

Supplementary material 02
Distribution and climate of Hydrocharitaceae

1. Köppen-Geiger climate symbols and defining criteria (Peel et al. 2007, Kottek et al. 2006, Rubel et al. 2017, Cui et al. 2021)

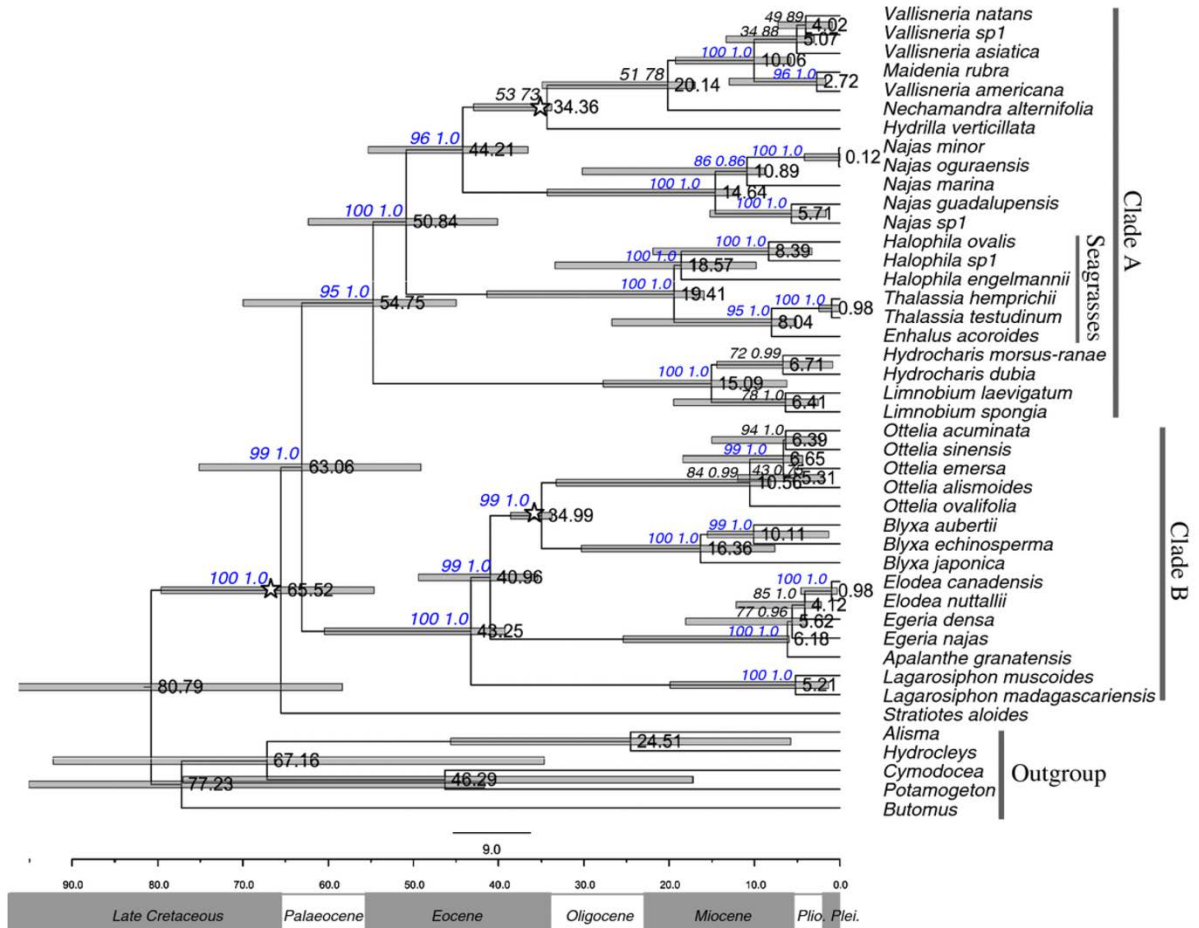
1st	2nd	3rd	Description and criteria
<i>A</i>			Equatorial/tropical — $MTCM \geq 18\text{ }^{\circ}\text{C}$
	<i>f</i>		Rainforest, fully humid— $P_{dry} \geq 60\text{ mm}$
	<i>m</i>		Monsoonal—not <i>Af</i> & $P_{dry} \geq 100 - MAP/25$
	<i>s</i>		Savannah with dry summer— $P_{sdry} < 60\text{ mm}$
	<i>w</i>		Savannah with dry winter— $P_{wdry} < 60\text{ mm}$
<i>B</i>			Arid — $MAP < 10 \times P_{threshold}$
	<i>W</i>		Desert— $MAP < 5 \times P_{threshold}$
	<i>S</i>		Steppe— $MAP \geq 5 \times P_{threshold}$
		<i>h</i>	Hot arid— $MAT \geq 18\text{ }^{\circ}\text{C}$
		<i>k</i>	Cold arid— $MAT < 18\text{ }^{\circ}\text{C}$
<i>C</i>			Warm temperate (subtropical to temperate)— $T_{hot} > 10\text{ }^{\circ}\text{C}$ & $0\text{ }^{\circ}\text{C} < MTCM < 18\text{ }^{\circ}\text{C}$
<i>D</i>			Snow (cold-temperate to boreal)— $T_{hot} > 10\text{ }^{\circ}\text{C}$ & $MTCM \leq 0\text{ }^{\circ}\text{C}$
	<i>s</i>		Summer dry— $P_{sdry} < 40\text{ mm}$ & $P_{sdry} < P_{wwet}/3$
	<i>w</i>		Winter dry— $P_{wdry} < P_{swet}/10$
	<i>f</i>		Fully humid, without a dry season, i.e. not <i>s</i> or <i>w</i>
		<i>a</i>	Hot summer— $T_{hot} \geq 22\text{ }^{\circ}\text{C}$
		<i>b</i>	Warm summer—not <i>a</i> & $T_{mon10} \geq 4$
		<i>c</i>	Cool/cold and short summer—not <i>a/b</i> & $1 \leq T_{mon10} < 4$
		<i>d</i>	Extremely continental: cold/very short or no summer & very cold winter—not <i>a/b</i> & $MTCM < -38\text{ }^{\circ}\text{C}$
<i>E</i>			Polar — $T_{hot} < 10\text{ }^{\circ}\text{C}$
	<i>T</i>		Tundra—($T_{hot} > 0$)
	<i>F</i>		Ice, permanent frost ('frost desert')—($T_{hot} \leq 0$)

MAP = mean annual precipitation, MAT = mean annual temperature, T_{hot} = mean temperature of the hottest month, T_{cold} = mean temperature of the coldest month, T_{mon10} = number of months where the temperature is above 10 °C, P_{dry} = precipitation of the driest month, P_{sdry} = precipitation of the driest month in summer, P_{wdry} = precipitation of the driest month in winter, P_{swet} = precipitation of the wettest month in summer, P_{wwet} = precipitation of the wettest month in winter, $P_{threshold}$ = varies according to the following rules: if 70% of MAP occurs in winter then $P_{threshold} = 2 \times MAT$, if 70% of MAP occurs in summer then $P_{threshold} = 2 \times MAT + 28$, otherwise $P_{threshold} = 2 \times MAT + 14$. Summer (winter) is defined as the warmer (cooler) six months period of October to March and April to September.

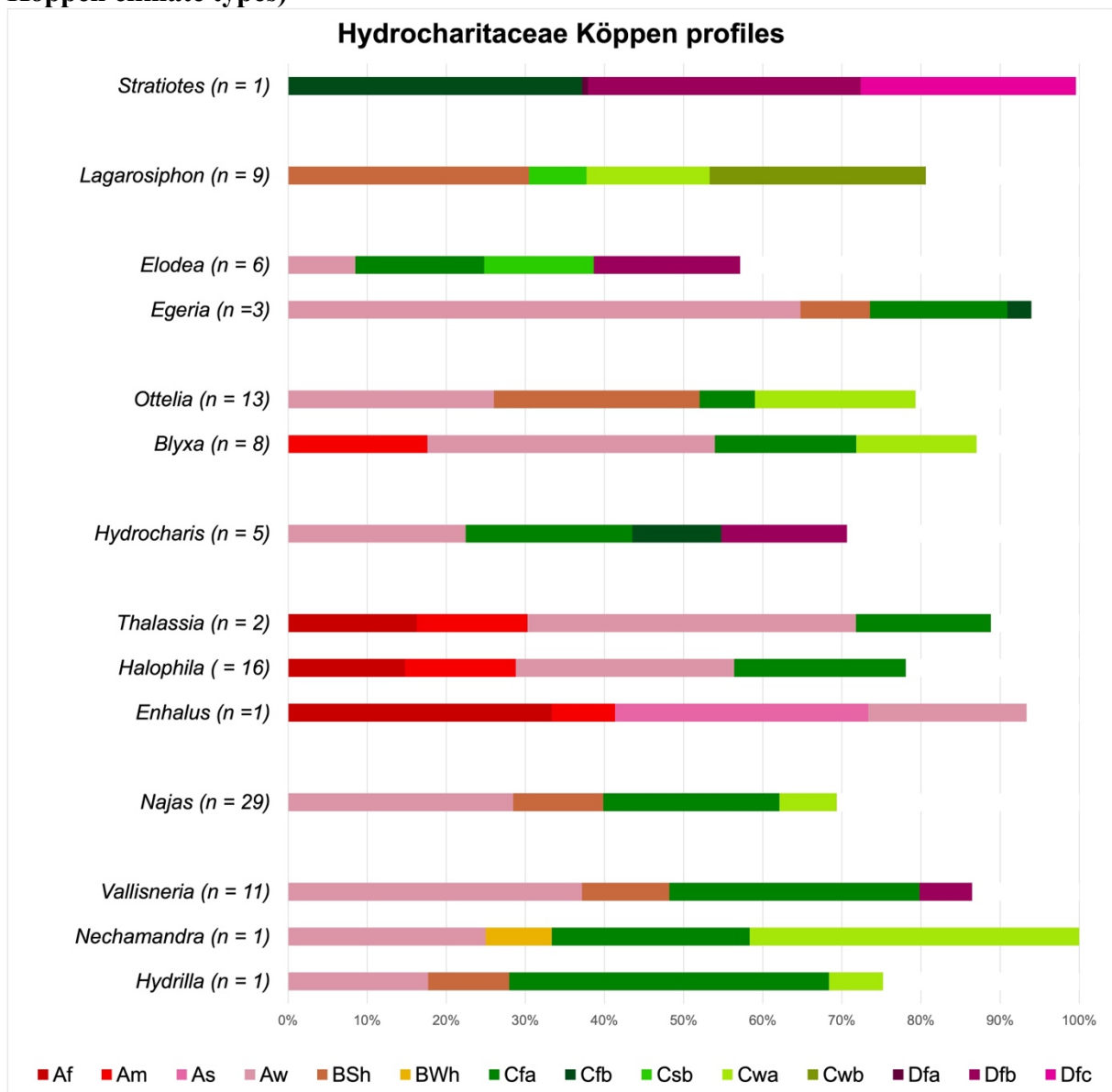
2. Köppen-Geiger climate map colour coding



3. Phylogenetic relationships within Hydrocharitaceae from Chen et al. (2012, fig. 1)



4. 2. Summarized Hydrocharitaceae genera Köppen profiles (incl. the four most common Köppen climate types)

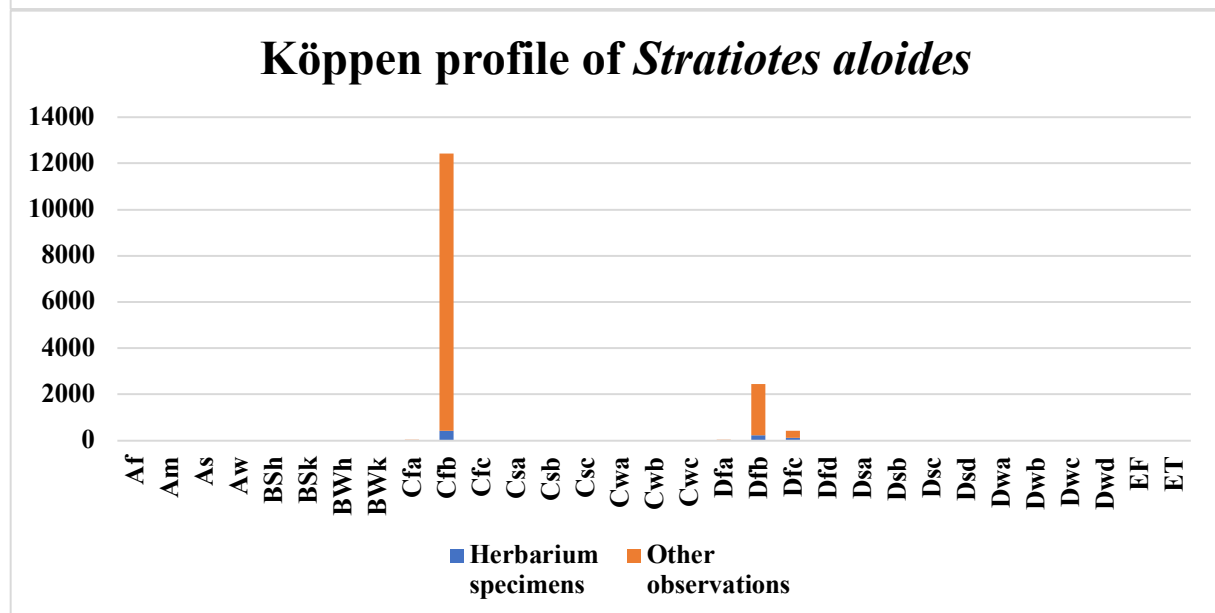
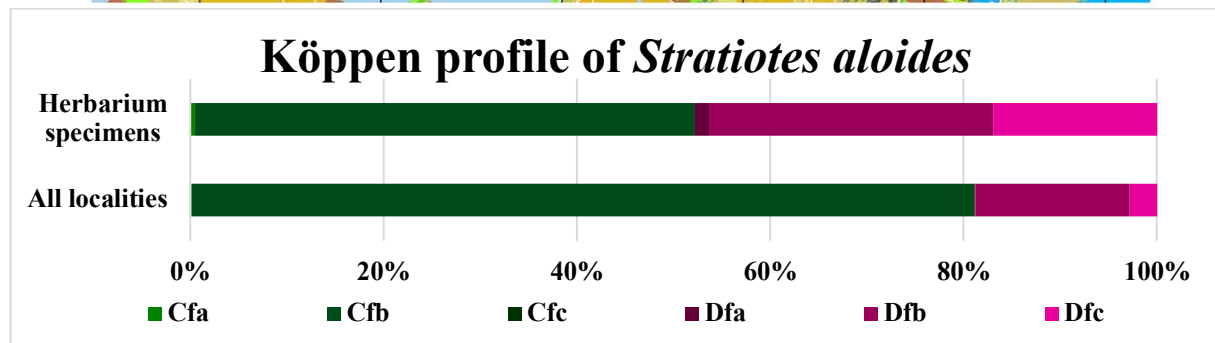
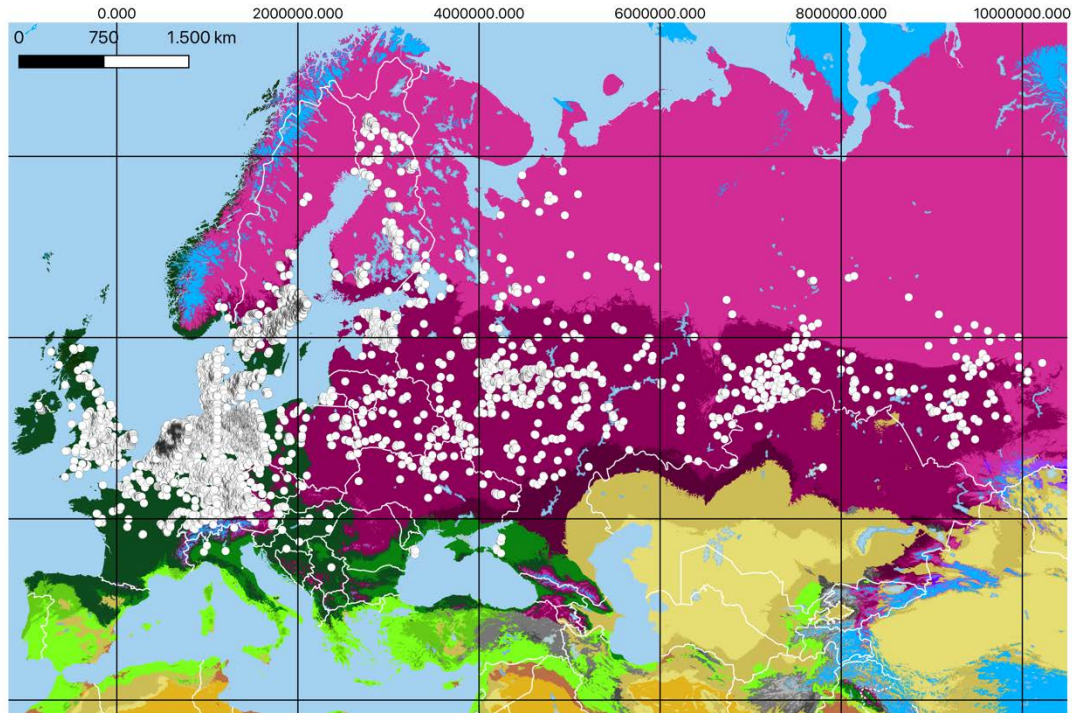


5. Hydrocharitaceae species Köppen Profiles

5.1. First diverging genus within Hydrocharitaceae cf. Chen et. al (2012)

5.1.1. Genus *Stratiotes* L., 1753.

5.1.1.1. Köppen profile, distribution and climate map– GBIF all occurrences of *Stratiotes aloides* L. 1753; all localities (n = 28431), unique localities (n = 15341), herbarium specimens excluding duplicate occurrences (n = 820), other observations (n = 14537).

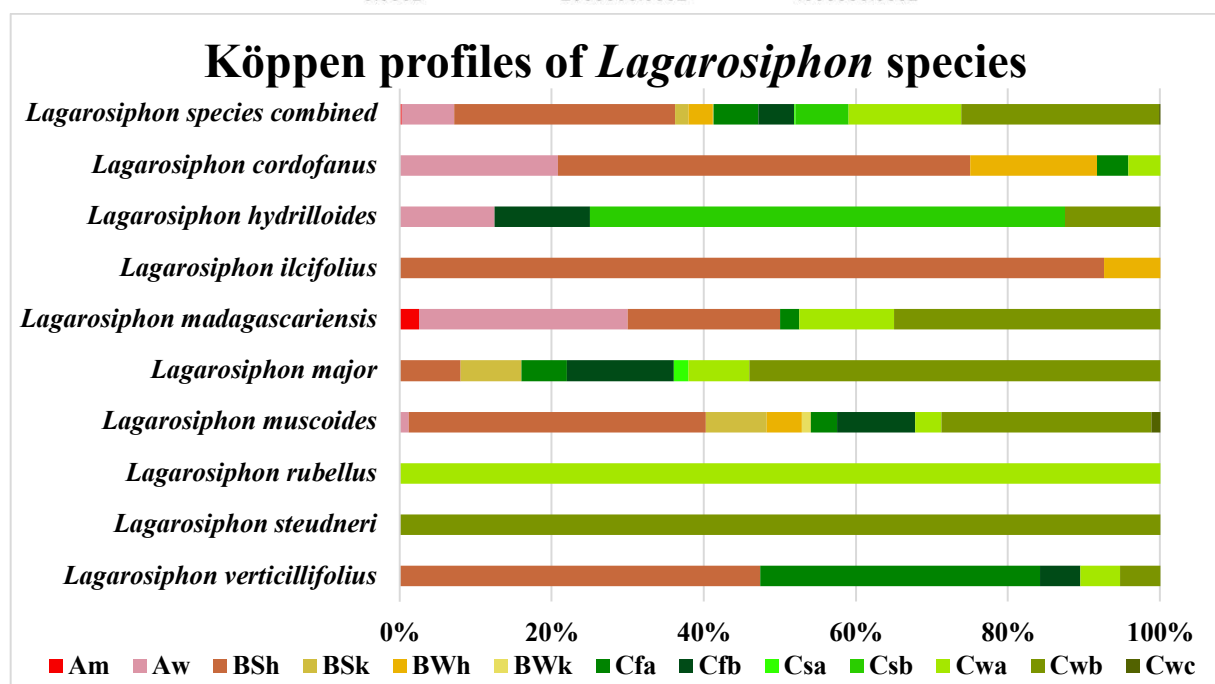
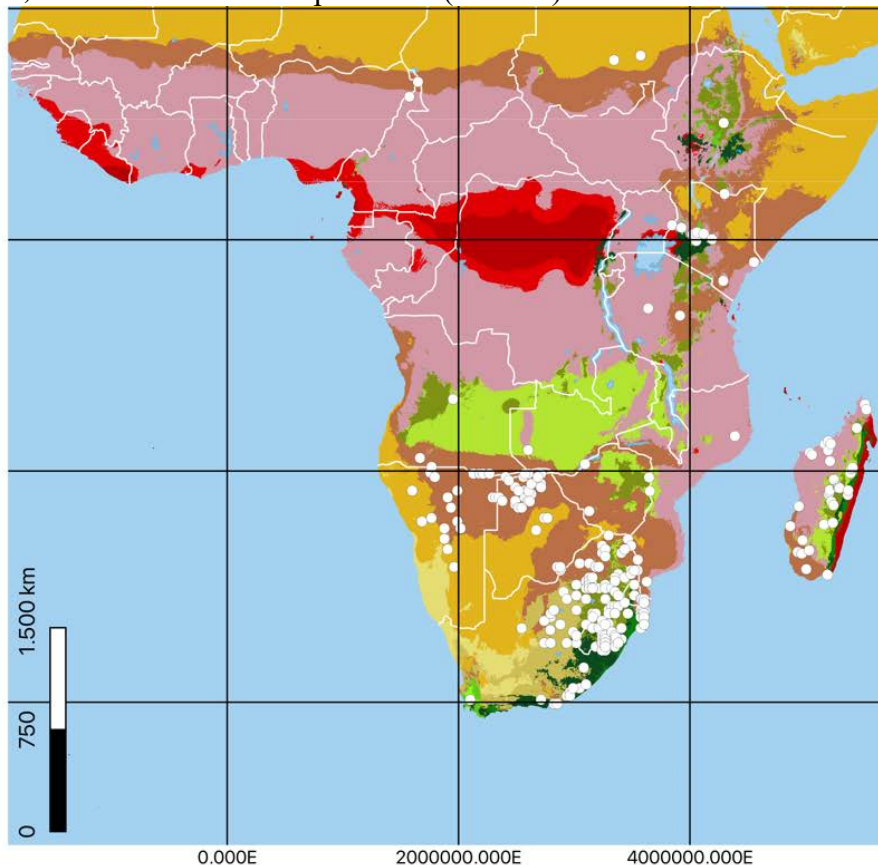


5.2 Clade B

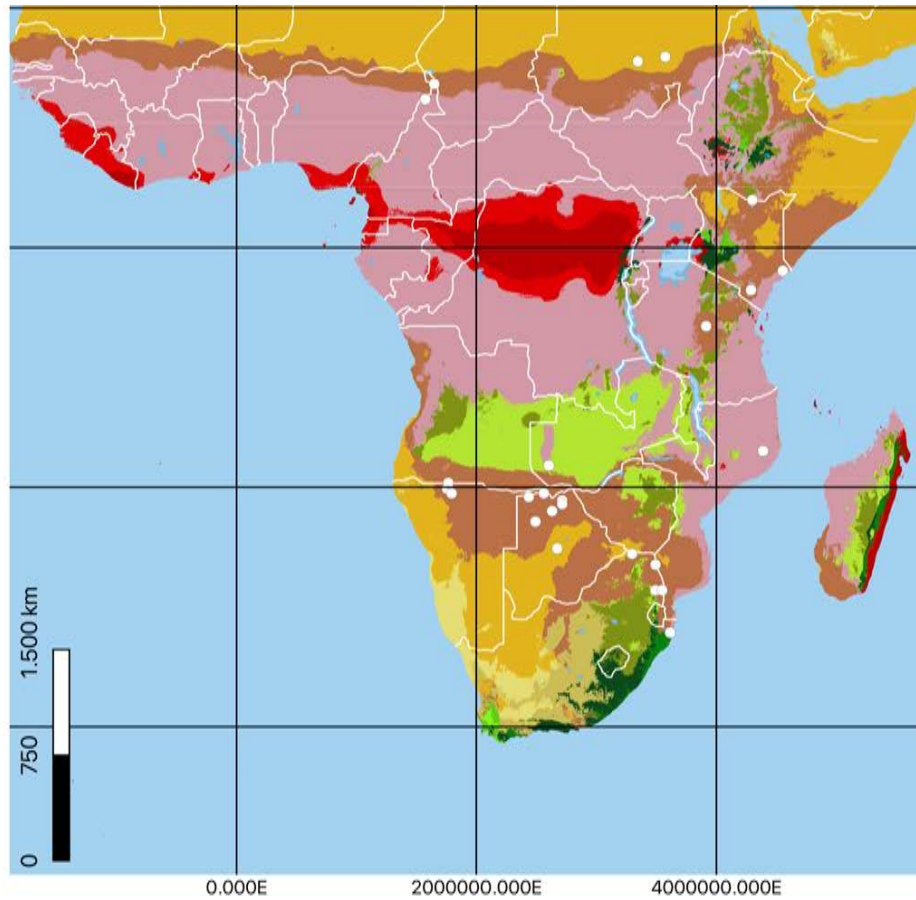
5.2.1. First diverging genera within Clade B of Hydrocharitaceae cf. Chen et. al (2012), comprising *Lagarosiphon* Harv., 1841 and *Appertiella* C.D.K.Cook & Triest, 1982 (GBIF database did not contain data sets of *Appertiella* including geographic occurrence data).

5.2.1.1. Genus *Lagarosiphon* Harv., 1841

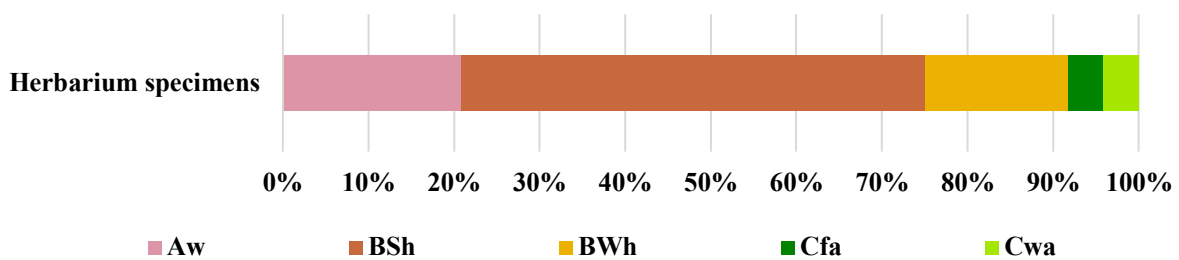
Distribution and Köppen profiles for *Lagarosiphon* incl. *L. cordofanus*, *L. hydrilloides*, *L. ilicifolius*, *L. madagascariensis*, *L. major*, *L. muscoides*, *L. rubellus*, *L. steudneri*, and *L. verticillifolius*, based on herbarium specimens (n = 445).



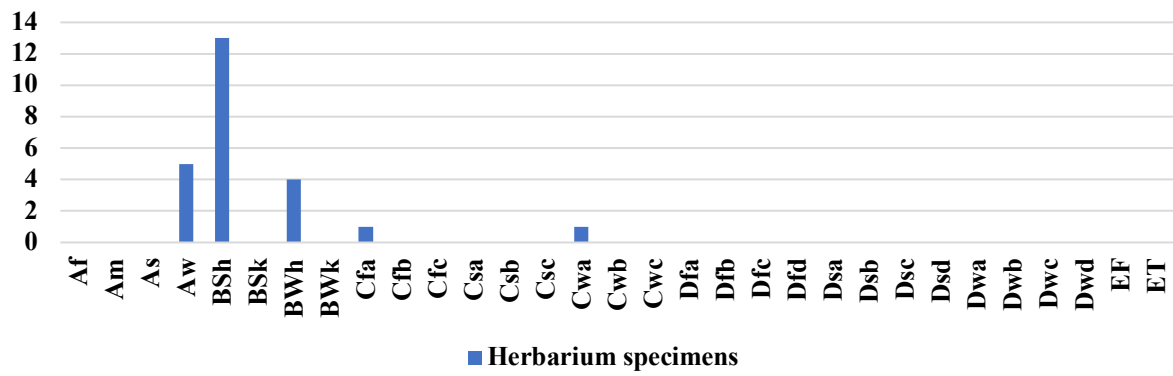
5.2.1.1.1. Köppen profile, distribution and climate map– GBIF occurrences of *Lagarosiphon cordofanus* Casp. 1858; herbarium specimens excluding duplicate occurrences (n = 24).



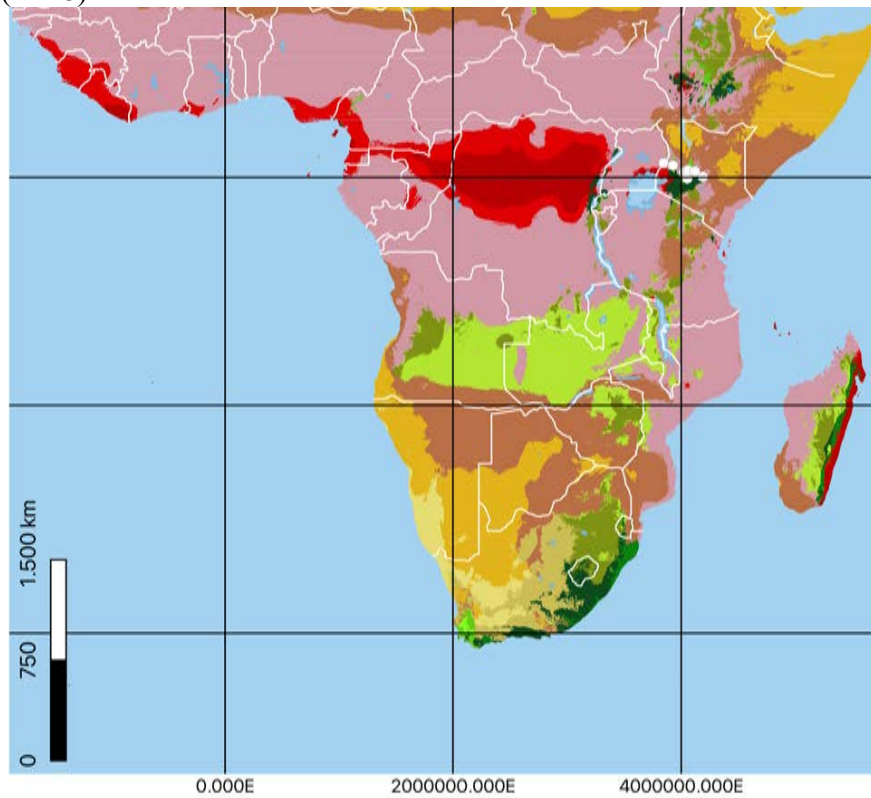
Köppen profile of *Lagarosiphon cordofanus*



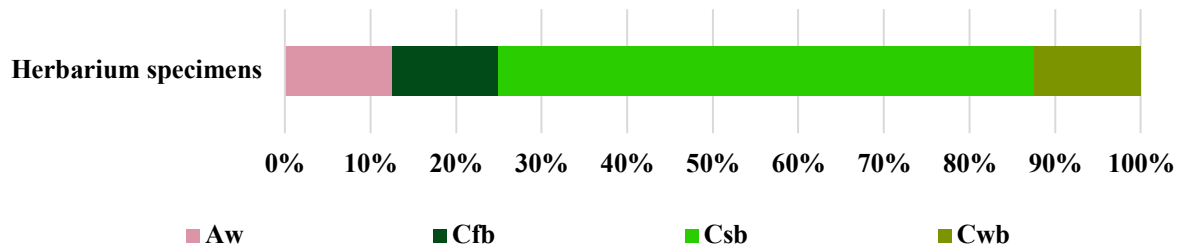
Köppen signatures of *Lagarosiphon cordofanus*



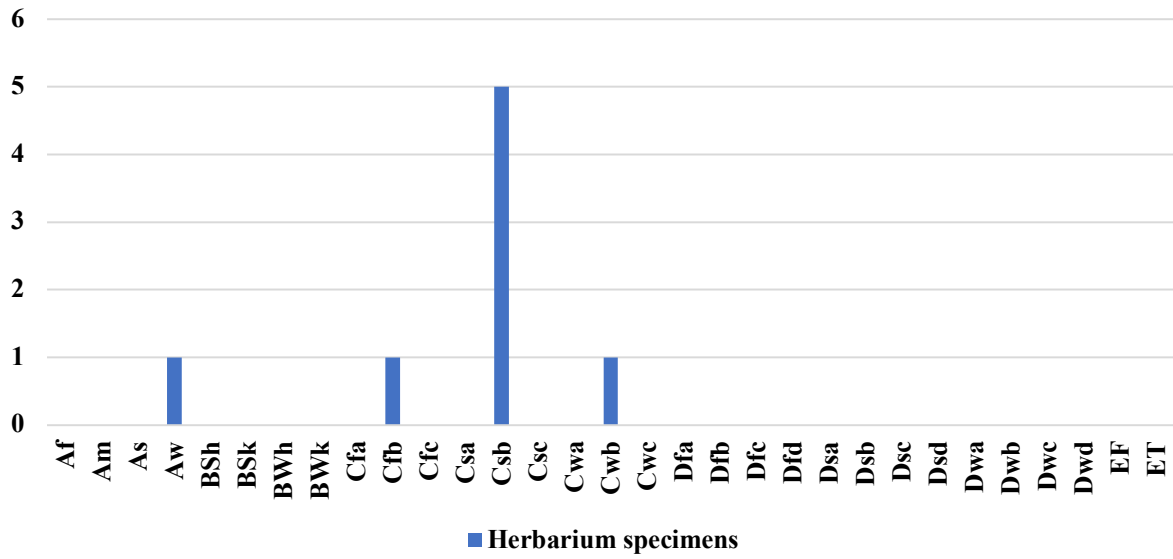
5.2.1.1.2. Köppen profile, distribution and climate map– GBIF occurrences of *Lagarosiphon hydrilloides* Rendle 1895; herbarium specimens excluding duplicate occurrences (n = 8).



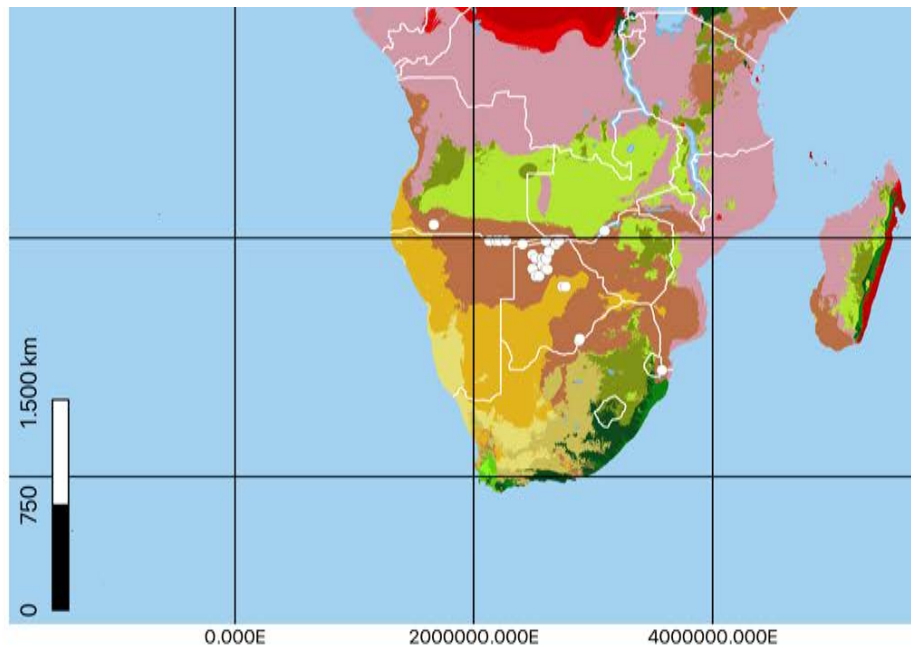
Köppen profile of *Lagarosiphon hydrilloides*



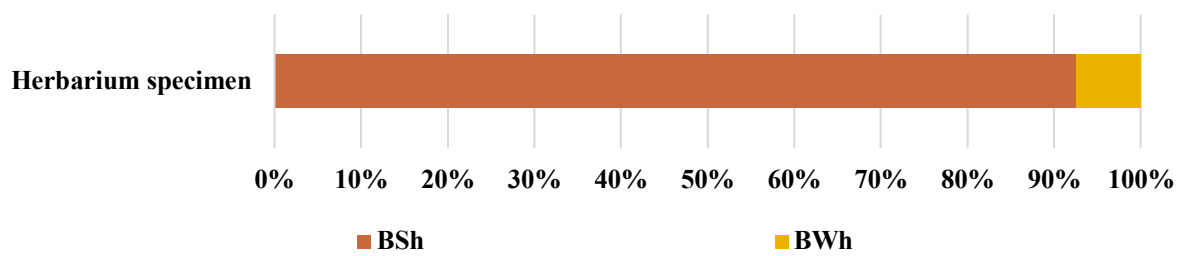
Köppen profile of *Lagarosiphon hydrilloides*



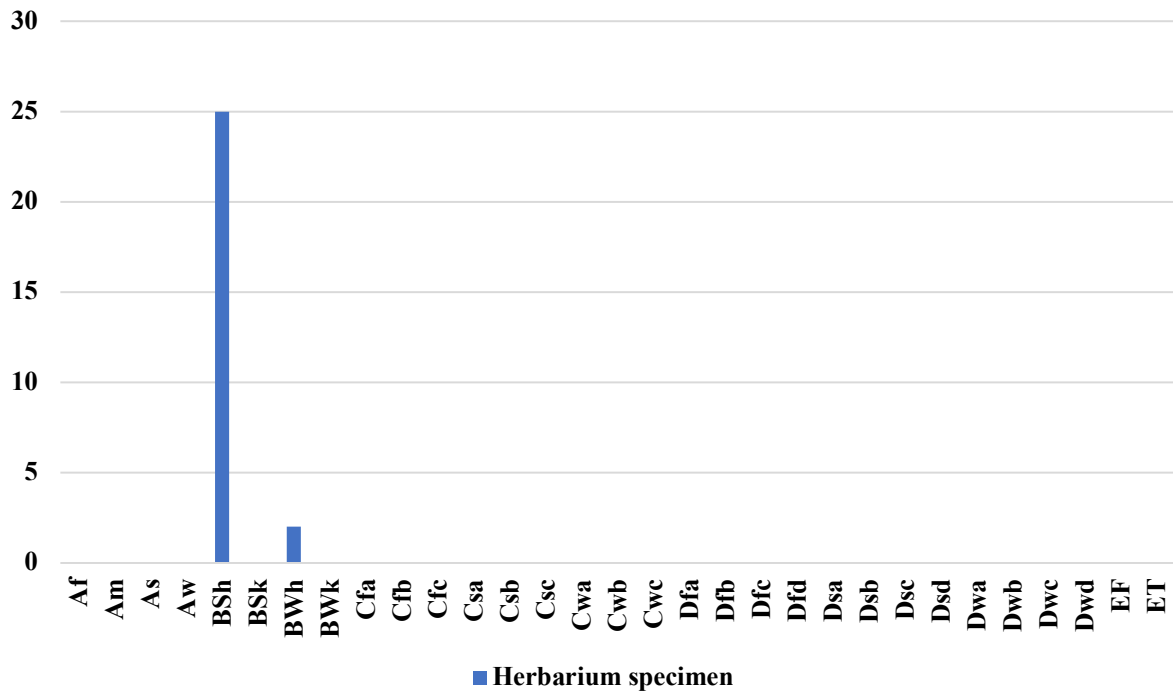
5.2.1.1.3. Köppen profile, distribution and climate map—GBIF occurrences of *Lagarosiphon ilicifolius* Oberm. 1964; herbarium specimens excluding duplicate occurrences (n = 27).



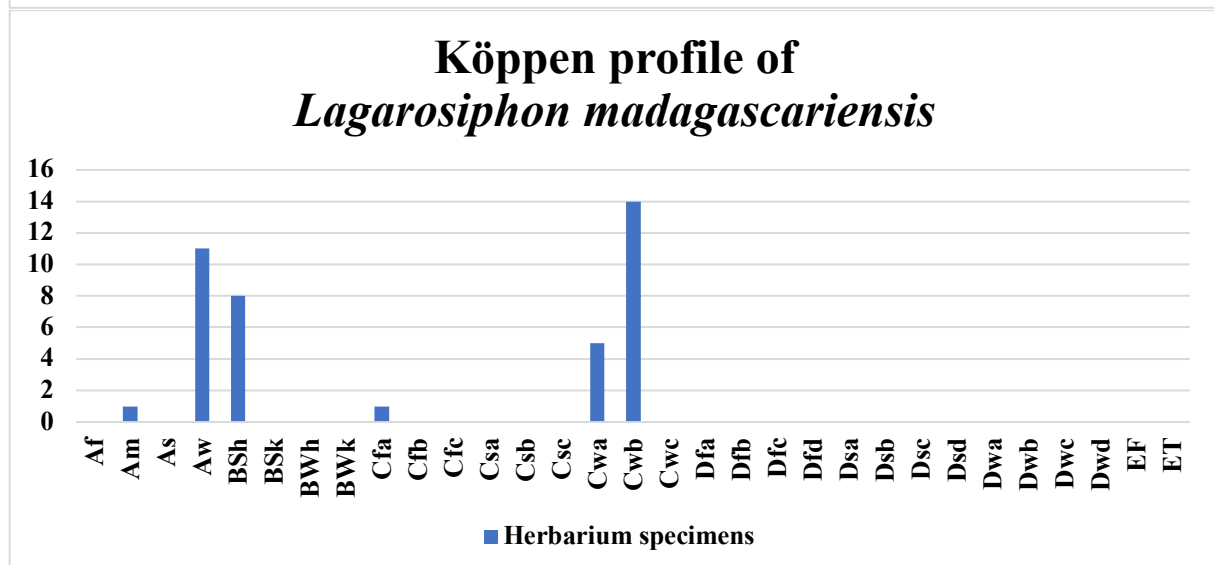
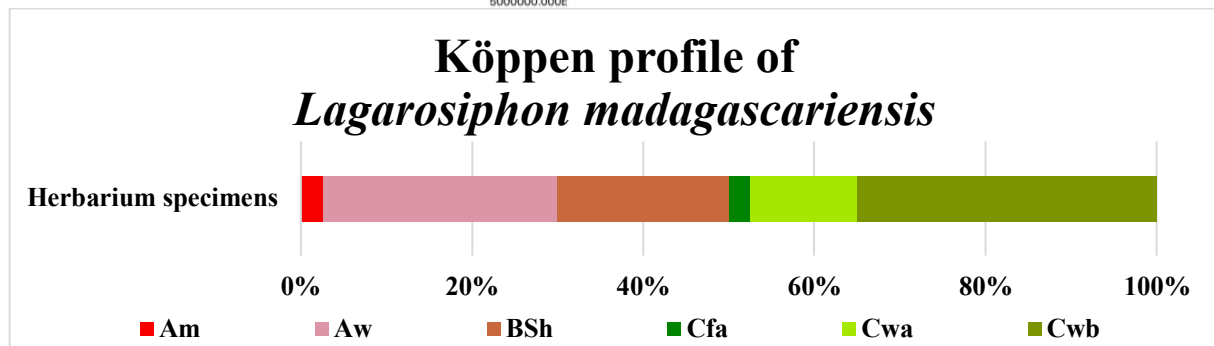
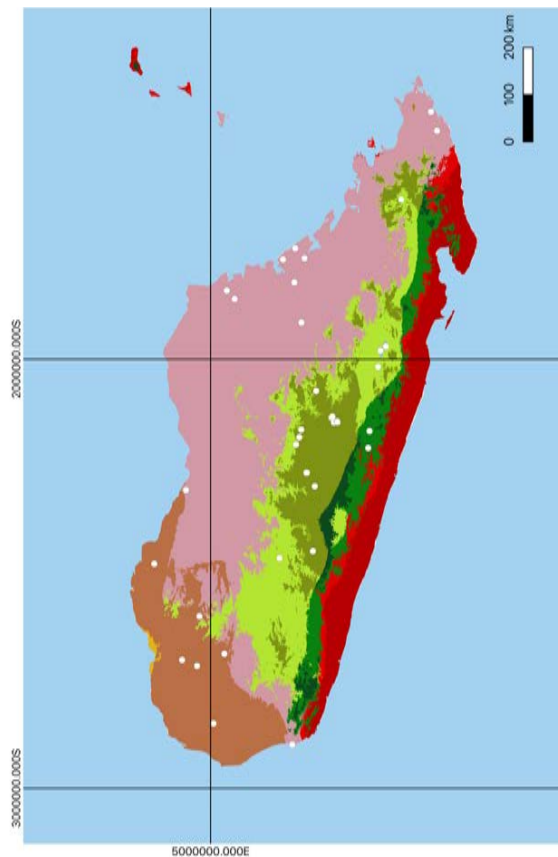
Köppen profile of *Lagarosiphon ilicifolius*



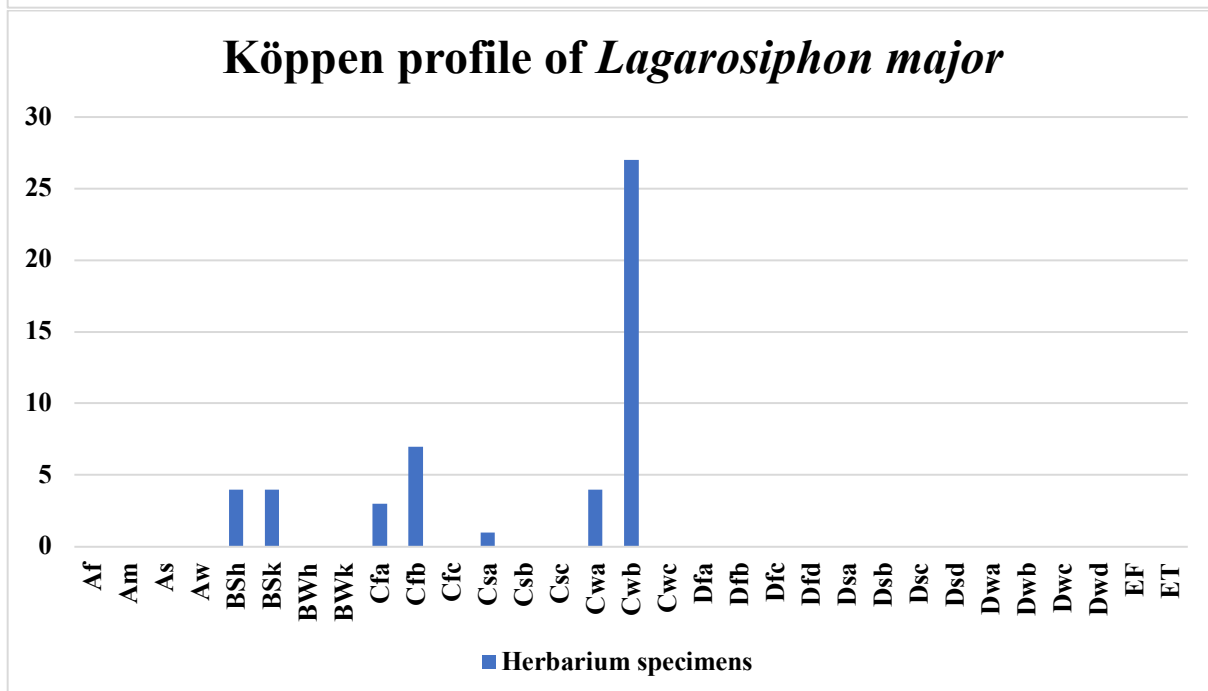
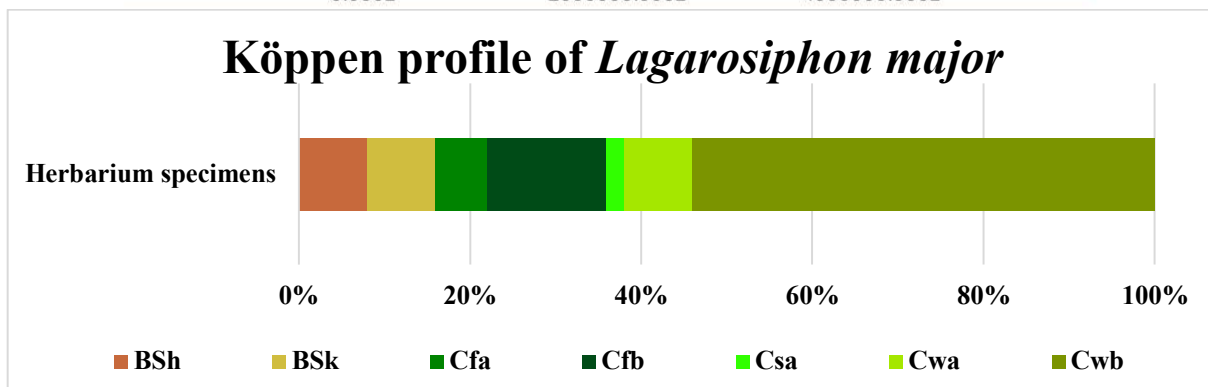
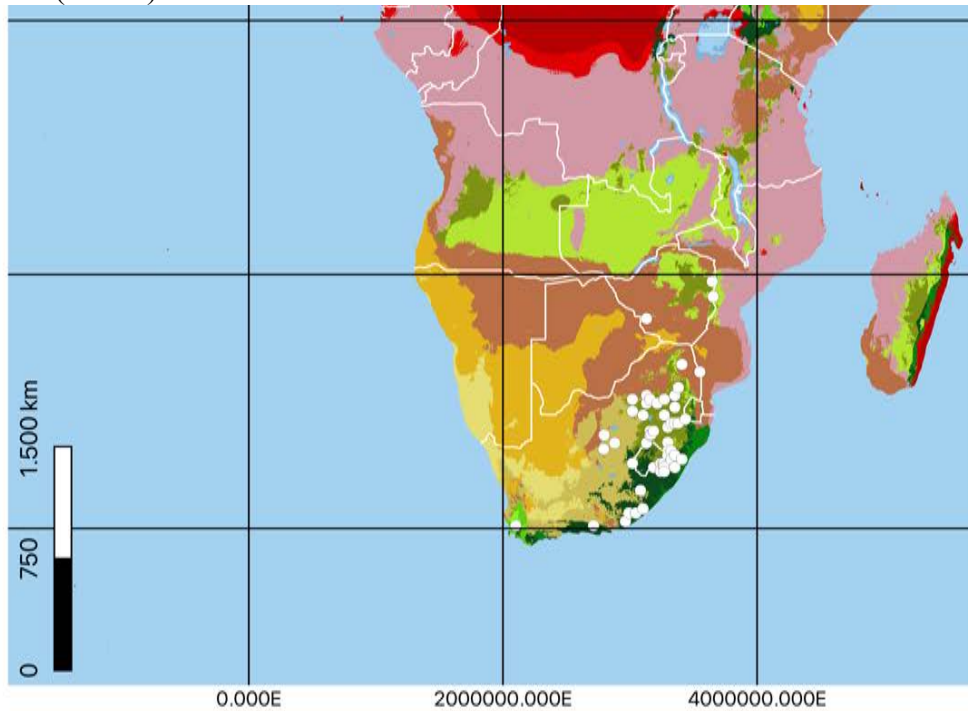
Köppen profile of *Lagarosiphon ilicifolius*



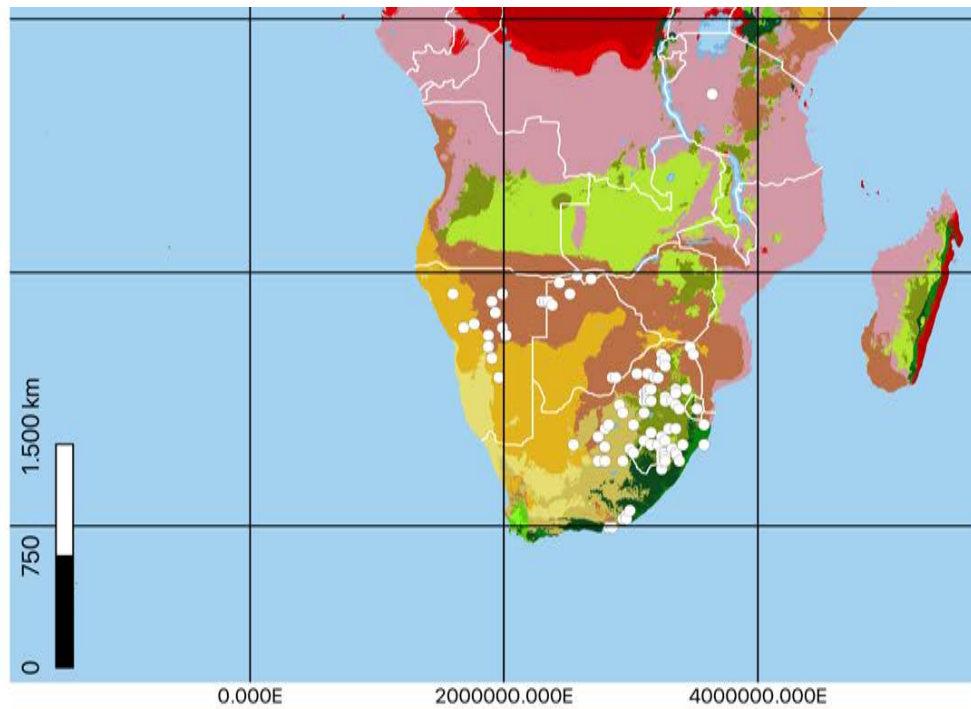
5.2.1.1.3. Köppen profile, distribution and climate map—GBIF occurrences of *Lagarosiphon madagascariensis* Harv. 1841; herbarium specimens excluding duplicate occurrences (n = 40).



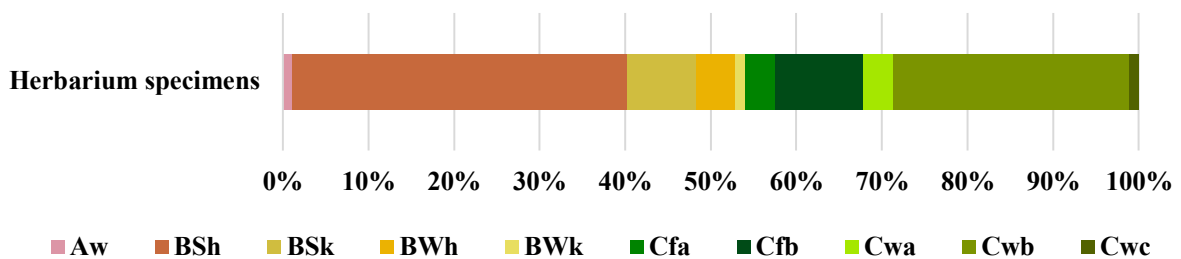
5.2.1.1.4. Köppen profile, distribution and climate map—GBIF occurrences of *Lagarosiphon major* (Ridl. 1886) Moss 1928; herbarium specimens excluding duplicate occurrences (n = 50).



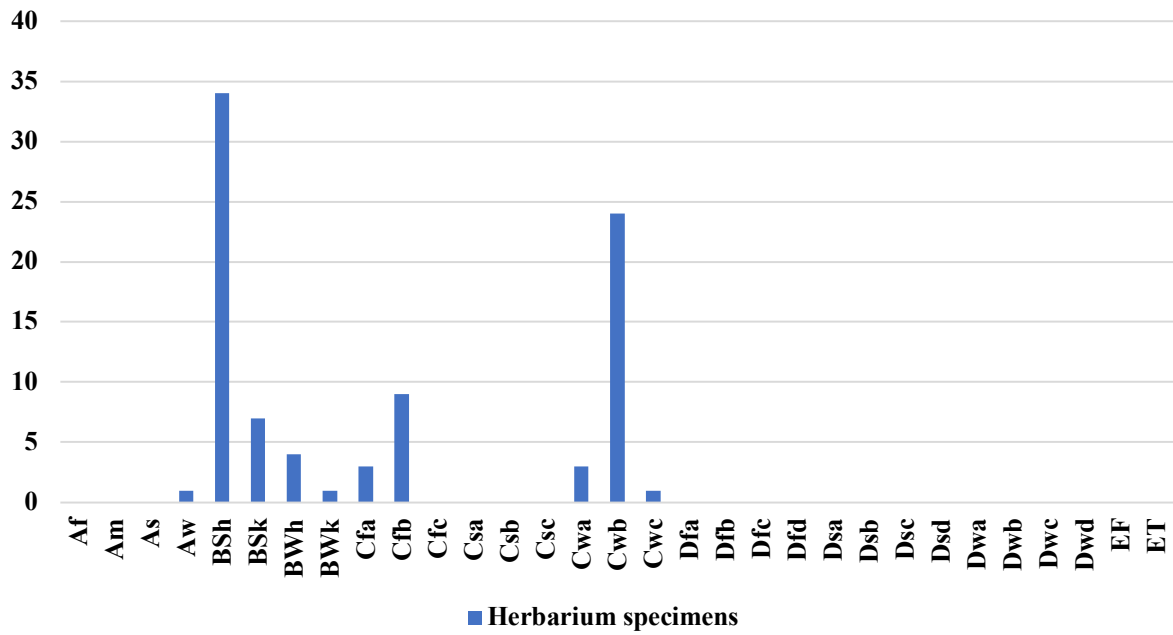
5.2.1.1.5. Köppen profile, distribution and climate map– GBIF occurrences of *Lagarosiphon muscoides* Harv. 1841; herbarium specimens excluding duplicate occurrences (n = 87).



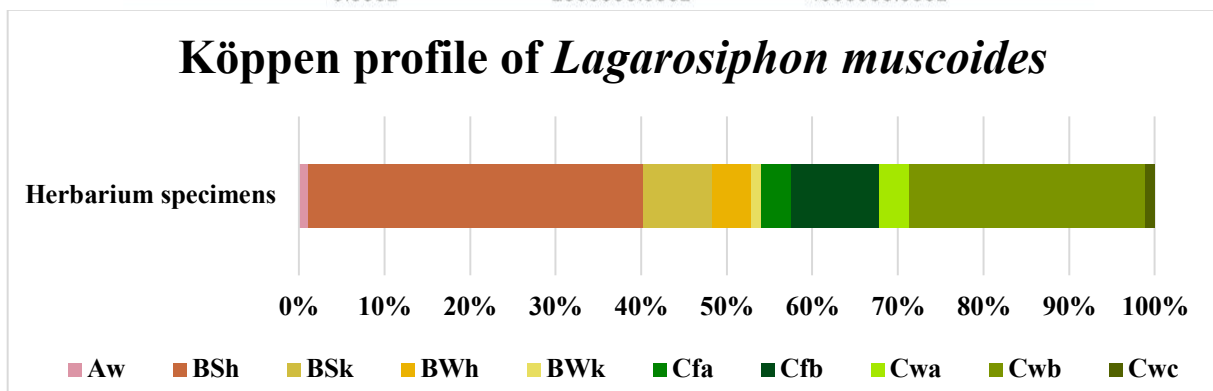
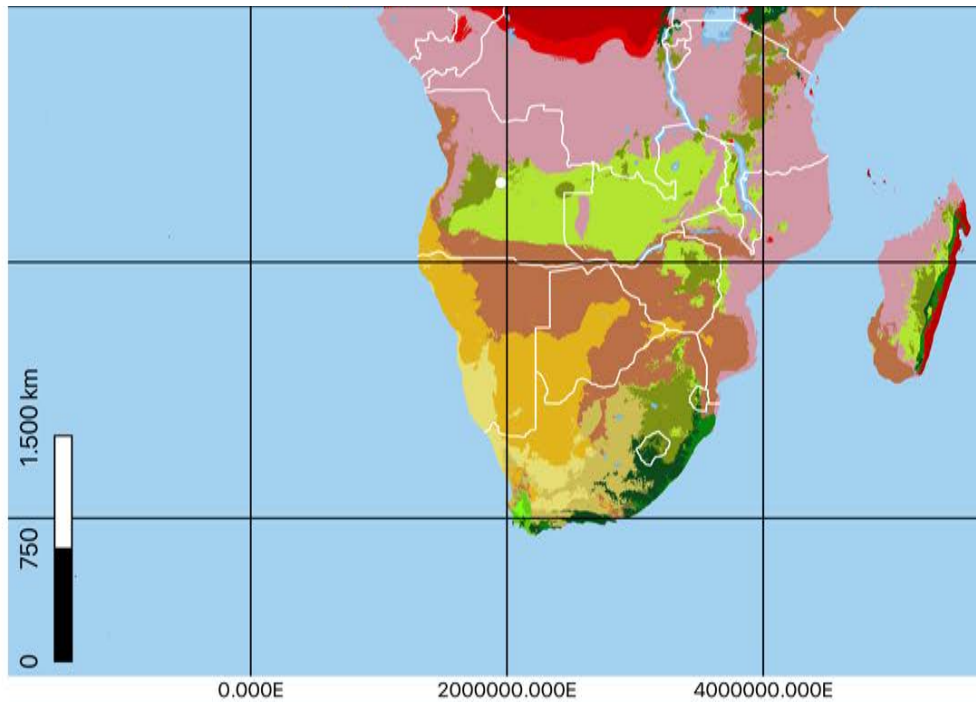
Köppen profile of *Lagarosiphon muscoides*



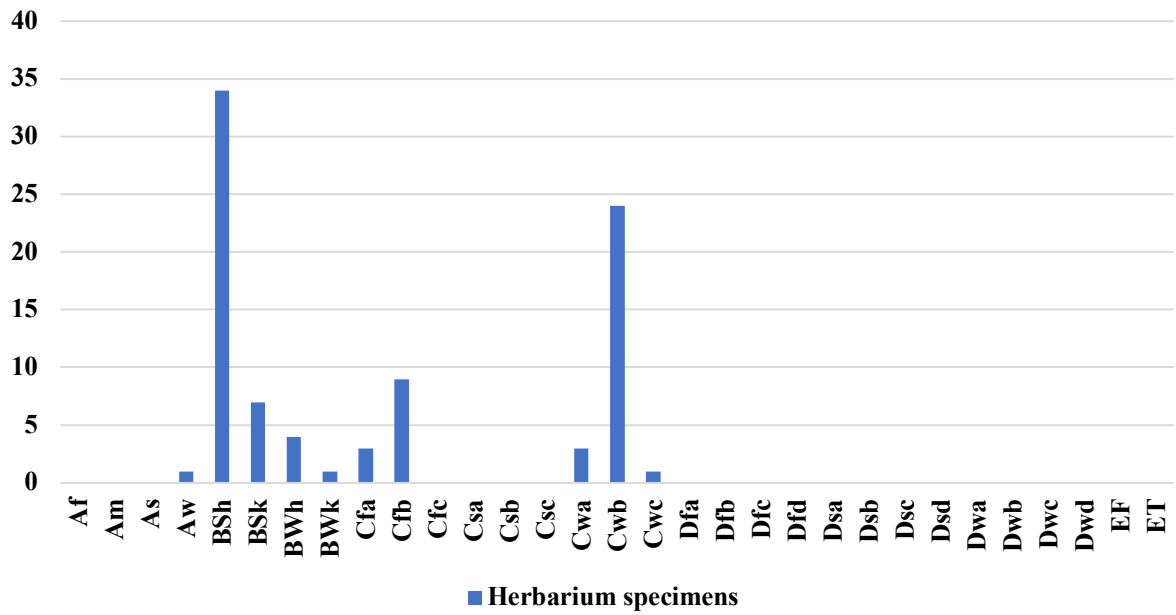
Köppen profile of *Lagarosiphon muscoides*



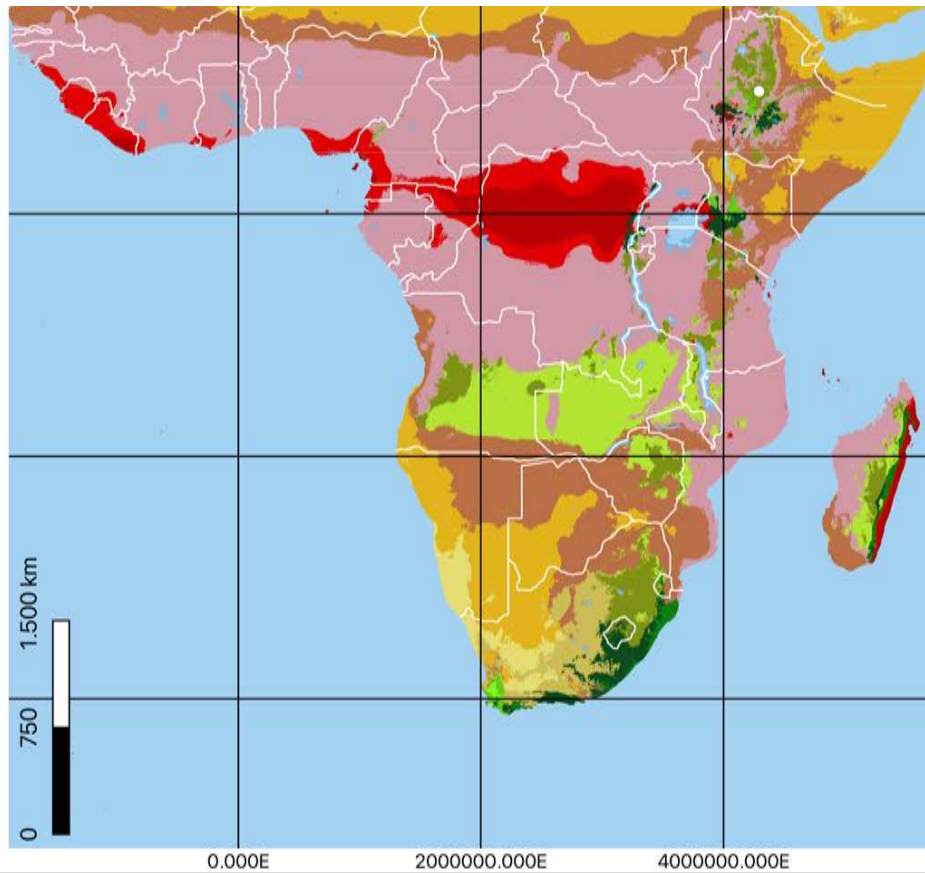
5.2.1.1.6. Köppen profile, distribution and climate map—GBIF occurrences of *Lagarosiphon rubellus* Ridl. 1886; herbarium specimens excluding duplicate occurrences (n = 1).



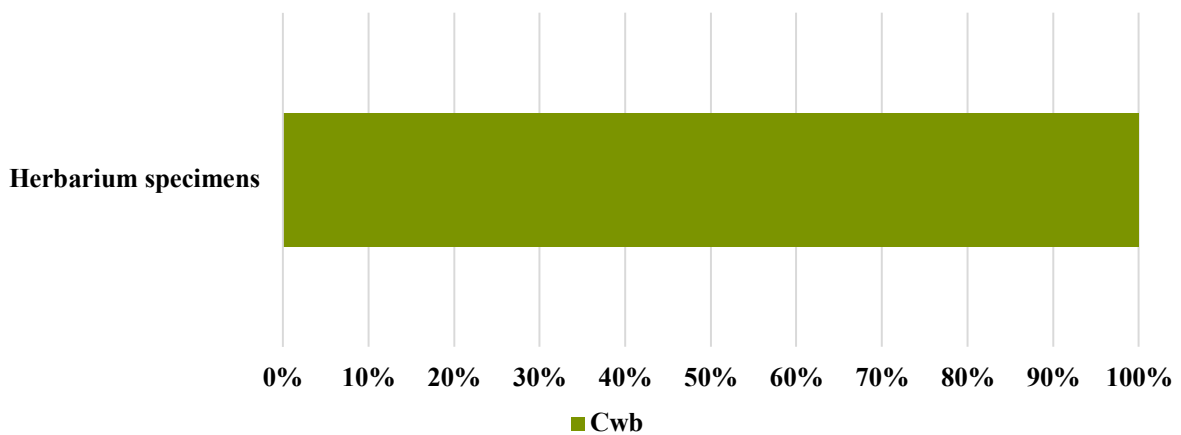
Köppen profile of *Lagarosiphon muscoides*



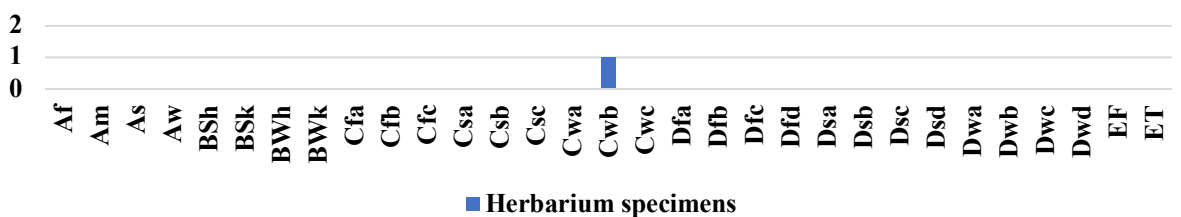
5.2.1.1.6. Köppen profile, distribution and climate map– GBIF occurrences of *Lagarosiphon steudneri* Casp. 1858; herbarium specimens excluding duplicate occurrences (n = 1).



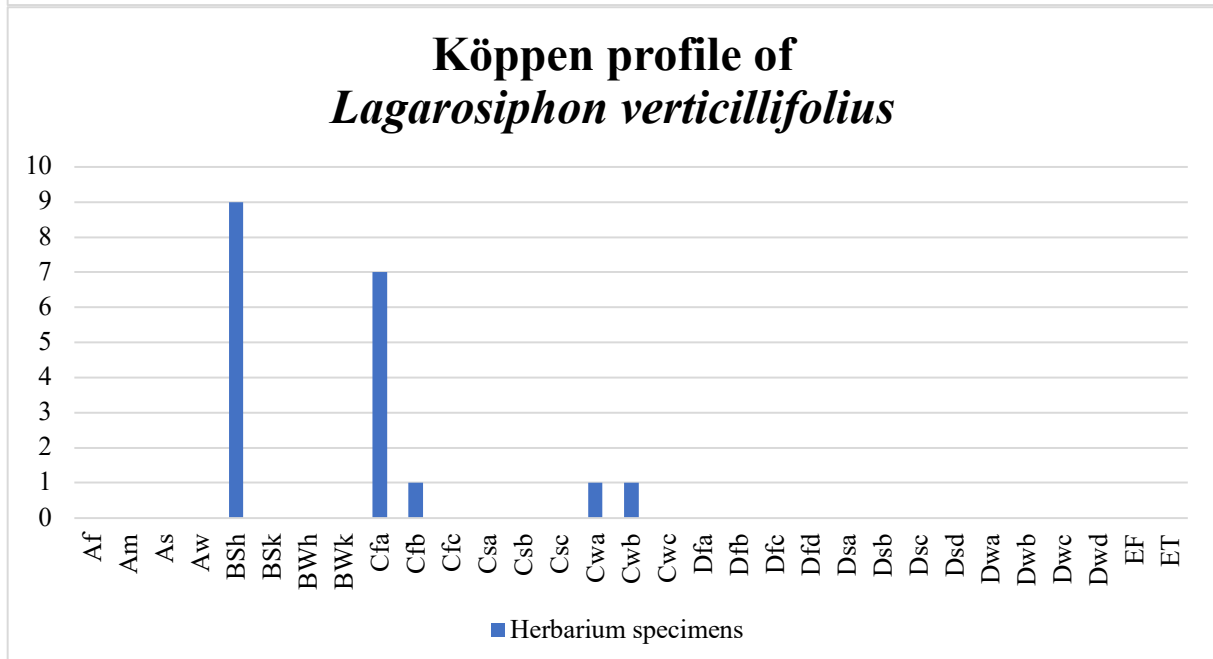
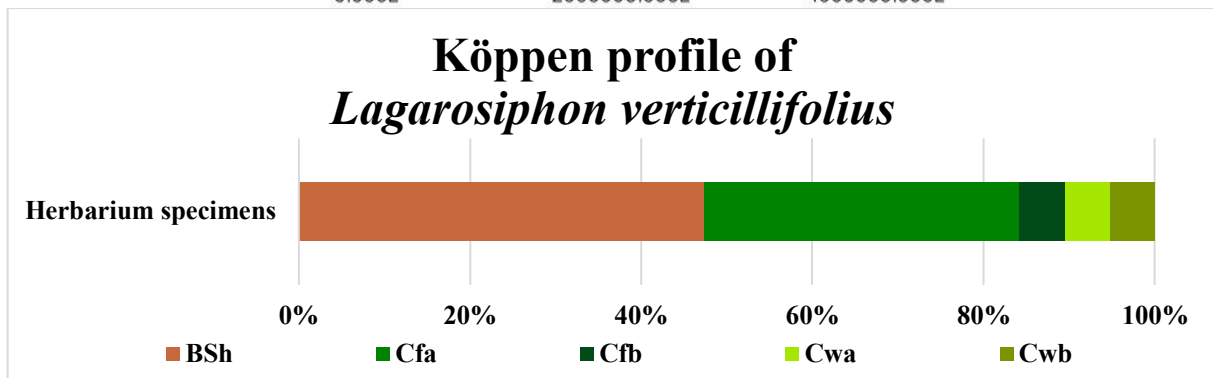
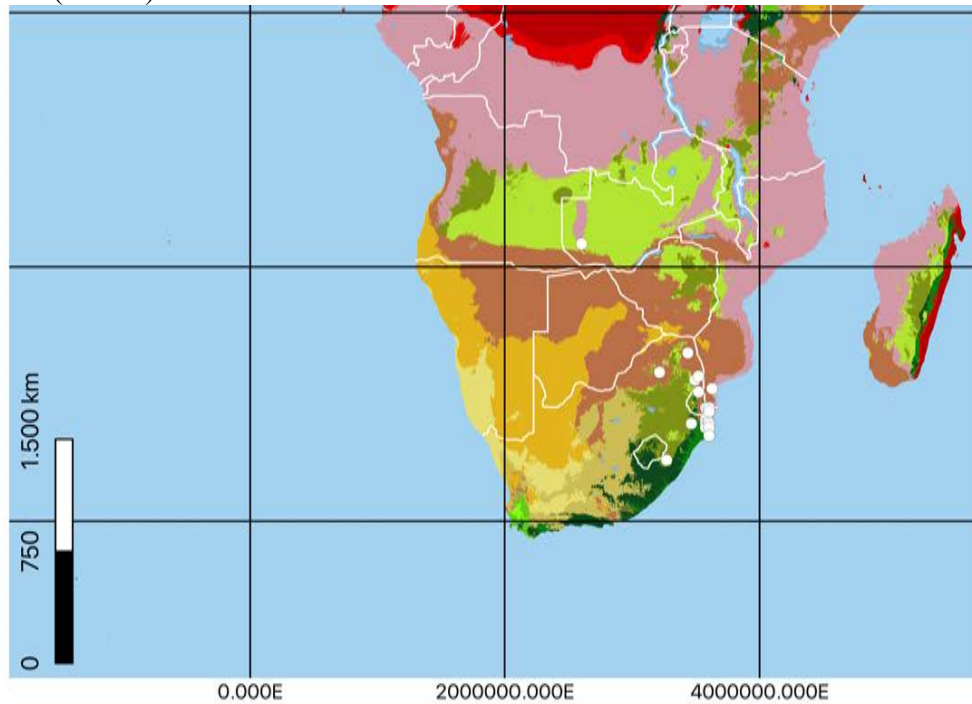
Köppen profile of *Lagarosiphon steudneri*



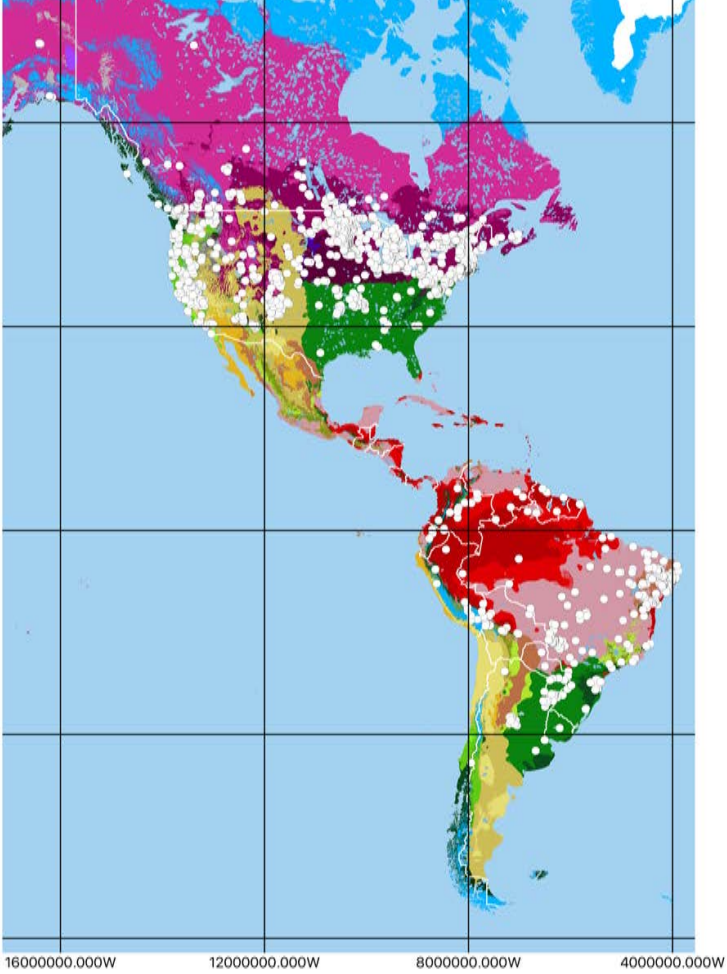
Köppen signatures of *Lagarosiphon steudneri*



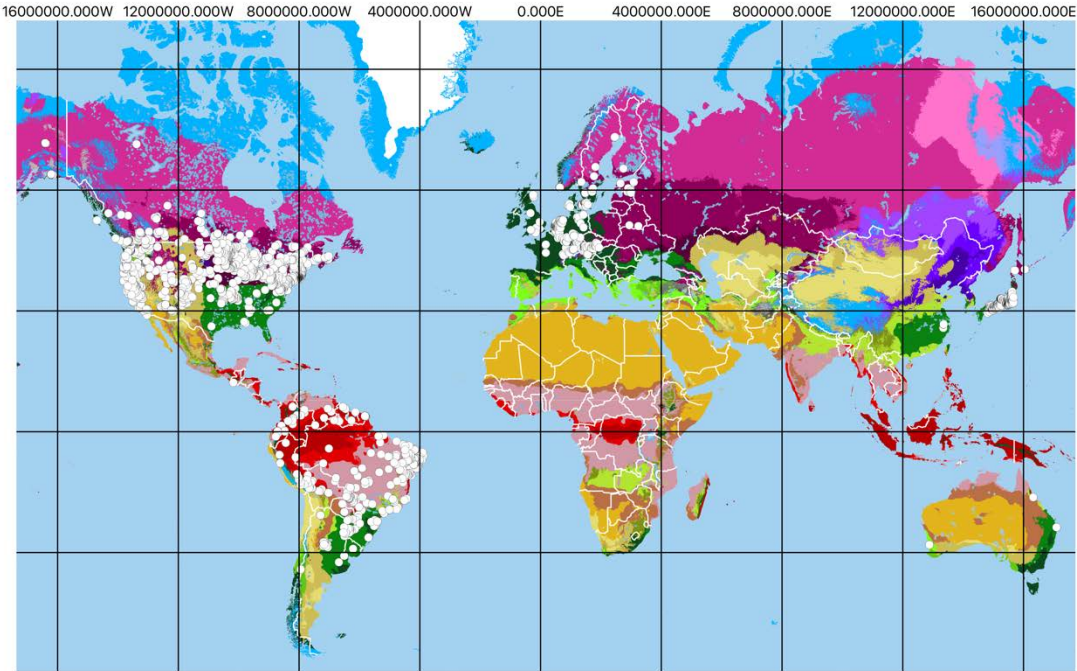
5.2.1.1.6. Köppen profile, distribution and climate map– GBIF occurrences of *Lagarosiphon verticillifolius* Oberm. 1964; herbarium specimens excluding duplicate occurrences (n = 19).



5.2.2. Second diverging genera within Clade B of Hydrocharitaceae cf. Chen et. al (2012), comprising *Egeria* Planch. 1849 and *Elodea* Michx. 1803 (native distribution)

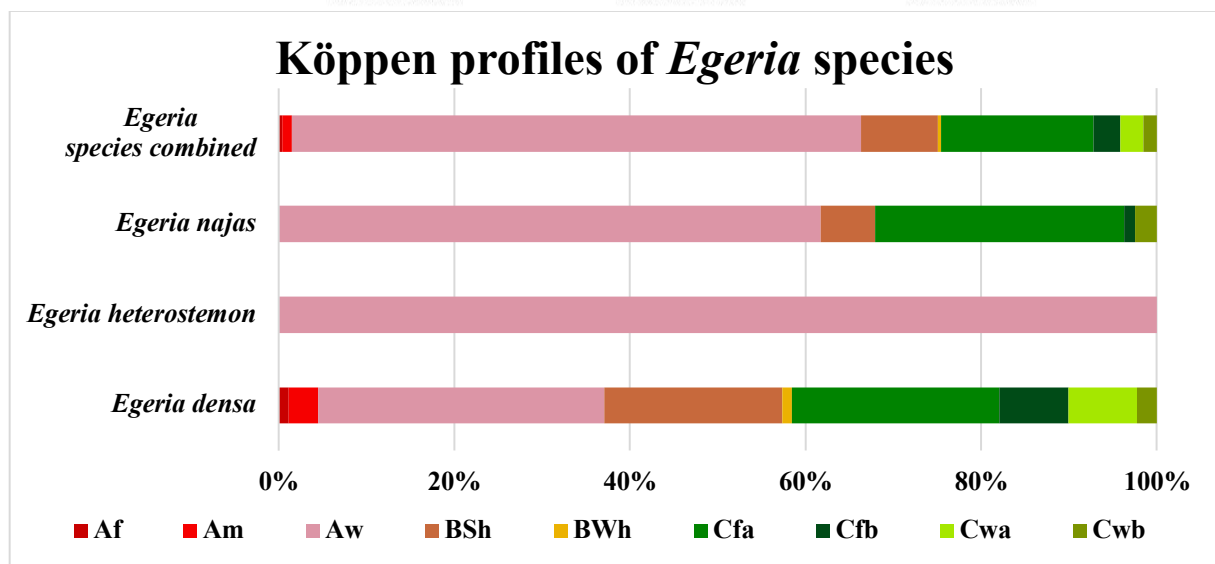
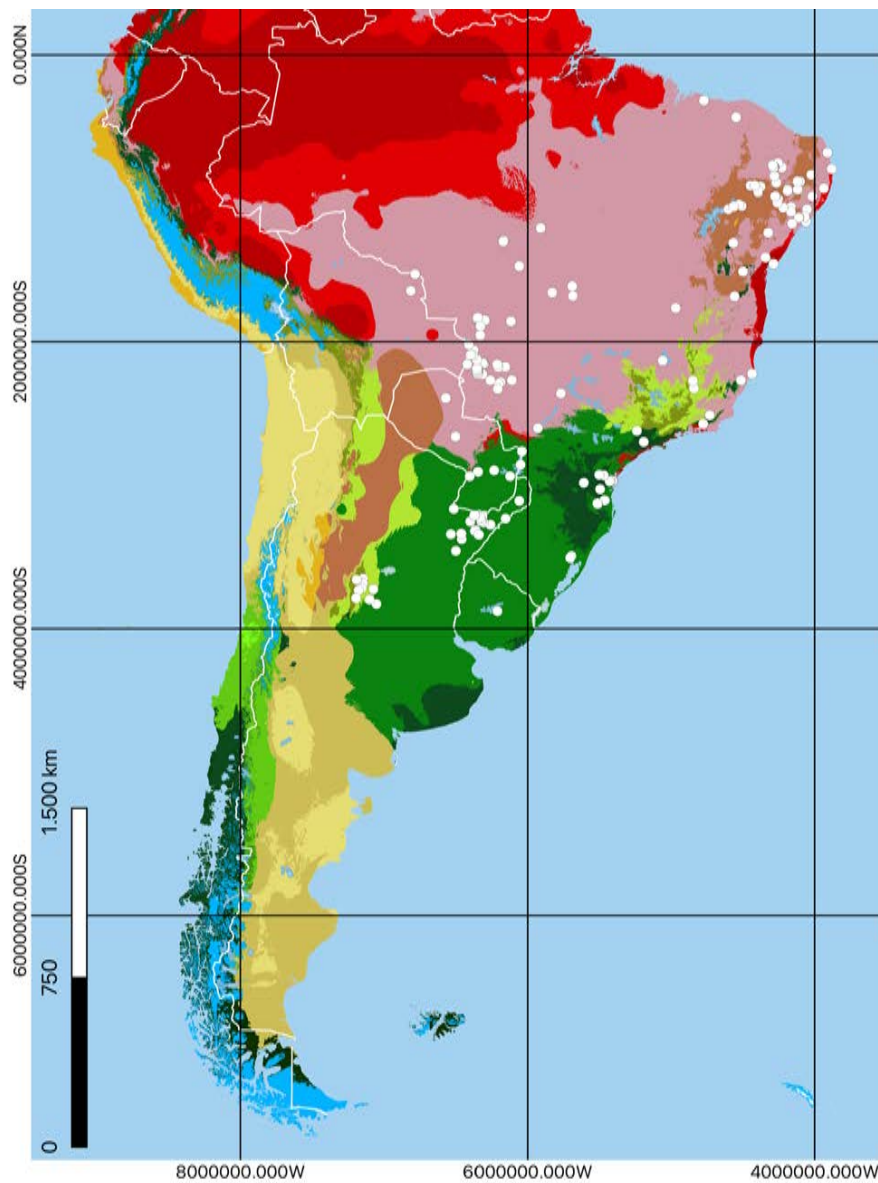


Egeria and *Elodea* preserved specimens, native and neophyte distribution.



