



INFORME ANUAL N°6

Plan de Manejo Biótico

Proyecto “Modificaciones y Mejoramiento del Sistema de Pozas de Evaporación Solar en el Salar de Atacama (RCA RE N°21/2016)”

ANEXO I

Vegetación y Flora

Monitoreo Invierno 2021

Monitoreo Verano 2022



Región de Antofagasta

Agosto de 2022

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1 ANEXOS DE VEGETACIÓN Y FLORA

1.1 Cartografía COT (Verano 2022).

1.1.1 Archivos PDF Cartografía COT (Verano 2022)

Archivo: “Anexo_Vegetacion_flora_Cartografía_COT_(Verano 2022).PDF”

1.2 Ficha de terreno para la toma de datos con el método intercepto de puntos (Point Quadrat).

		FORMULARIO "Vegetación Zonal"			REG 11-02				
		PROYECTO :		Plan de seguimiento ambiental Albemarle					
LOCALIZACIÓN:		Transecta (PM):			Orientación				
N°folio/Responsables:		Formación cart-COT:							
Campaña/Fecha		Formación Vegetal:							
Coordenadas I E: N:		Especies dominantes:							
Coordenadas F E: N:		Grado de Alteración:							
Altitud (m):		Contenido de humedad			No saturado / Saturado / Sobresaturado				
N° fotos:		% Afloramiento salino			1 / 2 / 3 / 4 / 5				
Int(m)	sp1	sp2	sp3	sp4	Int(m)	sp1	sp2	sp3	sp4
0,1					6,3				
0,2					6,4				
0,3					6,5				
0,4					6,6				
0,5					6,7				
0,6					6,8				
0,7					6,9				
0,8					7				
0,9					7,1				
1					7,2				
1,1					7,3				
1,2					7,4				
1,3					7,5				
1,4					7,6				
1,5					7,7				
1,6					7,8				
1,7					7,9				
1,8					8				
1,9					8,1				
2					8,2				
2,1					8,3				
2,2					8,4				
2,3					8,5				
2,4					8,6				
2,5					8,7				
2,6					8,8				
2,7					8,9				
2,8					9				
2,9					9,1				
3					9,2				
3,1					9,3				
3,2					9,4				
3,3					9,5				
3,4					9,6				
3,5					9,7				
3,6					9,8				
3,7					9,9				
3,8					10				
3,9					10,1				
4					10,2				
4,1					10,3				
4,2					10,4				
4,3					10,5				
4,4					10,6				
4,5					10,7				
4,6					10,8				
4,7					10,9				
4,8					11				
4,9					11,1				
5					11,2				
5,1					11,3				
5,2					11,4				
5,3					11,5				
5,4					11,6				
5,5					11,7				
5,6					11,8				
5,7					11,9				
5,8					12				
5,9					12,1				
6					12,2				
6,1					12,3				
6,2					12,4				

Fuente: Cedrem Consultores.

1.3 Tablas y gráficos de análisis de cobertura desde Monitoreo Base 0

Tabla N° 1-1. Características físicas del suelo sobre el contenido de humedad en las transectas en monitoreos de invierno y verano, M1, M2, M3, M4, M5, M6, M7, M9, M10, M12 y MB0.

Formación vegetal	Sub sector	Transecta	Contenido Humedad en Monitoreos										
			MB0 Monitoreo Base 2016	M1 Invierno 2016	M2 Verano 2017	M3 Invierno 2017	M4 Verano 2018	M5 Invierno 2018	M6 Verano 2019	M7 Invierno 2019	M9 Invierno 2020	M10 Verano 2021	M12 Verano 2022
Herbazal de <i>Distichlis spicata</i>	P	T08	Ns	Ns	Ss	Ns	Ns	S	S	S	Ss	S	Ns
		T09	Ss	S	Ns	Ns	Ns	Ns	S	S	S	S	Ns
	T	T20	Ns	Ns	Ns	Ns	Ns	Ns	Ns	S	S	Ns	Ns
		T21	S	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
		T22	S	Ns	S	Ns	Ns	Ns	S	Ns	Ns	Ns	Ns
		T26	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	S	Ns	Ns
		T27	-	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
		T28	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	S	Ns	Ns
Herbazal de <i>Juncus balticus</i>	LP	T13	S	Ns	S	Ns	Ns	Ns	Ns	Ns	S	Ns	Ns
	T	T18	Ns	Ns	Ns	Ns	Ns	Ns	S	Ns	Ns	Ns	Ns
		T30	S	Ns	Ns	Ns	Ns	Ns	Ns	Ns	S	Ns	Ns
		T31	Ns	Ns	S	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
Herbazal de <i>Schoenoplectus californicus</i>	P	T01	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss
		T02	S	S	S	Ss	Ss	S	S	S	S	S	Ns
		T03	Ns	S	Ss	S	S	S	Ss	Ss	Ss	Ss	Ss
		T04	Ns	Ns	Ss	Ns	S	S	S	S	S	Ns	S
	T	T19	-	Ns	S	S	S	S	S	S	S	Ns	Ns
		T29	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	S	Ss
Herbazal de <i>Triglochin concinna</i>	LB	T10	Ss	Ns	Ns	Ss	Ns	S	Ns	Ns	S	S	Ns
	LP	T11	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss	Ss
Matorral de <i>Sarcocornia fruticosa</i>	LP	T12	Ss	Ns	S	S	Ns	S	S	S	-	Ns	Ss
	AQ	T15*	-	S	S	Ss	S	Ns	-	Ss	-	Ns	Ns
		T16*	Ss	S	S	Ss	S	S	-	S	-	Ns	Ns
		T17*	Ss	Ss	Ss	Ss	S	S	-	Ss	-	S	Ns
P	T05	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
	T06	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns

Formación vegetal	Sub sector	Transecta	Contenido Humedad en Monitoreos										
			MB0 Monitoreo Base 2016	M1 Invierno 2016	M2 Verano 2017	M3 Invierno 2017	M4 Verano 2018	M5 Invierno 2018	M6 Verano 2019	M7 Invierno 2019	M9 Invierno 2020	M10 Verano 2021	M12 Verano 2022
Matorral de <i>Tessaria absinthioides</i>	T	T07	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
		T23	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns	Ns
		T24	Ns	Ns	Ns	Ns	Ns	Ns	S	Ns	Ns	Ns	Ns
		T25	-	Ns	Ns	Ns	Ns	Ns	S	Ns	S	Ns	Ns
Área desprovista de vegetación	S	T14	S	-	-	-	-	-	-	-	-	-	

Donde: Contenido de Humedad: Ns= No saturado, S= Saturado, Ss= Sobresaturado.

*: Transectas T15, T16 y T17 del subsector Aguas de Quelana sin muestreo estacional en Monitoreo 6 y Monitoreo 9 por restricciones de acceso; Transecta T12 en subsector La Punta sin muestreo estacional por restricciones de acercamiento por nidificación de aves en M9, Monitoreo 8 (verano 2020) sin muestreo por restricciones en el marco de la Pandemia Covid-19, Monitoreo 11 (invierno 2021) no se realizó por restricciones de acceso y razones de seguridad a causa de movilizaciones sociales en la zona.

Códigos subsectores: P= Peine; T= Tilopozo; LP: La Punta; LB= La Brava; AQ= Aguas de Quelana; S= Soncor.

Fuente: Elaboración propia.

Tabla N° 1-2. Características físicas del suelo sobre el porcentaje de afloramiento salino en las transectas en monitoreos de invierno y verano, M1, M2, M3, M4, M5, M6, M7, M9, M10, M12 y MB0.

Formación vegetal	Sub sector	Transecta	% Afloramientos salinos en Monitoreos										
			MB0 Monitoreo Base 2016	M1 Invierno 2016	M2 Verano 2017	M3 Invierno 2017	M4 Verano 2018	M5 Invierno 2018	M6 Verano 2019	M7 Invierno 2019	M9 Invierno 2020	M10 Verano 2021	M12 Verano 2022
Herbazal de <i>Distichlis spicata</i>	P	T08	>80%	>80%	>80%	>80%	>80%	>80%	10-30%	30-50%	>80%	>80%	50-80%
		T09	>80%	>80%	>80%	>80%	30-50%	>80%	50-80%	30-50%	>80%	>80%	50-80%
	T	T20	50-80%	>80%	>80%	>80%	30-50%	>80%	30-50%	<10%	30-50%	30-50%	>80%
		T21	>80%	>80%	>80%	>80%	>80%	50-80%	>80%	>80%	>80%	>80%	>80%
		T22	>80%	>80%	>80%	>80%	>80%	50-80%	50-80%	>80%	>80%	>80%	50-80%
		T26	>80%	>80%	>80%	>80%	50-80%	50-80%	>80%	10-30%	30-50%	10-30%	<10%
		T27	>80%	10-30%	10-30%	<10%	10-30%	<10%	10-30%	<10%	<10%	10-30%	<10%
		T28	50-80%	>80%	>80%	50-80%	>80%	30-50%	>80%	>80%	30-50%	>80%	>80%
Herbazal de <i>Juncus balticus</i>	LP	T13	>80%	>80%	>80%	>80%	>80%	>80%	50-80%	50-80%	>80%	>80%	50-80%
	T	T18	>80%	>80%	>80%	>80%	>80%	>80%	>80%	50-80%	>80%	>80%	50-80%

