"Climate Friendly" Field Office Technical Guide practices
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This table lists practices from the Field Office Technical Guide that have positive effects in helping those who depend on natural resources, including agriculture, forestry, fish, and wildlife, adapt to climate change. Potential effects of climate change to the northwest include changing weather patterns, more precipitation as rain during the winter, more extreme weather events, greater temperature extremes, and greater vulnerability to invasive species. Potential effects to agriculture and other natural resources include drought stress to plants and crops, heat stress to livestock,

Practice number	Practice title	GHG benefits - description	Tools to assess benefits
317	Composting facility	• If facility helps promote addition of organic matter to soil that would not have occurred otherwise, it can help build soil water holding capacity.	
327	Conservation cover	• Helps build soil quality which may improve/maintain crop productivity and increase ability to deal with drought; also may help lessen erosion associated with changing weather patterns.	Soil conditioning index; COMET-VR; C-QESTR
328	Conservation crop rotation	• Helps build soil quality which may improve/maintain crop productivity and increase ability to deal with drought; also may help lessen erosion associated with changing weather patterns.	Soil conditioning index; COMET-VR; C-QESTR
330	Contour farming	• Promotes water infiltration; may improve/maintain crop productivity and increase ability to deal with drought	
340	Cover crop	• Helps build soil quality which may improve/maintain crop productivity and increase ability to deal with drought; also may help lessen erosion associated with changing weather patterns.	Soil conditioning index; COMET-VR; C-QESTR
428	Ditch and canal lining	• Can reduce water loss associated with transporting water in unlined ditches, conserving water for irrigation and	

		other uses.	
589A	Cross wind ridges	• Helps build soil quality which may improve/maintain crop productivity and increase ability to deal with drought; also may help lessen erosion associated with changing weather patterns.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
647	Early successional habitat development/management	• May help benefit species that are sensitive to changing climate conditions.	
393	Filter strip	• May help reduce or mitigate erosion associated with more severe weather events.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
394	Firebreak	• Reduce potential for damage to ecosystems and resource lands from catastrophic wildfires.	
734	Fish and wildlife structure	• Improve resiliency of fish and wildlife species that are sensitive to climate change.	
396	Fish passage	• Expand habitat available to fish species that are sensitive to changing climate conditions.	
384	Forest slash treatment	• Reduce potential for damage to ecosystems and resource lands from catastrophic wildfires.	
666	Forest stand improvement	• May decrease competition among forest trees for water and help increase survival of existing trees. Also can help build forest resiliency against insect pests and disease.	
422	Hedgerow planting	• Provides shelter and movement corridor for wildlife.	
315	Herbaceous weed control	• Can help growers respond more effectively to existing and new pests that may benefit under changing climate conditions.	Weed surveys
436	Irrigation storage reservoir	• Could help provide summer irrigation water as supplies become more scarce in changing climate conditions. May provide incidental water for wildlife species	

		(projects also need to be evaluated to be sure they are not exacerbating stresses to climate sensitive species)	
441	Irrigation system, microirrigation	• When combined with Irrigation Water Management practice, can help reduce water consumption. May help producers deal with greater water insecurity in the future.	
442	Irrigation system, sprinkler	• Conversion from flood, furrow, or wheel line to low-pressure sprinkler irrigation, when combined with Irrigation Water Management practice, can reduce water consumption.	
447	Irrigation system, tailwater recovery	• Conserve irrigation water supplies for re-use	
776	Irrigation water conveyance, pipeline	• When used to convert open irrigation ditches and canals to piped delivery systems, can conserve water supplies. Also can facilitate conversion from flood/furrow to sprinkler irrigation which also saves water.	
449	Irrigation water management	• Ensures irrigation water is applied efficiently; can increase crop productivity	
484	Mulching	• Can help build soil organic matter, improving soil productivity and water holding capacity under changing climate conditions.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
512	Pasture and hayland planting	• Perennial crops with well-developed root systems may withstand weather extremes better than annual crops.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
595	Pest management	• Integrated pest management may help growers respond more effectively to new and existing pests that benefit from changing climate conditions.	Pest surveys

