

Survey Report Estimates for the Grand River and Flat River mouth, Kent County, 2015

Waterbody	Grand River and mouth of the Flat River
Year	2015
County	Kent County
Sites	GR5041, GR5042, GR505, and FR509
Survey period	March 21 to September 30
Survey design	Roving (instantaneous)-access
Count methods/modes	Roving (instantaneous)/boat and shore
Clerk time	full time
Survey purpose	Characterize general effort and catch aspects of the fishery

Notes

Survey followed a roving (instantaneous)-access design. Funding was provided by the Federal Aid to Sport Fish Restoration Project F-81, Study 230499. One clerk worked full time to collect angling survey data. Two weekend days and 3 week days were randomly selected for sampling during each week of the survey season. No holidays were sampled. The clerk followed a randomized count and interview schedule. One of two shifts was selected each sample day. The Grand River and Flat River were divided into 2 sections with 2 sites per section: GR5041 and GR5042 made up Section 1; and GR505 and FR509 made up Section 2. One section was sampled each day. Starting location within a section and direction of travel were randomized for both counting and interviewing. Roving (instantaneous) counts of boat and shore anglers were made twice per day. Survey period for both counts and interviews was March 21 to September 30. Months were estimated separately. “NAN” in a table indicates that there was not enough data to make an estimate.

Table 1.–Daylight hours used to estimate catch and effort for the Grand River and Flat River, March 21 to September 30, 2015.

Year	Month	Daylight hours
2015	3	13
2015	4	15
2015	5	15
2015	6	16
2015	7	16
2015	8	15
2015	9	15

Common White Sucker	0.0004	1	-	-	-	-	-	1
	0.0009	2	-	-	-	-	-	2
Redhorse	0.0169	18	29	-	-	-	-	48
	0.0224	19	59	-	-	-	-	62
Channel catfish	0.0125	-	-	35	-	-	-	35
	0.0252	-	-	70	-	-	-	70
Carp	0.0105	-	29	-	-	-	-	29
	0.0211	-	59	-	-	-	-	59
Muskellunge	0.0020	6	-	-	-	-	-	6
	0.0042	12	-	-	-	-	-	12
Chinook salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
White bass	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Freshwater drum	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Other*	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL RELEASED	0.5912	120	912	472	160	-	-	1,664
	0.2689	69	415	399	195	-	-	611
TOTAL CATCH	0.6711	193	1,026	472	197	-	-	1,889
	0.2880	84	437	399	209	-	-	633
ANGLER HOURS		808	1,120	451	222	113	101	2,814
		301	451	462	217	95	72	755
ANGLER TRIPS		392	812	281	125	54	49	1,714
		194	522	343	132	46	35	670

* "Other" in all tables is a combination of species lumped together that is made up of Quillback, Goby, Flathead Catfish, and Longnose Gar.

Common White Sucker	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Redhorse	0.0215	22	62	-	-	-	-	84
	0.0671	43	NAN	-	-	-	-	251
Channel catfish	0.0076	-	-	-	-	-	29	29
	0.0159	-	-	-	-	-	57	57
Carp	0.0056	22	-	-	-	-	-	22
	0.0124	45	-	-	-	-	-	45
Muskellunge	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Chinook salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
White bass	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Freshwater drum	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Other*	0.0447	173	-	-	-	-	-	173
	0.0954	341	-	-	-	-	-	341
TOTAL RELEASED	0.7692	1,008	80	-	48	1,700	147	2,983
	1.8799	870	NAN	-	96	NAN	132	6,865
TOTAL CATCH	0.9746	1,728	97	-	48	1,700	206	3,779
	1.9474	996	NAN	-	96	NAN	155	6,883
ANGLER HOURS		1,658	186	341	144	638	911	3,878
		960	219	NAN	165	NAN	891	3,187
ANGLER TRIPS		284	42	78	48	145	206	802
		167	56	NAN	55	NAN	212	716

