PHYSIOLOGICAL, MORPHOLOGICAL AND GROWTH RESPONSE OF FIR AND BEECH ALONG THE GEOGRAPHICAL GRADIENT - BASIS FOR PREDICTING FUTURE DEVELOPMENT TRENDS

Agency	Years	PI	Co-PI
Grant Agency of the Czech Republic	10.2021 – 9.2024	Slovenian Forestry Institute (lead by M. Čater, T. Veljanovski)	CzechGlobe (E. Dařenová, O.Brovkina, M.Švik)

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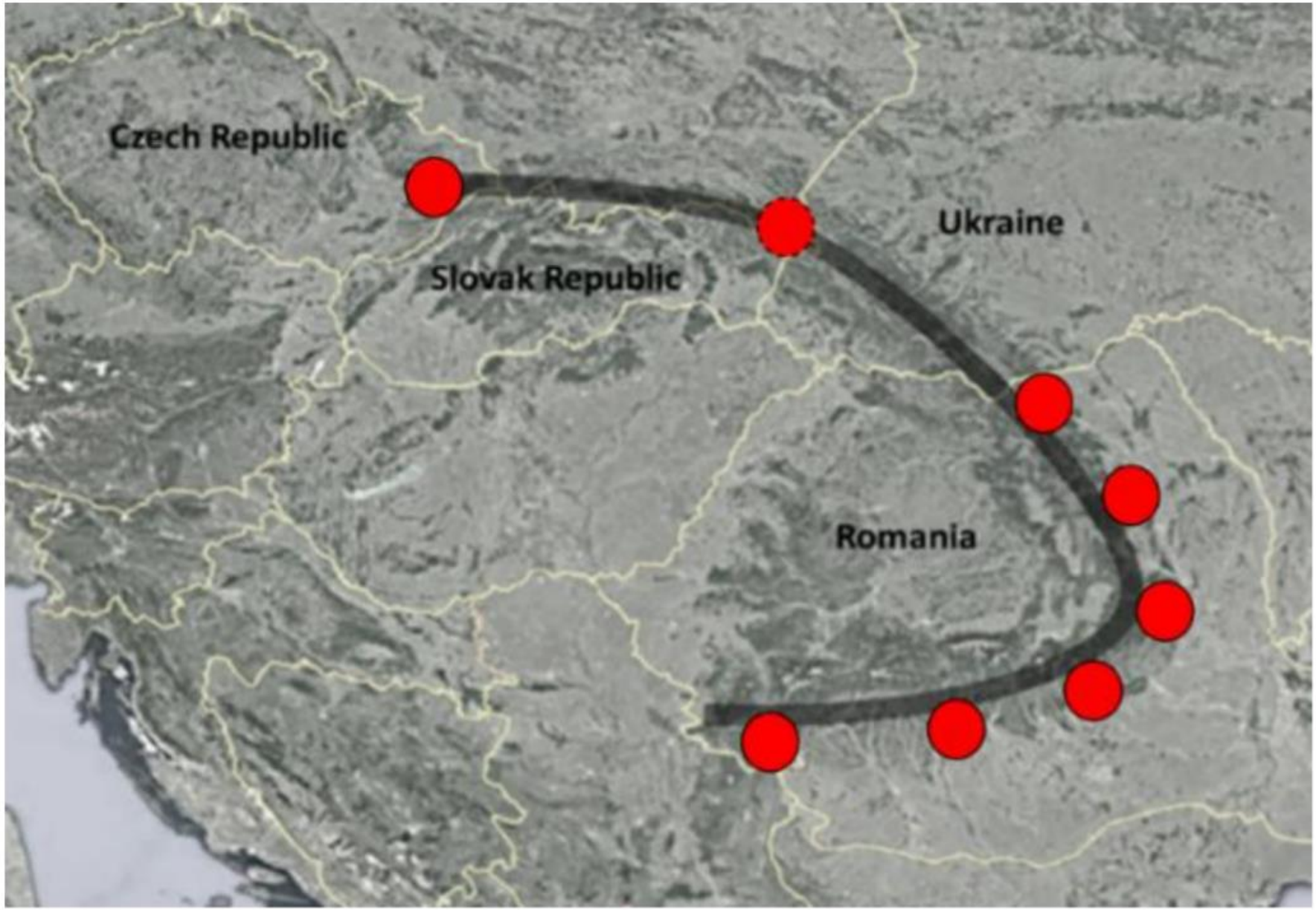
Mendelova univerzita v Brně



