APPENDIX L
District of West Kelowna Results

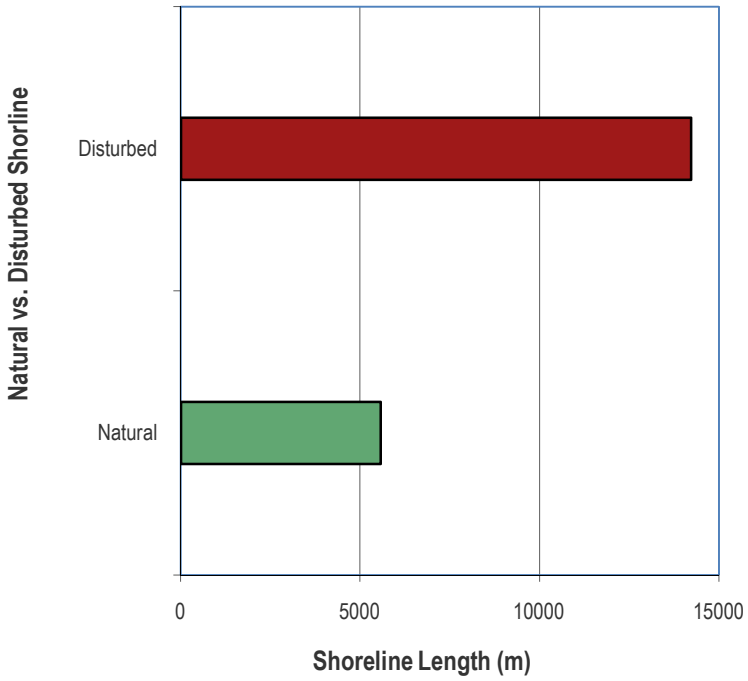


Figure 1: The percent of natural and disturbed shoreline.

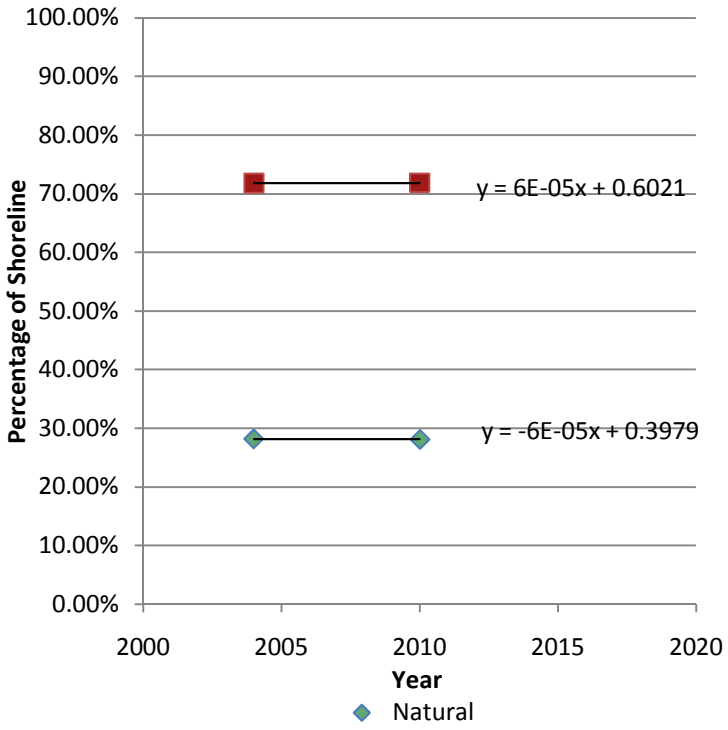


Figure 2: The percent of natural and disturbed shorelines in 2004 and 2010.

Table 1: The total shore length of percentage of shore length along Okanagan Lake in 2004 and 2010.

	2010		2004	
	% of Shoreline	Shore Length (m)	% of Shoreline	Shore Length (m)
Natural	28.16%	5575	28.19%	5582.35
Disturbed	71.84%	14227	71.81%	14219.89
	Total	19802.2		19802.2

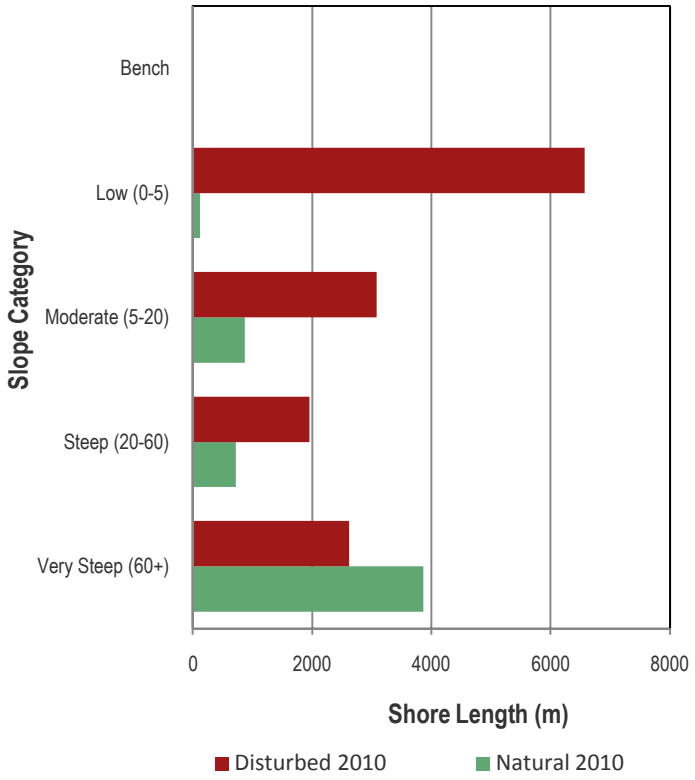


Figure 4: The lenght of natural and disturbed shorelines in each slope category.

