
ACE RESOURCES

A newsletter for the Association

FEBRUARY 2020

Enhancing our Natural Resources

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2020 President's Message

Welcome to the 2021 Association of Conservation Engineers (ACE). As we celebrate our 60th year of conservation engineering, I would like to personally thank our members for making ACE such a great organization. Members that share their experience, knowledge, and friendship have allowed ACE to bring engineers and related design professionals together from across the Nation. It is a great honor to lead ACE into its sixth decade of conservation engineering excellence. I continue to be inspired by the professionalism, knowledge, and abilities of our members. ACE provides engineers and design professionals a platform to collaborate and share their project knowledge related to conservation and outdoor recreational facilities in an atmosphere of friendship and camaraderie.

I want to give a special thank you to our past presidents, Terry Boyd and Howard Thomas, for working hard to improve membership and utilizing technology that allowed for continued success in 2019 and 2020. We held our annual conference virtually last year despite the pandemic challenges. Also, our membership has grown to 114 members. I am humbled to step into the shoes of predecessors that conquered such challenges. As we continue to welcome new members and utilize technology to enhance our organization, I would like to build on past successes by encouraging member involvement. Nothing connects people and builds friendships like being welcomed into an organization as a valued active member.

Through member involvement, the ACE organization can continue to grow and utilize technology to promote its four goals. Please take a moment to visit the ACE website at <https://conservationengineers.org> to learn about ACE and review the four goals listed on the "About ACE" page. This year our focus is on involvement and the pursuit of goals through active committee achievements. We show the complete listing of ACE committees on our website on the About ACE page. If you are interested in serving on a committee, please contact me.

A special thank you goes out to our 2020 ACE sponsors. Without our sponsors, we could not have realized the success of the virtual conference. The executive board was unanimously in favor of hosting a conference in 2020. Meetings Northwest created a virtual platform that transformed our thoughts and ideas from a physical space to a virtual space allowing ACE members to continue our annual tradition successfully. I anticipate working with Meetings Northwest and our sponsors to provide a virtual component and the physical component we are all familiar with. By adding the virtual platform, I hope to continue the pattern of success for the 2021 conference.

I am pleased to announce that the 60th ACE conference will be held in Springfield, Missouri, at the Oasis Hotel and Conference center from October 10-13, 2021. Please plan to attend and catch up with old friends and make new ones as you make your trip to the Ozarks. Springfield, Missouri, is located on the Ozark Mountains plateau's top, where the prairies meet the Ozarks. Missouri is the United States' geographic center, so we are excited to see members from all over our great Nation. If you have extra time, bring your fishing rod or your hiking boots and visit one of our lakes, hiking trails, or numerous caves in the region. As we put our plan together, please consider being a presenter at this year's conference. The heart of the annual ACE conference is sharing our engineering experiences and knowledge gained through the design and construction of specialized conservation, natural resource, or recreational facility projects. Presenting your projects promotes engineering and conservation and builds a network of knowledge that the Nation can utilize.

Finally, please send us your latest updates and project experiences to publish in our June ACE newsletter. We want to see what our members are working on. Conservation, natural resource, and outdoor recreation facility projects often require specialized knowledge or numerous engineering disciplines to solve a problem or deliver a solution where man and nature intersect. Someone in ACE may share their knowledge related to conservation using the fundamentals of engineering that may provide insight for your project. In my 23 years of experience with planning, design, and construction of natural resource, conservation, and recreational facilities, I realized that knowledge passed on from my predecessors and peers is invaluable when coupled with sound principles of engineering and conservation. Don't forget to invite state agencies, friends, associates, and co-workers who work in engineering and conservation-related fields to consider the benefits of joining our organization. I look forward to interacting with ACE members this year.

