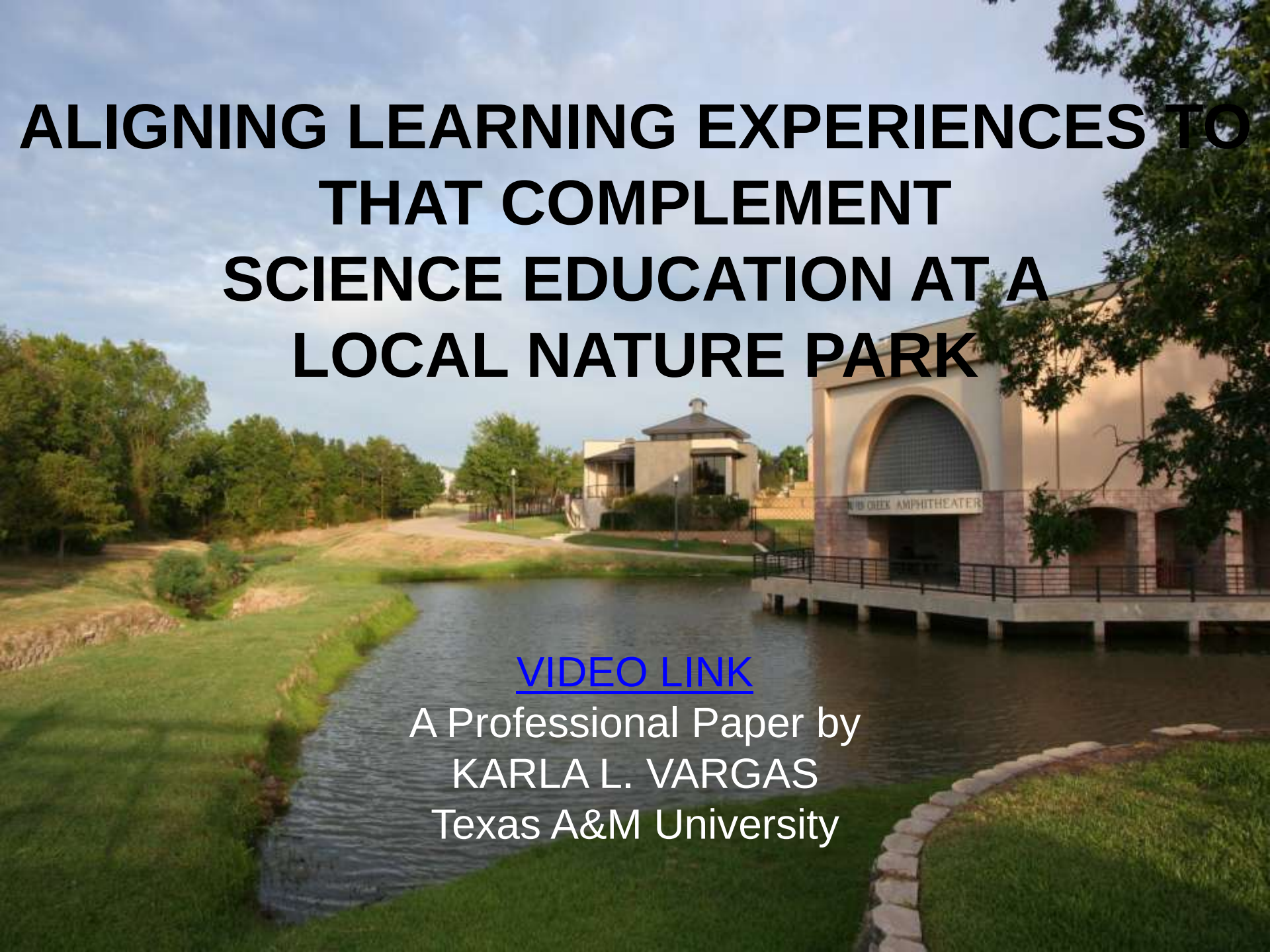
ALIGNING LEARNING EXPERIENCES TO THAT COMPLEMENT SCIENCE EDUCATION AT A LOCAL NATURE PARK



VIDEO LINK

A Professional Paper by
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Motivation

WOLF PEN
CREEK

ALIGNING LEARNING EXPERIENCES
THAT COMPLEMENT SCIENCE
EDUCATION AT A LOCAL NATURE
PARK
A Professional Paper by
KARLA L. VARGAS
Texas A&M University

Introduction

- Science at the elementary level
- Inquiry-based science learning
- Health benefits from contact with the outdoors
- Inquiry-based science in outdoor settings
- Community-school collaboration for science

Introduction

- Science at the elementary level

Quality science experiences in the early years are crucial to develop knowledge of science concepts, problem-solving and critical-thinking skills.

