TUOLUMNE - STANISLAUS IRWM PROGRAM

PROJECT
WORKSHEET
V9.0

Revised Oct 9, 2012

This worksheet is to be completed by the proponent and submitted electronically as an PDF file to the Tuolumne – Stanislaus IRWM Program staff. E-mail completed worksheets to Sarah Laybourne with Kennedy/Jenks Consultants – sarahlaybourne@kennedyjenks.com

NOTE: ANY VERSION OF THE PROJECT WORKSHEET WILL BE ACCEPTED. THIS VERSION INCLUDES STRIKETHROUGH TO CLARIFY INSTRUCTIONS AND SOME ADDITIONAL COMMENTS FIELDS, WHICH ARE OPTIONAL.

PROJECT WORKSHEET

Section 1 – Project Information

1. Proponent: Stanislaus National Forest
2. Contact person(s): Deb Romberger
   Phone - (209) 532-3671
   E-mail - dromberger@fs.fed.us
3. Name of project:
   Shell Meadow Restoration Project
4. County(ies) and City(ies) where the project will be implemented:
   Tuolumne
5. Watershed(s) where the project will be carried out (examples; Sullivan Creek, Littlejohn Creek, North Fork Tuolumne River, etc):
   Niagara Creek - Middle Fork Stanislaus River
6. Federal and/or other public or private lands upon which project will be carried out. Please indicate expression of support for proposal from land-owner or manager.
   The project would be carried out on the Summit Ranger District of the Stanislaus National Forest. The Forest Supervisor supports this project as the #5 Priority.
7. Please provide a brief (500 words maximum in Palatino 12-point font single spaced text) narrative description of the project that includes:
   a. Statement of problem to be addressed by the project
   b. Objective(s)
   c. Design phase
   d. Deliverables
   e. Expected outcome(s)

f.Beneficiaries

g.Disadvantaged Community benefits, if applicable

h.Project partners

i.Priority of project to proponent.

Two stream headcuts in Shell Meadow, one five feet deep and one three feet deep, are actively migrating upstream, threatening the loss of the entire meadow. If no action is taken, the headcuts will advance, causing the channel to incise and the water table to drop. This would result in a loss of water storage in the meadow, loss of carbon storage, loss of floodplain connectivity, loss of Yosemite toad breeding habitat, loss of deer fawning habitat, degradation of water quality, and conversion of the meadow plant community to dryland species. The objective of the project is to stabilize the headcuts to prevent advancement into the meadow.

Conceptual planning and all field work for NEPA were completed in 2012. NEPA is planned for winter 2012/2013. The Stanislaus National Forest has partnered with American Rivers, a 501(c) 3 non-profit, in submitting two grant proposals for design, permitting, and contract preparation funds at Shell Meadow. This includes a National Fish and Wildlife Foundation (NFWF) grant (awarded) as well as a Sierra Nevada Conservancy (SNC) grant (still in approval process). This work would occur in summer 2013 through spring 2014. Implementation is planned for fall 2014.

The intermittent stream in Shell Meadow is a tributary to Niagara Creek, which flows into Donnell Reservoir and the Middle Fork Stanislaus River. Donnell Reservoir is part of the Tri-Dam Project, a partnership between the Oakdale Irrigation District and the South San Joaquin Irrigation District. Properly functioning meadows protect water quality by filtering and storing runoff as well as maintaining base streamflows, both of which are benefits to Tri-Dam. This project will also protect breeding habitat of Yosemite toad, a Forest Service Sensitive Species and a United States Fish and Wildlife Service (USFWS) candidate threatened species. The project will protect important fawning habitat for deer. More fawns are born in meadows than any other habitat, although meadows represent less than one percent of the area of summer range. Wet meadows meet the requirements of pregnancy and lactation better than any other habitat and receive especially high concentrations of does and fawns. Research conducted by UC Davis Extension on the Stanislaus National Forest found that soils under more moist meadow positions in properly functioning meadows have at least twice the carbon storage of non-functioning meadows. Therefore, stabilization of headcuts would prevent the drying of Shell Meadow and the loss of carbon storage.

This project is priority 5 of 7 on the forest.

