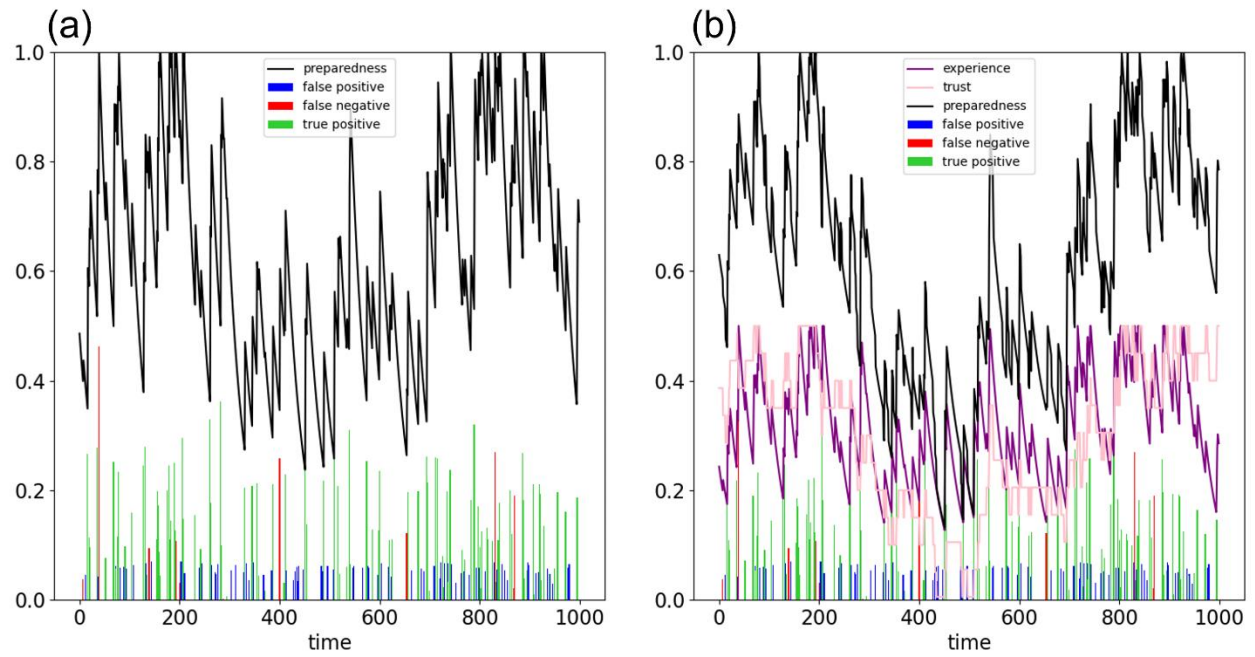Hydrology and
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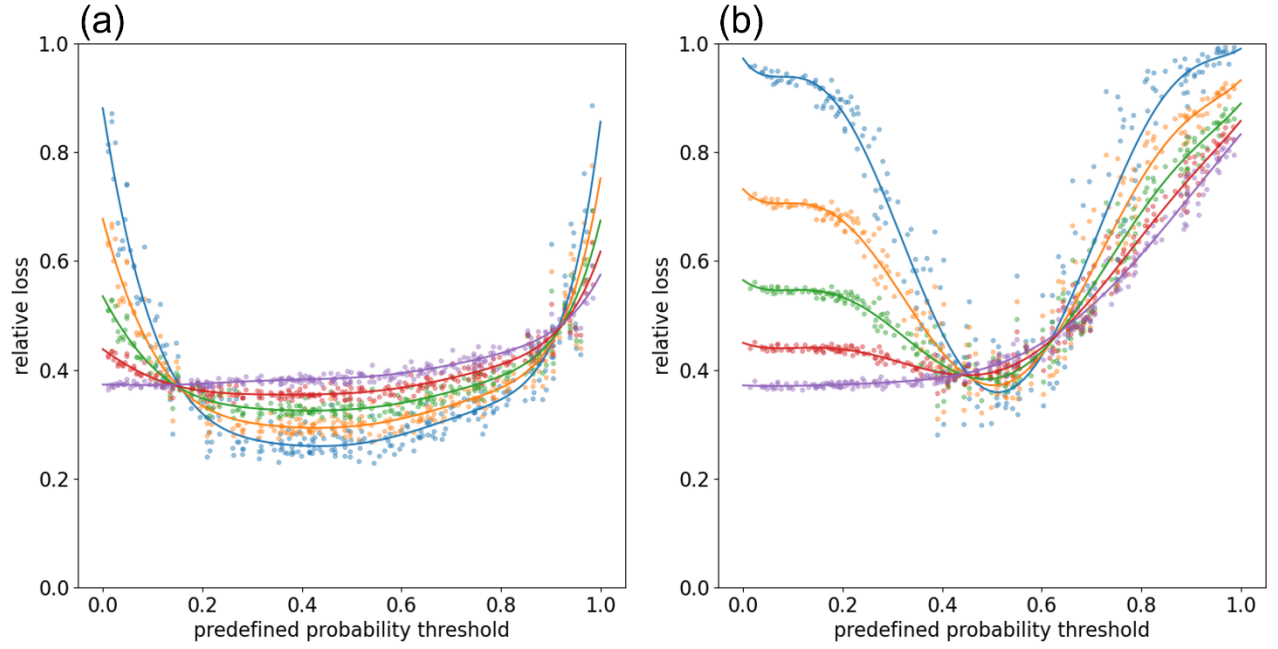
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Figure S1. Same as Figure 1 but for the entire time range.

