza CALISKAN	DSI, Seventh Regional Directorate, Geological Engineer
Ms. Ilksen CINEL	DSI, Seventh Regional Directorate, Environmental Engineer
Mr. Nasih ARKAN	DOGUS, Project Coordinator
Mr. John MELDRIM	HARZA
Mr. Peter AMES	HARZA
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

This session was a continuation of session one and the same subjects were discussed.

SESSION 16. State Planning Organization, Ankara

Date: 3 February 1996

The participants were:

Ms. Filiz DOLUNAY
Ms. Yildiz ECEVIT

State Planning Organization
Middle East Technical University, Department
of Sociology

Ms. Dolunay stated that the projects to be carried out by state agencies are all controlled by the State Planning Organization (DPT) and they can be implemented only after the approval of the DPT. The resettlement issue was discussed and both of the parties agreed that it is one of the most important issues in dam and hydroelectric powerplant projects. The comments were taken into consideration in preparation of the EA report.

SESSION 17. The Society for the Protection of Nature, Istanbul and Bafra Branches

Date: 26 January 1996

Telephone call with Sunay Demircan, Head of the Bafra Branch.

A telephone conversation with Sunay Demircan was held. Information about the project was provided. Information about the present state of the site, with respect to wildlife and habitat was requested. A fax was sent following the telephone conversation to provide more information on the project and to ask their opinions about the project. On the telephone, Mr. Demircan stated that the project site is not a protected area, to his knowledge, but he would investigate the subject in more detail.

SESSION 18. Turkish Electricity Authority, Ankara

Date: 1 February 1996

The participants were:

Mr. Metin YILDIRAN

Mr. Cem CAKIROGLU

Mr. Haluk CERIBASI
Mr. Huseyin TEKIN

Turkish Electricity Authority, Directorate of
Environment, Vice Director
Turkish Electricity Authority, Directorate of
Environment, Environmental Engineer
ENCON
ENCON

Turkish Electricity Authority (TEAS) is the agency managing the production and the transmission of electricity. Mr. Yildiran's comments were generally related to the need for electricity, and he believes that more energy development projects should be initiated as soon as possible. He pointed out that the electricity need increases rapidly in Turkey and power shortage is expected in the coming years.

In addition, the issue of the transmission line was also discussed. It was stated that the environmental impact assessment (EIA) report for transmission lines are also prepared by this agency since power transmission lines are planned and built by TEAS. For the Boyabat Project, an EIA report will be prepared by TEAS according to the EIA regulation in Turkey after the alternative routes for the transmission line have been determined. Presently, it is planned that the transmission lines, having a length of approximately 60 km and a capacity of 380 kV, will be located between the Boyabat and Altinkaya switchyards. DOGUS continues to be in close contact with TEAS regarding this issue.

SESSION 19. Twelfth Regional Directorate of Rural Affairs, Samsun

Date: 15 January 1996

The participants were:

Mr. Asim BILGIN	Twelfth Regional Directorate of Rural Affairs, Director
Mr. Ibrahim DUTLAR	Twelfth Regional Directorate of Rural Affairs, Engineer
Mr. Haluk CERIBASI	ENCON
Mr. Huseyin TEKIN	ENCON

The General Directorate of Rural Affairs is the agency dealing with resettlement issues. In this session, information about the studies by the Regional Office for the Boyabat Project and Altinkaya Project was requested. Mr. Bilgin pointed out that they took necessary actions to assist in the resettlement of the people as outlined by the law. The approximate number of families requesting resettlement assistance from the government in the villages affected from Boyabat Project was also provided by Mr. Dutlar.

SESSION 20. Undersecretariat for Treasury, Ankara

Date: 13 February 1996

Telephone call with Ms. Nurhan Uyduranoglu, BOT Projects Department Head.

Ms. Uyduranoglu was asked about the status and attitude of the Undersecretariat of Treasury in BOT models, and in this project. She stated that the Undersecretariat of Treasury guarantees that the Turkish Electricity Authority will buy the electricity produced in Boyabat Hydroelectric Power Plant.