8. Please provide a budget for the project that identifies the following:

   a. All anticipated costs

   $47,625

   b. Potential sources of project funding including internal funds

   Requested Amount: $25,725. Match: $21,900 (NFWF grant - $8,500 (awarded), field work/planning/NEPA covered by forest - $13,400 to date). SNC grant, if received, would cover contract prep and additional

   c. Potential source(s) of 25% local match, unless the project is projected to qualify for a Disadvantaged Communities waiver.

   NFWF grant and USFS appropriated funds.

9. Earliest expected start date and estimated schedule for the project's completion. If acquisition of lands and/or easements is needed, please list and provide relative status of compliance.

   Earliest Start Date: 8/1/2012

   Project Schedule

Project Stage	Planned/Actual Start Date	Planned/Actual Completion Date
a. Conceptual	summer 2012	summer 2012
b. Planning	summer/fall 2012	summer/fall 2012
c.Environmental (CEQA/NEPA)	fall 2012	winter 2012/2013
d.Permitting	fall/winter 2013	fall/winter 2013
e.Design	summer 2013	summer 2013
f.Construction/ Implementation	fall 2014	fall 2014

   Comments: Implementation of meadow restoration must occur in September of any given year because intermittent streams are typically dry by then and fall rains have not yet arrived.

10. Geographic location of project (latitude and longitude - any format):

    119°51'55.181"W 38°20'2.201"N

Section 2 – Project Selection Score Sheet

Note: Parts 1 through 5 of this Project Selection Worksheet are color-coded to match the corresponding parts 1 through 5 of the Project Selection Score Sheet (an excel spreadsheet file).

~~Note: If, after checking a box, a narrative or written response is requested, the project proponent is asked to provide a metric in terms of the subject matter (for example: acres, square feet, gallons, river miles, etc.).~~

Part 1. Eligibility (check all boxes that apply)

- ☑ The proponent has adopted[1] or will adopt the IRWM Plan. If this box is not checked the proponent is ineligible.[2]
- ☑ This project is being submitted by one or more organizations that are currently members of the Planning Grant Committee in compliance with the financial agreement.
- ☐ This project is being submitted by one or more organizations that are currently members of the Planning Grant Committee, but one or more of them are not in compliance with the financial agreement.
- ☐ This project is being submitted by an organization whose place of business is and/or customers or members are located within this region, but is not a member of the Planning Grant Committee.
- ☐ This project is being submitted by an organization whose place of businesses and/or customers or members are located outside this region and is not a member of the Planning Grant Committee (e.g. Interregional project)

Part 2. Please indicate which of the Tuolumne - Stanislaus IRWM Objectives this project may address.

[1] DWR Financial Assistance Branch will clarify the meaning of the term "adopted" in the final Guidelines.

[2] DWR Proposal Solicitation Package, Implementation, Round 2, July 2012, page 19

- Each checked box is worth a range of from 0 to 4 points with a total of 56 points for all of Part 2. ~~For each box checked please provide a one-sentence description explaining your answer.~~
- This represents the first category of information numerically scored on the Project Selection Score Sheet (check as many boxes as may apply):

☐ Improve water supply sources and/or distribution within DAC and urban areas that have declining water quantity/quality or other water system reliability issues (e.g. fire-flow, contamination, etc.)

☑ Reduce the negative impacts of storm water, urban runoff, and nuisance water

☑ Reduce contamination in groundwater, natural streams, raw water conveyance systems, and reservoirs

☐ Improve infrastructure: to meet wastewater discharge or disposal requirements and deliver drinking water that meets drinking water standards and customer expectations

☑ Improve watershed health in support of increased water yield and ecosystem function

☑ Improve the condition and ecosystem function of meadows

☑ Assist in the protection and recovery of sensitive, special status, threatened, culturally sensitive, and endangered native aquatic and other water dependent species in the region

☑ Identify, preserve and promote the regeneration and restoration of wetlands, vernal pools, and native plant riparian habitat; and reduce invasive species

☐ Reduce the risk of localized flooding in urban areas

☐ Increase renewable energy production for water management

☐ Improve energy efficiency and reliability of surface water conveyance systems

☐ Increase current and future water use efficiency (WUE) by both municipal (residential and commercial) and agricultural end users

☑ Develop sufficient reliable and affordable water supplies to meet regional demands of existing and projected water supply needs under a multiyear drought now and into the future

Provide any additional explanation of objectives selection in this box:

Stabilization of headcuts in Shell meadow would prevent the loss of meadow benefits, such as filtering storm runoff (flood attenuation), protecting Yosemite toad habitat, providing subsurface water storage, protecting deer fawning habitat, carbon storage, and reducing contamination of natural streams with sediment by providing for high streambank stability.

