

Arizona Department of Transportation

Environmental Handbook

Ecological Resources

This handbook provides a regulatory background for compliance with Federal regulations for the management of ecological resources, with the exception of the Endangered Species Act.



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Note to Users

This handbook outlines a high level overview of the background and requirements necessary for complying with the Migratory Bird Treaty Act (MBTA), Executive Order (EO) 13112 on Invasive Species, the Fish and Wildlife Coordination Act (FWCA), the Bald and Golden Eagle Protection Act (BGEPA) and the Arizona Native Plant Law as associated with the National Environmental Policy Act (NEPA). Project sponsors can use the handbook to identify compliance obligations that may be triggered by their project in order to scope them appropriately. Anyone with responsibility for developing compliance documentation can use the handbook to identify the general requirements to meet these obligations as outlined by the Arizona Department of Transportation (ADOT).

Evaluation of applicability of these regulations is required for NEPA documentation regardless of classification: categorical exclusion, environmental assessment, or environmental impact statement.

It is ADOT procedure to meet its compliance obligations regarding potential project effects related to the aforementioned regulations by following the requirements in this handbook and appropriate laws and regulations. Please contact the appropriate ADOT Biologist when completing project analysis involving these laws and regulations.

The Federal Highway Administration (FHWA) assigned ADOT the responsibilities as department delegate for ensuring compliance with these regulations for Federal-aid highway projects. As such, ADOT is the lead federal action agency for purposes of compliance.

Definitions

Biological Evaluation (BE) – A document that evaluates the potential effects of the proposed action on any listed and proposed species and designated and proposed critical habitat that may be present in the action area. In some instances, a Biological Evaluation Short Form (BESF) may be used. For the purposes of this document BE and BESF are not differentiated and only the terms BE or Biological Evaluation are used.

Endangered Species – A species in danger of extinction within the foreseeable future throughout all or a significant portion of its range

Fish and wildlife – This term applies to any member of the animal kingdom, without limitation: any mammal, fish, bird (including any migratory, non-migratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate. The term also applies to any part, product, egg, or offspring thereof, or the dead body or parts thereof.

Invasive species – With regard to a particular ecosystem, a non-native organism whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal or plant health.

Native plant – These plant species occur naturally in a particular region, ecosystem, and/or habitat without direct or indirect human actions.

National Environmental Policy Act (NEPA) - A United States environmental law that promotes the enhancement of the environment and established the President's Council on Environmental Quality (CEQ). The law was enacted on January 1, 1970.

Practicable – Practicable actions are available and capable of being done after taking into consideration existing technology, cost, and logistics in light of the overall purpose of the activity.

Take (as defined under the Bald and Golden Eagle Act - 16 USC 668) – A take is an action to pursue, shoot, shoot at, poison, wound, kill, capture, trap, or molest or disturb a Bald or Golden Eagle (50 CFR 22.3).

Take (as defined under the Endangered Species Act - 16 USC 1532) – A take is an action to harass, hunt, capture, kill or collect, or an attempt to harass, hunt, capture, kill or collect a listed species (50 CFR 17.3).

Take (as defined under the Migratory Bird Treaty Act) - No definition of “take” is given in the MBTA itself. In 2001, Executive Order No. 13186, 66 Fed. Reg. 3853 (2001) explained for the purposes of the MBTA, that ‘take’ means take as defined in 50 C.F.R. 10.12, and includes both intentional and unintentional take, but did not clarify whether take refers solely to hunting or poaching activities or instead could be any activity that purposefully or incidentally harms birds, see <https://www.fws.gov/migratorybirds/Partnerships/migbrdeo.pdf>.

Threatened species – These are species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Code of Laws of the United States of America or U.S. Code (USC) - Is the official compilation and codification of the general and permanent federal statutes of the United States.