SESSION 21. Ministry of Agriculture and Village Affairs, Water Resources Department

Date: 29 February 1996

The participants were:

Mr. Faruk Coskun

Ministry of Agriculture and Village Affairs,
The General Directorate of Agricultural
Production and Development, Directorate
of Water Resources, Director

Mr. Huseyin TEKIN

ENCON

The Directorate of Water Resources is responsible for monitoring and the development of inland water fishery resources in Turkey. The harvest of fish in Turkish river waters is monitored regularly throughout the year. Information on the amount and species of fish caught in Kizilirmak River in Boyabat Project Region was requested of the director. Mr. Coskun pointed out that most of the fish species found in the area are not economically feasible to catch, as their numbers are limited and/or they have less economic value in the market. For this reason only four fish species are commercially caught in this region. He also stated that impounding the river would be beneficial for most of the fish species.

SESSION 22. Villagers living in the project area

Expropriation and resettlement studies were started by DSI after 1985. The area to be flooded and the land to be expropriated were estimated by DSI. As described in the "Project Description" Section, this project was included in the construction list of DSI in 1987. The villagers all have had information about this project at least since 1985. In 1987, the number of villages which would be directly and indirectly affected by the project was first estimated as 25. Another study was conducted by DSI in late 1992 and, because of the changes in the region between 1987 and 1992, it was found that some properties and districts of 3 other villages would also be affected by the project.

In Table 1, these villages are presented with the number of houses and occupied houses, and the total population according to 1990 census. In 1985 census, total population of these villages was 18,000; according to 1990 census, this population decreased to 16,593. About 12,000 people living in these villages will be affected by the project.

The cadastral surveys for most of the villages to be expropriated were completed by DSI. The surveys, to find out the resettlement preferences of the villagers, were completed in many of the villages, but are still being conducted in some of them by the General Directorate for Rural Affairs (KHGM). Table 2 shows the resettlement preferences of the families affected by the project, according to the completed surveys.

Table 1. Villages that will be Directly and Indirectly Affected by the Boyabat Project, and Total Number of Houses and Population

Province	Town	Village	Number of Houses	Number of Occupied Houses	Total Population (1990 census)
Sinop	Sarayduzu	Fakili Akbelen Hacicayi Yaylacili Yalmansaray	466	336	2,027
Samsun	Vezirkopru	Susuz Yukaridaricay Asagidaricay Kizilkise Alankoy (Yalak Dis.)	574	469	3,600
Corum	Osmancik	Aydin Asagizeytin Yukarizeytin Pelitcik Asikbuku Kamil Avlagi	873	478	5,090
	Kargi	Avsar Bagozu Orencik Saraycik Sinonozu Karaboya Maksutlu Koprubasi Demiroren (Egzen) Karapurcek Gokcedogan (Tekkesin) Karacaoglan	1,232	1,045	5,876
		TOTAL	3,145	2,328	16,593

In these surveys, the KHGM staff interviewed the villagers to ascertain whether or not they would like to be resettled. The KHGM staff explained what benefits are provided under their resettlement program, and if the villagers choose to be resettled by the government, they are required to deposit the received cash compensation in a special account. After KHGM has ascertained a particular household's intention to be resettled, the staff carries out a simple socio-economic survey of the household, its property and income earning activities.

The main data for socio-economic setting were obtained by a field study conducted in 14 of the villages (5 villages from Kargi, 5 villages from Osmancik, 2 villages from Vezirkopru and 2 villages from Sarayduzu) that will be affected by the Boyabat Project. These villages are selected as representatives of the ones that are going to

be affected by the Project, based on the information obtained during the office studies prior to the initiation of the field study. The field work was carried out by an experienced team of 11 researchers and interviewers. In each village, three interviews about the village and one about the history of the village were conducted. In addition to these interviews, two focus group studies were done with men and women. Prior to the interviews, the headman of the villages were informed and the meetings were announced to increase the participation of the locals. The villagers were all informed about the aim of the study and they were asked to raise any concerns related to the Project without hesitating for any reason. Field reports were prepared for these meetings and the interviews were tape recorded.

Table 2. Type of Resettlement Preferences of Villagers

Province	Town	Families Preferring Resettlement	Rural Resettlement		Urban Resettlement	
		Number	Number of Families	(%)	Number of Families	(%)
Sinop	Sarayduzu	240	238	99	2	1
Corum	Kargi	379	306	81	73	19
Corum	Osmancik	421	365	87	56	13
Samsun	Vezirkopru	432	383	89	49	11
Total		1472	1292	88	180	12

The villagers were all informed about the study and invited to attend the meetings, with the help of the headman. The contacted persons, the place, date and duration of the meetings in each village, are summarized below. In the interviews and meetings, general information about the project was provided first. During the interviews and meetings, the opinions of villagers about their environmental concerns were asked in addition to their socio-economic concerns. The environmental considerations of the villagers were only related to the loss of their farmlands. They all raised their concerns mainly on resettlement and expropriation. These issues are discussed thoroughly in the Section on "Socio-Economic Environment."