Introduction

- Inquiry-based science learning

Through inquiry-based science instruction, children are given the opportunity to explore, carry out investigations, and actively participate and learn about the nature and content of science.

Introduction

- Health benefits from contact with the outdoors

Encouraging young children to participate in activities outdoors contributes to their physical, mental and social development.

Introduction

- Inquiry-based science in outdoor settings

Outdoor education enhances the learning of academic subjects, and promotes inquiry science by exposing children to relevant and meaningful materials and settings.

Introduction

- Community-school collaboration for science

Regardless of the many challenges, collaboration between informal and formal education, is a new vision much needed for educating the future citizens of the 21st century.

Photo credit: www.nps.gov

Background

- The City of College Station
- College Station Independent School District
- Parks and Recreation
- Wolf Pen Creek Corridor
- Wolf Pen Creek Interpretive Signage

Background

- College Station Independent School District

Core principles:

Each student can be a critical thinker, problem solver and possess the knowledge and skills to be a productive and responsible citizen.
The education of each student is the responsibility of the school district, the student, the family and the community.

Background

Photo credit: www. activerain.com

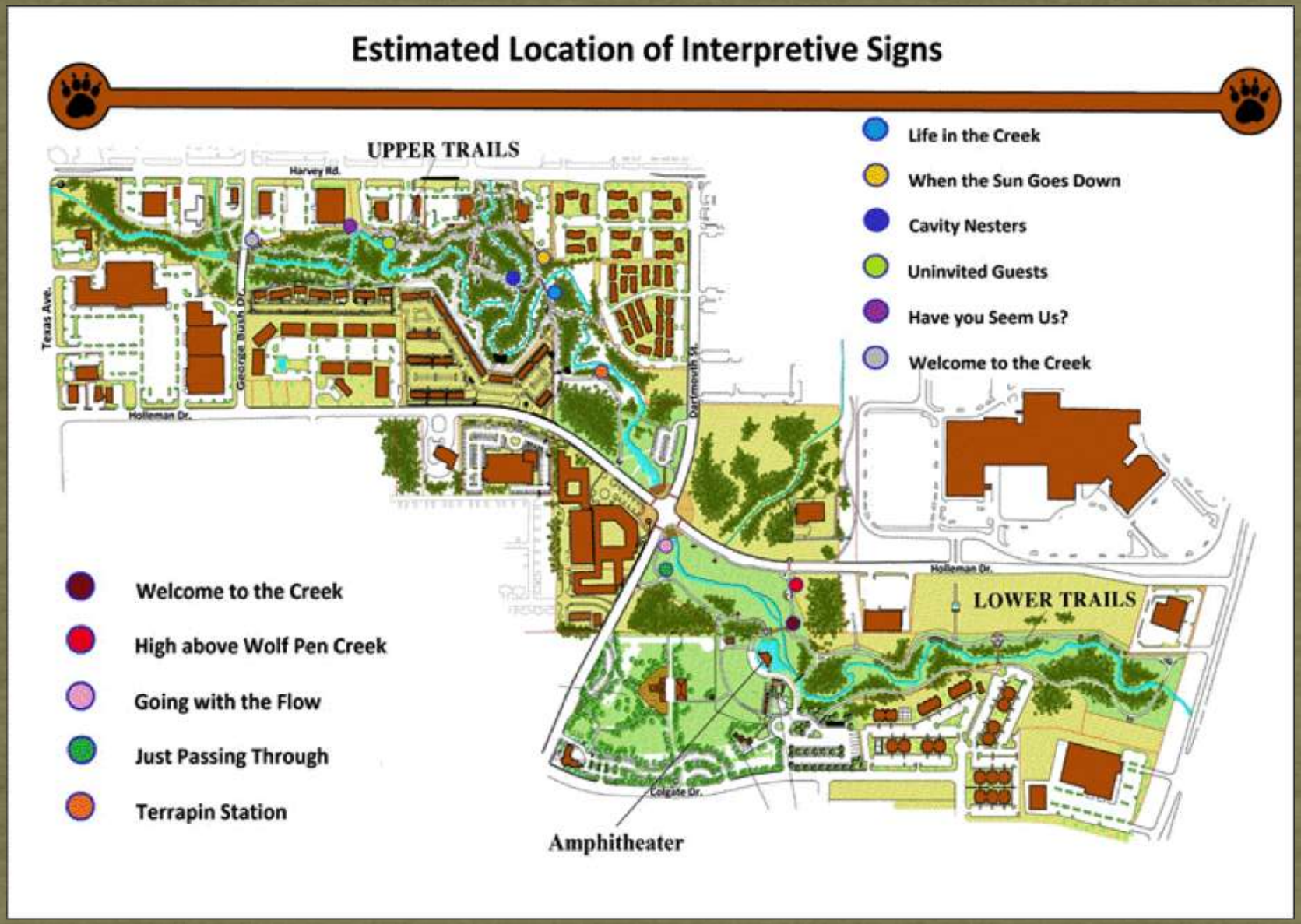
- Wolf Pen Creek Corridor

  The City adopted the first Wolf Pen Creek Master Plan in 1988 to promote urban development, recreational opportunities, manage drainage, and preserve the creek's plants and wildlife.

- Wolf Pen Creek Interpretive Signage

Photo credit: www.asergeev.com

➢ Wolf Pen Creek Interpretive Signage



Problem

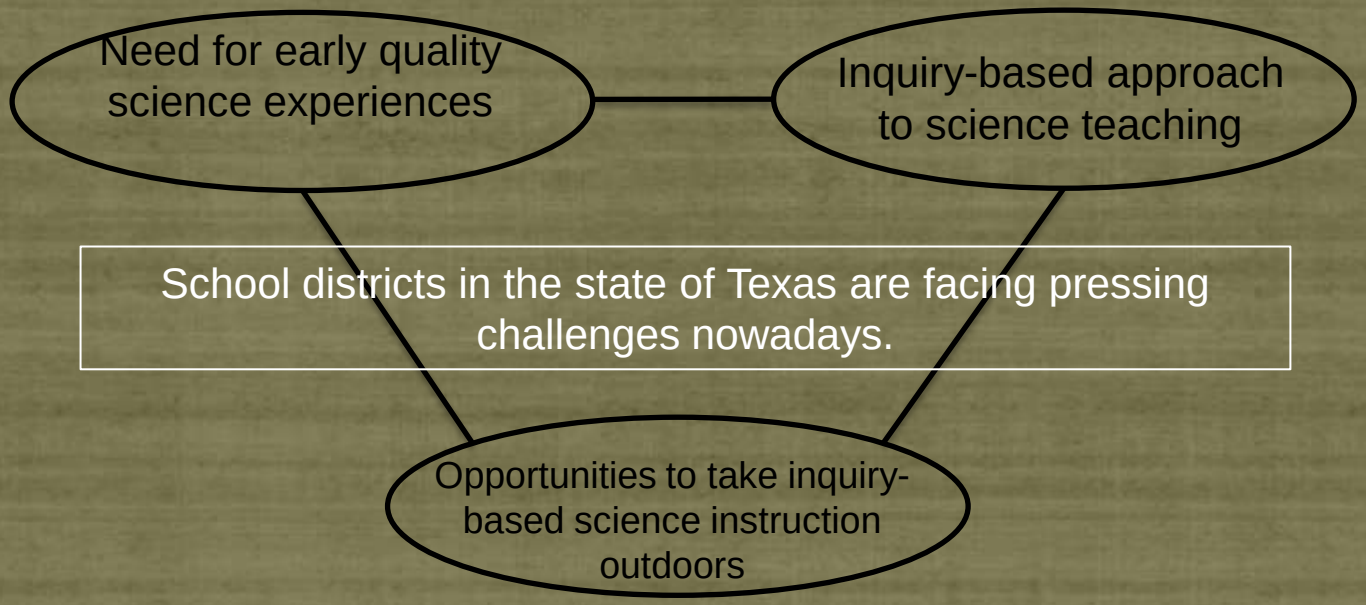
Need for early quality science experiences

Inquiry-based approach to science teaching

School districts in the state of Texas are facing pressing challenges nowadays.