Abbreviations and Acronyms

ADOT	Arizona Department of Transportation
ARS	Arizona Revised Statutes
AZGFD	Arizona Game and Fish Department
BE	Biological Evaluation
BESF	Biological Evaluation Short Form
BGEPA	Bald and Golden Eagle Protection Act (16 USC 668)
CFR	Code of Federal Regulations

EO	Executive Order
EP	ADOT Environmental Planning
EPIC	Environmental Permits, Issues, and Commitments
FHWA	Federal Highway Administration
FR	Federal Register
FWCA	Fish and Wildlife Coordination Act (16 USC 661)
IP	Individual Permit
LOA	Letter of Authorization
MBTA	Migratory Bird Treaty Act (16 USC 703-712)
NEPA	National Environmental Policy Act (42 USC 4321-4347)
NMFS	National Marine Fisheries Service
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service

Chapter 1 - ADOT Procedure

It is the Arizona Department of Transportation (ADOT) policy to meet its compliance obligations regarding potential project impacts by following the regulation requirements in this handbook and other biology technical guidance found at <https://www.azdot.gov/business/environmental-planning/biology>.

FHWA Assignment

Under the Memorandum of Understanding between the Federal Highway Administration (FHWA) and ADOT concerning the State of Arizona participation in the Project Delivery Program pursuant to 23 U.S.C. 326-327, FHWA assigned ADOT the responsibility for ensuring compliance with the following regulations for projects with FHWA as the funding agency.

- Migratory Bird Treaty Act (16 USC 703 – 712)
- E.O. 13112 and 13751, Invasive Species
- Fish and Wildlife Coordination Act (16 USC 661 – 667d)
- Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d)
- Arizona Native Plant Law (A.R.S. §§ 3-341 et seq. and 3-3101 et seq)

Review and Approval

ADOT evaluates compliance with the federal regulations addressed in this handbook during the review of the environmental document and issues approval through the National Environmental Policy Act or NEPA process. Coordination may continue during project permitting. The federal agency funding the project is responsible for ensuring compliance with these regulations. FHWA is the most common funding agency and has assigned this responsibility to ADOT.

Public Involvement

None of the federal regulations for the management of ecological resources addressed in this handbook require ADOT specific public involvement outside of the NEPA process.

Chapter 2 - Migratory Bird Treaty Act (MBTA)

Applicable Project Types

All project types must comply with the provisions of the MBTA.

Regulatory Overview

The MBTA was enacted in 1918 and implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. It is codified at 16 USC 703-712. Under the act, taking, killing, or possessing migratory birds (other than game birds during valid hunting seasons) is unlawful. Protections extend to migratory bird nests determined to contain eggs or young. The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over this act.

Additional Resources

For further background information and additional guidance regarding the MBTA, refer to the USFWS Migratory Bird Treaty Program and ADOT EP Migratory Bird Treaty Act Mitigation Guidance.

Documentation Requirements

Project File Documentation

Include the following documentation in the project file:

- Biological Evaluation (BE) Document;
- Summary of field investigations in the appendix identifying the presence of migratory birds in the project area or the lack thereof; (See Biological Evaluation Guidance)
- Environmental commitments or mitigation measures, if any, to be included in the NEPA document, and Environmental Permits, Issues and Commitments (EPIC) Sheet.

Environmental Document Content

The Biological Evaluation must include a statement acknowledging the applicability of the MBTA to the project and explain how the project will comply with the MBTA. The goal of compliance efforts regarding the MBTA are to prevent disturbance of active nests or individual protected birds. The BE and subsequent NEPA document will list specific conservation measures based on the following objectives:

- Avoid disturbing nesting habitat (vegetation or structures) during the nesting season and/or any existing active nests. Vegetation containing nesting birds can be cut or cleared prior to construction during non-nesting seasons.
- Prevent migratory birds from nesting on structures that will be repaired or demolished prior to nest building. For example, exclusionary devices such as netting, tarps, slick surface coatings (polytetrafluoroethylene (Teflon) sheeting) or ledge protectors (coils, pin and wire) can be placed on structures to prevent nest building.
- Avoid directly or indirectly damaging vegetation outside of the work area.
- Physically remove nests that do not contain eggs or young to prevent future active nests that may occur during construction (*see specific cliff swallow mitigation*).
- Dispersal methods such as visual, auditory, or sensory deterrents (active construction, predator models, scare balloons, tapes, sonic devices, chemical repellants) may be used to deter birds from nesting but will not exclude them from other nesting areas outside the project limits (*see specific cliff swallow mitigation*)

Chapter 3 - Executive Order 13112 on Invasive Species

Applicable Project Types

Compliance with Executive Order (EO) 13112 on Invasive Species is required for projects that are federally funded and result in ground disturbance.