Formación vegetal	Sub sector	Transecta	% Afloramientos salinos en Monitoreos											
			MB0 Monitoreo Base 2016	M1 Invierno 2016	M2 Verano 2017	M3 Invierno 2017	M4 Verano 2018	M5 Invierno 2018	M6 Verano 2019	M7 Invierno 2019	M9 Invierno 2020	M10 Verano 2021	M12 Verano 2022	
		T30	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	50-80%	>80%	50-80%
		T31	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%
Herbazal de <i>Schoenoplectus californicus</i>	P	T01	10-30%	<10%	10-30%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
		T02	10-30%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
		T03	10-30%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
		T04	10-30%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
	T	T19	-	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
		T29	-	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
Herbazal de <i>Triglochin concinna</i>	LB	T10	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%	>80%
	LP	T11	>80%	>80%	>80%	>80%	50-80%	>80%	>80%	50-80%	>80%	>80%	50-80%	50-80%
Matorral de <i>Sarcocornia fruticosa</i>	LP	T12	>80%	>80%	>80%	>80%	>80%	10-30%	10-30%	>80%	-	>80%	>80%	>80%
	AQ	T15*	>80%	50-80%	>80%	>80%	>80%	50-80%	-	>80%	-	>80%	>80%	>80%
		T16*	>80%	>80%	>80%	>80%	>80%	>80%	>80%	-	>80%	-	>80%	>80%
Matorral de <i>Tessaria absinthioides</i>	P	T05	<10%	<10%	>80%	50-80%	<10%	<10%	30-50%	<10%	<10%	<10%	50-80%	50-80%
		T06	<10%	<10%	<10%	50-80%	<10%	<10%	30-50%	<10%	30-50%	<10%	30-50%	30-50%
		T07	<10%	<10%	10-30%	10-30%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	30-50%
	T	T23	-	50-80%	>80%	30-50%	30-50%	30-50%	30-50%	30-50%	>80%	30-50%	>80%	50-80%
		T24	10-30%	50-80%	>80%	50-80%	>80%	10-30%	10-30%	>80%	30-50%	30-50%	30-50%	30-50%
		T25	-	>80%	>80%	50-80%	10-30%	30-50%	10-30%	>80%	10-30%	>80%	10-30%	10-30%
Área desprovista de vegetación	S	T14	>80%	-	-	-	-	-	-	-	-	-	-	-

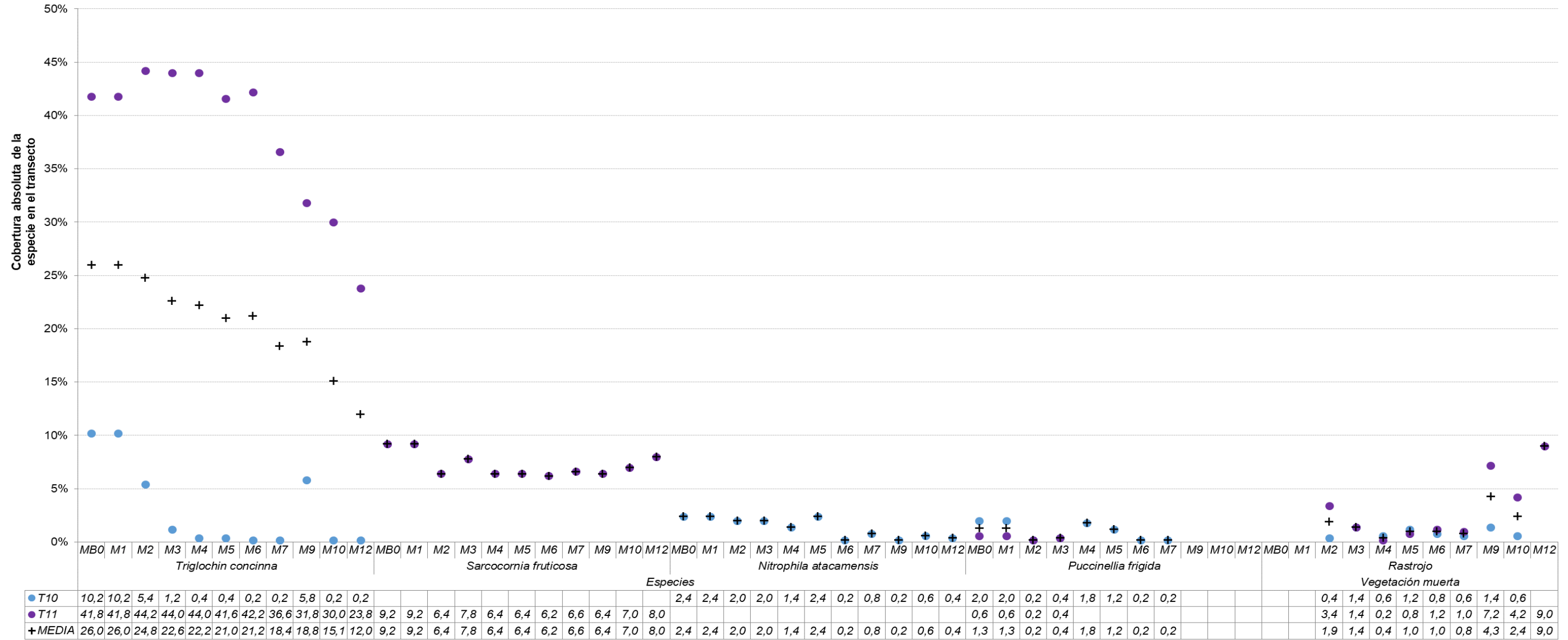
Donde *: Transectas T15, T16 y T17 del subsector Aguas de Quelana sin muestreo estacional en Monitoreo 6 y Monitoreo 9 por restricciones de acceso; Transecta T12 en subsector La Punta sin muestreo estacional por restricciones de acercamiento por nidificación de aves en M9, Monitoreo 8 (verano 2020) sin muestreo por restricciones en el marco de la Pandemia Covid-19, Monitoreo 11 (invierno 2021) no se realizó por restricciones de acceso y razones de seguridad a causa de movilizaciones sociales en la zona.

