Reef, habitats and connectivity 2

* assess the diversity of a reef system using a measure that could include (but is not limited to) line intercept transects, quadrats and fish counts using underwater video survey techniques, benthic surveys, invertebrate counts and rugosity measurements
* analyse reef diversity data, using an index, to determine rank abundance
* interpret, with reference to regional trends, how coral cover has changed on a reef over time
* recognise that some of the factors that reduce coral cover (e.g. crown-of-thorns) are directly linked to water quality
* understand that the processes in this sub-topic interact to have an overall net effect, i.e. they do not occur in isolation.
* **Mandatory practical:** Examine the concept of connectivity within or between habitats by investigating the impact of water quality on reef health.

**Describe how coral assemblages change on a reef over time.**

Explain the effects of Crown of Thorns Starfish have of reefs.

**Define:**

|  |  |
| --- | --- |
| **Line intercept transect** |  |
| **Benthic surveys** |  |
| **Quadrats**  |  |
| **Pulse event** |  |

List as many processes that impact coral reefs as you can:

|  |
| --- |
|  |

**Runoff**

Define the following terms:

**Species diversity**

**Species richness**

 **Rugosity**

**Reef connectivity**

List and describe similarity indices other than Simpson’s.

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**SDI: Calculate the SDI for a line intercept transect that included – 40 *Acropora sp., 47 Porites sp., 36 Pocillopra sp., 30 Favites sp, 23 Leptastrea sp., 2 Goniopora sp.***

|  |  |  |  |
| --- | --- | --- | --- |
| Genus | Number of Individuals  | *n-1* | *n(n-1)* |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  | *N* | *N*-1 | *N(N-1)* |
| Total individuals (*N*) |  |  |  |
| Simpson’s Diversity Index |  |  |  |

How does water quality influence COTS?

 What is the benefit of using video transects?

**Ocean acidification**