WORKING DRAFT FOR REVIEW - VERSION 2

ENVIRONMENTAL FACTORS FOR SELECTED PROJECT SITES BASED ON A SEARCH AND REVIEW OF LITERATURE

PROJECT SITE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22						23		24	25	26	27	28
	AREA (ha)	RELIEF (m)	DEPTH (m)	BASE SUBSTRATUM	TEMPERATURE REGIME (°C)	SALINITY REGIME	CLOSEST PROX. TO SHORE (km)	CLOSEST PROX. TO MAJOR RIVER (km)	CLOSEST PROX. TO ACTIVE O&G FACILITY (km)	CLOSEST PROX. TO WIND FIELD (km)	CLOSEST PROX. TO MINING (km)	CLOSEST PROX. TO MAJOR SHIPPING LANE (km)	CLOSEST PROX. TO OTHER PROTECTED AREA (km)	CLOSEST PROX. TO MILITARY OPERATIONS (km)	CLOSEST PROX. TO DUMPING AREA (km)	CLOSEST PROX. TO ACTIVE METHANE SEEP (km)	SCLERACTINIAN CORAL SPECIES RICHNESS	OCTOCORAL SPECIES RICHNESS	HYDROZOAN CORAL SPECIES RICHNESS	ANTIPATHARIAN CORAL SPECIES RICHNESS	FISH SPECIES RICHNESS	FISHING ACTIVITY(IES)	FISHING INTENSITY - BLL (Min. # of Vessel Positions)	FISHING INTENSITY - BLL (Max. # of Vessel Positions)	FISHING INTENSITY - BLL (Mean # of Vessel Positions)	FISHING INTENSITY - BENTHIC TRAWL (Min. Hrs.)	FISHING INTENSITY - BENTHIC TRAWL (Max. Hrs.)	FISHING INTENSITY - BENTHIC TRAWL (Mean Hrs.)	FISHERY TYPE(S)	FISHERY GEAR	INVASIVE SPECIES	DISEASE INCIDENCE	RESEARCH HISTORY	CURRENT PROTECTIONS	VULNERABILITY TO CLIMATE CHANGE
SOUTHEASTERN GULF OF MEXICO																																		
Northern West Florida Slope	62529.6		368-757	Carbonate scarp with mixed rocks and boulders	6-27.0	34.9-36.2	229.9	266.0	355.3	n/a	n/a	60.7	66.1	0.0	181.0	87.2	3	6	1	2	50	Seasonal	1	13	4.2				Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed			
North Reed Site	4664.7		300-900	Carbonate mounds and sand	~5.2-30	34.9-36	239.0	260.7	329.0	n/a	n/a	98.5	80.0	0	141.3	141.3	2	4	1	3	50	Seasonal	2	2	2	0	50	25	Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed	4	Proposed for HAPC status with or without fishing regulations	
Long Mound	4664.7		300-700	Carbonate mounds and sand	~5.2-30	34.9-36	235.4	259.5	322.0	n/a	n/a	109.9	86.8	0	129.0	129.0	1	>7	1	2	50	Seasonal	1	1	1				Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed	3	Proposed for HAPC status with or without fishing regulations	
Many Mounds	4458.9		199-700	Carbonate mounds and sand	~5.2-30	34.9-36	243.1	261.0	339.6	n/a	n/a	83.6	71.8	0	156.5	156.5	1	>7	1	2	50	Seasonal	38	38	38				Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed	3	Proposed for HAPC status with or without fishing regulations	
West Florida Wall	12450.6	6–37	399-602	Carbonate ledges and boulders	6-27.0	35-36.5	239.8	261.3	329.2	n/a	n/a	97.7	80.0	0	142.3	142.3	2	9	1	2	50	Seasonal	1	10	4.3				Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed	28	Proposed for HAPC status with or without fishing regulations	
Southern West Florida Slope	81270.8		368-757	Carbonate scarp with mixed rocks and boulders	6-27.0	34.9-36.2	120.6	283.9	478.0	n/a	n/a	79.8	10.7	0	318.0	201.3	3	6	1	2		Seasonal	1	186	23.35				Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed			
Okeanos Ridge	12347.7		300-701	Carbonate wall	~5.2-30	34.9-36	201.0	276.0	382.0	n/a	n/a	26.6	57.7	0	218.5	124.5	3	7	1	3		Seasonal	1	5	3	0	50	25	Commercial, Recreational(?); Golden crab, Finfish	Bottom longline; electric (bandit) reelhook and line; traps		Not observed	6		
NORTHEASTERN GULF OF MEXICO																																		
Pinnacles Reefs	407878.2			Carbonate; silty sediment	15.4-27.5	34.9-36.8				n/a	n/a			0			1	10		4		BLL prohibited in areas < 91 m	820	820	820	51	1000	525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed	8		
