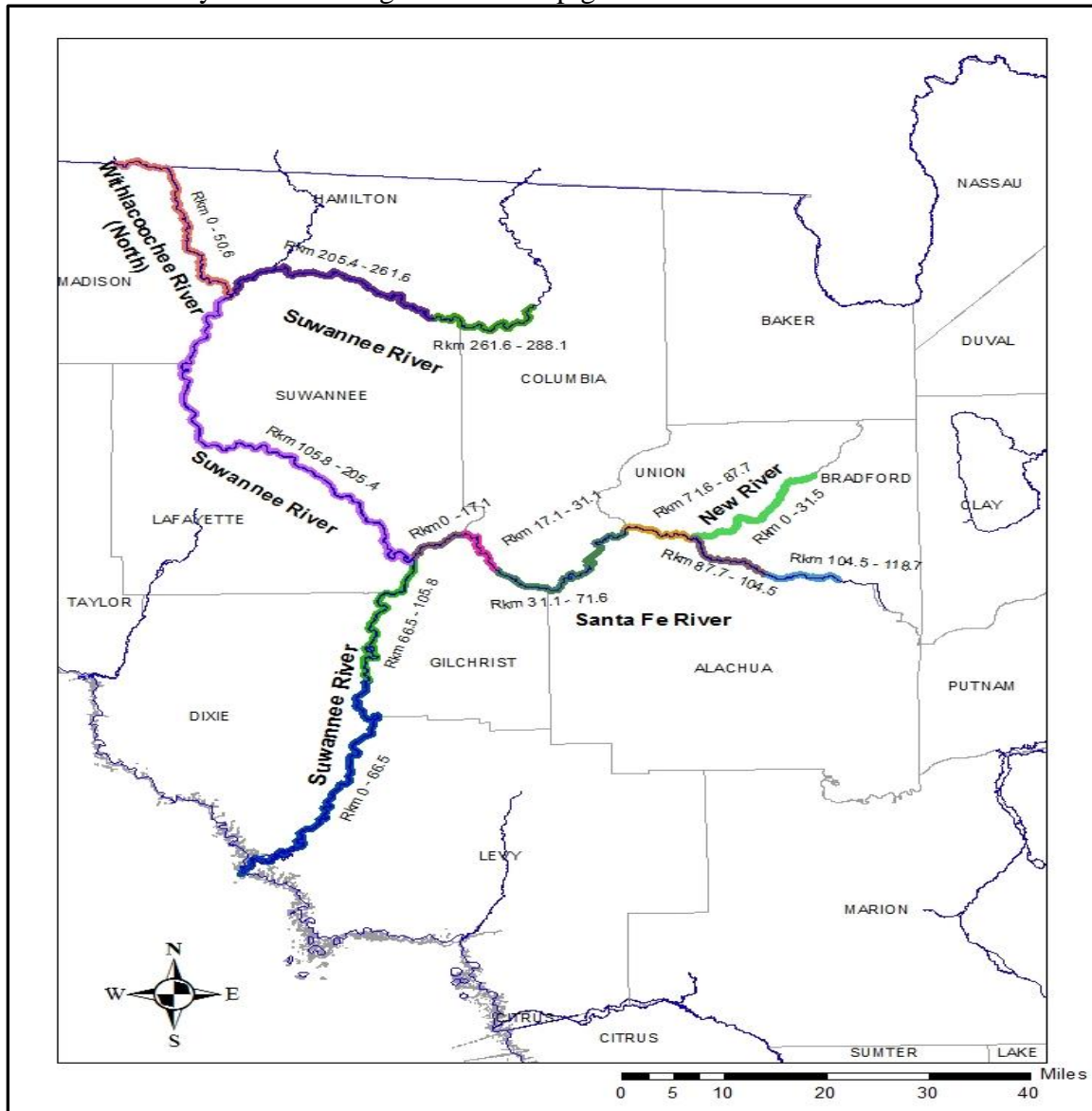*Presented below are water quality standards that are in effect for Clean Water Act purposes.*

EPA is posting these standards as a convenience to users and has made a reasonable effort to assure their accuracy. Additionally, EPA has made a reasonable effort to identify parts of the standards that are not approved, disapproved, or are otherwise not in effect for Clean Water Act purposes.

ATTACHMENT D

Information Related to Location of Endangered Species to Which Alternative DO criteria from the Regional Criteria Apply and Determining Whether DO Values Have Decreased Below the Baseline Distribution

The map below shows the portion of the Suwannee, Santa Fe, New, and Withlacoochee North Rivers utilized by the Gulf Sturgeon and oval pigtoe mussel.

To evaluate whether DO values have decreased below the baseline distribution, it is recommended that a) no more than 10 percent of the DO measurements be below the 10th percentile of the existing data distribution for that river segment, b) no more than 50 percent of the measured values to be below the median of the existing data distribution for that river

segment. The 10th percentiles and median DO values for each of the affected river segments are provided in **Table 3**.