Códigos subsectores: P= Peine; T= Tilopozo; LP: La Punta; LB= La Brava; AQ= Aguas de Quelana; S= Soncor.

Fuente: Elaboración propia

Figura N° 1-4. Cobertura absoluta de las especies registradas en las transectas de Monitoreo Base 0 (MB0), M1, M2, M3, M4, M5, M6, M7, M9, M10 y M12, en la formación de herbazal de *Triglochin concinna*.

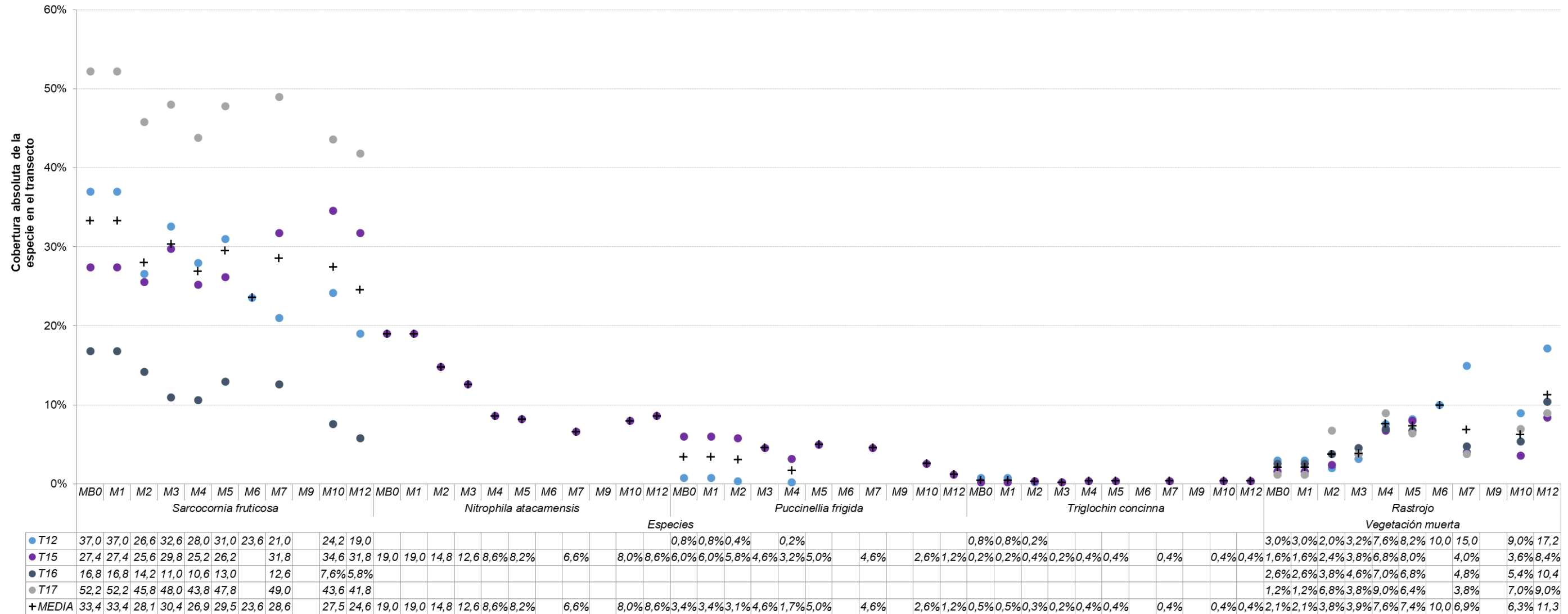
Herbazal de *Triglochin concinna*



Monitoreo verano 2020 (M8) no se realizó debido de las condiciones excepcionales establecidas durante ese año en el marco de la Pandemia Covid-19.
 Monitoreo invierno 2021 (M11) no se realizó por restricciones de acceso y razones de seguridad a causa de movilizaciones sociales en la zona.
 Fuente: Elaboración propia.

Figura N° 1-5. Cobertura absoluta de las especies registradas en las transectas de Monitoreo Base 0 (MB0), M1, M2, M3, M4, M5, M6, M7, M9, M10 y M12, en la formación de matorral de *Sarcocornia fruticosa*.

Matorral de *Sarcocornia fruticosa*



Transectas 115, 116 y 117 del subsector Aguas de Quilana sin muestreo estacional en Monitoreo 6 por restricciones de acceso.
 Monitoreo verano 2020 (M8) no se realizó debido a las condiciones excepcionales establecidas durante ese año en el marco de la Pandemia Covid-19.
 M9 sin información en transecta T12 en subsector La Punta sin muestreo de transecta por restricciones de acercamiento por resguardo de fauna (notificación de aves). Subsector Aguas de Quilana sin muestreo de transectas por restricciones de acceso según indicaciones de CONAF regional por seguridad sanitaria. Monitoreo invierno 2021 (M11) no se realizó por restricciones de acceso y razones de seguridad a causa de movilizaciones sociales en la zona.
 Fuente: Elaboración propia.

Tabla N° 1-3. Cobertura absoluta y promedio de las transectas en Monitoreo Base 0 (M0), M1, M2, M3, M4, M5, M6, M7, M9, M10 y M12

