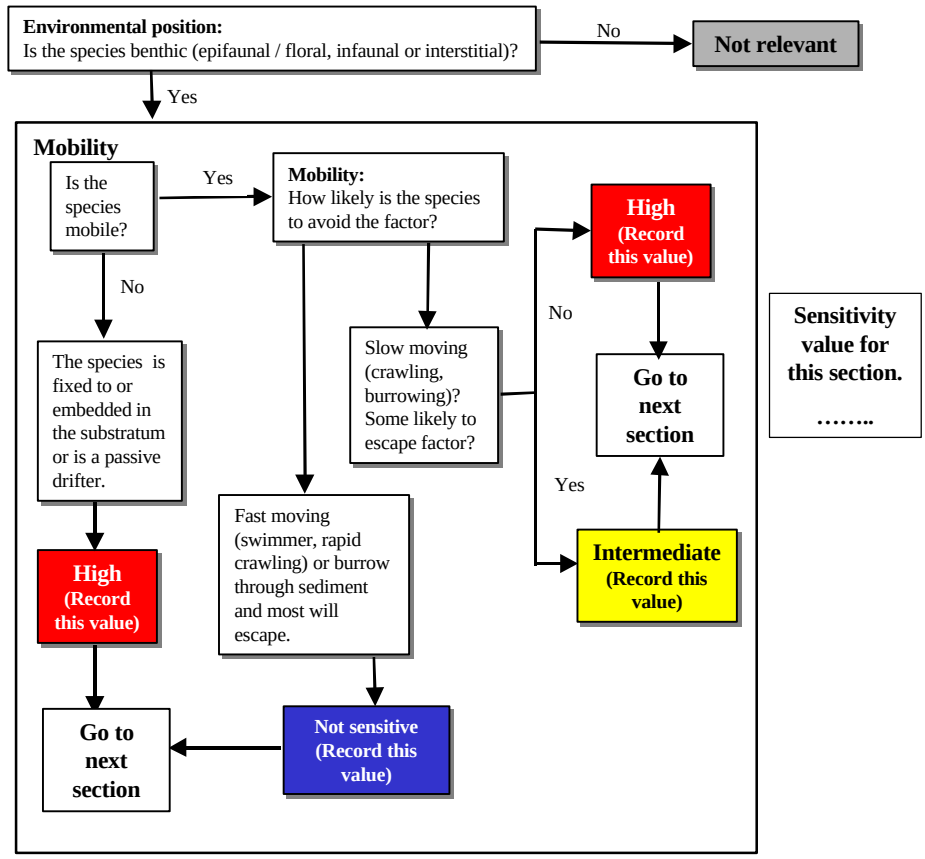
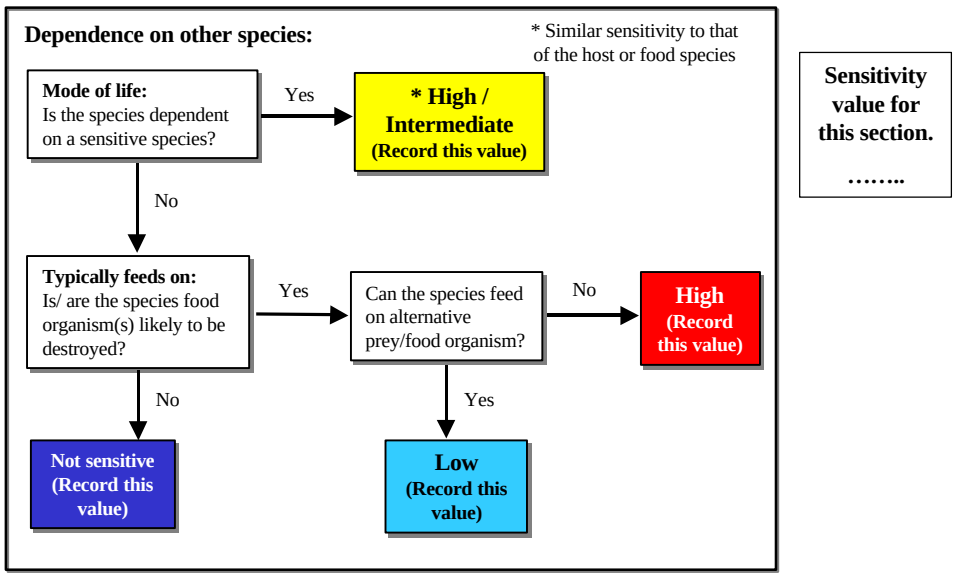
Factor: Substratum removal

Description: The physical removal of the substratum inhabited or required by the species or community in question.

Benchmark: All of substratum occupied by the species or biotope under consideration is removed. Once the activity or event has stopped (or between regular events) substratum within the habitat preferences of the original species or community remains or is deposited. A single event is assumed for assessment.



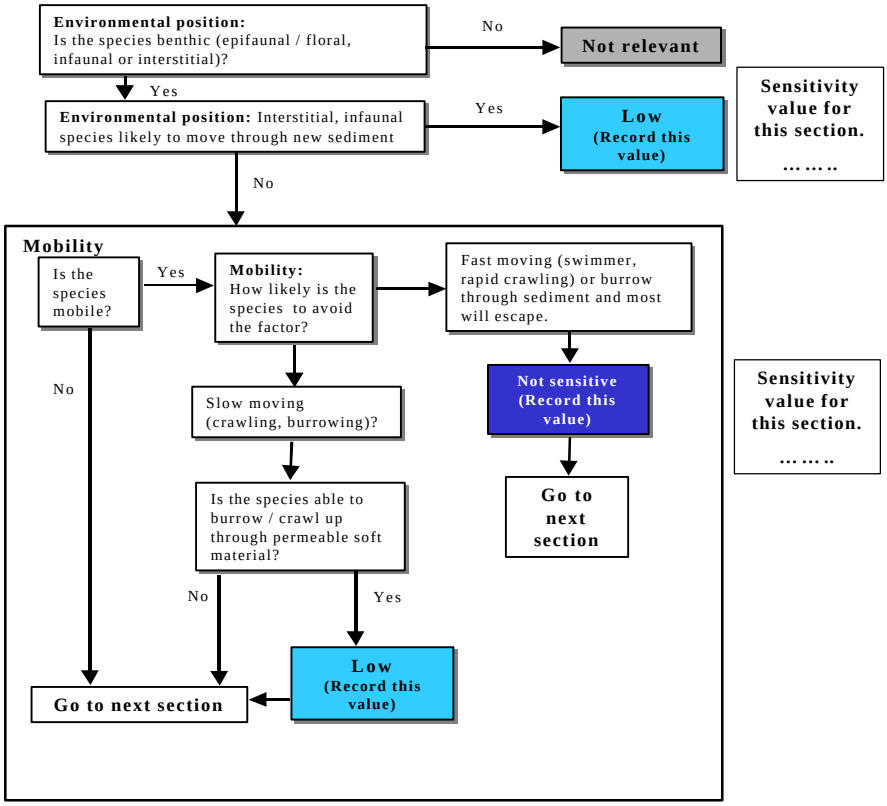


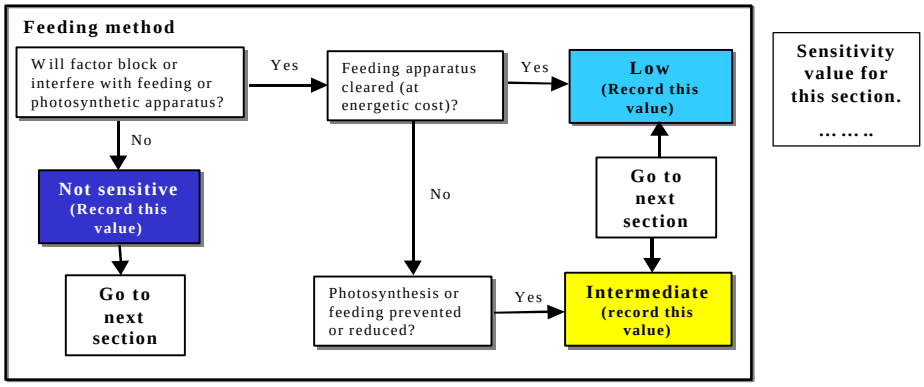
Overall sensitivity value for substratum loss (worst case value) ……..

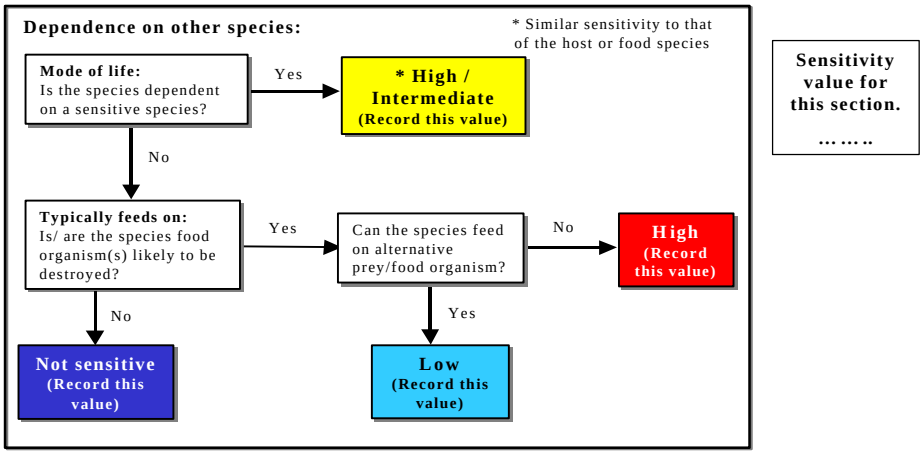
Factor: Smothering

Description: The physical covering of the species or community and its substratum with additional sediment (silt), spoil, detritus, litter, oil or man-made objects.

Benchmark: All of the population of a species or an area of a biotope is smothered by sediment to a depth of 5 cm above the substratum for one month. **Impermeable** materials, such as concrete, oil or tar, are likely to have a greater effect.

