

Table 1. Calculation of weighted average fish concentrations for piscivorous birds and threatened and endangered species.

Subreach or Averaging Area	Model Grid Area (Acres)	Habitat Quality Factor	Projected Fish Concentrations (mg/kg) ¹					
			Piscivorous birds (represented by osprey)			Threatened and endangered species (represented by bald eagle)		
			SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
Reach 5A	55	1	21	0.55	11	25	0.45	13
Reach 5B	32	1	22	11	17	23	13	19
Reach 5C	69	1	23	7.0	20	24	7.7	21
Reach 5D	57	3	21	15	24	19	15	21
Reach 6	58	5	22	1.9	9.1	18	1.6	6.8
Reach 5-6 Weighted Average²			22	6.5	15	20	6.3	14
Reach 7A	14	1	11	2.4	7.2	9.2	2.3	6.2
Reach 7B	11	3	16	8.4	13	16	9.5	13
Reach 7C	8	3	12	4.4	8.6	11	4.7	8.2
Reach 7D	59	1	11	3.4	7.7	10	3.6	7.4
Reach 7E	7	3	7.4	2.2	5.1	6.5	2.2	4.6
Reach 7F	68	1	6.1	1.9	4.2	5.5	1.9	3.9
Reach 7G	13	3	7.3	3.5	5.7	7.0	3.8	5.7
Reach 7H	32	1	5.0	1.5	3.5	4.4	1.5	3.2
Reach 8	44	5	7.8	4.4	6.3	7.7	4.9	6.4
Reach 7-8 Weighted Average²			8.5	3.8	6.4	8.1	4.1	6.3

Notes

¹ Model endpoint concentrations after 52-year projection (autumn average) for relevant species and size classes.

² Weighted average calculated based on sum-product of area times habitat quality factor times subreach fish concentration, divided by sum-product of area times habitat quality factor.

Table 2. Alternate Evaluation: IMPG attainment for benthic invertebrates for selected SED/FP combinations.

Reach	Exposure Area ¹	Average 0-6" Sediment PCB Concentration (mg/kg) ²			IMPG Attainment				
		SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	Lower End of IMPG Range (mg/kg)	Upper End of IMPG Range (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
5A	R5A_01	1.9	0.33	3.3	7	27.8	6 / 0	1 / 0	6 / 0
	R5A_02	3.7	0.18	0.92	7	27.8	32 / 0	1 / 0	1 / 0
	R5A_03	6.4	0.12	4.8	7	27.8	48 / 0	2 / 0	42 / 0
	R5A_04	29	0.071	27	7	27.8		2 / 2	
	R5A_05	13	0.032	1.1	7	27.8	10	2 / 2	1 / 1
	R5A_06	7.7	0.043	2.3	7	27.8	0	3 / 0	2 / 0
	R5A_07	15	0.062	0.77	7	27.8	0	3 / 0	2 / 0
	R5A_08	17	0.028	14	7	27.8	0	4 / 0	0
	R5A_09	9.9	0.022	10	7	27.8	0	4 / 0	0
	R5A_10	16	0.020	17	7	27.8	0	5 / 0	0
	R5A_11	18	0.023	0.95	7	27.8	0	7 / 0	3 / 0
5B	R5B_01	9.6	9.1	9.8	7	27.8	0	0	0
	R5B_02	8.5	5.3	6.9	7	27.8	0	17 / 0	22 / 0
	R5B_03	4.7	3.2	4.4	7	27.8	5 / 0	4 / 0	4 / 0
	R5B_04	5.7	4.4	5.3	7	27.8	17 / 0	12 / 0	15 / 0
	R5B_05	5.6	3.9	5.2	7	27.8	26 / 0	10 / 0	12 / 0
5C	R5C_01	7.2	5.8	7.1	7	27.8	0	33 / 0	0
	R5C_02	8.0	6.4	7.8	7	27.8	0	38 / 0	0
	R5C_03	4.9	3.2	4.4	7	27.8	11 / 0	8 / 0	9 / 0
	R5C_04	6.1	4.4	5.7	7	27.8	35 / 0	21 / 0	28 / 0
	R5C_05	37	1.8	37	7	27.8		8 / 8	
	R5C_06	29	1.5	27	7	27.8		9 / 9	48
6	Woods Pond	16	1.5	3.7	7	27.8	14	10 / 9	6 / 4
	7A	0.43	0.41	0.42	7	27.8	0 / 0	0 / 0	0 / 0
	7B	4.2	3.9	4.1	7	27.8	0 / 0	0 / 0	0 / 0
	7C	4.1	4.0	4.1	7	27.8	0 / 0	0 / 0	0 / 0
	7D	1.4	0.92	1.2	7	27.8	0 / 0	0 / 0	0 / 0
	7E	1.2	1.2	1.2	7	27.8	0 / 0	0 / 0	0 / 0
	7F	0.74	0.61	0.69	7	27.8	0 / 0	0 / 0	0 / 0
	7G	5.1	4.7	5.1	7	27.8	0 / 0	0 / 0	0 / 0
	7H	0.40	0.39	0.40	7	27.8	0 / 0	0 / 0	0 / 0
8	Rising Pond	2.9	2.7	2.8	7	27.8	0 / 0	0 / 0	0 / 0