Common White Sucker	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Redhorse	0.1297	158	-	2	-	-	-	160
	0.2635	316	-	5	-	-	-	316
Channel catfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Carp	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Muskellunge	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Chinook salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
White bass	0.0596	-	71	2	-	-	-	74
	0.1271	-	153	5	-	-	-	153
Freshwater drum	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Other*	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
TOTAL RELEASED	0.1893	158	71	5	-	-	-	234
	0.2990	316	153	7	-	-	-	351
TOTAL CATCH	0.1893	158	71	5	-	-	-	234
	0.2990	316	153	7	-	-	-	351
ANGLER HOURS		149	563	43	179	38	264	1,236
		107	490	85	280	75	189	615
ANGLER TRIPS		105	335	30	141	26	187	824
		98	312	65	223	57	178	442

Common White Sucker	0.1131	214	-	-	-	-	-	214
	0.3965	422	-	-	-	-	-	422
Redhorse	2.2614	4,282	-	-	-	-	-	4,282
	7.9302	8,447	-	-	-	-	-	8,447
Channel catfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Carp	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Muskellunge	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Chinook salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
White bass	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Freshwater drum	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Other*	0.0222	-	-	-	42	-	-	42
	0.1097	-	-	-	NAN	-	-	168
TOTAL RELEASED	3.1722	5,781	79	-	126	21	-	6,006
	15.2902	NAN	107	-	NAN	40	-	23,128
TOTAL CATCH	3.3305	6,080	79	-	126	21	-	6,306
	15.5713	NAN	107	-	NAN	40	-	23,130
ANGLER HOURS		1,346	206	-	263	79	-	1,893
		NAN	228	-	NAN	89	-	5,489
ANGLER TRIPS		290	59	-	57	42	-	447
		NAN	70	-	NAN	48	-	1,184

Table 6.—Estimated harvest, catch per hour, and fishing pressure for the Grand River, site 5042 in section 1, shore fishery. Site 5042 is the upper site of Section 1 in the survey area. Two standard errors are given below the estimates.

Species	C/H	March-April	May	June	July	August	September	Season
HARVEST								
Walleye	0.0033	—	7	28	38	NAN	—	73
	0.0034	—	13	56	47	—	—	75
Northern Pike	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	—	—	—
Smallmouth Bass	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	10	—	10
Bluegill	0.0397	—	139	336	394	NAN	—	869
	0.0268	—	173	273	455	130	—	573
Pumpkinseed	0.0039	—	13	73	—	NAN	—	86
	0.0055	—	27	117	—	—	—	120
Rock Bass	0.0127	—	—	278	—	NAN	—	278
	0.0158	—	—	343	—	—	—	343
Rainbow Trout	0.0376	536	72	32	25	NAN	157	823
	0.0135	195	64	46	39	48	152	267
Brown Trout	0.0053	—	9	—	—	NAN	107	116
	0.0080	—	17	—	—	—	174	174
Common White Sucker	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	—	—	—
Redhorse	0.0060	95	37	—	—	NAN	—	132
	0.0057	99	75	—	—	—	—	124
Channel Catfish	0.0055	—	13	89	18	NAN	—	120
	0.0074	—	27	108	36	110	—	160
Carp	0.0015	—	—	27	6	NAN	—	34
	0.0020	—	—	42	13	—	—	44
Chinook Salmon	0.0034	—	—	—	—	NAN	76	76
	0.0035	—	—	—	—	—	76	76
Coho Salmon	0.0237	—	—	—	—	NAN	519	519
	0.0162	—	—	—	—	14	345	345
Freshwater Drum	0.0016	—	15	19	—	NAN	—	34
	0.0022	—	30	38	—	—	—	48
Other*	0.0155	15	15	206	91	NAN	13	340
	0.0142	31	29	231	101	167	25	307
TOTAL HARVEST	0.1597	646	321	1,088	574	NAN	871	3,499
	0.0483	220	208	529	472	245	423	913
RELEASED								
Walleye	0.0083	79	13	7	63	NAN	19	181
	0.0059	70	27	14	94	—	39	127
Northern pike	0.0006	4	—	9	—	NAN	—	14
	0.0010	9	—	19	—	—	—	21
Largemouth bass	0.0058	12	65	28	8	NAN	14	127
	0.0055	17	99	56	12	—	27	119
Smallmouth bass	0.0752	66	1,289	150	108	NAN	37	1,648
	0.0361	54	717	144	142	26	56	750
Bluegill	0.0340	—	276	228	24	NAN	216	744
	0.0245	—	248	265	34	—	379	526
Pumpkinseed	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	—	—	—
Rock bass	0.0605	15	678	606	26	NAN	—	1,325
	0.0524	29	759	837	47	26	—	1,131
Black crappie	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	—	—	—
Rainbow trout	0.0176	292	94	—	—	NAN	—	385
	0.0101	191	94	—	—	—	—	213
Brown trout	0.0002	4	—	—	—	NAN	—	4
	0.0004	9	—	—	—	—	—	9

