Pots, Traps and Creels Interactions with Subtidal Boulder and Cobble Reef

1. Introduction

The Assessing Welsh Fishing Activities (AWFA) Project is a structured risk-based approach to determining impacts from current and potential fishing activities (undertaken from licensed and registered commercial fishing vessels), upon the features of European marine sites (EMS) in Wales.

Further details of the AWFA Project, and all completed assessments to date, can be found on the AWFA website.

The methods and process used to classify the risk of interactions between fishing gears and EMS features, as either purple (high), orange (medium) or green (low) risk, can be found in the AWFA Project Phase 1 outputs: Principles and Prioritisation Report and resulting Matrix spreadsheet.

2. Assessment summary

Assessment Summary: **Pots, Traps and Creels Interactions with Subtidal Boulder and Cobble Reef**	**Assessment of impact pathway 1. Physical damage to a designated habitat feature:** No studies were found that directly measured or estimated the physical impacts of potting on Subtidal Boulder and Cobble Reef. Indirect evidence and expert judgement suggests the impacts from pots, weights or anchors making contact with Subtidal Boulder and Cobble Reef could cause physical damage to the structure of the habitat. **Assessment of impact pathway 2. Damage to a designated habitat feature via removal of, or other detrimental impact to, associated biological communities:** Direct evidence, expert judgement and indicative MarLIN sensitivity assessments suggest the impacts from pots, weights or anchors making contact with Subtidal Boulder and Cobble Reef habitat could cause damage to some of the biological communities. Confidence in this assessment is **high** (please see section 8).

3. Feature description

Feature Description: **Subtidal Boulder and Cobble Reef**	Subtidal Boulder and Cobble Reef (also called Stony Reef) comprises areas of stable boulders and cobbles larger in diameter than 64mm (Irving, 2009). Whilst often embedded in matrices of smaller particles such as pebbles and mixed sediments, they are dominated by epifaunal species typically associated with hard substrates (Irving, 2009). For AWFA assessment purposes, boulder and cobble reef was separated from bedrock reef and is assessed separately. Whilst both reef types share common supporting biological communities, the effects of heavy fishing gear on the structure of boulder and cobble reef could differ from bedrock reef. An explanation of how these two feature types were separated is detailed in Annex 1, whilst Annex 2 provides a list of biotopes, 'biotope' definition, and their sensitivity to relevant pressures, commonly associated with Welsh Subtidal Boulder and Cobble Reef. Subtidal Boulder and Cobble Reef is a complex habitat with variable topography and interstitial spaces that provide substrate and refuge for a diverse range of species and biological communities (Irving, 2009; JNCC, 2020a). Larger boulders support a fauna and flora much the same as bedrock reef with shallow areas dominated by kelp and other seaweeds, and deeper areas dominated by animals (e.g. sponges, anthozoans and bryozoans) (NRW, 2018a; JNCC, 2020a). On smaller boulders and cobbles, exposure to waves and storms dictates the substratum mobility and biological communities present (JNCC, 2020a). More mobile cobbles and those influenced by scour will support lower diversities of robust species such as Keel worms (*Spirobranchus spp.*) and encrusting bryozoans (Tillin and Tyler-Walters, 2016). As the stability increases, longer-lived and larger species like Hornwrack (*Flustra foliacea*), sponges and erect hydroids become more common (Tyler-Walters and Ballerstedt, 2007; Readman, 2016). In shallower areas consolidated cobbles and boulders support large seaweeds like Sugar kelp (*Saccharina latissima*) or Sea oak (*Halidrys siliquosa)*, whilst in deeper waters a diverse faunal turf forms (Readman, 2016; Stamp and Tyler-Walters, 2016). The most commonly occurring Subtidal Boulder and Cobble Reef biotopes found in Welsh waters include mixed faunal turf communities (CR.HCR.XFa), bryozoan turf and erect sponges on tide-swept circalittoral rock (CR.HCR.XFa.ByErSp), foliose red seaweeds on exposed lower infralittoral rock (IR.HIR.KFaR.FoR). In Wales, Subtidal Boulder and Cobble Reef frequently occurs as mosaics within sediment dominated biotopes such as *Flustra foliacea* and *Hydrallmania falcata* on tide-swept circalittoral mixed sediment (SS.SMx.CMx.FluHyd), *Ophiothrix fragilis* and/or *Ophiocomina nigra* brittlestar beds on sublittoral mixed sediment