When assessing these waters in the future, compliance with both the 10th percentile and median DO values will be evaluated using a binomial hypothesis test at the 80 percent and 90 percent confidence levels necessary to place a water segment on the Planning List and Verified Lists, respectively, for TMDL development. The use of the binomial hypothesis test is consistent with the assessment for other water quality parameters conducted under Chapter 62-303, F.A.C. The number of exceedances required to have 80 percent and 90 percent confidence that more than 10 percent of the measurements are below the applicable 10th percentile value are provided in Chapter 62-303, F.A.C., Tables 1 and 3, respectively. The number exceedances required to have 80 percent and 90 percent confidence that more than 50 percent of the measurements are below the applicable median value for sample sizes up to 419 are provided in **Table 4**.

Species	River System	River km	10th Percentile	Median
Oval Pigtoe Mussel	New River	0 - 31.5	52.5	67.7
Gulf Sturgeon	Santa Fe River	0 - 17.1	50.9	66.0
Gulf Sturgeon	Santa Fe River	17.1 - 31.1	47.6	74.0
Gulf Sturgeon	Santa Fe River	31.1 - 71.6	30.7	53.6
Oval Pigtoe Mussel	Santa Fe River	71.6 - 87.7	59.5	73.0
Oval Pigtoe Mussel	Santa Fe River	87.7 - 104.5	46.1	69.2
Oval Pigtoe Mussel	Santa Fe River	104.5 - 118.7	37.1	69.3
Gulf Sturgeon	Suwannee River	0 - 66.5	58.9	76.7
Gulf Sturgeon	Suwannee River	66.5 - 105.8	60.2	74.6
Gulf Sturgeon	Suwannee River	105.8 - 205.4	53.3	69.0
Gulf Sturgeon	Suwannee River	205.4 - 261.6	41.1	66.4
Gulf Sturgeon	Suwannee River	261.6 - 288.1	65.5	78.2
Gulf Sturgeon	Withlacoochee River	0 - 50.6	54.9	68.2

Table 3. Baseline DO conditions for portions of the Suwannee, Santa Fe, New, and Withlacoochee Rivers utilized by the Gulf Sturgeon and Oval Pigtoe Mussel. The 10th percentile and median percent DO saturation values were determined from data collected from 1991 through 2011.

Table 4. Minimum number of samples not meeting applicable median criterion needed to put a water on the planning list with 80% confidence and on verified list with 90% confidence that more than 50% of measurements are below median.

Number of Samples	Number of exceedances required for 80% confidence that more than 50% of measurements are below median	Number of exceedances required for 90% confidence that more than 50% of measurements are below median		Number of Samples	Number of exceedances required for 80% confidence that more than 50% of measurements are below median	Number of exceedances required for 90% confidence that more than 50% of measurements are below median
10	7	8		76	43	45
11	8	9		77	43	45
12	8	9		78	44	46
13	9	10		79	44	46
14	10	10		80	45	47
15	10	11		81	45	47
16	11	12		82	46	48
17	11	12		83	46	48
18	12	13		84	47	49
19	12	13		85	47	49
20	13	14		86	48	50
21	13	14		87	48	50
22	14	15		88	49	51
23	15	16		89	49	52
24	15	16		90	50	52
25	16	17		91	51	53
26	16	17		92	51	53
27	17	18		93	52	54
28	17	18		94	52	54
29	18	19		95	53	55
30	18	20		96	53	55
31	19	20		97	54	56
32	19	21		98	54	56
33	20	21		99	55	57
34	20	22		100	55	57
35	21	22		101	56	58
36	22	23		102	56	58
37	22	23		103	57	59
38	23	24		104	57	60
39	23	24		105	58	60
40	24	25		106	58	61
41	24	26		107	59	61
42	25	26		108	59	62
43	25	27		109	60	62
44	26	27		110	60	63
45	26	28		111	61	63
46	27	28		112	61	64
47	27	29		113	62	64
48	28	29		114	62	65
49	28	30		115	63	65
50	29	31		116	64	66
51	30	31		117	64	66
52	30	32		118	65	67
53	31	32		119	65	67
54	31	33		120	66	68
55	32	33		121	66	69
56	32	34		122	67	69
57	33	34		123	67	70
58	33	35		124	68	70
59	34	35		125	68	71
60	34	36		126	69	71
61	35	37		127	69	72
62	35	37		128	70	72
63	36	38		129	70	73
64	36	38		130	71	73
65	37	39		131	71	74
66	37	39		132	72	74
67	38	40		133	72	75
68	38	40		134	73	75
69	39	41		135	73	76
70	40	41		136	74	76
71	40	42		137	74	77
72	41	42		138	75	78
73	41	43		139	75	78
74	42	44		140	76	79
75	42	44		141	76	79

Table 4. Continued.

