PFish
Hatchery

Project Overview

The agriculture and economy of the Grand Valley rely heavily on the Colorado River, as do the organisms that inhabit it. However, as drought worsens in the Grand Valley, both of these entities are threatened. The PHS Fish Hatchery project hopes to provide a solution to these issues. This project aims to establish a fish hatchery on the school grounds that supports the endangered fish of the Colorado River. This project will start by supporting the Razorback Sucker, which is an endangered fresh water sucker fish found in rivers and lakes in the southwestern United States. By aiding the endangered fish populations, more water can be accessed by agriculture. In addition to the economic and environmental benefits, this project will also provide students with learning opportunities and hands on experience with maintaining the fry. Overall the PHS Fish Hatchery is an incredible opportunity to help the community and will benefit the environment during this critical 15-year drought.

[Image of a Razorback Sucker]

Hatchery Facility

The US Fish & Wildlife Service will provide the hatchery fish tanks, the filtration system, the fish, fish feed and feeding systems, and any other components that are needed for the tank system. Palisade High School will provide a building to house the fish tanks, as well as students to work the fully equipped high school campus hatchery. There is already a building present that will be modified to accommodate the fry. The experience would be from fry to release into the Colorado River, which is directly behind Palisade High School.

Hatchery Needs:

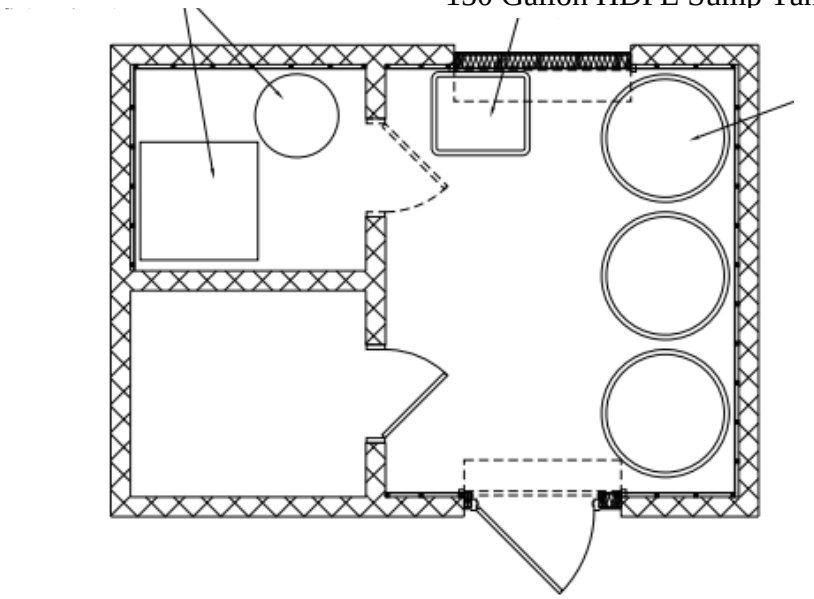
- Keyed entry door/security door/well insulated
- Fire alarm
- Heating and cooling device to maintain 70^{o} F
- Insulation, walls & ceiling
- Dehumidifier
- Year round water supply
- State inspection on electrical & plumbing

[The current storage building that will be converted for the project]

Integrated Filtration System including dual filter bag, low head pump, air compressor, and sterilizer

150 Gallon HDPE Sump Tank

235 Gallon Fiberglass Fish Rearing Tanks



[Floorplan with filtration and tanks]

Filtration and Tank System

700 gal system from Integrated Aqua Systems (3 – 235 gal tanks 48” x 30”)

Model RAS-705, Recirculating Aquaculture System

Includes:

- Qty (3) Fiberglass Fish Rearing Tanks 48” Diameter x 30” Deep, 235-gallon max capacity each includes dual external standpipes, self-supported on legs.
- Qty (1)150 gallon HDPE sump tank 30” x 36” x 32” (LxWxH) with integrated quad bag filtration system, gravity fed.
- Qty (1)INTEGRATED Filtration System, model IFS-25

IFS-25 Includes:

- Qty (1)Dual bag filters with pressure gauges, true-union isolation plumbing
- Qty (1)Low head energy efficient pump 25 gpm, 225 watts, 115v-60Hz, true-union isolation plumbing
- Qty (1)Air compressor for Biofilter/Tanks 3 cfm @ 2 psi, 90 watts, 115v.
- Qty (1)50-watt high output UV sterilizer mounted in FRP strut bracket includes flow protection with low flow cutout.

*System is skid mounted to a (48” x30”) FRP skid, pre-plumbed and pre-wired to GFCI electrical outlet. Single point 115v electrical required. System is water tested, electrically tested and documented prior to shipping.

- Qty (1)Model MBBR-29, Moving Bed Bioreactor Biofilter with 10 cubic feet IAS BioElements™ Biofiltration Media, air distribution manifold, dual outlet ports for gravity return to tanks.

*System includes 3D CAD design drawings to illustrate design and provide a basis for installation.

Benefits

Palisade High School students who take classes that interact with the PHS Fish Hatchery project would receive high school academic credit in classes such as River Dynamics, Chemistry, Biology, Environmental Science, Math and Literacy to name a few. The educational benefits would be far reaching and would allow our graduates a unique way to stand out on the pathway to college.

As a farming community, Palisade would benefit from this project. Palisade is well known for raising all types of fruits and vegetables with apple, cherry, peach, pear and plum trees being planted as early as the 1890's. The agriculture in Palisade is successful due to the unique climate and the presence of the Colorado River, which provides irrigation water to the farmlands. Therefore, supporting the endangered fish of the Colorado River through the PHS Fish Hatchery project allows Palisade more access to this critical irrigation water, supporting the community as a whole.

The Department of Fish and Wildlife will benefit from having an ongoing method for raising endangered fish that can cause water resources to be restricted when fish habitats are threatened. This is a key reason why the U.S. Fish and Wildlife Service is willing to provide PHS Fish Hatchery with help and materials.

The PHS Hatchery experience will also provide our Colorado community with a source of pride as we create a trailblazing opportunity. Our example of cooperation across lines of boundaries such as our local school district, water boards, and government entities could set an important example to benefit other communities looking to create change.

