

Bilaga till Nyström Sandman m. fl. 2024. Mänsklig påverkan och effekter på bentisk miljö. Metoder för bedömning av havsbottens integritet i svenska hav. Naturvårdsverket.

Bilaga 5. Förslag på sensitivitetmatris, Eunis level 3+

Värdena är förslag på sensitivitet med hänsyn till risk för fysisk förlust ("physical loss", kolumn sens_phys) samt biologisk förlust ("adversely affected", kolumn sens_bio).

Sensitiviteten föreslås här utifrån en kombination av vågexponering och djupzoner, vilka sammantaget påverkar sensitiviteten exempelvis genom att vågverkan riskerar att förvärra fysisk störning där substraten är mjuka vågor kan röra upp substrat och förvärra fysisk påverkan genom att skapa grumling och större erosionsärr, eller genom att grunda mjukbottnar i vågskyddade områden riskerar kvardröjande problem med en kombination av fysisk störning och ändrade sediment- och sedimentationsförhållanden.

A.B1: Extremt skyddat

depth_zone	habitat	sens_phys	sens_bio
Hydrolittoral zone	Dense Mytilus reefs (>25%)	1	4
Hydrolittoral zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Hydrolittoral zone	Dynamic elevated sand (above seabed within 100 m)	3	3
Hydrolittoral zone	Dynamic sand (mobile in case of severe waves)	3	3
Hydrolittoral zone	Fluffy"" bottoms with anoxia	5	0
Hydrolittoral zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Hydrolittoral zone	Hard substrate	0	3
Hydrolittoral zone	Mixed hard substrate (sand, stones, rock)	4	4
Hydrolittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	5
Hydrolittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Hydrolittoral zone	Muddy sand (soft sedimentation on sand)	4	5
Hydrolittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Hydrolittoral zone	Reef with benthic animals	1	5
Hydrolittoral zone	Reef with Mytilus, cover > 10%	1	4
Hydrolittoral zone	Reefs dominated by vegetation	1	3
Hydrolittoral zone	Sandy bottoms with Zostera spp.	3	4
Hydrolittoral zone	Sandy mud	4	5
Hydrolittoral zone	Sandy substrate	3	3
Hydrolittoral zone	Coarse substrate	2	3
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%)	1	4
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Infralittoral (euphotic) zone	Dynamic elevated sand (above seabed within 100 m)	3	3
Infralittoral (euphotic) zone	Dynamic sand (mobile in case of severe waves)	3	3
Infralittoral (euphotic) zone	Fluffy"" bottoms with anoxia	5	0
Infralittoral (euphotic) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Infralittoral (euphotic) zone	Hard substrate	0	3
Infralittoral (euphotic) zone	Mixed hard substrate (sand, stones, rock)	4	4
Infralittoral (euphotic) zone	Muddy gravel (sedimentation on sand, stones etc)	2	5
Infralittoral (euphotic) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Infralittoral (euphotic) zone	Muddy sand (soft sedimentation on sand)	4	5
Infralittoral (euphotic) zone	Mytilus reefs (>10%) with vegetation	1	4

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Infralittoral (euphotic) zone	Reef with benthic animals	1	5
Infralittoral (euphotic) zone	Reef with Mytilus, cover > 10%	1	4
Infralittoral (euphotic) zone	Reefs dominated by vegetation	1	3
Infralittoral (euphotic) zone	Sandy bottoms with Zostera spp.	3	4
Infralittoral (euphotic) zone	Sandy mud	4	5
Infralittoral (euphotic) zone	Sandy substrate	3	3
Infralittoral (euphotic) zone	Coarse substrate	1	2
Circalittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Circalittoral zone	Reefs dominated by vegetation	1	3
Circalittoral zone	Coarse substrate	2	3
Off-shore (below wave base) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Off-shore (below wave base) zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Off-shore (below wave base) zone	Fluffy"" bottoms with anoxia	1	0
Off-shore (below wave base) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	3	0
Off-shore (below wave base) zone	Hard substrate	0	2
Off-shore (below wave base) zone	Mixed hard substrate (sand, stones, rock)	3	3
Off-shore (below wave base) zone	Muddy gravel (sedimentation on sand, stones etc)	1	2
Off-shore (below wave base) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Off-shore (below wave base) zone	Muddy sand (soft sedimentation on sand)	2	1
Off-shore (below wave base) zone	Mytilus reefs (>10%) with vegetation	1	4
Off-shore (below wave base) zone	Reef with benthic animals	1	5
Off-shore (below wave base) zone	Reef with Mytilus, cover > 10%	1	4
Off-shore (below wave base) zone	Reefs dominated by vegetation	1	3
Off-shore (below wave base) zone	Sandy bottoms with Zostera spp.	3	4
Off-shore (below wave base) zone	Sandy mud	3	1
Off-shore (below wave base) zone	Sandy substrate	3	3

