Water-Data Report 2013

15295700 TERROR RIVER AT MOUTH NEAR KODIAK, AK

Kodiak-Shelikof Basin
Kodiak-Afognak Islands Subbasin

LOCATION.--Lat 57°41′41″, long 153°09′42″ referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.5, T.29 S., R.24 W., Kodiak Island Borough, AK, Hydrologic Unit 19020701, (Kodiak C-4 quad), on Kodiak Island, in Kodiak National Wildlife Refuge, on right bank, 0.9 mi upstream from mouth, 7.5 mi downstream from Terror Lake Dam, and 29 mi southwest of Kodiak.

DRAINAGE AREA.--30.7 mi^2, 45.7 mi^2 prior to diversion from Terror Lake to hydropower plant on Kizhuyak River.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--February 1964 to October 1968, October 1981 to current year.

REVISED RECORDS.--WDR AK-84-1: 1982-83. WDR AK-96-1: 1995(instantaneous maximum discharge).

GAGE.--Water-stage recorder. Elevation of gage is 30 ft above sea level, from topographic map. Prior to October 1, 1981 at site 0.2 mi downstream at different datum.

REMARKS.--Records fair, except for estimated daily discharges, which are poor. Flow from 15 mi^2 at headwaters regulated by Terror Lake Dam and some flow diverted from Terror Lake to Kizhuyak River. Regulation for construction began in November 1982. Began filling reservoir April 29, 1984. Diversion to hydropower plant began February 12, 1985. See Water-Data Reports prior to 2010 for Summary Statistics for Water Years 1965-1983, prior to construction of Terror Lake Dam. GOES satellite telemetry at station.

Suggested citation: U.S. Geological Survey, 2014, Water-resources data for the United States, Water Year 2013: U.S. Geological Survey Water-Data Report WDR-US-2013, site 15295700, accessed at http://wdr.water.usgs.gov/wy2013/pdfs/15295700.2013.pdf

15295700 TERROR RIVER AT MOUTH NEAR KODIAK, AK—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	191	121	72	402	89	69	106	161	511	463	157	155
2	177	151	68	208	84	69	106	162	509	284	175	166
3	202	186	68	156	85	83	105	163	676	232	198	153
4	216	139	66	117	74	91	104	152	576	240	150	155
5	209	105	66	98	68	78	102	152	466	238	158	152
6	237	104	64	87	65	69	103	152	512	246	616	346
7	205	103	67	78	71	149	106	151	520	252	313	248
8	183	107	65	68	68	112	109	155	551	248	207	200
9	158	151	69	73	93	81	105	159	635	225	192	460
10	159	193	63	64	81	68	107	155	598	221	149	271
11	158	182	69	68	74	68	105	164	618	230	147	209
12	158	141	71	76	69	68	104	245	617	236	165	190
13	171	122	68	167	69	68	104	263	670	230	140	233
14	174	111	64	317	70	71	105	255	599	216	145	205
15	156	101	56	196	65	69	107	215	563	194	145	176
16	157	93	49	144	75	68	104	204	556	247	152	150
17	154	74	51	101	64	68	106	173	593	289	160	154
18	154	75	60	93	72	66	106	151	662	280	181	152
19	155	72	56	122	68	68	106	157	571	248	156	153
20	154	68	52	114	66	69	106	158	439	229	154	153
21	158	66	57	113	67	70	106	157	393	175	155	168
22	152	62	71	177	69	66	103	206	388	162	158	154
23	157	76	66	288	67	67	120	294	418	153	154	156
24	152	67	65	226	68	67	114	332	395	160	156	158
25	153	72	69	147	71	70	110	436	352	164	153	184
26	153	67	80	99	73	76	105	457	410	162	154	157
27	152	71	82	85	65	67	104	499	415	159	155	337
28	156	64	72	78	68	70	106	482	345	157	155	335
29	160	70	162	82	---	64	108	586	313	152	264	224
30	156	65	348	93	---	66	123	622	330	152	255	170
31	155	---	269	79	---	70	---	574	---	158	185	---
Mean	169	103	84.0	136	72.1	74.4	107	264	507	219	187	204
Max	237	193	348	402	93	149	123	622	676	463	616	460
Min	152	62	49	64	64	64	102	151	313	152	140	150
Med	158	97	67	101	69	69	106	173	516	229	156	169
Ac-ft	10,380	6,110	5,170	8,360	4,000	4,570	6,360	16,250	30,150	13,490	11,510	12,150
Cfsm	5.50	3.34	2.74	4.43	2.35	2.42	3.48	8.61	16.5	7.15	6.10	6.65
In.	6.34	3.73	3.16	5.11	2.45	2.79	3.88	9.93	18.42	8.24	7.03	7.42

