UNITED STATES ARMY MEDICAL RESEARCH AND MATERIEL COMMAND

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THE SSE ELUCIDATOR

"Elucidate: to give clarity through explanation and analysis."

BALD EAGLE REMOVED FROM ENDANGERED SPECIES LIST

"They are shrieking for our freedom," exclaimed an American Soldier 230 years ago, seeing bald eagles soar over the Battle of Brandywine as Gen. George Washington's troops engaged the British in southeastern Pennsylvania during the Revolutionary War.

The 1777 battle began early in the morning. Legend has it that the noise of fighting in a valley stirred eagles who had been nesting in the heights, causing them to circle over the fight. Inspired by the bald eagles' cry overhead, the Continental Army Soldiers took the bird as their symbol of freedom and strength.

When America formally adopted the bald eagle as the national symbol in 1782, as many as 100,000 nested in what would become the lower 48 states. By 1963, though, only 417 nesting pairs remained and the species was in danger of extinction. Loss of habitat, shooting for feathers, and poisoning by the pesticide DDT all contributed to its near extinction.

Nine eagle generations later, the birds have soared to recovery.

The bald eagle, one of the first species to receive protections under the precursor to the Endangered Species Act (ESA) in 1967, has been removed from the Federal List of Endangered and Threatened Wildlife and Plants. The final delisting rule was published in the Federal Register on July 9, 2007, and became effective 30 days later, on August 8, 2007. Secretary of the Interior Dirk Kemthorne announced the delisting of the bald eagle at a ceremony on Thursday, June 28, 2007, on the steps of the Jefferson Memorial in Washington, D.C. After decades of conservation efforts, the bald eagle has exhibited a dramatic recovery, from a low of barely 400 nesting pairs in the lower 48 states in 1963, to nearly 10,000 nesting pairs today. Fortunately, the bald eagle has never needed the protection of the ESA in Alaska, where the population is estimated at between 50,000 and 70,000 birds. The recovery and delisting of the nation's symbol marks a major achievement in conservation.

The bald eagle first gained federal protection in 1940, under what later became the Bald and Golden Eagle Protection Act. The eagle was later given additional protection under the Migratory Bird Treaty Act. Soon after passage of the Eagle Act, populations stabilized or increased in most areas of the country. However, the eagle population fell into steep decline in later decades, due primarily to widespread use of the pesticide DDT after World War II. DDT accumulated in eagles and caused them to lay eggs with weakened shells, decimating the eagle population across the nation.

Concerns about the bald eagle resulted in its pro-

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BALD EAGLE REMOVED FROM ENDANGERED SPECIES LIST

tection in 1967 under the predecessor to the current ESA. The eagle was one of the original species protected by the ESA when it was enacted in 1973. The legal protections given the species by these statutes, along with a crucial decision by the EPA to ban the general use of DDT in 1972, provided the springboard for the U.S. Fish and Wildlife Service (USFWS) and its partners to accelerate recovery through captive breeding programs, reintroductions, law enforcement efforts, protection of habitat around nest sites, and land purchase and preservation activities.

Army environmental stewardship efforts played an important role in bringing the bald eagle back from the brink of extinction, according to Michael Dette, chief of natural resources at the U.S. Army Environmental Command. Fifty-eight Army installations report bald eagles living on or near its properties. In fact, the bald eagle has been the most common threatened or endangered species reported on Army installations.

Army installations apply a number of different natural resource management practices to protect the bald eagle and its habitat. Typically, garrison staffs work to maintain and improve forested habitat for both breeding and non-breeding eagles, minimize human disturbance in nesting and wintering areas, maintain and improve the availability and quality of food supplies, and minimize direct hazards to bald eagles. Installations identify special management areas around eagle nests and evaluate proposed activities within these areas for impacts on the bald eagle population. For example, on some installations, forest management, harvest, and thinning activities are limited to mid-July through mid-December to prevent disruptions to nesting eagles. Army forest management practices, such as timber rotation and the retention of snags, also improve eagle nesting habitat.

In addition, Army wildlife specialists pay special attention to the potential for electrocution or collisions with power or communication lines, installing deflectors, avoidance devices, insulators or perch guards where there is a risk to eagles.

The eagle responded dramatically to all of these actions. Removing the bald eagle, the symbol of our country, from the list of threatened and endangered species is a great environmental triumph. It provides a tangible example of how far our nation and its military have progressed as environmental stewards," said Col. Michael P. O'Keefe, commander of the USAEC.