Notes

¹ Exposure areas in Reach 5 represent EPA spatial bins (1/4 to 1/2-mile segments as defined in EPA's Model Validation Report)

² Model endpoint concentrations after 52-year project

Key:

= post-remediation EPC is higher than Upper Bound IMPG
 = post-remediation EPC is between Lower and Upper Bound IMPGs
 = post-remediation EPC is below Lower Bound IMPG
 <value>/<value> = Time to achieve the lower bound and upper bound IMPG, respectively (years)

Table 3. Alternate Evaluation: IMPG attainment for amphibians (as represented by wood frog) for selected SED/FP combinations.

Exposure Area ID ¹	Area (acre)	Floodplain Pre-Remediation EPC (mg/kg) ²	Floodplain Post-Remediation EPC (mg/kg) or Projected Sediment Concentrations (mg/kg) ²			IMPG Attainment			
			SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
Floodplain Vernal Pools									
Reach 5-6 Vernal Pools Combined	34	21	21	3.1	21	38.6			
5-VP-3	1.9	73	73	5.6	73	38.6			
5-VP-1	0.044	1.7	1.7	1.7	1.7	38.6			
8-VP-5	0.043	23	23	5.6	23	38.6			
8-VP-4	0.24	3.9	3.9	3.9	3.9	38.6			
8-VP-3	0.024	7.7	7.7	0.021	7.7	38.6			
8-VP-2	0.57	69	69	5.6	69	38.6			
18-VP-2	0.61	7.2	7.2	5.6	7.2	38.6			
18-VP-1	0.28	8.1	8.1	5.6	8.1	38.6			
19-VP-7	0.068	0.84	0.84	0.84	0.84	38.6			
19-VP-2	0.0080	34	34	0.021	34	38.6			
19-VP-1	0.18	32	32	5.6	32	38.6			
19-VP-3	0.031	10	10	5.6	10	38.6			
19-VP-4	0.094	6	6	5.6	6	38.6			
19-VP-8	0.057	91	91	0.021	91	38.6			
19-VP-5	0.51	45	45	5.6	45	38.6			
19-VP-6	1.2	24	24	5.6	24	38.6			
23-VP-2	0.18	47	47	5.6	47	38.6			
23-VP-1	0.30	75	75	5.6	75	38.6			
23A-VP-1	0.45	10	10	5.6	10	38.6			
23B-VP-1	0.068	7.2	7.2	5.6	7.2	38.6			
23B-VP-2	0.091	0.34	0.34	0.34	0.34	38.6			
27B-VP-2	0.28	11	11	5.6	11	38.6			
27B-VP-3	0.062	16	16	0.021	16	38.6			
27B-VP-1	0.072	12	12	5.6	12	38.6			
27-VP-2	0.47	21	21	5.6	21	38.6			
27A-VP-1	0.20	31	31	5.6	31	38.6			
27-VP-1	1.3	23	23	5.6	23	38.6			
26-VP-1	0.036	40	40	5.6	40	38.6			
33-VP-1	0.022	9.5	9.5	0.021	9.5	38.6			
33-VP-2	0.12	70	70	5.6	70	38.6			
38-VP-1	0.43	36	36	5.6	36	38.6			
38A-VP-1	0.020	5	5	5	5	38.6			
38-VP-3	0.046	28	28	5.6	28	38.6			
38-VP-2	0.17	46	46	5.6	46	38.6			
40-VP-3	0.46	67	67	5.6	67	38.6			
40-VP-2	0.36	18	18	5.6	18	38.6			
40A-VP-1	0.11	68	68	5.6	68	38.6			
40-VP-1	0.47	57	57	5.6	57	38.6			
42-VP-1	0.22	64	64	5.6	64	38.6			
42-VP-2	0.28	46	46	5.6	46	38.6			
42-VP-3	0.050	41	41	5.6	41	38.6			