Triple Top Reef	3.6	8	68-76	Carbonate; silty sediment	15.4-27.5	34.9-36.8	91.7	100.4	4.8	n/a	n/a	17.2	92.6	0	64.2	23.8	1	10		4		BLL prohibited in areas < 91 m	1569	1569	1569	0	1000	500	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Double Top Reef	13.8	12	68-80	Carbonate; silty sediment	15.4-27.5	34.9-36.8	91.7	100.4	4.8	n/a	n/a	17.2	92.6	0	64.2	23.8	1	10		4	16	BLL prohibited in areas < 91 m	1569	1569	1569	0	1000	500	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Shark Reef	1.2	3	74-77	Carbonate; silty sediment	15.4-27.5	34.9-36.8	91.7	100.4	4.8	n/a	n/a	17.2	92.6	0	64.2	23.8	1	10		4	17	BLL prohibited in areas < 91 m	1569	1569	1569	0	1000	500	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Far Tortuga	74.8	4	66-70	Carbonate; silty sediment	15.4-27.5	34.9-36.8	79.1	99.0	48.6	n/a	n/a	7.3	77.6	0	16.7	74.1	1	10		4	11	BLL prohibited in areas < 91 m	1053	1053	1053	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Patch Reef Field	1000	6	71-77	Carbonate; silty sediment	15.4-27.5	34.9-36.8	86.8	113.4	23.6	n/a	n/a	7.7	86.8	0	32.4	45.4	1	10		4	12	BLL prohibited in areas < 91 m	2038	2038	2038	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed	1		
Solitary Mound	1.2	5	66-71	Carbonate; Coarse sand	15.4-27.5	34.9-36.8	86.8	113.4	23.6	n/a	n/a	7.7	86.8	0	32.4	45.4	1	10		4	25	BLL prohibited in areas < 91 m	2038	2038	2038	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Mountain Top Bank	0.8	8	76	Carbonate; Coarse sand	15.4-27.5	34.9-36.8	55.4	55.4	1.7	n/a	n/a	37.0	68.6	38.9	90.3	<1	1	10		4	12	BLL prohibited in areas < 91 m	80	1644	670.25	1001	5000	3000.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*	Not observed			
Pinnacle 1 Near West	2020.4		90-110				78.1	78.1	0.7	n/a	n/a	39.6	81.3	16.8	84.8	5.5	1	10		4		BLL prohibited in areas < 91 m	820	820	820	51	1000	525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
West Pinnacle 2	2020.4		90-110				78.1	78.1	0.7	n/a	n/a	39.6	81.3	16.8	84.8	5.5	1	10		4		BLL prohibited in areas < 91 m	820	820	820	51	1000	525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Porgy Reef	23.9	14	64-78				90.3	113.6	30.6	n/a	n/a	6.5	90.4	0	23.5	51.0	1	10		3	7	BLL prohibited in areas < 91 m	1469	1469	1469				Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Cats Paw Reef	23.9	14	64-78				90.3	113.6	30.6	n/a	n/a	6.5	90.4	0	23.5	51.0	1	10		3	7	BLL prohibited in areas < 91 m	1469	1469	1469				Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
Yellowtail Reef	13.9	8	60-68				90.3	113.6	30.6	n/a	n/a	6.5	90.4	0	23.5	51.0	1	10		3	32	BLL prohibited in areas < 91 m	1469	1469	1469				Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*	Not observed			
DeSoto Canyon																																		
DeSoto Canyon Rim	2331.0	1	52-61	Low relief block outcrops			44.3	62.0	66.2	n/a	n/a	5.7	39.5	0	23.2	113.5	1	13		3	50	BLL prohibited in areas < 91 m	2809	2809	2809	0	50	25	Commercial, Recreational(?); Finfish		*Pterois volitans/miles;*		2		
Destin Dome																																		
Destin Dome 51/52	2331.0	0-2	28-39	Carbonate outcrops/sand			40.3	59.4	42.0	n/a	n/a	14.8	38.1	0.8	25.4	98.5	5	4			32	BLL prohibited in areas < 91 m	459	459	459	0	50	25	Commercial, Recreational(?); Finfish		*Pterois volitans/miles;*		1		
Destin Dome 99; 55/56/57	2331.0	1-8	52-61	Carbonate ridge			45.0	64.2	43.9	n/a	n/a	14.8	42.8	0	29.7	94.5	0	11		7	37	BLL prohibited in areas < 91 m	702	702	702	0	50	25	Commercial, Recreational(?); Finfish				1		
Destin Dome 617	2017.7	15	95-130	Carbonate pinnacles			99.8	129.7	11.0	n/a	n/a	5.9	99.8	0	42.8	28.3	2	5		2	13	BLL prohibited in areas < 91 m	146	146	146	0	50	25	Commercial, Recreational(?); Finfish				1		
NORTHWESTERN GULF OF MEXICO																																		