Common White Sucker	0.0269	590	-	-	-	NAN	-	590
	0.0251	542	-	-	-	-	-	542
Redhorse	0.4190	3,789	5,295	19	57	NAN	24	9,183
	0.1615	1,477	2,893	38	67	16	49	3,249
Channel catfish	0.0117	23	29	9	8	NAN	188	256
	0.0108	46	42	19	15	-	224	234
Carp	0.0238	23	85	319	82	NAN	12	521
	0.0179	28	79	362	92	29	25	385
Muskellunge	-	-	-	-	-	NAN	-	-
	-	-	-	-	-	-	-	-
Chinook salmon	0.0006	-	-	-	-	NAN	13	13
	0.0012	-	-	-	-	-	25	25
Coho salmon	0.0013	-	-	-	-	NAN	28	28
	0.0025	-	-	-	-	-	55	55
White bass	-	-	-	-	-	NAN	-	-
	-	-	-	-	-	-	-	-
Freshwater drum	0.0016	-	-	28	7	NAN	-	35
	0.0020	-	-	42	10	-	-	43
Green Sunfish	0.0007	15	-	-	-	NAN	-	15
	0.0013	29	-	-	-	-	-	29
Other*	0.0532	37	344	254	64	NAN	467	1,166
	0.0298	38	222	209	70	308	449	629
TOTAL RELEASED	0.7409	4,947	8,168	1,658	446	NAN	1,017	16,236
	0.2030	1,589	3,098	987	226	312	638	3,695
TOTAL CATCH	0.9005	5,593	8,488	2,746	1,020	NAN	1,888	19,735
	0.2215	1,604	3,105	1,120	523	397	765	3,806
ANGLER HOURS		5,268	3,601	2,038	1,863	2,835	6,311	21,915
		922	1,225	962	1,094	1,086	2,356	3,347
ANGLER TRIPS		1,834	1,149	1,448	857	1,063	1,882	8,234
		383	557	933	552	605	969	1,714

	-	-	-	-	-	-	-	-
Redhorse	0.0194	-	86	-	113	-	-	199
	0.0265	-	176	-	202	-	-	268
Channel catfish	0.0465	-	283	-	143	-	52	478
	0.0399	-	316	-	214	-	96	393
Carp	-	-	-	-	-	-	-	-
Muskellunge	-	-	-	-	-	-	-	-
Chinook salmon	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
White bass	-	-	-	-	-	-	-	-
Freshwater drum	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
Other*	0.0131	-	92	-	-	42	-	134
	0.0145	-	121	-	-	79	-	145
TOTAL RELEASED	0.5837	284	1,639	419	1,098	1,205	1,355	6,000
	0.2601	275	1,016	540	1,043	972	1,238	2,228
TOTAL CATCH	0.6438	284	1,866	562	1,155	1,205	1,545	6,618
	0.2721	275	1,055	567	1,046	972	1,271	2,273
ANGLER HOURS		876	2,064	2,026	1,611	1,787	1,916	10,279
		363	1,203	1,591	886	830	906	2,531
ANGLER TRIPS		319	603	744	307	409	452	2,834
		164	367	655	225	232	236	866

