

## 22. Circalittoral sand

### Sensitivity Assessment

Sensitivity scores for characterising ecological groups sensu Tillin & Tyler-Walters (2013) were obtained from Tillin & Tyler-Walters (2014). See case report (Appendix 10) for details of ecological groups that characterise this feature. The resistance, resilience and sensitivity scores for each pressure comprise those scores for the ecological group(s) most sensitive to that pressure. For pressures not assessed in Tillin & Tyler-Walters (2014), scores for characterising species of each ecological group were obtained from the MarLIN website ([www.marlin.ac.uk](http://www.marlin.ac.uk)) where available. The overall scores for these pressures again comprises the scores of the most sensitive organism(s) to each pressure.

**Table A11.22. Sensitivity assessment for circalittoral sand.** Associated sectors include activities related to offshore renewable energy (O), Fishing (F), or shipping (S). NR = not relevant, NA = not assessed, NEv = no evidence, H = high, M = medium, L = low, VL = very low, N = none, NS = not sensitive. Refs = References. \*Overall confidence score of the MarLIN sensitivity analyses for characterising species that followed the MarLIN sensitivity assessment approach used prior to MarESA.

Pressures		Associated sector(s)	Resistance				Resilience				Sensitivity				Group or species associated with score	Refs
Classification	Pressure type		Score	QoE	AoE	DoC	Score	QoE	AoE	DoC	Score	QoE	AoE	DoC		
Physical	Physical loss (to land or freshwater habitat)	O	N	H	H	H	VL	H	H	H	H	H	H	H	4, 5, 6, 7, 8(a)	3

Pressures		Associated sector(s)	Resistance				Resilience				Sensitivity				Group or species associated with score	Refs
Classification	Pressure type		Score	QoE	AoE	DoC	Score	QoE	AoE	DoC	Score	QoE	AoE	DoC		
	Physical change (to another seabed type)	O, F	L	M	L	NR	M	M	L	H	M	M	L	L	8(a)	3
	Physical change (to another sediment type)	O, F	L	M	L	NR	M	M	L	H	M	M	L	L	8(a)	3
	Habitat structure change-removal of substratum (extraction)	O	N	L	NR	NR	H	L	NR	NR	M	L	NR	NR	4, 5, 6, 8(a)	3
Physical	Abrasion/disturbance of substratum surface or seabed	O, F	M	L	NR	NR	M	L	NR	NR	M	L	NR	NR	4	3

Pressures		Associated sector(s)	Resistance				Resilience				Sensitivity				Group or species associated with score	Refs
Classification	Pressure type		Score	QoE	AoE	DoC	Score	QoE	AoE	DoC	Score	QoE	AoE	DoC		
	Penetration or disturbance of substratum subsurface	O, F	L	H	H	M	M	L	NR	NR	M	L	L	L	4, 8(a)	3
	Changes in suspended solids (water clarity)	O, F	M	L	NR	NR	M	L	NR	NR	M	L	NR	NR	4	3
	Smothering and siltation changes (light)	O	L				H				L	*M			<i>Spiophanes bombyx</i> , <i>Owenia fusiformis</i>	1, 2
	Smothering and siltation changes (heavy)	O	L	L	NR	NR	M	L	NR	NR	M	L	NR	NR	4, 5, 8(a)	3
	Underwater noise	O, F, S	NEv	NR	NR	NR	NEv	NR	NR	NR	NEv	NR	NR	NR	4, 5, 6, 7, 8(a)	3

Pressures		Associated sector(s)	Resistance				Resilience				Sensitivity				Group or species associated with score	Refs
Classification	Pressure type		Score	QoE	AoE	DoC	Score	QoE	AoE	DoC	Score	QoE	AoE	DoC		
	Electromagnetic energy	O	NEv	NR	NR	NR	NEv	NR	NR	NR	NEv	NR	NR	NR	4, 5, 6, 7, 8(a)	3
	Barrier to species movement	O, F	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
	Death or injury by collision	O, F, S	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Hydrological	Water flow changes	O	H	M	L	NR	H	H	H	H	NS	M	L	L		3
Chemical	Transition elements & organo-metal contamination	O, F, S	L				H				L	*L			<i>Spiophanes bombyx</i>	1
	Hydrocarbon & PAH contamination	O, F, S	L				H				L	*M			<i>Spiophanes bombyx</i>	1

Pressures		Associated sector(s)	Resistance				Resilience				Sensitivity				Group or species associated with score	Refs
Classification	Pressure type		Score	QoE	AoE	DoC	Score	QoE	AoE	DoC	Score	QoE	AoE	DoC		
	Synthetic compound contamination	O, F, S	N				H				M	*L			<i>Spiophanes bombyx</i>	1
	Introduction of other substances	O, F, S	NA	NR	NR	NR	NA	NR	NR	NR	NA	NR	NR	NR		
	Deoxygenation	O	L				H				L	*M			<i>Spiophanes bombyx</i>	1
Biological	Introduction or spread of invasive non-indigenous species	O, F, S	NEv	NR	NR	NR	NEv	NR	NR	NR	NEv	NR	NR	NR	4, 5, 6, 7, 8(a)	3
	Removal of target species	F	H	M	L	NR	H	H	H	H	NS	M	L	L	4, 5, 6, 7, 8(a)	3
	Removal of non-target species	F	H	M	L	NR	H	H	H	H	NS	M	L	L	4, 5, 6, 7, 8(a)	3

## References for circalittoral sand sensitivity assessment

1. Ager, O.E.D. (2005). *Spiophanes bombyx* A bristleworm. In Tyler-Walters H. and Hiscock K. (eds) *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [on-line]. Plymouth: Marine Biological Association of the United Kingdom. [cited 22-04-2024]. Available from: <https://www.marlin.ac.uk/species/detail/1705>
2. Neal, K.J. & Avant, P. (2008). *Owenia fusiformis* A tubeworm. In Tyler-Walters H. and Hiscock K. (eds) *Marine Life Information Network: Biology and Sensitivity Key Information Reviews*, [on-line]. Plymouth: Marine Biological Association of the United Kingdom. [cited 22-04-2024]. Available from: <https://www.marlin.ac.uk/species/detail/1703>
3. Tillin, H. & Tyler-Walters, H. (2014). *Assessing the sensitivity of subtidal sedimentary habitats to pressures associated with marine activities – Phase 2 Report*. JNCC Report No. 512B. JNCC, Peterborough, ISSN 0963-8091.

## Reference for ecological groups

Tillin, H, Tyler-Walters, H. (2013). *Assessing the sensitivity of subtidal sedimentary habitats to pressures associated with marine activities. Phase 1 Report: Rationale and proposed ecological groupings for Level 5 biotopes against which sensitivity assessments would be best undertaken*. JNCC Report No. 512