	(SS.SMx.CMx.OphMx) and *Spirobranchus triqueter* with barnacles and bryozoan crusts on unstable circalittoral cobbles and pebbles (SS.SCS.CCS.PomB).

4. Gear description

Gear Description: Pots, Traps and Creels	Pots, traps and creels (pots) are rigid cage-like structures designed to capture fish or shellfish species living on or near the seabed (FAO, 2001; Seafish, 2020a). They typically comprise one or more funnel-shaped entrances that guide fish or shellfish into one or more easily accessed and usually baited compartments (FAO, 2001; Seafish, 2020a). UK pot designs, sizes and construction materials vary geographically and according to target species, environmental conditions and fisher's preference (Seafish, 2020a). Top-entry inkwell pots (0.28-0.47 m^2 footprint) and side or top-entry parlour pots or 'D-creels' (0.24-0.55 m^2 footprint) weighing 15-20kg are used to catch crab or lobster and are made from wire, rubber, metal and netting (Gravestock, 2018; Cornwall Creels, 2020; Seafish, 2020a). Solid sided 20-30 litre rectangular containers with holes in the sides (0.09-0.14 m^2 footprint), a mesh funnel at the top, a concrete bottom and weighing 6-12kg are used to target whelks (Channel Pots, 2020; Seafish, 2020c). Lightweight plastic tubular pots with small-mesh sides and funnel entries at either end are used to target prawns (Coastal Nets, 2020; Seafish, 2020a). Pots can be fished individually or in strings (fleets), where several pots are attached to a length of rope, laid along the seabed and marked at either end with a rope to the surface and a marker buoy (Seafish, 2020a). The number of pots in a fleet will depend on factors including pot design, target species, habitat fished, fisher's preference, vessel size and the available deck space to store the pots once they have been hauled (Seafish, 2020b). Fishers can have multiple strings of pots deployed at any one time, hauled following a soak time of 24-48 hours (Seafish, 2020a). Multi-compartment 'parlour' pots generally retain catch for longer periods making them more suitable for longer soak times, whereas single compartment 'inkwell' pots are subject to more escapees during longer soak times (Swarbrick and Arkley, 2002). Strings of lighter traps, such as prawn creels, use anchors or weights at either end to reduce movement in tides (Seafish, 2020a). Other pots are designed to be heavy or utilise concrete-weighted end-pots that replace the need for anchors or weights (Seafish, 2020b). Strings of pots are deployed (or shot) one at a time whilst the boat slowly moves over the target fishing ground (Seafish, 2020a). Single pots are generally set in rocky inshore areas and can be bounced along the seabed until they contact rock or reef (FAO, 2001).

	Baited pots can capture undersized target species, non-target invertebrates and occasionally fish species (Pantin, *et al*., 2015). However, the use of appropriate-sized mesh coverings, or the addition of large-mesh panels or escape-gaps, can ensure smaller individuals and non-target species are able to escape (Seafish, 2020a).

