

STATE OF COLORADO

Colorado Water Conservation Board Department of Natural Resources

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TO: Colorado Water Conservation Board Members

Bill Ritter, Jr.
Governor

FROM: Linda J. Bassi, Chief
Kaylea White
Stream and Lake Protection Section

Harris D. Sherman
DNR Executive Director

Jennifer L. Gimbel
CWCB Director

DATE: November 9, 2009

Dan McAuliffe
CWCB Deputy Director

SUBJECT: **Agenda Item 16, November 16-18, 2009 Board Meeting
Stream and Lake Protection Section – Injury with Mitigation – Case No. 4-05CW264; Application of Ranch Properties, LLC**

This agenda item addresses a proposed pretrial resolution under ISF Rule 8i. (3) (Injury Accepted with Mitigation). Rule 8i.(3) requires the Board to consider an injury with mitigation proposal using a two meeting process. This is the second meeting of the process. This proposal was initially brought to the Board on January 28, 2009. The proposal is to mitigate impacts of pond evaporation that cannot be replaced under the applicant's augmentation plan. The ponds were built as part of a 2 mile stream restoration and habitat improvement project along the mainstem of Ohio Creek. See attached map.

The proposal would allow some injury to the Ohio Creek instream flow ("ISF") water right, but it appears that the extensive stream restoration and habitat improvement work on Ohio Creek will provide ample mitigation necessary to enable the CWCB to continue to preserve the natural environment to a reasonable degree on Ohio Creek.

Staff Recommendation

Staff recommends that the Board:

- 1) Determine that the natural environment of Ohio Creek could be preserved to a reasonable degree despite the proposed injury to the ISF if Ranch Properties provides the proposed mitigation, and
- 2) Approve the pretrial resolution of this case.

Injury with Mitigation Authority

The Board's authority to apply its ISF Rule 8i.(3), accepting an injury with mitigation, has been called into question in Water Division 5, but such decrees have already been entered in Water Division 4, where this case is pending. Furthermore, the Water Referee in Water Division 4 has requested that the Applicant and CWCB submit a stipulated proposed decree in this case for his probable approval and recommendation for the Judge's confirmation. Therefore, Staff requests

that the Board take action at this Board meeting so that the proposed decree may be filed with the Court.

Background

Applicant Ranch Properties has requested groundwater rights for ponds that are tributary to Ohio Creek, which is tributary to the Gunnison River. Ranch Properties seeks approval of absolute water rights and an approval of a plan for augmentation and implicit exchange¹ to replace out-of-priority depletions associated with groundwater evaporation of 10.378 acre-feet per year. Under its augmentation plan, Applicant will fully replace the 10.378 acre-feet per year; however, 2.51 acre-feet per year will not be replaced at the point of depletion, but rather at a point downstream of the CWCB's ISF water rights. The implicit exchange reach is from the confluence of Ohio Creek and the Gunnison River up to points of depletions from pond evaporation on Ohio Creek.

In November 2008, the Board approved an intervention and filing of a statement of opposition to this application² because the Applicant claimed that it was not required to replace depletions from pond evaporation. The Division Engineer disagreed with the Applicant and brought this case to the attention of the CWCB staff. Based upon discussions with the Applicant's Counsel and engineer, CWCB became a party in this case with the intent of negotiating terms and conditions to fully protect the Board's ISF water rights. Staff has been unable to secure full protection, and is therefore recommending this injury with mitigation proposal to include in a stipulation and final decree. The exercise of the proposed rights could adversely impact the Board's ISF water rights listed below.

CWCB Case No.	Stream/Lake	Amount (cfs)	Approp. Date	Watershed	County
4-80CW112A	Ohio Creek	10	3/17/80	Upper Gunnison	Gunnison
4-80CW112B	Ohio Creek	12	3/17/80	Upper Gunnison	Gunnison

The 10 cfs Ohio Creek ISF water right extends through Ranch Properties' Castleton Ranch, approximately 10 miles north of Gunnison, Colorado. Depletions associated with pond evaporation will occur directly within the 10 cfs ISF reach, and will equally affect the 12 cfs ISF reach downstream. Ranch Properties has agreed to protect Ohio Creek by maintaining the habitat and stream restoration structures, described more fully below.

