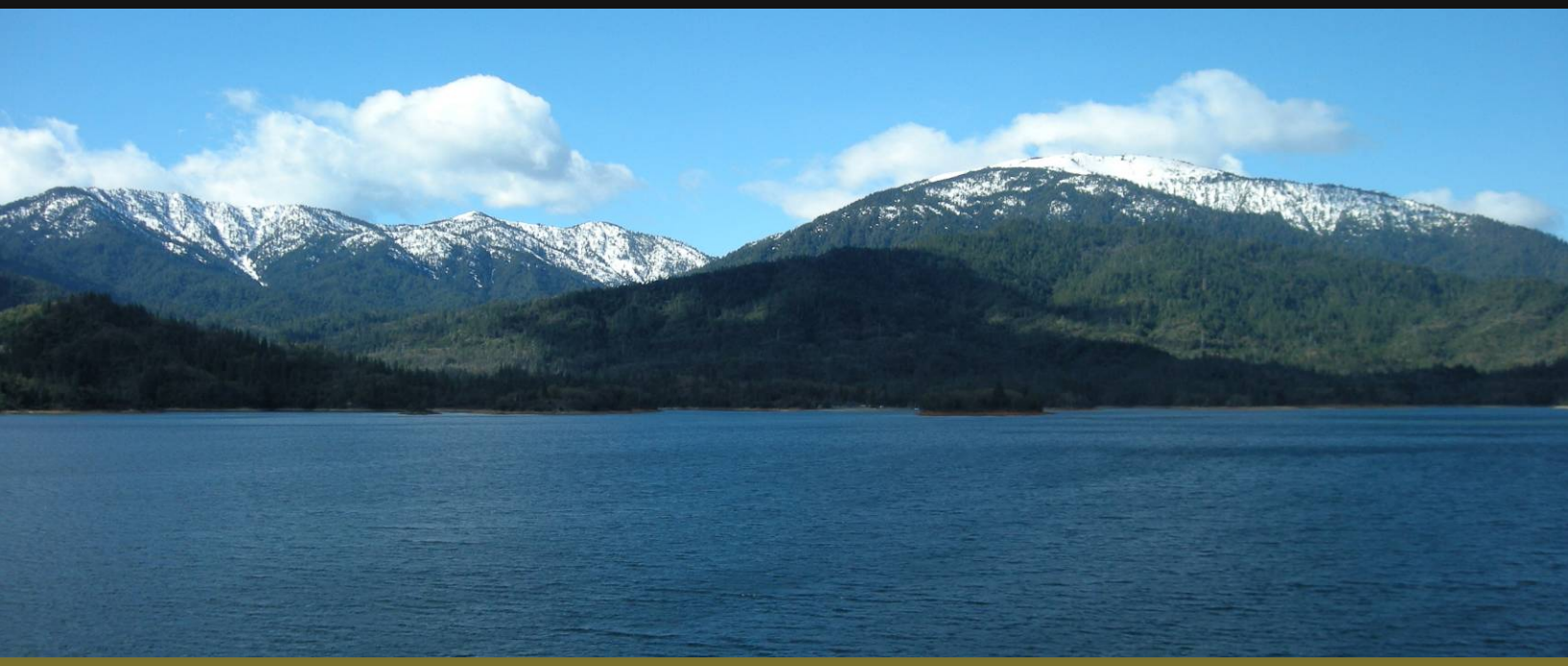
National Park Service
U.S. Department of the Interior



CLIMATE*Friendly* PARKS

Whiskeytown National Recreation Area Action Plan

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WHISKEYTOWN NATIONAL RECREATION AREA BECOMES A CLIMATE FRIENDLY PARK

As a participant in the Climate Friendly Parks program, Whiskeytown National Recreation Area belongs to a network of parks nationwide that are putting climate-friendly behavior at the forefront of sustainability planning. By conducting an emission inventory, setting an emission reduction goal, developing this Action Plan, and committing to educate park staff, visitors, and community members about climate change, Whiskeytown National Recreation Area provides a model for climate-friendly behavior within the park service.

This Action Plan identifies steps that Whiskeytown National Recreation Area can undertake to reduce GHG (Green House Gas) emissions mitigate its impact on climate change. The plan presents the park's emission reduction goals, and associated reduction actions to achieve the park's goals. Strategies and action plan items were developed by working groups at the Klamath Climate Friendly Parks Workshop.[1] While the plan provides a framework needed to meet the park's emission reduction, it is not intended to provide detailed instructions on how to implement each of the proposed measures. Whiskeytown National Recreation Area has an active facility Environmental Management System (EMS). The park EMS serves as the framework for managing all the park's environmental programs. The framework provided in the climate friendly park action plan will be incorporated into the EMS as objectives and targets.

Whiskeytown National Recreation Area intends to:

- Reduce 2007 energy GHG emissions from park operations by 20 percent by 2016.
- Reduce 2007 transportation GHG emissions from park operations by 20 percent by 2016.
- Reduce 2007 waste GHG emissions from park operations by 10 percent by 2016.
- Reduce total 2007 park GHG emissions, including visitors and concessioners, by 10 percent by 2016.