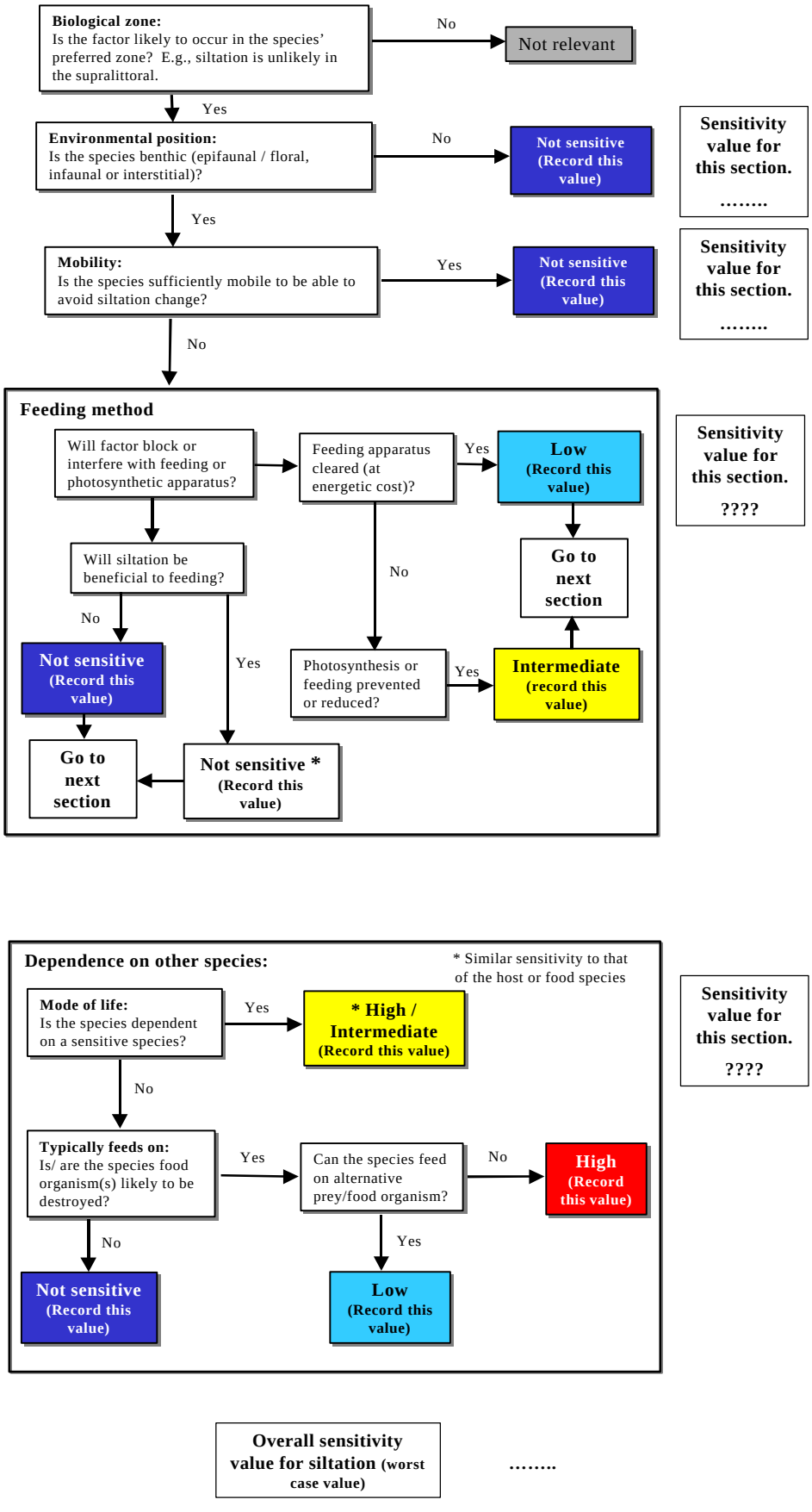






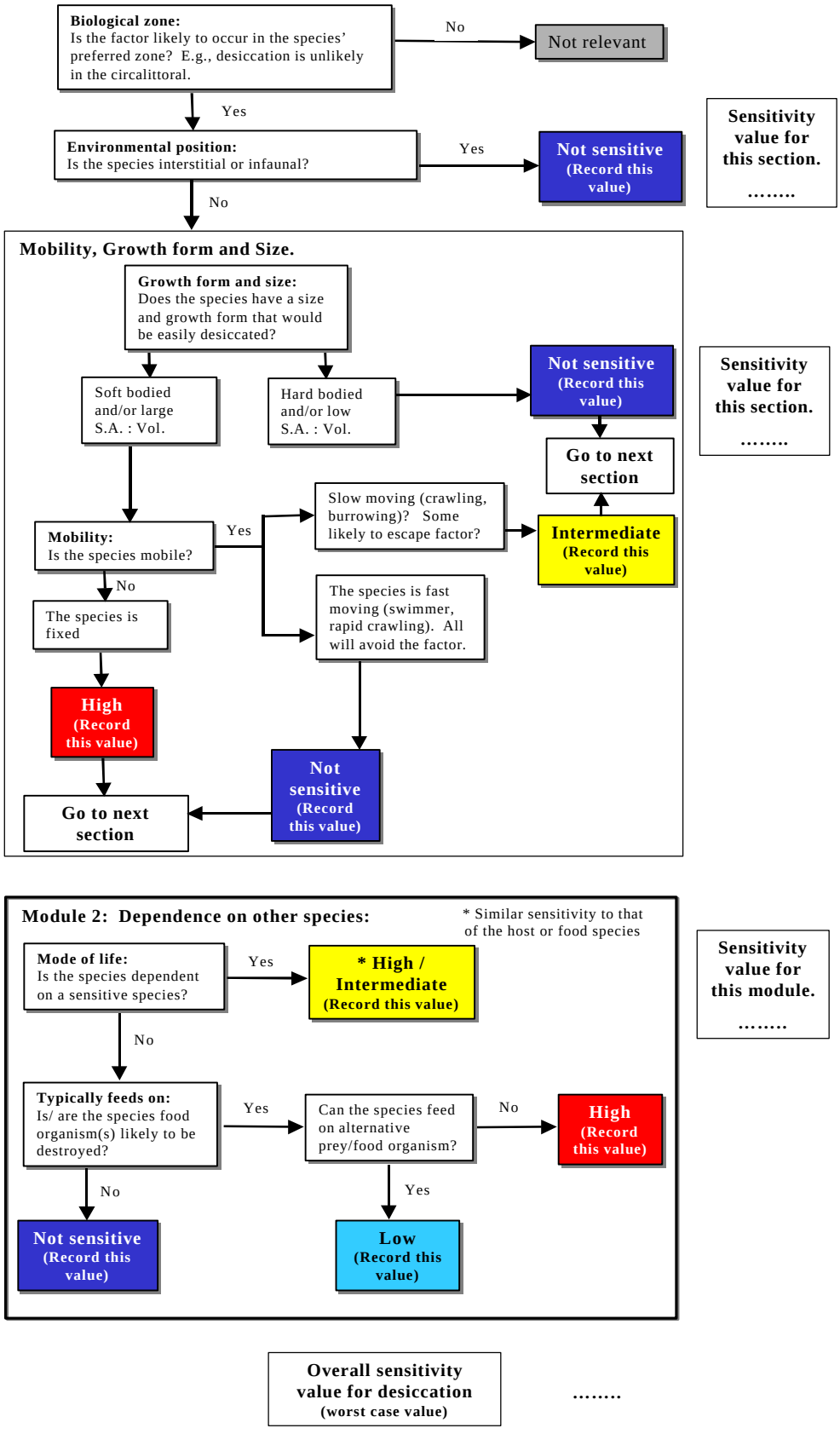
Overall sensitivity value for smothering (worst case value) ……

Factor: Siltation
Description: The settling out of suspended matter from the water column to the substratum.
Benchmark: A change in suspended sediment concentration of 100mg/1 outside the normal range experienced by the organism or community of interest for 1 year.



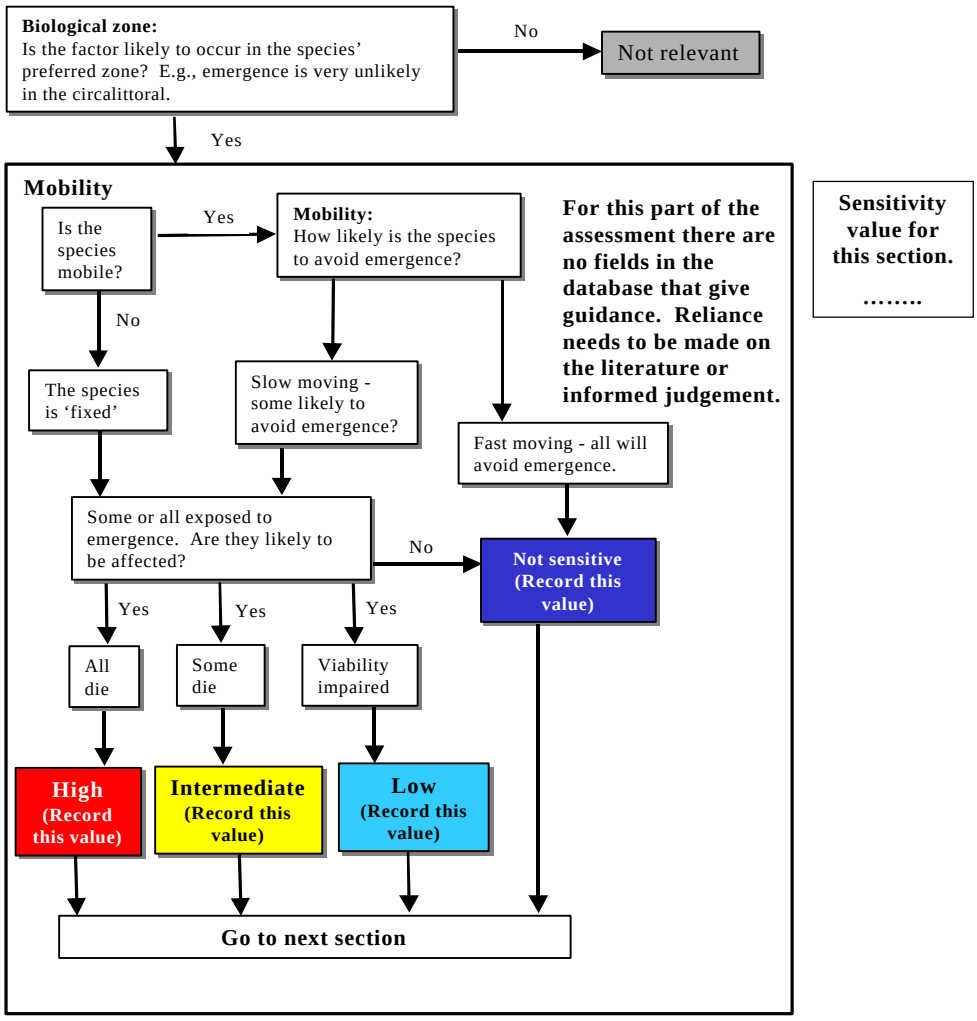
Overall sensitivity value for siltation (worst case value) ……..

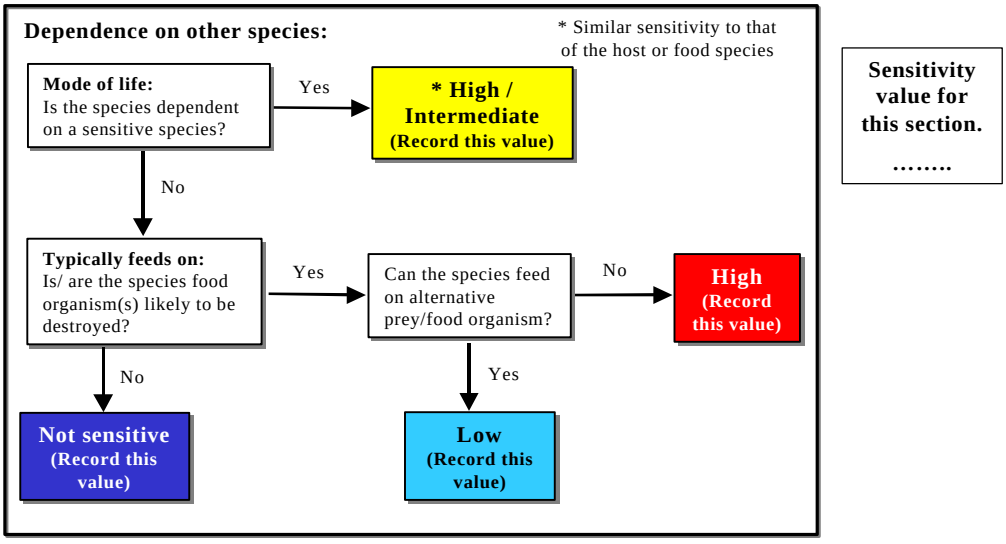
Factor: **Desiccation**
Description: The removal of water or drying.
Benchmark: 1). A normally subtidal, demersal or pelagic species including intertidal migratory or under surface species is continuously exposed to air and sunshine for 1 hour.
2). A normally intertidal species or biotope suffers 25% change in exposure to sunlight or wind for one year.



Overall sensitivity value for desiccation (worst case value) ……..

Factor: **Changes in emergence regime**
Description: The time spent emersed and exposed to air.
Benchmark: A 1 hour change in the time covered or not covered by the sea for a period of 1 year.