5. Assessment of impact pathways

Assessment of impact pathway 1	**1. Physical damage to a designated habitat feature (Physical Impacts)** No studies were found that directly measured or estimated the physical impacts of potting on Subtidal Boulder and Cobble Reef. Considering the robust nature of larger subtidal boulders, it seems unlikely that disturbance from potting would cause substantial physical impact to the Subtidal Boulder and Cobble Reef substrate. However, smaller boulders and cobbles could be rolled or moved by the activity of potting. In sediment influenced shallow and exposed areas, small boulders and cobbles are periodically mobilised or inundated by sediments during winter storms (Hinz *et al*., 2010; Sciberras *et al*., 2013). In such areas, minimal substrate movement by potting is unlikely to be detectable amongst natural disturbance (Sciberras *et al*., 2013). If potting were to occur across Subtidal Boulder and Cobble Reef, the general physical impacts from static gear, including pots, weights or anchors, making contact with the seabed during gear deployment could cause surface disturbance (e.g. movement of boulders and cobbles) and abrasion (JNCC and NE, 2011; Walmsley, *et al*., 2015). Where pots are fixed in strings, the retrieval of pots, or incidences of rough weather, could lead to ropes, pots and anchors dragging over or entangling seabed structures, potentially causing physical damage or abrasion to the seabed (MacDonald, *et al*., 1996; Roberts *et al*., 2010; JNCC and NE, 2011). During spring tides, strong wind and large waves, unintentional movement of pots and any associated seabed abrasion could be increased (Eno *et al*., 2001; Stephenson *et al*., 2017). Depending on the footprint and the intensity of potting it is possible that the impacts from pots, weights or anchors making contact with Subtidal Boulder and Cobble Reef habitat could cause physical damage to the structure of the habitat.

Assessment of impact pathway 2	**2. Damage to a designated habitat feature via removal of, or other detrimental impact to, associated biological communities (Impacts on Biological Communities)** UK experimental potting studies on Boulder and Cobble Reef have reported potting to have some impact on biological communities of subtidal rocky reef (bedrock, boulders and cobbles), including habitats with fragile organisms such as branching sponges, the bryozoan ross coral (*Pentapora foliacea),* the soft coral (*Alcyonium digitatum*) and pink sea fan *(Eunicella verrucosa)* (Eno *et al*., 2001; Hoskin, 2009; Coleman *et al*., 2013; Haynes *et al*., 2014; Vance and Ellis, 2016). Several researchers acknowledge the risk of cumulative damage, especially to sensitive fragile species, from repeated impacts and higher intensities of potting (Hartnoll, 1998; Eno *et al*., 2001; Roberts *et al*., 2010; Coleman *et al*., 2013; Walmsley *et al*., 2015; Rees *et al*., 2019, 2021). Rees *et al*. (2019, 2021) assessed impacts to typical and common species and communities of Subtidal Boulder and Cobble Reef that were exposed to increasing intensities of potting during a three-year study in Lyme Bay and Torbay SAC. Total abundance of all sessile epifauna showed a decreasing trend over time in the medium and higher potting treatment areas. This contrasted with the control areas (where no potting occurred), which showed an increasing trend in total abundance of all sessile species over time (Rees *et al*., 2019, 2021). Rees *et al*. (2019, 2021) demonstrated higher and medium intensity potting levels significantly impacted two fragile epibenthic reef species in particular; the bryozoan ‘ross coral’ (*P. foliacea*) and a seasquirt (*Phallusia mammillata*). In the case of ross coral, only the complete cessation of potting (i.e. the non-fished control group) resulted in a recovery trend (Rees *et al*., 2019, 2021). In another Lyme Bay potting study, Gall (2020) reported damage to almost a third (32%) of epifauna during the hauling of pots. The epifauna in Gall’s (2020) study included several fragile typical species of Subtidal Boulder and Cobble Reef, e.g. branching sponges, the bryozoan ross coral, the soft coral dead man’s fingers and pink sea fan. This suggests repeated potting could potentially affect local populations of these fragile species. Where these species occur on Subtidal Boulder and Cobble Reef in higher abundance, the biological communities are called ‘Fragile Sponges and Anthozoan Communities’ and MarLIN considered this habitat to have a high sensitivity to surface abrasion (Tillin *et al*., 2010). Annex 2 provides information on the sensitivity to abrasion for all component biotopes of the Subtidal Boulder and Cobble Reef feature. Mobile species are less vulnerable to physical damage from potting compared to sessile epifauna (Gall, 2020). Echinoderms (*Asterias rubens*, *Echinus esculentus* and *Holothuria forskali*) rolled or were gently moved away from the pot impact zone by the pressure wave preceding the moving pot (Gall, 2020), a result also reported by Eno *et al*. (2001) for burrowing megafauna in muddy sediments. If potting were to occur across Subtidal Boulder and Cobble Reef, the general physical impacts from static gear, including pots, weights or anchors, making contact with reef features during gear deployment could cause