Formación vegetal	Transecta	Subsector	Cobertura vegetación (%)																								Cobertura absoluta (%) Otros recubrimientos											
			Absoluta												Absoluta muerta/rastrojo																							
			M0	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12	M0	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12				
Herbazal de sca	T01	P	207	218	264	253	224	232	230	219	252	218	270	-	32	-	-	42	16	180	212	314	80	54	08	-	-	08	-	-	02	-	-	-	-			
	T02		156	78	125	96	106	84	133	127	141	129	154	-	30	30	36	29	47	24	24	26	32	21	-	-	-	-	-	-	-	-	-	-				
	T03		150	113	134	128	96	109	121	119	130	156	123	-	28	-	-	15	18	16	84	120	24	150	-	-	-	-	-	-	-	-	-	-	-			
	T04	189	130	182	170	160	178	185	150	161	147	154	-	20	-	16	60	-	-	11	16	60	106	10	-	-	-	02	-	-	02	-	-	-	-			
	T19	T	151	123	156	149	151	137	146	148	141	147	135	-	-	-	-	-	12	-	-	9	02	15	-	-	-	-	-	-	-	-	-	-	-			
T29	136		123	146	129	159	142	130	143	140	136	84	-	-	-	-	02	06	45	12	08	16	41	-	-	-	-	-	-	-	-	-	-	-				
Herbazal de jb	T13	LP	51	51	25	36	34	38	25	40	28	35	20	20	17	14	10	12	18	10	21	11	21	61	61	60	63	61	60	60	59	62	62	63				
	T18		27	27	10	8	12	13	7	11	11	10	4	3	3	6	8	9	6	11	9	12	9	6	7	8	8	7	8	7	8	8	7	8				
	T30	T	43	38	36	34	37	31	29	32	19	20	17	6	5	13	9	9	15	13	18	22	11	14	6	5	6	5	5	5	5	5	5	5				
	T31		10	10	3	6	7	8	4	6	4	5	4	3	3	7	6	5	3	5	8	9	5	5	8	8	8	8	8	8	8	8	8	8				
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	T09		21	21	22	22	21	22	29	30	20	24	20	7	7	10	16	21	11	19	10	22	18	18	7	6	6	6	6	6	6	6	6	6				
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	T21		30	30	5	4	3	4	4	5	4	4	6	3	3	3	4	4	2	4	2	6	3	5	9	9	9	9	9	9	9	9	9	9	9			
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	T28		18	18	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Herbazal de tc	T10	LB	14	14	7	3	3	4	0	6	1	0	-	-	0	1	0	1	0	1	1	0	-	8	9	9	9	9	9	9	9	9	9					
	T11	LP	51	51	50	52	50	48	48	43	38	37	31	-	-	3	1	0	1	1	1	1	1	5	4	4	4	4	4	4	4	4	4	4				
Matorral de Sf	T12	AQ	36	36	27	32	28	31	23	21	si	24	19	30	30	20	32	7	8	10	15	si	9	17	5	7	6	6	6	6	6	6	6	6				
	T15		52	52	46	47	37	39	si	43	si	45	42	16	20	24	38	6	8	si	4	si	3	8	5	5	5	5	5	5	5	5	5	5				
	T16		16	16	14	11	10	10	13	si	12	si	7	5	2	2	3	4	6	7	6	8	si	4	8	8	8	8	8	8	8	8	8	8	8			
	T17		52	52	45	48	43	47	si	49	si	43	41	12	12	6	3	9	6	4	si	3	si	7	9	4	4	4	4	4	4	4	4	4	4			
Matorral de Tb	T05	P	80	80	76	58	50	56	50	64	44	74	40	32	32	58	52	58	36	136	66	60	56	76	88	86	89	89	90	81	87	89	87	88				
	T06		24	24	14	13	14	14	10	11	18	7	5	7	7	15	17	15	17	30	19	16	21	18	7	7	6	6	6	6	6	6	6	6				
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	T24		63	63	33	51	27	63	29	44	39	33	32	7	7	3	11	3	4	2	18	26	29	38	4	3	3	3	3	3	3	3	3	3				
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M6: sin información en subsector Aguas de Quebrada sin muestreo estacional en Monitoreo 6 por restricciones de acceso; y en relación a la entrega del Informe semestral M6 (invierno 2018) varían valores del subsector Tilpozo para dicha campaña por compararse en M6 que el Taxo y se trata de una etapa vegetativa (post-incendio) de *S. californicus*;

M8: No se incluye Monitoreo 8 de verano 2020, debido a que no fue posible realizar la campaña dada las condiciones excepcionales del presente año, en el marco de la Pandemia Covid-19.

M9: sin información en transecta T12 en subsector La Punta sin muestreo de transecta por restricciones de acercamiento por resguardo de fauna (notificación de aves). Subsector Aguas de Quebrada sin muestreo de transectas por restricciones de acceso según indicaciones de CONAF regional por seguridad sanitaria, M11: Monitoreo invierno 2021 no se realizó por restricciones de acceso y razones de seguridad a causa de movilizaciones sociales en la zona.

Códigos especies: sca=Schoenoplectus californicus, cp=Distichlis spicata, tc=Triglochin concinna, S=Sarcocornia fruticosa, T=Tessaria absinthioides.

