Write-up/pseudocode of function for shifting CA DC fishing effort: risk\_mgmt() in Mgmt\_scenarios\_risk.R)

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**Inputs**

* Data frame with fishing effort – output of effort\_mgmt()
* Name of fishing metric with which to calculate the risk
* Data frame with all humpback and blue whale predictions, to join to fishing effort within the function. Note this argument is ignored if the data frame with fishing effort has columns for whale prediction values
* Minimum and maximum year months for which to calculate risk
  + These should only be kept if we decide to use complete() – see below

**Input checks**

* For the fishing effort data, all grid cells must be assigned to a single region. Four grid cells in the input data (63521, 63522, 63523, and 63524) are assigned to both CenCA and NorCA
* If the data frame with fishing effort has columns with whale predictions, the function checks that none of these whale predictions are NA

**Functionality**

* Sum the fishing effort values by year\_month and grid cell ID
* Join the whale predictions to the fishing data by year\_month and grid cell ID. Then calculate humpback and blue risk by multiplying the specified fishing metric and the respective whale prediction values
* Sum the fishing and risk values by year\_month and region, and return this data frame

**Notes**

* The final output does not include whale predictions summarize by year\_month and region, because the function does not use complete() to account for all possible year\_months and grid cells. This would be straightforward enough to add if useful.