Table 4.1 Climatic input requirements of a selection of Alpine case studies for climate change impact

Case study	Model type of impact system	Spatial resolution	Time window of projections	Temporal resolution	Time of the year	Input data
Distribution of plant species in the alpine belt	Statistical	Test regions, 100 m	Future time period, e.g., 2030-50	1 season (1 month)	Winter... autumn	E[T](s), E[R](s), Min[T]Win, Max[T]Sum, N≥0cm[H](m)
Distribution of potential natural forest vegetation	Statistical	Switzerland, 1 km	Future time period, e.g., 2030-50	1 month	Jan... Dec	E[T](m), E[R](m)
Forest succession and soil dynamics	Dynamic	Representative locations, Europe	Present... 2100+ (3000)	1 month	Jan... Dec	T, $R_{(y,m)}$ (E[T](m), E[R](m), Cov[T,R](m), ...)
Low-elevation grassland ecosystems	Dynamic	Representative locations, Switzerland	Present... 2030+	1 hour	Mar... Nov	T, R, S, W, $U_{(y,m,d,h)}$ (E[T](m), E[R](m),... Cov[T,S,W,U](d), E[T](h), E[S](h),...)

Note: *T* = Temperature, *R* = Precipitation, *S* = Radiation, *W* = Windspeed, *U* = Humidity, *H* = Snow Height; *y* = year, *s* = season, *m* = month, *d* = day, *h* = hour; *X(y,m,…)* = realization of random variable *X* for year *y*, month *m*, etc., *E[X](i)* = expected value of *X* for period *i*; *N≥z[X](i)* = number of days within period *i* at which *X* exceeds the threshold value *z*, *Min/Max[X](i)* = absolute minmum/maximum of *X* within month or season *i*. *Cov[X,Y,...]* = covariance matrix of *X* ,*Y*,... Main sources (by table row, from top to bottom): A. Guisan (personal communication, see also chapter 6); Brzeziecki, Kienast, and Wildi 1993; Fischlin, Bugmann, and Gyalistras 1995 (see also chapter 6); Fuhrer 1996.