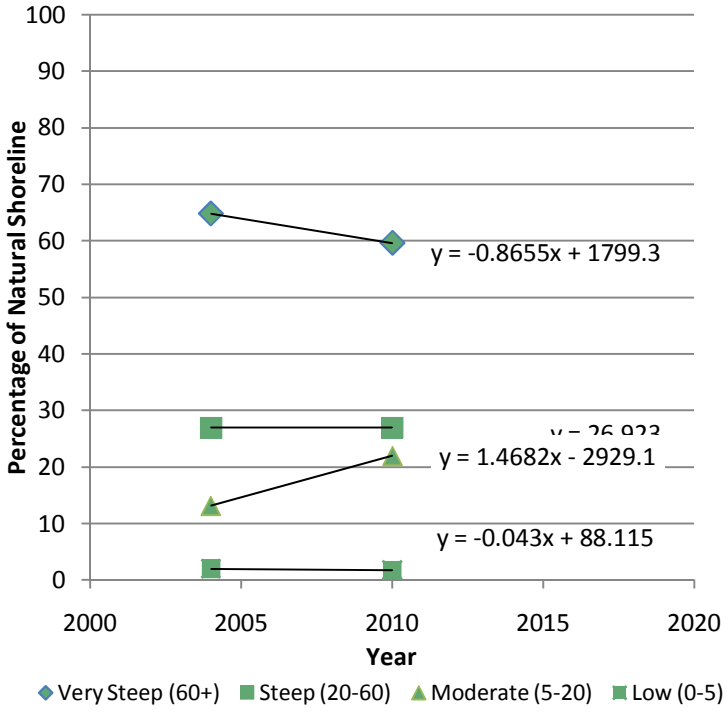


Figure 5: The percent of natural shoreline in each slope category in 2004 and 2010.

Table 2: The percentage of natural and disturbed shore lengths within each of the different slope categories on Okanagan Lake in 2004 and 2010.

2004							2010						
Slope	% of Total Shore Length	Total Shore Length (m)	Shore Length Natural (m)	Shore Length Disturbed (m)	% Natural	% Disturbed	Slope	% of Total Shore Length	Total Shore Length (m)	Shore Length Natural (m)	Shore Length Disturbed (m)	% Natural	% Disturbed
Very Steep (60+)	33	6493	4207	2286	65	35	Very Steep (60+)	32.8	6493	3870	2623	59.6	40.4
Steep (20-60)	14	2677	721	1957	27	73	Steep (20-60)	13.5	2677	721	1957	26.9	73.1
Moderate (5-20)	20	3946	519	3426	13	87	Moderate (5-20)	19.9	3946	867	3079	22.0	78.0
Low (0-5)	34	6686	135	6551	2	98	Low (0-5)	33.8	6686	118	6568	1.8	98.2
Bench	0	0	0	0	0	0	Bench	0.0	0	0	0	0	0
Total	100.0	19802	5582	14220	28.2	71.8	Total	100.0	19802	5575	14227	28.2	71.8

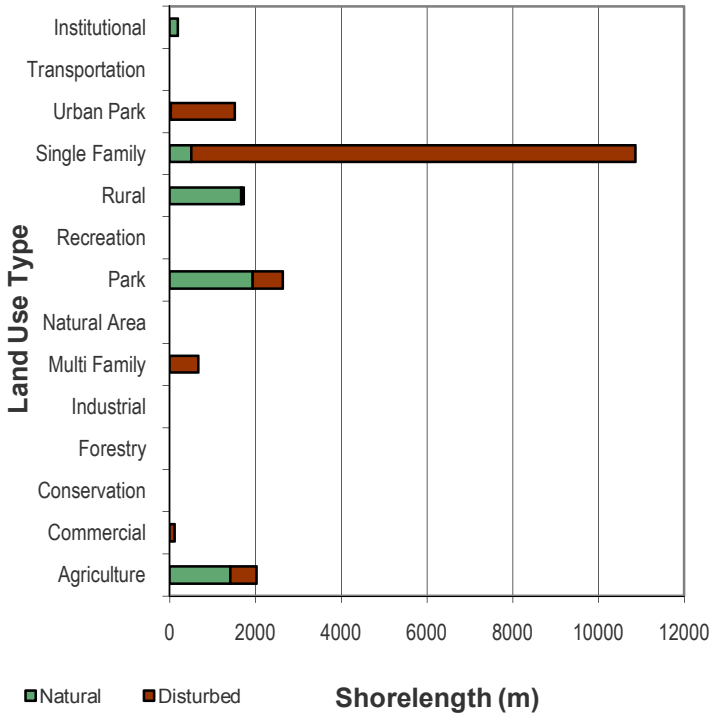


Figure 6: The length of natural and disturbed shoreline in each land use category

Table 3: The total length of natural and disturbed shorelines and their associated land uses around Okanagan Lake in 2004 and 2010.