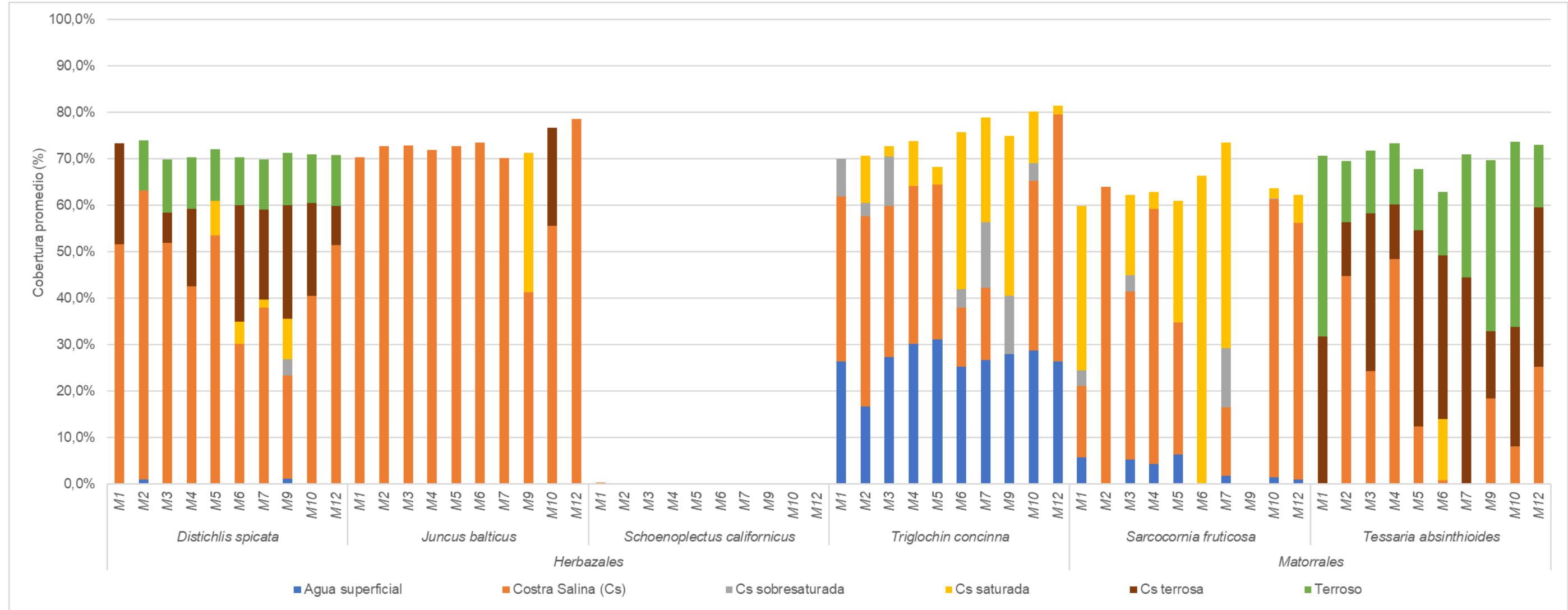
Códigos subsectores: P=Peine; T=Tilpozo; L=La Punta; B=La Brava; Q=Aguas de Quebrada.

Fuente: Elaboración propia.

Tabla N° 1-4. Cobertura absoluta promedio de otros recubrimientos en las transectas en M1, M2, M3, M4, M5, M6, M7, M9, M10 y M12

Recubrimiento	Formación vegetal	Herbazal de <i>Schoenoplectus californicus</i>						Herbazal de <i>Juncus balticus</i>				Herbazal de <i>Distichlis spicata</i>						Herbazal de <i>Triglochin concinna</i>		Matorral de <i>Sarcocornia fruticosa</i>			Matorral de <i>Tessaria absinthioides</i>												
		Transecta/ Monitoreo		T01	T02	T03	T04	T19	T29	T13	T18	T30	T31	T08	T09	T20	T21	T22	T26	T27	T28	T10	T11	T12	T15*	T16*	T17*	T05	T06	T07	T23	T24	T25		
		Sector	Peine			T			LP	T			P			Tilopozo						LB	LP	AQ			P			T					
Agua superficial	M1	08																			420	108			124		102								
	M2												76									334													
	M3																					472	74			32	26	154							
	M4	08																				514	88	172											
	M5														02							502	120			94	24	138							
	M6																					498	06												
	M7	02																				496	38			02	18	52							
	M9													70	16							466	94												
	M10																					540	34	60											
	M12																					500	28	40											
	Costra Salina (Cs)	M1					1,0			61,2	70,6	63,4	86,2	51,0	70,6	48,6	93,6	80,8				680	43,4	27,6	59,4		22								
		M2								61,6	83,8	55,4	89,4	47,0	67,4	50,0	91,6	82,4	89,4	22	67,8	58,8	23,2	71,2	55,6	82,0	47,4	86,6	70,6		77,8	34,0			
M3									60,2	83,0	60,2	88,2	42,8	61,6		90,6	78,2	79,6		63,2	48,0	17,0	28,8	1,0	81,8	32,8	86,6		76,2						
M4									63,0	80,6	55,4	87,8	60,6	19,6		92,0	81,4	86,4			44,6	23,4	32,4	57,8	82,4	47,2	89,2		78,8	47,6	74,6				