ACE
ASSOCIATION OF
CONSERVATION
ENGINEERS



Springfield, Missouri

ACE 2020-59th Annual Conference

59th Annual Association of Conservation Engineers Conference Report– Online Webinar

*59th Annual Association of Conservation Engineers Conference – from
the comfort of your own home/office/remote location*

What can be said about 2020 that hasn't already been declared, tweeted, posted, re-tweeted, commented on, or shouted from the rooftops? It was a challenge, no doubt, and the ACE crew did not escape the challenge. We started the year 2020 planning to visit the great state of Wyoming and ended up scrambling to put together our first-ever virtual conference. The 59th Conference did not go off without its hitches, but all in all, the ACE team pulled together and provided a pretty good virtual conference. We had presentations from a varied conservation subject base and from around the country. We also had generous support from our sponsors, Thru-Flow, Gredell Engineering Resources, and Engineers of the South. Remember, you can download the 2020 conference presentations from our website (<https://conservationengineers.org/conference-2020/>). As we reflect on 2020, it makes it easy to look forward to the 60th annual conference in Missouri, which will be hosted by a very capable Missouri ACE contingent. Sixty years is a long time to do anything, let alone do it consistently. So, hats off to each and every one of you, past, present, and future, that makes this Association of Conservation Engineers keep moving forward. Being part of such a quality group of like-minded folks makes it easy to be thankful for the 59th Annual (Virtual) Conference and to be excited to see what Missouri has in store for the 60th. It even gives a little optimism that you can yet visit the great state of Wyoming in 2022.

Yours in Conservation,
Loren Woodin, PE (WY)

Please remember to thank and support the sponsors of the 2020 ACE
Conference.



ENGINEERS
OF THE **SOUTH**

EOS UTILITY
SERVICES

GREDELL Engineering Resources, Inc.

ENVIRONMENTAL ENGINEERING
LAND – AIR – WATER

THRU-FLOW

PREMIUM DECKING SOLUTIONS

ACE 60th Annual Conference

October 11 - 14, 2021

Committee Members

2021 — 2022



Executive Committee

William Scheperle, MO-
President
Loren Woodin, WY-
President-Elect
Deborah Byrd, GA-
Secretary
Mattheuw Prenger, MO-
Treasurer
Howard Thomas, MO-
Past President
Terry Boyd, AL-Past
President
Justin Fessler, MO-At-
Large Member
Sarah Lau, ID-At-Large
Member

Awards

Mikel Carlson, MO
(Chair)
Linda Logan, MO
Holly Bentz, MD
Hans Nielson, CO

Bylaws

Natalie Little, UT (Chair)
William Scheperle, MO
Gary Wilken, IL

History

Terry Boyd, AL (Chair)
Ron Hansen, MO
Joel Krause, MT

Bill Lueckenhoff, MO

Membership

Terry Boyd, AL (Chair)
Loren Woodin, WY
Chitra Poudel, MO
Deborah Byrd, GA
Nicholas Leitner, SC
Hans Nielsen, CO
Mark Urbanovsky, TX
John Whipple, ID
Sarah Lau, ID
Thomas Kmetz, AZ

Nominating Committee

Terry Boyd, AL (Chair)
Gary Wilken, IL
Dale Gunter, AR

Operations Manual

William Scheperle, MO
(Chair)
Tom Homan, IN
Dale Gunter, AR

Past Presidents Committee

Holly Bentz, MD (Chair)
Dale Gunter, AR
Joel Krause, MT

Program

Justin Fessler, MO (Chair)
Loren Woodin, WY
Chitra Poudel, MO

Publications/Newsletter

Terry Boyd, AL (Chair)
Charles Meredith, AL
Sarah Lau, ID
Justin Fessler, MO
Breagan Eicher, IN
Natalie Little, UT
Barbara Li, MO
Ryan McBride, WY

Scholarship

Matthew Prenger, MO
(Chair) Ryan McBride, WY
Dale Brockamp, IL
Mark Urbanovsky, TX
William Scheperle, MO

Special Communications/ Social Media

Currently Inactive

Time & Place

Howard Thomas, MO
(Chair)
William Scheperle, MO
Terry Boyd, AL
Loren Woodin, WY

***Online Membership Applications & Renewals
Now Available***

Been awhile since you've been to a conference? Need to renew your membership? To make sure you continue to receive our newsletter? Never joined but want to become an ACE member? Or perhaps you have recently moved or changed your email address and need to update your membership info?

All of these options are now available on-line!

Through an agreement with Meetings Northwest, ACE is now offering membership application, renewals and updates to membership information through the internet.

Simply visit our webpage at [conservationengineers.org](http://www.conservationengineers.org) or follow the link here: <http://www.cvent.com/events/2021-ace-membership/event-summary-f127e95b4ce64aad95b1965572e4b2f2.aspx> and complete your application, renewal or update.

Please contact admin@meetingsnorthwest.com if you have questions or if you have trouble registering.

