

Endangered Species Act



Technical Report Documentation Page

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16. Abstract To provide the best possible quality of life and protect our diverse environment construction activity must be planned, designed, and executed with the highest possible regard for the environment. For construction and development, federal agencies have been assigned a special leadership role to demonstrate best construction practices. The federal agencies and state departments of transportation are working hard to provide regional programs and training for ESA that relate specifically to highway construction and maintenance. These two CDs are designed to acquaint highway construction inspection personnel with the ESA and to help them direct their contractor to Build Smart. The CDs provide information useful to both the experienced and inexperienced inspector. Disk 1 covers an introduction to the ESA, compliance to the ESA, and a review of the independent duties an agency has under the ESA. Disk 2 covers constructing to the ESA, two case histories, and additional resources for inspectors. Presentations include graphics, videos, and photographs throughout the CDs, which summarize key items discussed in the text. Navigation through the CDs is accomplished by using the navigation bar on the left hand side of the screen and the continue button that appears inside discussion topics.					
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Endangered Species Act: Build Smart

Technology Deployment Program
Western Federal Lands Highway Division
Federal Highway Administration
610 East 5th St.
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SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
AREA				
in ²	square inches	645.2	square millimeters	mm ²
ft ²	square feet	0.093	square meters	m ²
yd ²	square yard	0.836	square meters	m ²
ac	acres	0.405	hectares	ha
mi ²	square miles	2.59	square kilometers	km ²
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft ³	cubic feet	0.028	cubic meters	m ³
yd ³	cubic yards	0.765	cubic meters	m ³
NOTE: volumes greater than 1000 L shall be shown in m ³				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
ILLUMINATION				
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m ²	cd/m ²
FORCE and PRESSURE or STRESS				
lbf	poundforce	4.45	newtons	N
lbf/in ²	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
AREA				
mm ²	square millimeters	0.0016	square inches	in ²
m ²	square meters	10.764	square feet	ft ²
m ²	square meters	1.195	square yards	yd ²
ha	hectares	2.47	acres	ac
km ²	square kilometers	0.386	square miles	mi ²
VOLUME				
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m ³	cubic meters	35.314	cubic feet	ft ³
m ³	cubic meters	1.307	cubic yards	yd ³
MASS				
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or "t")	megagrams (or "metric ton")	1.103	short tons (2000 lb)	T
TEMPERATURE (exact degrees)				
°C	Celsius	1.8C+32	Fahrenheit	°F
ILLUMINATION				
lx	lux	0.0929	foot-candles	fc
cd/m ²	candela/m ²	0.2919	foot-Lamberts	fl
FORCE and PRESSURE or STRESS				
N	newtons	0.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in ²

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.

(Revised March 2003)

Foreword



The Endangered Species Act was enacted to preserve the ecological diversity of nature from human interference. Scientific evidence has highlighted that the changing landscape and increased development has placed certain species under threat, and in some cases their very survival is endangered. Congress appointed two Federal Agencies to enforce the act; the National Marine Fisheries Service (NMFS) for all aquatic species and the United States Department of Fish and Wildlife Service (USFWS) for all terrestrial species.

As of April 2003, a number of species were protected under the ESA in the Northwest part of United States (Washington-29, Oregon-45, Idaho-22, and Alaska-6). Many of these species live in and around aquatic environments and are affected by human activities, our expanding urbanization, and transportation infrastructure. Waterways serve as corridors for migratory birds and fish, and provide habitat to unique species of plants and animals, including federally endangered and threatened aquatic species. The Environmental Protection Agency (EPA) works to ensure the protection of animals and habitats through regulations, such as the Endangered Species Act. These activities not only affect the livelihood of animals, but of the engineers, contractors, and laborers that are involved in the construction process.

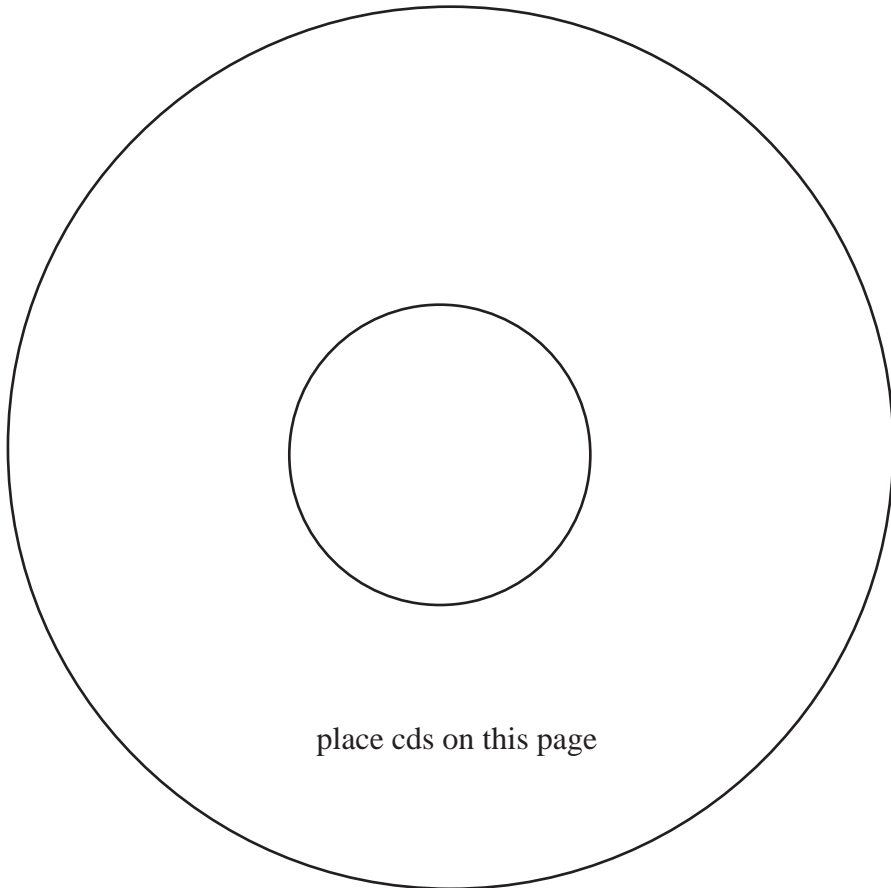
The Federal Lands Highway program provides transportation engineering and related services throughout federal lands in all 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands. Throughout federal land, and particularly our pristine and prized national parks within the Pacific Northwest and Alaska, one key agency for highway work is Western Federal Lands Highway Division, based in Vancouver, Washington.

To provide the best possible quality of life and protect our diverse environment, construction activity must be planned, designed, and executed with the highest possible regard for the environment. For construction and development, federal agencies have been assigned a special leadership role to demonstrate best construction practices. The federal agencies and state departments of transportation are working hard to provide regional programs and training for ESA that relate specifically to highway construction and maintenance. These two CDs are designed to acquaint highway construction inspection personnel with the ESA and to help them direct their contractor to Build Smart. The CDs provide information useful to both the experienced and inexperienced inspector. Disk 1 covers an introduction to the ESA, compliance to the ESA, and a review of the independent duties an agency has under the ESA. Disk 2 covers constructing to the ESA, two case histories, and additional resources for inspectors. Presentations include graphics, videos, and photographs throughout the CDs that summarize key items discussed in the text. Navigation through the CDs is accomplished by using the navigation bar on the left hand side of the screen and the continue button that appears inside discussion topics.

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