	% of Shoreline Length	Shoreline Length (m)	Natural Shore Length (m)	Disturbed Shore Length (m)	% Natural	% Disturbed
Agriculture	10.3%	2036	1418	618	69.7%	30.3%
Commercial	0.6%	119	0	119	0.0%	100.0%
Conservation	0.0%	0	0	0	0	0
Forestry	0.0%	0	0	0	0	0
Industrial	0.0%	0	0	0	0	0
Multi Family	3.4%	672	0	672	0.0%	100.0%
Natural Area	0.0%	0	0	0	0	0
Park	13.4%	2646	1945	701	73.5%	26.5%
Recreation	0.0%	0	0	0	0	0
Rural	8.8%	1734	1672	62	96.4%	3.6%
Single Family	54.9%	10868	510	10358	4.7%	95.3%
Urban Park	7.7%	1529	30	1499	2.0%	98.0%
Transportation	0.0%	0	0	0	0	0
Institutional	1.0%	199	199	0	100.0%	0.0%
Total	100.0%	19802.2				

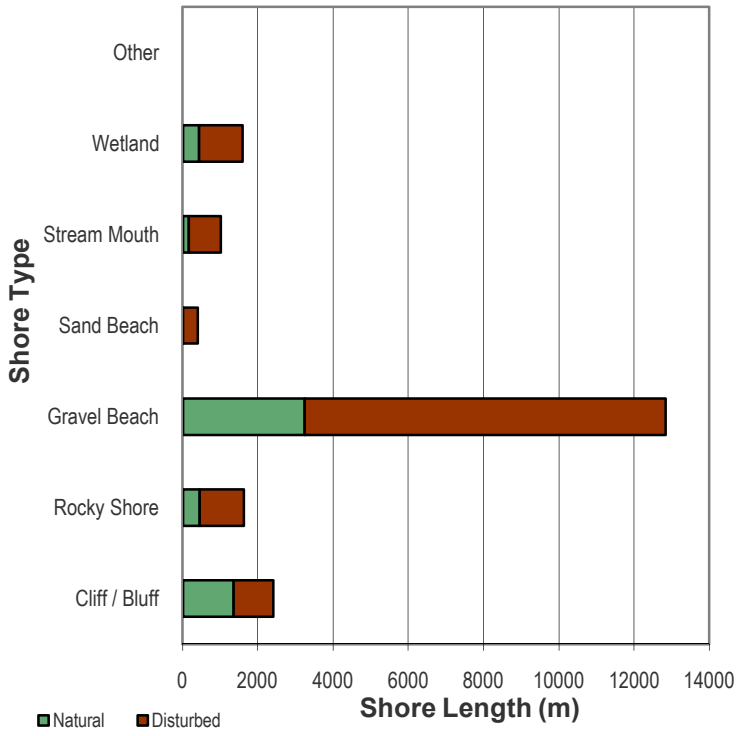


Figure 7: The lenght of natural and disturbed shoreline in each shore type category

Table 4: The total length of natural and disturbed shoreline and associated percentages within the different shore types that occur around Okanagan Lake in 2004 and 2010.

Shore Type	% of Total	Total Shoreline Length (m)	Natural Shore Length (m)	Disturbed Shore Length (m)	% Natural	% Disturbed
Cliff / Bluff	12.1%	2390	1340	1050.3	56.1%	43.9%
Rocky Shore	8.2%	1623	434	1189.8	26.7%	73.3%
Gravel Beach	64.7%	12813	3223	9590.3	25.2%	74.8%
Sand Beach	1.9%	384	5	378.6	1.3%	98.7%
Stream Mouth	5.1%	1009	156	852.9	15.4%	84.6%
Wetland	8.0%	1584	419	1164.8	26.5%	73.5%
Other	0.0%	0	0	0.0	0	0
Total	100.00%	19802				

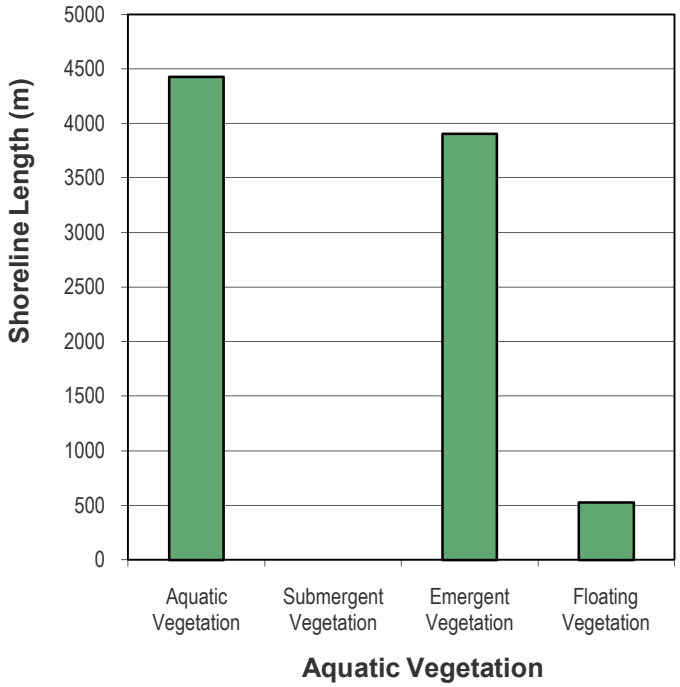


Figure 8: The shore lenght of each different type of aquatic vegetation.

