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**AGRICULTURAL
CONSERVATION EASEMENT
PROGRAM**
Programmatic Environmental
Assessment
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1.0 INTRODUCTION

The Agricultural Conservation Easement Program (ACEP) is a new program authorized by the Agricultural Act of 2014 (the 2014 Farm Bill). It is a voluntary easement program comprised of an agricultural land easement (ALE) component on farms and ranches and a wetland reserve easement component (WRE) for restoring wetlands that have previously been impacted by agricultural practices. The 2014 Farm Bill created the ACEP by merging the Farm and Ranch Lands Protection Program (FRPP), the Grassland Reserve Program (GRP), and the Wetlands Reserve Program (WRP), each of which was in effect during the period of the 2008 Farm Bill.¹

The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies prepare Environmental Impact Statements (EISs) for major Federal actions significantly affecting the quality of the human environment. When a proposed Federal action is not likely to result in significant impacts requiring an EIS, but the activity has not been categorically excluded from NEPA, an agency can prepare an Environmental Assessment (EA) to assist them in determining whether there is a need for an EIS.² The Council on Environmental Quality (CEQ) has defined "major Federal action" to include activities over which Federal agencies have control, including promulgation of regulations in which they exercise discretion. Because the Natural Resources Conservation Service (NRCS) has discretion over how it will implement certain aspects of ACEP, NRCS has prepared this EA to assist its Responsible Federal Official (RFO) in determining whether the proposed action will result in significant impacts on the environment such that an EIS should be prepared.

CEQ has indicated that because an EA is a concise document the purpose of which is to determine the need for an EIS, it should not contain long descriptions or detailed data which the agency may have gathered. Rather, it should contain a brief discussion of the need for the action, alternatives to the proposed action, the environmental impacts of the proposed action and alternatives, and a list of agencies and persons consulted.³ As such, this programmatic EA is intended to briefly provide enough information for the NRCS RFO to determine whether to prepare an EIS or a finding of no significant impact (FONSI). Congress explicitly stated in ACEP that one of the program purposes is to combine the purposes and coordinate the functions of the WRP, GRP and FRPP; therefore, NRCS has determined that ACEP should be implemented similarly to the way WRP, GRP and FRPP were implemented under the 2008 Farm Bill with the exception of provisions that the 2014 Farm Bill changed. As a result, this analysis

¹ Section 2403 of the Food, Conservation and Energy Act of 2008 (the 2008 Farm Bill) (P.L. 110-246) reauthorized and amended the GRP; section 2401 of the 2008 Farm Bill reauthorized and amended the FRPP; and sections 2201, et seq. of the 2008 Farm Bill reauthorized and amended WRP. The Commodity Credit Corporation (CCC) funds ACEP.

² 40 CFR 1501.4, 1508.9; 7 CFR 650.8.

³ 40 CFR 1508.9(b) and Forty Most Asked Questions Concerning CEQ's NEPA Regulations, 23 March 1981.

focuses on decisions related to the definition of grasslands of special environmental significance. Relevant analyses from the 2009 Programmatic EAs, as well as other existing analyses, are incorporated by reference as appropriate.

2.0 BACKGROUND

2.1 Overview of FRPP, GRP and WRP under 2008 Farm Bill

Information regarding WRP, FRPP, and GRP is relevant to this EA in part because CEQ NEPA implementing regulations require analysis of a No Action alternative. More importantly, those programs are relevant because ACEP combines the purposes and provisions of those programs with few changes. Those programs promoted the voluntary improvement of degraded wetlands, protection of agricultural lands and application of conservation practices that maintain or improve the condition of soil, water, wildlife habitat, air, and address other natural resource concerns, as does ACEP under the 2014 Farm Bill.

Wetlands Reserve Program⁴

The WRP was a voluntary program that provided technical and financial assistance to enable eligible landowners to restore and protect valuable wetland ecosystems that had been converted to agricultural use, including associated habitats such as riparian areas, forest lands, and other uplands. Under WRP, NRCS purchased permanent or other long-term easements and restored wetlands and associated habitats or entered into cost-share restoration agreements with others to do so. The goal of the WRP was to achieve the greatest wetland functions and values, along with optimum wildlife habitat, on all acreage enrolled. Lands targeted were those having a high likelihood of successful restoration and landowner activities were restricted to those compatible with restoration and protection of the functional values of wetlands associated with the site.

To achieve successful restoration that maximizes benefits to both the landowners and the public, the WRP focused on enrolling marginal lands that had a history of crop failures or low production yields; restoring and protecting wetland values on degraded wetlands; maximizing wildlife benefits; achieving cost-effective restoration with a priority on benefits to migratory birds; protecting and improving water quality; reducing the impact of flood events; increasing ecosystem resilience; and promoting scientific and educational uses of WRP project lands.

⁴ This summary incorporates by reference the description of the program on pages 1 – 5 of the Wetland Reserve Program Final Programmatic Environmental Assessment, January 2009, available from http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ec/?cid=nrcs143_008451, The EA provides an overview of WRP and summarizes changes to the program resulting from the 2008 Farm Bill.

Farm and Ranch Lands Protection Program⁵

Under FRPP, NRCS provided funding to eligible cooperating entities towards the purchase of conservation easements for the purpose of protecting agricultural uses and related conservation values by limiting nonagricultural uses of the land. Working in conjunction with existing non-Federal farmland protection programs, NRCS partnered with State and local governments, soil and water conservation districts, Indian tribes, and eligible nongovernmental organizations to purchase conservation easements from individual landowners. Conservation plans were also required to protect highly erodible land (HEL). In carrying out this program, NRCS helped to protect the Nation's most valuable lands for the production of food, feed, and fiber by providing matching funds to keep productive farm and ranch lands in agricultural use.

Land enrolled in the FRPP had to meet at least one of three criteria: 1) have at least 50 percent prime, unique, or important farmland soils; 2) have historic or archeological resources; or 3) support the policies of a State or local farm and ranch lands protection program. Easement acquisition focused on farms that were accessible to appropriate markets, had adequate infrastructure and agricultural support services, and had surrounding parcels of land that could support long-term agricultural production. Those lands with greatest development pressure typically ranked the highest for the program.

Grasslands Reserve Program⁶

The purpose of GRP was to help landowners and operators protect grazing uses and related conservation values by restoring and protecting rangeland,⁷ pastureland, and other valuable grasslands. Under GRP, NRCS purchased easements or provided cost-share for others to do so, and the Farm Service Agency (FSA) entered into rental agreements. Restoration cost-share agreements were also available when the land required restoration. In exchange for voluntarily limiting future development and cropping uses of the land, participants retained the right to conduct common grazing practices and operations related to the production of forage and seed production in accordance with a grazing management plan.

⁵ This summary incorporates by reference the description of the program on pages 3–6 of the Farm and Ranch Land Protection Program Programmatic Environmental Assessment, January 2009, available from http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ec/?cid=nrcs143_008451. The EA provides an overview of FRPP and summarizes changes to the program resulting from the 2008 Farm Bill.

⁶ This summary incorporates by reference the description of the program on pages 10–16 of the Grasslands Reserve Program Programmatic Environmental Assessment, January 2009, available from http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ec/?cid=nrcs143_008451. The EA provides an overview of GRP and summarizes changes to the program resulting from the 2008 Farm Bill.

⁷ The NRCS NRI defines rangeland as a land cover/use category on which the climax or potential plant cover is composed principally of native grasses, grasslike plants, forbs or shrubs suitable for grazing and browsing, and introduced forage species that are managed like rangeland. This would include areas where introduced hardy and persistent grasses, such as crested wheatgrass, are planted and such practices as deferred grazing, burning, chaining, and rotational grazing are used, with little or no chemicals or fertilizer being applied. Grasslands, savannas, many wetlands, some deserts, and tundra are considered to be rangeland. Certain communities of low forbs and shrubs, such as mesquite, chaparral, mountain shrub, and pinyon-juniper, are also included as rangeland.

GRP funds focused on projects that supported grazing operations, protected grassland from conversion to other uses, enhanced plant and animal biodiversity, leveraged non-Federal funds, and addressed State program priorities. Priority was given to expiring Conservation Reserve Program (CRP) grasslands.⁸ Participants were required to follow a grazing management plan developed with NRCS to ensure that the grassland was sustained and that livestock grazing on the enrolled land were healthy and well-managed. Private or Tribal lands were eligible that were: 1) grassland containing forbs or shrubs (including rangeland and pastureland) for which grazing was the predominant use; or 2) located in an area that had been historically dominated by grassland, forbs, or shrubs. The land also must have potential to provide habitat for animal or plant populations of significant ecological value when retained in its current use or restored to a natural condition.

2.2 Overview of ACEP

The 2014 Farm Bill repeals WRP, FRPP, and GRP and consolidates the majority of those program provisions without change into one program consisting of two components, referred to as ALE and WRE. Lands enrolled in the former FRPP, GRP, and WRP are considered enrolled in ACEP under the 2014 Farm Bill.

The 2014 Farm Bill states that the purposes of the ACEP are to: (1) combine the purposes and coordinate the functions of the WRP, the GRP, and the FRPP as they were in effect before ACEP enactment; (2) restore, protect, and enhance wetland on eligible land; (3) protect the agricultural use and future viability, and related conservation values of eligible land by limiting nonagricultural uses of that land; and (4) protect grazing uses and related conservation values by restoring and conserving eligible land.

Table 1 compares key provisions of WRP, FRPP, and GRP under the 2008 Farm Bill and ACEP as authorized by the 2014 Farm Bill.

⁸ The CRP authorizes use of 10 to 15 year rental agreements to convert cropland to grasslands or trees.

Table 1: ACEP Selected Statutory Requirements

Program Elements	2008 Farm Bill	2014 Farm Bill
<i>Authorized Program Funding</i>	<p>WRP: Cumulative enrollment cap through fiscal year (FY) 2013: 3,041,200 acres.⁹</p> <p>FRPP: FY 2009 - \$121,000,000 FY 2010 - \$150,000,000; FY 2011 - \$175,000,000; and FY 2012 – 2013 - \$200,000,000 each year¹⁰</p> <p>GRP: Annual enrollment cap FY 2009 – 2013: 1,220,000 acres; 40 percent of funds for rental agreements; 60 percent of funds for easements.¹¹</p>	<p>FY 2014 - \$400,000,000 FY 2015 - \$425,000,000 FY 2016 - \$450,000,000 FY 2017 - \$500,000,000 FY 2018 – \$250,000,000</p>
<i>Program Purposes</i>	<p>WRP: To restore, protect, or enhance farmed or converted wetlands on private or Tribal lands.</p> <p>FRPP: To protect the agricultural use and related conservation values of eligible land by limiting nonagricultural uses of that land.</p> <p>GRP: To assist owners and operators in protecting grazing uses and related conservation values by restoring and conserving eligible land through rental contracts, easements, and restoration agreements.</p>	<p>(1) combine the purposes and coordinate the functions of the WRP, GRP, and FRPP;</p> <p>(2) restore, protect, and enhance wetland on eligible land;</p> <p>(3) protect the agricultural use and future viability, and related conservation values of eligible land by limiting nonagricultural uses of that land; and</p> <p>(4) protect grazing uses and related conservation values by restoring and conserving eligible land.</p>

⁹ Authority to enroll additional lands expired on September 30, 2013.

¹⁰ The 2014 authority to expend \$200 million expired upon enactment of the 2014 Farm Bill and no FY 2014 funds were used for new enrollments under the 2008 Farm Bill. ACEP funds were obligated in FY 2014.

¹¹ Authority to enroll additional lands expired on September 30, 2013.

<p><i>Authorized Easement Purchase Funding</i></p>	<p>WRP:</p> <ul style="list-style-type: none"> • Permanent Easement: <ul style="list-style-type: none"> - Up to 100 percent of the land’s value for purchase; and - 75 to 100 restoration costs • Less than Permanent Easement: <ul style="list-style-type: none"> - 50 to 75 percent of cost of a permanent easement; - 50 to 75 percent restoration costs. <p>FRPP:</p> <ul style="list-style-type: none"> • Not to exceed 50 percent of the appraised fair market value of the easement with the eligible entity contributing at least 25 percent of the acquisition purchase price. • No additional cost-share available. <p>GRP EASEMENTS:</p> <ul style="list-style-type: none"> • Not to exceed the fair market value of the land less the grazing value. • Not more than 50 percent of the costs to restore grazing land functions and values. 	<p>WRE:</p> <ul style="list-style-type: none"> • Permanent Easement: <ul style="list-style-type: none"> - Up to 100 percent of the land’s value for purchase; and - 75 to 100 percent restoration costs • Less than Permanent Easement: <ul style="list-style-type: none"> - 50 to 75 percent of cost of a permanent easement; - 50 to 75 percent restoration costs. <p>ALE:</p> <ul style="list-style-type: none"> • Not to exceed 50 percent of the fair market value of the agricultural land easement, while requiring the non-Federal share to be equivalent to the Federal share, with the eligible entity contributing at least 50 percent of the Federal share with its own cash resources; NRCS may contribute up to 75 percent of the fair market value of the easement if enrolling grasslands of special environmental significance, with the non-Federal share and eligible entity cash contribution amounts adjusted accordingly. • No additional ACEP cost-share available for conservation practices.
<p><i>Eligible Lands</i></p>	<p>WRP:</p> <p>(1) Private or Tribal land that (a) maximizes wildlife benefits and wetland values and functions; and (b) the land is a farmed or converted wetland with functionally-dependent adjacent land; or is cropland or grassland used for production before flooding from natural overflow of a closed basin lake or pothole together with functionally dependent land; and (c) successful restoration is likely and worth the costs;</p> <p>(2) Farmed wetland and adjoining lands, enrolled in the conservation reserve, with the highest wetland functions and values, and that are likely to return to production after they leave</p>	<p>Private or Tribal land that is—</p> <p>WRE:</p> <p>(1) A wetland or related area, including—farmed or converted wetlands where conversion was commenced before December 23, 1985, together with adjacent functionally dependent land if it (I) is likely to be successfully restored in a cost-effective manner; and (II) will maximize the wildlife benefits and wetland functions and values;</p> <p>(2) cropland or grassland that was used for agricultural production before flooding from the natural overflow of (I) a closed basin lake and adjacent land that is functionally dependent upon it, if the State or other entity is willing to provide 50 percent share of the cost of</p>

<p>the conservation reserve; (3) other wetland that would significantly add to the functional value of the easement; or (4) riparian areas that link other protected wetlands.</p> <p>Lands explicitly ineligible for WRP: Land that contains timber stands established under the conservation reserve; or pasture land established to trees under the Conservation Reserve Program.</p> <p>FRPP: Farm or ranch land subject to a pending purchase offer from an eligible entity and (i) has prime, unique, or other productive soil; (ii) contains historical or archaeological resources; or (iii) the protection of which will further a State or local policy consistent with FRPP purposes. This includes cropland, rangeland, grassland, pasture land, forest land that (i) contributes to the economic viability of an agricultural operation; or (ii) is a buffer from development.</p> <p>GRP: Private or Tribal land that (1) is grassland, land that contains forbs, or shrubland (including improved land) where grazing is the predominant use; and (2) is located in an area historically dominated by grassland, forbs, or shrubland, and the land (A) could provide habitat for animal or plant populations of significant ecological value if the land (i) is retained in its</p>	<p>the easement; or (II) a pothole and adjacent land that is functionally dependent on it; (3) farmed wetlands and adjoining lands that (I) are enrolled in the conservation reserve program; (II) have the highest wetland functions and values; and (III) are likely to return to production after they leave the conservation reserve program; (4) riparian areas that link other protected wetlands; or (5) other wetlands that would significantly add to the functional value of the easement.</p> <p>Lands explicitly ineligible for the wetland component of ACEP: Land established to trees under the conservation reserve program, except in cases NRCS determines enrollment furthers the purposes of ACEP; and farmed or converted wetlands where conversion occurred after December 23, 1985.</p> <p>ALE: Agricultural land subject to a pending purchase offer from an eligible entity; (1) that has prime, unique, or other productive soil; (2) that contains historical or archaeological resources; (3) the enrollment of which would protect grazing uses and related conservation values by restoring and conserving land; or (4) the protection of which will further a State or local policy consistent with the purposes of the program; and (5) that is cropland; rangeland; grassland or land that contains forbs, or shrubland for which grazing is the predominant use; is located in an area that has been historically dominated by grassland, forbs, or shrubs and could provide habitat for animal or plant populations of significant ecological value; is pastureland; or is nonindustrial private forest land that contributes to the economic viability of an offered parcel</p>
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	current use; or (ii) is restored to a natural condition; or (B) contains historical or archaeological resources; or (C) would address issues raised by State, regional, and national conservation priorities.	or is a buffer from development. Lands explicitly ineligible for ACEP: <ul style="list-style-type: none"> • Federal lands except lands held in trust for Indian tribes • State-owned lands • Land that already receives similar protection • Lands that have on-site or off-site conditions that would undermine meeting purposes of the program
<i>Easement Modification/Termination Authority</i>	WRP: Limited modification authority; termination after notice to House and Senate Agriculture Committees FRPP: No authority GRP: No authority	Authorizes easement subordination, modification, exchange, and termination under certain limited criteria.
<i>Who holds the easement</i>	WRP: NRCS FRPP: Eligible entity GRP: NRCS or eligible entity	WRE: NRCS ALE: Eligible entity
<i>Planning Requirement</i>	WRP: Wetland Reserve Plan of Operations (WRPO) FRPP: HEL plan when applicable. GRP: Grazing management plan that also protects any HEL and wetlands	WRE: Wetland Reserve Plan of Operations. ALE: Agricultural Land Easement Plan, including associated component plans such as a Grassland Management Plan for grasslands, a forest management plan for forest land, or a conservation plan that protects HEL and wetlands.
<i>Other Provisions</i>	WRP: With limited exceptions must have owned the land at least 7 years before easement creation.	WRE: With limited exceptions, must have owned the land at least 2 years before easement creation.

3.0 PURPOSE AND NEED FOR ACTION

The need to which NRCS is responding by proposing action is the need to implement the ACEP as authorized and funded by Congress. To meet this need, NRCS must implement the program in a manner that achieves the purposes for which the ACEP was authorized, which are: (1) combine the purposes and coordinate the functions of the WRP, GRP, and FRPP; (2) restore, protect, and enhance wetland on eligible land; (3) protect the agricultural use and future viability,

and related conservation values of eligible land by limiting nonagricultural uses of that land; and (4) protect grazing uses and related conservation values by restoring and conserving eligible land.

Congress has prescribed most aspects of the program and stated that this program is intended to combine the authorities of WRP, FRPP and GRP, indicating the programs should largely continue to operate as they have in the past with the exception of those limited changes required by the 2014 Farm Bill, therefore, little programmatic discretion remains. The only decision NRCS must make to implement these changes is how to define grasslands of special environmental significance in the agricultural lands component of the program. Therefore, the environmental impacts of alternative approaches to addressing these requirements are briefly explored in this document to determine whether significant impacts will result that require NRCS to prepare an EIS.

4.0 ALTERNATIVES

4.1 Alternative 1: No Action – Continue to implement WRP, FRPP, and GRP as they were in effect under the 2008 Farm Bill.

Alternative 1 (No Action) involves a continuation of WRP, FRPP, and GRP as they were implemented under the 2008 Farm Bill. This alternative assumes conservation easement funding at 2014 Farm Bill levels and cost-share would be provided based on 2008 Farm Bill requirements and therefore that similar conservation practices would be implemented.

Although this alternative is not viable because it does not meet the requirements of the 2014 Farm Bill, it provides a baseline against which to compare the effects of the other alternatives considered. In addition, CEQ NEPA implementing regulations require analysis of a No Action alternative.

4.2 Alternative 2: Implement ACEP according to 2014 Farm Bill requirements and broadly define “grassland of special environmental significance” without establishing specific criteria.

Under alternative 2, grasslands of special environmental significance would be defined as: Grasslands that contain little or no noxious or invasive species, are subject to threat of conversion to nongrassland uses or are subject to fragmentation, and the land is:

- (1) Rangeland, pastureland, or shrubland on which the vegetation is dominated by native grasses, grasslike plants, shrubs, or forbs, or
- (2) Improved, naturalized pastureland and rangeland.

In addition, these must be lands that:

- (1) Provide, or could provide, habitat for threatened and endangered species or other at-risk species,
- (2) Protect sensitive or declining native prairie or grassland types, or
- (3) Provide protection of highly sensitive natural resources.

This alternative incorporates lands eligible for enrollment under GRP and its emphasis on protecting grassland habitat for declining species, but it also allows the higher cost-share rates to be used to protect grasslands that are particularly important to the protection of other highly sensitive natural resources, such as water quality or quantity. NRCS would have discretion to use the higher rate of cost share so long as the grasslands being protected meet this definition.

4.3 Alternative 3: Implement ACEP according to 2014 Farm Bill requirements and define “grassland of special environmental significance” by establishing criteria for initial eligibility instead of using a broad definition.

Alternative 3 allows the higher cost-share rates to be used to protect grasslands that are particularly important to the protection of other highly sensitive natural resources, but contains more explicit requirements for this designation. Under this alternative, national criteria would consist of:

- Grassland that is subject to threat of development or conversion to non-grassland uses, and
- Grassland that is predominantly native species, has minimal (i.e., less than 5 percent) invasive species present, will be maintained as grassland, is compatible with grazing uses, and meets one or more of the following functions or criteria:
 - (1) Provides protection for water quality improvement in impaired watersheds (i.e., watersheds subject to regulation under Clean Water Act).
 - (2) Contributes to groundwater recharge in vulnerable aquifers and/or surface waters.
 - (3) Identified as an environmentally sensitive area by the NRCS Chief (including sensitive or priority geographic regions).
 - (4) Expiring CRP established to grass.
 - (5) Habitat for species listed under the Endangered Species Act (ESA) as threatened or endangered or other species of concern.

This alternative would also allow NRCS to apply more focused criteria supporting State and regionally identified conservation priorities, such as protection of significant local at-risk plant or wildlife species or pollinator habitat.

4.4 Alternatives Considered but Eliminated from Detailed Analysis

NRCS considered an alternative under which there would be no definition of grasslands of special environmental significance. Instead, each State Conservationist, with input from the State Technical Committee, would determine what would constitute “grasslands of special environmental significance.” This alternative was eliminated from detailed analysis because assessing the impacts would require speculation about what criteria might be considered by State Conservationists and NEPA does not require analysis of speculative actions or impacts.

NRCS also considered alternatives regarding criteria to be used to identify projects of special significance that would qualify a land trust or other eligible entity to make a reduced cash contribution with no increase in Federal share where the landowner voluntarily increases the landowner contribution commensurate to the amount of the waiver. This issue was eliminated from detailed analysis because the direct effect of such a waiver is to allow the entity to purchase an easement interest in particular parcels using less out-of-pocket funds. Assessing the impacts of this on the quality of the human environment would require speculation about how those entities would use the funds they would be saving and NEPA does not require analysis of speculative actions or impacts.

5.0 EFFECTS OF ALTERNATIVES

5.1 Approach to Impact Analysis

This analysis concentrates on the environmental impacts of conservation practices likely to be implemented under each of the alternatives and the locations of lands likely to be protected by conservation easements. Program and conservation practice impacts described in the 2009 WRP, FRPP, and GRP Programmatic Environmental Assessments¹² are incorporated by reference. This EA also incorporates by reference, the findings of the Resources Conservation Act (RCA) Appraisal: Soil and Water Resources Conservation Act,¹³ and the Conservation Effects Assessment Project (CEAP) findings described in a series of CEAP cropland, wildlife, wetlands, and grazing lands assessment reports.¹⁴

¹² The 2009 WRP Programmatic EA is available at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_006911.pdf; the 2009 FRPP Programmatic EA is available at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1042340.pdf; and the 2009 GRP Programmatic EA is available at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1042339.pdf.

¹³ “RCA Appraisal: Soil and Water Resources Conservation Act,” USDA, 2011; http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044939.pdf.

¹⁴ See <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/ceap/> for a description of CEAP and links to related studies and reports. See also Appendix A.

This EA analyzes potential environmental impacts at a broad program scale, identifying the qualitative effects that are a reasonably foreseeable result of each alternative. The transfer of the easement interest alone does not affect the environment except to the extent it restricts future alternative land uses; it is the conservation practices that are implemented under the programs that have immediate potential to affect the quality of the human environment. These qualitative assessments of NRCS conservation practices are based on a review of the best available scientific studies and methodological approaches, as well as professional judgment. NRCS has developed network effects diagrams to illustrate the chain of expected direct, indirect, and cumulative effects of applying each of its conservation practices according to the standard for the land use on which it is intended to be applied and the other practices to be considered in conjunction. Copies of the network diagrams for conservation practices implemented under 2008 Farm Bill conservation easement programs and likely to be implemented under ACEP are available on the NRCS Web site,¹⁵ as well as in Appendix H. The methodologies used to develop the network effects diagrams and determine the effects of NRCS conservation programs are described in Appendix A.