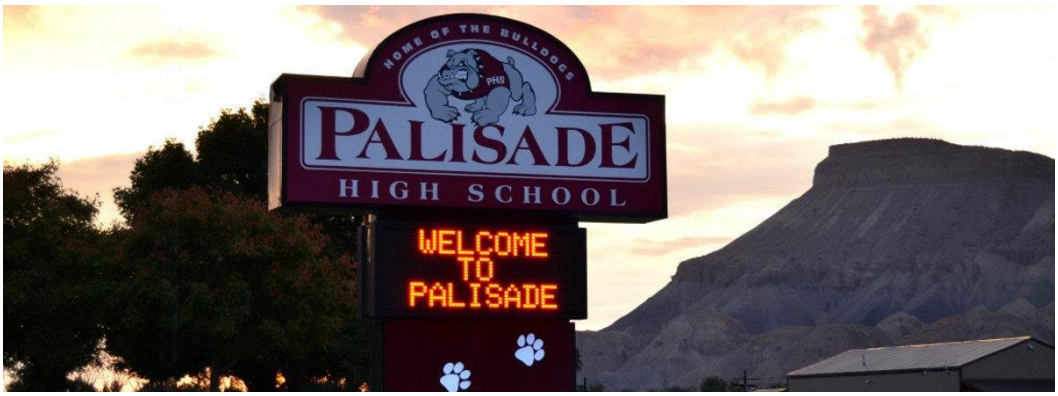
[Palisade peach orchard in bloom]

About Palisade High School

Palisade High School is a comprehensive, four-year public high school with an enrollment of 1050 students, a drop-out rate of 1%, and a graduation rate of 91.5%. 52% of PHS students receive free/reduced lunch, 31% of students are of a minority, and 10% of students have a disability.

Originally built in 1902, Palisade High School staff and students moved into a new facility 90 years later, in 1992. A staple of the Palisade community for more than 100 years, PHS, an International Baccalaureate World School, is also part of broad, global network of schools. The only IB World School in District 51, Palisade offers a robust and thriving Diploma Programme which aims to help students grow against the learner profile. PHS is in the process of adding a Middle Years Programme as well, so all students have access to an IB education. In addition to the Diploma Programme, PHS offers Advanced Placement (AP) classes and other pathways toward college and career readiness, including an apprenticeship program.

Palisade has a reputation as an outstanding school, a reputation cemented by earning the Governor's Distinguished Improvement Award four years in a row (2011-2014). While PHS is often celebrated for successful athletics and extracurricular programs, it is a culture of high expectations that helps Palisade maintain its standing as a school of excellence in the State of Colorado. An integral part of Palisade's culture is the PACK program, a system of interventions that supports students as they challenge themselves to grow while also holding students accountable for their learning and behavior. With PACK and so many world-class academic options, PHS students graduate equipped to participate productively and responsibly in both their local and global communities.



Costs

We have a building on campus that we can convert to be used for the hatchery. We have school district approval to do this conversion. What we are trying to do now is raise funds for the building conversion. We have to meet fire safety requirements for a student learning room. It won't be a traditional classroom. It will be more like a science lab but it still has to be brought up to current fire code and HVAC standards.

We have an original bid of $82,910 from PNCI Construction for the cost of the building conversion. Recently, a District #51 electrician, Brian Scherpping, worked through the summer to create a bid that was much more affordable. His bid came in at $25,000. This bid includes the use of PHS construction tech students to help with the building upgrades. In short, we are looking for funding. We have community to support to help with many aspects of the minor details of the conversion but are hoping to find a grant or donation to help with the larger part of the expense of this innovate and widely beneficial PHS Fish Hatchery project.

Three of our PHS Seniors have raised $1500 by selling peaches and donating scholarship award money earned, to help find funding for this project and are hoping to raise more. The PHS Fish Hatchery is easy to support once people understand how beneficial the project truly is. We are hoping you might help direct us toward some ideas for funding.

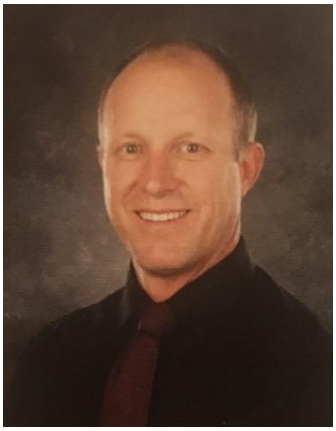
[Isabelle Haderlie and Kaleb Hawkins selling peaches at PHS back to school registration]

Team Members

Patrick Steele

Patrick Steele is a science teacher at Palisade High School. Mr. Steele has been a science teacher for 18 years and has taught at Palisade since 2007. Mr. Steele will be the PHS Fish Hatchery Project Director working with Mike Gross of the U.S. Fish & Wildlife. Mr. Steele will oversee the day to day student campus operations and coordinate efforts with school staff and administrators.

Dan Bollinger



Daniel Bollinger is the Principal at Palisade High School. Mr. Bollinger taught math in middle and high school for 10 years prior to his 14 years as an Administrator. Along with teaching, he has coached volleyball, wrestling, baseball and football. He is a Director for the Wrestling Officials Association, serves on the Palisade Little League Board and is a Board Member of the D51 Foundation. Mr. Bollinger is passionate about the community he serves and the activities that draw people from around the country to visit.

Mike Gross

Mike Gross is a Fish Culturist at Ouray National Fish Hatchery-Grand Valley Unit. Over the last decade or so, Mike has built a public education and outreach program at this small hatchery that provides tours to about 1,000 people a year. Mike has also partnered with personnel from Colorado Parks and Wildlife to administer an “Aquarium in the Classroom” program, which allows local school kids to raise endangered fish in their school classrooms. Mike has established a great rapport with local educators and business professionals, many of which return year after year to tour the Ouray National Fish Hatchery.