Table 5: The total shoreline length and percentage that has aquatic, submergent, emergent, and floating vegetation along Okanagan Lake in 2004 and 2010.

Type	% of Total Shoreline Length	Shoreline Length (m)
Aquatic Vegetation	22.4%	4427
Submergent Vegetation	0.0%	0
Emergent Vegetation	19.7%	3902
Floating Vegetation	2.6%	524

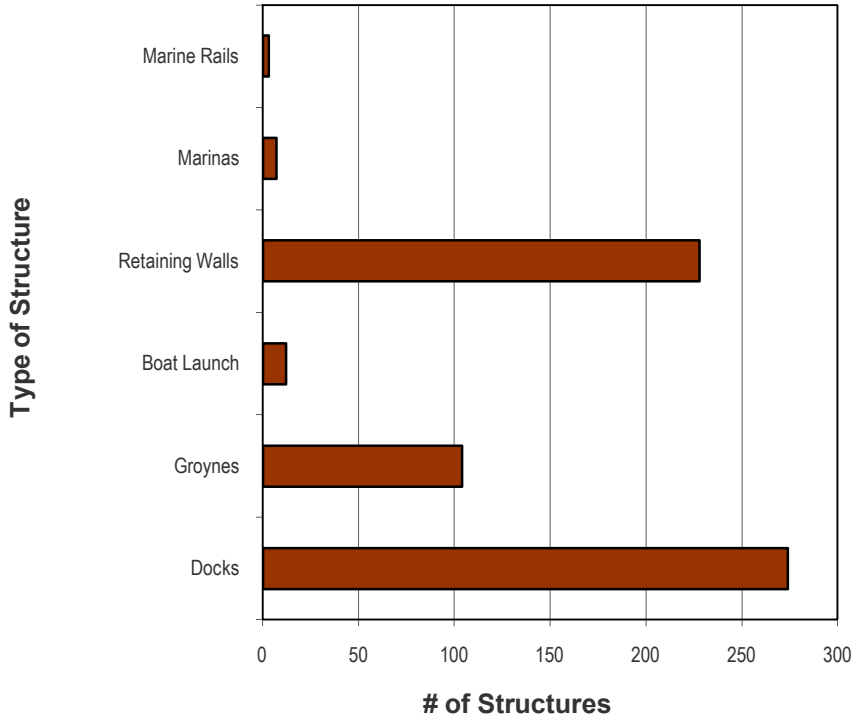
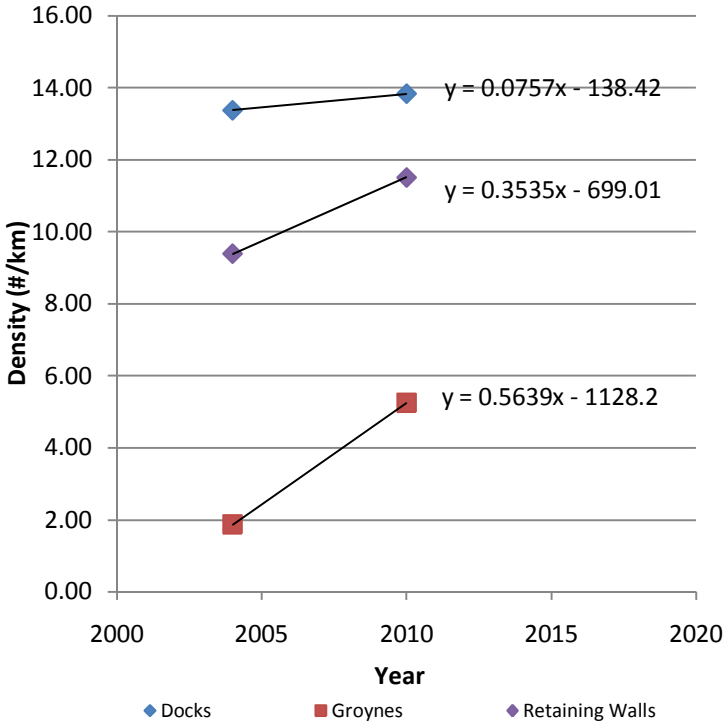
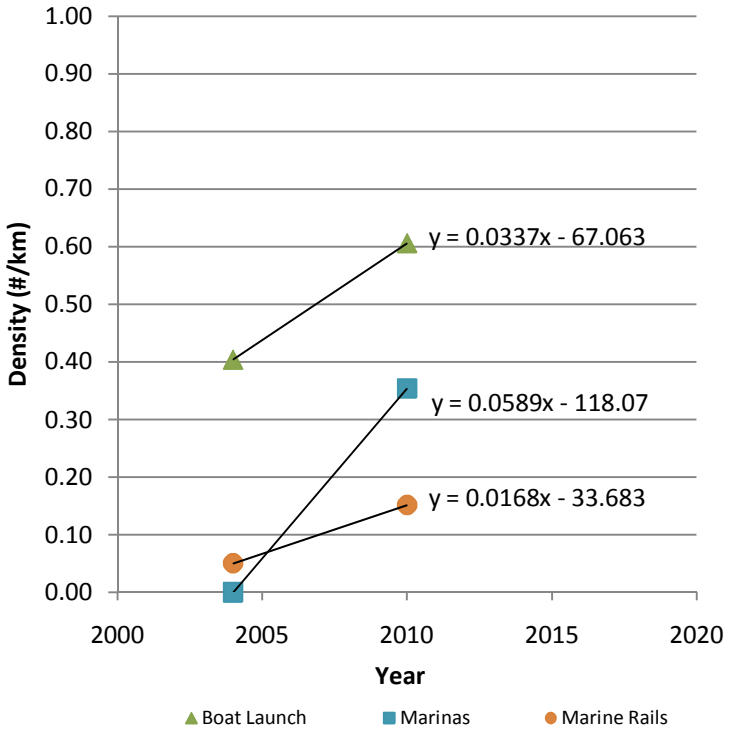


