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NOAA FISHERIES

WEST COAST REGION

Technical Guidance: Oregon RPA for floodplain protection

In response to a 2010 lawsuit, the Federal Emergency Management Agency (FEMA) consulted with NOAA Fisheries on whether the National Flood Insurance Program (NFIP) affects salmon and steelhead protected by the Endangered Species Act (ESA) in Oregon. NOAA Fisheries found that the NFIP jeopardizes protected species. As the ESA requires, NOAA Fisheries provided FEMA with a Reasonable and Prudent Alternative (RPA) that includes recommendations to avoid jeopardizing the species. FEMA may adopt the RPA, or draft a different proposal. This technical guidance explains the intent and details of recommendations in the RPA.

Development in the floodplain:

The RPA is intended to apply only in mapped special flood hazard[1] areas. In the future, certain provisions of the RPA will also apply to mapped channel migration zones. The RPA *does not* recommend a prohibition of development in floodplains. It *does* recommend limitations on the types of development that can occur in certain portions of the floodplain, to better protect the natural floodplain functions needed to support threatened and endangered salmon. Coincidentally, these same measures improve safety for people and property by avoiding development in high risk areas.

FEMA's existing rules divide the floodplain in some locations into the floodway,[2] (the area near the flood source, which is to remain open to convey floodwaters), and the remainder of the floodplain. FEMA's rules already limit some floodway development to avoid increasing flood risk. The RPA follows that framework. The RPA recommends both a comprehensive long-term strategy for protecting floodplain habitat and interim strategies that apply in the near term.

Oregon, 2007

The RPA long-term provisions recommend that in areas at greatest risk of flooding and flood-related erosion, development should be limited to flood-compatible and water-dependent uses.[3]

In the near term, the RPA accommodates new development in or near floodways and erosion prone areas if it would not impact natural floodplain functions, or if development impacts are mitigated to achieve an overall conservation of natural floodplain function. Mitigation might include, for example, replacing removed trees, low-impact

development methods, and creation of replacement flood storage. The RPA also expressly allows for water-dependent uses.

The RPA recognizes that it would not be practicable to require modification of existing structures and applies to new development only.

Mitigating floodplain development impacts:

Salem, 1996. Photo: KOIN news

Interim measures: The fundamental component of the RPA interim measures is a mitigation strategy to ensure that, despite development demands, there is no net loss of natural floodplain functions. In the highest risk areas, where floodplains are frequently inundated (10-year flood interval, identified in a flood insurance study [FIS]) and where volumes are likely to be fast and deep (floodway, if indicated on flood insurance rate map [FIRM]), and where flood-related erosion is probable (channel migration zone [CMZ] areas) – the mitigation ratios for floodplain development are higher: 2 to 1 for displaced flood storage; 3 to 1 for removal of trees at or greater than 6-inch diameter at breast height (dbh). If none of those measures are available, then these mitigation ratios would apply in the area proposed in FEMA's Biological Evaluation–170 feet from the ordinary high water mark.

In floodplain areas further landward of these measures– sometimes called the flood fringe– but still bounded by the mapped special flood hazard area, the mitigation ratios are lower: 1.5 to 1 for displaced flood storage; 2 to 1 for trees of 6 inch dbh or greater.

In both areas, pervious surfaces should be used where practicable. Where new impervious surface is placed, an equal amount of impervious surface affecting the same water body should be removed. If neither method can be achieved, stormwater capture and treatment should be employed.

These measures were designed to be implemented within two years of the biological opinion being issued.

Long-term measures: These measures include a recommendation for FEMA to update maps with methods that predict inundation areas with more accuracy, and which more fully account for changing flood patterns due to land use and climate changes. These measures also recommend restrictions for the most hazardous areas of the floodplain, where volumes are likely to be fast and deep (floodway, if indicated on FIRM), and where flood-related erosion is probable (CMZ areas). It is the dynamic nature of these areas that make them simultaneously dangerous for development and valuable for species habitat needs. The most suitable uses in these areas are water dependent uses, light recreation, open space, habitat restoration, and silviculture and agriculture that does not involve buildings or other structures.