Graduate Team Members

Isabelle Haderlie

Isabelle Haderlie graduated in May of 2018 as an international Baccalaureate student. She was a member of Earth Club, Art Club, and a local community service club called Interact Club. She has also competed in Speech and Debate all four years of high school. Isabelle has been playing the piano since age 4 and participated in several competitions over the years. Isabelle intends to pursue a degree in biology. She is at Texas A&M University in College Station, Texas, where she is working with the school to possibly establish a similar fish hatchery project there.

Kaleb Hawkins

Kaleb Hawkins graduated in May of 2018 as an International Baccalaureate student. Kaleb was involved in Speech and Debate where he competes in an event called Duo Interpretation. He is involved in musical theatre and performed as Reverend Shaw in Footloose, Warner in Legally Blonde, and Will Parker in Oklahoma. He also volunteered in Earth Club and National Honor Society. Kaleb is pursuing a degree in filmmaking at the University of Texas, in Austin. Kaleb spends most of his time playing the ukulele and filmmaking.

Emily Tucker

Emily Tucker, a 2018 graduate of Palisade High School, was on the varsity volleyball team for four years, along with varsity track for three years. During the winter, she played club volleyball and coached middle school volleyball. She was also been in Student Government for two years, Fellowship of Christian Athletes for three years, and Interact Club for one year. Emily has volunteered in many different environments such as the Palisade Library and for children summer camps. Emily was also a part of the International Baccalaureate for all four years of high school.

Student Team Members

Levi Van Pelt

Levi Van Pelt is an international Baccalaureate student at Palisade High School, graduating in May of 2019. Levi is in Speech and Debate where he participates in Public Forum Debate with James Soria. Levi is a member of Earth Club, where he assists in doing the schools recycling and creating a more earth conscious environment, and Debate Club, where he teaches new members and underclassmen the fundamentals of debate. Levi is passionate about environmental science and intends to pursue a degree in such when he gets to college.

James Soria

James Soria is an International Baccalaureate student at Palisade High School and graduates in May of 2019. James Soria is a member of the Speech and Debate team and is partners with Levi Van Pelt in the Public Forum event. James is a member of the Earth Club as well where he assists in recycling and creating the Earth a better place. James is passionate in civil construction but also takes the environment into account. His goal is to pursue a degree in Civil Engineer.

Parent and Community Members

Brian Scherpping

Brian Scherpping has been a School District 51 employee for ten years and is employed as a Master Electrician. Brian has been an Electrical Contractor in the state of Colorado since 1999. He has been a General Contractor in Mesa County for nearly as long. Brian has built many houses and built his first home at the age of 28. He has been involved with construction his whole life, working for his father, who was also a general contractor. Mr. Scherpping graduated from Mesa College with a degree in Biology and a minor in Chemistry. So, he has good understanding of the needs of a fish hatchery and knows Palisade High School like the back of his hand, which will make him the perfect foreman for the Hatchery construction project. For this reason, Brian will serve as the Construction Leader/Foreman for the PHS Fish Hatchery project. He loves to teach people about the construction trade. In fact, both of his sons are in the construction trade. Brian looks forward to working with our construction technology students at PHS, teaching them what he knows about the trade.

Laurie Haderlie

Laurie Haderlie is a parent of a PHS 2018 graduate. Laurie has served as co-chair of School District 51 Gifted & Talented Advisory Committee (2011-2014) and co-chair of Western Colorado Association of Gifted and Talented (2014-2017). She has also been an active member of the PHS Community Advisory Council since 2013. She has participated in the PHS Fish Hatchery Team 2018 project by assisting with fundraising and networking for grants and independent funding. Laurie believes the PHS Fish Hatchery has will have far reaching benefits to PHS students, the community of Palisade and the Grand Valley.

David Miller

David B. Miller, is an employee-owner of Alpine Bank (Senior Vice President Customized Business Solutions). David believes strongly in giving back to the community as an active volunteer. He currently serves on the Palisade High School Community Advisory Council (Palisade, CO), chairs the KRMJ Local Advisory Committee for Rocky Mountain PBS (Grand Junction, CO), serves as VP Board of Managers, Falcon Pointe Resort Condominium Association, (Avon, CO), serves as an ambassador for Rainbow Trail Lutheran Camp (Hillside, CO), and is an IT consultant to the Western Colorado Community Foundation.

2019 Updates

We are excited to share this updated prospectus with you! You will find the following important information in this new section of the PHS Fish Hatchery 2019 Prospectus:

- A Press Release...We have begun to receive recognition for our unique project from the School District and the community, to include KREX news channel 5 and the Grand Junction Daily Sentinel
- A Biography of Brian Scherpping...We have a secured a person to oversee the construction of the building site.
- An academic plan for Palisade High School
- A series of updated construction bids...We have reduced our costs to launch our project from the original estimate of $82,000, to $25,000!

We look forward to your support for this creative and innovative project!

PHS Fish Hatchery Academic Profile and Plan

In the last couple of years, School District #51 and Palisade High School have adopted a new learning model frequently referred to as Performance Based Learning. In that model, now known as the Middle Years Programme (MYP) at PHS, teachers focus not only on content knowledge, but also on concepts, local and global issues, and interdisciplinary connections. This approach to teaching and learning also stresses the importance of students taking ownership for their learning and developing problem-solving skills through creativity and collaboration. Because the International Baccalaureate's Middle Years Programme is encourages students to make practical connections between their studies and the real world, PHS aims to give students many opportunities to better understand and share in their responsibility for their community. We believe that students learn best when their learning experiences have context and connections to their lives and their world.

The foundation of this model is composed of 16 interdisciplinary concepts that can be summarized into four basic categories: Inquiring and Analyzing, Developing Ideas, Creating the Solution, and Evaluating. Each discipline of study then has concepts that are taught in relation to these four basic categories. A unifying thread throughout all MYP subject groups are the Approaches to Learning (ATL) skills. When students develop their social, thinking, research, communication and self-management skills, they grow into more self-directed and confident learners, able to apply their academic knowledge and skills in unfamiliar contexts. Another cornerstone of the MYP programme is the personal project that all students complete by the end of their sophomore year. The MYP projects are highly personalized and inquiry-driven; wherein, students, with the guidance and encouragement of a mentor, engage in practical explorations over an extended period of time. For all that is described above, it should not be surprising that the PHS learning community is rallying behind mottos like, "Education for a better world" and "Think Globally, Act Locally." Similarly, we recognize that the PHS Hatchery as an important education instrument in helping us engage students in learning experiences and projects indicative of what is described above.

