

# Peer Review Summary Document

(7/8/2021)

## Peer Review Plan

<https://www.usgs.gov/atom/112171> [48 KB PDF].

## Title and Authorship of Information Product Disseminated

Preliminary Assessment of the Wave Generating Potential from Landslides at Barry Arm, Prince William Sound, Alaska, By K. R. Barnhart, R. P. Jones, D. L. George, J. A. Coe, and D. M. Staley.

## Peer Reviewers Expertise and Credentials

Reviewer 1 has a PhD in geophysics. The reviewer's expertise is in geophysical monitoring, tsunami hazards and early warning systems.

Reviewer 2 has a JD degree and a PhD in geophysics and seismology. The reviewer's expertise is in geophysical monitoring, tsunami hazards and early warning systems.

Reviewer 3 has a MS in geophysics and over three decades of experience working on simulation of geophysical phenomena, most recently focusing on tsunami hazards. The reviewer has authored over 100 scientific publications.

Reviewer 4 has a PhD in geological sciences. They have expertise in Alaskan geology and hazards, including tsunami hazards. The reviewer has authored over 25 scientific publications.

Reviewer 5 has a PhD in geophysics and has over two decades of experience specializing in tsunami modeling and tsunami hazards, with a focus on the Alaska region. The reviewer has authored over 25 scientific publications.

## Charge Submitted to Peer Reviewers

The reviewers were asked to make an objective evaluation of the landslide and tsunami modeling described in the manuscript.

## Summary of Peer Reviewers Comments

Reviewers 1 and 2 recommended expanding the results to include additional analysis of new areas, and the addition of a tsunami travel time calculation. Reviewers 2 and 4 recommended expansion of the discussion on the landslide mapping and the basis for kinematic elements. Reviewer 3 recommended additional comparison between this latest work and prior tsunamigenic landslide studies and recommended the discussion of bottom friction be expanded. Reviewer 4 recommended more explanation of the landslide volume calculations. Reviewers 2 and 4 provided recommendations to improve the clarity of figures. Reviewers 2, 4, and 5 recommended more explanation of the difference between this latest work and prior work that simulated the tsunami hazard presented by the Barry Arm landslides. Reviewer 4 recommended additional explanation of the D-Claw model. Reviewers

4 and 5 recommended more careful use of language to describe both the landslide scenarios and landslide mobility. Reviewer 5 recommended additional explanation of why the largest wave generating scenario produced the largest wave as compared to the other considered scenarios.

## **Summary of USGS Response to Peer Reviewers Comments**

The authors made changes in the manuscript to incorporate virtually all suggested recommendations from the reviewers. A summary of specific changes made are as follows:

- Revised the language used to describe the landslide scenarios.
- Expanded the description of the D-Claw model, how it represents landslide mobility, and how it represents bottom friction. This description more fully contrasts the approach used by D-Claw for generating tsunamis with prior work.
- Expanded the description of the landslide mapping, the basis for the kinematic elements, and the method used to construct the landslide failure surface.
- Incorporated additional discussion (including the addition of multiple new figures) to explain the difference in wave generation between the four scenarios and compare this manuscript results more extensively with prior work that simulated the tsunami hazard presented by the Barry Arm landslides.
- Revised all figure elements where reviewers suggested clarity recommendations.
- Added new figures to provide (a) travel time results, (b) landslide runout through time, and (c) displaced water volume through time.

## **The Dissemination**

The published information product will be released as a USGS Open-File Report publication series and will be available at <http://pubs.usgs.gov/>.