To meet these goals, the park will implement strategies proposed in this plan that relate to the park's current and future emission inventories. Specifically, the plan recommends three strategies:

Strategy 1: Identify and implement mitigation actions that the park can independently take to reduce GHG emissions resulting from activities within and by the park.

Strategy 2: Increase climate change education and outreach efforts.

Strategy 3: Monitor progress with respect to reducing emissions and identify areas for improvement.

THE CHALLENGE OF CLIMATE CHANGE

Climate change presents significant risks and challenges to the National Park Service and specifically to Whiskeytown National Recreation Area. Scientists cannot predict with certainty the general severity of climate change nor its impacts. Average global temperatures on the Earth's surface have increased about 1.5°F since 1880, and January 2000 to December 2009 was the warmest decade on record[2]. The single leading cause of this warming is the buildup of GHGs in the atmosphere—primarily carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) —which trap heat that otherwise would be released into space.

[1] Original notes from these workshops, including detailed action items not presented in the final plan have been archived by Whiskeytown National Recreation Area and are available upon request.
[2] National Aeronautics and Space Administration. Research News. 2009: Second Warmest Year on Record; End of Warmest Decade. Available online at: <http://www.giss.nasa.gov/research/news/20100121/>

The continued addition of CO_2 and other GHGs to the atmosphere will raise the Earth's average temperature more rapidly in the next century; a global average warming of 4-7°F by the year 2100 is considered likely.[3] Rising global temperatures will further raise sea levels and affect all aspects of the water cycle, including snow cover, mountain glaciers, spring runoff, water temperature, and aquatic life. Climate change is also expected to affect human health, crop production, animal and plant habitats, and many other features of our natural and managed environments.

There is mounting evidence that forests in western North America are already responding to climatically forced changes to hydrologic cycles. Regional warming has resulted in a declining fraction of precipitation falling as snow, declining snowpack water content, earlier spring snowmelt and runoff, and a consequent lengthening of the summer drought. Recent research by Ault and St. George (2010) indicates that shifts in decade-to-decade winter precipitation in the United States have been largest in the region that encompasses the Klamath Network national parks in northern California and southern Oregon. Predicted forest responses to these changes include increasing background mortality rates, increasing frequency of die-backs of entire stands, and greater susceptibility to insects and pathogens. Climate model projections suggest all these phenomena will become more pronounced in coming years (IPCC 2007, Seager et al. 2007).

[3] IPCC 2007. Climate Change 2007: The Physical Science Basis. Intergovernmental Panel on Climate Change, Geneva Switzerland. Available online at < http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>

GREENHOUSE GAS EMISSION INVENTORY AT WHISKEYTOWN NATIONAL RECREATION AREA

Naturally occurring GHGs include CO_2, CH_4, N_2O, and water vapor. Human activities (e.g., fuel combustion and waste generation) lead to increased concentrations of these gases (except water vapor) in the atmosphere.

Greenhouse Gas Emissions

GHG emissions result from the combustion of fossil fuels for transportation and energy (e.g., heating and cooling, electricity generation), the decomposition of waste and other organic matter, and the volatilization or release of gases from various other sources (e.g., fertilizers and refrigerants).

In 2007 GHG emissions within Whiskeytown National Recreation Area totaled 2,720 metric tons of carbon dioxide equivalent ($MTCO_2E$). This includes emissions from park and concessioner operations and visitor activities, including vehicle use within the park. For perspective, a typical single family home in the U.S. produces approximately 11 $MTCO_2$ per year.[4] Thus, the combined emissions from park and concessioner operations, and visitor activities within the park, are roughly equivalent to the emissions from the electricity use of 247 households each year.

The largest emission sector for Whiskeytown National Recreation Area is transportation, totaling 2,129 $MTCO_2E$ (see Figure 1 and Table 1). The park fleet consists of approximately 100 vehicles, including cars, trucks, watercraft and construction equipment. Considerable effort has already been undertaken to "right size" the park fleet, reduce trips and choose low emission equipment. Nearly all park visitors arrive at the park in personal vehicles, and many engage in motorized activities such as boating and taking scenic driving tours. No regular public transportation exists to the park.

[4] U.S. EPA, Greenhouse Gases Equivalencies Calculators – Calculations and References, Retrieved , Website: http://www.epa.gov/RDEE/energy-resources/calculator.html

FIGURE 1

Whiskeytown National Recreation Area 2007 Total Greenhouse Gas Emissions by Sector