5.2.2.1 Genus *Egeria* Planch. 1849.

Distribution and climate map and Köppen profiles for *Egeria* incl. *Egeria densa*, *E. heterostemon*, and *E. najas*, based on herbarium specimens excluding duplicate occurrences (n = 241).

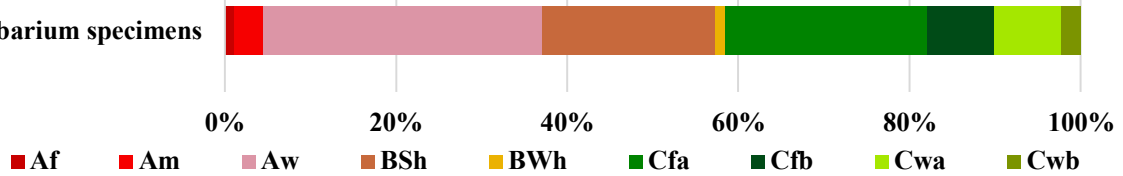


5.2.2.1.1. Köppen profile, distribution and climate map– GBIF occurrences of *Egeria densa* Planch. 1949; herbarium specimens excluding duplicate occurrences (n = 89).

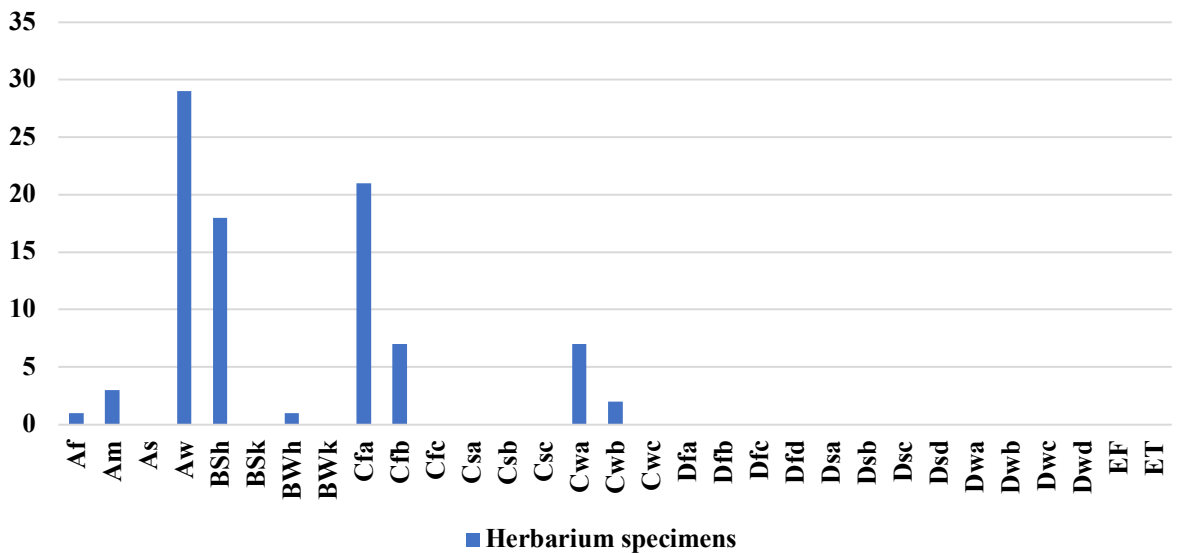


Köppen profiles of *Egeria densa*

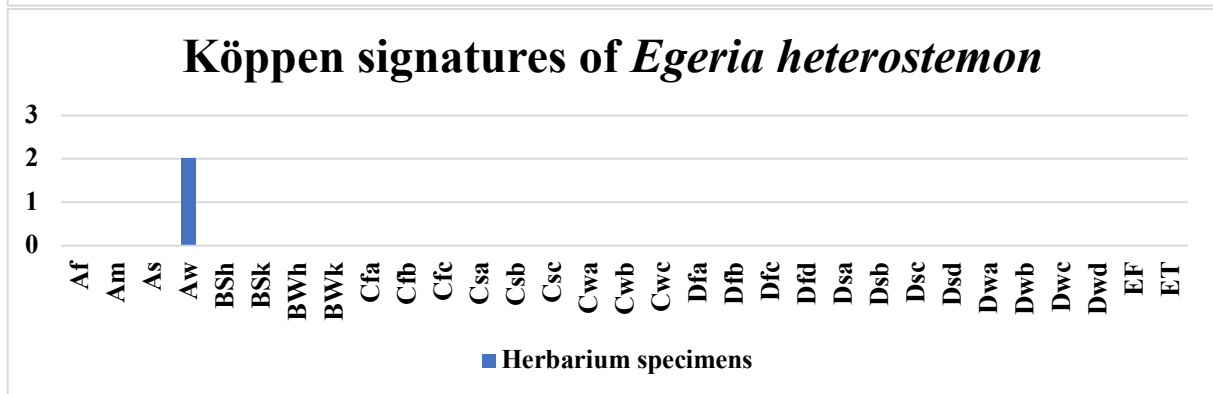
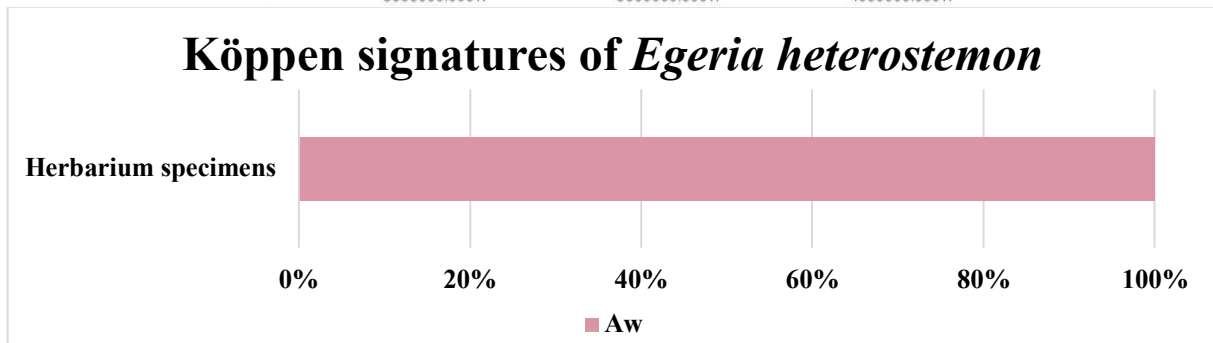
Herbarium specimens



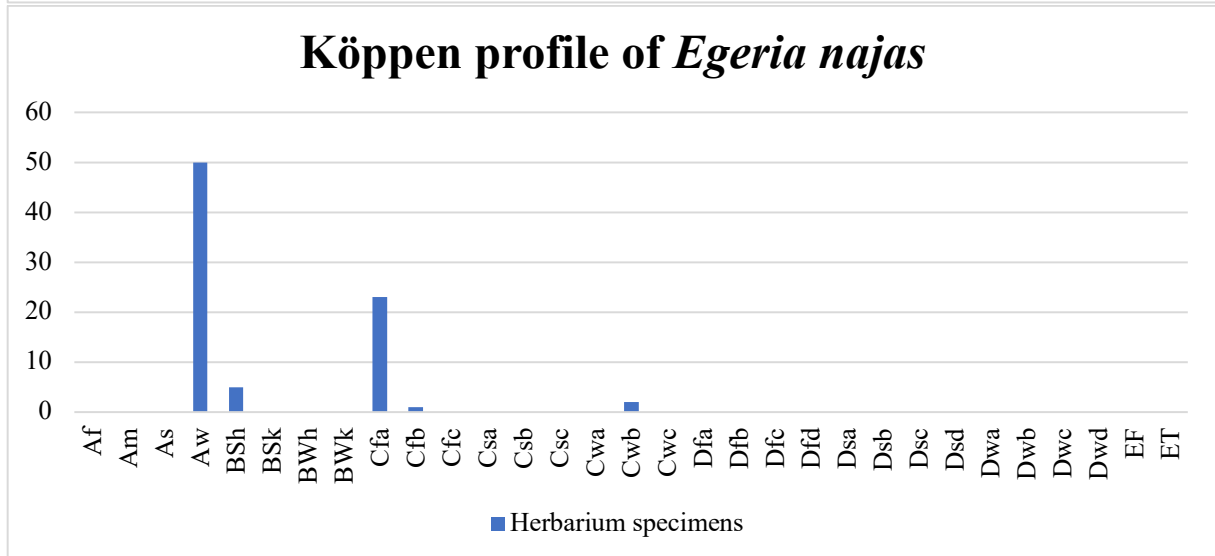
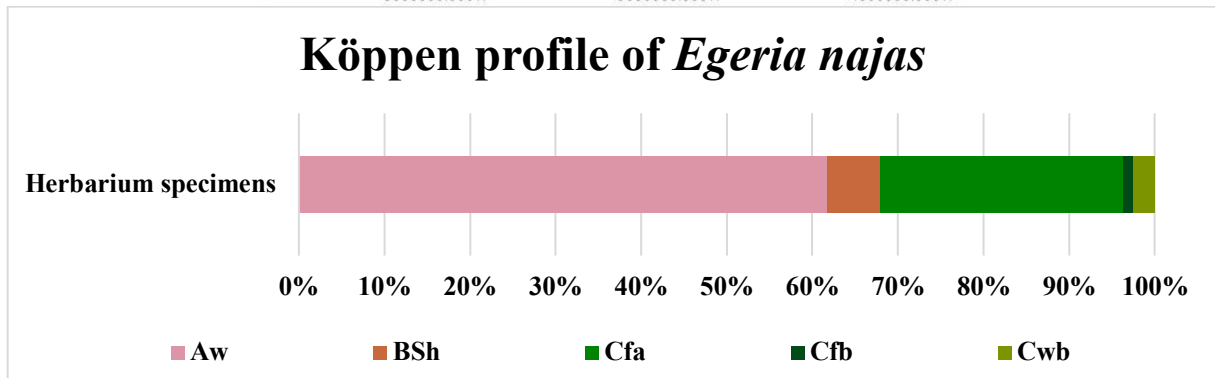
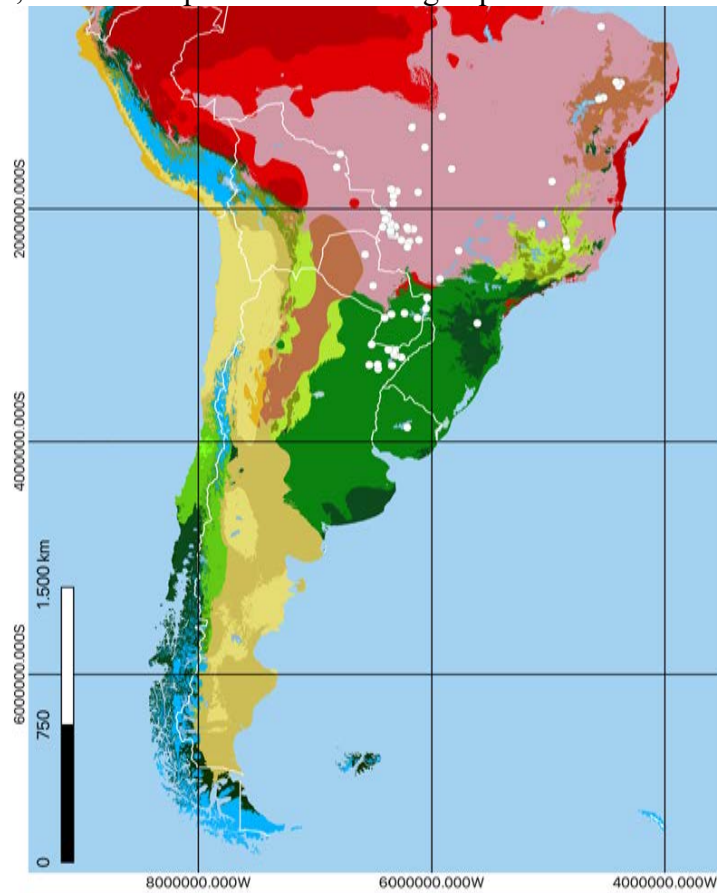
Köppen profiles of *Egeria densa*



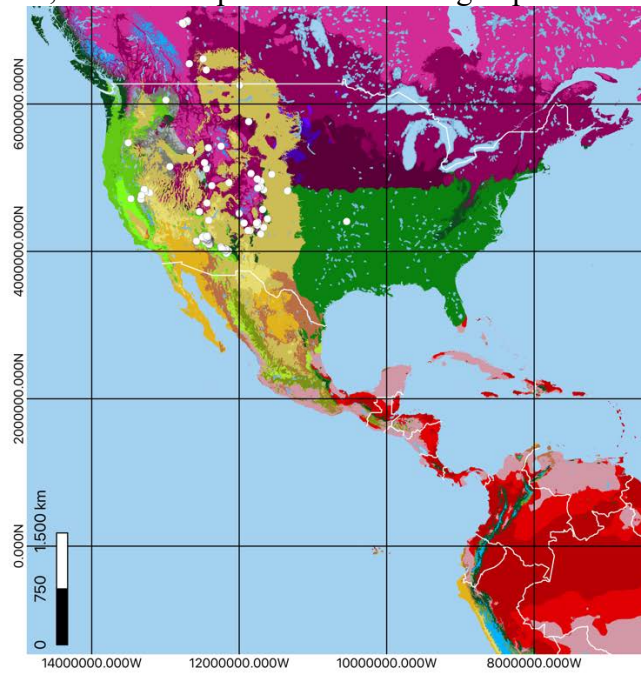
5.2.2.1.2. Köppen profile, distribution and climate map– GBIF occurrences of *Egeria heterostemon* S.Koehler & C.P.Bove 2001; herbarium specimens excluding duplicate occurrences (n = 2).



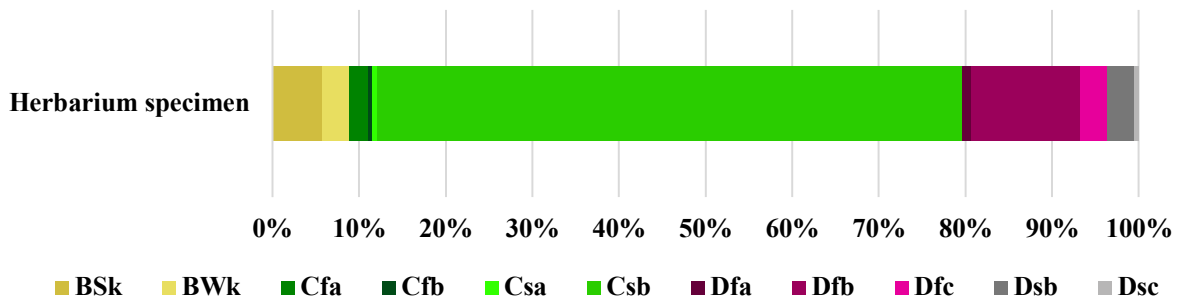
5.2.2.1.3. Köppen profile, distribution and climate map– GBIF occurrences of *Egeria najas* Planch. 1849; herbarium specimens excluding duplicate occurrences (n = 81).



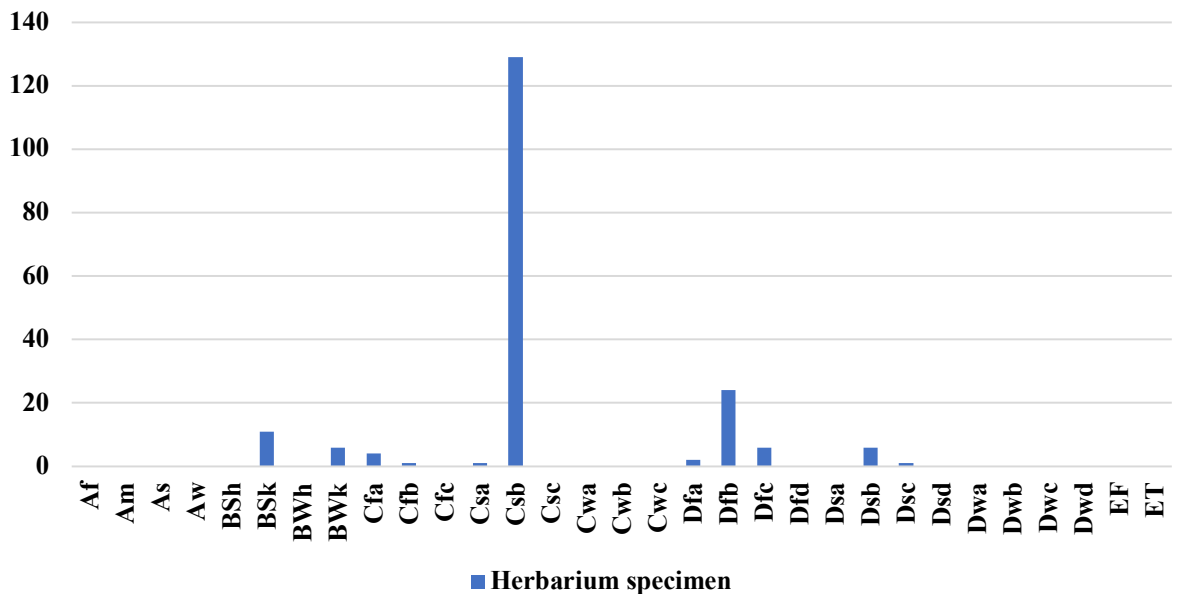
5.2.2.2.1. Köppen profile, distribution and climate map– GBIF occurrences of *Elodea bifoliata* H.St.John 1962; herbarium specimens excluding duplicate occurrences (n = 191).



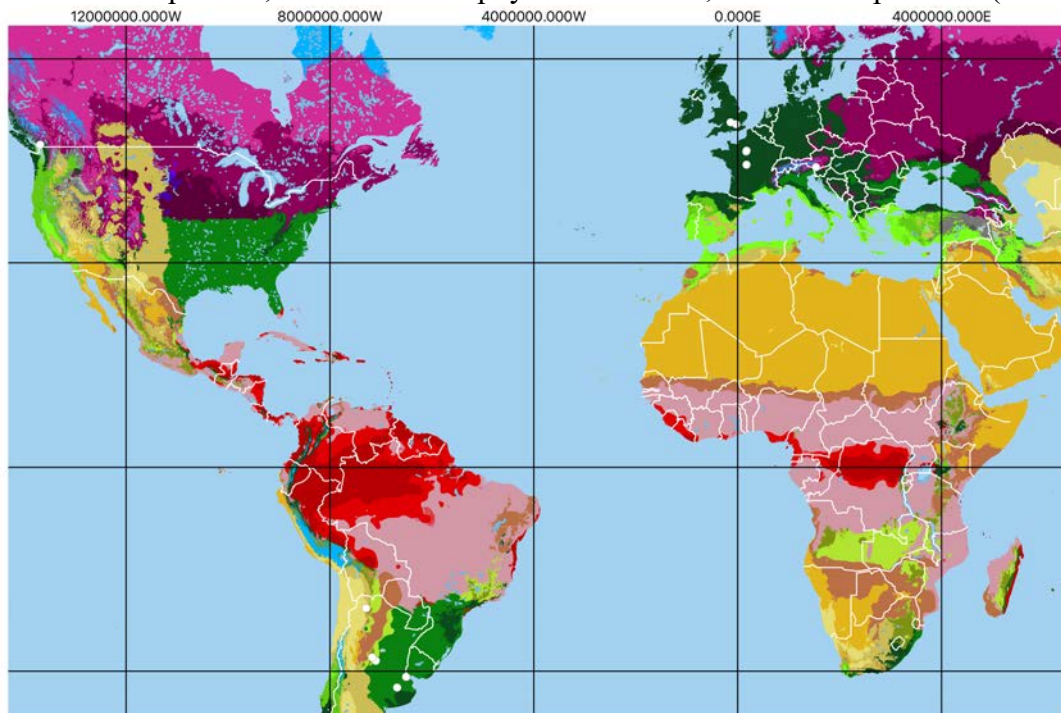
Köppen profile of *Elodea bifoliata*



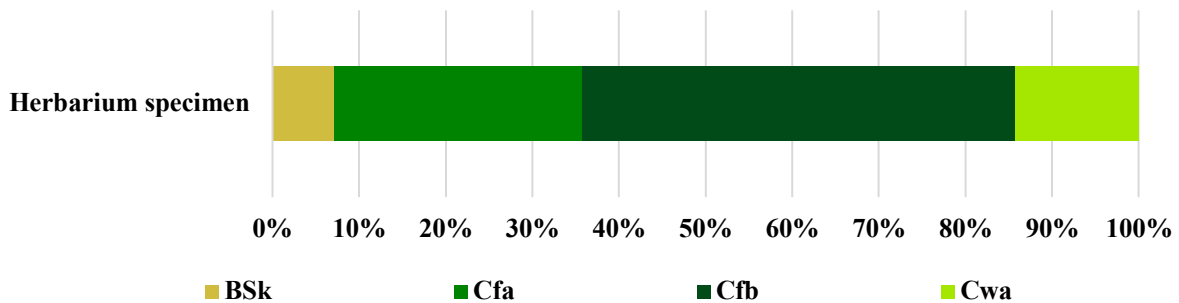
Köppen profile of *Elodea bifoliata*



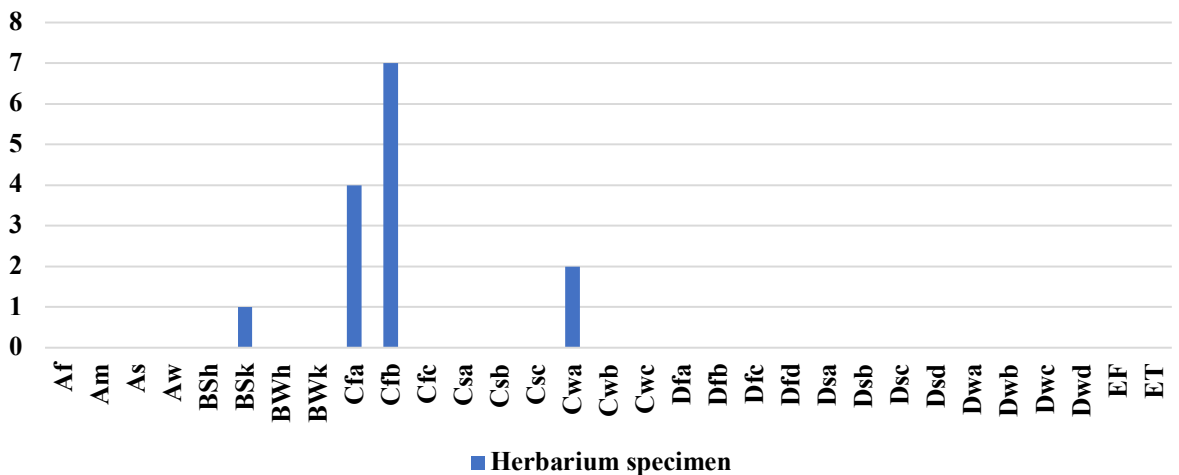
5.2.2.2. Köppen profile, distribution and climate map– GBIF occurrences of *Elodea callitrichoides* Casp. 1857, natural and neophyte distribution; herbarium specimen (n = 14).



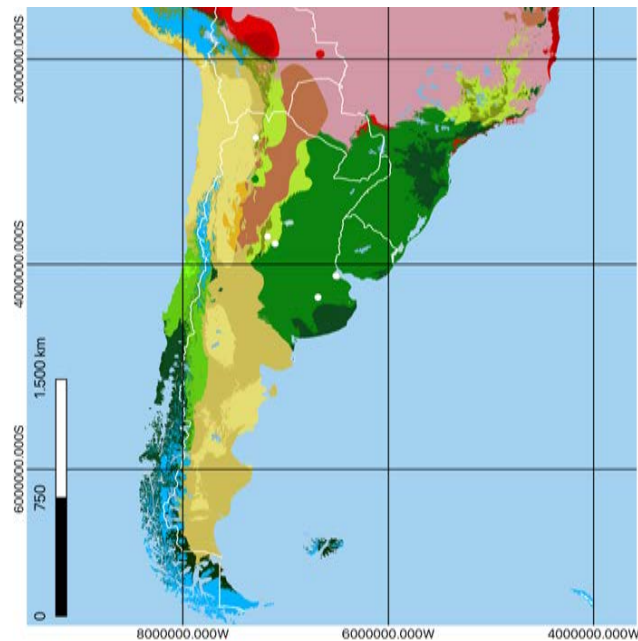
Köppen profiles of *Elodea callitrichoides* (+ neophyte localities)



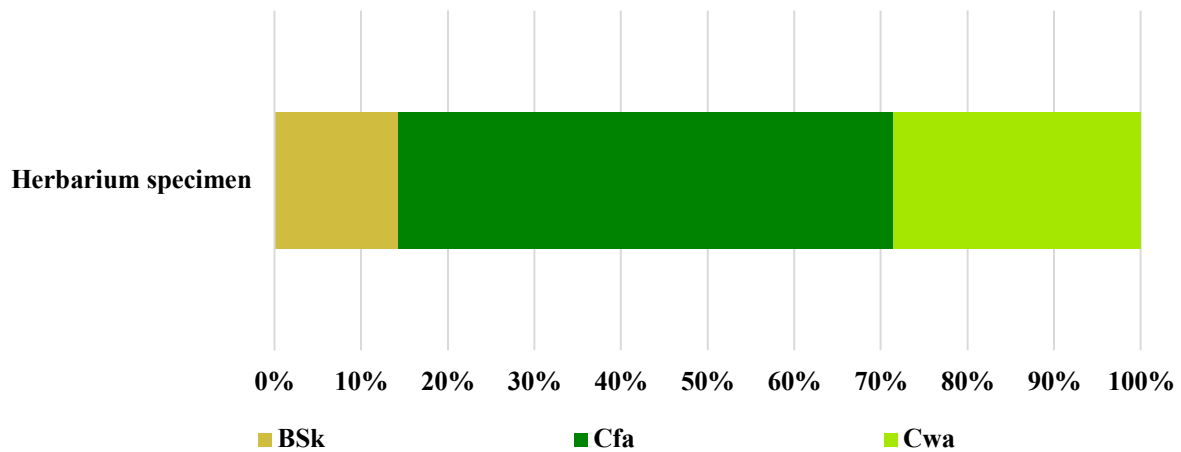
Köppen profiles of *Elodea callitrichoides* (+ neophyte localities)



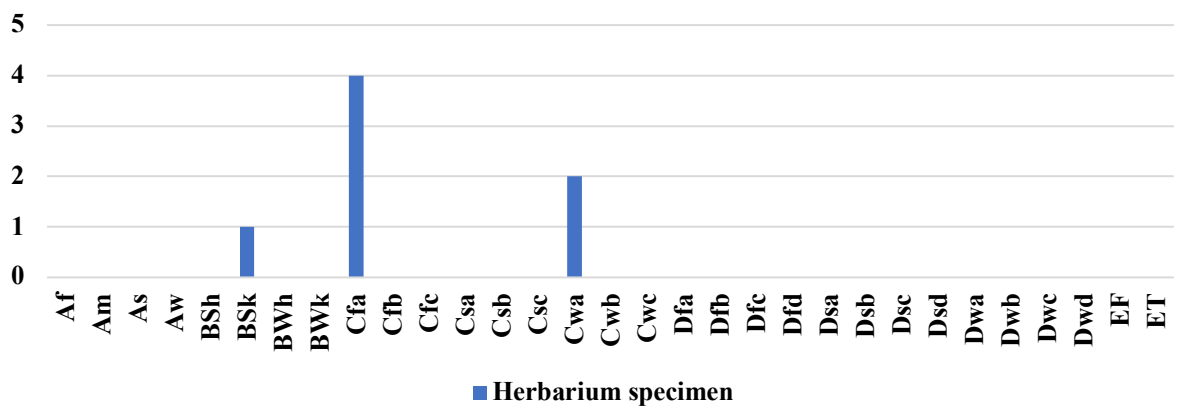
Köppen profile, distribution and climate map – GBIF occurrences of *Elodea callitrichoides*, natural distribution; herbarium specimens excluding duplicate occurrences (n = 7).



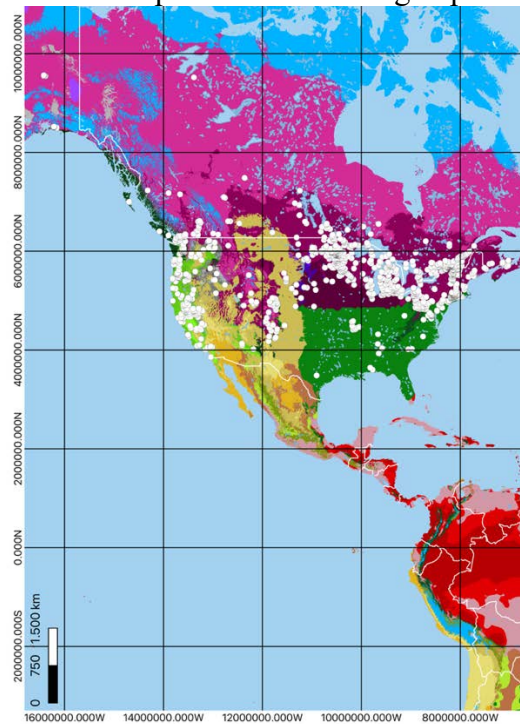
Köppen profile of *Elodea callitrichoides*



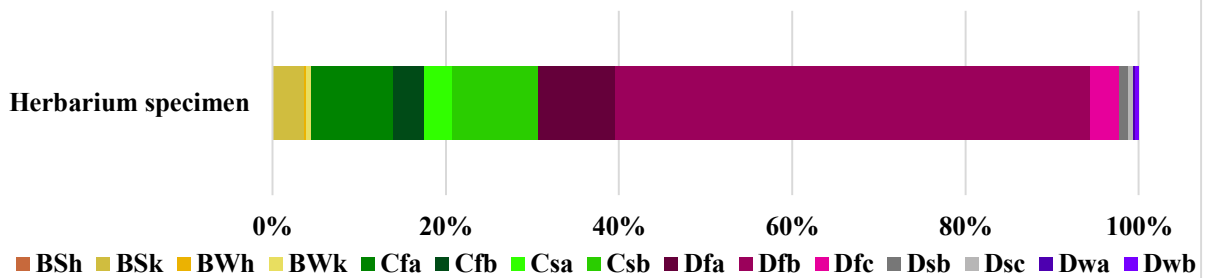
Köppen profile of *Elodea callitrichoides*



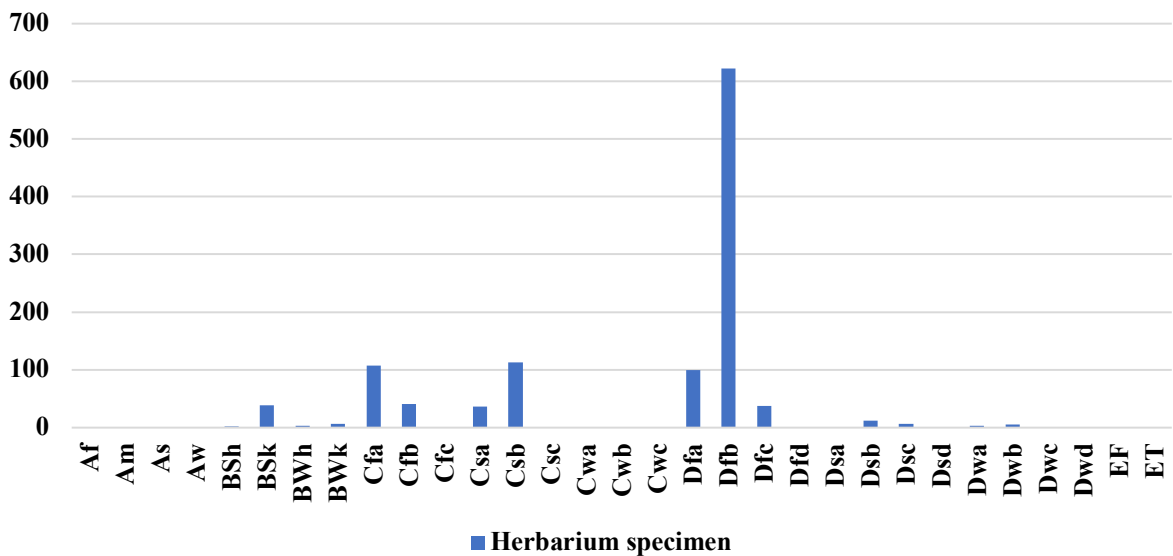
5.2.2.2.3. Köppen profile, distribution and climate map – GBIF occurrences of *Elodea canadensis* Michx. 1803; herbarium specimens excluding duplicate occurrences (n = 1134).



Köppen profile of *Elodea canadensis*



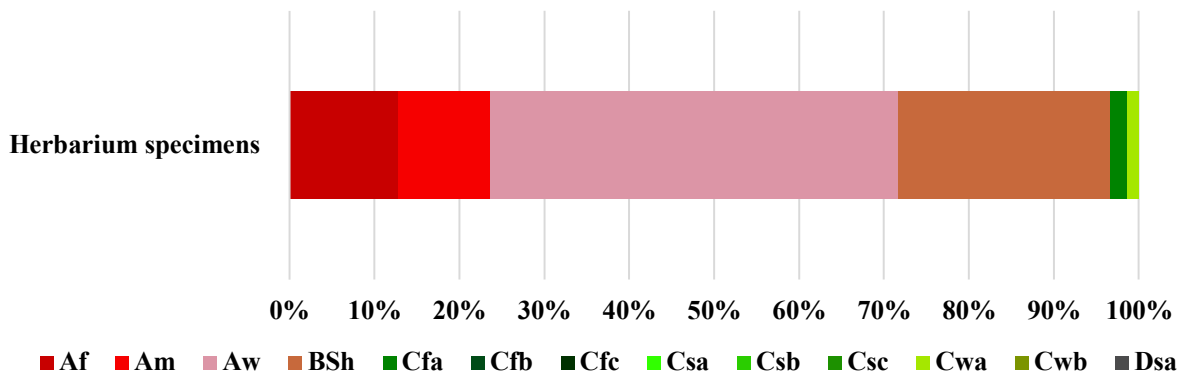
Köppen profile of *Elodea canadensis*



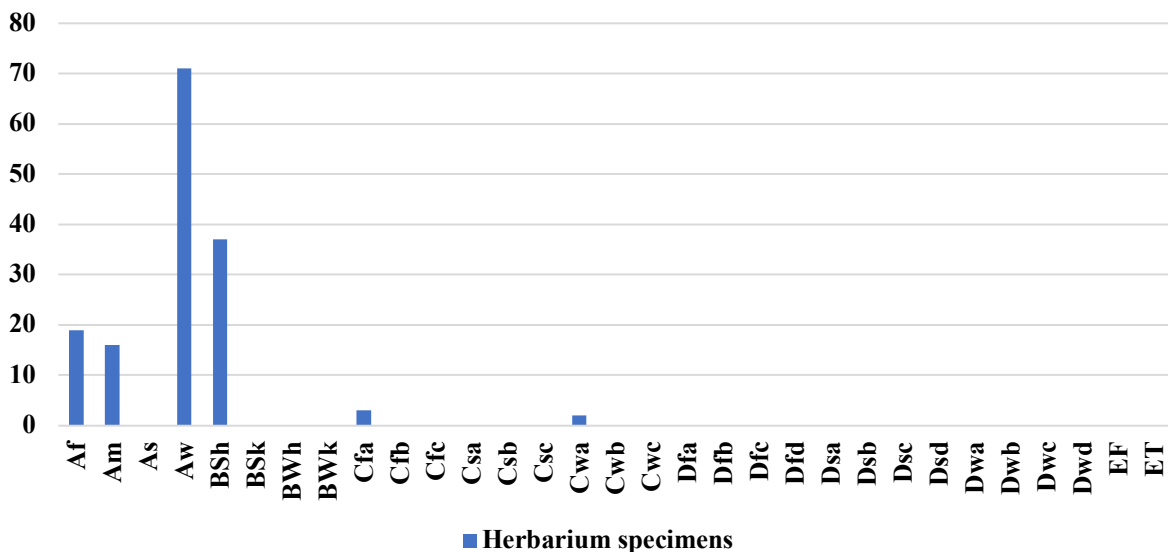
5.2.2.2.4. Köppen profile, distribution and climate map– GBIF occurrences of *Elodea granatensis* H.St.John 1962; herbarium specimens excluding duplicate occurrences (n = 148).



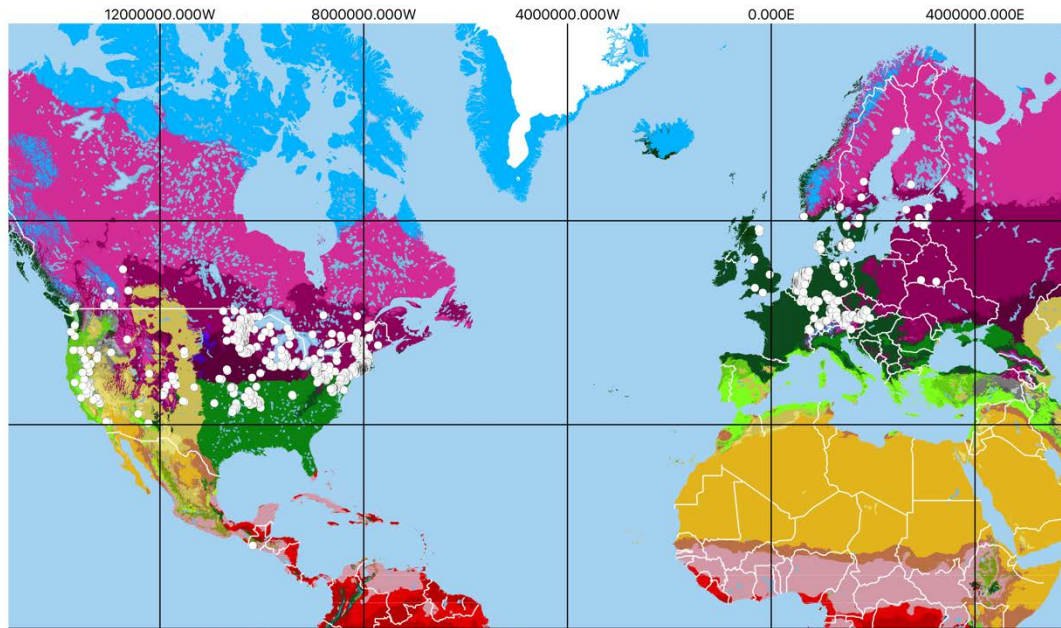
Köppen profile of *Elodea granatensis*



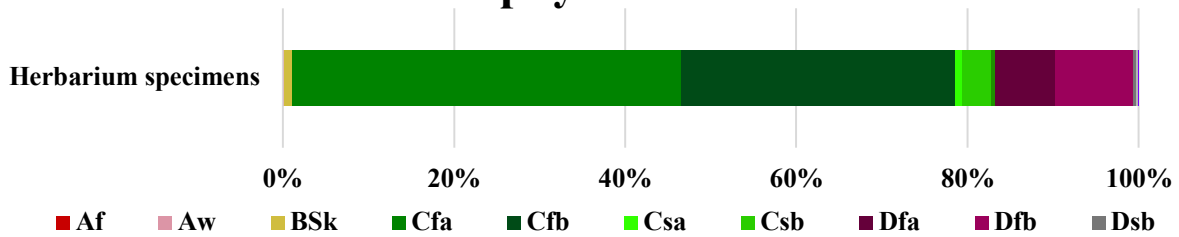
Köppen profile of *Elodea granatensis*



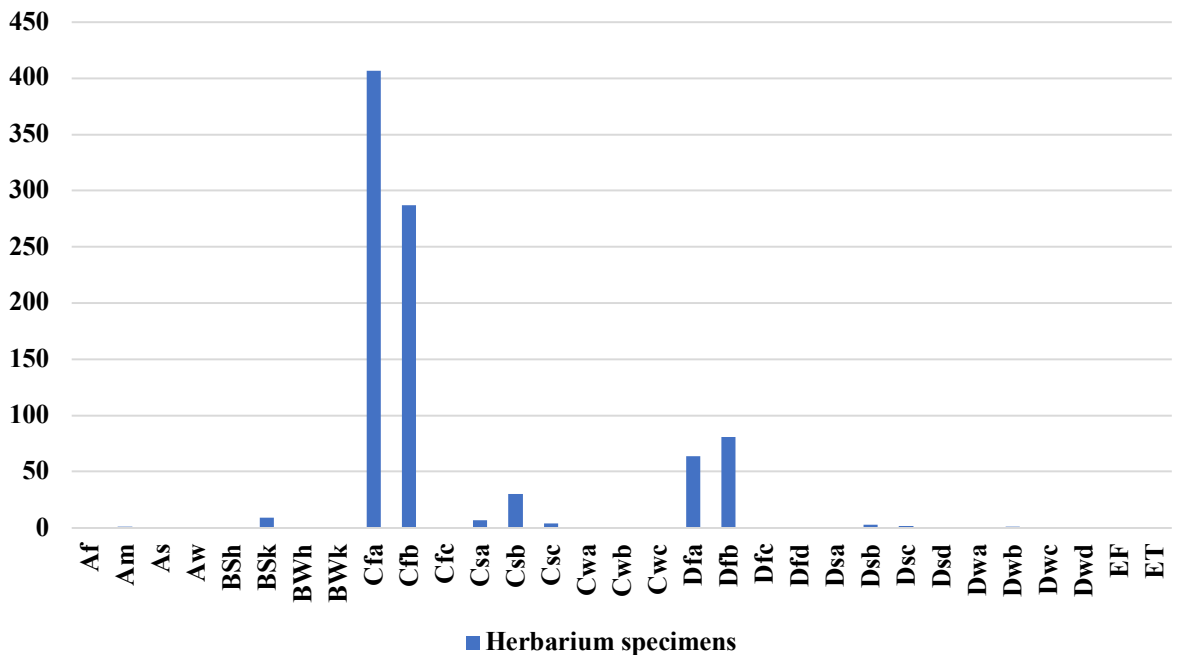
5.2.2.2.5. Köppen profile, distribution and climate map– GBIF occurrences of *Elodea nuttallii* H.St.John 1920; natural and neophyte distribution; herbarium specimen (n = 896).



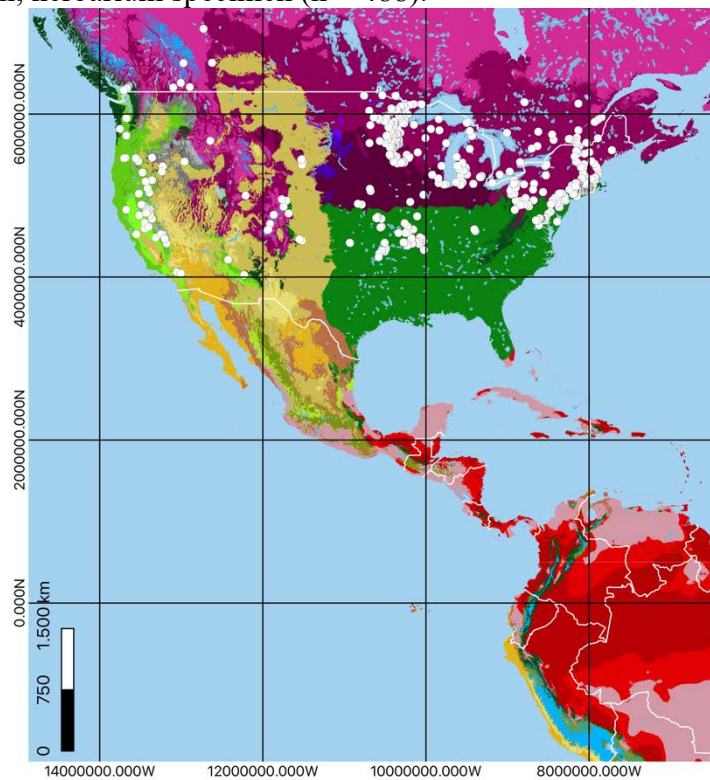
**Köppen profile of *Elodea nuttallii*
+ neophyte localities**



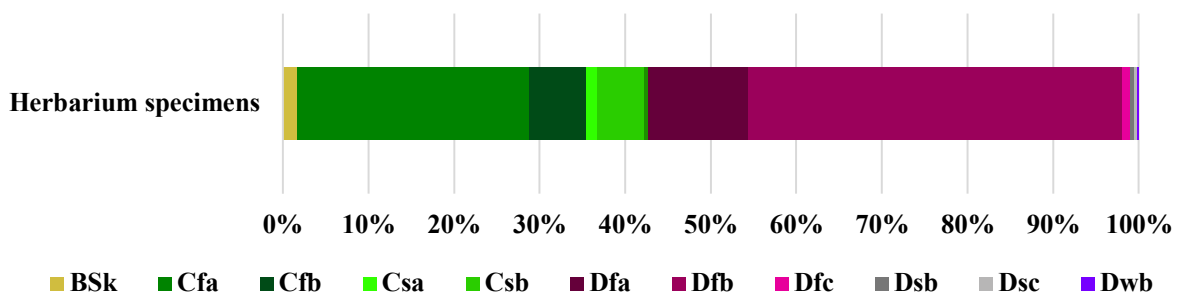
**Köppen profile of *Elodea nuttallii*
+ neophyte localities**



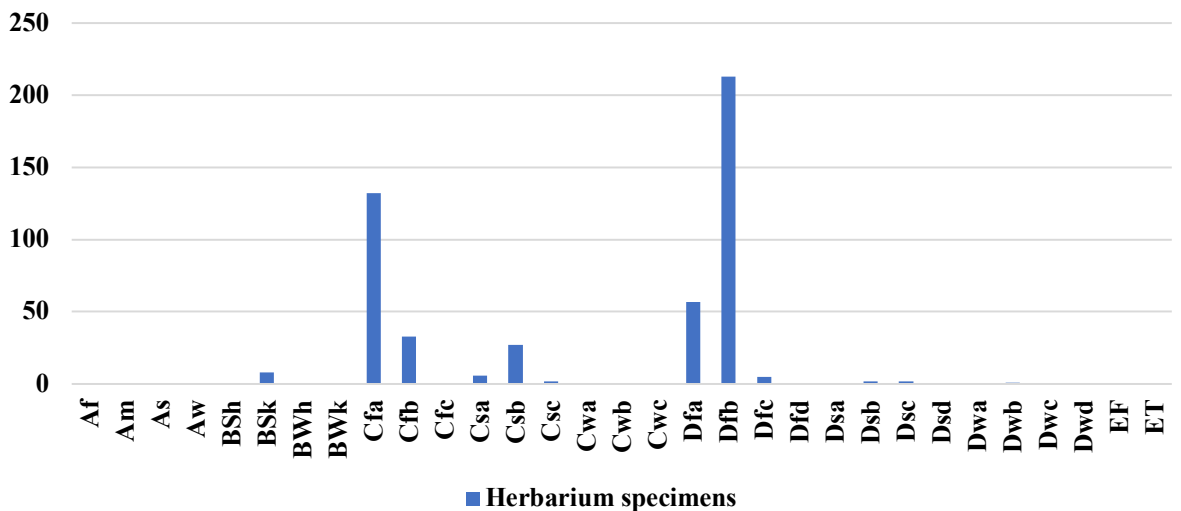
Köppen profile, distribution and climate map– GBIF occurrences of *Elodea nuttallii*; natural distribution; herbarium specimen (n = 488).



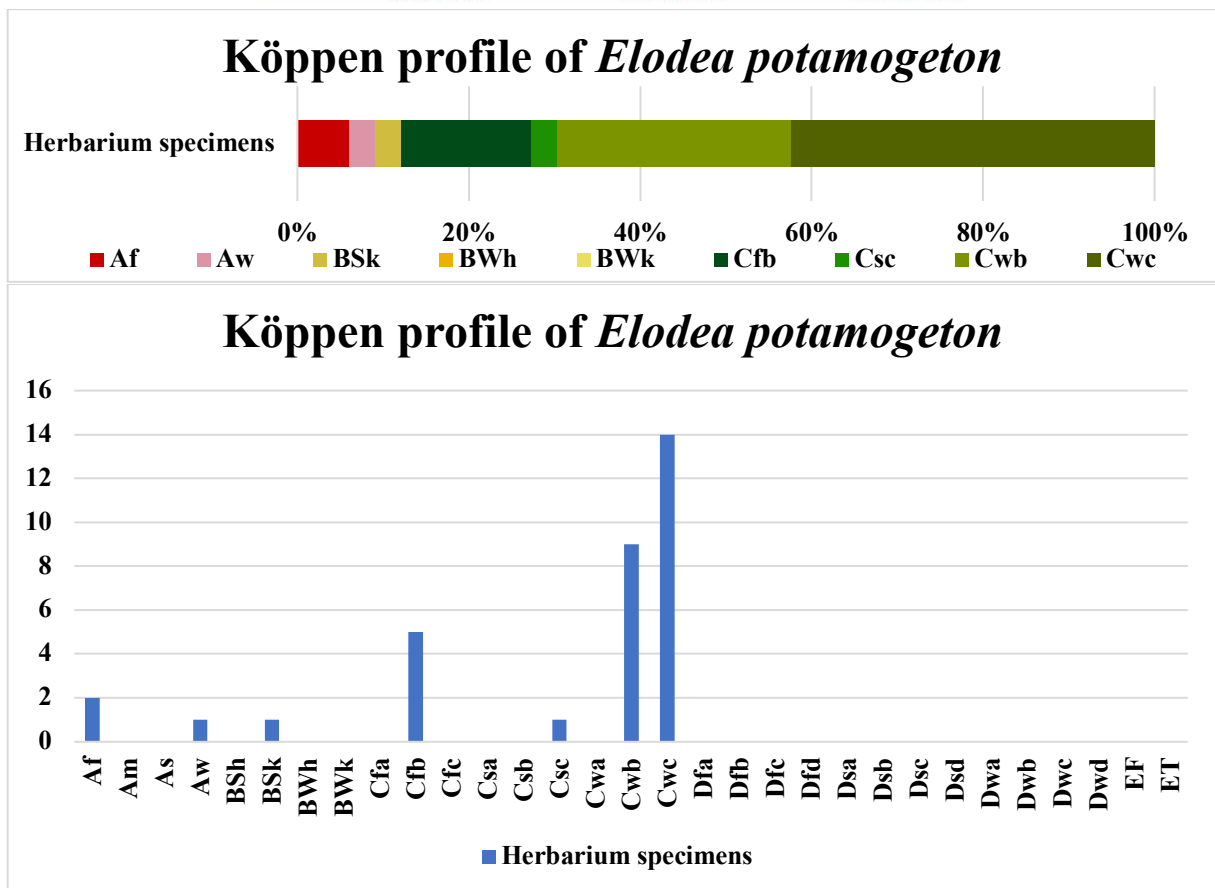
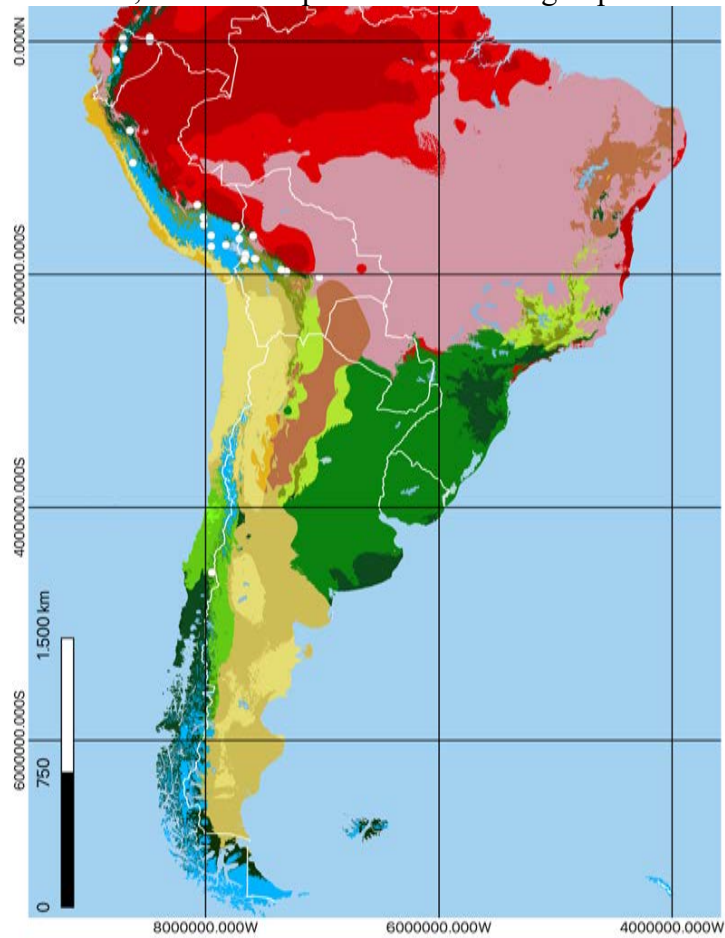
Köppen profile of *Elodea nuttallii*



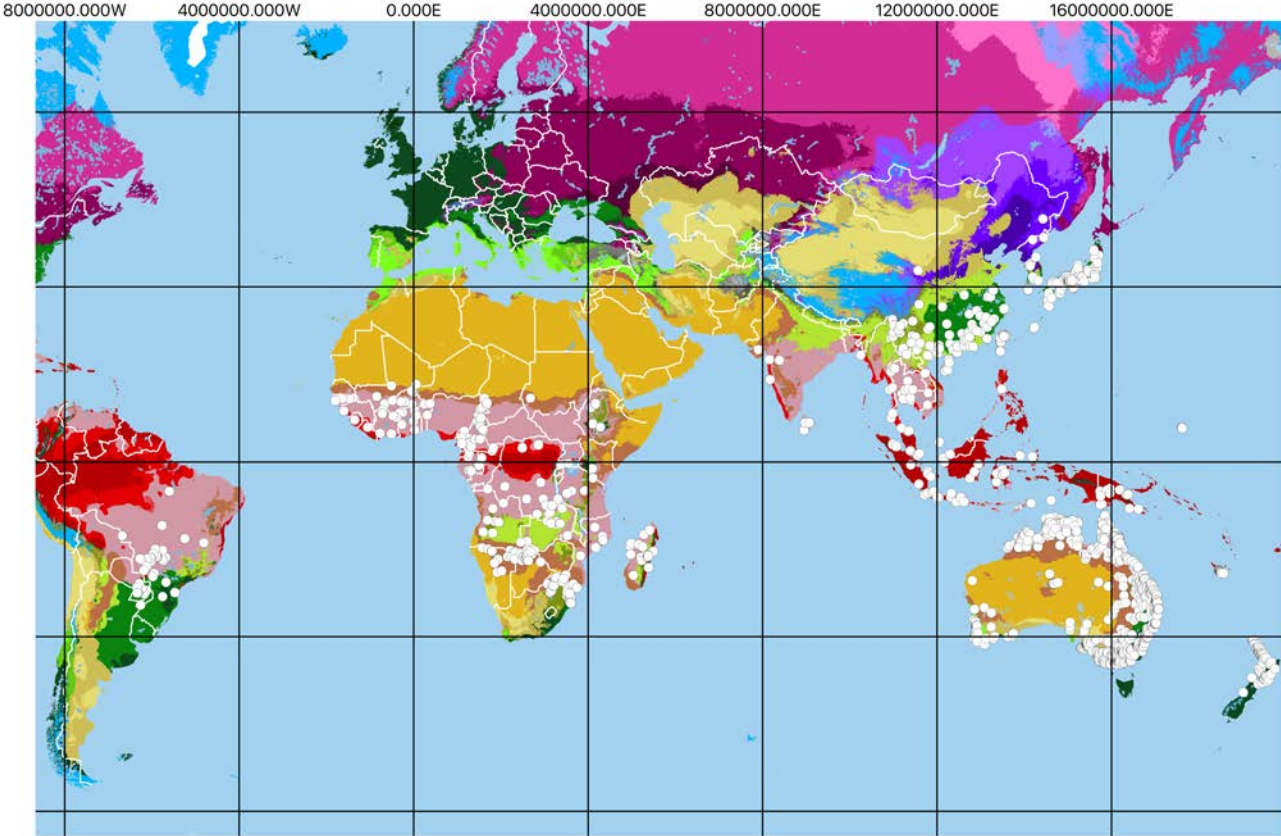
Köppen profile of *Elodea nuttallii*



5.2.2.2.6. Köppen profile, distribution and climate map—GBIF occurrences of *Elodea potamogeton* Espinosa 1928; herbarium specimens excluding duplicate occurrences (n = 33).

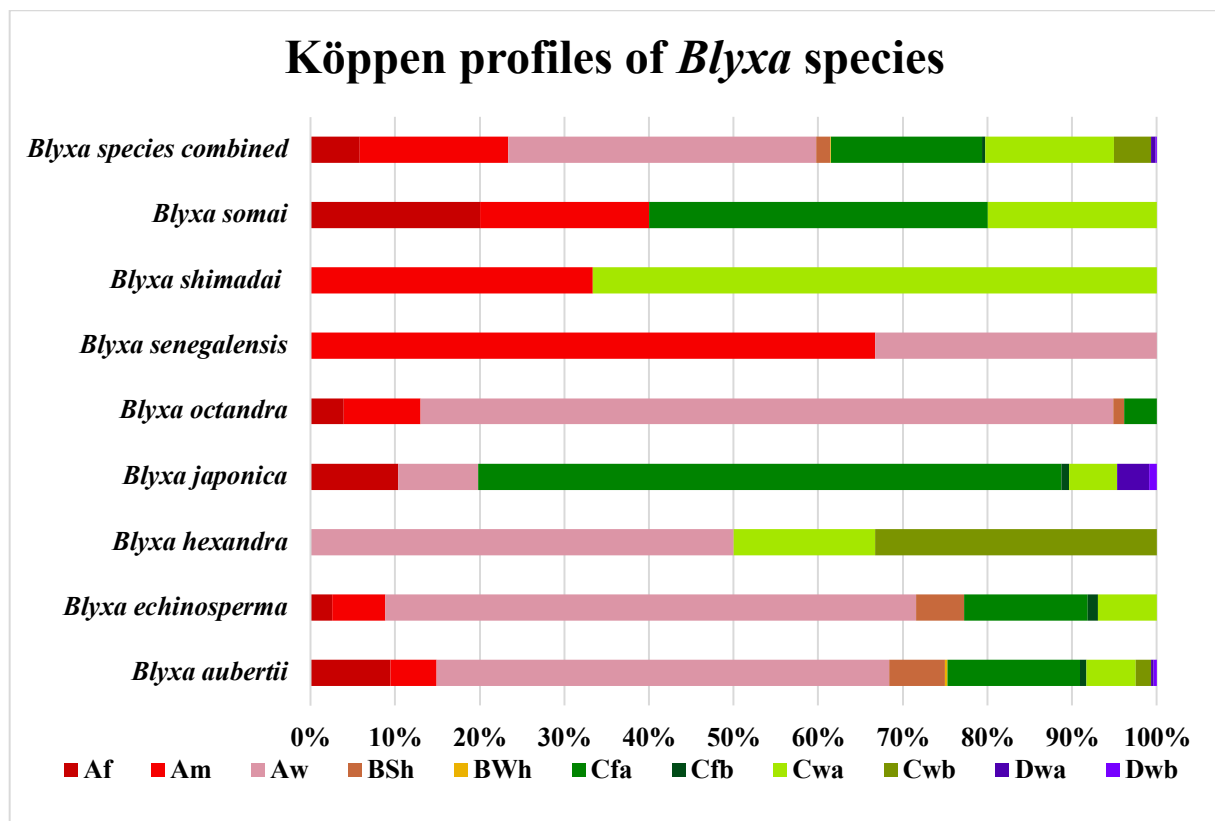
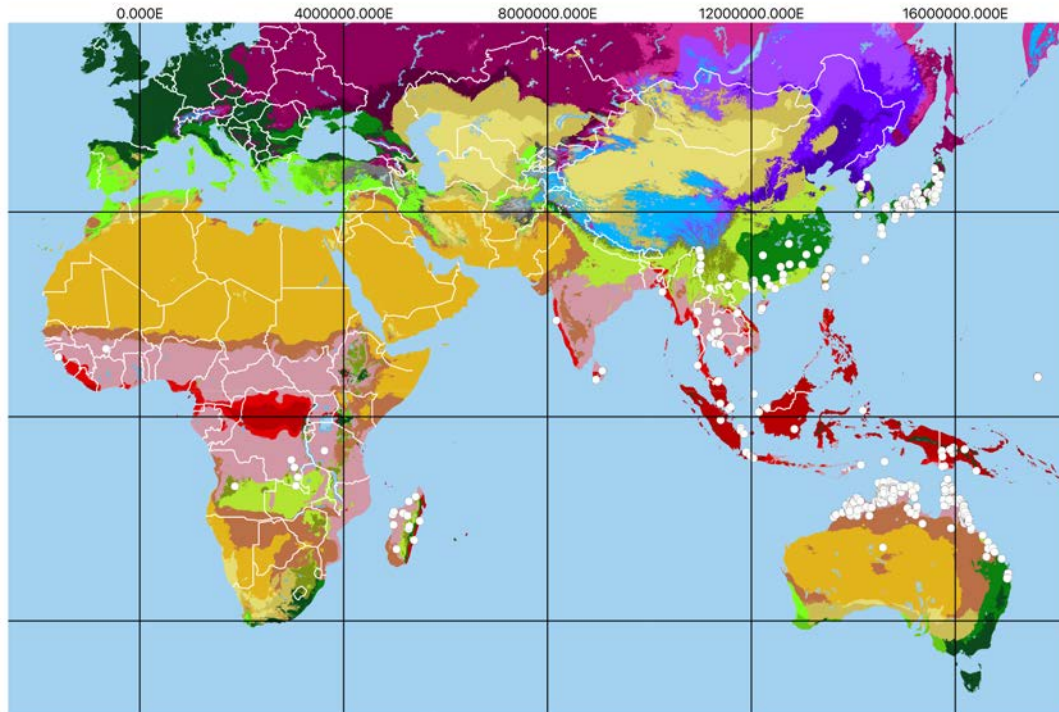


5.2.3. Crown group Clade B of Hydrocharitaceae cf. Chen et. al (2012), comprising *Blyxa* Noronha ex Thouars, 1806 and *Ottelia* Pers., 1805

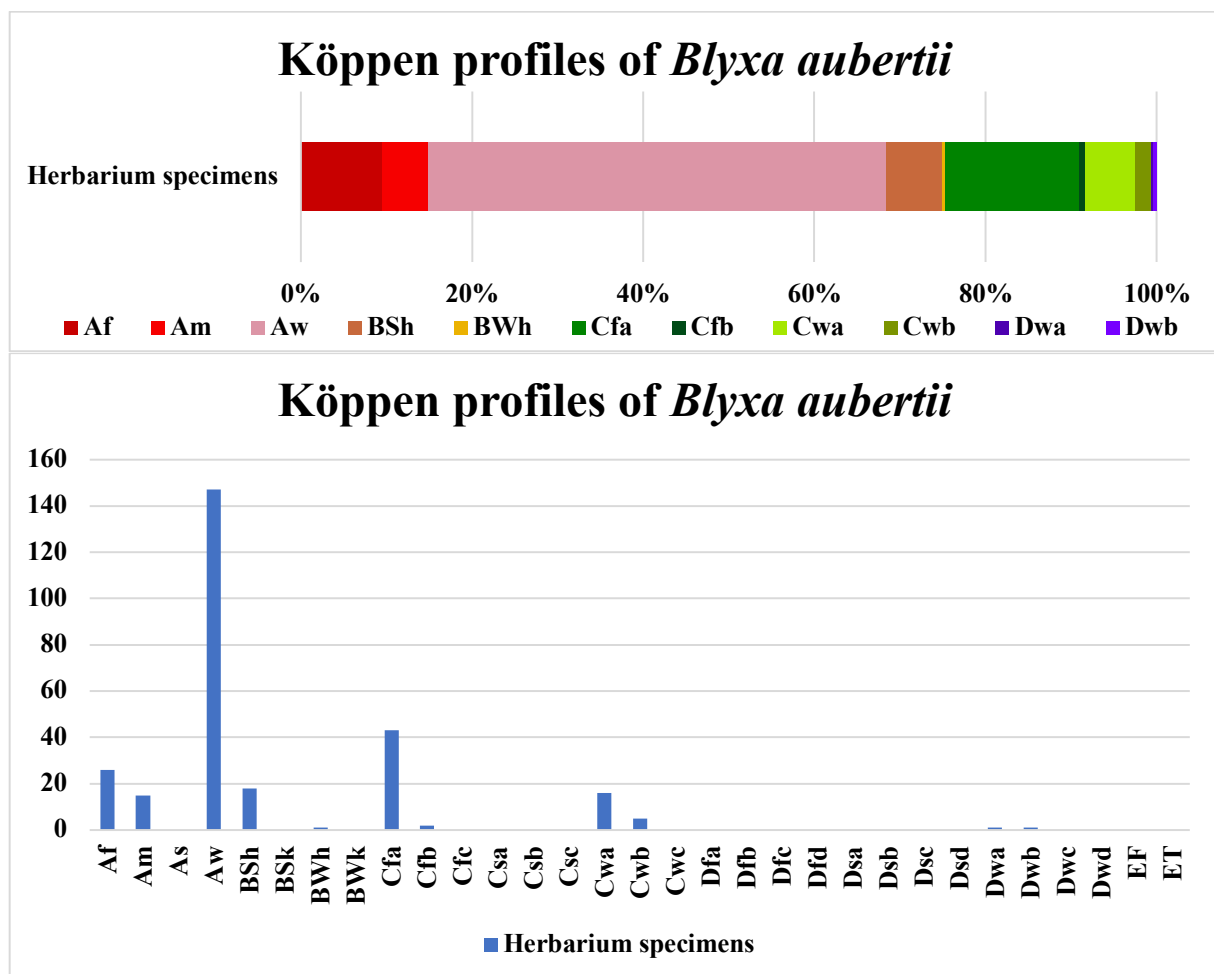
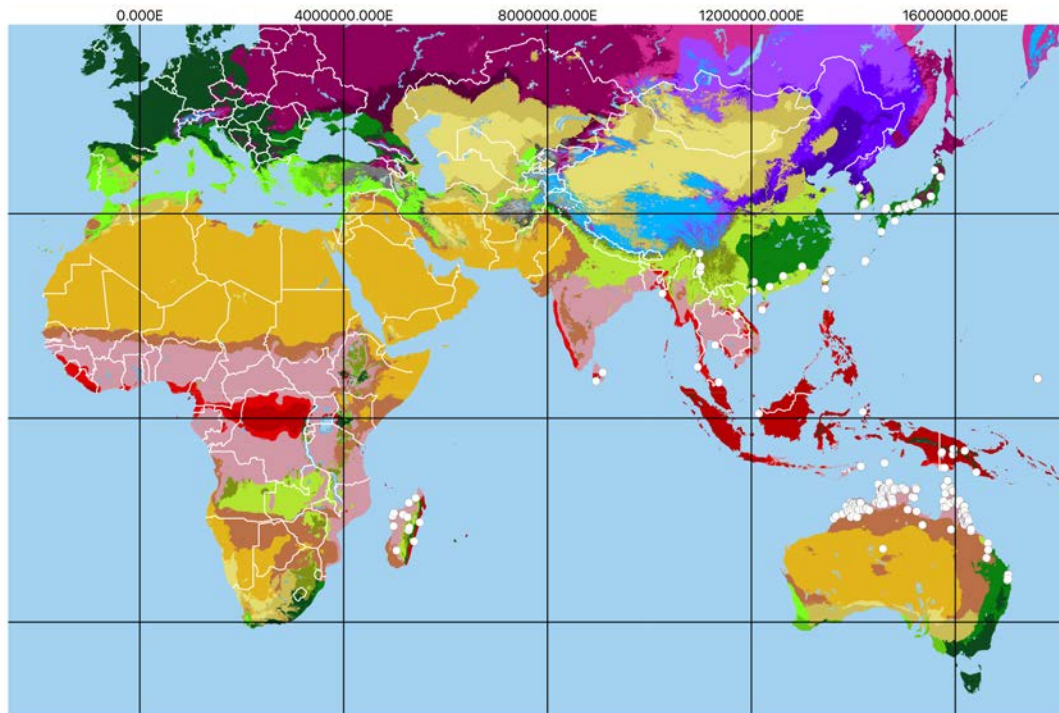


5.2.3.1 Genus *Blyxa* Noronha ex Thouars 1806.

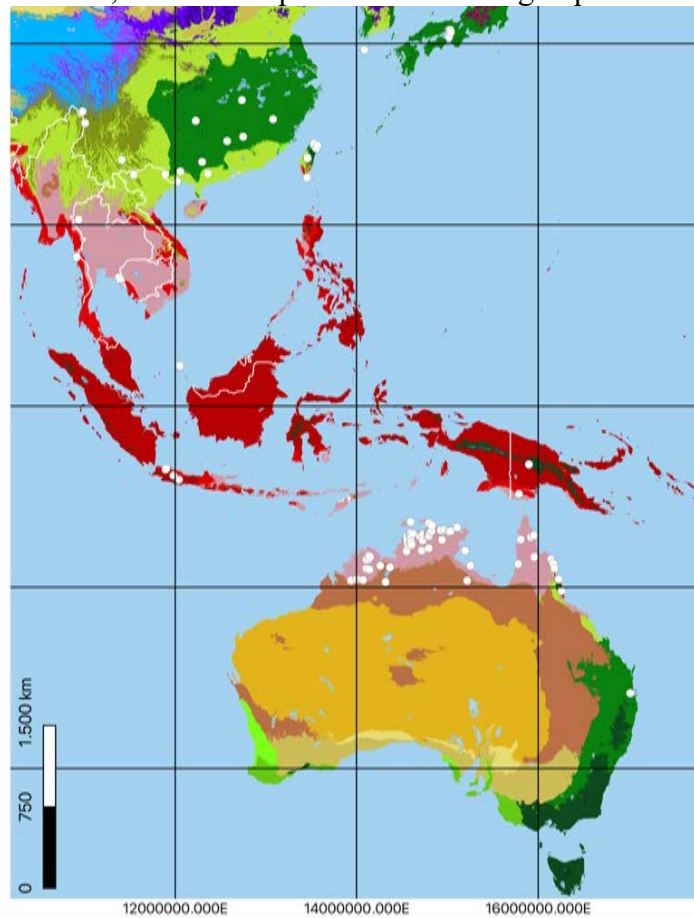
Distribution and Köppen profiles for genus *Blyxa* incl. *B. auberti*, *B. echinosperma*, *B. hexandra*, *B. japonica*, *B. octandra*, *B. senegalensis*, *B. shimadai*, and *B. somai*, based on preserved specimen (n = 926).



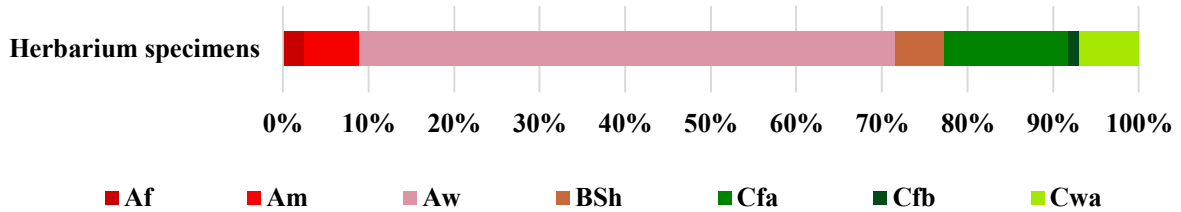
5.2.3.1.1. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa aubertii* Rich. 1814; herbarium specimens excluding duplicate occurrences (n = 275).



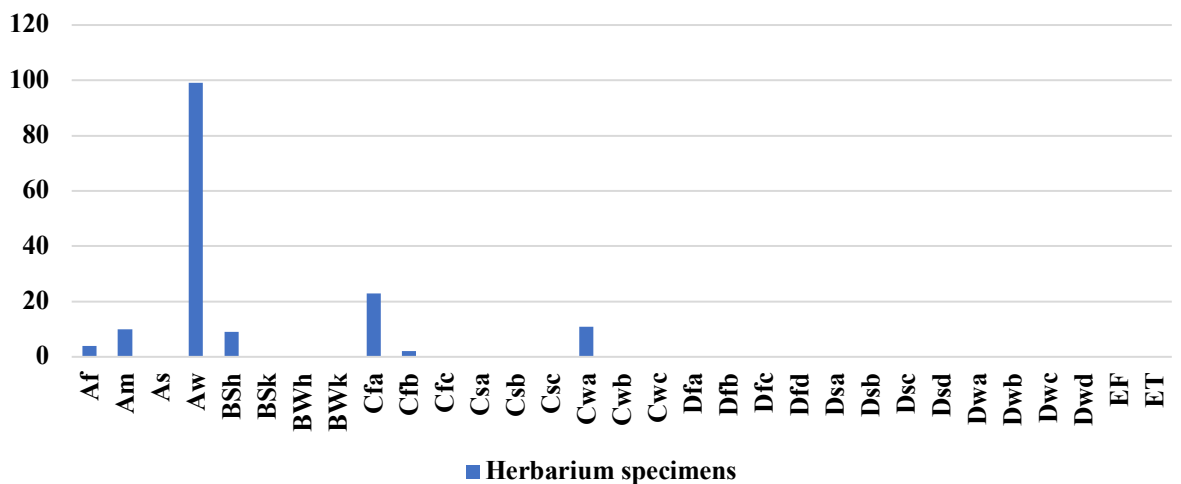
5.2.3.1.2. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa echinosperma* Hook f. 1888; herbarium specimens excluding duplicate occurrences (n = 158).



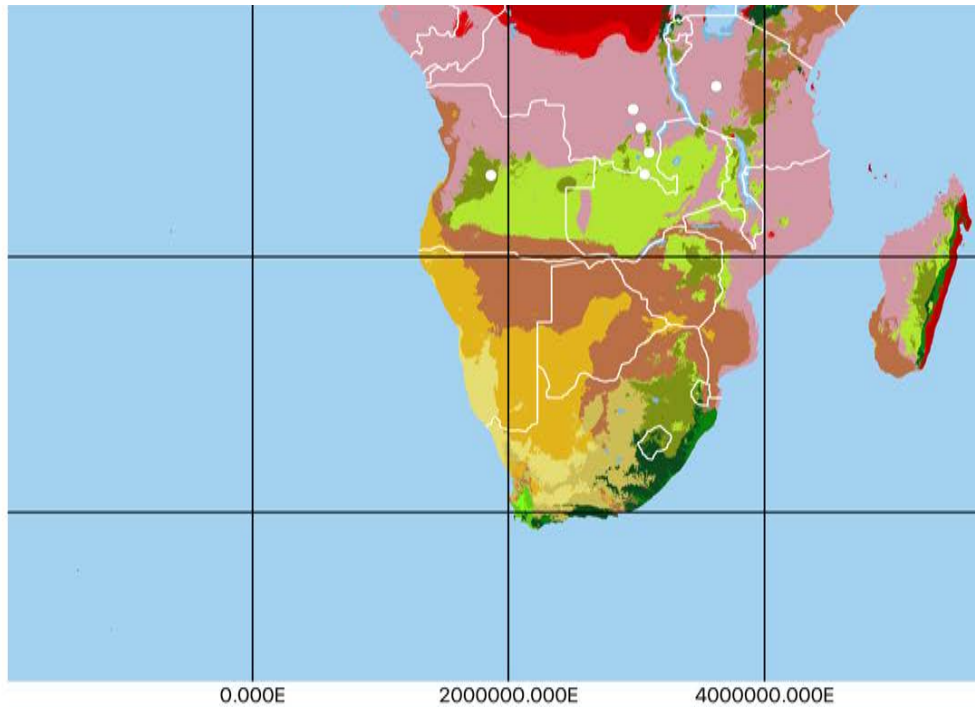
Köppen profile of *Blyxa echinosperma*



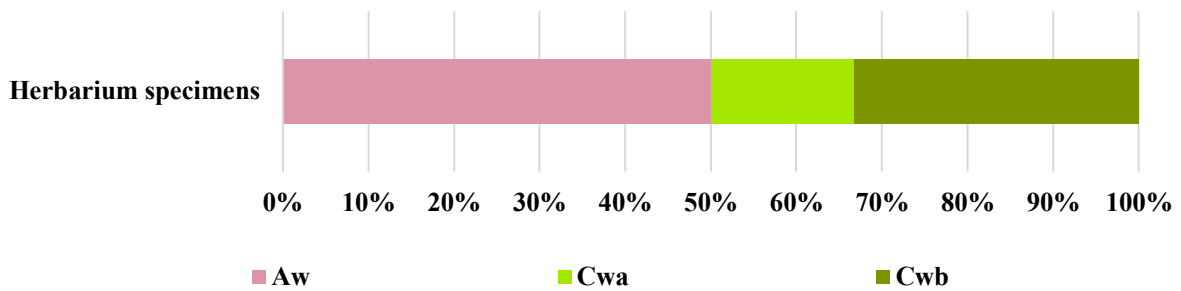
Köppen profile of *Blyxa echinosperma*



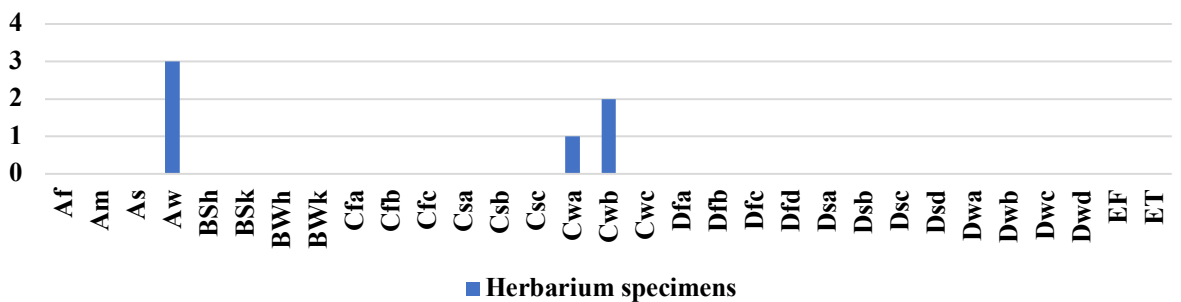
5.2.3.1.3. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa hexandra* C.D.K.Cook & Luond 1980; herbarium specimens excluding duplicate occurrences (n = 6).



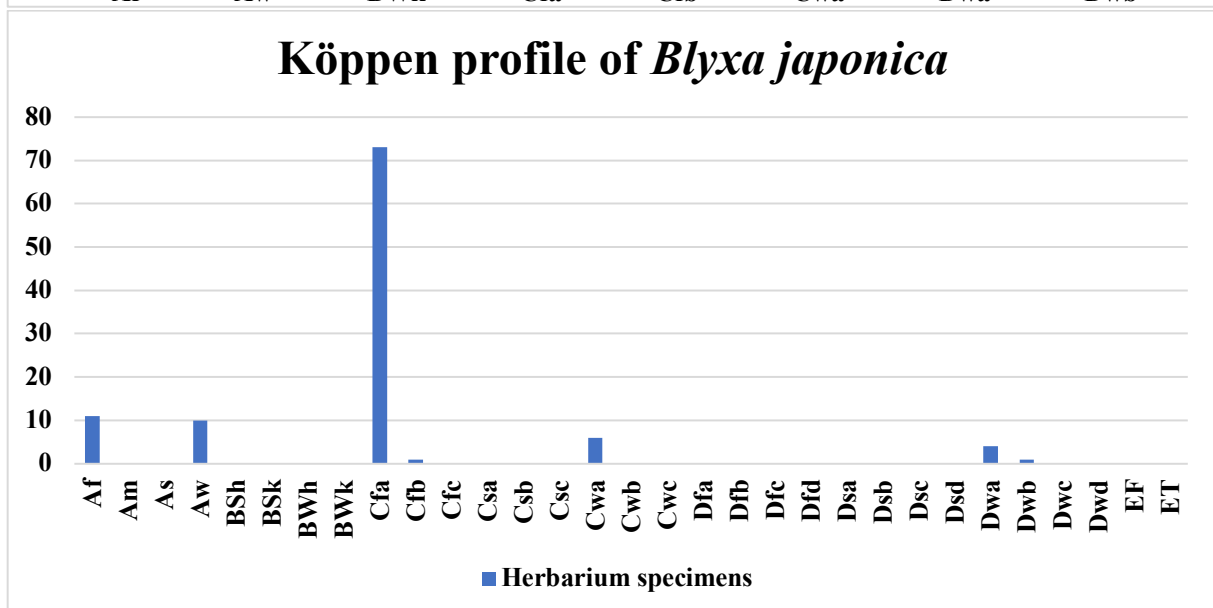
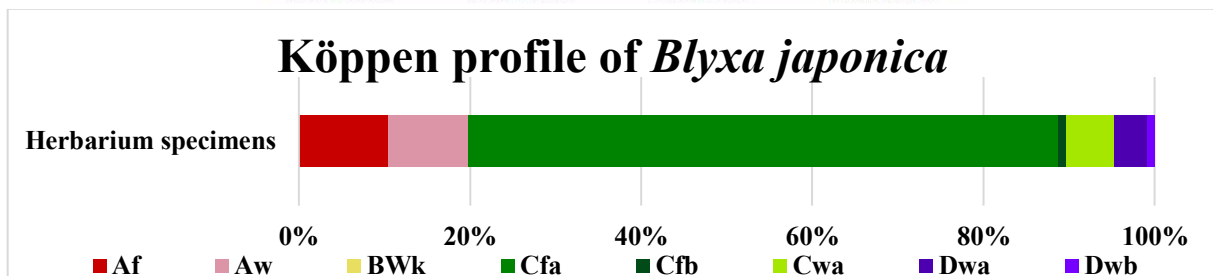
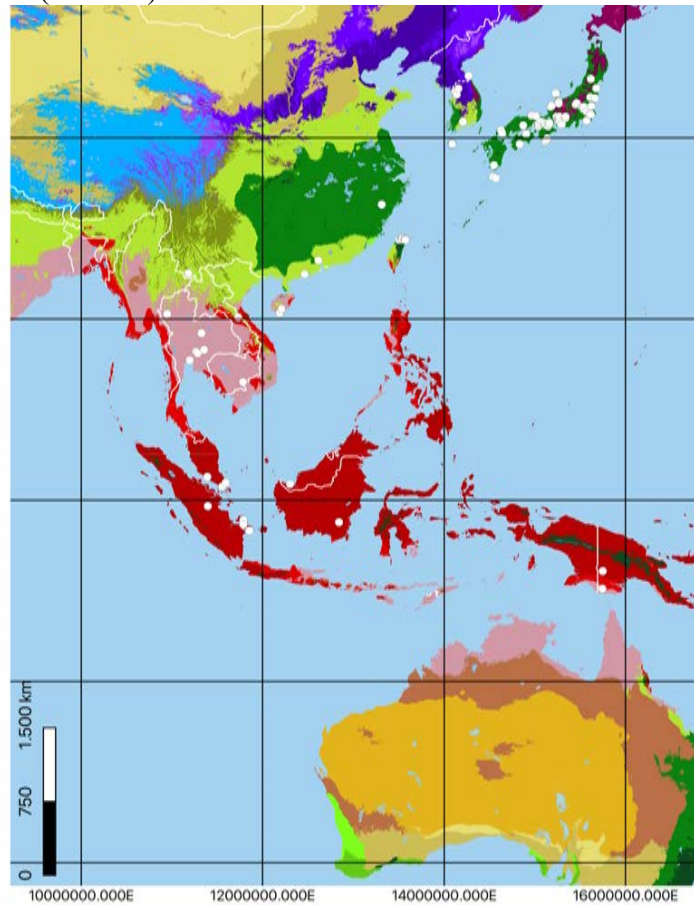
Köppen profile of *Blyxa hexandra*



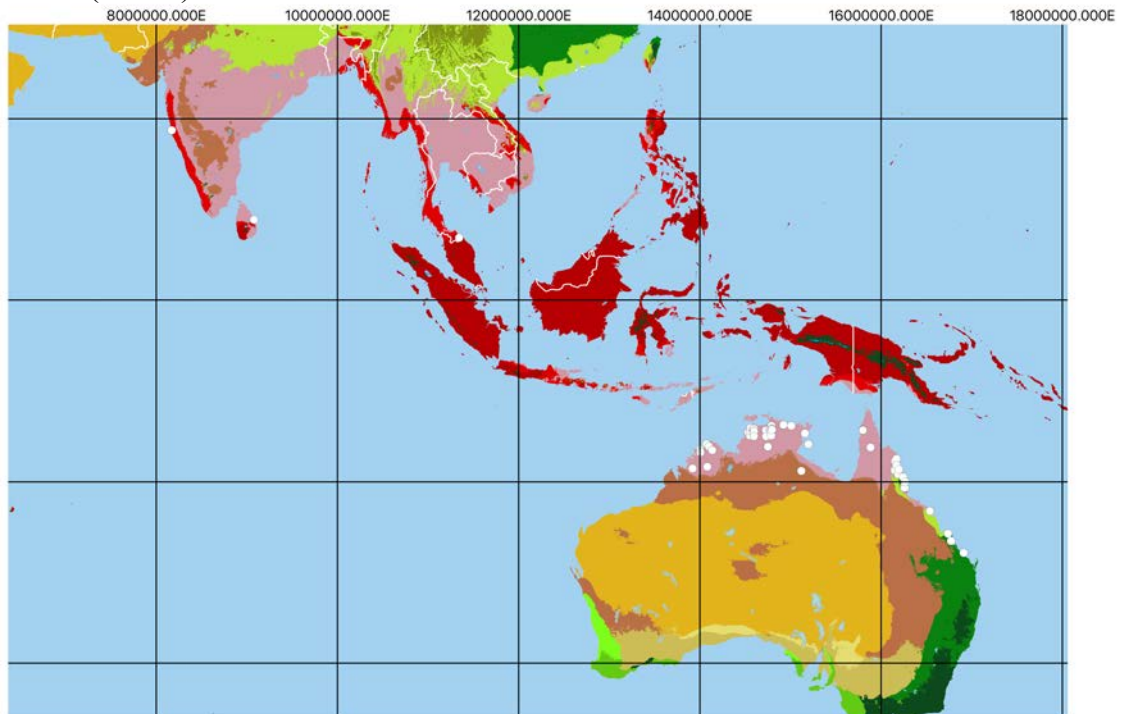
Köppen profile of *Blyxa hexandra*



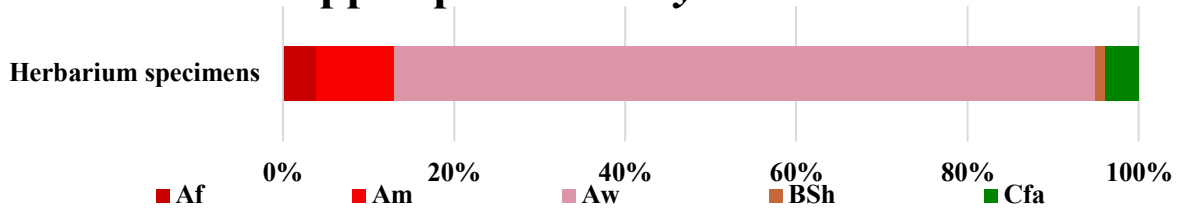
5.2.3.1.4. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa japonica* (Miq. 1866) Maxim. ex Asch & Gürke 1889; herbarium specimens excluding duplicate occurrences (n = 106).



