

Appendix Q

Plan Components Addressing Species Diversity and Population Viability

CHAPTER 1. INTRODUCTION

The following tables provide a crosswalk between Land and Resource Management Plan (LRMP) components and the ecosystem elements and environmental factors that play a major role in determining the diversity, abundance, and/or distribution of species and populations on the San Juan National Forest (SJNF). They also provide a better understanding of the framework used to address the legal and regulatory requirements for species diversity and population viability within the LRMP (see Section 2.1). In addition to the LRMP components listed below, a number of oil and gas leasing stipulations, as well as direction from documents listed under “Additional Guidance” in the LRMP, provide added protections that may address species diversity and population viability.

Table Q.1: Terrestrial Wildlife

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
Physical Habitat	Quantity	Y	2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.6, 2.2.7, 2.2.9, 2.2.15, 2.2.16, 2.2.18, 2.2.22, 2.3.1, 2.3.2, 2.3.4, 2.3.7, 2.3.8, 2.3.9, 2.3.10, 2.3.12, 2.3.13, 2.3.14, 2.3.15, 2.3.16, 2.3.18, 2.4.6, 2.5.3, 2.6.7, 2.6.9, 2.6.11, 2.6.13, 2.6.14, 2.6.15, 2.7.4, 2.7.5, 2.8.3, 2.8.5, 2.9.1, 2.10.2, 2.11.3, 2.11.6, 2.11.7, 2.11.8, 2.11.9, 3.12.1, 2.13.13, 3.25.17, 3.25.19, 3.25.21, 3.26.2	2.2.48, 2.2.49, 2.2.50, 2.3.25, 2.3.29, 2.4.13, 2.5.15, 2.12.8, 2.12.9, 2.12.10, 2.2.52, 2.2.53, 2.2.54, 2.9.5a, 2.10.6, 2.11.11, 3.25.28	2.2.65, 2.3.36, 2.3.38, 2.3.39, 2.3.44, 2.4.20, 2.4.21, 2.6.29, 2.6.30, 2.11.13	2.2.83, 2.2.85, 2.3.66, 2.3.68, 2.3.69, 2.3.70, 2.3.72, 2.3.73, 2.3.75, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.4.22, 2.4.25, 2.4.26, 2.4.28, 2.5.22, 2.5.27, 2.5.28, 2.6.38, 2.7.17, 2.7.20, 2.12.23, 2.13.27, 2.13.29, 2.13.31, 2.18.15
	Quality/ Structure	Y	2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.5, 2.2.6, 2.2.7, 2.2.15, 2.2.16, 2.2.18, 2.2.22, 2.3.1, 2.3.2, 2.3.4, 2.3.7, 2.3.8, 2.3.9, 2.3.10, 2.3.12, 2.3.13, 2.3.14, 2.3.15, 2.3.16, 2.3.17, 2.3.18, 2.4.2, 2.4.3, 2.4.5, 2.4.6, 2.5.1, 2.5.6, 2.5.7, 2.5.8, 2.6.7, 2.6.9, 2.6.11, 2.6.13, 2.6.14, 2.6.15, 2.7.4, 2.7.5, 2.8.3, 2.8.5, 2.9.1, 2.10.2, 2.11.3, 2.11.6, 2.11.7, 2.11.8, 2.11.9, 2.12.2, 2.13.12, 2.14.36, 2.19.5, 2.21.1, 2.21.2, 2.21.5, 3.12.1, 3.25.4, 3.25.17, 3.25.18, 3.25.19, 3.25.21, 3.27.6	2.3.25, 2.3.29, 2.4.14, 2.4.13, 2.4.16, 2.5.15, 2.5.16, 2.2.48, 2.2.49, 2.2.50, 2.2.52, 2.2.53, 2.2.54, 2.6.21, 2.10.6, 2.9.5a, 2.11.11, 2.12.8, 2.12.9, 2.12.10, 2.21.7, 3.25.28	2.2.65, 2.3.36, 2.3.38, 2.3.39, 2.3.44, 2.6.29, 2.6.30, 2.4.20, 2.4.21, 2.5.20, 2.11.13	2.2.69, 2.2.74, 2.3.66, 2.3.68, 2.3.69, 2.3.70, 2.3.72, 2.3.73, 2.3.74, 2.3.75, 2.3.76, 2.3.77, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.4.22, 2.4.25, 2.4.26, 2.4.28, 2.5.22, 2.5.25, 2.5.26, 2.5.27, 2.5.28, 2.6.38, 2.18.15, 2.2.83, 2.2.85, 2.7.17, 2.7.20, 2.7.22, 2.7.34, 2.11.17, 2.12.23, 2.12.25, 2.13.23, 2.13.27, 2.13.29, 2.13.31,