Bald eagles will continue to be protected by the Bald and Eagle Protection Act and the Migratory Bird Treaty Act. Both Federal laws prohibit the "taking" of eagles -- defined as killing, selling, or otherwise harming eagles, their nests, or eggs. While delisted, the USFWS will continue to work with state wildlife agencies to monitor eagles for at least 5 years, as required by the ESA. If at any time it appears that the bald eagle again needs the Act's protection, the USFWS can propose to relist the species. The USFWS developed a draft monitoring plan that was published in the Federal Register on July 9, 2007 with the comment period ending on October 9, 2007. The USFWS also held a 90-day public comment period on a proposal to create a permit program to authorize limited "take," or accidental killing or injury, of bald and golden eagles where the take is associated with, and not the purpose of, otherwise lawful activities. For more information visit http://www.fws.gov/migratorybirds/baldeagle.htm.

Bald Eagle Fast Facts

- Female eagles weight as much as 14lbs and have a wing span of 8ft
- Male eagles are smaller, weighting as much as 10lbs and with a wing span of 6ft
- Bald eagles are mostly dark brown until 4 or 5 years old
- Bald eagles live near rivers, lakes, and marshes where they can find fish, their staple food
- Eagles mate for life, choosing the tops of large trees to build nests, which they typically use and enlarge each year
- Nests may reach 10ft across and weigh a half ton
- Breeding eagles lay 1 to 3 eggs once a year
- Approximately 70 percent survive their first year of life

NEW ENERGY STAR WEBSITE

A new Energy Star website for federal agencies is now available at http://www.energystar.gov/fedofficeenergy. The site provides information for the federal audience on federal requirements for energy efficient products, purchasing Energy Star qualified products, and implementing power management. Federal agencies are required to purchase energy-efficient products and activate power management settings on their computers by the following two federal initiatives:

- The Energy Policy Act of 2005 requires federal agencies to buy either Energy Star products or products designated as energy efficient by the Federal Energy Management Program (FEMP). In June 2007, DOE published a Notice of Proposed Rule to provide guidance to federal agencies implementing EPAct, Section 104: "Federal Procurement of Energy Efficient Products."
- Executive Order 13423 requires federal agencies to activate Energy Star "sleep" features on computers and monitors and mandates that federal agencies buy Electronic Product Environmental Assessment Tool (EPEAT) registered products. In March 2007, the Council on Environmental Quality issued instructions defining agency requirements for implementing Executive Order 13423 and broad strategies for achieving them.

To comply, federal agencies should purchase EPEAT registered computers and monitors, purchase Energy Star qualified office equipment, activate power management features on computers and monitors, and purchase FEMP-designated energy-efficient products. The Energy Star website is designed to assist you in fulfilling all of these requirements.

The website offers guidance for Energy Star's new specifications for computers that went into effect on July 20, 2007. The new specification applies to a variety of products including desktop and notebook (or laptop) computers, game consoles, integrated computer systems, desktop-derived servers, and workstations. Only the market's most energy-efficient computing products will qualify for the Energy Star label.

Since computers are in use many more hours per day than in the past, Energy Star has strengthened its requirements to better save energy among computers and related equipment under today's usage patterns. Qualified products must now meet energy use guidelines in three distinct operating modes: standby, sleep mode, and while computers are being used. This approach ensures energy savings when a computer is active and performing a range of tasks, as well as when standing by. Newly qualified computers must also include a more efficient internal power supply.

By requiring efficiency savings across operating modes, the new computer specification is expected to save consumers and businesses more than $1.8 billion in energy costs over the next 5 years and prevent greenhouse gas emissions equal to the annual emissions of 2.7 million vehicles.

Initially, consumers can expect to see fewer computer models qualifying for Energy Star, as manufacturers change over their product lines to meet the more challenging requirements. This means it is more important than ever to look for the Energy Star label when purchasing a new computer. Manufacturers are required to use the label on products and packaging, in product literature and on websites, to clearly indicate which products qualify.

In order to help federal agencies purchase Energy Star qualified computers, the Energy Star website offers links to Energy Star efficiency specifications, qualified product lists, and savings estimates. The site provides links to the EPEAT system that helps purchasers evaluate, compare and select computers and monitors based on their environmental attributes. In addition to computers, the website provides information on purchasing other Energy Star office products such as copiers, desk lamps and bulbs, fax machines, mailing machines, printers, scanners, water coolers, and vending machines.

Finally, the website also provides links to the DOE's FEMP, which provides purchasing specifications for energy-efficient products not covered by Energy Star specifications.