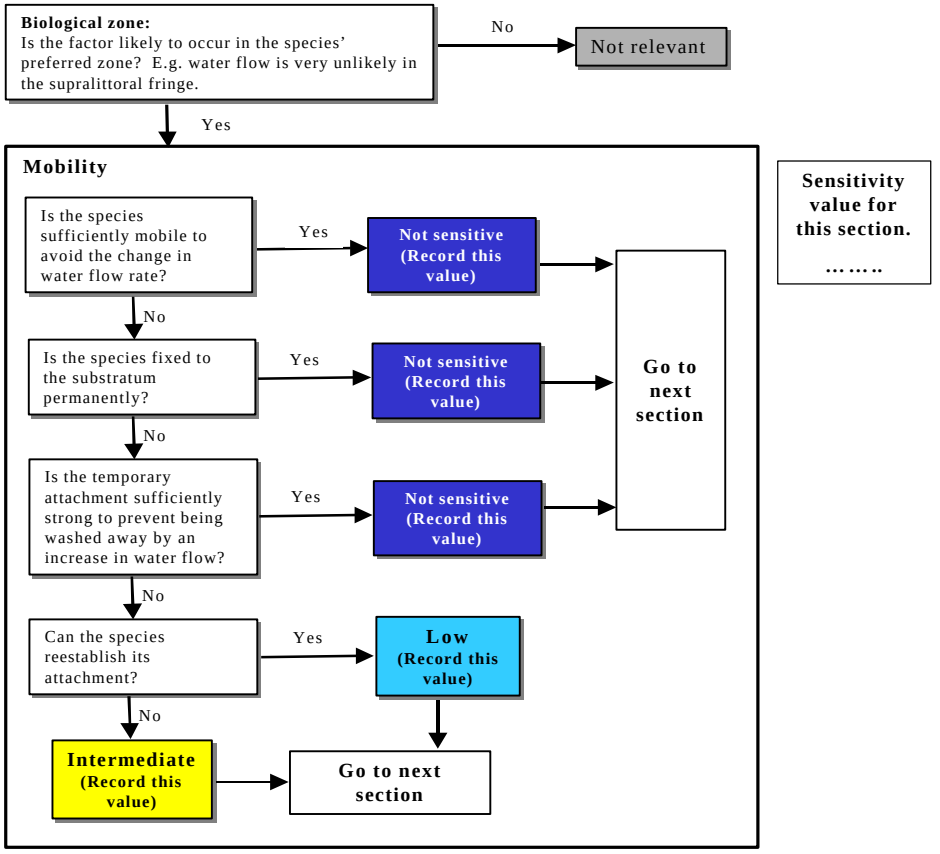


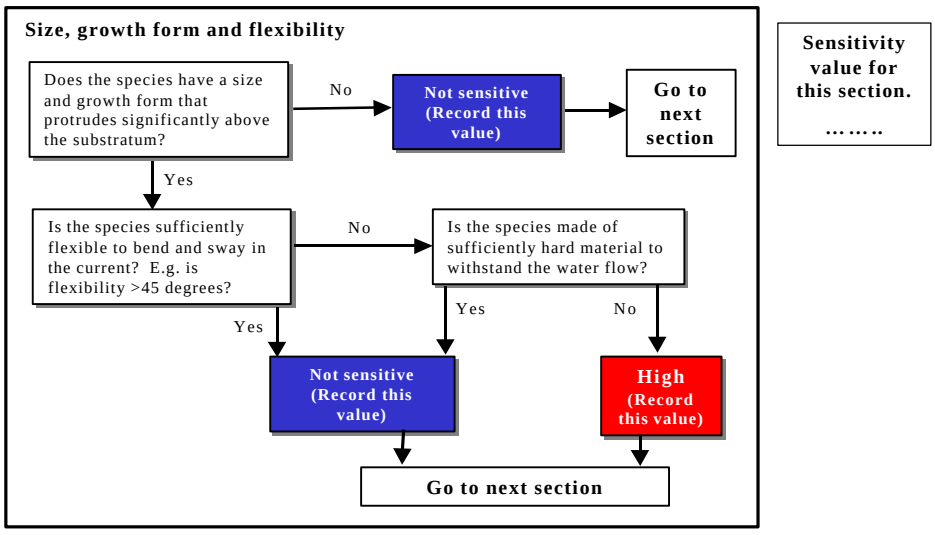


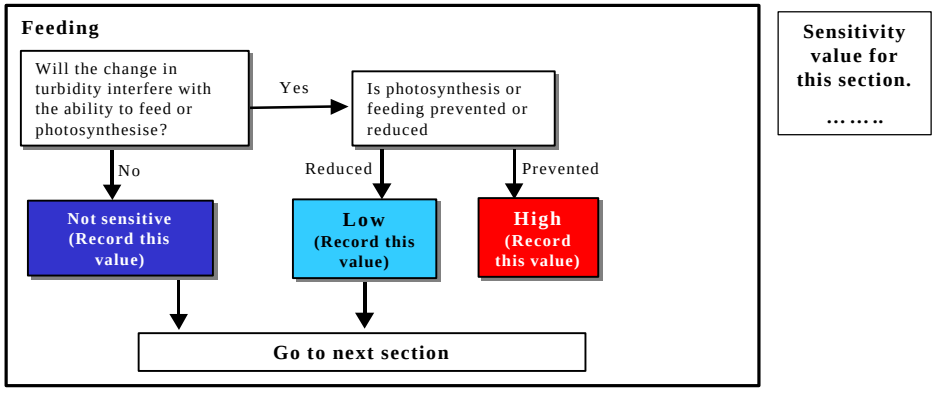
Overall sensitivity value for changes in emergence regime
(worst case value)

……..

Factor: **Changes in water flow rate**
Description: The movement of water associated with the rise and fall of the tide (tidal streams), prevailing winds and ocean currents.
Benchmark: A change of two categories in water flow rate for one year (see *MarLIN* glossary) for 1 year. For example from moderately strong (1-3 knots) to very weak (negligible).







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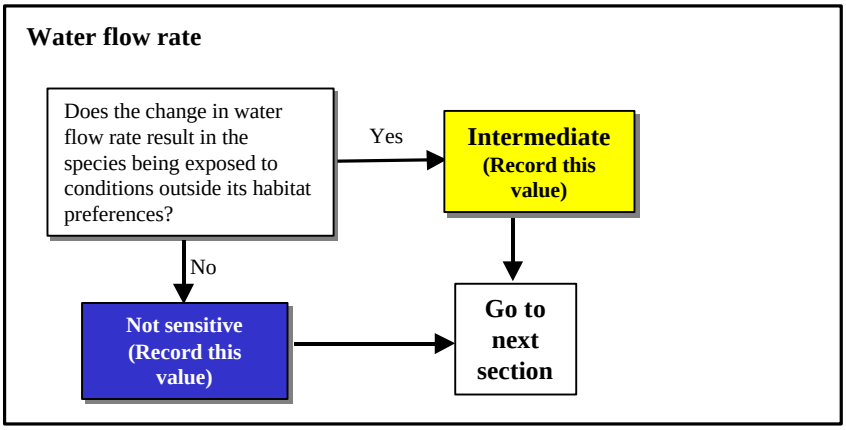

Sensitivity value for this section.

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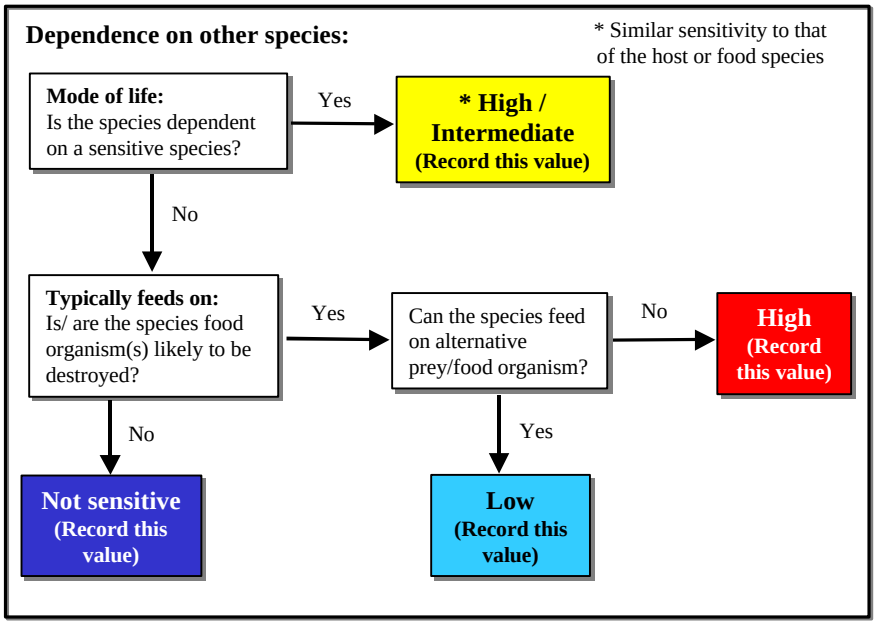


Sensitivity value for this section.

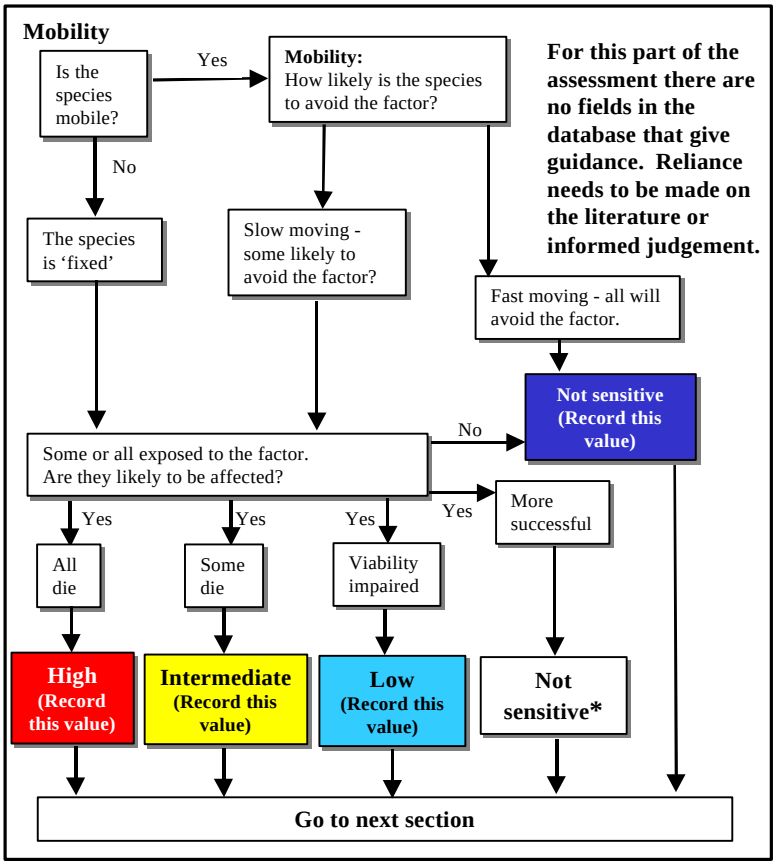
……..

Overall sensitivity value for changes in water flow rate (worst case value)

……..

Factor: **Changes in temperature**
Description:. Changes in the intensity of heat of the surrounding environment.
Benchmark: 1) A change of 5 °C outside normal temperature range for 3 consecutive days. This definition includes short term thermal discharges.
2) A change in temperature of 2 °C outside normal temperature range for a year. This definition includes long term thermal discharges.

For intertidal species, the normal range of temperatures includes the normal air temperature regime for that species.



Sensitivity value for this section.

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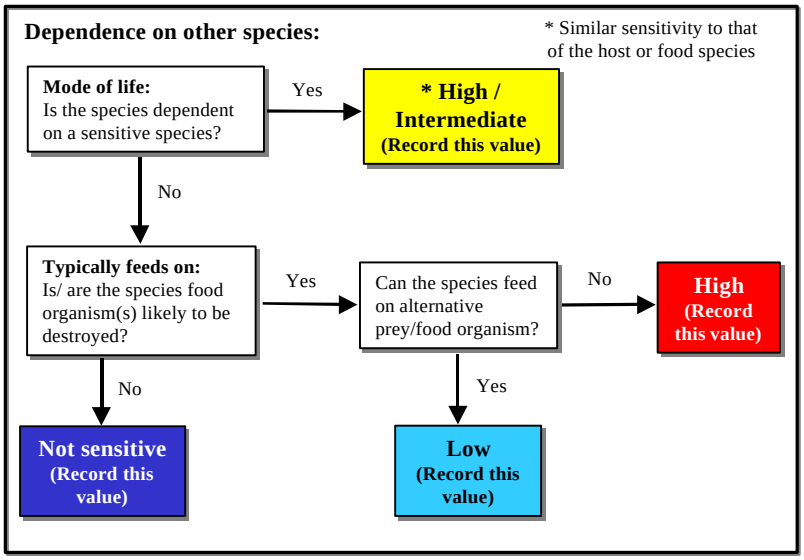

Sensitivity value for this section.

