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Video Conversations - The Future of the Colorado River

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Video Conversations – the Future of the Colorado River

CEE 6490, WATS 5330, WATS 6330 -- Spring 2020



Utah State University

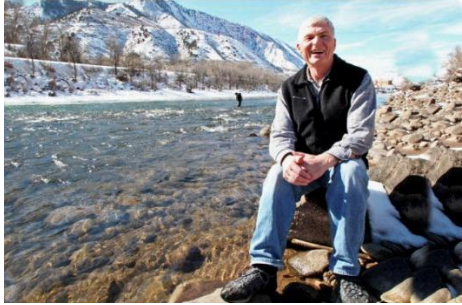

Introduction


This video series explores key Colorado River management issues with key managers across the basin. Video discussions in the table on the next page are presented in the order they were recorded. Topics include river ecosystems, California, Upper Basin, Tribal, and Federal perspectives, as well as future hydrology and climate. Each video runs for 60 to 90 minutes. Speakers start by describing how they got to the place they are professionally. There are prepared remarks and questions and answers from participants who attended at the time the video was recorded. Links to suggested readings are provided. Click the VIDEO url to access the video. Several early videos are no longer available but slides are provided. Asynchronous discussion prompts for select videos are noted in the far right column of the table and appear below the table. This series was produced during April and early May 2020 as part of the courses CEE 6490 Integrated River Basins Watershed Planning and Management and WATS 6330/5330 Large River Management at Utah State University co-taught by David Rosenberg and Jack Schmidt. The video series was produced as an alternative to a multi-day field trip to Glen Canyon Dam and Lees Ferry and face-to-face meetings with stakeholders that was canceled because of university travel restrictions imposed on March 11, 2020.

Schedule and Links to Videos and Readings

Record Date/Time	Topic	Guest Speaker / Readings / Video Link	Canvas Discussion
April 3; 2 pm	Managing the Colorado River to meet fish objectives	<p>Dr. Kim Dibble, fish biologist, US Geological Survey Grand Canyon Monitoring and Research Center</p> <p>Lecture slides: 2020 4 2 lecture Dibble.pdf</p> <p>VIDEO NO LONGER AVAILABLE</p> <p>Background reading:</p> <ul style="list-style-type: none"> • Gloss et al 2005 USGS State Colorado River ecosystem.pdf p. 33-56, 69-86 • Mueller Marsh 2002 USGS Lost desert river.pdf 	See below
Apr 7; 1:30 pm	Overview of the Colorado River Simulation System	<p>Dr. James Prairie, hydrologic engineer, Bureau of Reclamation</p> <p><u>THERE IS NO RECORDING</u></p> <p>Slides: CRSS Overview Lecture.pptx</p> <p>Required Reading: Wheeler et al (2019) - Water Resources Modeling of the Colorado River: Present and Future Strategies (previously assigned)</p>	
April 8; 2:30 pm	Aquatic invertebrates as the food base of the Colorado River's aquatic ecosystem	<p>Dr. Theodore Kennedy, aquatic ecologist, US Geological Survey Grand Canyon Monitoring and Research Center</p> <p>VIDEO NO LONGER AVAILABLE</p> <p>Readings:</p> <ul style="list-style-type: none"> • Kennedy et al 2016 B Flow management hydropower extirpates.pdf • Vinson 2001 EA Long-term dynamics invertebrate assemblage.pdf • Gloss et al 2005 USGS State Colorado River ecosystem.pdf p. 87-102 • Poff Schmidt 2016 S How dams can go.pdf 	See below

Record Date/Time	Topic	Guest Speaker / Readings / Video Link	Canvas Discussion
April 10; 2 PM	A California perspective	<p data-bbox="721 285 1109 338" style="text-align: center;"><i>The Water Supply Deficiency Problem of the Colorado River System</i></p>  <p data-bbox="932 562 1078 583" style="text-align: center;"><small>Colorado River Board of California</small></p> <p data-bbox="561 602 1219 814">Chris Harris, Executive Director, Colorado River Board of California. http://crb.ca.gov/. This board represents the interest of all California users of the Colorado River -- Imperial Irrigation District, Metropolitan Water District of Southern California, and others.</p> <p data-bbox="561 858 678 888">VIDEO:</p> <p data-bbox="561 896 1273 963">https://www.youtube.com/watch?v=KhJ2exkjinRY&feature=youtu.be</p> <p data-bbox="561 1005 1019 1035">slides: 2020_4_9_lecture_Harris.pdf</p>	
April 14: 9a	An Upper Basin perspective	 <p data-bbox="813 1266 1024 1333" style="text-align: center;">Upper Colorado River Commission</p> <p data-bbox="561 1383 1263 1671">Amy Haas, Executive Director, Upper Colorado River Commission http://www.ucrcommission.com/. The Upper Colorado River Commission (UCRC) is an interstate water administrative agency and its role is to ensure the appropriate allocation of water from the Colorado River to the Upper Division States and to ensure compliance with the 1922 Colorado River Compact and to Mexico.</p> <p data-bbox="667 1713 1170 1743" style="text-align: center;">VIDEO NO LONGER AVAILABLE</p>	

