

# Course outline

## **Assessing the status of fish stock for management: the collection and use of basic fisheries data and statistics**

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**University of the South Pacific,  
Suva, Fiji Islands**

# Assessing the status of fish stock for management: the collection and use of basic fisheries data and statistics

- 4 Main modules:
  - M1: General introduction
  - M2: Fisheries ecology
  - M3: Data collection
  - M4: Quantitative fisheries biology

# Course outline

- **M1 General introduction :**
  - Fisheries of the world, status and trends in the Pacific.
  - Patterns of exploitation, industrial vs. small scale fisheries.
  - Fisheries and resource management, the role of the fisheries scientist.
  - Current trends: EAF approach and MPAs.

- **M2 Fisheries ecology:**
  - General overview of the environment, processes, community structure
  - Life histories, trophic levels, species interaction, life history traits, ecological and evolutionary strategies.
  - Fishing effect on the population and community. Effect of fishing on life history traits.
  - Ecological concepts in relation to multi-species fisheries, fishing down the food web.

- **M3 Data collection:**
  - Biostatistics 1: Descriptive statistics, measures of variability, the normal distribution and statistical inference
  - Biostatistics 2. Fitting models to data. Simple and multilinear models.
  - Biostatistics 3. Sampling theory: Objectives, accuracy and precision. Sampling strategy, Survey methods and survey designs.
  - Exploratory analysis, trends. Database management.

- **M4 Quantitative fisheries biology :**
  - Principles of stock dynamics: Stock definition. The stock and the catch equation.
  - Age and growth: Methods of age determination, length-frequency analysis.
  - Mortality: Relative and instantaneous mortality, estimation of mortality rates.
  - Yield per recruit models. Exploitation rates. Stock-recruitment
  - Surplus production models. Density dependence.

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- **Methods:**
  - Lectures and exercises
  - Adaptive approach
  - Interactive sessions
  - This is your course – not ours!