Regulatory Overview

Executive Order 13112 on invasive species, directs federal agencies to prevent the introduction and control the spread of invasive species. Invasive species are defined as “a non-native organism whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal or plant health.” The EO directs federal agencies whose actions affect the status of invasive species to first identify such agency actions and subject to the availability of appropriations, and within administrative, budgetary and jurisdictional limits, use relevant agency programs and authorities to:

- Prevent the introduction, establishment, and spread of invasive species;
- detect and respond rapidly to eradicate or control populations of invasive species in a manner that is cost-effective and minimizes human, animal, plant, and environmental health risks;
- Monitor invasive species populations accurately and reliably;
- Provide for the restoration of native species, ecosystems, and other assets that have been impacted by invasive species;
- Conduct research on invasive species and develop and apply technologies to prevent their introduction, and provide for environmentally sound methods of eradication and control of invasive species;
- Promote public education and action on invasive species, their pathways, and ways to address them, with an emphasis on prevention, and early detection and rapid response; Do not authorize, fund, or carry out actions that are believed likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

These practices apply to federally funded projects.

Additional Resources

For background information and additional guidance regarding EO 13112 on Invasive Species, refer to one or more of the following:

[Federal Highway Administration \(FHWA\) guidance on invasive species](#)

[National Invasive Species Management Plan Website](#)

Documentation Requirements

Project File Documentation

Include the following documentation in the project file:

- Biological Evaluation Document;
- Summary of field investigations in the appendix identifying the presence of invasive species in the project area or the lack thereof; (See Biological Evaluation Guidance)
- Environmental commitments or mitigation measures, if any, to be included on the NEPA document, and Commitments (EPIC) Sheet.

Environmental Document Content

The Biological Evaluation must include a statement acknowledging EO 13112 on Invasive Species and explaining how the project will comply with the EO. Conservation measures found in the BE will be carried forward to the NEPA document.

Chapter 4 - Fish and Wildlife Coordination Act (FWCA)

Applicable Project Types

The FWCA applies to projects that result in the control or modification of a natural stream or body of water and require a Clean Water Act (CWA) Section 404 Permit.

Regulatory Overview

The FWCA of 1934 and subsequent amendments, as codified in 16 USC 661-666(c), were enacted to protect wildlife when federal actions result in the control or modification of a natural stream or body of water. The act requires federal agencies to consider the effect that water-related projects have on fish and wildlife resources; act to prevent loss or damage to these resources; and provide for the development and improvement of these resources. Wildlife is defined broadly in 16 USC 666(b) of the act to include fish, wildlife, and the habitat on which they depend. The applicability of the act is also very broad, as it applies to “any stream or other body of water” that is “impounded, diverted, the channel deepened, or otherwise controlled or modified for any purpose.”

Under the act, federal agencies must consult with resource agencies, “with a view to the conservation of fish and wildlife resources in connection with that project,” which includes the Arizona Game and Fish Department (AZGFD), the USFWS, and the National Marine Fisheries Service (NMFS) if applicable. This law provides a mechanism for federal agencies to consider measures to avoid impacts to wildlife and any mitigation measures in coordination with resource agencies, but does not require the federal agency to accept conservation recommendations.

The jurisdictional reach of the FWCA is to all waters affected by federal planning and construction, licensing, or permitting authorities. For example, in the case of the Section 404 Program it follows the U.S. Army Corps of Engineers (USACE) jurisdiction over waters of the United States, including wetlands. For this reason, complying with the terms of a nationwide Section 404 permit or following required processes and implementation terms when acquiring an IP typically satisfy FWCA coordination requirements. An individual permit is required for potentially significant impacts. Individual permits are reviewed by the U.S. Army Corps of Engineers, which evaluates applications under a public interest review, as well as the environmental criteria set forth in the CWA Section 404 Guidelines, regulations promulgated by EPA.