Sonnier Bank	78	1.4	20-60	Carbonate, sandstone, siltstone; fine sediments			132.9	137.8	8.7	n/a	n/a	39.9	28.8	0	123.6	22.4	10	1	1	2	30	Fishing Reported Within Site	1287	1287	1287	51	1000	525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Tubastraea coccinea; Pterois volitans/miles;*		15	Proposed HAPC with possible boundary revisions	Yes, becoming algal dominated feature
29-Fathom Bank	1477.7	1.5	54-77				174.1	180.5	4.6	n/a	n/a	36.9	10.4	0	100.9	<1						Fishing Reported Within Site	50	241	110.5	51	1000	525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line			4	Proposed HAPC with possible boundary revisions	
MacNeil Bank	2778.8	8	80	Thin veneer of sediment covering lithified sedimentary features			186.7	193.8	2.9	n/a	n/a	23.9	7.1	0	94.7	0.7						Fishing Reported Within Site	370	370	370	0	5000	2500	Commercial, Recreational(?); Finfish	Bottom longline; hook and line			2	Proposed HAPC with possible boundary revisions	
Alderdice Bank	1600	2	84-94	Carbonate, sandstone, siltstone; fine sediments	19-26.5	33.7-35	147.1	158.7	11.6	n/a	n/a	19.1	26.9	0	123.6	<1	16	29	2	9	32	Fishing Reported Within Site	48	662	263	0	1000	500	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*		2	Proposed HAPC\Coral Areas	
Bouma Bank	1397	3	62-100	Fine sediments and siltstone			164.7	169.5	4.8	n/a	n/a	19.5	7.1	0	147.6	9.0	16	29	2	9	26	Fishing Reported Within Site	127	371	248	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*		4	Proposed HAPC\Coral Areas	
Horseshoe Bank	17081.0	3	106-260	Carbonate; surficial sediments; mud volcanoes			194.3	215.5	13.4	n/a	n/a	3.7	6.3	7.2	69.6	1.5						Fishing Reported Within Site	88	297	160.8	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles; Neopomacentrus cyanomos*		3	Proposed HAPC\Coral Areas	
Rankin Bright Bank	27801.0	3	49-213	Carbonate; surficial sediments; siltstone moundsalgal nodules		36.2	201.5	201.2	17.5	n/a	n/a	8.1	16.4	0	104.7	0.5	16	29	2	9	36	Fishing Reported Within Site	93	341	166.7	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*		1	Proposed HAPC\Coral Areas	
Geyer Bank	4123	3	37-210	Carbonate, rubble and nodules; fine sediments; clay		36.3	199.1	198.6	13.6	n/a	n/a	0	19.7	0	134.3	1.5	16	29	2	9	48	Fishing Reported Within Site	97	139	118	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Tubastraea coccinea; Pterois volitans/miles;*		11	Proposed HAPC\Coral Areas	
Elvers Bank	5500	3	70-160	Algal nodules; carbonate sand		36.3	196.2	195.7	13.0	n/a	n/a	0	13.5	0	150.4	0.4	16	29	2	9	40	Fishing Reported Within Site	147	1165	544.7				Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*		3	Proposed HAPC\Coral Areas	
Rezak Sidner Bank	7800	4	60-140	Coralline algal nodules/sand		36.2	175.8	181.9	14.3	n/a	n/a	7.3	9.5	0	153.5	1.8	16	29	2	9	24	Fishing Reported Within Site	294	1376	713				Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*		3	Proposed HAPC\Coral Areas	
Parker Bank	6181.2		59-157	Carbonate; surficial sediments		36.6	160.6	170.9	8.9	n/a	n/a	4.9	12.7	0	137.7	<1	16	29	2	9	38	Fishing Reported Within Site	404	437	417.7	0	50	25	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles;*		2	Proposed HAPC\Coral Areas	
Jakkula Bank	830	5-10	59-66	Carbonate; surficial sediments; algal nodules	~18-26.5	33.5-35.7	137.1	149.3	14.7	n/a	n/a	5.4	32.4	0	127.7	<1	16	29	2	9	20	Fishing Reported Within Site	768	768	768				Commercial, Recreational(?); Finfish	Bottom longline; hook and line			8	Proposed HAPC\Coral Areas	
SOUTHWESTERN GULF OF MEXICO																																		
South Texas Banks - North																4																		
Baker Bank	133	16	74	Carbonate; surficial sediments	17 - 23		66.6	97.6	4.7	n/a	n/a	15.2	66.1	0	47.7	<1	7	5	0	2	33	Fishing Reported Within Site	54	54	54	1001	5000	3000.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line			8	HAPC recommended	