Records of Interviews and Meetings

Village: Aydin

Interview about village

Name of the person contacted	: Mustafa Kara,
Occupation	: Religious Leader
Date of the interview	: January 7, 1996
Duration of the meeting	: 3 hours
Place	: House of Headman
Name of the person contacted	: Dursun Sagir
Occupation	: Headman
Date of the interview	: January 7, 1996

Duration of the meeting	: 5 hours
Place	: House of The Headman
Name of the person contacted	: Rasim Dayi
Occupation	: Villager
Date of the interview	: January 7, 1996
Duration of the meeting	: 4 hours
Place	: House of The Headman

Interview about the history of village

Name of the person contacted	: Mufise Sagar
Occupation	: Midwife of the village
Date of the interview	: January 7, 1996
Duration of the meeting	: 3.5 hours
Age	: 60

Focus group study with men

Date of the interview	: January 7, 1996
Place	: Village Cafe
Persons contacted	:

Mustafa Kara, Religious Leader
 Dursun Sagir, Headman
 Rasim Dayi, Villager
 An old man, Villager
 A Young man, Villager
 Watchman of the Village

Focus group study with women

Date of the interview	: January 7, 1996
Place	: House of The Headman
Name of the person contacted	:

Wife of the Headman
 Wife of ex-headman
 Mufise Sagir, Villager
 Two girls
 Two young women

Village: Karapurcek

Interview about village

Name of the person contacted	: Melek Dora
Occupation	: Villager
Date of the interview	: January 8, 1996

Duration of the meeting : 4 hours
Place : House of The Headman
Name of the person contacted : Huseyin Yolcu
Occupation : Villager
Date of the interview : January 8, 1996
Duration of the meeting : 3 hours
Place : House of The Headman

Name of the person contacted : Mehmet Kislá
Occupation : Headman
Date of the interview : January 7, 1996
Duration of the meeting : 4 hours
Place : House of The Headman

Interview about the history of village

Name of the person contacted : Mustafa Tokmak, Ali Riza Dora
Date of the interview : January 7, 1996
Duration of the meeting : 2.5 hours
Place : House of The Headman

Focus group study with men

Date of the interview : January 7, 1996
Place : House of the Headman
Name of the person contacted :

Kamil Bey, Villager, Age 50
Fehmi Bey, Teacher, Age 35
Erdogan Bey, Villager, Age 40

Focus group study with women

Date of the interview : January 7, 1996
Place : House of the Headman
Name of the person contacted :

Didar Kislá, Villager, Age 17
Wife of the Headman, Age 50
Relative of Headman, Age 60
1 Housewife, Age 40
1 Housewife

Village: Karacaoglan

Interview about village

Name of the person contacted : Cemile Gormez
Occupation : Villager
Date of the interview : January 8, 1996

Duration of the meeting : 3 hours
Place : House of the Headman
Name of the person contacted : Kemal Gormez
Occupation : Villager
Date of the interview : January 8, 1996
Duration of the meeting : 2 hours
Place : House

Name of the person contacted : Huseyin Kaya
Occupation : Headman
Date of the interview : January 7, 1996
Duration of the meeting : 3 hours
Place : House of the Headman

Interview about the history of village

Name of the person contacted : Yakup Erturk and
Yusuf Gormez, Ages around 80
Date of the interview : January 8, 1996
Duration of the meeting : 2 hours
Place : In Mosque

Focus group study with men

Date of the interview : January 10, 1996
Place : Village Room
Name of the person contacted : Various people from different
age groups

Focus group study with women

Date of the interview : January 8, 1996
Place : Village Room
Name of the person contacted :

Aysel Kaya, Wife of the Headman
Three old woman (owner of large farmlands)
One young woman (owner of small farmland)
Four middle-age woman

Village: Pelitcik

Interview about village

Name of the person contacted : Zuhre Hanim
Occupation : Wife of the Headman
Date of the interview : January 7, 1996

Duration of the meeting :
Place : House of the Headman
Name of the person contacted : Rasim Amca, Old man
Occupation : Villager
Date of the interview : January 7, 1996
Duration of the meeting : 5 hours
Place : House of the Headman