The No Action alternative focuses on WRP, FRPP, and GRP activities under the 2008 Farm Bill, their effects on the resources they most influence, and a projection of future effects if these programs were to continue unchanged. The discussion of the Proposed Action and each of the other alternatives focuses on the likely differences in impacts to the quality of the human environment as compared to the No Action alternative.

5.2 Environmental Considerations in NRCS Conservation Program Delivery

In addition to this programmatic review, NRCS undertakes environmental review at subsequent stages of program implementation consistent with NEPA requirements, other requirements for protection of the environment, and NRCS regulations. This additional review is conducted as part of the NRCS planning process and includes conducting an on-site environmental evaluation (EE) and documenting the results on the NRCS-CPA-52, Environmental Evaluation Worksheet, before funding is provided to eligible recipients. The EE assesses the effects of conservation alternatives and provides information for the RFO to determine the need for consultation or to develop additional EAs or EISs consistent with NEPA, or to undertake other actions to meet requirements for environmental protection.

In situations where a single conservation practice may result in increased risk to the condition of another resource, additional conservation practices are integrated into the conservation plan to avoid creating new resource concerns. NRCS regulations require NRCS to minimize adverse

¹⁵ Conservation practice network effect diagrams are available in the right hand column at http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849.

effects¹⁶ and the planning and EE process helps to ensure that all potential impacts to natural resources are identified and appropriate alternatives and practices are available. Appendix B describes the development of NRCS conservation practice standards and how environmental considerations, including compliance with NEPA, the ESA and National Historic Preservation Act, are integrated into NRCS conservation planning and program delivery to ensure adverse effects are minimized and NRCS takes no action under ACEP that will result in significant adverse effects.

5.3 Environmental Effects of Alternatives

5.3.1 Alternative 1: No Action – Continue to implement WRP, FRPP, and GRP as they were in effect under the 2008 Farm Bill.

Alternative 1, the No Action alternative, assumes continuation of WRP, FRPP, and GRP under 2008 Farm Bill rules and 2014 Farm Bill authorized funding levels. Though this alternative is not feasible to implement, it is required by CEQ regulations because it provides a baseline against which to compare effects. Under this alternative, NRCS would continue to provide financial and associated technical assistance to private farm and ranch land owners or eligible cooperating entities through WRP, FRPP, and GRP as those programs were authorized before enactment of the 2014 Farm Bill.

WRP Impacts Overview¹⁷

Over half the Nation’s wetlands in the lower 48 States have been lost since colonial times and over 80 percent of lands on which restoration is economically feasible are in private ownership. WRP has been a key program for providing assistance to private and Tribal landowners to restore and protect wetlands degraded by agriculture. By the end of FY 2013, over 2.7 million acres were enrolled in WRP.

Overall wetland acreage continues to decline in the United States. However, according to the most recent report from the U.S. Fish and Wildlife Service (USFWS), “Status and Trends of Wetlands in the Conterminous U.S. 2004-2009” (2011), the difference in the national estimates of wetland acreage between 2004 and 2009 was not statistically significant. “Certain types of wetland exhibited declines while others increased in area.”¹⁸ Although wetland acreage declined by an estimated 62,300 acres between 2004 and 2009, wetland reestablishment efforts contributed to an overall decline in the net rate of wetland loss, particularly on agricultural lands.¹⁹ According to the report, between 2004 and 2009, 489,600 acres previously classified as

¹⁶ 7 CFR 650.3(b)(4).

¹⁷ Baseline conditions of the natural resources most affected by the WRP are described on pages 12, 13, 16, 21-23, and 32 of the 2009 WRP Final Programmatic Environmental Assessment and are hereby incorporated by reference.

¹⁸ U.S. Fish and Wildlife Service, Report on the Status and Trends of Wetlands in the Conterminous US, 2004-2009, page 16.

¹⁹ Ibid., at p. 72.

non-wetland, were reclassified as wetland. These increases were attributed in part to wetland reestablishment and creation on agricultural lands enrolled in conservation programs such as WRP.

Under the 2008 Farm Bill, more than 848,000 acres were enrolled in WRP for purposes of wetland restoration and protection. The types of wetland restored were appropriate to the geographic region and vary from vernal pools in the West and Northeast to bottomland hardwood forests in the Southeast, to prairie potholes in the upper Midwest, to coastal marshes, and mountain meadows. Primarily, however, WRP restorations are of emergent marsh wetlands and floodplain forests. Restoration and protection of these varied and valuable wetland types accounts for 85 percent of the acreage enrolled in WRP, while the remaining 15 percent of WRP acres includes adjacent upland habitats that provide nesting habitat and buffer for wetland areas. Most acres offered into WRP occur in areas that, despite having been drained or cleared for agricultural production, are still subject to frequent flooding or prolonged saturation, making them ideally suited for restoration and usually marginal for agricultural production.²⁰

Overall, the top three NRCS conservation practices used under WRP from FY 2009 to FY 2013 to restore wetlands were:

- Wetland Restoration 749,931 acres
- Wetland Enhancement 380,672 acres
- Wetland Wildlife Habitat Management 352,057 acres

A wider range of conservation practices was used under WRP, however, to achieve fish and wildlife habitat, water quality and wetlands goals, consistent with the purposes of WRP. (See Appendices C, D, and E.) The effects of NRCS wetland conservation practices are documented in the network diagrams, and summarized by region in “Conservation of Wetlands in Agricultural Landscapes of the United States: Summary of the CEAP Wetlands Literature Synthesis.” (2007).²¹ In lieu of Wetland Wildlife Habitat Management, though, the CEAP literature synthesis examined the effects of implementing the Riparian Buffer conservation practice standard in addition to Wetland Restoration and Wetland Enhancement.

For purposes of the No Action alternative, if it were assumed that the cap on acres that could be enrolled in WRP would remain at 3,041,000 as it was in 2008 Farm Bill, only an additional 333,576 acres could be enrolled from FY 2014 through FY 2018. This level would mean enrollments during the 2014 Farm Bill years would be well below the 2008 Farm Bill average annual enrollments of approximately 169,628 acres. Based on the authorized program funding for ACEP in the 2014 Farm Bill, it is reasonable to expect that a total of 150,000 to 300,000

²⁰ For further information see “Conservation of Wetlands in Agricultural Landscapes of the United States: Summary of the CEAP Wetlands Literature Synthesis” (April 2011); http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1041601.pdf.

²¹ See p. 73.

additional acres of degraded agricultural wetlands could be enrolled and restored from FY 2014 through FY 2018. Thus, cumulative enrollments under this alternative would not likely exceed the 2008 Farm Bill cap. This latter scenario is the assumption used for purposes of this analysis.

Since the beginning of WRP in 1992, approximately 2,707,424 acres of wetlands have been enrolled in the program. Figure 1 shows the approximate cumulative acres enrolled by State. Florida, Louisiana, and Arkansas have led the Nation in total WRP acres enrolled. Figure 2 shows that during the course of the 2008 Farm Bill, North Dakota and Minnesota joined Florida and Louisiana as States leading WRP enrollments, which totaled 848,140 acres nationwide.

To achieve successful restoration that maximizes benefits to both the landowners and the public, WRP focuses on: 1) enrolling marginal lands that have a history of crop failures or low production yields; 2) restoring and protecting wetland values on degraded wetlands; 3) maximizing wildlife benefits; 4) achieving cost-effective restoration with a priority on benefits to migratory birds; 5) protecting and improving water quality; 6) reducing the impact of flood events; 7) increasing ecosystem resilience; and 8) promoting scientific and educational uses of WRP projects.

**Figure 1: Cumulative Wetland Reserve Program Acres Enrolled
FY 1992 through FY 2013**

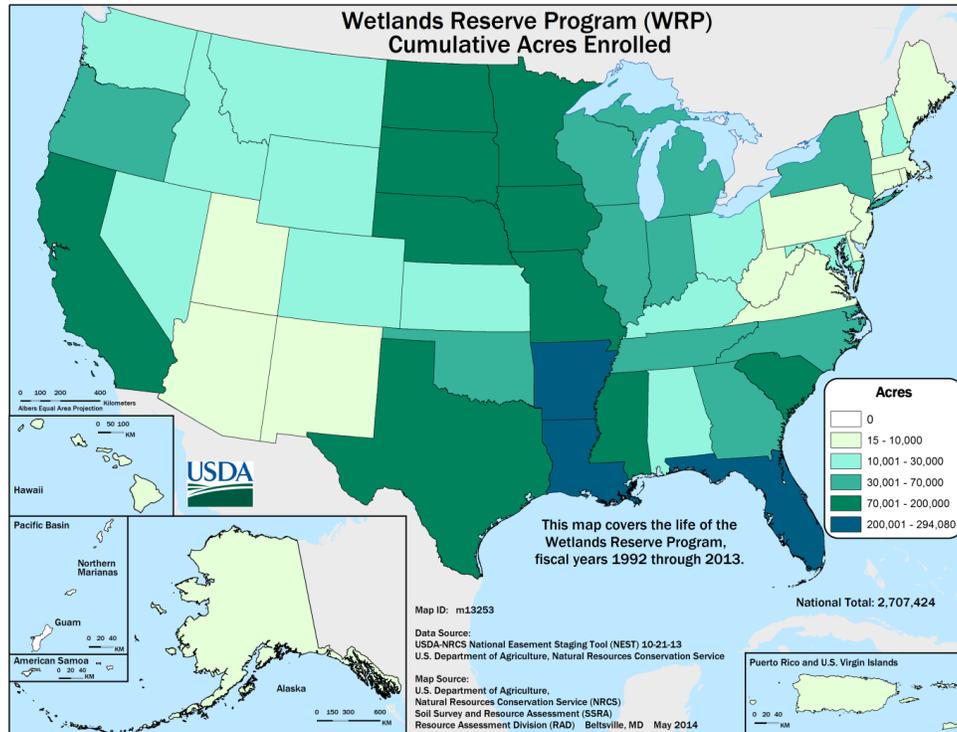
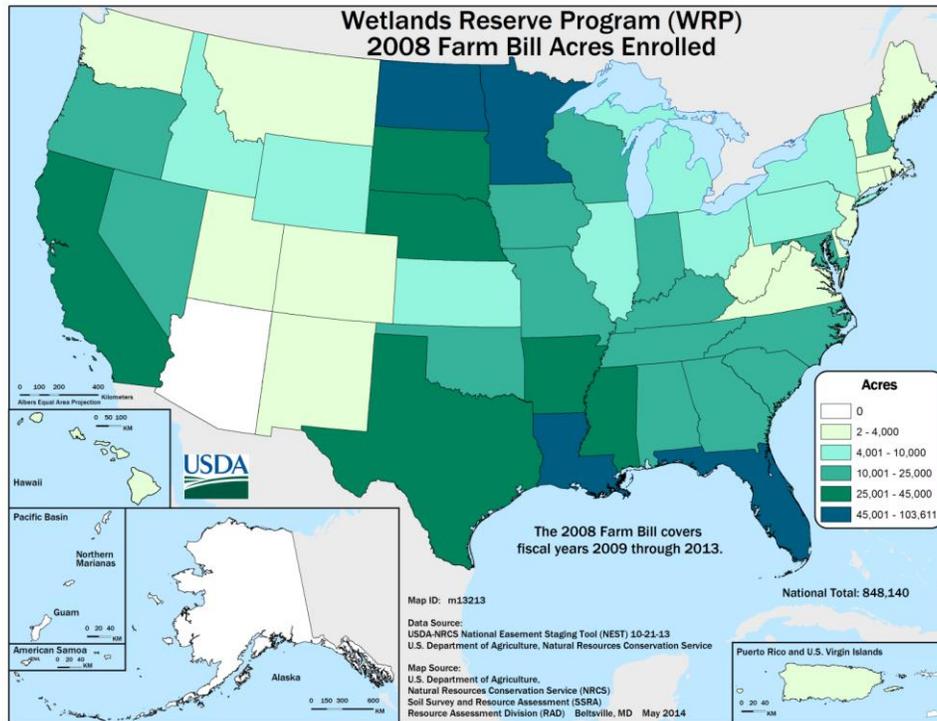


Figure 2: WRP Acres Enrolled During 2008 Farm Bill



Under WRP, at least 70 percent of the wetlands and associated habitats are restored to their original condition to the extent practicable; the remaining 30 percent of the project area may be restored or enhanced to alternative habitat conditions. For example, instead of restoring a bottomland hardwood site to all trees, a portion of the site could be restored to an emergent marsh condition if the landowner or NRCS wanted to create habitat for targeted wildlife species. This flexibility allows NRCS to implement projects that meet landowner objectives that also are compatible with program goals, address specific species or habitat needs, and maximize wildlife and environmental benefits.

All WRP contracts and easements are accompanied by a WRPO that includes a conservation plan that identifies how the wetlands and associated habitats will be restored, improved, and protected to achieve program purposes. Conservation practices implemented through the WRPO are planned, evaluated, and implemented for each site as a result of a field conservationist's application of the NRCS conservation planning process, environmental evaluation, and adherence to the applicable conservation practice standards and specifications.

Taking a WRP easement means that degraded wetlands will be restored and protected; the land will not be developed; and only uses compatible with the purposes of the program, including maintaining wetland functions and values will be allowed. Under WRP, the majority of conservation practices implemented are related to wetland restoration and wildlife habitat

improvement. The following information presents conservation practice data grouped by purpose: Fish and Wildlife Habitat Improvements, Water Quality Improvements, and Wetlands.²²

Fish and Wildlife Habitat

The 2009 WRP Programmatic EA describes typical issues related to wetland fish and wildlife resources. This EA incorporates by reference, pages 22 through 24 of the 2009 WRP Programmatic EA which characterizes biological resources, including fish and wildlife habitat. The section below provides additional information and describes the past and predicted future impacts of WRP when implemented according to 2008 Farm Bill rules.

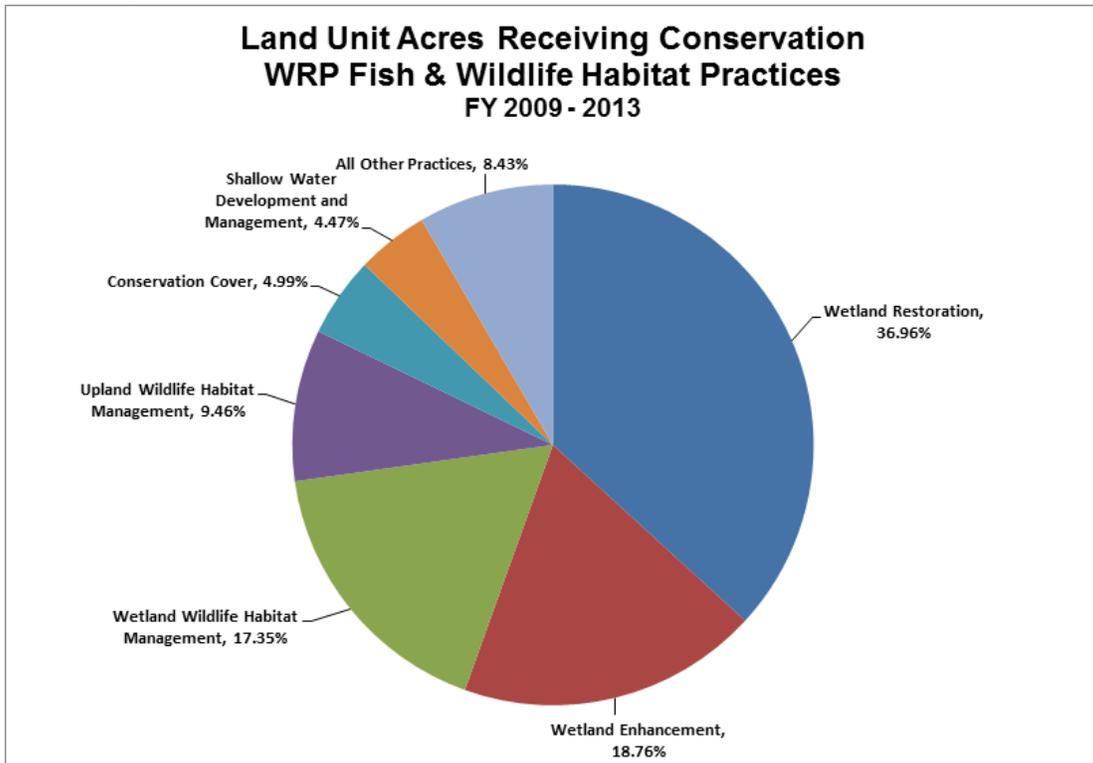
Conservation Practices Related to Improving Fish and Wildlife Habitat

Figure 3 identifies the top practices used through WRP under the 2008 Farm Bill to improve Fish and Wildlife Habitat. While every practice and management action taken on the land has some effect on biological resources, approximately 16 conservation practices have as their primary purpose the improvement of fish and wildlife habitat. Of these, three conservation practices—Wetland Restoration, Wetland Enhancement, and Wetland Wildlife Habitat Management—made up about 73 percent of the acreage treated with conservation practices used under WRP during the 2008 Farm Bill to improve fish and wildlife habitat. Approximately 13 other conservation practices make up the remaining 27 percent of acreage on which fish and wildlife habitat improvements were applied through WRP over the course of the 2008 Farm Bill. These 16 conservation practices were applied on 325,000 to 534,000 acres a year under WRP from FY 2009 through FY 2013.²³ (See Appendix C.) Under the No Action alternative, NRCS expects practices would be implemented in FY 2014 through FY 2018 at percentages very similar to those implemented from FY 2009 through FY 2013.

²² Note that there is some overlap between these groupings of conservation practices because some practices address multiple resource concerns. Also, in developing the conservation practice information, land unit acres are counted each time a practice is applied on that land unit in the fiscal year. Therefore, land unit acres may be counted multiple times across practices, practice groupings, and fiscal years.

²³ Note that in some cases, more than one of these conservation practices may have been applied on the same acreage, so these figures include some double-counting.

Figure 3: WRP 2008 Farm Bill Fish and Wildlife Habitat Practices



* Only practices representing a significant portion of the total for the period are included in the above chart. Practices not included are summed into the All Other category.

Network diagrams illustrating the effects of WRP conservation practices benefitting fish and wildlife habitat are found in Appendix H. Although the impacts of these practices to fish and wildlife are overwhelmingly beneficial, as the network diagrams reflect, other minor impacts to other resources may occur, especially during construction, some of which may require implementing associated conservation practices as mitigation measures. For example, depending on the location, Shallow Water Development may increase onsite sedimentation in the short-term. For this reason it is often implemented in concert with Critical Area Planting or Filter Strip. These potential impacts are identified through the site specific environmental evaluation and minimized as appropriate, with consultations conducted as necessary to avoid undue harm to protected resources.

A number of studies of WRP effects on fish and wildlife are being conducted as part of CEAP. Though responses by species vary, results have been positive overall. For example, a study in Missouri found that post-restoration Habitat Suitability Index²⁴ scores on WRP sites were markedly higher than the pre-restoration score for all non-forest species whose requirements

²⁴ Habitat Suitability Index models use data collected about a site to provide a relative measure of how well the site meets the life history requirements of a particular species. The better the site provides for the species' requirements for food, water, cover, and space for reproduction, the higher the site will score.

were modeled, and for two of the three forest species. The third forested species was an early successional wetland species that scored higher during earlier periods of restoration when vegetation is sparse.²⁵ Another study in the Rainwater Basin area of Nebraska, an important area for migratory waterfowl, found that WRP wetlands are an important source of wetland-based forage for migrating waterfowl.²⁶

Additional studies have found that restored wetlands provide wildlife habitat value similar to natural reference wetlands, though most of these studies focus on bird response to wetland restoration. These studies reveal that while wetland-associated birds respond positively to the habitats established, species composition and community structure are highly variable and depend on local wetland conditions and landscape factors, though species richness is expected to grow over time with the increase in vegetation complexity that occurs in most restored wetland sites.²⁷ Invertebrates and amphibians generally are quick to respond to newly established wetland habitats. “Key factors reported as correlated with wildlife species richness include wetland size, availability of nearby wetlands habitats, diversity of water depths and vegetation, wetland age, and maintenance and management activity.”²⁸

There is potential for adverse impacts to species to occur, particularly in the short-term as a result of construction activities. However, NRCS policies require that conservation plans minimize adverse effects before providing technical and financial assistance²⁹ and avoid adverse effects on species of concern by recommending alternatives that avoid or minimize adverse impacts. NRCS also consults with USFWS experts as necessary to avoid harm to any species that is protected under the ESA or is a candidate for listing. Overall, conservation practices implemented through WRP have been shown to produce important benefits for wildlife habitats. See Appendix C for a list of NRCS fish and wildlife habitat practices implemented under WRP during the 2008 Farm Bill and Appendix H for the network effects diagrams.

Water Quality

This EA incorporates by reference pages 15 through 18 of the 2009 WRP Programmatic EA which characterizes water quality issues related to agricultural lands eligible for WRP enrollment, and the discussion on pages 19 and 20 regarding the beneficial impacts of WRP to

²⁵ USDA Natural Resources Conservation Service, CEAP Conservation Insight: Ecological Monitoring Insights from the Wetlands Reserve Program in Missouri, February 2008.

²⁶ USDA Natural Resources Conservation Service, CEAP Conservation Insight: The Wetlands Reserve Program Supports Migrating Waterfowl in Nebraska’s Rainwater Basin Region, September 2008.

²⁷ Rewa, C., “Fish and Wildlife Benefits Associated with Wetland Establishment Practices,” Fish and Wildlife Response to Farm Bill Conservation Practices, The Wildlife Society Technical Review 07-1 September 2007, p. 80, http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_013370.pdf.

²⁸ Ibid., p. 71.

²⁹ 7 CFR 650.3(b)(4).

water quality. The section below provides additional information and describes the past and predicted future impacts of WRP when implemented according to 2008 Farm Bill rules.

Conservation Practices used in WRP Related to Water Quality

Figure 4 identifies the top conservation practices used under WRP during the 2008 Farm Bill to improve water quality. Water quality is an indicator of the health of our environment and reflects what occurs on the land. The primary water quality issues from agriculture are sediment, nutrients, pesticides, pathogens, and in some parts of the country, salinity and temperature. Using conservation practices to improve land in an environmentally sound manner results in better water quality for drinking, recreation, wildlife, fisheries, and industry.

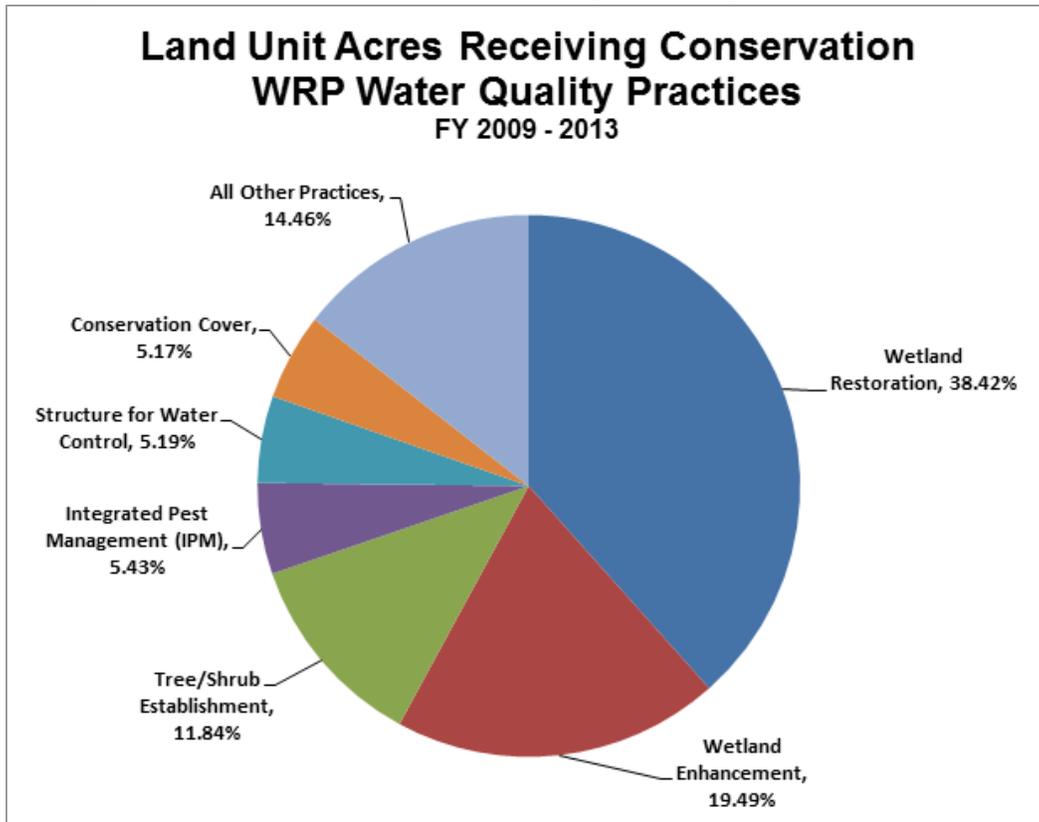
As figure 4 indicates, Wetland Restoration, Wetland Enhancement, and Tree/Shrub Establishment were the top three practices used under WRP during the 2008 Farm Bill to address water quality issues. Respectively, these three practices represented approximately 38, 19, and 12 percent of the acreage to which WRP water quality practices were applied. Of the 33 conservation practices with a water quality improvement purpose used from FY 2009 to 2013, six of those practices—Wetland Restoration, Wetland Enhancement, Tree/Shrub Establishment, Integrated Pest Management, Water Control Structure, and Conservation Cover—made up more than 85 percent of the water quality practices used. (See Appendix D.)