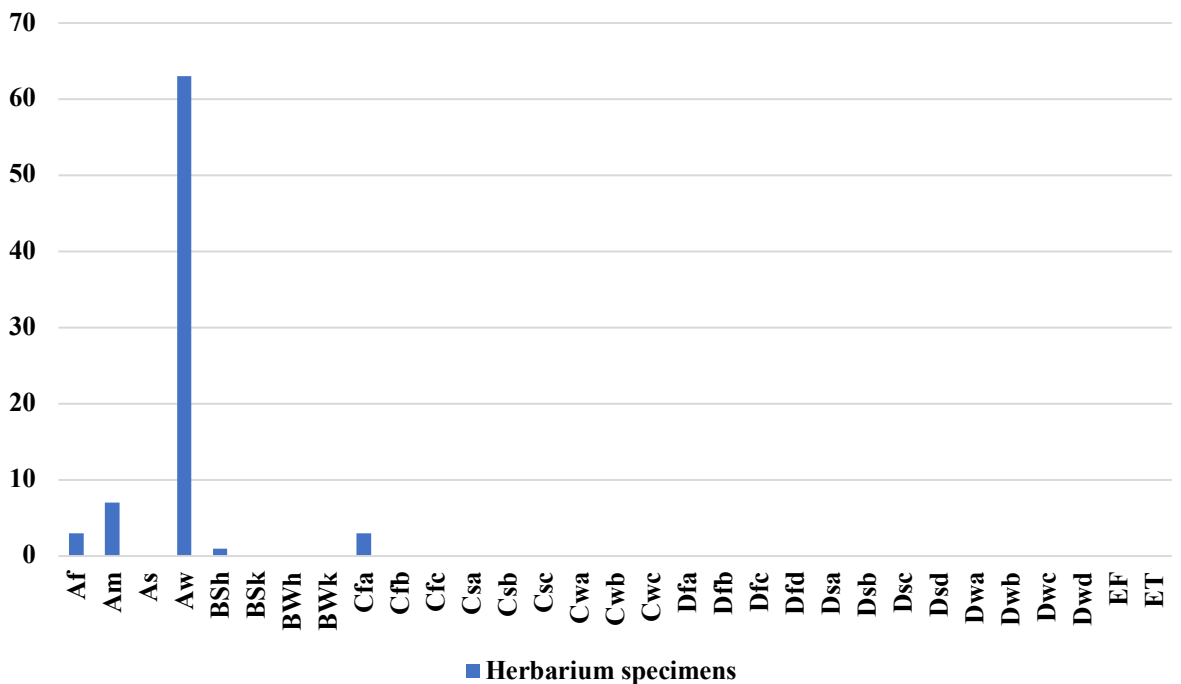
5.2.3.1.5. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa octandra* (Roxb. 1802) Planch. ex Thwaites 1864; herbarium specimens excluding duplicate occurrences (n = 77).



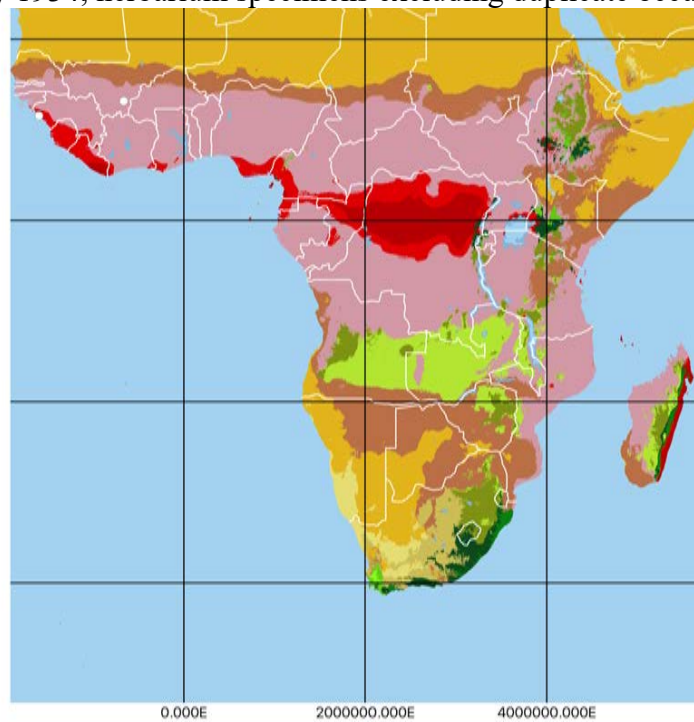
Köppen profile of *Blyxa octandra*



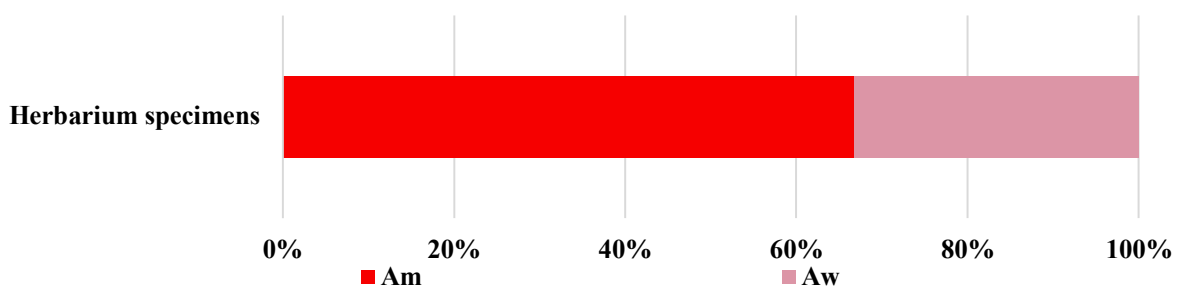
Köppen profile of *Blyxa octandra*



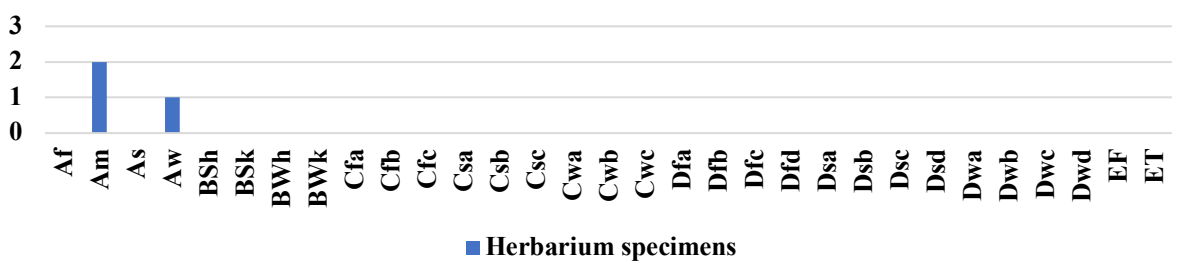
5.2.3.1.6. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa senegalensis* Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 3).



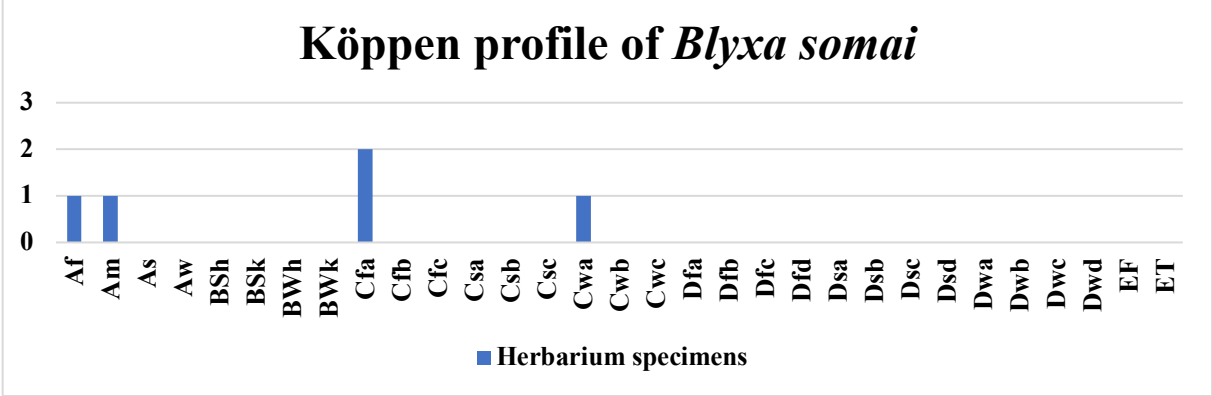
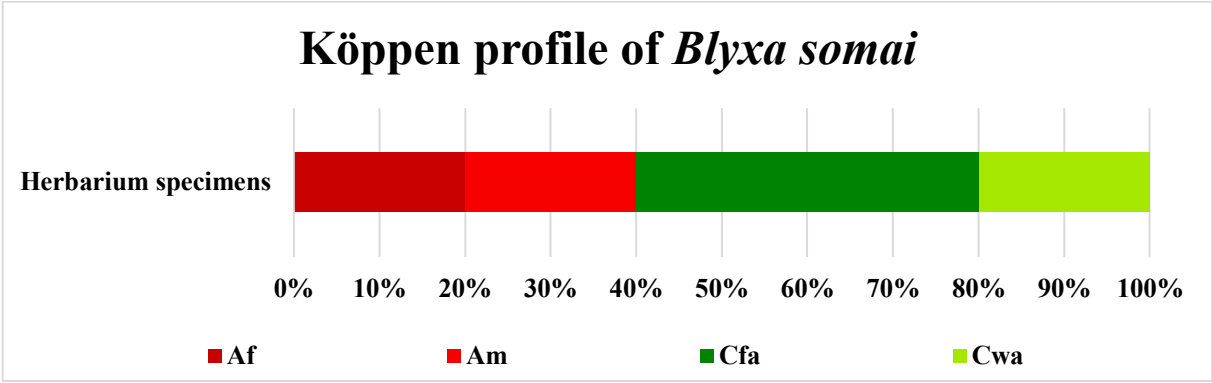
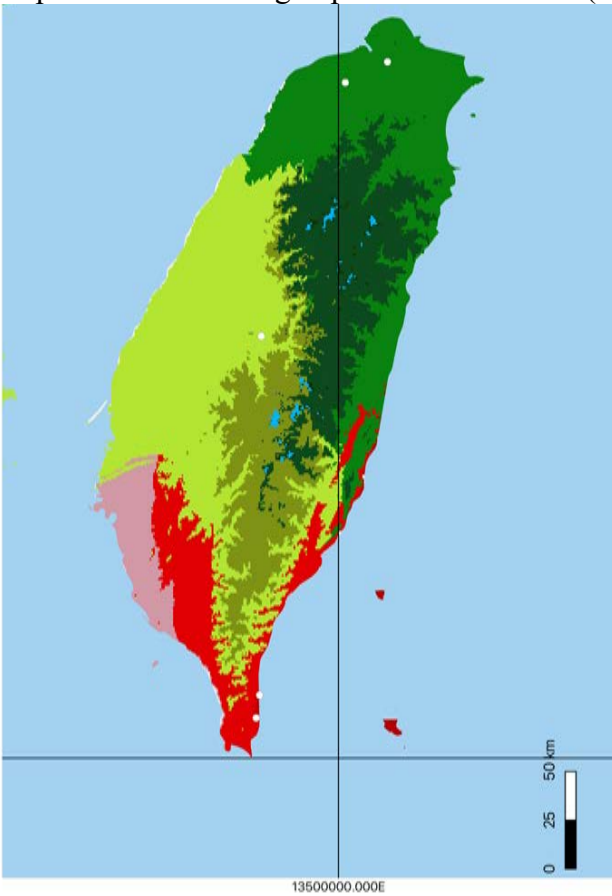
Köppen profile of *Blyxa senegalensis*



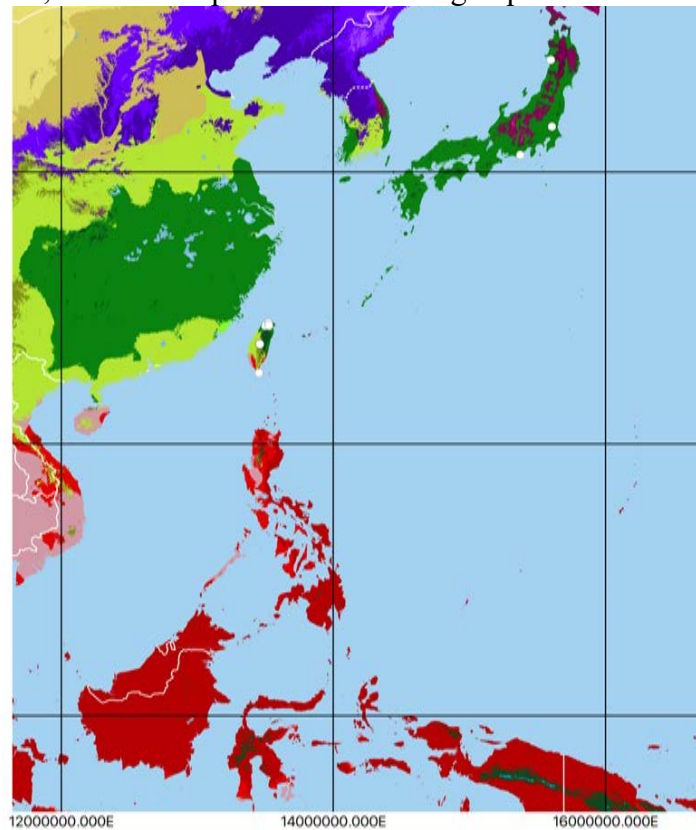
Köppen profile of *Blyxa senegalensis*



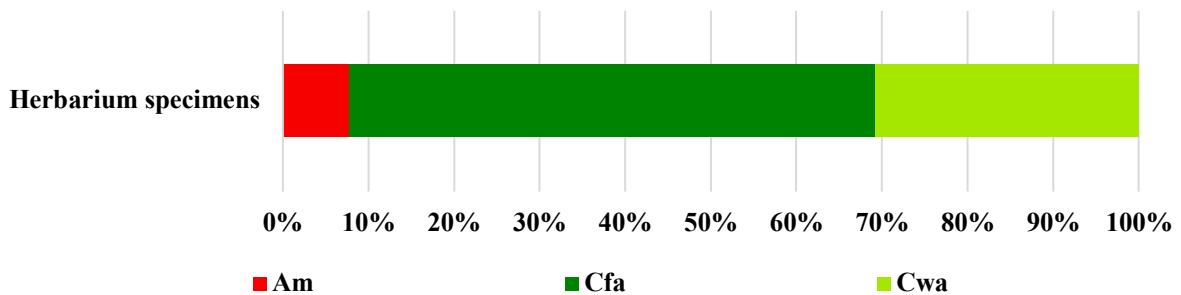
5.2.3.1.7. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa somai* Hayata 1915; herbarium specimens excluding duplicate occurrences (n = 5).



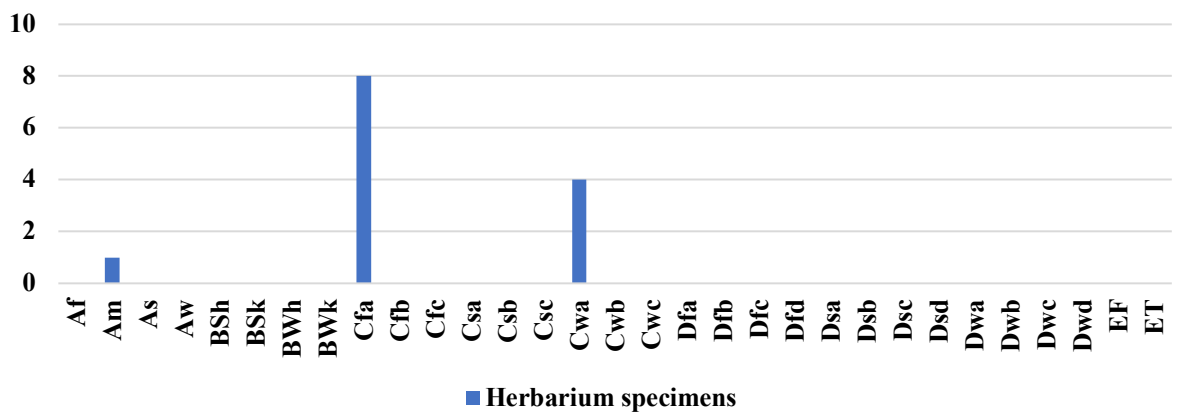
5.2.3.1.8. Köppen profile, distribution and climate map– GBIF occurrences of *Blyxa shimadai* Hayata 1915; herbarium specimens excluding duplicate occurrences (n = 13).



Köppen profile of *Blyxa shimadai*

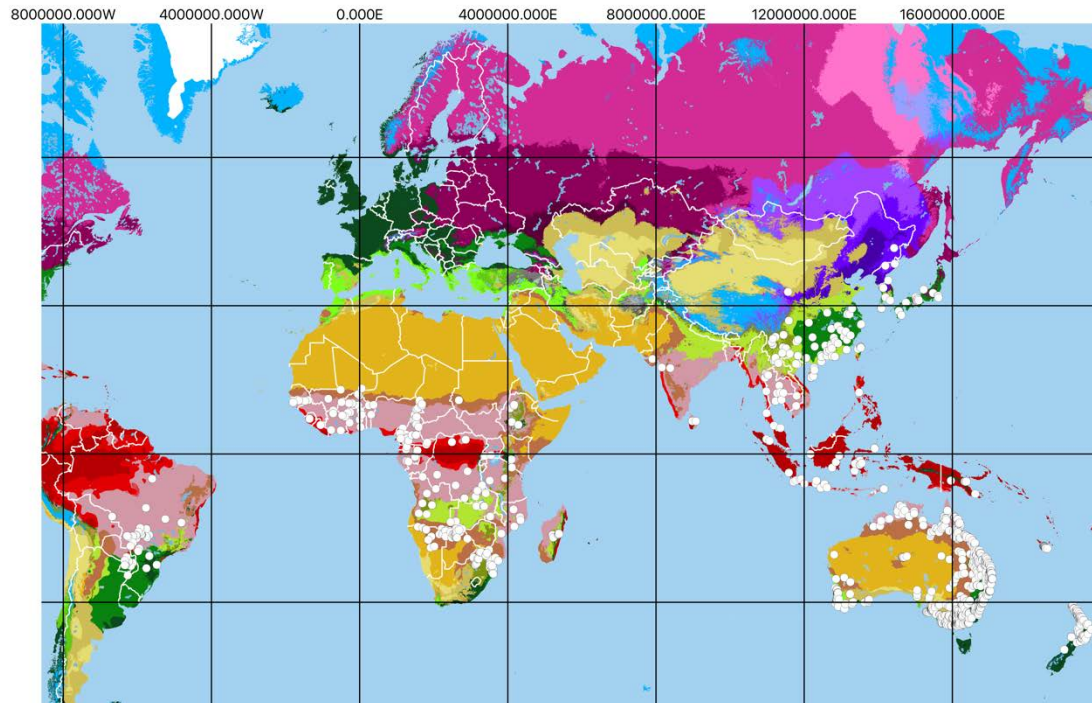


Köppen profile of *Blyxa shimadai*

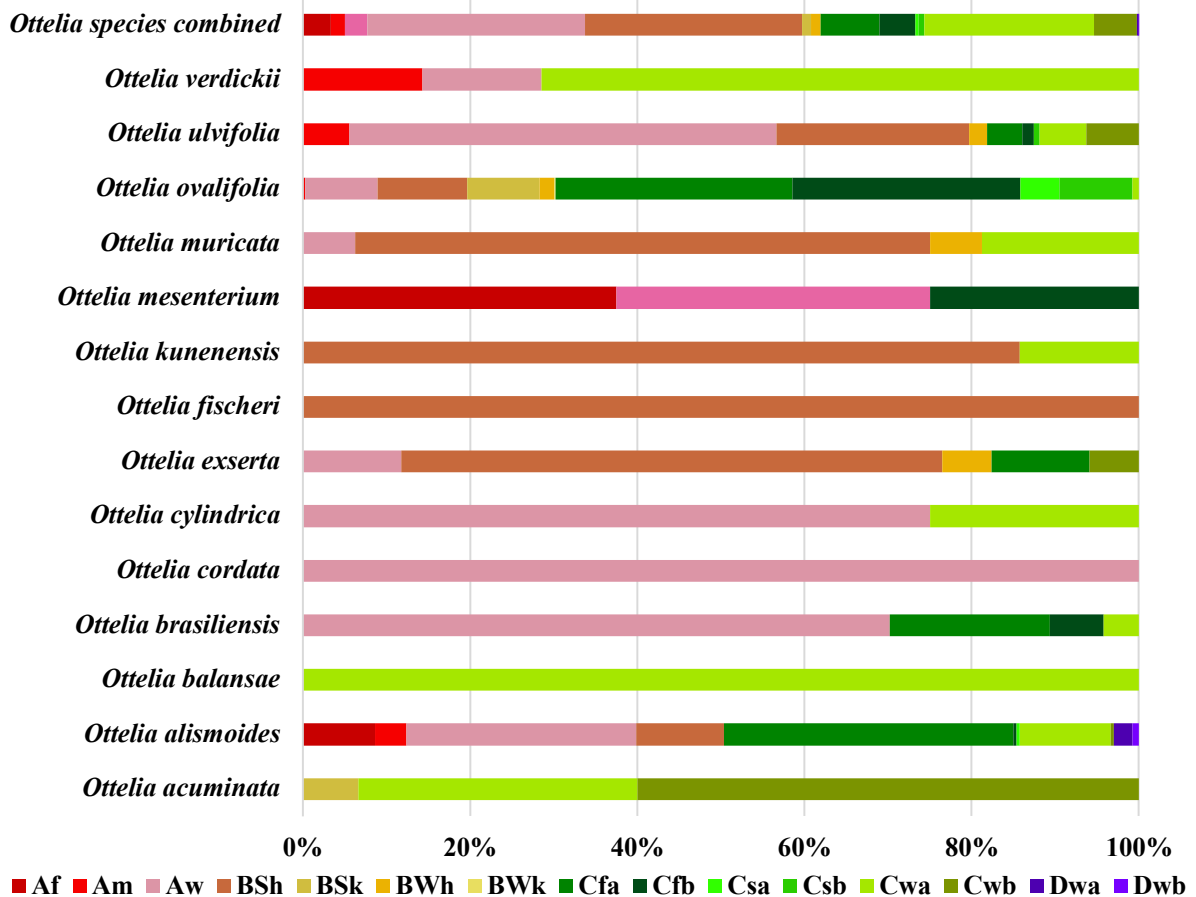


5.2.3.2. Genus *Ottelia* Pers. 1805.

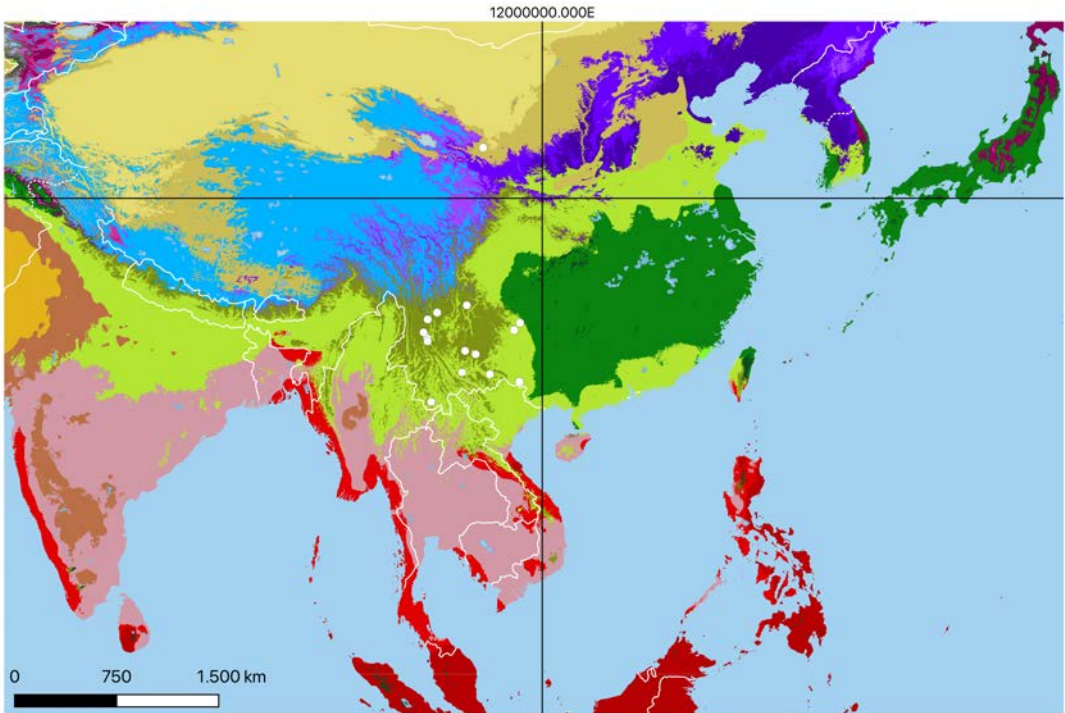
Distribution and Köppen profiles of genus *Ottelia* incl. *Ottelia acuminata*, *O. alismoides*, *O. balansae*, *O. brasiliensis*, *O. cordata*, *O. exserta*, *O. kunenensis*, *O. mesenterium*, *O. muricata*, *O. ovalifolia*, *O. ulvifolia*, and *O. verdickii*, based on preserved specimen (n = 1670).



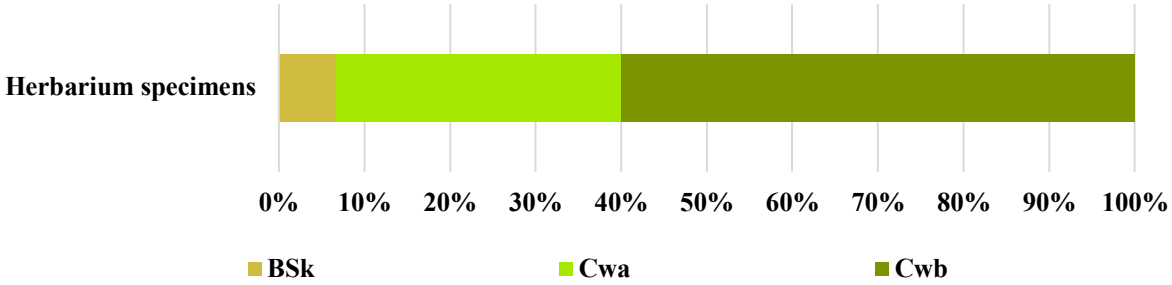
Köppen profiles of *Ottelia* species



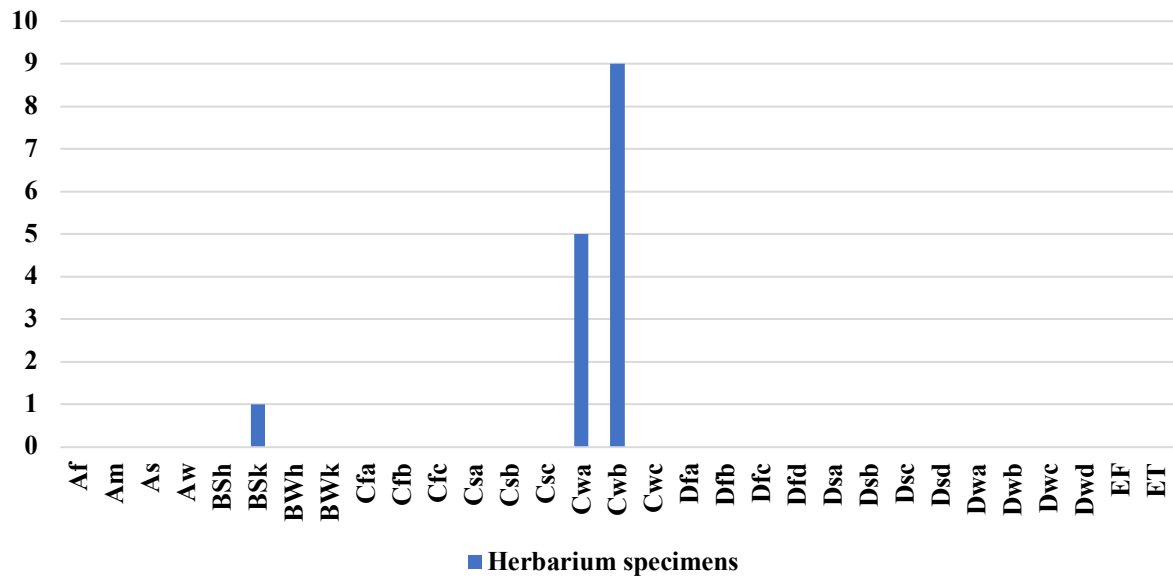
5.2.3.2.1. Köppen profile, distribution and climate map– GBIF occurrences of *Ottelia acuminata* (Gagnep. 1907) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 15).



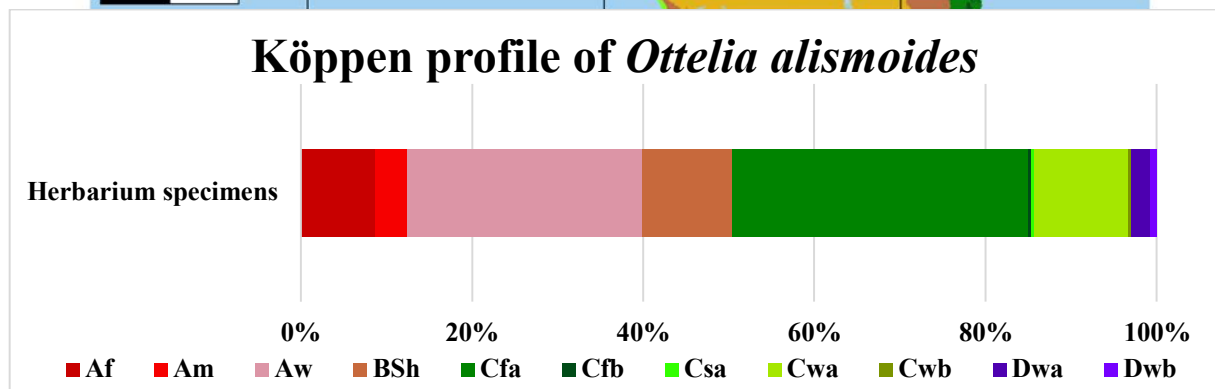
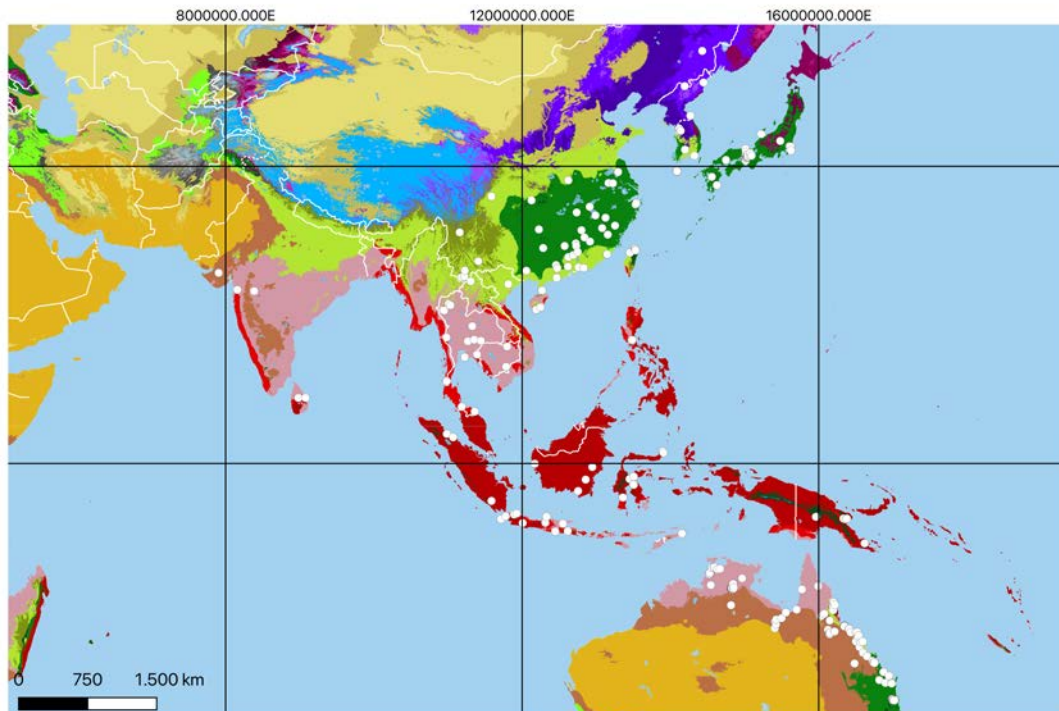
Köppen profile of *Ottelia acuminata*



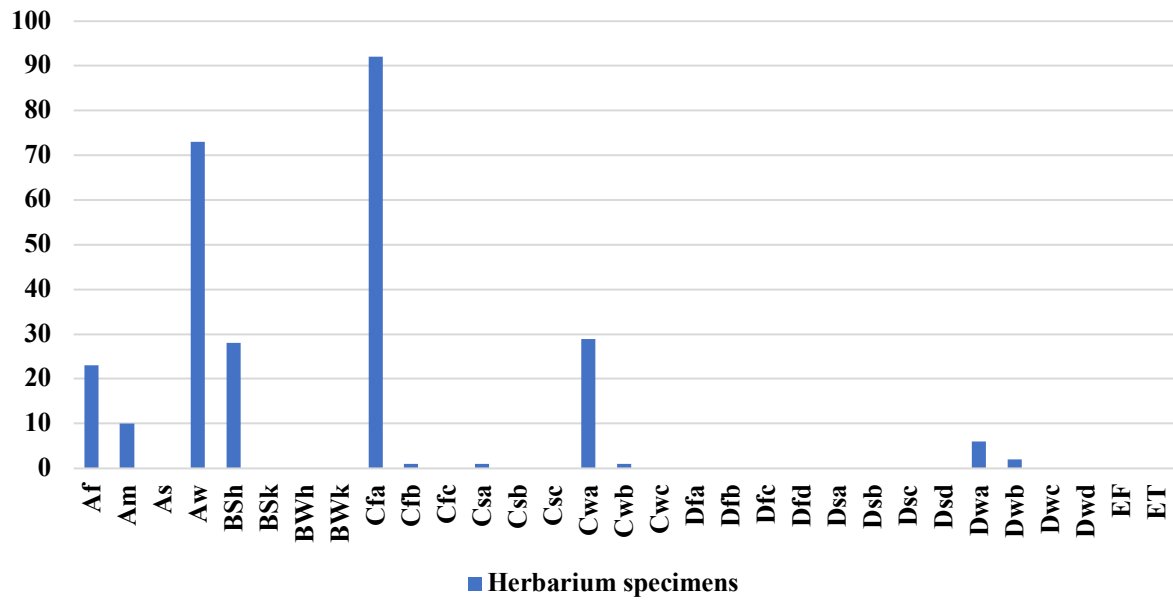
Köppen profile of *Ottelia acuminata*



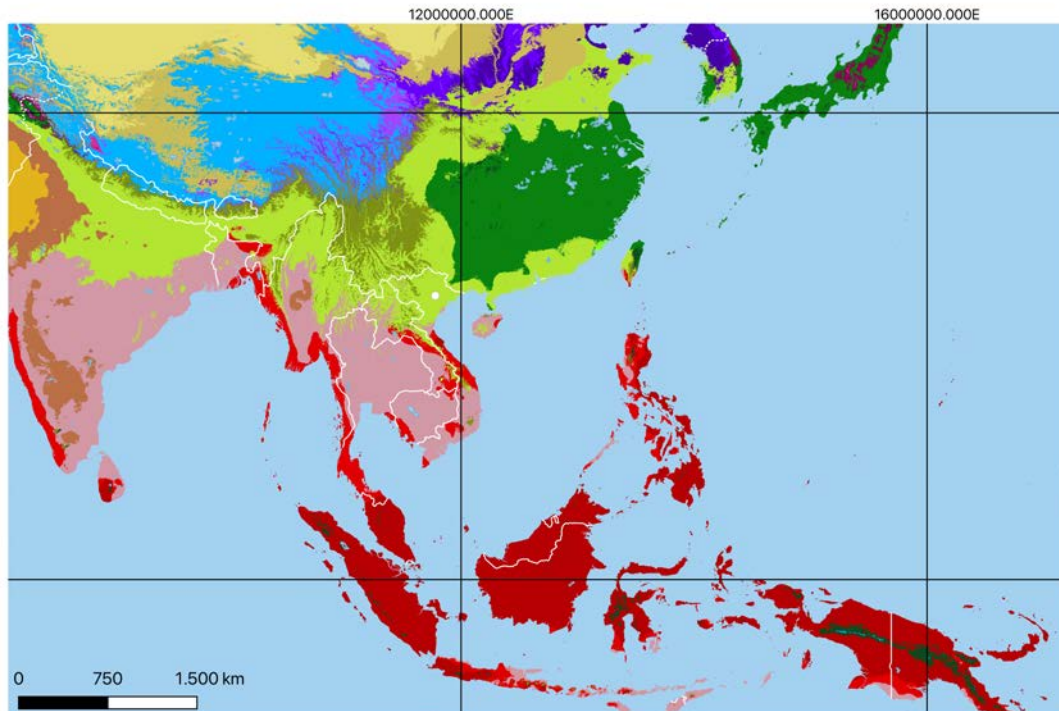
5.2.3.2.2. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia alismoides* (L. 1753) Pers. 1805; herbarium specimens excluding duplicate occurrences (n = 266).



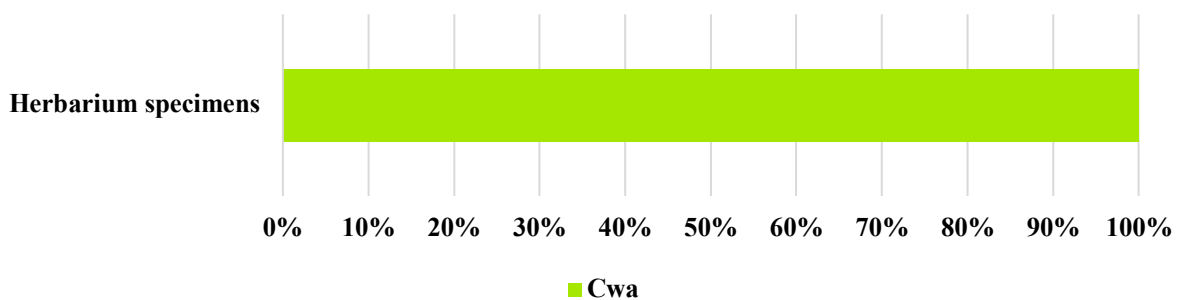
Köppen profile of *Ottelia alismoides*



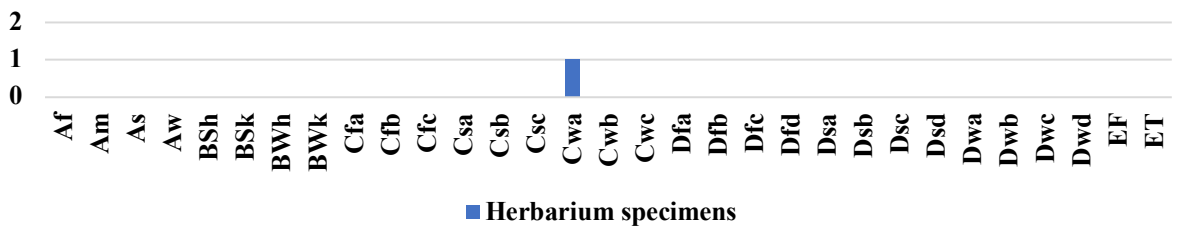
5.2.3.2.3. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia balansae* (Gagnep. 1907) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 1).



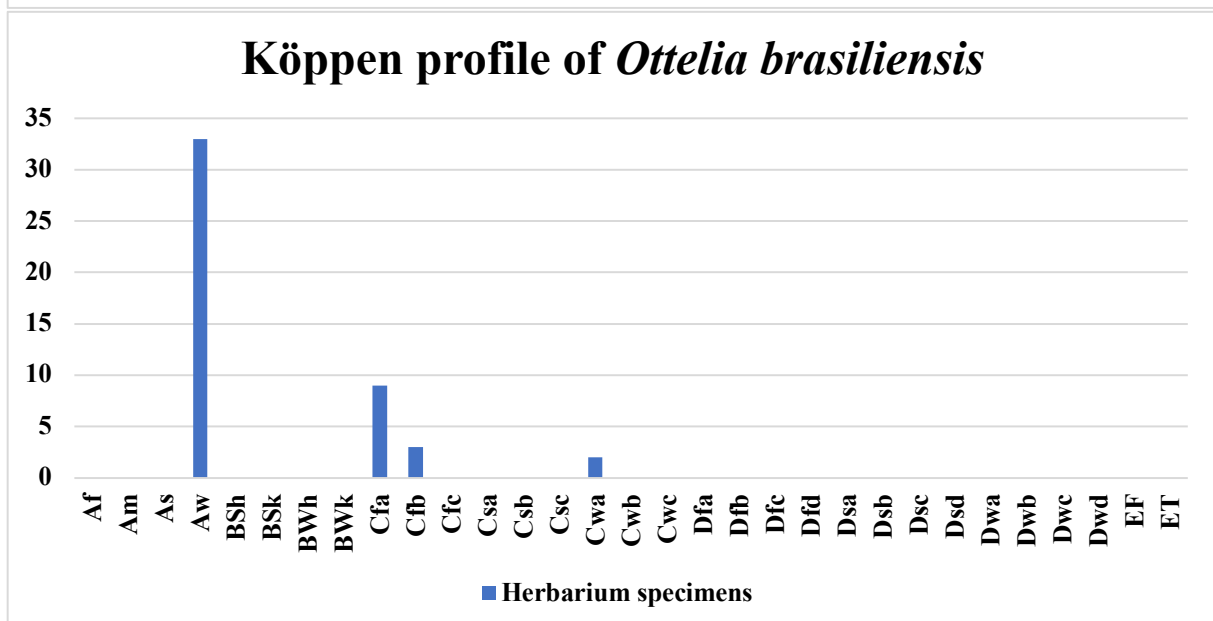
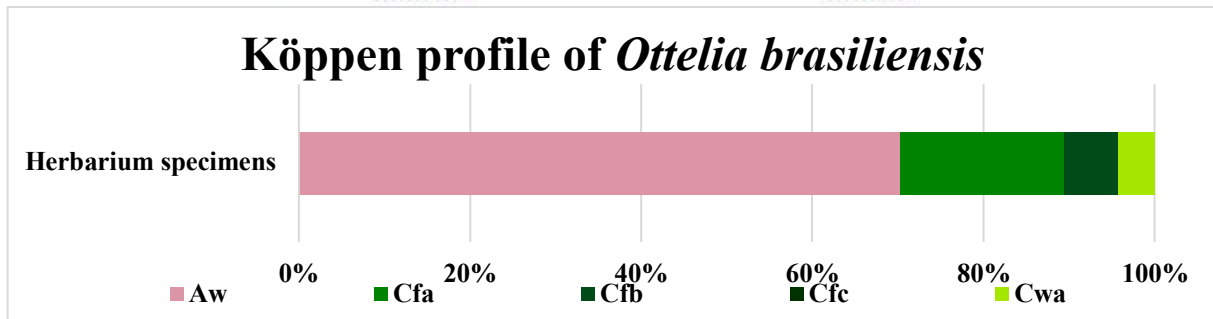
Köppen profile of *Ottelia balansae*



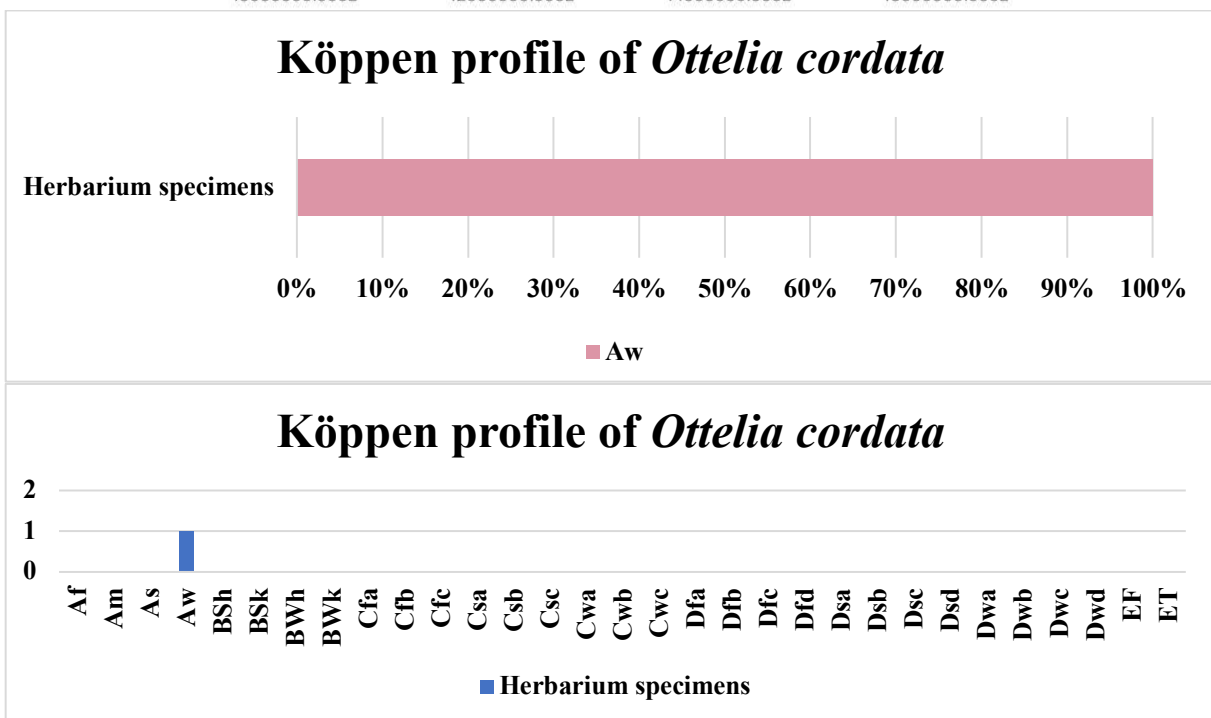
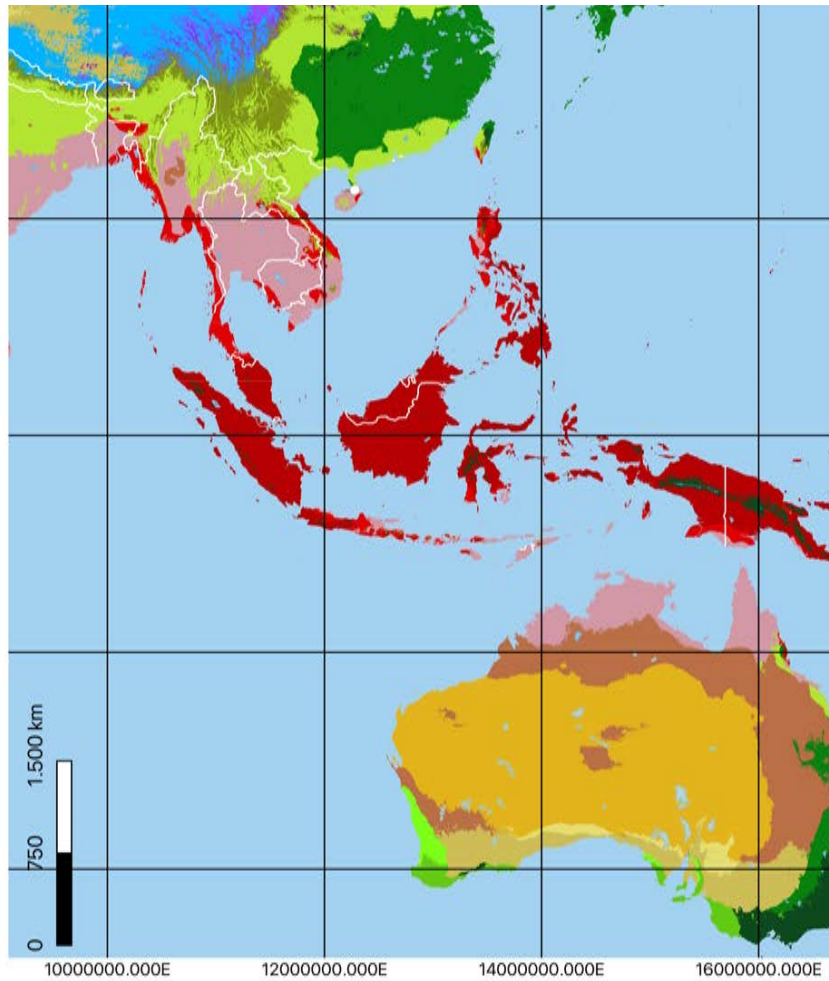
Köppen profile of *Ottelia balansae*



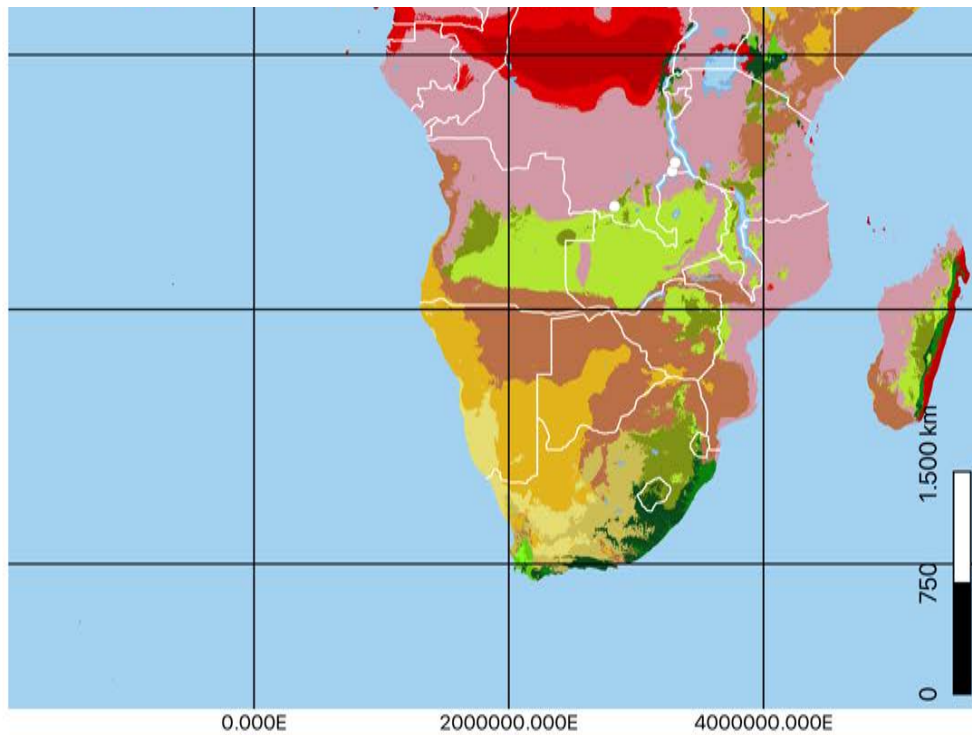
5.2.3.2.4. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia brasiliensis* Walp. 1852; herbarium specimens excluding duplicate occurrences (n = 47).



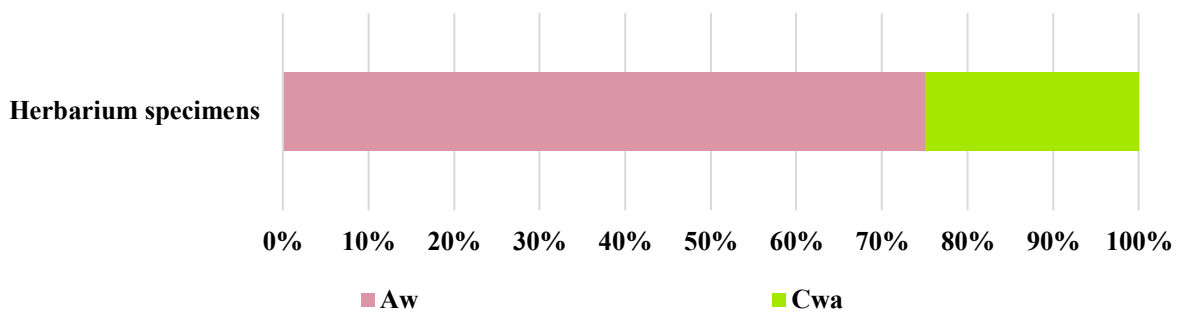
5.2.3.2.5. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia cordata* (Wall. 1830) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 1).



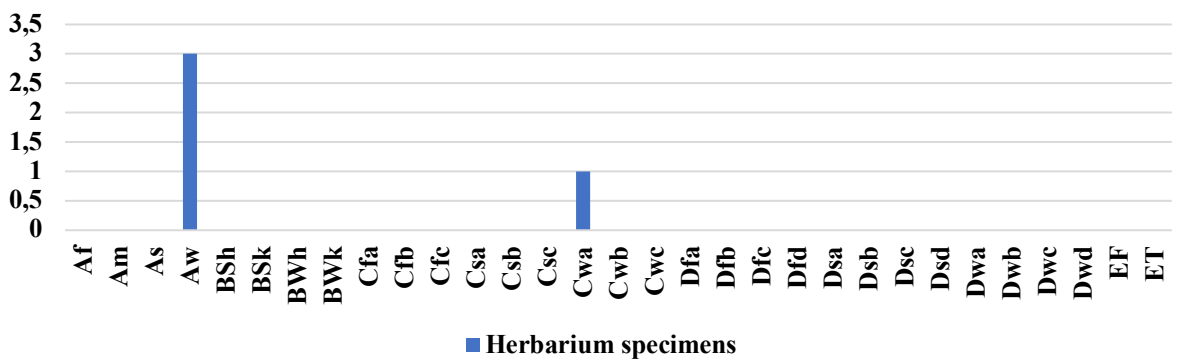
5.2.3.2.6. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia cylindrica* (T.C.E.Fr.) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 3).



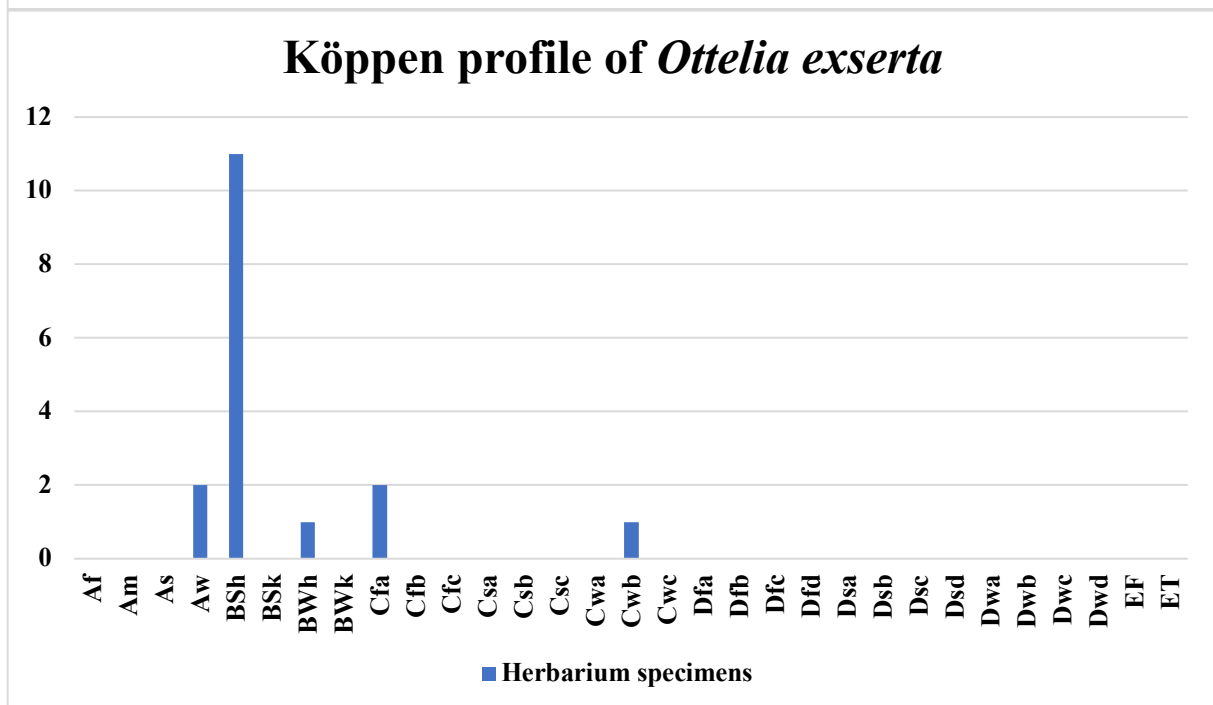
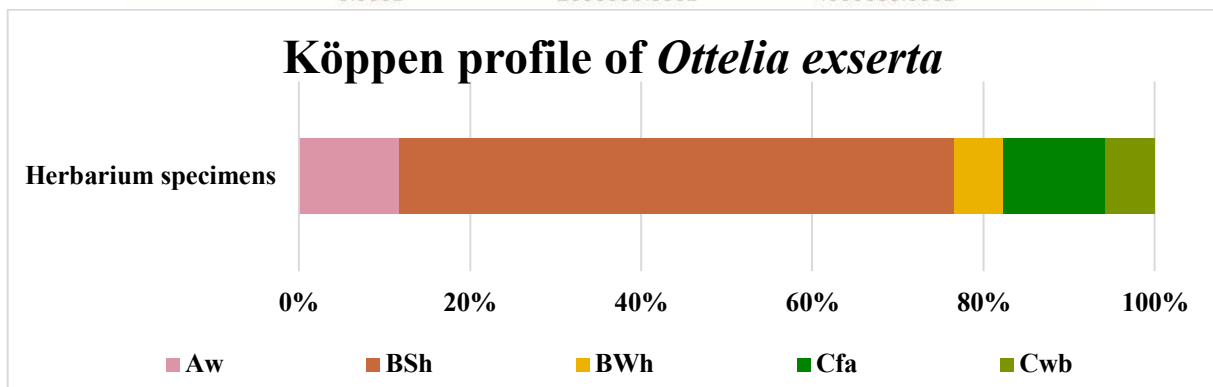
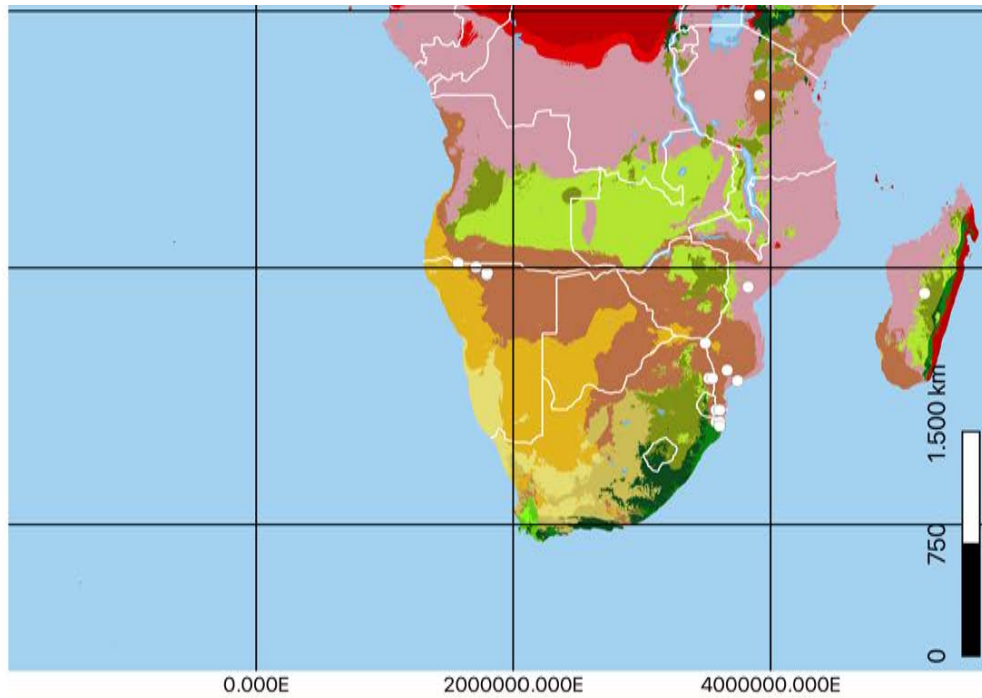
Köppen profile of *Ottelia cylindrica*



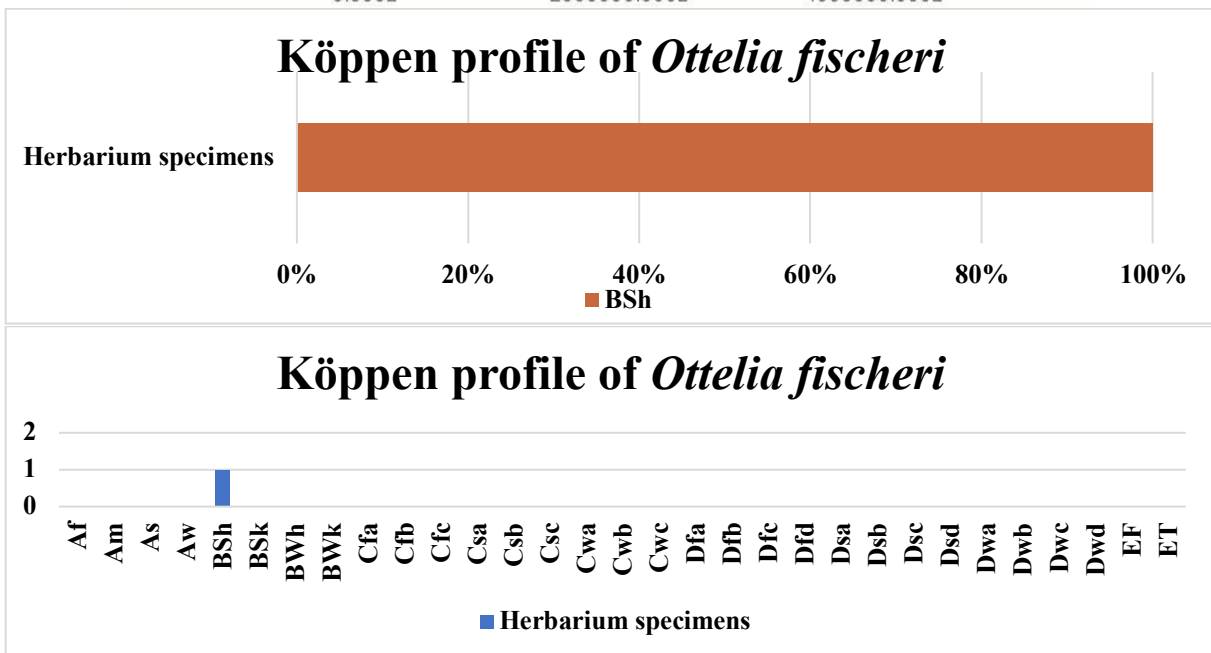
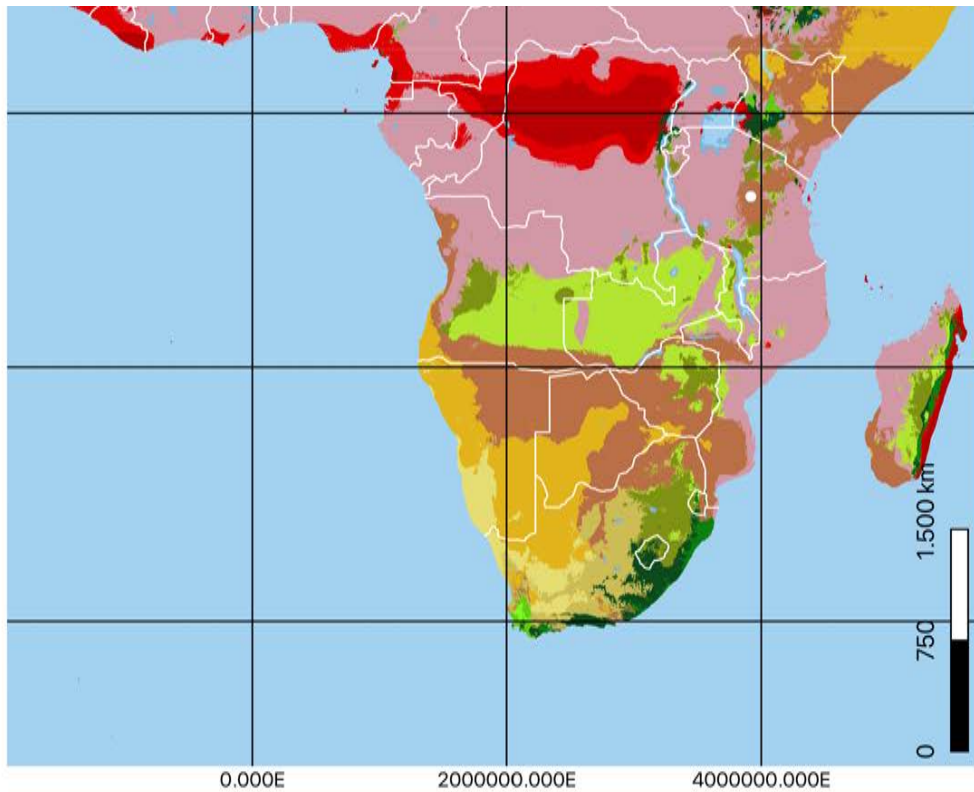
Köppen profile of *Ottelia cylindrica*



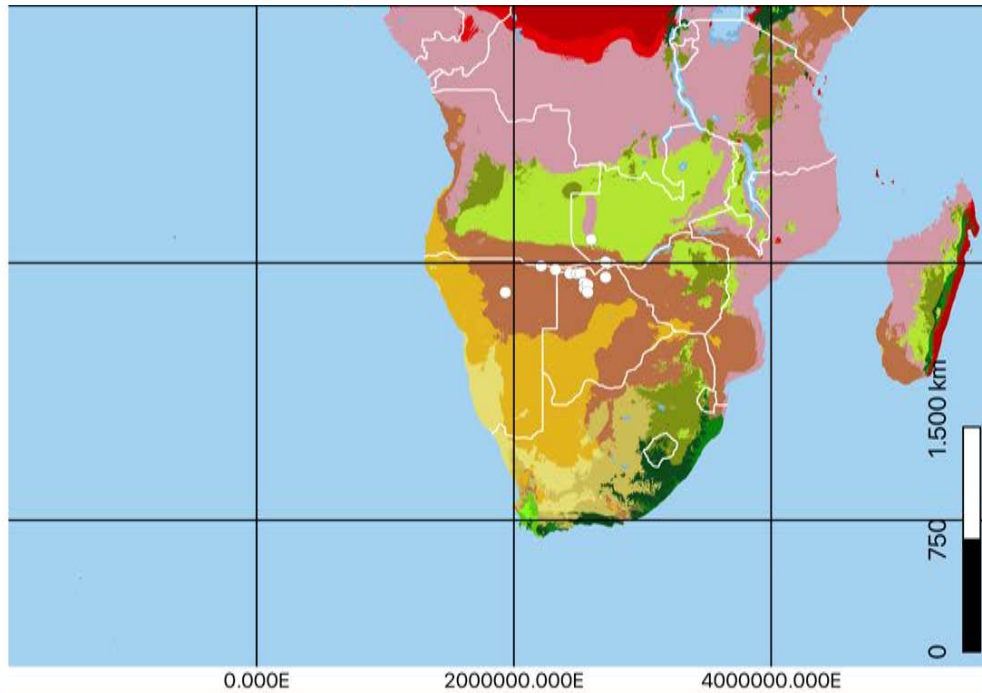
5.2.3.2.7. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia exserta* (Ridl. 1886) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 17).



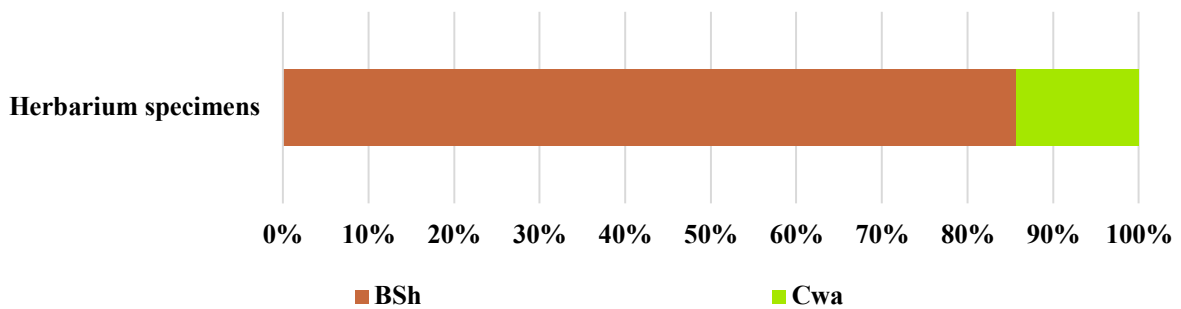
5.2.3.2.8. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia fischeri* (Gürke 1895) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 1).



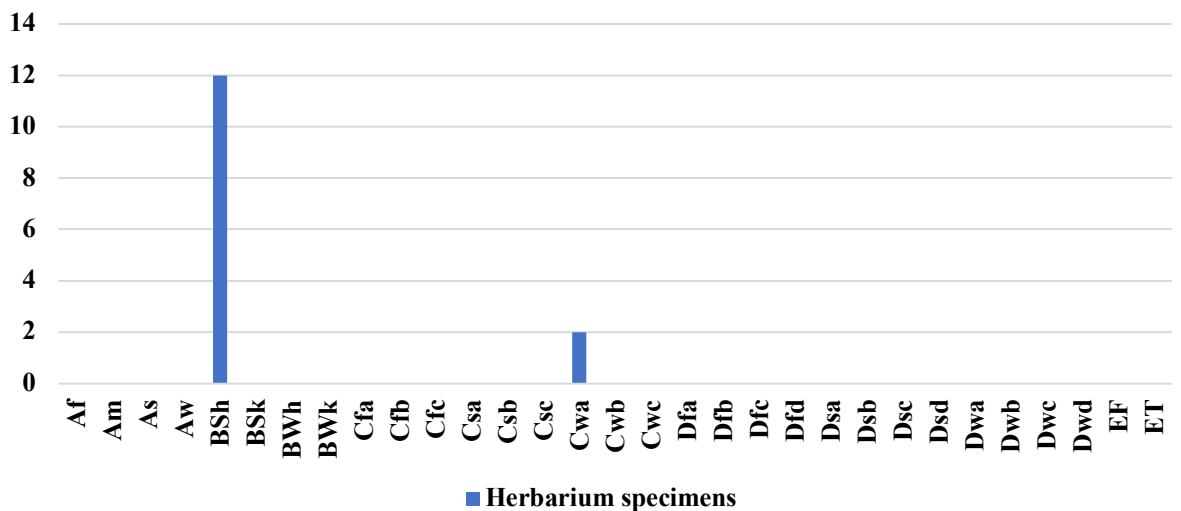
5.2.3.2.9. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia kunenensis* (Gürke 1895) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 14).



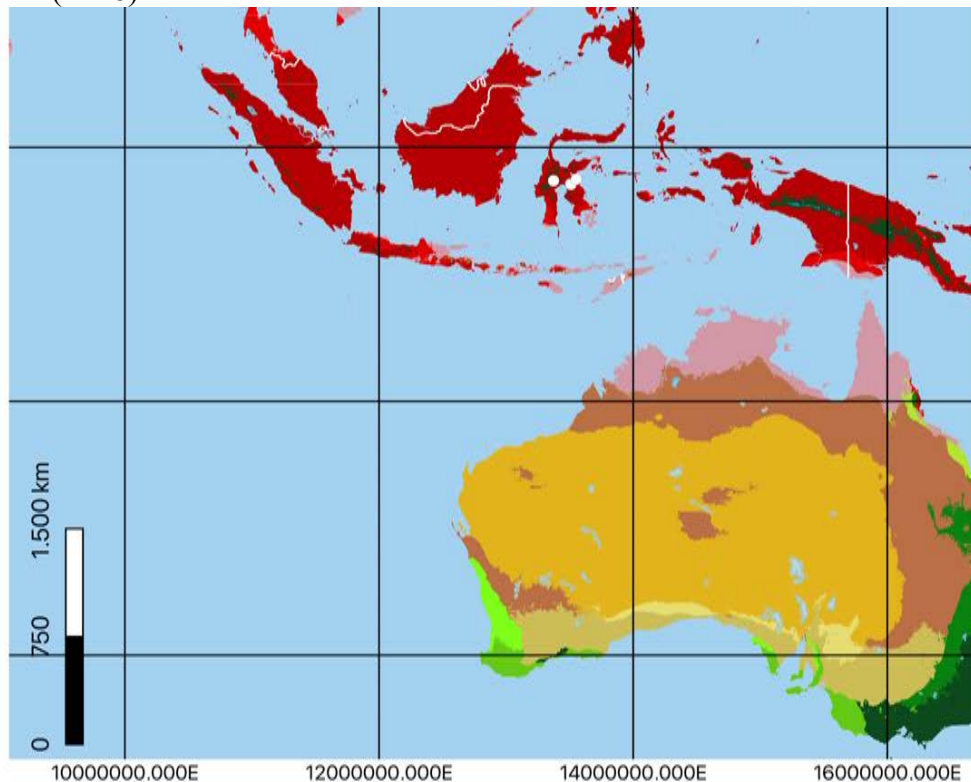
Köppen profile of *Ottelia kunenensis*



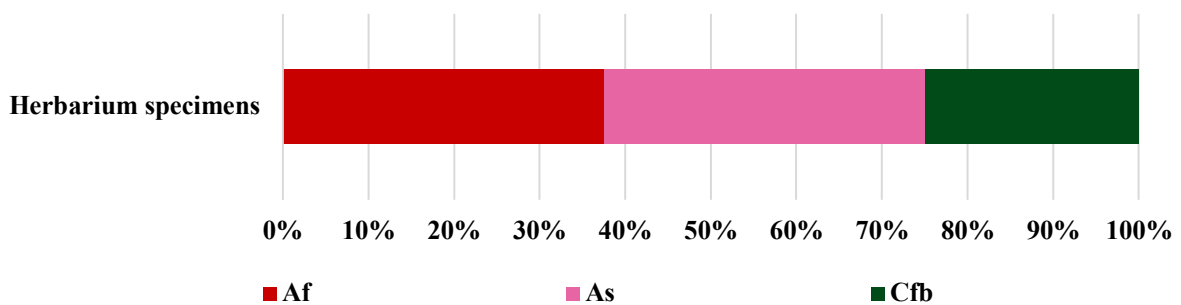
Köppen profile of *Ottelia kunenensis*



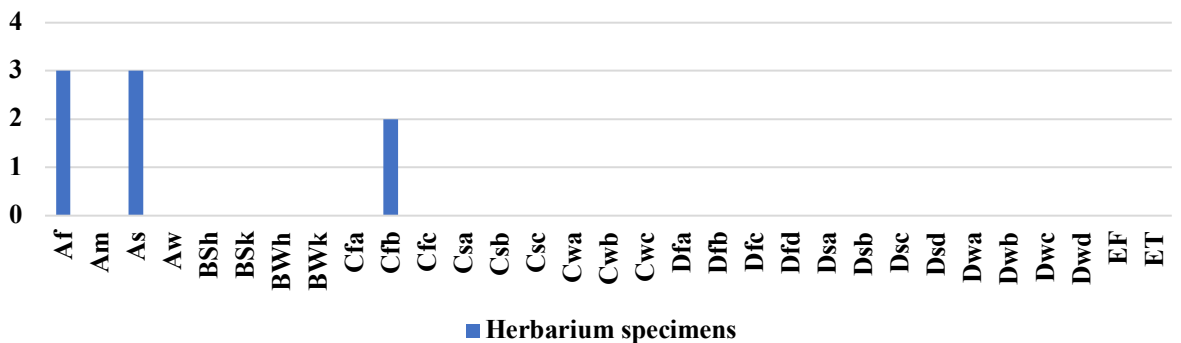
5.2.3.2.10. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia mesenterium* (Hallier f. 1915) Hartog 1957; herbarium specimens excluding duplicate occurrences (n = 8).



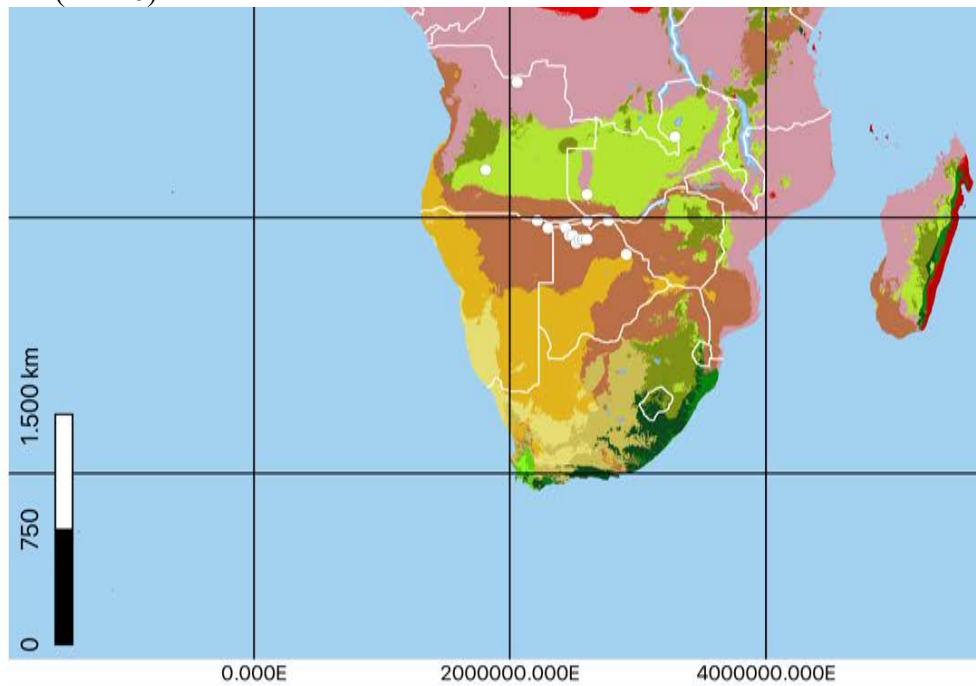
Köppen profile of *Ottelia mesenterium*



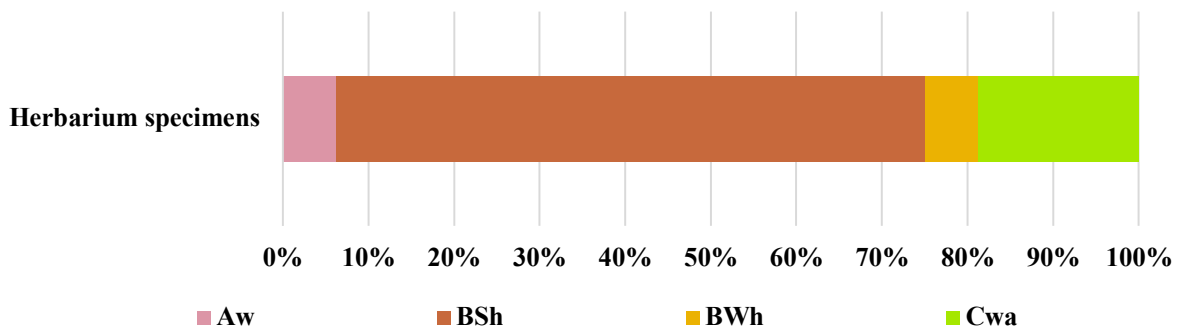
Köppen profile of *Ottelia mesenterium*



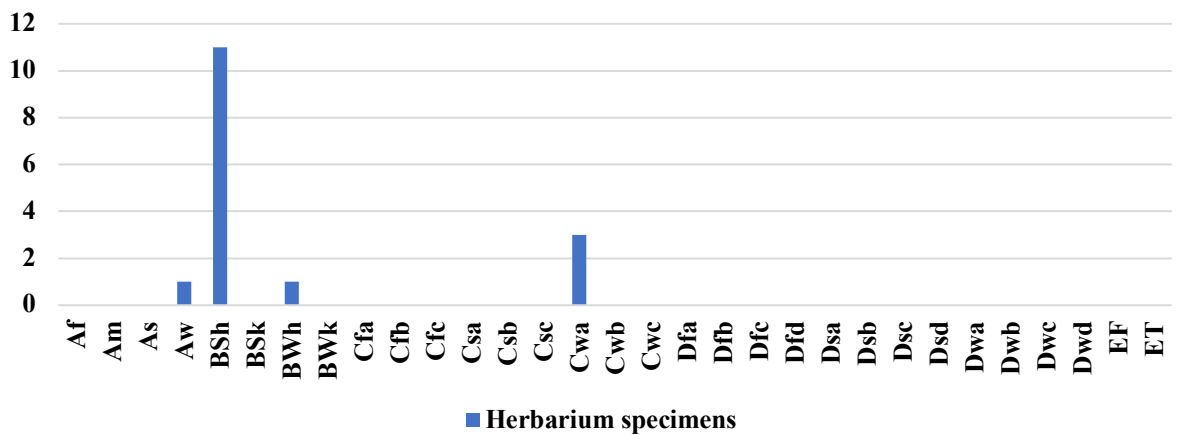
5.2.3.2.11. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia muricata* (C.H.Wright 1898) Dandy 1934; herbarium specimens excluding duplicate occurrences (n = 16).