Mitigation Improvements to Ohio Creek

As stated in Ranch Properties' proposal for injury with mitigation,

“Historically, this reach of Ohio Creek was characterized by a channel with a high width/depth ratio (wide and shallow) that resulted in high water temperatures, a lack of deeper water for “rearing” habitat and for in-stream “holding cover”, all detrimental to a sustainable fishery. There was also significant evidence of severe and progressive bank erosion on short-radius bends in the river, which at higher flows contributed to significant sediment loading in the Ohio Creek – Gunnison River system and an on-going loss of riparian habitat. Because of this severe erosion, the

¹ “Implicit exchange,” refers to a reach of stream that the augmentation plan does not fully replace, which is not explicitly claimed or identified in the Applicant's application or proposed decree as an exchange.

² Staff originally had not filed a SOP because the water right claimed was a storage right, junior to the ISF. However, during construction the ponds intercepted groundwater and therefore are now considered ground water rights referred to as “pond wells,” for which the evaporation must now be augmented.

alignment of the channel had lost the natural sinuosity associated with a stable channel.”

The restoration project includes channel modifications to restore a natural sinuosity, installation of rock structures for bank stabilization, excavation of oxbow stream channels, and improvement of existing riparian ponds.

Ranch Properties has coordinated with Colorado Division of Wildlife (CDOW) staff on the stream habitat improvement project. The structures were installed in three phases from September 2004 - September 2007. Applicant will maintain the structures and will allow the CWCB and CDOW a reasonable right of access to the area for the purpose of inspecting the river restoration and stream habitat improvement structures.

It is anticipated that these restoration efforts will improve the hydraulic conditions of the stream and increase the ability of Ohio Creek to sustain aquatic biota and the natural environment with lower flows.

Extent of proposed injury

Applicant has constructed 3 off-channel ponds that intersect groundwater and 10 on-channel ponds. Total surface area of all ponds is 5.37 acres, with an estimated total annual evaporation loss of 10.378 acre-feet per year. On a monthly basis, local dry-up credits will replace 7.97 acre-feet per year of the evaporation, leaving 2.51 acre-feet per year of stream depletions that are not directly replaced. The 2.51 acre-feet per year of depletions will be replaced downstream using Upper Gunnison River Water Conservancy Credits from Blue Mesa Reservoir. Total injury to the instream flow reach is expected to be 2.51 acre-feet per year, distributed monthly as follows:

April	0.83
May	0.45
September	0.42
October	0.51
November	0.28
December	0.02
Total	2.51

Benefits of mitigation

At the January 2009 Board meeting, Mr. George M. Fosha, Applicant’s Consulting Water Resources Engineer, provided a presentation on (1) the potential injury to the Ohio Creek ISF water rights resulting from Ranch Properties’ plan for augmentation, and (2) the extensive benefits to the natural environment resulting from Ranch Properties’ stream restoration and habitat improvement project.

The CDOW reviewed the design plan for this restoration project in 2005 and found that projects like this “have a long-term overall benefit to the aquatic environment...and are stable under a range of hydrologic conditions.” CDOW further stated that the project design techniques “are very appropriate for this particular section of Ohio Creek.” CDOW supports the enhancement of off-channel habitats for recruitment and rearing of sub-adult fish, such as proposed here. Based in part upon this evaluation and the 404 permit granted by U.S. Army Corps of Engineers, Ranch Properties proceeded with the project to restore two miles of the Ohio Creek bed and banks for channel stability and habitat improvement.

The project includes channel modifications that have resulted in a reduced width/depth ratio that lowers the ambient water temperatures and creates deeper holding water for the fishery. Reducing the width/depth ratio has also resulted in significantly less stream surface area and accordingly less evaporation loss. Scour pools, glides, low velocity zones, and random rock cover for habitat have been created from installation of approximately 120 rock and log structures. Oxbow channels were reconnected and deepened to create additional refuge and cover for fish during winter months and periods of low flow. The channel was realigned to restore the natural sinuosity of the river. The realignment along with the new rock and log structures have stabilized the banks and significantly reduced bank erosion, resulting in a lower sediment load in Ohio Creek and the Gunnison River.

Colorado Division of Wildlife Evaluation of Proposal

CWCB and Colorado Division of Wildlife (“CDOW”) staff members have met with Ranch Properties’ representatives to discuss this proposal. The CDOW staff’s analysis and recommendation will be provided at the November 2009 Board meeting.

