
APPENDIX D.

DEFINITIONS

Essential Fish Habitat (*Magnuson-Stevens Act, MSA*)

“EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.”

Adverse Effect (*EFH Interim Final Rule, IFR*)

“Adverse effect means any impact which reduces quality and/or quantity of EFH. Adverse effects may include direct (e.g. contamination or physical disruption), indirect, (e.g. loss of prey, or reduction of species’ fecundity), site-specific or habitat-wide impacts including individual, cumulative, or synergistic consequences of actions.”

“Adverse effects from fishing may include physical, chemical, or biological alterations of the substrate, and loss of, or injury to, benthic organisms, prey species and their habitat, and other components of the ecosystem.”

“Identifiable” Adverse Effect (*IFR*)

1. “Impacts from fishing practices that justify the implementation of management measures should be identifiable”
2. “Identifiable means both more than minimal and not temporary in nature...”
3. “Intent is to regulate fishing gears that reduce an essential habitat’s capacity to support marine resources, not practices that produce inconsequential changes in the habitat.”

Substrate Types

1. **Mud** - For purposes of the workshop this category consisting of clays and silts. Particle sizes range from 0.001 - 0.004 mm for clay and 0.004 mm - 0.062 mm for silt. (*USGS 2001*)
2. **Sand** - Sediment particles ranging from 0.062 mm - 2.00 mm (*USGS 2001*)
3. **Gravel** - For purposes of the workshop this category includes pebbles, cobbles, boulders, as well as hard bottom (ledge) and hard corals. Pebbles are the smallest particles in this category and range from 2.0 mm - 64.0 mm. Cobbles range from 64.0 mm - 256.0 mm. Boulders are > 256.0 mm (*USGS 2001*)

Type of Impact Used in Gear Impact Tables (*Modified from ICES, 2001*):

1. Removal of Major Physical Features - Fishing gear may cause the loss or dispersal of physical features in the environment such as peat banks or boulder reefs. These changes are always permanent, and lead to an overall reduction in habitat diversity. This, in turn, can lead to the local loss of species and species assemblages dependant upon such features, for example, attached bryozoan/hydroid turf and important fish habitat. Even when substantial quantities of the habitat feature remain, if the habitat has become highly fragmented, this may compromise the viability of populations dependent upon it. (*ICES 2001*)

2. Impacts to Biological Structure - Fishing gear can cause the loss of structure-forming organisms such as colonial bryozoans, *Sabellaria*, hydroids, seapens, sponges, mussel beds, and oyster beds. These changes may be permanent, and can lead to an overall loss of habitat diversity. This in turn, can lead to the local loss of species and species assemblages dependent upon such biogenic structure, for example, important fish habitat for juvenile gadoids. The viability of populations dependent on biogenic features may be compromised even if the feature remains but has become highly fragmented. (*ICES, 2001*)

3. Impacts to Physical Structure - Fishing gear can cause a reshaping of seabed features such as sand ripples, and damage to burrows and associated structures (e.g. mounds and casts, microhabitats, and shell windrows). These features provide important habitats for smaller animals (meiofauna) and can

be used by fish to reduce their energy requirements. These changes are not likely to be permanent. Fishing gear can cause the redistribution and mixing of surface sediments which can lead to a decrease in the physical patchiness of the sea floor (i.e., decreased heterogeneity) within the fishing grounds. These changes are not likely to be permanent. (*ICES 2001*)

4. Changes in Benthic Prey - Fishing gear can cause reductions in the abundance and/or species composition of benthic invertebrate populations that are consumed by bottom feeding fish. These changes have the potential to affect habitat suitability for growth, survival, and reproductive capacity of predatory fish.