CURRENT PROJECTS

In 2016, Agriculture's Clean Water Alliance (ACWA) continued to invest and support water quality improvements in the Boone, Raccoon and Des Moines rivers. This year, ACWA made progress with the Elk Run Water Quality Initiative (WQI), participated in a national water dialogue, continued stream monitoring and expanded tile water monitoring efforts.

ELK RUN WQI

The second year of the Elk Run WQI — funded by a grant with the Iowa Department of Agriculture and Land Stewardship — was a great success as the project broke ground on several edge-of-field practices, resulting in less nitrate loss.

Elk Run landowners installed four of eight planned bioreactors as well as two of six saturated buffers. Additionally, tile water monitoring showed improvements for water entering Elk Run from these practices. Farmers and landowners planted 350 additional acres of cover crops, providing beneficial feed sources while improving water quality — a win-win for Elk Run producers! The project hosted several field days and learning opportunities, including an Ag-Urban tour. During the tour, local community leaders viewed a bioreactor and saturated buffer installation along with the other great things farmers are doing to improve water quality.

The Elk Run WQI is one of several demonstration projects throughout the state working to ramp up implementation of conservation practices that improve and protect water quality. Diane Ercse, Elk Run watershed coordinator, is working on behalf of ACWA in the watershed to engage farmers and stakeholders. In addition to ACWA, the Elk Run WQI project receives support from 16 partners.

"We are excited about the momentum of the project and appreciate the partners and farmers who are taking leadership in implementing these tools in the watershed," Ercse said.

ONE WATER SUMMIT

ACWA leaders Harry Ahrenholtz, chairman, and Roger Wolf, executive director, attended the 2016 One Water Summit in Atlanta hosted by the U.S. Water Alliance.

The event brought together hundreds of professionals from across the country, representing water and wastewater sector leaders, policy organizations and academia, environmental and agricultural interests, and more. This year's summit focused on working together to scale up practices so one-water management becomes the new normal in every urban, suburban and rural community across America.

Ahrenholtz and Wolf — members of the Iowa delegation — participated in a One Water Roadmap listening session facilitated by the Alliance. During this session, they discussed the approach Iowa farmers are taking to improve water quality. Ahrenholtz and Wolf offered ideas and opportunities to engage the agricultural industry in water quality and quantity solutions.

WATER MONITORING

In 2016, ACWA continued its water monitoring support in the Boone, Raccoon and Des Moines river watersheds. Additionally, finer scale monitoring was ramped up in as part of Elk Run WQI.

Water samples collected this year by ACWA in the Raccoon and Boone river watersheds reaffirm the need for continuous improvement and greater collaboration. Water monitoring is the cornerstone of ACWA, because it provides a benchmark for measuring progress. All samples are analyzed for nitrate-nitrogen and some are analyzed for turbidity, coliform bacteria, alkalinity and total organic carbon.

ACWA collected 888 water samples from 111 tile outlets in 2016. Tile monitoring showed some promising results for water quality practices. Fields with cover crops planted in the fall of 2015 showed nitrate-nitrogen levels 29 percent lower than fields without cover crops.

Additionally, ACWA gathered 861 samples from 88 stream and river sites, which showed typical conditions this year. During the sample period, total discharge in the Raccoon River at Des Moines was the eighth highest out of 18 years. Stream concentrations averaged from 4.1 to 20.9 mg/L. Most long-term sites ranked in the middle of the historical record for nitrate concentrations, between seventh and tenth highest for sites with more than 17 years of record. This correlation makes sense because precipitation and stream flow are key drivers of nutrient loss. In the Boone River, nearly all sites ranked third or fourth highest out of 10 years of record for nitrate concentrations, while discharge was ranked eighth out of 10 years. Boone River concentrations averaged between 12.5 and 20.3 mg/L and were slightly above long-term averages.

RESEARCH INITIATIVES

This year, ACWA research continued on nitrogen reduction practices, plus expanded to include phosphorus removal.

Continuing its commitment to evaluating nitrogen reduction practices, ACWA began monitoring a multi-outlet saturated buffer installed in the summer of 2016. Monitoring wells were installed at two distances from the outlet along with other test equipment to measure the nitrogen removal performance of the buffer. Data from this project will inform improvements in practice design and expected water quality results. Furthermore, ACWA began the process of recharging one of the first bioreactors in the state located in Greene County. Project leaders have purchased necessary equipment and installation will begin summer 2017.