Table 3. Alternate Evaluation: IMPG attainment for amphibians (as represented by wood frog) for selected SED/FP combinations.

Exposure Area ID ¹	Area (acre)	Floodplain Pre-Remediation EPC (mg/kg) ²	Floodplain Post-Remediation EPC (mg/kg) or Projected Sediment Concentrations (mg/kg) ²			IMPG Attainment			
			SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
42-VP-5	0.58	73	73	5.6	73	38.6			
42-VP-4	1.0	34	34	5.6	34	38.6			
42A-VP-1	1.5	35	35	5.6	35	38.6			
46-VP-2	7.1	140	140	5.6	140	38.6			
46-VP-1	0.52	1.3	1.3	1.3	1.3	38.6			
46-VP-5	0.056	125	125	0.021	125	38.6			
46-VP-3	1.4	153	153	3.2	153	38.6			
46-VP-4	0.011	125	125	0.021	125	38.6			
49A-VP-1	0.019	16	16	0.021	16	38.6			
49-VP-1	1.2	18	18	5.6	18	38.6			
49B-VP-1	0.0044	26	26	0.021	26	38.6			
66A-VP-1	0.032	0.73	0.73	0.73	0.73	38.6			
69-VP-1	0.0074	12	12	0.021	12	38.6			
8-VP-6	0.086	47	47	5.6	47	38.6			
12-VP-1	0.080	14	14	0.021	14	38.6			
39-VP-1	2.0	39	39	5.6	39	38.6			
54-VP-1	0.20	21	21	5.6	21	38.6			
55-VP-1	0.59	7.6	7.6	5.6	7.6	38.6			
55A-VP-1	2.0	40	40	5.6	40	38.6			
58A-VP-1	0.32	25	25	5.6	25	38.6			
67A-VP-1	0.12	51	51	5.6	51	38.6			
61A-VP-1	0.19	18	18	5.3	18	38.6			
61A-VP-2	1.2	19	19	5.5	19	38.6			
56A-VP-1	0.58	73	73	5.6	73	38.6			
23-VP-3	1.3	22	22	5.6	22	38.6			
Sediment - Backwaters									
Reach 5-6 Backwaters Combined	85.4	---	13	11	13	38.6	0	0	0
Sediment - Small Backwaters (< 2 acres)									
BWS_01	1.9	---	5.7	4.2	5.6	38.6	0	0	0
BWS_02	1.8	---	5.9	5.0	5.6	38.6	0	0	0
BWS_03	1.9	---	3.0	1.8	2.4	38.6	0	0	0
BWS_04	0.30	---	23	22	22	38.6	0	0	0
BWS_06	0.56	---	2.2	0.26	1.3	38.6	0	0	0
BWS_07	0.12	---	5.4	5.4	5.4	38.6	0	0	0
BWS_08	0.35	---	37	37	37	38.6	0	0	0
BWS_09	0.28	---	19	19	20	38.6	0	0	0
BWS_10	1.5	---	16	15	16	38.6	0	0	0
BWS_11	0.11	---	2.1	0.14	1.3	38.6	0	0	0
BWS_12	1.7	---	6.1	4.7	6.0	38.6	0	0	0
BWS_13	0.37	---	10	9.2	10	38.6	0	0	0
BWS_14	0.57	---	8.8	8.1	9.0	38.6	0	0	0
BWS_15	0.90	---	8.9	6.7	9.2	38.6	0	0	0
BWS_16	1.0	---	3.2	1.2	2.8	38.6	0	0	0

Table 3. Alternate Evaluation: IMPG attainment for amphibians (as represented by wood frog) for selected SED/FP combinations.