409	Prescribed forestry	• May decrease competition among forest trees for water and help increase survival of existing trees. Also can help build forest resiliency against insect pests and disease.	
528	Prescribed grazing	• Helps pasture and range plants stay healthier and better able to respond to weather extremes.	
550	Range planting	• Can improve rangeland productivity and diversity under changing climate conditions.	
345	Residue and tillage management, mulch till	• Builds organic matter in the soil, helps maintain/improve crop productivity and improve soil water holding capacity.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
329	Residue and tillage management, no till/direct seed	• Builds organic matter in the soil, helps maintain/improve crop productivity and improve soil water holding capacity.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
643	Restoration and management of declining habitats	• Creates and maintains habitat for species sensitive to changing climate conditions.	
391	Riparian forest buffer	• Can help moderate temperature extremes in stream and streamside habitats; can help build watershed resiliency and reduce peak flows. Provides corridor for wildlife movement and shelter for wildlife.	
390	Riparian herbaceous cover	• Can help build watershed resiliency and reduce peak flows; provides corridor for wildlife movement and shelter for wildlife.	
395	Stream Habitat Improvement and management	Use of practice increases habitat diversity, and assures provision of thermal refuges, low-water refuges, and/or a diversity of complex habitat options for aquatic and riparian fauna to choose from as climate changes occur.	SVAP2 - Stream Visual Assessment Protocol, Version 2.

587	Structure for water control	Can help prevent erosion associated with concentrated water flow, and prevent or moderate flooding.	
612	Tree/shrub establishment	• Creates habitat for species sensitive to changing climate conditions; increasing forest diversity may improve resiliency to changing climate conditions.	
645	Upland wildlife habitat	• Creates and maintains habitat for species sensitive to changing climate conditions.	
472	Use exclusion	• Helps degraded areas recover and build resiliency to drought and other weather extremes.	
657	Wetland restoration	• Creates additional habitat for plants and wildlife, building their resiliency to changing climate conditions.	
380	Windbreak/shelterbelt establishment	• Can help cropland, people, and wildlife better handle weather extremes.	

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This table lists practices from the Field Office Technical Guide that have positive effects in reducing greenhouse gas emissions and sequestering carbon.

Practice number	Practice title	GHG benefits - description	Tools to assess benefits
702	Agricultural chemical handling facility	• By reducing pollution to soil and water from chemicals such as nitrogen fertilizer, facilities may also reduce emissions of nitrous oxide and provide other air quality benefits.	
591	Amendments for treatment of ag waste	• Reduce nitrous oxide emissions	
366	Anaerobic digester controlled temperature	• Capture methane emitted from manure • Generate renewable energy	Several protocols are available
723	Combustion system air emissions management	• May reduce fuel consumption and associated greenhouse gas emissions; may also reduce nitrous oxide emissions	
317	Composting facility	• MAY reduce greenhouse gas emissions depending on prior waste handling system; can help build organic matter in the soil.	
327	Conservation cover	• Promote carbon sequestration	Soil conditioning index; COMET-VR; C-QESTR
328	Conservation crop rotation	• A rotation that helps build soil organic matter may also help sequester carbon. In addition, if the rotation replaces some of the nitrogen fertilizer that the producer would otherwise need to apply, it may reduce nitrous oxide emissions	Soil conditioning index; COMET-VR; C-QESTR
340	Cover crop	• Promote carbon sequestration	Soil conditioning

		• Capture and store excess nitrogen	index; COMET-VR; C-QESTR
589A	Cross wind ridges	• Helps prevent wind-induced erosion and maintain soil organic matter.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
592	Feed management	• Can reduce methane emissions, depending on the specific strategies used (increasing digestibility, for example). The practice standard that I found online was from 2003 so there may be a more recent version, but it didn't talk about air quality or greenhouse gas emissions – if it has been or is going to be revised, there might be an opportunity to market some of these other benefits from this practice.	
393	Filter strip	• Reduce soil disturbance and sequester carbon in the planted area.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
394	Firebreak	• Reduce potential for greenhouse gas emissions from catastrophic wildfires.	
384	Forest slash treatment	• Reduce potential for greenhouse gas emissions from catastrophic wildfires. If the material is used to create renewable energy, it may also offset greenhouse gas emissions associated with non-renewable energy production.	
666	Forest stand improvement	• Promote carbon sequestration by improving forest health; reduce potential for greenhouse gas emissions from catastrophic wildfires.	
422	Hedgerow planting	• Sequester carbon by reducing disturbance in planted area and by accumulating carbon in the hedgerow plants.	
441	Irrigation system,	• Converting to microirrigation from other types of irrigation	Compare

