CHATSWORTH NATURE PRESERVE COALITION

Working Together to Save a Crucial Wildlife Habitat in Los Angeles-San Fernando Valley

A Meadowlark Needs a Meadow to Sing

AN ESSAY ON THE IMPORTANCE OF THE CHATSWORTH NATURE PRESERVE ECOLOGY POND AND ONE PROPOSAL FOR ITS PRESERVATION

by
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BACKGROUND AND GENERAL ECOLOGY

The Ecology Pond was created in 1974 out of the former Detention Basin #2 as mitigation for waterfowl habitat lost as a result of the draining of residual water from Chatsworth Reservoir following the 1971 Sylmar earthquake (Paul Lane letter, 1974). (The term "waterfowl" is currently defined by American ornithologists to refer only to the Anatidae -- ducks, geese, and swans; however, decades earlier the term was applied to virtually all water-associated birds and is still casually applied in that manner.) The surface area and capacity (volume) of the pond is uncertain and varies according to water level; however, a ballpark estimate is approximately 4 acres of surface. Depth also varies but, when full, is greater than 2,' allowing diving ducks, grebes, coots, and cormorants to submerge completely and for Osprey and Belted Kingfishers to safely plunge dive for fish. The maximum capacity, therefore, is likely in the neighborhood of 8 acre-feet. This compares, for example, with the Sepulveda Basin Wildlife Area lake having a surface area of 11 acres, a maximum depth of 10 feet and a maximum capacity of approximately 55 acre-feet, Reseda Park pond with a maximum depth of 6 feet and a maximum capacity of 10 acre-feet, and Hansen Dam fishing lake with a surface area of 9 acres and an unknown maximum depth, but certainly greater than 2 feet, for a minimum capacity of 18 acre-feet.

Both Reseda Park and Hansen Dam fishing lakes are replenished with potable water. Since its establishment in 1974 until approximately 2012, Ecology Pond water was routinely replenished during the dry season with potable water from a nearby pipeline. In 2012, DWP cut off potable supply, claiming the action was a conservation measure. Public outcry resulted in supplemental potable water being restored. Potable water was again supplied during 2013 and 2014. However, none has been officially provided since mid-June, 2015. As a result, the pond was nearly dried up when public outcry resulted in some water being provided by way of tanker trucks, which delivered water obtained from DWP de-watering operations and other non-potable sources, but just enough to maintain a shallow puddle.

Many species of birds utilize the pond, including the fringing marsh, for feeding, nesting, sleeping, roosting, and other activities. The pond formerly supported a breeding population of now-threatened Tricolored Blackbirds and continues to support breeding populations of ducks, herons and egrets, pied-billed grebes, Killdeer, Red-winged Blackbirds, Common Yellowthroats, coots, rails, and others. Many other species not directly utilizing the pond or marsh benefit indirectly from the flying insects the pond produces and the wildlife supported by it. This includes swallows, flycatchers, kingbirds, hawks, kites, and falcons. Some swallows and phoebes probably use pond mud for the construction of nest sites. The pond is utilized heavily during migration and winter by waterfowl, some shorebirds, and numerous other species. The semi-wet adjacent willow forest supports additional bird species, including Long-eared Owls and numerous hummingbirds, passerines, woodpeckers, and others.

For migratory birds, the pond is both regionally significant and an important component of the Pacific Flyway. For example, American White Pelicans were observed in, then operating, Chatsworth Reservoir by ornithology classes from California State University at Northridge (CSUN) in the 1960's -- long before they were observed elsewhere in the San Fernando Valley (Weston, 1970). This species

now utilizes the Ecology Pond. With the continuing deterioration of the major pelican wintering and staging area at the Salton Sea, this little pond assumes great importance for this species. Other species are similarly affected.

Mammal species, including bobcat, raccoon, coyote, deer (now rare), and mountain lions (very rare) are known to use the pond as a drinking water or foraging site. Gray fox is also present in nearby areas. Undoubtedly, many small mammals -- rodents, insectivores, rabbits, and bats -- utilize the pond at various times; however, observational information is lacking. Some of these constitute much of diet of many of the raptors found on the site, which probably supports the most diverse raptor population of any site in the city and environs. Native amphibians, mainly frogs and toads, are abundant at times in and immediately around the pond. Infrequently submerged areas adjacent to the pond may be the source of a western spadefoot toad discovered at a distant location in the preserve in 2011. Some snake species can be found in the pond area, presumably benefitting from the enhanced small mammal populations. Dragonflies are abundant.