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2013, BY WATER YEAR (WY)#

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	278	179	140	122	109	94.0	162	317	476	348	266	273
Max	722	631	313	267	205	152	247	457	872	1,070	662	707
(WY)	(2004)	(2003)	(1986)	(2003)	(2003)	(1998)	(1993)	(2004)	(1987)	(1987)	(1988)	(1995)
Min	169	84.4	71.1	68.5	72.1	60.9	107	221	250	181	162	163
(WY)	(2013)	(2006)	(2011)	(2012)	(2013)	(1986)	(2013)	(2008)	(2009)	(2009)	(2012)	(2010)

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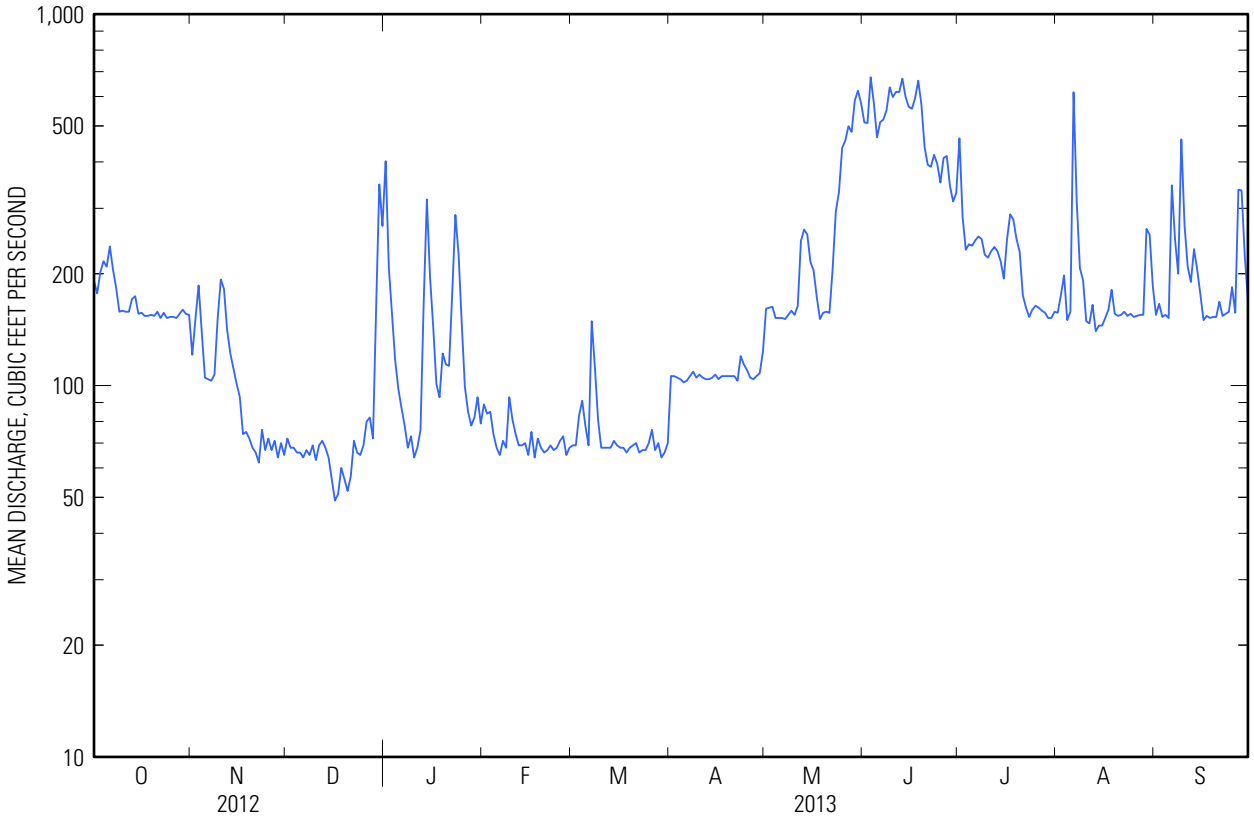
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1986 - 2013#	
Annual mean	179		177		231	
Highest annual mean					369	1987
Lowest annual mean					163	2009
Highest daily mean	1,620	Sep 27	676	Jun 3	4,610	Sep 20, 1995
Lowest daily mean	22	Jan 19	49	Dec 16	22	Jan 19, 2012
Annual seven-day minimum	37	Jan 14	54	Dec 15	37	Jan 14, 2012
Maximum peak flow			1,440	Aug 6	10,000	Sep 19, 1995
Maximum peak stage			3.48	Aug 6	7.67	Sep 19, 1995
Instantaneous low flow			45	Dec 15	9.8	Dec 11, 1996
Annual runoff (ac-ft)	130,100		128,500		167,200	
Annual runoff (cfsm)	5.84		5.78		7.52	
Annual runoff (inches)	79.50		78.50		102.11	
10 percent exceeds	354		390		449	
50 percent exceeds	152		152		175	
90 percent exceeds	66		67		79	

See Period of Record; break in record, and Remarks



WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1968, 1982 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: December 1981 to current year.