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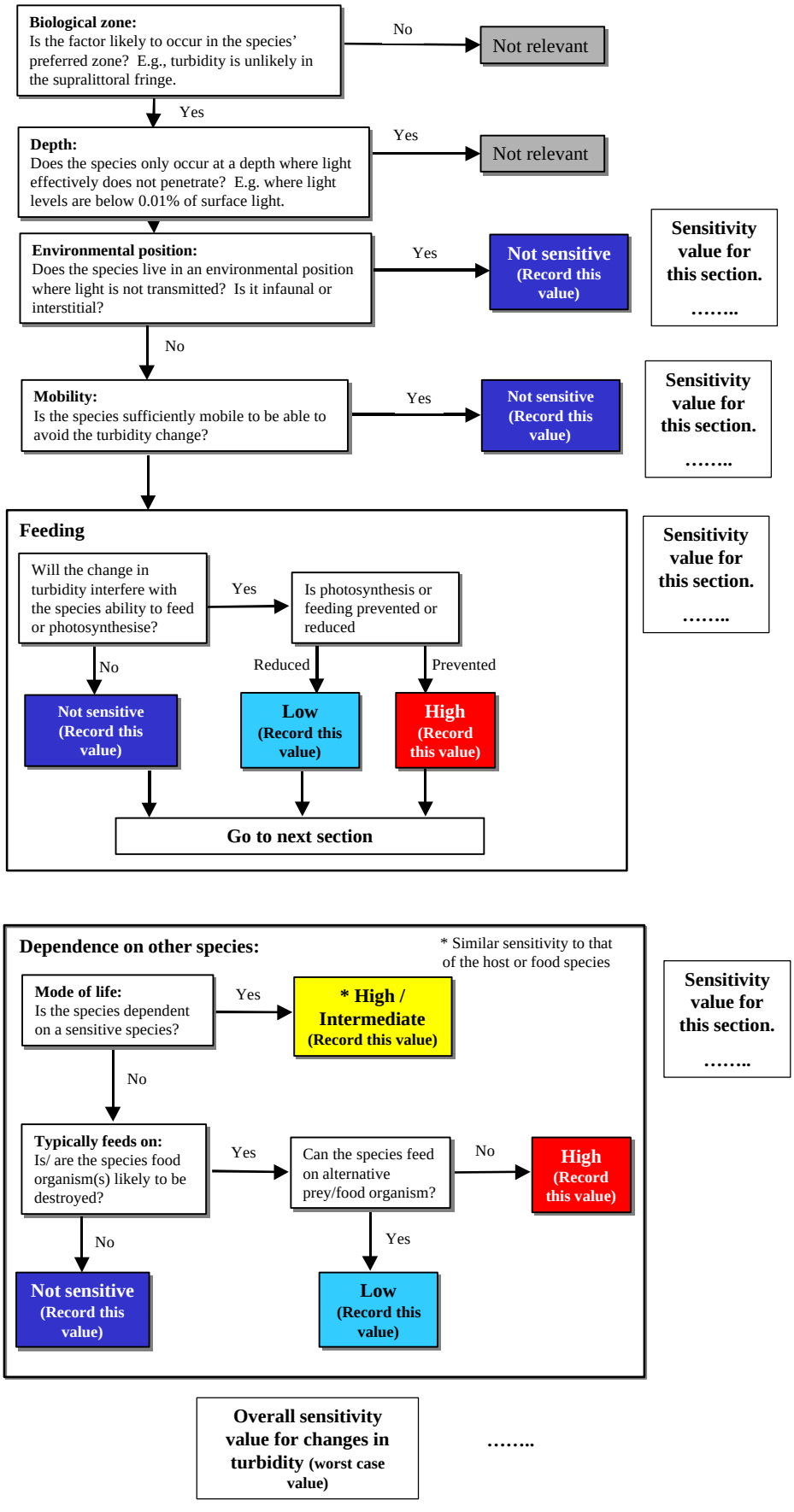
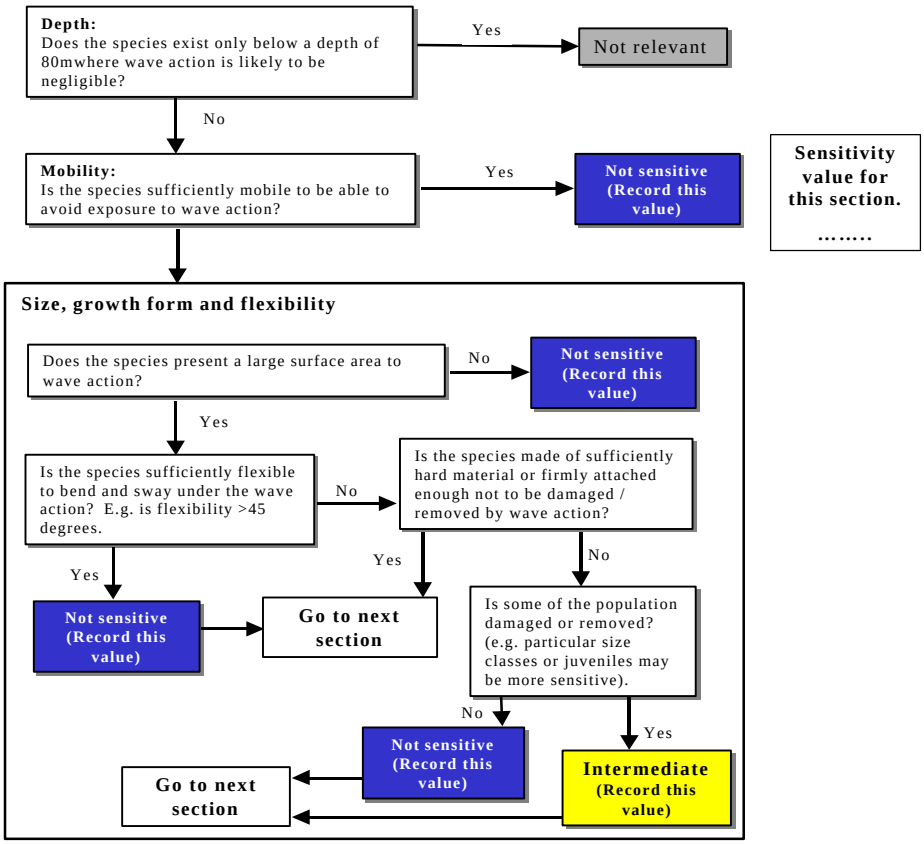
Overall sensitivity value for changes in temperature (worst case value)

……..

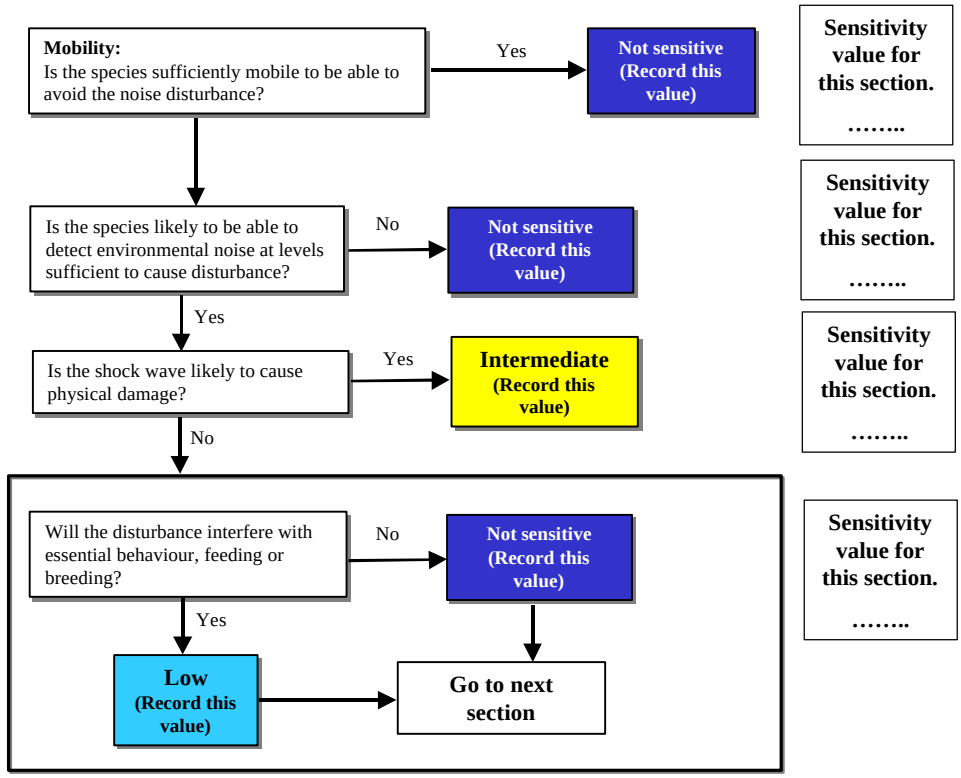
Factor: **Changes in turbidity**
Description:. The turbidity (clarity or opacity) of water is dependent on the concentration of substances that absorb or scatter light; for example, inorganic or organic particulates (suspended matter), plankton and dissolved substances.
Benchmark: Exposed to 50 mg/l suspended particulate matter or light absorption of 30% for five weeks.



Factor: **Changes in wave exposure**
Description: Exposure on an open shore is dependent upon the distance of open seawater over which wind may blow to generate waves (the fetch) and the strength and incidence of the winds.
Benchmark: A change of two ranks on the wave exposure scale (see glossary) e.g. from Exposed to Extremely exposed for a period of 1 year.



Factor: **Noise**
Description: Generally defined as unwanted or disruptive sound.
Benchmark: **Underwater noise levels** 130 dB re 1 ìPa (for broad spectrum noise 45 – 7070 Hz) at 100 metres from source intermittently over a 24 hour period for 1 month during important feeding or breeding periods. This approximates to the regular passing of a 30 metre trawler at 100 metres or a working cutter-suction transfer dredge at 100 metres.
Atmospheric noise levels 98 dB re 1 ìPa (for broad spectrum noise 45 – 7070 Hz) at 300 metres below the source on and off over a twenty-four hour period for 1 month during important feeding or breeding periods. This approximates to the regular passing of a Boeing 737 passenger jet 300 metres overhead.



Sensitivity value for this section. ……..

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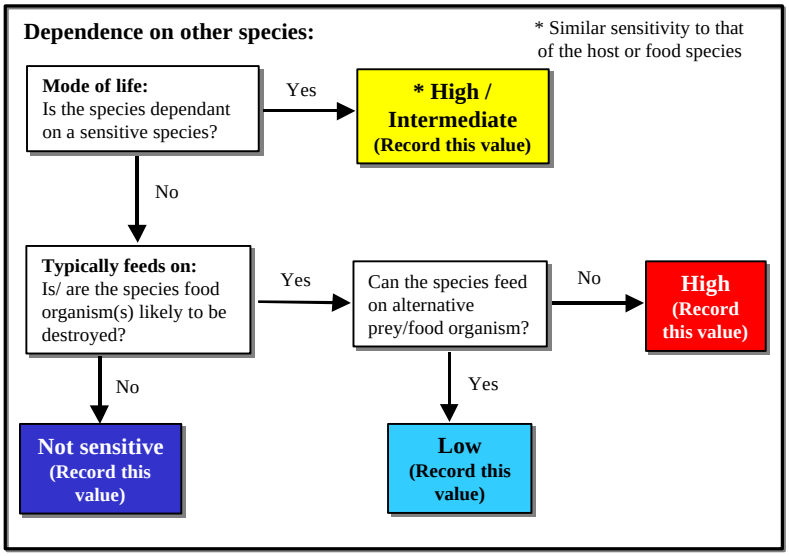