A.B2: Skyddat

depth_zone	habitat	sens_phys	sens_bio
Hydrolittoral zone	Coarse substrate	2	3
Hydrolittoral zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Hydrolittoral zone	Dynamic elevated sand (above seabed within 100 m)	3	3
Hydrolittoral zone	Dynamic sand (mobile in case of severe waves)	3	3
Hydrolittoral zone	Fluffy"" bottoms with anoxia	5	0
Hydrolittoral zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Hydrolittoral zone	Hard substrate	0	3
Hydrolittoral zone	Mixed hard substrate (sand, stones, rock)	4	4
Hydrolittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	5
Hydrolittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Hydrolittoral zone	Muddy sand (soft sedimentation on sand)	4	4
Hydrolittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Hydrolittoral zone	Reef with benthic animals	1	5
Hydrolittoral zone	Reef with Mytilus, cover > 10%	1	4
Hydrolittoral zone	Reefs dominated by vegetation	1	3
Hydrolittoral zone	Sandy bottoms with Zostera spp.	3	4

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Hydrolittoral zone	Sandy mud	4	4
Hydrolittoral zone	Sandy substrate	3	3
Infralittoral (euphotic) zone	Coarse substrate	2	3
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Infralittoral (euphotic) zone	Dynamic elevated sand (above seabed within 100 m)	3	3
Infralittoral (euphotic) zone	Dynamic sand (mobile in case of severe waves)	3	3
Infralittoral (euphotic) zone	Fluffy"" bottoms with anoxia	5	0
Infralittoral (euphotic) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Infralittoral (euphotic) zone	Hard substrate	0	3
Infralittoral (euphotic) zone	Mixed hard substrate (sand, stones, rock)	4	4
Infralittoral (euphotic) zone	Muddy gravel (sedimentation on sand, stones etc)	2	5
Infralittoral (euphotic) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Infralittoral (euphotic) zone	Muddy sand (soft sedimentation on sand)	4	4
Infralittoral (euphotic) zone	Mytilus reefs (>10%) with vegetation	1	4
Infralittoral (euphotic) zone	Reef with benthic animals	1	5
Infralittoral (euphotic) zone	Reef with Mytilus, cover > 10%	1	4
Infralittoral (euphotic) zone	Reefs dominated by vegetation	1	3
Infralittoral (euphotic) zone	Sandy bottoms with Zostera spp.	3	4
Infralittoral (euphotic) zone	Sandy mud	4	4
Infralittoral (euphotic) zone	Sandy substrate	3	3
Circalittoral zone	Coarse substrate	2	2
Circalittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Circalittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Circalittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Circalittoral zone	Reef with benthic animals	1	5
Circalittoral zone	Reefs dominated by vegetation	1	3
Off-shore (below wave base) zone	Coarse substrate	2	2
Off-shore (below wave base) zone	Dense Mytilus reefs (>25%)	1	4
Off-shore (below wave base) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Off-shore (below wave base) zone	Fluffy"" bottoms with anoxia	1	0
Off-shore (below wave base) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	3	0
Off-shore (below wave base) zone	Hard substrate	0	2
Off-shore (below wave base) zone	Mixed hard substrate (sand, stones, rock)	3	3
Off-shore (below wave base) zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Off-shore (below wave base) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Off-shore (below wave base) zone	Muddy sand (soft sedimentation on sand)	2	1
Off-shore (below wave base) zone	Mytilus reefs (>10%) with vegetation	1	4
Off-shore (below wave base) zone	Reef with benthic animals	1	5
Off-shore (below wave base) zone	Reef with Mytilus, cover > 10%	1	4
Off-shore (below wave base) zone	Reefs dominated by vegetation	1	3
Off-shore (below wave base) zone	Sandy bottoms with Zostera spp.	3	4
Off-shore (below wave base) zone	Sandy mud	3	1
Off-shore (below wave base) zone	Sandy substrate	1	3