Hospital Bank	241	30	77	Carbonate; surficial sediments	15.76 - 24.8	35.9-36.3	66.0	93.3	31.6	n/a	n/a	0	64.9	0	45.6	1.4	7	5	0	2	24	Fishing Reported Within Site	2	23	12.5	51	5000	2525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*		4	HAPC recommended	
North Hospital Bank	142	18.4	71	Carbonate; surficial sediments	17 - 23		66.0	93.3	31.6	n/a	n/a	0	64.9	0	45.6	1.4	7	5	0	2	38	Fishing Reported Within Site	2	23	12.5	51	5000	2525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line	*Pterois volitans/miles*		4	HAPC recommended	
Aransas Bank	50	12	70	Carbonate; surficial sediments	17 - 23		66.0	93.3	31.6	n/a	n/a	0	64.9	0	45.6	1.4	7	5	0	2	32	Fishing Reported Within Site	2	23	12.5	51	5000	2525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line			3	HAPC recommended	
South Texas Banks - South																																		
Dream Bank	229	14	82	Carbonate; surficial sediments	17 - 23		66.1	89.0	32.4	n/a	n/a	22.3	65.5	0	63.9	<1	7	5	0	2	26	Fishing Reported Within Site	158	158	158	1001	5000	3000.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line; trawl(?)			5	HAPC recommended	
Mysterious Banks	364	13.1	80	Carbonate; surficial sediments			59.4	79.4	23.2	n/a	n/a	22.4	59.4	0	56.1	<1	7	5	0	2	14	Fishing Reported Within Site	1	23	10	51	5000	2525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line; trawl(?)			5	HAPC recommended	
Big Adam Rock/Big Adam Bank	51	9.5	68	Carbonate; surficial sediments			54.4	83.2	16.9	n/a	n/a	11.4	53.9	0	58.2	8.6	7	5	0	2	21	Fishing Reported Within Site	5	5	5	51	5000	525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line; trawl(?)			5	HAPC recommended	
Blackfish Ridge	112	12	72	Carbonate; surficial sediments			57.6	81.7	17.0	n/a	n/a	16.3	57.1	0	57.0	<1	7	5	0	2	15	Fishing Reported Within Site	3	3	3	51	5000	2525.5	Commercial, Recreational(?); Finfish	Bottom longline; hook and line; trawl(?)			11	HAPC recommended	

LEGEND (see project report for methods and discussion)		
	Areas proposed as potential sites for additional protection.	
1	**Area:** Units = hectares. For this project, site boundaries were provided by the Gulf Council (and/or its committees) from previous designations. Using the provided site boundaries, CSA calculated site area using ArcGIS.	
2	**Relief:** Units = meters. For sites with multibeam bathymetric data the relief used for the matrix was the maximum profile of the largest reef feature (e.g., wall, pinnacle, mound, etc.) within the site boundary determined from GIS analysis. Without multibeam or other geospatial data, it was not possible to estimate relief unless that was available from relevant literature.	
3	**Depth:** Units = meters. For sites with multibeam bathymetric data, the depth range was reported as the deepest and shallowest depths within the site boundary. The average depth within the boundary was calculated from the multibeam data using ArcGIS tools. For sites without multibeam or other geospatial data, depth range was estimated from NOAA navigation charts or	
4	**Base Substratum:** This factor was restricted to represent the main material from which the reef feature was built (e.g., coral, rock (type, if known), consolidated muds, etc.). In some cases, coverage of area by various sediment and reef material was provided as notes in the matrix, if known.	
5	**Temperature Regime:** Units = degrees centigrade or generic designation if no explicit units were provided. The goal here was to determine not only the benthic temperature values but the degree of stability. If available, a range of temperatures was reported to infer variability. If no data existed, the temperature environment was approximated using generic descriptors (e.g., stenothermal, eurythermal, temperate, etc.).	