Each year from FY 2009 through FY 2013, between 296,000 and 515,000 acres were treated with water quality improvement practices under WRP. Under the No Action alternative, NRCS expects similar water quality practices to be implemented from FY 2014 through FY 2018.

The water quality improvement practices, as illustrated in the network effects diagrams associated with each practice and further supported by the results of CEAP studies, work to improve water quality by reducing delivery of sediment, nitrogen and phosphorous. Based on the results of CEAP studies thus far, by 2006 the greatest reduction in nitrogen and phosphorous losses from the land had generally occurred in the Missouri River and Arkansas-White-Red River Basin. The least reductions were obtained in the Lower Mississippi River Basin.³⁰

³⁰ See River Basin Cropland Modeling Study Reports for the Upper Mississippi River Basin, Ohio-Tennessee River Basin, Missouri River Basin, Arkansas-White-Red River Basin, Lower Mississippi River Basin, Great Lakes Region, and Chesapeake Bay;
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/na/?cid=nrcs143_014144.

Figure 4: WRP 2008 Farm Bill Water Quality Improvement Practices



* Only practices representing a significant portion of the total for the period are included in the above chart. Practices not included are summed into the All Other category.

The ability of wetlands to filter pollutants has long been known. A CEAP wetlands literature synthesis identified studies documenting the nutrient processing benefits of implementing Riparian Buffers, Wetland Restoration, and Wetland Creation in the corn belt³¹ and Wetland Restoration in the Prairie Pothole Region,³² as well as the pollutant management benefits of implementing Wetland Restoration and Riparian Forest Buffers in the Mississippi Alluvial Valley³³ and Filter Strips and Riparian Buffers in the Piedmont-Coastal Plain.³⁴ Other studies referenced in the report support additional water quality benefits from conservation practices used in WRP.

There is potential for adverse impacts to water quality to occur from some WRP conservation practices, particularly as a result of construction activities. For example, there may be some soil

³¹ USDA Natural Resources Conservation Service, Conservation of Wetlands in Agricultural Landscapes of the United States: Summary of the CEAP Wetlands Literature Synthesis, April 2011 at p. 7, http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1041601.pdf.

³² Ibid., at p. 15.

³³ Ibid., at p. 11.

³⁴ Ibid., at p. 13.

erosion associated with putting in a new grassed waterway; however mitigation measures are required to minimize the erosion based on the NRCS policy requiring that conservation plans minimize adverse effects before providing technical and financial assistance.³⁵

Wetlands

This EA incorporates by reference discussions of wetland conditions on pages 12–14, 15–17, 21, 22–24 and 32–33 of the 2009 WRP Programmatic EA, characterizing issues related to degraded wetlands on agricultural lands. The section below provides additional information and describes the past and predicted future impacts of WRP when implemented according to 2008 Farm Bill rules.

Conservation Practices used in WRP Related to Wetland Conservation

Figure 5 identifies the top practices used in WRP under the 2008 Farm Bill for Wetland Conservation. Healthy wetland ecosystems function to modulate drought and floods, provide wildlife habitat, filter pollutants, retain sediment, store carbon, and cycle nutrients. The goal of the wetland conservation practices is to restore, enhance and protect the quality and quantity of wetlands. Of the three primary wetland conservation practices funded through WRP, Wetland Restoration was applied on about 65 percent of the acres treated, followed by Wetland Enhancement on approximately 33 percent, and Wetland Creation on about 3 percent of wetland acres treated under WRP from FY 2009 to FY 2013.

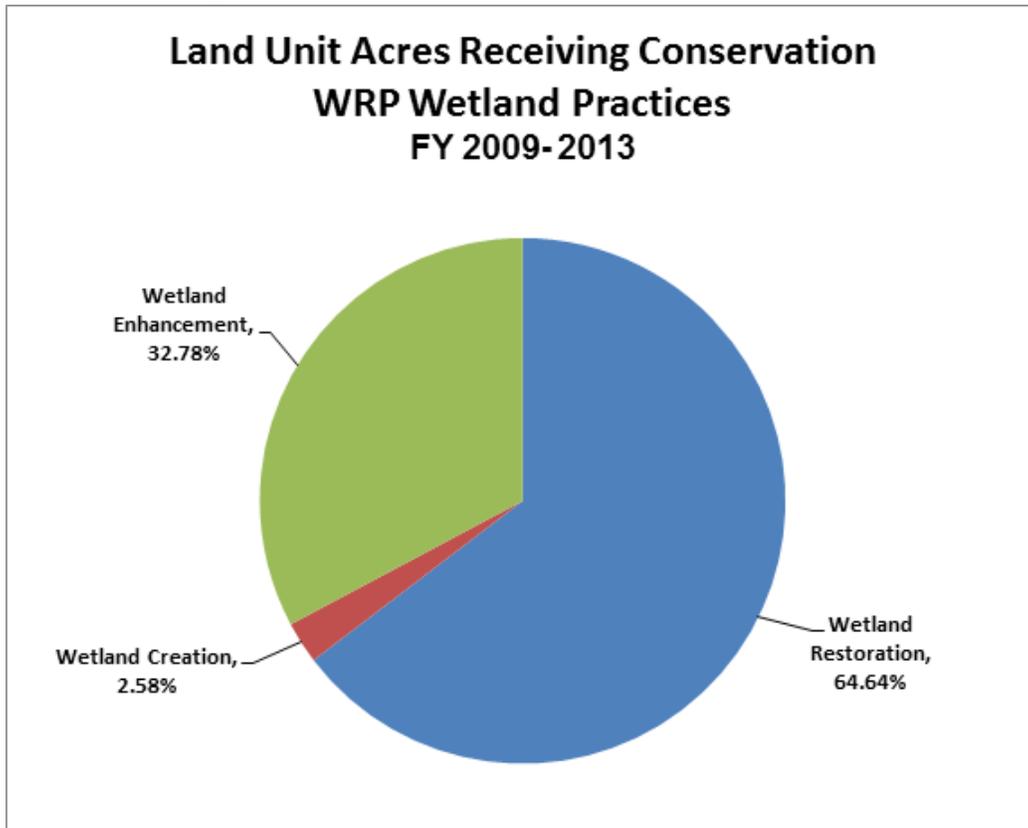
From FY 2009 through FY 2013, a total of approximately 1,950,081 acres of conservation practices related to wetland improvements were applied on lands enrolled in WRP. Under the No Action alternative, NRCS expects the types of wetland practices implemented from FY 2014 through FY 2018 to be similar to those implemented from FY 2009 through FY 2013.

The Wetland Enhancement, Restoration, and Creation practices, as illustrated in the network effects diagrams associated with each practice and further supported by the results of CEAP studies, indicate NRCS wetland restoration and enhancement conservation practices do improve ecosystem services, such as improved water quality, floodwater retention, and wildlife habitat.³⁶

³⁵ 7 CFR 650.3(b)(4).

³⁶ See, for example, the 2011 journal supplement by the Ecological Society of America titled, “*Conservation of Wetlands in Agricultural Landscapes of the United States*,” which includes 10 papers summarizing the effects of conservation practices and programs on agricultural wetlands in seven geographic regions of the United States.

Figure 5: WRP 2008 Farm Bill Wetland Practices



* Only practices representing a significant portion of the total for the period are included in the above chart. Practices not included are summed into the All Other category.

Additional studies are underway and may identify opportunities to further maximize wetland benefits, including those obtained under WRP. See Appendix E for the wetland conservation practices and Appendix H for the associated network effects diagrams.

WRP Cumulative Effects

WRP restored and protected wetland functions and values on more than 2.7 million acres of degraded wetlands and associated uplands through the end of FY 2013, maximizing wildlife benefits; achieving cost-effective restoration with a priority on benefits to migratory birds; protecting and improving water quality; reducing the impact of flood events; increasing ecosystem resilience; and promoting scientific and educational uses of WRP project lands. Of these acres, table 2 identifies the number of acres enrolled as permanent easements, 30-year easements, 30-year contracts with Tribes, or under restoration cost-share agreements. The large majority of acreage is enrolled as permanent easements and will protect wetland habitats and associated uplands into perpetuity.

**Table 2: WRP Cumulative Easements, Agreements,
Contracts and Acres through FY 2013**

WRP Cumulative Enrolled Easements, Restoration Cost-Share Agreements and Contracts with Tribes and Closed Easements		
Agreement Type	Cumulative Agreements	Cumulative Acres
Enrolled Permanent Easements	10,993	2,125,847
Enrolled 30-year Easements	2,823	455,695
Restoration Cost-Share Agreement	832	123,111
30-Year Contract with Tribes	14	2,771
Total	14,662	2,707,424
Agreement Type	Cumulative Easements	Cumulative Acres
Closed Permanent Easements	10,106	1,970,517
Closed 30-Year Easements	2,402	399,700
Total	12,508	2,370,217

WRP has been a key component of several NRCS landscape initiatives that provide targeted delivery of conservation assistance to address specific resource concerns in a specific area. These NRCS initiatives provide good examples of WRP cumulative effects. For example, as part of the NRCS landscape initiative in the Mississippi River Basin (MRBI), NRCS entered into a multi-state partnership agreement in FY 2012 to focus WRP enrollments in the 699-mile reach of the Lower Mississippi River from its confluence with the Ohio River at Cairo, Illinois, to the Port of Baton Rouge, Louisiana. The 2.8 million acre Mississippi river floodplain within this area includes 322,561 acres of agricultural land bounded on both sides by the U.S. Army Corps of Engineers mainline levee system (batture lands – Lower Mississippi River Basin (LMRB)). The Lower Mississippi River and the LMRB have been subjected to widespread flood-control practices resulting in vast clearing and conversion of the original forests, native grasslands, and wetlands for intensive agriculture. The wetlands of the LMRB are recognized as Wetland Habitats of National Concern and as Wetlands of International Importance. The international significance of the project area’s wetland values to migratory birds are recognized in the North American Waterfowl Management Plan, the U.S. Shorebird Conservation Plan, the Partners in Flight Initiative, and the North American Waterbird Conservation Plan. The restoration and protection of wetlands through WRP and the resultant change in land uses provides flood protection and meets some of the economic and environmental concerns of the local people.

The NRCS Bay Delta Initiative has also integrated WRP to achieve its objectives. NRCS in California purchased a WRP easement on the unique 789-acre Quimby Island that lies in the heart of the California Bay Delta. The Bay Delta region, located in the Sacramento and San Joaquin watersheds of California, encompasses over 38 million acres and is one of the most important estuary systems in the Nation. The area provides drinking water for more than 23 million people and irrigation water to 4 million acres of farmland, and is a region with general

economic activities estimated at over \$400 billion annually. However, increased demand for limited water resources and declining water quality threaten the economic and environmental well-being of the Bay Delta area. As part of the NRCS Bay-Delta Initiative, a WRP wetland restoration effort for waterfowl, sandhill cranes, and wintering shorebirds resulted from collaboration among NRCS, the owner of Quimby Island, and the nonprofit California Waterfowl Association. The restoration is expected to help reverse subsidence of the island by protecting fragile peat soils and increase carbon sequestration through the establishment of permanent emergent vegetation.

Another example of the cumulative effects of WRP is found in Georgia. There, NRCS helped protect a large portion of the Lower Altamaha River Corridor through WRP. In 2013, NRCS and a landowner signed a WRP agreement to restore wetlands in the Lower Altamaha River Corridor, which is identified as a high-priority area in the State Wildlife Action Plan. Commonly referred to as “Whaley Lake,” the 1,098-acre easement will add to the 35 miles of existing contiguous protection of the Lower Altamaha River Corridor, from the Intracoastal Waterway near Wolf and Egg Island National Wildlife Refuges up to Griffin Ridge Wildlife Management Area. The Lower Altamaha River Corridor is also part of the Fort Stewart/Altamaha Longleaf Partnership priority area. The Partnership is working together to restore longleaf pine habitats and includes Land Trusts and The Nature Conservancy; timber companies, such as International Paper; State Governments, including Wildlife Resources and Coastal Resource Divisions of the Georgia Department of Natural Resources and the Georgia Forestry Commission; and Federal agencies, such as USFWS, the Department of the Army, and the United States Marine Corps. This easement has noteworthy historical value, and will benefit the at-risk wildlife species that depend on the Altamaha River Corridor, such as the Wood Storks and Bald Eagles, and it will also ensure that these habitats are fully restored and protected for the long-term. Landscape-level protection achieved on the Lower Altamaha River Corridor is a model for other high priority areas in the State.

Because demand for wetland restoration is continuing, it is reasonable to conclude that under the No Action alternative the same types of conservation practices implemented under WRP in the past would likely be implemented in the future and that an additional 275,000 acres would be enrolled from FY 2014 through FY 2018, protecting up to a total of 3 million wetland acres by the end of FY 2018. Additional wetland wildlife habitat would be created and water quality and floodwater retention benefits would continue to accrue. The trend from FY 2004 to FY 2009 of WRP wetland reestablishment contributing to an overall decline in the net rate of wetland loss may continue into the future, but because there will be fewer ACEP-WRE acres enrolled overall as a result of 2014 Farm Bill funding levels, it is also possible there may not be enough enrollments to prevent a net wetland loss from occurring.³⁷

³⁷ See, USFWS, Status and Trends of Wetlands in the Conterminous U.S., at p. 72.

FRPP Impacts Overview³⁸

The FRPP provides matching funds to help purchase development rights to keep productive farm and rangeland in agricultural uses. Working through existing programs, USDA partners with State, Tribal, or local governments and nongovernmental organizations to acquire conservation easements or other interests in land from landowners. USDA provides up to 50 percent of the fair market value of the conservation easement.

The FRPP generally preserves open agricultural areas and associated viewsheds, protects land from development, supports conservation of the Nation's historic resources, and protects soil from excessive erosion and wetlands from degradation. Conservation practices are not funded as part of providing financial assistance for eligible entities to purchase FRPP easements, though farmers must protect their highly erodible land from excessive erosion and must prevent any wetlands from being degraded. The purchase of the easement does not change existing land uses or conservation practices other than those conservation practices required for highly erodible land and wetland conservation.

Figure 6 shows the distribution of the 1,137,767 acres enrolled in FRPP easements from the program's inception in FY 1996 through FY 2013. The greatest numbers of FRPP-protected acres are in Montana, Wyoming, Colorado, Pennsylvania, and Vermont. Figure 7 shows the cumulative number of FRPP easements, and the greatest numbers are located in Vermont, Massachusetts, Pennsylvania, and Ohio. The 2008 Farm Bill FRPP easements followed a similar pattern, as shown in figures 8 and 9. While not at the very top, Vermont and New York did, however, continue to be among the States with the most FRPP acres enrolled during the 2008 Farm Bill.

There were fewer easements enrolled in the West than in the East during the 2008 Farm Bill but the Western easements had higher acreages than the Eastern easements. This was as a result of the emphasis on enrolling agricultural lands through FRPP for the protection of Sage grouse in the Western States, coupled with the larger acreages associated with the average Western ranch as compared to the average Eastern farm.

³⁸ Baseline conditions of the natural resources most affected by the FRPP are described in the 2009 FRPP Programmatic Environmental Assessment at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1042340.pdf and are hereby incorporated by reference. See pages 11 through 16 for a discussion of soil and land use impacts, including those related to continuing FRPP; pages 16 through 20 and 21 for water quality impacts; pages 21 through 29 and 30 for air quality impacts; pages 31 and 32 for biological resource impacts; pages 33 through 36 for cultural resource impacts; and pages 39 through 41 for cumulative impacts.

Figure 6: Cumulative FRPP Acres Enrolled 1996 through 2013

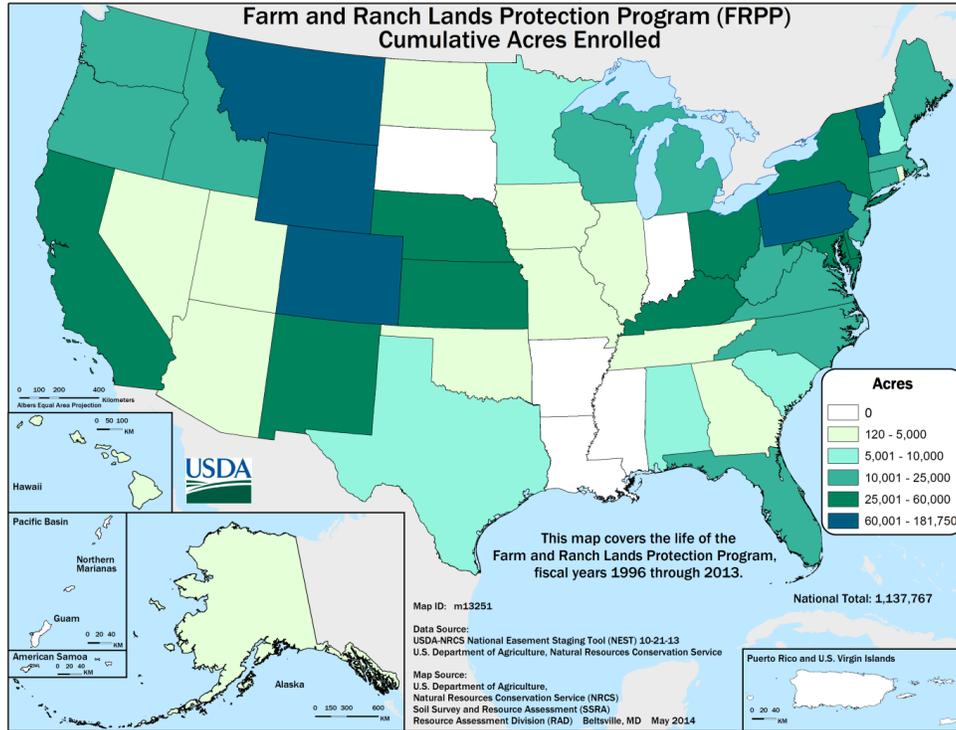


Figure 7: FRPP Cumulative Number of Easements Enrolled

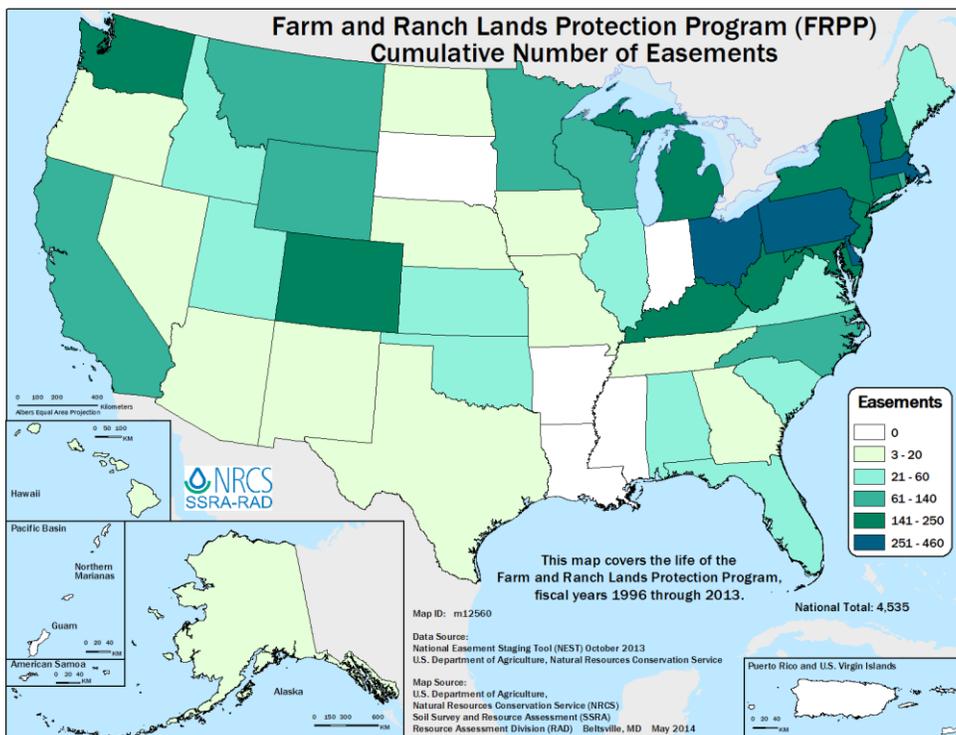


Figure 8: 2008 Farm Bill FRPP Acres Enrolled

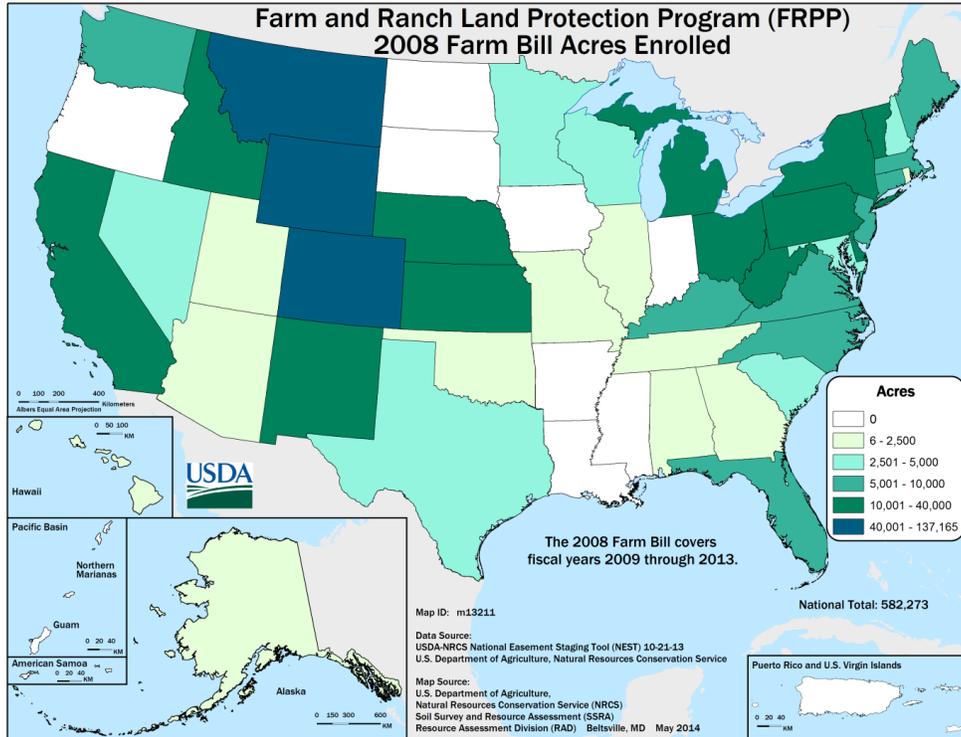
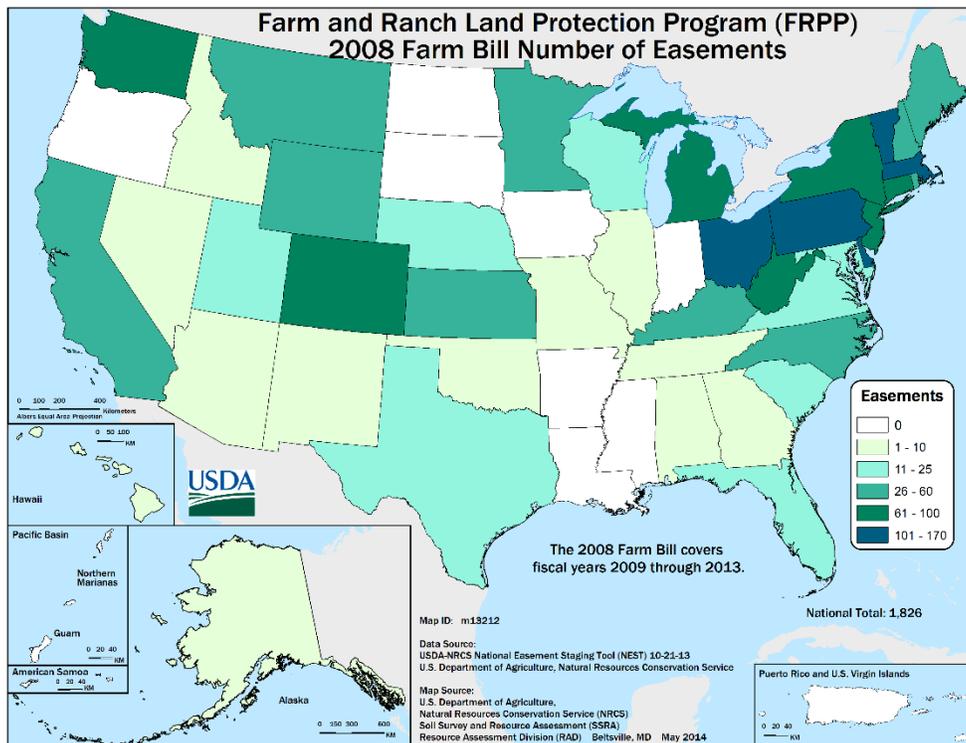


Figure 9: FRPP 2008 Farm Bill Number of Easements



FRPP Cumulative Effects

Cumulatively through the life of the program, 1,137,767 acres were enrolled in FRPP easements, with the majority located in Montana, Wyoming, Colorado, Pennsylvania and Vermont. Of this, 582,273 acres were enrolled during the 2008 Farm Bill years. Montana, Wyoming, and Colorado also led FRPP enrollments during the 2008 Farm Bill though there was heavy enrollment in the Northeast, as well, particularly in the Great Lakes States, and in Nebraska, Kansas, Oklahoma, Idaho and California.