Call for Papers

The 60th Annual Conference of the Association of Conservation Engineers is being held in Springfield, Missouri, from Sunday, October 10th thru Wednesday, October 13th, 2021. We invite you to consider signing up for a 30-minute presentation on an exciting project or topic on which you have worked. Please complete the attached abstract form and return it to Justin.Fessler@mdc.mo.gov so that we can set our conference agenda. If you think you need longer than the 30-minute time slot for your topic, please make that request in your abstract.

Having a set agenda of informative and interesting presentations that we can share will help attendees get permission to come to the conference. Thanks for your help with this matter. The requested deadline for submitting abstracts is May 15th, 2021. We know that we have a beautiful conference location, but we can only be successful with your attendance and presentations. We should have the hotel reservation link for the conference shared on our website within the next couple of weeks. If you have any questions, please contact me at 573-522-4115, Ext. 3766 or by email.

Thanks,

William H. Scheperle

ACE President

Bill.Scheperle@mdc.mo.gov

ACE CONFERENCE

PRESENTATION ABSTRACT

Submit by: May 15th, 2021

1. Paper Title: _____

2. Author(s): _____

3. Submitter Name(s), Title(s): _____

4. Submitter Company(s) / Agency(s): _____

5. Address: _____

6. City, State, Zip: _____

7. Phone: FAX: Email: _____

8. List any Conferences where this paper has been presented: _____

9. List any equipment needs (laptop, projector, etc.): _____

10. List any specific products your paper endorses: _____

Submit to:

Justin Fessler, P.E.

Missouri Department of Conservation

2901 W Truman BLVD

Jefferson City, MO 65102-0180

(573) 522-4115 ext. 3740 (Off.)

Justin.Fessler@mdc.mo.gov

ACE 60th Annual Conference

Conference Dates October 10-13, 2021

OASIS Hotel and Convention Center

www.springfieldoasis.com

We are planning on visiting Bass Pro Shops, Wonders of Wildlife Museum, and a field trip to Branson.



Spread the word!

The ACE Annual Conference is a great time to network with people from the Forest Service, National Park Service, State Departments of Natural Resources, other departments, private contractors, students and vendors.



Sponsor Levels

| PLATINUM | GOLD | SILVER | BRONZE | EXHIBITOR | CONTRIBUTOR |
|---|---|---|---|----------------------------------|---|
| \$5,000 | \$3,000 | \$2,000 | \$1,000 | \$600 | \$500 |
| 2 Exhibitor Spaces | 2 Exhibitor Spaces | 1 Exhibitor Space | X | 1 Exhibitor Space | X |
| 4 Full Conference Registrations | 2 Full Conference Registrations | 2 Full Conference Registrations | 1 Full Conference Registration | 1 Full Conference Registration | X |
| Full Page Ad in Conference Agenda | 1/2 Page Ad in Conference Agenda | 1/3 Page Ad in Conference Agenda | 1/3 Page Ad in Conference Agenda | Recognition in Conference Agenda | Recognition in Conference Agenda |
| Recognition in Post Conference Newsletter | Recognition in Post Conference Newsletter | Recognition in Post Conference Newsletter | Recognition in Post Conference Newsletter | X | Recognition in Post Conference Newsletter |
| Logo & Link on website | Logo & Link on website | Logo & Link on website | Logo & Link on website | Name & Link on website | Name & Link on website |

27th Annual Carl V. Anderson Award of Excellence



Background:

Hurricane Irma made landfall September 10, 2017 inflicting widespread damage via high winds and extreme flood waters to the Fisheating Creek Wildlife Management Area (WMA) Campground.

Approximately 80 acres of the campground were flooded with over 3 feet of water, damaging most of the facilities on this remote site. The campground is located on a zone designated by the Federal Emergency Management Agency (FEMA) as a special flood area without base flood elevation.

At the campground, flooding damaged the cabin in its entirety. Mold intrusion occurred throughout. The building became a safety hazard and was demolished.

Project:

Since there is not a FEMA established flood elevation at the site, the cabin replacement had to allow for flexibility for the finished floor elevation (FFE). Other considerations such as cost, and accessibility also had to be considered. Constructing a cabin elevated above all reasonable flood elevations would result in difficulties meeting the American with Disabilities Act (ADA). Replacing the cabin with a building similar to the demolished one, built on grade, would be more economical but the new structure would inevitably be affected by flood damage in the future. The Commission decided that the best solution was to make a larger front-end investment for a building that would be resilient to future flooding conditions.