An exciting new project, ACWA began investigating phosphorus removal through an edge-of-field structure. The structure is an edge-of-field practice like a bioreactor in concept; however, steel by-products are used in place of woodchips to remove the phosphorus from subsurface drainage water. A site was chosen near Clarion with elevated phosphorus concentrations and potential access to a local source of steel by-products from Hagie Manufacturing to serve as the P-sorption material (PSM). Researchers worked with Chad Penn at the USDA Agricultural Research Service National Soil Erosion Research Laboratory to design the P-removal structure. Furthermore, Dr. Penn — a leading expert in P-removal structures — tested the locally sourced PSM, and unfortunately, the lab results were not as encouraging as hoped. While the PSM would reduce phosphorus, removal rates were not as high as projected. At this point, project leaders are evaluating options to improve performance in the design.

4R PARTNER

Nutrient stewardship is a fundamental principle for ACWA members. This year, ACWA became a 4R Partner to expand awareness and implementation of fertilizer best management practices including the right source, right rate, right time and right place. Administered by The Fertilizer Institute, the 4R principles are globally accepted standards of best practices for cropping systems and we are proud to enhance our focus and offerings through them.

LOOKING FORWARD TO 2017

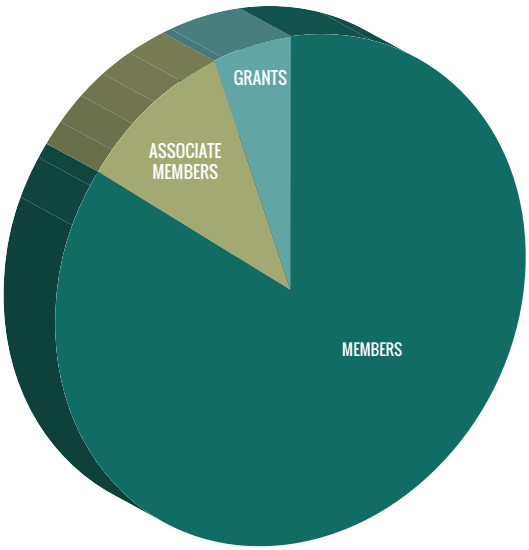
In 2017, ACWA will continue promoting and identifying opportunities to improve water quality in the Raccoon and Des Moines River watersheds and the environment. ACWA's objectives include greater focus on tile line monitoring to help farmers with decision-making as well as continuing a research and development initiative focused on water management and edge-of-field practices along with investing in watershed planning.

FINANCES

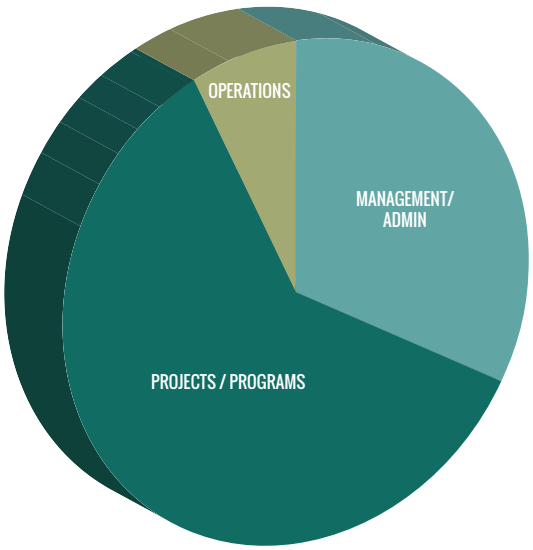
ACWA TOTAL REVENUE				
TYPE	**2017**	**2017**	**2001-2017**	**2001-2017**
MEMBERS	$262,138	65%	$3,286,631	84%
ASSOCIATE MEMBERS	$85,000	21%	$405,000	10%
GRANTS	$54,888	14%	$214,888	5%
OTHER	$-	0%	$10,800	0%
TOTAL REVENUE	**$402,026**	**100%**	**$3,917,319**	**100%**

ACWA TOTAL EXPENSES				
TYPE	**2017**	**2017**	**2001-2017**	**2001-2017**
MANAGEMENT/COMMUNICATION	$100,000	31%	$1,181,045	33%
PROJECTS/PROGRAMS	$198,817	63%	$2,109,780	60%
OPERATIONS	$19,061	6%	$251,711	7%
TOTAL EXPENSES	**$317,878**	**100%**	**$3,542,536**	**100%**

ACWA TOTAL REVENUE



ACWA TOTAL EXPENSES



CURRENT PROJECTS

ACWA MEMBERS

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Wall Lake, Iowa | www.cpsagu.com

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CONTRIBUTORS

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Iowa Department of Agriculture and Land Stewardship
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Iowa Soybean Association
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USDA Natural Resources Conservation Service
www.nrcs.usda.gov

CURRENT PROJECTS