	surface disturbance and abrasion to biological communities (JNCC and NE, 2011; Walmsley et al., 2015). Where pots are fixed in strings, the retrieval of pots, or incidences of rough weather, could lead to ropes, pots and anchors dragging over or entangling reef structures, causing probable physical damage or abrasion to the biological communities (MacDonald *et al*., 1996; Roberts *et al*., 2010; JNCC and NE, 2011, Gall *et al*., 2020). During spring tides, strong wind and large waves may cause unintentional movement of pots and any associated seabed abrasion could be increased (Eno *et al*., 2001; Sørensen *et al*., 2015; Stephenson et al., 2017). If there is a sensitive species present further assessment of the potting activity is recommended (Walmsley *et al.*, 2015). Subtidal Boulder and Cobble Reef biotopes have been assessed to a range of pressures by MarLIN (Readman, 2016; Readman *et al*., 2018). Relevant pressures for the assessment of potting impacts are primarily abrasion of the sediment. MarLIN abrasion sensitivity assessments for Subtidal Boulder and Cobble Reef biotopes shown in Annex 1 conclude: the majority of biotopes have a low to medium sensitivity to abrasion with some biotopes exhibiting a high sensitivity. Please refer to the MarLIN website which provides further information about the assessment methodology and the supporting evidence (www.marlin.ac.uk/). Depending on the footprint and the intensity of potting it is possible that the impacts from pots, weights or anchors making contact with Subtidal Boulder and Cobble Reef habitat could cause damage to some of the biological communities.

6. SACs where the habitat occurs as a component of a designated feature

Lleyn Peninsula and the Sarnau SAC	The Lleyn Peninsula and the Sarnau SAC contains examples of the Subtidal Boulder and Cobble Reef habitat, as evidenced by data and relevant literature (NRW, 2018a). Please see the latest SAC feature condition assessment for information on the location and condition of features. The following features contain Subtidal Boulder and Cobble Reef habitat within the Lleyn Peninsula and the Sarnau SAC: 1. Large Shallow Inlets and Bays 2. Reefs
Menai Strait and Conwy Bay SAC	The Menai Strait and Conwy Bay SAC contains examples of the Subtidal Boulder and Cobble Reef habitat, as evidenced by data and relevant literature (NRW, 2018b). Please see the latest SAC feature condition assessment for information on the location and condition of features. The following features contain Subtidal Boulder and Cobble Reef habitat within the Menai Strait and Conwy Bay SAC: 1. Large Shallow Inlets and Bays 2. Reefs
Pembrokeshire Marine SAC	The Pembrokeshire Marine SAC contains examples of the Subtidal Boulder and Cobble Reef habitat, as evidenced by data and relevant literature (NRW, 2018c). Please see the latest SAC feature condition assessment for information on the location and condition of features. The following features contain Subtidal Boulder and Cobble Reef habitat within the Pembrokeshire Marine SAC: 1. Large Shallow Inlets and Bays 2. Reefs 3. Estuaries
Cardigan Bay SAC	The Cardigan Bay SAC contains examples of the Subtidal Boulder and Cobble Reef habitat, as evidenced by data and relevant literature (NRW, 2018d). Please see the latest SAC feature condition assessment for information on the location and condition of features. The following features contain Subtidal Boulder and Cobble Reef habitat within the Cardigan Bay SAC: 1. Reefs

Carmarthen Bay and Estuaries SAC	The Carmarthen Bay and Estuaries SAC contains examples of the Subtidal Boulder and Cobble Reef habitat, as evidenced by data and relevant literature (NRW, 2018e). Please see the latest SAC feature condition assessment for information on the location and condition of features. The following features contain Subtidal Boulder and Cobble Reef habitat within the Carmarthen Bay and Estuaries SAC: 1. Large Shallow Inlets and Bays

7. Evidence Gaps

None Identified.