Figure 9: The total number of different types of modifications on Okanagan Lake



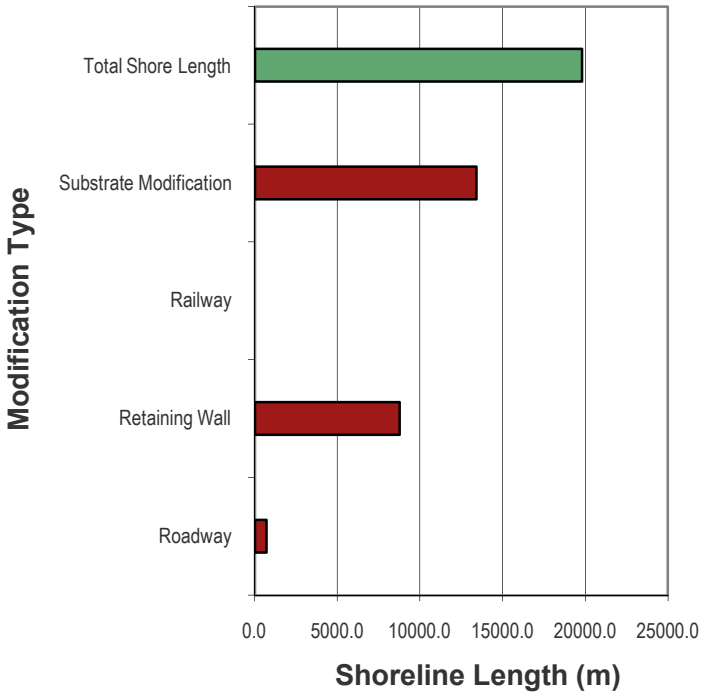
. **Figure 10:** The density of docks, groynes, and retaining walls on Okanagan Lake in 2004 and 2010.



. **Figure 11:** The density of boath launches, marinas, and marine rails on Okanagan Lake in 2004 and 2010.

Table 6: The total number and density (# per km) of different shoreline modifications occuring around Okanagan Lake in 2004 and 2010.

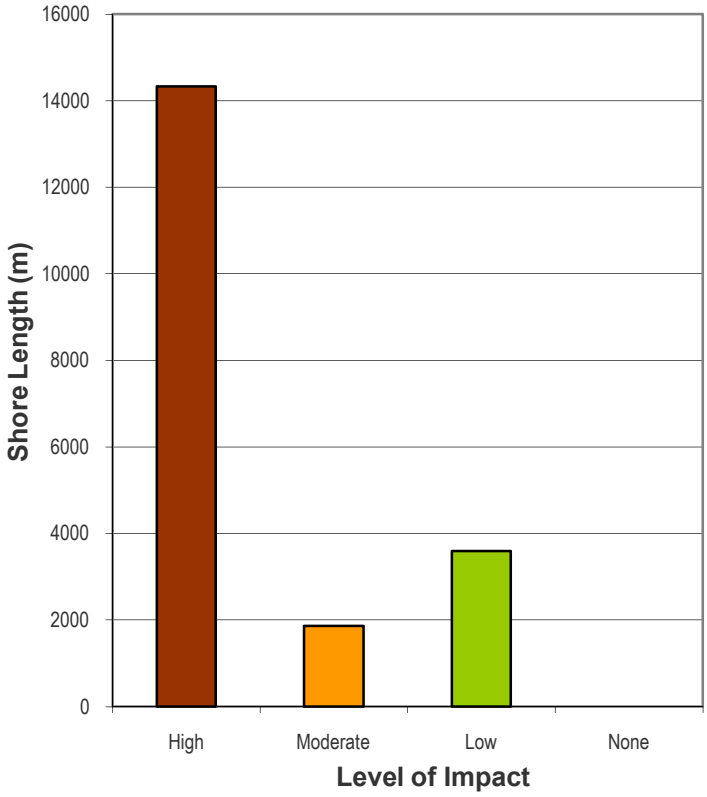
2004			2010		
Type	Total #	# Per km	Type	Total #	# Per km
Docks	265	13.38	Docks	274	13.84
Groynes	37	1.87	Groynes	104	5.25
Boat Launch	8	0.40	Boat Launch	12	0.61
Retaining Walls	186	9.39	Retaining Walls	228	11.51
Marinas	0	0.00	Marinas	7	0.35
Marine Rails	1	0.05	Marine Rails	3	0.15



