



The tables will be covered one by one from top to bottom, left to right, respectively. The first is the “Wave Height & Angle of Approach” table where the angle is relative to that of the shoreline. The table assigns points based on the combination of a wave height and an angle within the specified ranges. For example, a wave height of 2.8 feet and angle of 35 degrees would result in a point score of 2.5. The color in this table reflects that of the risk colors associated with the risk table. This is the most heavily weighted table in the equation.

The “Max Wave Height” table is based on the largest observed wave height within the past 12 hours. This table will require some historical weather information to calculate the associated risk points. If the max wave height in the past 12 hours was less than 3 feet, then 0 points are assigned.

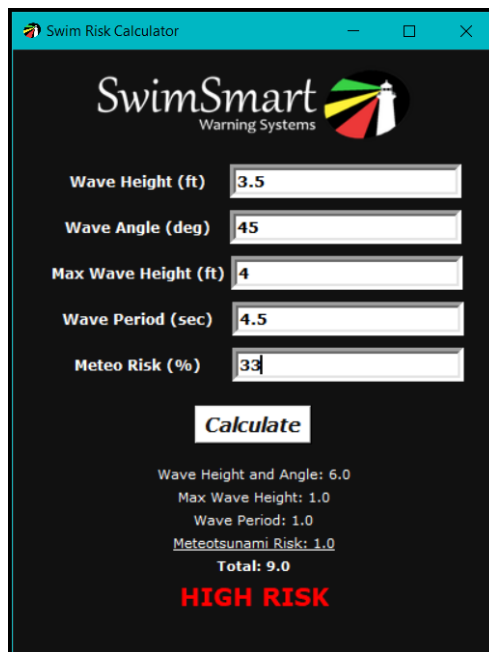
The “Wave Period” table requires both the [wave period](#) and wave height to calculate the risk points. For waves less than 3 feet, the left half of the table is used. For waves greater than or equal to 3 feet, the right half is used. For wave periods less than 4.5 seconds 0 points are assigned.

The final point table to calculate is the “Seiche/Meteotsunami Potential” table which is based on a percentage chance of a [Seiche](#) or [Meteotsunami](#) of occurring. Obtaining some of this information may require contact with your local area’s [NWS parent office](#).

The wave angle approach arrow shows the most probable currents based on the wave’s angle of approach to the shoreline.

## Calculator Usage:

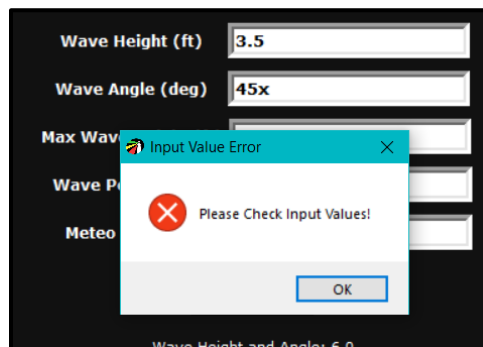
To use the calculator shown below in Figure 2, an input text box is available for each of the various pertinent weather parameters (wave height, angle, period, max wave height, and meteo/seiche risk). All these boxes default to 0.0. Once these values are entered into the boxes press the calculate button. The risk point values as explained in the prior section are then displayed for each table. A total point value is calculated and the respective swim risk is displayed at the bottom of the calculator.



The screenshot shows a window titled "Swim Risk Calculator" with the "SwimSmart Warning Systems" logo. It contains five input fields: "Wave Height (ft)" with value 3.5, "Wave Angle (deg)" with value 45, "Max Wave Height (ft)" with value 4, "Wave Period (sec)" with value 4.5, and "Meteo Risk (%)" with value 33. Below the fields is a "Calculate" button. The results section displays: "Wave Height and Angle: 6.0", "Max Wave Height: 1.0", "Wave Period: 1.0", "Meteotsunami Risk: 1.0", "Total: 9.0", and "HIGH RISK" in red text.

Figure 2: Swim Risk Lookup Tables

If one of the text boxes contain an incorrect character an error will appear as shown below in Figure 3. If this popup appears please double check the input values for issues. Do not enter the units of measure, the text boxes only take number values.



The screenshot shows the same calculator interface as Figure 2, but with an "Input Value Error" dialog box overlaid. The dialog box has a red 'X' icon and the text "Please Check Input Values!". The "Wave Angle (deg)" input field in the background now contains the text "45x".

Figure 3: Input Value Error

The calculator detects values that are out of bounds as shown below in Figure 4. For instance, the wave angle is in-between 0 and 90 degrees. The calculator detects when a wave angle of 96 degrees, which exceeds the upper bound, is entered and prints out a “calculator error” at the bottom. If this error occurs, please review the input values and the tables in Figure 1.

Wave Height (ft)	3.5
Wave Angle (deg)	96
Max Wave Height (ft)	4
Wave Period (sec)	4.5
Meteo Risk (%)	33

**Calculate**

Wave Height and Angle: [5.0, 6.0, 6.5]  
Max Wave Height: 1.0  
Wave Period: 1.0  
Meteotsunami Risk: 1.0  
Total: 9.0

**CALCULATOR ERROR**

Figure 4: Calculation Error

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