8. Confidence assessment

The confidence score is the sum of scores from three evidence components: quality, applicability and agreement. These are qualitatively assessed as high, medium or low using the most appropriate statements in the table below, and these are numerically represented as scores of 3, 2, or 1 respectively.

A total confidence score of 3 – 5 represents low confidence, 6 or 7 shows medium confidence and 8 or 9 demonstrates high confidence in the evidence used in the assessment.

This assessment scores 9, representing high confidence in the evidence.

Confidence	Evidence quality	Evidence applicability	Evidence agreement
High	**Based on more than 3 recent and relevant peer reviewed papers or grey literature from established agencies. Score 3.**	**Based on the fishing gear acting on the feature in the UK. Score 3.**	**Strong agreement between multiple (>3) evidence sources. Score 3.**
Medium	Based on either relevant but older peer reviewed papers or grey literature from less established agencies; or based on only 2-3 recent and relevant peer reviewed evidence sources.	Based on similar fishing gears, or other activities with a similar impact, acting on the feature in the UK.	Some disagreement but majority of evidence agrees. Or fewer than 3 evidence sources used.
Low	Based on either less relevant or older grey literature from less established agencies; or based on only 1 recent and relevant peer reviewed evidence source.	Based on similar fishing gears acting on the feature in other areas, or the fishing gear acting upon a similar feature in the UK.	Little agreement between evidence.

N.B. When evidence is indirect the evidence quality and applicability will be capped to medium, to ensure that direct evidence gaps are captured in this approach.

9. References

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Annex 1: Separation of Boulder and Cobble from Bedrock Reef

For the purposes of the AWFA project, ‘Boulder and Cobble Reef’ was separated from ‘bedrock reef’ reef to align with the approach taken by Natural England for a related piece of work.

Using Welsh habitat maps derived from historic surveys, an analysis of substratum components determined areas defined as boulder and cobble or bedrock reef as follows:

Boulder and Cobble Reef equates to Habitats Directive Annex I Stony Reef, which was previously defined by Irving (2009) as:

1) An area of seabed >25m^2 and comprising no less than 10% cobbles or boulders (i.e. rock particles ≥64mm in diameter), and
2) a biological community dominated by epibiota i.e. organisms that would normally be associated with rock habitats as opposed to sediment dwelling organisms (infauna).

The remaining substratum could be smaller particles such as pebbles, gravel, sand and mud, and stony reef may be consistent in its coverage or may form patches with intervening areas smaller particles and sediments (Irving, 2009).

Bedrock Reef, as defined by the AWFA project, included substratum meeting two conditions:

1) there was greater than 10% hard substratum (bedrock, boulders or cobbles), and
2) the percentage of bedrock (of the total rock component) was recorded as ≥50% bedrock (it is acknowledged that the substratum could comprise up to 50% cobbles and boulders and still be classed as subtidal bedrock reef).

Only subtidal biotopes (infralittoral and circalittoral) were included in the AWFA Subtidal Boulder and Cobble Reef definition. All intertidal (littoral) rock or sediments were omitted from this habitat type.

