

Memorandum: Targeted Samphire Survey

Botanica completed two seasons of the Targeted Samphire Survey for Lake Wells in September 2018/ January 2019. A total of eleven transects and 44 quadrats were established (see Attachment 1).

From the spring survey (September 2018), a total of 60 *Tecticornia* specimens were taken with each plant sampled marked in the field with a metal tag so specific plants could be re-visited. Botanica have received the *Tecticornia* ids from Kelly Shepherd and of the 60 specimens collected:

- six different species were identified
- six specimens were sterile and unable to be identified (sp. sterile 1, sp. sterile 2, sp. sterile 3)
- One Priority 1 Flora taxon was identified; *Tecticornia willisii*. All three records are located outside of the proposed disturbance footprint (see Attachment 1).
- One potentially distinct taxon was identified; *Tecticornia* aff. *undulata*. Two of the three records are located within the disturbance footprint (see Attachment 1).

Based on advice from EPA (Helena Mills), only those six specimens which were sterile in the Spring survey were recollected. Kelly Shepherd has indicated that the sterile plants may be late autumn/ early winter flowering taxa rather than summer flowering plants as she originally thought but she cannot determine this. As the original scope/ agreement with EPA based on Kelly Shepherd's advice was to conduct the second season of survey in Summer, Botanica conducted the additional sampling in January 2019. Only one of the six specimens was able to be identified; *Tecticornia peltata*. The remaining five specimens remained sterile.

A combined list of the *Tecticornia* taxa identified at Lake Wells from reconnaissance and detailed surveys conducted by Botanica from 2015 to 2017 and the targeted survey conducted in 2018/2019 is provided in Table 1 below.

Family	Genus	Taxon		
Chenopodiaceae	Tecticornia	calyptrata		
Chenopodiaceae	Tecticornia	indica subsp. bidens*		
Chenopodiaceae	Tecticornia	laevigata*		
Chenopodiaceae	Tecticornia	peltata*		
Chenopodiaceae	Tecticornia	pruinosa*		
Chenopodiaceae	Tecticornia	sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)*		
Chenopodiaceae	Tecticornia	triandra*		
Chenopodiaceae	Tecticornia	undulata*		
Chenopodiaceae	Tecticornia	aff. undulata (S)		
Chenopodiaceae	Tecticornia	willisii (P1)		
Chenopodiaceae	Tecticornia	sp. sterile 1		
Chenopodiaceae	Tecticornia	sp. sterile 2		
Chenopodiaceae	Tecticornia	sp. sterile 3		

Table 1: List of all Samphire recorded at Lake Wells (2015-2019)

*indicates those taxa previously recorded during reconnaissance/ detailed surveys; green cells indicate Tecticornia identified during targeted surveys

Red text (P)=Priority Flora; (S)=Significant Flora (potentially new taxon)

Additional survey work was also conducted in January 2019 to determine population size of *Tecticornia willisii (P1)* and *Tecticornia* aff. undulata (S). As the species occurred at high densities, an estimate of the population was conducted using extrapolation based on population area. In order to determine extrapolated population counts, multiple plot less 10m X 10m quadrats were used to determine average plant density of the species within 100 square metres. The boundary of the population was traversed on foot and recorded using a handheld GPS to determine the total area (square metres) of the population. The number of plants

per square metre was then multiplied by the number of square metres covered by the population. The estimated population size is shown in Table 2. Based on the assessment, an estimated 6731 plants of *Tecticornia* aff. *undulata* were recorded of which approximately 61% of the total known extent of *Tecticornia* aff. *undulata* is located within the disturbance footprint. An estimated 141,605 plants of *Tecticornia willisii* (P1) were recorded of which 0% of the total known extent is located within the disturbance footprint. A map of the population boundaries is provided in Attachment 2.

Table Z. Fupulation Size Lotinates

Taxon	Population Area (m²)	Mean No. plants (100m²)	Estimated Population Size (no. plants)
Tecticornia aff. undulata (S)	20,600	20	4120
Tecticornia aff. undulata (S)	43,510	6	2611
Total Tecticorr	6,731		
Tecticornia willisii (P1)	145,700	70	101,990
Tecticornia willisii (P1)	140,900	28	39,452
Tecticornia willisii (P1)	1684	15	253
Total Tectico	141,605		

Blue shaded cells-located within disturbance footprint

Regards

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