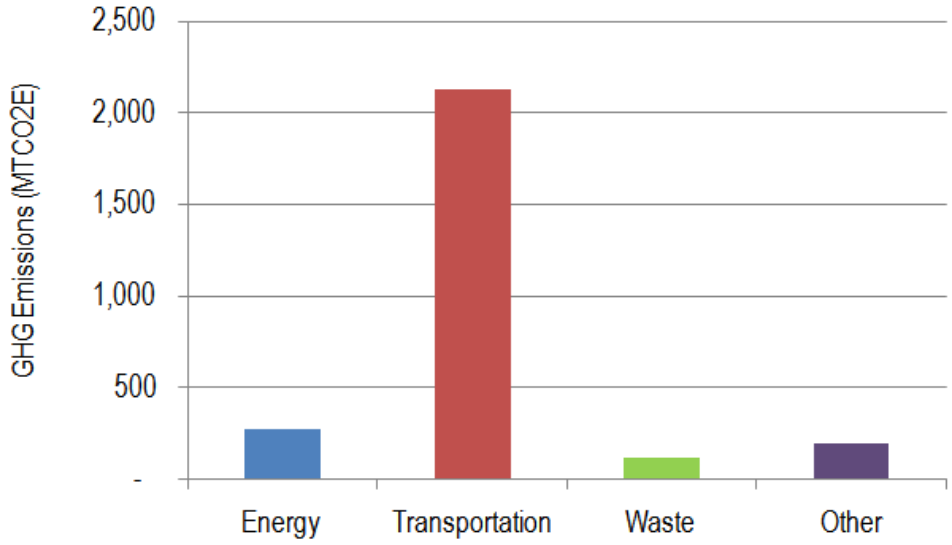

TABLE 1

Whiskeytown National Recreation Area 2007 Total Greenhouse Gas Emissions by Sector and Source

	MTCO2E
Energy	273
Stationary Combustion	160
Purchased Electricity	113
Transportation	2,129
Mobile Combustion	2,129
Waste	122
Landfilled Waste	122
Other	196
Refrigeration and Air Conditioning	196
Total	2,720

Note - Totals may not sum due to rounding

Not applicable data sources represented by "-"

FIGURE 2

Whiskeytown National Recreation Area 2007 Park Operations Emissions by Sector

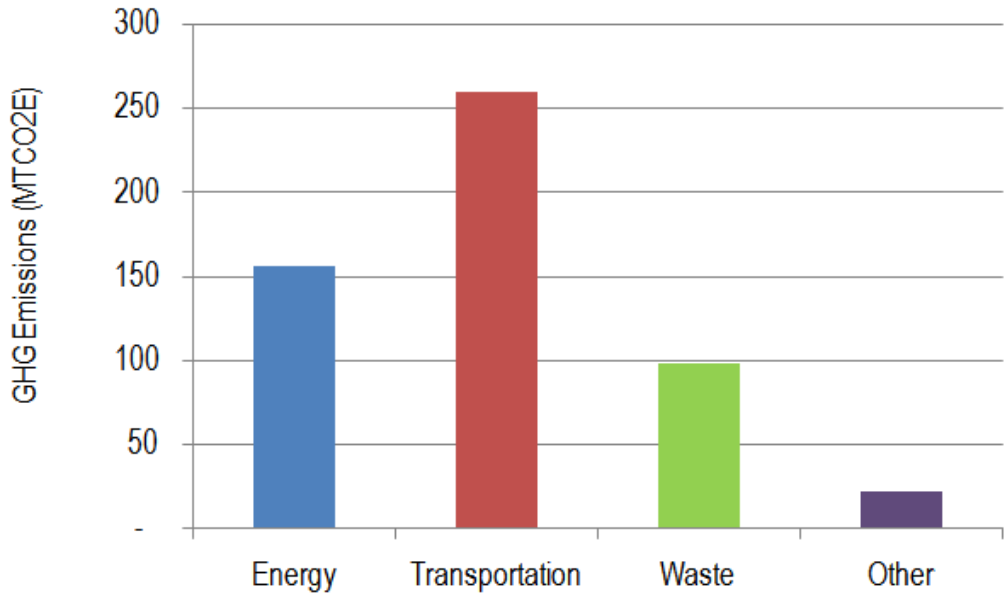

TABLE 2

Whiskeytown National Recreation Area 2007 Park Operations Emissions by Sector and Source

	MTCO2E
Energy	156
Stationary Combustion	49
Purchased Electricity	107
Transportation	260
Mobile Combustion	260
Waste	98
Landfilled Waste	98
Other	22
Refrigeration and Air Conditioning	22
Total	537

Note - Totals may not sum due to rounding

Whiskeytown National Recreation Area Responds to Climate Change

The following actions were developed during the Klamath Climate Friendly Parks Workshop on April 14th and 15th, 2010, in order to meet the park's climate change mitigation goals.

STRATEGY 1: REDUCE GHG EMISSIONS RESULTING FROM ACTIVITIES WITHIN AND BY THE PARK

Whiskeytown National Recreation Area has developed a set of actions that the park is committed to taking in order to reduce emissions from activities within and by the park. These strategies have been prioritized based on a qualitative assessment of a set of criteria including: emission reduction potential, cost-effectiveness, feasibility, co-benefits, regional impact, and ability to rapidly implement. Actions that Whiskeytown National Recreation Area will take have been presented below in order from highest to lowest priority within each sub-category.

Energy Use Management

Emission Reduction Goal: Reduce 2007 energy GHG emissions from park operations by 20 percent by 2016.

Improving energy efficiency and implementing alternative energy sources reduces park-based fuel use, lowers GHG emissions, decreases electricity consumption, and offers monetary benefits for the park. Emissions inventory results indicate that 29 percent of the park's GHG emissions from park operations are from energy consumption. Consequently, Whiskeytown National Recreation Area identified actions it will take to reduce energy-related emissions. Presented below are the actions that are currently under way and which comprise the park's progress to date, as well as those actions the park will pursue.

Progress to Date

Behavioral Changes

- Implemented energy savings protocols that are monitored by the employees. One example is the parks "no idle" policy for vehicles.
- Implemented a "flex work schedule" and approve telework requests when appropriate to reduce transportation emissions and take advantage of off-peak power rates.