Happy Thanksgiving!

TURKEY ROASTING SAFETY

Throughout the holidays, many people enjoy a traditional turkey dinner. A few guidelines and steps to follow when preparing a turkey dinner will help ensure that everyone is able to enjoy the meal and will greatly reduce the chances of a foodborne illness becoming part of your holiday memories.

Plan Ahead – The first step to safety is planning ahead. It's important to ask yourself ahead of time what size turkey you will need and do you have enough room to keep the turkey frozen if purchased in advance. If you choose to buy a frozen bird you may do so at any time. However, if you buy a fresh turkey, be sure you purchase it only 1-2 days before cooking. Keep it stored in the refrigerator until you're ready to cook it and place it on a tray or in a pan to catch any juices that may leak. Do not buy a prestuffed fresh turkey. If not handled properly, any harmful bacteria that may be in the stuffing can multiply very quickly. USDA recommends only buying frozen pre-stuffed turkeys that display the USDA or state mark of inspection on the packaging. These turkeys are safe because they have been processed under controlled conditions. Do not thaw before cooking, instead cook the pre-stuffed turkey from the frozen state. Follow package directions for proper handling and cooking.

Thawing the Turkey – There are three ways to thaw your turkey safely – in the refrigerator, in cold water, or in the microwave oven. If you plan to thaw your turkey in the refrigerator, make sure its temperature is set at 40°F or below and allow approximately 24 hours for every 4 to 5 pounds. Keep the turkey in its original wrapper and place it on a tray or in a pan to catch any juices that may leak. A thawed turkey can remain in the refrigerator for 1 to 2 days. If necessary, a turkey that has been properly thawed in the refrigerator may be refrozen.

If you forget to thaw the turkey or don't have room in the refrigerator for thawing, do not worry. You can also defrost the turkey by submerging it in cold water. Allow about 30 minutes defrosting time per pound of turkey. Wrap your turkey securely, making sure the water is not able to leak through the wrapping. Submerge your wrapped turkey in cold tap water, never hot or warm water, and change the water every 30 minutes. Cook the turkey immediately after it is thawed. Do not refreeze.

If you choice to use a microwave oven to thaw your turkey, check your owner's manual ahead of time for the size turkey that will fit in your microwave oven, the minutes per pound, and power level to use for thawing. Remove all outside wrapping and place the turkey on a microwave-safe dish to catch any juices that may leak. Microwave defrosting is irregular, creating hot spots, which may encourage bacterial growth. Therefore, cook your turkey immediately, do not refreeze or refrigerate after thawing in the microwave oven.

Stuffing the Turkey – For optimum safety, stuffing a turkey is not recommended. For more even cooking, it is recommended you cook your stuffing outside the bird in a casserole. If you choose to stuff your turkey, the ingredients can be prepared ahead of time; however, keep wet and dry ingredients separate. Chill all of the wet ingredients (butter/ margarine, cooked celery and onions, broth, etc.). Mix wet and dry ingredients just before filling the turkey cavities. Never stuff your turkey in advance in an effort to save time. Lightly stuff the washed cavity of the bird just before placing it in the oven. Whether you decide to stuff your bird or not, remember to always remove the giblet bag from inside the turkey. Because stuffing contains potentially hazardous ingredients, such as broth, eggs and meat, etc, it could cause illness if not properly cooked. Therefore, use a food thermometer to make sure the center of the stuffing reaches a safe minimum internal temperature of 165°F. Do not leave stuffing and other leftovers out for more than 2 hours. Refrigerate leftovers immediately following the meal.

Roasting the Turkey – Wash hands, sinks, counters, utensils and platters thoroughly with soap and hot

TURKEY ROASTING SAFETY (CONT.)

Happy Thanksgiving!

water before and after working with raw turkey. Make sure you have a roasting pan large enough for the turkey. Buy and use a meat thermometer. Dark meat takes longer to cook so always insert the thermometer in the thickest innermost part of the turkey thigh. A whole turkey and turkey parts are safe when cooked to a minimum internal temperature of 165 °F as measured with a food thermometer. Check the internal temperature in the innermost part of the thigh and wing and the thickest part of the breast. The turkey is safe to eat at this point but some consumers, for reasons of personal preference, may choose to cook turkey to higher temperatures. Even if your turkey has a "pop-up" temperature indicator, it is still recommended that you also check the internal temperature of the turkey using food thermometer. Use the timetables below to determine how long to cook your turkey. However, these times are approximate, based on an oven temperature of 325°F.