Coordination under the FWCA may be handled by USACE during the permitting process, but it is preferable to conclude all consultations with USFWS during the NEPA process. This streamlines the FWCA requirements because USACE can make a determination that all Endangered Species Act issues have been addressed and accept the consultation between the transportation agency and USFWS. In which case, additional consultation between USACE and USFWS is not necessary, and the FWCA requirements have been met. Section 7 consultation is required and completed by ADOT for all projects that “may affect” a listed or proposed species.

Critical Sequencing

ADOT coordinates with USFWS and AZGFD on all federal-aid projects, beginning with use of both agencies’ on-line systems at the initiation of review of each project. ADOT requests an Official Species List from the USFWS IPaC system for each project. The AZGFD On-line Review Tool is used and a scoping letter is sent to AZGFD for each project as well. If AZGFD has specific concerns, coordination will continue on specific projects. Coordination with USFWS will continue if Section 7 consultation is needed for a specific project. Coordination with USACE occurs when a 404 permit that requires notification is needed for a project; however, ADOT prefers to undertake the coordination with USFWS and AZGFD during the NEPA review process rather than waiting until the permitting process, which may occur after the NEPA review is complete.

Documentation Requirements

Documentation for compliance with the FWCA is included in the appendix of all long form Biological Evaluations.

Project File Documentation

Include the following in the project file:

- Biological Evaluation which includes but is not limited to the following;
- Documentation of completed consultation with USFWS and the lead transportation agency or USACE;
- Documentation of completed coordination with USFWS and AZGFD;
- Copies of correspondence with USFWS and AZGFD.

Environmental Document Content

If a project requires an Individual Clean Water Act Section 404 permit, the environmental document and/or Biological Evaluation must include a statement acknowledging the FWCA and explaining how the project will comply with the Act. If applicable, include references in the document to the coordination with USFWS and AZGFD.

Chapter 5 - Bald and Golden Eagle Protection Act of 2007 (BGEPA)

Applicable Project Types

The BGEPA applies to projects with the potential to take Bald Eagles or Golden Eagles. If the project is not within the range and/or suitable habitat for Bald or Golden Eagles and does not otherwise have the potential to take either species, no further action is necessary.

Regulatory Overview

The BGEPA was enacted in 1940 to provide for the protection of the Bald Eagle and the Golden Eagle by prohibiting, except under certain specified conditions, the taking, possession, and sale of such birds. The BGEPA is codified at 16 USC 668a-d. The U.S. Fish and Wildlife Service (USFWS) has regulatory authority over this act. The Arizona Bald Eagle population is divided into two populations; breeding birds and non-breeding or wintering birds. For the most part, breeding populations occur statewide with non-breeding or wintering Bald Eagle populations are located primarily in Northern AZ and in other areas of suitable habitat throughout the state. There are exceptions to these general statements, and it is advisable to coordinate directly with the AZGFD personnel responsible for monitoring Bald Eagle nest locations.

In Arizona the Golden Eagle has resident and wintering populations throughout the state and they are widespread, from low desert areas to high mountain terrain. AZGFD is aware of about 150 golden eagle nest sites in AZ and many have been monitored and revisited to gather a more complete count of golden eagles in the state.

Critical Sequencing

To ensure compliance with the BGEPA, conduct early coordination with USFWS and AZGFD if the project impacts Bald or Golden Eagles or their habitat. Conduct early coordination in such a way as to assess avoidance measures or alternatives to the project, potential permitting requirements, and mitigation for unavoidable impacts.

If, through coordination with USFWS and AZGFD, it is determined that the project will result in unavoidable impacts to Bald or Golden Eagles, a Non-Purposeful Take Permit must be acquired from USFWS prior to NEPA clearance.

Additional Resources

For further background information and additional guidance regarding the BGEPA, refer to the USFWS National Bald Eagle Management Guidelines or the USFWS guidance on non-purposeful take.