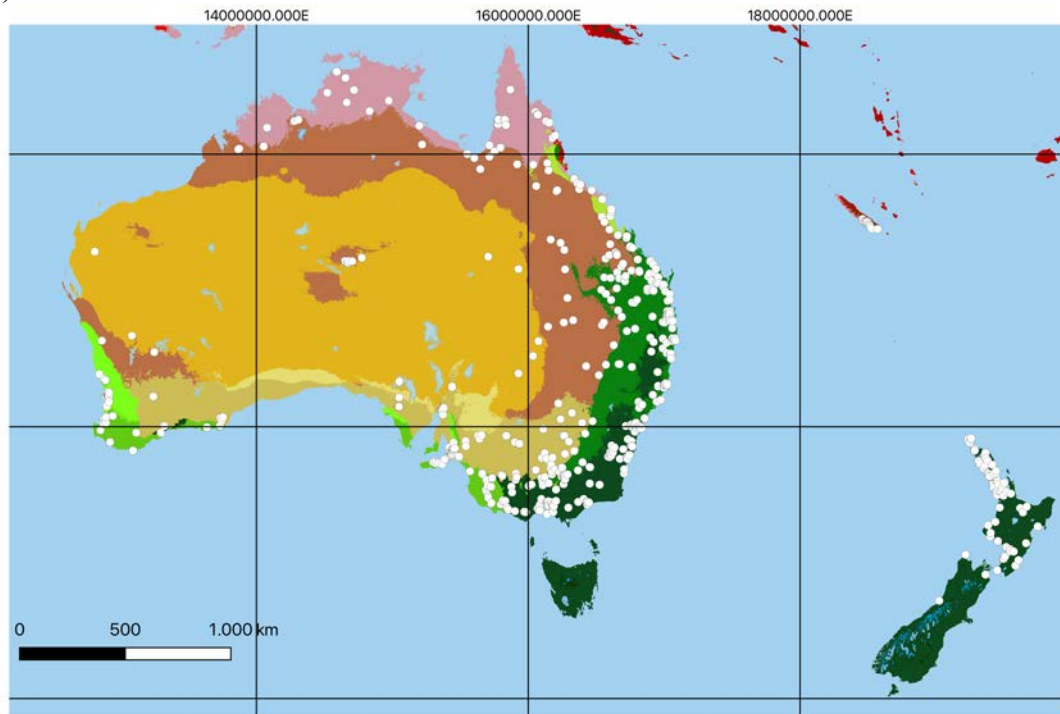
Köppen profile of *Ottelia muricata*



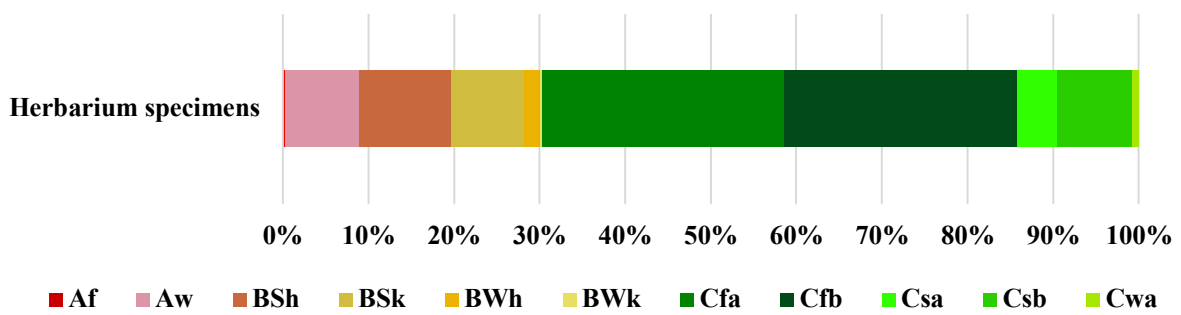
Köppen profile of *Ottelia muricata*



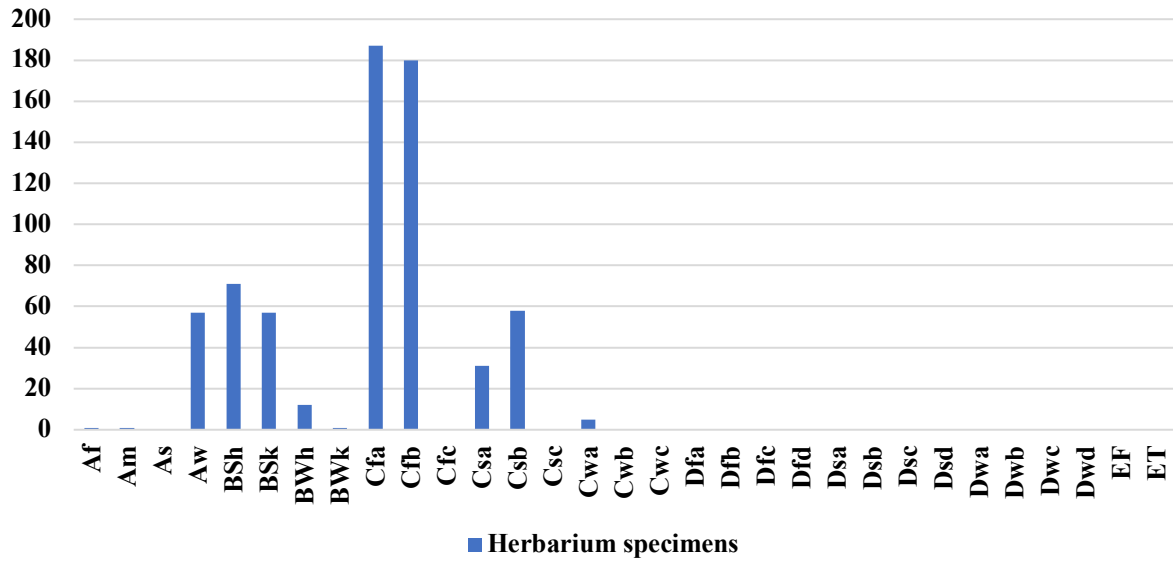
5.2.3.2.12. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia ovalifolia* (R.Br. 1810) Rich. 1814; herbarium specimens excluding duplicate occurrences (n = 661).



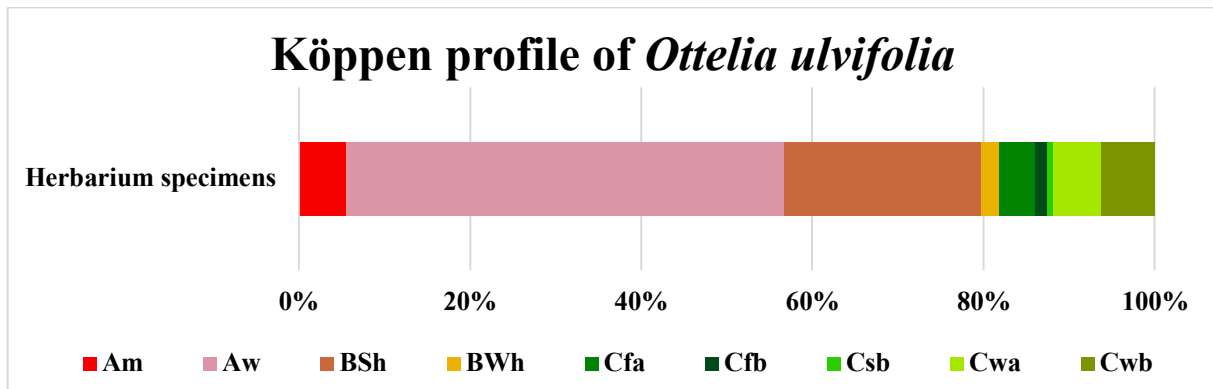
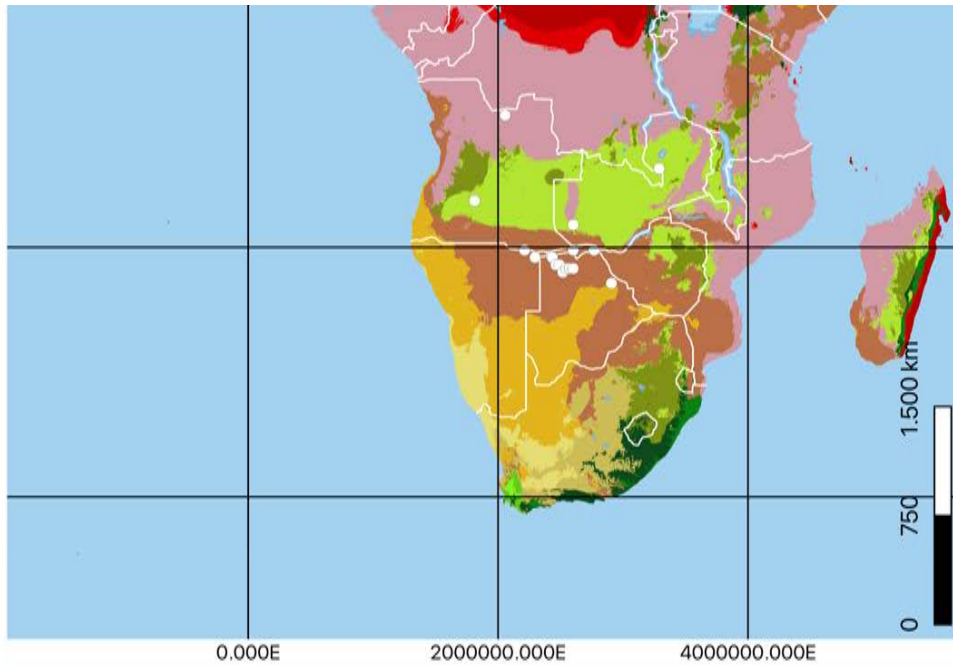
Köppen profile of *Ottelia ovalifolia*



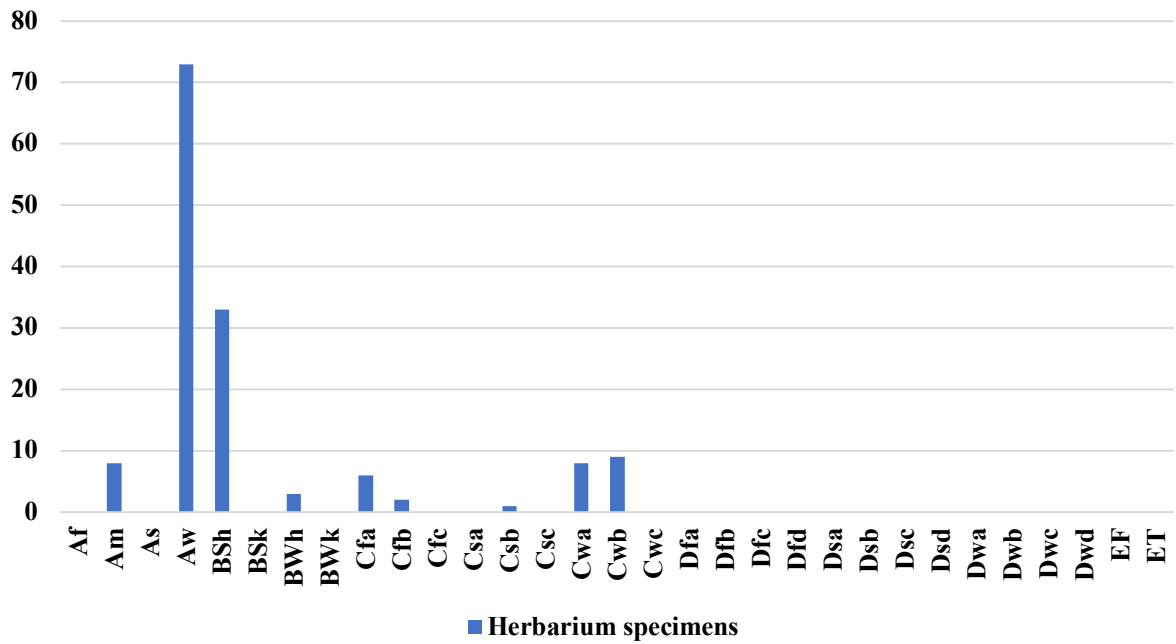
Köppen profile of *Ottelia ovalifolia*



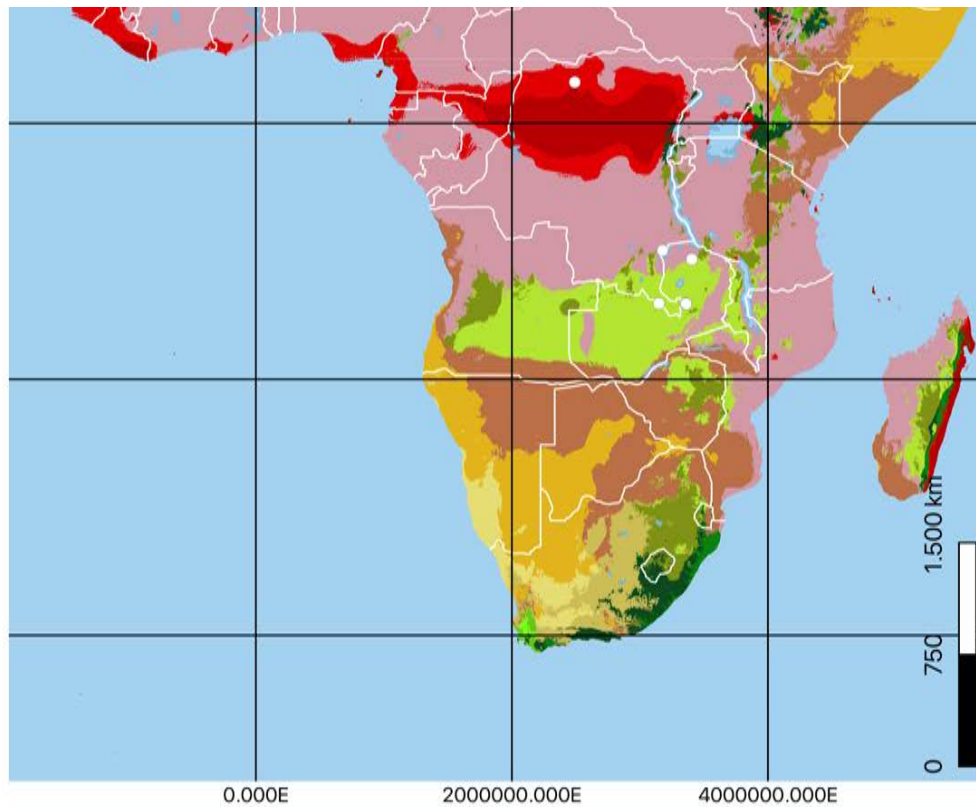
5.2.3.2.13. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia ulvifolia* (Planch. 1849) Walp. 1852; herbarium specimens excluding duplicate occurrences (n = 143).



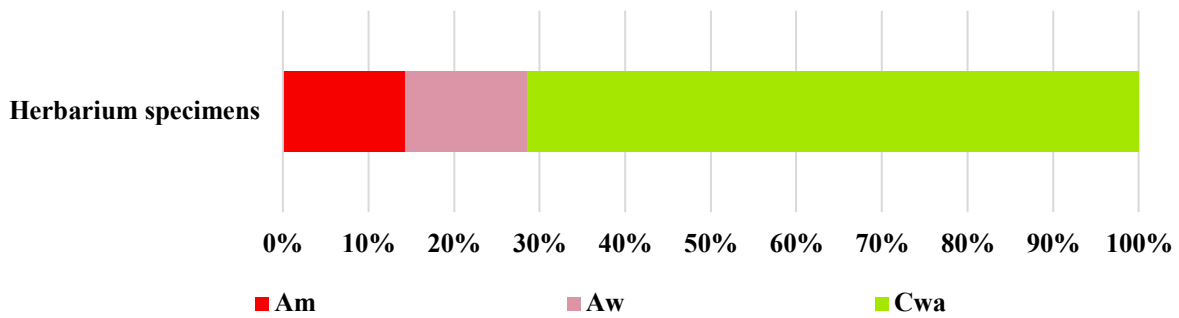
Köppen profile of *Ottelia ulvifolia*



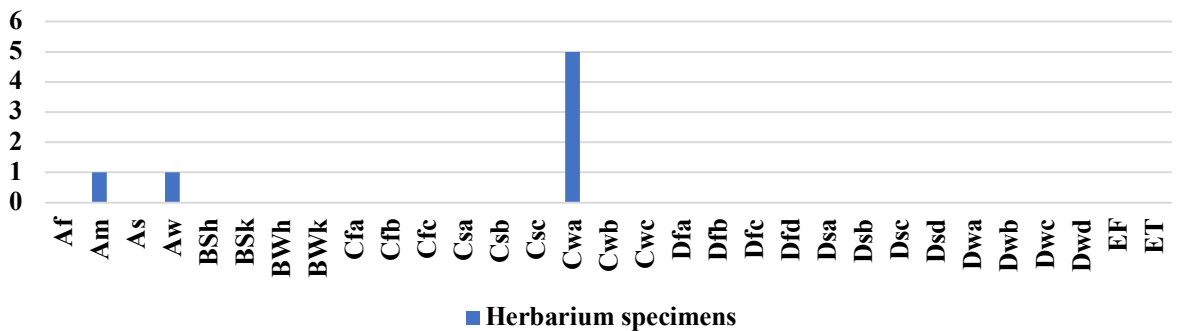
5.2.3.2.14. Köppen profile, distribution and climate map – GBIF occurrences of *Ottelia verdickii* Gürke ex De Wild., 1903; herbarium specimens excluding duplicate occurrences (n = 7).



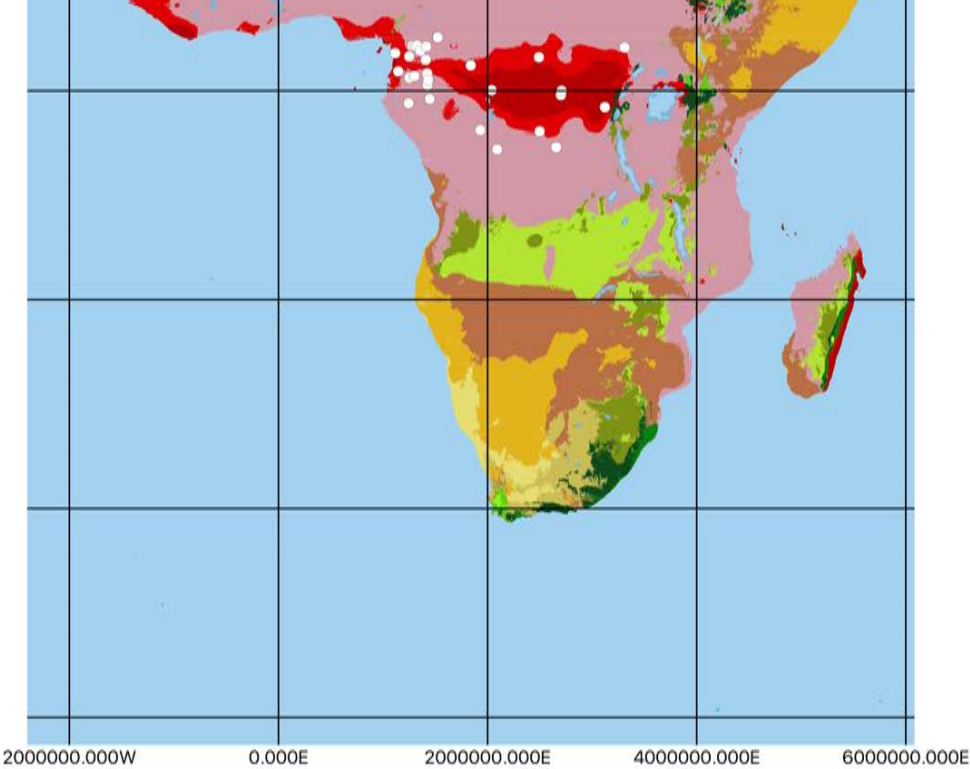
Köppen profile of *Ottelia verdickii*



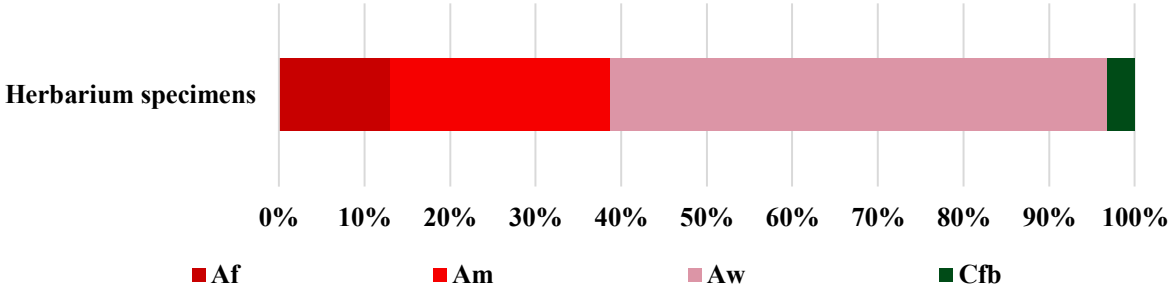
Köppen profile of *Ottelia verdickii*



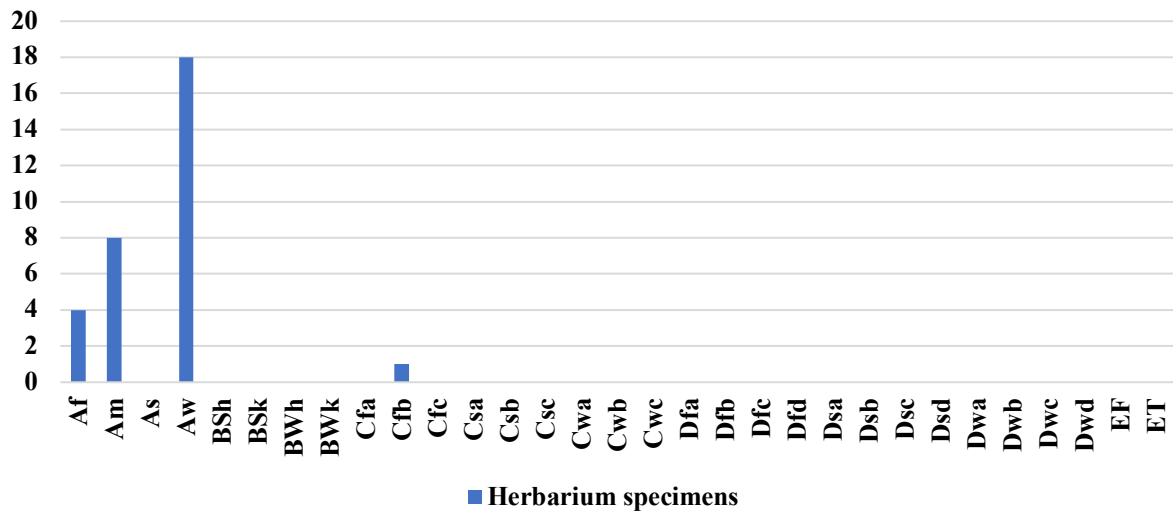
5.3.1.1.1. Köppen profile, distribution and climate map– GBIF occurrences of *Hydrocharis chevalieri* (De Wild. 1922) Dandy 1932; herbarium specimens excluding duplicate occurrences (n = 33).



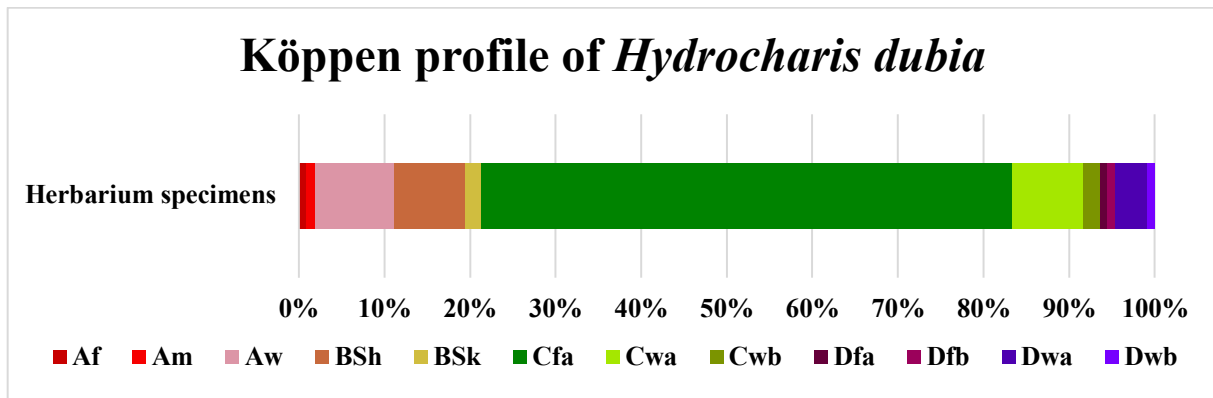
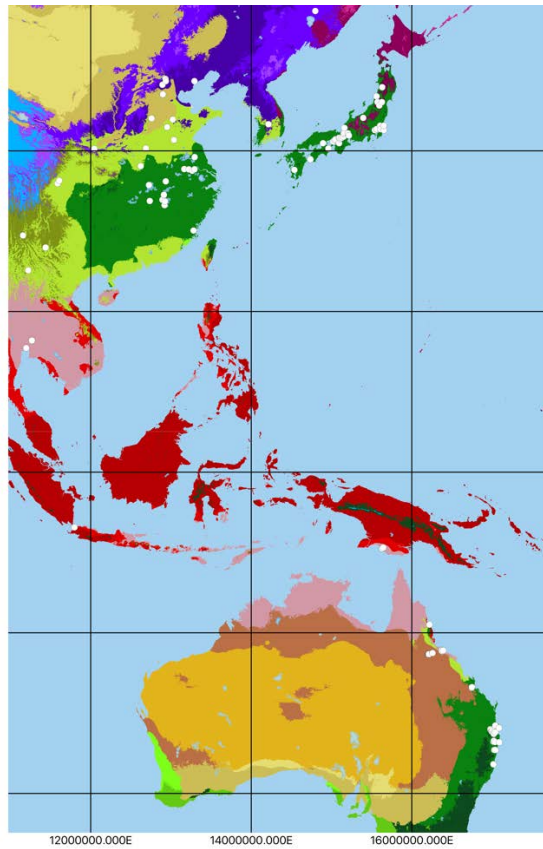
Köppen profile of *Hydrocharis chevalieri*



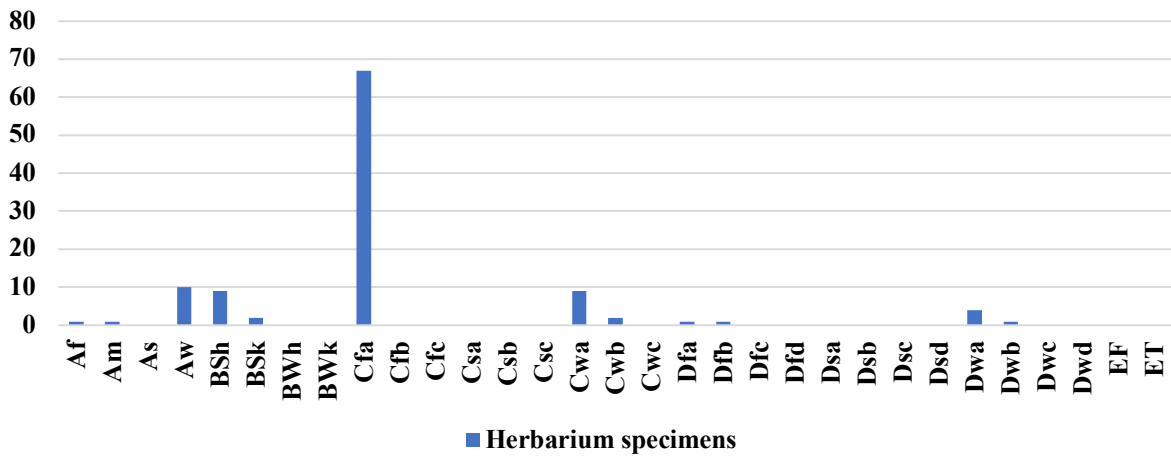
Köppen profile of *Hydrocharis chevalieri*



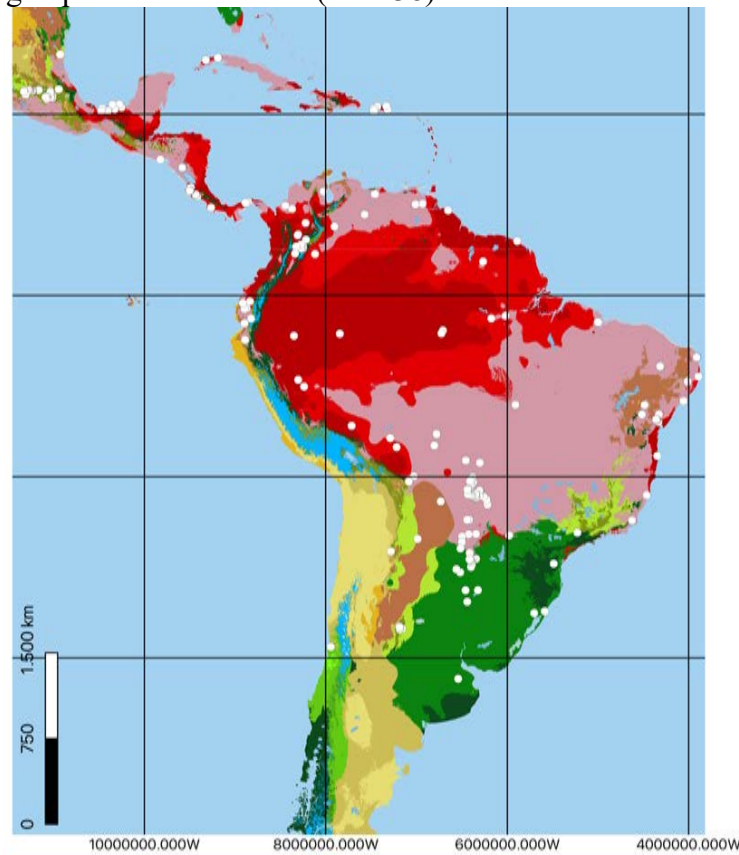
5.3.1.1.2. Köppen profile, distribution and climate map– GBIF occurrences of *Hydrocharis dubia* (Blume 1827) Backer 1925; herbarium specimens excluding duplicate occurrences (n = 108).



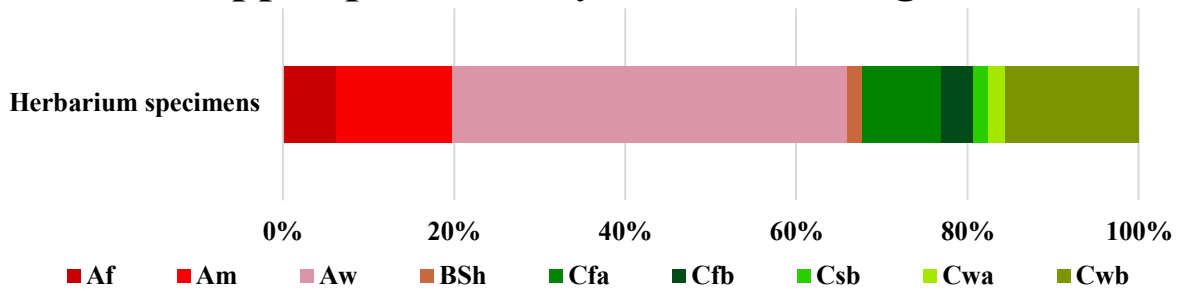
Köppen profile of *Hydrocharis dubia*



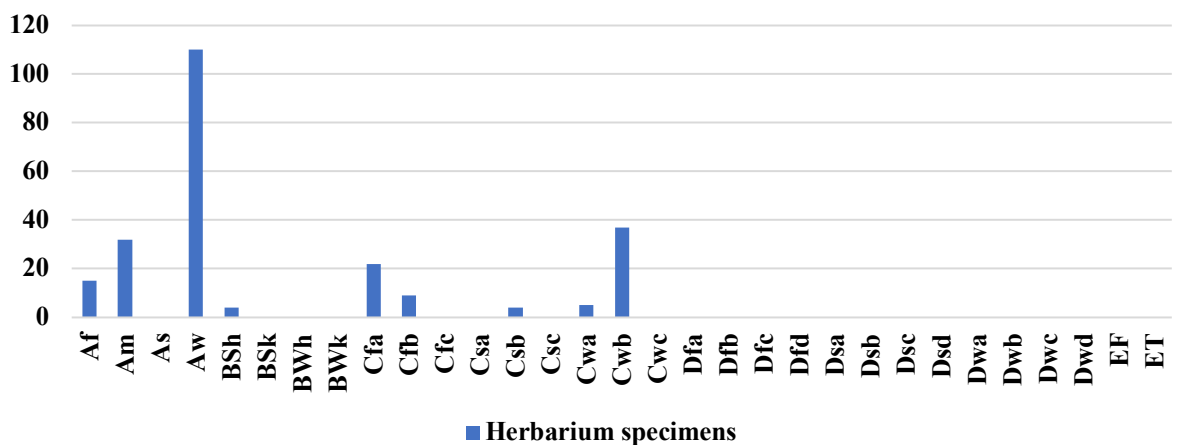
5.3.1.1.3. Köppen profile, distribution and climate map– GBIF occurrences of *Hydrocharis laevigata* (Humb. & Bonpl. ex Willd. 1810) Byng & Christenh. 2018; herbarium specimens excluding duplicate occurrences (n = 238).



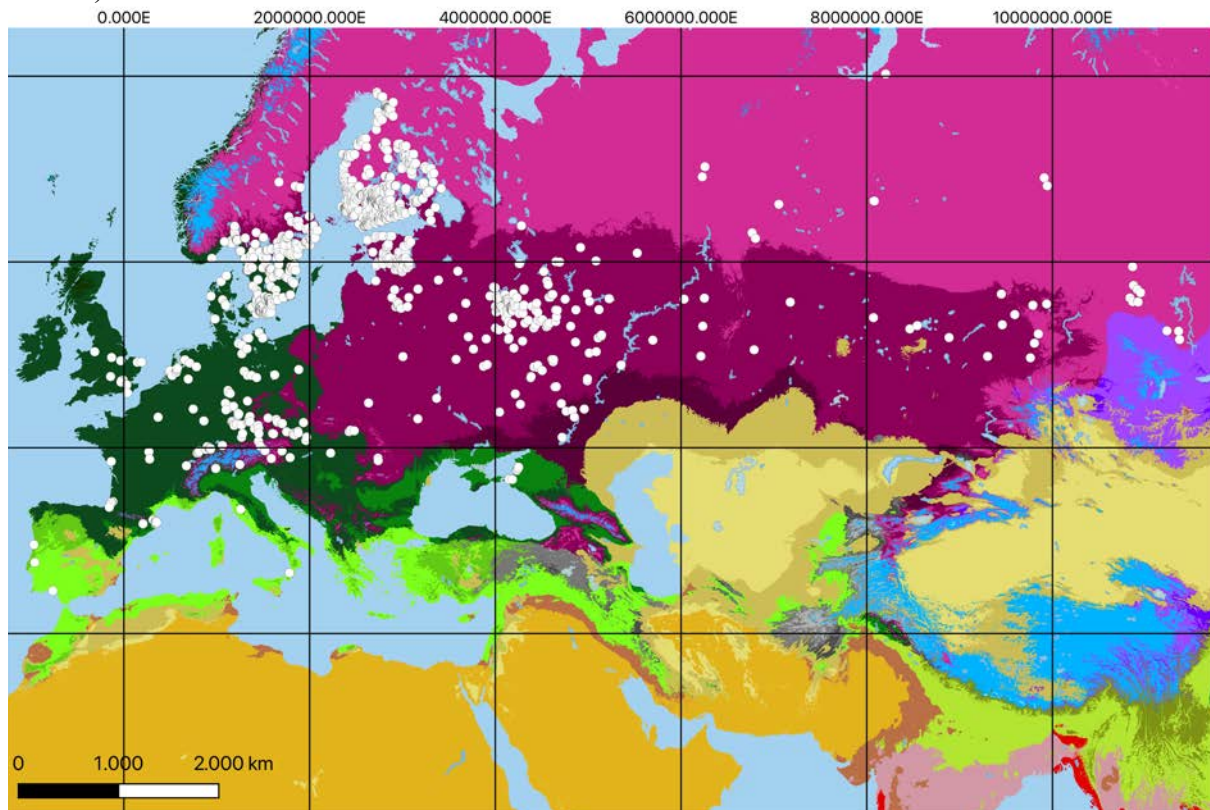
Köppen profile of *Hydrocharis laevigatum*



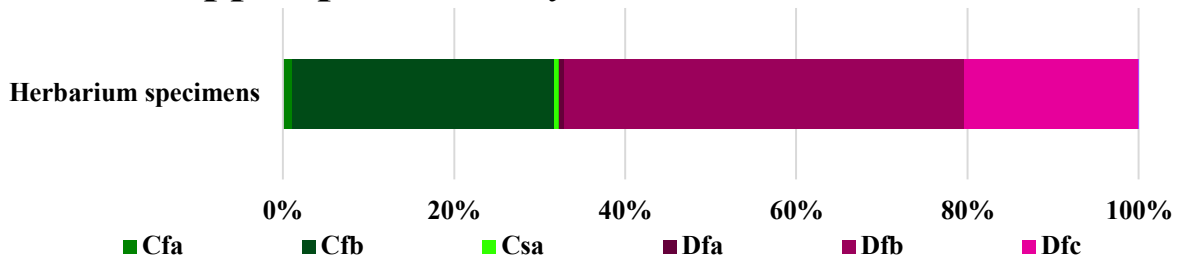
Köppen profile of *Hydrocharis laevigatum*



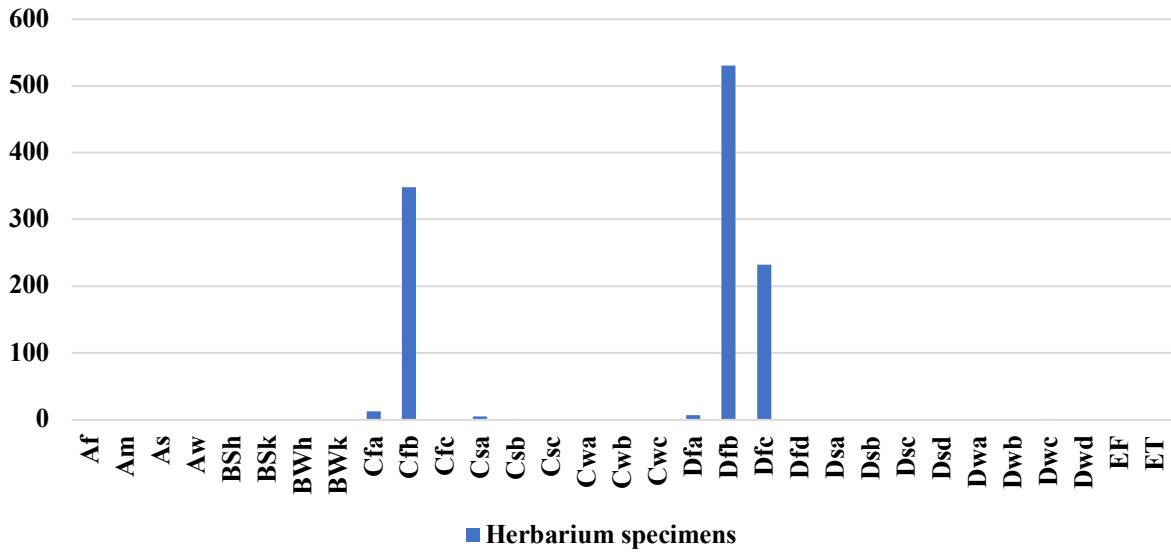
5.3.1.1.4. Köppen profile, distribution and climate map – GBIF occurrences of *Hydrocharis morsus-ranae* L. 1753; herbarium specimens excluding duplicate occurrences (n = 1138).



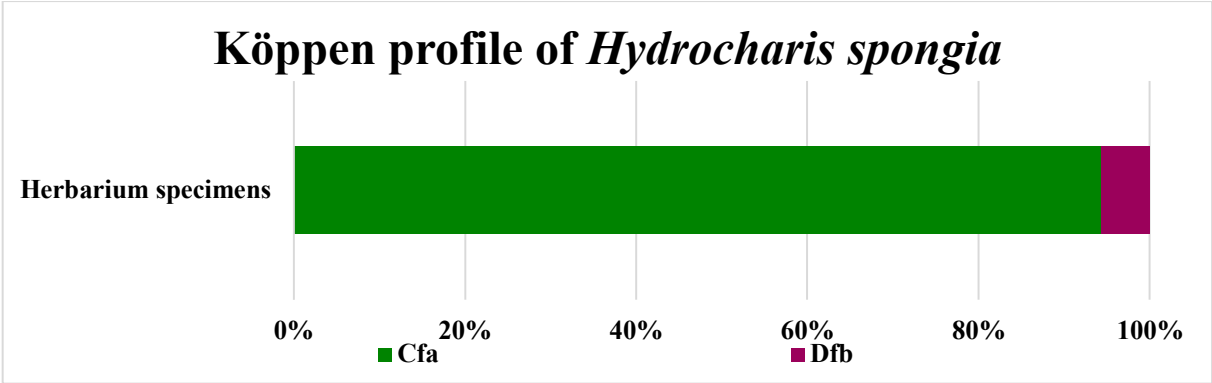
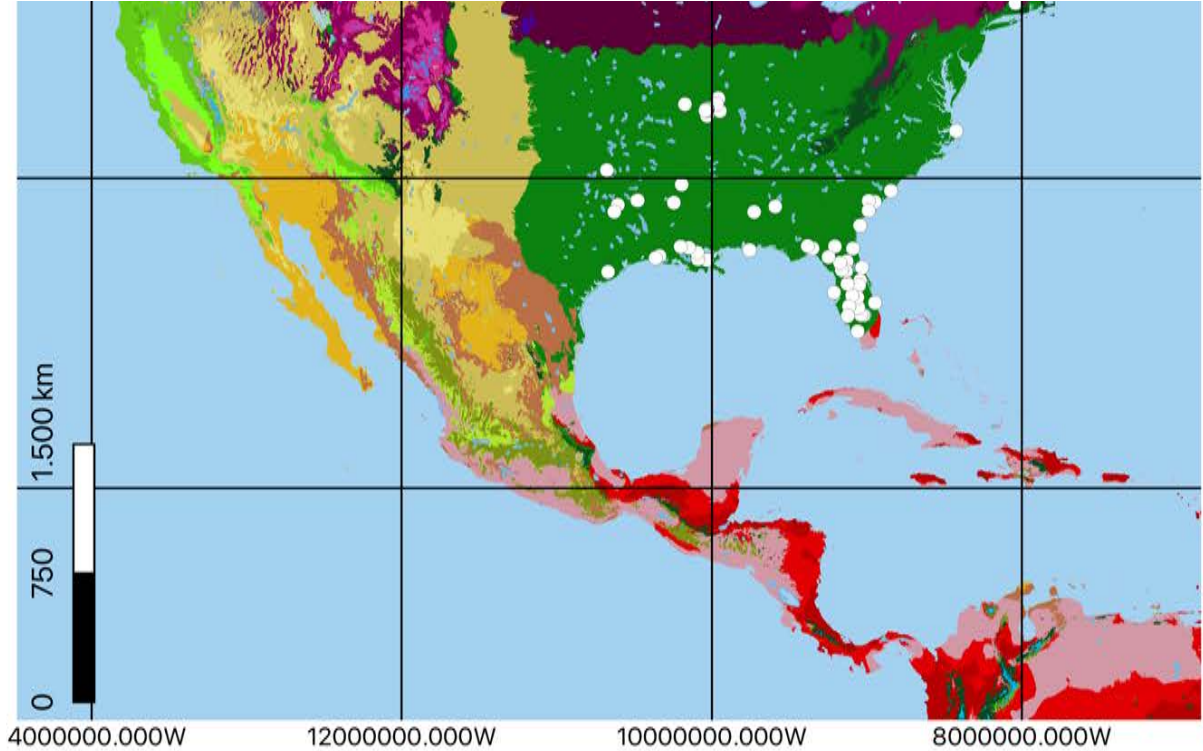
Köppen profile of *Hydrocharis morsus-ranae*



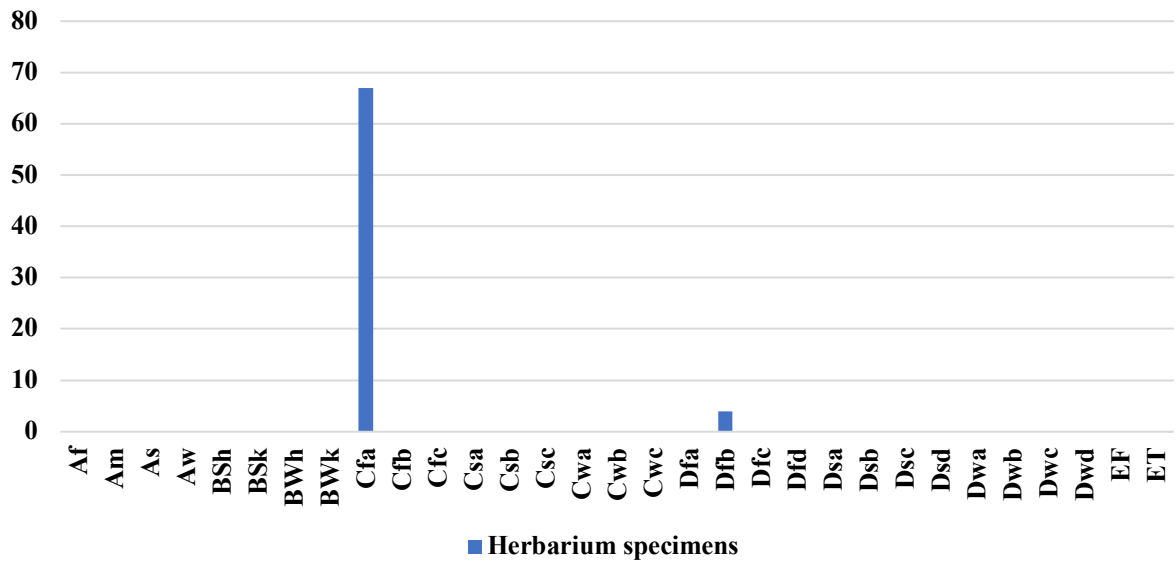
Köppen profile of *Hydrocharis morsus-ranae*



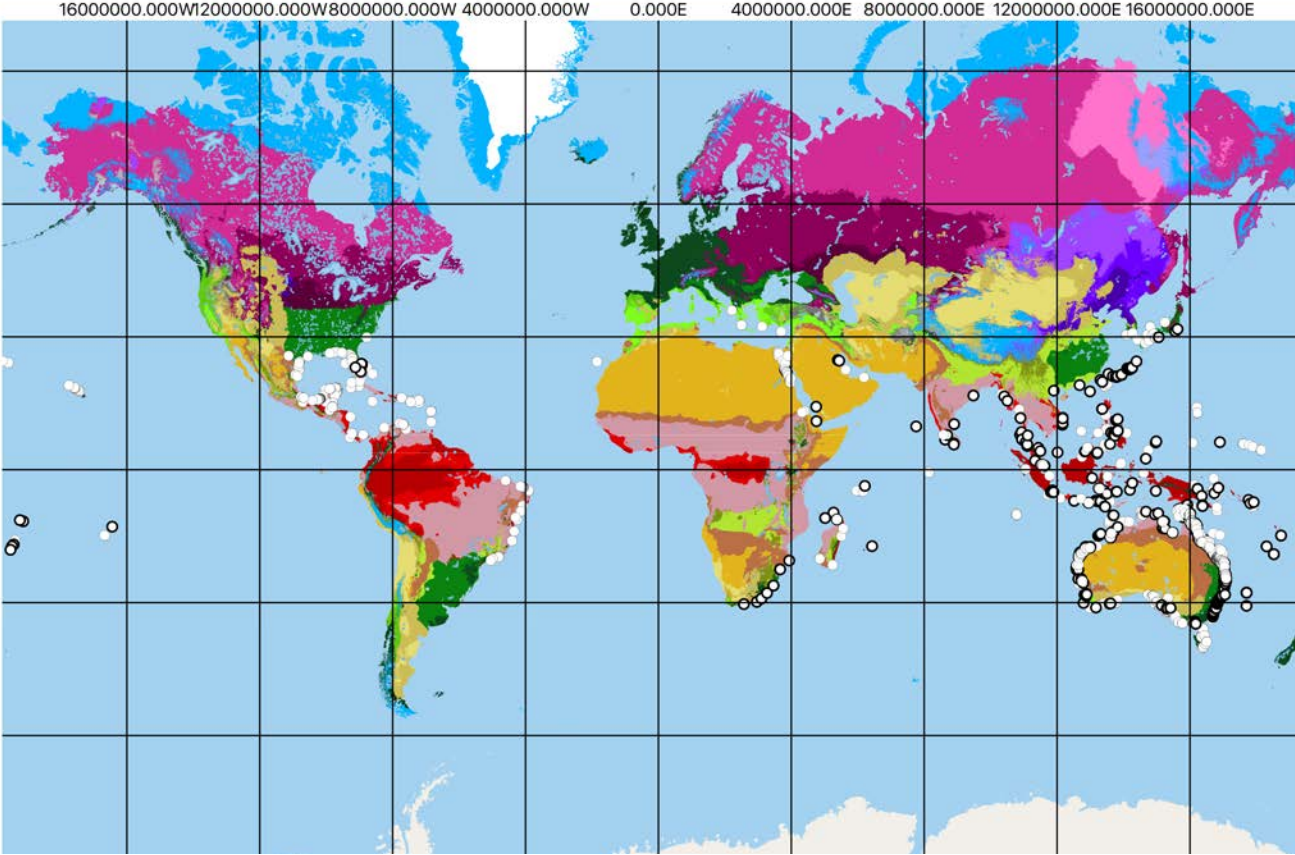
5.3.1.1.5. Köppen profile, distribution and climate map – GBIF occurrences of *Hydrocharis spongia* Bosc, 1807; herbarium specimens excluding duplicate occurrences (n = 71).



Köppen profile of *Hydrocharis spongia*

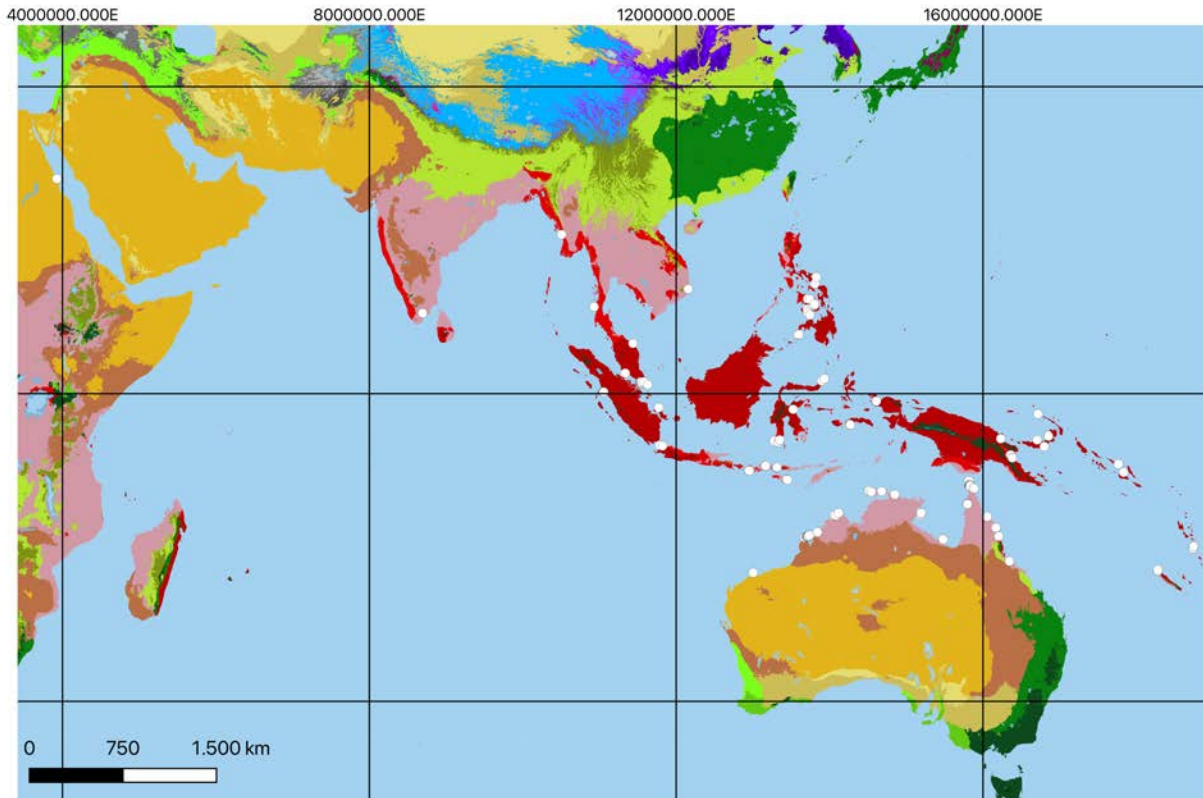


5.3.2. Second diverging genus within Clade A of Hydrocharitaceae cf. Chen et. al (2012), comprising *Enhalus* Rich. 1811, *Halophia* Thouars 1806, and *Thalassia* Banks ex K.D.Koenig 1805

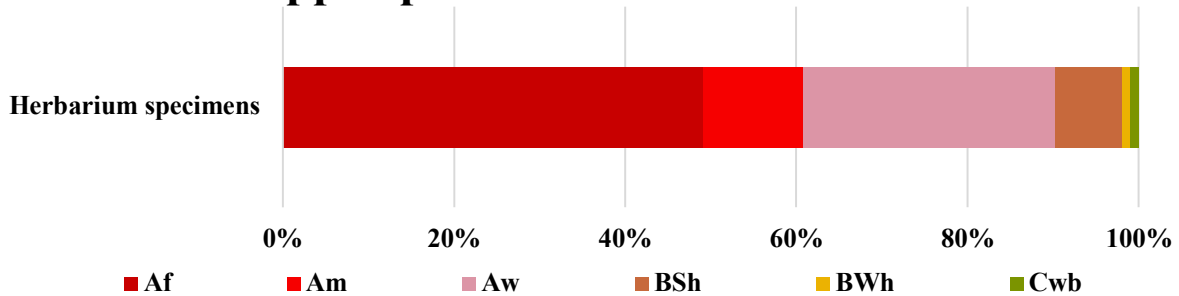


5.3.2.1. Genus *Enhalus* Rich. 1811.

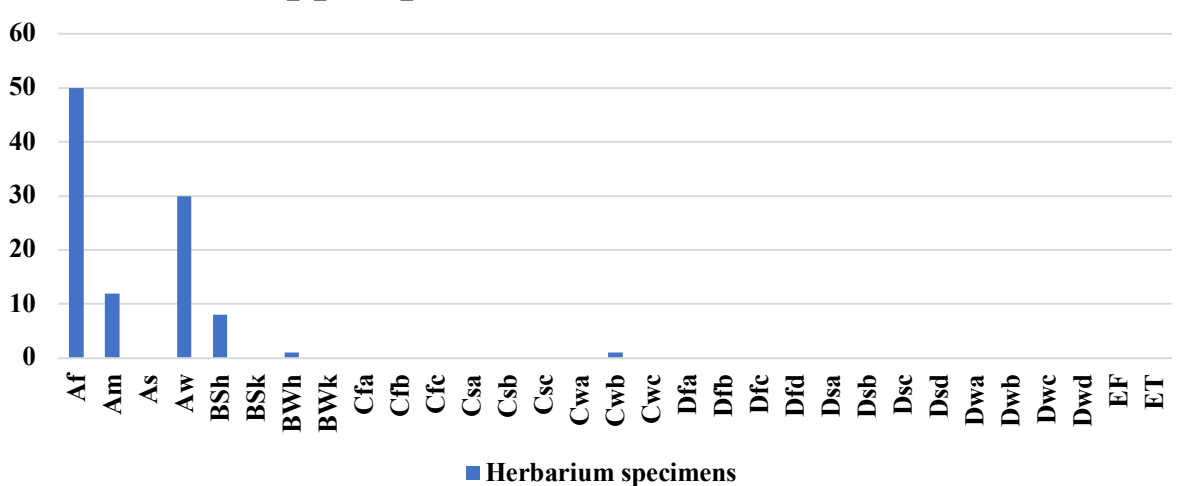
Köppen profile, distribution and climate map – GBIF occurrences of *Enhalus acoroides* (L.f. 1782) Royle 1839; herbarium specimens excluding duplicate occurrences (n = 102).



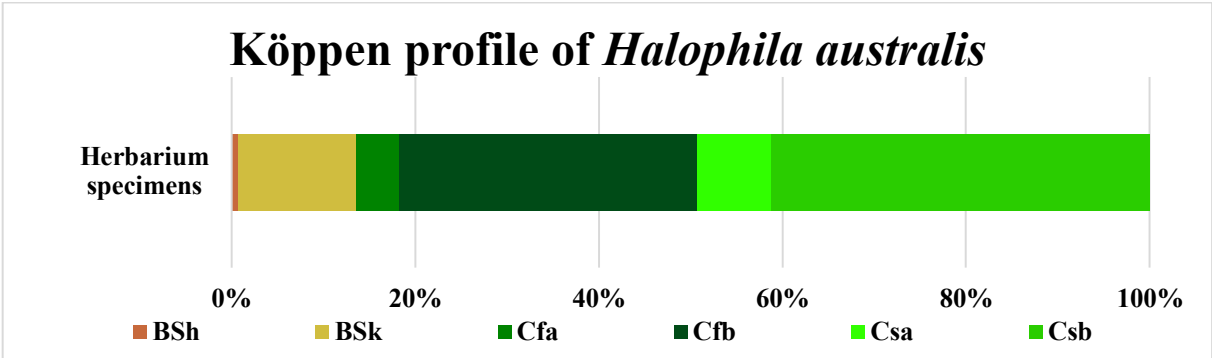
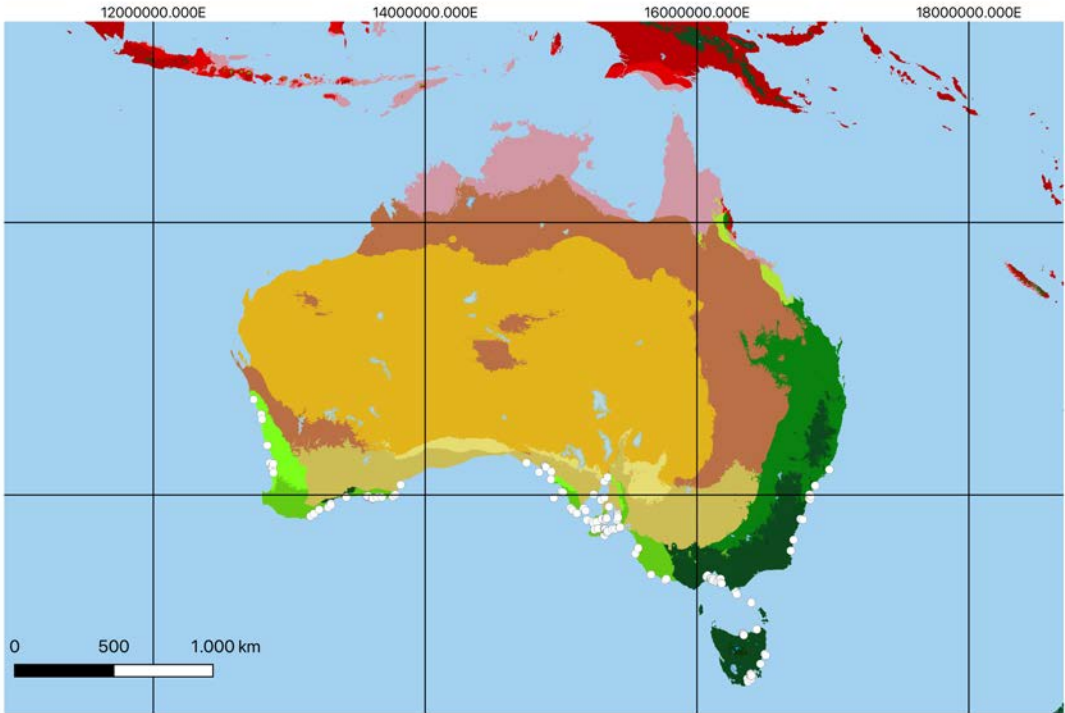
Köppen profile of *Enhalus acoroides*



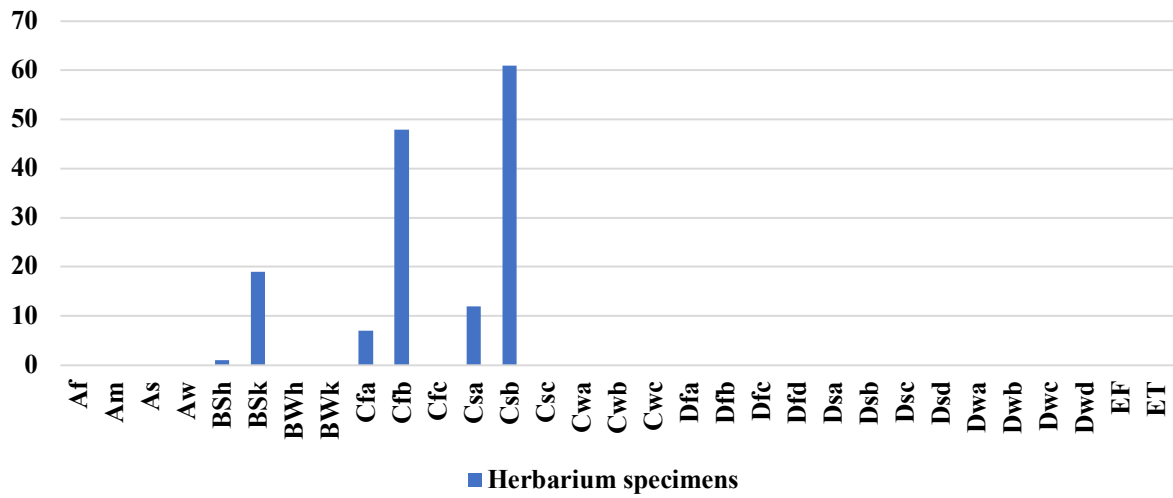
Köppen profile of *Enhalus acoroides*



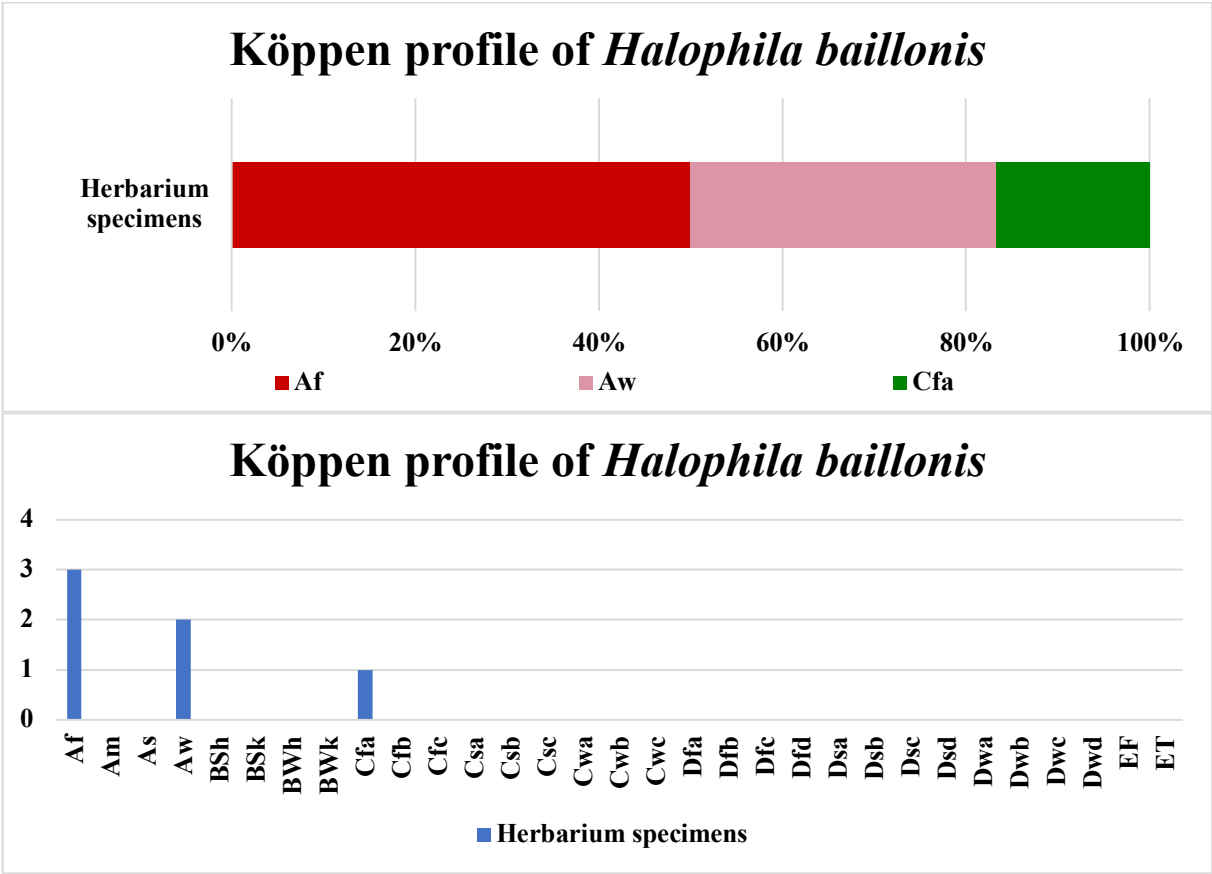
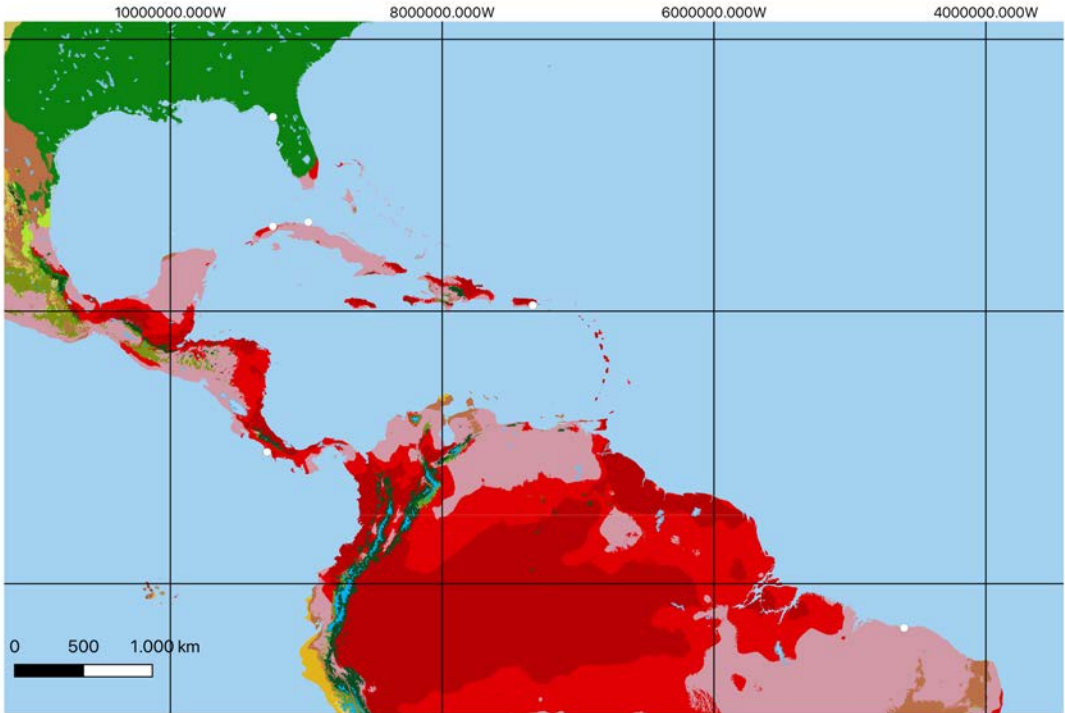
5.3.2.1.1. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila australis* Doty & B.C.Stone 1967; herbarium specimens excluding duplicate occurrences (n = 148).



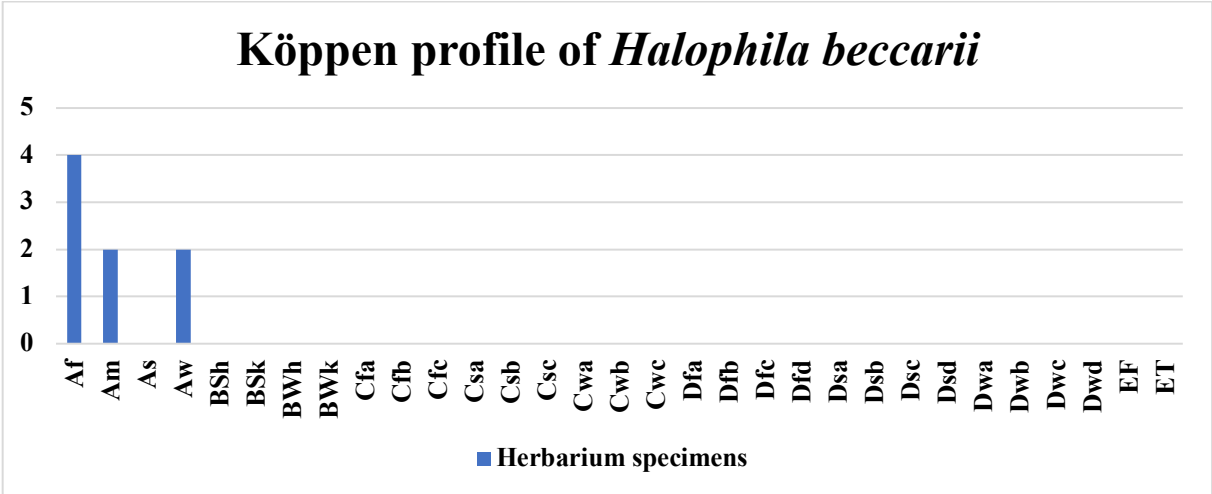
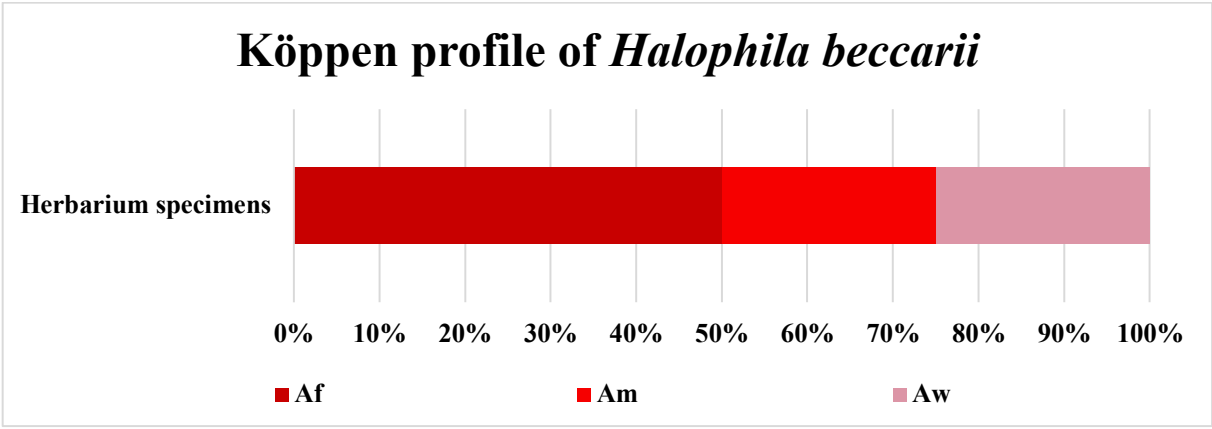
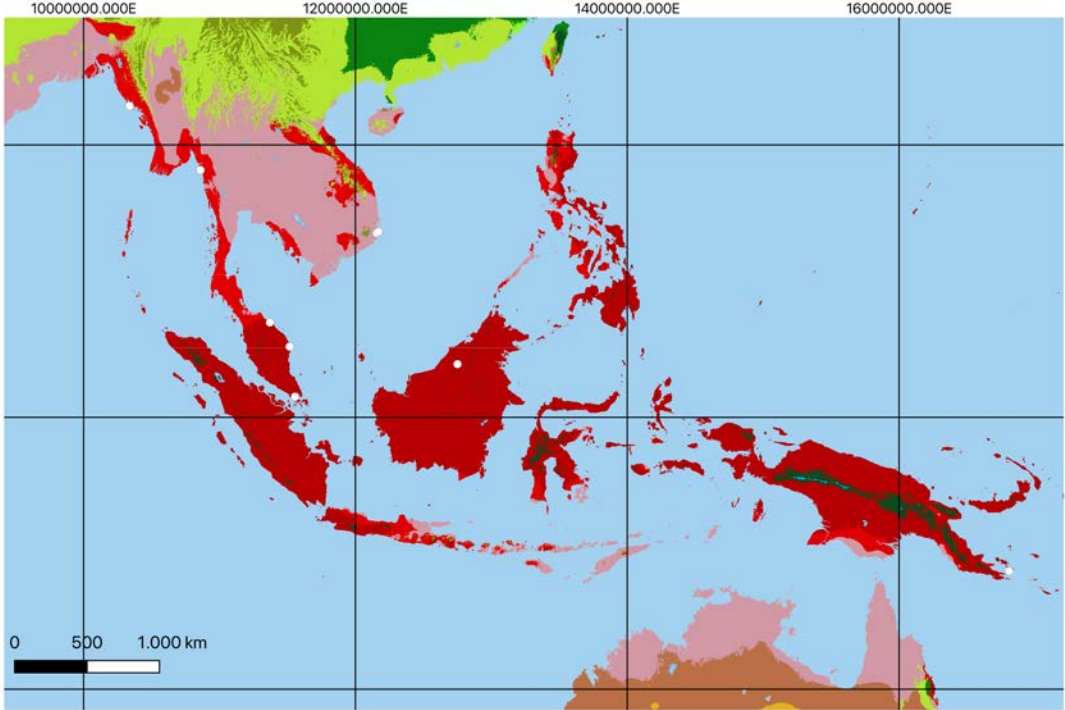
Köppen profile of *Halophila australis*



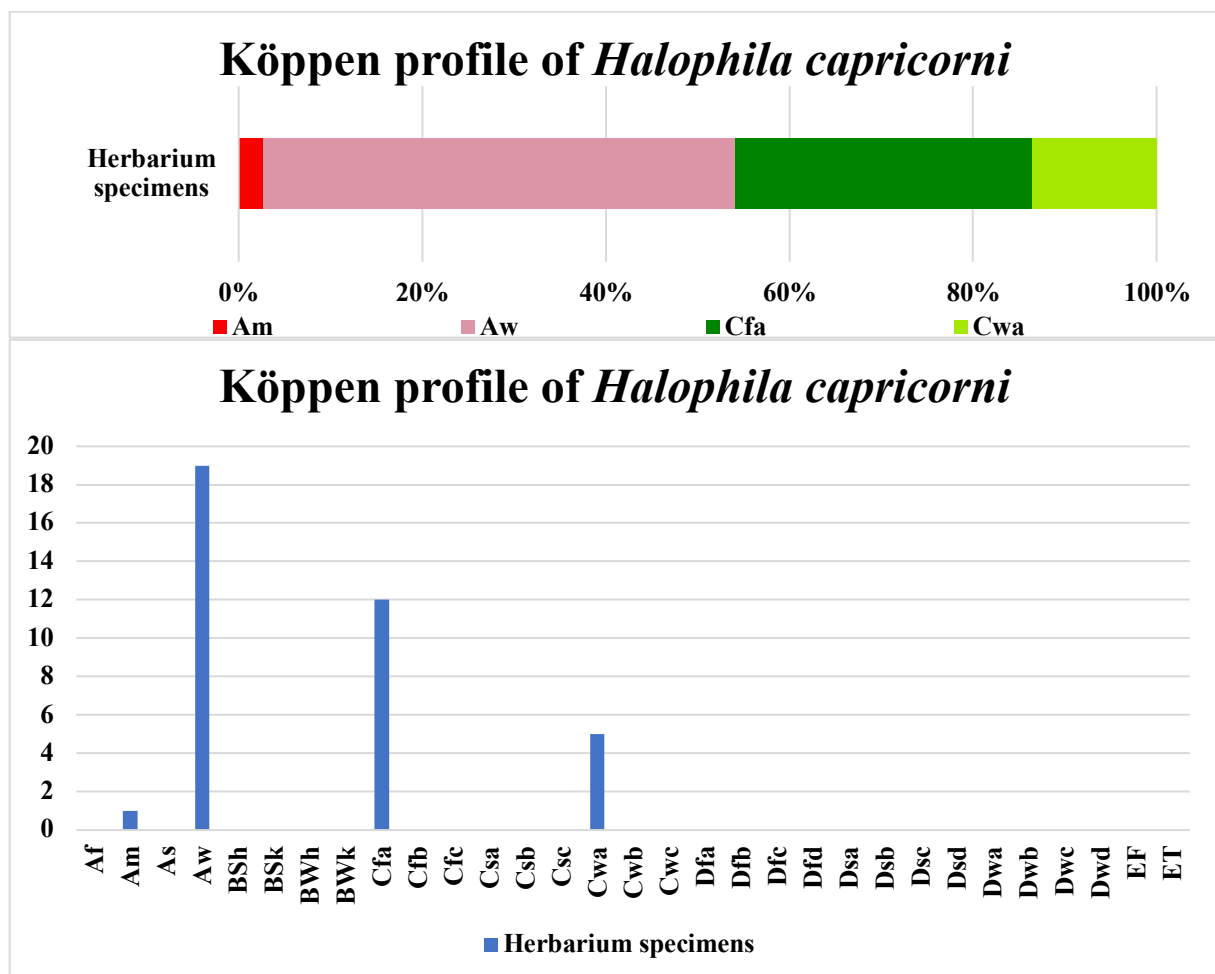
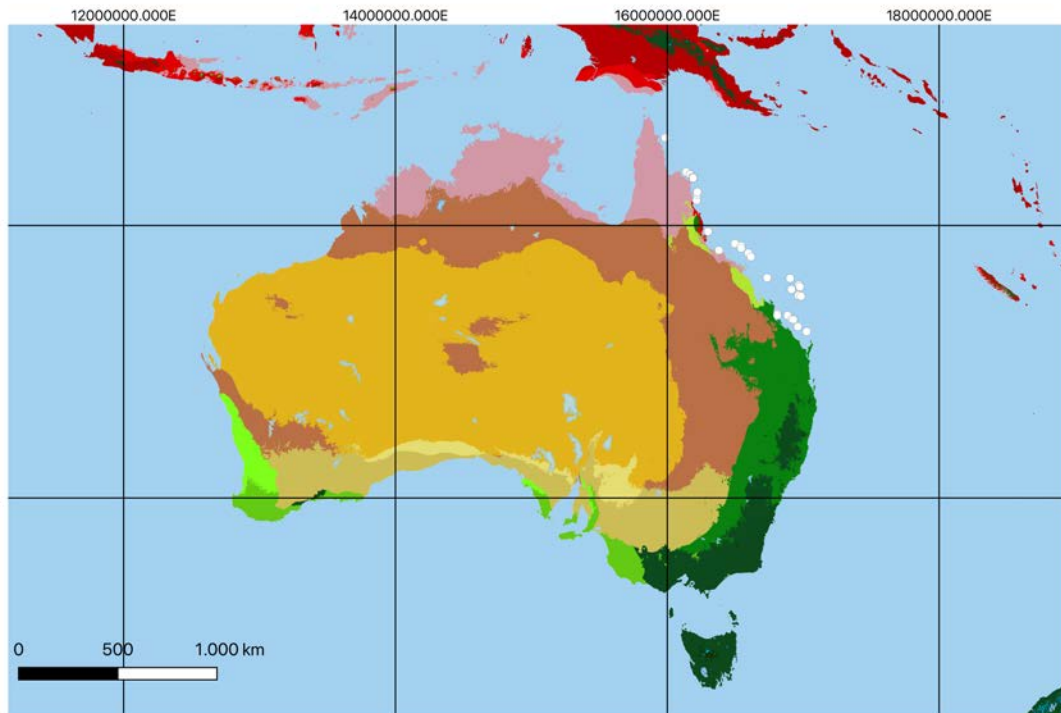
5.3.2.1.2. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila baillonis* Asch. ex Dickie 1874; herbarium specimens excluding duplicate occurrences (n = 6).



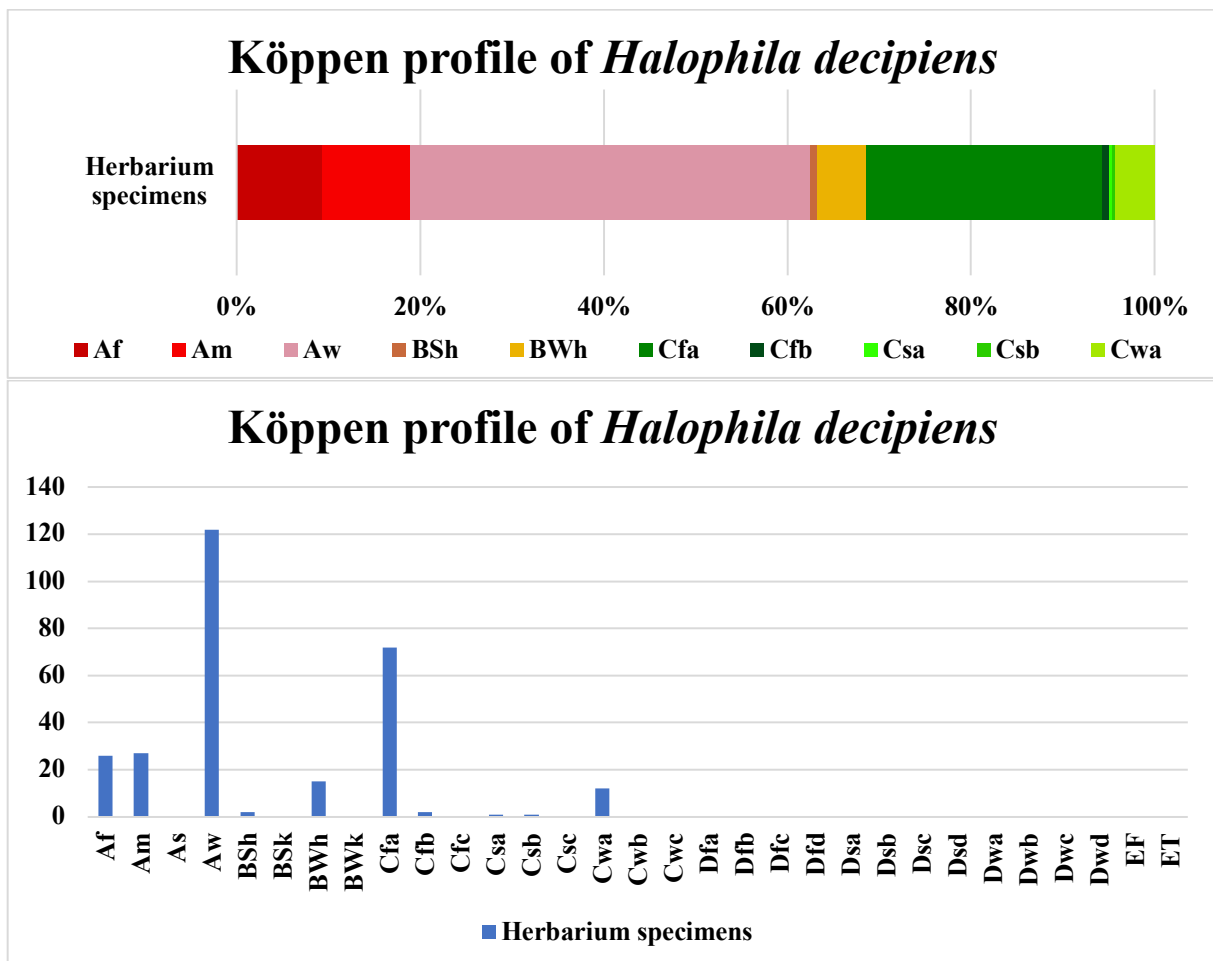
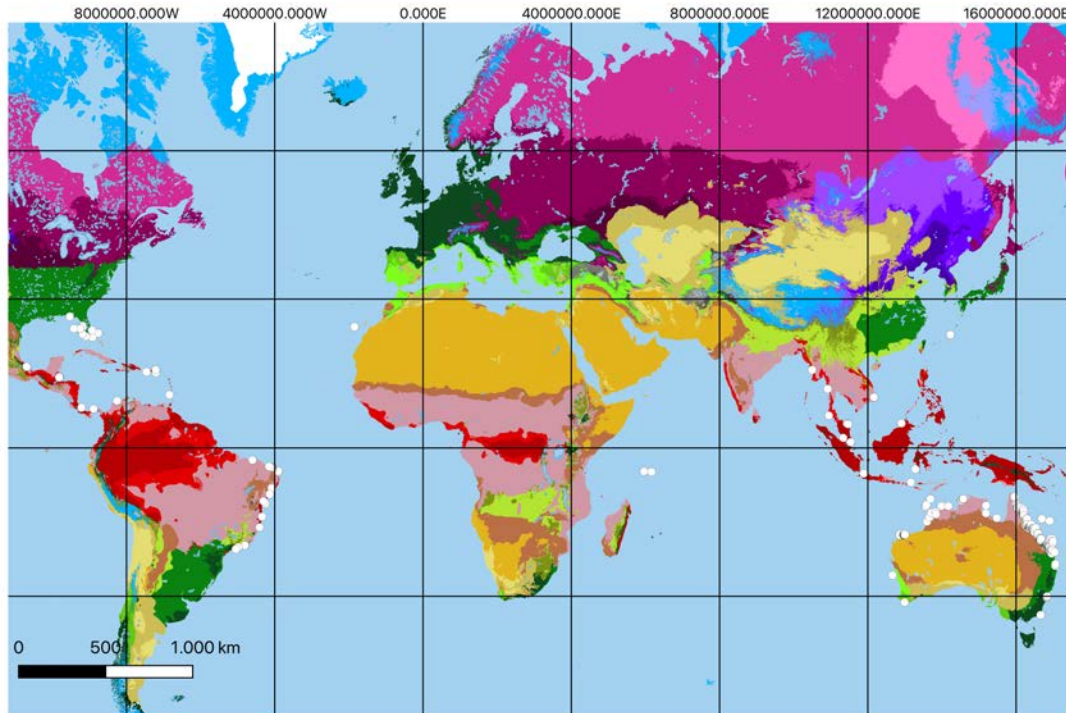
5.3.2.1.3. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila beccarii* Asch. 1874; herbarium specimens excluding duplicate occurrences (n = 8).