Name of the person contacted : Hasan
Occupation : Headman
Date of the interview : January 7, 1996
Duration of the meeting : 3 hours
Place : House of the Headman

Interview about the history of village

Name of the person contacted : Ismail Dede Age 85
Date of the interview : January 7, 1996
Duration of the meeting : 3 hours
Place : Village Room

Focus group study with men

Date of the interview : January 8, 1996
Place : House of the Headman
Duration of the meeting : 4 hours
Name of the person contacted :

Yusuf Kartal, Religious Leader
Hasan, Headman
Rasim Amca
Minibus Driver and one old man

Focus group study with women

Date of the interview : January 8, 1996
Place : Village
Name of the person contacted :

Hatice Kartal, Wife of the Religious Leader
Zuhre Hanim, Wife of the Headman
One very old woman
One middle-age woman

Village: Yukarizeytin

Interview about village

Name of the person contacted	:Yasar Temizkan
Occupation	: Headman
Date of the interview	: January 8, 1996
Duration of the meeting	: 2 hours
Place	: House of the Headman

Name of the person contacted	: Abdurrahman Surkan,
Age	: 47
Occupation	: Villager
Date of the interview	: January 7, 1996
Duration of the meeting	: 5 hours
Place	: House of the Headman

Name of the person contacted	: Kezban Temizkan
Occupation	: Wife of the Headman
Date of the interview	: January 7, 1996
Duration of the meeting	: 3 hours
Place	: House of the Headman

Interview about the history of village

Name of the person contacted	: Mehmet Ali Aygac
Age	: 63
Date of the interview	: January 9, 1996
Duration of the meeting	: 3 hours
Place	: Village Room

Focus group study with men

Date of the interview	: January 8 1996
Place	: House of the Headman
Duration of the meeting	: 2.5 hours
Name of the person contacted	:

Yasar Temizkan, Headman, Age 52
Satilmis Bey, Head of Forest Cooperative, Age, 43
One villager, Age 38

Focus group study with women

Date of the interview : January 7 1996
Place : House of the Headman
Name of the person contacted :

Aliye Buyukbas, Age 43
Hatice Buyukbas, Age 18
Halime Guler, Age 60
Muruvvet Hanim, Age 60
Sehri Hanim, Age 37

Village: Asikbuku

Interview about village

Name of the person contacted : Fikret Aksoy
Occupation : Villager
Date of the interview : January 8, 1996
Duration of the meeting : 2 hours
Place : House of the Headman

Name of the person contacted : Serif Aksoy
Occupation : Headman
Date of the interview : January 8, 1996
Duration of the meeting : 4 hours
Place : House of the Headman

Name of the person contacted : Fatma Aksoy
Occupation : Wife of the Headman
Date of the interview : January 8, 1996
Duration of the meeting : 2 hours
Place : House of the Headman

Interview about the history of village

Name of the person contacted : Kadir Aksoy
Age : 71
Date of the interview : January 8, 1996
Duration of the meeting : 2 hours
Place : House of the Headman

Focus group study with men

Date of the interview : January 9 1996
Place : House of the Teacher

Duration of the meeting : 2.5 hours
Name of the person contacted : Four villagers, Ages of the villagers are 21, 25, 26 and 35

Focus group study with women

Date of the interview : January 8 1996
Place : House of the Headman
Name of the person contacted :

Wife of the Headman
Wife of Kadir Aksoy
Four woman, Age group between 50 and 80

2nd Focus group study with women

Date of the interview : January 9 1996
Place : House of the Headman
Duration of the meeting : 4 hours
Name of the person contacted :

Wife of the Headman
Wife of Kadir Aksoy
Five woman, Age group between 25 and 50

Village: Asagizeytin

Interview about village

Name of the person contacted :
Occupation : Religious Leader
Date of the interview : January 6, 1996
Age : 65
Duration of the meeting : 2 hours
Place : House of the Headman

Name of the person contacted : Ali Coskun
Occupation : Headman
Date of the interview : January 6, 1996
Duration of the meeting : 2 hours
Place : House of the Headman

Name of the person contacted : Serife Coskun
Occupation : Wife of the Headman
Date of the interview : January 7, 1996
Duration of the meeting : 3 hours
Place : House of the Headman

Interview about the history of village

Name of the person contacted	: Sukru Ozturk
Age	: 60
Date of the interview	: January 6, 1996
Duration of the meeting	: 3 hours
Place	: House of the Headman