6	**Salinity Regime:** Units = standard salinity units or generic descriptors if no explicit data were available. As above, the goal was to describe benthic salinity values and variability. If available, a range of salinity values was reported. If there were no explicit data, the salinity environment was approximated using generic descriptors (marine, stenohaline, coastal, etc.) based on	
7	**Proximity to Nearest Shore**: Units = kilometers. A direct straight-line measurement using ArcGIS from the center of each site to the nearest mainland.	
8	**Proximity to Nearest Major River:** Units = kilometers. A direct straight-line measurement using ArcGIS from the approximate center of each site to the mouth (visually approximated) of the nearest major river.	
9	**Proximity to Nearest Active Oil/Gas Activity:** Units = kilometers. A direct straight-line measurement using ArcGIS from the approximate center of each site to the nearest active offshore oil and gas platforms or facilities.	
10	**Proximity to Nearest Wind Field:** Units = kilometers. A direct straight-line measurement using ArcGIS from the approximate center of each site to the nearest offshore wind facility.	
11	**Proximity to Nearest Offshore Mining:** Units = kilometers. A direct straight-line measurement using ArcGIS from the approximate center of each site to the nearest offshore mining facility.	
12	**Proximity to Nearest Shipping Lane:** Units = kilometers. A direct straight-line using ArcGIS measurement from the approximate center of each site to the nearest major shipping lane.	
13	**Proximity to Nearest Other Protected Areas (already designated):** Units = kilometers. A straight-line distance from the center of each site to the nearest edge of the nearest site currently protected by state or federal law (e.g., Marine Sanctuaries, HAPCs, etc.).	
14	**Proximity to Nearest Consistent Military Operations:** Units = kilometers. A direct straight-line using ArcGIS measurement from the approximate center of each site to the nearest active military operations.	
15	**Proximity to Nearest Dumping Areas (military, hazardous wastes, municipal, etc.):** Units = kilometers. A direct straight-line measurement using ArcGIS from the approximate center of each site to the nearest known dumping ground.	
16	**Proximity to Nearest Benthic Methane Seeps:** Units = kilometers. This is a direct straight-line measurement using ArcGIS from the approximate center of each site to the nearest known methane seep location.	
17	**Scleractinian Coral Species Richness:** Numbers of documented hermatypic (reef-building) species, genera, or families derived from available literature or in some cases from unpublished, but reputable, sources.	
18	**Octocoral Species Richness:** Numbers of all documented species, genera, or families derived from available literature or in some cases from unpublished, but authoritative sources.	
19	**Hydrozoan (Orders Milleporina and Stylasterina) Species Richness:** Numbers of all documented species, genera, or families derived from available literature or in some cases from unpublished, but authoritative sources.	
20	**Anthipatharian Species Richness:** Numbers of all documented species, genera, or families derived from available literature or in some cases from unpublished, but authoritative sources.	
21	**Fish Species Richness:** Numbers of all documented species, genera, or families derived from available literature or in some cases from unpublished, but authoritative sources.	
22	**Benthic Fishing Activity/Intensity – Bottom Long Line (BLL):** Estimates of bottom longline (BLL) fishing activity on reef fishes was identified, including minimum, maximum, and mean estimates of the numbers of vesselpositions within each study site	
23	**Benthic Fishing Activity/Intensity – Bottom Trawl:** Estimates of bottom trawling effort (number of hours trawled within each study site), including minimum, maximum, and mean estimates of trawling hours.	
24	**Benthic Fishery Types and Gears at Site:** General bottom contact type and gear (e.g., shrimp, bottom trawl, recreational, hook and line, etc.).	discard?
25	**Invasive Species:** Note numbers and species where known derived from available literature or in some cases from unpublished, but reputable, sources.	
26	**Disease Incidence:** Note type of disease and taxa affected derived from available literature or in some cases from unpublished, but reputable, sources.	
27	**Research History:** This category will be given a qualitative descriptor of Extensive, Moderate, Low, or None based on the number and type of publications found for each site in CSA's literature search. In some cases we may be aware of relevant research that either has not yet been published or that is hard to access. Categories above may be modified based on such information. The number and diversity of publications and studies will be considered here.	needs to be completed
28	**Vulnerability to Climate Change:** This factor was difficult to assess, and information was often subjective. Specific literature on a site basis is generally lacking but the effects of climate change usually occur on a broad scale. This vulnerability cannot be accurately assessed until additional authoritative information becomes available.	