FRPP protects the Nation's most valuable lands for the production of food, feed, and fiber by providing matching funds to keep productive farm and ranch lands in agricultural use. Prime farmland is some of the most productive agricultural land. According to NRCS National Resources Inventory (NRI) data, over 13 million acres of prime farmland, an area somewhat larger than the States of Maryland, Vermont and Rhode Island, were converted to nonagricultural uses between 2002 and 2010, primarily due to development.³⁹ The same report tells us that more than one-third of all land that has ever been developed in the lower 48 States during our Nation's history was developed in the last quarter century. Such conversion decreases the availability of local food markets and increases the travel distance and cost of delivery of food to the consumer market. By enrolling in FRPP, farm and ranch lands threatened by development pressures can remain productive and sustainable. Keeping land in agricultural use reduces the amount of urban pollution (nitrogen, phosphorus, and sedimentation) from land that would otherwise be converted to lawns and impervious surfaces such as pavement and buildings. Ultimately this assists with efforts in managing the Total Maximum Daily Load (TMDL) of nutrients to public waters such as the Chesapeake Bay and Mississippi River.

FRPP is a key component of some NRCS landscape initiatives, such as the Greater Sage Grouse Initiative, and these initiatives provide good examples of FRPP cumulative effects. One example is in Colorado, where the Colorado Cattlemen's Agricultural Land Trust (CCALT) completed protection of the 3,819-acre Elkhead Ranch on June 13, 2012. The historic Elkhead Ranch, northwest of Steamboat Springs, is dominated by rolling sagebrush-covered hills and riparian areas along the Elkhead Creek, which flows through the property. The ranch falls within a priority habitat area for the greater sage grouse. These lands were protected by a partnership between the Elkhead Ranch landowner, CCALT, NRCS, and Routt County (Purchase of Development Rights Program).

In Michigan's northwestern Lower Peninsula, the agriculture and food processing industries collectively generate \$97 million a year in the counties of Leelanau, Grand Traverse, Antrim,

³⁹ U.S. Department of Agriculture. 2013. Summary Report: 2010 National Resources Inventory, Natural Resources Conservation Service, Washington, DC, and Center for Survey Statistics and Methodology, Iowa State University, Ames, Iowa, at p. 7. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1167354.pdf.

Benzie, Kalkaska and Wexford. The majority of Michigan’s cherries grow in the northwest corner of the State’s Lower Peninsula, with well-drained soils and seasonal temperatures moderated by Lake Michigan. Food processors have developed alongside the orchards, producing dried fruit and fillings, jams, juices and packaged fresh apple slices for stores and restaurants. These businesses keep the pulse of the fruit suppliers they rely on. Locally led conservation easement efforts, assisted by FRPP, are providing capital for farmers to invest in rejuvenating and expanding orchards and vineyards, as well as helping transition farms from one generation to the next.

Figure 10: Number of Land Trusts by State, 2010

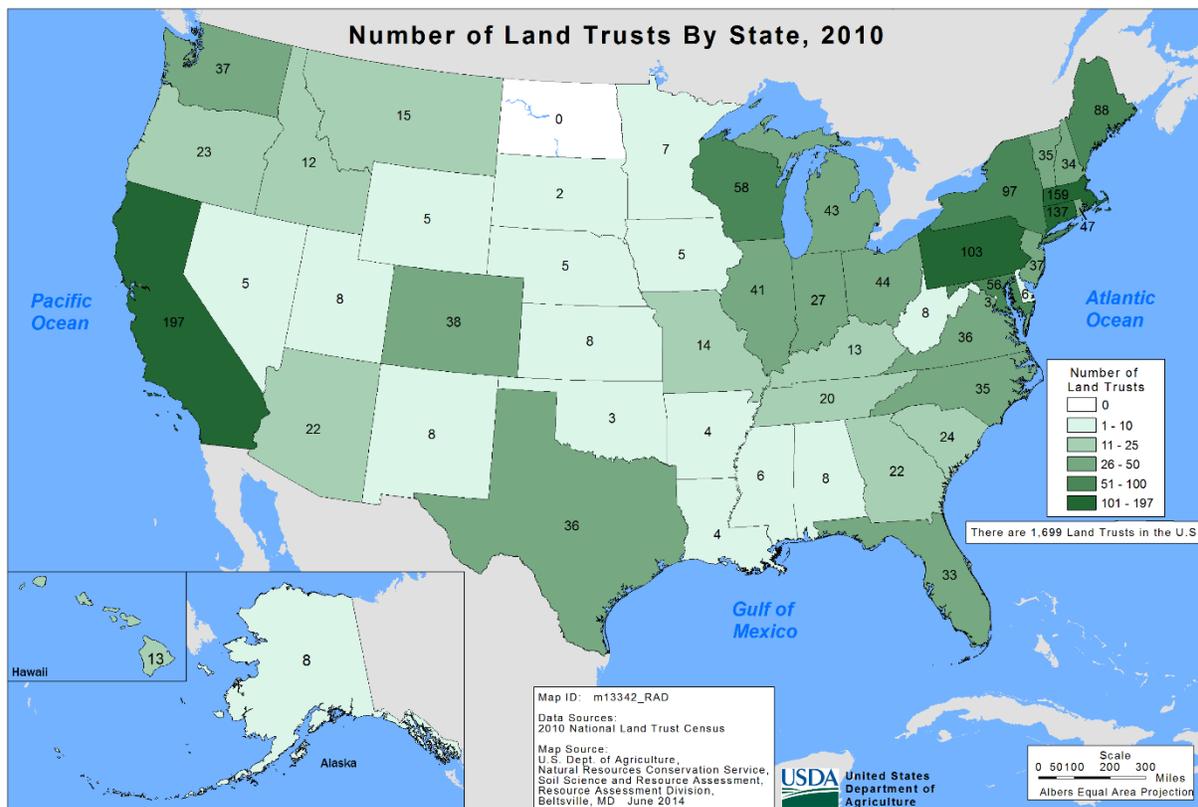


Figure 10 shows the number of land trusts that the National Land Trust Alliance 2010 National Land Trust Census found were operating in each State.⁴⁰ Of these, 61 percent of those that responded to the survey indicated that working farms or ranchlands were “very or extremely important priorities.”⁴¹ While there does not appear to be a strong correlation between the number of land trusts and the number of acres protected by FRPP, those land trusts that do exist

⁴⁰ <https://www.landtrustalliance.org/land-trusts/land-trust-census/2010-final-report>, p. 17.

⁴¹ *Ibid.*, p. 11.

in these States may be more interested in protecting larger expanses of agricultural land rather than multiple small ones.

The 2010 National Land Trust Census also indicates a continuing interest in conserving land. In 2000, 23,858,838 acres had been conserved;⁴² by 2005, 36,870,366 acres had been conserved, and by 2010, 47,021,499 acres had been conserved.⁴³ The pace does appear to be slowing, however, with the acres conserved increasing by 13,011,528 acres between 2000 and 2005, but only by 10,151,133 between 2005 and 2010.⁴⁴ Though the pace may be slowing, it is likely that demand for FRPP participation would continue throughout the 2014 Farm Bill years. There is less funding authorized overall under the 2014 Farm Bill than was authorized under the 2008 Farm Bill for WRP, FRPP, and GRP combined; as a result, assuming full funding of 2014 Farm Bill authorized amounts are provided, NRCS estimates approximately 200,000 acres of farm and ranch lands could potentially be protected under FRPP by the end of FY 2018 for a total of nearly 1.3 million FRPP acres. Therefore, under the No Action alternative, additional agricultural lands and associated viewsheds, open space, and associated amenities would likely be protected by FRPP conservation easements for future generations.

GRP Impacts Overview⁴⁵

NRCS enters into GRP easements or contracts with landowners or eligible cooperating entities to protect and conserve grasslands. GRP enrollment options include permanent easements and rental contracts, with the latter administered by the FSA. By entering into an easement agreement, the landowner agrees to forego future development and cropping uses of the land while retaining the right to conduct common grazing practices and operations in accordance with a grazing management plan. At the same time, NRCS obligates funds to purchase the easement rights and to provide technical and financial assistance for planning and applying conservation practices to restore and protect the grasslands.

The purchase of the easement does not change existing land uses or conservation practices other than those conservation practices required for highly erodible land and wetland conservation compliance. The participant's grazing management plan may also require additional conservation practices to improve the quality of their grazing lands and mitigate any existing resource concerns associated with their grazing operation.

Figure 11 shows the distribution among the States of the 396,261 acres of GRP easements enrolled from the program's inception in FY 2003 through FY 2013. It is clear from the map that the majority of grassland easements are in the Western half of the country. The trend

⁴² This includes acres conserved by land trusts through NRCS programs as well as by other means.

⁴³ <https://www.landtrustalliance.org/land-trusts/land-trust-census/2010-final-report>, p. 5.

⁴⁴ *Ibid.*, p. 5.

⁴⁵ Baseline conditions of the natural resources most affected by the GRP are described on pages 25 through 29 of the 2009 GRP Final Programmatic Environmental Assessment and are hereby incorporated by reference.

continued during the 2008 Farm Bill years, as shown by figure 12, with Idaho, Colorado, and Kansas leading in enrollment of GRP acres both cumulatively and during the 2008 Farm Bill years.

Figures 13 and 14 show the locations of non-Federal pastureland and rangeland identified by the NRI. These are two types of land eligible for GRP, and the figures show that the locations of rangeland and pasture align fairly well with the locations of GRP easements shown in figures 11 and 12.

Figure 11: Cumulative GRP Acres Enrolled FY 2003 through FY 2013

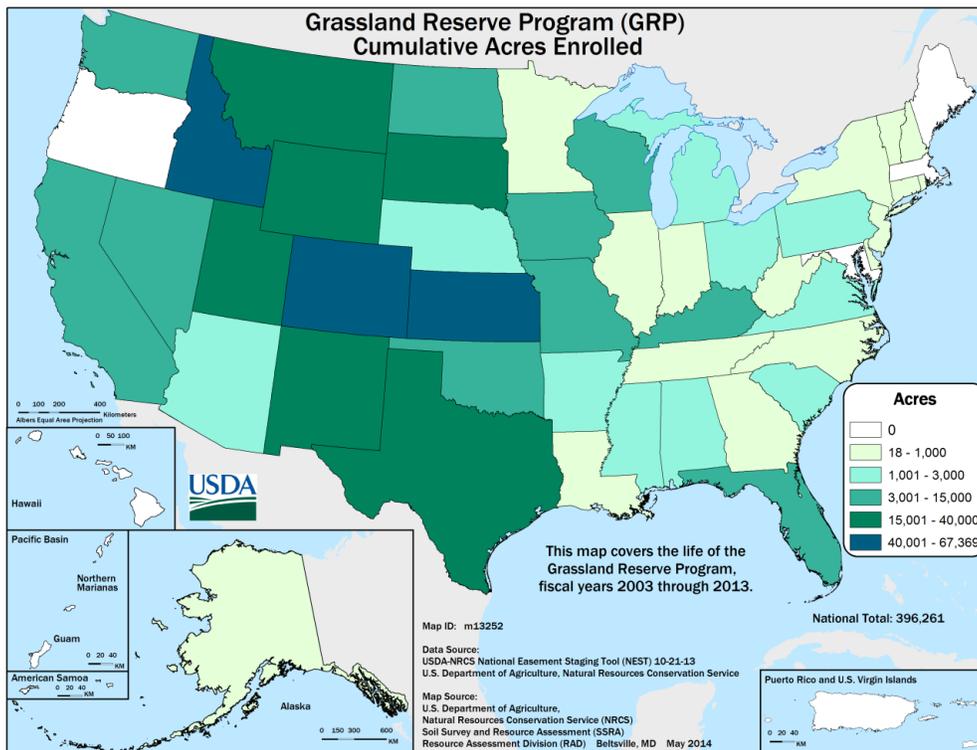


Figure 12: GRP Acres Enrolled During 2008 Farm Bill

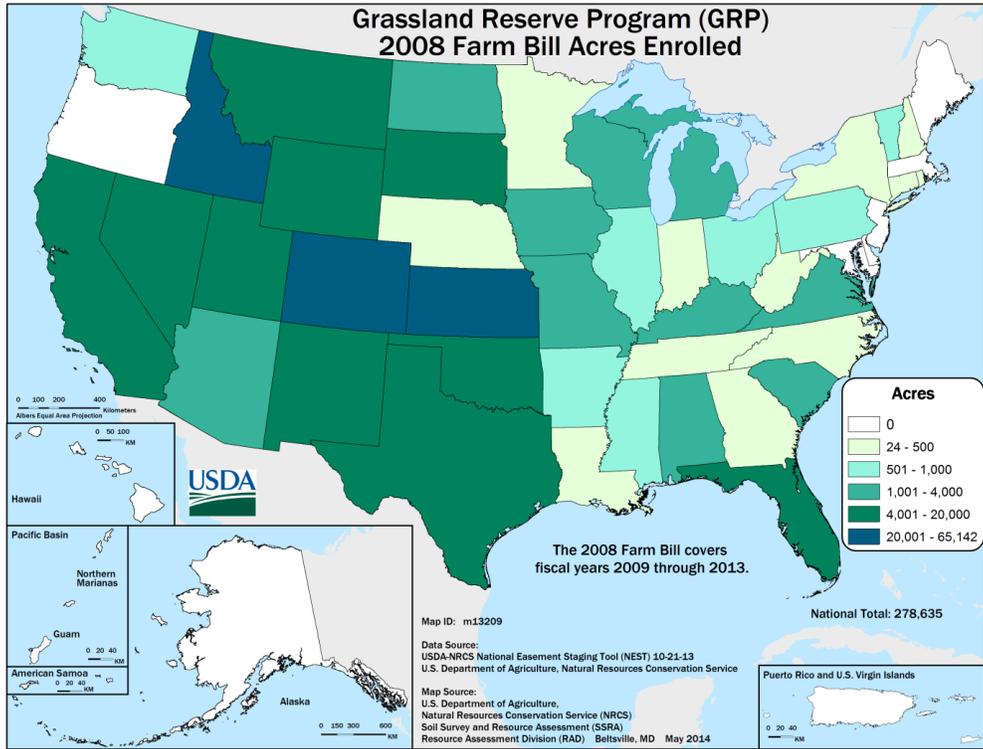


Figure 13: Acres of Non-Federal Pastureland, 2010

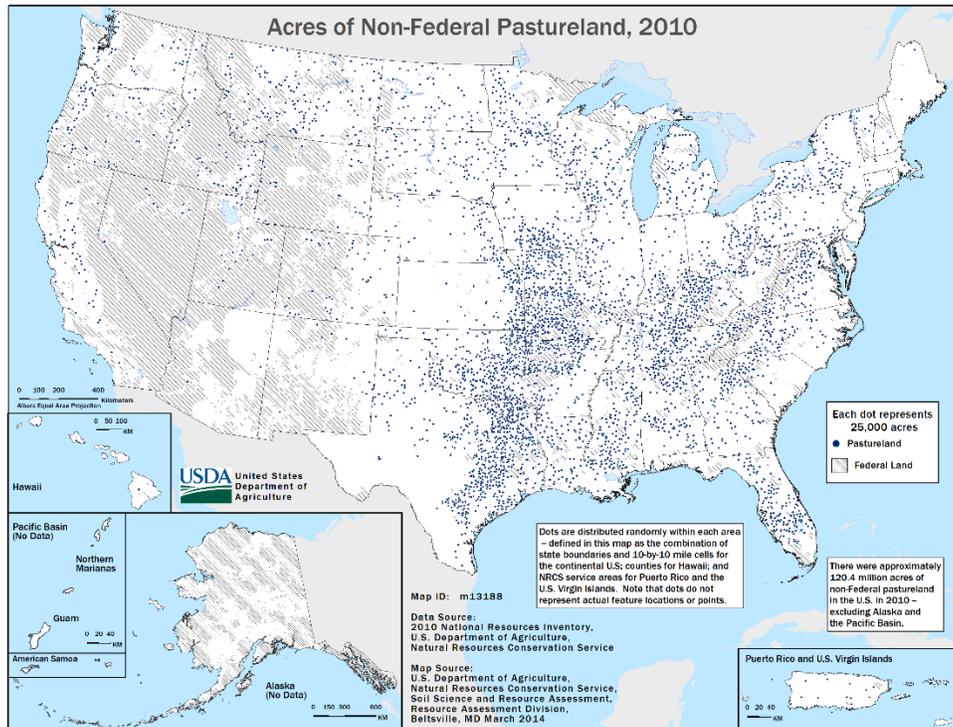
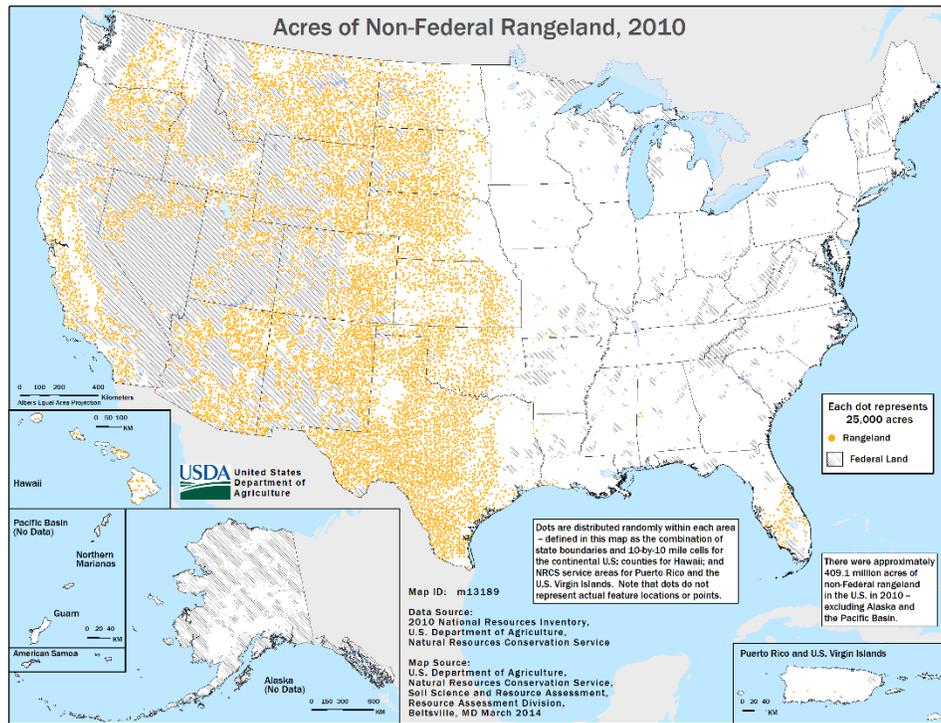


Figure 14: Acres of Non-Federal Rangeland, 2010



Though the GRP allows for NRCS to purchase and hold easements directly or to provide cost-share payments through cooperative agreements for other eligible cooperating entities to purchase and hold the GRP easement as is required under FRPP, the vast majority of the GRP easements are held by NRCS. Only eight parcels totaling 29,135 acres were enrolled under cooperative agreements with eligible cooperating entities from FY 2009 through FY 2013. Those cooperative agreements were in California, Colorado, Connecticut, Kansas, and North Carolina.

As an alternative to enrolling permanent easements, the 2008 Farm Bill also provided an option for participants to choose a 10-year, 15-year, or 20-year rental contract. USDA provided annual payments in an amount that is not more than 75 percent of the grazing value established by the FSA and payments could not exceed \$50,000 per year per person or legal entity. During the 2008 Farm Bill, 804,243 acres of grasslands were protected by GRP rental agreements in addition to those acres protected by easements. Table 3 shows the number of acres enrolled in rental agreements each year.

Table 3: 2008 Farm Bill Grassland Acres in GRP Rental Agreements

Fiscal Year	Acres in Rental Agreements
2009	89,580
2010	273,519
2011	124,039
2012	227,715
2013	89,390
Total	804,243

Under the No Action alternative, funding levels would be lower than under the 2008 Farm Bill and there would be no GRP rental agreement option because it was integrated by the 2014 Farm Bill into the Conservation Reserve Program (CRP). The 2014 Farm Bill also reduced from the 2008 Farm Bill levels the total acres authorized to be enrolled in CRP. As a result, NRCS estimates that under this alternative there would be an additional 64,000 to 130,000 acres of GRP easements enrolled depending on the number of grassland acres accepted into CRP that would previously have been enrolled in GRP rental agreements. By limiting development and providing habitat needed by threatened and endangered species, GRP preserves agricultural heritage and green space, provides for recreational activities, and helps ensure the Nation's ability to produce its own food.

In addition to providing these benefits, GRP requires each parcel to have a grazing management plan, and GRP cost-share is available to help landowners carry out required practices. GRP conservation practices are primarily for the purpose of improved grazing management or improved fish and wildlife habitat. The following information presents conservation practice data grouped by purpose: Fish and Wildlife Habitat Improvements and Grazing Land Improvements.⁴⁶

Fish and Wildlife Habitat

The 2009 GRP Programmatic EA describes typical grazing land issues related to fish and wildlife resources. This EA incorporates by reference pages 53 through 61 of the 2009 GRP Programmatic EA which characterizes biological resources, including fish and wildlife habitat. The section below provides additional information and describes the past and predicted future impacts of GRP when implemented according to 2008 Farm Bill rules.