Focus group study with men

Date of the interview	: January 7, 1996
Place	: Village Room
Duration of the meeting	: 2.5 hours
Name of the person contacted	:

Sukru Ozturk
Reis Bey, Age 38
Ekrem, Age 44

Focus group study with women

Date of the interview	: January 7 1996
Place	:
Name of the person contacted	:

Zeynep Teyze, Age 60
Emine Teyze, Age 45
Halise Teyze, Age 45

Village: Koprubasi

Interview about village

Name of the person contacted	: Halime Taskin
Occupation	: Villager
Date of the interview	: January 7, 1996
Duration of the meeting	: 4 hours
Place	: Her House

Name of the person contacted	:
Occupation	: Headman
Date of the interview	: January 6, 1996
Duration of the meeting	: 2.5 hours
Place	: Village Room

Name of the person contacted : Ali Taskin
Occupation : Villager
Date of the interview : January 6, 1996
Duration of the meeting : 4 hours
Place : Village Room

Name of the person contacted : Muharrem Bey
Occupation : Teacher
Date of the interview : January 6, 1996
Duration of the meeting : 2.5 hours
Place : Village Room

Interview about the history of village

Name of the person contacted : Mehmet Dayi
Date of the interview : January 6, 1996
Duration of the meeting : 2.5 hours
Place : Village Room

Focus group study with men

Date of the interview : January 8, 1996
Place : Village Room
Duration of the meeting : 4 hours
Name of the person contacted :

Ali Taskin, Age 48
Headman, Age 62
Son of the Headman
A farmer

Focus group study with women

Date of the interview : January 7 1996
Place : House of Halime Taskin
Duration of the meting : 5 hours
Name of the person contacted :

Halime Taskin
Four women with ages between 50 and 80

Village: Saraycik

Interview about village

Name of the person contacted : Ismail Erdogan
Occupation : Headman
Date of the interview : January 6, 1996
Duration of the meeting : 2 hours
Place : His House

Name of the person contacted : Sahriye Erdogan
Occupation : Villager
Date of the interview : January 6, 1996
Duration of the meeting : 3 hours
Place : Her House

Name of the person contacted : Yusuf Erdogan
Occupation : Ex-Headman
Date of the interview : January 6, 1996
Duration of the meeting : 2.5 hours
Place : His House

Interview about the history of village

Name of the person contacted :
Occupation, Age : A Villager, 60
Date of the interview : January 7, 1996
Duration of the meeting : 2.5 hours
Place : Village Room

Focus group study with men

Date of the interview : January 8, 1996
Place : Village Room
Duration of the meeting : 3 hours
Name of the person contacted :

Villagers from various age groups.

Focus group study with women

Date of the interview : January 7 1996
Place : House of Sehriye Erdogan
Duration of the meeting : 2 hours
Name of the person contacted :

Sehriye Erdogan
Two daughters of Sehriye Erdogan
Two middle aged and two old women

Village: Susuzkoy

Interview about village

Name of the person contacted : Emrullah Demirbilek
Occupation : Headman
Date of the interview : January 12, 1996
Duration of the meeting : 4 hours
Place : Village Room

Name of the person contacted	: Ismail
Occupation	: Villager
Date of the interview	: January 12, 1996
Duration of the meeting	: 3 hours
Place	: His House
Name of the person contacted	: Fadime Nasip
Occupation	: Villager
Date of the interview	: January 12, 1996
Duration of the meeting	: 3.5 hours
Place	: House of Ismail

Interview about the history of village

Name of the person contacted	: Emrullah Keskin
Date of the interview	: January 12, 1996
Duration of the meeting	: 3 hours
Place	: Village Room

Focus group study with men

Date of the interview	: January 12, 1996
Place	: Village Room
Duration of the meeting	: 4 hours
Name of the person contacted	:

Emrullah Demirbilek
 Ismail
 A 30 year old man
 Two old men

Focus group study with women

Date of the interview	: January 12, 1996
Place	: House of Ismail
Duration of the meeting	: 3 hours
Name of the person contacted	:

Ismail's wife
 Ismail's daughter and daughter in law
 Fadime Nasip
 An old woman
 Neighbours

Village: Asagidaricay

Interview about village

Name of the person contacted	: Omer Ekiz
Occupation	: Headman
Date of the interview	: January 13, 1996
Duration of the meeting	: 4 hours
Place	: Village Room