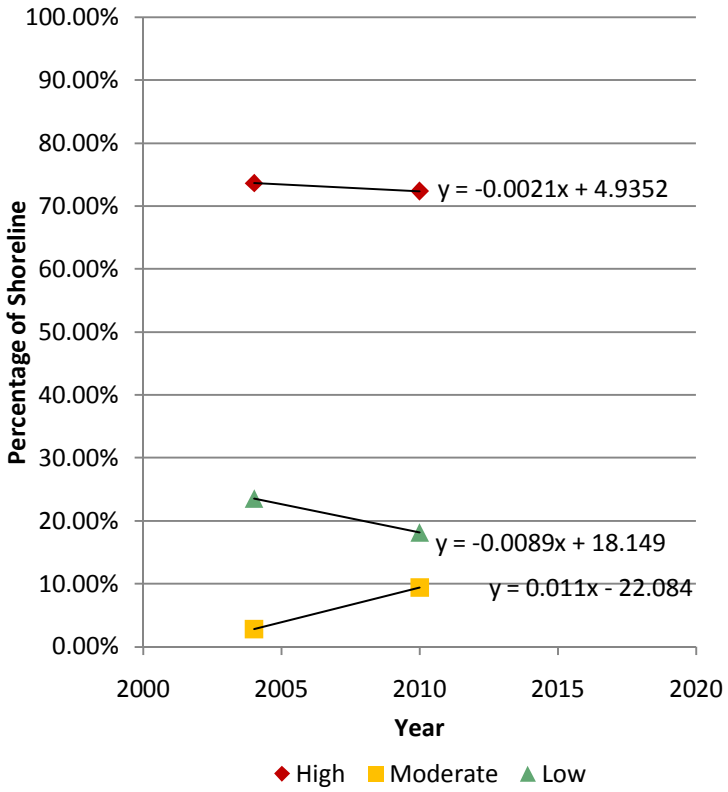
. **Figure 12:** The shore lenght of different shore modifiers were observed.

Table 7: The approximate shoreline length that has been impacted by substrate modification, road and railways, and retaining walls along Okanagan Lake in 2004 and 2010.

Category	% of Shoreline	Shorelength (m)
Roadway	3%	693.1
Retaining Wall	44%	8782.3
Railway	0%	0.0
Substrate Modification	68%	13426.7
Total Shore Length		19802.2



. **Figure 13:** The shore lenght of different levels of impact on Okanagan Lake..



. **Figure 14:** The perecentage of the shoreline classified as High, Moderate of Low Level of Impact in 2004 and 2010 on Okanagan Lake..

Table 8: The Level of Impact around Okanagan Lake (High > 40%, Moderate (10-40%), Low (<10%), None (0%)) in 2004 and 2010.

2004			2010		
Level of Impact	% of Shoreline	Shore Length	Level of Impact	% of Shoreline	Shore Length
High	73.63%	14580	High	72.37%	14331
Moderate	2.82%	559	Moderate	9.44%	1870
Low	23.55%	4663	Low	18.19%	3601
None	0.00%	0	None	0.00%	0

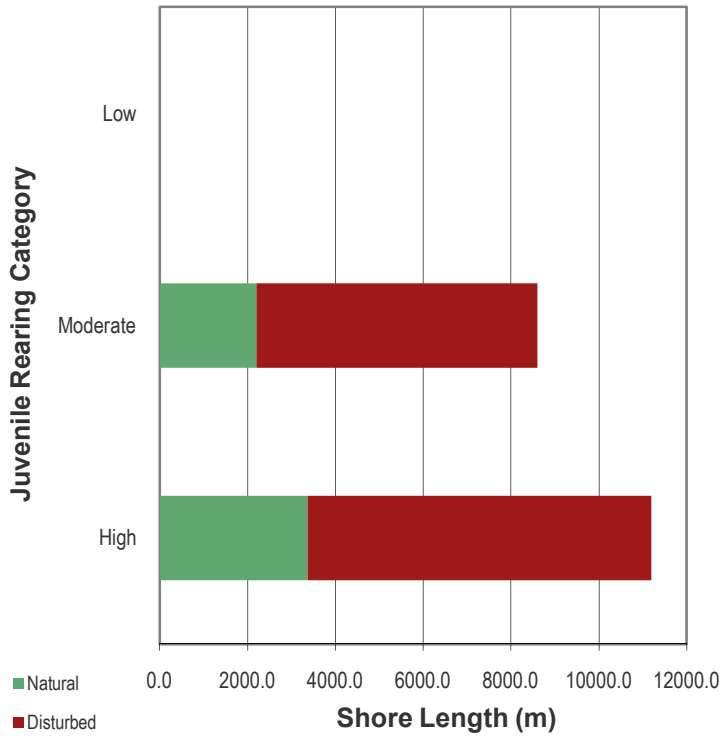


Figure 15: The natural and disturbed shore length of areas classified as having and High, Moderate, or Low Juvenile Rearing ranking.