The marsh vegetation is directly dependent on pond water and will die without it. However, upland vegetation, including valley and coast live oaks, probably depends on ground water augmented by pond water re-charge, especially in the heavily wooded area north and east of the pond. A population of valley oaks in the area is a virtually unique relic of a formerly abundant species in the western San Fernando Valley and depends on near-surface groundwater. Especially dependent on a semi-wet environment are two plants with high wildlife values; namely, mulefat and various species of willows, which grow densely on the west side of the pond.

IMPACT OF DRYING

PERMANENT DRYING

Impacts on Native Wildlife

Consulting for DWP, Weston (1970) studied the impact on waterfowl and other bird species of plans to renovate Chatsworth Reservoir, beginning in 1969, in order to increase its capacity and attempt to gain better control of water quality. The study predicted the outright elimination of 21 species, including the American White Pelican discussed above, and reduced populations of 10 other species of water-associated birds. It is important to keep in mind that Weston's (1970) conclusions were derived solely from expectations of what was likely to occur as a result of the planned renovations *not* from complete draining, which occurred after the 1971 earthquake.

The Ecology Pond was established in order to mitigate for these impacts. Although the two bodies of water obviously differ greatly in size, morphology, and other factors, many of the conclusions reached in the earlier study regarding impacts on birds are applicable to the Ecology Pond. Continued urban development in the San Fernando Valley and environs is likely to exacerbate many of the adverse impacts predicted at that time. The remaining relatively small bodies of water in the area constitute a network of habitats that many species visit on a more or less rotating or irregular schedule. This is evidenced by direct observation of, for example, wing-tagged, American White Pelicans. No such body of water is capable of supporting such species in isolation.

If the Ecology Pond is allowed to dry completely, marsh and mulefat/willow forest vegetation will die causing important habitat for birds and small mammals to disappear completely. The area will likely be colonized by invasive plant species, such as tamarisk, fountain grass, star thistles and other noxious weeds. Many of the bird species utilizing the pond, especially divers, will likely be eliminated entirely from the preserve, as there is no other water source of sufficient depth to support them. This includes surface divers (diving ducks, grebes, coots), plunge divers (terns, Osprey, Belted Kingfisher), and large surface feeders (American White Pelican). Others will experience severe population reductions. This includes waders (herons, egrets), shorebirds (yellowlegs, Killdeer, sandpipers), and marsh nesters and feeders (Sora, Red-winged Blackbirds, various other passerines). Some may visit short-lived seasonal ponds

elsewhere in the preserve on occasion in wet years. All native amphibians and some reptiles, which forage on small rodents sustained indirectly by proximity to pond, will be eliminated from the area or will experience severe population reductions. Wildlife will be deprived of the only reliable water source available to them within the preserve leading to further population declines. These could be severe, given the rapid development of remaining open space and the already fragmented, reduced population sizes that are clinging to existence in the area. An important source of native species of birds and amphibians will be eliminated. A potential "restoration" site for the western pond turtle will have been eliminated.

Impacts on Invasive Species

Certain invasive species, notably, pond sliders, bullfrogs, and mosquitofish will be eliminated from the pond area. However, crayfish will continue to persist in other areas of the preserve, where run-off from the surrounding watershed feeds ephemeral pools and streams. Furthermore, their populations will be restored continuously from streams up- and downstream from the preserve. That is where they came from to begin with, and that is how they will be replenished. With reduced populations of animals that feed on them (herons and egrets, certain duck species, raccoons, pond sliders [!]) and so partly control their populations, it is likely that their adverse impact on native amphibians will increase. The other invasive species will continue to flourish in other areas of the watershed and will remain an ever present threat, especially if the Republic Services modifications are allowed to occur on the west side of the property. They will not be extirpated without a comprehensive, long-term, expensive, watershed-wide campaign using mostly volunteer labor. As noted above, invasive plant species will come to dominate an area now populated mostly with healthy native vegetation.