Lighting

- Installed compact fluorescent light bulbs at the administration building and maintenance shop.
- Installed lighting control sensors in existing structures to include headquarters and the maintenance shop.
- Installed photovoltaic lighting systems at Brandy Creek, Oak Bottom, Whiskey Creek, Carr Powerhouse and the Headquarters.

Energy-efficient Electronics and Devices

- Set in place policies regarding the procurement of energy savings devices.
- Replaced three standard hot water heaters with on-demand hot water heating systems where energy savings would likely result.

Improve Building Envelope

- Visitor Center upgraded to double-paned, low-E vinyl windows.

- Autore House has been upgraded with double-paned vinyl windows.

Alternative Energy

- Photovoltaic solar panels have been installed on the Visitor Center and the maintenance workshop.

Energy Use Management – Planned Actions

1 Promote energy efficiency and energy conservation in the park through behavioral change

- Develop a mandatory energy-saving training program.
  - Develop an office/workspace shutdown checklist for all unnecessary equipment to include lights (interior and exterior), computers, printers, and thermostat settings.
  - Install motion sensors for existing facilities such as restrooms.
- Establish an Operations and Maintenance (O&M) schedule that evaluates energy use across the entire park.
  - Improve routine custodial routes and maintenance procedures.
  - Evaluate the need for additional waste collection sites to reduce the energy required to transport park waste.
  - Audit potential problem areas where there are indications of excessive energy usage.
- Adjust janitorial schedules.
  - Adjusting schedules and staffing for better coverage and increased efficiency.

2 Upgrade lighting options

- Upgrade all light fixtures and bulbs in park to energy-efficient bulbs.
  - Assess the lighting needs of each building and develop a project for re-lamping buildings with deficiencies.
- Install lighting controls.
  - Assess the lighting needs of park facilities and reduce the wattage of light bulbs if necessary to increase efficiency.
- Install energy-efficient outdoor lighting.
  - Develop a plan to install photovoltaic sidewalk lights in areas that require additional lighting for pedestrian travel such as Oak Bottom Beach and Brandy Creek snack bar.
  - Research latest photovoltaic technology that includes the energy costs for battery system replacement, photo panel lifespan, and minimizes impact to the night skyscape.
- Use daylighting.
  - Establish guidelines for natural lighting installation and optimizing existing passive solar potential of existing structures.

3 Heating, ventilation, and air conditioning (HVAC)

- Develop an HVAC maintenance schedule.
  - Develop a schedule for checking existing HVAC systems in the park.
- Recalibrate thermostats.
  - Recalibrate thermostats annually.
  - Adjust program timing to increase efficiency and ensure that the correct time is displayed on all thermostats.

4 Switch to more efficient electronics and devices

- Default all computers to print double-sided.
  - Establish intra-office guidelines for the use of the double-sided default setting for office printing.
- Install Smart Strip power strips.
  - Replace existing powerstrips with smart and measure the vampire power wasted in specific locations.
- Purchase only energy-efficient electronics.
- Install and/or utilize portable energy meters to measure energy use and monitor big consumers.
- Replace park's existing heating ventilation and air conditioning systems with energy-efficient models.
- Install energy-efficient water heaters.
  - Replace life-cycle expired water heaters with on-demand hot water heaters.

5 Improve building structures and envelopes

- Window shading.
  - Replace all screens with advanced shading screens to minimize solar energy transfer through windows.
- Replace old windows with new windows.
  - Replace existing single-pane windows at the McDermott residence with double-pane vinyl or equivalent high efficiency window system.
- Continue to evaluate Park facility needs and when appropriate move operations to more energy efficient structures and remove unnecessary structures.

6 Utilize alternative energy sources

- Install photovoltaic systems at park buildings, parking lots, open areas, etc.

- Install stand alone photovoltaic solar panel system at the new Oak Bottom Fire Station.
- Conduct feasibility studies to determine a sufficient energy return on investment for other park facilities.

7 Measure energy use throughout the park

- Incorporate energy efficiency criteria into new contracts for park and concessioner construction.
  - Conduct an energy audit for all park buildings.
  - Develop partnerships with Pacific Gas and Electric (PG&E), California State University, and other agencies to perform studies in the park on energy efficiency.
  - Pursue internships within university partnership to explore energy efficiency projects in the park.
  - Develop and perform an energy audit for all structures in the park.

Transportation Management

Emission Reduction Goal: Reduce 2007 transportation GHG emissions from park operations by 20 percent by 2016.

Reducing vehicle miles traveled, improving vehicle efficiency, and using alternative fuels can significantly reduce Whiskeytown National Recreation Area's emissions. As the inventory results indicate, GHG emissions from transportation comprise 48 percent of park operations emissions and 78 percent of the park's overall emissions (including visitors, and concessioners). Accordingly, in addition to the park operations emissions reduction goal, Whiskeytown National Recreation Area set a goal to reduce overall transportation emissions by 15 percent below 2007 levels by 2010. Presented below are the actions that are currently under way and which comprise the park's progress to date, as well as those actions that the park will pursue.

Progress to Date

Behavioral Changes

- Encouraging employees to carpool to worksites and programs.