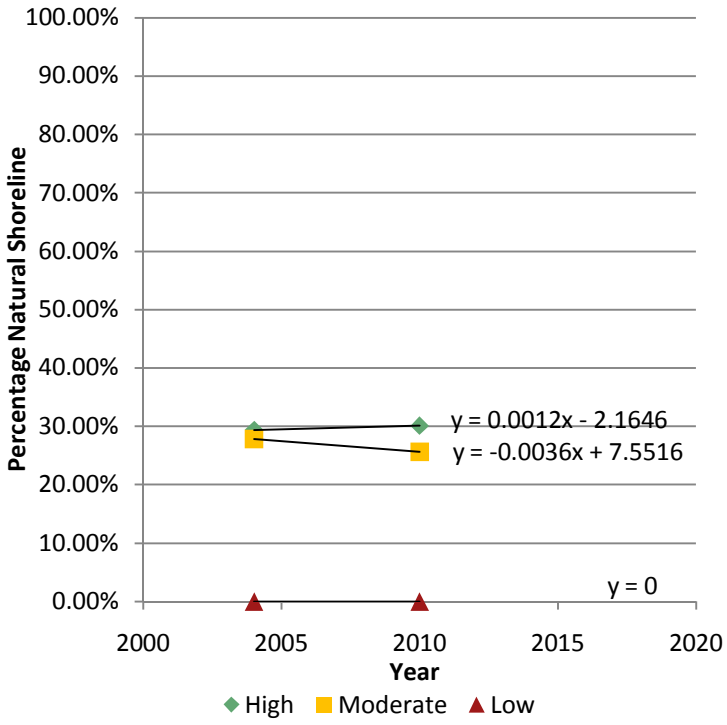


Figure 16: The percentage of High, Moderate, or Low Juvenile Rearing ranking in 2004 and 2010.

Table 9: The shore length and percentage of shoreline areas classified as having High, Moderate, or Low Juvenile Rearing Value on Okanagan Lake in 2004 and 2010.

2004							2010						
Juvenile Rearing Category	# of Segments	Shore Length (m or %)					Juvenile Rearing Category	# of Segments	Shore Length (m or %)				
		Natural (m)	Natural (%)	Disturbed (m)	Disturbed (%)	Total			Natural (m)	Natural (%)	Disturbed (m)	Disturbed (%)	Total
High	14	3189.1	28.47%	8011.46	71.53%	11200.9	High	14	3369.6	30.1%	7831.0	69.9%	11200.9
Moderate	14	2393.2	27.82%	6208.42	72.18%	8601.90	Moderate	14	2205.9	25.6%	6395.7	74.4%	8601.90
Low	0	0.0	0	0	0	0	Low	0	0.0	0	0.0	0	0

Table 10: The lenght of natural and disturbed shorelines within the different Okanagan Large Lakes Protocol Kokanee Shore Spawning areas in 2004 and 2010.

2004								2010							
Black		Red		Yellow		No Colour		Black		Red		Yellow		No Colour	
Natural	Disturbed	Natural	Disturbed	Natural	Disturbed	Natural	Disturbed	Natural	Disturbed	Natural	Disturbed	Natural	Disturbed	Natural	Disturbed
0	0	49.13%	50.87%	14.54%	85.46%	28.74%	71.26%	0	0	54.1%	45.9%	16.5%	83.5%	27.5%	72.5%
0	0	963.755	997.995	520.44	3060.12	4098.15	10161.8	0	0	1062	900	592	2988	3921	10339

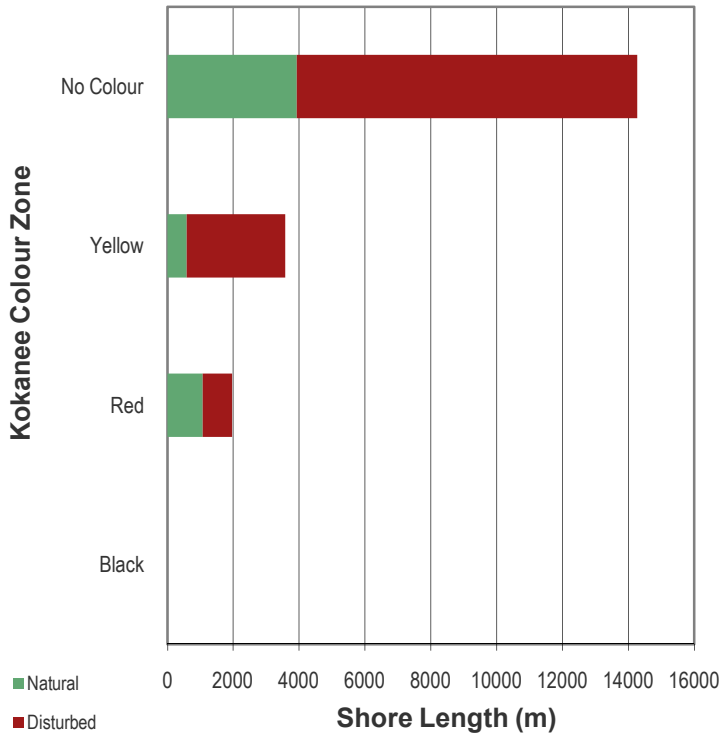


Figure 17: The lenght of natural and disturbed shoreline in the differnet shore spawning kokanee zones.

