## **Supplementary Materials**

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.



**Supp. Figure 1**. Mean (± 95% credible intervals) belief weights for each of ten hypotheses explaining the etiology of stony coral tissue loss disease (SCTLD) based on expert elicitation of 15 experts using Method 1. The B indicates a bacterial agent, F indicates a fungal pathogen, O indicates a combination of infectious and non-infectious agents, T indicates toxins, V indicates a viral agent, and Z corresponds with metabolites from zooxanthellae (defined as 'algal symbiont') that directly affect the coral (C) and/or zooxanthellae. The red line represents the starting belief weights given no expert knowledge (i.e., each hypothesis is equally plausible). Deviations of the estimated belief weights from this line show that expert knowledge shifted the belief weights towards some hypotheses (above the red line) and away from others (below the red line).



**Supp. Figure 2.** Mean belief weights for each of ten hypotheses explaining the etiology of stony coral tissue loss disease (SCTLD) based on expert elicitation of fifteen experts using Method 2 where belief weights change over time as more studies are considered. The five studies considered are shown on the x-axis in chronological order where belief weights are calculated using the current study and all prior studies. The B indicates a bacterial agent, F indicates a fungal pathogen, O indicates a combination of infectious and non-infectious agents, T indicates toxins, V indicates a viral agent, and Z corresponds with metabolites from zooxanthellae (defined as 'algal symbiont') that directly affect the coral (C) and/or zooxanthellae. The dashed line represents complete uncertainty for each hypothesis (50% chance the hypothesis is true). Deviations of the estimated belief weights from this line show that expert knowledge shifted the belief weights towards some hypotheses (above the red line) and away from others (below the red line).