☑ Improve integrated land use and natural resource planning to support watershed management actions that restore, sustain and enhance watershed functions

Part 3. Please indicate which of the Proposition 84 IRWM Program Preferences (PRC §75026[b] and CWC §10544) this proposal addresses.

- Each checked box is worth a range of from 0 to 2 points with a total of 14 points for all of Part 3. (For additional information please see DWR Draft IRWM Guidelines, pages 11-13, July 2012.)
- Part 3 represents the second category of information numerically scored on the Project Selection Score Sheet (check all boxes that apply):

☑ Is the project a regional project or program?

☑ Does the project effectively integrate water management programs and projects within a hydrologic region identified in the California Water Plan; the Regional Water Quality Control Board region, or subdivision or other region or sub-region as identified by the DWR or SWRCB?

☐ Does the project effectively resolve significant water-related conflicts within or between regions?

☑ Does the project contribute to the attainment of one or more of the objectives of the CALFED Bay-Delta Program? (Improve water quality, improve water supply reliability through storage, conveyance, water use efficiency or water transfers, improve the ecological health of the Bay-Delta Watershed)?

☐ Does the project address critical water supply or water quality needs for disadvantaged communities within the region?

☐ If applying for Storm Water Flood Management funding does the project provide multiple benefits, including but not limited to water quality improvements, ecosystem benefits, reduction in instream erosion and sedimentation and groundwater recharge? (DWR Draft IRWM Guidelines Page 11)

Part 4. Please indicate which of the Proposition 84 IRWM Program Statewide Priorities this project may address.

- Each checked box is worth a range of from 0 to 2 points with a total of 40 points for this section.

- ~~For each box checked please provide a one-sentence description justifying your answer.~~ (For more details please see DWR Draft IRWM Guidelines, Table 1, Statewide Priorities, pages 11-13, July 2012.)
- This represents the third category of information numerically scored on the project score sheet (check all boxes that apply):

Drought Preparedness through contributing to a sustainable water supply and reliability during water shortages

- ☑ Promote water conservation, conjunctive use, reuse and recycling
- ☐ Improve Landscape and Agricultural Irrigation Efficiencies
- ☐ Achieve a Long-Term Reduction of Water Use
- ☐ Efficient ground water basin management
- ☐ Establish System Interties

Use and Reuse Water More Efficiently to help meet future water demands increase water supply and reliability and adapt to climate change

- ☐ Increase urban and agricultural water use efficiency measures such as conservation and recycling
- ☑ Capture, store, treat and use storm water runoff (such as percolation to usable aquifers, underground storage beneath parks, small surface basins, domestic storm water capture systems or the creation of catch basis or sumps downhill of development or projects outlined in PRC §30916 - Coastal Conservancy)
- ☐ Incorporate and implement low impact development (LID) design features, techniques and practices to reduce or eliminate storm water runoff

Climate Change Response Actions that will assess vulnerabilities as a result of climate change, adapt to climate change, reduce greenhouse gas emissions, or reduce energy consumption

- ☑ Advance and expand conjunctive management of multiple water supply sources

☑ Water management system modifications that address anticipated climate change impacts, such as rising sea level, and which may include modifications, or relocations of intakes or outfalls

☑ Establish migration corridors, re-establish stream flood-plain hydrologic continuity, re-introduce anadromous fish populations to upper watersheds, and enhance and protect upper watershed forests and meadow systems

☐ Reduce water demand and wastewater loads and may reduce energy demands & Green House Gas emissions, including water use efficiency, recycling, water system energy efficiency, and reuse of runoff

Expand Environmental Stewardship

☑ Proposals that contain projects that practice, promote, improve and expand environmental stewardship to protect and enhance the environment by improving watersheds, floodplains and Instream functions and to sustain water and flood management ecosystems

Practice Integrated Flood Management

☑ Proposals that contain projects that practice, integrated flood management to provide multiple benefits including; better emergency preparedness and response, improved flood protection, more sustainable flood and water management systems, enhanced flood plain ecosystems and Low Impact Development techniques that store and infiltrate runoff while protecting groundwater

Protect Surface Water and Groundwater Quality

☑ Protect and restore surface water and groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses

☐ Salt/Nutrient management planning as a component of the IRWM Plan

Improve Tribal Water and Natural Resources

☐ Projects that include the development and/or implementation of Tribal consultation, collaboration, and access to funding for water programs and projects to better sustain Tribal water and natural resources

Provide any additional explanation of statewide priorities selection in this box:

Ensure Equitable Distribution of Benefits

- ☐ Projects that increase the participation of small and disadvantaged communities in the IRWM process
- ☐ Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations
- ☐ Projects that address critical water supply or water quality needs of Disadvantaged Communities within the Region

Part 5. Mandatory Selection Components[3].