	-	-	-	-	-	-	-	-
Redhorse	0.1153	6	-	-	-	-	169	175
	0.4471	13	-	-	-	-	NAN	675
Channel catfish	0.0368	-	56	-	-	-	-	56
	0.0657	-	97	-	-	-	-	97
Carp	0.0039	-	6	-	-	-	-	6
	0.0080	-	12	-	-	-	-	12
Muskellunge	0.0126	-	19	-	-	-	-	19
	0.0258	-	38	-	-	-	-	38
Chinook salmon	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
White bass	-	-	-	-	-	-	-	-
Freshwater drum	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
Other*	0.0053	-	8	-	-	-	-	8
	0.0107	-	16	-	-	-	-	16
TOTAL RELEASED	0.5311	40	352	14	115	117	169	806
	0.5498	68	258	28	214	127	NAN	768
TOTAL CATCH	0.5632	46	366	14	144	117	169	855
	0.5563	69	259	28	219	127	NAN	770
ANGLER HOURS		209	655	70	138	278	169	1,518
		106	357	141	160	416	158	618
ANGLER TRIPS		119	596	67	131	255	88	1,257
		78	361	135	158	450	145	635

Table 9.—Total estimated harvest, catch per hour, and fishing pressure for all sites combined for the boat fishery. Two standard errors are given below the estimates.

Species	C/H	March-April	May	June	July	August	September	Season
HARVEST								
Walleye	0.0049	—	43	—	—	—	35	78
	0.0097	—	91	—	—	—	66	112
Northern Pike	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Smallmouth Bass	0.0167	—	—	84	—	—	184	268
	0.0309	—	—	154	—	—	287	326
Bluegill	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Pumpkinseed	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Rock Bass	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Rainbow Trout	0.0654	1,020	—	—	—	—	29	1,049
	0.0974	557	—	—	—	—	58	560
Brown Trout	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Common White Sucker	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Redhorse	0.0037	—	—	59	—	—	—	59
	0.0072	—	—	81	—	—	—	81
Channel Catfish	0.0133	—	185	—	28	—	—	213
	0.0254	—	271	—	66	—	—	279
Carp	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Chinook Salmon	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Coho Salmon	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Freshwater Drum	0.0011	—	18	—	—	—	—	18
	0.0047	—	NAN	—	—	—	—	71
Other*	0.0018	—	—	—	28	—	—	28
	0.0035	—	—	—	39	—	—	39
TOTAL HARVEST	0.1068	1,020	246	143	56	—	249	1,713
	0.1659	557	NAN	174	77	—	300	1,184
RELEASED								
Walleye	0.0959	—	43	—	—	1,438	59	1,540
	0.3824	—	72	—	—	NAN	82	5,752
Northern pike	0.0235	93	130	—	—	21	134	378
	0.0403	120	286	—	—	47	207	375
Largemouth bass	0.0238	—	20	—	—	275	87	381
	0.0417	—	34	—	—	387	128	409
Smallmouth bass	0.2997	192	933	419	974	1,150	1,141	4,810
	0.6134	248	NAN	540	NAN	NAN	1,213	7,220
Bluegill	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Pumpkinseed	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Rock bass	0.0092	—	147	—	—	—	—	147
	0.0224	—	295	—	—	—	—	295
Black crappie	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Rainbow trout	0.1294	2,076	—	—	—	—	—	2,076
	0.5479	NAN	—	—	—	—	—	8,306
Brown trout	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—
Common White Sucker	0.0133	214	—	—	—	—	—	214