A.B3: Exponerat

depth_zone	habitat	sens_phys	sens_bio
Hydrolittoral zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Hydrolittoral zone	Dynamic sand (mobile in case of severe waves)	3	2
Hydrolittoral zone	Muddy sand (soft sedimentation on sand)	4	1
Hydrolittoral zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Hydrolittoral zone	Mixed hard substrate (sand, stones, rock)	4	3
Hydrolittoral zone	Coarse substrate	2	2
Hydrolittoral zone	Sandy mud	4	1
Hydrolittoral zone	Hard substrate	0	2
Hydrolittoral zone	Reefs dominated by vegetation	1	3
Hydrolittoral zone	Sandy substrate	4	3
Hydrolittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Hydrolittoral zone	Reef with benthic animals	1	5
Hydrolittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Hydrolittoral zone	Fluffy"" bottoms with anoxia	5	0
Hydrolittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Hydrolittoral zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Hydrolittoral zone	Reef with Mytilus, cover > 10%	1	4
Hydrolittoral zone	Dense Mytilus reefs (>25%)	1	4
Hydrolittoral zone	Sandy bottoms with Zostera spp.	3	4
Infralittoral (euphotic) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Infralittoral (euphotic) zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Infralittoral (euphotic) zone	Dynamic sand (mobile in case of severe waves)	3	2
Infralittoral (euphotic) zone	Coarse substrate	2	2
Infralittoral (euphotic) zone	Sandy substrate	3	3
Infralittoral (euphotic) zone	Muddy sand (soft sedimentation on sand)	4	1
Infralittoral (euphotic) zone	Mixed hard substrate (sand, stones, rock)	4	3
Infralittoral (euphotic) zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Infralittoral (euphotic) zone	Sandy mud	4	1
Infralittoral (euphotic) zone	Reefs dominated by vegetation	1	3
Infralittoral (euphotic) zone	Reef with benthic animals	1	5
Infralittoral (euphotic) zone	Hard substrate	0	2
Infralittoral (euphotic) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Infralittoral (euphotic) zone	Fluffy"" bottoms with anoxia	5	0
Infralittoral (euphotic) zone	Reef with Mytilus, cover > 10%	1	4
Infralittoral (euphotic) zone	Mytilus reefs (>10%) with vegetation	1	4
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%)	1	4
Infralittoral (euphotic) zone	Sandy bottoms with Zostera spp.	3	4
Circalittoral zone	Sandy substrate	3	3
Circalittoral zone	Coarse substrate	2	2
Circalittoral zone	Muddy sand (soft sedimentation on sand)	4	1
Circalittoral zone	Reef with benthic animals	1	5
Circalittoral zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Circalittoral zone	Mixed hard substrate (sand, stones, rock)	4	3

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Circalittoral zone	Dynamic sand (mobile in case of severe waves)	3	2
Circalittoral zone	Sandy mud	4	1
Circalittoral zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Circalittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Circalittoral zone	Reefs dominated by vegetation	1	3
Circalittoral zone	Hard substrate	0	2
Circalittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Circalittoral zone	Fluffy"" bottoms with anoxia	5	0
Circalittoral zone	Reef with Mytilus, cover > 10%	1	4
Circalittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Circalittoral zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Circalittoral zone	Dense Mytilus reefs (>25%)	1	4
Off-shore (below wave base) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	3	0
Off-shore (below wave base) zone	Muddy sand (soft sedimentation on sand)	3	1
Off-shore (below wave base) zone	Coarse substrate	2	2
Off-shore (below wave base) zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Off-shore (below wave base) zone	Mixed hard substrate (sand, stones, rock)	3	3
Off-shore (below wave base) zone	Sandy mud	3	1
Off-shore (below wave base) zone	Sandy substrate	1	3
Off-shore (below wave base) zone	Reef with benthic animals	1	5
Off-shore (below wave base) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Off-shore (below wave base) zone	Reefs dominated by vegetation	1	3
Off-shore (below wave base) zone	Hard substrate	0	2
Off-shore (below wave base) zone	Fluffy"" bottoms with anoxia	1	0
Off-shore (below wave base) zone	Mytilus reefs (>10%) with vegetation	1	4
Off-shore (below wave base) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Off-shore (below wave base) zone	Reef with Mytilus, cover > 10%	1	4
Off-shore (below wave base) zone	Dense Mytilus reefs (>25%)	1	4
Off-shore (below wave base) zone	Sandy bottoms with Zostera spp.	3	4
Bathyal zone	Reef with benthic animals	1	5
Bathyal zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	0	2
Bathyal zone	Fluffy"" bottoms with anoxia	0	0
Bathyal zone	Muddy hard substrate (rock and mud, sedimentation)	3	2
Bathyal zone	Hard substrate	0	5

A.B4: Mycket exponerat

depth_zone	habitat	sens_phys	sens_bio
Hydrolittoral zone	Coarse substrate	2	2
Hydrolittoral zone	Dense Mytilus reefs (>25%)	1	4
Hydrolittoral zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Hydrolittoral zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Hydrolittoral zone	Dynamic sand (mobile in case of severe waves)	3	2
Hydrolittoral zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Hydrolittoral zone	Hard substrate	0	2
Hydrolittoral zone	Mixed hard substrate (sand, stones, rock)	4	3