Vehicle and Equipment Fuel Consumption

- Have been encouraging employees to plan and prepare for their entire day and to have all the required tools, equipment, uniforms, and food and water to reduce the number of trips back to headquarters or other areas.
- The park uses a preventative maintenance schedule which exceeds the General Services Administration (GSA) standards.

Vehicle and Equipment Replacement

- Implemented an inventory management plan to eliminate fleet vehicles that are unnecessary for the park.

Vehicle Maintenance

- Implemented proactive preventative maintenance schedules to keep vehicles in top mechanical condition: rotate tires every 5000 miles, check tire pressure, don't top off tank (which can cause the gas station's vapor recovery system to operate improperly), and get regular tune-ups.

Transportation Infrastructure

- Reused chip-seal materials from previous pavement preservation projects to improve road shoulders and pullouts.
- Used native plants in infrastructure projects in the Oak Bottom beautification project, Highway 299 East Boundary Pullout, and the James K. Carr trailhead parking area.

Transportation Management – Planned Actions

1 Transportation-related behavioral changes

- Encourage staff carpooling.
  - Develop carpooling information and establish a carpool program for permanent and seasonal employees.
- Reduce vehicle idling.
  - Continue distribution of "Save our air-No idling" stickers and providing written and verbal guidance on the no idling policy at all-employee meetings.

2 Reduce visitor vehicle fuel consumption

- Promote accessible front-country trails.
  - Continue to encourage visitors to explore the front- and back-country areas of the park and spend time experiencing the beauty of the park outside of their vehicles.
- Partner with surrounding state and local communities on alternative transportation opportunities for visitors.
  - Pursue partnerships to establish public transportation routes with stops within the park at areas that receive high levels of visitor usage.
  - Encourage visitors to utilize public transportation to the park and bring alternative modes of transportation such as bicycles that can be carried on the front of busses in racks.

3 Reduce NPS vehicle and equipment fuel consumption

- Promote efficient driving.
  - Encourage park employees to increase efficiencies of travel within the park. This should include proper driving techniques and developing routes to minimize fuel consumption.
- Identify areas to reduce or eliminate mowing.

- Pursue native plants for landscaping in areas of the park that currently have lawns.

- Convert from diesel to biodiesel.
  - Research and develop a fuel conversion plan and fuel delivery schedule to provide the optimum diesel/bio-diesel mix for summer and winter seasons.

4 Replace NPS vehicles and equipment

- Increase fleet fuel efficiency through replacement.
  - Replace existing vehicles with more fuel efficient models and assess the performance requirements of new vehicles with the capabilities required for the job it will be primarily be used for.

- Right size the vehicle fleet by the number and type.
  - Use a Vehicle Allocation Methodology (VAM) to achieve a fleet that is the right size and type.

- Establish a systematic approach to vehicle replacement.
  - Evaluate the replacement of all administrative vehicles with hybrids or electric vehicles.

- Use alternative fuel vehicles or hybrids.
  - Evaluate AFV options: hybrid electric vehicles (HEVs), electric vehicles, compressed natural gas (CNG), flex fuel (E85 capable vehicles) and biodiesel.

5 Implement appropriate vehicle maintenance procedures

- Develop and maintain a maintenance schedule.
  - Continue using monthly vehicle inspection reports, assign vehicle “caretakers” that are trained on vehicle inspection procedures and meet the goal of 100% compliance.

6 Improve transportation infrastructure

- Improve parking lot designs to include native vegetation.
  - Remove and replace exotic vegetation in parking lot areas with native plants that require less maintenance and watering.
  - Evaluate the feasibility of creating bioretention features for storm water management.

- Use reclaimed materials for new roads and paving.
  - Ensure all road materials disturbed by park staff in road maintenance and new road construction projects are recycled or reused.
  - Ensure there is contract language that states that all road materials disturbed in road maintenance and new road construction projects are recycled or reused.

Waste Management

Emission Reduction Goal: Reduce 2007 waste GHG emissions from park operations by 10 percent by 2016.

The connection between waste and GHG emissions may not be obvious. However, waste management—in the form of source and solid waste reduction—can dramatically reduce GHG emissions. Landfills are the largest human-generated source of CH_4 emissions in the United States. Reducing the amount of waste sent to landfills reduces CH_4 emissions caused by decomposition as well as the GHGs emitted from the transportation of waste. The less the park and its visitors consume in terms of products and packaging, the less energy is used and fewer GHGs are emitted.

Whiskeytown National Recreation Area's park operation activities emitted 98 $MTCO_2E$ from waste management in 2007. The amount of waste sent to landfills and resulting emissions will be decreased by diverting or reducing the park's waste stream through increased recycling efforts and waste management. Presented below are the actions that are currently under way and which comprise the park's progress to date as well as those actions that the park will pursue.

Progress to Date

- Behavioral Changes
  - Improved construction recycling procedures.
- Waste Prevention
  - Improved the uniformity of recycling receptacles with visible and consistent messaging for visitors.
  - Installed jug filers on new restrooms for visitors to fill jugs and reusable water bottles.
- Waste Diversion (Recycling and Composting)
  - Established a universal waste disposal system.
  - Established monitoring diversion rate to seek improvements in waste operations.
- Green Procurement
  - Worked with concessioners and procurement personal to find local vendors and food producers when making purchasing decisions.
  - Purchased, through GSA, recycled content tissues, legal, and other paper products.
  - Installed recycled carpet in the Visitor Center and the Autore House.
- Reduce Wastewater
  - Developed appropriate sites for planting and conversions to native landscapes.
  - Set appropriate watering times/durations.