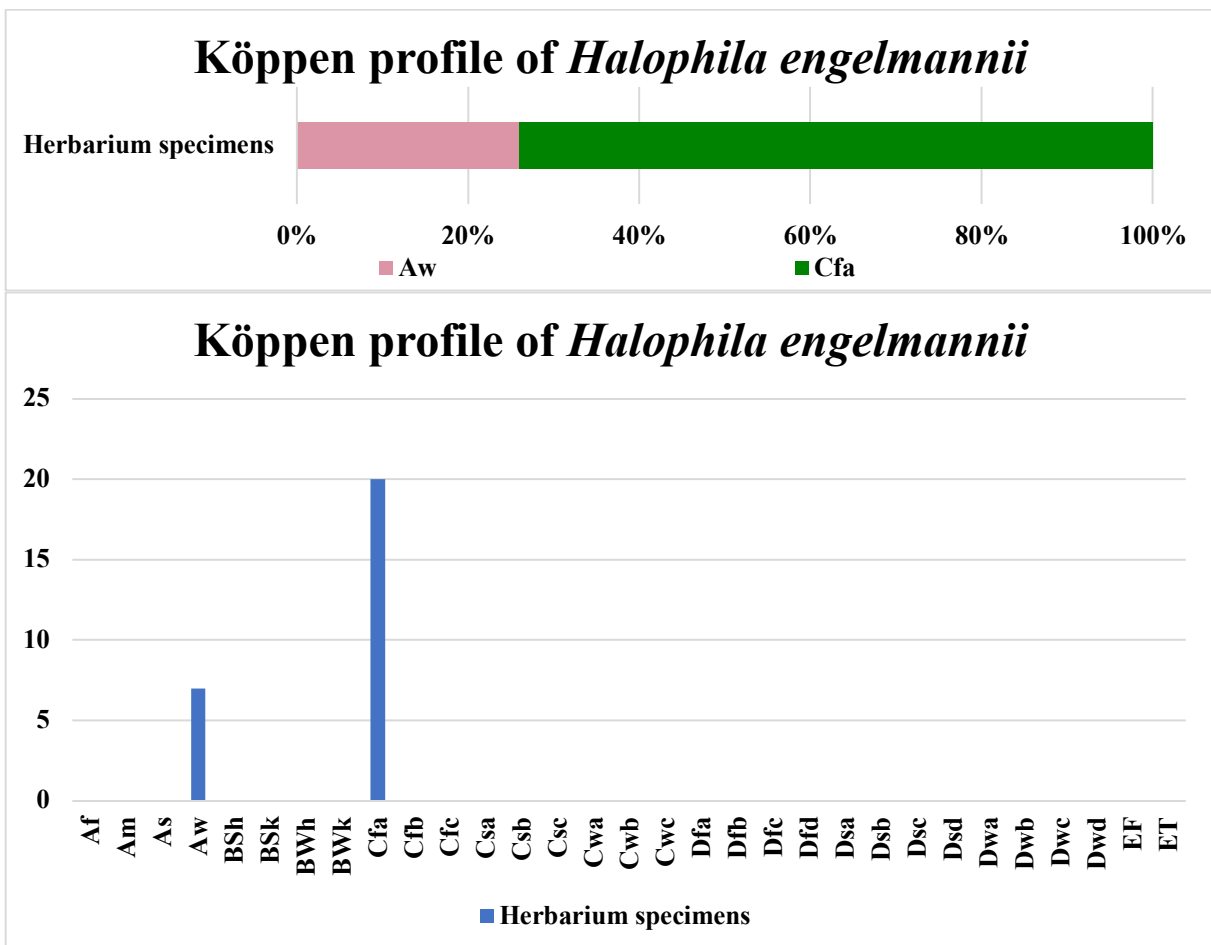
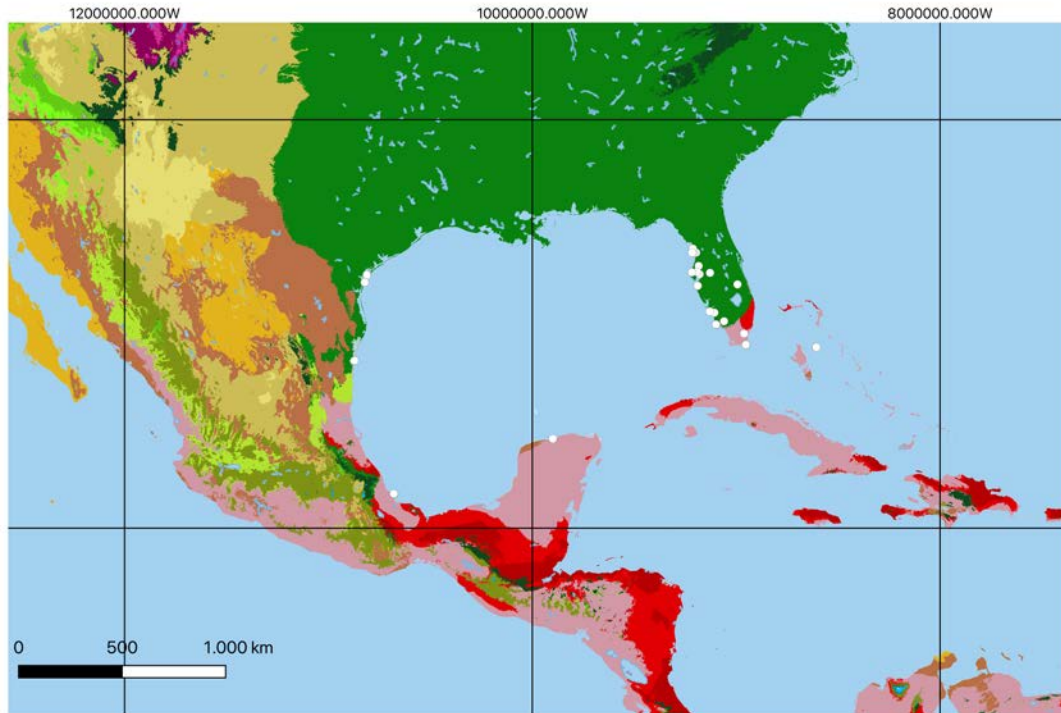
5.3.2.1.4. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila capricorni* Larkum 1995; herbarium specimens excluding duplicate occurrences (n = 37).



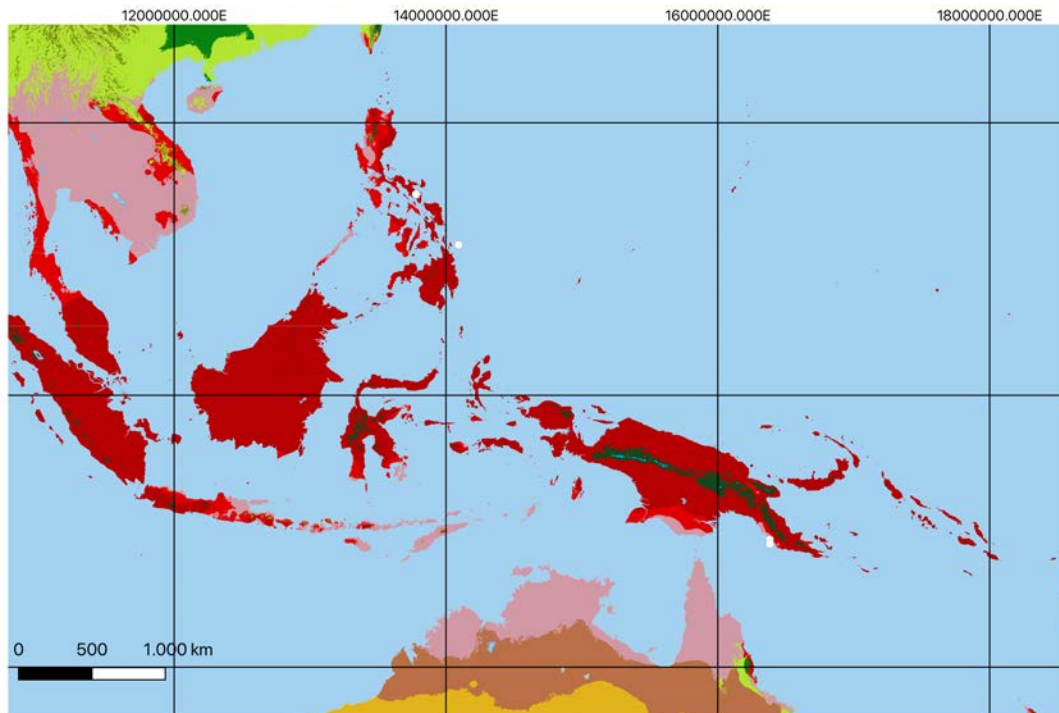
5.3.2.1.5. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila decipiens* Ostenf. 1902; herbarium specimens excluding duplicate occurrences (n = 280).



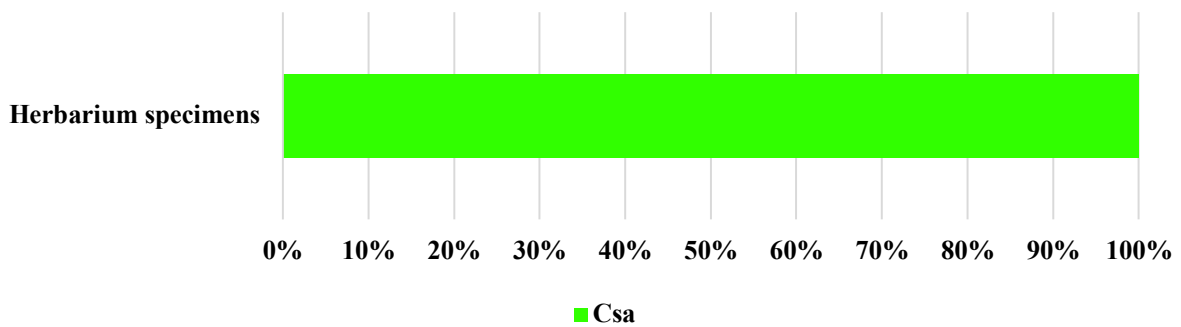
5.3.2.1.6. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila engelmannii* Asch. 1974; herbarium specimens excluding duplicate occurrences (n = 27).



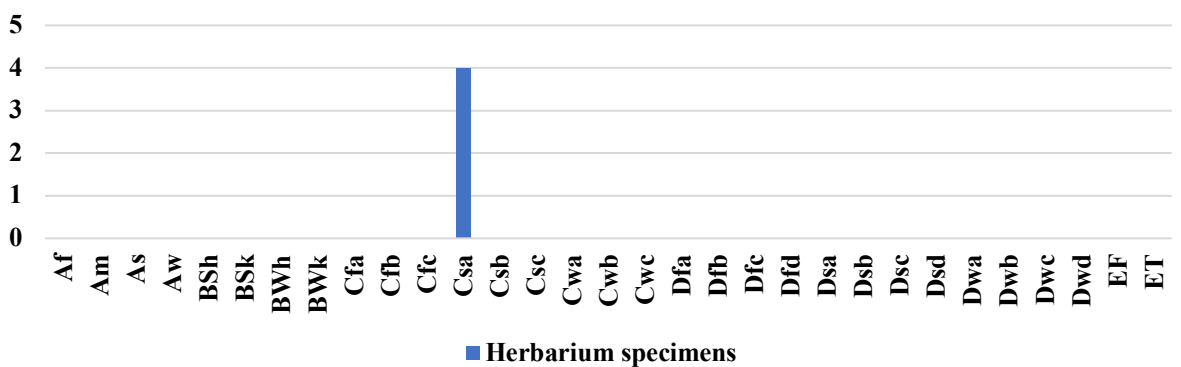
5.3.2.1.7. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila gaudichaudii* J.Kuo 2006; herbarium specimens excluding duplicate occurrences (n = 4).



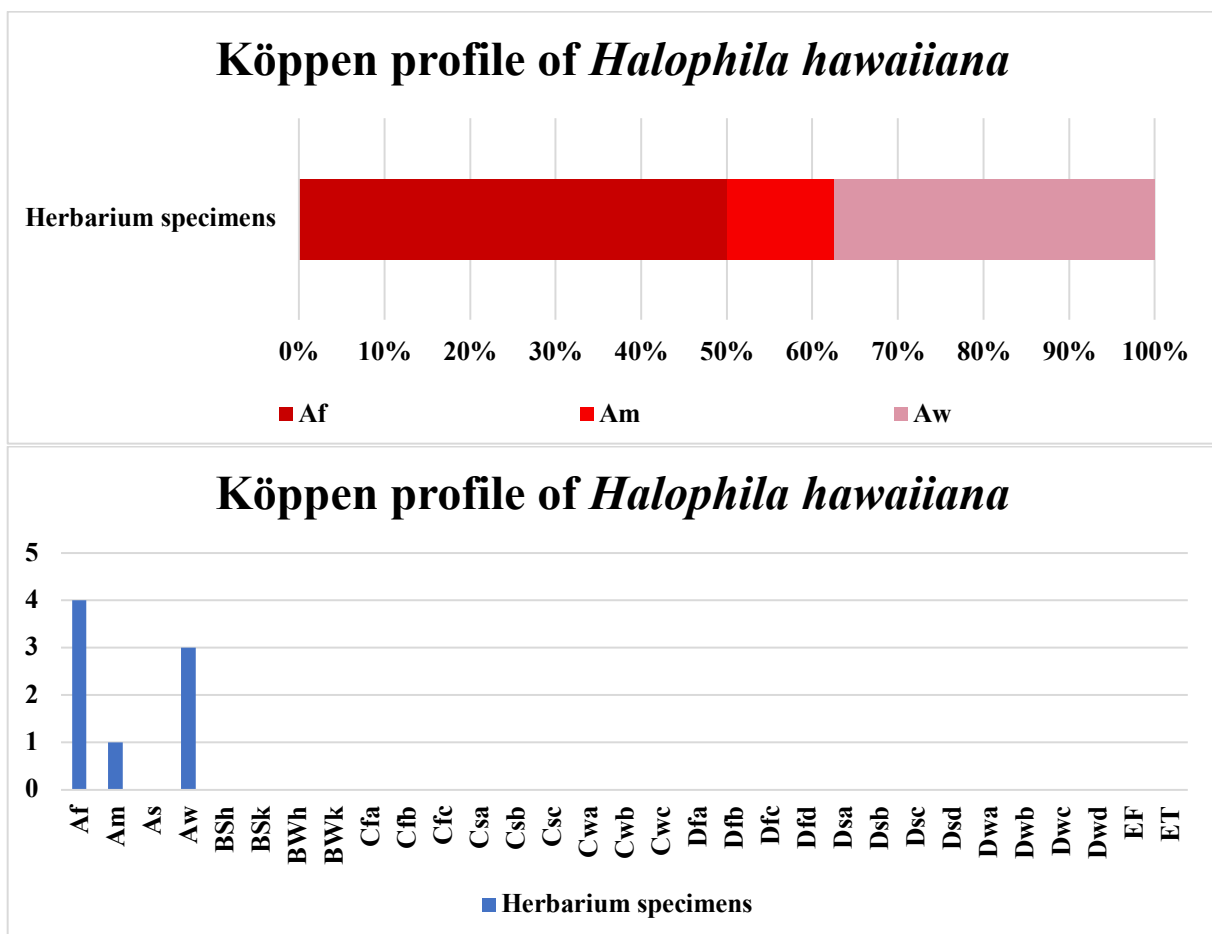
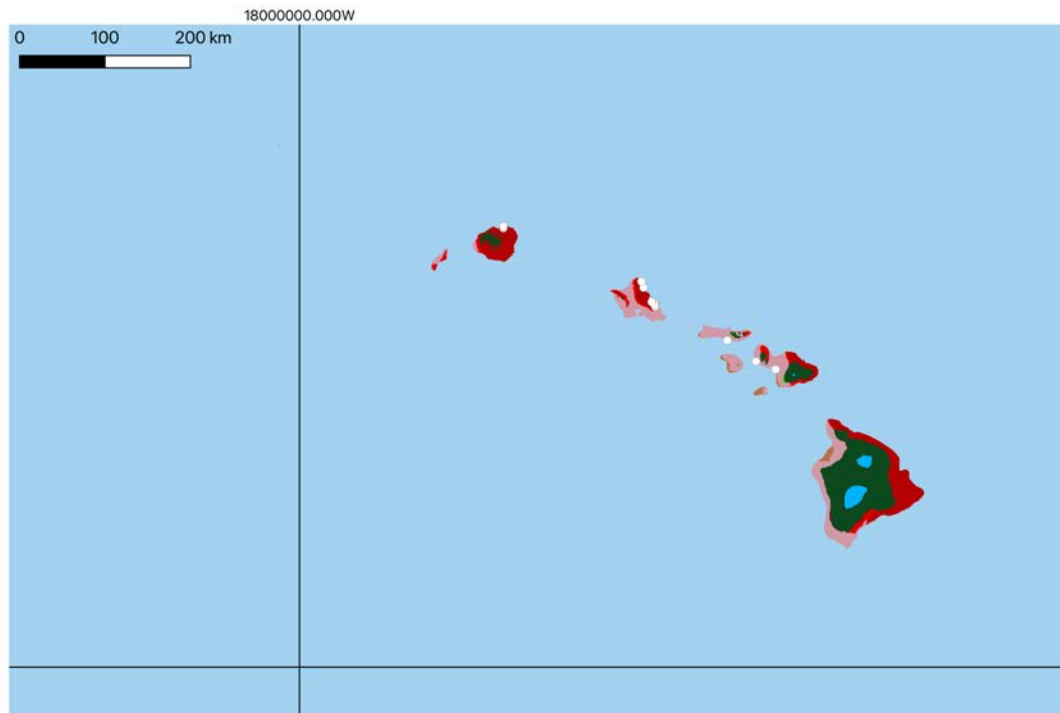
Köppen profile of *Halophila gaudichaudii*



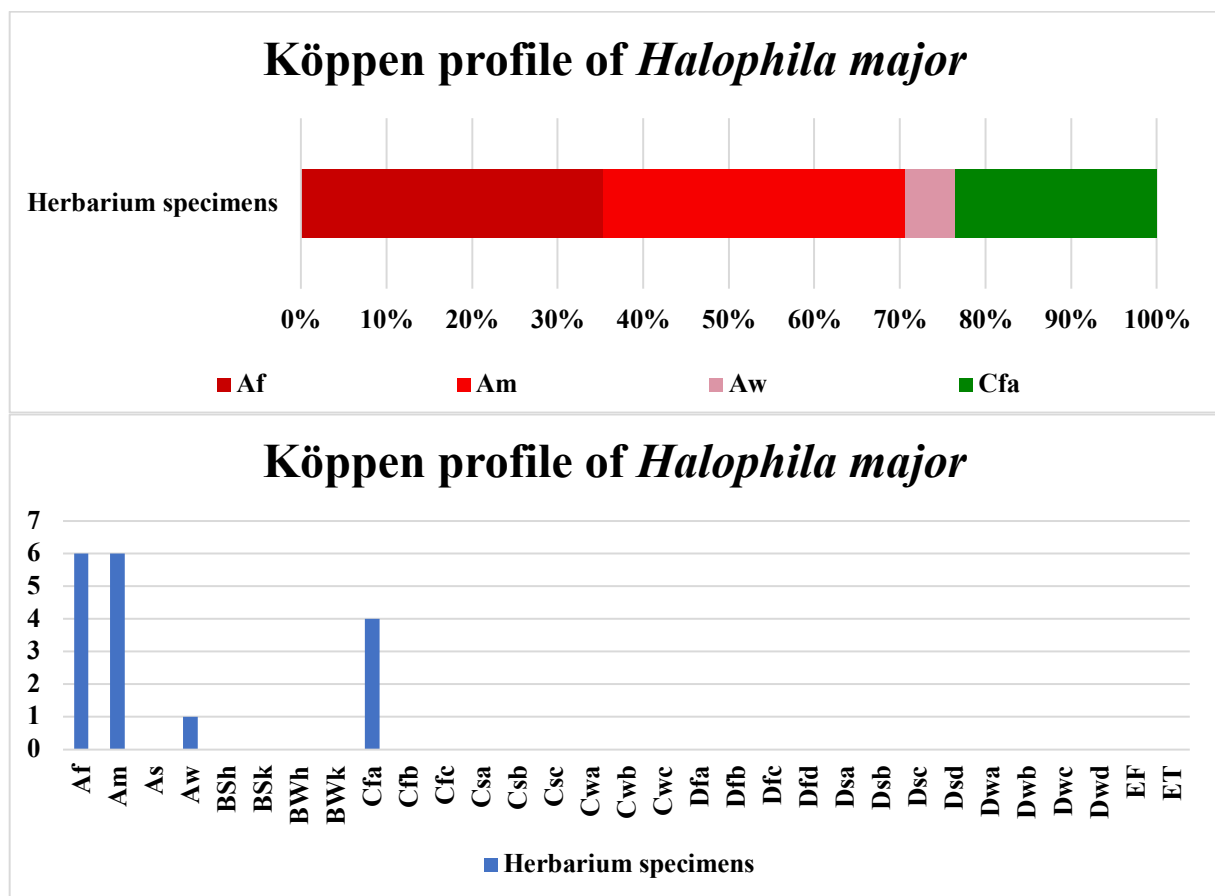
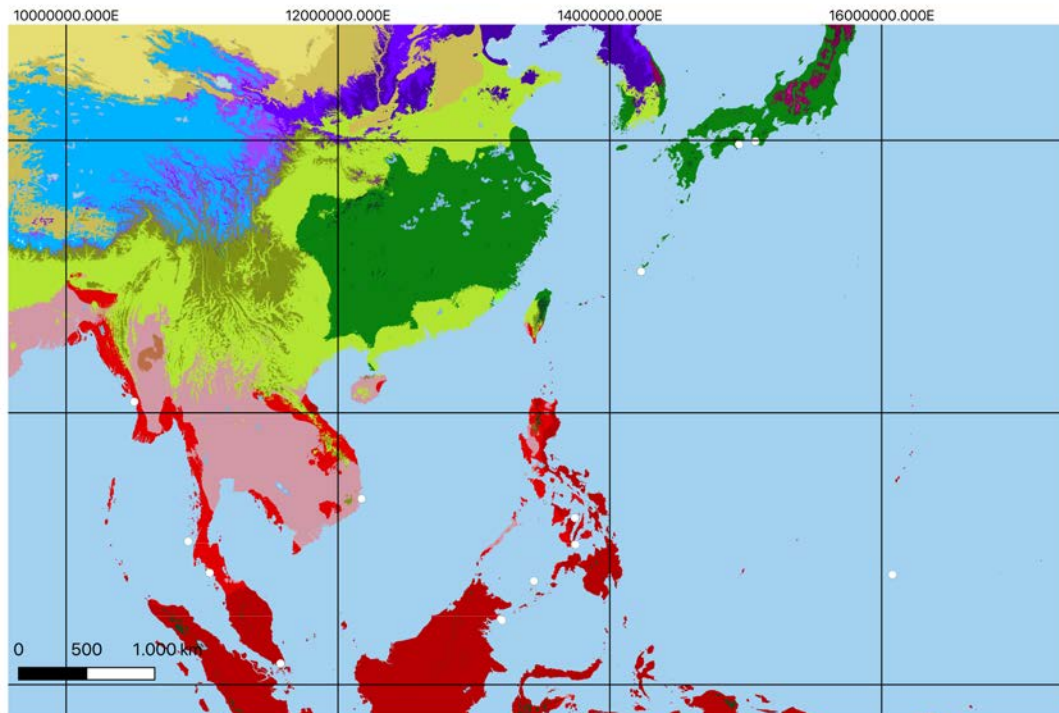
Köppen profile of *Halophila gaudichaudii*



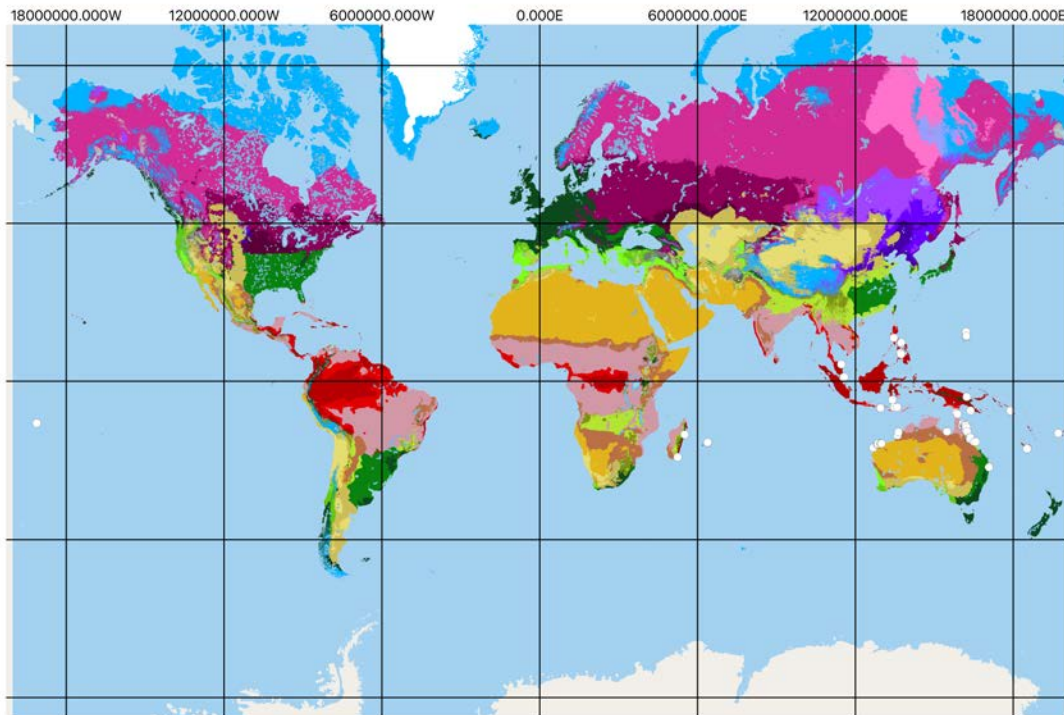
5.3.2.1.8. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila hawaiiiana* Kuo 2006; herbarium specimens excluding duplicate occurrences (n = 8).



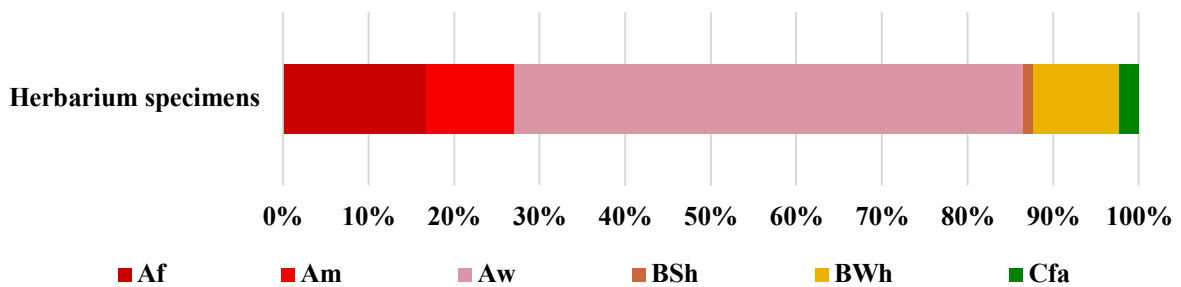
5.3.2.1.9. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila major* Mirq. 1856; herbarium specimens excluding duplicate occurrences (n = 17).



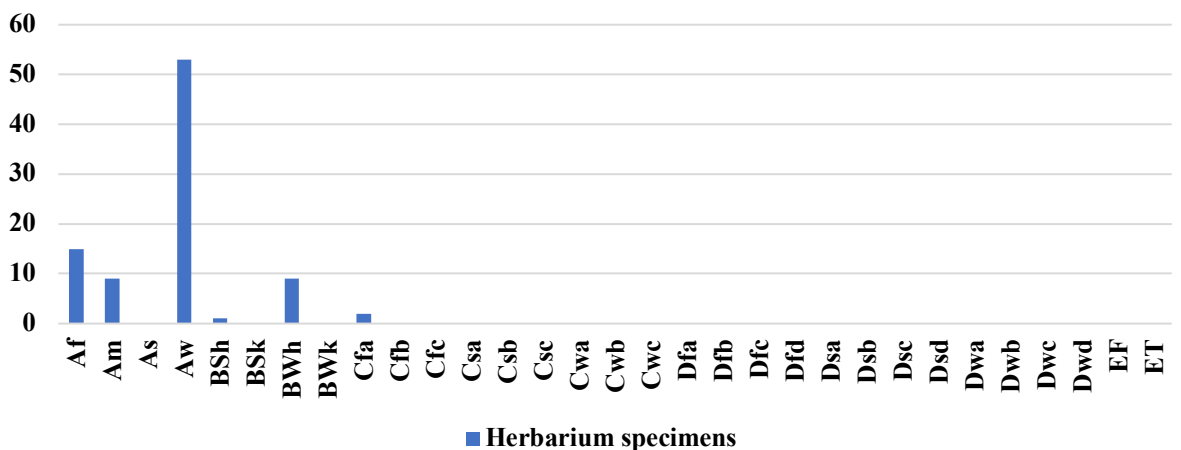
5.3.2.1.10. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila minor* (Zoll.) Hartog 1957; herbarium specimens excluding duplicate occurrences (n = 89).



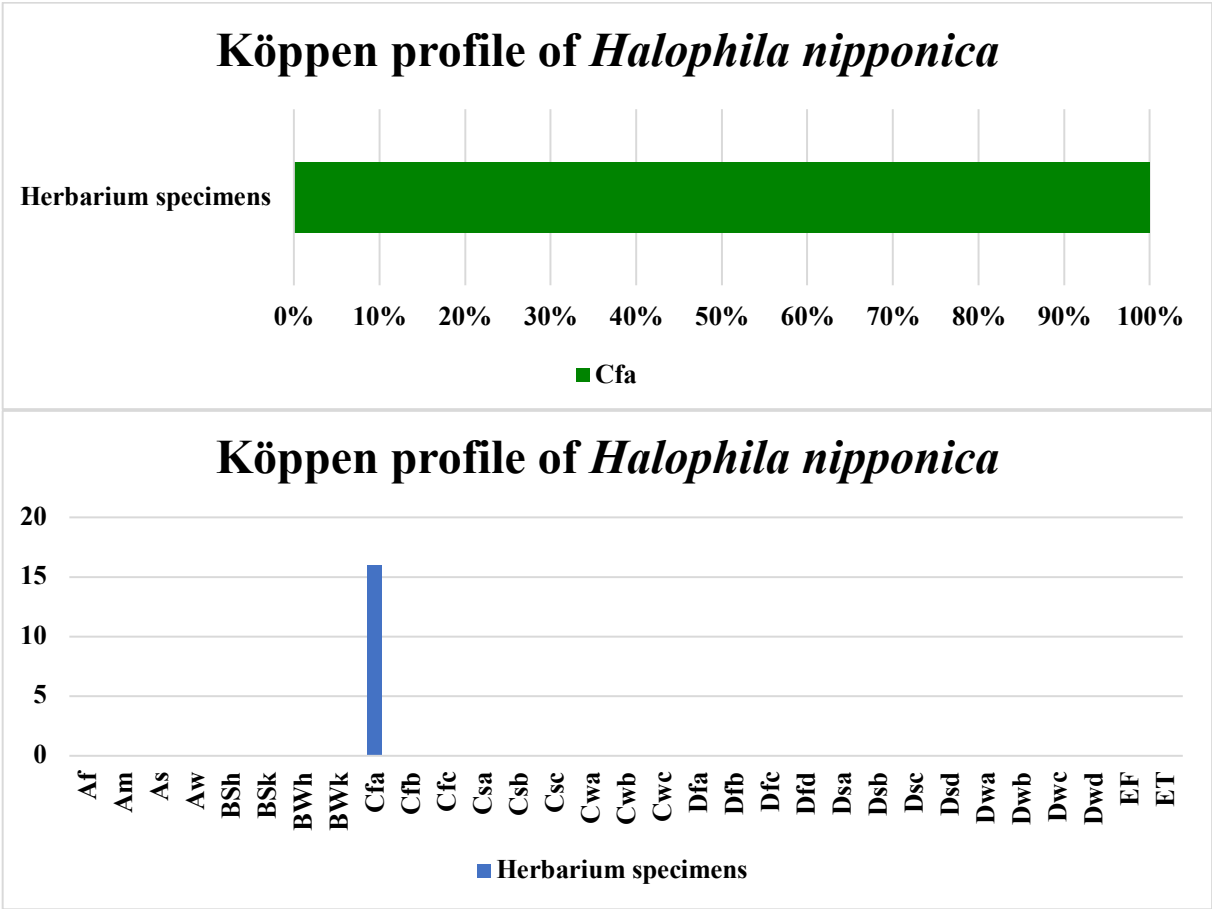
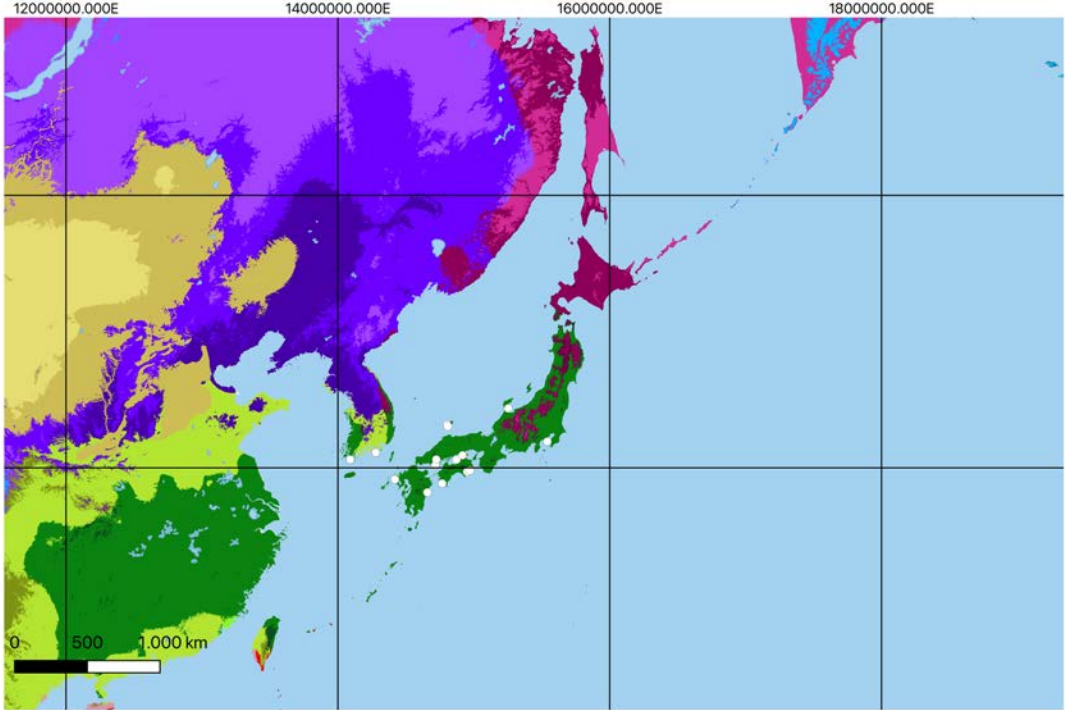
Köppen profile of *Halophila minor*



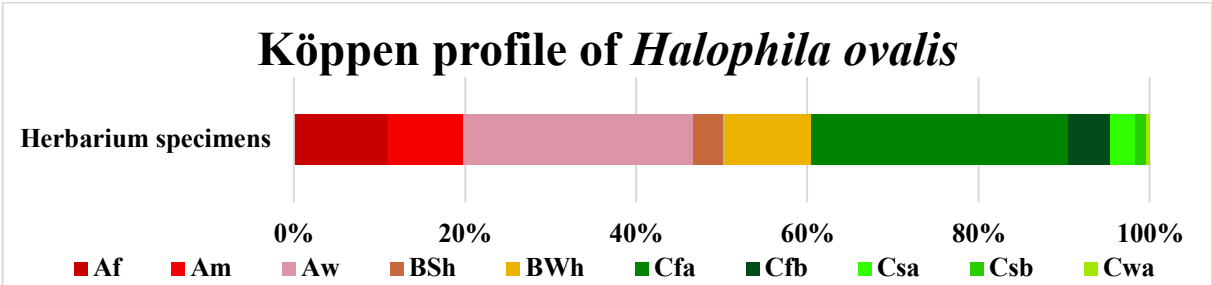
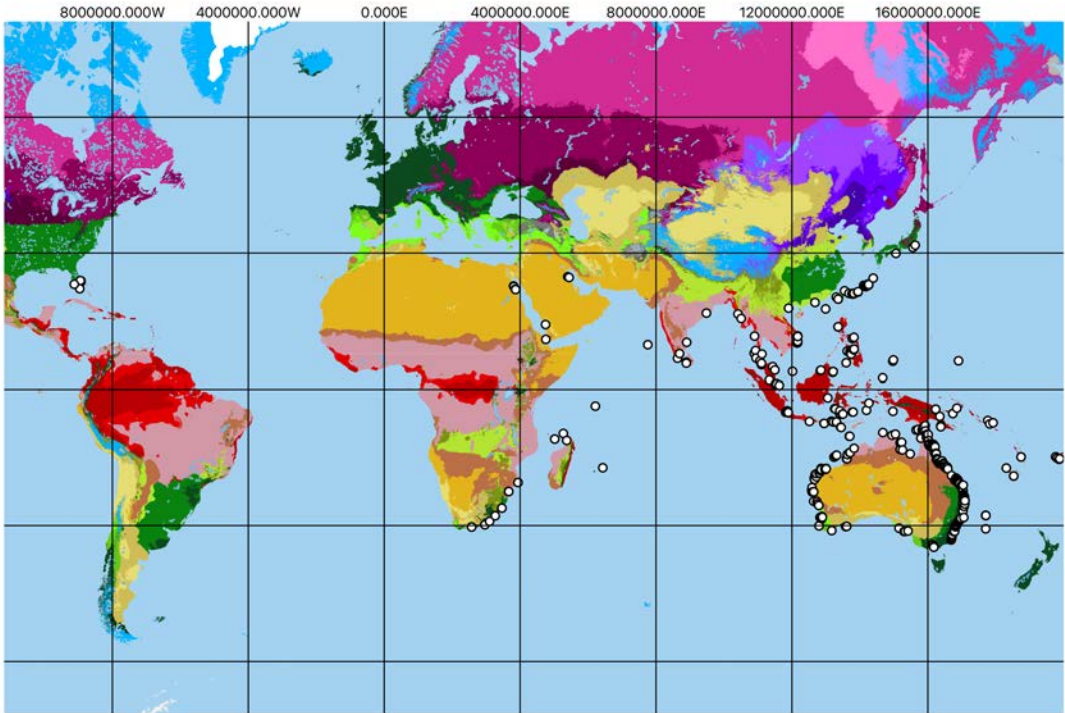
Köppen profile of *Halophila minor*



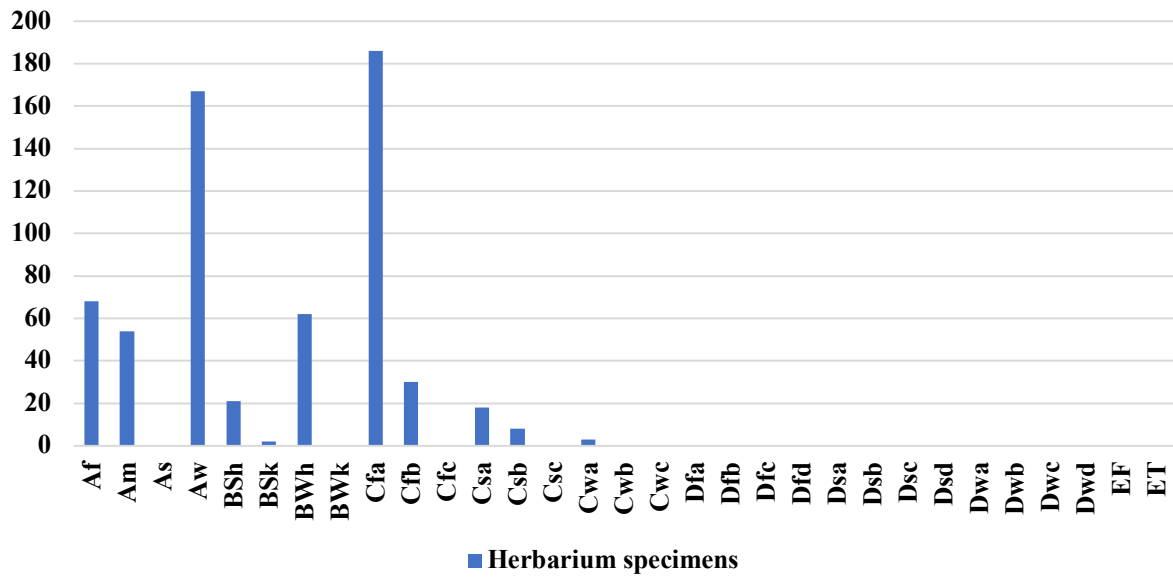
5.3.2.1.11. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila nipponica* J.Kuo 2006; herbarium specimens excluding duplicate occurrences (n = 16).



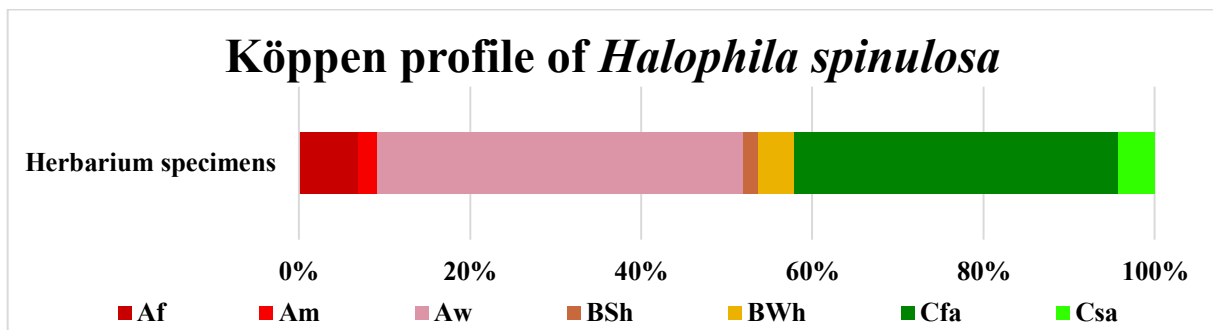
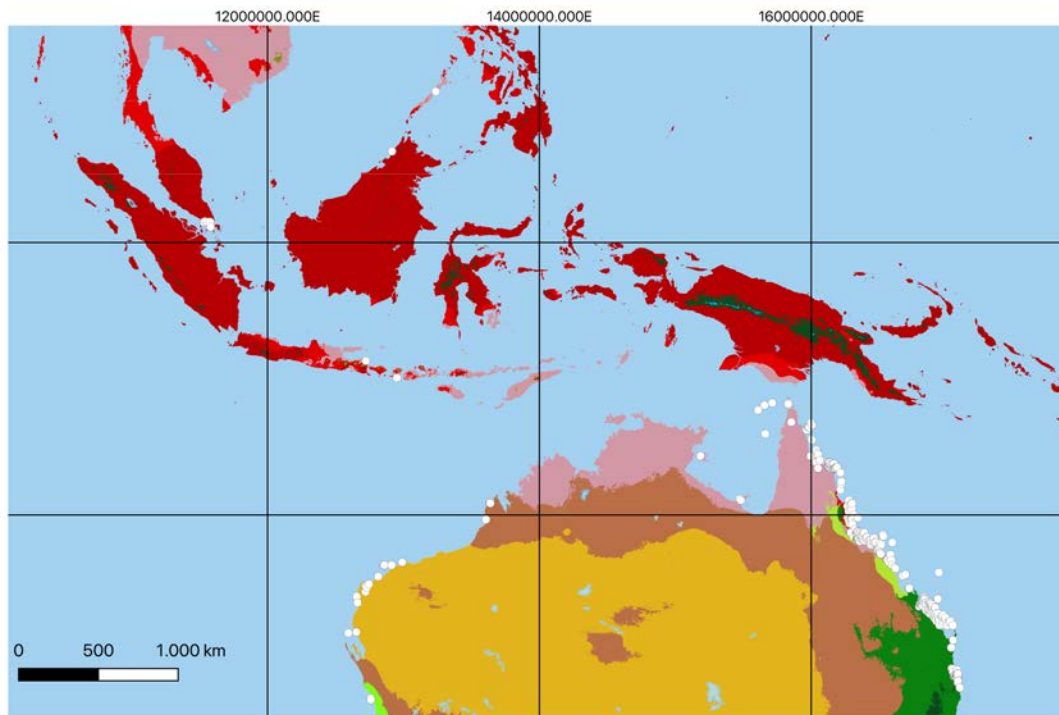
5.3.2.1.11. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila ovalis* (R.Br. 1810) Hook.f. 1859; herbarium specimens excluding duplicate occurrences (n = 619).



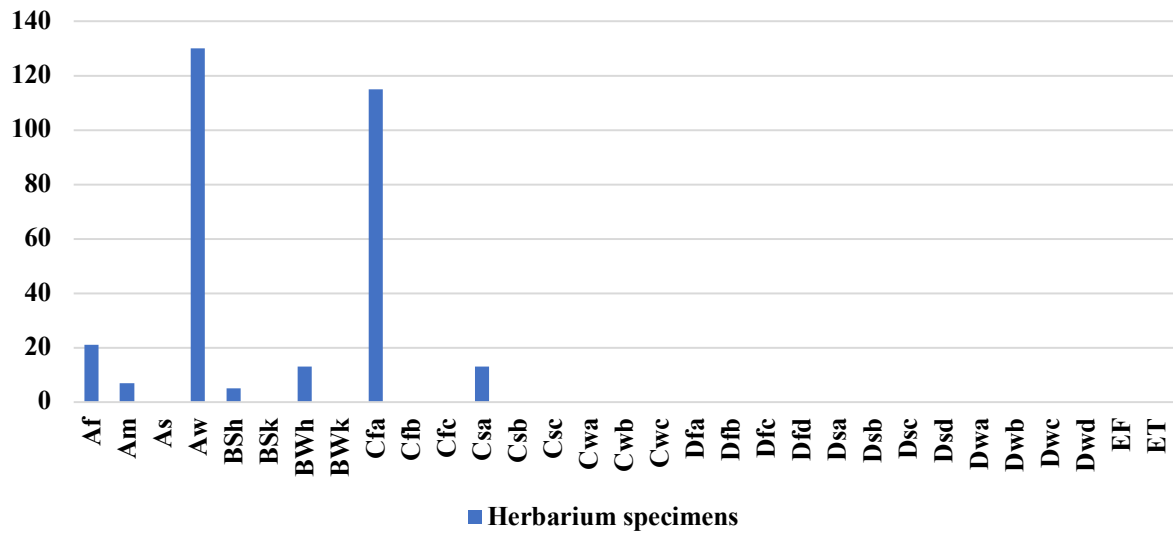
Köppen profile of *Halophila ovalis*



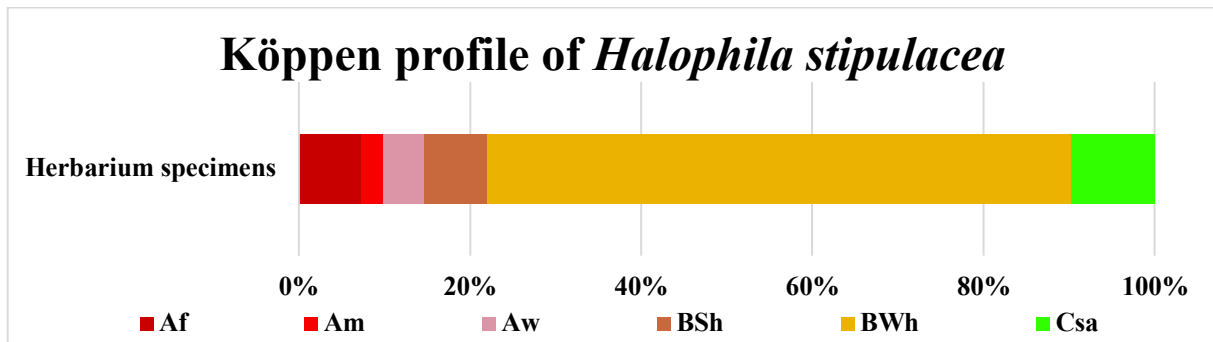
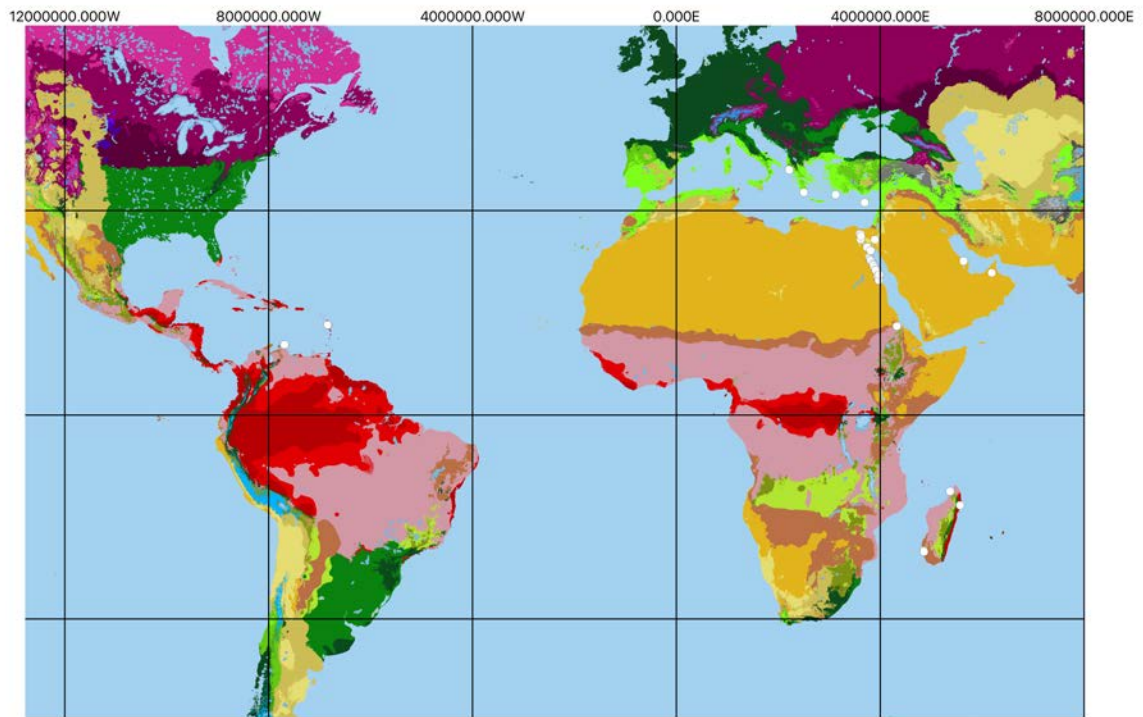
5.3.2.1.12. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila spinulosa* (R.Br. 1810) Asch. 1875; herbarium specimens excluding duplicate occurrences (n = 304).



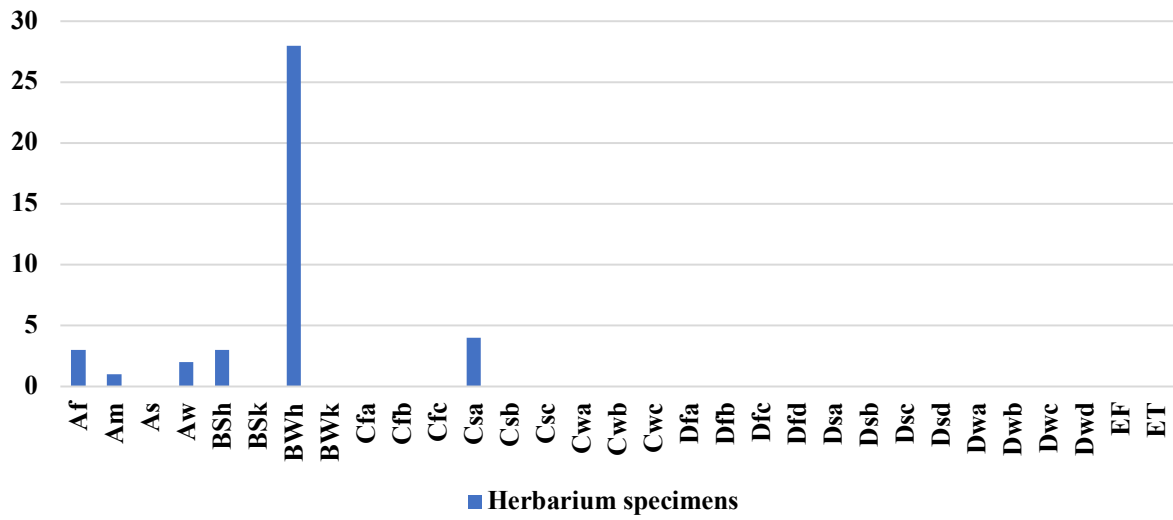
Köppen profile of *Halophila spinulosa*



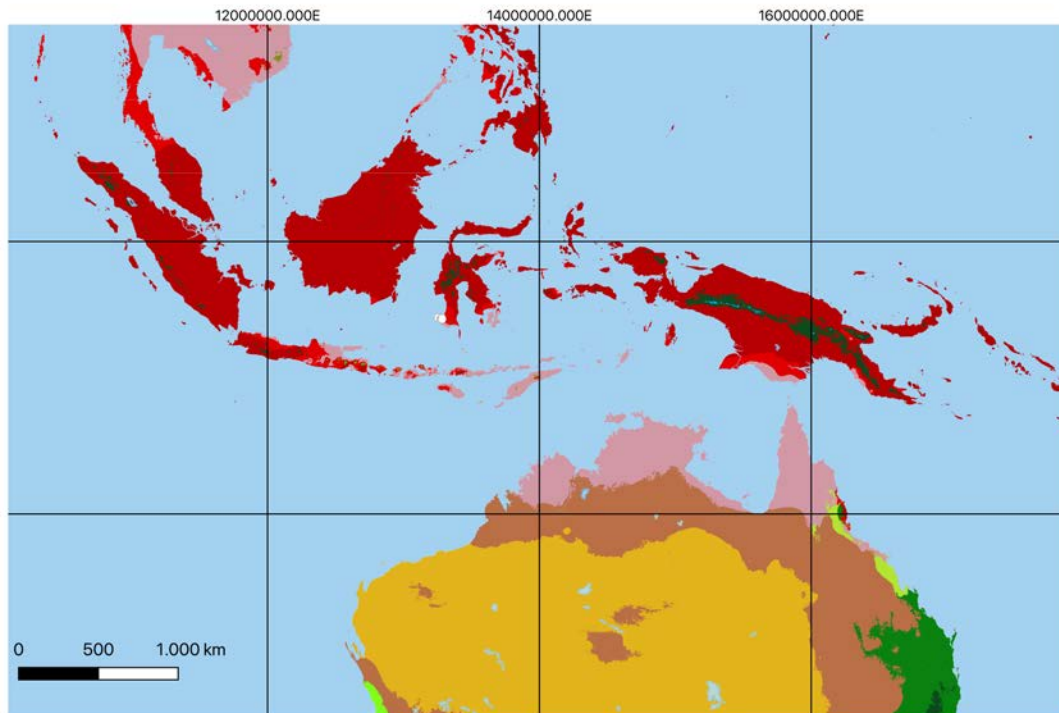
5.3.2.1.13. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila stipulacea* (Forssk.) Asch. 1867; herbarium specimens excluding duplicate occurrences (n = 41).



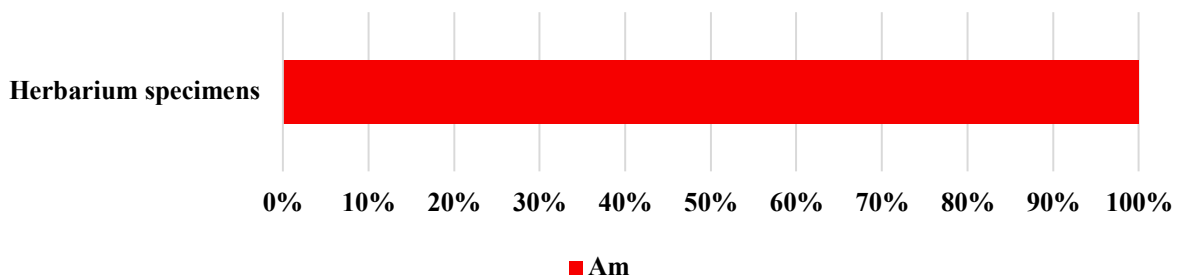
Köppen profile of *Halophila stipulacea*



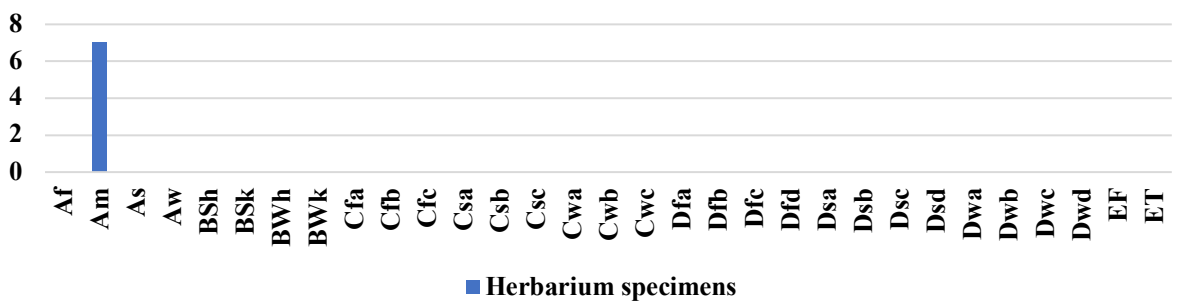
5.3.2.1.14. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila sulawesii* J.Kuo 2006; herbarium specimens excluding duplicate occurrences (n = 7).



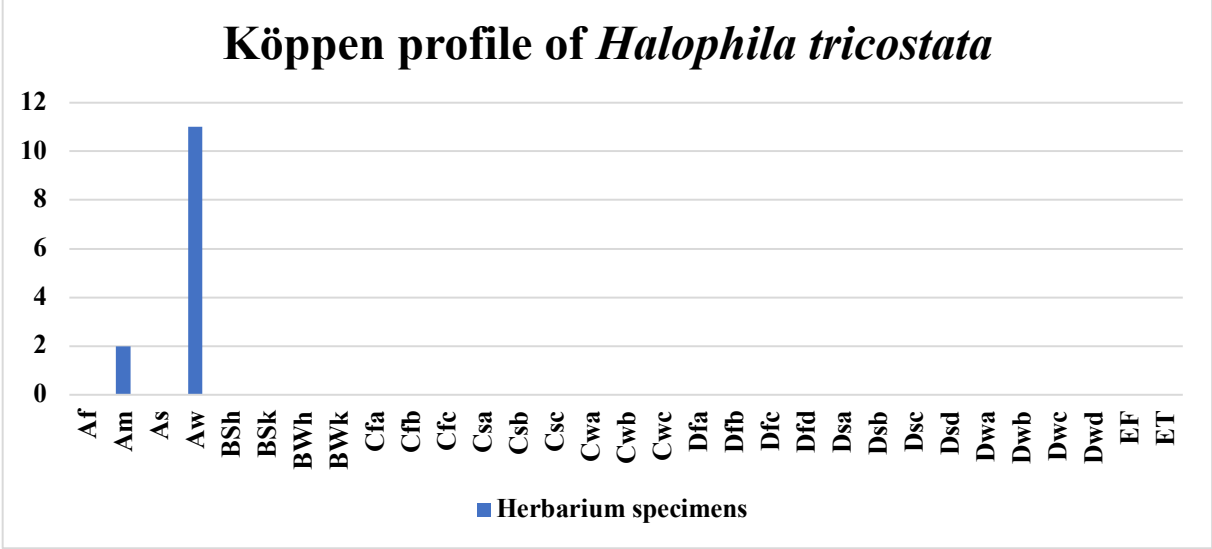
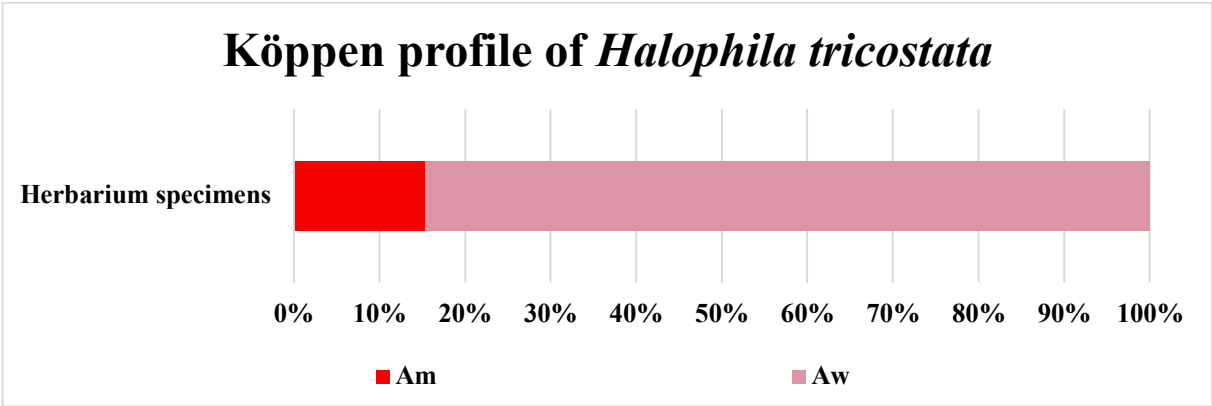
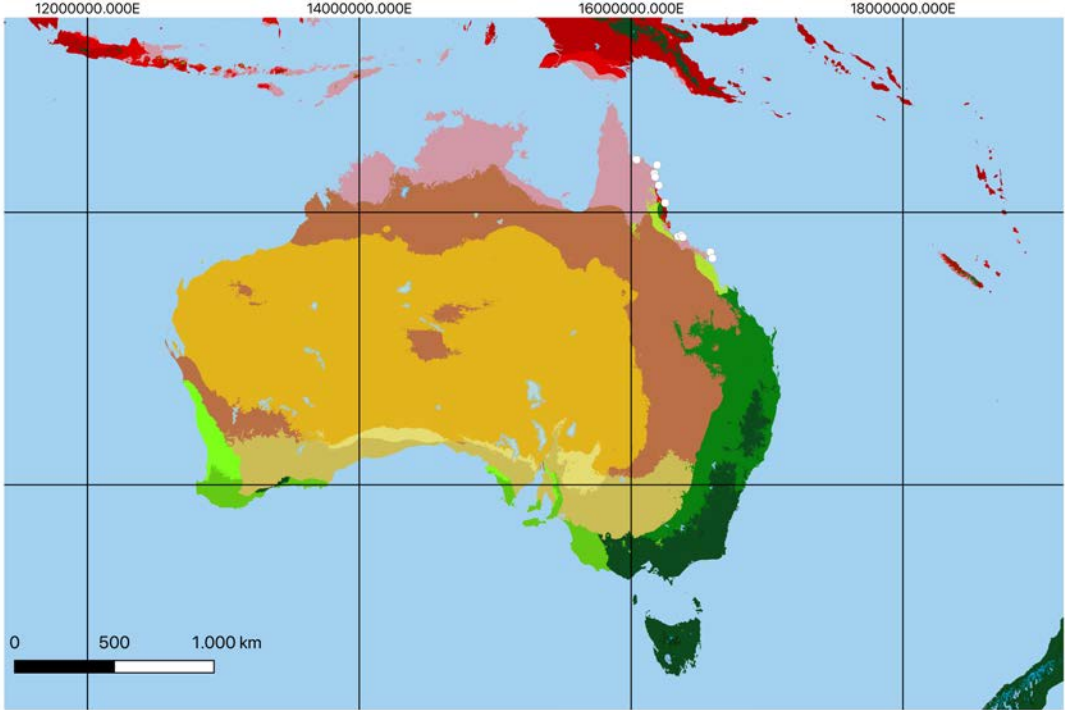
Köppen profile of *Halophila sulawesii*



Köppen profile of *Halophila sulawesii*

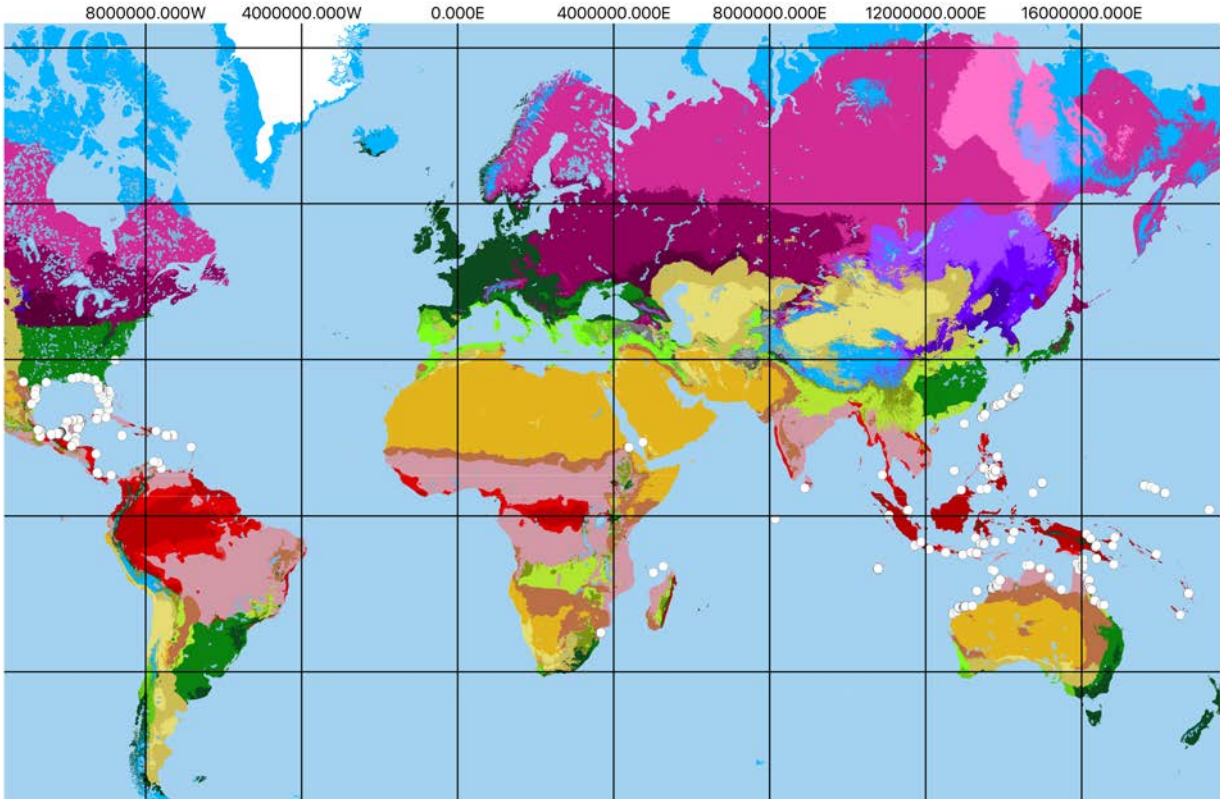


5.3.2.1.15. Köppen profile, distribution and climate map – GBIF occurrences of *Halophila tricostata* M.Greenway 1979; herbarium specimens excluding duplicate occurrences (n = 7).

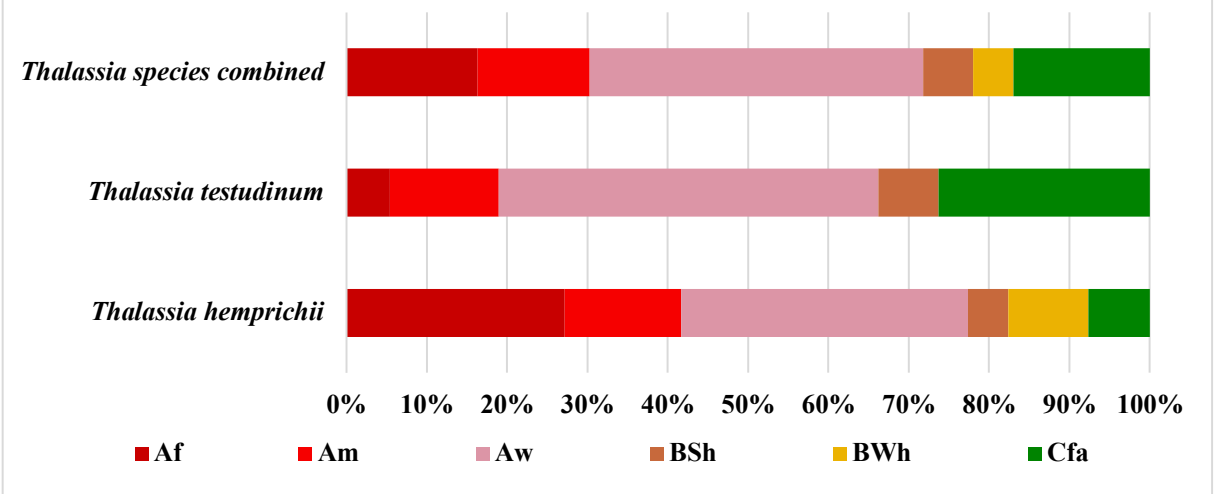


5.3.2.2. Genus *Thalassia* Banks & Sol. ex K.D.Koenig 1805.

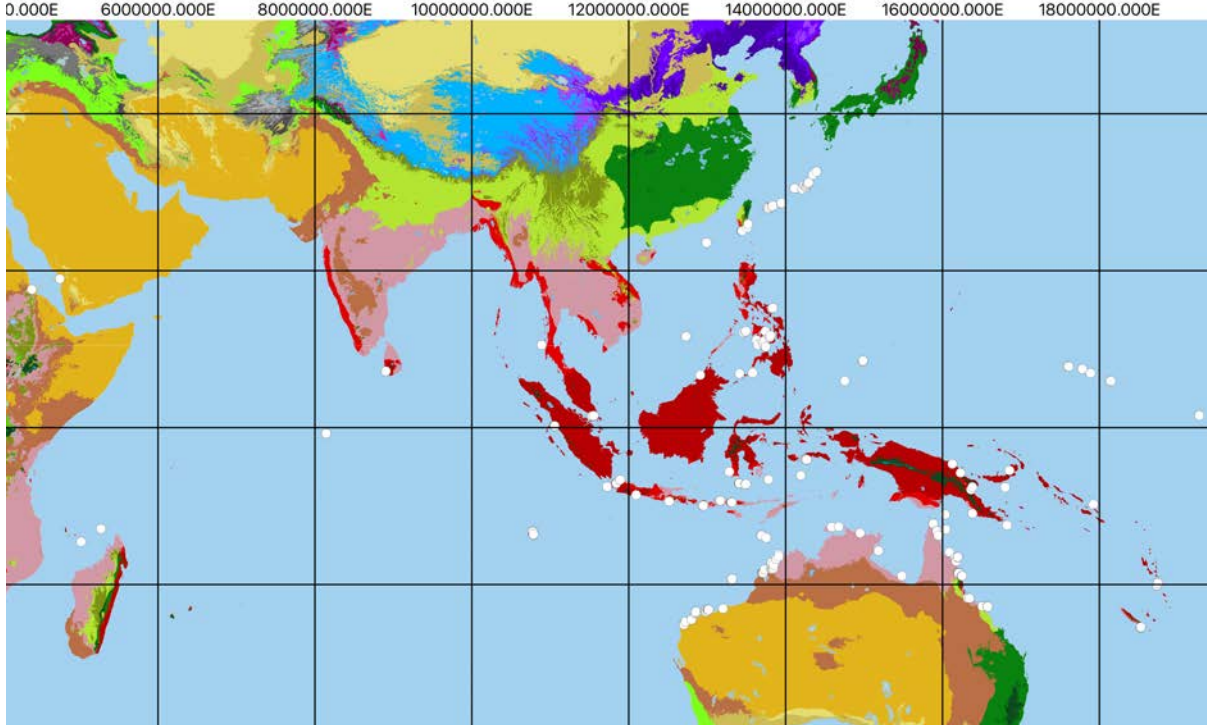
Distribution and Köppen profiles of genus *Thalassia* incl. *T. hemprichii* and *T. testudinum*, based on preserved specimen (n = 341).



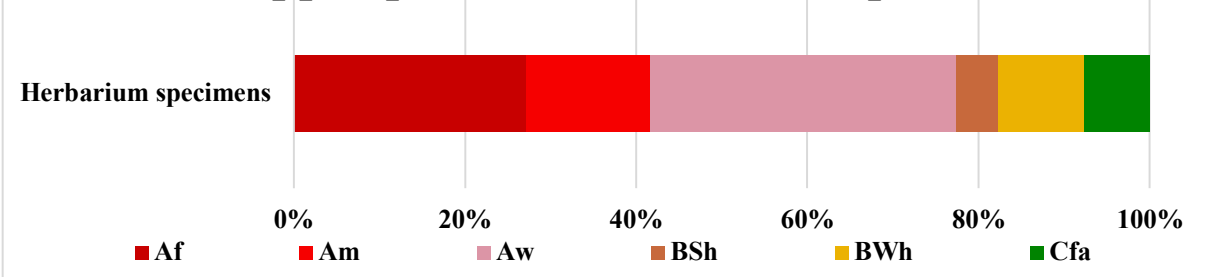
Köppen profiles of *Thalassia* species



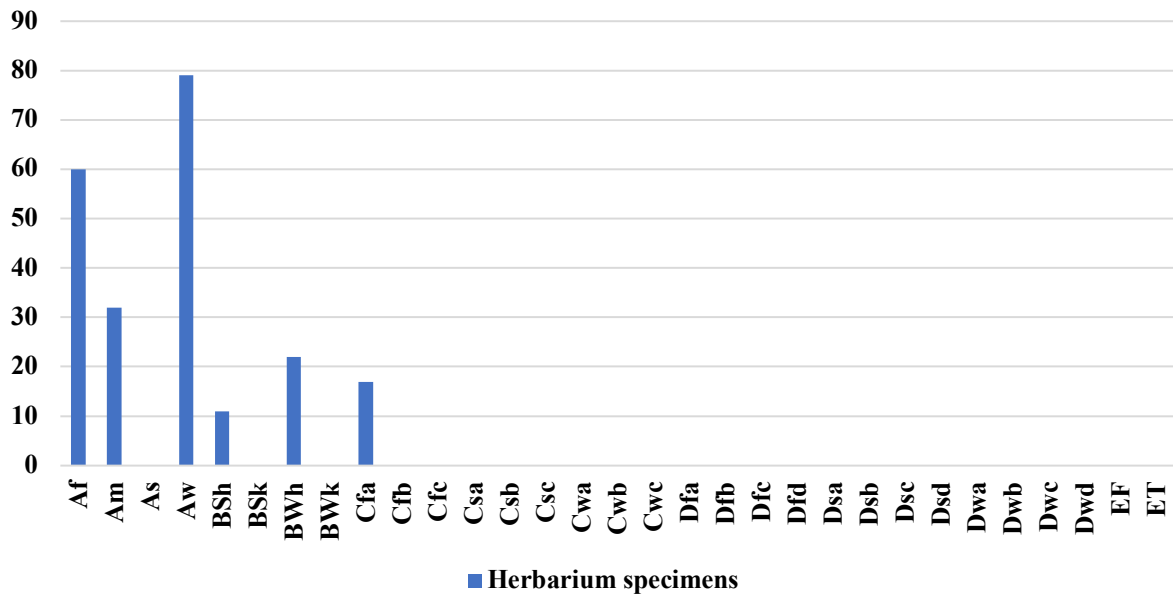
5.3.2.2.1. Köppen profile, distribution and climate map – GBIF occurrences of *Thalassia hemprichii* (Ehrenb. 1832) Asch. 1871; herbarium specimens excluding duplicate occurrences (n = 221).



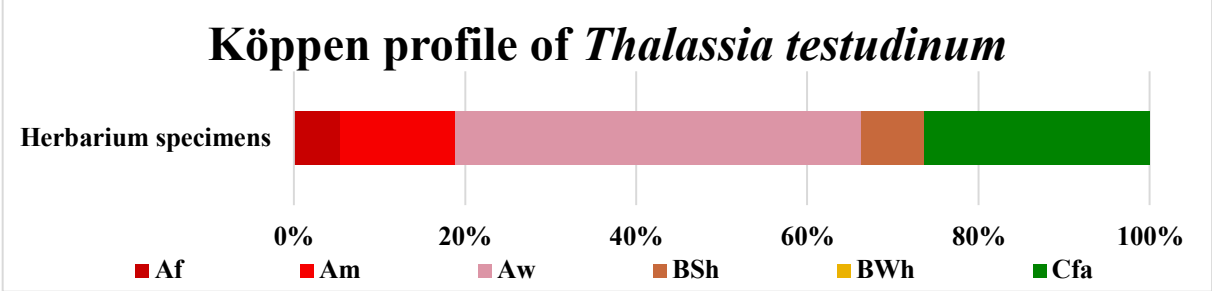
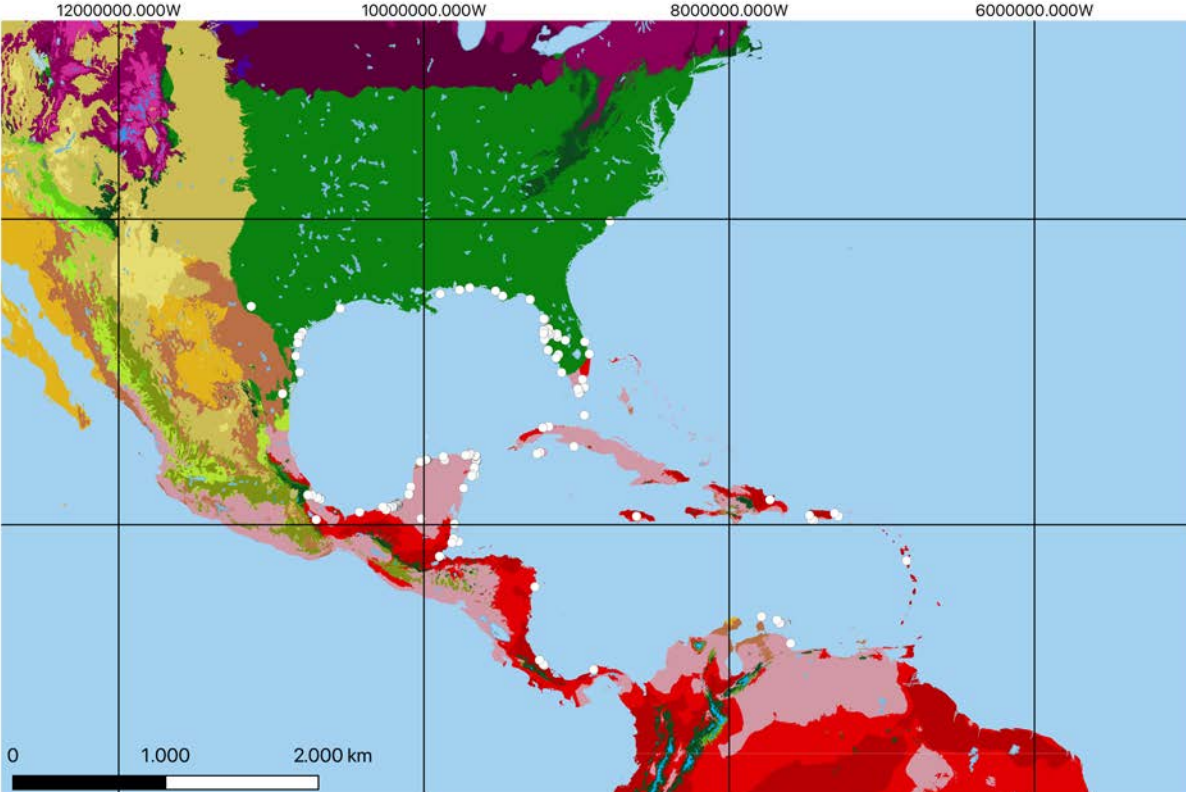
Köppen profile of *Thalassia hemprichii*



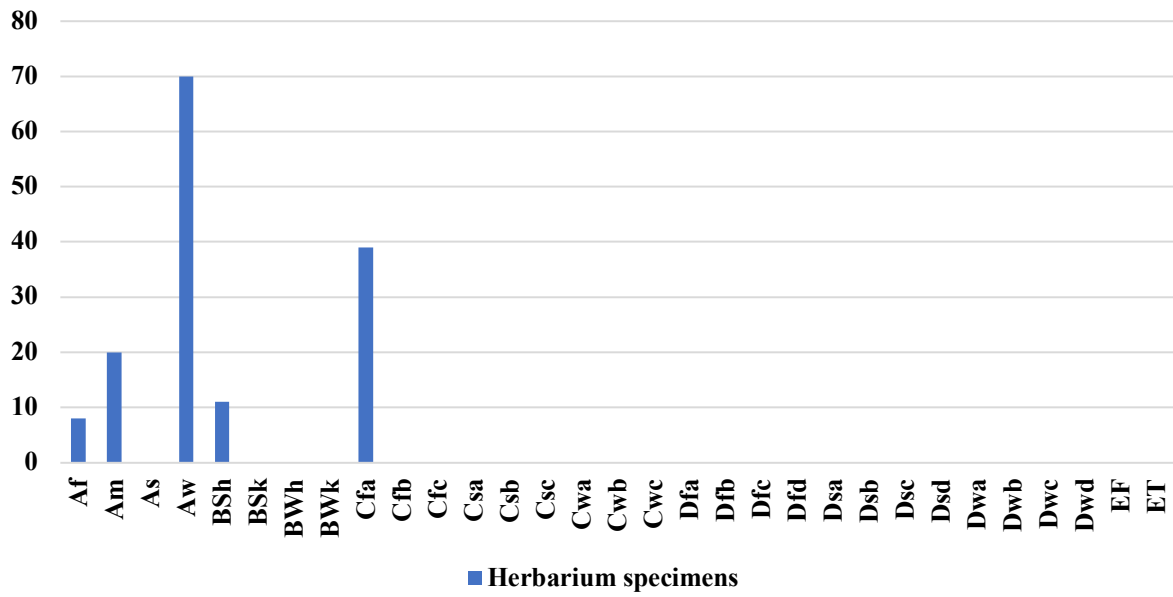
Köppen profile of *Thalassia hemprichii*



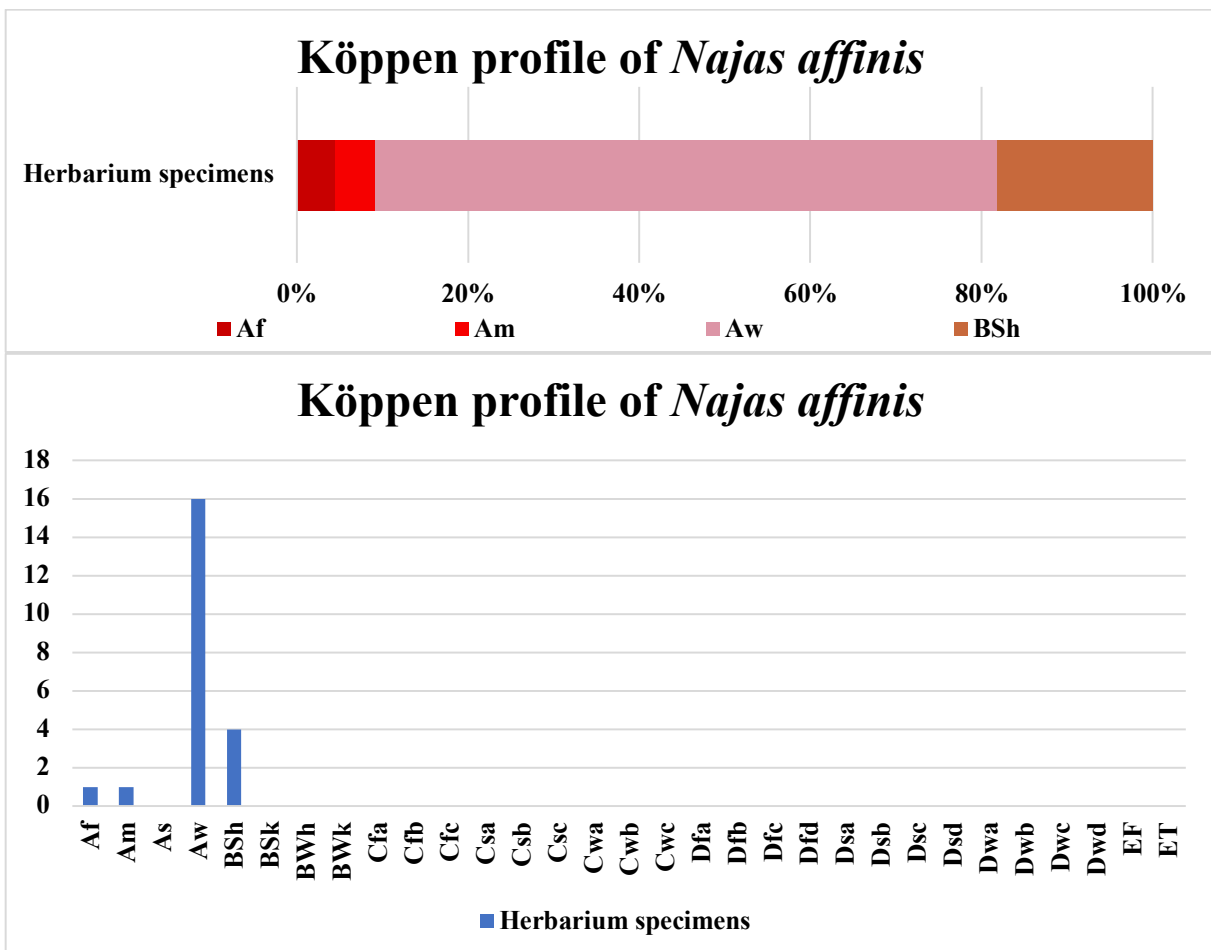
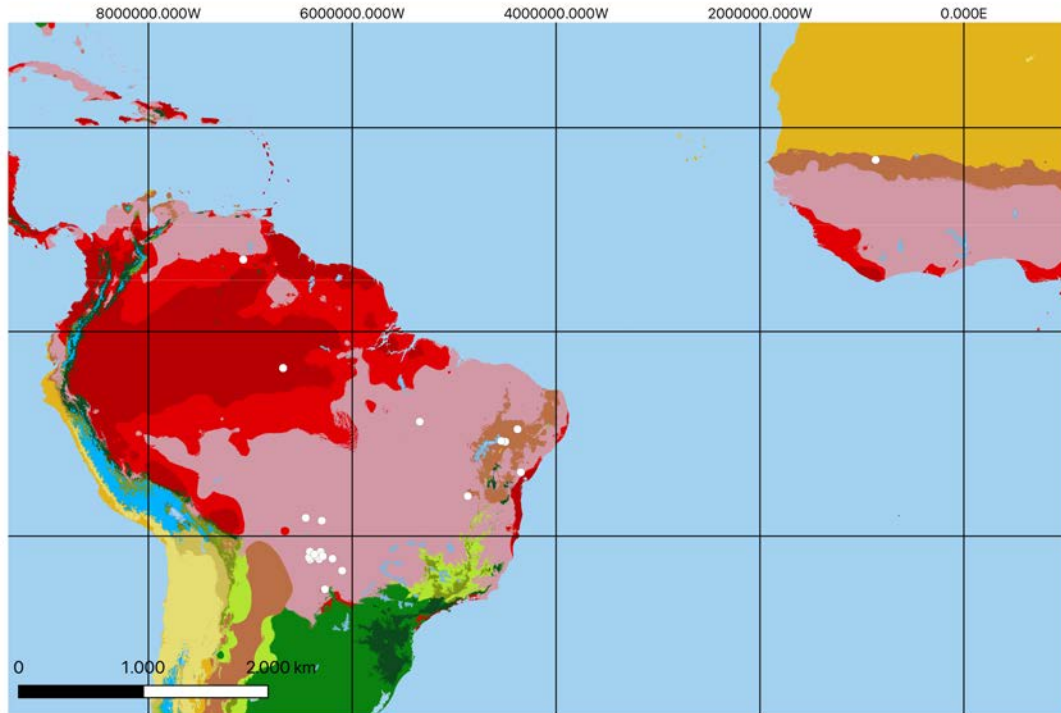
5.3.2.2.2. Köppen profile, distribution and climate map – GBIF occurrences of *Thalassia testudinum* K.D.Koenig 1805; herbarium specimens excluding duplicate occurrences (n = 148).