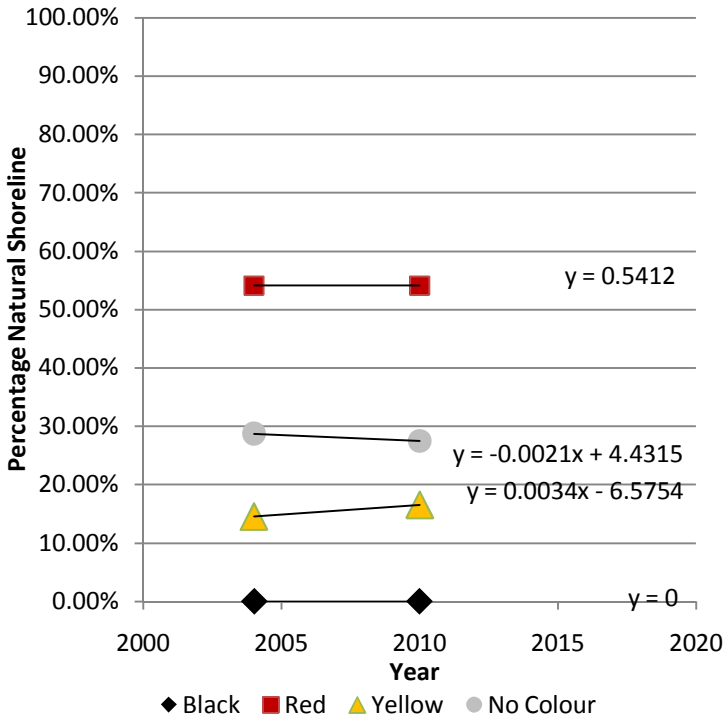


Figure 18: The percentage of natural shoreline in the differnet shore spawning kokanee zones in 2004 and 2010.

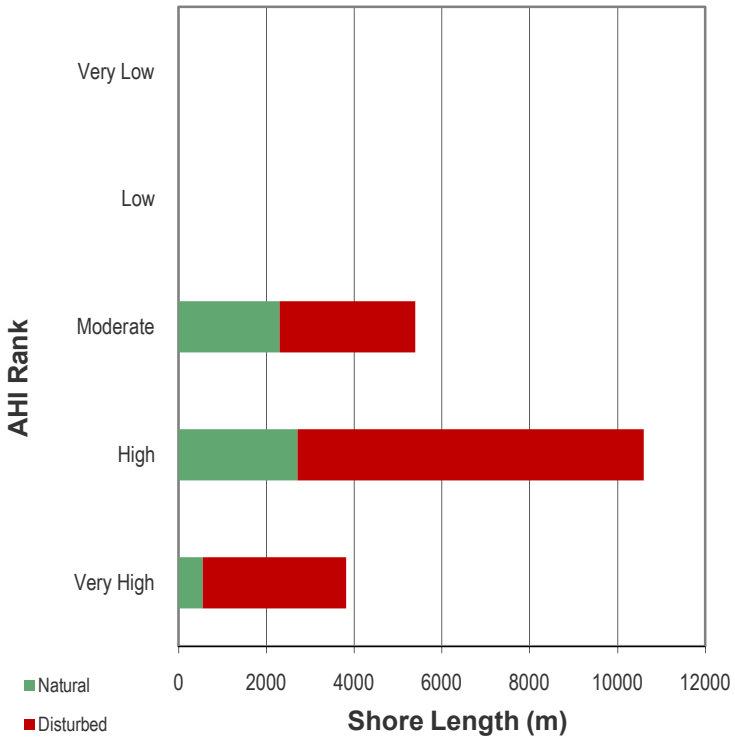


Figure 18: The lenght of natural and disturbed shoreline in the differnet AHI rankings.

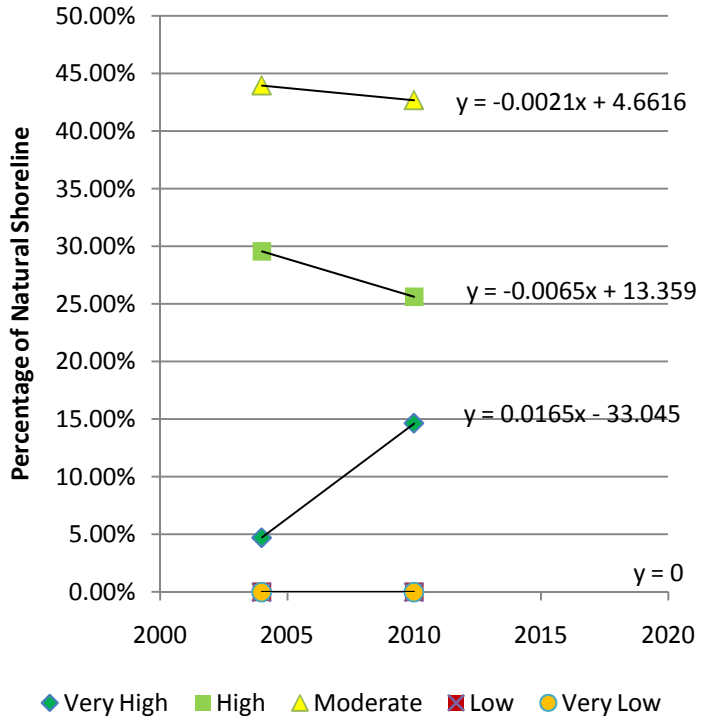


Figure 19: The lenght of natural shoreline in the differnet AHI rankings in 2004 and 2010.

Table 11: The shoreline that is natural and disturbed (m and %) within each of the different AHI rankings in 2004 and 2010.

2004					2010				
AHI Rank	Natural		Disturbed		AHI Rank	Natural		Disturbed	
	m	%	m	%		m	%	m	%
Very High	82.3466	2.16%	3731.19 8	97.84 %	Very High	558.200 7	14.6%	3255.34 4	85.4%
High	3132.16 6	29.55 %	7468.76 2	70.45 %	High	2717.54 2	25.6%	7883.38 6	74.4%
Moderate	2367.83 8	43.95 %	3019.92 5	56.05 %	Moderate	2299.73 1	42.7%	3088.03 2	57.3%
Low	0	0	0	0	Low	0	0	0	0
Very Low	0	0	0	0	Very Low	0	0	0	0