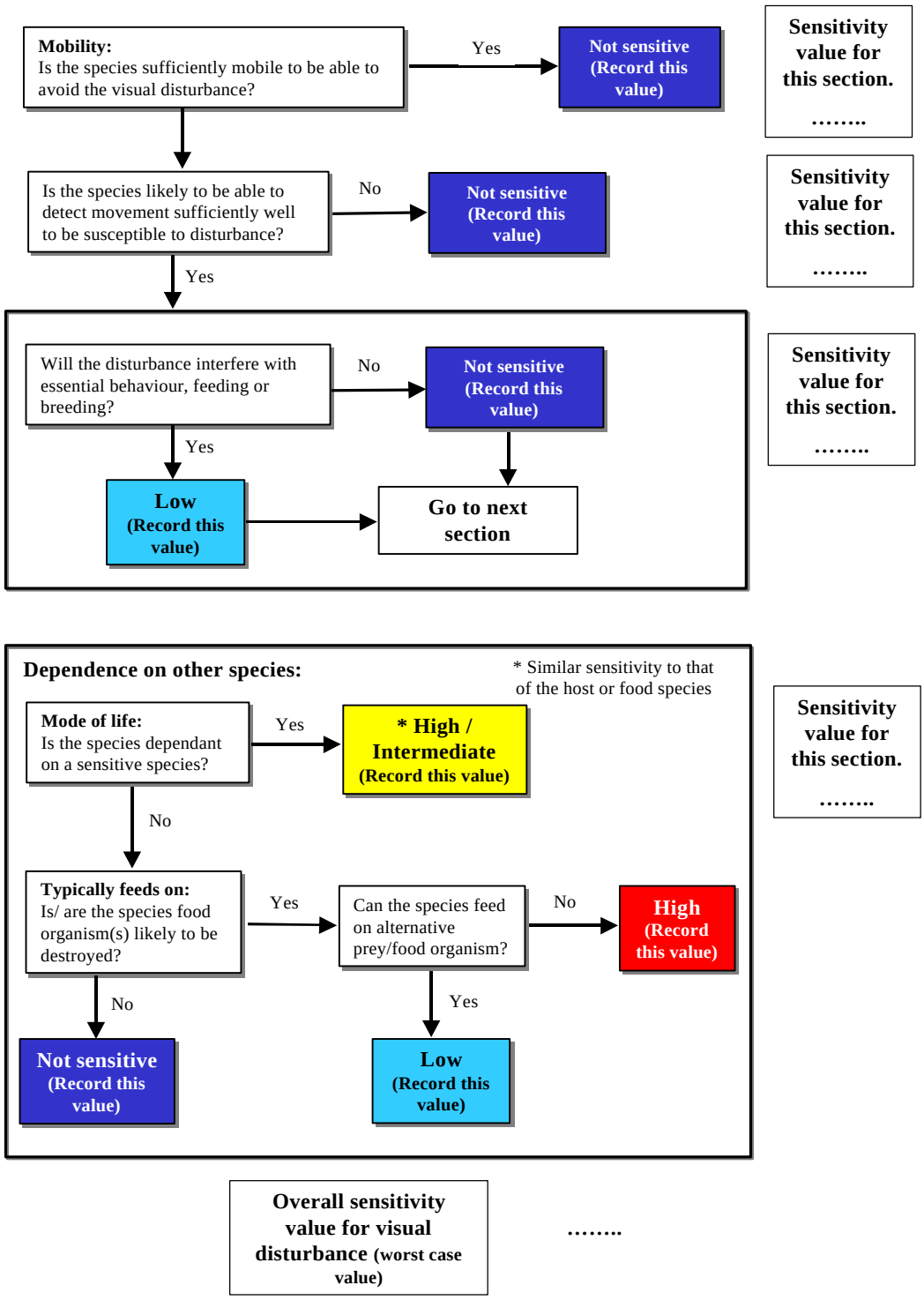
Sensitivity value for this section. ……..

Overall sensitivity value for noise (worst case value) ……..

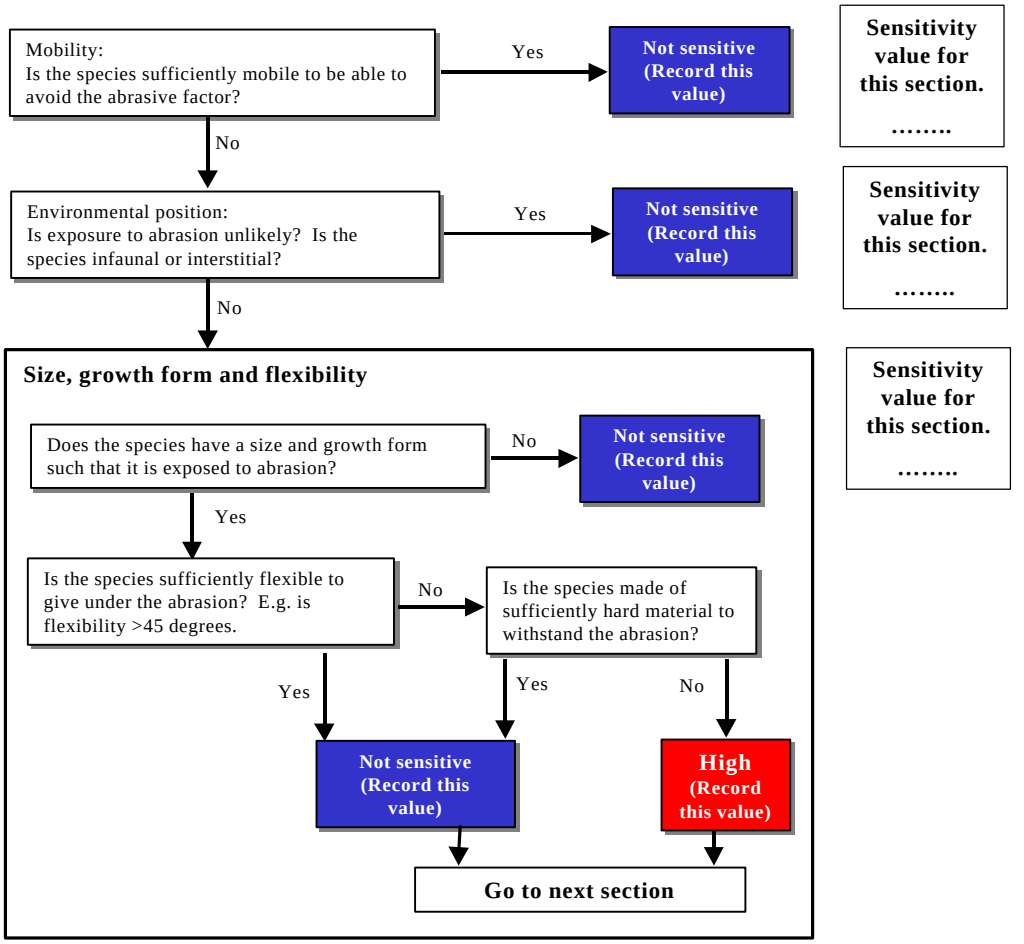
Factor: **Visual disturbance**

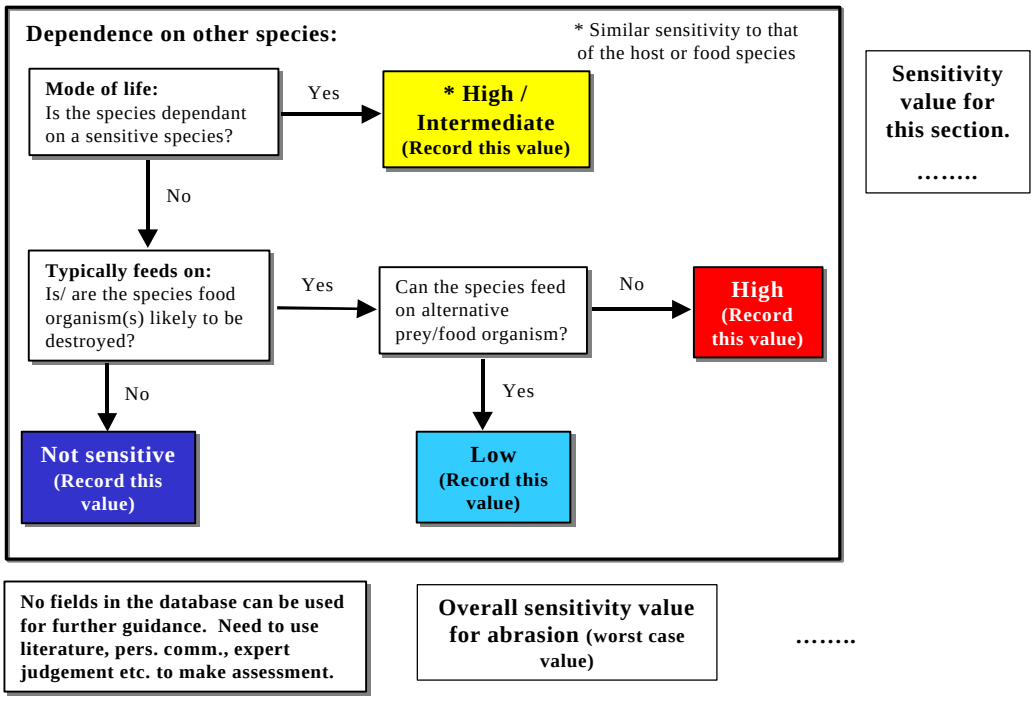
Description: This benchmark applies only to species that have sufficient visual acuity to resolve moving objects or at least differentiate between rapid changes in light intensity (as in a moving shadow).

Benchmark: The continuous presence for one month of moving objects not naturally found in the marine environment (e.g. boats, machinery, and humans) within the visual envelope of the area in which the species under consideration occurs.



Factor: **Abrasion**
Description: The mechanical interference or rubbing of the organism of interest.
Benchmark: Force equivalent to a standard lobster pot or creel landing on the organism.

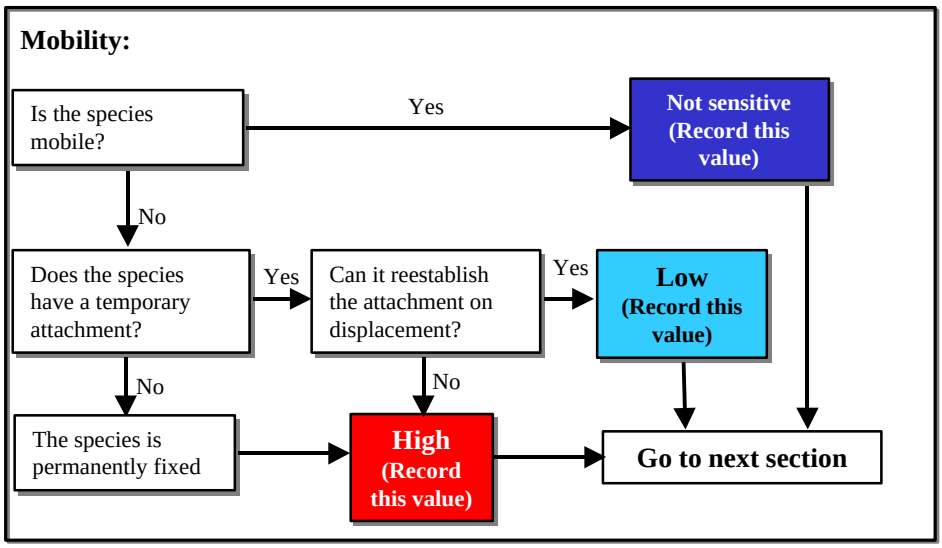




No fields in the database can be used for further guidance. Need to use literature, pers. comm., expert judgement etc. to make assessment.

Overall sensitivity value for abrasion (worst case value) ……..

Factor: **Displacement**
Description: Physical removal or transportation of the species or community of interest.
Benchmark: Removal of the organism from the substratum and displacement from its original position onto a suitable substratum. A single event is assumed for assessment.



Sensitivity value for this section.

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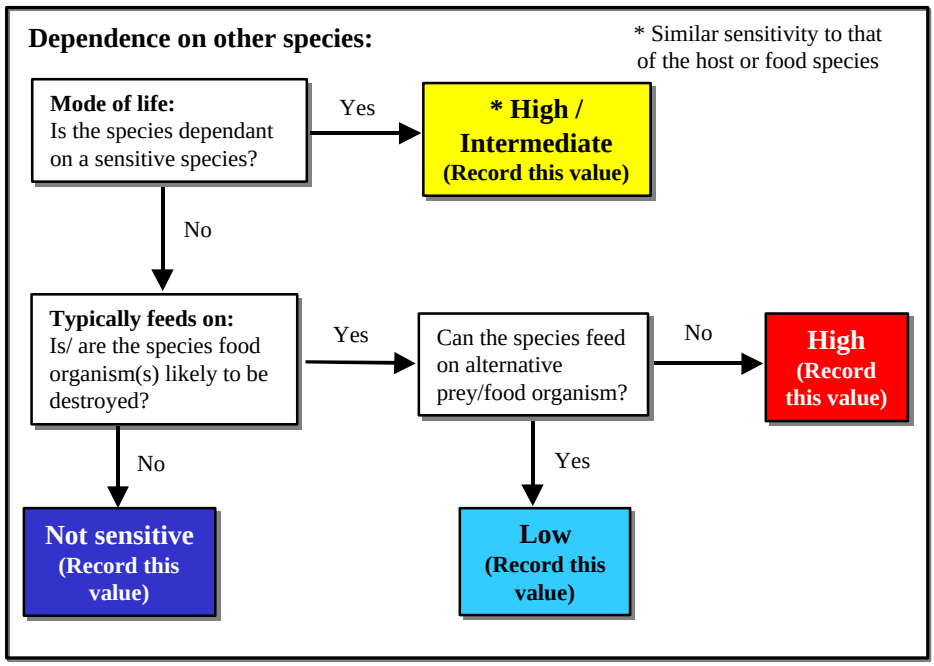

Sensitivity value for this section.