Record Date/Time	Topic	Guest Speaker / Readings / Video Link	Canvas Discussion
April 16: 4p	A conversation with Eric Kuhn	 <p>Eric Kuhn, general manager (retired), Colorado River Water Conservancy District</p> <p>VIDEO: https://www.youtube.com/watch?v=7lQYPdkVtyU&feature=youtu.be</p>	
April 17: 1:30 pm	Colorado River Future Hydrology, Climate Drivers, and Policy Response	 <p>Brad Udall, Senior Water & Climate Research Scientist, Colorado Water Institute Colorado State University</p> <p>Video Recording</p> <p>Relevant Readings:</p> <ul style="list-style-type: none"> • Barnett Pierce 2008 WRR When will Lake Mead.pdf • VanoEtAl-2014-UnderstandingUncertaintiesInFutureColoradoRiverStreamflow • Udall Overpeck 2017 WRR Twenty-first century Colorado River.pdf • XiaoEtAl-2018-CausesDecliningColoradoRiverStreamflows 	Brad Udall Hydrology/Climate Observation

Record Date/Time	Topic	Guest Speaker / Readings / Video Link	Canvas Discussion
May 6	A Federal Perspective	 <p>A conversation with Anne Castle, who served as assistant secretary for water and science in the U.S. Department of the Interior from 2009 to 2014. She is currently a senior fellow at the Getches-Wilkinson Center for Natural Resources, Energy and the Environment.</p> <p>Video: https://www.youtube.com/watch?v=bZRDjADVcOE&feature=youtu.be</p>	

- **Webpage for additional videos produced after class end -**
<https://qcnr.usu.edu/coloradriver/learn/>

Select Asynchronous Discussion Prompts

Read the discussion prompt before watching the corresponding video on the Canvas page. After watching the video, answer the discussion questions in 1-2 short paragraphs. Alternatively, watch the video in a group, and discuss the questions together (social learning).

April 3, 2020 – Dr. Kim Dibble. Managing the Colorado River to meet fish objectives

Dr. Dibble provided a remarkable and integrative talk on the state-of-the-science regarding fish ecology in Grand Canyon and how those fish populations are affected by water-supply decisions made for Lakes Powell and Mead. Amongst many things, we learned that prediction of the future of fish populations is fraught with complexity.

After watching and listening to this presentation, now posted, and considering the background reading that I have also posted, please consider these discussion questions and provide your answers in the Discussion forum:

- 1) What were the characteristics of the pre-dam fish communities of the Colorado River? How have those characteristics been changed by the existence and operations of large dams and reservoirs?
- 2) Why are native fish populations relatively healthy in western Grand Canyon?
- 3) Projections of future climate suggest that air temperature will be warmer and that watershed runoff from the Rocky Mountains will decrease. Thus, there is less water available to store in Lake Powell and Lake Mead. Dr. Dibble demonstrated how water storage patterns in Powell and Mead potentially affect the fish populations of Grand Canyon. What do you think should be the goal of fish management in Grand Canyon in the future? If the goal of water storage were to achieve your stated fish management goal, what rule would you propose for where and how much water should be stored -- primarily in Powell, primarily in Mead, in some other proportion?

April 8, 2020. Dr. Theodore Kennedy. Aquatic invertebrates as the food base of the Colorado River's aquatic ecosystem

- 1) Why does hydropeaking adversely affect aquatic invertebrate populations?
- 2) Why do aquatic invertebrate populations matter to aquatic ecosystems?
- 3) What mitigation strategies might be employed to reduce adverse impacts of hydropeaking? are these strategies successful?

April 16, 2020. Daryl Vigil and Matt McKinney. Tribal Perspectives

- 1) How do Tribes view their role in the historical development of the Colorado River?
- 2) What do Tribes want in terms of how the Colorado River is managed in the future?

April 17, 2020. Brad Udall. Colorado River Future Hydrology, Climate Drivers, and Policy Response

Please share at least one main observation or important take-home point from Brad Udall's talk.