- Other Waste Management Actions
  - Set a recycling program to recycle concrete, picnic tables, asphalt grindings, and metal and steel.
  - Developed action plan based on ISWAP to reduce by 50% the landfill solid waste diversion.
  - Identified clean up areas (bone yards) with recyclable materials.

Waste Management – Planned Actions

1 Decrease waste through behavior change

- Train park staff and contractors on waste reduction responsibilities.
  - Develop new procedures for solid waste management and recycling and determine which items can be recycled or reused in the park.
  - Incorporate appropriate verbiage into new contracts.

2 Establish new plans and policies that promote waste reduction.

- Start a comprehensive waste reduction and recycling outreach campaign aimed at park visitors.
  - Include recycling opportunities, messages, and a list of commonly recycled items in the park newspaper and other park publications for visitors, as well as the park website.
  - Consolidate and centralize recycling and waste receptacles to make them more accessible and visible to visitors.
  - Standardize the look and signage on recycling and waste receptacles to increase compliance.
  - Incorporate recycling and waste reduction techniques in formal interpretive programs and community outreach.
- Choose hand dryers over paper towels.
  - Replace paper towel dispensers with new hand dryer technology.
- Reduce waste generated at meetings and employee functions.
  - Use environmentally sustainable products at employee functions and products that are reusable.
  - Send non-essential memos electronically.
- Encourage pack-In and pack-out.
  - Communicate “Leave No Trace” principles in park publications and programs.
- Communicate park waste policy or ISWAP to staff and concessioners.
  - Evaluate snack bar operations and products used to determine if there are any products that can be replaced with those that are sustainable.

- Reduce plastic water bottle use.
  - Replace existing bottled water for sale at the Visitor Center with inexpensive and sustainably produced reusable water bottles that can be filled at the park. Collaborate with concessioners to encourage their operations to do the same.
  - Replace water fountains at the end of their usable lifespan with water fountains that can be easily fill 32 oz reusable water bottles and improve visitor health and sanitation.
  - Install a place card or relocate the jug filler on the Visitor Center to make it more visible to visitors.

3 Implement recycling and composting practices

- Partner with vendors to reuse and recycle park waste.
  - Work with concessioners to establish more ways to recycle in the park.
- Continually increase the amount of waste material at the park that can be recycled.
  - Research and explore opportunities for co-mingled recycling services and locations with the City of Redding or other waste management contractors.
- Start a comprehensive recycling outreach campaign aimed at park visitors.
  - Collaborate with local schools and community groups to develop and implement recycling and waste reduction programs with measureable results and incentives for participation.
- Recycle old asphalt pavement for use in ongoing road projects.
  - Continue to reuse pavement grindings.
- Send used florescent bulbs to reclaim/recycle service center.
  - All lamps are packaged and recycled when their lifespan has been met.
- Measure the baseline solid waste generation at the park.
  - Track and record all solid waste disposal in order to track compliance with park and Departmental waste diversion goals.
- Assign at least one full time person to act as a park recycling leader/manager.
  - Assign and train the new grounds employee as the recycling coordinator and have the individual work with the interpretation staff.
- Establish a propane cylinder recycling program.
  - Contact the park's concessioner and evaluate the feasibility of installing a collection and reclamation system.
- Improve waste collection and transportation efficiency.
  - Collaborate collection receptacles and increase the efficiency of collection routes.

- Consolidate trash bags and combine the trash from different receptacles to use fewer bags.
- Explore the use of biodegradable trash bags.

4 Reduce waste through green procurement

- Purchase locally produced materials whenever possible.
  - Seek local vendors first within purchasing authority.
- Use post-consumer recycled paper in all park publications.
  - Change current procurement procedures to purchase 100% post-consumer (PC) content, processed chlorine-free (PCF) copy paper. Consider alternative fibers (i.e., non-wood) and water based ink. Target paper reductions.
  - Ensure that vendors that produce park publications also use sustainable practices.
- Use low/no-VOC insulation, carpets, paints, and adhesives.
  - Establish purchasing requirements for low/no-VOC products.
- Purchase products with recycled content whenever practical.

5 Reduce and reuse wastewater

- Conserve water used in grounds maintenance.
  - Replace non-native landscaping with native plants that require less water and maintenance.
- Reduce storm and groundwater runoff.
  - Inspect and identify infiltration sites and develop short and long range goals for mitigation.
  - Evaluate the feasibility of using bioretention features.
- Monitor, manage and reduce point source wastewater.
  - Create plan to manage wastewater discharge in the park.

6 Other waste-related actions

- Implement and enforce a construction waste management plan and job site recycling policy.
  - Identify appropriate recycling construction material waste.
- Purchase equipment to reduce volume of waste and recyclables.
  - Develop recycling center.
  - Consolidate containers and processes.
- Improve waste collection and transportation efficiency.

- Consolidate and reduce frequency of solid waste routes.
- Look at ways to reduce handling and disposal of recycled plastic bottles, cans, and glass.
- Install recycling and consolidate solid waste containers.