INSTRUMENTATION.--Water-temperature recorder since December 10, 1981. Electronic water-temperature recorder set for 15-minute recording interval.

REMARKS.--Records represent water temperature at sensor within 0.5 °C. Temperature at sensor was compared with the stream average by cross section on April 17 and July 23, 2013. A maximum variation of 0.8 °C was found in the cross section temperature, occurring April 17. A gravel bar running parallel to the channel formed in the 2003 water year and has remained in place across from the sensor location. The maximum variation of 0.1 °C was found between median stream temperature and sensor temperature.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 15.0°C, July 15, 2003; minimum, 0.0°C many days during winter.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 13.5°C, July 24; minimum, 0.0°C, many days during winter.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
[ft, feet; ft³/s, cubic feet per second; °C, degrees Celsius]

Date	Sample start time	Stream width, ft (00004)	Sample location, relative to right bank, looking downstream, ft (72103)	Discharge, instantaneous, ft³/s (00061)	Sampling method (82398)	Temperature, water, °C (00010)
April 17, 2013	**1001**	60.0	3.0	105	EWI	1.1
April 17, 2013	**1002**	60.0	9.0	105	EWI	1.1
April 17, 2013	**1003**	60.0	15.0	105	EWI	1.1
April 17, 2013	**1004**	60.0	21.0	105	EWI	1.1
April 17, 2013	**1005**	60.0	27.0	105	EWI	1.2
April 17, 2013	**1006**	60.0	33.0	105	EWI	1.2
April 17, 2013	**1007**	60.0	39.0	105	EWI	1.9
April 17, 2013	**1008**	60.0	45.0	105	EWI	1.9
April 17, 2013	**1009**	60.0	51.0	105	EWI	1.9
April 17, 2013	**1010**	60.0	57.0	105	EWI	1.9
July 23, 2013	**0930**	70.0	.5	152	EWI	8.6
July 23, 2013	**0931**	70.0	3.5	152	EWI	8.6
July 23, 2013	**0932**	70.0	10.5	152	EWI	8.6
July 23, 2013	**0933**	70.0	17.5	152	EWI	8.6
July 23, 2013	**0934**	70.0	24.5	152	EWI	8.6
July 23, 2013	**0935**	70.0	31.5	152	EWI	8.6
July 23, 2013	**0936**	70.0	38.5	152	EWI	8.6
July 23, 2013	**0937**	70.0	45.5	152	EWI	8.7
July 23, 2013	**0938**	70.0	52.5	152	EWI	8.4
July 23, 2013	**0939**	70.0	59.5	152	EWI	8.3
July 23, 2013	**0940**	70.0	66.5	152	EWI	8.3

