Table S1. A summary of linear mixed-effects models analyzing the effects of mowing treatments (MT), mowing periods (MP), different Elymus varieties (SP), and their interactive effects on plant total biomass, root biomass, stem biomass, leaf biomass, and spike biomass. Significant statistics * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The ns indicates no significant difference.

Factor	Total biomass	Root biomass	Stem biomass	Leaf biomass	Spike biomass
MT	54.437 ***	32.262 ***	219.546 ***	39.758 ***	401.670 ***
MP	81.820 ***	26.685 ***	110.444 ***	54.075 ***	109.182 ***
SP	14.975 ***	11.853 ***	16.550 ***	10.583 ***	1.020 ns
MT×MP	19.022 ***	7.442 ***	13.420 ***	7.178 ***	28.640 ***
MT×SP	3.012 ***	2.550 **	7.782 ***	2.959 ***	1.744 *
MP×SP	12.314 ***	8.274 ***	16.297 ***	5.350 ***	11.467 ***
MT×MP×SP	3.453 ***	1.922 **	7.080 ***	3.241 ***	2.024 **

Table S2. A summary of linear mixed-effects models analyzing the effects of mowing treatments (MT), mowing periods (MP), different Elymus varieties (SP), and their interactive effects on root-, stem-, leaf-, and spike-biomass proportion. Significant statistics * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The ns indicates no significant difference.

Factor	Root biomass proportion	Stem biomass proportion	Leaf biomass proportion	Spike biomass proportion
MT	339.868 ***	210.350 ***	6.053 ***	532.521***
MP	80.909 ***	38.906 ***	16.868 ***	79.295 ***
SP	3.445 **	8.453 ***	13.531 ***	3.962 **
MT×MP	5.466 ***	3.448 ***	1.917 ns	26.076 ***
MT×SP	3.651 ***	6.144 ***	2.121 *	1.778 *
MP×SP	4.296 ***	6.594 ***	2.058 *	7.739 ***
MT×MP×SP	2.355 ***	4.044 ***	2.154 **	1.149 ns

Table S3. The results (p values) of linear mixed-effects models on the effects of mowing treatments (MT), mowing periods (MP), different Elymus varieties (SP), and their interactions on compensatory index of total biomass and module biomass. Total biomass compensatory index (TOBI), root-biomass compensatory index (RBI), stem-biomass compensatory index (STBI), leaf-biomass compensatory index (LBI) and spike-biomass compensatory index (SPBI). Significant statistics * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. The ns indicates no significant difference.

	TOBI	RBI	STBI	LBI	SPBI
MT	42.895 ***	0.753 ns	126.077 ***	24.334 ***	53.207 ***
MP	75.780 ***	35.196 ***	22.370 ***	34.227 ***	260.958 ***
SP	3.291 *	6.601 ***	1.920 ns	4.546 **	7.636 ***
MT×MP	4.087 **	3.339 *	7.639 ***	2.461*	6.469 ***
MT×SP	1.987 *	1.722 ns	2.578 **	0.947 ns	1.468 ns
MP×SP	4.805 ***	2.900 **	13.040 ***	3.344 **	3.184 **
MT×MP×SP	2.086 **	1.520 ns	2.513 **	1.208 ns	0.985 ns