	microirrigation	can save energy when done in combination with Irrigation Water Management practice and lower energy consumption from water pumping. This practice may also reduce saturated soils, a condition that can contribute to nitrous oxide emissions.	before/after energy consumption
442	Irrigation system, sprinkler	• Converting to more efficient irrigation systems, such as upgrading from wheel lines to pivots, can save energywhen done in combination with Irrigation Water Management practice and lower energy consumption from water pumping. Also, the practice could reduce nitrous oxide emissions by reducing soil saturation.	Compare before/after energy consumption
449	Irrigation water management	• Can save energy and associated greenhouse gas emissions; can also reduce saturated soil periods and associated nitrous oxide emissions.	Compare before/after energy consumption
484	Mulching	• Can help build soil organic matter and sequester carbon.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
590	Nutrient management	• Using nutrients more efficiently can reduce energy use to produce fertilizer, and can also reduce nitrous oxide emissions associated with fertilizer applications.	Nutrient trading tool - NTD
752	Orchard and Vineyard air quality management	• Can involve conversion to cleaner burning and more energy-efficient fuel, which saves energy and reduces greenhouse gas emissions; may also reduce emissions from burning of orchard and vineyard prunings.	
512	Pasture and hayland planting	• If the practice is taking place because cropland is being converted to pasture or hayland, it will likely result in additional carbon sequestration.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
595	Pest management	• If pest management practices reduce the need for pesticide	

		applications, they can reduced fuel use from pesticide application and in some cases, petroleum inputs into fertilizer product.	
409	Prescribed forestry	• Promote carbon sequestration by improving forest health; reduce potential for greenhouse gas emissions from catastrophic wildfires.	
528	Prescribed grazing	• Promotes carbon sequestration by increasing biomass of pasture and rangeland plants and reducing erosion.	
533	Pumping plant for water control	• Pumping plant components such as a premium-efficiency pump and/or variable speed drive can help save energy and reduce greenhouse gas emissions associated with electricity production.	Compare before/after energy use
550	Range planting	• Promotes carbon sequestration by increasing biomass of rangeland plants and reducing erosion.	
345	Residue and tillage management, mulch till	• Can reduce carbon dioxide emissions compared with tillage methods that cause more disturbance to the soil.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
329	Residue and tillage management, no till/direct seed	• Promotes carbon sequestration in the soil.	RUSLE2; soil conditioning index; COMET-VR; C-QESTR
643	Restoration and management of declining habitats	• Strategies that involve tree/shrub planting and conversion of land into permanent cover can help sequester carbon.	
391	Riparian forest buffer	• Eliminate soil disturbance in streamside area (in some cases), reduce carbon dioxide emissions, and sequester carbon in streamside area in the soil and vegetation.	
390	Riparian herbaceous cover	• Eliminate soil disturbance in streamside area (in some cases), reduce carbon dioxide emissions, and sequester carbon in streamside area in the soil and vegetation.	

381	Silvopasture establishment	• Reduce carbon dioxide emissions and promote carbon sequestration in soil, pasture, and trees.	
632	Solid/liquid waste separation facility	• Keeping a greater portion of the manure in aerobic conditions can help reduce methane emissions. However, the solid waste stream can potentially result in an increase in nitrous oxide emissions if there is an inconsistent moisture level and there can still be methane emissions if the material is kept too wet.	
612	Tree/shrub establishment	• Promote carbon sequestration in soil, shrubs, and trees.	
645	Upland wildlife habitat	• Depending on the type of project, may promote carbon sequestration in trees, shrubs, and herbaceous vegetation.	
472	Use exclusion	• Promotes carbon sequestration by increasing biomass of grasses, shrubs, and/or trees, and by reducing erosion.	
367	Waste facility cover	• If the cover captures biogas emitted from the waste and the biogas is flared or used to produce energy, it eliminates methane emissions.	
629	Waste treatment	• Can help reduce methane and nitrous oxide emissions.	
633	Waste utilization	• If waste is applied consistent with practice criteria, it should help reduce nitrous oxide emissions associated with waste application. Also, substituting manure for other fertilizer can reduce the energy needed to produce and transport fertilizer.	
657	Wetland restoration	• By restoring native vegetation, this practice can help promote carbon sequestration. However, wetlands can also be a source of nitrous oxide.	
380	Windbreak/shelterbelt establishment	• Eliminate soil disturbance in the planted area; promotes carbon sequestration in the soil and vegetation.	