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No fields in the database can be used for further guidance. Need to use literature, pers. comm., expert judgement etc. to make assessment.

Overall sensitivity value for displacement (worst case value)

……..

Factor: **Synthetic compound contamination**

Description: Synthetic chemicals are by definition man-made and include, for example, organotins (tributyl tin, triphenyl tin), pesticides (lindane, atrazine, dichlorvos, DDT), organochlorides, organophosphates, solvents (carbon tetrachloride, chloroform) and poly-chlorinated biphenyls (PCBs).

Benchmark: Exposed to the following contaminant concentration:

Tributyl tin

1). Long term: 0.004 µg/l average in seawater for a 1 year period

2). Short term: 1 µg/l seawater for 2 days (48hrs)

DDT

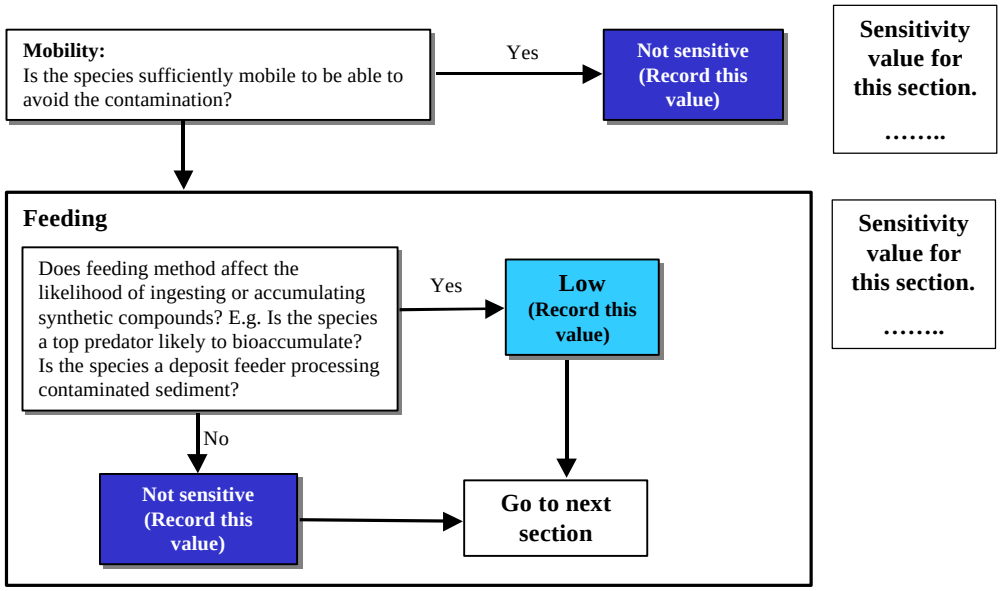
1). Long term: 0.05 µg/l average for 1 year

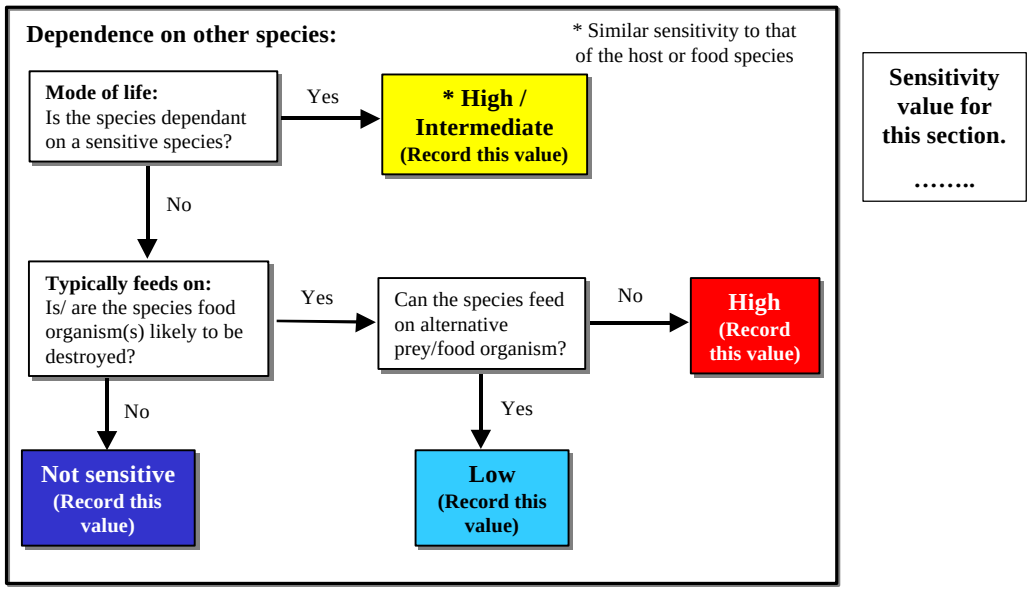
2). Short term: 0.25 µg/l for 48hrs

Lindane

1). Long term: 0.04 µg/l average in seawater for a 1 year period

2). Short term: 0.2 µg/l for 48hrs





No fields in the database can be used for further guidance. Need to use literature, pers. comm., expert judgement etc. to make assessment.

Overall sensitivity value for synthetic compound contamination (worst case value)

……..

Factor: **Heavy metal contamination**

Description: Heavy metals include, for example, Arsenic (As), Cadmium (Cd), Mercury (Hg), Lead (Pb), Zinc (Zn) and Copper (Cu).

Benchmark: Exposed to the following contaminant concentration

Copper

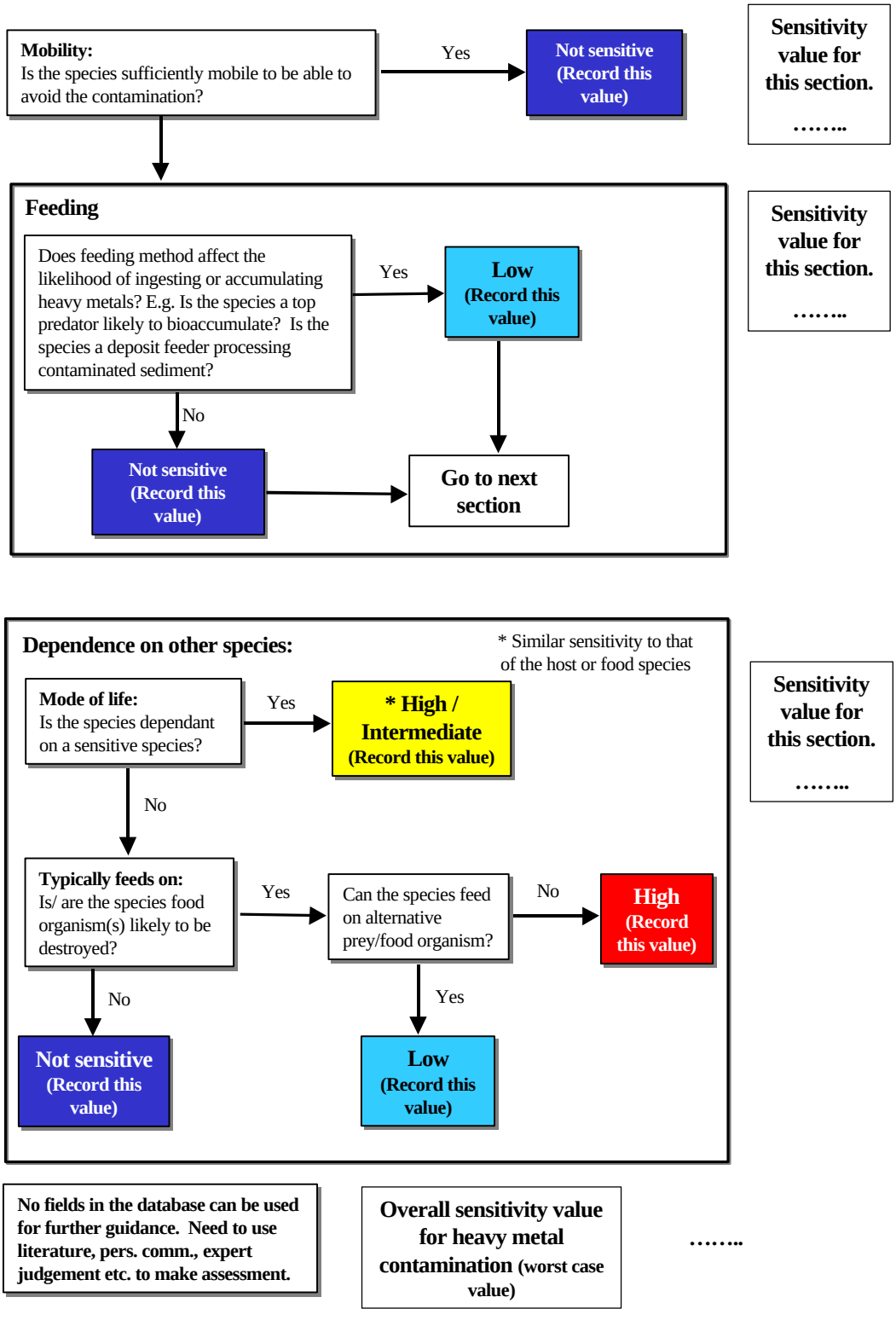
1). Long term: 10 µg/l annual average for 1 year period.

2). Short term: 50 µg/l for 48hrs

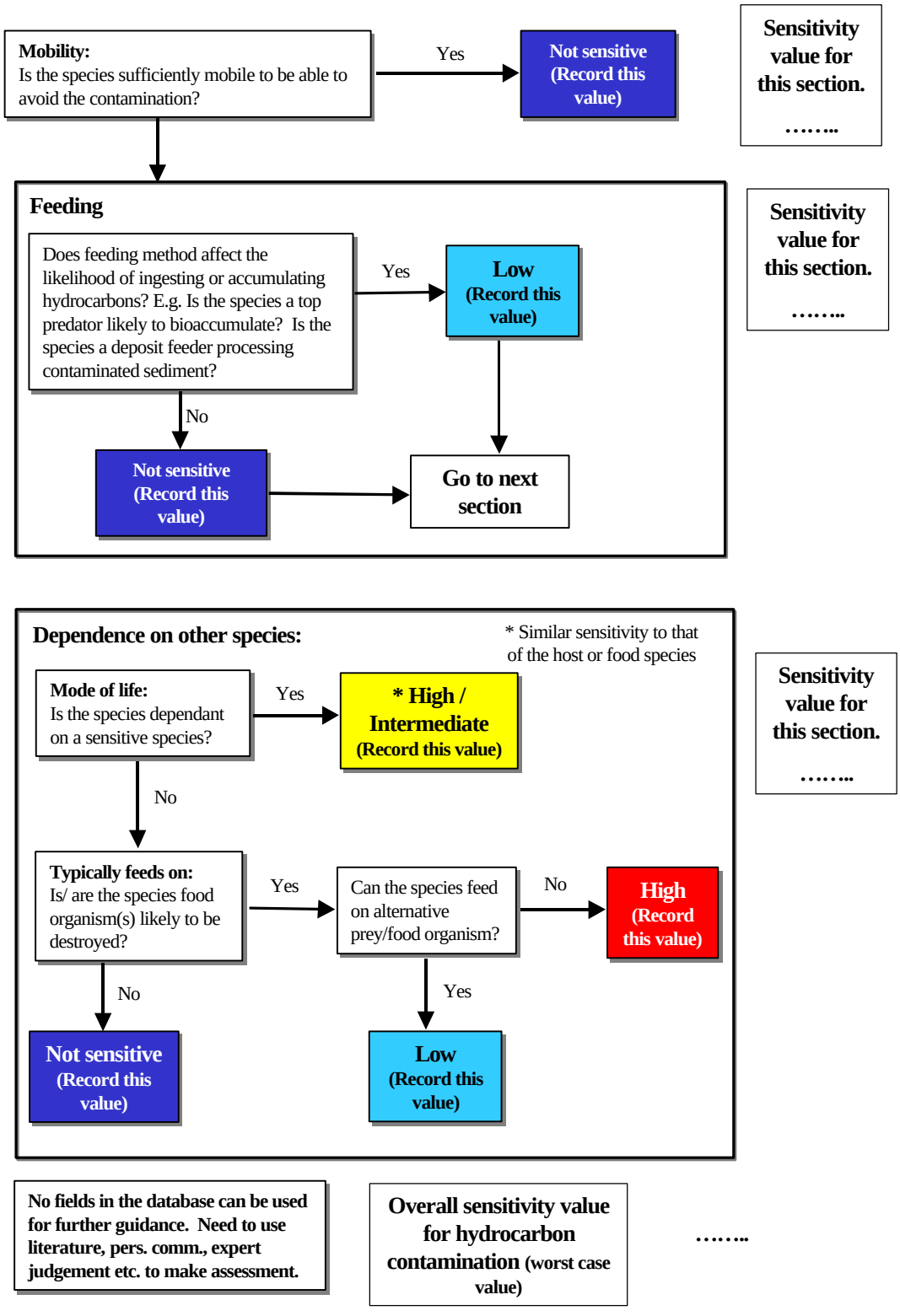
Mercury

1). Long term: 0.6µg/l annual average for 1 year, or 0.26 mg/kg in sediments for 1 year

