

VS Id#	Vital Sign Category			Vital Sign	Network Rank	WAPA
H04	Land Use			Alien Invasive Species Points of Entry	3.4	
H05	Land Use			Water Use(s) Within & Surrounding Parks	3.0	
H10	Park Use & Activities			Subsistence Farming/Agriculture	1.2	
H12	Park Use & Activities			Coral/Sand Mining Harvest	1.2	
H17	Management Zones			Wilderness Areas - HAVO, HALE, other Unofficial	1.1	
M25	Marine Ecosystems	Intertidal	Population	Intertidal Reef Fisheries / Collected species (limu, opihi, crabs, fish, etc.)	2.3	
P16	Soil, Water, & Nutrient Dynamics			Soil Crust Change (Arid-Semiarid habitats)	0.9	
P34	Geology	Hazards		Volcanic Unrest - Ground Deformation	1.4	
P35	Geology	Hazards		Volcanic Unrest - Lava Flows	1.2	
P37	Geology	Hazards		Seismicity of Volcanic Origin	1.8	
P40	Geology	Landforms		Dune Change (erosion & accretion)	0.9	
P41	Geology	Landforms		Permafrost on Big Island summits	0.0	
P21	Water Quality			Marine Water Quality Core parameters	3.3	4.5
P22	Water Quality			Surface Water Quality Core parameters	3.6	4.5
P24	Water Quality			Marine Water Quality Supplemental parameters	2.9	4.5
P30	Water Quality			Marine Water Quality - Toxics & contaminants	3.0	4.5
P31	Water Quality			Surface Water Quality - Toxics & contaminants	3.7	4.5
T06	Terrestrial Ecosystems	Vegetation	Community	Terrestrial Plant Biodiversity	3.6	4.4
P28	Water Quality			Surface Water Quality - Microbiology	2.9	4.3
P07	Climate & Air Quality			Weather & Climate	3.4	4.2
H15	Park Use & Activities			Reef Fisheries Harvest	2.6	4.2
P17	Soil, Water, & Nutrient Dynamics			Flowing surface water hydrology	2.7	4.2
P25	Water Quality			Surface Water Quality Supplemental parameters	3.5	4.2
M06	Marine Ecosystems	Benthic	Population	Benthic Reef Fisheries / Collected species (inverts: sea cucumbers, pololo worm, corals; etc)	2.7	4.1
M22	Marine Ecosystems	Intertidal	Community	Intertidal Biodiversity - Vertebrates, Invertebrates, and Algae	3.1	4.1
M26	Marine Ecosystems	Intertidal	Population	Intertidal Marine Invertebrates, Fish, and Algae	3.0	4.1
T37	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Predatory Terrestrial Vertebrate	3.3	4.1
M18	Marine Ecosystems	Water column (motile)	Population	Water Column Marine Invertebrates	2.8	3.9
M19	Marine Ecosystems	Water column (motile)	Population	Fish Growth/Size and Age Structure, and Recruitment	3.2	3.9
P32	Water Quality			Marine Water Quality - macroinvertebrates	2.8	3.9
T13	Terrestrial Ecosystems	Vegetation	Population	Native Plant Species Protection (T, E, S-o-C species)	4.0	3.9
F2	Freshwater Ecosystems	Consumers	Community	Aquatic and Riparian Species (vertebrate and invertebrate) Biodiversity	3.5	3.8
M04	Marine Ecosystems	Benthic	Community	Subtidal - Hard Bottom (coral reef, colonized basalt, etc.)	2.7	3.8
M07	Marine Ecosystems	Benthic	Population	Benthic Marine Invertebrates and Algae	2.7	3.8
M10	Marine Ecosystems	Benthic	Population	Alien Incipient Coral Disease & Pathogens	2.5	3.8
M12	Marine Ecosystems	Benthic	Population	Alien Incipient Invasives - Benthic Marine	2.8	3.8
M14	Marine Ecosystems	Water column (motile)	Population	Water Column Reef Fisheries	2.2	3.8
P12	Soil, Water, & Nutrient Dynamics			Soil Erosion	2.9	3.8
T19	Terrestrial Ecosystems	Consumers	Community	Terrestrial Vertebrate (including off-shore islets refugia) Biodiversity	3.3	3.8
P11	Soil, Water, & Nutrient Dynamics			Biogeochemical Cycles - Nutrient Cycling	2.5	3.7
P14	Soil, Water, & Nutrient Dynamics			Soil Quality- Chemical	1.9	3.7
P15	Soil, Water, & Nutrient Dynamics			Soil Quality- Physical	2.3	3.7
T04	Terrestrial Ecosystems	Vegetation	Landscape	Fire Effects & Dynamics: Vegetation and Landscape Level	2.5	3.7
M20	Marine Ecosystems	Water column (motile)	Population	Marine Species Protection (T, E, S-o-C species)	3.3	3.7
P33	Water Quality			Surface Water Quality - macroinvertebrates	2.6	3.6
T17	Terrestrial Ecosystems	Vegetation	Population	Alien Incipient Invasive Plants	3.7	3.6
T26	Terrestrial Ecosystems	Consumers	Population	Seabirds (including T & E spp.)	3.5	3.6
