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CAN PLAN OR NO CAN PLAN? REVIEW OF NATURAL RESOURCE MANAGEMENT PLANNING IN HAWAI'I

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Science, Policy and Management


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SUMMARY

Planning is an early step in the conservation process, but how do we evaluate whether a plan includes the elements needed for successful management? As part of a University of Hawai'i graduate seminar we met with planning experts and reviewed current literature to derive 15 criteria that in our opinion were important for evaluating management plan quality. Thirty-six plans were randomly selected and scored as they fulfilled, partially fulfilled, or failed to fulfill each criterion. We present these 15 criteria as a partial checklist for plan development and address how we measured criterion fulfillment. In general, we found that reviewed plans only partially fulfilled most criteria. Only five reviewed plans came within 10% of total criteria fulfillment using a metric scoring system. We present the results of our review and report the five highest scoring plans. The results suggest that management planning in Hawai'i could be improved. Ultimately, we hope this study will help resource managers develop quality management plans that, if properly implemented, should improve the quality and management of resources over time.


Photo: Stephanie Dunbar


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METHODS

We defined 15 criteria that we felt represented important elements of a comprehensive natural-resource management plan and designated *a priori* what constituted fulfillment for each criterion (Table 1). Thirty-six plans were randomly chosen for scoring and analysis and the total weighted metric score from each plan was used to determine plan quality, ranking, and for comparison with other plans.


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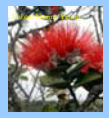
RESULTS

Five of the plans scored within 10% of the highest possible weighted metric score and are listed in alphabetical order for reference (Table 2).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CONCLUSION

Plans varied greatly in quality and in our opinion no plan adequately addressed all of the 15 criteria. Only five plans came within 10% of a perfect score.

We were encouraged to find that all but one of the plans focused on the importance of clearly defined goals and descriptions of tasks that can logically be expected to achieve stated goals. Many plans seem to have been designed to address only short-term needs, without explicitly outlining a long-term strategy.


Photo: Lindsay Young

While most plans included some facet of "adaptive management", only the top-scoring plans described an explicit strategy for incorporating new information into an ongoing plan. The failure of plans to include measurable benchmarks is perhaps our greatest concern because managers risk continuing to implement an unsuccessful plan, with no way to determine their progress.


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Failure to include definable outcomes and assessment methods may also lead to a lack of accountability in the conservation process and subsequent loss of credibility and funding.


Photo: Stephanie Dunbar

Future directions: To determine criteria validity by comparing our plan rankings to management success.

Table 1 Evaluation criteria and definitions for fulfillment based on a numerical scale of 1, 2, and 3. Each criterion score converted with a factor based on whether we considered it a marginally important element in good planning (multiplication by a factor 1x), important (2x) or exceptionally important (3x).

Criterion	Question	1 (Criterion Not Fulfilled)	2 (Criterion Partially Fulfilled)	3 (Criterion Fulfilled)	Metric Conversion
1	Is there a table of contents?	No	NA	Yes	1
2	Is there a stated goal(s)?	No	Partially fulfilled -goals implied only	Yes - definite goal(s) stated	3
3	Are there stated tasks?	No	NA	Yes	2
4	Do these tasks address each goal?	No	Partially fulfilled - some goals have tasks assigned	Yes - all goals have explicit tasks	3
5	Are the proposed actions prioritized?	No	Partially fulfilled - some but not all proposed actions are prioritized	Yes - proposed actions are clearly prioritized	2
6	Is there a stated timeline?	No	Partially fulfilled - some time line exists, but does not include all tasks and/or have time estimates	Yes - tasks are orderly mapped with time estimates	2
7	Is the plan understandable to non-scientists?	No – plan has excessive unexplained abbreviations and jargon, scientific concepts are not explained	Partially fulfilled - some jargon exists, some scientific concepts not explained	Yes - plan is written in plain language, all scientific concepts explained for non-scientists	2
8	Does the plan cite supporting scientific literature?	No – Plan has only ≤ 3 citations in text for biological/scientific information and/or these citations are not standard scientific references	Partially fulfilled – Plan has 4-15 citations in text for biological/scientific information and/or these citations are not standard scientific references	Yes – ≥ 15 citations in text for biological/scientific information and all citations are standard scientific references	2
9	Are the proposed actions grounded in the results of scientific research?	No - no proposed actions have a clear scientific rationale	Partially fulfilled - some but not all proposed actions have a clear scientific rationale	Yes - all proposed actions have a clear scientific rationale	3
10	Is the plan adaptive?	No - plan has no strategy for incorporating new data into proposed actions	Partially fulfilled - plan may mention adaptive management, or refer to incorporating new data into proposed actions, but no explicit strategy	Yes - plan has an explicit strategy for incorporating new data into proposed actions	2
11	Are measurable outcomes defined?	No - plan has no defined measurable outcomes	Partially fulfilled - plan mentions only vague outcomes and/or outcomes are not measurable through clear methodology (monitoring, etc.)	Yes - plan has definable outcomes through clear methodology (monitoring, etc.)	3
12	Is there a budget?	No	NA	Yes	1
13	Are the funding sources identified?	No	Partially fulfilled - some but not all proposed actions have funding sources identified and/or funding sources are only potential sources not committed sources	Yes - each proposed action has a clear funding source	1
14	Are the stakeholders identified?	No	Partially fulfilled - some but not all parties affected by proposed actions are identified	Yes - all parties affected by proposed actions are identified	2
15	Are the responsible parties identified?	No – no proposed actions have identified parties, agencies or individuals responsible for implementation	Partially fulfilled - some but not all proposed actions have identified parties, agencies or individuals responsible for implementation and/or responsibility is not explicit and is implied by authorship	Yes – all proposed actions have explicitly identified parties, agencies or individuals responsible for implementation	2

Table 2. Natural-resource management plans that placed within 10% of the highest possible total weighted metric score. These plans based on our review, could be used by managers in Hawaii as a useful tool in natural-resource planning and management. Plans are listed in alphabetical order.

Natural-resource management plans

Draft Integrated Natural Resources Management Plan 2002-2006 and Environmental Assessment, Oahu
Hawaii Coastal Erosion Management Plan (COEMAP)
Management Plan for the Ahupua'a of Pu'u Wa'awa'a and the Makai Lands of Pu'u Anahulu
Mount Kaala Natural Area Reserve Management Plan
Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Final Reserve Operations Plan


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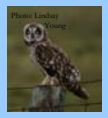
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