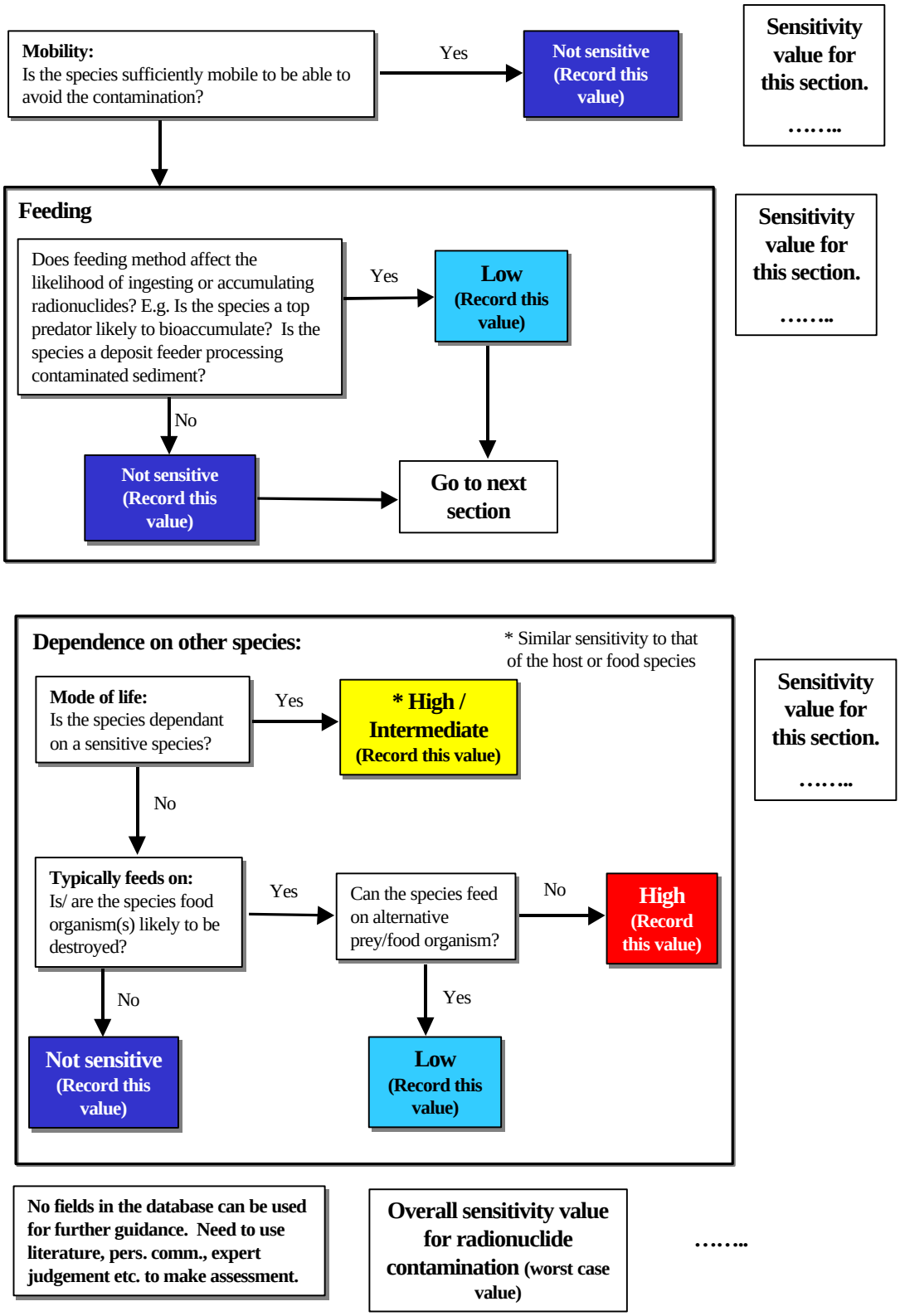
2). Short term: 3 µg/l for 48hrs



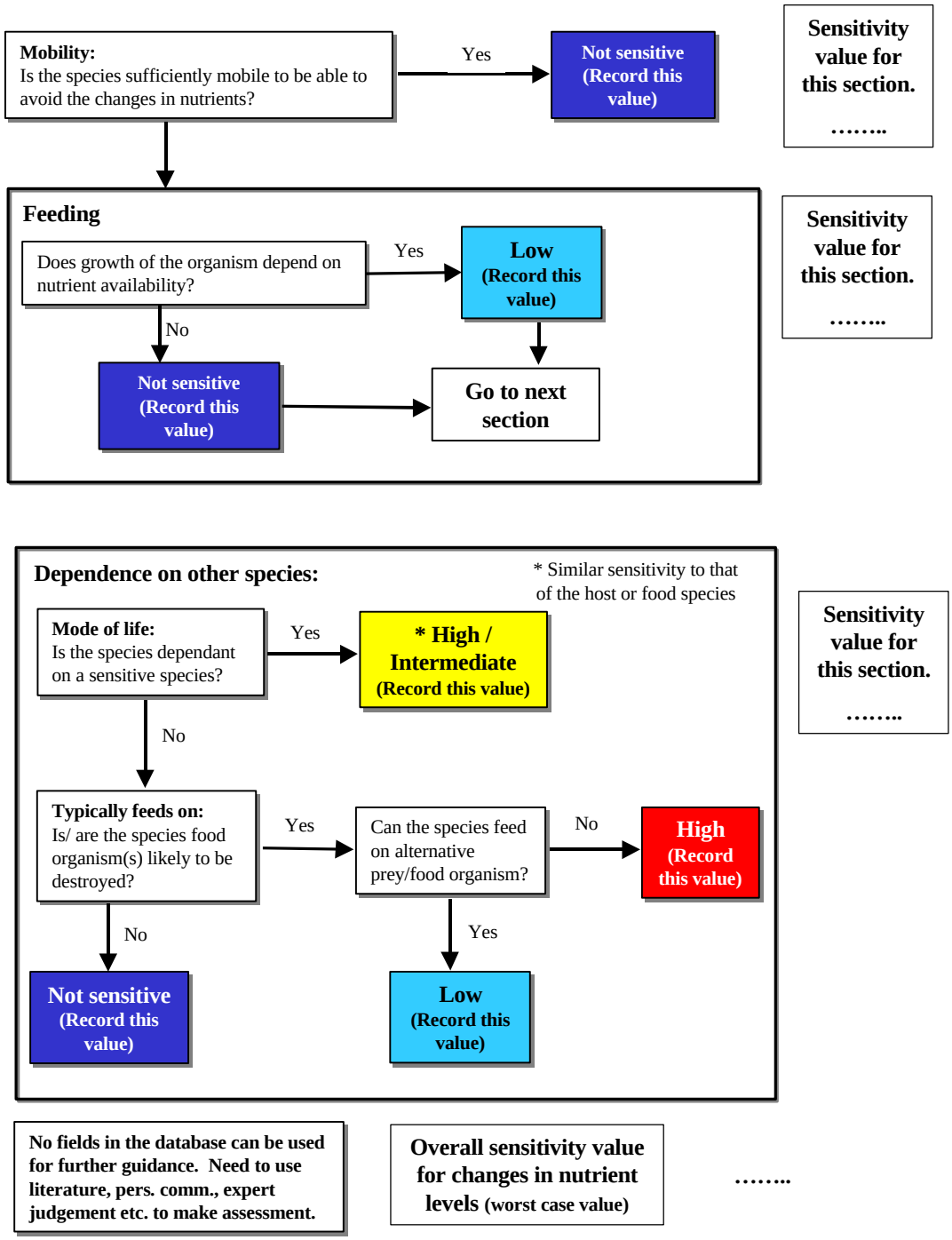
Factor: **Hydrocarbon contamination**
Description: Hydrocarbons include, for example, oils (crude and fuel oils) and poly aromatic hydrocarbons (PAHs).
Benchmark: Exposed to the following contaminant concentration
Benzo(a)pyrene
Exposed to 176 µg/kg in sediment for 1 year.



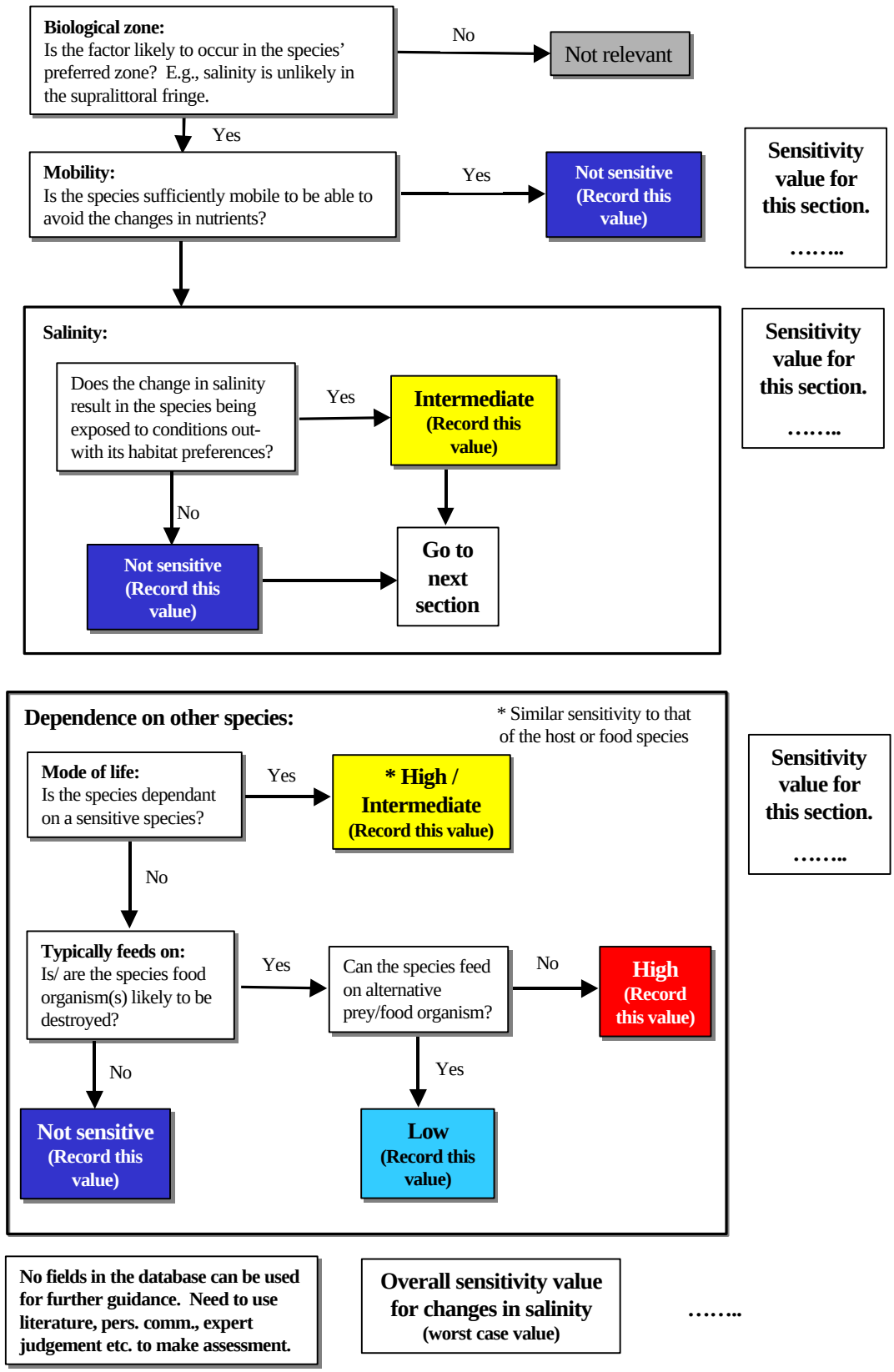
Factor: **Radionuclide contamination**
Description: Isotopes of elements that emit alpha, beta or gamma radiation.
Benchmark: Exposed to the following contaminant concentration
All radionuclides
Exposure to concentration of radionuclide equivalent to 100 mBg/l.