Poorly thought out plans for invasive species control, such as the permanent draining of the pond, amount to dangerous fantasy originating from the failure to consider the overall ecological, geographical, and economic context in which this will take place. As noted above, wildlife populations in the area are extremely fragmented and clinging to existence in relatively small refugia, all of which are under one sort of threat or another. Wetlands, in particular, have been almost entirely eliminated from the western San Fernando Valley. It is estimated that 75 to 85% of freshwater wetlands in southern California have been eliminated causing near-catastrophic population declines in species dependent on them. This includes the La Cienega Wetland Complex in the Los Angeles Basin and similar smaller wetlands in the San Fernando Valley (California Environmental Protection Agency, 2015). There is nothing "irrelevant" about considering the loss of an additional wetland, the Ecology Pond, created as a mitigation site within this context. Furthermore, there is nothing "silly" about imagining the same sort of logic advocating the drying of the Ecology Pond being applied to other man-made wetlands, even flowing streams, currently providing important, if not critical, habitat for wildlife. The words "irrelevant" and "silly" were pejorative terms used as implied in an effort to undermine efforts to preserve the pond; hence, the attention given here to place these criticisms in their proper context. These are, of course, not scientific terms and have no place in legitimate scientific discourse.

Unlikelihood of Permanent Drying

While the above paragraphs assume, *arguendo*, that permanent drying is an option, the simple fact is that it is not. DWP *will* continue to maintain a water and sediment capture basin in one form or another as a means of flood prevention or of providing water for fire fighting for the adjacent exurban area. This will result in the periodic inundation of the Ecology Pond area. See below for descriptions of the impacts of this strategy.

TEMPORARY DRYING

Impacts on Native Wildlife

The actual impact depends on the timing and duration of drying along with weather variables (temperature, humidity, cloud cover, timing and extent of rainfall, etc.), and run-off from the surrounding watershed. For the purposes of this paragraph, drying is assumed to take place from July 1 to September 30 and weather variables and run-off are assumed to be similar to recent historical averages.

Many of the adverse impacts described above will occur, although, perhaps, some will not be as severe.

Marsh vegetation will die back causing important habitat for birds and small mammals to largely disappear until plants are rejuvenated by rainfall and run-off the following year. The area will likely be increasingly colonized by invasive plant species, such as tamarisk, fountain grass, star thistles and other noxious weeds as the canopy is repeatedly opened up by die back causing soil to dry out. These weeds may eventually completely replace marsh vegetation resulting in a loss of important habitat for birds and small mammals.

Many of the bird species utilizing the pond, especially divers, will likely be eliminated entirely from the preserve until rain and run-off replenish the pond. There is no evidence that rain and run-off is sufficient to accomplish this without supplemental water. Birds that will be extirpated include surface divers (diving ducks, grebes, coots), plunge divers (terns, Osprey, Belted Kingfisher), and large surface feeders (American White Pelican). Others will experience severe population reductions. This includes waders (herons, egrets), shorebirds, and marsh nesters and feeders (Sora, Red-winged Blackbirds, various other passerines). Some may visit seasonal ponds elsewhere in the preserve on occasion in wet years.

All native amphibians and some reptiles, which forage on small rodents sustained indirectly by proximity to pond, will be eliminated from the area or will experience population reductions. There is no evidence that rain and run-off will provide enough water to allow for amphibian reproduction to occur on an annual basis. Wildlife will be deprived of the only water source available to them within the preserve during the dry season. Large animals may be unable to utilize the seasonal water source, unless soft sediments, which now trap them, are removed. This will lead to population declines among these species and unpredictable alterations in ecological structure. Population declines could be severe, given the rapid development of remaining open space and the already fragmented, reduced population sizes that are clinging to existence in the area. An important source of native species of birds and amphibians will be eliminated. A potential "restoration" site for the western pond turtle will have been eliminated.