INTEGRATION

a. Project Benefits. Please provide a brief narrative description (150 words or less.) This item is worth 0-5 points total.

Implementation of the Shell Meadow Restoration Project would prevent two headcuts from advancing into the meadow, degrading meadow conditions. In the last two years the headcuts have advanced more than three feet into the meadow, despite the fact that the meadow is fenced there are no disturbances within the area. Stabilization of the headcuts would prevent the loss of meadow benefits, including:
1) subsurface water storage: Properly functioning meadows act like a sponge and store water. This water is slowly released throughout the year, which can decrease the severity of the dry season downstream.
2) flood attenuation capacity: Degraded meadows have poor water storage capabilities, so during high flow events water passes quickly downstream, leading to potential for flooding as well as streambank erosion, road washouts, etc.
3) high water quality:A degraded channel with eroding stream banks would be a large source of sediment. Drier vegetation would also not protect the soil surface as well as deep rooted hydric soil associated plant communities.
4) deer fawning habitat: More fawns are born in meadows than any other habitat, although meadows represent less than one percent of the area of summer range.
5) Yosemite toad breeding habitat: Shell Meadow has breeding habitat for Yosemite toad, a Forest Service Sensitive Species and a USFWS candidate threatened species.
6) carbon storage: Soils under more moist meadow positions in properly functioning meadows have at least twice the carbon storage of non-functioning meadows.

b. Resource Management Strategies. Please indicate which of the of the State Water Plan's Resource Management Strategies this project may address. Please note that not all of the Resource Management Strategies have application to this IRWM Region. This item is worth a total of 0-5 points. ~~For each box checked please provide a brief description justifying your answer.~~ (check as many boxes as may apply):

[3] (DWR, July 2012 IRWM P84 Guidelines, page 19)

- ☐ Agricultural Lands Stewardship
- ☐ Agricultural Water Use Efficiency
- ☑ Conjunctive Management and Ground water storage
- ☐ Conveyance (Delta)
- ☐ Conveyance (Regional/Local)
- ☐ Desalination
- ☐ Drinking Water Treatment and Distribution
- ☐ Economic Incentives (loans, grants & water pricing)
- ☑ Ecosystem Restoration
- ☑ Flood Risk Management
- ☑ Forest Management
- ☐ Groundwater Remediation/Aquifer Remediation
- ☐ Land Use Planning and Management
- ☑ Matching Water Quality to Use
- ☐ Pollution Prevention
- ☐ Precipitation Enhancement
- ☐ Recharge Area Protection
- ☐ Recycled Municipal Water
- ☐ Salt and Salinity Management
- ☐ Surface Storage - CALFED

☐	Surface Storage - Regional/Local
☐	System Re-operation
☐	Urban Runoff Management
☐	Urban Water Use Efficiency
☐	Water Transfers
☐	Water-dependent Recreation
☑	Watershed Management

Provide any additional explanation of RMS selection in this box:

c. Geographic Area/Zone of Influence. Please briefly describe (150 words or less) the project's general geographic area and size and describe its beneficial zone of influence. This item is worth a total of 0-3 points.

The intermittent stream in Shell Meadow is a tributary to Niagara Creek, which flows into Donnell Reservoir and the Middle Fork Stanislaus River. Donnell Reservoir is part of the Tri-Dam Project, a partnership between the Oakdale Irrigation District and the South San Joaquin Irrigation District. Properly functioning meadows protect water quality by filtering and storing runoff as well as maintaining base streamflows, both of which are benefits to Tri-Dam.

READINESS TO PROCEED to Implementation

Each box checked describes the project's readiness to proceed. Please note, **only** answer Item #1 **or** #2 and not both. If your project is subject to both the National Environmental Policy Act (NEPA) & the California Environmental Quality Act (CEQA) please so note in a one-sentence explanation. Each item is worth a total of 0-4 points. (Check only one box per item):

Item 1.

