

# 5 Summary and Recommendations

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This report reviews the models available for vessel-generated wave prediction. Most of the models have limited application. The limited data available to evaluate these models show significant scatter and are deficient in the available supporting information on vessel hull characteristics.

A set of field experiments would be very useful in further evaluating the models presented herein and in improving their predictive capabilities for a given vessel hull form and operating draft. The experiments should be conducted with selected vessel hulls that are representative of common vessels used for recreation.

The vessels should be ballasted so that they do not plane at higher speeds and the hull geometries and operating drafts should be well defined. The water body where the experiments are conducted should have a depth that yields a satisfactory range of Froude numbers for the vessel speeds employed, and the water depths over the range of wave propagation should be relatively constant to eliminate shoaling and refraction effects. Wave records should be taken for a sufficient range of vessel speeds and wave decay distances. Besides a value for  $H_m$  from each record, the wave energy in each record should be determined as discussed above. The simplest model to use is the PIANC (1987)/Verhey and Bogaerts (1989) model. The data from the recommended field experiments should be used to further develop the coefficients  $A''$  and  $K$  for the vessels studied. The experimental data may also redefine the power to which the Froude number is raised. The data should also be used to improve the definition of the coefficients  $A'$  and  $B'$  in the Weggel and Sorensen (1986) model. Ideally, these coefficients should be related to vessel bow geometry.