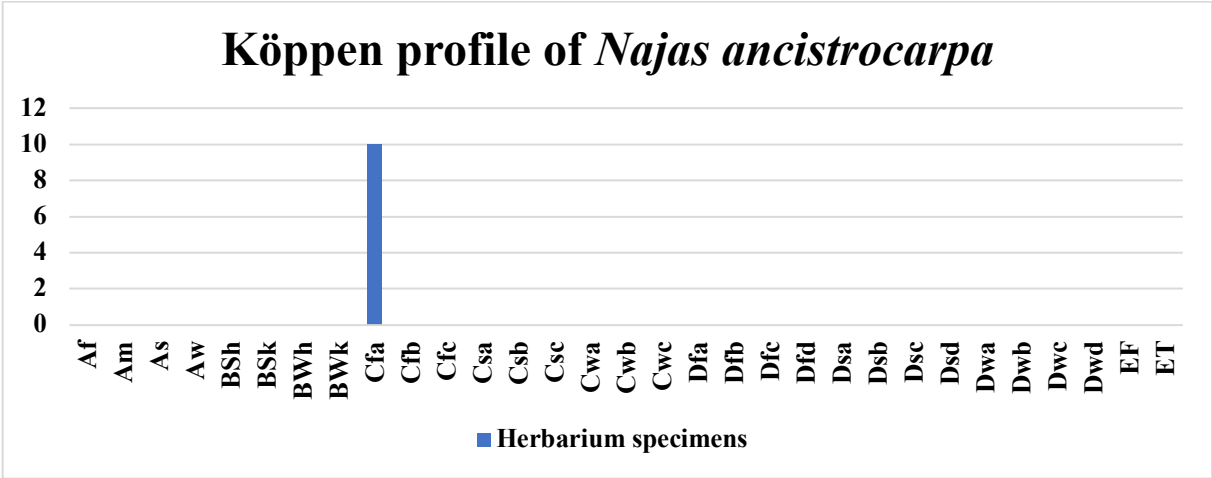
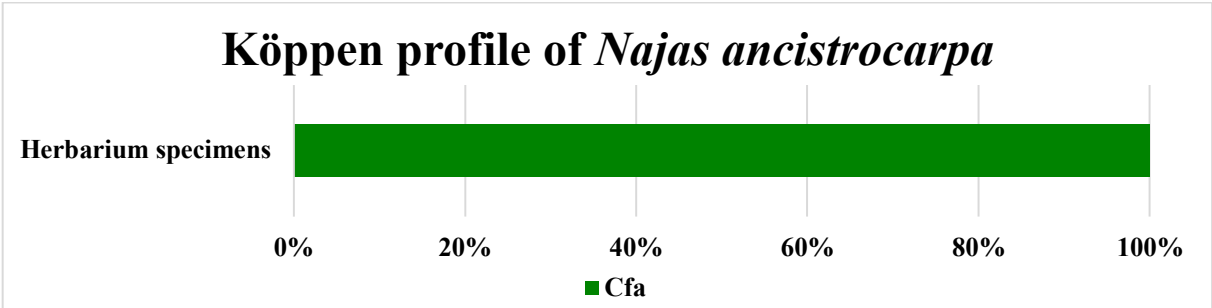
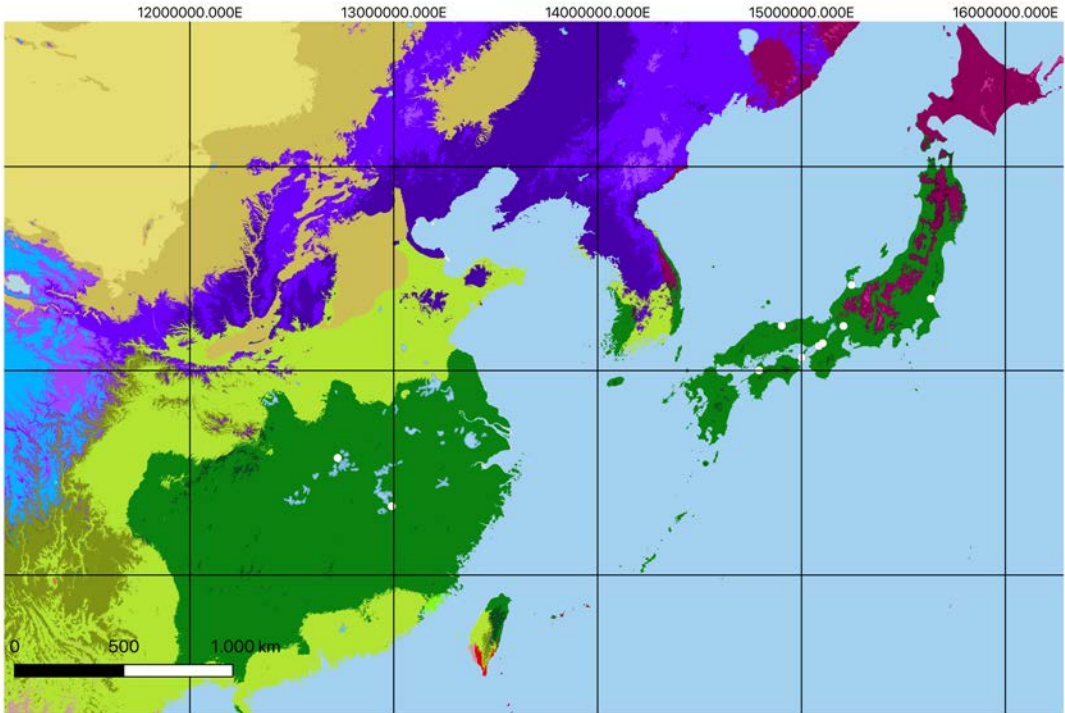
Köppen signatures of *Thalassia testudinum*



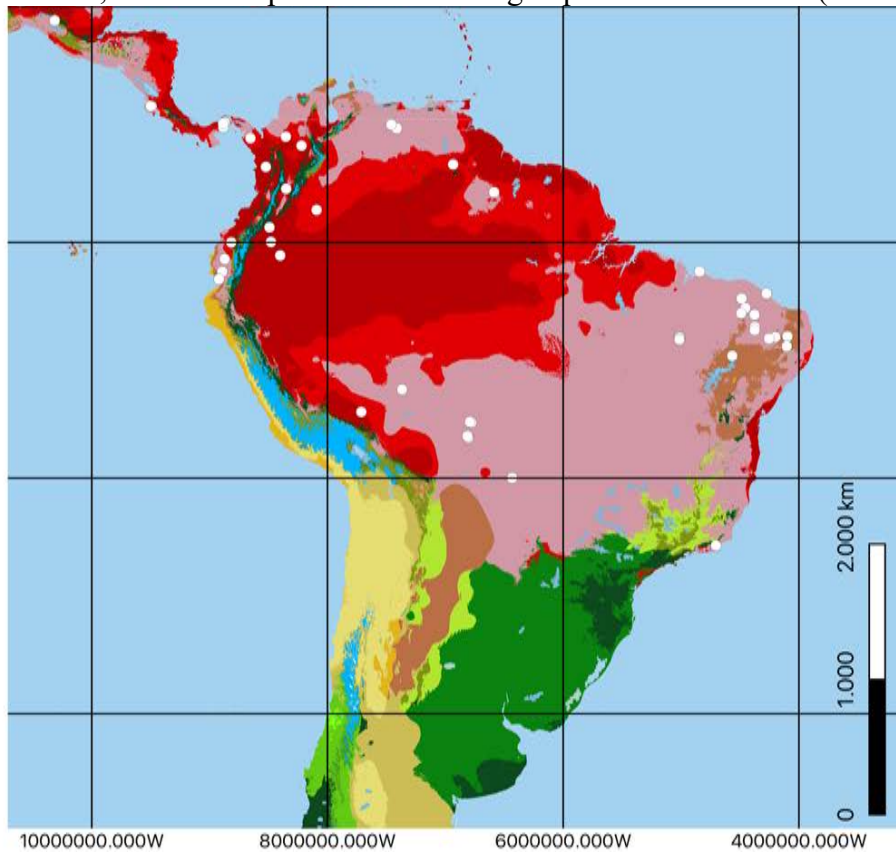
5.3.3.1.1. Köppen profile, distribution and climate map – GBIF occurrences of *Najas affinis* Rendle 1900; herbarium specimens excluding duplicate occurrences (n = 22).



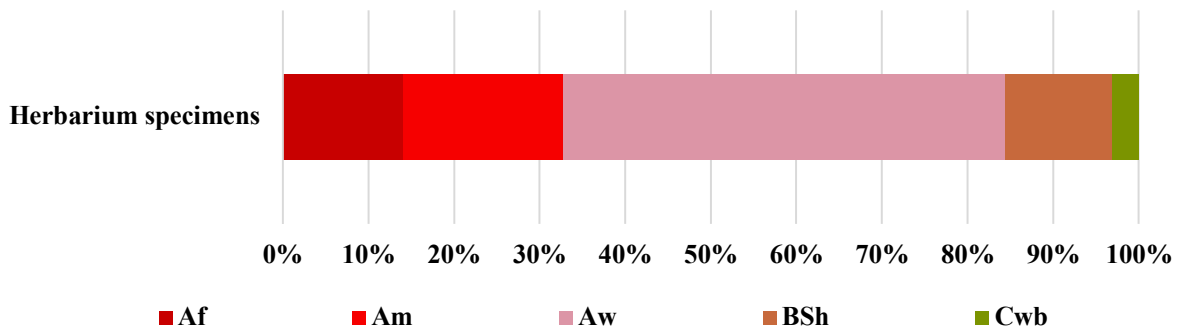
5.3.3.1.2. Köppen profile, distribution and climate map – GBIF occurrences of *Najas ancistrocarpa* A.Braun ex Magnus 1870; herbarium specimens excluding duplicate occurrences (n = 10).



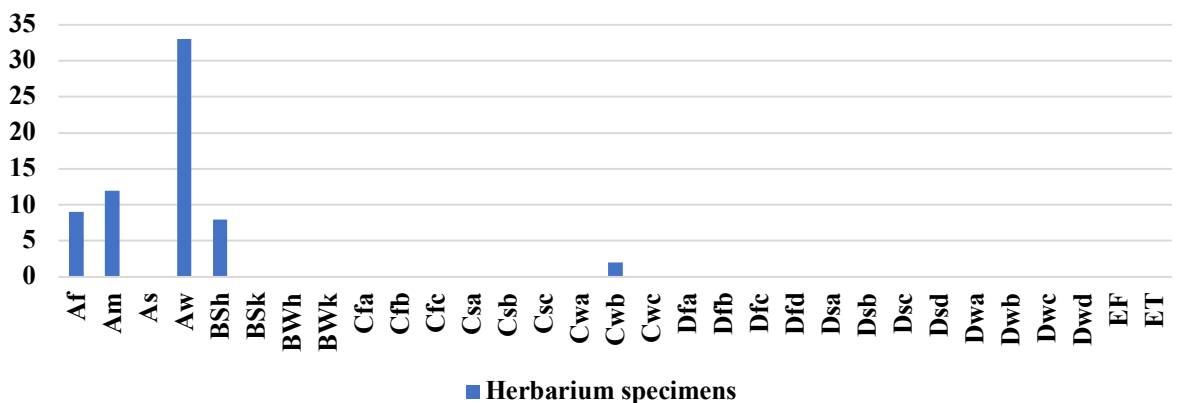
5.3.3.1.3. Köppen profile, distribution and climate map – GBIF occurrences of *Najas arguta* Kunth 1816; herbarium specimens excluding duplicate occurrences (n = 64).



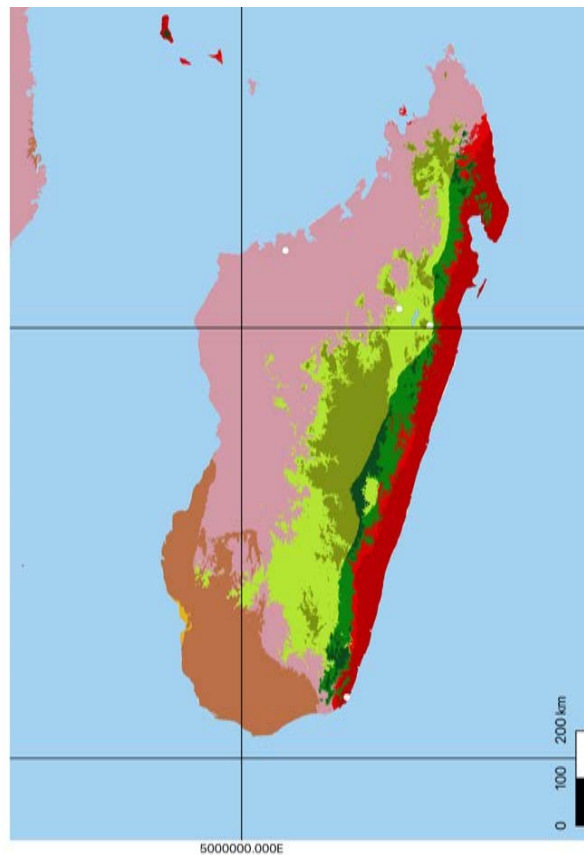
Köppen profile of *Najas arguta*



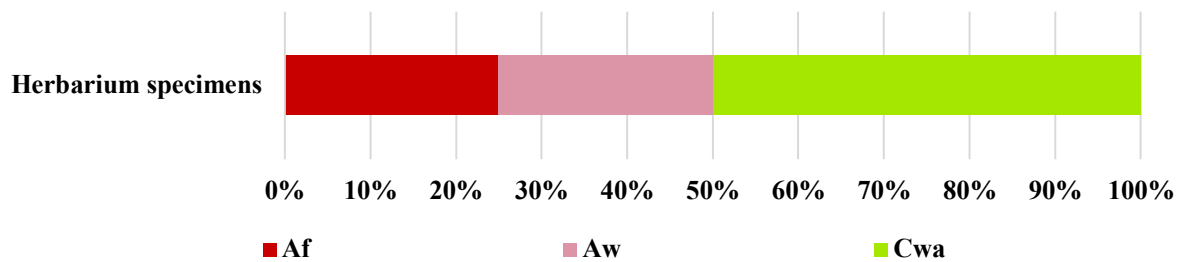
Köppen profile of *Najas arguta*



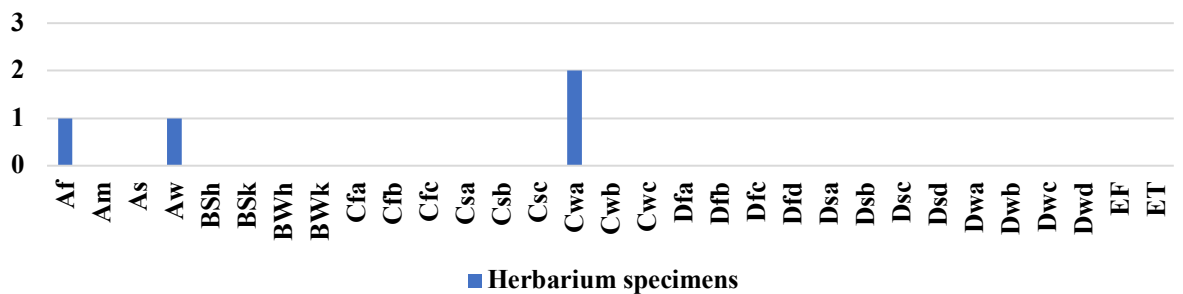
5.3.3.1.4. Köppen profile, distribution and climate map – GBIF occurrences of *Najas australis* Borey ex Cham. 1829; herbarium specimens excluding duplicate occurrences (n = 4).



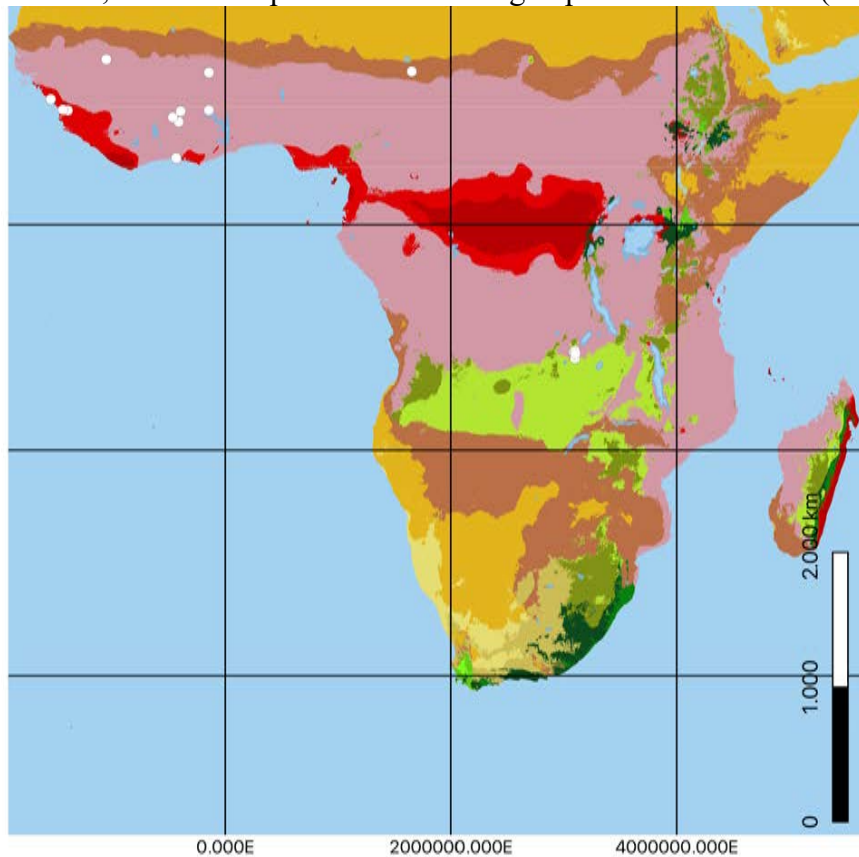
Köppen profile of *Najas australis*



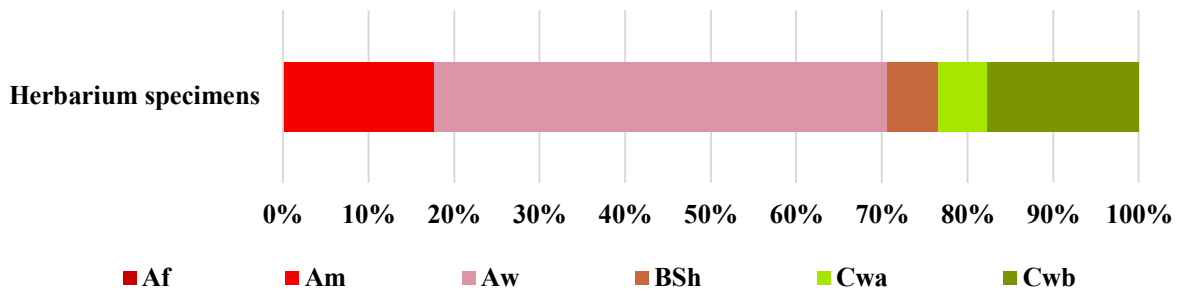
Köppen profile of *Najas australis*



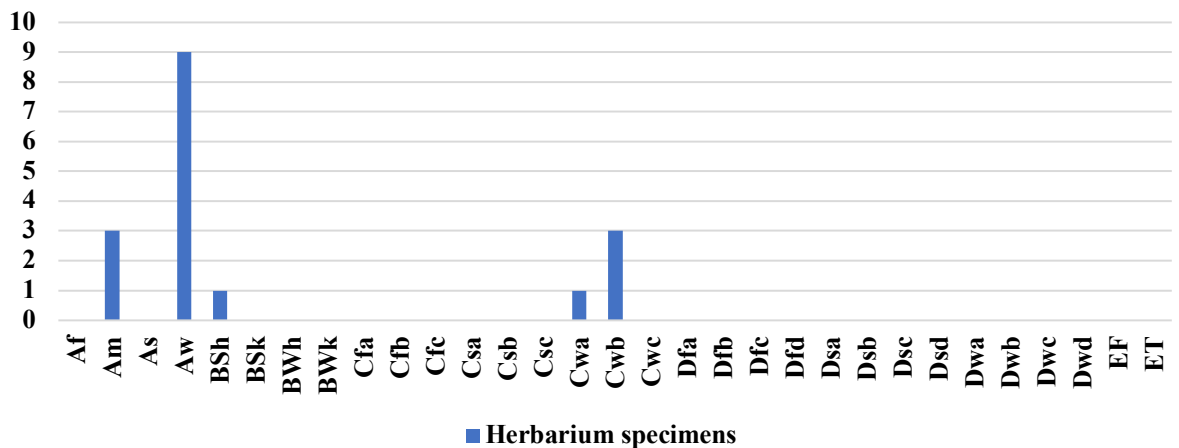
5.3.3.1.5. Köppen profile, distribution and climate map – GBIF occurrences of *Najas baldwinii* Horn 1950; herbarium specimens excluding duplicate occurrences (n = 17).



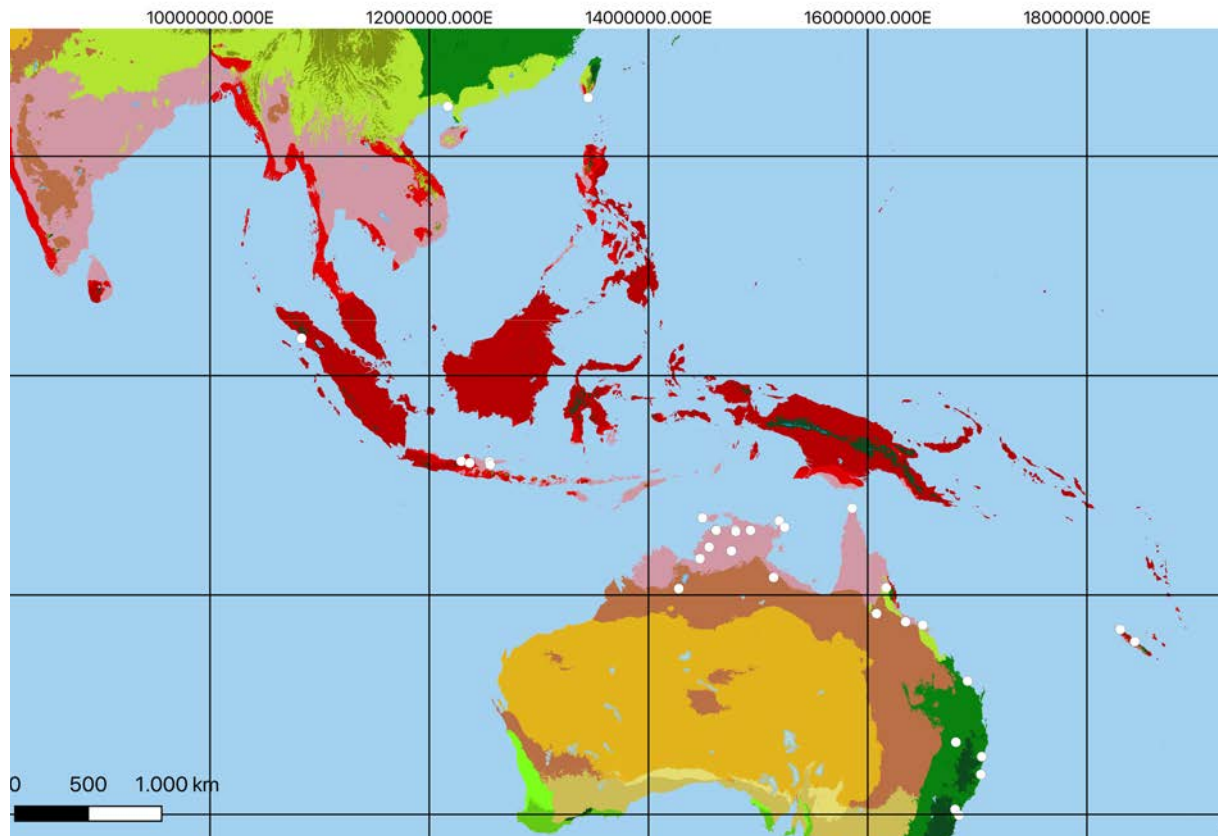
Köppen profile of *Najas baldwinii*



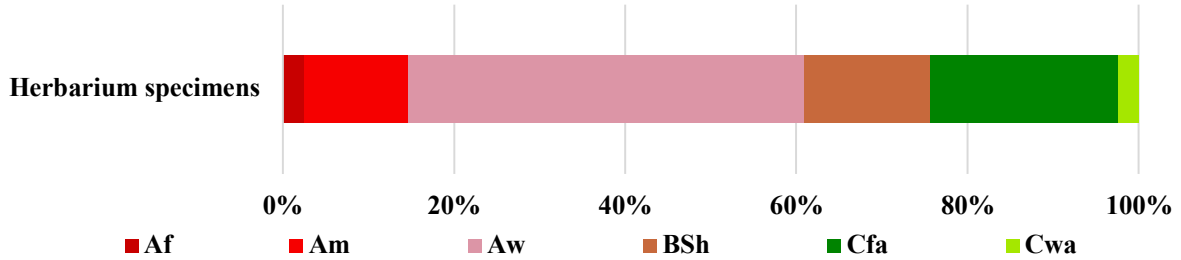
Köppen profile of *Najas baldwinii*



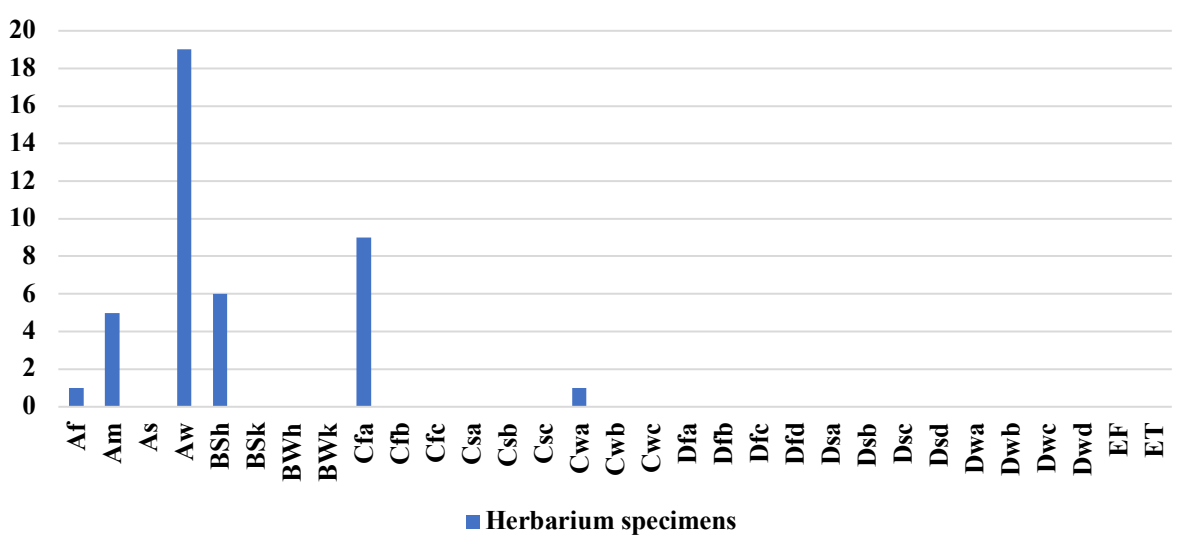
5.3.3.1.6. Köppen profile, distribution and climate map – GBIF occurrences of *Najas browniana* Rendle 1899; herbarium specimens excluding duplicate occurrences (n = 41).



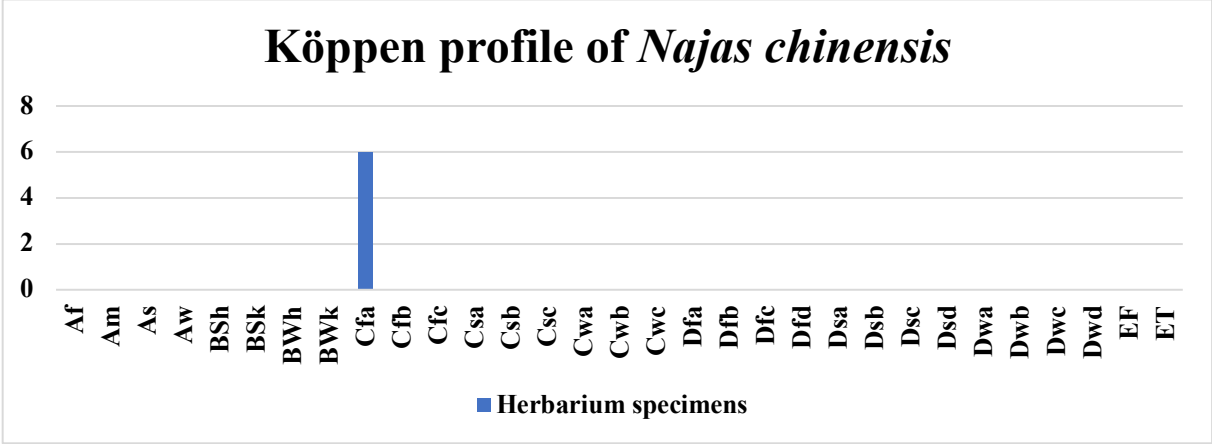
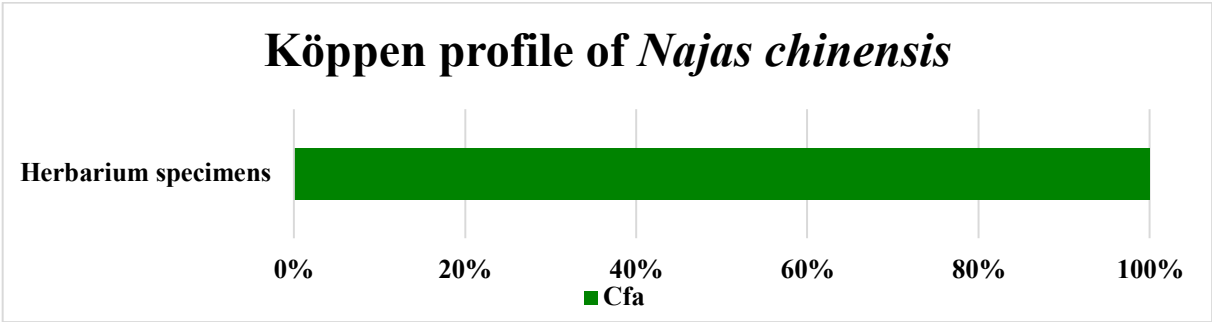
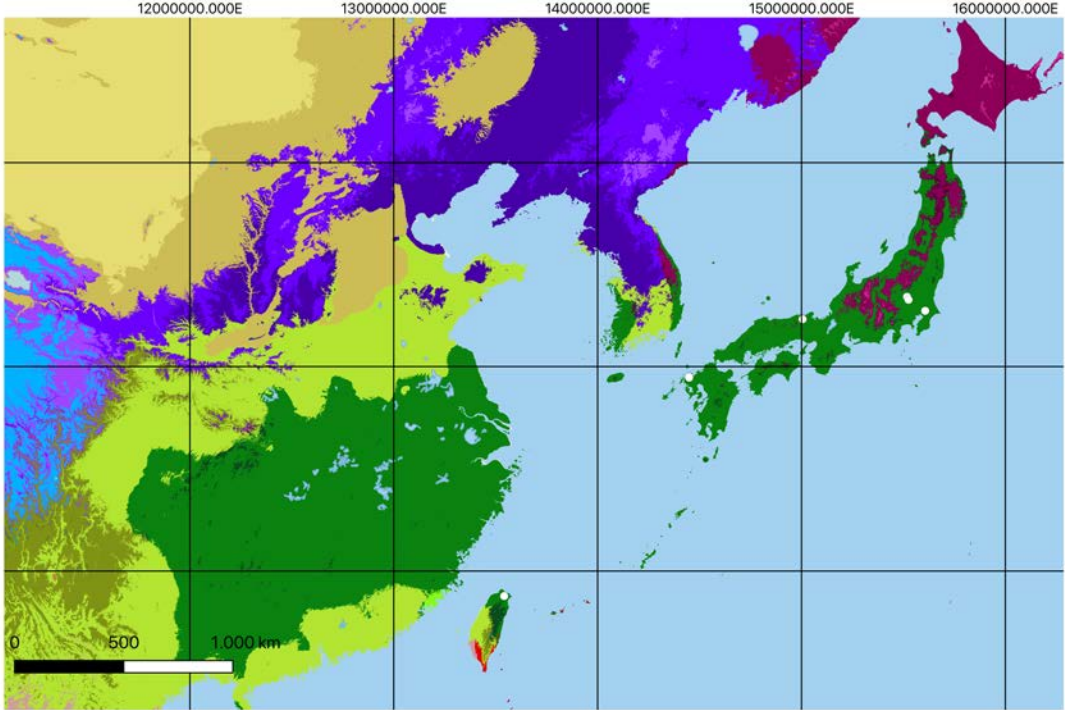
Köppen profile of *Najas browniana*



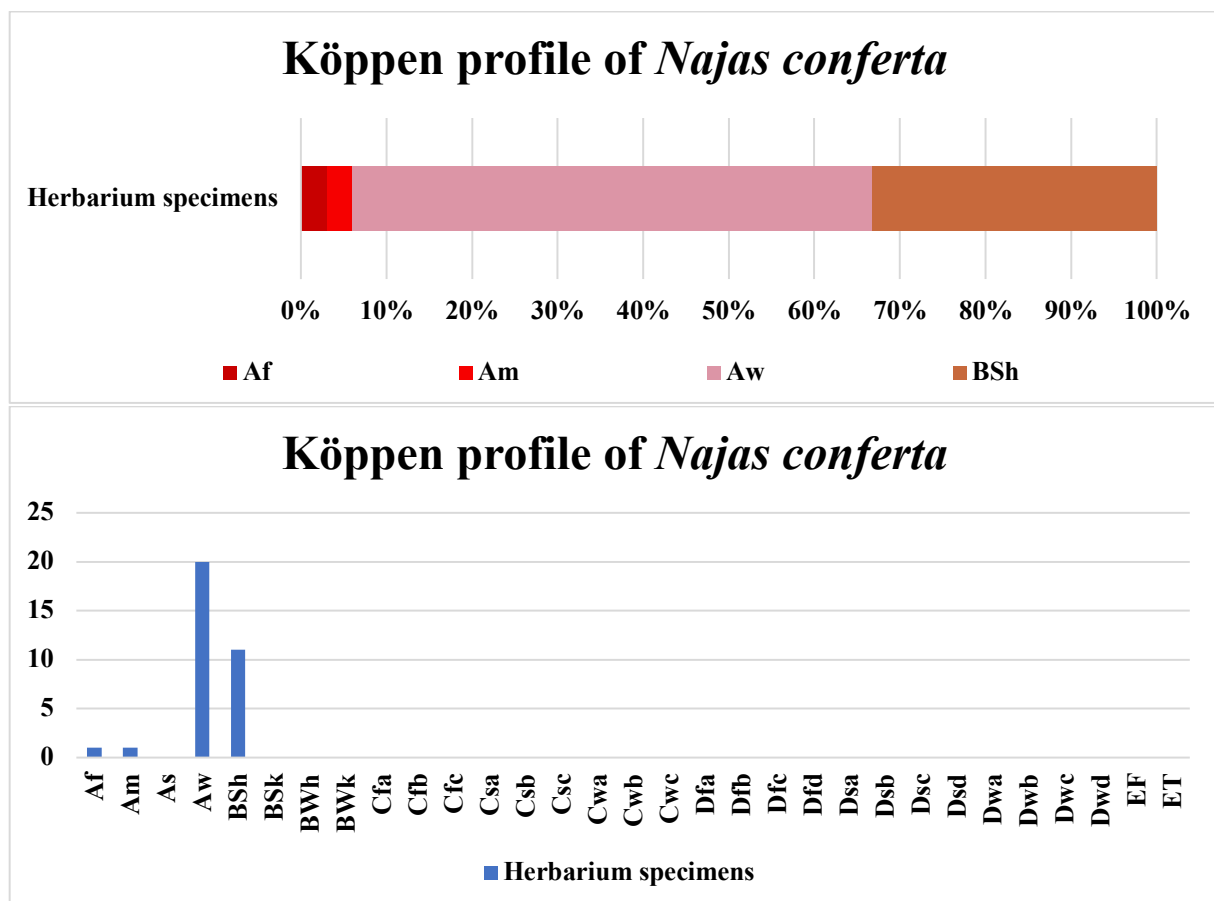
Köppen profile of *Najas browniana*



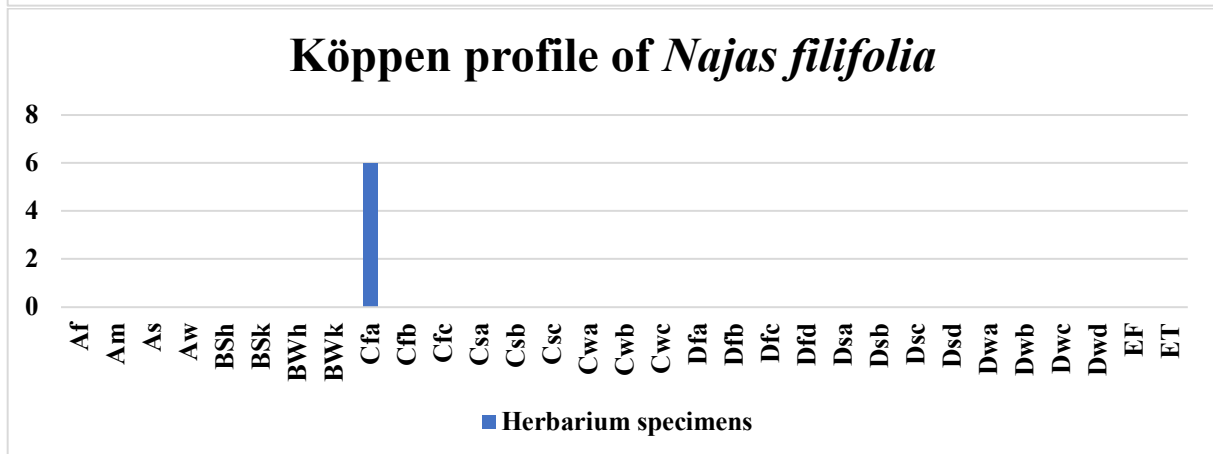
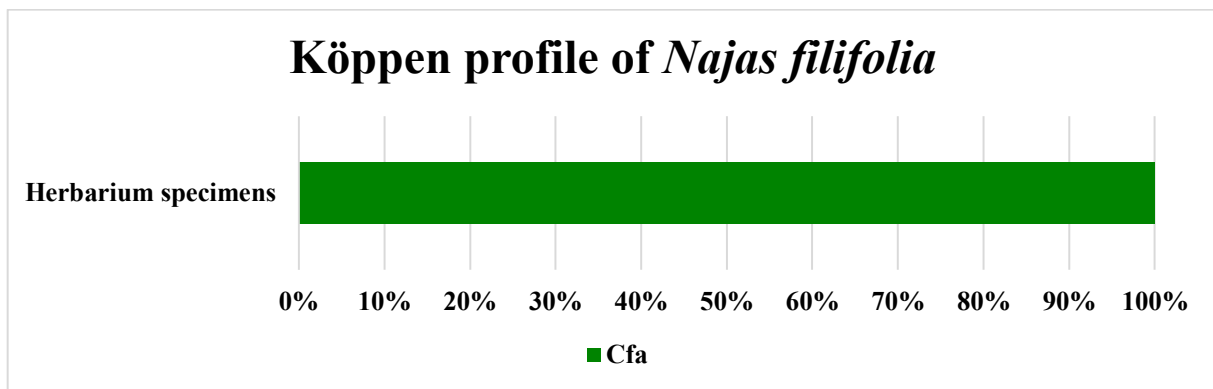
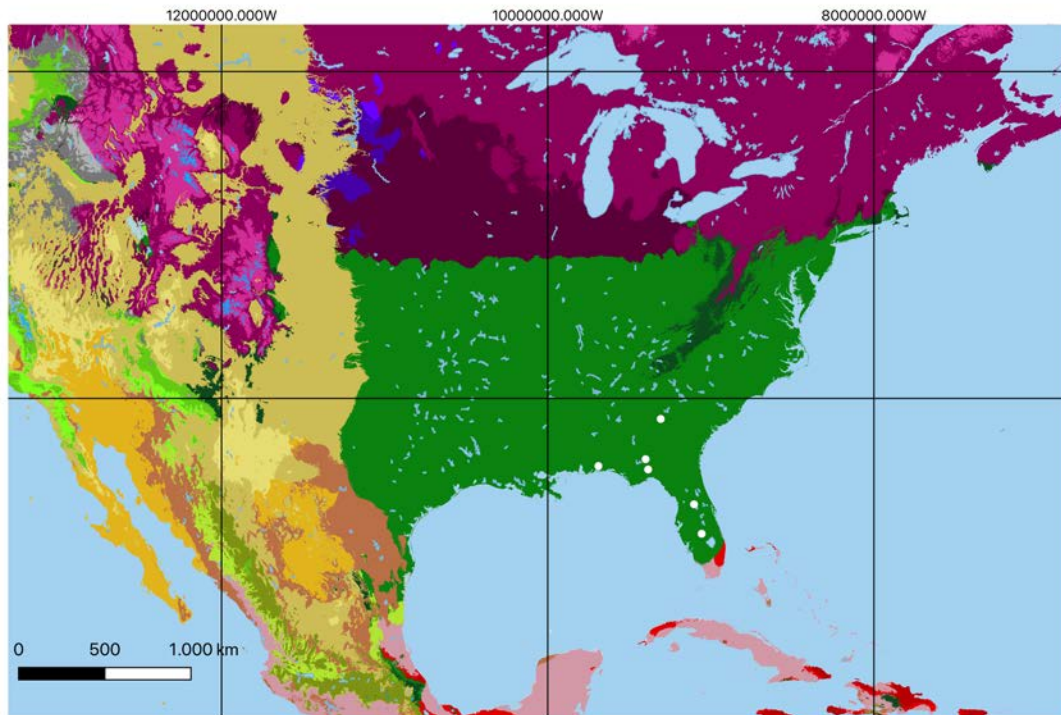
5.3.3.1.7. Köppen profile, distribution and climate map – GBIF occurrences of *Najas chinensis* N.Z.Wang 1985; herbarium specimens excluding duplicate occurrences (n = 6).



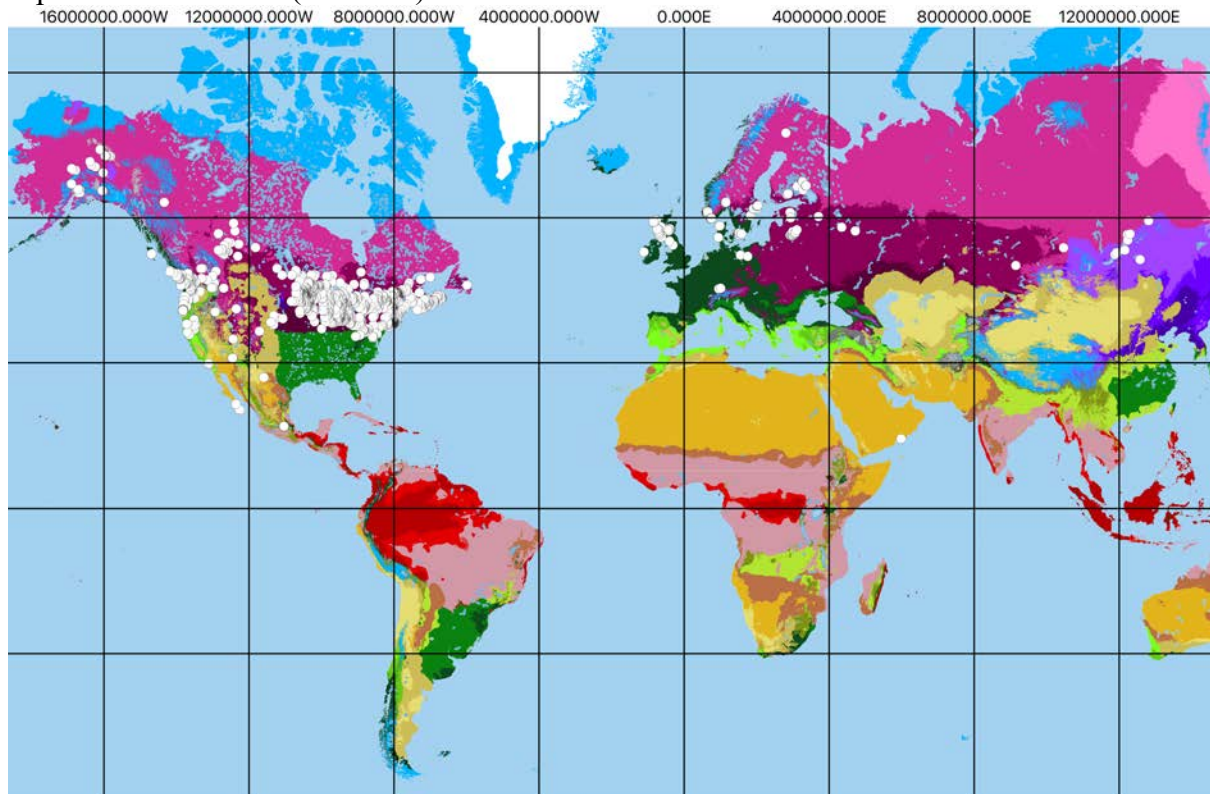
5.3.3.1.8. Köppen profile, distribution and climate map – GBIF occurrences of *Najas conferta* (A.Braun 1864) A.Braun 1868; herbarium specimens excluding duplicate occurrences (n = 33).



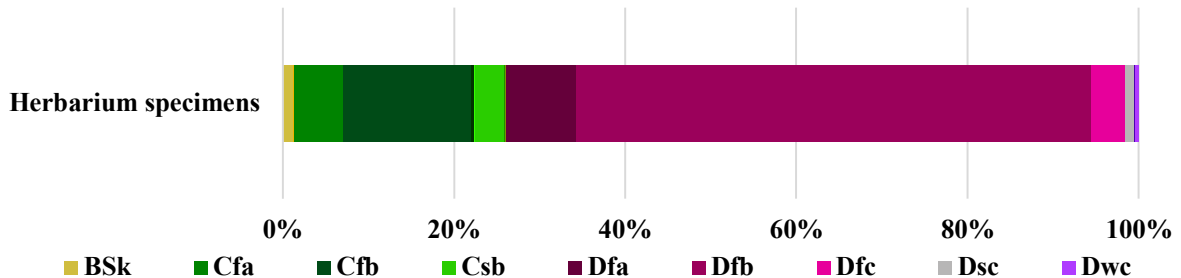
5.3.3.1.9. Köppen profile, distribution and climate map – GBIF occurrences of *Najas filifolia* R.R.Haynes 1985; herbarium specimens excluding duplicate occurrences (n = 6).



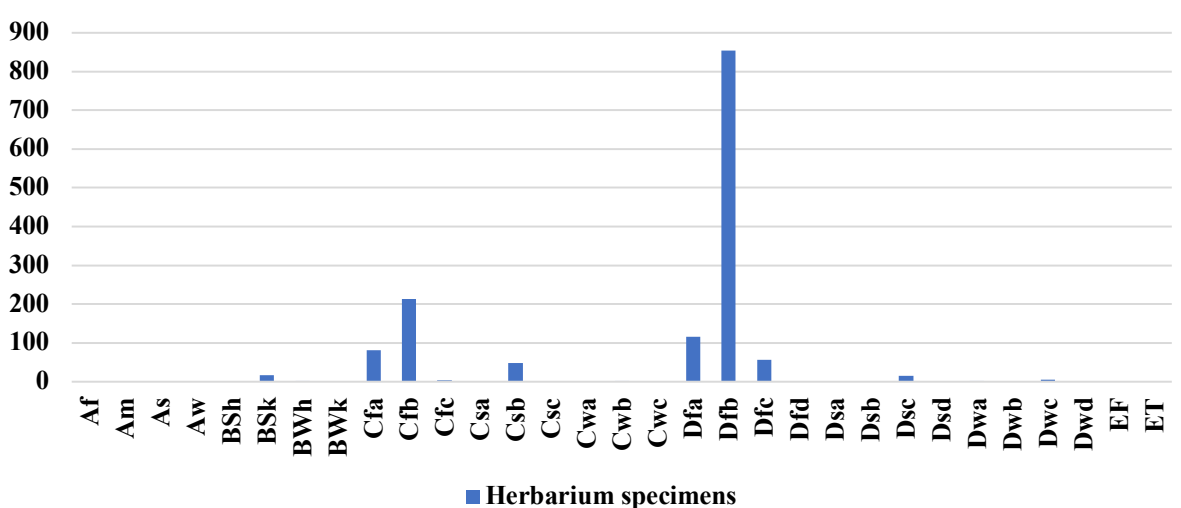
5.3.3.1.10. Köppen profile, distribution and climate map – GBIF occurrences of *Najas flexilis* (Willd. 1801) Rostk. & W.L.E.Schmidt 1924; herbarium specimens excluding duplicate occurrences (n = 1419).



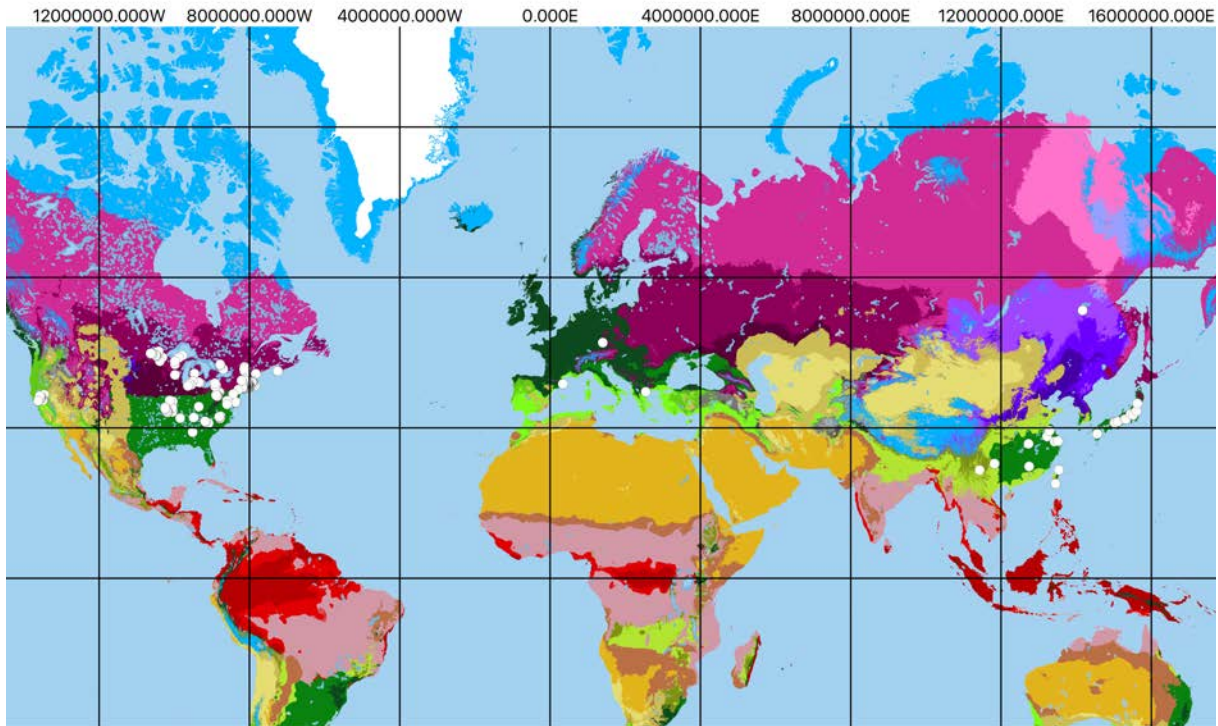
Köppen profile of *Najas flexilis*



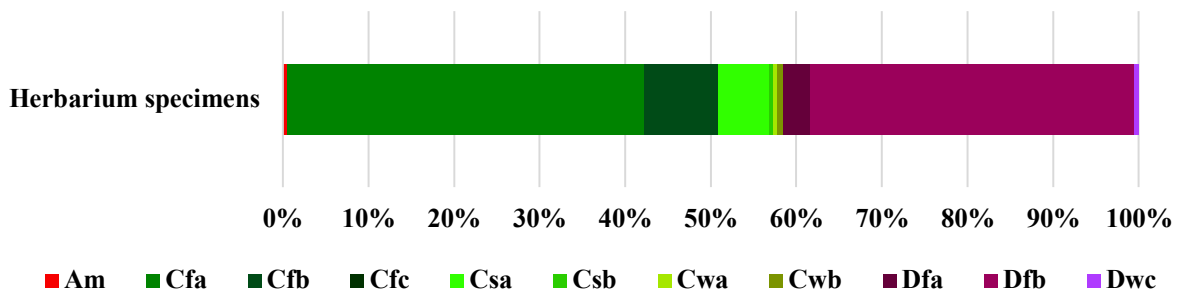
Köppen profile of *Najas flexilis*



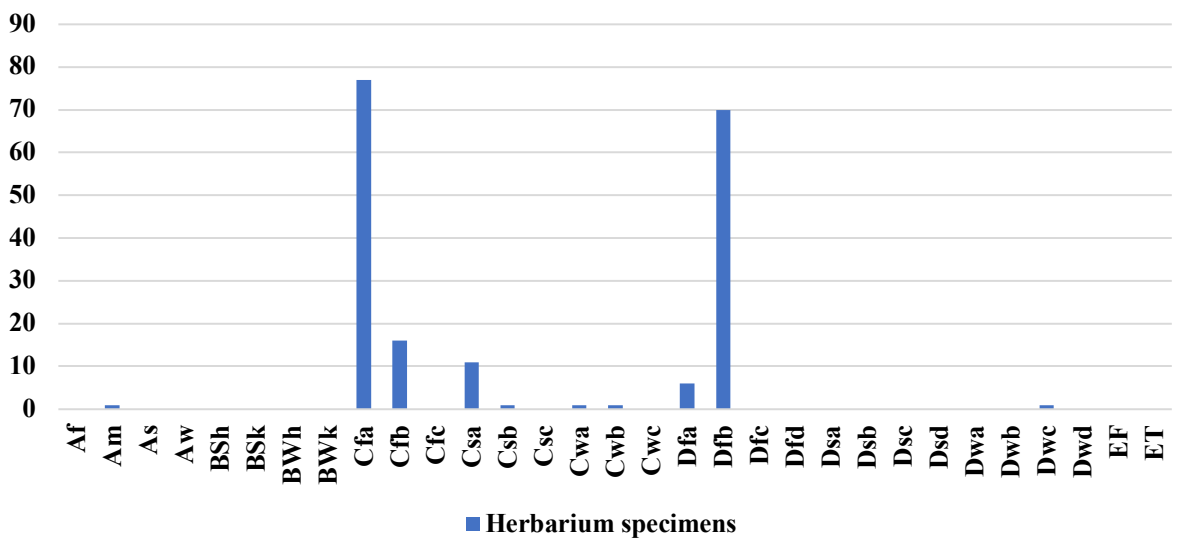
5.3.3.1.11. Köppen profile, distribution and climate map – GBIF occurrences of *Najas gracillima* (A.Braun ex Engelm. 1868) Magnus 1870; herbarium specimens excluding duplicate occurrences (n = 185).



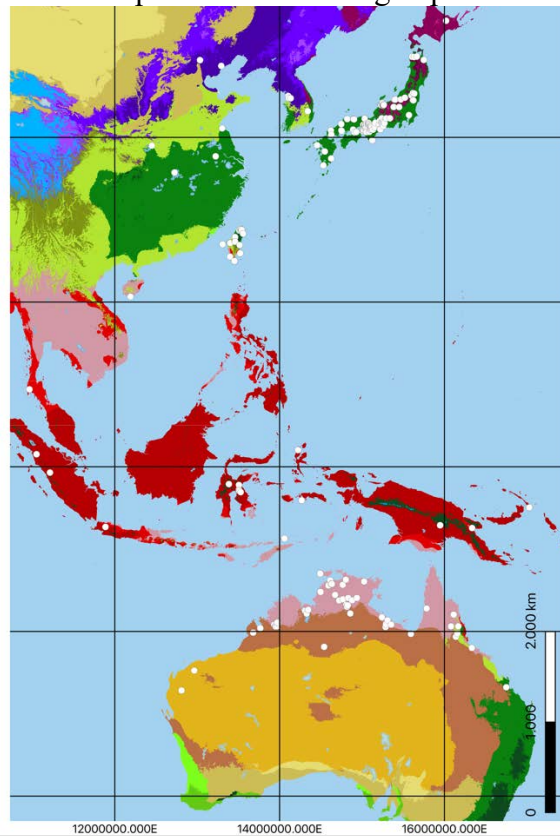
Köppen profile of *Najas gracillima*



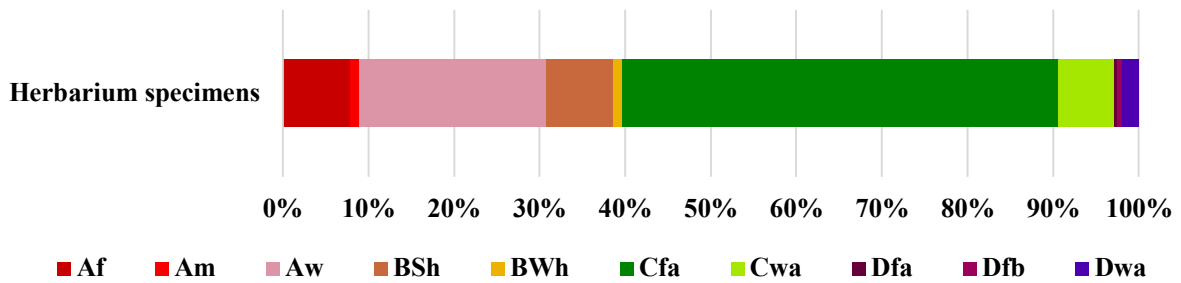
Köppen profile of *Najas gracillima*



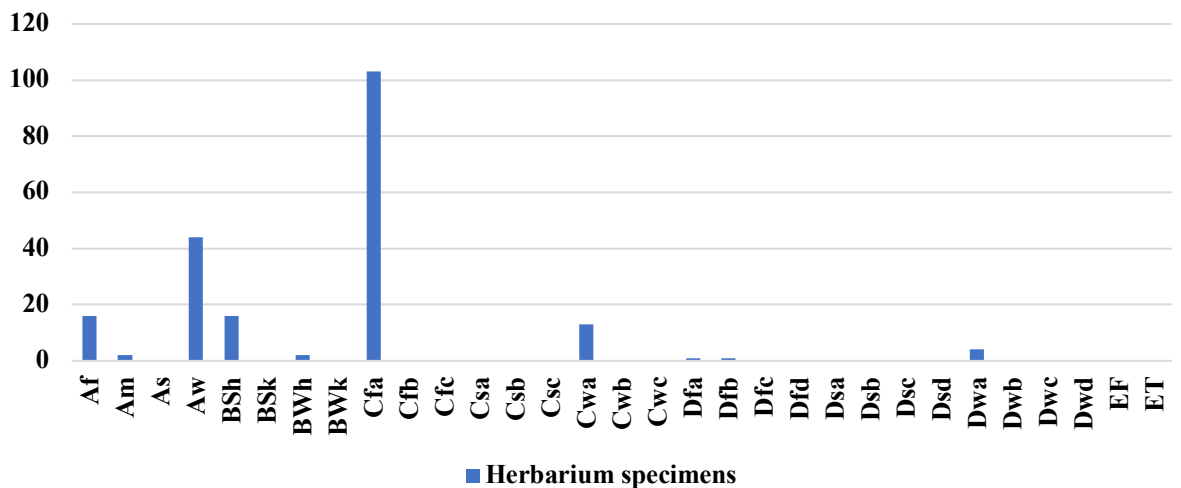
5.3.3.1.12. Köppen profile, distribution and climate map – GBIF occurrences of *Najas graminea* Delile 1814; herbarium specimens excluding duplicate occurrences (n = 202).



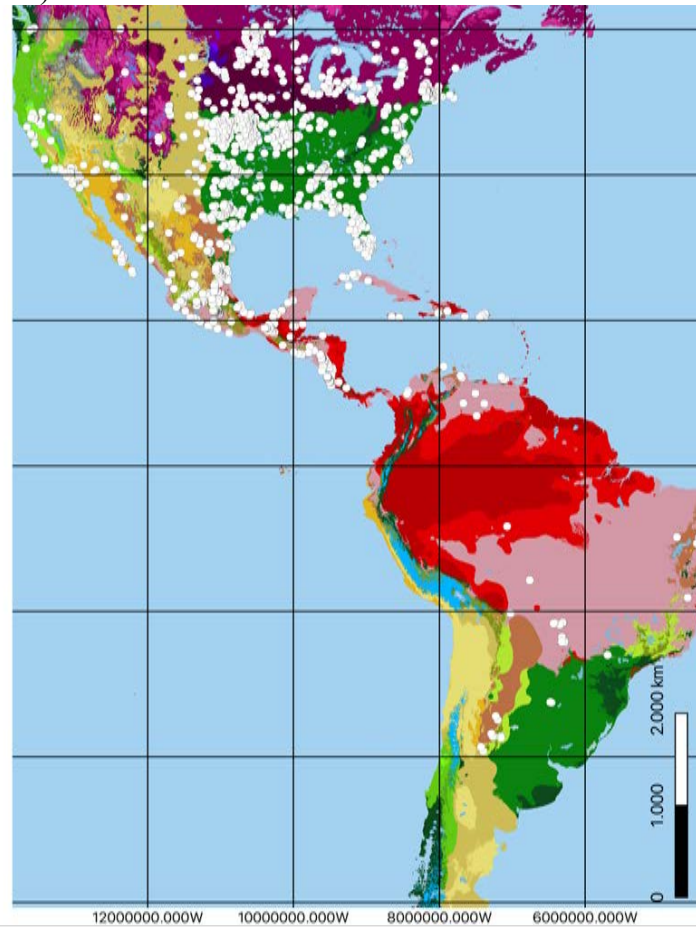
Köppen profile of *Najas graminea*



Köppen profile of *Najas graminea*

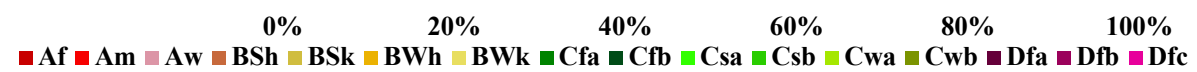


5.3.3.1.13. Köppen profile, distribution and climate map – GBIF occurrences of *Najas guadalupensis* (Spreng. 1824) Magnus 1870; herbarium specimens excluding duplicate occurrences (n = 1387).

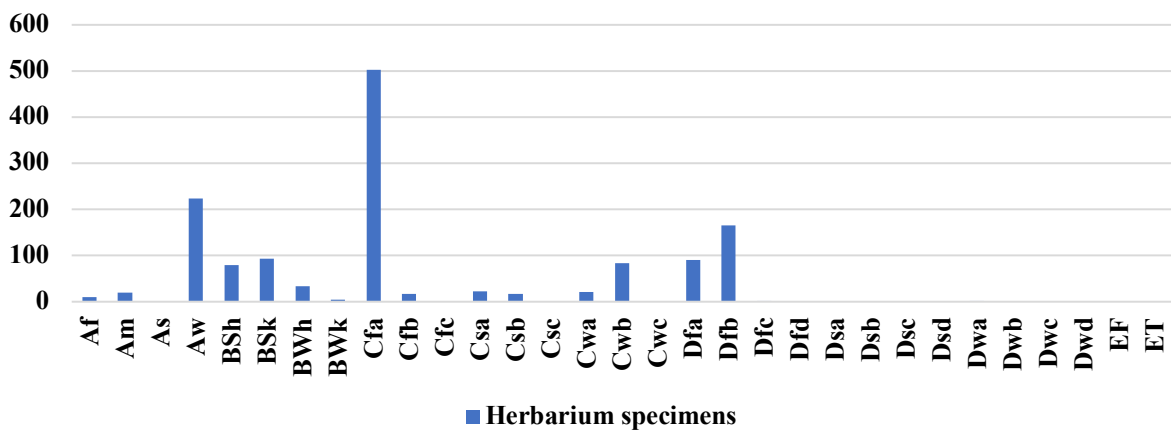


Köppen profile of *Najas guadalupensis*

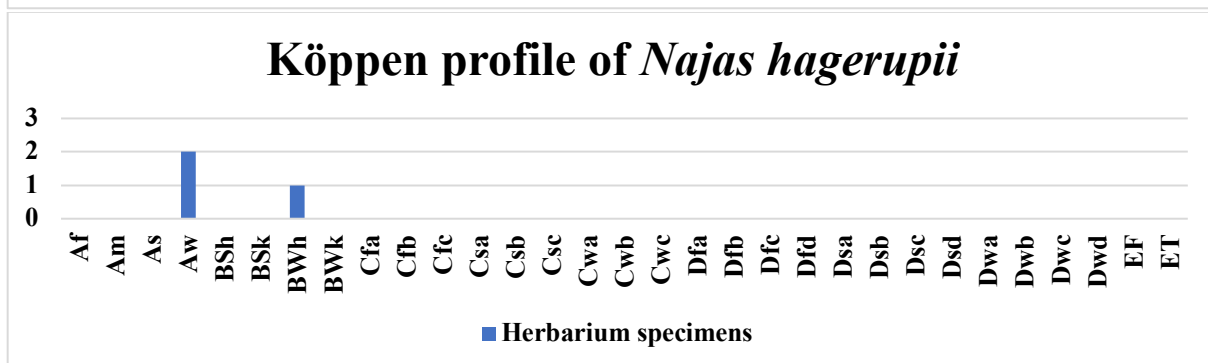
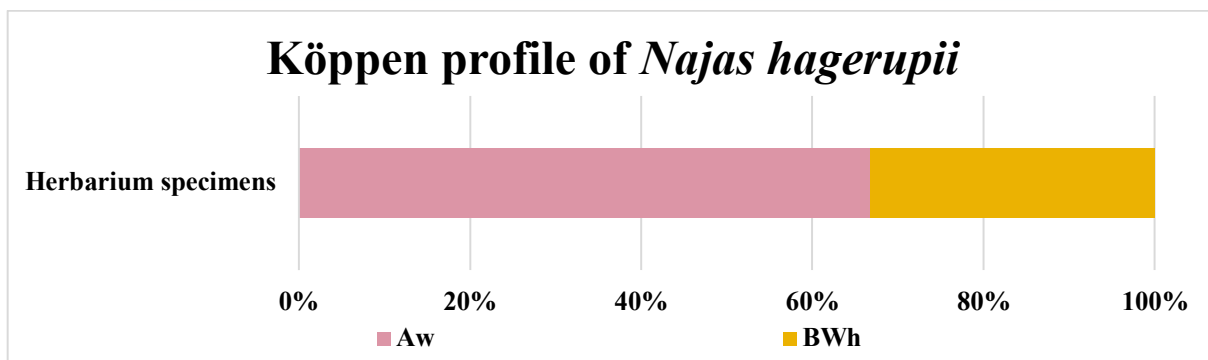
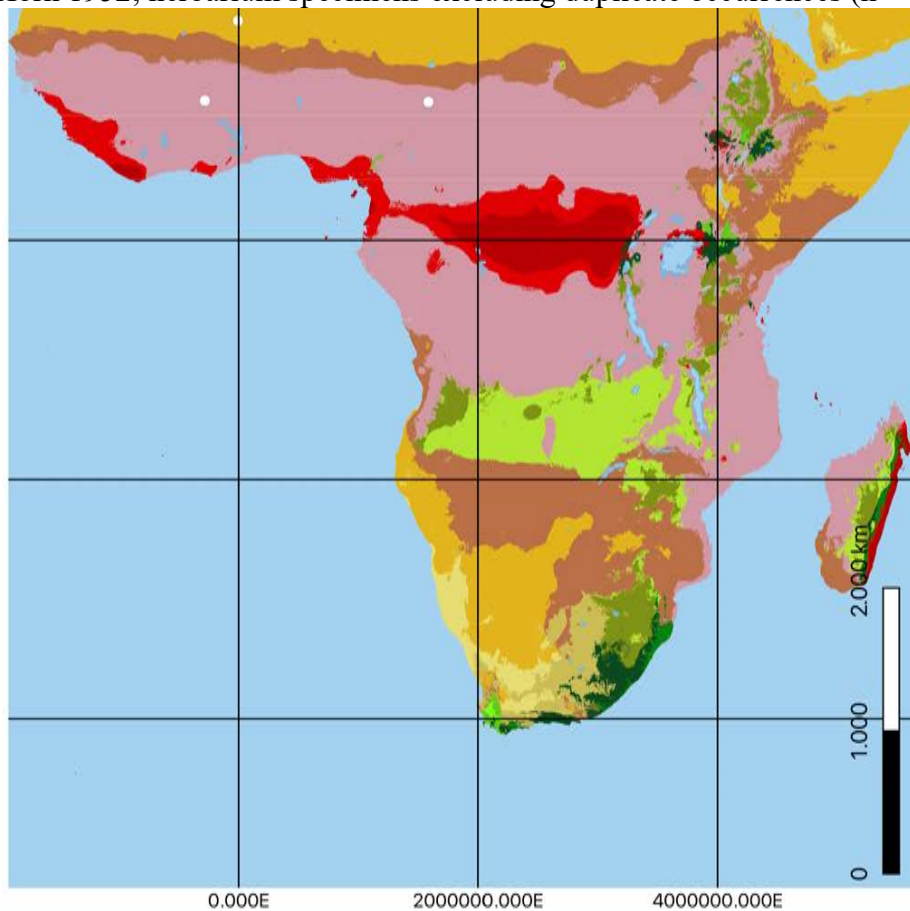
Herbarium specimens



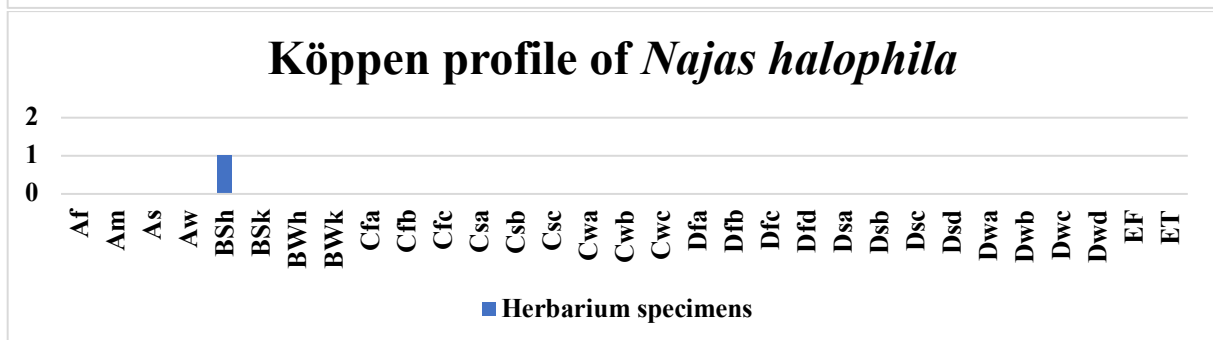
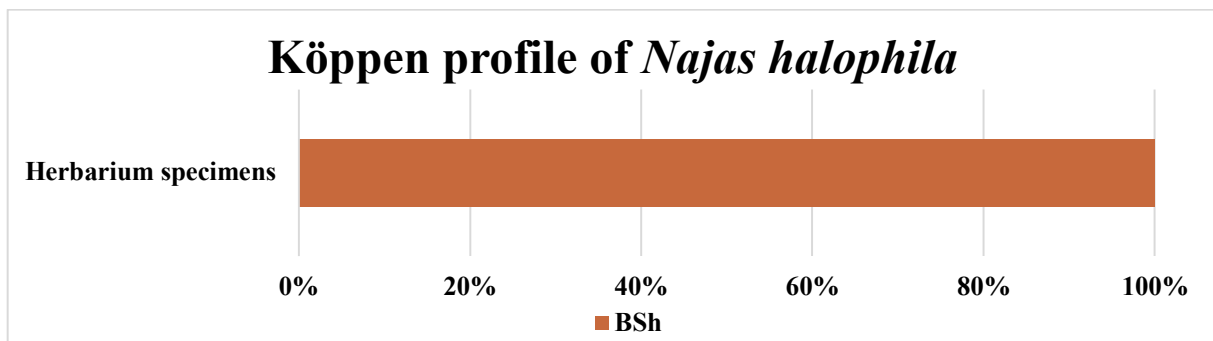
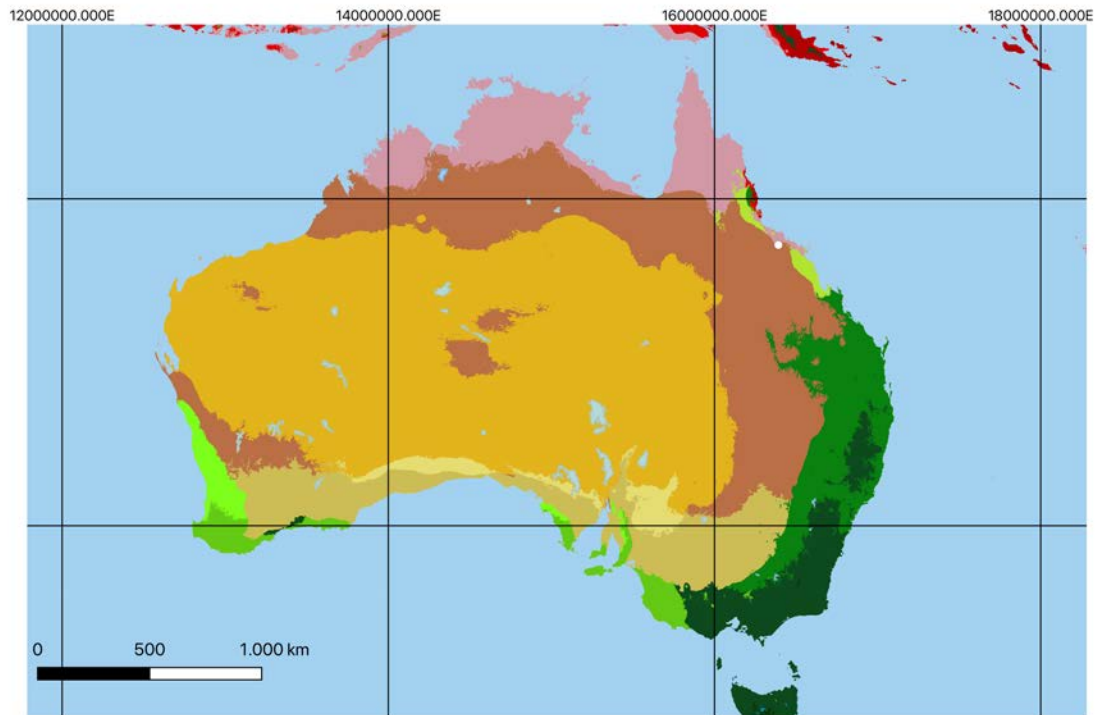
Köppen profile of *Najas guadalupensis*



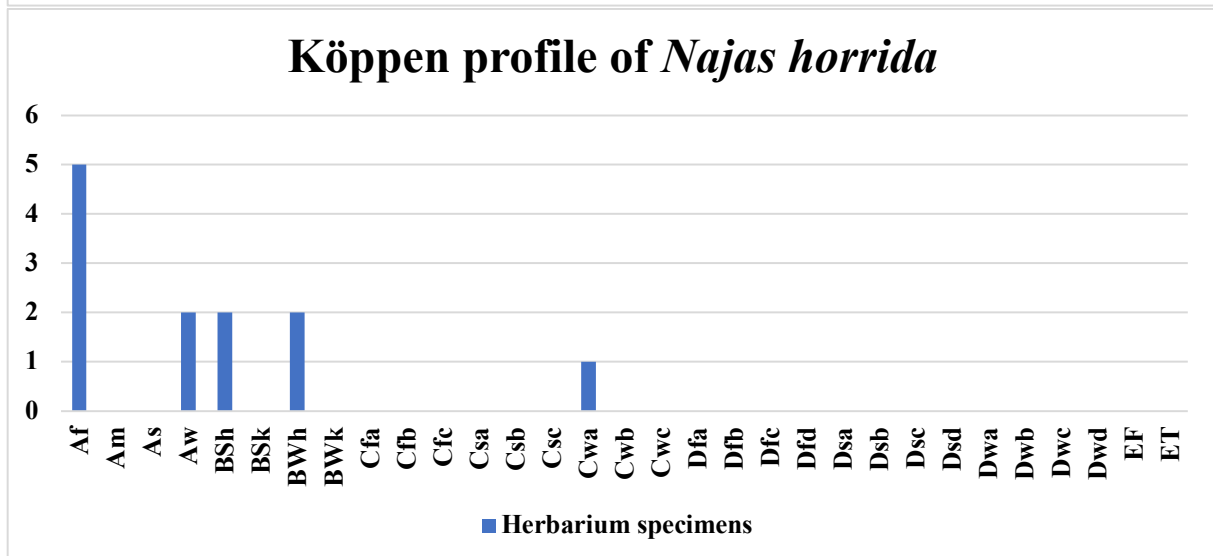
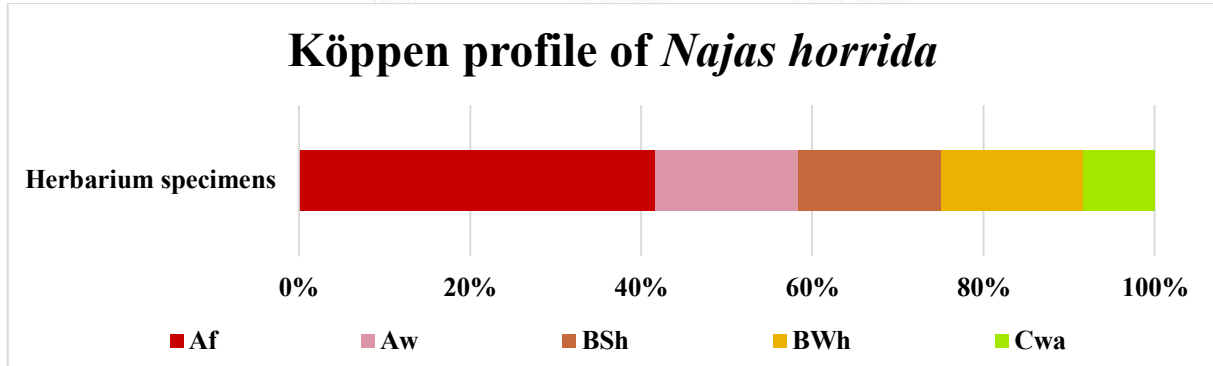
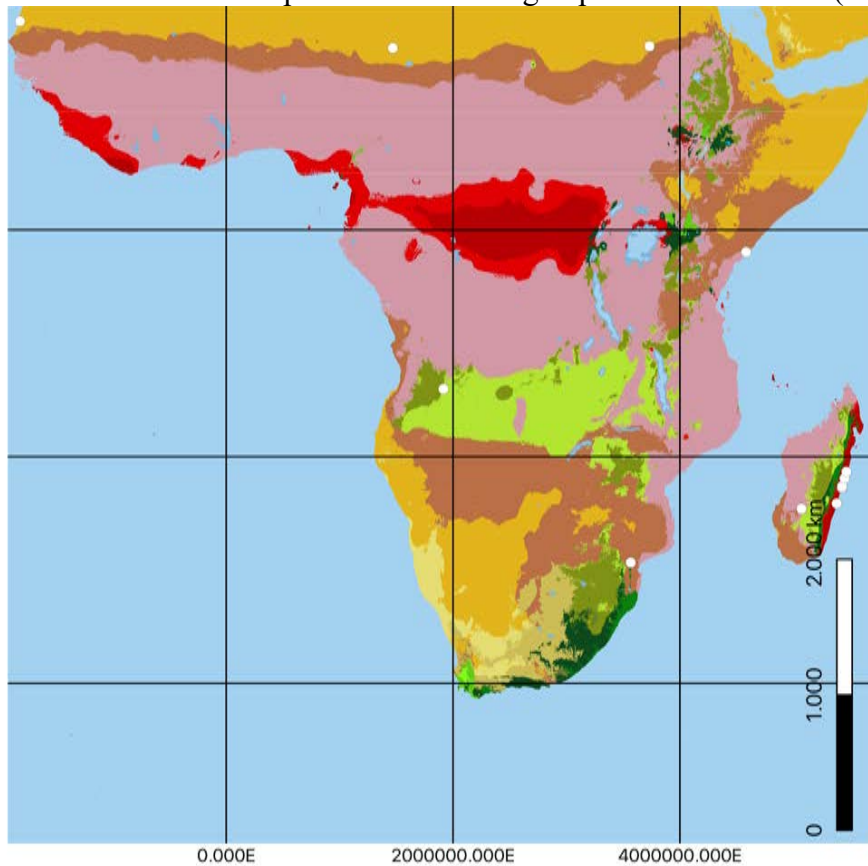
5.3.3.1.14. Köppen profile, distribution and climate map – GBIF occurrences of *Najas hagerupii* Horn 1952; herbarium specimens excluding duplicate occurrences (n = 3).