M5						0,2			61,4	82,2	59,2	87,8	0,2	65,4	54,0	91,0	73,8	84,4		58,0	45,0	21,8	22,0	13,6	78,0				73,8	0,2					
M6									60,8	82,0	61,2	90,0	43,2	49,4		93,0	45,2		4,4	6,0	22,6	3,0							5,2						
M7									60,8	80,6	53,8	85,4	43,2	47,4	38,4	91,4	83,2				29,2	2,0	14,8												
M9										78,2		87,0		1,0			93,0	84,2												69,8	40,8				
M10									62,8		70,0	89,8	46,0	57,4	45,6	92,6	77,8		4,6		44,8	28,4	59,8	52,0	86,8	40,8									
M12									63,4	87,2	73,4	90,4	50,2	61,0	40,8	87,4	81,4	90,4			45,8	60,6	59,8	36,4	83,8	40,8			79,4					72,0	
Cs sobresaturada		M1																					16,2			3,4	4,0	6,0							
		M2																					5,6												
	M3																					21,4			14,2										
	M4																																		
	M5																																		
	M6																						8,0												
	M7																					28,2			35,8	3,4	11,0								
	M9												25,4		0,2							20	23,0												
	M10																					7,6	0,6												
	M12																																		
	Cs saturada	M1																							36,8	74,4	30,4								
		M2																					20,2												
M3																						4,4	35,4	33,6											
M4																						19,6	14,8												
M5													60,0									7,6	33,8	33,8		32,0									
M6													4,2	2,2			3,2				26,4	41,2	66,4						29,2	49,4					
M7													1,2	11,0	1,8						19,6	25,4	49,4	19,6	77,4	31,0									
M9									59,2		60,6		18,8	51,8							44,2	24,8													
M10																						22,2	0,4			8,4									
M12																						3,8			15,8		8,4								
Cs terrosa		M1																88,4	86,4											76,2	44,4	69,8			
		M2																																	69,2
	M3																											89,0				44,2	70,6		
	M4													37,4	30,0																				
	M5																											90,8	70,8			32,8	60,2		