Opportunities to take inquiry-based science instruction outdoors

Problem



Trail system and interpretive signage at Wolf Pen Creek Park are a natural asset that is currently under-utilized.

Methods

- Audio-taped semi-structured interviews with open-ended questions.
- Stakeholder groups:
- In-service elementary school teachers.
- Pre-service teachers in a professional development program.
- Facilitators encouraging integration of informal and formal education.
- Program administrators.
- NVivo 10: Qualitative method of content analysis. Themes: Needs, Expectations, Best Practices, Stakeholder.

Results

Stakeholders (n=15; 12.2%)

- In-service elementary school teachers: College Station and Bryan Independent School Districts.

- Pre-service teachers in a professional development program. Undergraduate student at TAMU TLAC.

- Facilitators encouraging integration of informal and formal education: The Brazos Valley Museum of Natural History, The Brazos Valley Chapter of Texas Masters Naturalists, KidzClub and Project Wild.

- Program administrators: College Station ISD, College Station Parks and Recreation, and TAMU TLAC

Results

Photo credit: www. dunwoodynature.org

Needs (n=47; 38.2%)

- Challenges in science education
- Challenges in outdoor science education
- Places for outdoor learning in the community
- Professional Development

Results

Best Practices (n=33; 26.84%)

- Successful science activities.
- Successful science activities in outdoor settings.
- TEKS alignment.

Photo credit: www.stacylewis.com

Results

Expectations (n=28; 22.76%)

- Science at a nature park
- Logistics

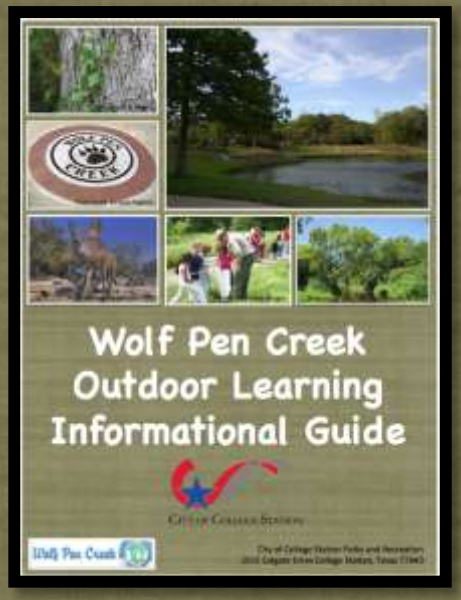
Photo credit: K. Vargas

Solution

A community-school collaboration model in which, formal and informal educators, and community partners cooperate to provide outdoor learning experiences at Wolf Pen Creek Park.