	PLOT
1	Tismana
2	Arefu
3	Zagon
4	Soveja
5	Tarcau
6	Frumosu
7	Slovakia
8	Salajka

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PHYSIOLOGICAL, MORPHOLOGICAL AND GROWTH RESPONSE OF FIR AND BEECH ALONG THE GEOGRAPHICAL GRADIENT - BASIS FOR PREDICTING FUTURE DEVELOPMENT TRENDS

WP1: Ecology of beech and silver fir

WP2: Beech and silver fir growth responses

WP3: Wood anatomy characteristics of beech and silver fir

WP4: Monitoring beech and fir forests with time series of satellite images

WP5: Modelling and future response scenarios of beech and silver fir

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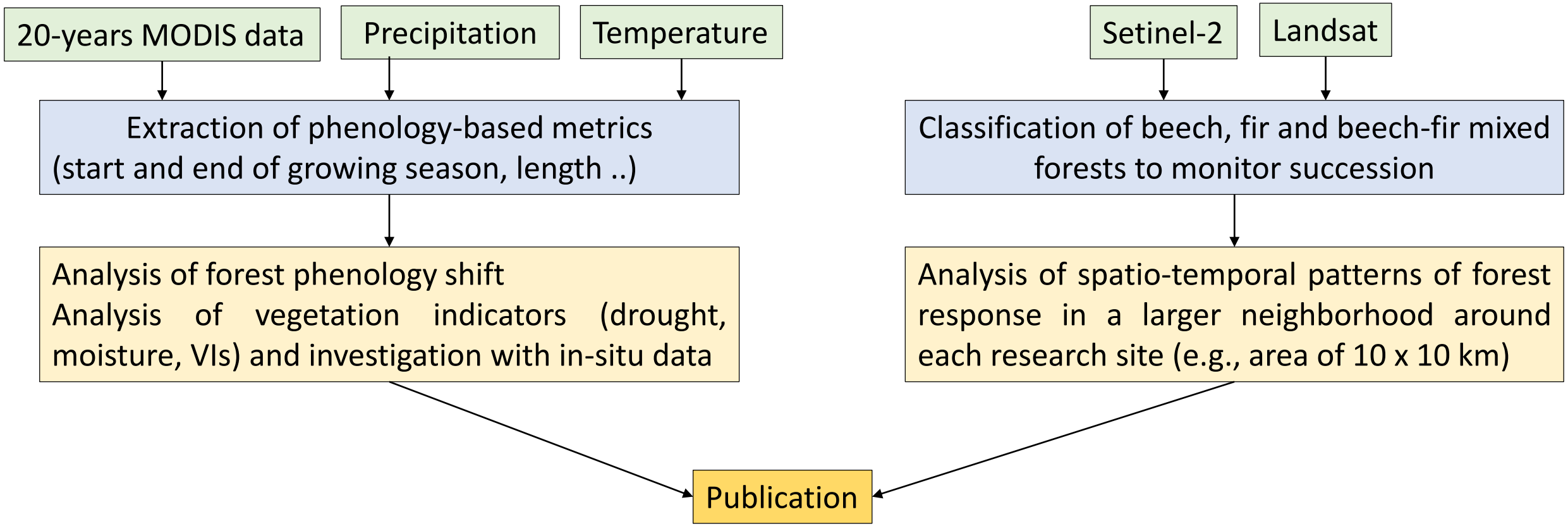
WP4: Monitoring beech and fir forests with time series of satellite images