	0.0322	422	-	-	-	-	-	422
Redhorse	0.2844	4,303	148	-	113	-	-	4,565
	0.6597	8,447	NAN	-	202	-	-	8,470
Channel catfish	0.0316	-	283	-	143	-	81	507
	0.0505	-	316	-	214	-	111	397
Carp	0.0013	22	-	-	-	-	-	22
	0.0033	45	-	-	-	-	-	45
Muskellunge	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Chinook salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Coho salmon	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
White bass	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Freshwater drum	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Green Sunfish	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Other*	0.0218	173	92	-	42	42	-	350
	0.0395	341	121	-	NAN	79	-	407
TOTAL RELEASED	0.9339	7,073	1,797	419	1,272	2,926	1,502	14,989
	2.3742	NAN	NAN	540	NAN	NAN	1,245	31,888
TOTAL CATCH	1.0407	8,093	2,042	562	1,329	2,926	1,751	16,703
	2.4598	NAN	NAN	567	NAN	NAN	1,281	31,910
ANGLER HOURS		3,879	2,456	2,367	2,018	2,503	2,827	16,050
		NAN	1,244	NAN	NAN	NAN	1,270	22,337
ANGLER TRIPS		892	704	822	412	596	657	4,084
		NAN	378	NAN	NAN	NAN	317	5,674

Table 10.—Total estimated harvest, catch per hour, and fishing pressure for all sites combined for the shore fishery. Two standard errors are given below the estimates.

Species	C/H	March-April	May	June	July	August	September	Season
HARVEST								
Walleye	0.0027	—	7	28	38	NAN	—	73
	0.0027	—	13	56	47	—	—	75
Northern Pike	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	—	—	—
Smallmouth Bass	—	—	—	—	—	NAN	—	—
	—	—	—	—	—	10	—	10
Bluegill	0.0350	—	193	336	431	NAN	—	961
	0.0219	—	204	273	461	130	—	588
Pumpkinseed	0.0031	—	13	73	—	NAN	—	86
	0.0044	—	27	117	—	—	—	120
Rock Bass	0.0111	—	27	278	—	NAN	—	305
	0.0127	—	54	343	—	—	—	348
Rainbow Trout	0.0319	590	72	32	25	NAN	157	877
	0.0107	199	64	46	39	48	152	270
Brown Trout	0.0042	—	9	—	—	NAN	107	116
	0.0064	—	17	—	—	—	174	174
Common White Sucker	0.0003	8	—	—	—	NAN	—	8
	0.0006	15	—	—	—	—	—	15
Redhorse	0.0062	98	71	—	—	NAN	—	169
	0.0052	99	101	—	—	—	—	141
Channel Catfish	0.0062	6	27	89	47	NAN	—	169
	0.0062	13	38	108	59	110	—	169
Carp	0.0015	8	—	27	6	NAN	—	41
	0.0017	15	—	42	13	—	—	47
Chinook Salmon	0.0027	—	—	—	—	NAN	76	76
	0.0028	—	—	—	—	—	76	76
Coho Salmon	0.0189	—	—	—	—	NAN	519	519
	0.0128	—	—	—	—	14	345	345
Freshwater Drum	0.0012	—	15	19	—	NAN	—	34
	0.0018	—	30	38	—	—	—	48
Other*	0.0124	15	15	206	91	NAN	13	340
	0.0113	31	29	231	101	167	25	307
TOTAL HARVEST	0.1373	725	449	1,088	640	NAN	871	3,773
	0.0381	226	251	529	480	245	423	929
RELEASED								
Walleye	0.0067	80	13	7	63	NAN	19	183
	0.0047	70	27	14	94	—	39	127
Northern pike	0.0008	4	—	9	7	NAN	—	21
	0.0029	9	—	19	14	76	—	80
Largemouth bass	0.0046	12	65	28	8	NAN	14	127
	0.0044	17	99	56	12	—	27	119
Smallmouth bass	0.1005	130	1,978	387	232	NAN	37	2,763
	0.0363	94	814	346	258	92	56	932
Bluegill	0.0400	—	384	355	146	NAN	216	1,100
	0.0225	—	276	323	193	—	379	601
Pumpkinseed	0.0003	—	—	9	—	NAN	—	9
	0.0006	—	—	17	—	—	—	17
Rock bass	0.0621	30	945	685	47	NAN	—	1,708
	0.0431	43	792	850	59	26	—	1,165
Black crappie	0.0019	—	53	—	—	NAN	—	53
	0.0030	—	77	—	—	29	—	83
Rainbow trout	0.0157	338	94	—	—	NAN	—	432
	0.0083	195	94	—	—	39	—	220
Brown trout	0.0002	4	—	—	—	NAN	—	4
	0.0003	9	—	—	—	—	—	9
Common White Sucker	0.0215	591	—	—	—	NAN	—	591