Exposure Area ID ¹	Area (acre)	Floodplain Pre-Remediation EPC (mg/kg) ²	Floodplain Post-Remediation EPC (mg/kg) or Projected Sediment Concentrations (mg/kg) ²			IMPG Attainment			
			SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
BWS_17	0.58	---	2.4	0.44	1.6	38.6	0	0	0
BWS_18	0.84	---	2.3	0.29	1.4	38.6	0	0	0
BWS_19	0.99	---	20	20	21	38.6	0	0	0
BWS_20	1.3	---	5.8	4.4	6.4	38.6	0	0	0
Sediment - Large Backwaters (> 2 acres)									
BWL_01	2.1	---	11	11	11	38.6	0	0	0
BWL_02	5.5	---	5.7	4.2	5.2	38.6	0	0	0
BWL_03	2.4	---	3.6	2.2	3.3	38.6	0	0	0
BWL_04	2.1	---	4.4	2.4	3.8	38.6	0	0	0
BWL_05	12	---	14	12	14	38.6	0	0	0
BWL_07	22	---	20	19	20	38.6	0	0	0
BWL_08	4.1	---	13	11	14	38.6	0	0	0
BWL_09	7.0	---	15	14	15	38.6	0	0	0
BWL_10	6.4	---	13	12	13	38.6	0	0	0
BWL_11	4.6	---	2.3	2.3	2.3	38.6	0	0	0

Key:

= post-remediation EPC is higher than IMPG

= post-remediation EPC is lower than IMPG

<value> = time to achieve the IMPG as predicted by the model in backwater sediments

Notes:

¹ See Revised CMS Report Figures 3-18 and 4-5, respectively for locations of backwaters and vernal pools.

² EPC is calculated for the top 1 ft of soil for vernal pools and as a 0-6" modeled sediment average for backwaters.

Table 4. Alternate Evaluation: IMPG attainment for protection of warmwater and coldwater fish for selected SED/FP combinations.

Ecological Receptor	Reach	Projected Fish Concentrations (mg/kg) ¹			IMPG Attainment				
		SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	Lower Bound IMPG (mg/kg)	Upper Bound IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
Fish Protection -- Warmwater fish tissue (whole body)	5A	28	0.98	16	86	185	0/0	0/0	0/0
	5B	36	12	25			0/0	0/0	0/0
	5C	29	7.0	22			0/0	0/0	0/0
	5D	36	24	41			0/0	0/0	0/0
	6 (WP)	34	2.8	14			0/0	0/0	0/0
	7A	25	4.8	16			0/0	0/0	0/0
	7B	22	8.2	16			0/0	0/0	0/0
	7C	24	6.7	17			0/0	0/0	0/0
	7D	21	5.2	14			0/0	0/0	0/0
	7E	16	3.9	11			0/0	0/0	0/0
	7F	13	3.1	8.5			0/0	0/0	0/0
	7G	14	4.8	9.9			0/0	0/0	0/0
	7H	11	2.8	7.4			0/0	0/0	0/0
8 (RP)	14	6.0	10	0/0	0/0	0/0			
Fish Protection -- Coldwater fish tissue (whole body) - Trout Below PSA	7A	49	9.6	32	86	7	4	5	
	7B	44	16	32		0	0	0	
	7C	49	13	33		5	4	3	
	7D	42	10	29		0	0	0	
	7E	32	7.7	22		0	0	0	
	7F	25	6.3	17		0	0	0	
	7G	27	9.7	20		0	0	0	
	7H	22	5.5	15		0	0	0	

Notes

¹ Model endpoint concentrations after 52-year projection (autumn average)

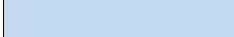
Key

- = post-remediation EPC is higher than Upper Bound IMPG
- = post-remediation EPC is below IMPG
- <value>/<value> = Time to achieve the lower bound and upper bound IMPG, respectively (years), as predicted by the model
- <value> = Time to achieve the IMPG (years), as predicted by the model

Table 5. Alternate Evaluation: IMPG attainment for insectivorous birds (as represented by wood duck) for selected SED/FP combinations.