The implementation of the PHS Fish Hatchery Project at Palisade High School will be a vehicle that provides a very strong means for both students and teachers to meet requirements of the MYP model of learning. The use of aquaculture systems in the classroom is innately interdisciplinary; not only with a variety of disciplines in science and math, but throughout all school subjects. Our vision at Palisade High School is to use the fish hatchery as a mechanism to link the concepts taught in all of our classes. For starters, the construction tech class at PHS will be tackling the internal framing and insulation work on the building that will house the fish hatchery. These students will also be building a secured shed next to the hatchery to hold equipment and tools that will be used within the hatchery as well as our Outdoor Classroom facility. The construction tech students will be working right alongside the project manager (Brian Scherpping), gaining good insight to the development of construction projects. Engineering concepts will be applied with the construction of the aquaculture system itself. The partnership with the U.S. Fish and Wildlife Service's Colorado River Endangered Fisheries Project will allow students to work with professionals to learn how to build an aquaponics system and the mechanics that go with it, as well as being able to find solutions to problems within the system when maintenance is needed.

After the hatchery is built and ready to use, the USFWS will deliver 300-500 razorback sucker fry and place them in the aquaculture tanks. This will enable teachers to provide a hands on look at the life cycle of fish as students monitor the growth of the fish throughout the school year and from one school year to the next. Teachers in the District #51 have worked over the last two years to create a new freshmen level Environmental Science course that is required for all freshmen to take. This course is aligned to the Next Generation Science Standards (NGSS) that provides teachers with guidance on cross-curricular content connections, engineering connections and practical mathematics connections. This means that all freshmen at PHS will have the opportunity to use the fish hatchery as a basis of study in each unit within the course. From studying Earth's History and the timeline that Razorback Suckers have lived in the Colorado River Basin, to studying how endangered fish impact the Colorado River as a Natural Resource for freshwater in the west. Freshmen students will study Weather and Climate, which will help them to understand ebb and flow of river cycles and the impact that has on aquatic life in the river. The ecology unit will lend itself to the study of Razorback Sucker habitat and the need to protect it. Finally, the unit on Population Dynamics and Human interactions will give students the skills to evaluate the impact the humans have on endangered fish populations and what can be done to help sustain healthy populations of those fish. The freshmen year of high school is the most important year of high school to determine a successful outcome for the student. At Palisade High School, we have worked hard to make sure that we provide academic accountability, academic guidance, avenues for involvement and a sense of belonging for all of our freshmen students. We feel that with the use of the fish hatchery, PHS can now provide a great connection between students' academic life, their personal experiences and the natural world around them. With this students can have a better understanding on where they fit in the natural world and how their behaviors can impact the resources that those that live in the Colorado River Basin rely on.

At Palisade High School, all of the sophomores are required to take Biology. District #51 recently updated the Biology curriculum as well, which also aligns to the NGSS standards. This new update provides the capability for teachers to use the fish hatchery to teach concepts in the units of Biochemistry, Cell Structure and functions, Heredity, Gene expression, Evolution and Structure/Functions of Organisms. This means that in the first two years of education at PHS, every student in the school will have used the PHS Fish Hatchery as a modality for their learning…and that is just through two science courses.

In fact, there is not one science class at PHS where the installation of a fish hatchery would not enrich the current curriculum. Chemistry classes will focus on the importance of water quality testing, physics classes will study water flow dynamics, water pressure within pump systems and electrical loads needed to run the hatchery. Zoology classes will study the anatomy of the fish, the characteristics that make razorback suckers unique and the behavior of the fish in a confined space verses their natural environment. The River Dynamics course will use the hatchery to correlate the Colorado Parks & Wildlife's RiverWatch program to compare the chemistry of the Colorado River to that within the hatchery. This class will also work on habitat recovery projects relative to the endangered species within the Colorado River. In addition, watershed management and water law will be studied and evaluated, which builds a more knowledgeable citizen in regards to water use. We also foresee the technological applications and skills of further use of Geographical Information Systems (GIS) to help track the migration of the endangered species and the implementation of an underwater camera in the hatchery tanks (called the "Razorback Cam") to be able to view the fish in the tank for a variety of studies.

Furthermore, the upper level science courses at Palisade High, which include A.P. Environmental Science, IB Environmental Systems and Societies and IB Biology will use the hatchery to advance the study of their aquatic ecosystems units to include long term data analysis of a variety of aspects of the hatchery. The IB students will be able to use the fish hatchery as a basis for Internal Assessment and Extended Essay design experiments, as well as the ability to use the hatchery as a source for the mandatory C.A.S. (Creativity, Action and Service) project. This also leads into the use of the hatchery as a focal point for the sophomores at PHS and their "personal projects", a requirement for the MYP status.

Within the MYP programme at PHS, one of the requirements is to show interdisciplinary work between subject groups. With that, the science department has partnered with the English Language department to devise a unit where students use scientific studies to become better scientific writers. Once the hatchery is built, we see the fish hatchery as a foundation of this interdisciplinary unit, giving students a practical way to learn the aspects of scientific writing and persuasive writing using the Toulmin model of writing. This interdisciplinary unit also makes way for the plan of students giving fish hatchery semester update reports to the community, where students not only perfect their writing skills but also their public speaking skills. The ELA teachers at PHS also have plans to incorporate journal writing and creative writing that is centered on the fish hatchery and endangered fish habitat.

The math department is working on plans to incorporate the fish hatchery in the "data analysis" units within the various levels of math. The Social Studies department sees the fish hatchery fitting in with the work that they do with mapping and GIS, geography and the economic benefits of endangered fish recovery programs. The hatchery lends itself to the promotion of fish art, where students grow their artistic abilities through the detailed sketching of the fish and/or the use of the Razorback sucker as a focal point of creative art designs. With this, students will be able to see the correlation between science and art; and the need for good artistry to depict the fish in the hatchery and in the wild. Inspirational local and regional artists like Paul Gray and W. Howard Brandenburg could coordinate with staff and students on the importance of art in the sciences and show the significance of endangered species inspired art work. The great thing is that this fits right in with the Scientific Drawing sketchbooks that students currently use in their biology classes.