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Hydrolittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Hydrolittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Hydrolittoral zone	Muddy sand (soft sedimentation on sand)	4	1
Hydrolittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Hydrolittoral zone	Reef with benthic animals	1	5
Hydrolittoral zone	Reef with Mytilus, cover > 10%	1	4
Hydrolittoral zone	Reefs dominated by vegetation	1	3
Hydrolittoral zone	Sandy bottoms with Zostera spp.	3	4
Hydrolittoral zone	Sandy mud	4	1
Hydrolittoral zone	Sandy substrate	3	3
Infralittoral (euphotic) zone	Coarse substrate	2	2
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%)	1	4
Infralittoral (euphotic) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Infralittoral (euphotic) zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Infralittoral (euphotic) zone	Dynamic sand (mobile in case of severe waves)	3	2
Infralittoral (euphotic) zone	Fluffy"" bottoms with anoxia	5	0
Infralittoral (euphotic) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Infralittoral (euphotic) zone	Hard substrate	0	2
Infralittoral (euphotic) zone	Mixed hard substrate (sand, stones, rock)	4	3
Infralittoral (euphotic) zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Infralittoral (euphotic) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Infralittoral (euphotic) zone	Muddy sand (soft sedimentation on sand)	4	1
Infralittoral (euphotic) zone	Mytilus reefs (>10%) with vegetation	1	4
Infralittoral (euphotic) zone	Reef with benthic animals	1	5
Infralittoral (euphotic) zone	Reef with Mytilus, cover > 10%	1	4
Infralittoral (euphotic) zone	Reefs dominated by vegetation	1	3
Infralittoral (euphotic) zone	Sandy bottoms with Zostera spp.	3	4
Infralittoral (euphotic) zone	Sandy mud	4	1
Infralittoral (euphotic) zone	Sandy substrate	3	3
Circalittoral zone	Coarse substrate	2	2
Circalittoral zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Circalittoral zone	Fluffy"" bottoms with anoxia	0	0
Circalittoral zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	5	0
Circalittoral zone	Hard substrate	0	2
Circalittoral zone	Mixed hard substrate (sand, stones, rock)	4	3
Circalittoral zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Circalittoral zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Circalittoral zone	Muddy sand (soft sedimentation on sand)	4	1
Circalittoral zone	Mytilus reefs (>10%) with vegetation	1	4
Circalittoral zone	Reef with benthic animals	1	5
Circalittoral zone	Reef with Mytilus, cover > 10%	1	4
Circalittoral zone	Reefs dominated by vegetation	1	3
Circalittoral zone	Sandy bottoms with Zostera spp.	3	4
Circalittoral zone	Sandy mud	4	1
Circalittoral zone	Sandy substrate	3	3
Off-shore (below wave base) zone	Coarse substrate	2	2

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Off-shore (below wave base) zone	Dense Mytilus reefs (>25%)	1	4
Off-shore (below wave base) zone	Dense Mytilus reefs (>25%) with vegetation	1	4
Off-shore (below wave base) zone	Dynamic elevated sand (above seabed within 100 m)	3	2
Off-shore (below wave base) zone	Fluffy" bottoms with anoxia	1	0
Off-shore (below wave base) zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	3	0
Off-shore (below wave base) zone	Hard substrate	0	2
Off-shore (below wave base) zone	Mixed hard substrate (sand, stones, rock)	3	3
Off-shore (below wave base) zone	Muddy gravel (sedimentation on sand, stones etc)	2	2
Off-shore (below wave base) zone	Muddy hard substrate (rock and mud, sedimentation)	1	0
Off-shore (below wave base) zone	Muddy sand (soft sedimentation on sand)	2	1
Off-shore (below wave base) zone	Mytilus reefs (>10%) with vegetation	1	4
Off-shore (below wave base) zone	Reef with benthic animals	1	5
Off-shore (below wave base) zone	Reef with Mytilus, cover > 10%	1	4
Off-shore (below wave base) zone	Reefs dominated by vegetation	1	3
Off-shore (below wave base) zone	Sandy bottoms with Zostera spp.	3	4
Off-shore (below wave base) zone	Sandy mud	3	1
Off-shore (below wave base) zone	Sandy substrate	1	3
Bathyal zone	Fluffy" bottoms with anoxia	0	0
Bathyal zone	Gyttja, ongoing sedimentation, ""fluffy"" substrat	0	2