Figura N° 1-7. Cobertura promedio de otros recubrimientos por formación vegetal en los monitoreos M1, M2, M3, M4, M5, M6, M7, M9, M10 y M12: herbazales y matorrales.



Donde: M1 monitoreo invierno 2016, M2 monitoreo verano 2017, M3 monitoreo invierno 2017, M4 monitoreo verano 2018, M5 invierno 2018, M6 monitoreo verano 2019, M7 invierno 2019, M9 invierno 2020, M10 monitoreo verano 2021; M6 sin información en subsector Aguas de Queda sin muestreo estacional en Monitoreo 6 por restricciones de acceso, y en relación a la entrega del Informe Semestral M5 (invierno 2018) varían valores del subsector Tilco pozos para dicha campaña por compararse en M6 que el taxa Cyperaceae trabada en la etapa vegetativa (post incendio) de *S. californicus*.; M8: No se incluye Monitoreo 8 de verano 2020, debido a que no fue posible realizar la campaña dada las condiciones excepcionales del presente año, en el marco de la Pandemia Covid-19. M9: sin información en transecta T12 en subsector La Punta sin muestreo de transecta por restricciones de acercamiento por resguardo de fauna (nubilación de aves). Subsector Aguas de Queda sin muestreo de transectas por restricciones de acceso según indicaciones de CONA regional por seguridad sanitaria, M11: Monitoreo invierno 2021 no se realizó por restricciones de acceso y razones de seguridad a causa de movilizaciones sociales en la zona.
 Fuente: Elaboración propia.

Especie	Sub sector Área de estudio																																															
	La Punta y La Brava												Peine												Aguas de Quelana												Tilopozo											
	MB0	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12	MB0	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12	MB0	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12	MB0	M1	M2	M3	M4	M5	M6	M7	M9	M10	M12				
Riqueza total por Monitoreo	6	6	6	6	7	6	6	6	5	5	5	5	5	5	5	5	5	8	7	5	5	6	4	4	4	4	4	4	-	4	s.i	4	4	6	6	7	6	7	6	6	6	6	6	8	7			
Riqueza total por Sector	8												9												4												9											

*: En relación a la entrega del Informe semestral M5 (invierno 2018) no se incluye el taxo *Cyperaceae*, por encontrarse en M6 que se trata de una etapa vegetativa (post incendio) de *Schoenoplectus californicus*, variando los valores de riqueza para el subsector de Tilopozo.
 M8: No se incluye Monitoreo 8 de verano 2020, debido a que no fue posible realizar la campaña dada las condiciones excepcionales del presente año, en el marco de la Pandemia Covid-19.
 M11: Monitoreo invierno 2021 no se realizó por restricciones de accesos y razones de seguridad a causa de movilizaciones sociales en la zona.
 Fuente: Elaboración propia.

1.5 Cartografía Vegetación Activa (NDVI) (Verano 2022).

1.5.1 Archivos PDF Cartografía Vegetación Activa NDVI (Verano 2022)

Archivo: “Anexo_Vegetacion_Activa_NDVI_(Verano2022).PDF”

1.6 Metadata de imágenes satelitales – Pleiades 1A

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