	0.0199	542	-	-	-	-	-	542
Redhorse	0.3481	3,971	5,324	21	57	NAN	193	9,566
	0.1300	1,510	2,893	38	67	16	NAN	3,355
Channel catfish	0.0126	23	85	45	8	NAN	188	348
	0.0097	46	106	73	15	-	224	263
Carp	0.0203	23	120	319	82	NAN	12	557
	0.0144	28	99	362	92	29	25	390
Muskellunge	0.0009	6	19	-	-	NAN	-	25
	0.0015	12	38	-	-	-	-	40
Chinook salmon	0.0005	-	-	-	-	NAN	13	13
	0.0009	-	-	-	-	-	25	25
Coho salmon	0.0010	-	-	-	-	NAN	28	28
	0.0020	-	-	-	-	-	55	55
White bass	0.0027	-	71	2	-	NAN	-	74
	0.0056	-	153	5	-	-	-	153
Freshwater drum	0.0013	-	-	28	7	NAN	-	35
	0.0016	-	-	42	10	-	-	43
Green Sunfish	0.0005	15	-	-	-	NAN	-	15
	0.0011	29	-	-	-	-	-	29
Other*	0.0427	37	352	254	64	NAN	467	1,174
	0.0236	38	223	209	70	308	449	629
TOTAL RELEASED	0.6849	5,265	9,503	2,149	721	NAN	1,186	18,824
	0.2365	1,623	3,140	1,065	367	337	NAN	6,031
TOTAL CATCH	0.8222	5,990	9,952	3,237	1,361	NAN	2,057	22,597
	0.2460	1,639	3,150	1,189	604	417	NAN	6,102
ANGLER HOURS		6,434	5,938	2,602	2,402	3,263	6,846	27,484
		982	1,440	1,080	1,161	1,169	2,370	3,540
ANGLER TRIPS		2,450	2,893	1,827	1,255	1,399	2,205	12,029
		447	900	1,006	630	758	997	1,996

Table 11.—Total estimated harvest, catch per hour, and fishing pressure for the Grand River all sites and modes combined. Two standard errors are given below the estimates.