As one might see, Palisade High School has distinct plans on how and where to incorporate an endangered fish hatchery into the curriculum of many courses. We feel that this fish hatchery could become a cornerstone to engage and inspire student learning throughout a large variety of subject areas. However, the long-term vision with the PHS fish hatchery is to not keep this mechanism for learning just in the hands of those at PHS, but to open it up to any school or class that would be willing to come out to PHS and use it. We plan to reach out to the feeder elementary and middle schools, as well as other local high schools with hopes of inspiring similar projects at the schools that visit. Also, we foresee a growing partnership with programs at Colorado Mesa University, where we would work with professors like Eric Hanson (the head of CMU's fisheries curriculum), Deb Kennard and Stephanie Matlock Cooley. We will bring in guest speakers that are professionals in the various careers that have a direct link to the study and preservation of these prehistoric Razorback sucker fish; for example, the U.S. Fish and Wildlife Service, the Colorado Parks and Wildlife Service, the U.S. Department of Natural Resources, those involved with the Colorado River Water Conservation Board, meteorologists, climatologists and a variety of agriculturists, just to name a few.

Palisade High School is a school that has high expectations for both students and staff and the implementation of the fish hatchery into the school system will only help in exceeding those expectations. Not only will it enrich the education of all the students at PHS, but it will be an invaluable resource to other schools and the Grand Valley community.

Press Release-Palisade High Works to Open New Fish Hatchery

Palisade, CO – Palisade High School hopes to turn a storage building at the school into a fish hatchery with support from the U.S. Fish and Wildlife Service, which will provide food, aquatic supplies, and fish for the hatchery.

The hatchery will consist of three, 230-gallon tanks that can each stock approximately 150 endangered fish. Once the fish are big enough to leave the hatchery, they will be released into the nearby Colorado River.

In addition to increasing the population of endangered species of fish in the Colorado River, the hatchery will offer students in all disciplines a chance to learn in a hands-on way. Students will measure the fish, analyze their habitat and food-to-growth ratios, learn about life cycles, and draw inspiration from the hatchery for writing assignments, to name just a few of the ways the hatchery will be incorporated into curriculum at PHS.

Students from the Class of 2018 helped raise nearly $1,500 for the hatchery, but Palisade High School science teacher Pat Steele is working to raise a total of $25,000 to complete the project. He will work this year with a few seniors from Palisade's International Baccalaureate Programme to approach possible funding groups.

Anyone interested in donating to or learning more about the hatchery can email patrick.steele@d51schools.org.

Photo Credit: U.S. National Park Service

Students to build Palisade hatchery

Project can offer hands-on learning in variety of topics

By KATIE LANGFORD
Katie.Langford@gjsentinel.com

If all goes according to plan, an outbuilding at Palisade High School with be teeming with hundreds of razorback suckers a year from now.

Building a high school fish hatchery is the brainchild of U.S. Fish and Wildlife Service fish culturist Mike Gross and Palisade High teacher Patrick Steele, who have been working on this project for years.

Teacher Patrick Steele said Palisade is a perfect fit for a hatchery, with the Colorado River close to the campus.

Gross works in the Grand Valley unit of the Ouray National Fish Hatchery, where thousands of endangered fish are raised every year and released into rivers.

Gross said it's long been a career goal to build a hatchery at a school, where students can experience hands-on learning every day.

"It's an incredible way to inspire a younger generation, getting them into science and in particular fish and fish hatcheries," Gross said. "It's such a grand tool for so many different possibilities to learn from."

The hatchery could offer lessons for math, science, engineering, construction and even art.

CHRISTOPHER TOMLINSON/The Daily Sentinel

Mike Gross with the U.S. Fish and Wildlife Service holds a razorback sucker at the Ouray National Fish Hatchery on 24 Road. Under Gross's supervision, Palisade High School will be setting up its own hatchery.

While the full-scale hatchery consists of dozen of tanks, Palisade's will be made up of three, 230-gallon tanks that can stock approximately 150 fish each.

Steele said Palisade is a perfect fit for a hatchery, with the Colorado River close to the campus.

"It's a neat opportunity for students to see how that works, to give back to our area and help our Colorado River system be that much more healthy and sustainable," Steele said.

This is the second year of planning for the fish hatchery project, which has been led both years by high school seniors in the International Baccalaureate program for their service project.

Students James Sonia and Levi Van Palt are organizing the project this year, along with support from Steele and a group of parent volunteers.

"We're both pretty passionate about environmental sciences, and so this service project was a chance for us to do something that had a huge benefit to the community and to the environment," Van Palt said.

After support from the school district in the form of a construction foreman brought the project's price down from $82,000 to $25,000, Van Palt and Sonia are now looking to obtain the final piece of funding in order to start building the hatchery.

Because of the timeline, it's likely that Van Palt and Sonia won't get to do much work with the fish, but both said they don't mind.

"I think being here for the planning and getting it up and running is just as exciting," Van Palt said. "I don't have to be in Grand Junction to know it's positively affecting the community."

New Team Members

Brian Scherpping

PHS Fish Hatchery project is happy to add to its team Brian Scherpping. Brian is a School District 51 employee and is employed as a Master Electrician. Brian has a General Contractors license and understands what is needed to get the Hatchery construction project completed. Brian will be the Construction Leader/Foreman for the PHS Fish Hatchery project.

After meeting with a couple of electrical engineers, we found that it will not be necessary to dig a trench for electrical line from the school to the Hatchery building. This will cut our cost down considerably.

Brian was able to secure various bids for the conversion needs of the building. Overall, the total costs came to just over $19,000. This includes using students that are in the Palisade High School Construction class to help with some of the framing and insulation installation. This is yet another creative way to solve our own problems and create learning opportunities for students. It also builds a sense of ownership and pride in the school Hatchery project and the community as a whole.

