

Recommendations for the Restoration, Enhancement and Creation of Wetlands in the Malibu Lagoon Area

Malibu Lagoon Task Force

The UCLA Report addresses two different sets of wetland recommendations in Chapter 9: (1) to restore and enhance existing wetlands for habitat and 2) to create wetlands for treatment of urban runoff. The Task Force recognizes this distinction and provides recommendations for each of these wetland functions. The recommendations also distinguish between long-term visions and short-term implementation options. The intent of the short-term priority options is to move forward with on-the-ground achievements. Implementing the short-term objectives does not preclude the need to identify willing sellers of wetland acreage.

Objective #1: To restore as much of the historic lagoon habitat in the watershed as feasible.

1) Long-term High Priority Recommendation:

- a) Restore and re-connect sites A1, A2 and A3 as components of a restored salt marsh system.
 - i) re-connect hydrology of these sites.
 - ii) increase subtidal, intertidal mudflat and salt marsh habitats.
 - iii) restore diversity of high quality habitats.
 - iv) increase salt marsh habitat and lagoon water holding capacity.

Site A1 (which is public land) would be re-engineered to improve water circulation, increase holding capacity and reduce predator encroachment, including possible elimination of islands and peninsulas in the site and the pedestrian walkway. This work would be done in a manner that would be consistent with any potential future purchase of the adjacent sites A2 and A3.

Sites A2 and A3 would be purchased at such time as the private owners become willing sellers.

2) Short-term High Priority Recommendations (to be implemented within the next 3-5 years):

- a) Enhance Salt Marsh (Site A1).
 - i) Step 1: initiate a feasibility study to determine the appropriate engineering design to improve the function of this site as well as the relationship of this site to A2 and A3 into the future.

ii) Step 2: seek funding and implement design that would accomplish the following:

- (1) increase tidal flushing *in the wet season*.
- (2) improve water circulation.
- (3) increase holding capacity.
- (4) reduce predator encroachment.

Any work done would be consistent with the potential future acquisition of adjacent sites and would be consistent with the initial feasibility/design study. The design would have to take into consideration potential impacts to endangered species such as the tidewater goby that have returned to the site. The design may also have to identify possible upland sites to replace components that currently provide habitat to these species.

b) Restore East Lagoon Salt Marsh (Site A4)

i) Step 1: initiate a feasibility design study to determine how to increase salt marsh acreage at this site and establish nesting habitat. The study will include all aspects of project design.

ii) Step 2: seek funding and implement the design that would include the following elements:

- (1) re-grading to encourage establishment of salt marsh hydrology.
- (2) creation of a nesting island for least terns and snowy plovers.
- (3) creation of channel connections to the lagoon.

c) Pair habitat restoration actions with water quality improvement options.

i) implement a water-level management system.

ii) initiate non-point source BMP measures.

iii) establish septic system standards, identify malfunctioning septic systems and initiate corrective action.

iv) expand storm drain retrofit measures¹.

v) continue ongoing monitoring of the Purizer disinfection facility.

d) Use adaptive management throughout the development and implementation of the projects.

¹ See complete list of management recommendations in Chapter (8) of the UCLA study.

Objective #2: To create wetlands that are capable of treating urban runoff and/or excess creek flows.

1) *Long-term High Priority Recommendation:*

- a) Create an interconnected series of constructed treatment wetlands (sites C3 and C2).

Several potential sites have been identified that are suitable for construction of a treatment wetland. Sites C3 and C2 are suggested as high priority sites in the UCLA report. Site C2 has also been evaluated in a recent report by Huffman and Associates. Implementation of this recommendation requires purchase of Site C3 and C2 at such time as the three different owners become willing sellers. Easements over adjacent property between the sites and the creek must also be obtained. The purchase of either portion of C3 and C2 can be sequenced in whatever order they become available.

These sites also have potential value as restored wetland habitat, even though the focus of this recommendation is on treatment options.

2) *Short-term High Priority Recommendations (to be implemented within the next 3-5 years):*

- a) Create an interconnected series of small retention ponds and treatment wetlands through cooperative agreements with landowners and mitigation requirements for parcel development.

This option includes sites C3, C2, *Civic Center Way*, *Public Right of Way* and the easement from end of *Civic Center Way* to the Creek, but is significantly smaller than the long-term option. It would be flexible and opportunistic to accommodate additional acreage depending on the preference of owners now and in the future. This short-term measure should not preclude achievement of the long-term goal.

The first step would be to initiate a study to identify the most cost-effective combination of wetland projects. The desired result is the highest level of nutrient and pathogen removal from storm flows and/or creek flows possible, before entrance to the Lagoon and Surfrider Beach. For wetland projects that are considered equal in the cost/benefit analysis, projects that create or enhance wildlife habitat would be favored.

- b) Coordinate with the proposed study in Site C1 to examine additional options for an interconnected series of wetlands.
- c) Construct a small filtration/disinfection treatment system that can be incorporated into the series of ponds and wetlands to enhance water quality prior to discharge back to the creek.

**MALIBU LAGOON TASK FORCE
PRIORITIZATION OF RECOMMENDATIONS**

Listed in Order of Priority

Per Revision of 12/18/00

For Meeting of April 2, 2001

Priority No.	Item No.	Description	Total Points For Each Item	Ave. Points For Each Item
1	5c	Fix w/w treat. Systems	30	4.3
2	1e	Specific problems	48	6.9
3	4a	Treatment sites	61	8.7
4	2d	Malibu BMP's	75	10.7
5	6b	City surveillance	88	12.6
6	4c	Comp. Drainage system	96	13.7
7	10a	Install signs	112	16.0
8	1b	Specific measures	116	16.6
8	1c	WAMP elements	116	16.6
10	6a	Develop-monitor approach	118	16.9
11	3b	Enforcement & volunteers	120	17.1
12	3c	Develop model ordinance	121	17.3
13	1a	Regulation Loopholes	123	17.6
14	4d	Dry weather runoff	125	17.9
15	5a	Problem septs	127	18.1
16	1d	Reporting system	130	18.6
17	8b	Native plant incentives	140	20.0
18	4b	Malibu Road drain	142	20.3
19	8a	City ordinances	144	20.6
20	2c	Work w/ cities & agencies	145	20.7
20	3a	Coord w/ other efforts	145	20.7
22	7c	Reclaimed water use	148	21.1
23	10c	Inform lifeguards	155	22.1
24	2a	Monitoring/water audit	159	22.7
25	8g	Arundo removal	161	23.0
26	2b	Funding sources	166	23.7
27	7b	Recommend policies	174	24.9
28	9	Natural debris piles	177	25.3
29	10b	Erect fences / islands	178	25.4
30	8f	Roadside dirt piles	180	25.7
31	7a	Enhance existing policies	182	26.0
32	8e	Crayfish problem	183	26.1
33	2e	Drip irrigation & xeriscape	184	26.3
34	10d	Non-native plant removal	186	26.6
35	5e	Funding sources	190	27.1
36	5b	Warshall study	208	29.7
37	3d	Landowner incentives	209	29.9
37	8c	Funding sources	209	29.9
39	8d	Adopt-a-weed	210	30.0
40	7d	Funding sources	215	30.7
41	5d	Composting toilets	231	33.0
Totals				
Count			41	41.0
Points			6027	861.0