File name: Utah Lake reports for DWQ UTLake CommitteeSciencePanel

Recent Utah Lake Ecological Studies conducted by OreoHelix Consulting and the Wasatch Front Water Quality Council.

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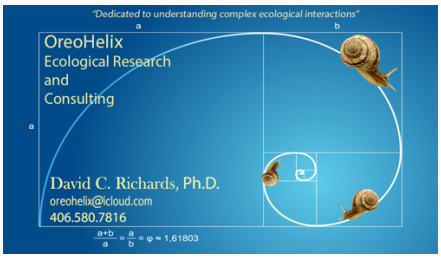

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June 6, 2018

OreoHelix Consulting and the Wasatch Front Water Quality Council have been conducting ecological research on Utah Lake and other waters in the drainage for the last several years. Some of our findings are presented in reports (gray literature) and their existence may not have been known to the Utah Lake Steering Committee or Science Panel.

The following is a list of several reports on research that we conducted on the ecology of Utah Lake and waters in the drainage to date. We have much more raw data that have been collected and are being compiled and analyzed and we are continuing to collect data into the foreseeable future.

All of the following reports should be available to download from Research Gate https://www.researchgate.net/profile/David_Richards20/contributions

Several reports can also be accessed through the Wasatch Front Water Quality Council. http://wfwqc.org/research/

Utah Lake Reports

Richards, D. C. 2018. Relationships between Phytoplankton Richness and Diversity, Zooplankton Abundance, and cyanoHAB Dominance in Utah Lake, 2016. Draft Technical Report. To: Wasatch Front Water Quality Council, Salt Lake City, UT. OreoHelix Consulting. 67pp. https://www.researchgate.net/publication/323116894_Relationships_between_Phytoplankton_Richness_and_Diversity_Zooplankton_Abundance_and_cyanoHAB_Dominance_in_Utah_Lake_2016

Note: the following addendum is a taxonomic update of phytoplankton taxa collected in 2016. This is likely the most up to date taxonomic nomenclature for the lake.

Richards, D.C. 2018. Utah Lake Phytoplankton Taxonomic Update. Addendum to: Richards, D.C. 2018. "Relationships between Phytoplankton Richness-Diversity, Zooplankton Abundance, and cyanoHAB Dominance in Utah Lake, 2016" and Richards, D.C. and T. Miller. 2017. "Utah Lake Research 2016: Progress Report". http://wfwqc.org/wp-content/uploads/2018/06/Utah-Lake-phytoplankton-taxonomic-revisions-for-WFWQC-reports-version-1.0.pdf

Richards, D. C. and T. Miller. 2017. A preliminary analysis of Utah Lake's unique foodweb with a focus on the role of nutrients, phytoplankton, zooplankton, and benthic invertebrates on HABs. Utah Lake Research 2016. Progress Report. Wasatch Front Water Quality Council, Salt Lake City, UT. https://www.researchgate.net/publication/317873652_Utah_Lake_Research_2016_Progress_ReportA_preliminary_analysis_of_Utah_Lake%27s_unique_foodweb_with_a_focus_on_the_role_of_nutrients_phytoplankton_zooplankton_and_benthic_invertebrates_on_HABs

Note: the following report describes in detail the status of the unique native freshwater mollusks in the Utah Lake drainage and their extreme importance to ecosystem function. A must read for those not familiar with the essential ecological contribution of mollusks to Utah Lake and why we suggest that any attempt at developing biocriteria should keep mollusks in mind.

Richards, D. C. 2017. Native Unionoida Surveys, Distribution, and Metapopulation Dynamics in the Jordan River-Utah Lake Drainage, UT. Report to Wasatch Front Water Quality Council, Salt Lake City, UT. OreoHelix Consulting, Vineyard, UT. https://www.researchgate.net/publication/319490937_Native_Unionoida_Surveys_Distribution_and_Metapopulation_Dynamics_in_the_Jordan_River-Utah_Lake_Drainage_UT

Utah Lake Power Point Presentations available on request:

Richards, D. C. and T. Miller. 2016. Who pulled the plug on Utah Lake: An ecological primer. Invited Presentation. Salt Lake County Watershed Annual Conference. Salt Lake City, UT.

Richards, D. C. and T. Miller. 2017. Utah Lake: An ecological primer. Invited Presentation. First Utah Lake Summit. Provo, UT.

Additional Supplementary Reports

In addition, several reports although not specific to Utah Lake may be useful. For example, we conducted a literature review and survey of an invasive clam and snail in the drainage and their ecosystem impact on functioning of the Jordan River just downstream of Utah Lake. Our conclusion is that these invasives have replaced natives and completely dominate ecosystem function including water quality in the now novel Jordan River. Conditions in the Jordan River will likely never return to what they once were and mollusks in Utah Lake /Jordan River drainage both invasive and native were/are contribute substantially more to ecosystem function than any other taxonomic group. Likewise, Utah Lake is now a novel ecosystem and will not return to its prior state pre-Mormon settlement.

Richards, D. C. 2018. A snail, a clam, and the River Jordan. Report to Wasatch Front Water Quality Council. Salt Lake City, UT. OreoHelix Consulting, Vineyard, UT. https://www.researchgate.net/publication/323522803_A_SNAIL_A_CLAM_AND_THE_RIVER_JORDAN_A_REVEALING_NOVEL

Several reports on Farmington Bay of Great Salt Lake may also be useful. For example:

Marden, B. and D. C. Richards. 2017. Multi-year Investigations of Complex Interactions Between Cyanobacteria Blooms and the Food Web in Farmington Bay, Great Salt Lake, Utah. Report to Wasatch Front Water Quality Council, Salt Lake City, UT. https://www.researchgate.net/publication/315694208_Mulit-year_Investigations_of_Complex_Interactions_Between_Cyanobacteria_Blooms_and_the_Food_Web_in_Farmington_Bay_Great_Salt_Lake_Utah

Marden, B., T. Miller, and D.C. Richards. 2015. Factors Influencing Cyanobacteria Blooms in Farmington Bay, Great Salt Lake, Utah. https://www.researchgate.net/publication/305488678_Factors_Influencing_Cyanobacteria_Blooms_in_Farmington_Bya_Great_Salt_Lake_Utah