STRATEGY 2: INCREASE CLIMATE CHANGE EDUCATION AND OUTREACH

Climate change is a complex and easily misunderstood issue. Whiskeytown National Recreation Area can play an integral role in communicating about climate change to a vast audience. A better understanding of the challenges and benefits of reducing GHG emissions can motivate staff, visitors, and community members to incorporate climate-friendly actions into their own lives. Whiskeytown National Recreation Area recognizes that the greatest potential impact the park can have on mitigating climate change is through public education. Thus, the park sees public education as an end goal of any climate initiative. From increasing the efficiency of public transportation to developing a green purchasing program, the actions Whiskeytown National Recreation Area takes to address climate change serve as opportunities for increasing the public's awareness of climate change. Presented the actions that are currently under way and which comprise the park's progress to date, and those actions that the park will pursue.

Progress to Date

- Behavioral Changes
  - Local vendors are used for frequent procurement needs such as printing, uniform production, and office supplies.
- Climate Friendly Parks Team
  - Utilized Climate Change brochures and information and disseminated them at events and educational programs.
- Climate Change Education
  - Presented the "Green and Getting Greener" evening program on the sustainability efforts of the National Park Service and our local communities.

Park Staff

Incorporate climate change into park staff training, events, and performance plans

Developing a climate change education program for park staff is vital to increasing awareness about climate change among park visitors and fostering a sense of collective responsibility among staff to help reduce park emissions. By incorporating climate change education into staff development programs, Whiskeytown National Recreation Area will enable its staff to demonstrate their commitment through leading by example, and providing visitors with the tools and resources they need to reduce GHG emissions in the park and in their own communities. Potential actions include:

- Create a Park Climate Change Policy Memo specific to Whiskeytown National Recreation Area.
  - Develop and disseminate a Climate Change memo at the Superintendent's level that will communicate the park's position on climate change, plans and goals to address climate change, and recognition of the challenges the National Park Service faces in meeting its mission as climate impacts emerge and affect park resources.
- Hold internal Climate Friendly Park discussions and workshops.
  - Develop a system through which climate change solutions and suggestions can be submitted by park employees, volunteers, and visitors, reviewed, and implemented in park polices.

- Keep staff members that are part of the Green Team/Environmental Management Team informed about climate-related issues.
    - Re-establish and organize the Green Team for the park, and ensure that regularly scheduled meetings are held to review the park's planned actions for addressing climate change are being implemented and adhered to.
- Include the science and impacts of climate change into park education tools.
    - Research and develop curriculum driven programs that can be presented in the park and local schools.
    - Train seasonal staff and educate them on climate change issues both at Whiskeytown NRA and globally.
- Incorporate sessions on climate change into new staff training.
    - Include general climate change information into seasonal staff and new-hire training so that they are aware of the park's position on climate change.
    - Discuss specific behaviors or duties involved in the staff person's job and how they can be performed in an efficient manner in order to minimize carbon emissions.
- Create visual reminders for park employees with climate change information and tips on how employees can help reduce emissions at work and at home.
    - Utilize existing resources and develop a global and park-specific, climate-friendly behaviors messaging program which will provide employees and volunteers with helpful suggestions and simple changes they can make to reduce their carbon footprint while on the job, and are also helpful in reducing carbon emissions at home.
- Create personal incentives for staff to reduce GHG emissions in park and at home.
    - Recognize employees that strive to reduce greenhouse gas emissions through a story on the park website or an article in the park newspaper. Volunteers, community members, and park visitors can also receive recognition for their contribution through photographic display and accompanying photograph at the Visitor Center.
    - Create a yearly award to recognize employees who make a difference in implementing climate friendly park goals or have new ideas to lessen the environmental impact of park operations.
- Develop and leverage relationships with other agencies and entities to create opportunities for workshops on climate-friendly activities.
    - Collaborate and coordinate efforts with other agencies such as the U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service, California Department of Fish and Game, Bureau of Reclamation, and California State Parks to build relationships that will lead to effective outreach, adaptation, and mitigation strategies.
- Advise staff on monthly webinars hosted by the climate change steering committee.
    - Assign one park staff member to alert all employees to upcoming webinars and climate change trainings or events in the area.

Visitor Outreach

Understanding climate change and its consequences is essential to initiating individual behavioral change. Whiskeytown National Recreation Area realizes that it has a unique opportunity to educate the public in a setting free from many of the distractions of daily life. By using existing materials, developing park-specific materials, highlighting what the park is currently doing about climate change, and encouraging visitors to reduce emissions, Whiskeytown National Recreation Area can play an important role in educating the public about climate change.

