

Prediction Model

Age-based Thompson and Bell's Model

Length-based Thompson and Bell's Model

Basic Features of Thompson and Bell's Model

- The Thompson and Bell model was 'opposite' to the VPA
- Thompson and Bell model was used for determining an effect from fishing effort to the future fishery productivity
- The VPA and cohort analysis were used for estimate **number of fish that should be in the sea**, for know the number of catchable fish and to estimate the sustainable yield, in order to manage the fishing effort of each age or length group (F at age / length array)

Basic Features of Thompson and Bell's Model

- ▶ VPA and cohort analysis were known as **"historic or retrospective data"**
- ▶ While Thompson and Bell model was **"predictive model"**
- ▶ The Thompson and Bell calculation steps
 - ▶ Collecting the necessary input data and chosen data
 - ▶ Calculating future productivity, biomass and value of future productivity

Provision of Inputs

- ▶ F was reference as **'F-at-age-array (or at-length-array)'**, mostly any F can be used, but for avoiding the non – relation to the real situation, so **'F' should come from VPA**
- ▶ The number of recruitment from VPA was used for estimating the absolute value, but in case that lack of this kind of data, the relative value are usable
- ▶ weight-at-age-array or at-length-array
- ▶ **Price/kg.-age-array or at-length-array**

Results

- Estimation of total catch in number
- Total number of mortality fish
- Productivity
- Average biomass
- Economical value of fish
- MSY
- MEY
- F and X-factor both variable for calculating the optimum fishing effort

Thompson and Bell's Model

Can be calculating with catch price, then becomes to the development of *"Bio – Economical model"* which really useful for fishery management

Length-based Thompson and