Brian suggested that we work to get funding for $25,000, to allow for incidentals, as they often occur in construction projects. Attached are the updated bids for the construction conversion of the Hatchery building.

Brian Scherpping has done amazing work for the PHS Fish Hatchery project. He has helped us put the dream within reach!

If you would like to support us in making the dream a reality, please contact:

Patrick Steele, Science Department
Palisade High School
3679 G Rd., Palisade, CO 81526
970.254.4800 ext. 25291
Patrick.Steele@d51schools.org

Thank you!

Construction Bid

Project: Palisade Observatory Remodel for Fish Hatchery
Address: Palisade High School
3679 G Road Palisade, CO 81526

Date: 8/24/2018
Estimator: Brian Scherpping
Project Duration: 2.5 - 3 months

Company	Description	Total
Builders First Source	construction materials for building remodel	$3,186.00
SMG Electrical Services	electrical line & panel materials and labor	$8,781.00
Comfort Air	HVAC system installation and materials	$5,400.00
Wapiti Plumbing & Heating	labor and materials for aquaculture system hook-up	$1,760.00
Palisade High School	utility shed, unforeseen construction costs, maintenance fund	$5,873.00
	Total:	$25,000.00

Builders FirstSource

DATE	QT NUMBER
08-23-18	37341121

Builders FirstSource

QUOTATION

QUOTE Page 1

SOLD TO
517351
MESA CTY SCHOOL DIST 51
2115 GRAND AVE
GRAND JUNCTION, CO 81501-0000

SHIP TO
517351
MESA CTY SCHOOL DIST 51
PALISADE HIGH SCHOOL
FISH HATCHERY
GRAND JUNCTION
CO 81501-0000

JOB NO.		COST CODE	EST SHIP DATE	CLERK #	SHIPPED FROM
			09-23-18	dkq4	GRJUCOYD QT

QTY	ITEM NO.	DESCRIPTION	U/M	UNIT PRICE	EXTENDED PRICE
10	248HF2	2X4-8 #2&BTR HEM FIR DRY	EA	4.25	42.50
40	228F	2X2-8 FURRING STRIP	EA	2.58	103.20
9	112FOAM48250	4X8 1-1/2" FOAMULAR 250 SQ E	EA	38.16	343.44
10		4X8 WHITE FRP BOARD	EA	61.57	615.70
10		8' WHITE DIVISON TRIM	EA	3.45	34.50
3		1 GAL FRP ADHESIVE	EA	20.65	61.95
6	1416MDFP	1X4-16' MDF PRIMED	EA	11.05	66.30
1		48X80 METAL DOOR AND FRAME	EA	100.00	100.00
1		HARDWARE ALLOWANCE	EA	500.00	500.00
8	268HF2	2X6-8 #2&BTR HEM FIR DRY	EA	5.32	42.56
1	2616T1AGCT	2X6-16' #1 PT AG CDR TONE	EA	19.16	19.16
2	SS3848CP	4X8 TX SMART STRAND 38	EA	31.54	63.08
4	KN-B09EM	R19K 15"X94" KNAUF 97.92SF	PKG	48.51	194.04
		48" x 80" Metal insulated door		1,000.00	1,000.00

Unless otherwise specified herein, all prices shown shall only be valid for materials delivered for or received by the Purchaser within 30 days from the date of this quotation.

3,186.40

SUBTOTAL	TAX	TOTAL
2,186.43	.00	2,186.4

BFS RETAINS THE RIGHT TO ADJUST ALL QUOTED PRICES IN THE EVENT OF SHORTAGES, ENVIRONMENTAL IMPACTS, FREIGHT INCREASES, OR GOVERNMENTAL REGULATIONS.

Thank you for the opportunity to quote.

QUOTATIONS SUBJECT TO CREDIT APPROVAL

Work Bid

SMG Electrical Services, LLC
2935 Sunset Drive Grand Junction, Colorado 81504
FAX 970-257-1649
970-986-0665

Date: 08/15/18
W.O. #: 84
Customer ID:

Bill to: Palisade High School Fish Hatchery
Job: Fish Hatchery

Palisade, Co
Contact : Brian Scherpping (maintenance) 216-5472

Description	Line Total
To include all wiring, fittings, and devices as required by the scope of work.	
This bid includes; new 60 amp three phase service, panel inside, conduit and wiring for panel and transformer. Also relocate existing panel, and switches. New 24 LED highbay lighting, and switching.	8,781.18
This price does not any low voltage wiring.	

Subtotal $ 8,781.18
Sales Tax
Total $ 8,781.18

Make all checks payable to SMG Electric
Thank you for your business!

COMFORT AIR of Grand Junction, LLC

HEATING, COOLING & SHEET METAL
746 Scarlet Drive • Grand Junction, CO 81505
Phone: 970-254-1170 Fax: 970-254-1178

PROPOSAL #5847

SUBMITTED TO: Palisade High School	PHONE: 970-361-5415 DATE: August 22, 2018 EMAIL: Patrick.steele@d51schools.org
ADDRESS: 3678 G Road	JOB NAME: PHS Fish Hatchery
CITY, STATE AND ZIP: Palisade, CO 81526	JOB LOCATION: Palisade High School
DATE OF PLANS: -	

We hereby submit specifications and estimates for HVAC:
We propose to provide all necessary equipment, labor, and materials for complete HVAC system for PHS Fish Hatchery located in Palisade, CO. Proposal includes a full one year parts and labor warranty. The following inclusions also apply:
1 – 2 Ton Roof Mounted HVAC Packaged Unit, 460/3/60
1 – Electric Heat Strip Heating Element
1 – Roof Mounted Exhaust Fan connected to Dehumidification stat
Supply and Return Ductwork into 2 spaces
Includes all dampers, grilles, and diffusers for complete installation

All of the above work to be completed in a substantial and workmanlike manner for the sum of:
Five Thousand Four Hundred Dollars and 00/100 ----------$5,400.00

Exclusions: Painting, Patching, plumbing, gas piping, electrical, water piping

Payment to be made as follows: **Progressive draws with balance due at time of completion.**

Terms: Payment is due upon receipt of invoice – All past due accounts shall bear an interest rate of 1.5 percent per month, compounded (18% annual percent rate) on all unpaid balances. Customer is to pay all reasonable costs of collection, including but not limited to, attorney's fees in the pursuit of unpaid amounts.