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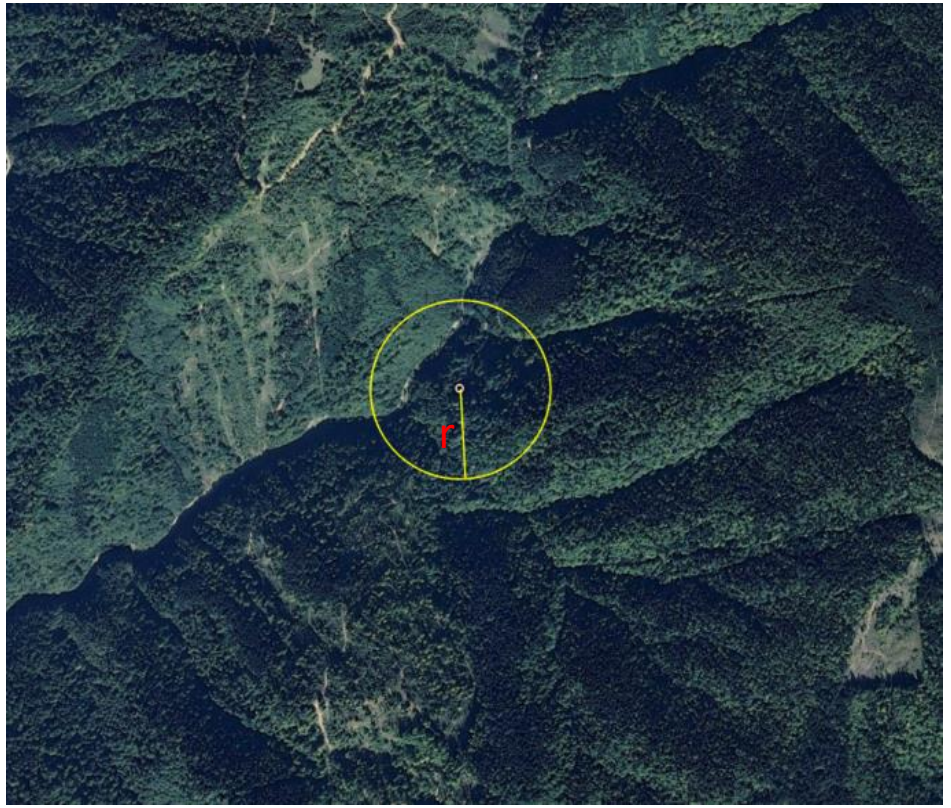
GEE MODIS time-series

- NDVI/EVI product 250 m spatial resolution/16-day temporal resolution
- LAI/fPAR product 500 m spatial resolution/8-day temporal resolution
- data filtered according to their quality assesment band
- for each parameter a time-series for each year and each plot created