- ☐ The project is a project under CEQA and a final Negative Declaration has been completed, or the project is not a project under CEQA, or is otherwise exempt from CEQA (4)
- ☐ The project is a project under CEQA and an Final Environmental Impact Report has been completed (4)
- ☐ This project is a project under CEQA and CEQA compliance is anticipated to be completed within 12 months (3)
- ☐ This project is a project under CEQA and CEQA compliance is anticipated to be completed within 13 to 36 months (2)
- ☐ This project is a project under CEQA and CEQA compliance is anticipated to be completed in 37 months or more (1)
- ☐ The project is a project under CEQA and no final environmental document has been completed (0)

Item 2.

- ☐ The project is a project under NEPA and a final Finding of No Significant Impact has been completed, or the project is not a project under NEPA, or is otherwise exempt from NEPA (4)
- ☐ The project is a project under NEPA and an Final Environmental Impact Statement has been completed (4)
- ☑ This project is a project under NEPA and NEPA compliance is anticipated to be completed within 12 months (3)
- ☐ This project is a project under NEPA and NEPA compliance is anticipated to be completed within 13 to 36 months (2)
- ☐ This project is a project under NEPA and NEPA compliance is anticipated to be completed in 37 months or more (1)

☐	The project is a project under NEPA but no final environmental document has been prepared (0)

Item 3.

☐	All local, state and federal permitting requirements (if any) have been completed (4)
☐	All local, state and federal permitting requirements should be completed within 12 months (3)
☑	All local, state and federal permitting requirements should be completed within 13 to 36 months (2)
☐	All local, state and federal permitting requirements should be completed in 37 months or more (1)

Item 4.

☑	The proponent has capacity within current staff and/or consultants or volunteers to carry out the project (2)
☐	The proponent will have to hire staff or retain consultants or secure volunteers to carry out the project (1)

Item 5.

☑	Feasibility analysis for the project is complete (4)
☐	Feasibility analysis for the project will be complete within 12 months (3)
☐	Feasibility analysis for the project will be complete within 13 to 36 months (2)
☐	Feasibility analysis for the project will be complete in 37 months or more (1)

Item 6.

☐	The project has all necessary engineering, designs, blueprints and work plans completed (4)
☑	The project will have all necessary engineering, designs, blueprints and work plans completed within 12 months (3)

☐	The project will have all necessary engineering, designs, blueprints and work plans completed within 13 to 36 months (2)
☐	The project will have all necessary engineering, designs, blueprints and work plans completed in 37 months or more (1)

Item 7.

☑	The proponent has the necessary authority and approvals to implement the project (such as landowner approval, approval by a governing board, license, right or fee) (4)
☐	The proponent expects to have the necessary authority and approvals to implement the project (such as landowner approval, approval by a governing board, license, right or fee) within 12 months (3)
☐	The proponent expects to have the necessary authority and approvals to implement the project (such as landowner approval, approval by a governing board, license, right or fee) within 13 to 36 months (2)
☐	The proponent expects to have the necessary authority and approvals to implement the project (such as landowner approval, approval by a governing board, license, right or fee) in 37 months or more (1)

Item 8.

☐	This project qualifies as a Disadvantaged Community project and the local match may be waived (2)
☑	The proponent has secured non-state funding and/or in-kind services that will qualify for and meet the required minimum local match (2)
☐	The proponent has no non-state funding and/or in-kind services that qualifies for the required local match (0)

For informational purposes only:

☐	A feasibility analysis is a component of the proposed project
☑	The proponent has carried out similar projects in the past

STRENGTH OF THE PROJECT

Subjective Evaluation Narratives (response will be 150 words or less for each question and may be attached as a separate document). This item is worth a total of 0-13 points and is subjectively scored at one point maximum per lettered question below.

a. Will this project result in increasing local and or regional resiliency to extended drought or water supply or resolving water quality issues? If yes, please explain how.

b. Does this project address public safety and or health concerns within the Tuolumne - Stanislaus IRWM Region (Region)? Please describe.

c.Will this project contribute to the achievement of regulatory compliance within the Region? If yes, please specify regulation(s) and describe.

d. Will this project provide short-term economic benefits within this Region? If yes, please explain.