The project constructed a structure attached to plastic floats that allow vertical movement of up to 5 feet above the FFE, set 42 inches above the surrounding grade. The FFE is two feet higher than the highest recorded flood elevation based on the South Florida Water Management District's data. The floating cabin design includes a connection to a stationary front porch for access by stairs or an ADA ramp. The floats are attached with 2 x 4 wood runners to the cabin's wood joists, so the building's wood floor elements remain dry even during flooding conditions. During dry conditions, the wood joists are designed to sit above leveling beams and steel channels attached to wood piles, this prevents the weight of the building from damaging the plastic floats. During flooding conditions, the building is kept in place by metal hoops that roll up and down wood piles located at each corner of the building.

The project was submitted to FEMA for reimbursement of 90% of the cost and FEMA approved the

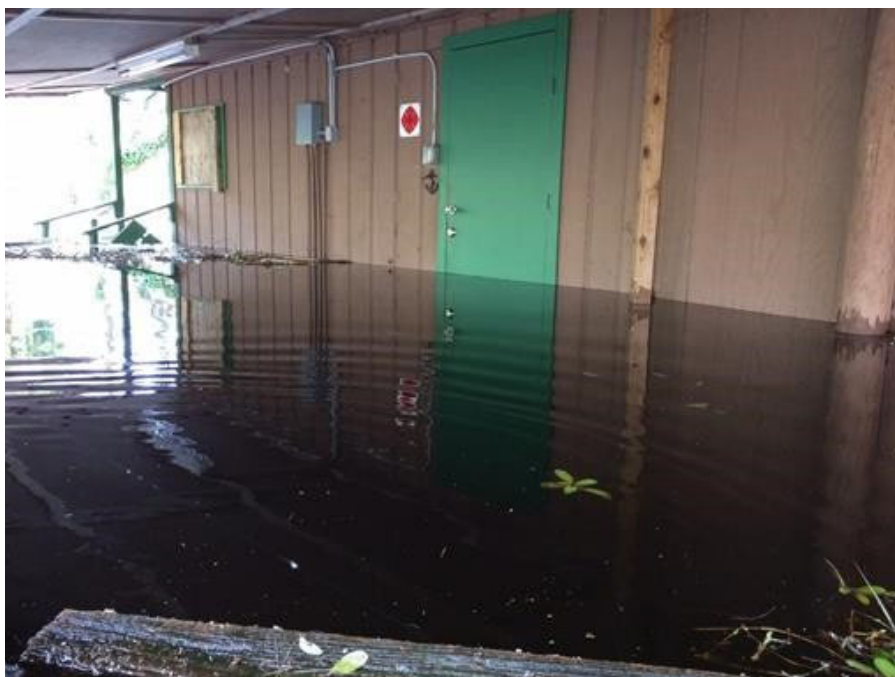
project although it did not provide an exact replacement of the damaged building, because the design mitigates chances of future damage.

The prototype cabin has been very well received by the campground patrons. The Commission may consider other similar buildings in the future since so many of the areas it manages are highly susceptible to flooding. Initial engineering cost were negotiated with the understanding that the design could be used for future projects with a small reuse fee.

Pictures:



Original cabin

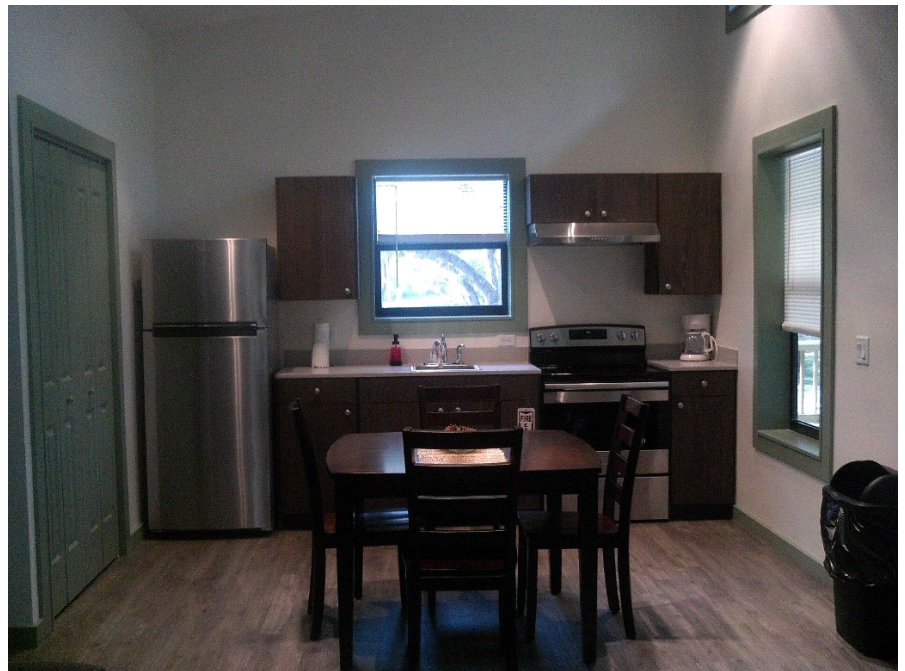


Flooding at cabin caused by Hurricane Irma



New cabin support structure and plastic floats.

Finished cabin interior.





Finished cabin exterior.

Stationary ADA access connected to front porch



27th Annual Carl V. Anderson Award of Merit

KANKAKEE RIVER

YELLOW RIVER



BASIN DEVELOPMENT COMMISSION

August 27, 2020

Linda Logan, PE
ACE Committee Chairman
Association of Conservation Engineers

Dear Linda:

We are extremely enthused to submit our Kankakee River Flood and Sediment Management Work Plan for consideration for the Carl Anderson Conservation Engineering Project Awards competition, Project Category A - STUDIES / RESEARCH PROGRAMS. Likewise, we urge that the expert plan developed by the Christopher B. Burke Engineering team receive your organization's strongest consideration.

The Kankakee River Basin faces nearly a century's worth of mounting water resource challenges. The implications of early Twentieth Century drainage activities affect our region to this day, and relentless flooding and erosion within the basin have become increasingly unmanageable. In 2018, the State of Indiana and our Commission finally turned to Burke Engineering for solutions. Due to their work and innovation, our state now has a forty-year template for the economic and natural resource development for over a million acres in Northwest Indiana.

I also hope you will accept this letter from the Kankakee River Basin and Yellow River Basin Development Commission as permission to allow the publication of any feature or innovation found to be of interest to the members of the Association of Conservation Engineers. There is much to be learned.

I would be delighted to discuss our work plan and the efforts of the Burke team with you at any time at 219-861-7999 or sdpelath@gmail.com. Until then, we remain grateful for your close interest in the Kankakee River Basin.

Sincerely,

Scott D. Pelath Executive Director
Kankakee River Basin and Yellow River Basin
Development Commission

The Kankakee River Basin is one of the most extensively modified and heavily studied watersheds in Indiana. Since the draining of the Kankakee marsh in Indiana was “completed” in 1918, studies have been done almost every decade to address continuing problems with flooding along the channelized river. Climate change has increased the amount of rainfall received and the frequency of very heavy rains. The response to the higher rainfall has been to increase the number of drain tiles, upsize the tiles and drainage ditches, and erect more berms or make them higher, all of which has increased the amount of flow in the river even further. Flooding problems that were bad are now worse.

With every major flood in the Kankakee River, about 100,000 acres are inundated. So, the long-time question has been – how do we reduce the flooding? The volume is such that there is no way to get rid of the water or contain it within the banks, and the volume of water is going to increase. But, with a systems approach, there are ways to manage it more effectively.

But finding solutions to flooding and sediment problems in a multistate river basin requires more than just a new approach, it also requires a vision and leadership. Fortunately, that leadership came from the Kankakee River Basin Commission (KRBC) which changed their question from, “how do we control flooding” to, “is there a better way to manage this river system?”. That new question quickly attracted strong support from legislators and elected officials in Indiana and Illinois who requested that a work plan be developed to guide the implementation of strategies to better manage the Kankakee River. Key recommendations from the plan are:

Adapting to changing conditions by:

- understanding that flooding will continue.
- exploring where and how critical portions of the floodplain can be reattached
- providing strategic flood protection to critical facilities and key infrastructure
- adopting No Adverse Impact stormwater standards for new urban development
- adopting No Adverse Impact standards for new farm drainage and regulated drain projects
- developing flood response plans
- developing flood resilience plans

Mitigating existing problems by:

- reducing the sediment supply
- stopping maintaining and strategically breaching some berms, mitigating flooding using setback berms
- maintaining selected reaches of berms
- purposefully removing and relocating infrastructure from berm-reliant areas
- providing zone-specific access to the river for managing logjams
- restoring Yellow River sediment transport capacity
- managing large wood
- removing and/or replace restrictive bridges
- construction off-line retention or detention storage along laterals

While the Kankakee Basin is unique in how extensively modified it is, the systems management

Conservation Engineering and Black-footed Ferrets

-Norval Olson, Colorado Parks and Wildlife, retired

Since 1967, black-footed ferrets have been classified as an endangered species in the United States. In 1979, the last captive black-footed ferret died from the known population that had been captured and bred in South Dakota. This ferret was considered extinct, the only species native to North America.

In 1981 near Meeteetse, Wyoming, a ranch dog brought a dead ferret home to his owners. It was the beginning of a new start for *Mustela nigripes*, the “American polecat” or “prairie dog hunter.”

In order to save the species, black-footed ferrets were removed from prairie dog colonies outside of Meeteetse when the population started to decline there. Between 1985 and 1987, 24 black-footed ferrets were captured. Six of those animals died soon after of canine distemper. The Black-Footed Ferret Recovery Program initiated their captive breeding program on the surviving 18 ferrets.

Biologists with the Wyoming Game and Fish Department and the U.S. Fish and Wildlife Service convened domestic ferret breeders and reproductive experts from the Association of Zoos and Aquariums. Today there are six facilities that make up the managed BFF Species Survival Plan®(SSP®). Since 1991, these agencies and organizations have been actively reintroducing ferrets into the wild. Between 1986 and 2010, over 8,500 kits have been produced at the captive breeding facilities in Colorado, Arizona, Virginia, Kentucky and Quebec.

I can recall a Colorado Parks and Wildlife Engineering project where we designed and built outdoor containment facilities for black footed ferrets at CPW's Fort Collins Research Facility. Included were power and water utilities, containment fencing and maintenance buildings.

Check out this page and the 7-minute video (CAUTION! Prairie dog for dinner):

<https://cpw.state.co.us/conservation/Pages/CON-Ferret.aspx>

Wyoming Game and Fish Update, January 2021

2020 was a challenging year for the Wyoming Game and Fish Department, just like everyone else. Separate from the COVID-19 pandemic, the Engineering Section lost two engineers who moved on to other adventures, thus cutting our staff in half. The State of Wyoming in general is going through a budget crisis as well, and our engineering budgets took a hit mid-year.

Bad news aside, there was plenty of accomplishments to be proud of this year. The biggest accomplishment was the completion of a three year stream restoration project in northwest Wyoming known as the Sunlight Creek Stream Restoration project. This creek was eroding a number of cut banks that was taking out a considerable amount of irrigated meadow that is also in critical winter range habitat. Nearly 4000 feet of stream was reconstructed using natural channel design techniques with the ultimate goals of protecting terrestrial habitat, protecting historic log structures, improving aquatic habitat, and reducing stream sediment loads. Phase III (and final phase) of the project was completed in early November 2020.

Another accomplishment that was completed was a fish barrier on West Pass Creek in north central Wyoming. This fish barrier was the second of two structures built in this drainage as part of overarching goal of removing non-native brook trout and enhancing the native Yellowstone Cutthroat Trout population.

2021 project year holds promise and intrigue as well. Mixed in with quite a few “smaller” projects, we anticipate breaking ground on two large projects in the spring and fall. We anticipate a spring start on a new 25000 SF regional office building in Cody, WY and a late summer/early fall start on a large stream restoration project just south of Jackson, WY.

As always, we are happy to be part of the ACE team and are looking forward to visiting Missouri in October.



Sunlight Creek in Northwest Wyoming Looking Downstream



Sunlight Creek in Northwest Wyoming, Looking Upstream



West Pass Creek Fish Barrier





Loren Woodin has been enjoying the fishing in the Clearwater River, near Kamiah, Idaho. Loren landed this



Association of Conservation Engineers

ACE Objectives

- 1) To encourage and broaden the educational, social and economic interests of engineering practices.*
- 2) To promote the recognition of the importance of sound engineering practices in fish, wildlife and recreation development.*
- 3) To enable each member to utilize the experiences of other members.*
- 4) To generally take all such proper action that may be necessary to further the cause of fish, wildlife and recreational developments.*