Other long-term standards of the RPA recommend preventing subdivision of lots in a manner that puts new lots completely inside the special flood hazard area, and minimizing building footprints inside the special flood hazard area.

The RPA long-term measures also include a proposal for mitigating development impacts, outlined in an appendix to the biological opinion. FEMA can use the mitigation protocols provided in the RPA until it adopts its own mitigation strategy that provides comparable protection of floodplain functions that species rely on.

The RPA includes provisions allowing local governments to work with FEMA and NOAA Fisheries to develop alternate measures for those circumstances where these criteria may be impossible to comply with due to unique circumstances of geography and jurisdiction.

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Agricultural and forestry activities:

Under the RPA, timber harvest and agriculture are suitable uses in the floodplain. The RPA won't affect harvest areas where these are established uses. Existing infrastructure or structures associated with agriculture or silviculture are grandfathered. Only new structures or infrastructure would trigger the RPA's mitigation requirements. Finally, tree removal conducted for the purpose of converting the land to new uses would be subject to the RPA's development limitations.

RPA Specificity/flexibility:

The RPA is specific enough to provide clear, comprehensible development standards, yet flexible enough to adapt to local circumstances. It is flexible in several ways.

First - the mitigation requirements vary depending on the actual condition of the landscape.

Example: If five wooded acres adjacent to a stream are turned into a housing development, mitigation would be required for removing the riparian vegetation, adding fill and structures that displace flood waters, and new impervious surfaces that create run-off, such as sidewalks, rooftops, roads, and driveways. But, if five waterfront acres of old warehouses and parking lots are redeveloped, there may be no mitigation required except as needed to create a net conservation benefit, which is a standard already proposed by FEMA. The "net benefit" standard might mean including a planting corridor next to the water, or adding bioswales to treat stormwater.

Second - the RPA allows for the development, in coordination with FEMA and NOAA Fisheries, of alternative mitigation standards for circumstances where the recommended mitigation may be difficult to provide within jurisdictional boundaries, such as in Beaverton.

Third - the RPA allows communities, in coordination with FEMA and NOAA Fisheries, to develop individualized compliance plans where the RPA's recommended measures would be impracticable – for example, in jurisdictions located entirely within the floodplain, such as Enterprise or Tillamook.

RPA implementation process and strategies:

The RPA is an alternative that NOAA Fisheries developed consistent with the ESA's requirements. However, FEMA ultimately determines how to modify their program to provide adequate protections for ESA-listed species and habitat. FEMA may implement the RPA, or may develop an alternative that provides equal protection. During the summer of 2016, FEMA and NOAA Fisheries participated in multiple information and outreach sessions around the state, hosted by the Department of Land Conservation and Development (DLCD). The federal agencies presented information on the RPA, took questions, and listened to concerns from local communities such as Springfield and Enterprise. These helped identify additional information needs, and DLCD has recently created workgroups, with local government participation, to help inform FEMA on implementation strategies, and technical concerns.

There are also other pathways to demonstrate ESA compliance. A community can choose to work with NOAA Fisheries directly to develop an ESA Section 10(a)(1)(B) Habitat Conservation Plan or a 4(d) rule as alternate pathways to ensuring that floodplain development does not jeopardize listed species. These alternate approaches are referenced in RPA element 4(H)(iii).

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[1] "Area of special flood hazard is the land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated as Zone A on the FHBM. After detailed ratemaking has been completed in preparation for publication of the flood insurance rate map, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, or V1-30, VE, or V. For purposes of these regulations, the term 'special flood hazard area' is synonymous in meaning with the phrase 'area of special flood hazard'." 50 CFR 59.1.

[2] "Regulatory Floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height." 50 CFR 59.1.

[3] For example, ports, docks, bridges are water dependent; parks, open space, light recreation, agriculture and silviculture are flood compatible.