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
			3.27.7,			
	Distribution	Y	2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.6, 2.2.18, 2.2.21, 2.3.1, 2.3.2, 2.3.4, 2.3.6, 2.3.7, 2.3.8, 2.3.9, 2.3.10, 2.3.12, 2.3.13, 2.3.14, 2.3.15, 2.3.16, 2.3.18, 2.3.19, 2.5.6, 2.5.8, 2.6.7, 2.6.9, 2.6.11, 2.6.13, 2.11.3, 2.11.6, 2.11.7, 2.11.8, 2.11.9, 3.12.1, 2.13.13, 3.26.2, 3.27.6	2.3.25, 2.3.29	2.2.65, 2.3.36, 2.3.38, 2.3.44, 2.6.30	2.2.74, 2.2.85, 2.3.66, 2.3.68, 2.3.69, 2.3.70, 2.3.72, 2.3.73, 2.3.74, 2.3.75, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.4.25, 2.4.26, 2.7.34
	Connectedness	Y	2.2.3, 2.2.4, 2.3.1, 2.3.2, 2.3.4, 2.3.6, 2.3.9, 2.3.12, 2.3.13, 2.3.14, 2.3.15, 2.3.16, 2.3.18, 2.3.19, 2.5.8, 2.5.9, 2.6.7, 2.6.9, 2.6.11, 2.6.13, 2.6.14, 2.6.15, 2.11.3, 2.11.9, 2.8.3, 2.19.3, 2.19.5, 3.12.1, 3.25.18, 3.26.2, 3.27.6, 3.27.7	2.3.25, 2.4.14	2.2.65, 2.3.38, 2.5.16, 2.6.30	2.3.70, 2.3.72, 2.3.73, 2.3.75, 2.3.76, 2.3.77, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.6.38, 2.12.23, 2.12.25, 2.13.27, 2.13.23, 2.13.29, 2.13.31, 2.18.15
Biological Factors	Disease	Y	2.3.1, 2.3.3, 2.3.14	2.3.31	2.3.40, 2.3.41, 2.3.42, 2.3.43, 2.5.20, 2.7.11, 2.7.12	2.3.68, 2.7.17, 2.3.80, 2.3.81, 2.3.82
	Competition	N	2.3.1, 2.3.2, 2.3.5, 2.3.13, 2.3.14, 2.8.3, 2.8.5,		2.3.40, 2.3.41, 2.3.42, 2.3.43	2.3.80, 2.3.83, 2.7.17, 2.7.20
	Exotic Species	N	2.3.3, 2.8.3, 2.8.5	2.3.31		