Annex 2: Welsh biotopes included in the AWFA potting and Subtidal Boulder and Cobble Reef assessment

The term 'biotope' refers to both the physical environment (e.g. substrate) and the unique set of species associated with that environment (Tyler-Walters and Jackson, 1999). Biotopes are defined by the JNCC Marine Habitat Classification for Britain and Ireland Version 15.03 (https://mhc.jncc.gov.uk/) and sensitivities to abrasion are from the Marine Evidence based Sensitivity Assessment (MarESA) (https://www.marlin.ac.uk/sensitivity/sensitivity_rationale). The MarESA approach considers a range of pressures and benchmarks for all biotopes using all available evidence and expertise (Tyler-Walters *et al*., 2018). The MarESA sensitivity to abrasion assessments highlighted in the table below consider any type of potential abrasion to the surface substratum and associated biology and do not specifically refer to potting activity (Tyler-Walters *et al*., 2018). High sensitivity indicates a significant loss of species combined with a recovery time of more than 10 years. Medium sensitivity indicates either significant mortality combined with medium recovery times (2-10 years) or lower mortality with recovery times varying from 2 to 25+ years. Whilst a low sensitivity indicates a full recovery within 2 years.

Circalittoral rock	MarESA sensitivity to abrasion	Infralittoral rock	MarESA sensitivity to abrasion	Sublittoral sediments	MarESA sensitivity to abrasion
CR.FCR.Cv	High	IR.FIR.IFou	Not Assessed	SS.SCS.CCS.PomB	Low
CR.FCR.Cv.SpCup	High	IR.FIR.SG	Not Assessed	SS.SCS.ICS.HchrEdw	Not sensitive
CR.FCR.FouFa	Not Assessed	IR.FIR.SG.CC	Low	SS.SCS.ICS.SSh	Not sensitive
CR.FCR.FouFa.Aasp	Not Assessed	IR.FIR.SG.CC.Mo	Low	SS.SCS.SCSVS	Not sensitive
CR.HCR.FaT	Not Assessed	IR.FIR.SG.CrSpAsDenB	Low	SS.SMp.KSwSS	Not Assessed
CR.HCR.FaT.BalTub	Low	IR.FIR.SG.DenCcor	Low	SS.SMp.KSwSS.LsacGraFS	Medium
CR.HCR.FaT.CTub.Adig	Low	IR.FIR.SG.FoSwCC	Low	SS.SMp.KSwSS.LsacGraVS	Medium
CR.HCR.FaT.CTub.CuSp	Low	IR.HIR.KFaR	Not Assessed	SS.SMp.KSwSS.LsacR	Medium
CR.HCR.XFa	Not Assessed	IR.HIR.KFaR.Ala	Low	SS.SMp.KSwSS.LsacR.CbPb	Medium
CR.HCR.XFa.ByErSp	Medium	IR.HIR.KFaR.Ala.Ldig	Low	SS.SMp.KSwSS.LsacR.Gv	Medium
CR.HCR.XFa.ByErSp.DysAct	Medium	IR.HIR.KFaR.Ala.Myt	Low	SS.SMx.CMx	Not Assessed
CR.HCR.XFa.ByErSp.Eun	High	IR.HIR.KFaR.FoR	Low	SS.SMx.CMx.ClloMx.Nem	Medium
CR.HCR.XFa.ByErSp.Sag	Medium	IR.HIR.KFaR.FoR.Dic	Low	SS.SMx.CMx.FluHyd	Medium
CR.HCR.XFa.CvirCri	Low	IR.HIR.KFaR.LhypFa	Medium	SS.SMx.CMx.OphMx	Medium
CR.HCR.XFa.FluCoAs	Low	IR.HIR.KFaR.LhypR	Medium	SS.SMx.IMx	Not Assessed
CR.HCR.XFa.FluCoAs.SmAs	Low	IR.HIR.KFaR.LhypR.Ft	Medium	SS.SMx.IMx.CreAsAn	Low
CR.HCR.XFa.FluCoAs.X	Low	IR.HIR.KFaR.LhypR.Pk	Medium	SS.SMx.IMx.SpavSpAn	Medium
CR.HCR.XFa.FluHocu	Low	IR.HIR.KFaR.LhypRVt	Medium		
CR.HCR.XFa.Mol	Low	IR.HIR.KSed	Not Assessed		
CR.HCR.XFa.SpAnVt	Medium	IR.HIR.KSed.DesFilR	Medium		
CR.HCR.XFa.SpNemAdia	Medium	IR.HIR.KSed.LsacChoR	Medium		