Documentation Requirements

Project File Documentation

The project file must include the Biological Evaluation Form and copies of correspondence with USFWS and AZGFD, including the Non-Purposeful Take Permit, if required.

Environmental Document Content

The Biological Evaluation must include a statement acknowledging the BGEPA and explaining whether or not the project is within the range and suitable habitat for Bald or Golden Eagles. If the project is within the range and suitable habitat for Bald or Golden Eagles but will not result in an incidental taking, the Biological Evaluation must include a statement that the project will comply with the National Bald Eagle Management Guidelines of 2007. If the project will result in the incidental taking of Bald or Golden Eagles, the Biological Evaluation must include an assessment of impacts as outlined in the Non-Purposeful Take Permit. Additionally, the document must reference coordination with USFWS and AZGFD if applicable.

Chapter 5 - Arizona Native Plant Law (native plant law)

Applicable Project Types

The Arizona Native Plant Law applies to all ADOT projects that have the potential to impact any Arizona protected native plant.

Regulatory Overview

Arizona's native plants are protected by the Arizona Native Plant Law (A.R.S. §§ 3-341 et seq. and 3-3101 et seq) which is administered by the Arizona Department of Agriculture, Environmental Services Division. R3-3-1103 Disposal and Salvage of Protected Native Plants by a State Agency states that "A state agency intending to remove or destroy protected native plants shall notify the Department, under A.R.S. § 3-905 and shall propose a method of disposal from a detailed list" (see A.R.S 3-1103). It also states that if the plants are highly safeguarded they shall first be made available to the holder of a scientific permit or a noncommercial salvage permit.

The Arizona Native Plant Law was enacted to protect rare plant species and to protect some species from being over harvested. There are four Protected Native Plant Categories:

- **Highly Safeguarded** – These plants are threatened for survival or are in danger of extinction. Protection includes not only the plants themselves, but their plant parts such as

fruits, seeds and cuttings. A few examples of species in this category are saguaro (*Carnegiea gigantea*), Arizona willow (*Salix arizonica*), and some agave and cacti (Agavaceae and Cactaceae families). Some of the species in this category are listed under the Endangered Species Act and require consultation with the US Fish and Wildlife Service prior to any work conducted that may impact these plants.

- **Salvage Restricted** – This is a large group of plants that are subject to damage and vandalism. This is a large list of species with 32 plant families represented, the largest being numerous species of cacti.
- **Salvage Assessed** – This much smaller group of plants have enough value if salvaged to support the cost of salvaging. This list includes desert willow (*Chilopsis linearis*), palo verde (*Cercidium* or *Parkinsonia* spp.), ironwood (*Olneya tesota*), smoke tree (*Psoralea argophylla*) and several mesquite species (*Prosopis* spp.).
- **Harvest Restricted** – Also a smaller group, these plants are protected due to the fact that they are subject to excessive harvesting because of the intrinsic value of products made with their wood or fiber. Included in this group are bear grass (*Nolina microcarpa*), yucca (*Yucca* spp.), ironwood and mesquite.

Critical Sequencing

To ensure compliance with the Native Plant Law a land survey will be conducted for all areas that will have ground disturbance during project construction. If native plants are found a determination will be made on whether or not those plants will be impacted. If native plants will be destroyed or salvage is planned the ADOT Roadside Development Section will notify the Arizona Department of Agriculture.

Additional Resources

For further background information and additional guidance regarding the native plant law, refer to the Arizona Department of Agriculture's website <https://agriculture.az.gov/plants/native-plants>.

Documentation Requirements

Project File Documentation

The project file must include the Biological Evaluation that includes a determination of impacts to native plants.

Environmental Document Content

The Biological Evaluation must include a statement acknowledging the native plant law and explaining whether or not the project will impact native plants. If impacts will occur then appropriate mitigation measures will be included in the Biological Evaluation and associated NEPA documentation for Department of Agriculture notification.

Appendix A

RevisionHistory

The following table shows the revision history for this handbook.

Revision History	
Effective Date Month, Year	Reason for and Description of Change
April 2019	Final Posted to EP webpage
November 2017	Draft completed.