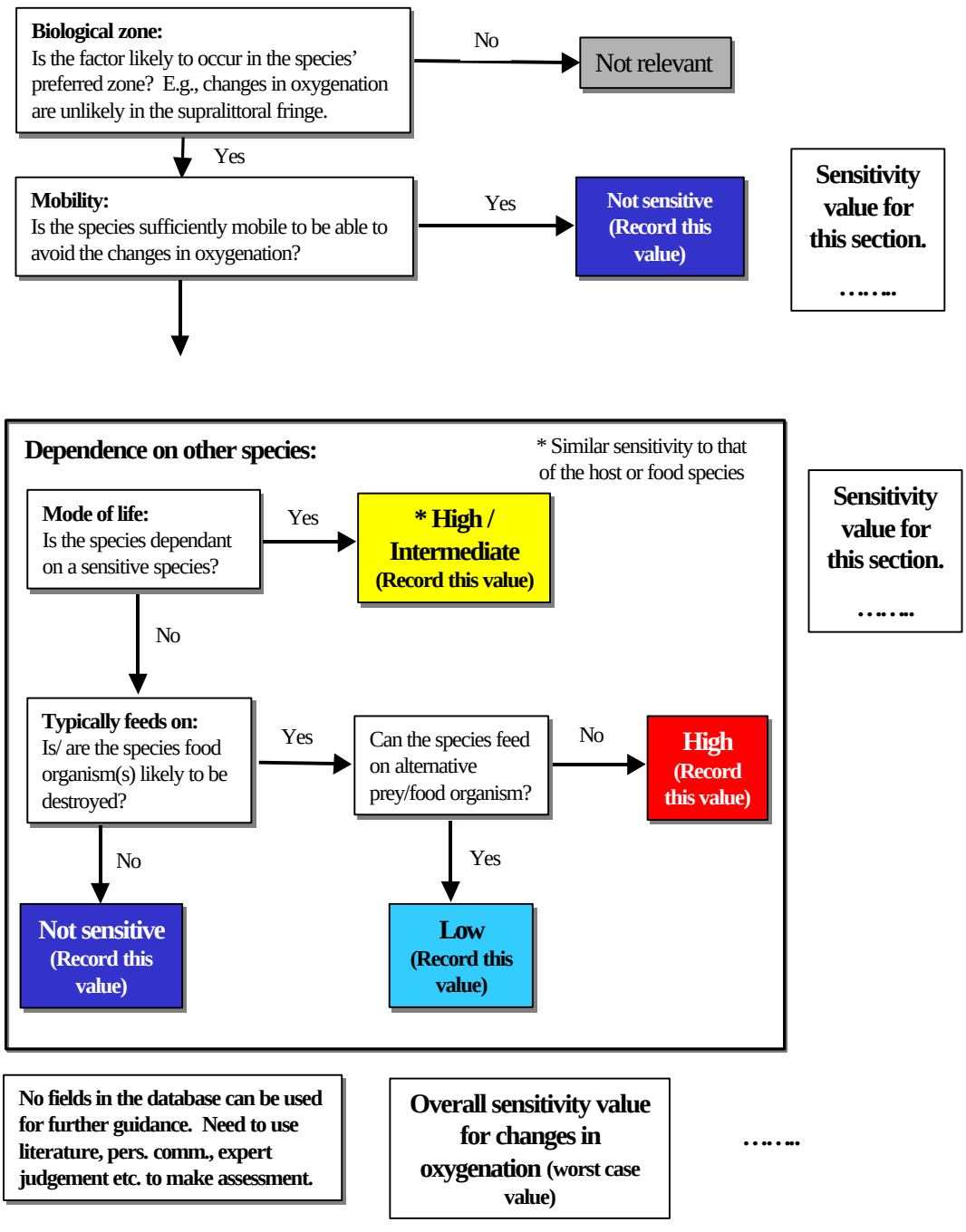
Factor: **Changes in nutrient levels**
Description: Nutrients include substances required for growth, for example, nitrogen, phosphorus, silicon, and micro-nutrients (heavy metals and vitamins).
Benchmark: A change of total nitrogen of 3 mg/l and/or phosphorus of 0.3 mg/l as an annual average. Alternatively, a 50% increase of nutrients as an annual average.



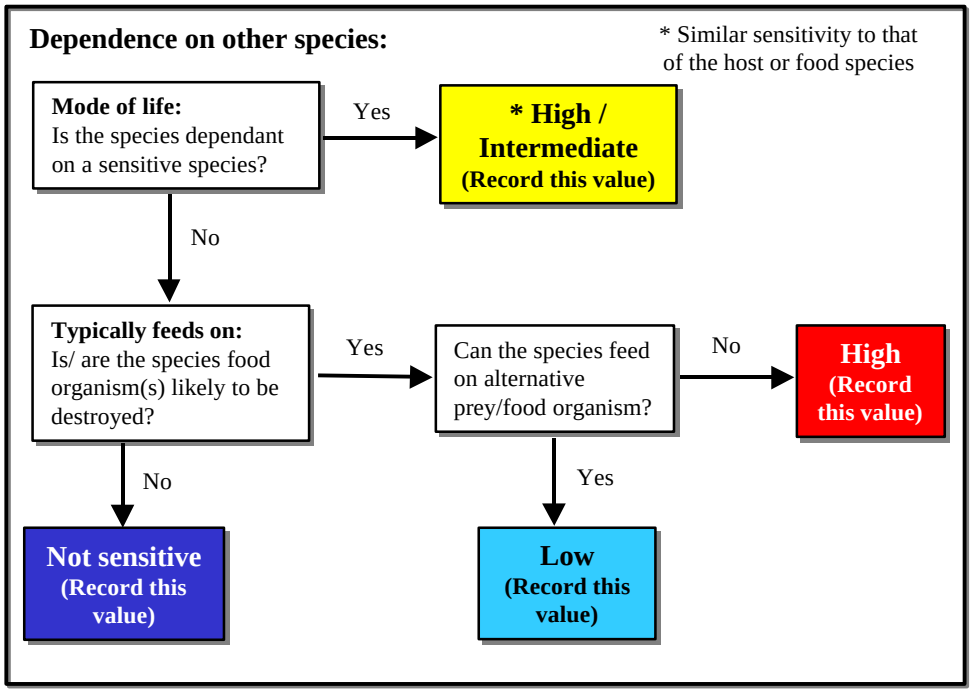
Factor: **Changes in salinity**
Description: Salinity is a measure of the amount of dissolved salts in the water.
Benchmark: A change of one category from the MNCR salinity scale (see glossary) e.g. from reduced to low for 1 year.



Factor: **Changes in oxygenation**
Description: Oxygenation is a measure of the amount of dissolved oxygen in water.
Benchmark: Exposure to dissolved oxygen concentration of 2 mg/l for 1 week.



Factor: **Microbial pathogens / parasites**
Description: By definition, disease causes a reduction in fitness of the organism so all species automatically score as sensitive to disease.
Benchmark: Sensitivity can only be assessed relative to a known, named disease. Likely to cause partial loss of a population and will be assessed of intermediate sensitivity.



Sensitivity value for this section.

……..

An assessment can only be made for known diseases that a species can contract. No fields in the database can be used for further guidance. Need to use literature, pers. comm., expert judgement etc. to make assessment.

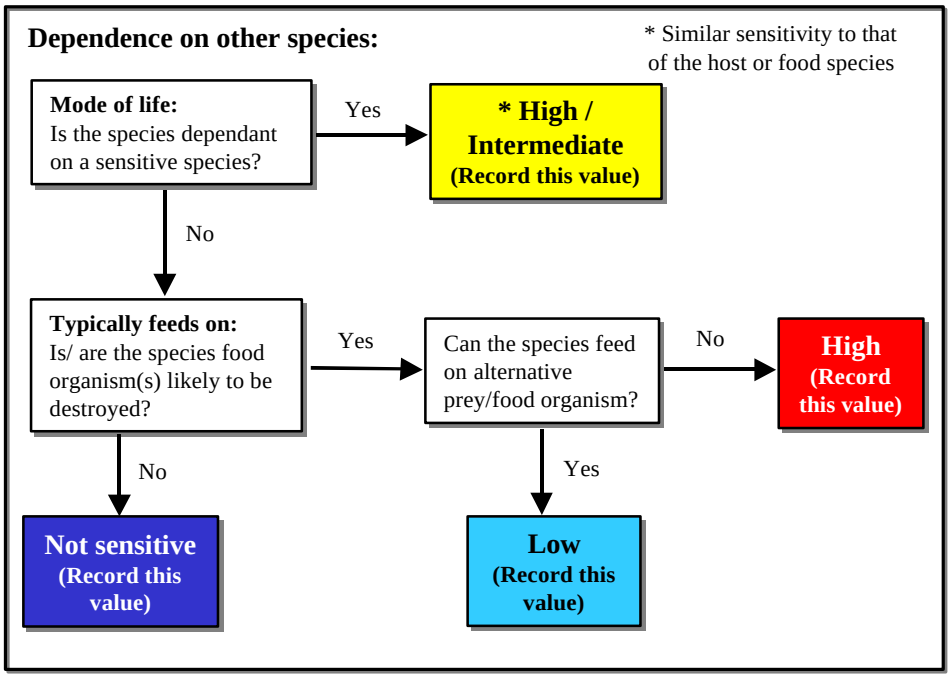
Overall sensitivity value for disease (worst case value)

……..

Factor: **Introduction of non-native species**

Description: Sensitivity is assessed against a specific alien or non-native species that already occurs in Britain and/or Ireland that is most likely to have an adverse effect and indicate the species being considered in the 'notes' section.

Benchmark: Sensitivity assessed against the likely effect of the introduction of alien or non-native species in Britain or Ireland.



Sensitivity value for this section.

……..

An assessment can only be made for known alien species that affect the species. No fields in the database can be used for further guidance. Need to use literature, pers. comm., expert judgement etc. to make assessment.

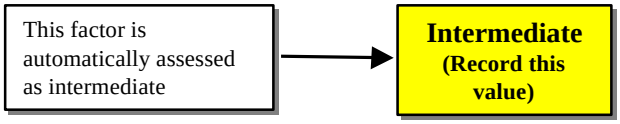
Overall sensitivity value for introduction of alien species (worst case value)

……..

Factor: **Selective extraction of this species**

Description: A species is bound to be sensitive to its removal and will automatically be assessed as 'intermediate'.

Benchmark: Extraction removes 50% of the species from the area under consideration.
The habitat remains intact or recovers rapidly.



Factor: **Selective extraction of other species**

Description: the species will be regarded as sensitive if the targeted species is a host for the species being considered, an obligate food source, or if it creates the habitat required by the species or community under consideration.

Benchmark: A species that is a required host or prey for the species under consideration (and assuming that no alternative host exists) or a keystone species in a biotope is removed.