Species	C/H	March-April	May	June	July	August	September	Season
HARVEST								
Walleye	0.0035	–	50	28	38	NAN	35	151
	0.0053	–	92	56	47	–	66	135
Northern Pike	–	–	–	–	–	NAN	–	–
	–	–	–	–	–	–	–	–
Smallmouth Bass	0.0062	–	–	84	–	NAN	184	268
	0.0107	–	–	154	–	10	287	326
Bluegill	0.0221	–	193	336	431	NAN	–	961
	0.0307	–	204	273	461	130	–	588
Pumpkinseed	0.0020	–	13	73	–	NAN	–	86
	0.0037	–	27	117	–	–	–	120
Rock Bass	0.0070	–	27	278	–	NAN	–	305
	0.0118	–	54	343	–	–	–	348
Rainbow Trout	0.0442	1,609	72	32	25	NAN	186	1,926
	0.0570	592	64	46	39	48	163	622
Brown Trout	0.0027	–	9	–	–	NAN	107	116
	0.0052	–	17	–	–	–	174	174
Common White Sucker	0.0002	8	–	–	–	NAN	–	8
	0.0004	15	–	–	–	–	–	15
Redhorse	0.0052	98	71	59	–	NAN	–	228
	0.0075	99	101	81	–	–	–	163
Channel Catfish	0.0088	6	212	89	75	NAN	–	382
	0.0133	13	274	108	88	110	–	326
Carp	0.0010	8	–	27	6	NAN	–	41
	0.0016	15	–	42	13	–	–	47
Chinook Salmon	0.0017	–	–	–	–	NAN	76	76
	0.0028	–	–	–	–	–	76	76
Coho Salmon	0.0119	–	–	–	–	NAN	519	519
	0.0168	–	–	–	–	14	345	345
Freshwater Drum	0.0012	–	33	19	–	NAN	–	52
	0.0035	–	NAN	38	–	–	–	137
Other*	0.0085	15	15	206	120	NAN	13	369
	0.0127	31	29	231	109	167	25	309
TOTAL HARVEST	0.1260	1,745	694	1,231	696	NAN	1,120	5,486
	0.1716	601	NAN	557	486	245	519	2,992
RELEASED								
Walleye	0.0066	80	57	7	63	NAN	78	285
	0.0090	70	76	14	94	NAN	91	167
Northern pike	0.0087	97	130	9	7	NAN	134	378
	0.0140	120	286	19	14	89	207	384
Largemouth bass	0.0054	12	85	28	8	NAN	100	233
	0.0118	17	104	56	12	387	131	426
Smallmouth bass	0.1475	322	2,911	806	1,207	NAN	1,178	6,423
	0.3446	265	NAN	641	NAN	NAN	1,214	12,681
Bluegill	0.0253	–	384	355	146	NAN	216	1,100
	0.0344	–	276	323	193	–	379	601
Pumpkinseed	0.0002	–	–	9	–	NAN	–	9
	0.0005	–	–	17	–	–	–	17
Rock bass	0.0426	30	1,092	685	47	NAN	–	1,855
	0.0599	43	845	850	59	26	–	1,201
Black crappie	0.0012	–	53	–	–	NAN	–	53
	0.0024	–	77	–	–	29	–	83
Rainbow trout	0.0576	2,415	94	–	–	NAN	–	2,508
	0.2332	NAN	94	–	–	39	–	9,659
Brown trout	0.0001	4	–	–	–	NAN	–	4
	0.0002	9	–	–	–	–	–	9
Common White Sucker	0.0185	805	–	–	–	NAN	–	805

	0.0280	687	-	-	-	-	-	687
Redhorse	0.3246	8,274	5,473	21	170	NAN	193	14,131
	0.6754	8,581	NAN	38	213	16	NAN	23,526
Channel catfish	0.0196	23	367	45	151	NAN	269	854
	0.0268	46	333	73	214	-	250	476
Carp	0.0133	45	120	319	82	NAN	12	578
	0.0189	53	99	362	92	29	25	392
Muskellunge	0.0006	6	19	-	-	NAN	-	25
	0.0012	12	38	-	-	-	-	40
Chinook salmon	0.0003	-	-	-	-	NAN	13	13
	0.0007	-	-	-	-	-	25	25
Coho salmon	0.0006	-	-	-	-	NAN	28	28
	0.0015	-	-	-	-	-	55	55
White bass	0.0017	-	71	2	-	NAN	-	74
	0.0041	-	153	5	-	-	-	153
Freshwater drum	0.0008	-	-	28	7	NAN	-	35
	0.0014	-	-	42	10	-	-	43
Green Sunfish	0.0003	15	-	-	-	NAN	-	15
	0.0008	29	-	-	-	-	-	29
Other*	0.0340	210	445	254	106	NAN	467	1,481
	0.0467	343	254	209	NAN	318	449	843
TOTAL RELEASED	0.7095	12,338	11,300	2,568	1,994	NAN	2,688	30,887
	1.8007	NAN	NAN	1,194	NAN	NAN	NAN	68,258
TOTAL CATCH	0.8355	14,083	11,994	3,799	2,690	NAN	3,808	36,373
	1.8843	NAN	NAN	1,317	NAN	NAN	NAN	68,323
ANGLER HOURS		10,313	8,394	4,970	4,420	5,766	9,673	43,534
		NAN	1,903	NAN	NAN	NAN	2,689	54,332
ANGLER TRIPS		3,343	3,597	2,649	1,667	1,995	2,863	16,113
		NAN	976	NAN	NAN	NAN	1,046	20,031