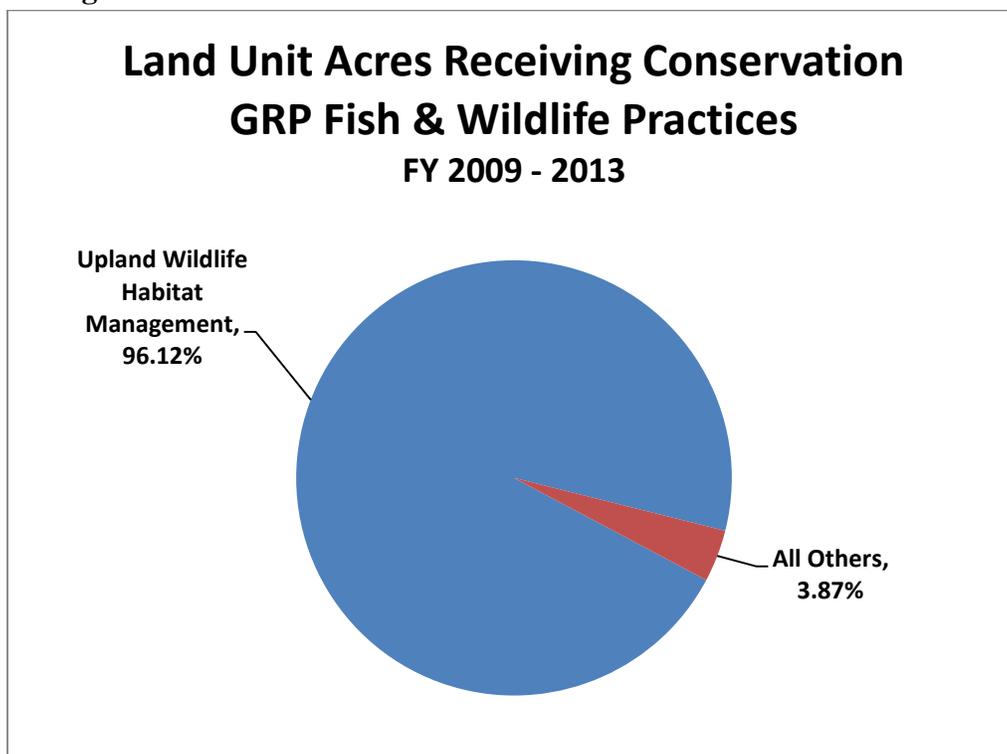
⁴⁶ Note that there is some overlap between these groupings of conservation practices because some practices address multiple resource concerns. Also, in developing the conservation practice information, land unit acres are counted each time a practice is applied on that land unit in the fiscal year. Therefore, land unit acres may be counted multiple times across practices, practice groupings, and fiscal years.

Conservation Practices Related to Improving Fish and Wildlife Habitat

Figure 15 identifies the top practices used through GRP under the 2008 Farm Bill to improve fish and wildlife habitat. While every practice and management action taken on the land has some effect on biological resources, approximately 16 conservation practices have as their primary purpose the improvement of fish and wildlife habitat.⁴⁷

Of these, one conservation practice—Upland Wildlife Habitat Management—made up more than 96 percent of the conservation practices used to improve fish and wildlife habitat through GRP from FY 2009 through FY 2014. Approximately 9 other conservation practices made up the remaining 3.9 percent of fish and wildlife habitat improvement treatments applied through GRP over the course of the 2008 Farm Bill. (See Appendix F.) These 10 fish and wildlife conservation practices were applied on acreage ranging from 20,022 to 43,775 acres a year under GRP from FY 2009 to FY 2013.⁴⁸ Under the No Action alternative, NRCS expects practices would be implemented from FY 2014 through FY 2018 at percentages very similar to those implemented from FY 2009 through FY 2013.

Figure 15: GRP 2008 Farm Bill Fish and Wildlife Habitat Practices



* Only practices representing a significant portion of the total for the period are included in the above chart. Practices not included are summed into the All Other category.

⁴⁷ Of these 16 practices, only 10 were used under GRP during the 2008 Farm Bill.

⁴⁸ Note that in some cases, more than one of these conservation practices may have been applied on the same acreage, so these figures include some double-counting.

A literature review conducted under CEAP found that very few NRCS upland wildlife conservation practices have been studied, but those studies that do exist found that effects vary by species and by location.⁴⁹ Upland Wildlife Habitat Management and the other fish and wildlife habitat practices implemented through GRP, as illustrated in the network effects diagrams associated with each practice and further supported by the results of CEAP studies, indicate NRCS fish and wildlife practices implemented under GRP benefit some species, but also have potential to adversely affect other species, particularly if those effects are not taken into account during the planning process. However, the purpose of Upland Wildlife Habitat Management is specifically to benefit wildlife—to treat “upland wildlife habitat concerns identified during the conservation planning process that enable movement, or provide shelter, cover, or food in proper amounts, locations, and times to sustain wild animals that inhabit uplands during a portion of their life cycle.”⁵⁰ NRCS requires planners to consider effects of this practice on other species that may be affected, including species with declining populations, in particular.⁵¹ NRCS policies require that plans minimize adverse effects before providing technical and financial assistance⁵² and avoid adverse effects on species of concern by recommending alternatives that avoid or minimize adverse impacts.⁵³ GRP grazing management plans that incorporate Upland Wildlife Habitat Management are relied upon to provide important benefits to particular species. In fact, GRP has been an important tool in restoring Sage grouse and other game bird populations.⁵⁴ As a result, if there are any adverse effects from applying these practices, they are expected to be minor. See Appendix F for the GRP fish and wildlife conservation practices and Appendix H for the associated network effects diagrams.

Grazing Lands

The 2009 GRP Programmatic EA discusses natural resource issues related to U.S. grazing lands. This EA incorporates by reference pages 25 through 30 of the 2009 GRP Programmatic EA, which characterizes issues related to the condition and conversion of private grazing lands.

The 2011 RCA Appraisal indicates that in “the 25-year period 1982 to 2007, the acreage of U.S. grazing lands declined gradually until 2002 and then stabilized...; rangeland acreage declined by about 2 percent; pastureland acreage, by 9 percent; and grazed forest land acreage, by 15 percent.”⁵⁵ Additional more specific information regarding the conversion of grazing lands to

⁴⁹ Paul R. Krausman, Vernon C. Bleich, William M. Block, David E. Naugle, and Mark C. Wallace, “An Assessment of Rangeland Activities on Wildlife Populations and Habitats, p 257.

⁵⁰ Upland Wildlife Habitat Management Conservation Practice Standard, available in the National Handbook of Conservation Practices and on the internet at http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_025754.pdf.

⁵¹ Ibid.

⁵² 7 CFR 650.3(b)(4).

⁵³ NRCS General Manual Title 190, Part 410.22(E).

⁵⁴ Krausman, et al, “An Assessment of Rangeland Activities on Wildlife Populations and Habitats, p 257.

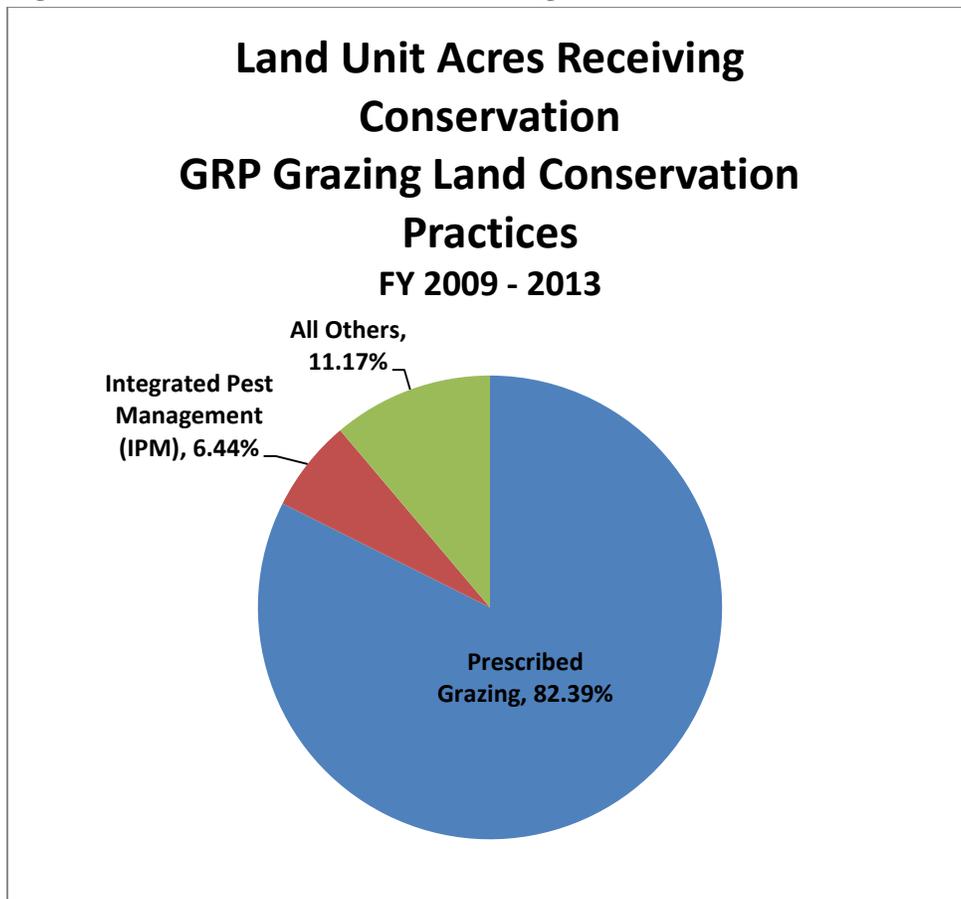
⁵⁵ 2011 RCA Appraisal, p. 6.

other uses is described on pages 6 and 7 of the 2011 RCA Appraisal and is incorporated by reference. The section below provides additional information and describes the past and predicted future impacts of GRP when implemented according to 2008 Farm Bill rules.

GRP Conservation Practices Related to Grazing Land Conservation

Figure 16 identifies the top GRP practices used under the 2008 Farm Bill for Grazing Land Conservation. NRCS is committed to conserving and enhancing private grazing land resources. This includes the application of conservation practices that conserve and improve wildlife habitat on private grazing land; conserve and improve fish habitat and aquatic systems through grazing land conservation treatment; protect and improve water quality; improve the dependability and consistency of water supplies; and identify and manage weed, noxious weed, and brush

Figure 16: GRP 2008 Farm Bill Grazing Land Conservation Practices*



* Only practices representing a significant portion of the total for the period are included in the above chart. Practices not included are summed into the All Other category.

encroachment problems.⁵⁶ Of the 17 conservation practices used in GRP from FY 2009 to FY 2013 to improve grazing land, two of those practices—Prescribed Grazing and Integrated Pest Management—made up nearly 90 percent of the grazing land conservation practices used. See Appendix G for a list of the grazing land conservation practices implemented under GRP during the 2008 Farm Bill and Appendix H for a copy of the associated network diagrams.

The NRCS CEAP includes a rangeland component that reviewed scientific literature related to seven core NRCS conservation practices: prescribed grazing, prescribed burning, brush management, range planting, riparian herbaceous cover, upland wildlife habitat management, and herbaceous weed control.⁵⁷ These analyses collectively indicate that NRCS investments in conservation programs are sound, though “practices like prescribed grazing are not a simple treatment but have widely divergent effects, depending on locale, timing, intensity, and species or combination of grazing animals.”⁵⁸ Moreover, the frequency, timing, and intensity of livestock grazing may be different when managed for maximum wildlife benefits versus maximum livestock benefits, with wildlife more affected by the amount of residue allowed to remain than the amount of residue removed.⁵⁹ Below is an excerpt of some of the CEAP findings made with respect to Prescribed Grazing, the most-funded GRP practice reviewed.

Prescribed Grazing

- Stocking rate, as well as appropriate temporal and spatial animal distribution, is the key management variable that influences numerous conservation outcomes.
- Assumptions regarding livestock distribution and preferences for specific sites and conditions are valid, especially with respect to water distribution, steep topography, and high-elevation sites.
- The preponderance of experimental evidence indicates that all systems of grazing are similarly constrained by stocking rate and weather; thus, effective management is more important than the specific system of grazing.
- Hydrological responses of soils to grazing largely parallel those of other ecological variables in that stocking rate is the most important management variable.
- Grazing management recommendations should not be developed exclusively from individual plant responses without partial verification in communities or ecosystems.

⁵⁶ Note that only practices applied on grazed range, grazed forest, native and naturalized pasture, or pasture land are included.

⁵⁷ For information on the conservation practices themselves and the effects of the remaining five of seven conservation practices reviewed, see USDA NRCS, Conservation Benefits of Rangeland Practices: Assessment, Recommendations, and Knowledge Gaps, Briske, D.D., editor. (2011), Executive Summary: The next Generation of Conservation Practice Standards, at pages 12 and 14, http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1045792.pdf.

⁵⁸ Krausman, et al, “An Assessment of Rangeland Activities on Wildlife Populations and Habitats, p. 255.

⁵⁹ Ibid., pp. 256, 257.

This confirms that the NRCS approach to conservation planning is important to ensuring such site-specific considerations are taken into account.

NRCS grazing land practices, as illustrated in the network effects diagrams associated with each practice and further supported by the results of CEAP studies, generally improve grazing land health and the health of natural resources associated with those grazing lands, such as plant communities, wildlife habitat and soil erosion. (See Appendix G for a list of NRCS grazing land practices implemented during the 2008 Farm Bill and Appendix H for the associated network effects diagrams.) It is possible for some adverse impacts to occur as a result of conservation practices used on grazing lands, particularly in the short-term as a result of implementing certain practices such as Brush Management or Prescribed Burning. Such effects are expected to be minor, however, as a result of NRCS policies that require plans minimize adverse effects when providing technical and financial assistance,⁶⁰ particularly on a national programmatic basis.

GRP Cumulative Effects

Cumulatively through the life of the program, 396,261 acres were enrolled in permanent GRP easements and another 1,422,346 acres were enrolled in 10-, 15-, or 20-year GRP rental agreements. The majority of GRP easement acres are located in the Western half of the country, with the highest concentration in Idaho, Colorado and Kansas—2 of the 5 States in which NRCS is carrying out its Lesser Prairie Chicken Initiative (Colorado and Kansas) and 2 of the 11 States in which NRCS is carrying out its Sage Grouse Initiative (Colorado and Idaho). Under the 2008 Farm Bill, 278,635 acres were enrolled in GRP easements with an additional 804,243 acres enrolled in rental agreements. Thus, of the total 1,082,878 acres enrolled in GRP from FY 2009 to FY 2013, nearly 26 percent were enrolled in permanent easements and 74 percent in rental agreements. The 2008 Farm Bill authorized enrollment of an additional 1,220,000 acres in GRP, with 40 percent to be enrolled in rental agreements and 60 percent in easements to the extent practicable; however, it was not practicable to meet those enrollment levels, due more to landowner interest in rental agreements than permanent easements. Rental agreements tend to provide temporary environmental benefits with no guarantee those land uses will continue beyond the duration of the agreement, which is a maximum of 20 years under the 2008 Farm Bill, but they provide landowners with greater flexibility over future use of their land. Under this alternative, NRCS expects that approximately 130,000 acres of additional GRP easements would be enrolled with 2014 Farm Bill funding if it is assumed there would be no authority for rental agreements. However, assuming authority for rental agreements would continue, NRCS estimates there would be only about 64,000 additional acres of GRP easements enrolled, with another 205,000 acres covered by GRP rental agreements.

GRP has been an important component of some NRCS Landscape Initiatives, which provide good examples of the program's cumulative effects. In one case, a single Phillips County,

⁶⁰ 7 CFR 650.3(b)(4).

Montana landowner enrolled 2,800 acres into GRP to protect grazing lands and wildlife habitat in the Prairie Pothole Region of the State. The sagebrush habitat on this GRP easement provides cover for many species and is specifically beneficial for Sage Grouse. Also in the heart of the Prairie Pothole Region, but in South Dakota, landowners enrolled 5,800 acres of native grasslands into permanent GRP easements. There, the area is known as the “duck factory” because it is critical to the region’s success in supporting almost 50 percent of the breeding ducks in North America. Remaining native grasslands in the region are under severe risk of conversion due to high land and commodity prices, but fortunately, interest in GRP remains high in the area.

Another example of GRP cumulative effects is found in Missouri. There, landowners have enrolled 37 easements into GRP, protecting approximately 4,300 acres of grassland. Approximately half of those protected acres are native prairie lands, which have declined from a presettlement total of 15 million acres to a current total of 90,000 acres. Missouri Department of Conservation wildlife service biologists have documented 94 species of plants on one GRP site, and there is a record of a greater prairie chicken nesting on a Missouri GRP easement after traveling over 50 miles from Kansas. The protection of this once flourishing habitat has provided habitat necessary to help maintain animal and plant biodiversity in Missouri.

GRP, by limiting development and providing habitat needed by threatened and endangered species, preserves agricultural heritage and green space, benefits many fish and wildlife species, provides for recreational activities, and ensures the Nation’s ability to produce its own food.

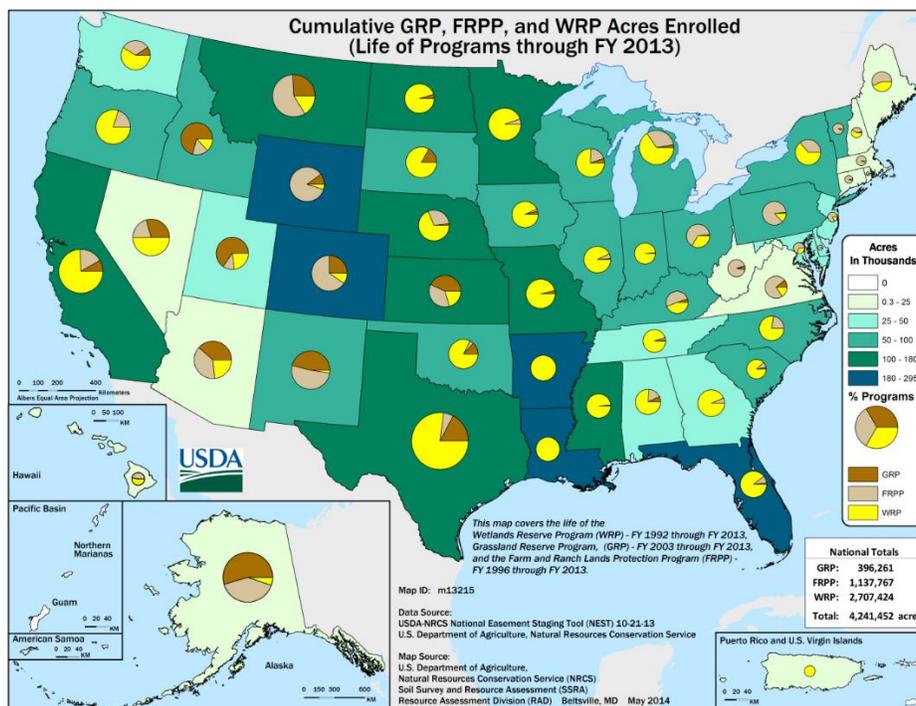
Alternative 1 Cumulative Effects

The map in figure 17 illustrates the relative number of WRP, FRPP, and GRP acres enrolled in each State from the inception of each program through FY 2013, and how those compare with enrollments in other States. Florida, Louisiana, Arkansas, Colorado, and Wyoming have the most acreage protected by NRCS conservation easement programs overall; however, the mix of easement programs through which those acres are protected varies considerably. Louisiana and Arkansas easements were enrolled in WRP; Florida easements were enrolled primarily in WRP with some easements in FRPP and a small amount of acreage in GRP. On the other hand, the easements in Colorado and Wyoming were enrolled primarily in FRPP, with some GRP easements and a small amount of acreage in WRP.

Figure 18 shows the land uses in each farm production region. Based on land uses, it is not surprising that the majority of GRP acres are enrolled in the Western half of the country and the middle of the country, where the majority of rangeland and pastureland are found. It is interesting that States such as Oklahoma, Colorado, and Wyoming, which have substantially more rangeland than cropland or even pasture, have higher enrollments in FRPP than in GRP.

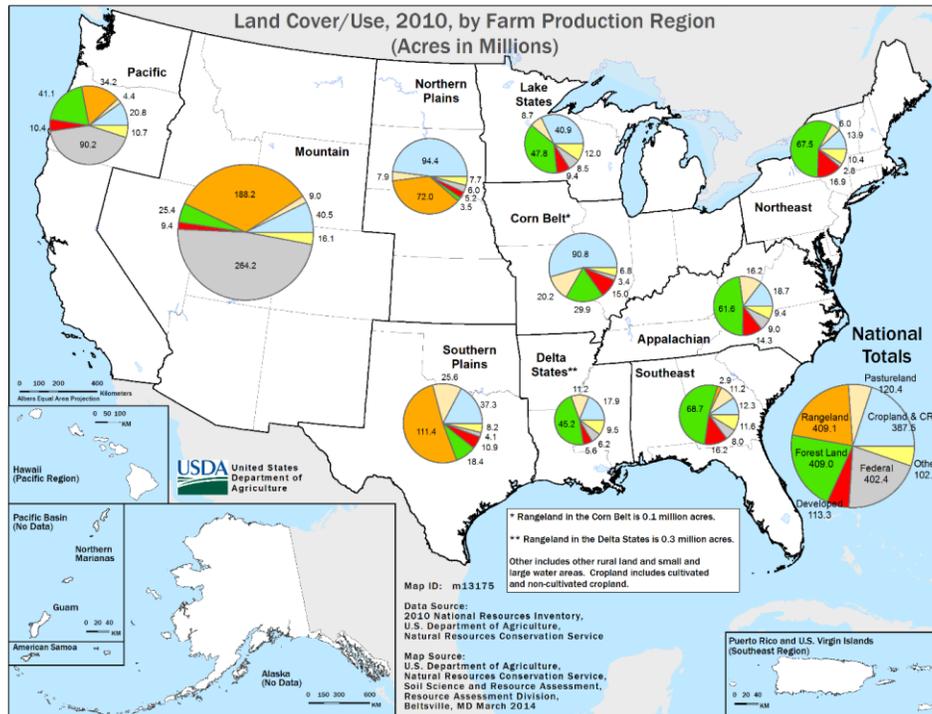
If WRP, FRPP, and GRP continue through FY 2018 as they were implemented during the 2008 Farm Bill but with the ACEP funding levels authorized under the 2014 Farm Bill, an additional 150,000 to 300,000 acres of wetlands and associated uplands would likely be protected throughout the United States under WRP for a total of up to 3.0 million acres and an additional 250,000 to 500,000 acres of farm and ranch lands would be protected by permanent easements under FRPP and GRP combined for total enrollment of up to 1.6 million acres.⁶¹ It is likely that the lands would tend to be enrolled in the same regions they have in the past, as well, based largely on land uses and the types of lands eligible for enrollment in each program, but also on the availability of land trusts or other entities who qualify to purchase easements through FRPP and GRP and their availability of funds. Upon enrollment, all the benefits associated with these programs would extend to these additional lands, helping to improve the environment and protect productive farms and ranches for future generations.

Figure 17: Cumulative GRP, FRPP, and WRP Acres Enrolled from Beginning of Programs



⁶¹ The 2014 Farm Bill authorized a new Regional Conservation Partnership Program (RCPP) that identifies ACEP as one of the Programs that must contribute funding to achieve RCPP goals. The RCPP authority does not include contributions from WRP, FRPP or GRP; therefore, consideration of RCPP is outside the scope of this alternative. RCPP is, however, discussed under Alternatives 2 and 3.

Figure 18: Relative Acres of Cropland, Rangeland, Forestland, Pastureland, Federal Land, Developed Land and Other Uses, 2010 NRI



5.3.2 Alternative 2: Proposed Action - Implement ACEP according to 2014 Farm Bill requirements and broadly define “grassland of special environmental significance” without establishing specific criteria.

Under this alternative and alternative 3, ACEP would be implemented according to the provisions of the 2014 Farm Bill. As is required by the 2014 Farm Bill provisions, there will be a WRE component that will be implemented the same way WRP was implemented under the 2008 Farm Bill with minor changes. There will also be an ALE component that will be implemented similar to the way FRPP was implemented under the 2008 Farm Bill in that NRCS will provide cost-share payments to eligible cooperating entities to purchase easements on qualifying lands. No additional cost-share is available under ACEP-ALE to implement conservation practices.⁶²

Land eligible for enrollment in ACEP-ALE includes lands previously eligible for enrollment under FRPP and GRP, as well as nonindustrial private forest land that contributes to the economic viability of a parcel or is a buffer from development. Figure 19 shows the locations of

⁶² See Table 1 for a comparison of the 2008 Farm Bill conservation easement provisions compared to those of the 2014 Farm Bill.