Terms and Conditions

Staff, the Attorney General’s Office and representatives of Ranch Properties have discussed proposed terms and conditions related to the injury with mitigation proposal. Some terms and conditions are yet to be negotiated, but injury with mitigation terms and conditions in the final decree should include the following:

1. Maintenance. Ranch Properties will commit to maintain the structures and improvements in Ohio Creek that provide the mitigation benefits. Pursuant to ISF Rule 8e(3)(l)(iv), if Ranch Properties ceases to maintain the structures and improvements, CWCB will no longer accept the injury based on the mitigation no longer being in effect and CWCB will notify the Division Engineer that the IWM provision of the decree is no longer in effect.
2. Inspection access. Ranch Properties will allow and agrees to facilitate access for CWCB and CDOW staff to inspect the mitigation structures and perform biological stream monitoring if necessary, subject to reasonable limits and provisions for advance notice.
3. Measuring Devices. Ranch Properties will install and pay operation and maintenance costs of (or commit to pay operation and maintenance costs if the CWCB installs) any measuring device deemed necessary by the Division Engineer to administer terms of the stipulation and decree implementing the injury with mitigation.
4. Retained jurisdiction. Ranch Properties will include in any final decree a retained jurisdiction provision allowing the water court to enforce the provisions of the injury with mitigation stipulation as a water matter.

Staff anticipates that the parties will work to refine the above-listed terms and conditions and incorporate them into a stipulation and the resulting water court decree, along with standard protective terms and conditions.

Conclusion

Based upon a review of the report prepared by George M. Fosha, and upon staff’s and CDOW’s discussions with Ranch Properties’ representatives, it appears that Ranch Properties’ river

restoration and habitat improvement project on Ohio Creek show that the natural environment of Ohio Creek can continue to be preserved to a reasonable degree under the conditions described herein as a result of the mitigation provided by Ranch Properties. Staff and the Attorney General's Office have consulted with the Division Engineer on this proposal. The Division Engineer has concluded that this proposal is administrable because, in this particular case, the stipulation and decree will not result in a selective call or subordination on the subject reach of Ohio Creek.