We used a buffer with r = 250 m



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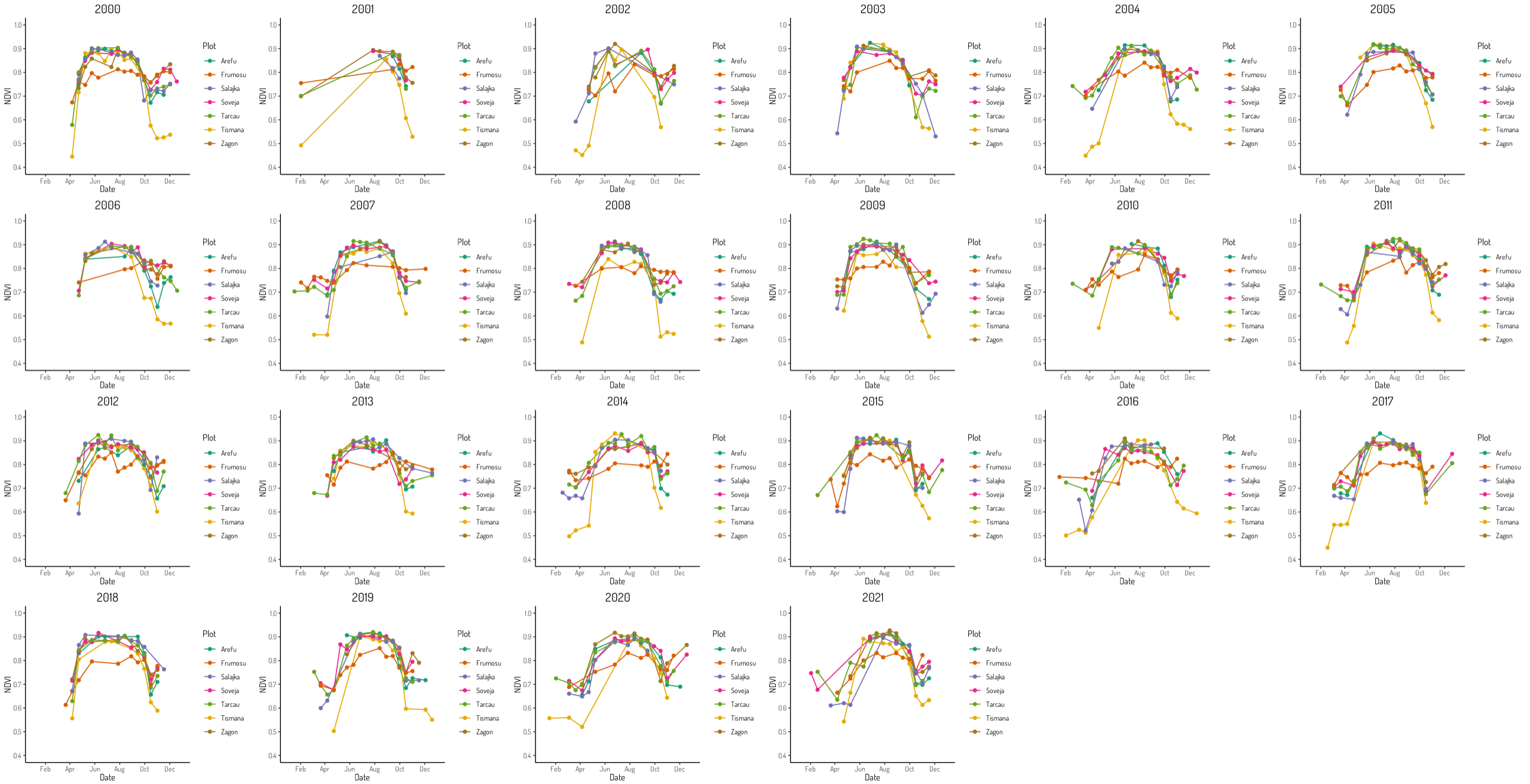
NDVI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