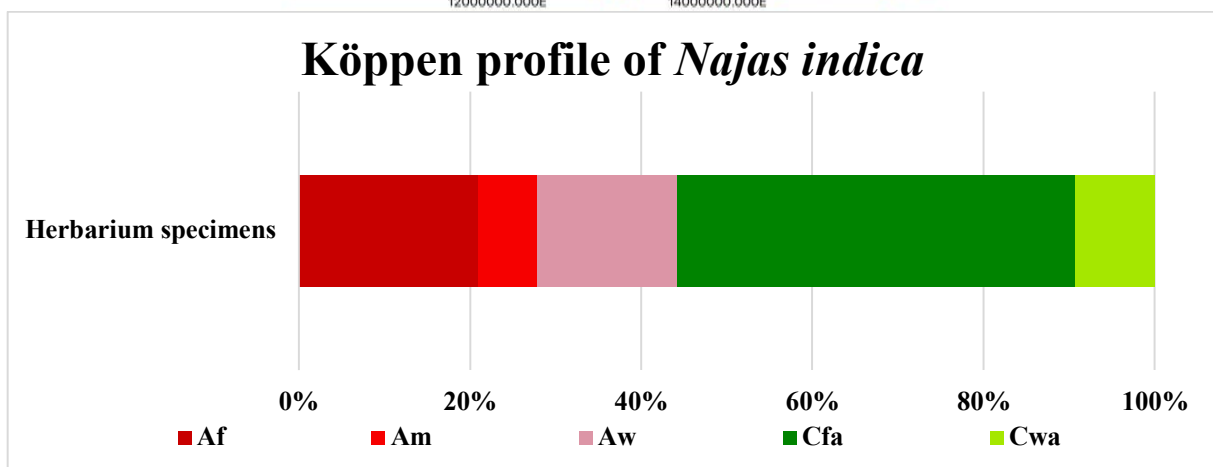
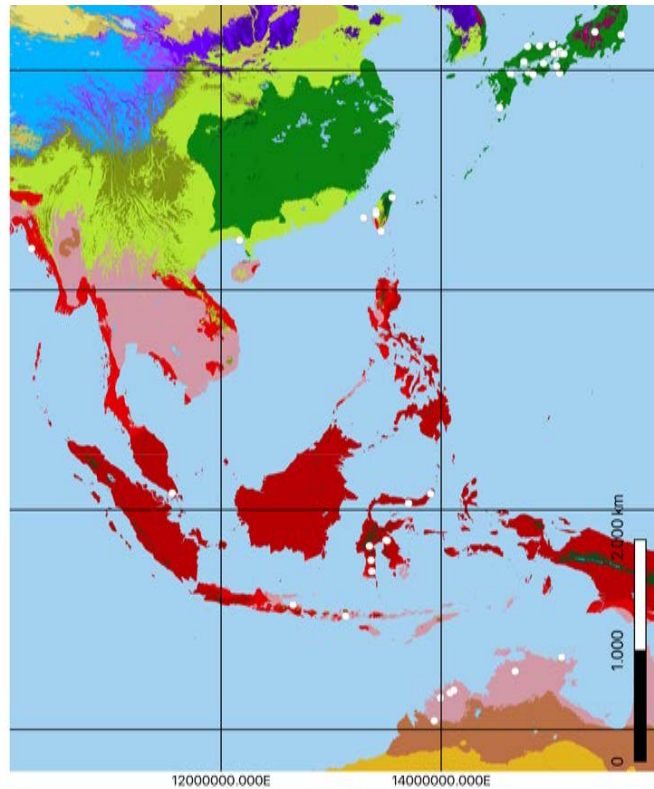
5.3.3.1.15. Köppen profile, distribution and climate map – GBIF occurrences of *Najas halophila* L.Triest 1988 herbarium specimens excluding duplicate occurrences (n = 1).



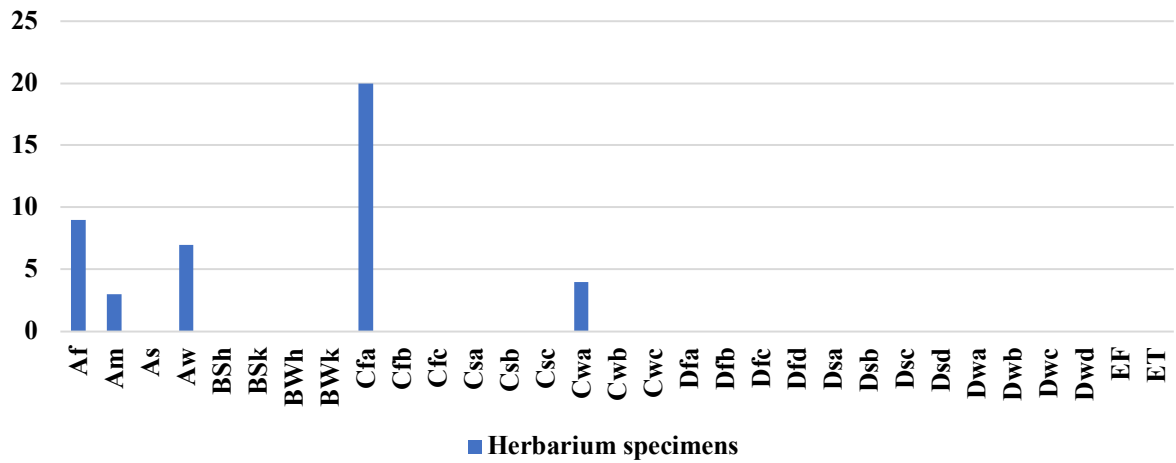
5.3.3.1.16. Köppen profile, distribution and climate map – GBIF occurrences of *Najas horrida* A.Braun 1870 herbarium specimens excluding duplicate occurrences (n = 12).



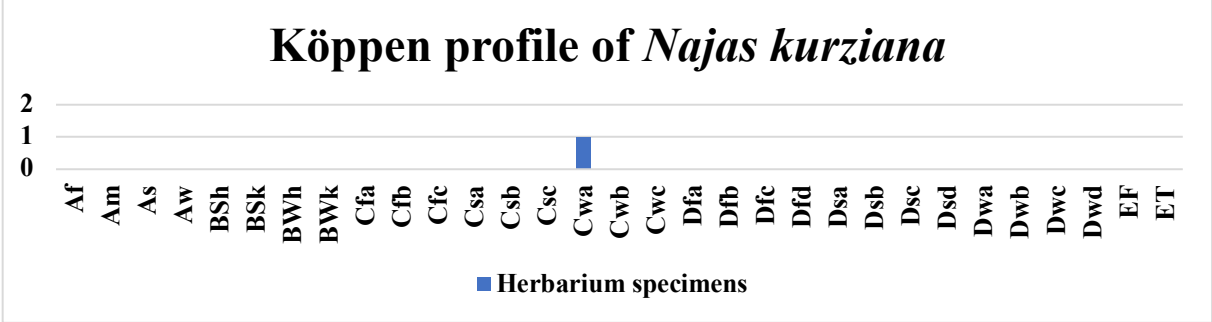
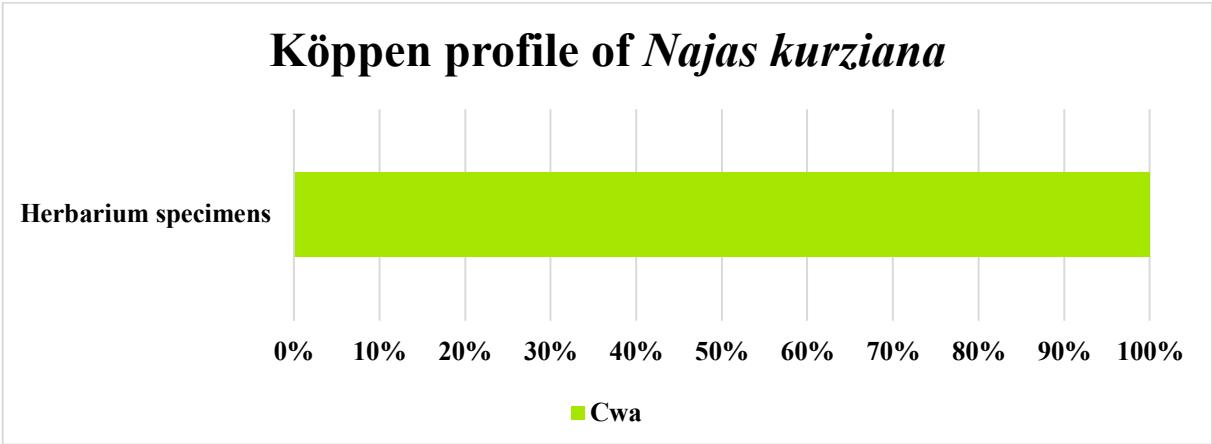
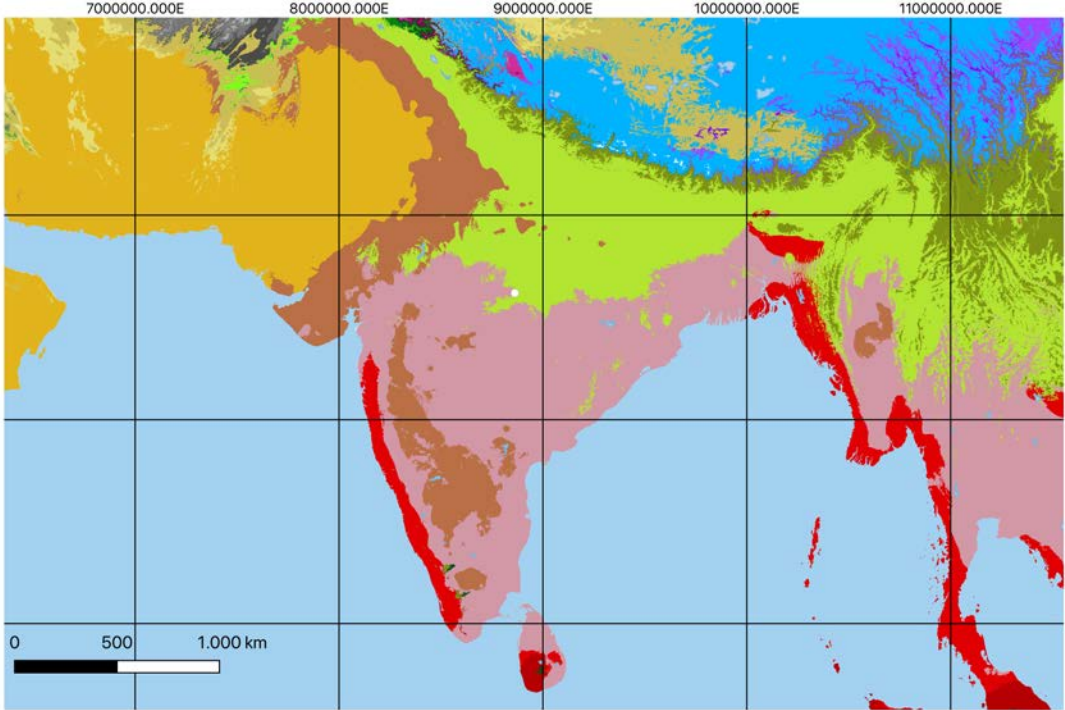
5.3.3.1.17. Köppen profile, distribution and climate map – GBIF occurrences of *Najas indica* (Willd. 1801) Cham. 1829; herbarium specimens excluding duplicate occurrences (n = 43).



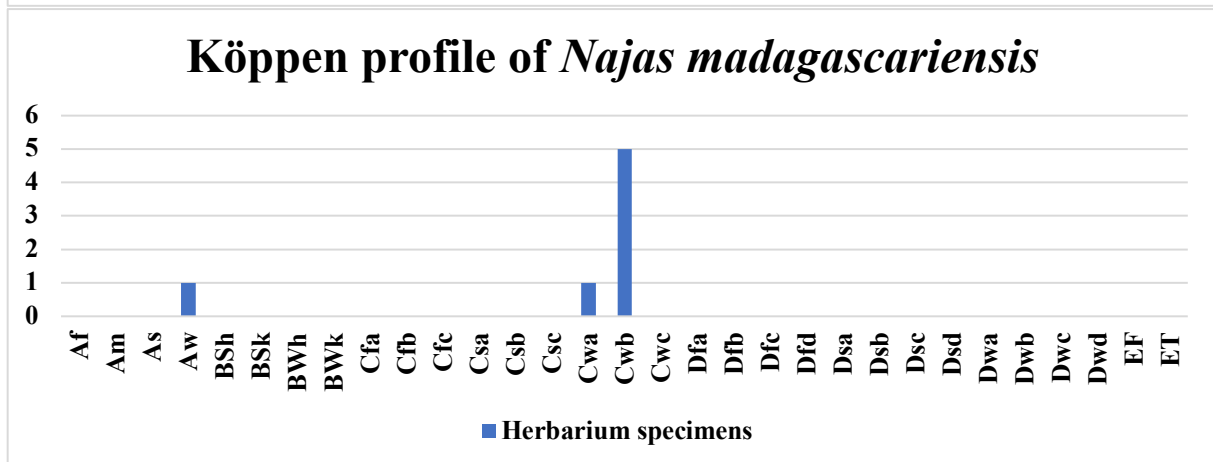
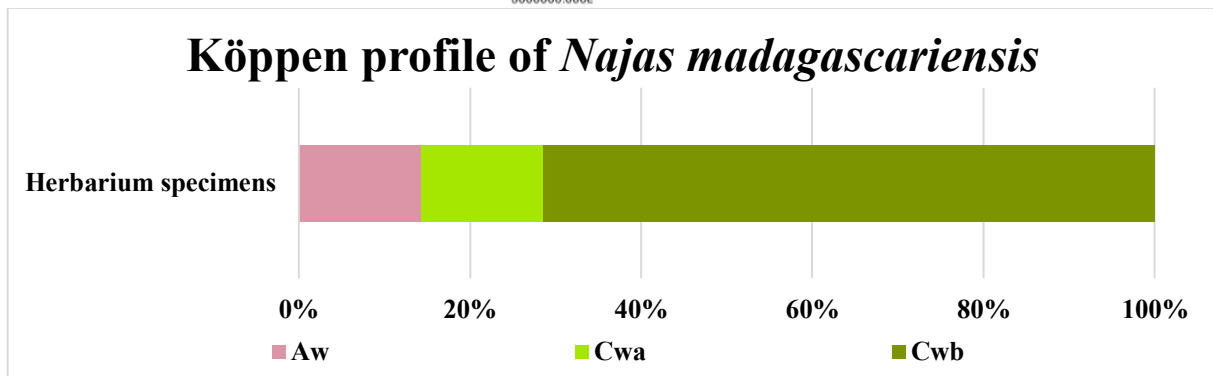
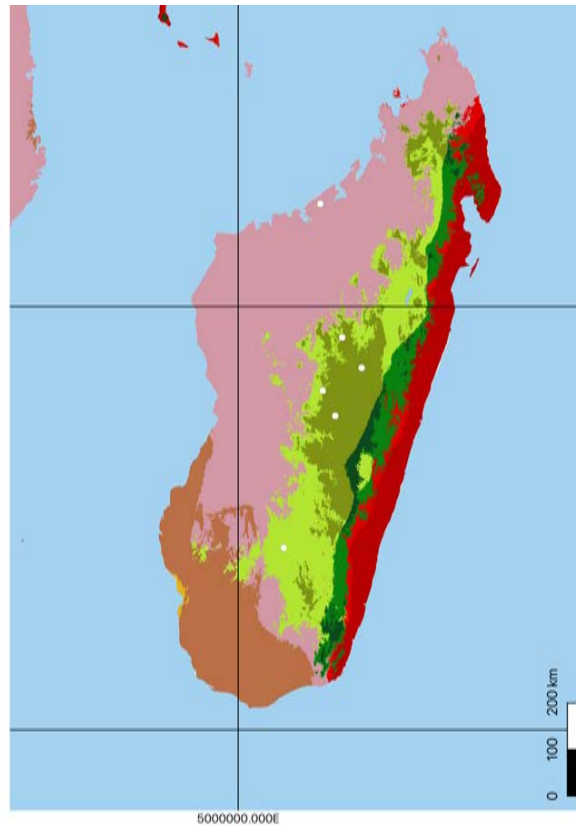
Köppen profile of *Najas indica*



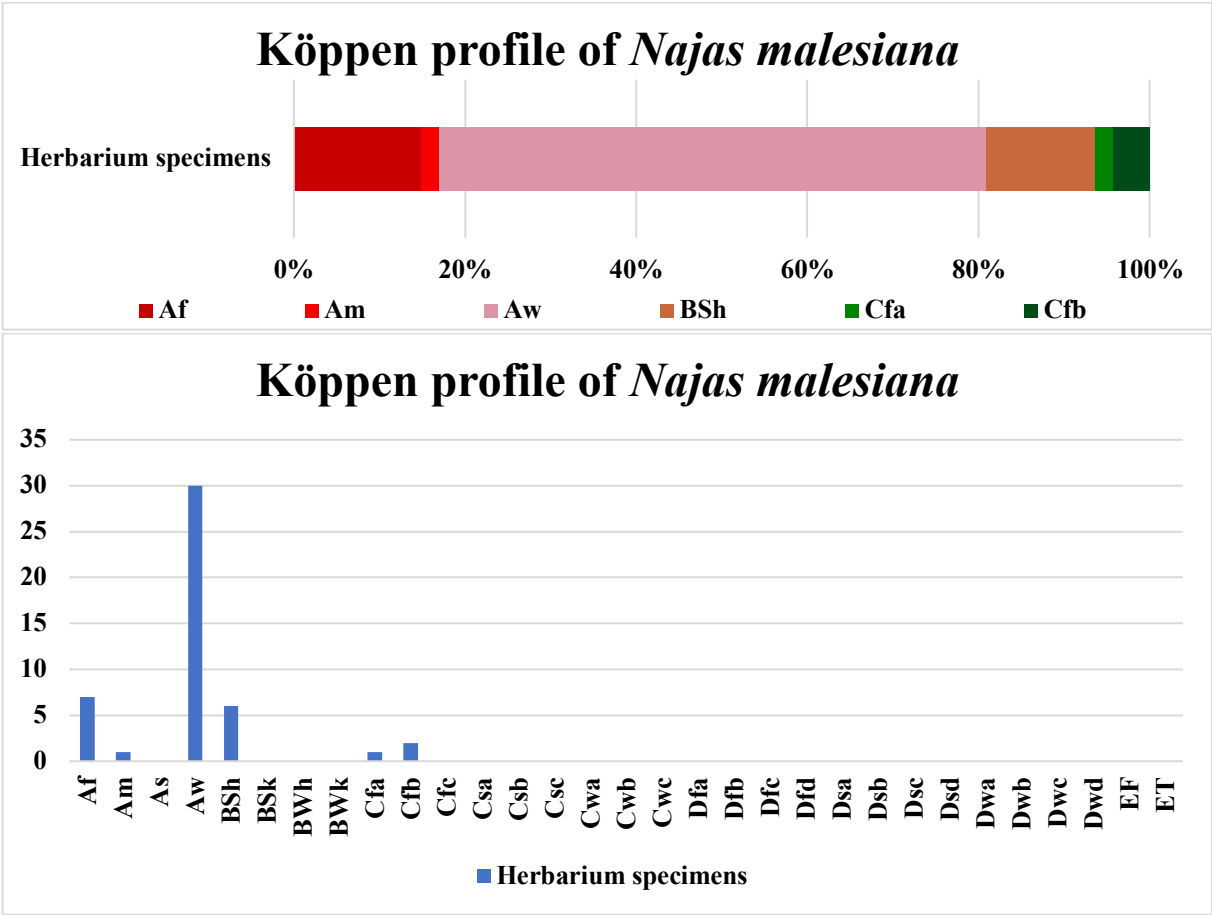
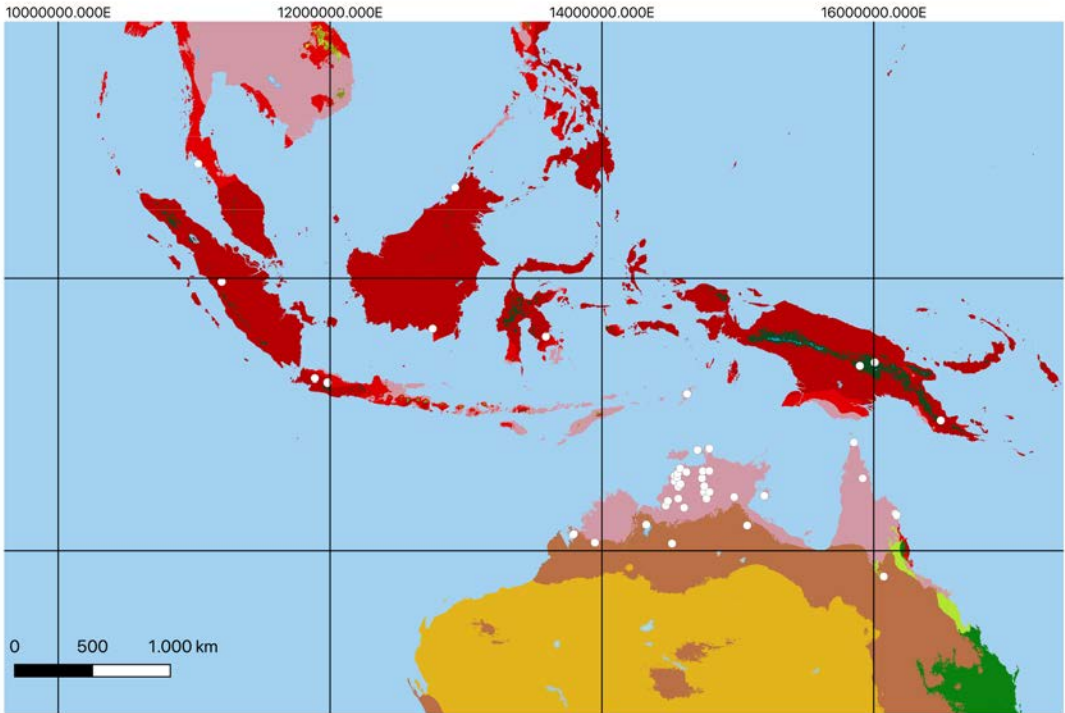
5.3.3.1.18. Köppen profile, distribution and climate map – GBIF occurrences of *Najas kurziana* Rendle 1899; herbarium specimens excluding duplicate occurrences (n = 1).



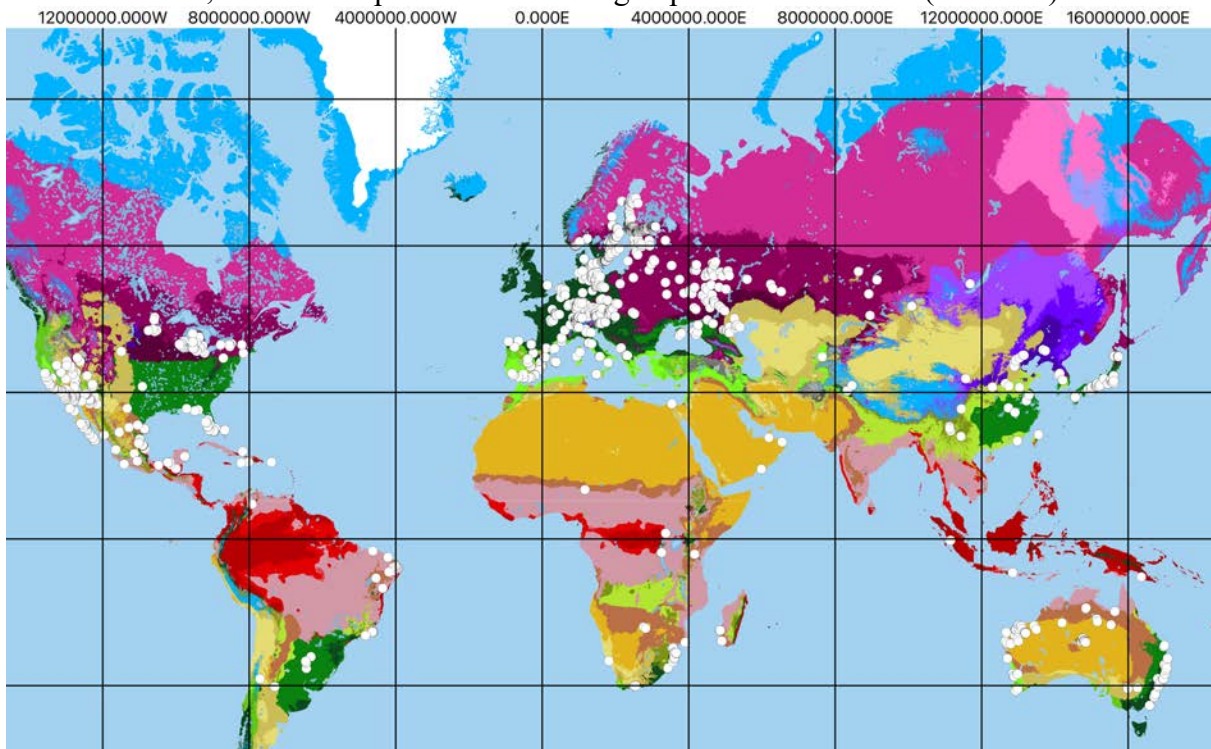
5.3.3.1.19. Köppen profile, distribution and climate map – GBIF occurrences of *Najas madagascariensis* Rendle 1889; herbarium specimens excluding duplicate occurrences (n = 7).



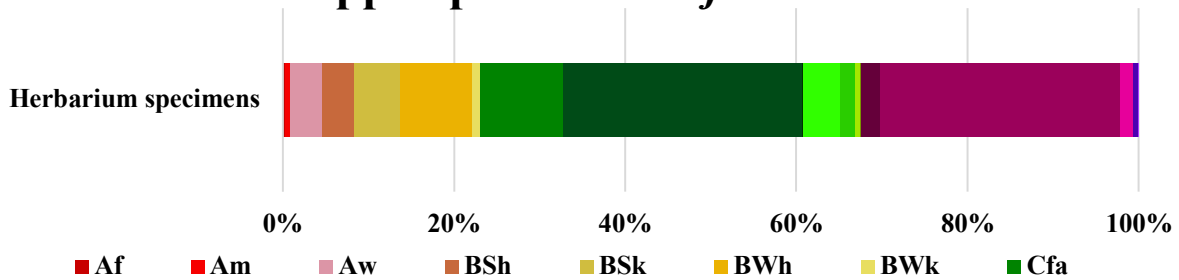
5.3.3.1.20. Köppen profile, distribution and climate map – GBIF occurrences of *Najas malesiana* W.J.de Wilde 1968; herbarium specimens excluding duplicate occurrences (n = 47).



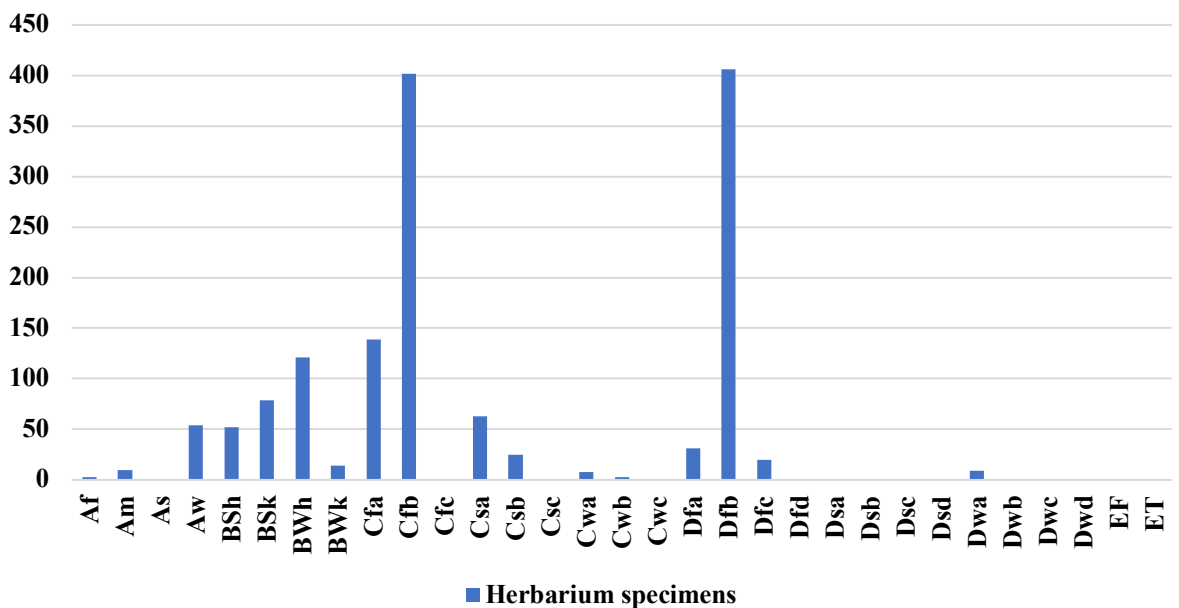
5.3.3.1.21. Köppen profile, distribution and climate map – GBIF occurrences of *Najas marina* L. 1753; herbarium specimens excluding duplicate occurrences (n = 1441).



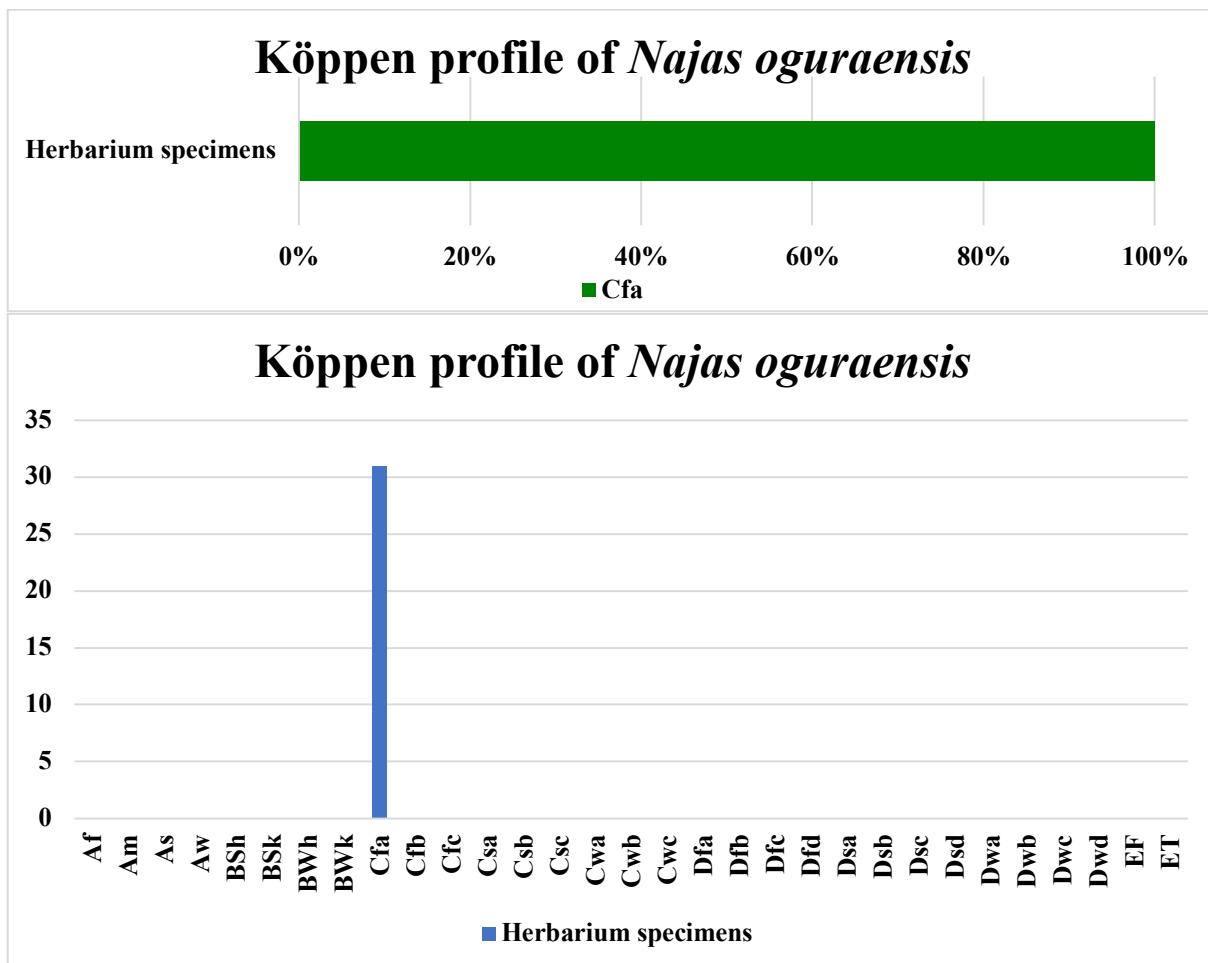
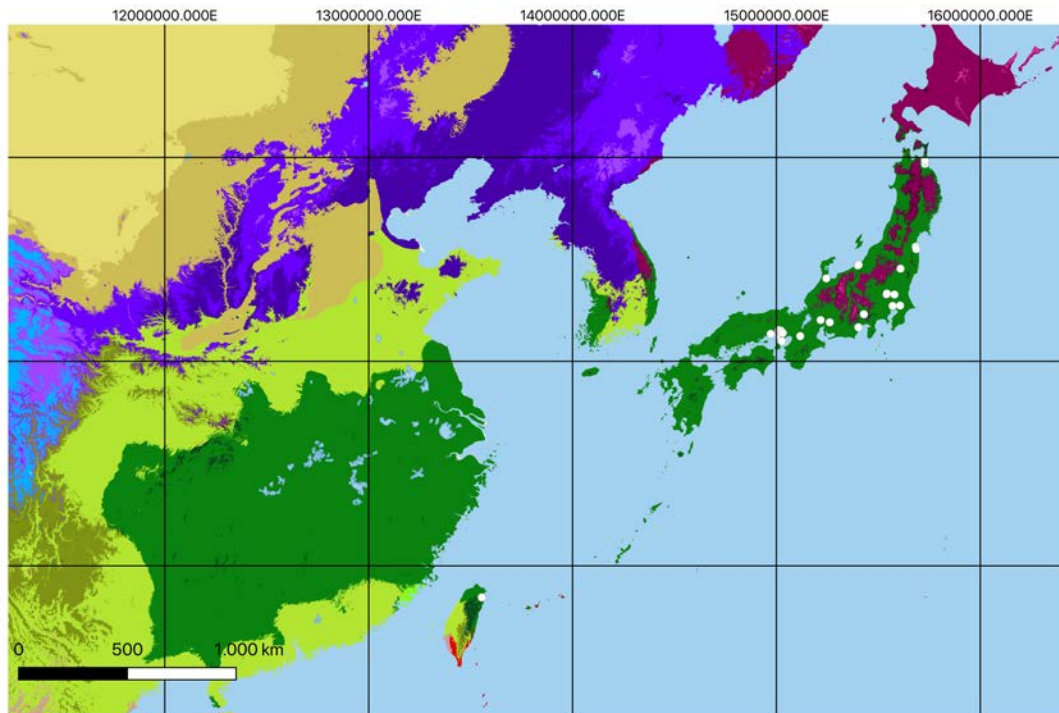
Köppen profile of *Najas marina*



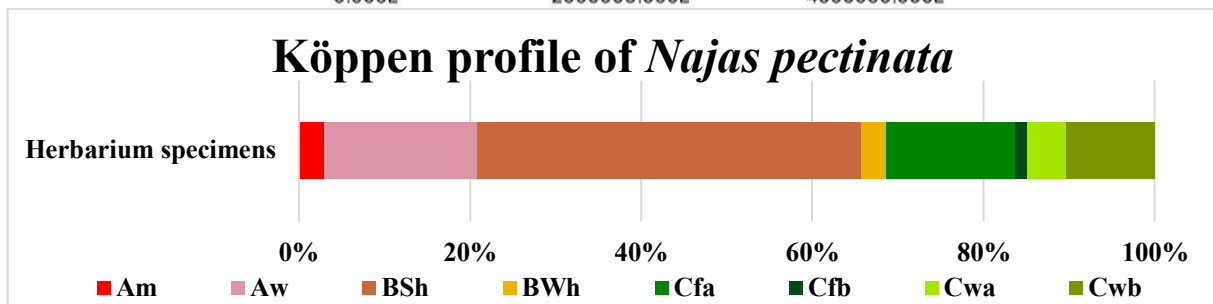
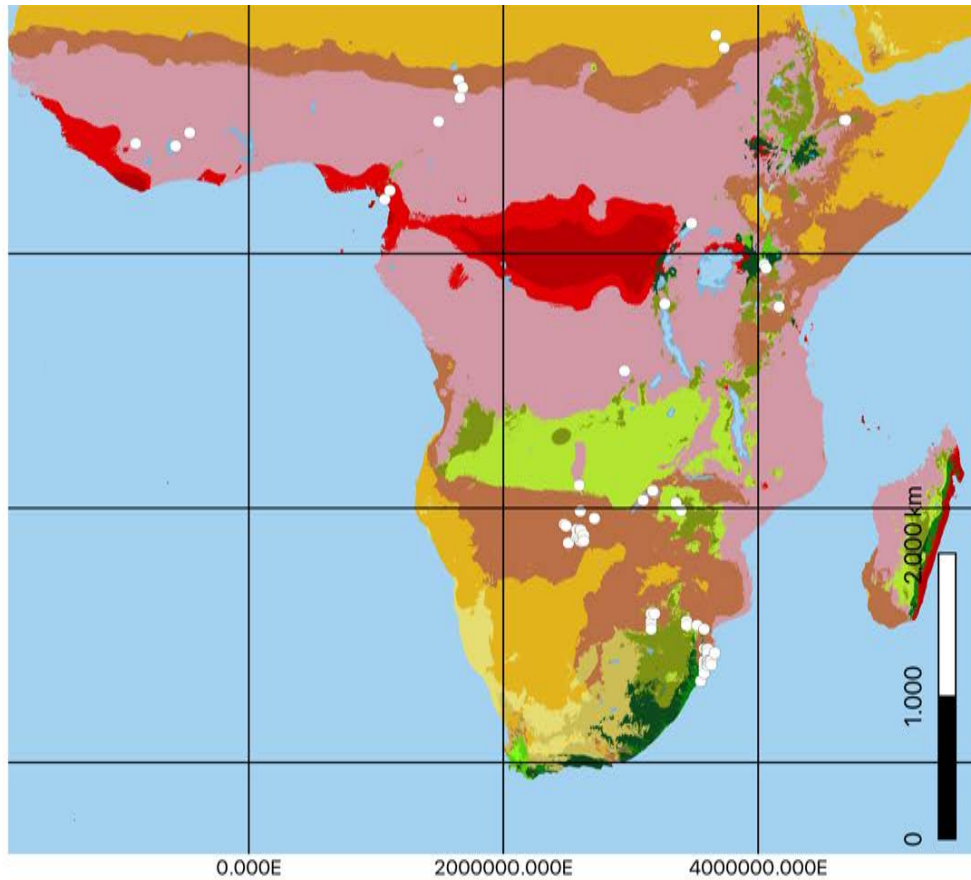
Köppen profile of *Najas marina*



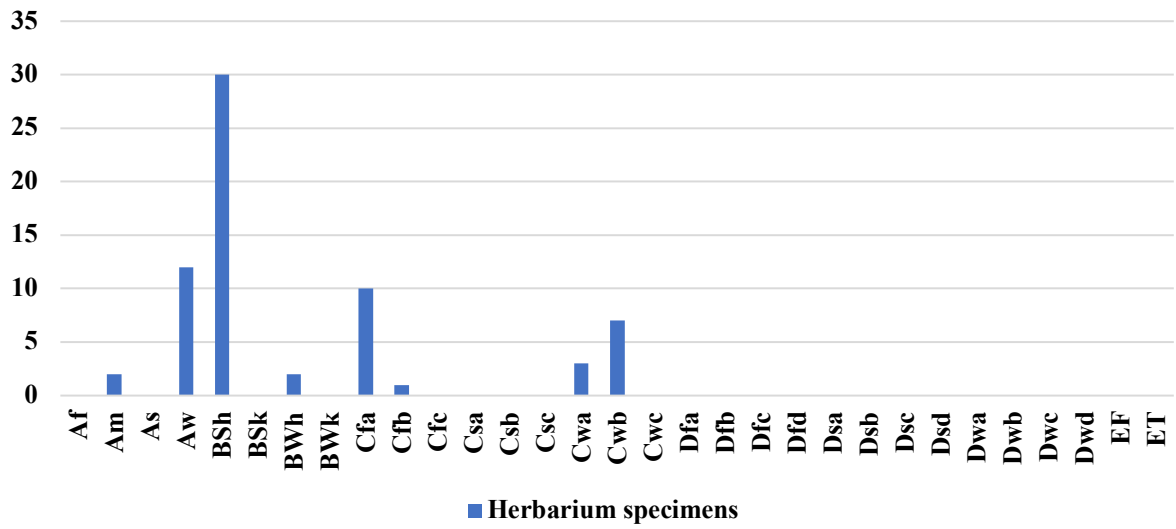
5.3.3.1.22. Köppen profile, distribution and climate map – GBIF occurrences of *Najas oguraensis* Miki 1935; herbarium specimens excluding duplicate occurrences (n = 31).



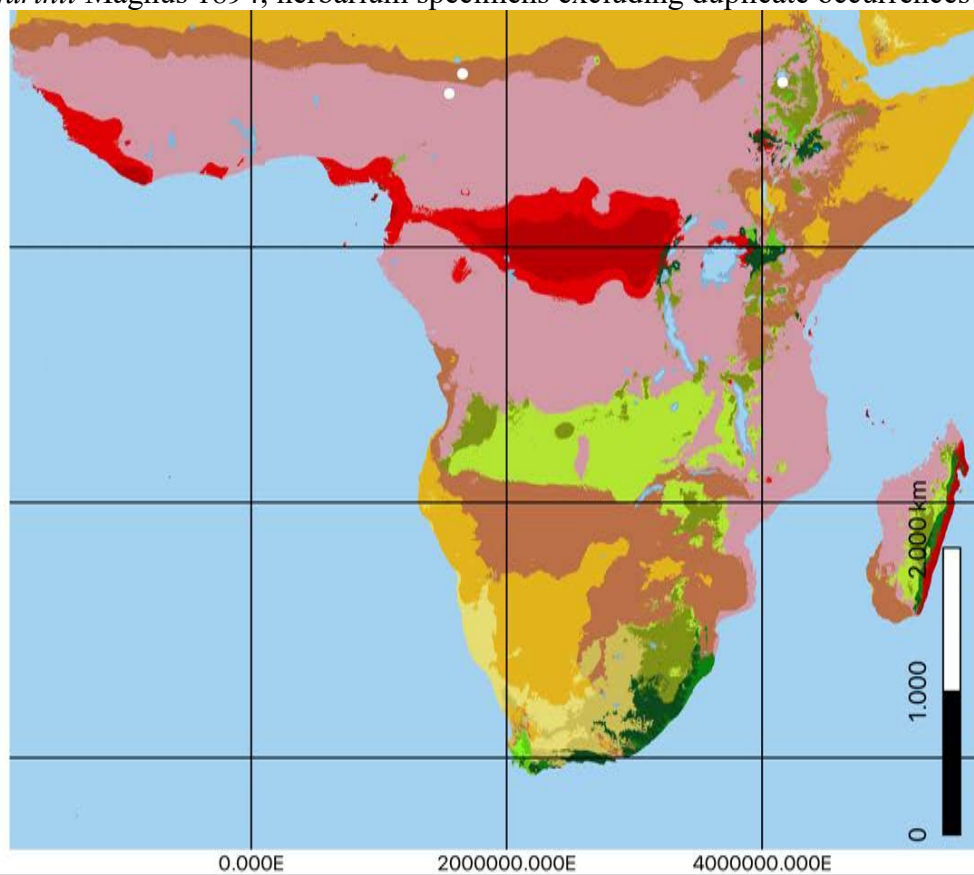
5.3.3.1.23. Köppen profile, distribution and climate map – GBIF occurrences of *Najas pectinate* (Parl. 1860) Magnus 1887; herbarium specimens excluding duplicate occurrences (n = 67).



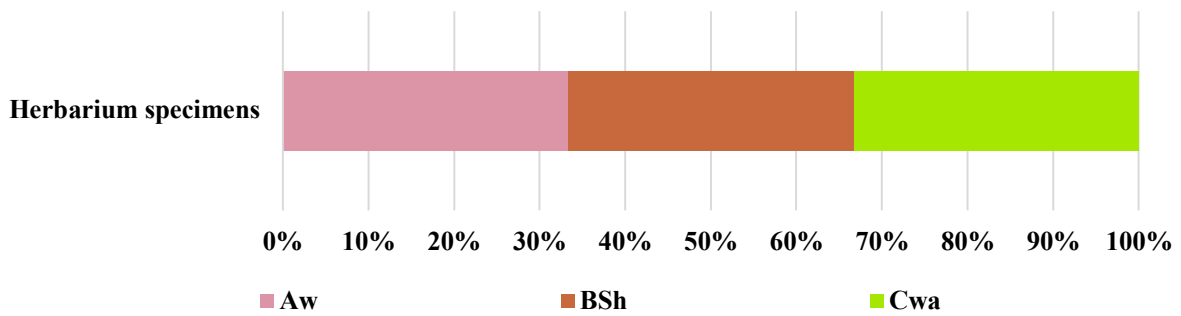
Köppen profile of *Najas pectinata*



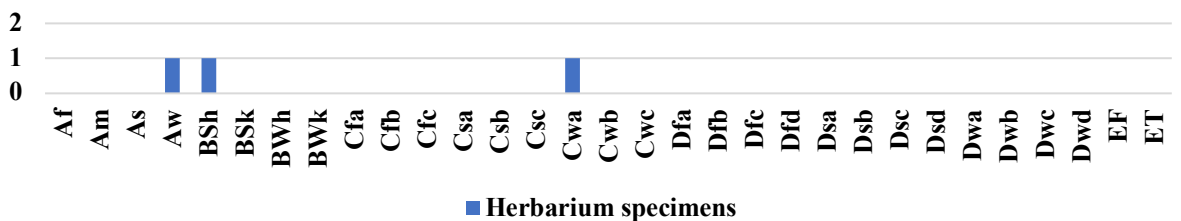
5.3.3.1.24. Köppen profile, distribution and climate map – GBIF occurrences of *Najas schweinfurthii* Magnus 1894; herbarium specimens excluding duplicate occurrences (n = 3).



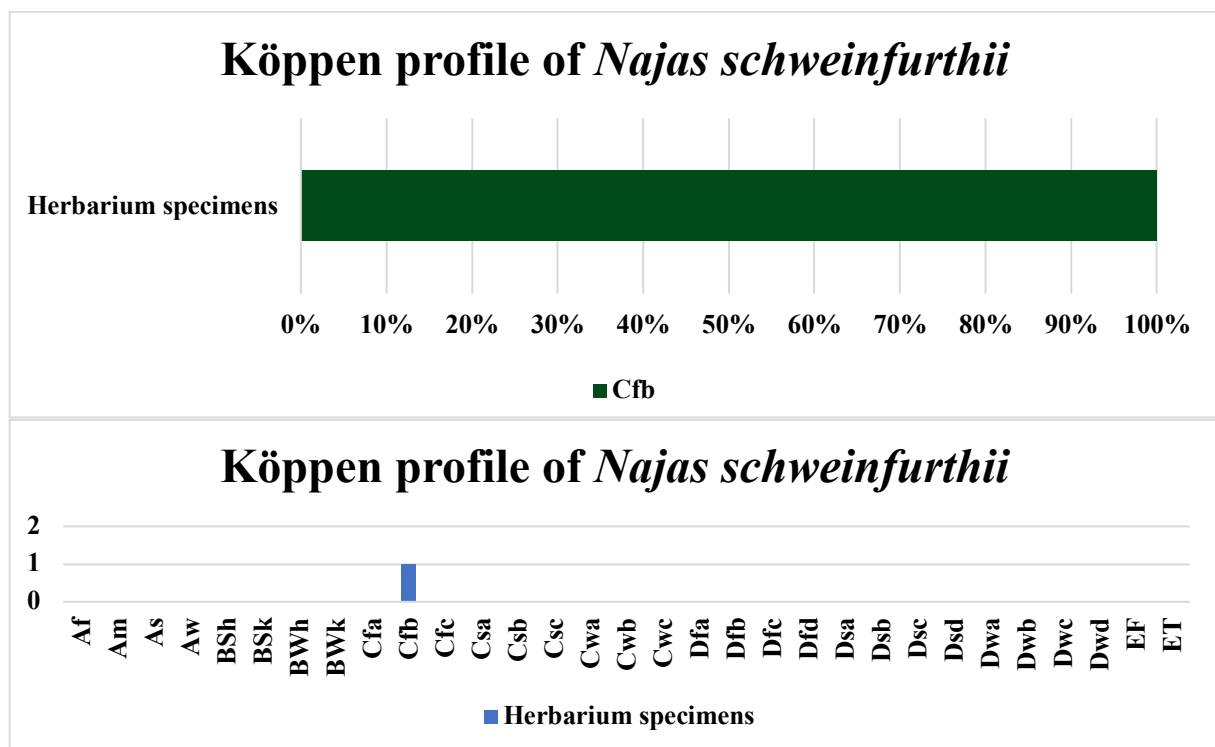
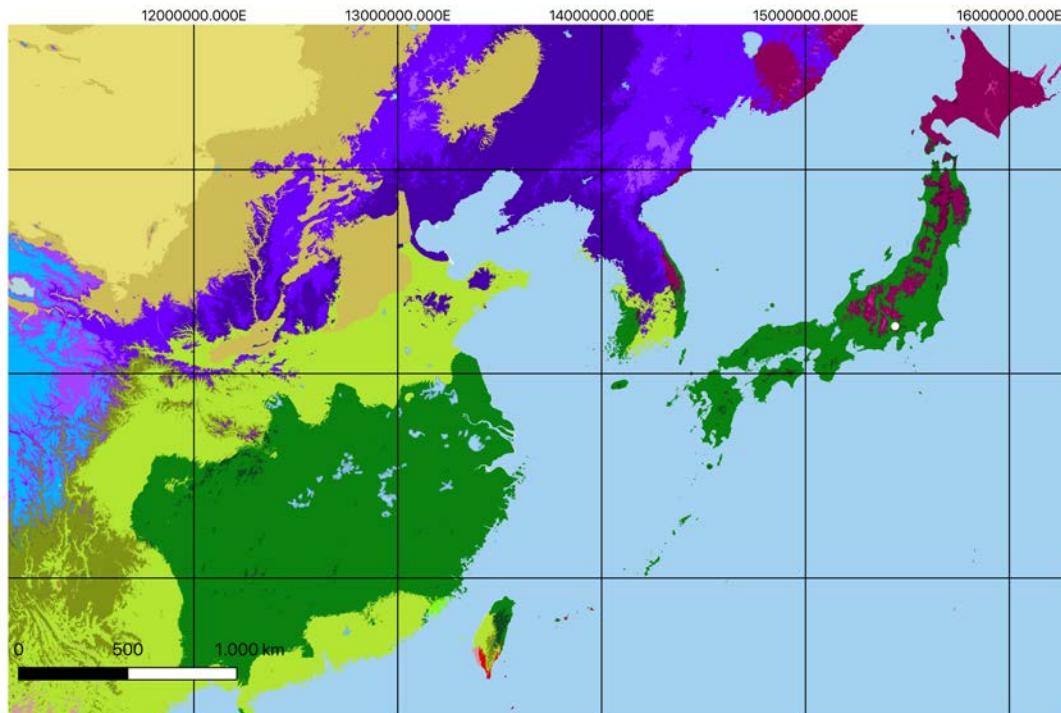
Köppen profile of *Najas schweinfurthii*



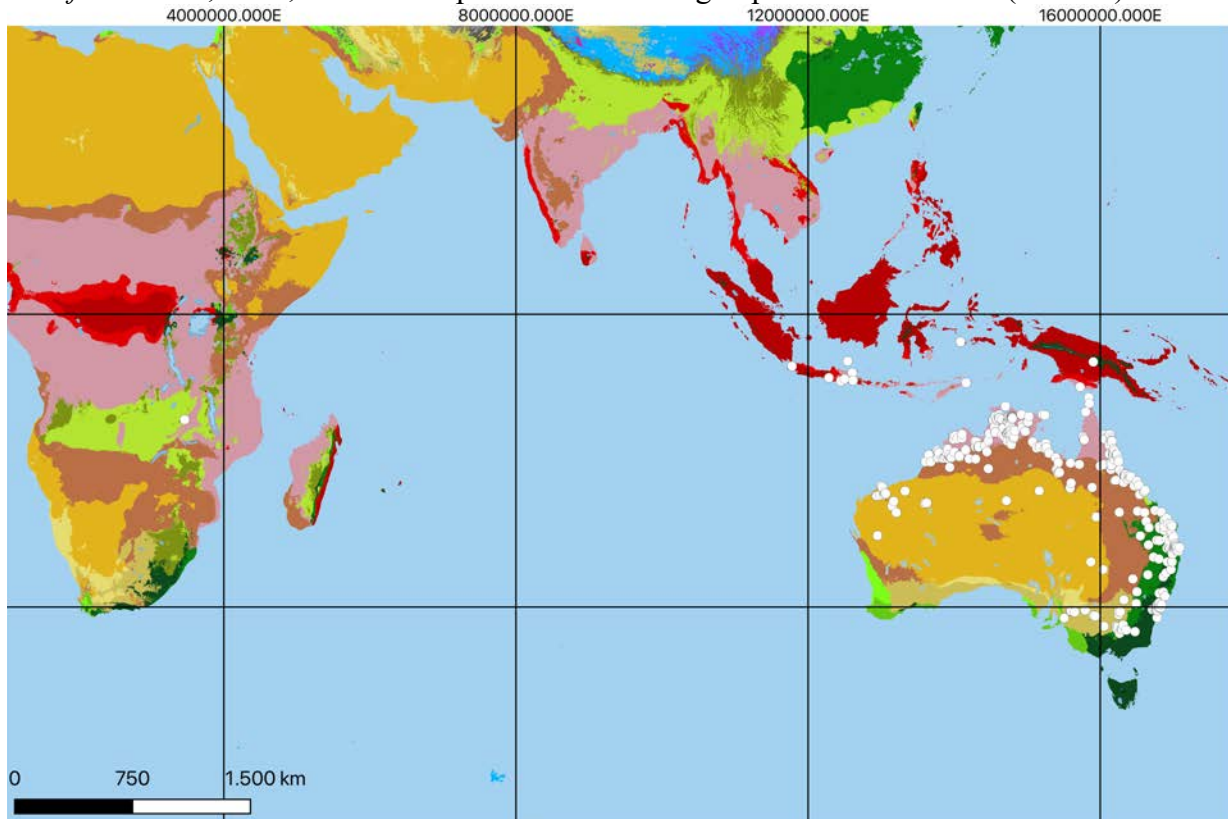
Köppen profile of *Najas schweinfurthii*



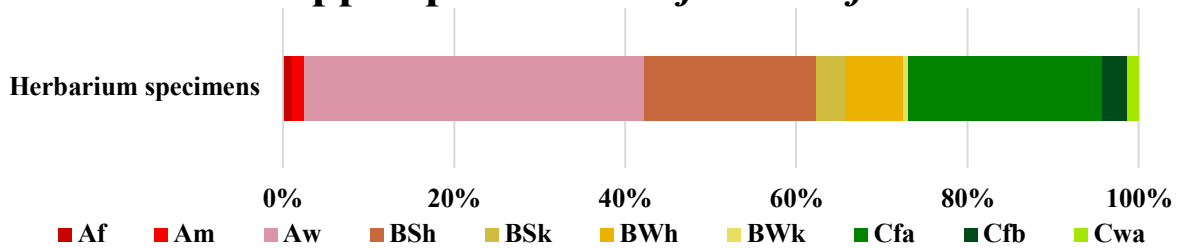
5.3.3.1.25. Köppen profile, distribution and climate map – GBIF occurrences of *Najas tenuicaulis* Miki 1935; herbarium specimens excluding duplicate occurrences (n = 1).



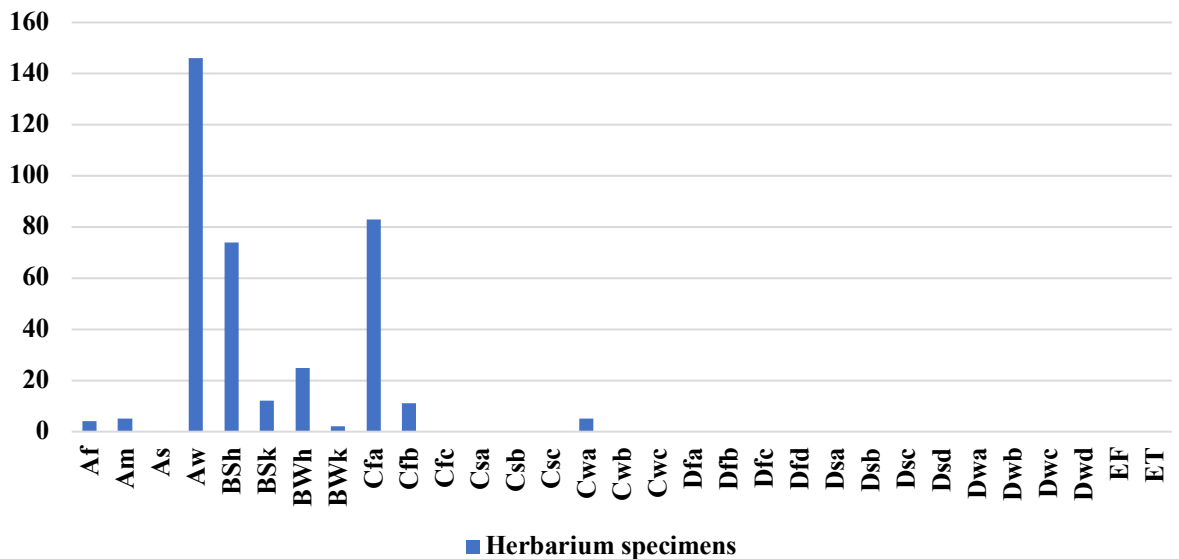
5.3.3.1.26. Köppen profile, distribution and climate map – GBIF occurrences of *Najas tenuifolia* R.Br., 1810; herbarium specimens excluding duplicate occurrences (n = 367).



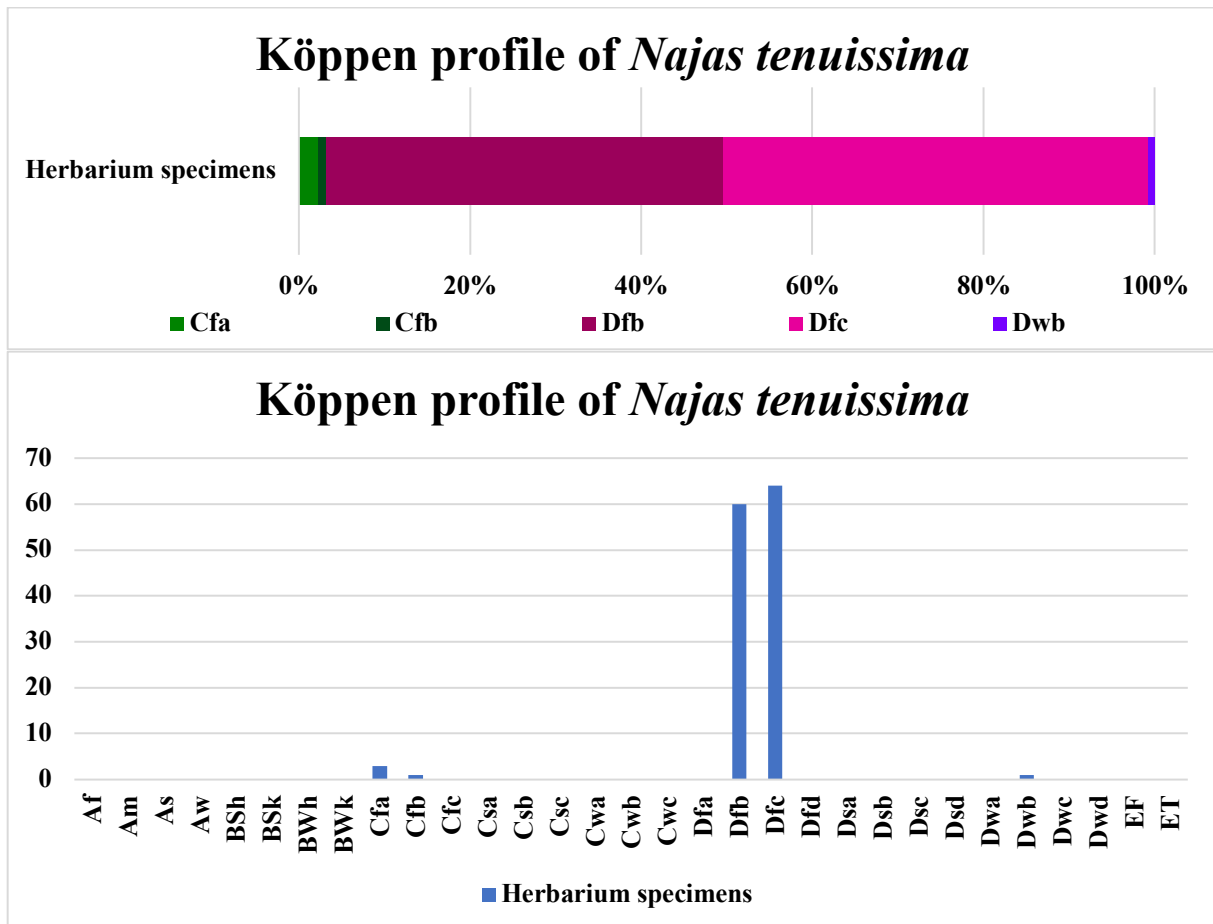
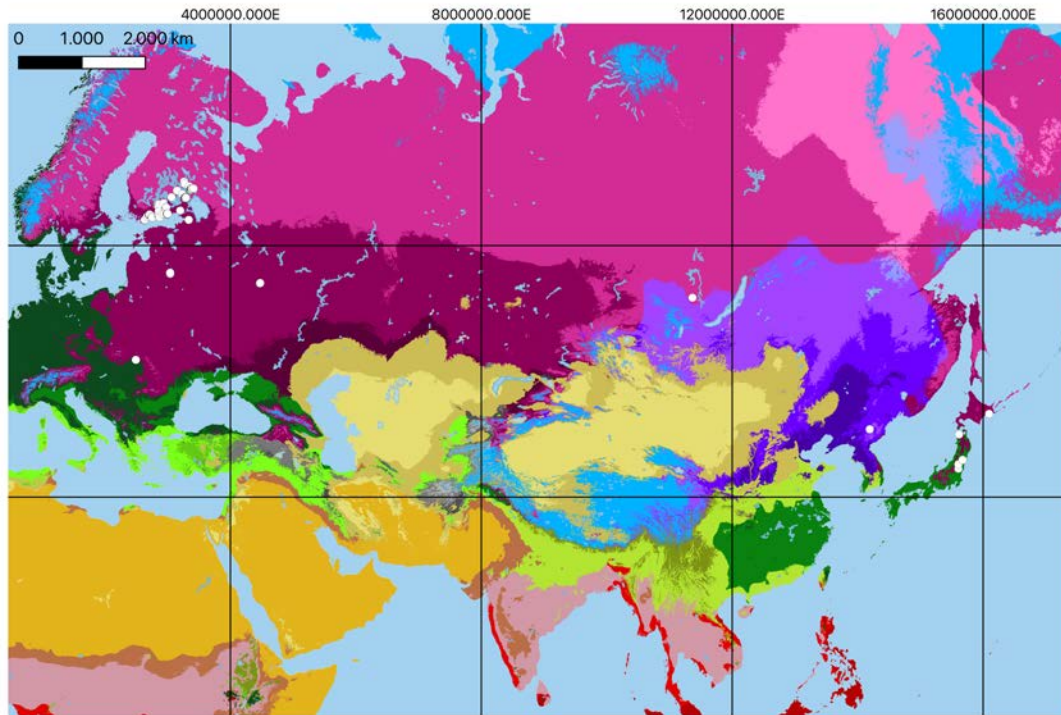
Köppen profile of *Najas tenuifolia*



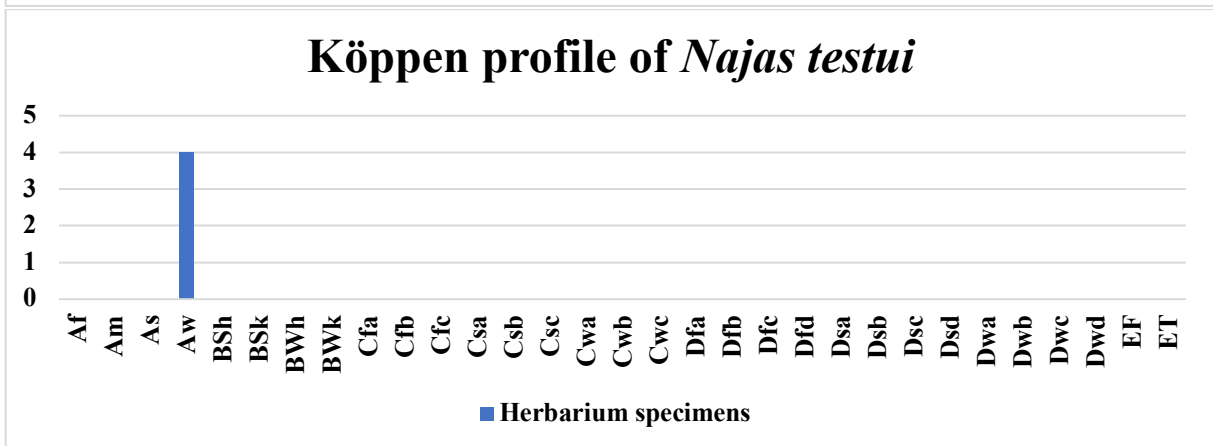
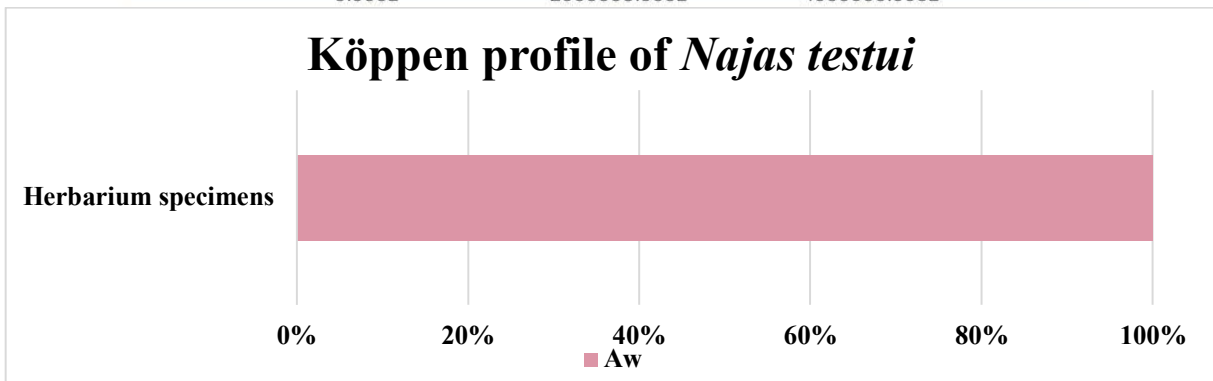
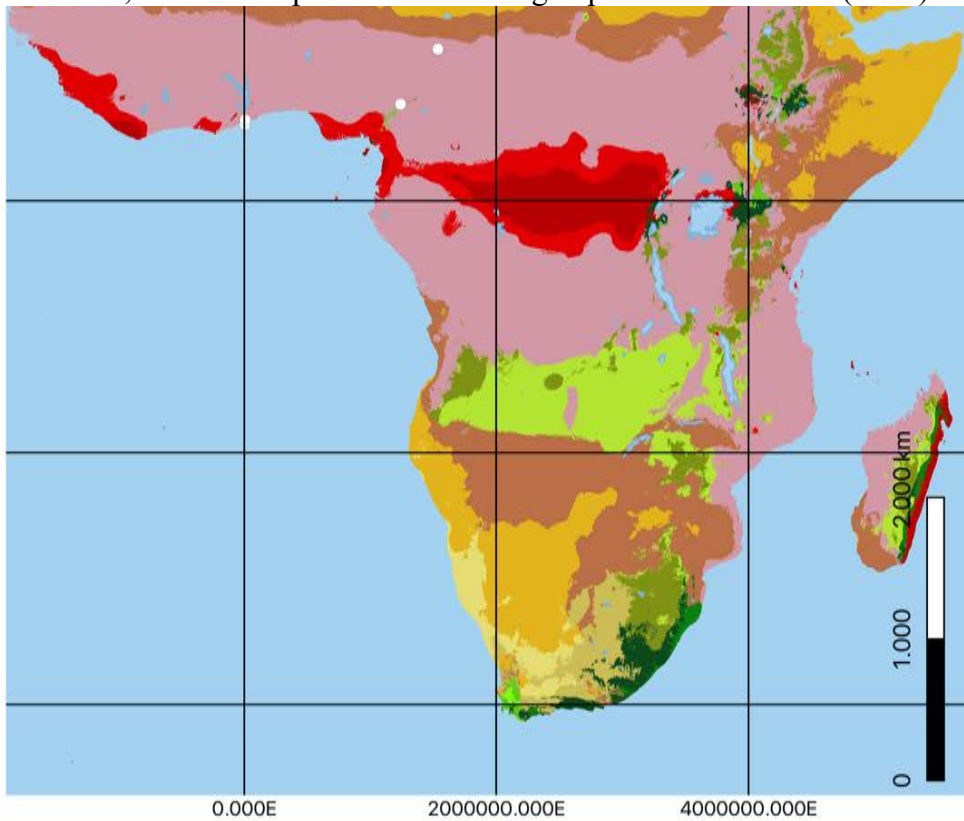
Köppen profile of *Najas tenuifolia*



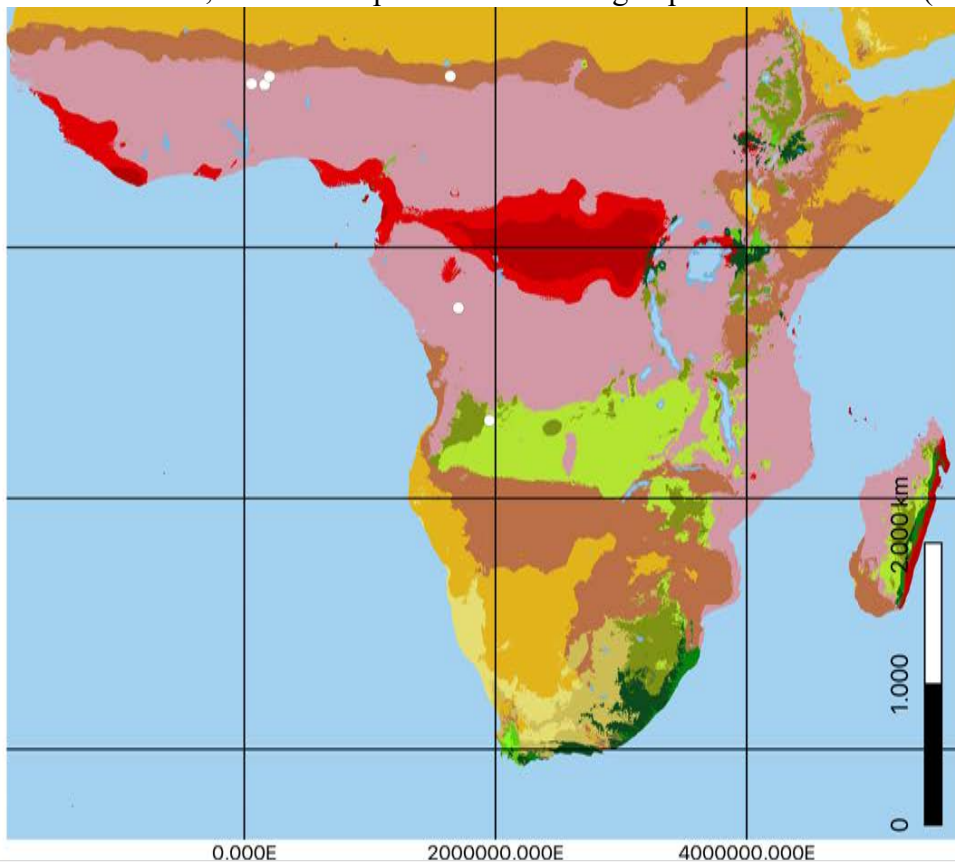
5.3.3.1.27. Köppen profile, distribution and climate map – GBIF occurrences of *Najas tenuissima* (A.Braun ex Magnus 1868) Magnus 1870; herbarium specimens excluding duplicate occurrences (n = 129).



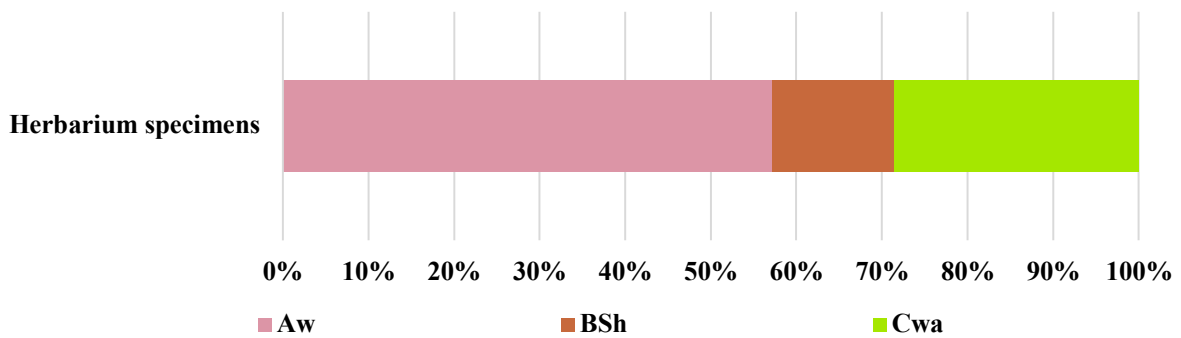
5.3.3.1.28. Köppen profile, distribution and climate map – GBIF occurrences of *Najas testui* Rendle 1937; herbarium specimens excluding duplicate occurrences (n = 4).



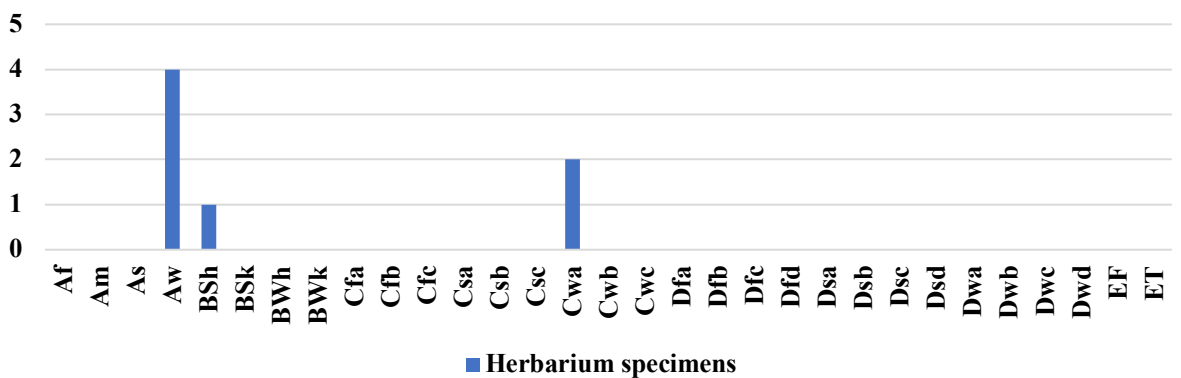
5.3.3.1.29. Köppen profile, distribution and climate map – GBIF occurrences of *Najas welwitschia* Rendle 1899; herbarium specimens excluding duplicate occurrences (n = 7).



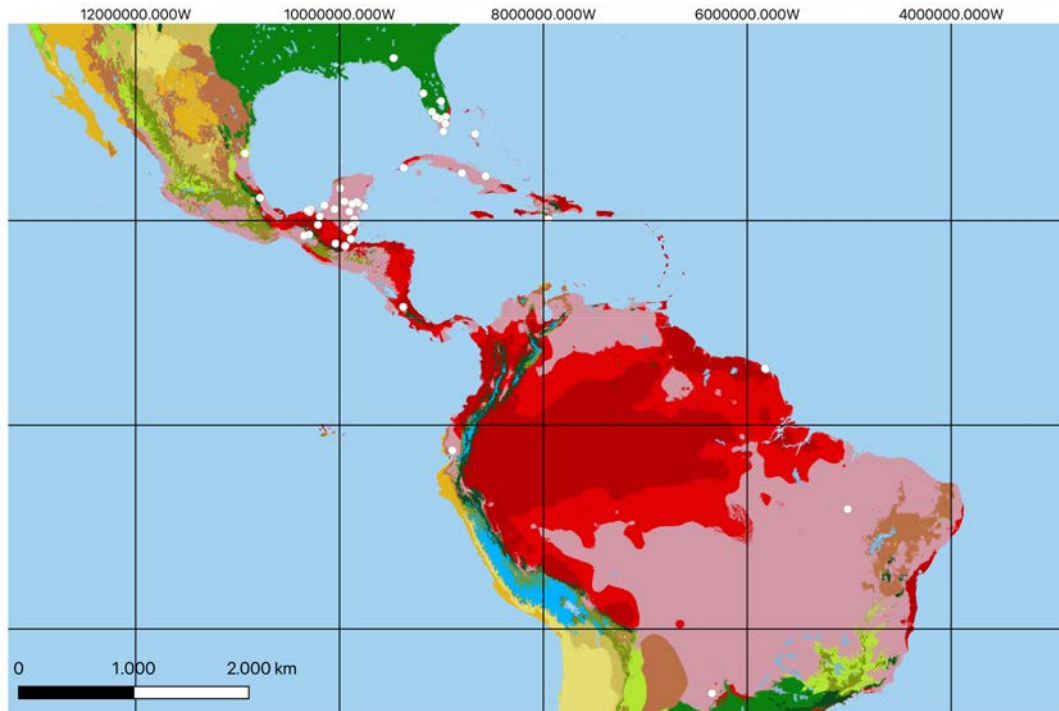
Köppen profile of *Najas welwitschii*



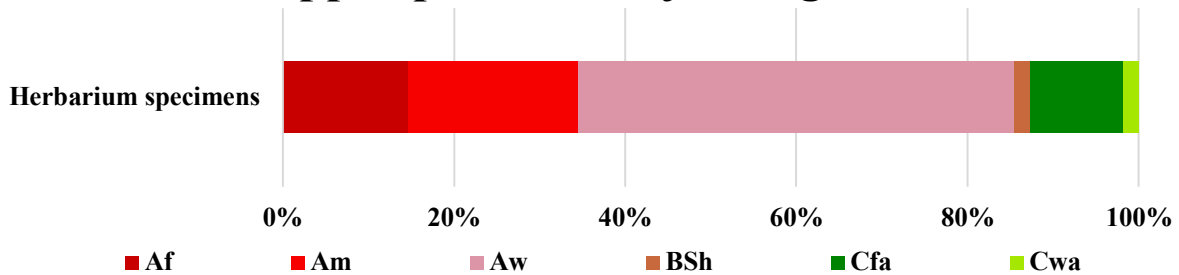
Köppen profile of *Najas welwitschii*



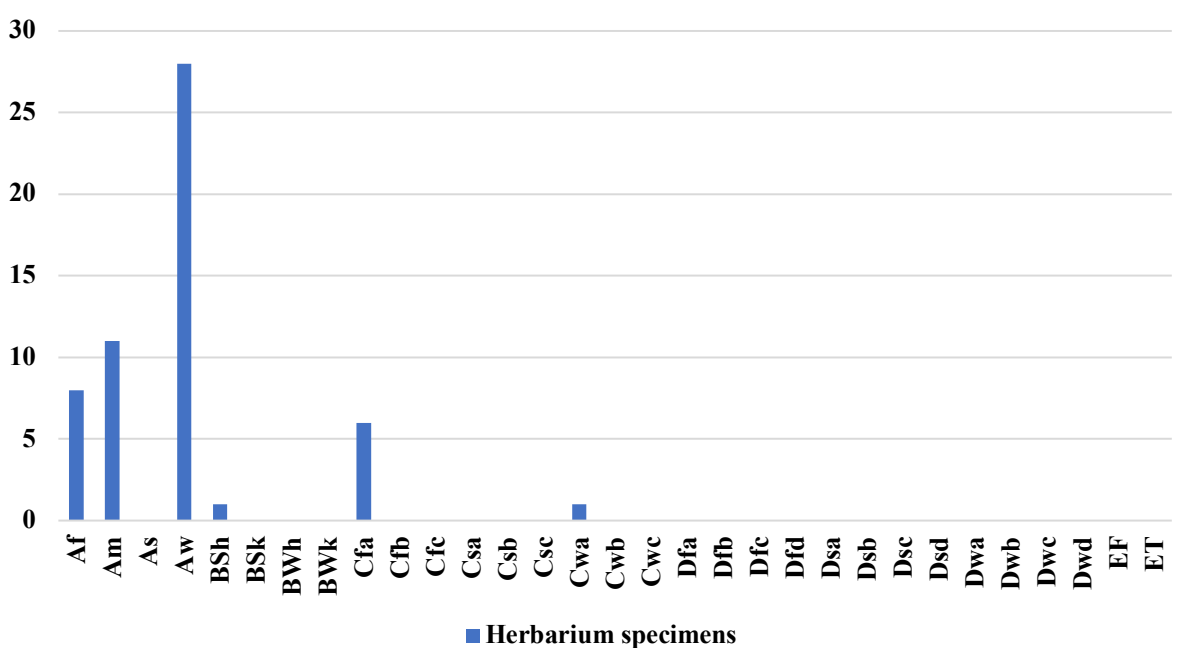
5.3.3.1.30. Köppen profile, distribution and climate map – GBIF occurrences of *Najas wrightiana* A.Braun 1868; herbarium specimens excluding duplicate occurrences (n = 55).



