



## General Information for the case study:

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|---|---|---|
| WRL reference                           | M05 D03   |   |
| Module                                  | M05 Natural Resource Use and Sustainability   |   |
| Data set                                | D03 Quantifying the effect of fishing on Amazonian fish   |   |
| Research questions                      | <ol style="list-style-type: none"> <li>How stable are the size distributions of the oscar, <i>A. ocellatus</i>, and white piranha, <i>S. rhombeus</i>, in the Samiria River, given constant fishing quotas and a drought in 2010?</li> <li>Would you recommend adjusting the fishing quota for either species?</li> </ol>   |   |
| Keywords                                | <b>abiotic;</b> amazon; <b>biotic;</b> climate change; ecosystem; <b>fishing;</b> <b>human impact;</b> global warming; <b>overfishing;</b> <b>population;</b> sampling; <b>sustainability;</b>  |   |
| Potential Biology Curriculum links (UK) | <b>AQA</b>  | 3.4.1; 3.6.2; How Science Works.                  |
|   | <b>edexcel</b>  | Unit 4-10; 7.3; App 10                            |
|   | <b>IB</b>   | 5.1.1; 5.2.4; G.5.5                               |
|   | <b>Camb. Pre-U</b>  | 5.2; 2.3  |
|   | <b>OCR</b>  | 5.3.1; 2.3.4; 5.3.2; App D                        |
|   | <b>WJEC</b>   | 4.5; 5.8; BY6                                     |
|   | <b>SQA</b>  | Case studies; FH2H (2); FH2J (3); HOAL (1) : HOAM |
|   | <b>CCEA</b>   | 2.2; 2.3; 4.4; Maths and Stats knowledge          |
| Summary                                 | <p>A study carried out on a tributary of the Amazon River which looked at fish stocks for 2 species of fish (an Oscar and a Piranha) over a five year period. The study looks for evidence of change in population number and structure and relates these to the fishing activities of local communities and the possible effects of a severe drought in 2010. Analysis uses class interval or bin widths to compare the fish populations. The study provides a good opportunity to discuss sustainability of fish stocks in delicate ecosystems such as the Amazon river and provoke further thoughts about current threats such as climate disruption/change. For those keen to practice statistics, the data would be very suitable for further statistical treatment in order to determine degrees of significance over time.</p> <p><b>Research Objectives 1 and 2: 6/10</b></p> |   |

