

**Table S1.** Wavelength classification according to separability thresholds for the seasonal Transformed Divergence (TD), Jeffries-Matusita (JM), and M-statistic (M) metrics.

Season	Separability metric	Separability class		
		Poor	Moderate	Good
Spring	TD	84.83%	1.92%	13.25%
	JM	93.71%	6.29%	0.00%
	M	83.15%	16.85%	
Summer	TD	80.40%	2.04%	17.57%
	JM	80.76%	4.80%	14.45%
	M	39.57%	60.43%	
Fall	TD	99.90%	0.12%	0.00%
	JM	100%	0.00%	0.00%
	M	91.97%	8.03%	

**Table S2.** Mean simulated reflectance value (%) per Landsat 8 and Sentinel-2A band for each shrub species and season (B-Blue, G-Green, R-Red, RE-Red Edge, W. Vap.-Water Vapour, SWIR=Shortwave infrared).

Mean simulated reflectance value (%)																		
Season	Shrub species	Landsat 8						Sentinel-2A										
		B	G	R	NIR	SWIR 1	SWIR 2	B	G	R	RE 1	RE 2	RE 3	NIR	RE 4	W. Vap.	SWIR 1	SWIR 2
Spring	W. Snow.	3.0	7.5	3.6	38.8	19.6	8.4	3.3	7.9	3.2	12.3	34.5	37.8	38.3	38.8	38.3	19.9	8.5
	Wolfw.	8.3	11.8	9.7	34.9	19.3	10.8	8.7	12.1	9.4	14.8	30.8	33.9	34.4	34.9	34.0	19.5	10.9
Summer	W. Snow.	3.8	7.7	4.5	42.0	19.2	7.2	4.1	8.0	4.2	12.3	35.3	39.8	41.1	42.0	42.1	19.5	7.3
	Wolfw.	9.3	13.5	11.0	55.4	23.8	12.3	9.7	13.8	10.7	17.5	45.9	53.3	54.5	55.4	54.1	24.0	12.4
Fall	W. Snow.	5.0	11.4	7.4	38.4	22.6	9.7	5.6	11.8	6.7	18.0	31.8	34.9	37.0	38.4	40.6	22.9	9.8
	Wolfw.	9.8	14.9	14.2	53.2	32.7	18.4	10.3	15.2	14.0	22.1	43.4	49.3	51.7	53.2	54.1	33.0	18.5

**Table S3.** Mean simulated reflectance value per Sentinel-2B band for each shrub species and season (B-Blue, G-Green, R-Red, RE-Red Edge, W. Vap.-Water Vapour, SWIR=Shortwave infrared).

Mean simulated reflectance value (%)												
Season	Shrub species	Sentinel-2B										
		B	G	R	RE 1	RE 2	RE 3	NIR	RE 4	W. Vap.	SWIR 1	SWIR 2
Spring	W. Snow.	3.3	7.9	3.2	12.1	34.0	37.7	38.3	38.8	38.4	19.7	8.4
	Wolfw.	8.7	12.1	9.4	14.7	30.4	33.8	34.4	34.9	34.1	19.3	10.8
Summer	W. Snow.	4.1	8.1	4.2	12.1	34.8	39.7	41.1	42.0	42.2	19.3	7.2
	Wolfw.	9.7	13.9	10.7	17.3	45.1	53.2	54.5	55.4	54.2	23.8	12.3
Fall	W. Snow.	5.6	11.8	6.7	17.8	31.6	34.7	37.0	38.4	40.6	22.7	9.7
	Wolfw.	10.3	15.2	14.0	21.9	42.9	49.1	51.7	53.2	54.2	32.8	18.5