Circalittoral rock	MarESA sensitivity to abrasion	Infralittoral rock	MarESA sensitivity to abrasion	Sublittoral sediments	MarESA sensitivity to abrasion
CR.HCR.XFa.SubCriTf	Medium	IR.HIR.KSed.LsacSac	Medium		
CR.MCR.CFaVS	Medium	IR.HIR.KSed.ProtAhn	Low		
CR.MCR.CFaVS.CuSpH	Medium	IR.HIR.KSed.Sac	Medium		
CR.MCR.CFaVS.CuSpH.As	Medium	IR.HIR.KSed.XKHal	Medium		
CR.MCR.CFaVS.CuSpH.VS	Medium	IR.HIR.KSed.XKScrR	Medium		
CR.MCR.CMus.CMyt	Medium	IR.LIR.IFaVS	Not Assessed		
CR.MCR.CMus.Mdis	Medium	IR.LIR.K	Not Assessed		
CR.MCR.CSab	Medium	IR.LIR.K.LhypLsac	Medium		
CR.MCR.CSab.Sspi	Medium	IR.LIR.K.LhypLsac.Pk	Medium		
CR.MCR.CSab.Sspi.As	Medium	IR.LIR.K.Lsac.Ft	Low		
CR.MCR.CSab.Sspi.ByB	Medium	IR.LIR.K.Lsac.Ldig	Low		
CR.MCR.EcCr	Not Assessed	IR.LIR.K.Lsac.Pk	Low		
CR.MCR.EcCr.AdigVt	Low	IR.LIR.K.Sar	Low		
CR.MCR.EcCr.CarSp	Low	IR.MIR.KR	Not Assessed		
CR.MCR.EcCr.CarSp.Bri	Medium	IR.MIR.KR.HiaSw	Medium		
CR.MCR.EcCr.CarSp.PenPcom	Low	IR.MIR.KR.Ldig	Low		
CR.MCR.EcCr.FaAlCr	Low	IR.MIR.KR.Ldig.Bo	Medium		
CR.MCR.EcCr.FaAlCr.Adig	Low	IR.MIR.KR.Ldig.Ldig	Low		
CR.MCR.EcCr.FaAlCr.Bri	Medium	IR.MIR.KR.Lhyp	Medium		
CR.MCR.EcCr.FaAlCr.Car	Low	IR.MIR.KR.Lhyp.Ft	Medium		
CR.MCR.EcCr.FaAlCr.Flu	Low	IR.MIR.KR.Lhyp.GzPk	Medium		
CR.MCR.EcCr.FaAlCr.Pom	Low	IR.MIR.KR.Lhyp.Pk	Medium		
CR.MCR.EcCr.UrtScr	Medium	IR.MIR.KR.LhypT	Medium		
CR.MCR.SfR	Not Assessed	IR.MIR.KR.LhypT.Ft	Medium		
CR.MCR.SfR.Pol	Medium	IR.MIR.KR.LhypT.Pk	Medium		
		IR.MIR.KR.LhypTX	Medium		
		IR.MIR.KR.LhypTX.Ft	Medium		
		IR.MIR.KR.LhypTX.Pk	Medium		
		IR.MIR.KR.XFoR	Low		
		IR.MIR.KT	Not Assessed		
		IR.MIR.KT.FilRVS	Low		
		IR.MIR.KT.LdigT	Medium		

Circalittoral rock	MarESA sensitivity to abrasion	Infralittoral rock	MarESA sensitivity to abrasion	Sublittoral sediments	MarESA sensitivity to abrasion
		IR.MIR.KT.XKT	Medium		
		IR.MIR.KT.XKTX	Medium		