Averaging Area	Model-Predicted Sediment Endpoint PCB Concentrations (mg/kg)			Calculated Target Floodplain Soil Levels (mg/kg) ¹									Post-Remediation Floodplain EPC (mg/kg)	IMPG Attainment											
				Lower Bound IMPG (6.1 mg/kg in prey)			Mid-Range IMPG (37 mg/kg in prey)			Upper Bound IMPG (68 mg/kg in prey)				Lower Bound IMPG (6.1 mg/kg in prey)			Mid-Range IMPG (37 mg/kg in prey)			Upper Bound IMPG (68 mg/kg in prey)					
	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9		SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
PSA	15	5.1	11	49	67	57	436	454	443	824	841	831	19	15	18										

Key

 = post-remediation floodplain EPC is below calculated target level (and thus prey-based IMPG is met)

Notes:

¹ Target floodplain soil levels calculated in accordance with method described in Attachment B.

Table 6. Alternate Evaluation: IMPG attainment for consumption of fish by piscivorous birds (as represented by osprey) and threatened and endangered species (as represented by bald eagle) for selected SED/FP combinations.

Ecological Receptor	Averaging Area	Projected Fish Concentrations (mg/kg) ¹			Lower Bound IMPG Attainment			Midpoint IMPG Attainment			Upper Bound IMPG Attainment					
		SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
Piscivorous birds (represented by osprey)	Fish tissue (whole body)															
	Reaches 5/6	22	6.5	15	6.7		51		41	5	4	3	75	0	0	0
	Reaches 7/8	8.5	3.8	6.4			11	37		0	0	0		0	0	0
Threatened and endangered species (represented by bald eagle)	Fish tissue (whole body)															
	Reaches 5/6	20	6.3	14	37	5	3	3	65	0	0	0	93	0	0	0
	Reaches 7/8	8.1	4.1	6.3		0	0	0		0	0	0		0		

Notes

¹ Model endpoint concentrations after 52-year projection (autumn average), calculated as weighted average of individual subreach concentrations with weighting factors to account for quantity and quality of foraging habitat (see Table 1).

Key

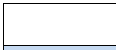


-  = model prediction exceeds the IMPG
-  = model prediction is lower than the IMPG
- <value> = Time to achieve the IMPG (years), as predicted by the model

Table 7. Alternate Evaluation: IMPG attainment for piscivorous mammals (as represented by mink) for selected SED/FP combinations.

Averaging Area	Model-Predicted Sediment Endpoint PCB Concentrations (mg/kg)			Calculated Target Floodplain Soil Levels (mg/kg) ¹			Post-Remediation Floodplain EPC (mg/kg)			IMPG Attainment		
	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
PSA	15	5.1	11	n/a	66	27	19	15	18			

Key

 = post-remediation floodplain EPC is below calculated target level (and thus prey-based IMPG is met)

Notes:

¹ Target floodplain soil levels calculated in accordance with method described in Attachment B.

n/a denotes IMPG values not attainable given the predicted sediment level.

Table 8. Alternate Evaluation: IMPG attainment for omnivorous/carnivorous mammals (as represented by short tailed shrew) for selected SED/FP combinations.

Averaging Area ID	Area of Averaging Area (acre)	Pre-Remediation EPC (mg/kg) ¹	Floodplain Post-Remediation EPC (mg/kg) ¹			IMPG Attainment			
			SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9	IMPG (mg/kg)	SED 2 / FP 1	SED 3 / FP 3	SED 10 / FP 9
PSA	595	20	20	16	19	43.5			

Key:

	= post-remediation EPC is higher than IMPG
	= post-remediation EPC is lower than IMPG

Notes:

¹ EPC is calculated for the top 1 ft of floodplain soil.