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
	Natural Ecological Processes	Y	2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.6, 2.2.7, 2.2.15, 2.2.16, 2.2.22, 2.3.1, 2.3.2, 2.3.5, 2.3.7, 2.3.8, 2.3.9, 2.3.10, 2.3.12, 2.3.14, 2.3.15, 2.3.16, 2.3.17, 2.3.18, 2.4.1, 2.4.2, 2.4.6, 2.6.7, 2.10.2, 2.11.3, 2.11.6, 2.11.7, 2.11.8, 2.11.9, 2.10.2, 3.12.1, 3.25.21, 2.5.1, 2.5.6, 2.5.9, 2.6.7, 2.6.9, 2.6.11, 2.6.13, 2.6.14, 2.6.15, 2.8.3, 2.8.5, 2.9.1, 2.10.2	2.2.48, 2.2.49, 2.2.50, 2.4.13, 2.5.15, 2.11.11, 2.10.6	2.3.39, 2.4.20, 2.4.21, 2.6.30, 2.11.13	2.2.74, 2.2.85, 2.3.70, 2.3.73, 2.3.74, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.4.22
Human Factors	Harvest	Y				
	Human Caused Mortality	N	2.3.2, 2.3.6, 2.3.8, 2.3.9, 2.3.14, 2.3.15, 2.3.17, 2.6.14, 2.6.15, 2.12.2	2.3.29	2.3.36, 2.3.38, 2.3.39, 2.3.40, 2.3.41, 2.3.42, 2.3.43, 2.3.44	2.3.66, 2.3.68, 2.3.75, 2.5.27, 2.3.69, 2.3.70, 2.3.73, 2.3.74, 2.3.76, 2.3.77, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83
	Human Caused Disturbance	Y	2.2.2, 2.3.1, 2.3.2, 2.3.6, 2.3.8, 2.3.9, 2.3.12, 2.3.14, 2.3.15, 2.3.16, 2.3.18, 2.6.11, 2.13.6, 2.13.13, 2.14.36, 2.19.3, 2.19.5, 2.21.5, 3.25.4	2.6.21, 2.13.19	2.3.36, 2.3.38, 2.3.39, 2.5.20, 2.6.30	2.3.66, 2.3.68, 2.3.69, 2.3.70, 2.3.72, 2.3.75, 2.3.76, 2.3.77, 2.3.79, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.6.38, 2.11.17, 2.12.25, 2.13.27, 2.13.23, 2.13.29, 2.13.31,
Species-Specific Management	Monitoring of Listed or Sensitive Species	N		2.3.30	2.3.38,	2.3.67

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
	Recovery of Listed or Sensitive Species	N	2,2,3, 2,2,4, 2,2,7, 2,2,22, 2.3.1, 2.3.3, 2.3.4, 2.3.6, 2.3.7, 2.3.8, 2.3.9, 2.3.12, 2.3.13, 2.3.14, 2.3.15, 2.3.16, 2.3.17, 2.3.18, 2.3.19, 2.4.5, 2.4.6, 2.5.9, 2.6.7, 2.6.9, 2.6.11, 2.21.5, 3.27.7	2.3.25, 2.3.28, 2.3.29, 2.3.30, 2.3.31, 2.4.13, 2.5.15	2.2.65 2.3.36, 2.3.38, 2.3.39, 2.3.40, 2.3.41, 2.3.42, 2.3.43, 2.3.44, 2.4.20, 2.4.21, , 2.5.20, 2.6.30, 2.7.11, 2.7.12, 2.11.13	2,2,74, 2.3.68, 2.3.69, 2.3.70, 2.3.72, 2.3.73, 2.3.74,2.3.75, 2.3.80, 2.3.81, 2.3.82, 2.3.83, 2.5.27, 2,4,22, 2.4.25, 2.4.26, 2.5.22, 2.5.25, 2.5.26, 2.5.28, 2.18.15

Table Q.2: Aquatic Ecosystems and Fisheries

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
Physical Factors	Water Quantity	Y	2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.5, 2.5.6, 2.5.12, 2.6.7, 2.6.9, 2.6.11, 2.6.13, 2.6.14, 2.6.15, 2.6.16, 2.6.17	2.5.14, 2.6.28,	2.4.19, 2.5.18	2.5.22, 2.6.39
	Water Quality	Y	2.4.3, 2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.7, 2.6.1, 2.6.2, 2.6.3, 2.6.4, 2.6.5, 2.6.10,	2.6.18, 2.6.19, 2.6.20, 2.6.21, 2.6.22, 2.6.23	2.6.29, 2.6.30, 2.11.14	2.4.27, 2.5.24, 2.5.25, 2.5.26, 2.5.28, 2.6.32, 2.6.33, 2.6.34, 2.6.35, 2.6.36, 2.6.37, 2.6.38, 2.6.39, 2.6.40, 2.11.17
	Substrate	N	2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.5, 2.6.7, 2.6.12	2.5.15		2.5.24, 2.5.25
	Woody Debris	N	2.4.3, 2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.5	2.5.15		2.4.27
	In-channel features	N	2.4.3, 2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.5, 2.5.9, 2.6.7, 2.6.8, 2.6.9	2.5.15		
	Habitat Connectivity	N	2.5.1, 2.5.3, 2.5.8, 2.5.9	2.5.16		2.5.23