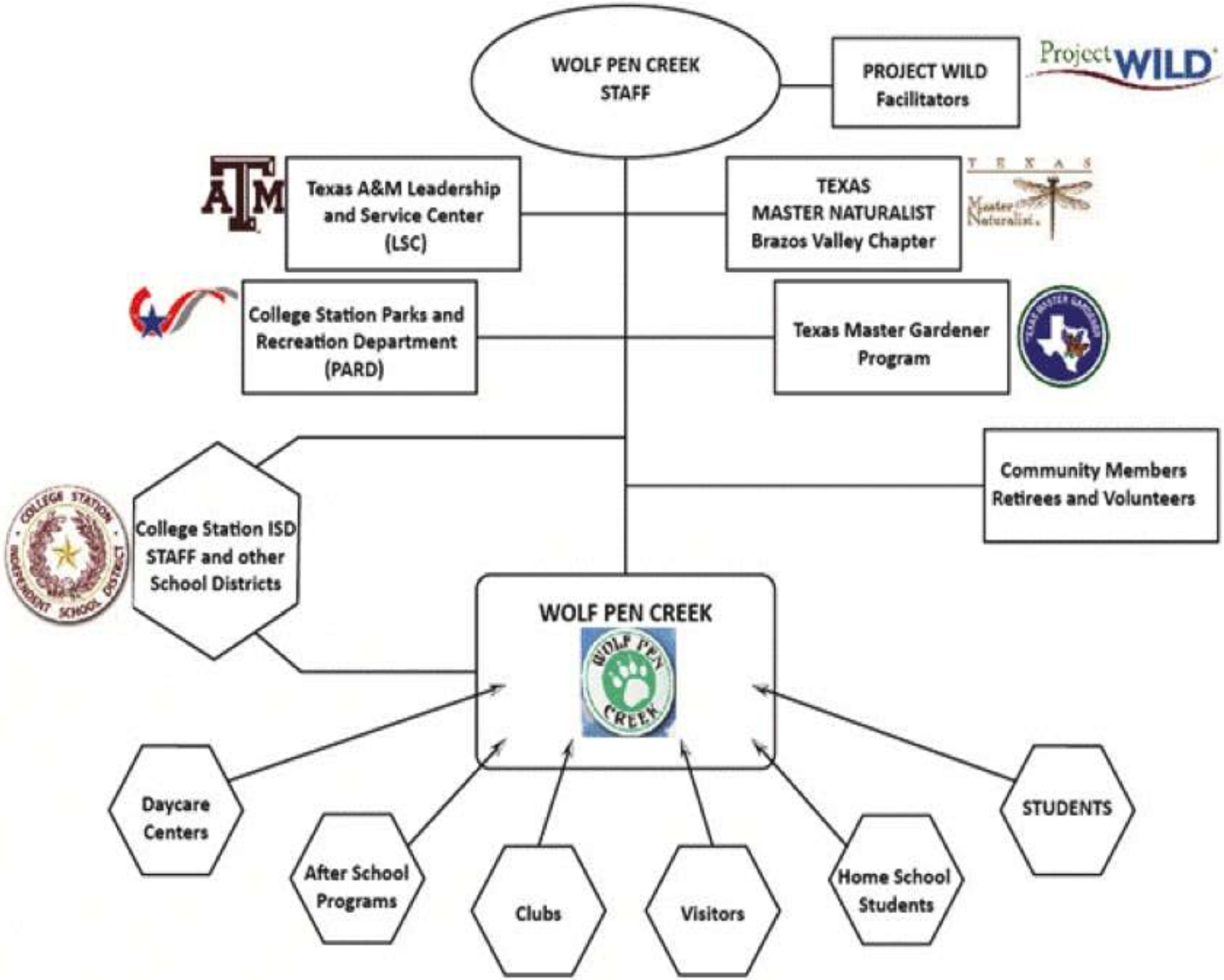
Outdoor experiential learning opportunities

Healthy lifestyles through outdoor activities



Nurture their innate curiosity through inquiry based experiences

Use inexpensive local resources



Community-school collaboration model

Conclusions

Children are lacking valuable outdoor opportunities that are essential to gain deep scientific knowledge and develop healthy life habits. In addition, limited financial resources for out-of-school experiences, and insufficiency of materials are pressing challenges in education at the elementary level.

Wolf Pen Creek Park and the interpretive sings along the trails are local resources that can offer inquiry-based outdoor science learning experiences.

A school – community collaborative approach can join resources to promote healthy habits in children, nurture their innate curiosity to explore natural areas, and expand their knowledge bringing science concepts to life. Project Wild, Project Wild Aquatic and Growing Up Wild offer developmentally appropriate curriculum that can be used to accomplish that goal.

Recommendations

Implement the collaborative model described in this study.

Design and execute a research study to evaluate long-term impact of Project Wild and Project Wild Aquatic activities at Wolf Pen Creek Park on student's mastery of science concepts, on student's awareness, appreciation, and knowledge of local natural resources, and on teachers' attitudes and comfort level related to facilitating outdoor activities and delivering science content.

Acknowledgements

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Thank you!

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