

SIWQC Member Projects (as of 5.8.2020)

A. North Side Canal Company Efforts

The North Side Canal Company (NSCC) has installed 22 water quality ponds, two wetlands, and 4 regulator ponds. Regulator ponds are used to minimize flooding as needed. NSCC conducts an annual company meeting where staff presents updated information to the shareholders regarding the performance of the current water quality projects. Projects planned for the next year are also presented to those in attendance.

Every September, NSCC provides an educational field day for area sixth graders at the W 28 Nature Conservancy Wetland Area. During this field day, students are taught about phosphorous and its impact on the environment, sedimentation, how a wetland functions to remove pollutants, and where pollutants originate from in our built environment.

B. Twin Falls Canal Company Efforts

The Twin Falls Canal Company has built and maintains 16 large water quality pond/wetland projects, that in total capture over 20,000 tons per year of sediment and associated nutrients that historically discharged into the Middle Snake River. Over this same period farmers on the Twin Falls Tract have converted over 4,000 acres per year from gravity irrigation to more efficient sprinkler irrigation methods. As of 2020, 60% of the 200,000 acres of irrigated farmland on the canal system were sprinkler irrigated and that percentage is projected to rise to 75% within the next 10 years. Use of sprinkler irrigation rather than flood irrigation significantly reduces soil erosion and loss of soil from farms. The Twin Falls Canal Company is also seeing a slow but steady change from conventional tillage methods to reduced tillage practices that maintain higher organic matter on farmed land and reduces erosion from irrigated fields. Finally, the Twin Falls Canal Company is continually improving water delivery efficiency with automated water turn-outs, re-regulating reservoirs and canal lining projects. Twin Falls Canal Company will keep expanding these projects and practices to insure they are doing their part in making the Middle Snake River cleaner, healthier, and sustainable long into the future.

C. Idaho Aquaculture Environmental Stewardships Efforts

The aquaculture community has worked to be good environmental stewards. Some of their efforts are listed below.

- Development of *Idaho Waste Management Guidelines for Aquaculture Operations* (1996). The guideline was developed in collaboration with the Department of Environmental Quality, university scientists, and eNGOs.
- United States Department of Agriculture funded research (about \$2 million) through the Western Regional Aquaculture Center to improve effluent water quality from aquaculture facilities in the Magic Valley.

- These research efforts included both in-kind contributions and direct expenditures of \$30 million resulting in improvement, modification, and/or installation of waste treatment systems, improved fish feeding programs, and implementation of best management practices.
- Results to date:
 - Meeting the 40% reduction of Total Phosphorus (TP) discharge required by the Middle Snake River Total Maximum Daily Load Waste Load Allocation for aquaculture.
 - Further reducing the TP discharge requirement of 40% by an additional estimated 200-300 pounds per day (based on Tetra Tech review of the Middle Snake River TMDL).
 - A significant reduction in Total Suspended Solids (TSS) discharged, with almost 100% of aquaculture facilities reporting below the 5 mg/L TSS net compliance limit 100% of the time.
- Monitoring instream TP concentrations in the Snake River at the Ken Curtis Bridge (Buhl) since 2001. Mean annual TP concentrations have declined significantly since 2001.
- Western Sustainable Agriculture Research and Education grant that investigated composting aquaculture solids and fish mortalities during the mid-1990s. Aquaculture companies and producers have adopted composting aquaculture solids, which has led to improved and sustainable handling and disposal of solids.
- Conversion of earthen aquaculture production facilities to concrete aquaculture production facilities resulting in improved waste management and effluent water quality.

D. City of Twin Falls Efforts

The City of Twin Falls incorporates regular public input in its council meeting, city planning documents (e.g. strategic plan), and other important public resolutions. One of the most recent examples of community involvement has been the issuance of a wastewater bond to upgrade the wastewater treatment facility. The City of Twin Falls formed a Citizens Committee to receive recommendations from the public and to help educate the public of the necessity for upgrades to the wastewater treatment facility. On Monday, March 11, 2013, the Citizens Committee reported to the City Council and the public its recommendations from its public input on treatment improvements. The success of this committee and the public education was demonstrated when the public voted for the bond approval and subsequent treatment plant improvements.

Other important public involvement has come with the expansion of the Auger Falls Conservation Area. This area has had a lot of public input over the past ten years. This area is a place for reactional enthusiasts, bird watchers, and the public to go and enjoy the outdoors. The city received a discharge permit from the Idaho Department of Environmental Quality to land apply treated wastewater effluent from the municipal waste treatment plant. The process of obtaining this permit required general comments from the public. The public is very interested in this area, the city receives comments and input from time to time on what needs to occur to protect and enhance this area of the city.

The city remains involved in communication on NPDES or Idaho Pollutant Discharge Elimination System (IDPES) permits, whether that communication comes directly or indirectly through other associations that the city is affiliated with.

E. IDA Research, Education & Outreach Efforts

The Idaho Dairymen's Association (IDA) puts considerable resources towards environmental research, education, and outreach to continue to help IDA's members improve their stewardship of Idaho's air, land, and water.

1. Recent Soil Health & Water Quality Research

The IDA has made environmental research a priority over the past decade, with water quality being one of the primary areas of emphasis. The IDA has provided grants totaling over \$1 million to fund research focused on the potential environmental impacts related to Idaho's dairy industry. Below are three current projects the IDA are helping to fund and collaborate on:

- Long Term Impacts of Manure Application on Crop Production, Soil Quality and Environmental Footprint – Dr. April Leytem, USDA ARS, Kimberly, ID (2013-2020)
- Measuring the Efficiency & Financial Feasibility of a Centrifuge Separator – Dr. Lide Chen, University of Idaho, Dr Hernan Tejada, University of Idaho (2017-2018)
- Evaluating Manure Separation Technologies on Dairy Farms – Dr. April Leytem, USDA ARS, Kimberly, ID (2019)

2. Education & Outreach

The IDA works to provide its members with the latest scientific information regarding water quality and soil health through two main avenues; regional producer meetings and newsletters. Every winter, the IDA hosts regional educational meetings throughout the state for its members in 4-5 separate locations central to where its dairy farm members are located. The IDA in-house scientists, as well as researchers from USDA ARS and University of Idaho, provide presentations on topics covering nutrient management, factors impacting nutrient loss from fields, emerging technologies and practices that benefit soil health and water quality, and other timely subjects.

This same expertise contributes to the IDA newsletter, which is received by the 457 dairy farm members, as well as nearly 2,000 other recipients. The IDA publishes 4-6 newsletters per year, with each edition having an environmental topic. Past articles have ranged from 'Soil Test Phosphorus – Don't let it be Your Legacy' to 'Manure Analysis 101'. These articles are written with the dairy producer as the target audience, and typically are about subject matters that are opportune and relevant to environmental practices within Idaho's dairy industry.

3. New Environmental Standard Development

The IDA works closely with the state and federal agencies that regulate the dairy industry. In 2018, the IDA endeavored to have the Idaho State Department of Agriculture adopt rules that would allow a newly created Phosphorus Site Index (PSI) risk assessment tool to be used as a Nutrient Management Standard within Idaho's dairy industry. The PSI was created at the request of the IDA by Drs. David Bjerneberg, April Leytem, and David Tarkalson with the USDA ARS in Kimberly, Idaho. The IDA's goal was to modernize nutrient management standards with the most

recent science available, while also having a more producer-minded resource developed to enhance its adoption and use.