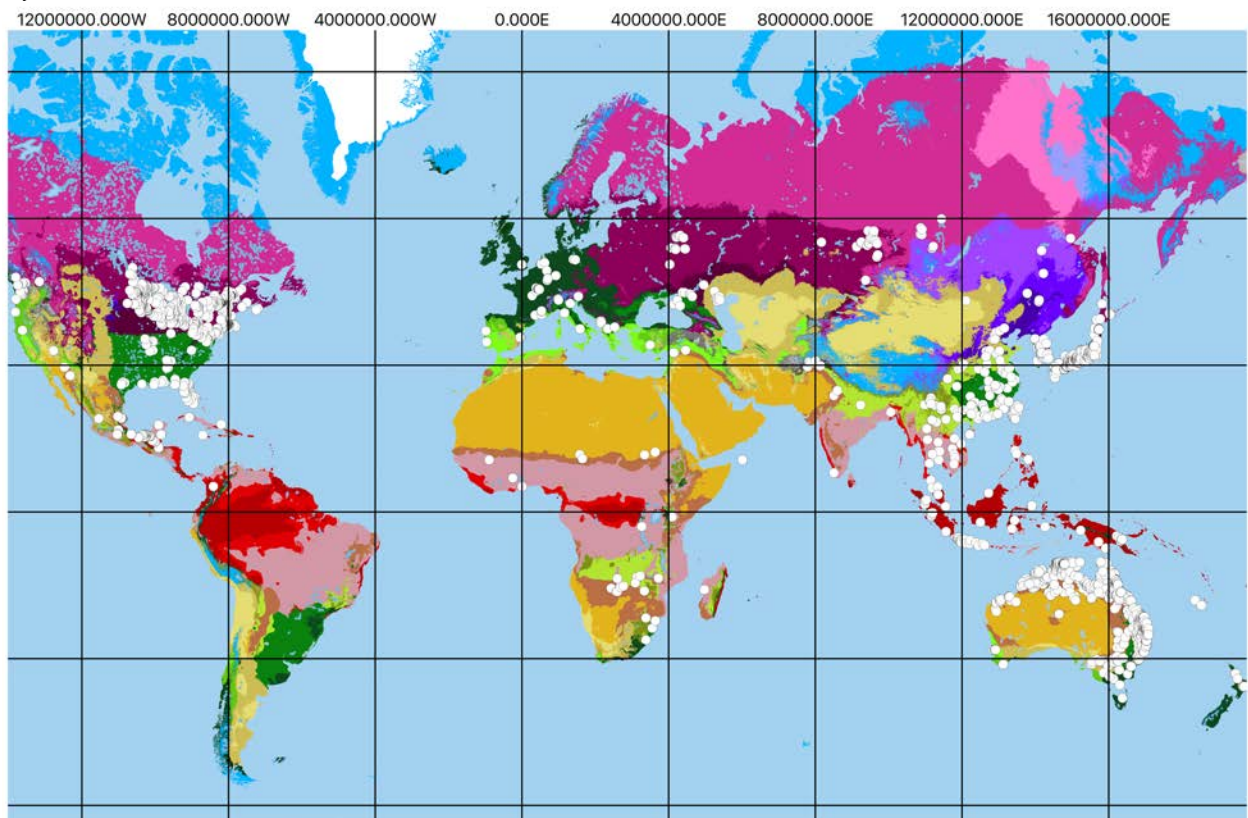
Köppen profile of *Najas wrightiana*



Köppen profile of *Najas wrightiana*

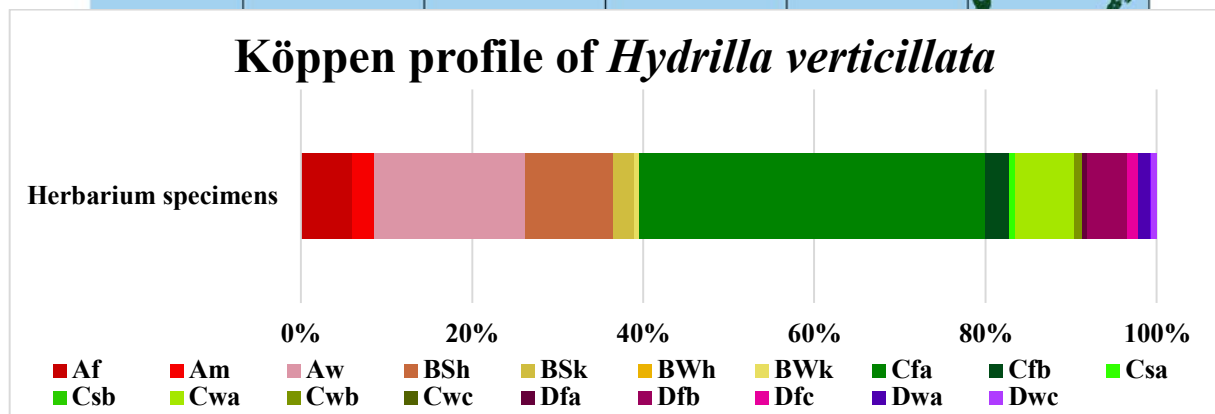
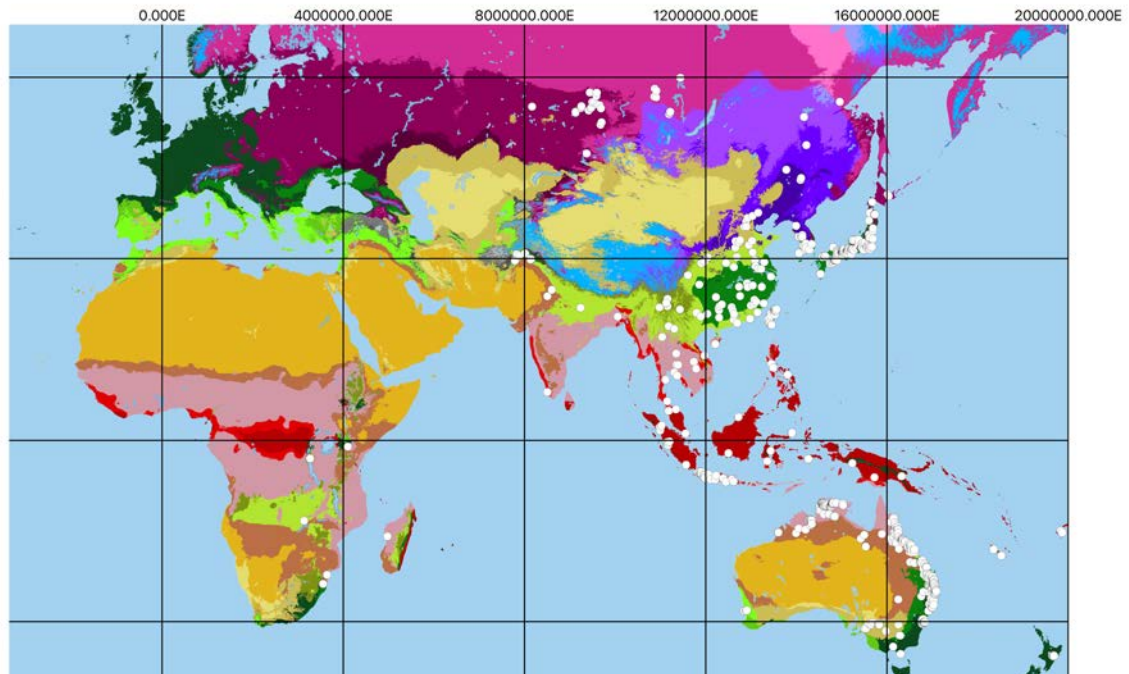


5.3.4. Crown group Clade A of Hydrocharitaceae cf. Chen et. al (2012), comprising *Hydrilla* Rich. 1811, *Nechamandra* Planch. 1849, and *Vallisneria* P.Micheli ex L. 1753

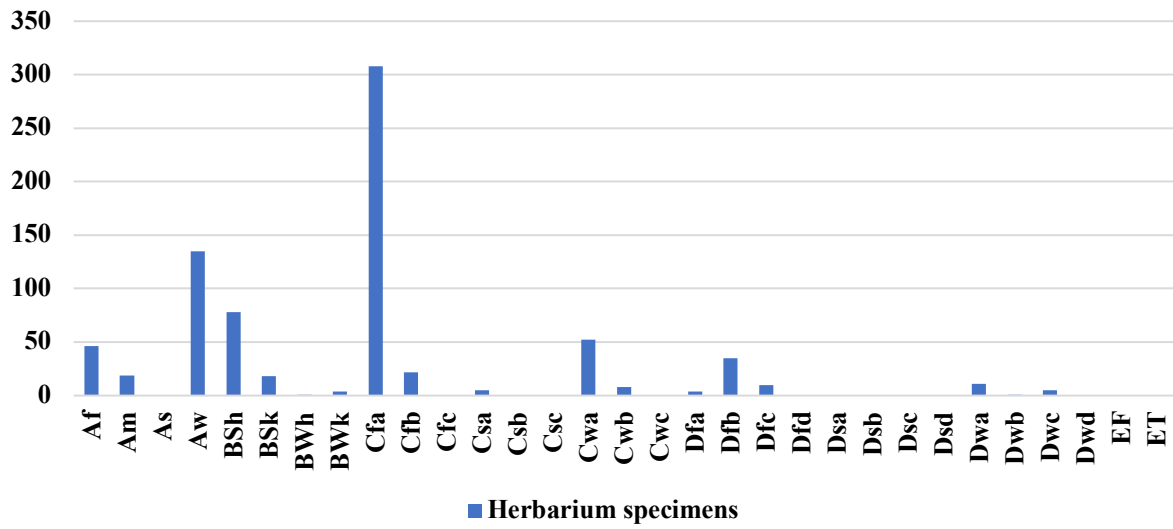


5.3.4.1. Genus *Hydrilla* Rich. 1811

5.3.4.1.1. Köppen profile, distribution and climate map – GBIF occurrences of *Hydrilla verticillata* (L.f 1782) Royle 1839; herbarium specimens excluding duplicate occurrences (n = 762).

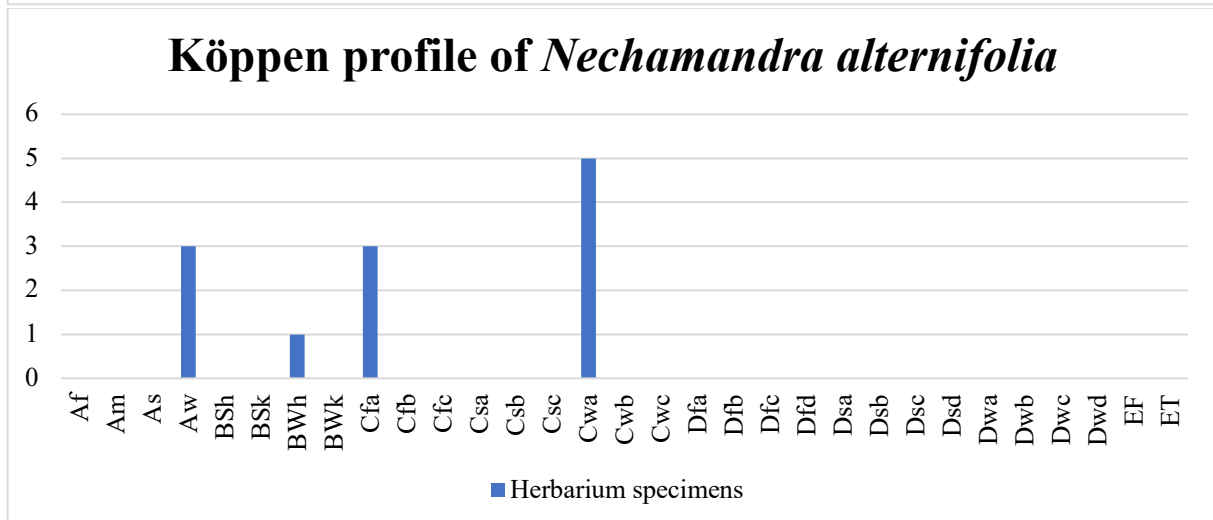
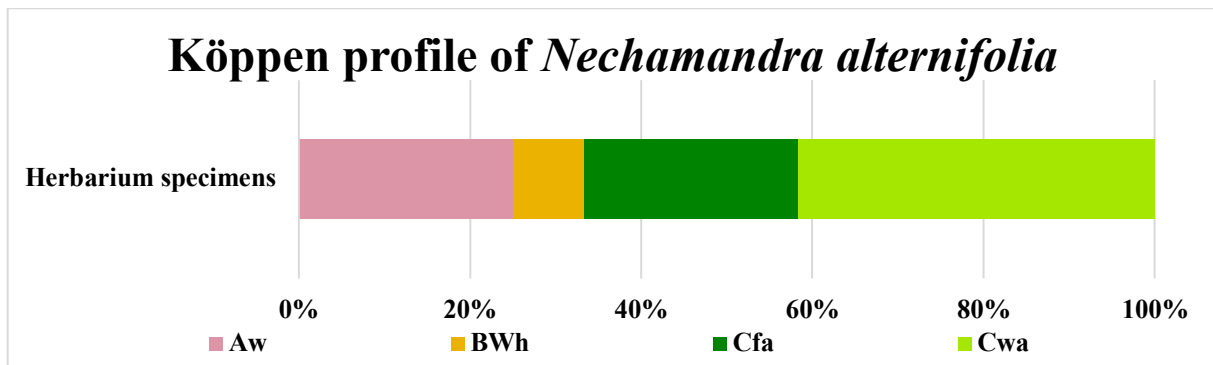
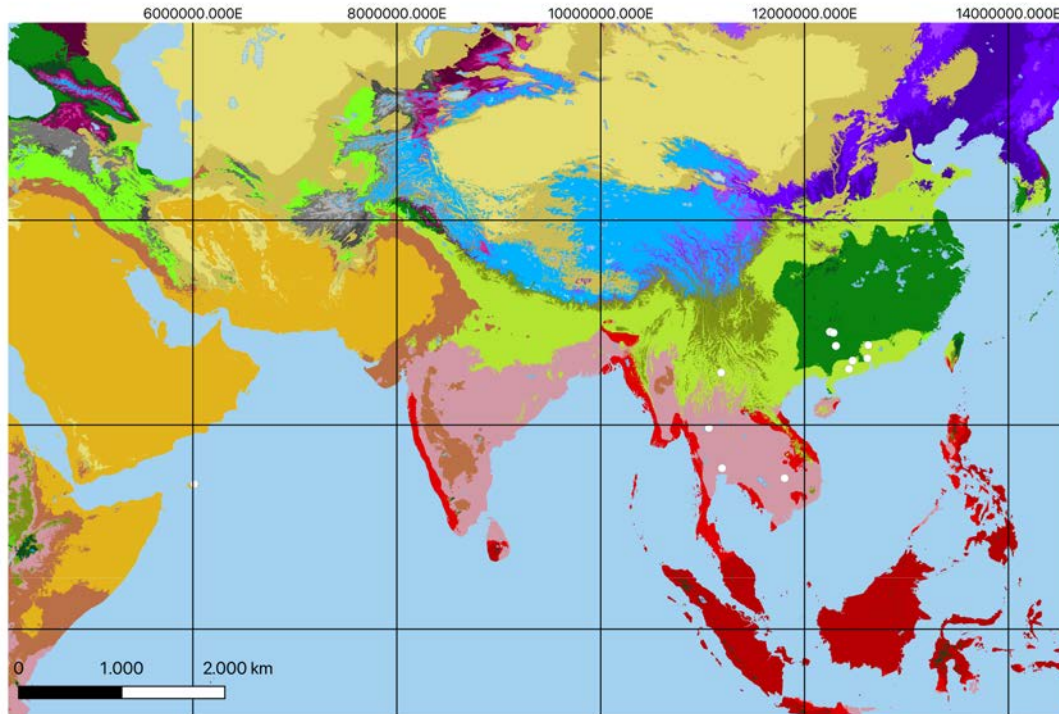


Köppen profile of *Hydrilla verticillata*

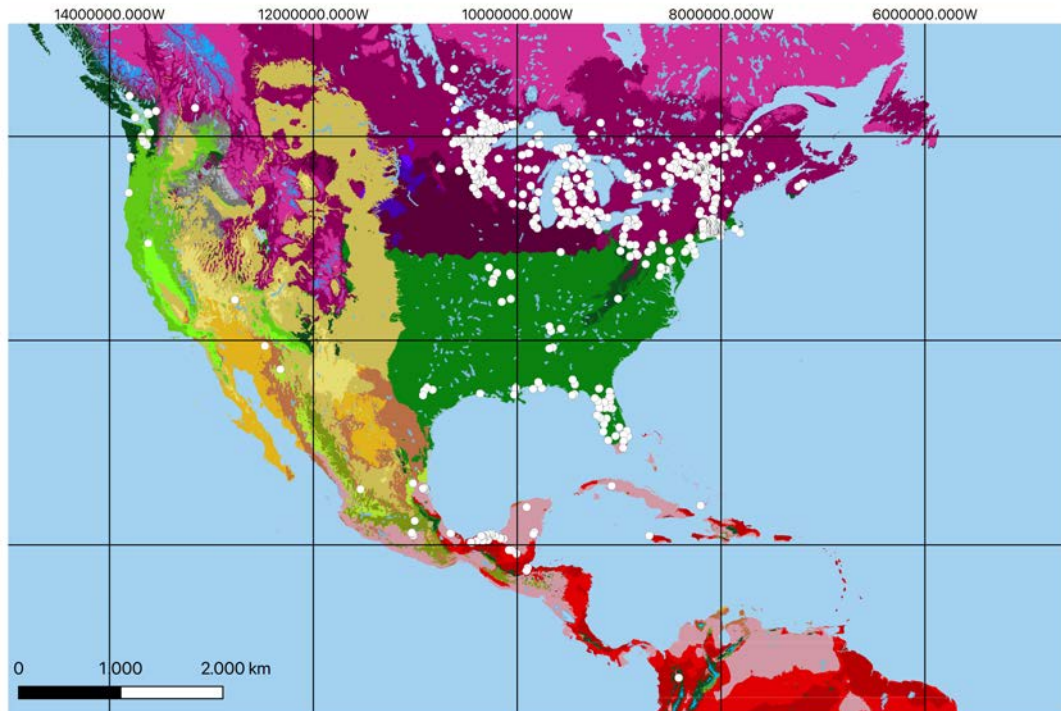


5.3.4.2. Genus *Nechamandra* Planch. 1849.

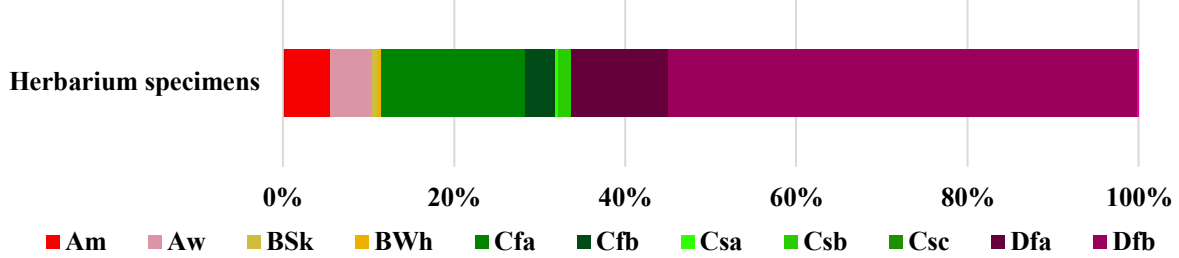
5.3.4.2.1. Köppen profile, distribution and climate map – GBIF occurrences of *Nechamandra alternifolia* Thwaites, 1864; herbarium specimens excluding duplicate occurrences (n = 12).



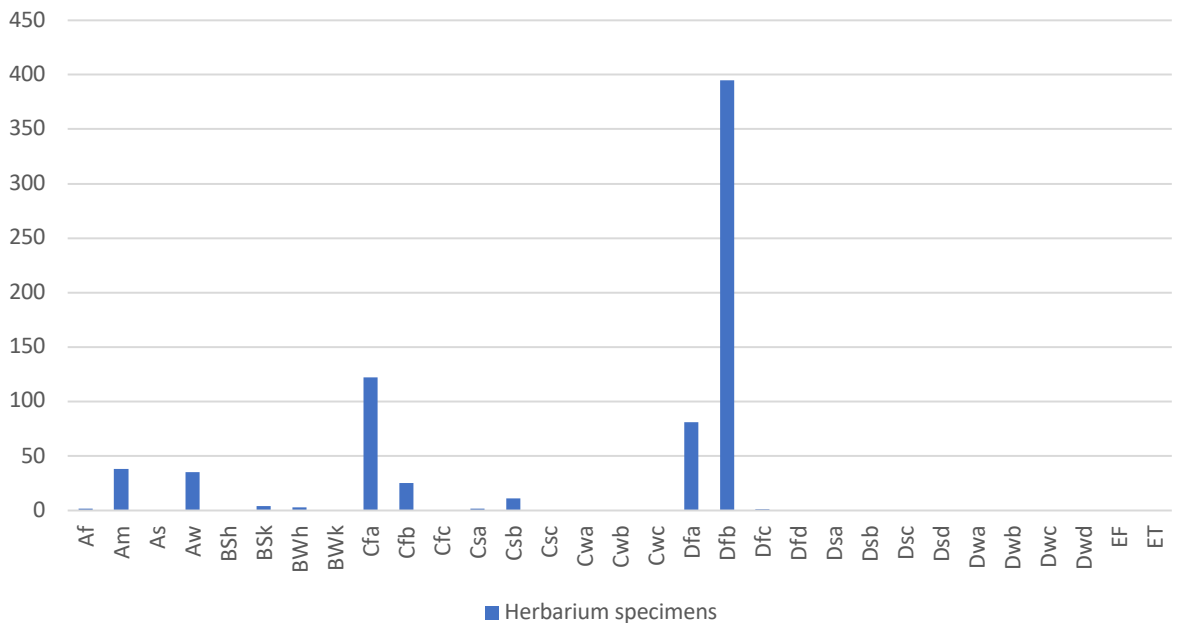
5.3.4.3.1. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria americana* Michx. 1803; herbarium specimens excluding duplicate occurrences (n = 719).



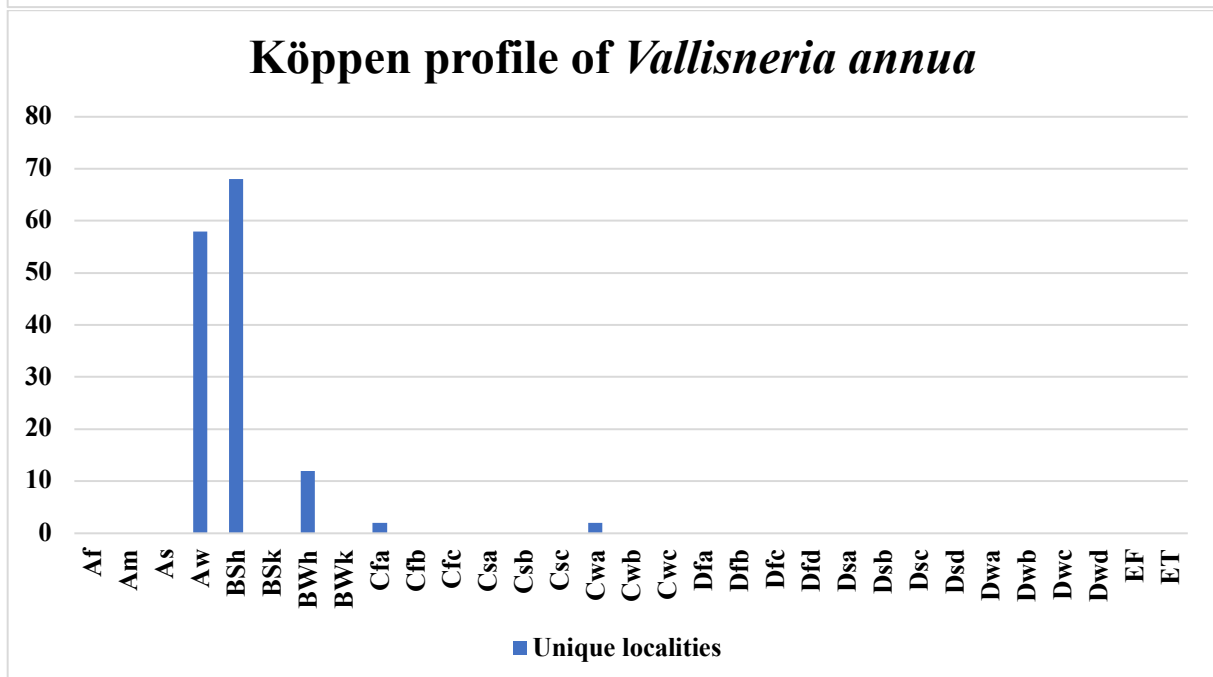
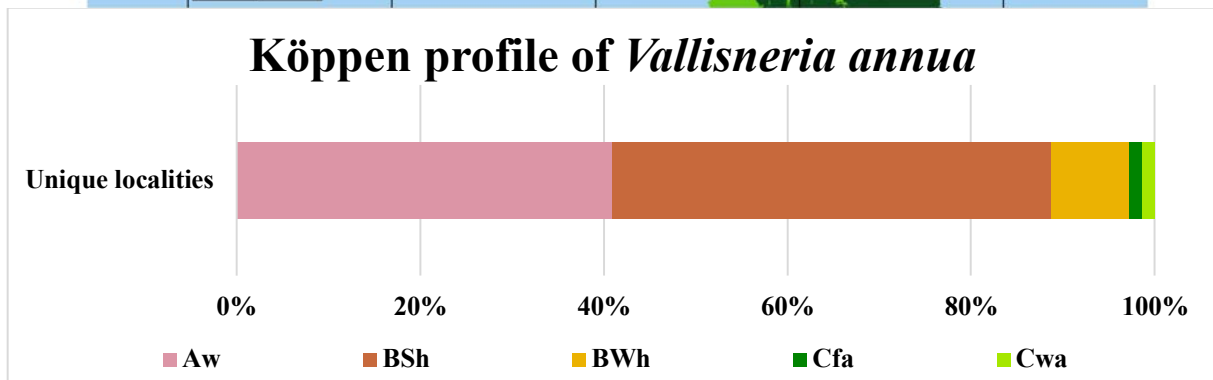
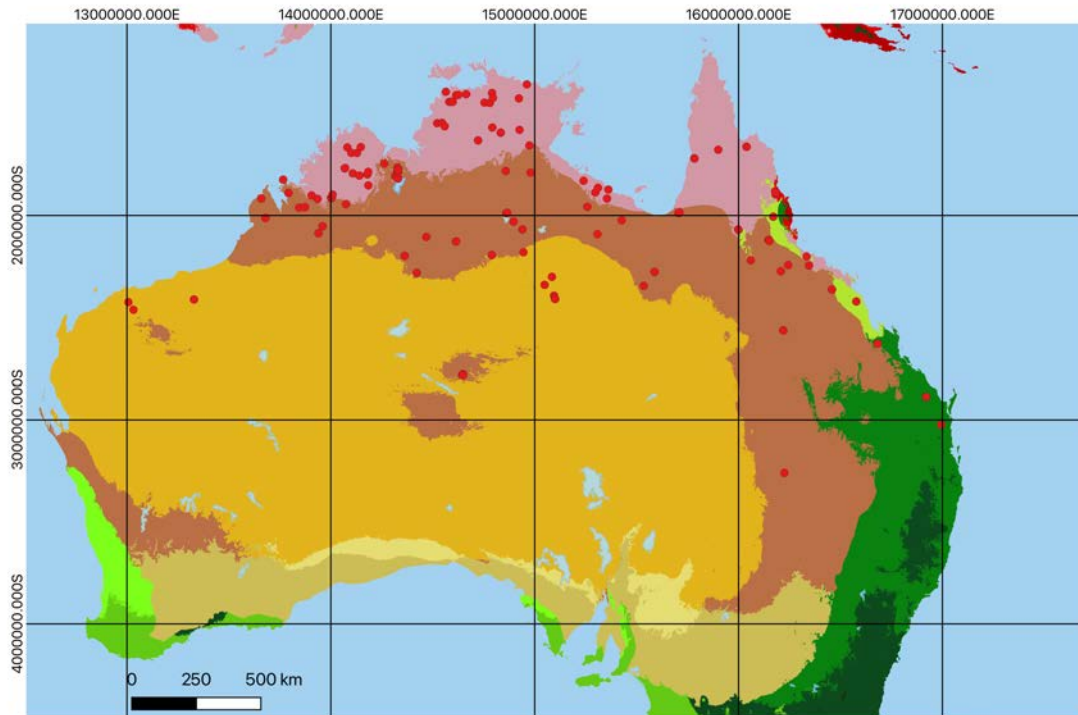
Köppen profile of *Vallisneria americana*



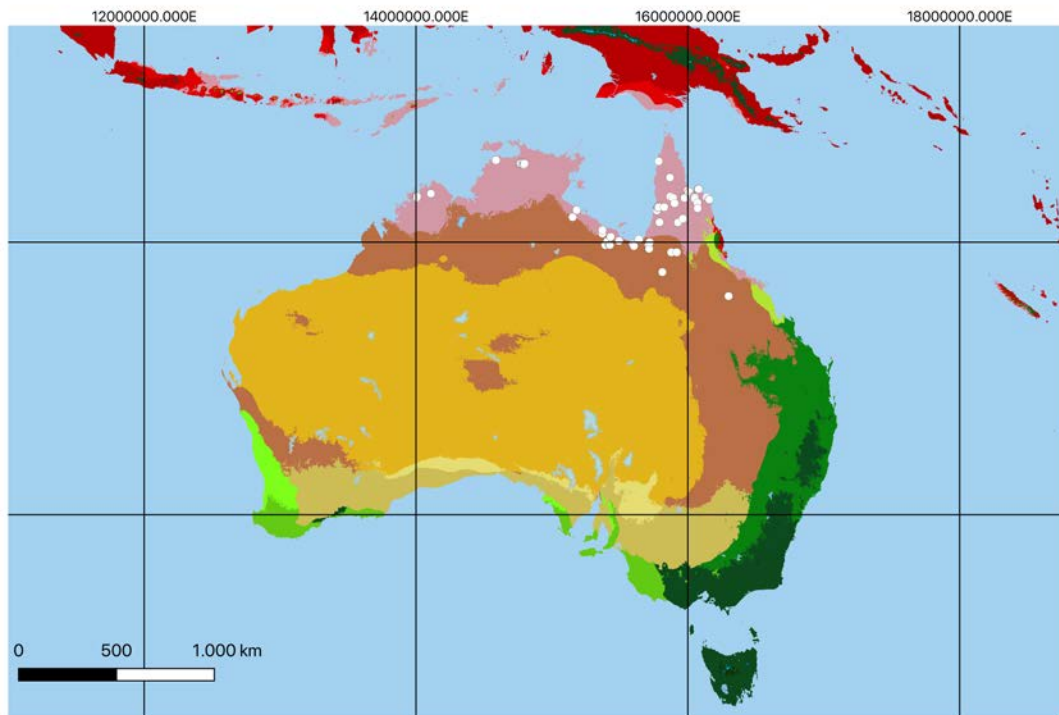
Köppen profile of *Vallisneria americana*



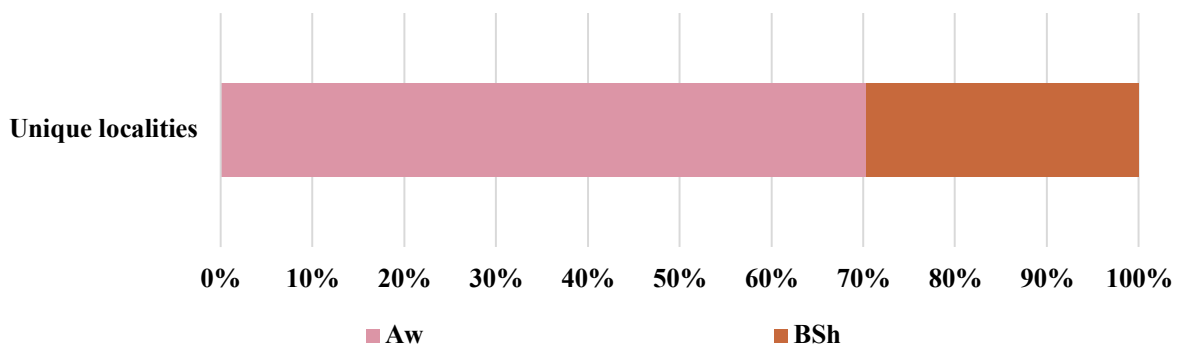
5.3.4.3.2. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria annua* S.W.L.Jacobs & K.A.Frank 1997; herbarium specimens excluding duplicate occurrences (n = 142).



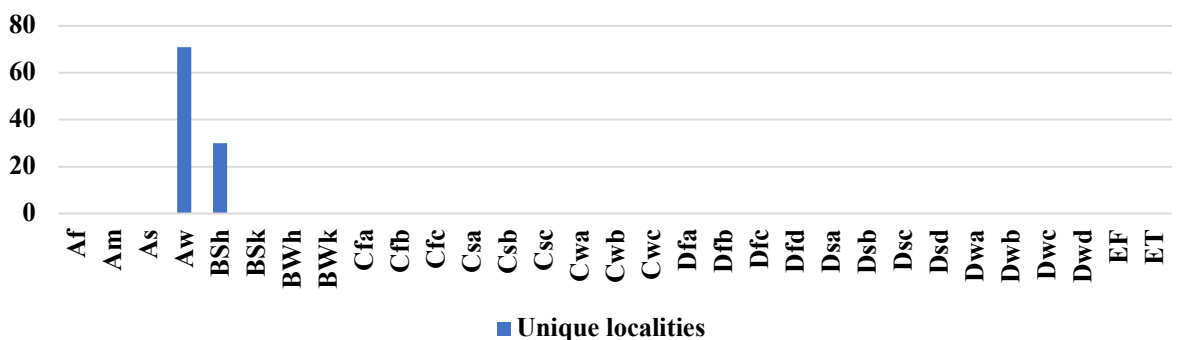
5.3.4.3. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria caulescens* F.M.Bailey & F.Muell. 1888; herbarium specimens excluding duplicate occurrences (n = 101).



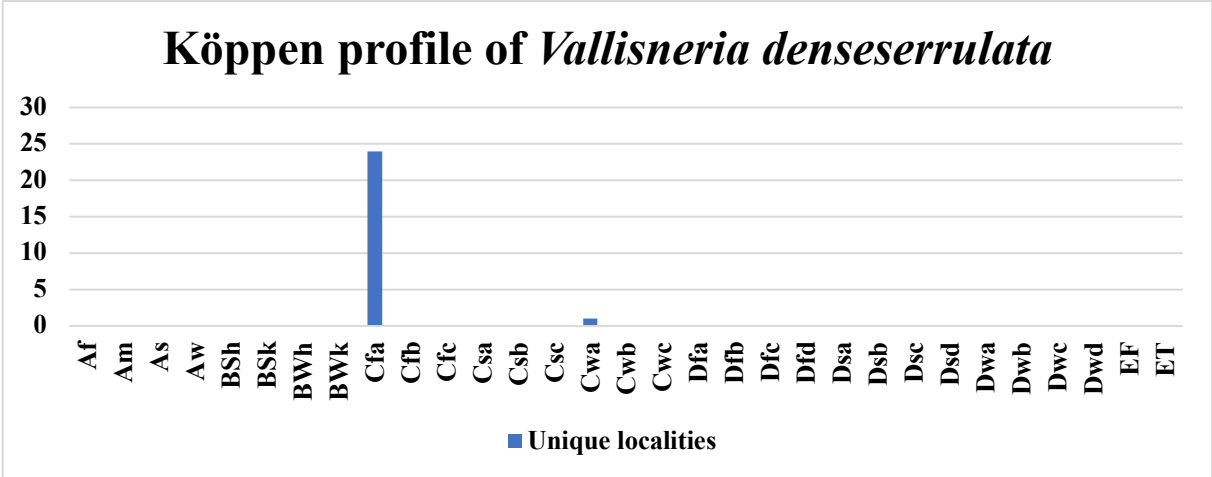
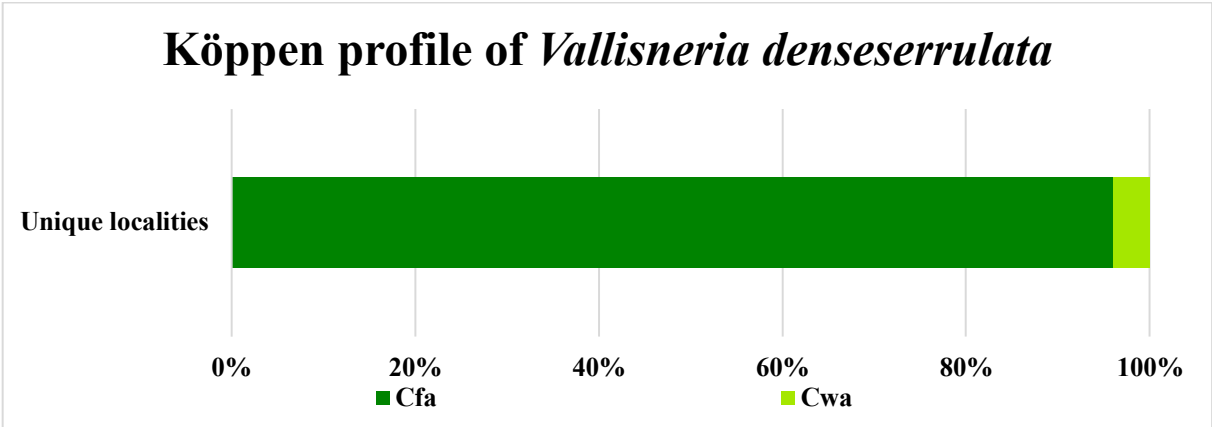
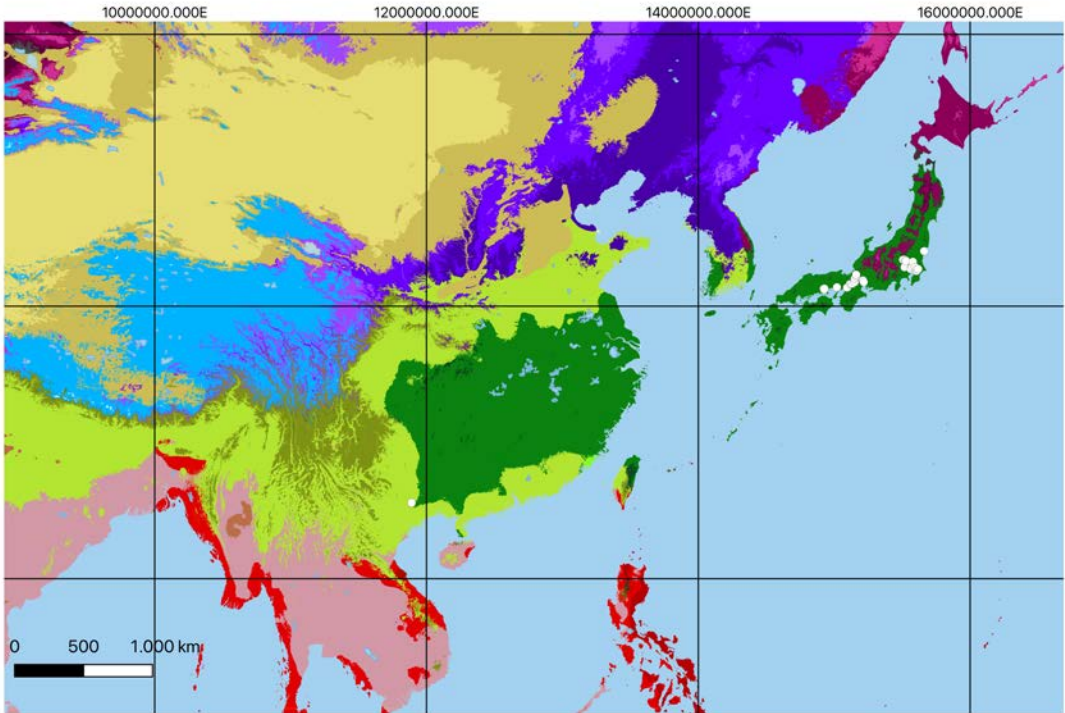
Köppen profile of *Vallisneria caulescens*



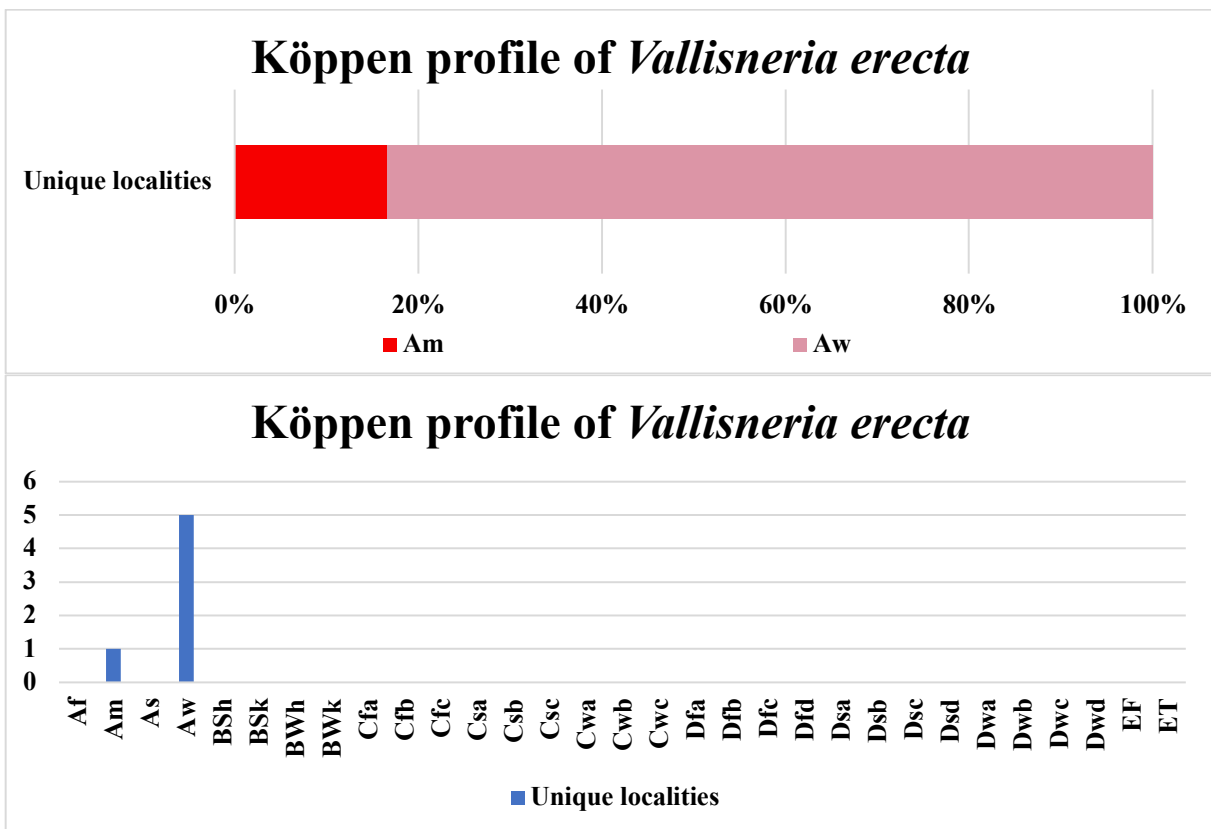
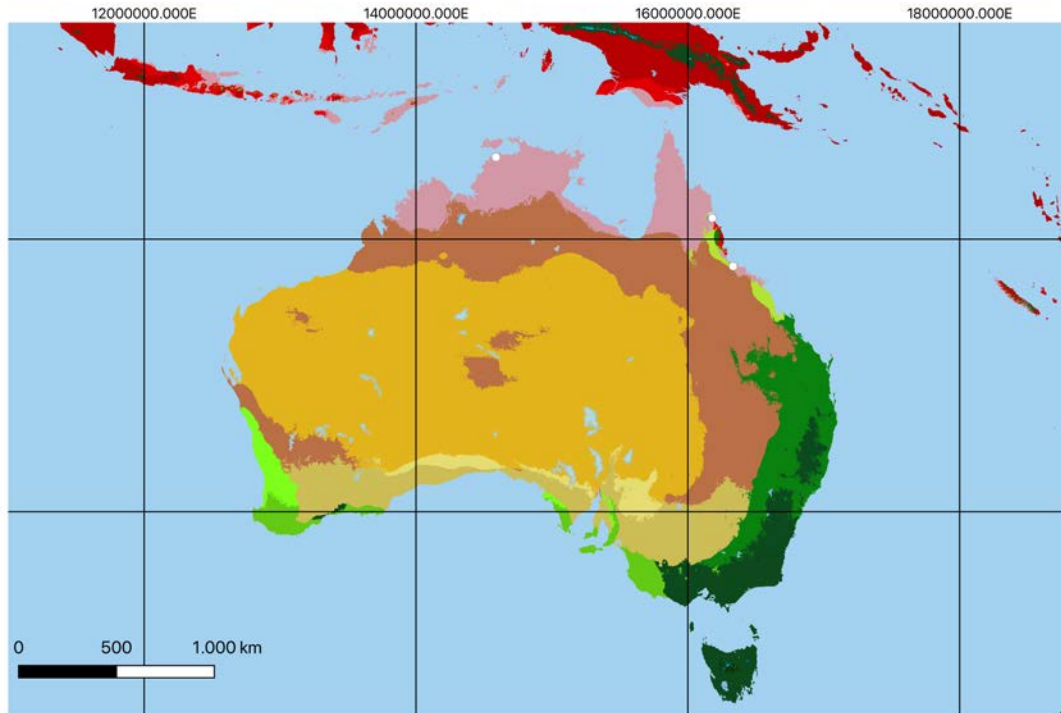
Köppen profile of *Vallisneria caulescens*



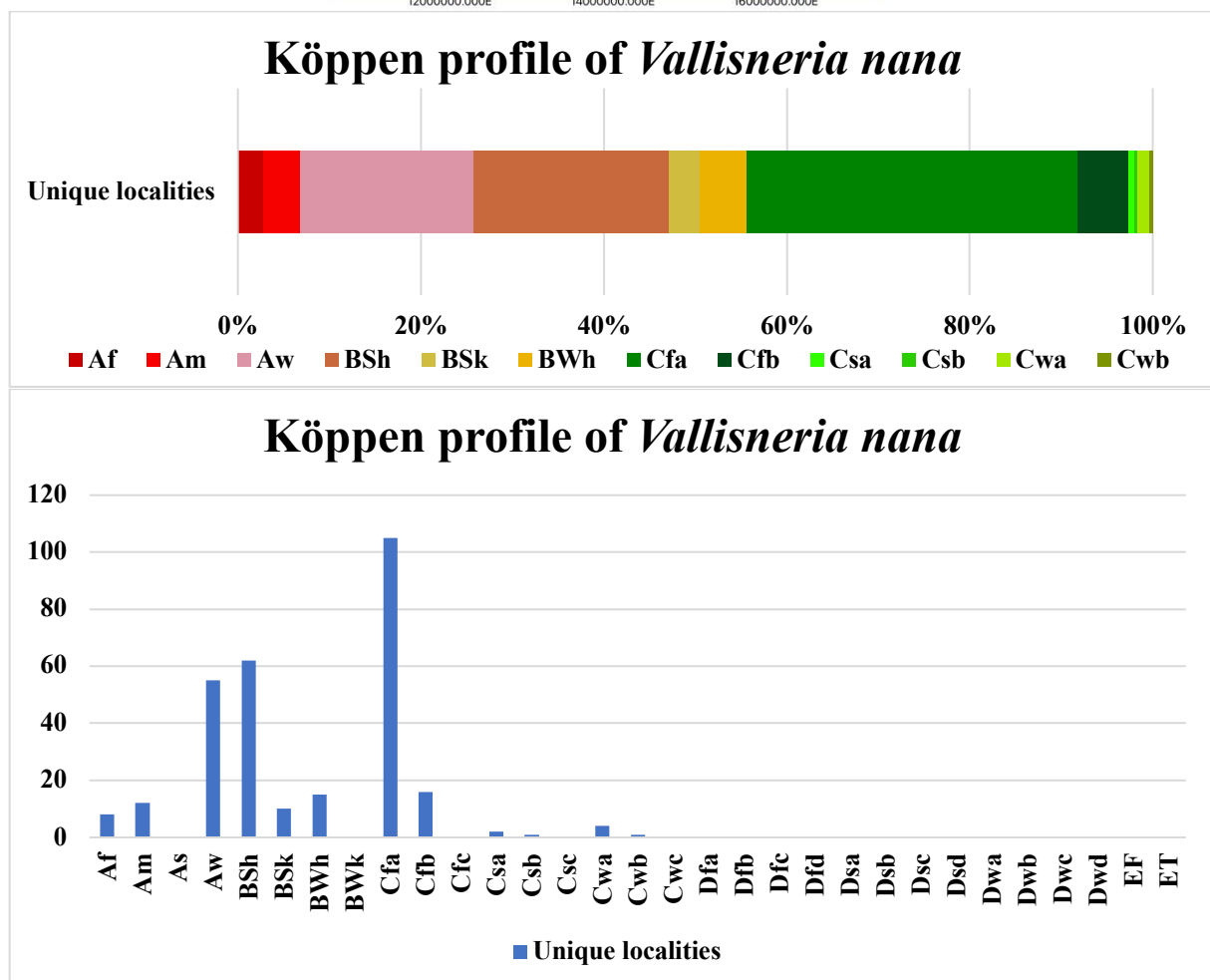
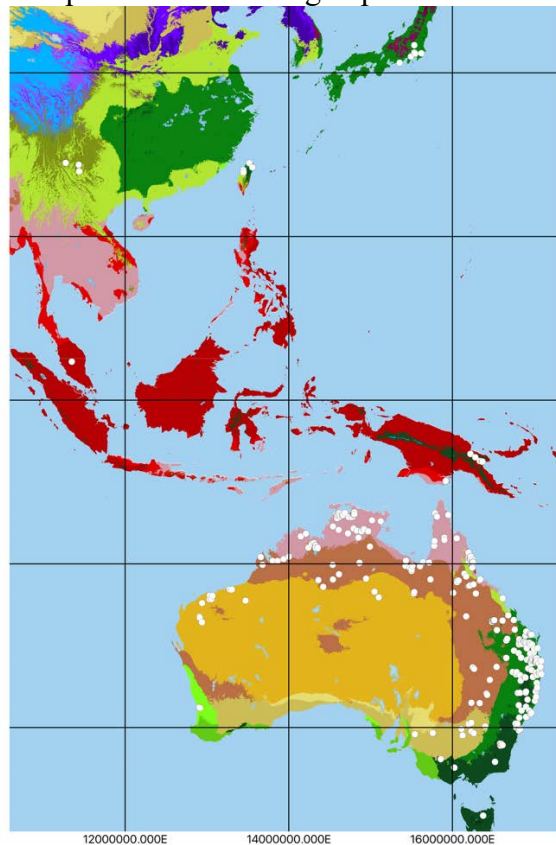
5.3.4.3.4. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria denseserrulata* (Makino 1914) Makino 1921; herbarium specimens excluding duplicate occurrences (n = 25).



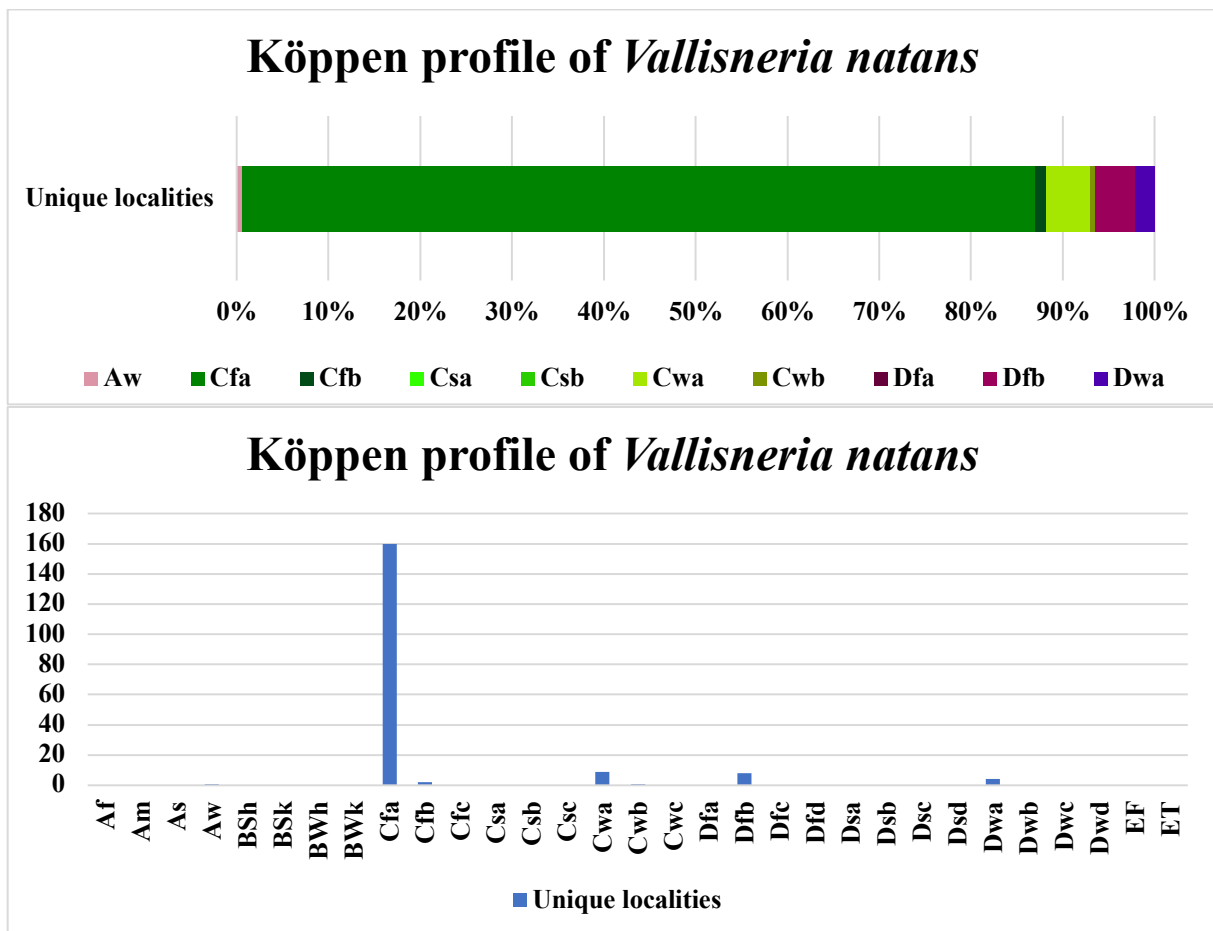
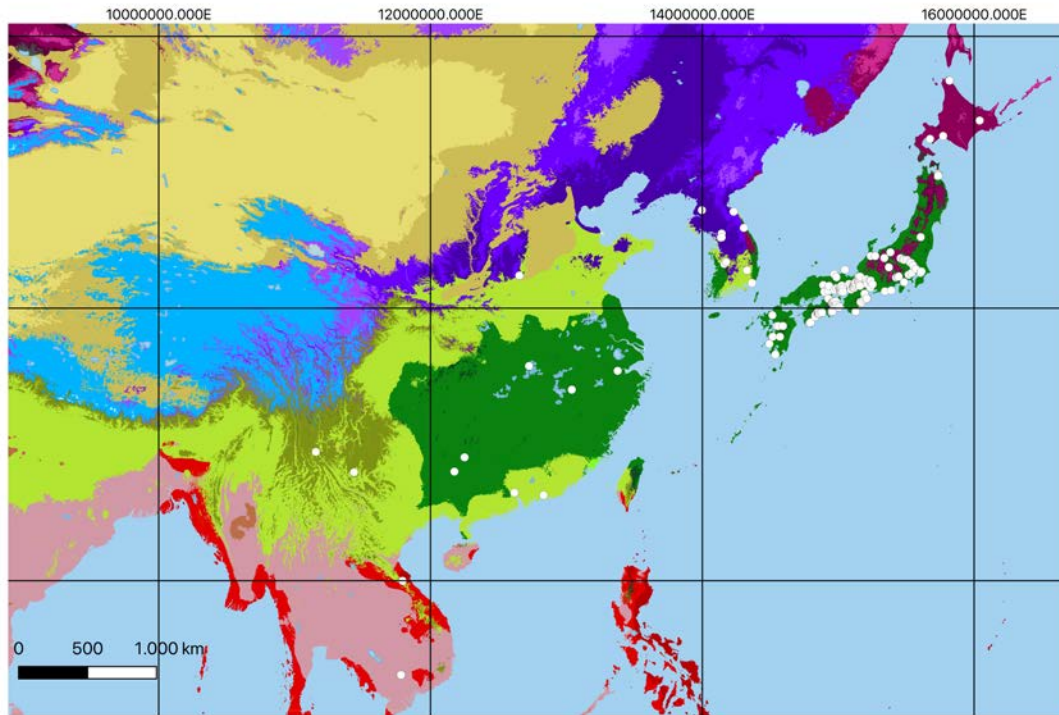
5.3.4.3.5. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria erecta* S.W.L.Jacobs 2008; herbarium specimens excluding duplicate occurrences (n = 6).



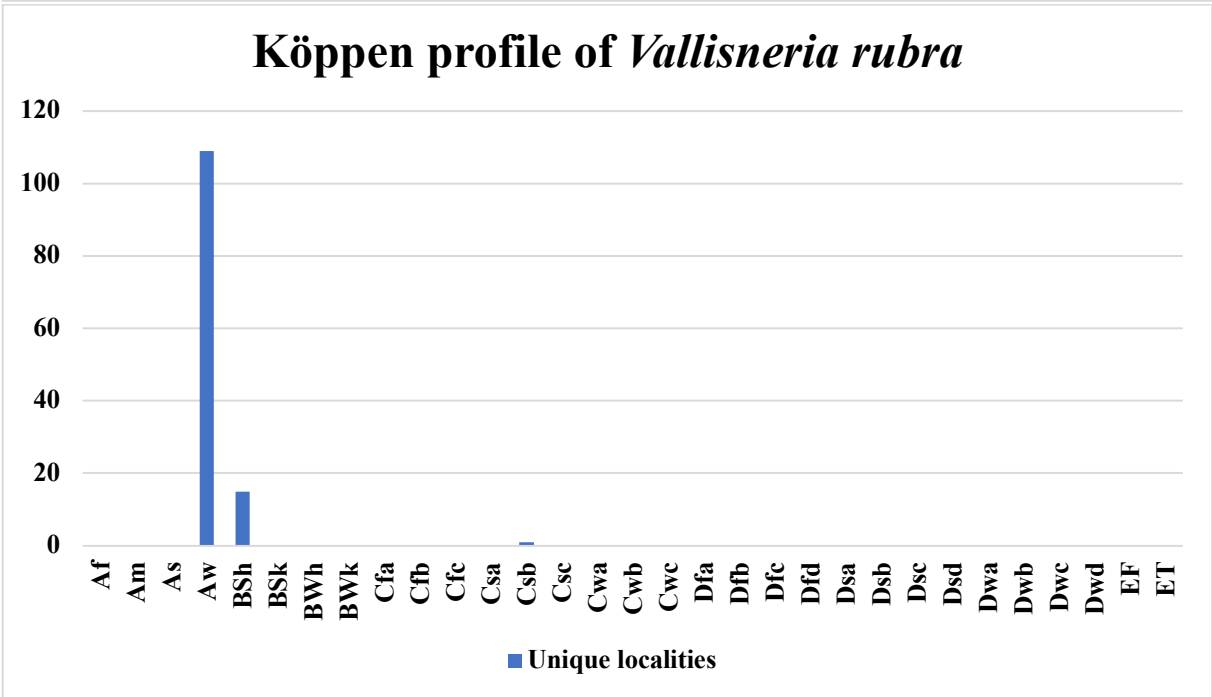
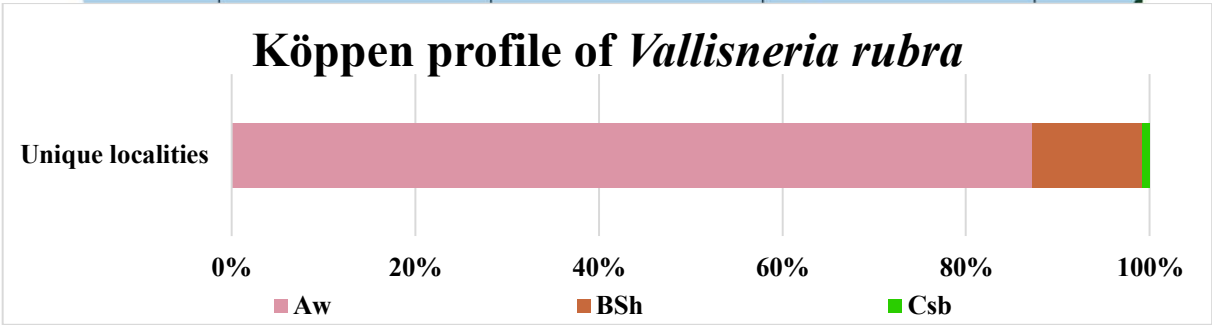
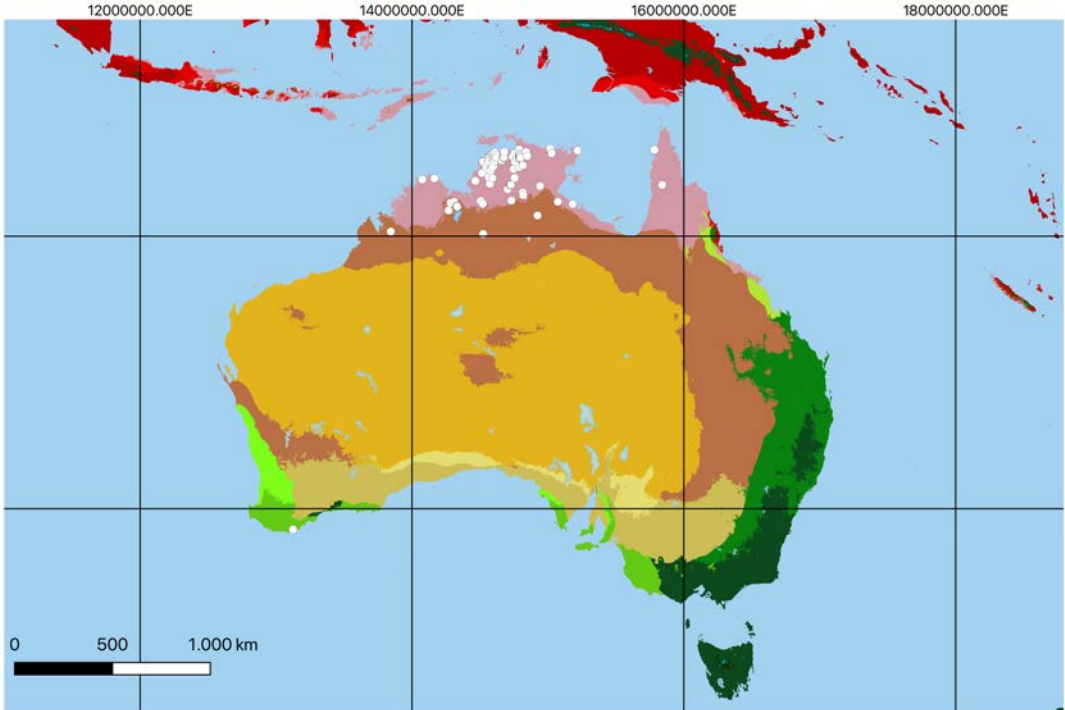
5.3.4.3.6. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria nana* R.Br. 1810; herbarium specimens excluding duplicate occurrences (n = 291).



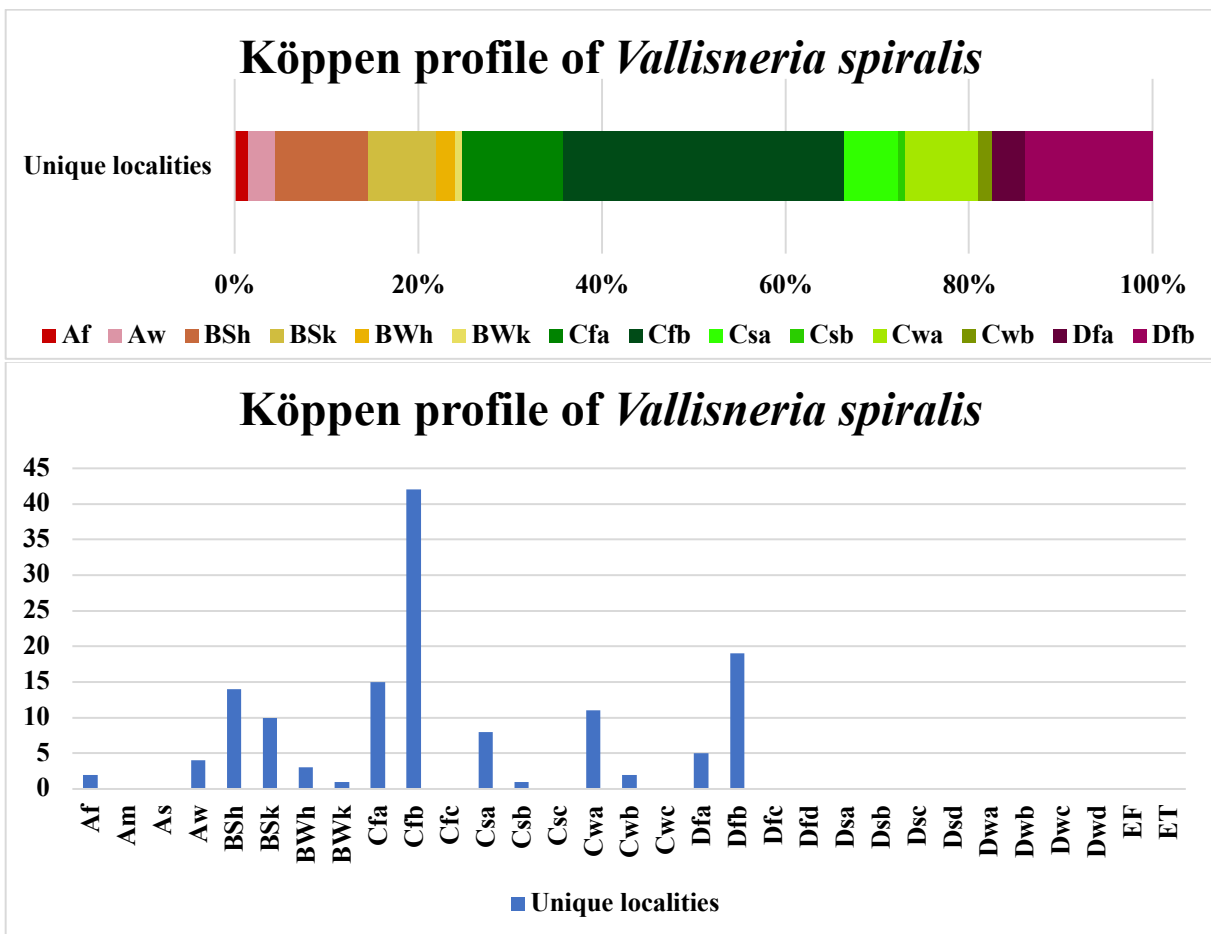
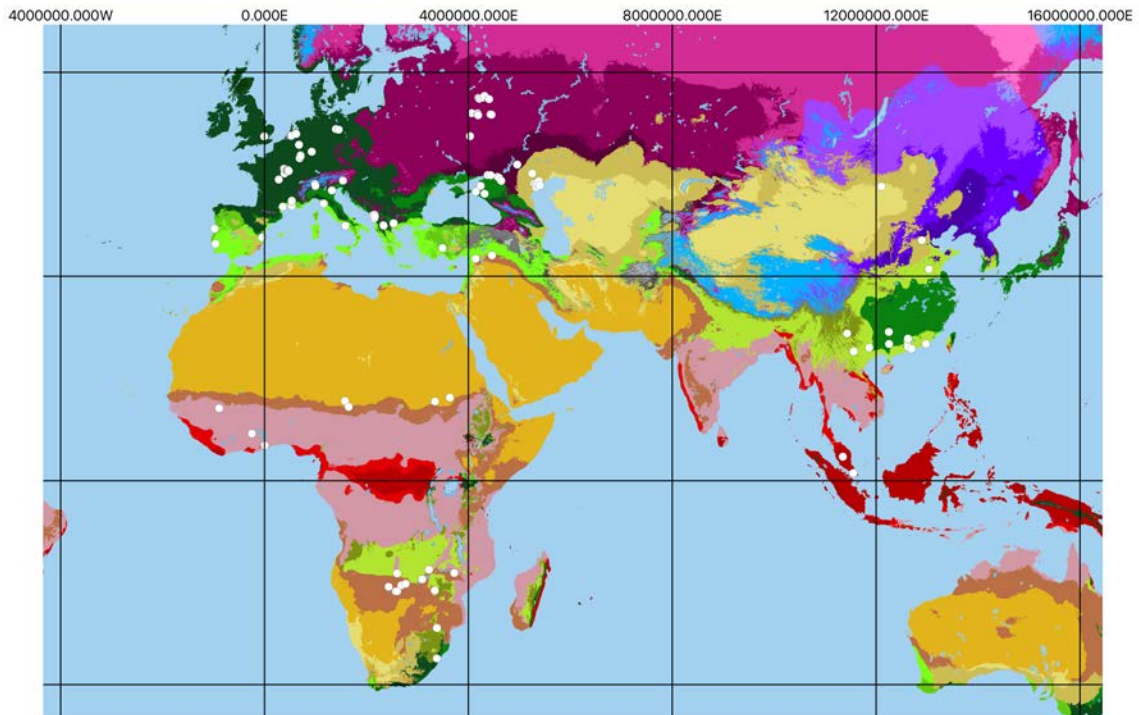
5.3.4.3.7. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria natans* (Lour. 1790) H.Hara 1974 herbarium specimens excluding duplicate occurrences (n = 185).



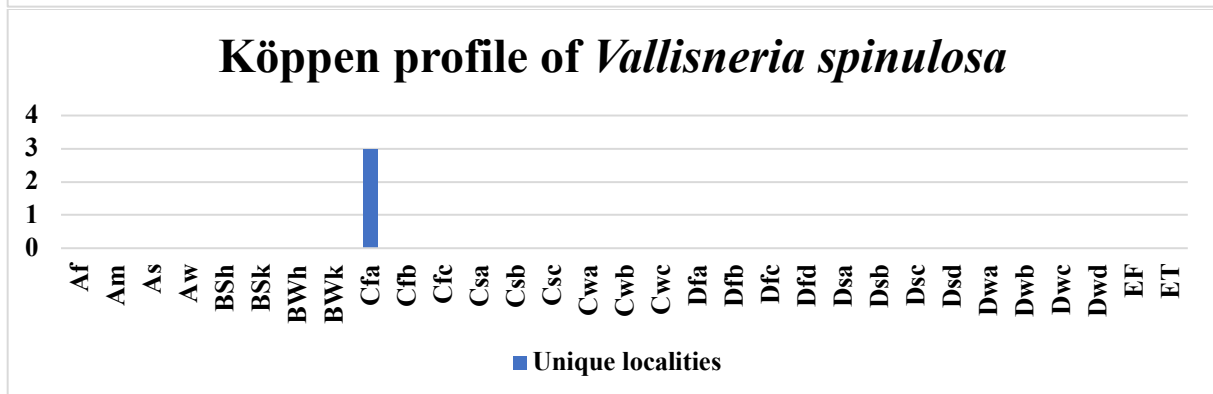
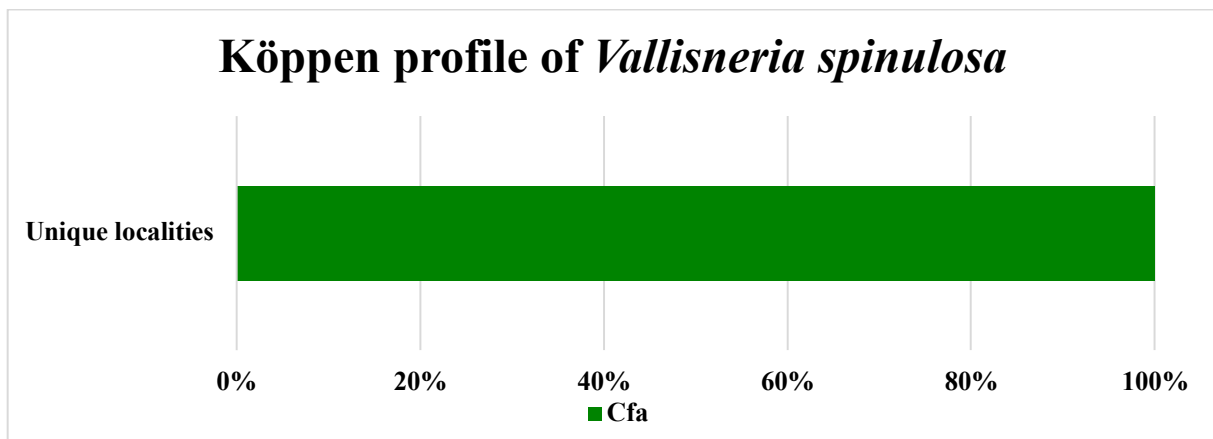
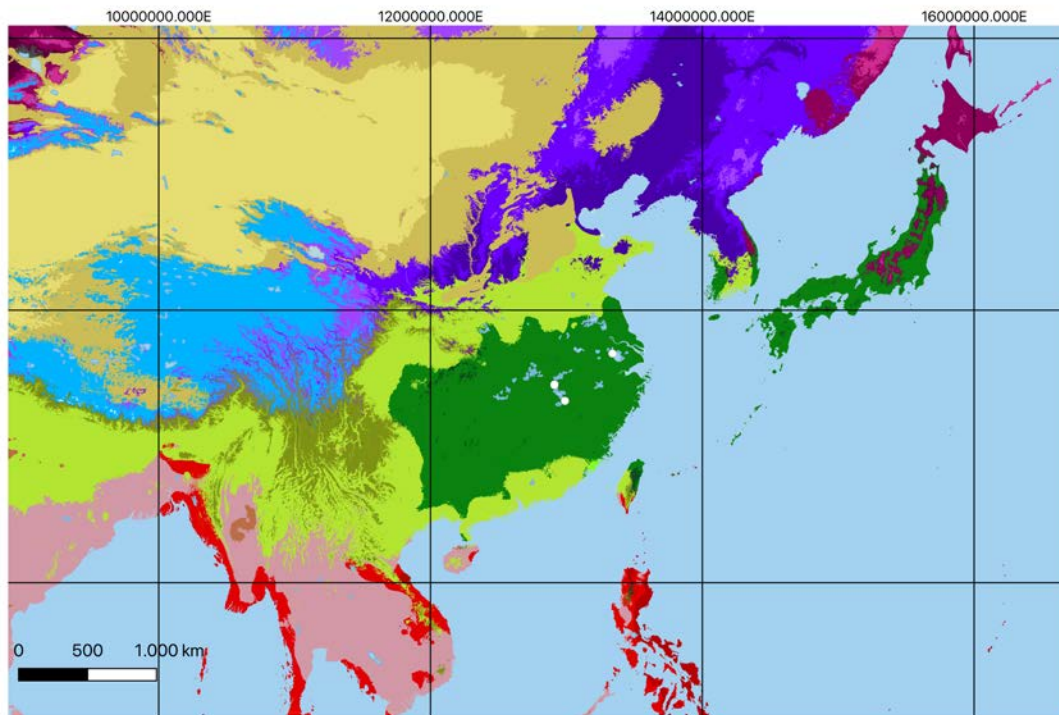
5.3.4.3.8. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria rubra* (Rendle 1916) Les & S.W.L.Jacobs 2008; herbarium specimens excluding duplicate occurrences (n = 125).



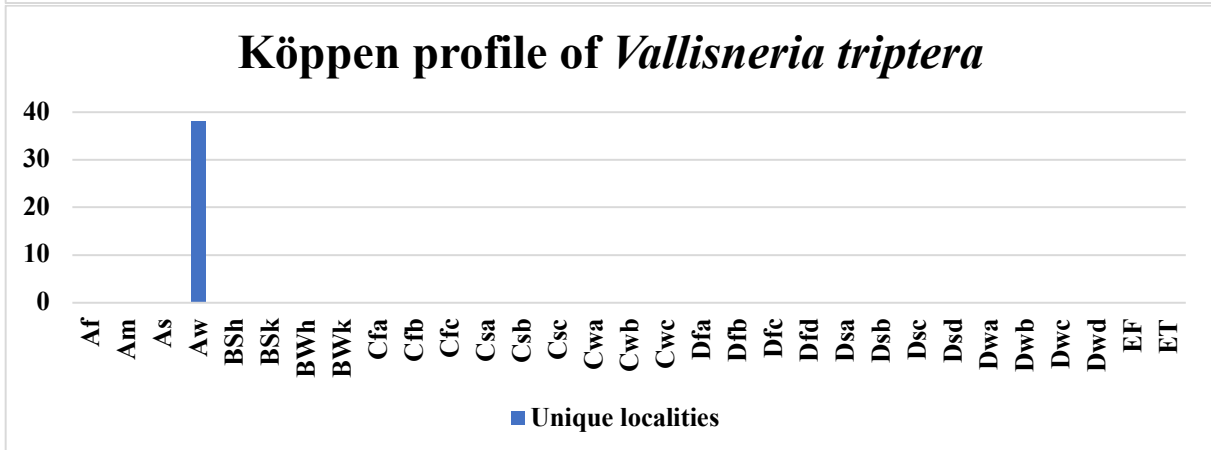
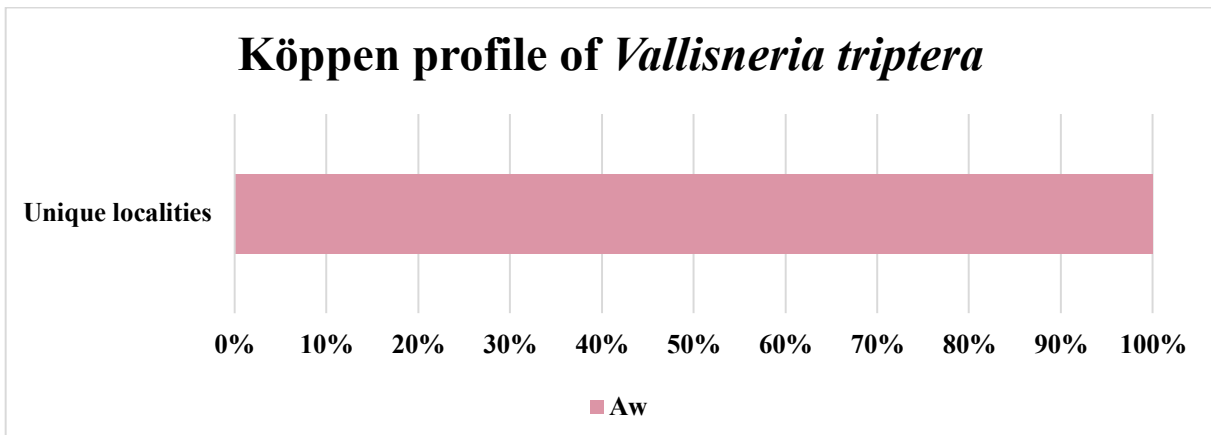
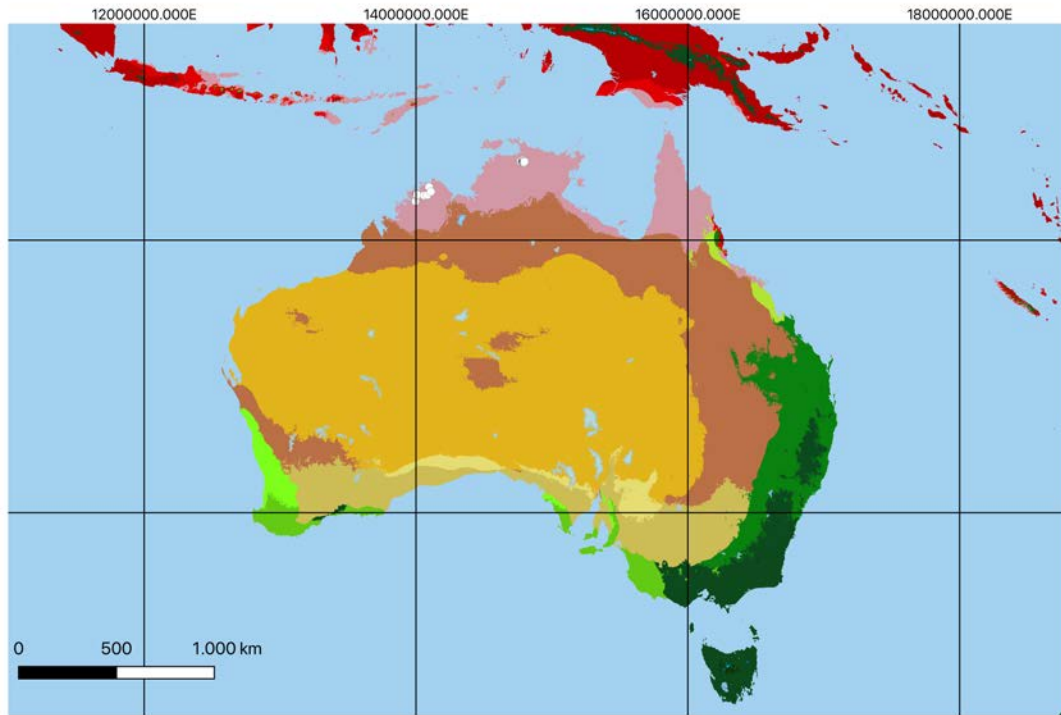
5.3.4.3.9. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria spiralis* L. 1753; herbarium specimens excluding duplicate occurrences (n = 137).



5.3.4.3.10. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria spinulosa* S.Z.Yan 1982; herbarium specimens excluding duplicate occurrences (n = 3).



5.3.4.3.11. Köppen profile, distribution and climate map – GBIF occurrences of *Vallisneria triptera* S.W.L.Jacobs & K.A.Frank 1997; herbarium specimens excluding duplicate occurrences (n = 38).



GBIF datasets:

Blyxa:

Blyxa auberti GBIF Data set: <https://doi.org/10.15468/dl.3j4svh>
Blyxa echinosperma GBIF Data set: <https://doi.org/10.15468/dl.tz2q94>
Blyxa hexandra GBIF Data set: <https://doi.org/10.15468/dl.m74dkr>
Blyxa japonica GBIF Data set: <https://doi.org/10.15468/dl.qa5fwa>
Blyxa octandra GBIF Data set: <https://doi.org/10.15468/dl.4cn2yg>
Blyxa senegalensis GBIF Data set: <https://doi.org/10.15468/dl.tju7pg>
Blyxa shimadai GBIF Data set: <https://doi.org/10.15468/dl.gt7uv3>
Blyxa somai GBIF Data set: <https://doi.org/10.15468/dl.7ejqk9>

Egeria:

Egeria densa GBIF Data set: <https://doi.org/10.15468/dl.ukwfx3>
Egeria heterostemon GBIF Data set: <https://doi.org/10.15468/dl.hasy2z>
Egeria najas GBIF Data set: <https://doi.org/10.15468/dl.9h5hst>

Elodea:

Elodea bifoliata GBIF Data set: <https://doi.org/10.15468/dl.hhnwbb>
Elodea callitrichoides GBIF Data set: <https://doi.org/10.15468/dl.neghzn>
Elodea canadensis GBIF Data set: <https://doi.org/10.15468/dl.3nr47e>
Elodea granatensis GBIF Data set: <https://doi.org/10.15468/dl.7t6hms>
Elodea nuttallii GBIF Data set: <https://doi.org/10.15468/dl.7t79ef>
Elodea potamogeton GBIF Data set: <https://doi.org/10.15468/dl.gacw7j>

Enhalus:

Enhalus bifoliata GBIF Data set: <https://doi.org/10.15468/dl.7m27pd>

Halophila:

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Halophila baillonis GBIF Data set: <https://doi.org/10.15468/dl.6uswb5>
Halophila beccari GBIF Data set: <https://doi.org/10.15468/dl.9bk8sz>
Halophila capricorni GBIF Data set: <https://doi.org/10.15468/dl.4ug7ez>
Halophila decipiens GBIF Data set: <https://doi.org/10.15468/dl.4z58jg>
Halophila engelmannii GBIF Data set: <https://doi.org/10.15468/dl.sv6uhx>
Halophila gaudichaudii GBIF Data set: <https://doi.org/10.15468/dl.9zx4bm>
Halophila hawaiiiana GBIF Data set: <https://doi.org/10.15468/dl.ycjvn6>
Halophila major GBIF Data set: <https://doi.org/10.15468/dl.jpu9t2>
Halophila minor GBIF Data set: <https://doi.org/10.15468/dl.rn36mp>
Halophila nipponica GBIF Data set: <https://doi.org/10.15468/dl.sxxf8d>
Halophila ovalis GBIF Data set: <https://doi.org/10.15468/dl.9kye3d>
Halophila spinulosa GBIF Data set: <https://doi.org/10.15468/dl.e8gzfx>
Halophila stipulaceae GBIF Data set: <https://doi.org/10.15468/dl.ekfzps>
Halophila sulawesii GBIF Data set: <https://doi.org/10.15468/dl.wzyxq6>
Halophila tricostata GBIF Data set: <https://doi.org/10.15468/dl.he7ef8>

Hydrilla:

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Hydrocharis:

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Hydromystria:

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Lagarosiphon:

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Lagarosiphon madagascariensis GBIF Data set: <https://doi.org/10.15468/dl.8fmajb>

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Najas:

Najas affinis GBIF data set: <https://doi.org/10.15468/dl.t26may>

Najas ancistrocarpa GBIF data set: <https://doi.org/10.15468/dl.6rxsax>

Najas arguta GBIF data set: <https://doi.org/10.15468/dl.c85mtz>

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Najas baldwinia GBIF data set: <https://doi.org/10.15468/dl.ejhxz2>

Najas browniana GBIF data set: <https://doi.org/10.15468/dl.5a374t>

Najas chinensis GBIF data set: <https://doi.org/10.15468/dl.kg84zf>

Najas conferta GBIF data set: <https://doi.org/10.15468/dl.ya2xhn>

Najas filifolia GBIF data set: <https://doi.org/10.15468/dl.a5h9cz>

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Najas pectinata GBIF data set: <https://doi.org/10.15468/dl.xgwnfj>

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Najas welwitschii GBIF data set: <https://doi.org/10.15468/dl.pqb8za>

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Nechamandra:

Nechamandra alternifolia GBIF data set: <https://doi.org/10.15468/dl.f8c75z>

Ottelia:

Ottelia acuminata GBIF Data set: <https://doi.org/10.15468/dl.nhbs3u>

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Ottelia mesenterium GBIF Data set: <https://doi.org/10.15468/dl.6p8qdx>

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Stratiotes:

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Thalassia:

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Vallisneria:

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Vallisneria nana GBIF data set: <https://doi.org/10.15468/dl.hvka99>

Vallisneria rubra GBIF data set: <https://doi.org/10.15468/dl.knjwsx>

Vallisneria spinulosa GBIF data set: <https://doi.org/10.15468/dl.j364pd>

Vallisneria spiralis GBIF data set: <https://doi.org/10.15468/dl.72599d>

Vallisneria triptera GBIF data set: <https://doi.org/10.15468/dl.8vs4g9>

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