Name of the person contacted	: Yakup Ay
Occupation	: Villager
Date of the interview	: January 13, 1996
Duration of the meeting	: 3 hours
Place	: Village Room

Name of the person contacted	: Kamile Erdem
Occupation	: Grocer
Date of the interview	: January 13, 1996
Duration of the meeting	: 4 hours
Place	: Village Room

Interview about the history of village

Name of the person contacted	: Huseyin Tunc
Occupation	: Ex-Headman
Date of the interview	: January 13, 1996
Duration of the meeting	: 4 hours
Place	: Village Room

Focus group study with men

Date of the interview	: January 13, 1996
Place	: Village Room
Duration of the meeting	: 4 hours

Name of the person contacted	:
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Huseyin Tunc and his son
Omer Ekiz and his son
Yakup Ay and his brother

Focus group study with women

Date of the interview	: January 13 1996
Place	: House of the Headman
Duration of the meting	: 3 hours

Name of the person contacted :

Wife of Yakup Ay
Daughter in law of Huseyin Tunc
Wife and daughter in law of Omer Ekiz

Village: Maksutlu

Interview about village

Name of the person contacted : Ismet Caliskan
Occupation : Headman
Date of the interview : January 6, 1996
Duration of the meeting : 3.5 hours
Place : His House

Name of the person contacted :
Occupation : Midwife of the village
Date of the interview : January 6, 1996
Duration of the meeting : 3 hours
Place : Her House

Name of the person contacted : Osman Pat
Occupation : Villager
Date of the interview : January 7, 1996
Duration of the meeting : 3 hours
Place : Village Room

Interview about the history of village

Name of the person contacted : Musa Gokcer
Date of the interview : January 6, 1996
Duration of the meeting : 3 hours
Place : Village Room

Focus group study with men

Date of the interview : January 7, 1996
Place : Village Room
Duration of the meeting : 4 hours

Name of the person contacted :

Fikret Caliskan, Age 24
Mustafa Dayi, Age 55
Sefer Gokcer, Age 60
Nuri Amca, Age 50

Focus group study with women

Date of the interview : January 7, 1996
Place : House of the Headman
Duration of the meeting : 5 hours

Name of the person contacted :

Feride Caliskan, Age 22
Wife of the Headman
Women from various age groups

Village: Fakili

Interview about village

Name of the person contacted : Mekik Teyze
Occupation : Villager
Date of the interview : January 14, 1996
Duration of the meeting : 2 hours
Place : Her House

Name of the person contacted : Ismail Bilgic
Occupation : Headman
Date of the interview : January 13, 1996
Duration of the meeting : 4 hours
Place : His House

Name of the person contacted : Mustafa Bilgic
Occupation : Villager
Date of the interview : January 13, 1996
Duration of the meeting : 3 hours
Place : House of the Headman

Interview about the history of village

Name of the person contacted :
Occupation, Age : Teacher, 50
Date of the interview : January 13, 1996
Duration of the meeting : 5 hours
Place : Village Room

Focus group study with men

Date of the interview : January 14, 1996
Place : Village Room

Duration of the meeting : 2 hours
Name of the person contacted :

Headman and his son
Two old men and three young men

Focus group study with women

Date of the interview : January 14, 1996
Place : House of the Headman
Duration of the meeting : 2 hours
Name of the person contacted :

Wife of the Headman and three middle aged women

Village: Yaylacili

Interview about village

Name of the person contacted : Mehmet Ozmen
Occupation : Villager
Date of the interview : January 14, 1996
Duration of the meeting : 4 hours
Place : Village Room

Name of the person contacted :
Occupation : A 40 year old farmer
Date of the interview : January 14, 1996
Duration of the meeting : 4 hours
Place : Village Room

Name of the person contacted :
Occupation : Daughter of the ex-headman
Date of the interview : January 14, 1996
Duration of the meeting : 3 hours
Place : Village Room

Interview about the history of village

Name of the person contacted :
Occupation, Age : An old villager
Date of the interview : January 15, 1996
Duration of the meeting : 2.5 hours
Place : Village Room

Focus group study with men

Date of the interview : January 16, 1996
Place : Village Room
Duration of the meeting : 2 hours
Name of the person contacted :

Headman
A group of old and young villagers

Focus group study with women

Date of the interview : January 16, 1996
Place : Village Room
Duration of the meeting : 2 hours
Name of the person contacted :

Six middle aged women