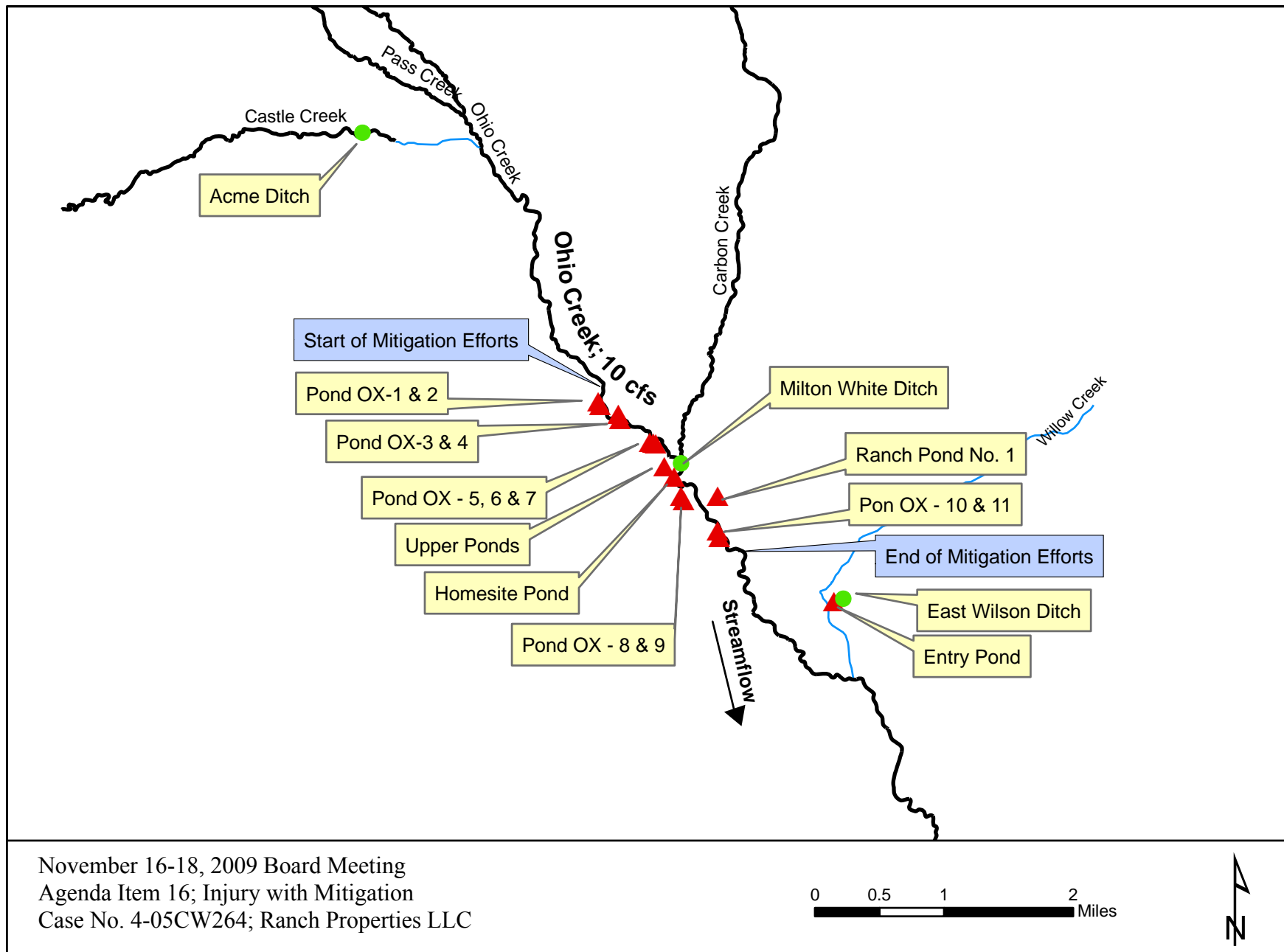
Staff Recommendation

As stated above, injury with mitigation is a two-meeting process. At the first meeting, the Board "conduct[ed] a preliminary review of the pretrial resolution during any regularly scheduled meeting to determine whether the natural environment could be preserved to a reasonable degree with the proposed injury or interference if applicant provided mitigation." At this subsequent meeting, the Board may "take final action to ratify, refuse to ratify or ratify with additional conditions."

Staff recommends that the Board:

1. Determine that the natural environment of Ohio Creek will be preserved to a reasonable degree with the proposed injury to the ISF if Ranch Properties provides the proposed mitigation; and
2. Authorize staff and the Attorney General's Office to enter into a stipulation with Ranch Properties implementing the injury with mitigation proposal as approved by the Board.

Attachments



STATE OF COLORADO

Bill Ritter, Jr., Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

AN EQUAL OPPORTUNITY EMPLOYER

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*For Wildlife-
For People*

November 10, 2009

Ms. Linda Bassi
Colorado Water Conservation Board
Stream and Lake Protection Section
1313 Sherman Street, Room 723
Denver, Colorado 80203

Re: Ranch Properties Injury with Mitigation Proposal

Dear Linda,

The purpose of this letter is to officially transmit the Colorado Division of Wildlife's (CDOW) recommendation regarding Ranch Properties Injury with Mitigation Proposal regarding Ohio Creek in Gunnison County. The Colorado Water Conservation Board has requested the CDOW to provide an analysis of the Injury with Mitigation Proposal received from Ranch Properties. This proposal is to mitigate impacts of pond evaporation to the Colorado Water Conservation Board's (CWCB) decreed instream flow on Ohio Creek with stream habitat improvements.

Extent of proposed injury

The CWCB holds the following instream flow ("ISF") water rights that could be injured by the applicant's ponds:

CWCB Case No.	Stream/Lake	Amount (cfs)	Approp. Date	Watershed	County
4-80CW112A	Ohio Creek	10	3/17/80	Upper Gunnison	Gunnison
4-80CW112B	Ohio Creek	12	3/17/80	Upper Gunnison	Gunnison

Applicant has constructed 3 off-channel ponds that intersect groundwater and 17 in-channel ponds. Total surface area of all ponds is 5.37 acres with an estimated total annual evaporation loss of 10.378 acre-feet per year. On a monthly basis, local dry-up credits will replace 7.97 acre-feet per year of the evaporation, leaving 2.51 acre-feet per year of stream depletions that are not directly replaced. The 2.51 acre-feet per year of depletions will be replaced downstream using Upper Gunnison River Water Conservancy Credits from Blue Mesa Reservoir. Total injury to the instream flow reach is expected to be 2.51 acre-feet per year, distributed monthly as follows: April 0.83 af, May 0.45 af, September 0.42 af, October 0.51 af, November 0.28 af and December 0.02 af.