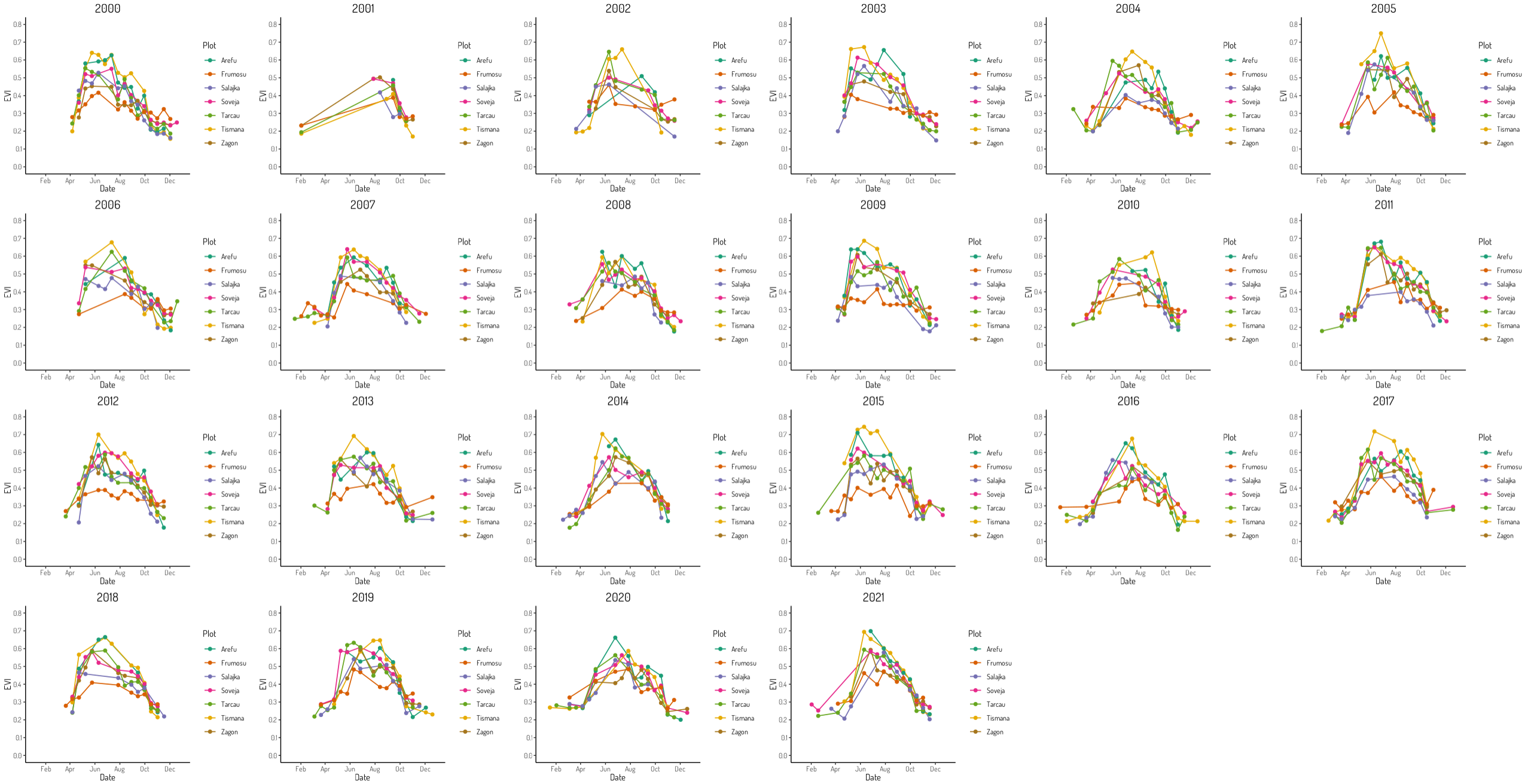
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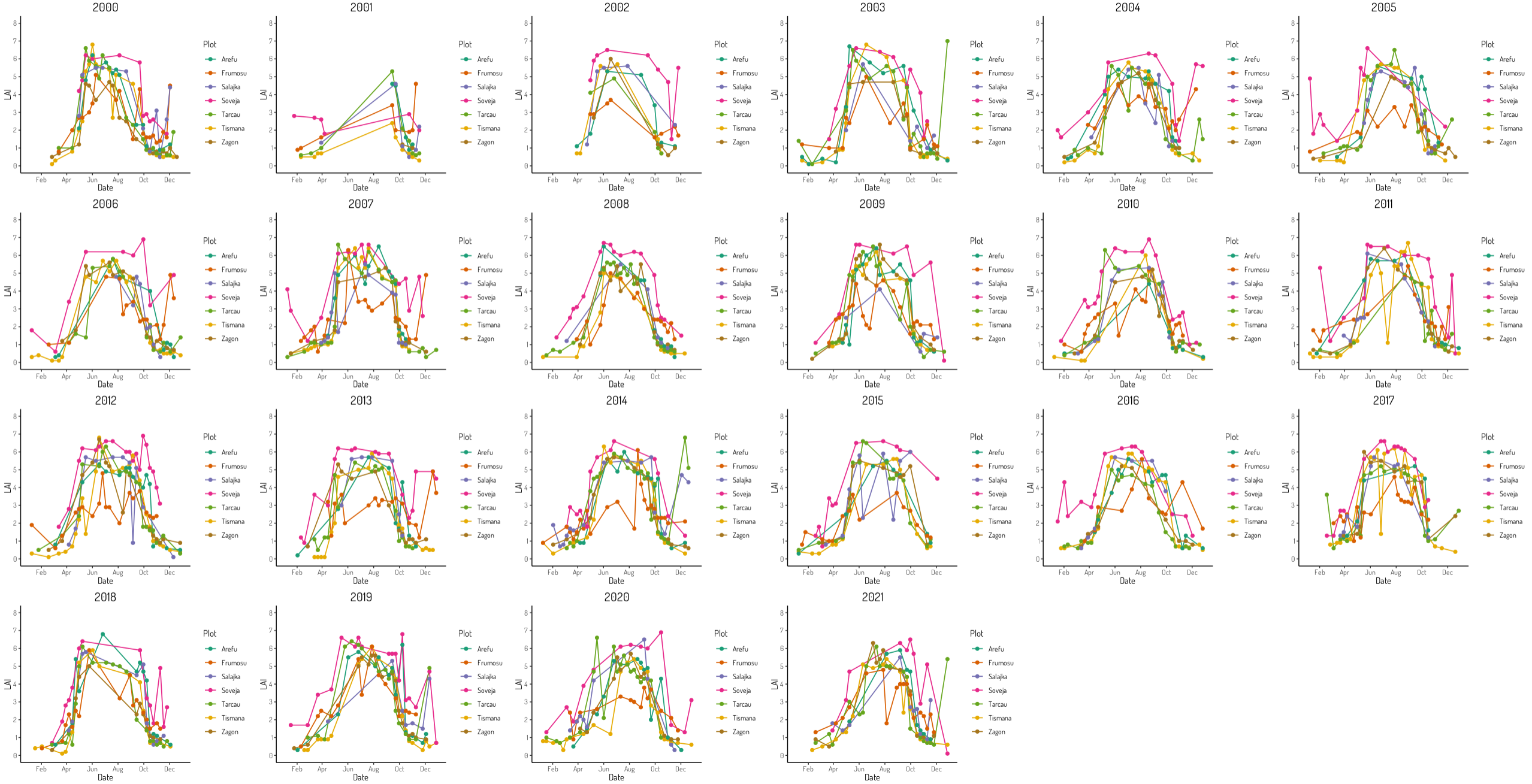