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
Biological Factors	Introduced/ Invasive Spp.	Y	2.5.1, 2.8.3, 2.8.6	2.3.31	2.8.13, 2.11.14	2.8.14, 2.8.15, 2.8.16, 2.8.17, 2.8.18, 2.8.19
	Disease	Y	2.5.1, 2.5.10	2.3.31	2.5.19, 2.5.20	
	Riparian Veg.	N	2.4.1, 2.4.2, 2.4.3, 2.5.2, 2.6.6, 2.6.7, 2.6.8, 2.14.22	2.4.13, 2.4.15, 2.4.16, 2.4.17, 2.4.18	2.6.30	2.4.21, 2.4.22, 2.4.24, 2.4.25, 2.4.27, 2.5.26, 2.7.22, 2.7.23, 2.11.17
Human Factors	Fishing mortality	N	2.5.1			
	Stocking	N	2.5.1			
Species Specific Factors	Conservation Plans and Strategies	NA	2.5.11, 2.5.12, 2.5.13	2.5.17		2.5.21
	Other					2.5.27, 2.5.28

Table Q.3: Terrestrial Ecosystems and Plant Species Diversity and Viability Table

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
Physical	Soil conditions		2.2.32-36	2.2.42, 2.2.44, 2.2.53, 2.2.56	2.2.61, 2.2.65	2.2.66, 2.2.71-72, 2.2.74
	Forest stand structure		2.2.1, 2.2.5, 2.2.19-25	2.2.45, 2.2.51	---	2.2.73, 2.2.78, 2.2.79
	Distribution of various threatened and endangered species across the landscape		2.2.3, 2.2.4, 2.2.18	2.2.46-50	---	2.2.70, 2.2.81

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
	Abundance and distribution of desirable native plant species within threatened and endangered species		2.2.8-11, 2.2.18, 2.2.20-31	2.2.43, 2.2.44, 2.2.53	---	2.2.69, 2.2.77
	Presence or condition of habitat for special status plant species or other rare plant species		2.2.6, 2.2.38-41	---	2.2.65	2.2.67, 2.2.76
	Presence of or impacts to soil crusts		2.2.25, 2.2.27-29, 2.2.37	2.2.44	---	2.2.75
	Resilience to climate change and other stressors		2.2.1, 2.2.6-7, 2.2.12-16, 2.2.18	2.2.45, 2.2.54-55, 2.2.57-58, 2.2.60	---	2.2.82
Biological	Native plant species diversity		2.2.1, 2.2.14, 2.2.18	2.2.43-44, 2.2.51-55, 2.2.57-59	2.2.63, 2.2.64, 2.2.65	2.2.68, 2.2.69, 2.2.82
	Impacts to special status plant species and other rare plant species		2.2.41	2.2.55	2.2.63, 2.2.64, 2.2.65	2.2.68
	Presence of invasive plant species		2.2.2, 2.2.20-31	2.2.44	2.2.62	2.2.80

Table Q.4: Wetland and Riparian Ecosystems

Category	Factor	Significant Factor (Y/N)	LRMP Components			
			Desired Conditions	Objectives	Standards	Guidelines
Physical Factors	Hydrology and Water Sources	Y	2.2.41, 2.4.6, 2.4.7, 2.5.4, 2.6.8, 2.6.9, 2.6.11	2.4.15	2.4.19, 2.6.29, 2.6.30	2.4.22, 2.5.28, 2.7.22, 2.7.23
	Soils	Y	2.4.2, 2.4.7, 2.4.9, 2.4.10, 2.4.11, 2.4.12	2.4.15	2.2.80, 2.4.19	2.4.22, 2.4.24, 2.7.23
Biological Factors	Introduced/ Invasive Spp.	Y	2.4.1, 2.8.3	2.4.16	2.8.13, 2.11.14	2.4.27, 2.8.16, 2.8.18, 2.8.19
	Special Status Species	N	2.2.41, 2.2.43	2.5.15	2.2.66, 2.2.67	2.2.71, 2.2.80, 2.5.28
	Riparian Veg.	Y	2.4.1, 2.4.2, 2.4.3, 2.4.6, 2.4.7, 2.4.8, 2.5.2, 2.6.7, 2.6.8	2.4.13, 2.4.15, 2.4.17, 2.4.18	2.4.12, 2.4.19, 2.4.20, 2.4.21, 2.8.13, 2.6.30	2.4.21, 2.4.22, 2.4.23, 2.4.25, 2.4.26, 2.5.26, 2.7.23, 2.7.28