

The Value of Resolving Uncertainty in Social-ecological Systems

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Conservation is increasingly framed or analysed as a coupled social-ecological problem. However, considering the broader links between social and ecological systems reveals additional and increasing dimensions of uncertainty for conservation management. Reducing uncertainty is expected to lead to improved management decisions, however collecting more data or lengthening project time frames to reduce uncertainty is not without cost. In this study we analyse where conservation managers should invest resources to improve management outcomes by decreasing uncertainty in a coupled social-ecological system. We consider five system components: social and ecological nodes and links, and social-ecological links. We find that the expected value of improving information for any one component is always highest for the component which is most directly acted upon by managers. Our results can help guide conservation investment to reduce uncertainty where improved knowledge of a social-ecological system will provide the greatest improvement in management outcomes.