All material to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers Are fully covered by Workman's Compensation Insurance.

Authorized
Signature_____

Note: this proposal may be withdrawn by us if not accepted within 30 days.

Acceptance of Proposal – The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.
Date of Acceptance: _____

Signature _____

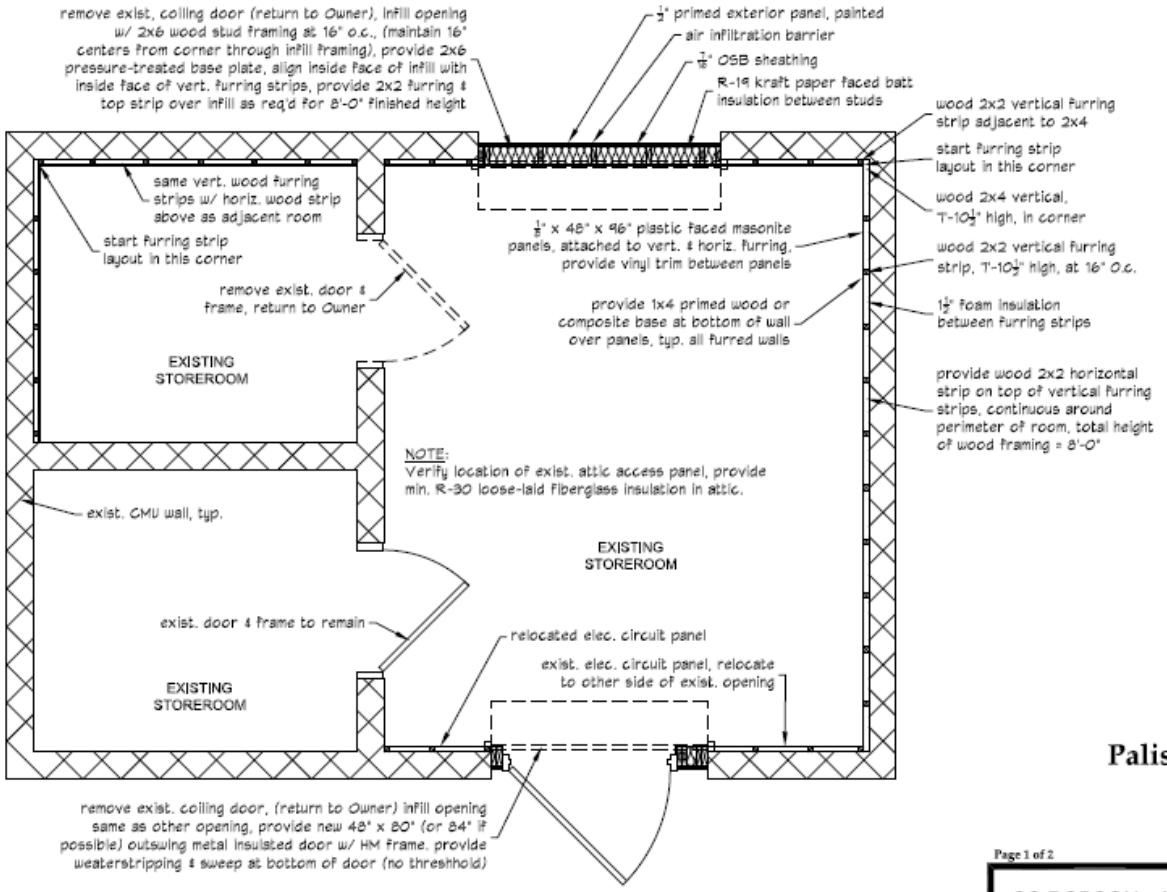
Wapiti Plumbing and Heating
Lance Combs
635 Meadowood St.
Grand Junction, CO 81504

Date 8/17/2018
Estimate # 414

Name / Address
Mesa County Valley School District 51

Description	Total
Job Address: PHS Fish Hatchery SD51 Labor and material to hook up owner supplied fish hatchery equipment with PVC piping.	1,760.00

Wapiti Plumbing and Heating
wapitiplumbing@yahoo.com 970-683-0762



FLOOR PLAN

3/8" = 1'-0" 352 s.f. (existing)

GENERAL NOTES:

1. This project is the conversion of an existing equipment building into an educational fish hatchery laboratory. This space will NOT be used as a classroom.
2. A new heating & cooling (or ventilation) system (w/ dehumidification) capable of maintaining 70° F is to be provided.
3. A fire alarm w/ horn & strobe is to be provided.
4. The new door is be an insulated steel door w/ a keyed lock & deadbolt.
5. A waterline from the closest domestic water service is to be extended into the building to provide year-round water service. Provide an enclosure around all exposed exterior pipes, insulate or heat tape all exposed exterior pipes.
6. The existing electrical system is to be modified as req'd to accommodate the new hatchery equipment & hatchery operation.
7. All plumbing & electrical work is to be inspected by the State for compliance with applicable codes.
8. All hatchery equipment is to be furnished by others.