Number of Samples	Number of exceedances required for 80% confidence that more than 50% of measurements are below median	Number of exceedances required for 90% confidence that more than 50% of measurements are below median	Number of Samples	Number of exceedances required for 80% confidence that more than 50% of measurements are below median	Number of exceedances required for 90% confidence that more than 50% of measurements are below median
142	77	80	211	113	116
143	78	80	212	113	116
144	78	81	213	114	117
145	79	81	214	114	117
146	79	82	215	115	118
147	80	82	216	115	118
148	80	83	217	116	119
149	81	83	218	116	119
150	81	84	219	117	120
151	82	84	220	117	121
152	82	85	221	118	121
153	83	85	222	118	122
154	83	86	223	119	122
155	84	86	224	119	123
156	84	87	225	120	123
157	85	88	226	120	124
158	85	88	227	121	124
159	86	89	228	121	125
160	86	89	229	122	125
161	87	90	230	122	126
162	87	90	231	123	126
163	88	91	232	123	127
164	88	91	233	124	127
165	89	92	234	124	128
166	89	92	235	125	128
167	90	93	236	125	129
168	90	93	237	126	129
169	91	94	238	126	130
170	91	94	239	127	130
171	92	95	240	128	131
172	93	95	241	128	131
173	93	96	242	129	132
174	94	96	243	129	132
175	94	97	244	130	133
176	95	97	245	130	134
177	95	98	246	131	134
178	96	99	247	131	135
179	96	99	248	132	135
180	97	100	249	132	136
181	97	100	250	133	136
182	98	101	251	133	137
183	98	101	252	134	137
184	99	102	253	134	138
185	99	102	254	135	138
186	100	103	255	135	139
187	100	103	256	136	139
188	101	104	257	136	140
189	101	104	258	137	140
190	102	105	259	137	141
191	102	105	260	138	141
192	103	106	261	138	142
193	103	106	262	139	142
194	104	107	263	139	143
195	104	107	264	140	143
196	105	108	265	140	144
197	105	108	266	141	144
198	106	109	267	141	145
199	106	110	268	142	145
200	107	110	269	142	146
201	107	111	270	143	147
202	108	111	271	143	147
203	108	112	272	144	148
204	109	112	273	144	148
205	110	113	274	145	149
206	110	113	275	145	149
207	111	114	276	146	150
208	111	114	277	147	150
209	112	115	278	147	151
210	112	115	279	148	151

Table 4.   Continued.

Number of Samples	Number of exceedances required for 80% confidence that more than 50% of measurements are below median	Number of exceedances required for 90% confidence that more than 50% of measurements are below median	Number of Samples	Number of exceedances required for 80% confidence that more than 50% of measurements are below median	Number of exceedances required for 90% confidence that more than 50% of measurements are below median
280	148	152	350	184	188
281	149	152	351	184	189
282	149	153	352	185	189
283	150	153	353	185	190
284	150	154	354	186	190
285	151	154	355	186	191
286	151	155	356	187	191
287	152	155	357	187	192
288	152	156	358	188	192
289	153	156	359	188	193
290	153	157	360	189	193
291	154	157	361	189	194
292	154	158	362	190	194
293	155	158	363	191	195
294	155	159	364	191	195
295	156	160	365	192	196
296	156	160	366	192	196
297	157	161	367	193	197
298	157	161	368	193	197
299	158	162	369	194	198
300	158	162	370	194	198
301	159	163	371	195	199
302	159	163	372	195	199
303	160	164	373	196	200
304	160	164	374	196	200
305	161	165	375	197	201
306	161	165	376	197	201
307	162	166	377	198	202
308	162	166	378	198	202
309	163	167	379	199	203
310	163	167	380	199	203
311	164	168	381	200	204
312	164	168	382	200	205
313	165	169	383	201	205
314	165	169	384	201	206
315	166	170	385	202	206
316	166	170	386	202	207
317	167	171	387	203	207
318	168	171	388	203	208
319	168	172	389	204	208
320	169	172	390	204	209
321	169	173	391	205	209
322	170	173	392	205	210
323	170	174	393	206	210
324	171	175	394	206	211
325	171	175	395	207	211
326	172	176	396	207	212
327	172	176	397	208	212
328	173	177	398	208	213
329	173	177	399	209	213
330	174	178	400	209	214
331	174	178	401	210	214
332	175	179	402	210	215
333	175	179	403	211	215
334	176	180	404	211	216
335	176	180	405	212	216
336	177	181	406	212	217
337	177	181	407	213	217
338	178	182	408	214	218
339	178	182	409	214	218
340	179	183	410	215	219
341	179	183	411	215	219
342	180	184	412	216	220
343	180	184	413	216	221
344	181	185	414	217	221
345	181	185	415	217	222
346	182	186	416	218	222
347	182	186	417	218	223
348	183	187	418	219	223
349	183	187	419	219	224

The portion of the St. Johns River between the U.S. Highway 17 Bridge in Palatka north to the Shands Bridge (U.S. Highway 16) bridge near Green Cove Springs (shown by hatching) requiring alternative DO criteria to assure potential sturgeon spawning habitat is protected.