

CHAPTER 2. BIOTIC RESOURCES

1. INTRODUCTION AND DEFINITIONS.

a. **Biotic Resources.** For purposes of this desk reference, the term “biotic resources” means various types of flora (plants) and fauna (fish, birds, reptiles, amphibians, marine mammals, coral reefs, etc.) in a particular area. The term also means rivers, lakes, wetlands, forests, upland communities, and other habitat types supporting flora and aquatic and avian fauna.

b. **National Environmental Policy Act (NEPA).** A NEPA document’s Biotic Resources chapter must address the effects on biotic resources due to a proposed action and its reasonable alternatives. The chapter must also address action-related effects and consequences on the affected area’s *state-listed* rare or unique species or their habitats. However, the Biotic Resources chapter should not discuss action effects on *Federally-listed* endangered and threatened species. Instead, place that information in a separate chapter specifically addressing Federally-protected species (see Chapter 8 of this Desk Reference.)

2. APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS.

When a Federal action would affect water resources, Section 662(a) of the Fish and Wildlife Coordination Act (FWCA), as amended (16 USC Section 662(a)) specifically requires consideration of biotic resources. To comply with that section, FAA must coordinate with the U.S. Fish and Wildlife Service (FWS) to assess the effects of proposed FAA actions on aquatic areas. Consultation with the National Marine Fisheries Service (NMFS) is needed for actions affecting anadromous fish species and marine mammals. Also, FAA or the airport sponsor, as appropriate, must consult with state wildlife agencies having jurisdiction over affected biotic resources.

APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS	SUMMARY DESCRIPTION	OVERSIGHT AGENCY
16 USC Section 662(a), Fish and Wildlife Coordination Act	When a Federally approved or financed action would affect a stream or water body, the responsible Federal agency must consult with the FWS.	FWS
Guidance for Presidential Memorandum on Environmentally and Economically Beneficial Landscape Practices on Federally Landscaped Grounds, 60 Federal Register (FR) 40837 or 60 FR 40837	Provides guidance for interpreting and applying the Presidential Memorandum on Environmentally and Economically Beneficial Landscape Practices on Federally Landscaped Grounds.	U.S. Environmental Protection Agency (EPA) (Office of the Federal Environmental Executive)
Executive Order 13112, <i>Invasive Species</i> , 64 FR 6183.	Paragraph 3f of attachment 2; U.S. Department of Transportation (DOT) Order 5610.1C.	Departments of the Interior (DOI), Commerce, Agriculture (USDA), and Transportation (DOT)
49 USC Section 47106(c)(1)(B)	When review of an application for an airport development action involving a new airport, a new runway, or a major runway extension indicates the action would have significant	FAA

APPLICABLE STATUTES AND IMPLEMENTING REGULATIONS	SUMMARY DESCRIPTION	OVERSIGHT AGENCY
	adverse effects on natural resources including fish and wildlife (among other environmental resources), the Secretary of Transportation may approve that application, but only after finding that no possible and prudent alternative exists and that every reasonable step has been taken to minimize the adverse effects.	
Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended by the Sustainable Fisheries Act, 16 USC Section 1855(b)(2) <i>et seq.</i> . See 50 CFR Part 600 for regulations implementing this Act	Prohibits actions that may affect "essential fish habitat" (EFH). Fisheries Councils throughout the country identify and describe fishery management plans to protect certain anadromous fish species. If an action would affect an EFH, an impact assessment on the affected EFH is needed. The assessment and any mitigation are done in consultation with NMFS.	NMFS
Migratory Bird Treaty Act of 1918, as amended, 16 USC Sections 703-711. See 50 CFR Part 10 for regulations implementing this Act	Actions that may take a migratory bird species are prohibited. If an action may take a migratory bird or affect its breeding habitat, consultation with the FWS is needed. If it is determined there are no feasible alternatives to taking the migratory bird or its nest, FWS must issue a permit for the taking. The permit will likely require mitigation.	FWS
Marine Mammal Protection Act of 1972, as amended, 16 USC Sections 1361-1421. See 50 CFR Part 18 for regulations implementing this Act	Actions that may take a marine mammal are prohibited. If an action may take a marine mammal, consultation with the NMFS must occur. Mitigation actions to minimize or avoid the potential take must be implemented.	NMFS
Executive Order 13089, <i>Coral Reef Protection</i> , 63 FR 32701.	Orders Federal agencies to preserve and protect the health, heritage, social, and economic value of the country's coral reef ecosystem and the marine environment	National Oceanic and Atmospheric Administration (NOAA)

**3. APPLICABILITY TO AIRPORT DEVELOPMENT ACTIONS.** FAA must evaluate any airport development action subject to FAA approval or funded under the Airport Improvement Program (AIP). In those instances, FAA must determine if the proposed action or its reasonable alternatives would significantly affect biotic resources. Typical airside actions that may cause those impacts include: new or expanded terminals or hangar facilities; building new or extended runways or taxiways; installing navigational aids (NAVAIDS) or expanding those facilities. Landside actions may include new or relocated access roadways, on-airport remote parking facilities or rental car lots.