Palisade High School Fish Hatchery
3679 G Road
Palisade, Colorado

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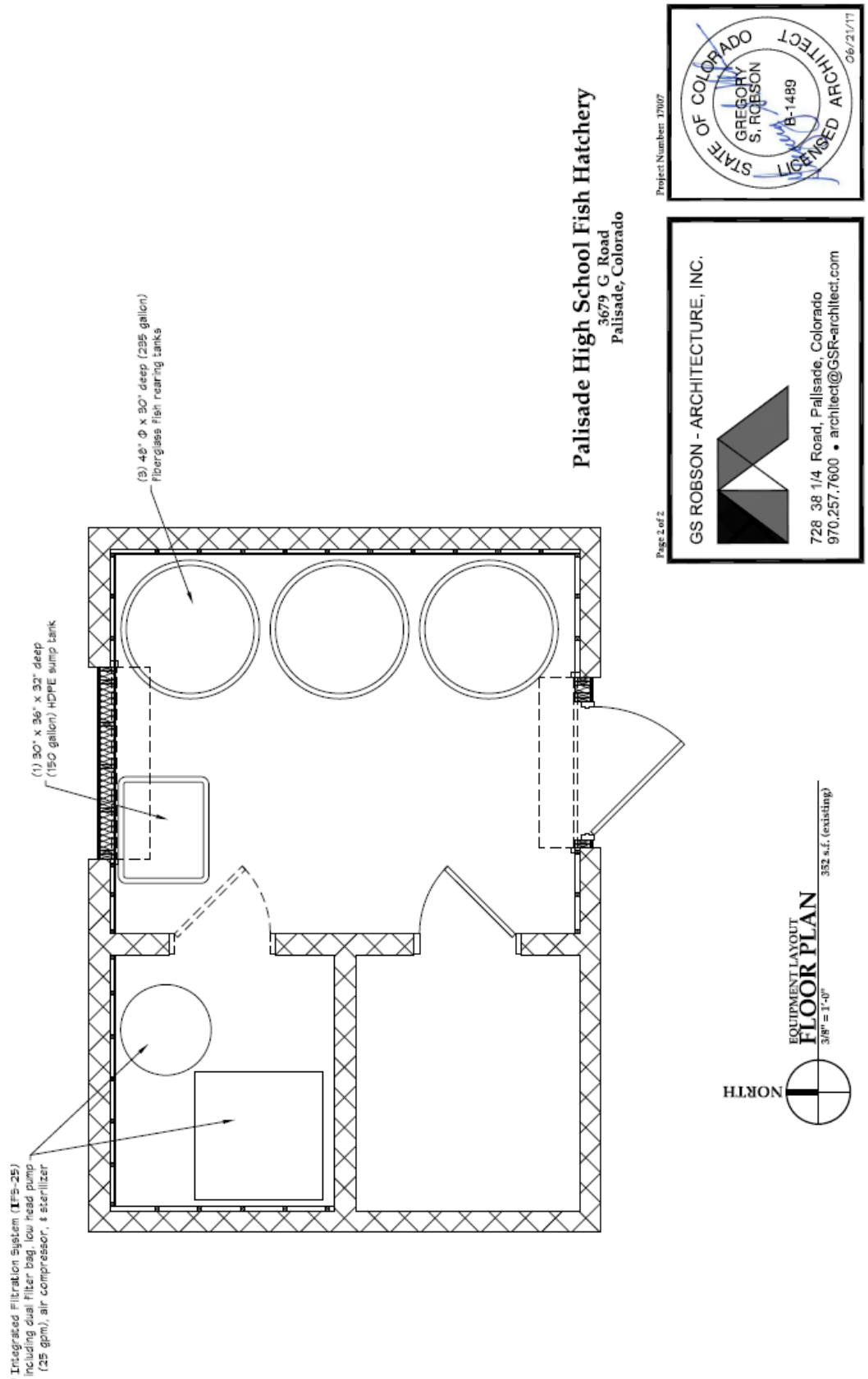
Project Number 17007

GS ROBSON - ARCHITECTURE, INC.
728 38 1/4 Road, Palisade, Colorado
970.257.7600 • architect@GSR-architect.com

STATE OF COLORADO
GREGORY S. ROBSON
B-1489
LICENSED ARCHITECT
06/21/17


Palisade High School Fish Hatchery
3679 G Road
Palisade, Colorado
(3) 48" Φ x 30" deep (295 gallon) Fiberglass fish rearing tanks
(1) 30" x 36" x 32" deep (150 gallon) HDPE sump tank
(1) Integrated Filtration System (IFS-25) including dual filter bag, low head pump (25 gpm), air compressor, & sterilizer
NORTH
EQUIPMENT LAYOUT
FLOOR PLAN
3/8" = 1'-0"
352 s.f. (existing)
Project Number: 17007
STATE OF COLORADO
GREGORY S. ROBSON
B-1489
LICENSED ARCHITECT
06/21/17
GS ROBSON - ARCHITECTURE, INC.
728 38 1/4 Road, Pallsade, Colorado
970.257.7600 • architect@GSR-architect.com
Page 2 of 2

Contacts for possible funding:

Steve Acquafresca... steven@acsol.net

Steve Acquafresca represents Mesa County and was reappointed to the Colorado River District Board in January 2017 having previously served from 2011-2014. Mr. Acquafresca has been an advocate for the agricultural community while being actively engaged in farming, conservation, business, community affairs, and public policy-making. As a former Colorado state legislator, Mr. Acquafresca represented six west slope counties in Colorado's General Assembly and focused on farming and ranching issues, business and economic development, water law, conservation, local government, transportation and public education funding and policies. More recently, Mr. Acquafresca served as Mesa County Commissioner from 2007-2015. Mr. Acquafresca's current term on the Colorado River District Board expires January 2020.

Jim Pokrandt... jpokrandt@crwcd.org

Jim Pokrandt is the Education and Communications Specialist for the Colorado River District, a position he has held since 2005. Prior to joining the Colorado River District, Jim worked in community-level newspapers at all levels for 30 years, the last 13 in various ski resort communities in Western Colorado. In addition to his duties at the River District, Jim is the chair of the Colorado Basin Roundtable, one of nine Roundtables created by the Colorado General Assembly under the Colorado Water for the 21st Century Act.

Richard Van Gytenbeek... Richard.Gytenbeek@tu.org

Richard Van Gytenbeek works for Trout Unlimited's Western Water Project as the Colorado River Basin Outreach Coordinator. Travelling throughout western Colorado, Richard meets with elected officials, businesses, organizations and individuals about TU's collaborative efforts with the agricultural community and the importance of healthy rivers to West Slope communities and their economies. Richard's current efforts focus on a program called Our Colorado River. The goals of the program are to highlight the Western Water Project's efforts on the West Slope and to enlist support for the program's core values. The five core values speak to cooperation among water users, protection of agriculture, protection of open space and wildlife habitat and employing innovative water management techniques.