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	5.5	3.0	4.5	3.0	2.0	2.5	0.5	0.5	0.5	1.5	0.5	1.0
2	6.0	5.0	5.5	3.0	1.5	2.0	0.5	0.5	0.5	1.5	1.0	1.5
3	6.5	4.5	5.5	2.5	2.0	2.5	1.0	0.5	1.0	1.0	1.0	1.0
4	7.5	6.0	6.5	3.0	2.0	2.5	1.0	0.5	1.0	1.5	1.0	1.0
5	6.5	5.5	6.0	2.5	2.0	2.0	1.0	0.5	1.0	2.0	1.5	1.5
6	6.5	5.5	6.0	2.0	1.0	2.0	1.0	0.5	0.5	1.5	0.5	1.0
7	9.0	6.5	7.5	1.5	0.5	1.0	1.0	0.5	1.0	2.0	1.0	1.5
8	7.0	6.0	6.5	3.0	1.5	2.5	1.5	1.0	1.0	1.0	0.5	0.5
9	6.5	5.5	6.0	3.5	2.5	3.0	1.5	1.0	1.0	1.0	0.5	0.5
10	6.5	5.0	6.0	3.0	2.5	2.5	1.5	1.0	1.0	1.5	0.5	1.0
11	7.0	6.0	6.5	2.5	1.5	2.5	2.0	0.5	1.0	1.5	1.0	1.0
12	6.5	6.0	6.5	2.0	1.5	1.5	2.0	1.5	2.0	2.5	1.0	2.0
13	6.0	5.5	6.0	2.5	1.5	2.0	2.0	1.5	2.0	2.5	2.0	2.0
14	6.0	5.0	5.5	2.5	2.0	2.5	1.5	1.0	1.0	2.0	1.0	2.0
15	5.0	3.0	4.0	2.5	2.0	2.5	1.0	0.5	0.5	1.0	0.5	0.5
16	3.0	2.0	2.5	2.0	1.0	1.5	0.5	0.5	0.5	1.5	0.5	1.0
17	3.5	2.5	3.0	1.0	1.0	1.0	0.5	0.5	0.5	1.0	0.5	0.5
18	3.5	3.0	3.0	1.0	0.5	1.0	0.5	0.0	0.5	1.0	0.5	1.0
19	3.5	2.5	3.0	1.0	0.5	1.0	0.5	0.5	0.5	1.0	1.0	1.0
20	3.5	2.0	2.5	1.0	1.0	1.0	0.5	0.5	0.5	1.5	1.0	1.5
21	3.5	2.0	2.5	1.5	1.0	1.5	0.5	0.0	0.5	---	---	---
22	4.0	2.5	3.0	1.5	1.0	1.0	0.5	0.0	0.5	---	---	---
23	4.0	2.5	3.0	1.0	0.5	1.0	0.5	0.0	0.5	---	---	---
24	4.0	3.0	3.5	1.0	0.0	1.0	0.5	0.0	0.5	---	---	---
25	4.5	3.0	4.0	1.5	0.5	1.0	0.5	0.0	0.0	---	---	---
26	4.5	4.0	4.0	2.0	1.5	1.5	0.5	0.5	0.5	---	---	---
27	4.5	3.0	4.0	2.5	1.5	2.0	1.0	0.5	0.5	---	---	---
28	3.5	2.5	3.0	2.0	0.5	1.0	1.0	0.5	0.5	---	---	---
29	3.5	2.5	3.0	0.5	0.5	0.5	0.5	0.0	0.5	---	---	---
30	3.5	2.5	3.0	0.5	0.5	0.5	1.0	0.0	0.5	---	---	---
31	3.5	2.5	3.0	---	---	---	1.5	1.0	1.0	---	---	---
Month	9.0	2.0	4.5	3.5	0.0	1.7	2.0	0.0	0.7	---	---	---

15295700 TERROR RIVER AT MOUTH NEAR KODIAK, AK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	---	---	---	---	---	---	---	---	---	5.0	2.5	3.5
2	---	---	---	---	---	---	---	---	---	5.5	3.0	4.0
3	---	---	---	---	---	---	---	---	---	4.5	3.0	3.5
4	---	---	---	---	---	---	---	---	---	7.0	2.0	3.5
5	---	---	---	---	---	---	---	---	---	6.5	1.0	3.5
6	---	---	---	---	---	---	---	---	---	6.0	1.5	3.5
7	---	---	---	---	---	---	---	---	---	5.0	2.5	3.5
8	---	---	---	---	---	---	---	---	---	6.5	2.5	4.0
9	---	---	---	---	---	---	---	---	---	6.0	3.0	4.0
10	---	---	---	---	---	---	---	---	---	7.0	2.5	4.5
11	---	---	---	---	---	---	---	---	---	5.0	3.5	4.5
12	---	---	---	---	---	---	---	---	---	5.0	3.0	4.0
13	---	---	---	---	---	---	---	---	---	8.0	2.0	4.5
14	---	---	---	---	---	---	---	---	---	7.0	1.5	4.0
15	---	---	---	---	---	---	---	---	---	7.0	2.0	4.0
16	---	---	---	---	---	---	---	---	---	5.0	2.5	4.0
17	---	---	---	---	---	---	---	---	---	5.5	3.0	4.0
18	---	---	---	---	---	---	5.5	0.5	2.5	6.0	1.5	3.5
19	---	---	---	---	---	---	6.0	0.5	2.5	7.5	1.5	4.0
20	---	---	---	---	---	---	4.0	1.0	2.5	5.5	2.0	3.5
21	---	---	---	---	---	---	3.5	1.5	2.5	6.5	3.0	4.5
22	---	---	---	---	---	---	4.5	1.5	3.0	7.5	4.0	5.0
23	---	---	---	---	---	---	5.0	2.5	3.5	5.5	3.5	4.0
24	---	---	---	---	---	---	6.5	2.5	4.0	8.5	3.0	5.0
25	---	---	---	---	---	---	6.5	2.0	4.0	8.0	2.5	4.5
26	---	---	---	---	---	---	6.5	1.0	3.5	5.5	3.0	4.0
27	---	---	---	---	---	---	5.5	2.0	3.5	5.0	3.0	4.0
28	---	---	---	---	---	---	6.5	1.0	3.5	8.5	3.0	5.0
29	---	---	---	---	---	---	6.5	1.5	3.5	8.5	3.0	5.0
30	---	---	---	---	---	---	7.0	1.5	3.5	7.5	2.5	4.5
31	---	---	---	---	---	---	---	---	---	6.0	3.5	4.5
Month	---	---	---	---	---	---	---	---	---	8.5	1.0	4.1