**4. PERMITS, CERTIFICATIONS, AND APPROVALS.** Permits do not cover all airport actions affecting biotic resources. However, those actions that could affect migratory birds, fish,

marine mammals, or sea turtles<sup>1</sup> may require special permits. FAA or the airport sponsor, as fitting, must consult the FWS or NMFS to determine if permits issued under the Migratory Bird Treaty Act or the Marine Mammal Protection Act, respectively, are needed. Also, a U.S. Army Corps of Engineers (Corps) Clean Water Act Section 404 permit is required if proposed airport development would require dredging or filling navigable waters or wetlands, collectively known as “waters of the United States.” (See Chapters 20 and 21 of this Desk Reference for information on how to analyze impacts to water quality and wetlands, respectively.)

**5. ENVIRONMENTAL COMPLIANCE PROCEDURES - ENVIRONMENTAL ANALYSIS.** As noted earlier, under the FWCA, FAA must consult with the FWS when FAA is considering an airport action that would impound, divert, deepen, control, modify, pollute, dredge, or fill any watercourse, water body, or wetland. FAA also coordinates with FWS and state agencies about action impacts on potentially affected biotic resources that do not occupy those waters. If an action would affect tidally influenced waters, Essential Fish Habitat, marine and anadromous fishes, marine mammals or sea turtles, coordination with NMFS should occur. This interagency coordination provides multidisciplinary input critical to FAA's evaluation of action impacts. In addition, this consultation helps FAA determine the adequacy of potential mitigation measures.

**6. DETERMINING IMPACTS.** As needed, the environmental document contains an evaluation of action-related biotic resources impacts. Impact analyses at the population or community level may be necessary. Consult with FWS and other expertise agencies to determine the proper analyses.

**a. Levels of analyses.** If the proposed action or its reasonable alternatives would affect only previously disturbed airport property, populated areas, or farmland, the analyses would normally be minimal and straightforward. Impacts on undisturbed wildlife habitats require more analyses than that needed for already disturbed areas. Develop the analyses for the undisturbed areas in consultation with FWS and other agencies having expertise on the affected biotic resources and their habitats. Include construction impacts to ensure the NEPA document properly addresses temporary, constructed-related impacts on these resources.

**b. State-listed species.** The responsible FAA official must ensure the environmental document's Biotic Resources chapter addresses action impacts on *state-listed* endangered and threatened resources. However, if those species are also Federally-protected, the Biotic Resources chapter of the NEPA document should report that fact and refer the reader to the document chapter addressing Federally-listed endangered or threatened species (see Chapter 8 for information on those species).

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<sup>1</sup> See 50 CFR Section 10.13 for migratory species; Section 224.101(a) for anadromous fish species; Section 224.101(b) for marine mammal species; and Section 224.101(c) for sea turtles.

**c. Evaluating impacts.** To evaluate impacts to biotic resources, the environmental document must provide the following information:

(1) names and locations of water bodies or watercourses the action would affect.  
and

(2) an analysis of impacts and their consequences on common and unique biotic resources the no action, the proposed action, and any reasonable alternatives would cause.

Note: If the action would affect publicly-owned wildlife or waterfowl refuges of local, state, or national significance, refer to Chapter 7 of this Desk Reference for instructions on complying with Section 4(f). If the action may affect Federally-listed endangered and threatened species, refer to Chapter 8 for details.

**d. Minor permanent habitat change determinations.** The environmental document should provide the basis for determining the severity of permanent, minor habitat changes. Here, the environmental document should address each of the following criterion the no action, the proposed action and the reasonable alternatives (collectively called "alternatives") would cause.

(1) Does the affected habitat represent a small percentage of a particular habitat type commonly found in the affected area? Consult FWS and state wildlife personnel to help quantify the term "small percentage." or

(2) Does the habitat affected support a limited number of biotic resources commonly occurring in the affected area?

**e. Major permanent habitat change determinations.** Major permanent habitat change determinations are needed when an alternative would remove or disturb small tracts of sensitive, important habitat. Consultation with the proper resource agency is important here. The environmental document should address each of the following criterion for each alternative.

(1) Is the affected habitat critical to the area's ecological stability?