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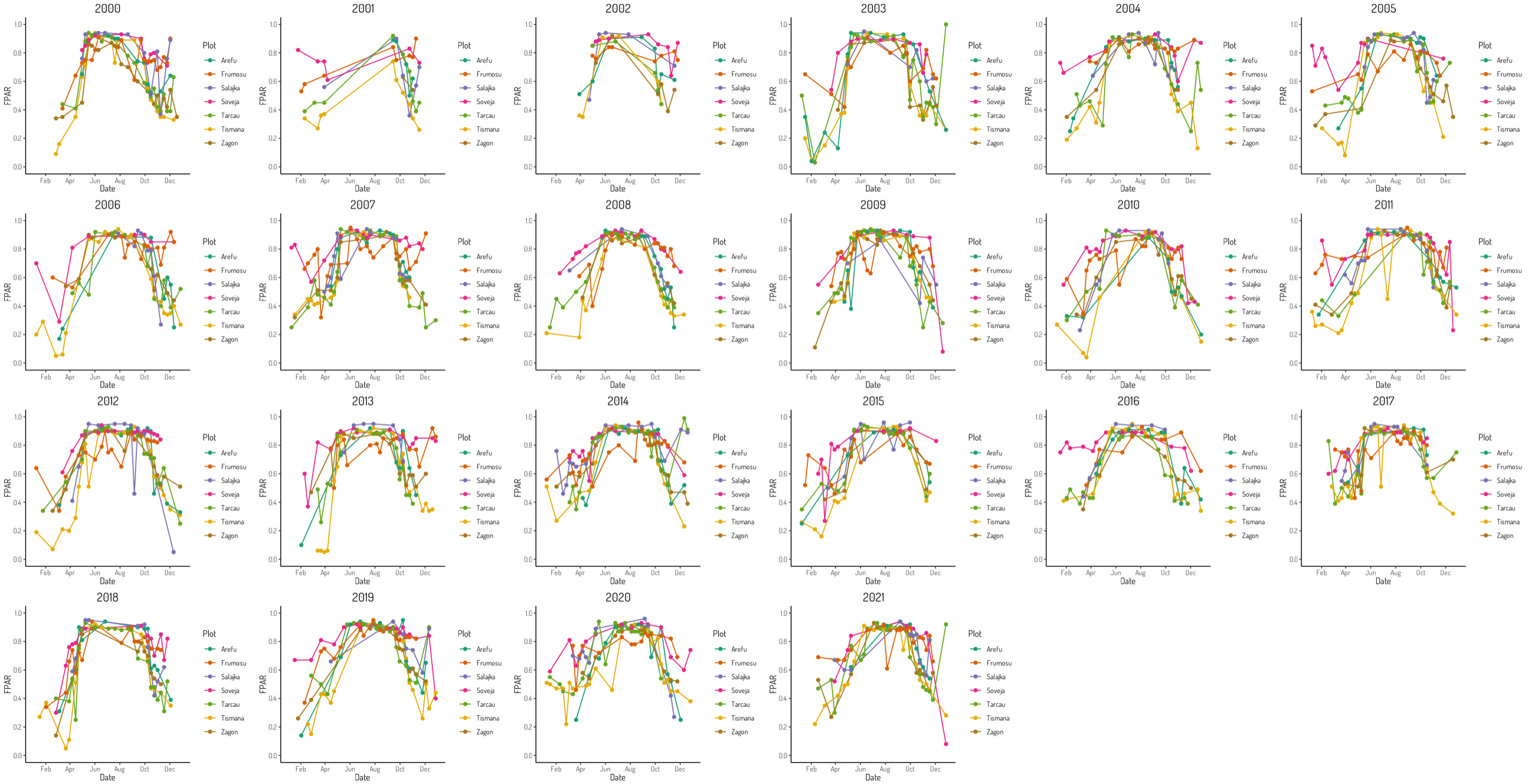
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To analyse MODIS time-series we will use:

- Species composition – fir and beech percentage for plot
- Forest structure
- Climate data time-series

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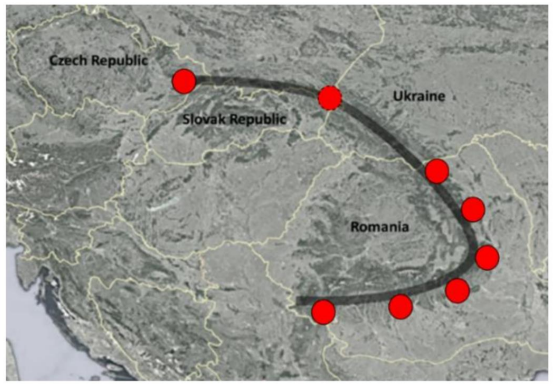
Forest structure and species composition

Satellite WorldView-2, GSD of 2 m

Spectral bands:
400-450 nm (coastal blue)
450-510 nm (blue)
510-580 nm (green)
585-625 nm (yellow)
630-690 nm (red)
705-745 nm (red edge)
770-895 nm (NIR1)
860-1040 nm (NIR2)



WV-2 RGB composite

Georectification of WV images

Mismatch from 15 to 20 m

Background layer is orthophoto, transparent top layer is WV-2 RGB composite

Georectification of WV images

Mismatch from 15 to 20 m

Background layer is orthophoto, transparent top layer is WV RGB

Thank you for your attention!

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