Figure 19: Acres of Non-Federal Grazing Land, 2010

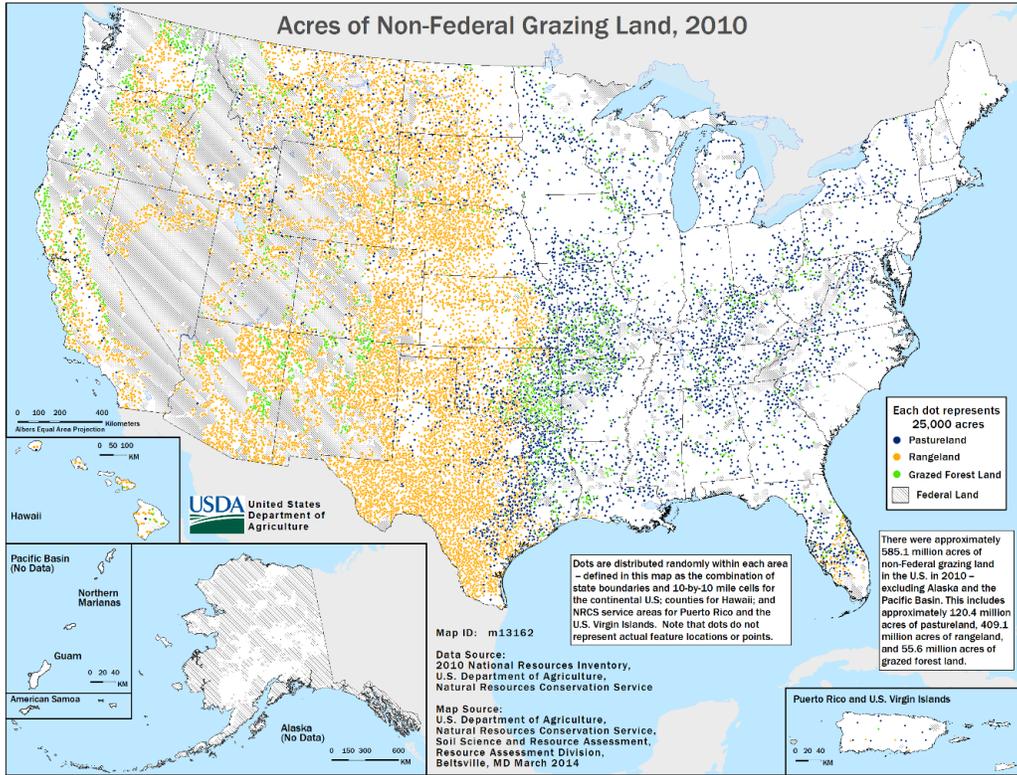
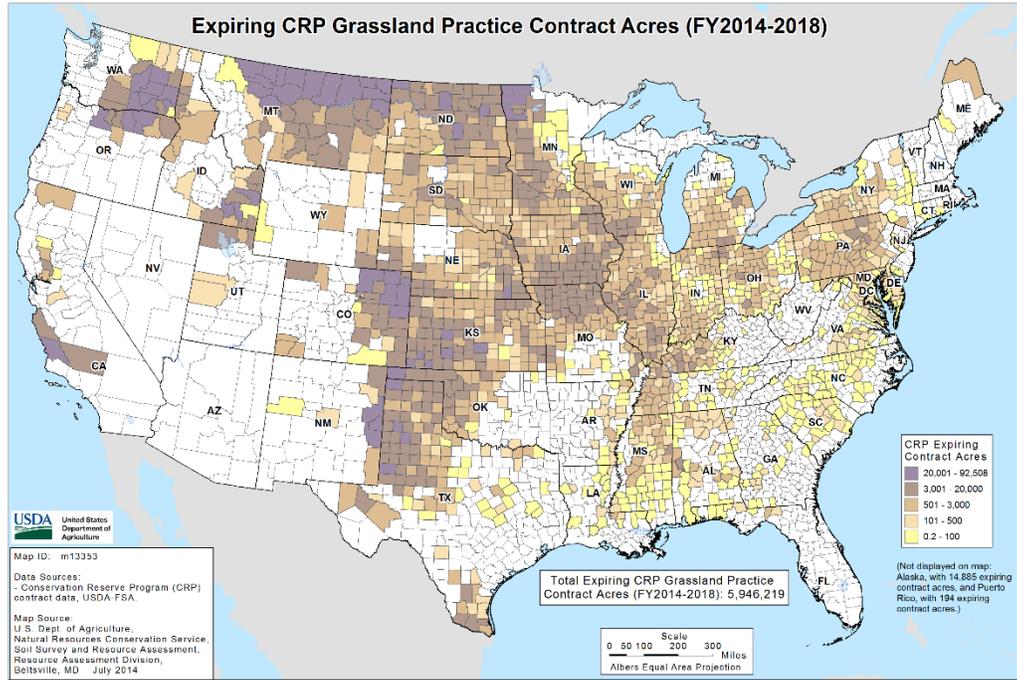


Figure 20: CRP Grassland Contract Acres Expiring FY 2014 - FY 2018



non-Federal rangeland, pastureland and grazed forest land identified by the 2010 NRI. These lands would be among those potentially eligible for the ACEP-ALE component. CRP lands with contracts expiring from FY 2014 through FY 2018 will also be eligible if they have been planted to grass. Figure 20 shows the locations of these acres. The combined lands represent the universe of grasslands potentially eligible for ACEP-ALE under the 2014 Farm Bill, and it is quite extensive.

ACEP is intended to combine the authorities of WRP, FRPP, and GRP. NRCS expects agricultural lands to be enrolled in ACEP in locations similar to those in which WRP and FRPP easements were enrolled. There may, however, be some differences in the locations of grasslands enrolled in ACEP that would previously have been eligible for GRP enrollment.

Although NRCS was authorized under the 2008 Farm Bill to provide cost share payments for eligible cooperating entities to purchase GRP easements, the vast majority were purchased directly by NRCS. Of the 408 GRP easements covering 278,635 acres enrolled from FY 2009 through FY 2013, there were only 8 easements covering 29,135 acres that were held by eligible entities in cooperative agreements with NRCS. This represents about 2 percent of the GRP easements, though they cover over 10 percent of the acres. The reasons are not known though it may be due to the relatively lower amount of enrollment and associated funding available for GRP easements as compared to FRPP easements or the land trusts' greater familiarity with FRPP. It may also indicate that cooperating entities are focusing their resources on particularly large grassland parcels they want to ensure are protected or that there is a lack of eligible entities in areas of the country that have extensive grasslands. (See figure 10 for the numbers of land trusts in each State and figures 13 and 14 for the locations of non-Federal pastureland and rangeland). It is also possible either that land trusts have limited funding to acquire large expanses of grazing lands or that strategically it was not a priority for otherwise interested land trusts to purchase lands eligible for GRP because they knew that NRCS could provide 100 percent of the funding needed to purchase, monitor, and enforce the easement.

As a result of the 2014 Farm Bill, the NRCS is no longer authorized to purchase and hold grassland easements; eligible cooperating entities may continue their purchase of grassland conservation easements so long as they have funds available to do so. Overall, however, the requirement that an eligible cooperating entity must purchase the easement is likely to reduce the relative number of grassland acres enrolled in ACEP as compared to those that would be enrolled under GRP in alternative 1 because NRCS would be able to pay all costs of acquiring and holding grassland easements under Alternative 1. In addition, it is likely that grassland easements enrolled in ACEP-ALE will tend to be in those States with the most land trusts able to purchase and hold those easements.

In terms of the conservation practices that will be carried out as a result of ACEP, on the WRE easements that are funded, conservation practices similar to those implemented under WRP will continue to be implemented and cost-share will continue to be provided for required conservation practices. As a result, the effects of the ACEP-WRE are expected to be the same as the effects of WRP under alternative 1, though there will be a lower level of wetland enrollment due to lower overall funding availability. Thus, ACEP-WRE will continue to benefit wildlife, and migratory birds in particular, and will improve water quality and floodwater retention, as well as increase ecosystem resilience, just as WRP has in the past.

All ALE enrollments that include grasslands must have grassland management plans that preserve the grasslands and other associated natural resources, however cost-share assistance to implement conservation practices is not available under ALE. Because of this, the types of conservation practices included on ALE grassland enrollments may be similar to those under GRP grazing plans with the exception, perhaps, that the required practices may be limited to management practices. Conservation practices requiring the landowner to make a financial investment may be recommended but may not be required, although land enrolled in ACEP-ALE may qualify for cost-share assistance to implement these plans under another NRCS program such as the Environmental Quality Incentives Program (EQIP). In any case, under both this alternative and alternative 3, the cumulative effect of the conservation practices applied under ACEP-ALE are expected to be similar to those that would occur under FRPP and GRP and are described under alternative 1, although they will occur to a lesser extent due to the lack of authority to provide ACEP-ALE cost-share for conservation practices.

Within the ALE component, there is a provision allowing NRCS to pay a cooperating entity up to 75 percent of the fair market value of the agricultural land easement to enroll grasslands of special environmental significance rather than the standard 50 percent. Under this alternative, which is the Proposed Action, grasslands of special environmental significance would be defined as:

Grasslands that contain little or no noxious⁶³ or invasive species, are subject to threat of conversion to nongrassland uses or are subject to fragmentation, and the land is:

- (1) Rangeland, pastureland, or shrubland on which the vegetation is dominated by native grasses, grasslike plants, shrubs, or forbs, or
- (2) Improved, naturalized pastureland⁶⁴ and rangeland.

⁶³ NRCS General Manual policy at Title 190, Section 414.3(G) defines “noxious weeds” as “Those plant species designated as such by the Secretary of Agriculture, Secretary of the Interior, or by State law or regulation. Generally, noxious weeds will possess one or more of the characteristics of being aggressive and difficult to manage, parasitic, a carrier or host of deleterious insects or disease, and being non-native, new to, or not common to the U.S. or parts thereof.”

⁶⁴ “Naturalized” pastureland or rangeland has been improved by introducing non-native plant species that can survive and reproduce for an indefinite period.

In addition, these must be lands that:

- (1) Provide, or could provide, habitat for threatened and endangered species or other at-risk species,
- (2) Protect sensitive or declining native prairie or grassland types, or
- (3) Provide protection of highly sensitive natural resources.

The proposed definition bears some similarity to the definition of lands eligible for GRP enrollment under the 2008 Farm Bill, but this definition is even more limiting to ensure the higher cost-share rate is reserved only for those grasslands that provide special environmental benefits. GRP authorized enrollment of virtually any grazing lands except grazed forest lands. It also allowed enrollment of lands currently not used for grazing so long as they were historically dominated by grassland, forbs, or shrubland and they 1) had potential to provide habitat for animals or plants of significant ecological value; or 2) would protect historic or archaeological resources; or 3) address other State, regional or national conservation priorities. Due to the breadth of the last factor, nearly any lands currently grazed or that historically had grasslands could potentially be eligible for GRP enrollment.

Under this alternative, land could only be enrolled as grasslands of special environmental significance and qualify for a higher cost-share rate if it contains little or no noxious or invasive species. Under this alternative and alternative 3, invasive species are an important consideration because control can be expensive and “certain non-native plant species have the potential to outcompete native species. Loss of native species negatively impacts quality of forage for grazing livestock and can lead to fire risks, land degradation and erosion.”⁶⁵ This is a requirement that was not included in GRP and has the potential to narrow the universe of lands potentially qualified to be enrolled as grasslands of special environmental significance when compared to GRP enrollments, though these lands could still be enrolled as grasslands under regular ACEP-ALE.

There is little information available on the extent of noxious or invasive species nationwide. However, the NRCS NRI examined the prevalence of several herbaceous and woody non-native species on rangeland in 17 Western States extending from North Dakota south to Texas and west and to a limited extent in Florida and Louisiana. The study included nine non-native invasive herbaceous species groups and three native invasive woody species groups.⁶⁶

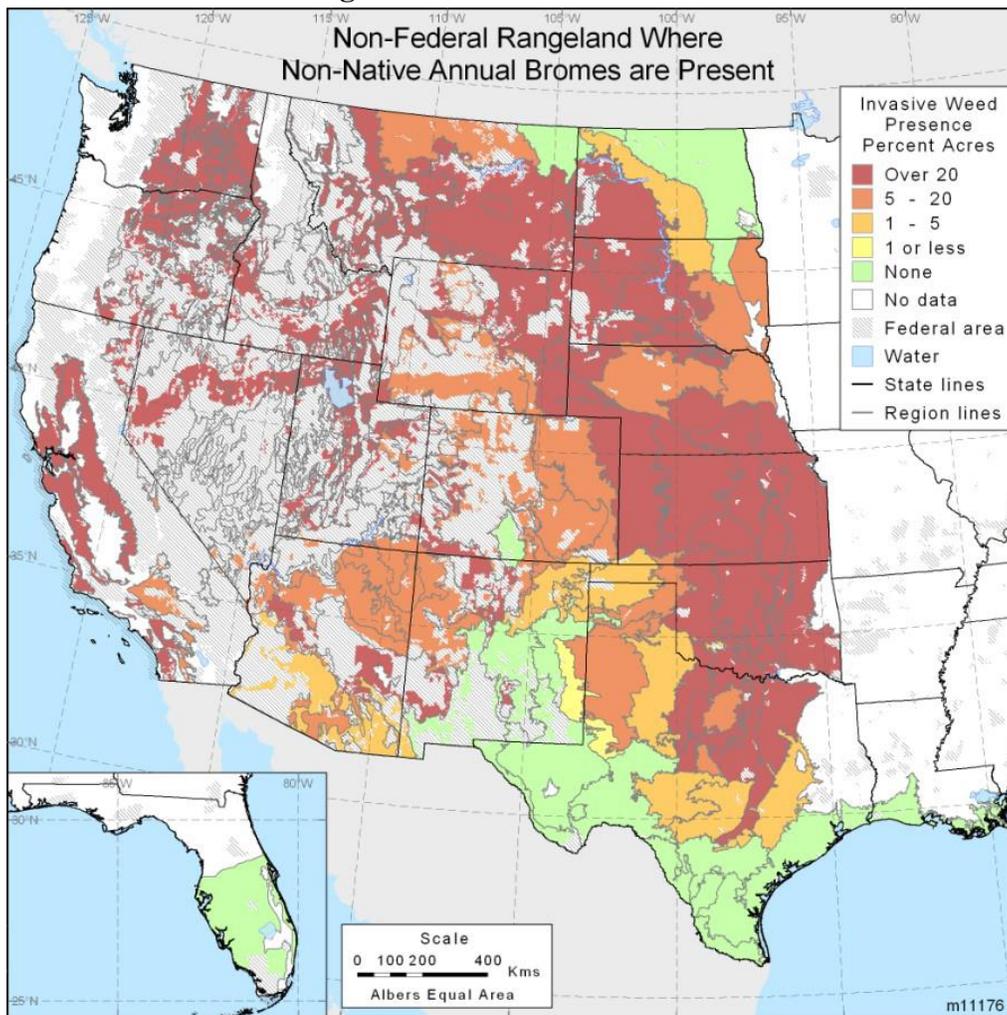
⁶⁵ National Resources Inventory Rangeland Resource Assessment Non-Native Plant Species, October 2010, http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1041751.pdf, p. 6.

⁶⁶ The herbaceous non-native invasive species groups were Annual bromes (*Bromus spp.*); Cheatgrass (*Bromus tectorum* L.); Medusahead (*Taeniatherum caput-medusae* (L.) Nevski) Kentucky and Canada bluegrass (*Poa pratensis* L. and *Poa compressa* L.); Buffelgrass (*Pennisetum ciliare*); Halogeton *glomeratus*; *Centaurea spp.*; *Cirsium spp.*; and Leafy spurge (*Euphorbia esula* L.). The native invasive woody species were Juniper, Mesquite, and Pinyon pine. See the 2014 Rangeland Assessment for more information about each of these species and the NRI.

The particular non-native invasive herbaceous species groups were selected for the NRI “because of their ubiquitous nature in rangeland plant communities. Plant species in these groups were introduced from other countries and once established, have been very difficult to eradicate.”⁶⁷ Woody invasive species were included because “[s]ome native woody shrubs such as juniper and mesquite can invade areas replacing native grasses and forbs. Dense stands can alter nutrient and energy cycles, affect hydrology, and reduce wildlife habitat and forage for domestic animals and wildlife. Deep root systems of woody species such as mesquite can reduce water availability to other native plants and eventually animals.”⁶⁸

Annual bromes, a non-native invasive herbaceous species group that was assessed by the NRI, are highly invasive in shrub communities such as sagebrush and often out-compete native

Figure 21: Non-Federal Rangeland Where Non-Native Annual Bromes are Present



⁶⁷ Ibid., p.2.

⁶⁸ NRI Rangeland Resource Assessment Native Invasive Woody Species, October 2010, p. 1.

grasses and forbs. Communities of annual bromes can also be highly flammable. As shown in figure 21, annual bromes are widespread and are found on 30.1 percent of non-Federal rangeland.⁶⁹ They cover at least 30 percent of the soil surface on 7.1 percent of non-Federal rangeland and make up at least 30 percent of the relative plant canopy cover on 6.3 percent of non-Federal rangeland.⁷⁰ Medusahead is found on 1.7 percent of non-Federal rangeland and invasive bluegrass species on 13.8 percent. The remaining species were found to be present on a very small proportion of the Nation's non-Federal rangeland but it appears there are some non-native invasive herbaceous species found on some rangeland in nearly every part of every State.⁷¹

In terms of woody invasive species groups, the NRI found that although specific groups of invasive native woody species tend to be more prevalent in certain areas, as a whole they are widespread throughout the western part of the Nation.⁷² For example, although Pacific juniper species are native, they are invading areas where they normally have not been present. In Oregon, where they are most common and appear on 18 percent of non-Federal rangeland, Pacific juniper species have expanded to an additional 1.5 percent of non-Federal rangeland areas where they normally have not been. Mesquite species are present on 15.2 percent of the Nation's non-Federal rangeland, including 4.5 percent of non-Federal rangeland in areas where they have not been part of reference conditions.⁷³

The fact that the NRI survey found invasive herbaceous species, in particular, to be ubiquitous on rangeland does not mean that rangeland will never be eligible as grasslands of special environmental significance under this alternative. Even within areas that the NRI shows have high percentages of noxious or invasive species there are some grasslands without such species or with a sufficiently low coverage that they would still meet this criteria. The NRI results do indicate, though, that the presence of invasive species is likely to be a limiting factor for enrollment of grasslands of special environmental significance under this alternative's definition – at least on rangeland. Though invasive species data is not available for pasture land or other grasslands present primarily in the eastern portion of the United States, invasive species likely will be present on most lands unless they have been specifically managed to exclude them. Pasture lands may have relatively few invasive species as compared to rangeland because they

⁶⁹ Ibid., page 5.

⁷⁰ Relative plant canopy cover is an indicator of species composition and is calculated for each sample site as the percent of foliar observations that were in the species group

⁷¹ NRI Rangeland Resource Assessment Non-Native Plant Species. Findings related to the locations of specific invasive herbaceous species is available in the NRCS NRI 2014 Rangeland Assessment.

⁷² 2014 Rangeland Assessment.

⁷³ Ibid. The report includes additional information regarding the presence of each species group on non-Federal U.S. rangelands.

tend to be more intensively managed than rangeland, but there is no evidence to indicate whether that is the case. CRP acres are by contract supposed to be managed to prevent invasive species infestations, so it is likely much expiring CRP would meet this criterion.

In addition to the non-native invasive herbaceous species and the woody invasive species studied by the NRI, there are many other invasive species that would have to be considered on a site-specific basis before a parcel could be determined to potentially qualify as grasslands of special environmental significance under this criteria. It is likely that the requirement there be little or no noxious or invasive species present will considerably limit the grassland acres that will qualify for enrollment as grasslands of special environmental significance, though there are likely to be grasslands in every State that will meet this criteria. This is particularly true because there is no specific limit provided on the amount of invasive species that would be considered “little or no.”

In addition to the requirement that the grasslands contain little or no noxious or invasive species, the definition also requires that to be enrolled as grasslands of special environmental significance the lands must be “subject to threat of conversion to non-grassland uses, or are subject to fragmentation.” While this was not a requirement to enroll grazing lands into GRP, there was a provision that such lands should be given priority for GRP enrollment if the land was previously enrolled in CRP planted to grass and had high ecological value. The location of CRP acres enrolled under contracts that expired during the course of the 2008 Farm Bill but were not re-enrolled in CRP, as shown in figure 22, indicates where CRP grasslands may have been converted to cropland or developed uses and where such pressures may continue in the future. The majority of the land that was not re-enrolled in CRP is located in the Great Plains region, but there is also a fairly large amount of CRP acreage in other parts of the country that likewise were not re-enrolled. The locations of these lands are generally consistent with the locations of the 2008 GRP Farm Bill easements as shown in figure 12, indicating that GRP enrollments did take this factor into account.

NRI findings regarding the change in percent of urban and built-up land from 1982 to 2010 also indicate potential locations of pressure to convert grasslands to non-grassland uses. Figure 26 identifies those areas that have experienced the most growth from 1982 to 2010 and therefore would be most subject to threat of conversion to developed uses. Any grasslands in proximity to areas that experienced more than 10 percent growth over the period, and particularly those in proximity to areas that experienced more than 25 percent growth, would be subject to threat of conversion to non-grassland uses. Most of those areas are east of the Mississippi River, but there are growing areas in the West that are also experiencing strong conversion pressure from development. State Conservationists likely would view the threat of conversion to non-grassland uses as relative to actions occurring within their own State; thus, there would be areas within

Figure 22: CRP Grassland Practice Acres Expiring and Not Re-Enrolled, FY 2009-FY 2013

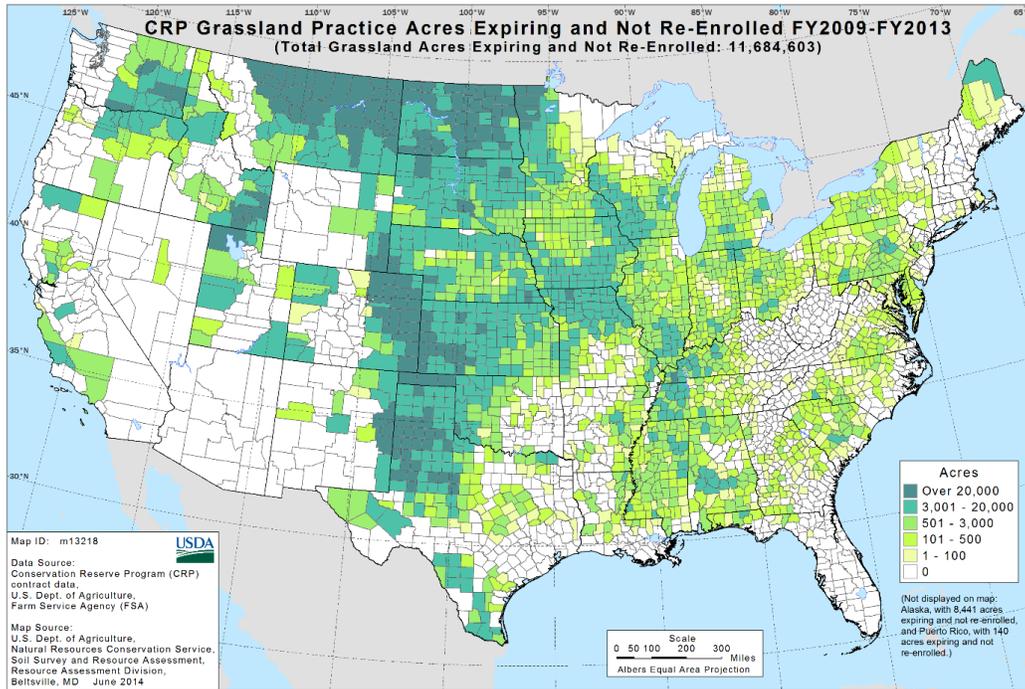
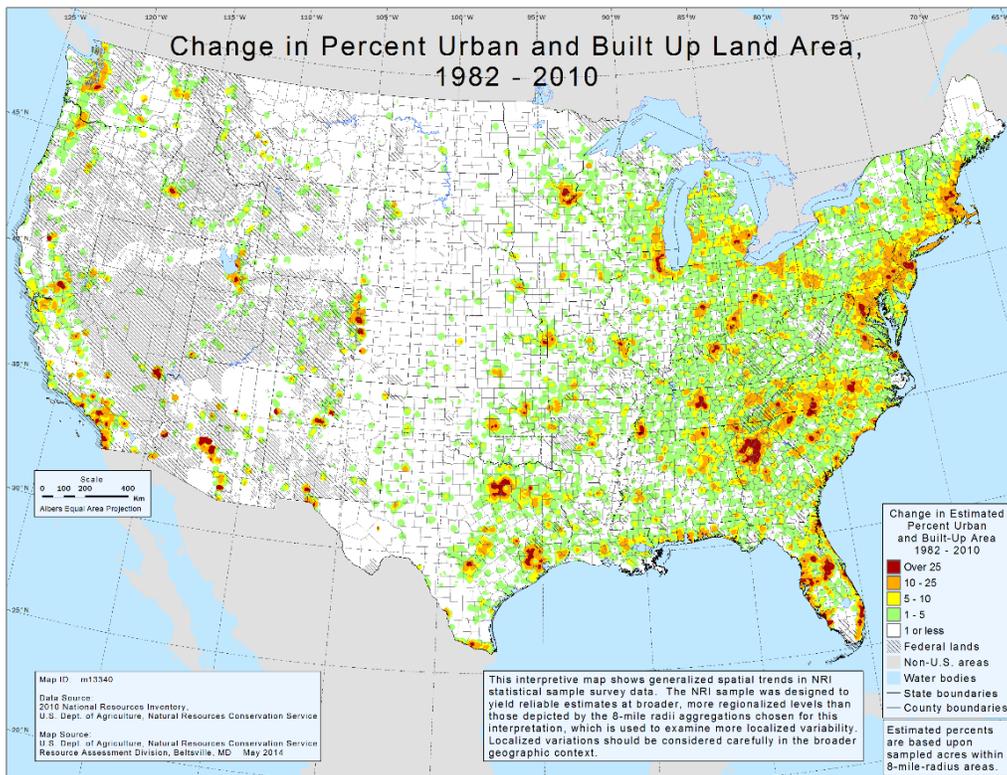


Figure 23: Change in Percent Urban and Built Up Land Area, 1982-2010



North Dakota, for example, that may have experienced only 1 to 5 percent growth over the 28-year period but have experienced increased conversion of grassland to cropland in recent years and therefore would still qualify to fund grasslands of special environmental significance. When the two types of conversion pressures are considered together, it appears there will be some grassland acres in all States that will meet this requirement, though there are certain States, such as Nevada, in which the qualifying acreage would be quite limited.