Unstuffed	
4 to 8 pounds (breast)	1½ to 3¼ hours
8 to 12 pounds	2¾ to 3 hours
12 to 14 pounds	3 to 3¾ hours
14 to 18 pounds	3¾ to 4¼ hours
18 to 20 pounds	4¼ to 4½ hours
20 to 24 pounds	4½ to 5 hours
Stuffed	
4 to 6 pounds (breast)	Not usually applicable
6 to 8 pounds (breast)	2½ to 3½ hours
8 to 12 pounds	3 to 3½ hours
12 to 14 pounds	3½ to 4 hours
14 to 18 pounds	4 to 4¼ hours
18 to 20 pounds	4¼ to 4¾ hours
20 to 24 pounds	4¾ to 5¼ hours

If you choose to cook your turkey from a frozen state, the cooking time will take at least 50 percent longer than recommended for a fully thawed turkey.

If the turkey is done ahead of schedule, it is safe to hold it in the oven at a reduced temperature, 200°F. Leave the thermometer in the turkey and make sure that the temperature of the turkey does not drop below 140°F during holding time. Keep the turkey covered so it does not dry out.

Optional Cooking Hints –

- Tuck wing tips under the shoulders of the bird for more even cooking. This is referred to as "akimbo."
- Add ½ cup of water to the bottom of the pan.
- If your roasting pan does not have a lid, you may place a tent of heavy-duty aluminum foil over the turkey for the first 1 to 1 ½ hours. This allows for maximum heat circulation, keeps the turkey moist, and reduces oven splatter.
- To prevent overbrowning, foil may also be placed over the turkey after it reaches the desired color.
- If using an oven-proof food thermometer, place it in the turkey at the start of the cooking cycle, allowing you to check the internal temperature of the turkey while it is cooking.
- If using an oven cooking bag, follow the manufacturer's guidelines on the package.

Storing Leftovers – After the meal, cover and store leftovers in the refrigerator as soon as possible. The safest margin is 2 hours from the time you take the bird out of the oven. Large quantities should be divided into smaller portions and stored in several shallow containers. Food in small amounts will chill faster keeping it safer and fresher. Leftover turkey will keep in the refrigerator for 3 to 4 days. If a large amount of turkey is left, consider freezing some for later use. Do not wait until the turkey has been in the refrigerator for 4 days to freeze it. Freezing will not improve the quality of the turkey. If the turkey is frozen while it is fresh the quality will be better upon defrosting. If freezing leftovers, use within 2 to 6 months for best quality. Leftover cooked turkey can be eaten either cold or reheated.

CRYOGENIC SAFETY

A cryogenic material is any substance that must be cooled to a temperature of 130° C or lower to change from a gas to a liquid. The most commonly used cryogenic is liquid nitrogen, but also includes helium, hydrogen, argon, oxygen, and methane. Cryogenics is being applied to a wide variety of research areas, a few of which are: microbiology, medicine, surgery, food processing and refrigeration, rocket propulsion fuels, spacecraft life support systems, space simulation, electronics, data processing, and metalworking. Cryogenics have several distinguishing characteristics:

- They are extremely cold (-120 to 270° C)
- Their primary cooling mechanism is vaporization (latent heat)
- They have an extremely high expansion ratio (averaging 800:1) when their physical state changes from liquid to vapor/gas

Because of these special characteristics, cryogenic materials must be handled with care. The hazards associated with the use of cryogenic liquids can be categorized as follows:

- *Cold Contact Burns* - All cryogenics can cause cold burns or frostbite when in contact with human skin.
- *Asphyxiation* - Degrees of asphyxia will occur when the oxygen content of the working environment is less than 20.9% by volume. Effects from oxygen deficiency become noticeable at levels below ~18% and sudden death may occur at ~6% oxygen content by volume. This decrease in oxygen content can be caused by a failure/leak of the cryogenic vessel or transfer line and subsequent vaporization of the cryogen.
- *Pressure Explosion* - Heat flux into the cryogen from the environment will vaporize the liquid and potentially cause pressure buildup in cryogenic containment vessels and transfer lines.
- *Flammability* - Cryogenic vapors from liquid oxygen or hydrogen may cause a fire or explosion if ignited. Many organic materials can react explosively in the presence of an open flame or ignition source. Clothing splashed with liquid oxygen can remain highly flammable for hours. Materials that are normally noncombustible (e.g., carbon steel) may ignite if coated with an oxygen-rich condensate. Liquefied inert gases, such as liquid nitrogen or helium, are capable of condensing atmospheric oxygen and causing oxygen entrapment or enrichment in unsuspected areas. Extremely cold metal surfaces are also capable of entrapping atmospheric oxygen.