Impacts on Invasive Species

Certain invasive species, notably, pond sliders and crayfish, will be temporarily eliminated by drying of the pond. Mosquitofish *may* be permanently eliminated, if the existing population has been completely extirpated. Sliders and crayfish will quickly re-populate the area from source areas as soon as seasonal rains have partially refilled basins in the area. Bullfrogs, probably never numerous, due to the presence of relatively large population of herons and egrets, will be eliminated temporarily and, possibly, permanently. Whether they are temporarily or permanently eliminated depends on rainfall patterns and whether they are able to complete development from egg to mature adult during the time sufficient water is present. While this can take up to two years, there are sources that claim the period can be as little as twelve weeks. (described in American-bullfrog-paradise, 2015, which contains the following statement: "By between 12 to 16 weeks, depending on water and food supply, the frog has completed the full growth cycle.") Is it possible that natural selection in our warm, wet-dry climate is resulting in bullfrog populations with accelerated development? If bullfrogs have the sufficient genetic capacity to evolve in such a manner, they probably will, if they have not already done so. In addition, Stebbins (1972) provides support for this hypothesis in that he states, "Tadpoles transform during season eggs are laid (foothills of Sierra) or overwinter" (p. 86).

PROPOSAL FOR PRESERVING THE ECOLOGY POND

Planning for Removal of Excess Sediment

It is recognized that in order to serve its flood control and drainage functions, as well as to allow for helicopters to vacuum water from the pond for fighting fires, which are compatible with the primary function of providing wildlife habitat, excess sediments in the Ecology Pond must be removed. These sediments reduce the capacity of the pond to store storm water, including run-off, thereby complicating

flood-control and drainage efforts, while loose sediments clog helicopter vacuum hoses. Therefore, a plan must be devised for removing sediments while protecting the pond ecosystem.

This plan will have to be carefully worked out in accordance with an Initial Study conducted in the sense of the California Environmental Quality Act. There has been no indication that any such study has been undertaken to date, in spite of efforts to bring this requirement to the attention of at least two DWP General Managers, currently Marcie Edwards and formerly Ronald Nichols, and a number of other managers and planners in writing.

Interim Pond Maintenance During Initial Study

While an Initial Study is being planned or undertaken, the wisest approach would be to continue to provide the pond with supplemental water sufficient to maintain a reasonable depth to support aquatic or semi-aquatic wildlife and enable terrestrial wildlife to visit the pond for water and food. The source of water may be potable water, recycled water (available from pipeline de-watering or other activities), or groundwater from a newly dug well (provided water quality is acceptable). A reasonable target depth at this time of year would be approximately one foot with shallower areas towards the edges of the fringing marsh. The amount of water supplied should be carefully monitored, and a staff gauge (or other device) installed to track the pond water surface elevation. If potable water is used, it should be de-chlorinated. A meter should be installed on the outlet of the pipe used for the purpose.

Removing Excess Sediment

There are a number of ways to remove excess sediment while minimizing ecosystem disruption. Ideally, this should be done in as short a period of time as possible between the end of the breeding season and the beginning of the migration season for birds, as well as after the breeding season for amphibians. The actual dates will vary; however, probably the best timing for this is the month of August. By this time, the breeding season is over, and the migration period is just beginning. Amphibians that have not burrowed into the pond mud will have left the area of the pond by this time.

Regardless of timing, the sediments should be removed in stages, so that an aquatic environment in portions of the pond is maintained. To achieve this, the pond, with water in it, can be sectioned off with the installation of inflatable dams or other types of dividers typically used for the purpose. Water may then be pumped out of one section while leaving the others intact. Some of the water can be retained in a mobile tank, such as a Baker tank, temporarily retained on site for the purpose. Following draining, sediments from the top few inches of the drained area can be vacuumed out and deposited in the tank. This will preserve benthic organisms for the purpose of later re-seeding. The remainder of the sediments can then be removed. After the sediments have been removed, the water and sediments stored in the tank can be returned to the drained portion of the pond. Water from the next section to be cleaned can then be diverted (pumped) to the cleaned section, along with the upper few inches of sediment, and the process repeated until all sections have been cleaned. The inflatable dams, or other dividers, can then be removed and the pond slowly re-filled with water from a source described above. The entire process should take no more than a few days -- two weeks at the most.

CONCLUSION

The Ecology Pond at Chatsworth Nature Preserve is a significant ecological resource that must be preserved. Renovation of the pond can be accomplished in a manner that achieves that goal as well as auxiliary functions, such as, flood control and fire fighting.

REFERENCES

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