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	6.5	3.5	4.5	7.0	5.5	6.0	10.5	8.5	9.5	11.0	9.0	10.0
2	5.0	3.5	4.0	6.5	5.0	5.5	10.0	9.0	9.5	10.5	9.5	10.0
3	4.5	3.5	4.0	7.5	5.0	6.5	11.5	9.0	10.0	10.5	8.5	9.5
4	5.5	3.0	4.0	7.5	5.5	6.5	10.0	9.0	9.5	10.0	8.0	9.0
5	5.0	3.5	4.0	7.5	5.5	6.5	9.0	8.5	8.5	9.0	7.5	8.0
6	4.5	3.5	4.0	8.0	6.0	6.5	11.0	8.5	9.5	10.0	8.0	9.0
7	7.5	3.5	5.0	7.0	5.0	6.0	10.0	8.5	9.0	9.5	8.5	9.0
8	8.5	3.5	5.5	8.0	6.0	7.0	9.5	7.5	8.5	9.0	7.5	8.5
9	9.0	3.5	5.5	9.5	5.5	7.0	11.0	8.5	9.5	10.5	9.0	9.5
10	9.0	3.5	5.5	11.0	5.5	8.0	10.5	8.5	9.5	10.0	8.5	9.0
11	9.0	4.0	6.0	10.5	6.0	8.5	10.0	9.0	9.5	9.5	8.0	8.5
12	9.0	3.5	6.0	11.5	6.0	8.5	10.5	9.0	9.5	9.5	8.0	8.5
13	9.0	4.5	6.0	12.0	6.5	9.0	11.0	9.0	10.0	9.0	7.5	8.5
14	9.5	4.5	6.5	10.0	7.5	9.0	10.5	8.0	9.5	9.0	8.0	8.5
15	9.5	4.0	6.5	10.5	7.5	9.0	11.0	8.5	9.5	9.5	7.5	8.0
16	9.5	4.5	6.5	12.5	8.0	9.5	10.0	8.5	9.0	8.5	6.5	7.5
17	10.0	4.5	6.5	12.0	8.0	10.0	10.5	8.5	9.0	8.0	6.5	7.0
18	9.5	5.0	6.5	12.0	8.5	10.0	11.5	9.0	10.0	7.5	5.0	6.5
19	7.5	4.5	5.5	13.0	8.5	10.5	11.0	9.5	10.0	7.5	5.0	6.0
20	7.5	4.5	6.0	12.0	9.0	10.5	9.5	8.5	9.0	7.5	5.0	6.0
21	8.5	5.0	6.0	12.5	8.0	10.0	9.5	8.5	9.0	7.0	6.0	6.5
22	5.5	5.0	5.5	13.0	8.0	10.5	10.5	9.0	9.5	6.5	5.0	5.5
23	6.5	4.5	5.5	12.5	8.5	10.5	11.0	8.5	9.5	6.5	5.0	5.5
24	7.0	5.0	6.0	13.5	8.5	11.0	10.5	7.5	9.0	7.0	4.5	5.5
25	10.5	5.0	7.0	12.5	8.5	10.5	9.0	7.0	8.0	8.0	6.5	7.0
26	10.0	5.5	7.5	12.0	8.5	10.0	9.0	8.0	8.5	8.0	6.5	7.0
27	9.5	5.5	7.0	10.0	8.5	9.0	9.5	7.5	8.5	7.0	6.5	6.5
28	7.5	5.5	6.5	12.0	8.5	10.0	8.0	7.0	8.0	6.5	5.5	6.5
29	10.0	5.5	7.5	11.5	8.5	10.0	10.0	8.0	9.0	5.5	4.5	5.0
30	7.0	5.5	6.5	12.5	8.0	10.0	11.5	9.5	10.0	5.5	4.0	5.0
31	---	---	---	11.0	8.0	9.5	10.5	9.5	10.0	---	---	---
Month	10.5	3.0	5.8	13.5	5.0	8.7	11.5	7.0	9.3	11.0	4.0	7.5