Cryogenic fluids should be stored in properly insulated containers designed to minimize the loss of product due to boil-off. A Dewar flask is the most common container for cryogenic fluids. It is a double-walled, evacuated container made of metal or glass, with a vacuum between the walls. Larger quantities of cryogenic fluid require double-walled metal containers of evacuated construction. Exposed glass should be taped to minimize the flying glass hazard if the container should break or implode. All storage equipment and systems should be kept extremely clean. In addition, cryogenic equipment should be inspected and removed from service when it does not meet manufacturer's operating specifications.

Personnel should be thoroughly instructed and trained in avoidance of the hazards associated with cryogenics. Any employee using cryogenics should have a thorough knowledge of procedures, operation of equipment, safety devices, properties of materials used, and use of personal protective equipment. To prevent *cold contact burns*, personnel should not overfill containers, avoid direct contact with cryogenic liquids, uninsulated cryogenic pipes or equipment, and stay out of the path of boil-off gases. Instead, liquids should be transferred from the metal Dewar vessels with special transfer tubes or pumps designed for that particular application, such as a phase separator. Personnel should wear suitable personal protective equipment and transfer or pour cryogens slowly to minimize boiling and splashing. Tongs should be used to place and re-

CRYOGENIC SAFETY (CONT.)

move items in cryogenic liquid. All dewars should be positioned so the pressure relief valves and rupture disks vent paths are directed away from personnel. Cryogen-containing dewars should be carried with both hands and as far away from the body as possible. *Asphyxiation* can be avoided by ensuring an oxygen alarm that is periodically tested and calibrated is present in the work area. Personnel should also use natural ventilation and chemical hoods to prevent an accumulation of flammable, toxic, or inert gas in the work area. To prevent *pressure explosions*, pressure relief devices should be utilized, sized for maximum possible back pressure, and inspected at regular intervals for leakage, frosting, and dirt accumulation. Finally, to avoid *fire or explosion*, there should be no smoking or open flames in any areas where liquid oxygen is stored or handled. All organic materials and flammable substances should be kept from contact with oxygen and cold metal surfaces. Equipment used in oxygen service must be constructed of materials that have high ignition temperatures and are non-reactive with oxygen. Extreme care should be taken when mixing gases and fluids to prevent the formation of flammable or explosive mixtures. Any clothing that has been splashed with liquid oxygen or exposed to high oxygen concentrations should be removed immediately, aired for at least an hour in a well-ventilated area, and kept away from any source of ignition.

UPCOMING COURSES AND SEMINARS

Title: USEPA Workshop: Improving Environmental Compliance and Environmental Management Systems at Federal Labs

Location: Various **Date:** Various

Description: This free, two-day workshop is designed to educate the federal laboratory community about federal facility lab requirements under various environmental statutes, regulations and Executive Orders, as well as environmental management systems and pollution prevention strategies. Pre-registration is required.

Web: For more information, to view locations or dates, or to register visit http://www.fedcenter.gov/_kd/go.cfm? Destination=page&pge_id=3256.

Title: 2008 National Environmental Partnership Summit: "Accelerating Environmental Performance: Pathways to Action"

Location: Baltimore, MD **Date:** 5/19/08 - 5/23/08

Description: This years Summit will be held at the Sheraton Baltimore City Center and will highlight examples of environmental leadership attained by businesses and government programs. Various case studies will be provided to show you how your business or program can do the same.

Web: For more information or to register visit http://www.environmentalsummit.org/.

Title: Transport of Biomedical Waste Online Refresher Course

Location: Online **Date:** 30 days within receipt of materials

Description: You can now complete your refresher training online. This course is conducted using a CD-ROM & online quizzes, linked directly to the US Army Center for Health Promotion and Preventive Medicine website. The final examination is conducted via a proctor. Complete the online application to receive your training materials. Contact Ms. Teresa Lewis at teresa.lewis@apg.amedd.army.mil if you have any questions.

Web: To register visit https://usachppm.apgea.army.mil/TrainCon/datePage.aspx.

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Visit us at:

http://mrmc.amedd.army.mil

Reminder

For all accidents, no matter how minor,

specific forms documenting the incident must be submitted to your Safety Office.

Military: DA Form 285-AB-4

Civilian: DOL Claims Forms CA-1 or CA-2

All employees requiring medical attention must visit your local Occupation Health Clinic as soon as possible post mishap.