Mitigation Improvements to Ohio Creek

The restoration project includes channel modifications to restore a natural sinuosity, installation of rock structures for bank stabilization, excavation of oxbow stream channels, and improvement of existing riparian ponds. Ranch Properties has coordinated with Colorado Division of Wildlife (CDOW) staff for a field reconnaissance to identify stream habitat improvement areas. Applicant will maintain the structures and will allow the CWCB and CDOW a right of access to the area for the purpose of inspecting the river restoration and stream habitat improvement structures.

As stated in the Ranch Properties Proposal:

The restoration of Ohio Creek was designed by Dave Rosgen of Wildland Hydrology. The proposed improvements are designed to create a stable stream channel that will be able to transport the flows and sediment from the tributary watershed in such a manner that the stream will maintain its natural patterns, dimensions and profile, without aggradation (deposition of sediments) and/or degradation (bank erosion). In conjunction with achieving channel stability, the modifications have created habitat diversity and natural habitat features that allow for a self-sustaining fish population. This was accomplished by reducing the *width/depth ratio* of the channel which in turn will lower the average ambient water temperatures and create deeper "holding water" for the fishery. It was also necessary to re-align portions of the channel to re-store the natural sinuosity of the channel and reduce the shear stresses on the stream banks. This re-alignment, installation of bank protection features and re-establishment of vegetative cover significantly reduced the erosional stresses on the banks and at the same time, provide shade and over-head cover for the fishery. The modified channel is designed to increase the mean and maximum water depths and decrease the water surface slope, resulting in velocities capable of transporting sediments at low flows while still being suitable for fishing, particularly along the stream banks. Analysis of the channel shear stress and bed material entrainment indicates that the modified channel will maintain its sediment transport capability and that the scour holes and glides will not fill with sediment.

The channel restoration work was based on analyses of river cross-sections, channel grades, bed materials and erosion potential in accordance with the Rosgen design principles. Using field surveys of the river profiles and cross-sections, the following parameters for a stable channel design were calculated:

	Existing	Proposed
Channel Width (Bankfull)	57.6 ft.	41 ft.
Mean Depth (Riffle)	1.8 ft.	2.5 ft.
Width/Depth Ratio	32	16.4
Area	125 ft ²	103 ft ²
Mean Velocity	4.4 fps	5.3 fps
Meander Wave Length	200 – 300 ft.	450 – 500 ft.
Radius (Meander)	50 – 80 ft.	120 – 160 ft.
Slope	0.009	0.008

Applicant installed approximately 14 cross-vane structures, 23 J-hook vanes, 28 modified J-hook vanes, 22 rock/log vanes and 26 rock vortex vanes. These control structures are designed to provide bank stabilization and grade control. These in-channel structures improve stream habitat by increasing river stage and decreasing stream velocity providing refuge areas for fish. In addition to the fore mentioned in-channel control structures applicant has constructed several flow through Oxbow ponds which are hydraulically connected to Ohio Creek. These ponds will provide excellent refuge areas for fish during high spring runoff and during times of very low streamflow.

CDOW Evaluation of Stream Habitat Improvements

The CDOW has evaluated the stream habitat improvement structures constructed by Ranch Properties and believes the constructed in-channel structures and flow through Oxbow Ponds have significantly improved the physical condition of stream channel and increased the biological potential of Ohio Creek. The CDOW believes the stream habitat work done by Ranch Properties adequately mitigates the pond evaporation depletions to Ohio Creek.

CDOW Recommendation

The CDOW recommends that the CWCB approve the proposed Injury with Mitigation Plan proposed by staff and Ranch Properties with the understanding that any water court decree will include the following Terms and Conditions:

1. **Maintenance.** Ranch Properties will commit to maintain the structures and improvements in Ohio Creek that provide the mitigation benefits.
2. **Inspection access.** Ranch Properties will allow and agrees to facilitate access for CWCB and CDOW staff to inspect the mitigation structures and perform biological stream monitoring if necessary, subject to reasonable limits and provisions for advance notice.
3. **Retained jurisdiction.** Ranch Properties will include in any final decree a retained jurisdiction provision allowing the water court to enforce the provisions of the injury with mitigation stipulation as a water matter.

If you have any questions regarding this letter please give me a call.

Sincerely,



Mark Uppendahl
Colorado Division of Wildlife
Instream Flow Program Coordinator

Cc: Jay Skinner, CDOW Water Unit Program Manager – w/o attachments
John Alves, CDOW Senior Fish Biologist – Southwest Region – w/o attachments
Dan Braugh, CDOW Aquatic Biologist – w/o attachments