T27	Terrestrial Ecosystems	Consumers	Population	Shorebirds and Waterbirds (including T & E spp.)	3.3	3.6
T34	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Predatory Terrestrial Vertebrates	3.4	3.6
M02	Marine Ecosystems	Benthic	Landscape	Benthic Habitats	2.6	3.5
M03	Marine Ecosystems	Benthic	Community	Benthic Marine Invertebrates and Algae Biodiversity	2.8	3.5
M08	Marine Ecosystems	Benthic	Population	Coral Growth/Size and Age Structure, and Recruitment	2.6	3.5
M11	Marine Ecosystems	Benthic	Population	Established Alien Species - Benthic Marine	2.7	3.5
M13	Marine Ecosystems	Water column (motile)	Community	Water Column Marine Vertebrates and Invertebrates Biodiversity	2.8	3.5
H06	Land Use			Land Use(s) Within & Surrounding Parks	3.4	3.4
T08	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Alien Plant Control	3.5	3.4
T09	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Feral Ungulate Control	2.4	3.4
M01	Marine Ecosystems	Benthic	Landscape	Coral Growth (erosion & accretion)	2.7	3.4
T16	Terrestrial Ecosystems	Vegetation	Population	Established Alien Species - Plants	4.0	3.4
T40	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Vertebrates	2.6	3.4
H09	Park Use & Activities			Footprint & Visitor Use Patterns	3.3	3.3
T07	Terrestrial Ecosystems	Vegetation	Community	Long-term Plant Succession	3.5	3.3
P38	Geology	Hazards		Mass Geologic Wasting	1.6	3.2
M09	Marine Ecosystems	Benthic	Population	Established Coral Disease & Pathogens (including bleaching)	2.4	3.2
H08	Park Use & Activities			Marine Recreational Activities & Groundings/Anchor Damage	2.5	3.1
T03	Terrestrial Ecosystems	Vegetation	Landscape	Landscape Fragments, Patch Size, Land Cover	2.6	3.1
P27	Water Quality			Marine Water Quality - Microbiology	2.8	3.0
T23	Terrestrial Ecosystems	Consumers	Population	Forest Birds and Bats (includes T & E spp.)	3.1	3.0
M05	Marine Ecosystems	Benthic	Community	Subtidal - Soft Bottom (sand flat, seagrass bed)	2.4	2.9
P36	Geology	Hazards		Seismicity of Non-Volcanic Origin	1.9	2.8
M23	Marine Ecosystems	Intertidal	Community	Intertidal - Hard Bottom	2.2	2.8
T32	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Feral Ungulates	2.4	2.8
P42	Geology	Landforms		Cave Environmental conditions	2.0	2.6
P44	Geology	Landforms		Cave Geology: karst	0.9	2.5
T21	Terrestrial Ecosystems	Consumers	Community	Recovery/change of Native Wildlife and habitats (including wetlands) with restoration of native vegetation	3.2	2.5
P13	Soil, Water, & Nutrient Dynamics			Soil Quality - Biological	1.7	2.3
P39	Geology	Landforms		Coastal Shoreline Change (erosion & accretion)	3.2	2.3
M24	Marine Ecosystems	Intertidal	Community	Intertidal - Soft Bottom (sand beach, mudflat, mangrove)	2.6	2.3
P10	Soil, Water, & Nutrient Dynamics			Ocean/Physical Dynamics: Currents, Sea Level, Tides/Swell	2.7	2.2
T02	Terrestrial Ecosystems	Vegetation	Landscape	Ecozone Boundaries	2.1	2.2
F4	Freshwater Ecosystems	Consumers	Population	Amphidromous Fauna Size-Age Structure, Reproduction and Recruitment	2.1	2.2
T41	Terrestrial Ecosystems	Cave Systems	Community	Cave & lava tube communities	2.0	2.1
M16	Marine Ecosystems	Water column (motile)	Population	Established Turtle Disease & Pathogens	2.9	2.1
P03	Climate & Air Quality			Atmospheric Gases: Climate Change Indicators, Human Pollutants, Natural-Volcanic	2.2	2.1
P05	Climate & Air Quality			Atmospheric Particulates: Climate Change Indicators, Human Pollutants, Natural-Volcanic	2.2	2.1
P20	Water Quality			Ground Water Quality Core parameters	2.8	2.1
P23	Water Quality			Ground Water Quality Supplemental parameters	2.6	2.1
P29	Water Quality			Ground Water Quality - Toxics & contaminants	2.8	2.1
P18	Soil, Water, & Nutrient Dynamics			Wetlands (incl. anchialine pools) hydrology	3.2	2.0
H14	Park Use & Activities			Culturally Significant Vertebrate Species Harvest	1.6	1.9
P08	Climate & Air Quality			Extreme events (weather & ocean)	3.0	1.9
T18	Terrestrial Ecosystems	Consumers	Community	Terrestrial Invertebrate Biodiversity	2.9	1.9
T24	Terrestrial Ecosystems	Consumers	Population	Herps (native)	1.7	1.9