Figure S2. Sensitivity of γ in the equation (7) to the relationship between relative loss and predefined probability thresholds. No cost of the mitigation and protection action is assumed. In (a), the high prediction accuracy that is same as the experiments 2.1 and 2.4 is assumed. In (b), the lower prediction accuracy that is same as the experiments 2.2 and 2.5 is assumed. Blue, orange, green, red, and purple lines are results with $\gamma = 0, 0.25, 0.5, 0.75, and\ 1$, respectively. Each dot shows the result of the individual Monte-Carlo simulation and we smoothed them by Gaussian process regression. See also Table 4 for detailed parameter settings.
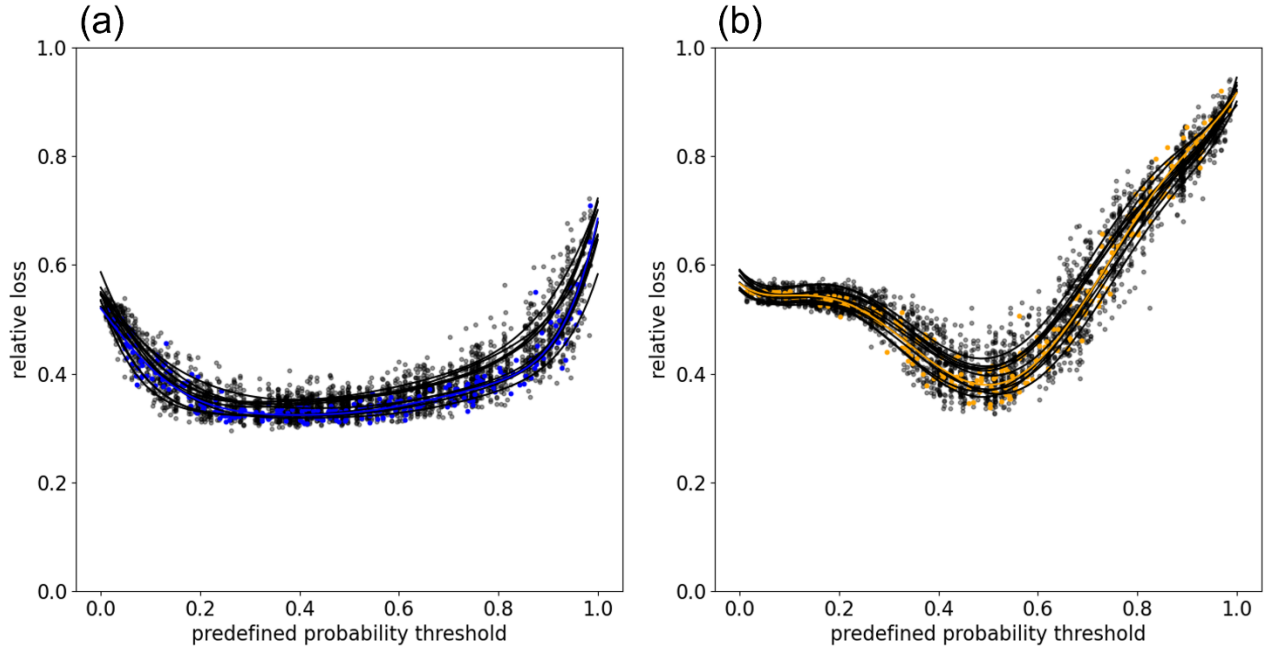
Figure S3. The relationship between relative loss and predefined probability thresholds in (a) the experiment 2.4 and (b) the experiment 2.5. In (a), the blue line shows the original result shown in Figure 2(b) and black lines show the results with 10 different river discharge timeseries which are sampled from the gamma distribution shown in the equation (1). In (b), the orange line shows the original result shown in Figure 2(b) and black lines show the results with 10 different river discharge timeseries which are sampled from the gamma distribution shown in the equation (1). Each dot shows the result of the individual Monte-Carlo simulation and we smoothed them by Gaussian process regression. See also Table 4 for detailed parameter settings.