e.Will this project provide long-term economic benefits within the Region? If yes, please explain.

f. Does the project improve the condition in a natural resource within the Region? If yes, please reference resource(s) and explain.

g. Does the project provide specific benefits to critical water supply or water quality needs of a Disadvantaged Community (DAC) as defined by CWC 79505.5(a) and as listed in XXXXX of the Tuolumne-Stanislaus IRWM Plan? If so, how, and are there any Environmental Justice concerns. If non-DAC mark N/A.

h. Will this project actively involve or benefit Indian Tribes within the Region? If yes, please specify Tribe or Band and explain involvement and or benefits anticipated.

i. Will this project contribute to developing or implementing strategies to respond to climate variability on water resources within the Region? If yes, please explain.

j. Will this project reduce, directly or indirectly, greenhouse gas emissions within the Region?

k. Is this project expected to result in any significant, socio-economic, environmental, or economic impacts within the Region, which cannot be mitigated to a non-significant level? If so, briefly explain how the project would mitigate them to a non-significant level.

l. Are any benefits associated with this project outside the Region? If yes, please explain.

m. Are any significant, socio-economic, environmental, or economic impacts, outside the Region that cannot be mitigated to a non-significant level? If so, briefly explain how the project would mitigate them to a non-significant level.

Type Response(s) to Strength of Project Questions Here. Please type the letter of the question prior to each response :

a. The project will prevent a loss of water storage and a degradation of water quality. Properly functioning meadows act like a sponge and store water. This water is slowly released throughout the year, which can decrease the severity of the dry season downstream. Degraded meadows have poor water storage capabilities, so during high flow events water passes quickly downstream, leading to potential for flooding as well as streambank erosion, road washouts, etc. Properly functioning meadows can store much of these high flows, reducing the likelihood and/or scale of flooding and associated impacts to water quality. In addition, a degraded channel with eroding stream banks in a meadow is a large source of sediment. Drier vegetation in degraded meadows also do not protect the soil surface as well as deep rooted hydric soil associated plant communities, leading to further sediment inputs to streams.
b. In combination with other meadow restoration projects, this project would address public safety by protecting/improving flood attenuation capacity and would address health concerns by protecting/improving water quality.
c. No
d. Yes. The project implementation will be contracted out to a local contractor.
e. Yes. Protection and restoration of meadows results in less sedimentation of downstream reservoirs (Donnells and Beardsley). This leads to increased storage capacity of those reservoirs, which provides an economic benefit to Tri-Dam and those users who receive power and water from this system (potential for lower rates).

Strength of Project Narrative - Continued

f. Yes. The project protects 1) water quality, 2) deer fawning habitat, 3) Yosemite toad habitat, and 4) carbon storage. 1) A degraded channel with eroding stream banks would be a large source of sediment. 2) Local research shows that more fawns are born in meadows than any other habitat, although meadows represent less than one percent of the area of summer range. Wet meadows meet the requirements of pregnancy and lactation better than any other habitat and receive especially high concentrations of does and fawns. 3) Shell Meadow has breeding habitat for Yosemite toad, a Forest Service Sensitive Species and a USFWS candidate threatened species. 4) Research conducted on the forest found that soils under more moist meadow positions in properly functioning meadows have at least twice the carbon storage of non-functioning meadows. Stabilization of headcuts would prevent the drying of Shell Meadow and the loss of carbon storage.

g. This project, in combination with other meadow restoration projects on the forest, will protect and improve water quality and water supply by protecting/improving subsurface water storage, protecting/improving flood attenuation capacity, and stabilizing eroding banks, thereby improving water quality. There are no environmental justice concerns.
h. No
i. Yes. Research conducted by UC Davis Extension on the Stanislaus National Forest found that soils under more moist meadow positions in properly functioning meadows have at least twice the carbon storage of non-functioning meadows. Therefore, stabilization of headcuts would prevent the drying of Shell Meadow and the loss of carbon storage. As CO2 emissions increase as a result of human activities, carbon sequestration is essential in stabilizing atmospheric levels of CO2 and mitigating impacts of climate change, including impacts on water resources.
j. Yes. If the headcuts in Shell Meadow were to advance further into the meadow, the meadow would dry and release CO2 into the atmosphere. Dry meadows do not have the carbon storage capacity of wet meadows.
k. No
l. No
m. No

END