(2) Does the affected habitat support species or populations not commonly found in the affected or surrounding area?

(3) Does the affected habitat comprise a large percentage of a particular habitat type occurring in the affected or surrounding area? Consult FWS and state wildlife personnel to help quantify the term "large percentage." or

(4) Will the action permanently remove the affected area's biotic community from a portion of the habitat it currently uses or will the community leave the affected habitat for a long-term (i.e., 8-10 years)?

**f. Actions involving coral reefs.** If an FAA action would affect a part of a coral reef ecosystem, FAA should fund a study (subject to funding availability) to determine how the sponsor should carry out measures to monitor, manage, and restore the coral reef the

action would affect. This includes measures that would reduce impacts from action-related pollution or sedimentation.

**7. DETERMINING IMPACT SIGNIFICANCE.**

**a. General.** After completing the consultation and analyses discussed above, use the significance thresholds in column 1 of the following table. Consider factors in column 2 when determining if the action meets a threshold. The responsible FAA official should consider the following factors in consultation with agencies having jurisdiction or special expertise about the protection or management of the affected species. The official should complete added analysis for each reasonable alternative that would cause long-term habitat impacts (see section 6.e(4) of this chapter).

ORDER 1050.1E THRESHOLD	FACTORS TO CONSIDER
<p>Consider scientific literature addressing the affected species and information from agencies having expertise addressing those species. Also review information on:</p> <ul style="list-style-type: none"> <li>• Action effects on population dynamics.</li> <li>• Action effects on sustainability and reproduction rates.</li> <li>• Natural and artificial mortality (aircraft strikes).</li> <li>• The minimum population size needed to maintain the affected populations.</li> </ul>	<ul style="list-style-type: none"> <li>• Consult the proper agency(ies) to determine if an area sufficient to sustain species <b>commonly</b> found in the affected area would remain if the alternative were implemented.</li> <li>• Determine if the action would affect habitat supporting floral or faunal species <b>not commonly</b> occurring in the affected area. If the action affects such habitat, consult the correct agency(ies) to determine if the action would affect a small tract of sensitive habitat needed for the survival or well-being of the affected biotic resource. Consider the locations of other nesting or breeding grounds relative to the affected area and if resource agencies suggest those areas could sustain the disturbed species.</li> </ul>

From: Table 7-1, FAA Order 5050.4B.

**b. Potential mitigation measures.**

**(1) Agency recommendations.** During the environmental review process, FWS and other resource agencies normally provide letters addressing biotic resource impacts. Often, those letters include recommended measures to mitigate impacts. An appendix to the environmental document should include copies of those letters. The environmental document should summarize the most important information in those letters and accurately cross-reference the appendix and pages in that appendix for further information. If the sponsor or FAA does not adopt any recommended mitigation, the environmental document should explain clearly why the mitigation was not adopted.

**(2) Possible mitigation.** After the impacts to biotic resources have been determined, consider the following mitigation measures to reduce those impacts:

- (a)** erosion controls to protect bordering biotic resources;

(b) phasing various construction activities to avoid breeding, nesting, flowering, or pollination seasons;

(c) providing escape routes for mobile species;

(d) using landscape rehabilitation to restore or enhance existing, degraded habitat, or to create new habitat;

(e) changing design to minimize impacts on sensitive resources;

(f) buying adjoining habitat to create a preserve for displaced wildlife or to create a buffer zone; or

(g) adopting mitigation measures FWS or other resource agencies recommend and justify.

## 8. ENVIRONMENTAL IMPACT STATEMENT CONTENT.

**a. General.** When a significant impact to biotic resources would occur, FAA must prepare an EIS if mitigation will not reduce impacts below the significance threshold. The EIS should contain the information noted below as well as the applicable information discussed throughout this chapter.

**b. Photographs.** Aerial photographs and field survey(s) to help further define the extent or distribution of the affected biotic resources.

**c. Resource importance.** A description of the significance of affected biotic resources. As fitting, this should address the following issues:

(1) the species or communities the action would destroy or displace;

(2) the importance of affected species or communities to the impacted area;

(3) the species' range; and

(4) the locations of sites significant to those resources (e.g., breeding or nesting areas) relative to the location of the alternatives considered.

**d. Other information.** Refer the reader to other chapters discussing impacts to other resources (e.g., water quality, noise, and induced development, etc.) that could also affect the action area's biotic resources.

**e. Mitigation.** Describe proposed mitigation when FWS or other consulted agencies provide such recommendations. FAA should fully consider those measures and balance their benefits against those of the proposed action. Explain why FAA or the sponsor did not adopt any recommended measure. If feasible, provide an estimated schedule for undertaking accepted mitigation.