F5	Freshwater Ecosystems	Consumers	Population	Established Alien Species - Predatory Freshwater (vertebrate and invertebrate)	2.9	1.9
F6	Freshwater Ecosystems	Consumers	Population	Alien Incipient Invasives - Predatory Freshwater (vertebrate and invertebrate)	2.8	1.9
P01	Climate & Air Quality			Visibility	2.9	1.9
P02	Climate & Air Quality			Atmospheric Deposition: Wet (direct & occult) and Dry	2.1	1.9
T25	Terrestrial Ecosystems	Consumers	Population	Invertebrate Charismatic or Species of Concern	3.2	1.9
T28	Terrestrial Ecosystems	Consumers	Population	Terrestrial Invertebrates Associated with Habitat Quality	2.7	1.8

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P19	Soil, Water, & Nutrient Dynamics			Groundwater dynamics	2.4	1.8
T20	Terrestrial Ecosystems	Consumers	Community	Recovery/Change of Native Invertebrates Communities with Native Plant Restoration	2.5	1.7
M17	Marine Ecosystems	Water column (motile)	Population	Established Alien Species - Water Column Marine	2.5	1.7
M21	Marine Ecosystems	Water column (motile)	Population	Alien Incipient Invasives - Water Column Marine	2.1	1.7
M28	Marine Ecosystems	Intertidal	Population	Alien Incipient Invasives - Intertidal Marine	2.6	1.7
T39	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Terrestrial Invertebrates	2.2	1.7
H16	Management Zones			Management Zone uses	3.1	1.6
P06	Climate & Air Quality			Solar radiation	2.7	1.6
P26	Water Quality			Ground Water Quality - Microbiology	2.9	1.6
H11	Park Use & Activities			Bio-prospecting Harvest	1.9	1.5
T33	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Invasive Terrestrial Invertebrate Pests of natural systems	2.4	1.5
H01	Soundscapes			Alien, Natural, Human Soundscapes	2.6	1.4
P09	Climate & Air Quality			Climate Representations - 2- & 3- dimensional	1.7	1.4
M27	Marine Ecosystems	Intertidal	Population	Established Alien Species - Intertidal Marine	2.5	1.4
P43	Geology	Landforms		Cave Geology: non-karst	2.2	1.4
H07	Park Use & Activities			Litter/debris	3.1	1.3
T14	Terrestrial Ecosystems	Vegetation	Population	Established Plant Disease & Pathogens	2.9	1.3
H03	Viewscapes / Lightscapes			Lightscape & Night sky	2.7	1.3
H13	Park Use & Activities			Culturally Significant Plant Harvest	2.5	1.3
T10	Terrestrial Ecosystems	Vegetation	Community	Recovery/Change of Native Vegetation with Invasive Alien Invertebrate Control	1.8	1.3
T30	Terrestrial Ecosystems	Consumers	Population	Established Disease & Pathogens of Terrestrial Vertebrates	2.5	1.3
T15	Terrestrial Ecosystems	Vegetation	Population	Alien Incipient Plant Disease & Pathogens	2.6	1.1
F1	Freshwater Ecosystems	Producers		Community dynamics of primary producers	2.5	1.1
T11	Terrestrial Ecosystems	Vegetation	Population	Invertebrate Biocontrol of Plants	1.7	1.1
T12	Terrestrial Ecosystems	Vegetation	Population	Plant Pathogen Biocontrol of Plants	1.6	1.1
T22	Terrestrial Ecosystems	Consumers	Population	Invertebrate Biocontrol of Invertebrates	1.7	1.1
T29	Terrestrial Ecosystems	Consumers	Population	Terrestrial Invertebrate Species Protection (T, E, S-o-C Species)	2.9	1.1
T36	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Terrestrial Invertebrate Pests (human structures)	1.9	1.1
M15	Marine Ecosystems	Water column (motile)	Population	Established Marine Animal (other than turtles) Disease & Pathogens	1.9	0.9
T05	Terrestrial Ecosystems	Vegetation	Landscape	Forest Dieback	1.5	0.9
T35	Terrestrial Ecosystems	Consumers	Population	Established Alien Species - Terrestrial Invertebrate Pests (agricultural)	1.8	0.9
T01	Terrestrial Ecosystems	Vegetation	Landscape	Soil and Pollen Landscape History	2.3	0.7
T38	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Invasives - Fungi	2.0	0.7
F3	Freshwater Ecosystems	Consumers	Population	Freshwater Animals Disease & Pathogen	2.2	0.5
T31	Terrestrial Ecosystems	Consumers	Population	Alien Incipient Disease & Pathogens of Terrestrial Vertebrates	2.5	0.5
P04	Climate & Air Quality			Marine Aerosols	1.4	0.3
H02	Viewscapes / Lightscapes			Viewsheds	2.7	0.0