The proposed definition also limits enrollment of grasslands of special environmental significance to grassland that is 1) currently in predominately native grasses, grasslike plants, shrubs, or forbs (which includes pastureland and rangeland); or 2) is improved, naturalized pastureland and rangeland.

As is the case for invasive species, there is little information available nationally on the amount of land that is in predominately native grasses, grass-like plants, shrubs or forbs or is improved, naturalized pastureland and rangeland, although much pastureland likely would qualify under these criteria. The results of the NRCS NRI Rangeland Assessment provide an indication of the locations and amount of rangeland acreage that may have predominately native grasses. In addition to the non-native invasive herbaceous species discussed previously, the Rangeland Assessment examined the presence of additional non-native herbaceous plant species on rangeland in the same 17 Western States and to a limited extent in Florida and Louisiana. Key findings from the study are:

- Non-native species are present on approximately 53.8 percent of the Nation's non-Federal rangeland;⁷⁴
- Plant canopy cover represents the proportion of the soil surface covered by an individual species. Nationally, non-native species make up at least 25 and 50 percent of the plant canopy cover on 18.1 (± 0.7) and 8.6 (± 0.5) percent, respectively, of non-Federal rangeland; and
- Relative plant canopy cover is an indicator of species composition and therefore relative dominance. Nationally, non-native species make up at least 25 and 50 percent of the relative plant canopy cover on 19.4 (± 0.7) and 9.0 (± 0.5) percent, respectively, of non-Federal rangeland.⁷⁵

Figure 24 shows the locations of non-Federal rangeland where non-native species are present and figure 25 shows the locations of non-Federal rangelands on which non-native species make up at least 50 percent of the plant cover on non-Federal rangeland. Some of the locations in figure 24 will consist predominately of native species though they are in an area where non-native species are easy to find. The map shown in figure 25 shows the percentage of acres in each State

⁷⁴ Many of these are not invasive.

⁷⁵ NRI Rangeland Resource Assessment (June 2014): Non-Native Plant Species, page 3.

Figure 24: Non-Federal Rangeland Where Non-Native Plant Species are Present

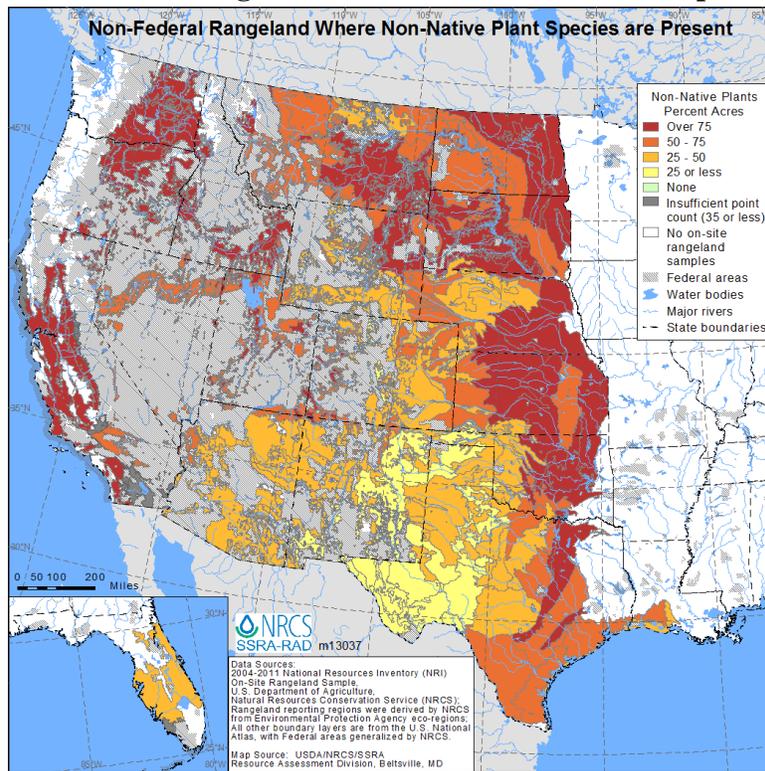
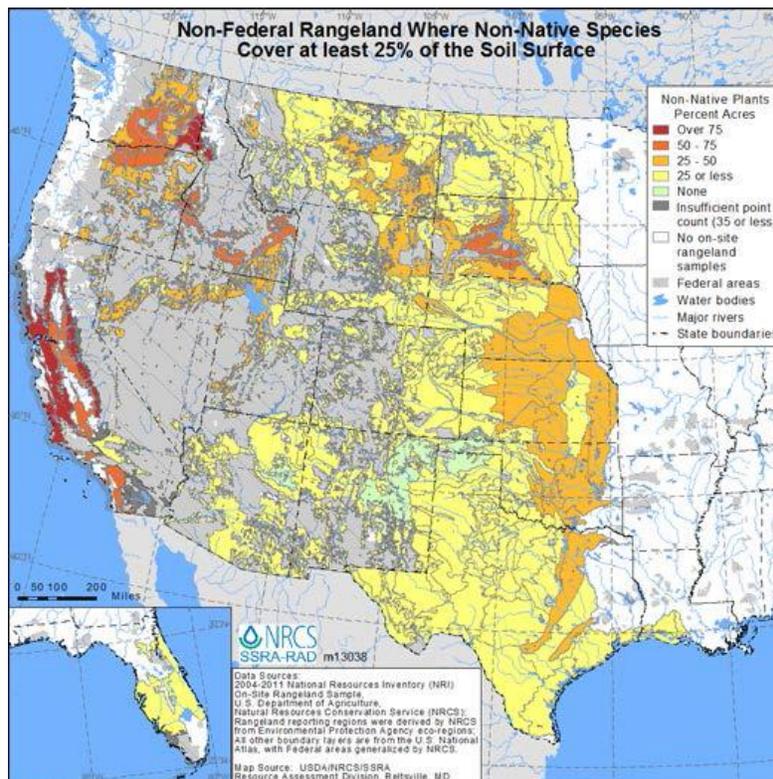


Figure 25: Non-Federal Rangeland Where Non-Native Species Cover at least 25 Percent of the Soil Surface



studied where non-native species cover at least 25 percent of the soil surface. This gives an indication of the amount of rangeland that may not meet the requirement that the grassland consist of predominately native species. The areas in yellow and orange would be likely to have the most rangeland acres qualifying for enrollment as grasslands of special environmental significance because less than 50 percent of the rangeland in those areas have non-native species covering at least 25 percent of the soil surface.

The study did not examine the presence of non-native species on pastureland or other Eastern lands, though introduced species are often found on pastureland. While the lands in figure 26 would not qualify for enrollment as native grasses, they may qualify for enrollment as improved, naturalized pastureland. Improved, naturalized pastureland and rangeland is located in most States. Often these lands are improved with non-native grasses. “Most non-native plant species are not a problem, and some are considered beneficial. Crested wheatgrass (*Agropyron cristatum* (L.) Gaertn), for example, is an introduced species that is commonly recommended for forage production and for soil stabilization in semi-arid regions.”⁷⁶

In addition to certain rangeland and pastureland, all CRP land planted to grass and expiring during the 2014 Farm Bill will also meet this requirement.⁷⁷ CRP land planted to native grass would qualify under the native grassland requirement, and CRP land planted to non-native grass would qualify under the provision for improved, naturalized pastureland or rangeland. Figure 20 shows the locations of these lands. The lands in each of these categories meets the types of lands encompassed by the proposed definition, and one or more are found in every State, though to varying degrees.

In addition to the factors discussed above, the definition proposed in this alternative requires that grasslands of special environmental significance must meet one of three ecological factors. It must 1) provide or have potential to provide habitat for species listed as threatened or endangered under the ESA or that are otherwise at risk; 2) protect sensitive or declining native prairie or grassland types; or 3) protect highly sensitive natural resources. The first of these appears to be more restrictive than GRP requirements, but in practice animal and plant populations of significant ecological value tend to be species that are ESA-listed or at risk and subject to potential regulation. Under alternative 1, GRP would also provide for enrollment of lands benefiting such species.

Figure 26 shows the locations of grassland-dependent species identified by NatureServe for NRCS in 2009. Not only have additional grassland species been listed since 2009, this map is

⁷⁶ NRCS Rangeland Assessment.

⁷⁷ It is unlikely grazed forest land would meet the grassland requirement that would enable it to be eligible to receive 75 percent of the fair market value of the agricultural land easement.

Figure 26: Federally Listed Grassland Dependent Species, 2009

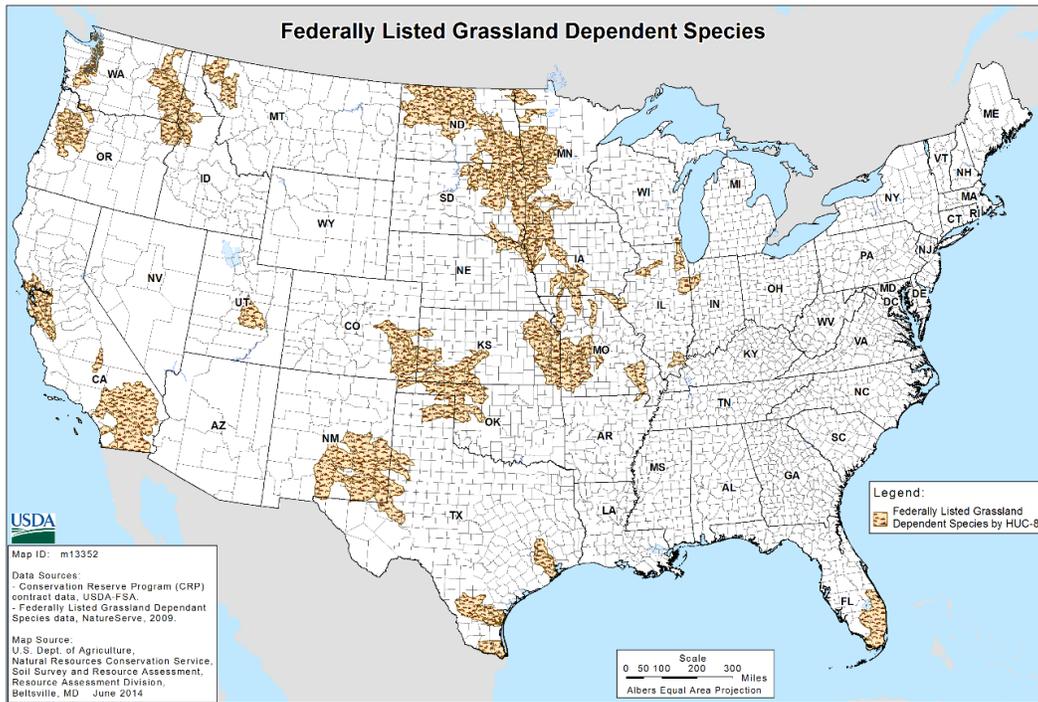
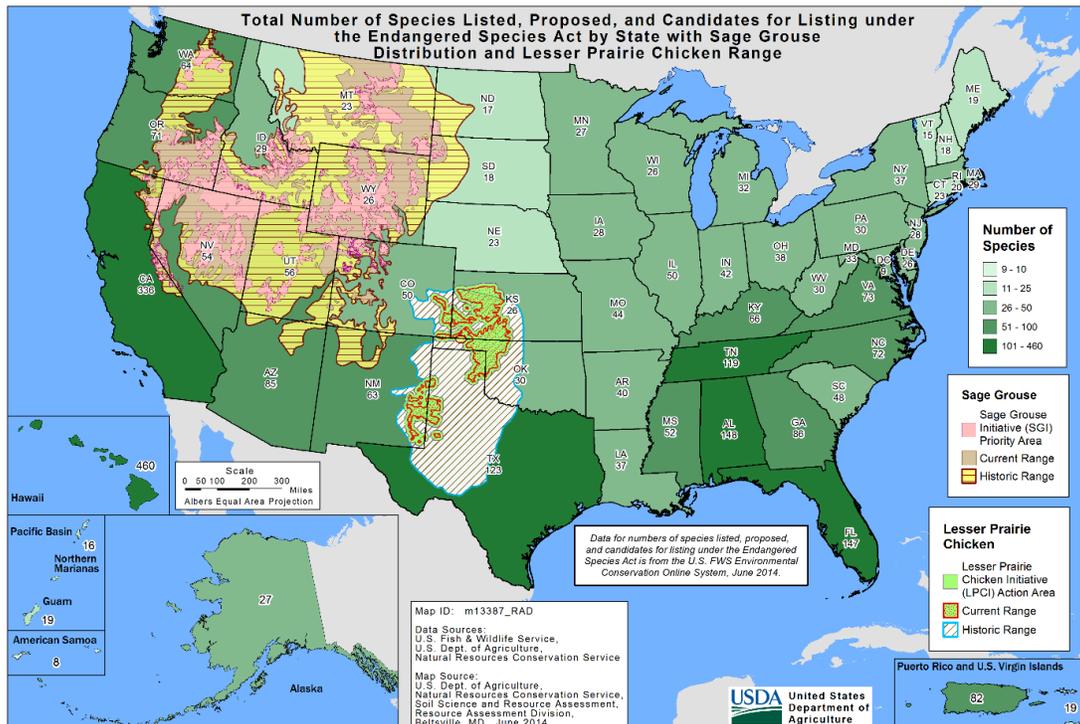


Figure 27: Number of U.S. Fish and Wildlife Service Species Listed, Proposed, and Candidates for Listing under the Endangered Species Act as of June 2014 with Sage Grouse Distribution and Lesser Prairie Chicken Range



not inclusive of all species that would enable land to qualify under this requirement because it does not include grassland dependent species that were proposed or were candidates for listing under the ESA at that time nor does it include other grassland species considered to be at risk. This map merely gives an indication of where such species may be found.

Figure 27 shows the number of species listed, proposed for listing, or candidates for listing under the ESA, which includes more than just grassland dependent species. Figure 27 also outlines the current and historic ranges of two important grassland-dependent species that are at risk and are the subject of important NRCS Initiatives—the Sage Grouse Initiative (SGI) and the Lesser Prairie Chicken Initiative (LPCI)—and shows the areas in which those initiatives are being implemented.⁷⁸

The SGI is being implemented in portions of 11 States and the LPCI is being implemented in portions of 5 States. ACEP-ALE enrollments in these States would provide these species with long-term protection, as do the GRP and FRPP easements already in place. The LPCI is being carried out in Colorado, Kansas, Oklahoma, Texas, and New Mexico; and the SGI is in Montana, Wyoming, Colorado, North Dakota, South Dakota, Idaho, Utah, Washington, Oregon, Nevada, and California. There are nearly 200 land trusts in California so it is likely the most important grasslands will be protected by a land trust there. Colorado, which is the only State in which both initiatives are being implemented, also has a fairly large number of land trusts at 38, and the high number of FRPP enrollments under the 2008 Farm Bill reflects this. Texas follows closely with 36 land trusts, Washington has 37, and Oregon has 23. Montana only has 15 land trusts, Idaho has 12, and Kansas, Utah, and New Mexico each have only 8 land trusts. Wyoming, which has a large amount of important Sage grouse habitat, has only five land trusts. Oklahoma has only three, South Dakota only has two land trusts and North Dakota has none. With the exception of Oregon, during the 2008 Farm Bill, these States were among those with the greatest numbers of acres enrolled in GRP (see figure 12). A number of these States—Montana, Wyoming, Colorado, Idaho, New Mexico, and Kansas—were also among those with the greatest number of FRPP easement acres enrolled during the 2008 Farm Bill. It remains to be seen whether the land trusts that were active under the 2008 Farm Bill will be able to continue their pace and address needs for grassland protection in States such as Oregon, North Dakota, South Dakota, Utah, and Arizona, all of which had very few or no FRPP enrollments under the 2008 Farm Bill but had substantial GRP easement acres enrolled.⁷⁹ Regardless of the amount of land actually protected by land trusts, though, it appears there will be quite a large number of grassland acres that would qualify for enrollment based on this criterion.

⁷⁸ U.S. Fish and Wildlife Service Environmental Conservation Online System (ECOS), June 2014. These figures are provided as a supplement to the 2009 grassland dependent species information because of its age.

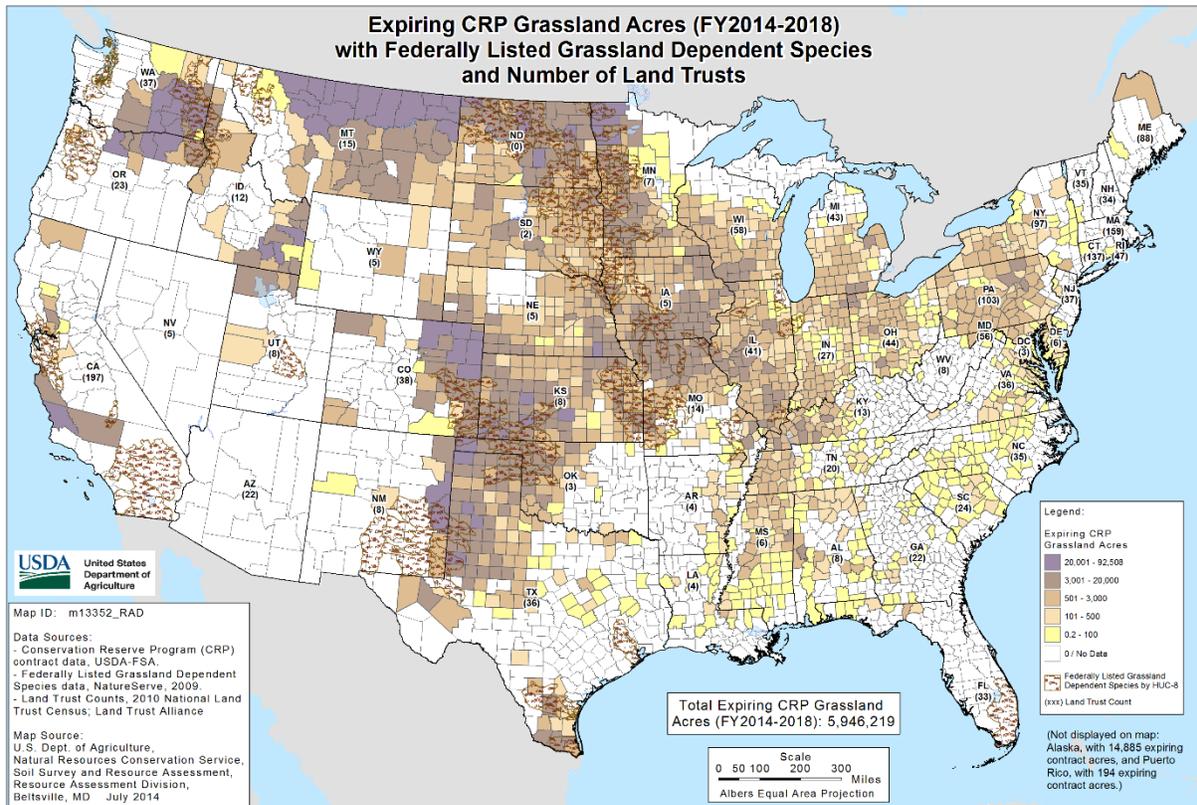
⁷⁹ With the exception of Oregon, which had no FRPP or GRP easements enrolled under the 2008 Farm Bill.

Grasslands meeting the second ecological factor, sensitive or declining native prairie or grassland types, would have been eligible for GRP enrollment in most cases, and likely would represent only a small portion of the universe of grasslands eligible to be considered grasslands of special environmental significance under this alternative. Estimates are that as much as 99 percent of original U.S. native prairie has disappeared, and there is even less still on private lands. As a result, there will not be extensive amounts of sensitive or declining native prairie or grassland types to protect. Those that do still exist are located primarily in the Great Plains region. If this criteria were the only ecological consideration under this alternative, it would severely restrict enrollments of grasslands of special environmental significance, but it is not.

The third ecological consideration, providing protection of highly sensitive natural resources, is quite broad as this has potential to encompass a multitude of natural resources of State or local concern. Such resources could range from water quality to carbon sequestration, to migratory birds, to historic resources and many others unless otherwise limited. This factor is roughly equivalent to the GRP consideration of State, regional, and national conservation priorities. In ACEP, depending on the breadth of the highly sensitive natural resources addressed, this ecological factor has potential either to limit the acres that would qualify for enrollment as grasslands of special environmental significance, or to maximize those acres. Primarily because of the breadth of this third consideration, the requirement that grasslands meet one of these three factors to qualify for the higher cost share rate is not likely to greatly limit the number of grassland acres that will qualify to be enrolled at 75 percent cost share.

Thus, of the factors included in the proposed definition of grasslands of special environmental significance, it appears that the primary limit on qualifying acres would be as a result of the requirement that there be little or no noxious or invasive species on the grasslands. Assuming CRP lands have been properly managed to minimize invasive species, it is likely that under this alternative, grasslands of special environmental significance enrollments will consist primarily, but not entirely, of expiring CRP grassland acres that either have habitat for declining or protected species or provide protection of another sensitive resource. Figure 28 shows the locations of CRP acres planted to grass with contracts expiring during the 2014 Farm Bill as well as the locations of Federally-listed grassland dependent species and the number of land trusts in each State. There is considerable overlap in North Dakota, South Dakota, Iowa, Missouri, and Kansas, in particular, though there is grassland habitat in other States, as well. Unfortunately, there are few land trusts in several of these States: North Dakota has none; South Dakota has two; Iowa has five; and Kansas has only eight. Assuming national land trusts step in to protect lands in these States, it likely will be the ecological considerations and presence of invasive and noxious species that will limit the amount of expiring CRP and other grassland acres qualifying for the 75 percent cost-share rate as grasslands of special environmental significance under this alternative.

Figure 28: Expiring CRP Grassland Practice Contact Acres (FY 2014-FY 2018) with Federally-Listed Grassland Dependent Species and Number of Land Trusts



Alternative 2 Cumulative Effects

Cumulatively, the effects of ACEP under this alternative are not likely to be different from those of the No Action alternative except that there may be relatively fewer acres of grazing lands enrolled due to the requirement that all ACEP-ALE acres must be held by a third party who also has to provide funding toward the easement. Because NRCS has authority under ACEP-ALE to pay a higher cost-share rate to assist cooperating entities in protecting grasslands of special environmental significance, land trusts may choose to focus their resources on protecting lands qualifying as such, enabling them to contribute a lower level of funding and better leverage their resources. This is particularly likely to be the case for the few large national land trusts that exist.⁸⁰

Though the higher rate of cost share might encourage these entities to protect grasslands of special environmental significance, many of the acres qualifying for enrollment under this provision are likely to be from expiring CRP contracts with acreage planted to grass that has been well-managed to exclude noxious and invasive species. CRP contracts planted to grass and

⁸⁰ National land trusts are not represented in the numbers shown in Figure 10.

covering more than 5.9 million acres are expected to expire during the 2014 Farm Bill and could qualify as grasslands of special environmental significance if they meet one or more of the ecological factors.⁸¹ This has potential to result in many acres of grasslands being eligible for this designation and also provides a mechanism for the permanent protection of the Federal investment already made through CRP. As the amount of grasslands of special environmental significance protected increases, the available funding remaining for ACEP-WRE and “regular” ACEP-ALE enrollments is reduced and a trade-off of benefits occurs.