Whiskeytown National Recreation Area staff recognize the many different audiences that visit the park, including recreational and non-recreational park visitors, "virtual visitors" who visit the park online, school-aged visitors, local and out of town visitors, local tribes, and external audiences. Reaching these various audiences with climate change information and engaging them in the park's efforts requires appropriately focused messaging. The park has developed a number of strategies to reach these various audiences effectively. These strategies include:

- Educate visitors about climate change.
    - Include climate change topics in the park's Junior Ranger program and that expand the horizons of preservation and stewardship from not only the park, but to our schools, communities, and the earth. In recognition that climate change is not subject to optical boundaries, a holistic and global view will be communicated.
    - Work with the Whiskeytown Environmental School to incorporate climate change topics into their curriculum.
    - Research and develop climate change materials that can be communicated to visitors via the new computer system and monitor at the park's Visitor Center. Utilize existing materials and programs that communicate consistent messages in the same manner.
    - Discuss the carbon footprint of attending park programs, and behaviors which can be implemented by the NPS and visitors.
- Create and distribute previously produced information on climate change and its effects on national parks in general and on your park in particular.
    - Utilize existing climate change information from the Klamath Inventory and Monitoring Program to provide specific examples of climate change issues in the park and actions the park is taking to address and or mitigate those effects.
- Integrate climate change themes into interpretive programs.
    - Research, develop, and distribute a climate change "Traveling Electric Vehicle" to schools with educational materials and items that are focused on actions and personal choices that students can make to reduce their own carbon footprint.
- Incorporate/create climate change information into existing park brochures.
    - Develop and incorporate a climate change message for inclusion in the 2011 edition of the park's brochures.
    - Develop interpretive programs that discuss climate change issues in the park, using resources in the park as examples, and offer solutions to visitors to make their own lives more climate friendly.
    - Develop relationships with other resource management agencies and collaborate with their staff to present climate change programs and share resources.
- Incorporate climate-friendly information into interpreter programs and talks.

- Incorporate climate change into interpretive programs, both formal and informal, whenever possible and appropriate to do so.
- Promote sustainable practices during programs such as carpooling, composting food waste, using alternative modes of transportation to and from the park, and encouraging visitors to enjoy the park outside of a vehicle.

- Educate visitors about their recycling options at the park and at home.
  - Provide clear and consistent signage throughout the park to inform visitors of their opportunities to recycle.
  - Develop signage to notify visitors of the availability of co-mingled recycling locations in the park after they are planned and installed.

- Communicate with local communities, park visitors, and local media about actions they can take to reduce GHG emissions.
  - Encourage visitors, employees, volunteers, and the greatest community to reduce their carbon footprint by using tools like "Do Your Part!"

- Develop and distribute Do Your Part! materials.
  - Incorporate "o Your Part!" messaging on the park website, as well as links to other climate change websites and educational resources.

Local Community Outreach

The gateway communities, agencies, vendors, and volunteers surrounding Whiskeytown National Recreation Area can play a significant role in supporting the park's climate change mitigation goals. As such, when appropriate, park staff will assist local communities with incorporating climate change messages into community events and find partners to promote climate change education at those events, and engage with surrounding agencies to coordinate effective outreach and education efforts. Potential actions include:

- Consider the local economy in procurement and other areas.
  - Promote and procure sustainable products in the workplace and coordinate procurement needs with co-workers to reduce the number of trips for supplies.
  - Utilize local vendors when appropriate and economical to reduce unnecessary carbon emissions produced by long-distance shipping.
  - Request that sustainable materials be used in the production of items used in the park whenever possible.

- Plan a community event for Earth Day.
  - Develop an Earth Day activity in the park that engages the local community and provides volunteers with meaningful work and helps them develop a sense of place in the park. Ensure that the activity includes messaging on the actions the park is currently taking to mitigate climate change impacts and reduce the carbon footprint of park operations.

- Set up a Do Your Part! table at local events.
  - Incorporate climate change materials within which the park has representation each year.

STRATEGY 3: EVALUATE PROGRESS AND IDENTIFY AREAS FOR IMPROVEMENT

By taking the actions established in strategies 1 and 2 above, Whiskeytown National Recreation Area plans to reduce its emissions to the specified goals. Achieving these goals will require an ongoing commitment by the park, which may include subsequent emission inventories, additional mitigation actions, and revaluation of goals. As part of this strategy, Whiskeytown National Recreation Area will:

- Monitor progress with respect to reducing emissions. This will include subsequent emission inventories to evaluate progress toward goals stated in this action plan.
- Develop additional emission mitigation actions beyond those listed in this plan.
- Periodically review and update this plan.
- The park will track climate-friendly actions through the environmental management system.

CONCLUSION

Whiskeytown National Recreation Area has a unique opportunity to serve as a model for over 800,000 recreational visitors annually.[5] This report summarizes the operational actions the park commits to undertake to address climate change. Specifically, the park realizes its ability to educate the public and serve as a valuable model for citizens. By seriously addressing GHG emissions within the park and sharing its successes with visitors, Whiskeytown National Recreation Area will help mitigate climate change far beyond the park's boundaries.

The National Park Service faces an uncertain future due to the possible effects of climate change. However, by seriously addressing climate change impacts and reducing emissions, Whiskeytown National Recreation Area will reduce its contribution to the problem while setting an example for its visitors. The strategies presented in this Action Plan present an aggressive first step toward moving Whiskeytown National Recreation Area to the forefront of Climate Friendly Parks.

[5] Whiskeytown National Recreation Area: park Statistics. Available online at: http://www.nature.nps.gov/stats/viewReport.cfm

APPENDIX A: LIST OF PREPARERS

NAME	POSITION
Sean Denniston	Chief of Interpretation and Resources Management
Jeremiah Hockett	Park Ranger - Interpretation
Dave Larabee	Chief of Maintenance
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