There will be fewer acres enrolled under this alternative overall as compared to the 2008 Farm Bill because of the lower overall ACEP funding levels as compared to the combined funding for WRP, FRPP, and GRP under the 2008 Farm Bill, though there is potential for the decrease to be somewhat mitigated by the cooperating entity contribution requirement for the ALE component, which leverages the NRCS funding. There may also be fewer overall acres protected cumulatively under this alternative than alternative 1 depending on the use of the higher cost share rates for grasslands of special environmental significance under this alternative and alternative 3.

Because of the very low coverage of invasive species allowed on properties that are candidates to be enrolled as grasslands of special environmental significance,⁸² practices such as Herbaceous Weed Control, Brush Management, and Integrated Pest Management that are used to control invasive species are expected to be applied on a smaller proportion of the acreage than would be the case under the No Action alternative. As with alternative 1, any foreseeable adverse effects on the environment resulting from conservation practices required on these lands would be minor and temporary in nature, as the practices are designed to improve the condition of natural resources.

Under this alternative, ACEP would continue to be an integral part of ongoing NRCS landscape initiatives, similarly to WRP, FRPP, and GRP before it. In addition, ACEP will be an important component of the new RCPP. RCPP provides authority for an additional \$100 million in RCPP projects and requires NRCS to set aside 7 percent of funds from ACEP, EQIP, the Conservation Stewardship Program (CSP), and Healthy Forest Reserve Program each year for RCPP projects that leverage partner funds. The program purposes are broad, encompassing a number of regional 2008 Farm Bill authorities such as the Chesapeake Bay Watershed Program, and a number of other provisions generally aimed at promoting coordination between NRCS and its partners to deliver conservation assistance to producers and landowners to address a wide variety of natural resource problems on a regional or watershed basis. Should funds still remain

⁸¹ Of these, more than 4.3 million acres are planted to native grass.

⁸² See proposed definition, below.

available by April 1, they may be used for their originating program purposes.⁸³ NRCS implements RCPP based on proposals it receives from the public; as a result, it is not possible to predict what the future proposals or their associated effects will be. However, the conservation practices implemented under RCPP will be the same as those implemented under ACEP, EQIP, CSP, and HFRP, so the cumulative effects of RCPP on the landscape are also expected to be the same as the effects occurring under those programs.⁸⁴

Overall under this alternative, wetland reserve easements will continue to be enrolled under ACEP-WRE as they were under WRP, so degraded wetlands and associated uplands will continue to be restored and protected, the land will not be developed, and only uses compatible with maintaining wetland functions and values will be allowed. As with WRP, ACEP-WRE will maximize wildlife benefits; achieve cost-effective restoration with a priority on benefits to migratory birds; protect and improve water quality; reduce the impact of flood events; increase ecosystem resilience; and promote scientific and educational uses of ACEP-WRE project lands. In addition, as was the case with FRPP and GRP, enrolling lands in ACEP-ALE will help keep farm and ranch lands productive and sustainable when they are threatened by development pressures. Retaining land in agricultural use reduces the amount of urban pollution (nitrogen, phosphorus, and sedimentation) from land that would otherwise be converted to lawns and impervious surfaces such as pavement and buildings. Ultimately this assists with efforts in managing the TMDL of nutrients to public waters such as the Chesapeake Bay and Mississippi River. By protecting agricultural lands, ACEP-ALE also will protect the viewsheds, open space, and associated amenities for future generations. In addition, by limiting development and providing habitat needed by threatened and endangered species, ACEP-ALE will preserve agricultural heritage and green space, provide for recreational activities, and help ensure the Nation's ability to produce its own food.

5.3.3 Alternative 3: Implement ACEP according to 2014 Farm Bill requirements and define “grassland of special environmental significance” by establishing criteria for initial eligibility instead of using a broad definition.

Under this alternative, just as with alternative 2, ACEP would be implemented according to the provisions of the 2014 Farm Bill. Both a WRE and an ALE component would be implemented as described under alternative 2, and the conservation practices implemented under this alternative and the effects of those practices would be the same as those described under alternative 2. The only difference in the effects of alternative 3 as compared to alternative 2 is the location and amount of potential grasslands of special environmental significance.

⁸³ See Subtitle I of Title XII of the Food Security Act of 1985, as amended by Section 2401 of the Agricultural Act of 2014.

⁸⁴ The effects of EQIP, CSP and HFRP are disclosed in 2009 Programmatic EAs. These EAs are available at www.nrcs.usda.gov/ea and are hereby incorporated by reference.

This alternative allows the 75 percent cost-share rate to be used to protect grasslands of special environmental significance that are particularly important to the protection of other highly sensitive natural resources. Instead of a definition, national criteria would be established as follows:

- Grassland that is subject to threat of development or conversion to nongrassland uses, and
- Grassland that is predominantly native species, has minimal (less than 5 percent) invasive species present, will be maintained as grassland, is compatible with grazing uses, and meets one or more of the following:
 - (1) Provides protection for water quality improvement in impaired watersheds (i.e., Clean Water Act Section 303d impaired waters).
 - (2) Contributes to groundwater recharge in vulnerable aquifers and/or surface waters.
 - (3) Identified as an environmentally sensitive area by the NRCS Chief.
 - (4) Has expiring CRP acreage established to grass.
 - (5) Has habitat for species listed under the ESA as threatened or endangered or other species of concern.

This alternative would allow additional criteria to be added at the NRCS Chief's discretion. It would also allow State Conservationists to propose criteria that would restrict enrollment of grasslands of special environmental significance to areas supporting State and regionally-identified conservation priorities, such as protection of significant local at-risk plant or wildlife species or pollinator habitat, so long as it also meets the criteria above.

Alternative 3 is narrower in scope than alternative 2 by virtue of the use of specific criteria to identify grasslands of special environmental significance and because it does not allow for enrollment of pastureland and rangeland that has been improved with non-native species. Like the previous alternative, this one provides that the grassland must be subject to threat of conversion to non-grassland uses, including development. Figures 22 and 23 identify the areas in which CRP grassland acres expiring in FY 2009 through FY 2013 were not re-enrolled and in which the increase in urban and built-up land areas were the greatest. Each of these represents locations in which there is pressure to convert existing grassland to other uses. As was the case under alternative 2, this criteria is not particularly restrictive because where there is not pressure to convert to developed land uses, there appears to be pressure to convert grasslands to cropland uses. In addition, because this factor was also a requirement in alternative 2, there is no difference between the effects of the two alternatives based on this criteria. It does narrow enrollments somewhat as compared to the grassland acres that would be enrolled under GRP, but even GRP gave priority to those lands if they had been enrolled in CRP and were of high ecological value, and this alternative does as well.

Unlike alternative 2, this alternative explicitly requires that the land must be compatible with grazing uses and that it be maintained as grassland into the future. This has potential to eliminate some lands that would qualify under alternative 2 if those lands cannot support grazing due to presence of other factors, but the effect is expected to be negligible.

This alternative requires the land to have minimal (less than 5 percent) invasive species whereas alternative 2 requires “little or no noxious or invasive species.” Though the requirements are phrased differently, the types of plant species that will disqualify grasslands from meeting this criteria are the same because noxious species are also invasive and invasive species may be non-native or native. The biggest difference is the reference in this alternative to “minimal invasive species” being less than 5 percent. This removes much of the flexibility allowed by alternative 2 and likely will further restrict the lands eligible for enrollment as grasslands of special environmental significance under this alternative as compared to alternative 2. This criteria would not exist for grasslands enrolled under alternative 1, the No Action alternative, so compared to lands eligible for GRP, very few would qualify for enrollment as grasslands of special environmental significance under this alternative.

One of the key differences between this alternative and alternative 2 is that this alternative includes the requirement that for any grassland to be enrolled as a grassland of special significance, it must consist predominately of native species. Thus, there are naturalized pastures and CRP acres planted to non-native grass that could qualify as grasslands of special environmental significance under alternative 2 that would not qualify under this alternative. As discussed with respect to alternative 2, the NRI found that non-native species are present on nearly half (49.9 percent) of the Nation’s non-Federal rangeland, though many of those are not invasive.⁸⁵ Figure 24 shows the percentage of rangeland acres on which the nine non-native herbaceous plant species measured by the NRI were found to be present. One or more of the nine non-native species groups studied are present in every Western State to some extent. Based on the NRI results, New Mexico, Arizona, Texas, and Florida, overall, have the least percentage of non-Federal rangeland acres with herbaceous non-native species present, and therefore would be most likely to have rangelands that could potentially qualify as grasslands of special environmental significance based on this factor. As shown in figure 29, there are over 3.7 million acres of CRP planted to native grass in many States that will expire during the 2014 Farm Bill that would also be eligible under this alternative. As stated previously, much pastureland is not likely to qualify as it often includes non-native species.

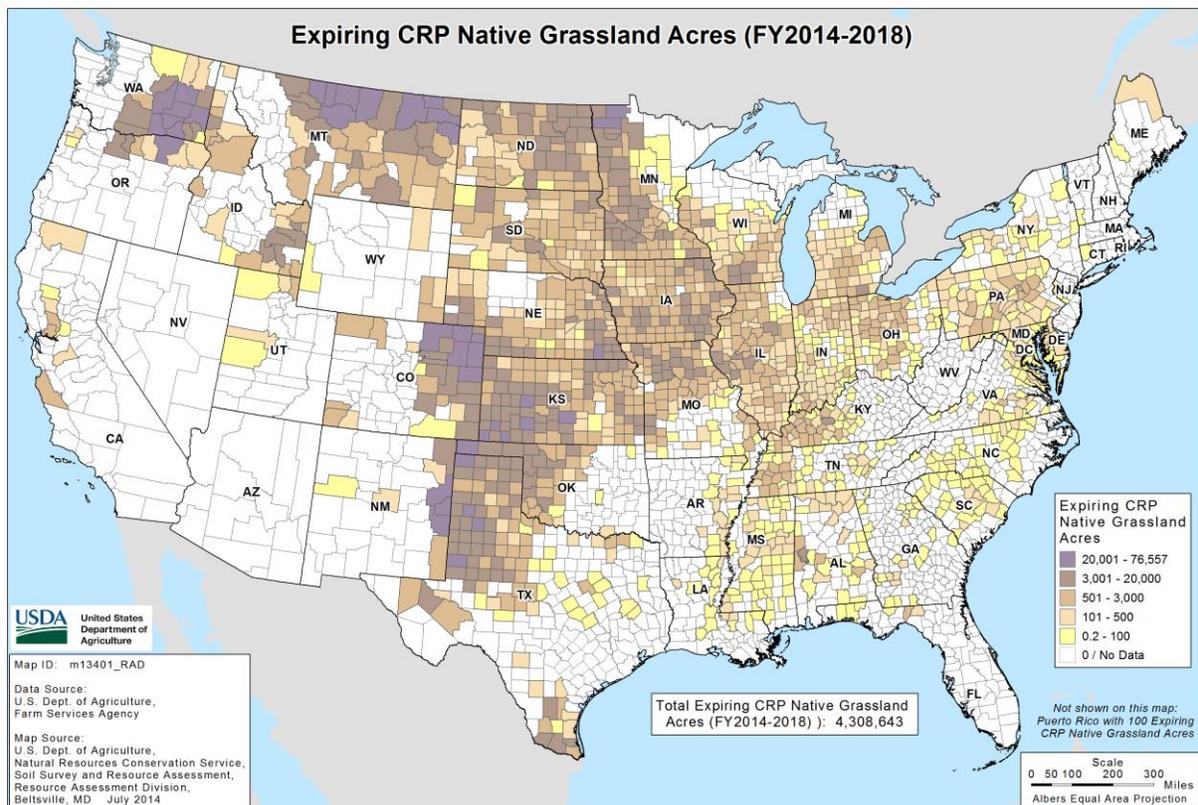
Alternative 3 is also different from alternative 2 in that this alternative explicitly identifies the range of highly sensitive resource concerns to which the land must contribute: Water quality improvement in Clean Water Act Section 303d impaired waters; groundwater recharge in

⁸⁵ NRI Non-Native Species,

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/nri/results/?cid=stelprdb1041704>

vulnerable aquifers or surface waters; or habitat for ESA-listed species or species of concern. It also explicitly allows for expiring CRP grasslands to be considered. Land would automatically qualify under this alternative if it has expiring CRP acreage planted predominately to native species and with invasive species present on less than 5 percent of the acres. If the expiring CRP grassland also addressed another of the identified resources concerns, such as providing habitat for a listed species, those acres would receive the highest priority for enrollment.

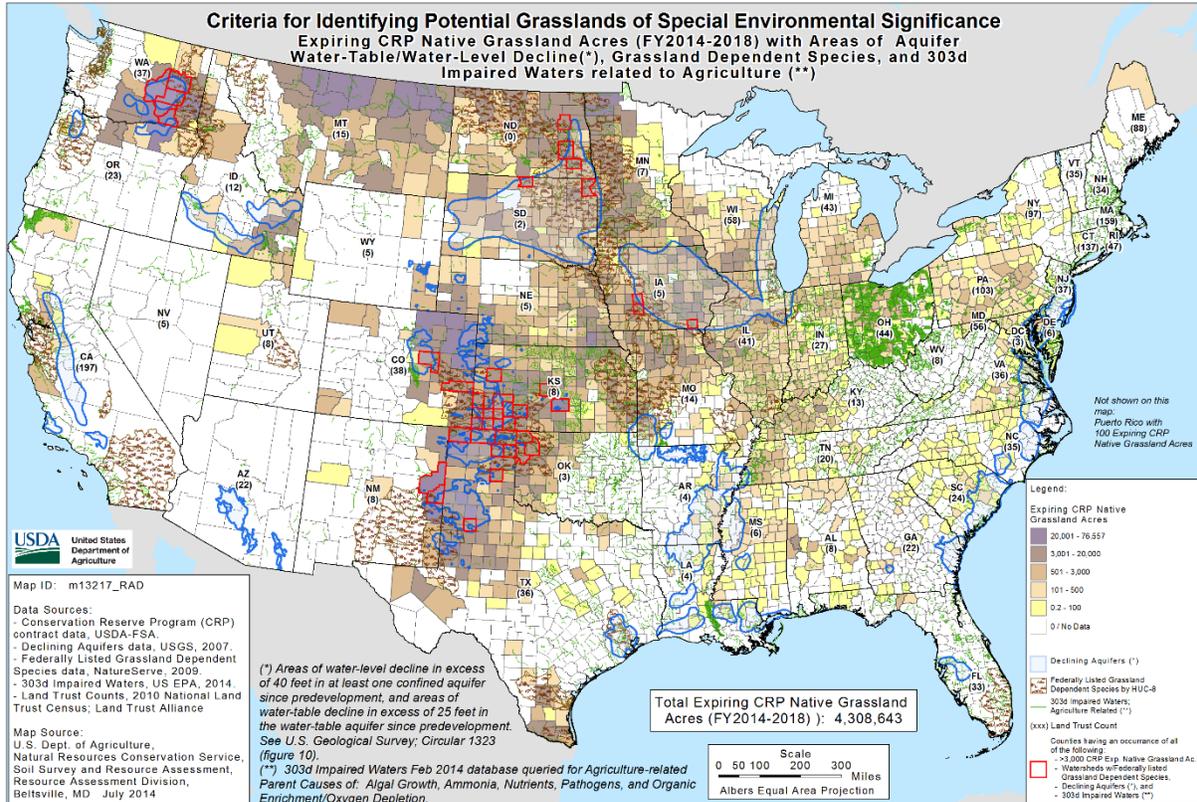
Figure 29: CRP Native Grassland Acres Expiring FY 2014 to FY 2018



Though it is not inclusive of all eligible lands, the map in figure 30 provides an indication of the relative number and location of acres that may qualify under this alternative to be enrolled as grasslands of special environmental significance. The map shows the locations of CRP acres planted to native grass that will expire between FY 2014 and FY 2018 and environmental considerations. Vulnerable aquifers are outlined in blue,⁸⁶ waters impaired due to agricultural land uses are shown in green, and the grassland-dependent species locations are also identified in brown. Finally, the numbers of land trusts in each State are identified.

⁸⁶ For purposes of this analysis, vulnerable aquifers are represented by areas of water level decline in excess of 40 feet in at least one confined aquifer since predevelopment, and areas of water table decline in excess of 25 feet in the water table aquifer since predevelopment. See USGS Circular 1323.

Figure 30: Possible Criteria for Identifying Potential Grasslands of Special Environmental Significance



There are quite a number of vulnerable aquifers in areas where there will be expiring CRP native grassland acres. The areas in which there is the greatest overlap are the central part of the country and in Washington, Oregon, and parts of Idaho. Many States have streams listed as impaired for reasons related to agriculture; in those States where there are high densities of such streams, such as Ohio, the State may appear on the map to be shaded green.

The red boxes in figure 30 show the locations of those counties that have CRP grassland acres under contracts that will expire between FY 2014 and FY 2018, are in areas with vulnerable aquifers, had listed grassland dependent species as of 2009,⁸⁷ and are in watersheds with waters listed as impaired under Clean Water Act Section 303(d) for reasons related to agriculture. While it is not necessary to meet all the environmental criteria to qualify, the areas in red boxes would receive the highest priority under this alternative. Some States, such as North Dakota and South Dakota, with relatively large amounts of grassland that could potentially qualify under all of these criteria, may not ultimately have many acres enrolled as grasslands of special environmental significance due to the few entities qualified to hold the easements in those States.

⁸⁷ As discussed in alternative 2, these locations do not include all the grassland dependent at risk species habitat.

It is likely that many eligible acres will be CRP acres planted to native grass with contracts expiring during the 2014 Farm Bill that have been well-maintained and also are subject to conversion pressures to nongrassland uses. NRCS expects fewer acres would qualify for enrollment as grasslands of special environmental significance under this alternative than alternative 2 because this alternative limits enrollment to predominately native grasslands with less than 5 percent invasive species and that meets specific environmental criteria rather than allowing for protection of highly sensitive resources in general as is the case in alternative 2. Although this alternative targets the high quality grassland ecosystems, because it has such specific criteria it may be less successful than alternative 2 in preserving some sensitive communities, such as tallgrass prairies that are not being grazed, although it does allow special designation of “environmentally sensitive areas” by the NRCS Chief.

With the exception of grasslands of special environmental significance, the effects of this alternative will be much like those described in alternative 2. There likely will be relatively fewer grasslands enrolled under this alternative than under GRP in alternative 1, and fewer grasslands of special environmental significance as under alternative 2. However, NRCS expects there will be about the same number of agricultural land enrollments in the ACEP-ALE component as under FRPP in alternative 1. The locations of lands likely to be enrolled in the ACEP-WRE component under this alternative are going to be similar to the locations of lands enrolled under alternative 2 and the WRP under alternative 1.

The types of conservation practices that will be required and, in the case of the WRE component, the types of practices for which financial assistance may be provided, are likely to be the same under this alternative as under alternative 2. As was the case with alternative 2, because of the low coverage of invasive species allowed under this alternative, practices such as Herbaceous Weed Control, Brush Management, and Integrated Pest Management designed to control invasive species are expected to be applied less frequently or on less acreage than would be the case under the No Action alternative. As with alternatives 1 and 2, any foreseeable adverse effects on the environment resulting from conservation practices required on these lands would be minor and temporary in nature, as the practices are designed to improve the condition of natural resources.

Alternative 3 Cumulative Effects

Cumulatively, the effects of ACEP under this alternative are not likely to be different from those of alternative 2 except with respect to grasslands of special environmental significance. Under this alternative, grasslands of special environmental significance would tend to be more focused around vulnerable aquifers and impaired streams than would be the case under alternative 2. There will also be fewer lands that will meet the criteria. As with alternative 2, many of the acres qualifying for enrollment under this provision are likely to be from expiring grassland CRP

contracts that have been well-managed to exclude noxious and invasive species, but under this alternative only CRP lands planted to native grass will qualify and those lands will qualify automatically. This ensures the taxpayer investment made to restore those CRP lands will continue into perpetuity.

As under alternative 2, ACEP will be an integral part of ongoing NRCS landscape initiatives, as were WRP, FRPP, and GRP. In addition, ACEP will be an important component of the new RCPP as described in alternative 2 and to the extent the conservation practices implemented under RCPP will be the same as those implemented under ACEP, EQIP, CSP and HFRP, the cumulative effects are also expected to be the same as alternative 2. As a result, under the ACEP-WRE component, degraded wetlands and associated uplands will continue to be restored and protected, land will not be developed, and only uses compatible with maintaining wetland functions and values will be allowed. As with WRP and ACEP-WRE under alternative 2, this alternative will maximize wildlife benefits, achieve cost-effective restoration with a priority on benefits to migratory birds, protect and improve water quality, reduce the impact of flood events, increase ecosystem resilience, and promote scientific and educational uses of ACEP-WRE project lands. In addition, as was the case with FRPP and GRP and with ACEP-ALE under alternative 2, enrolling lands in ACEP-ALE will help keep farm and ranch lands productive and sustainable when they are threatened by development pressures. Retaining land in agricultural use reduces the amount of urban pollution (nitrogen, phosphorus, and sedimentation) from land that would otherwise be converted to lawns and impervious surfaces such as pavement and buildings. By protecting agricultural lands, ACEP-ALE also will protect the viewsheds, open space, and associated amenities for future generations. In addition, by limiting development and providing habitat needed by threatened and endangered species, ACEP-ALE will preserve agricultural heritage and green space, provide for recreational activities, and help ensure the Nation's ability to produce its own food.

6.0 List of Persons and Agencies Consulted

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APPENDICES

Appendix A: NRCS Methodologies to Estimate Conservation Effects

NRCS uses three main mechanisms to evaluate the conservation effects of its recommended activities. They are: Conservation Network Effects Diagrams, Conservation Practice Physical Effects documents, and the Conservation Effects Assessment Project. Each is discussed below.

Conservation Network Effects Diagrams

To assist in the analysis of environmental impacts, NRCS has developed Conservation Network Effects Diagrams depicting the chain of natural resource effects resulting from the application of each conservation practice. Each of the diagrams first identifies the typical setting to which the practice is applied. This includes identification of the predominating land use and the environmental resource concerns that trigger use of the conservation practice. The diagrams then identify the conservation practice used to mitigate or address the resource concerns. All of the available conservation network effects diagrams are incorporated by reference and can be viewed in the National Handbook of Conservation Practices and in the last column on the following website:

http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849.

Following identification of the conservation practice, there is a description of the physical activities that are carried out to implement the practice. From there, the diagrams depict the occurrence of the direct, indirect, and cumulative effects of the practice. Effects are qualified with a "+" or a "-" which qualitatively denotes an increase ("+") or decrease ("-") in the effect. Pluses and minuses do not equate to good and bad or positive and negative. Impacts are characterized in this manner due to the fact that site-specific conditions can influence the degree or intensity of the potential environmental impact. Only the general effects that are considered the most important ones from a national perspective are illustrated.

Additional information on the process used to develop the Network Effects Diagrams is available in the NRCS Watershed Science Institute Report CED-WSSI-2002-2, "Analyzing Effects of Conservation Practices – A Prototypical Method for Complying with National Environmental Policy Act (NEPA) Requirements for Farm Bill Implementation." This document is included in the NRCS National Environmental Compliance Handbook and is available at <http://www.info.usda.gov/OpenNonWebContent.aspx?content=26743.wba>.

Conservation Practice Physical Effects (CPPE)

The Conservation Practice Physical Effects (CPPE) documents, found in the Field Office Technical Guide – Section V and the National Handbook of Conservation Practices, display in subjective terms the physical effects conservation practices have on the natural resources and their associated problems or concerns. Technical specialists document in the CPPE the practice effects based on their experience and available technical information.

When creating the CPPE, the question is presented, "When this practice is installed according to NRCS practice standards, and fully functional, what effect will it have on the various resource concerns?" The answer is in the form of a rating that represents the practice's effect on the resource concern, and the magnitude of the effect.

The following terms define "Effect" values:

- No effect - The conservation practice being evaluated has no discernible effect on the resource concern identified.
- Worsening - The conservation practice further deteriorates the condition of the resource.
- Improvement - The conservation practice improves the condition of the resource.

The following terms express the magnitude of the effects:

- Slight - Some effect (positive or negative) of the practice on the resource, but not enough to influence the decision to select the practice to solve the problem.
- Moderate - A measurable effect (positive or negative) of the practice on the resource.
- Substantial – An extensive measurable effect (positive or negative) of the practice on the resource.

National technical specialists with responsibility for a given conservation practice establish CPPE values for each conservation practice. The effects listed in the National CPPE represent general conditions nationwide.

Example: The national agronomist determines that generally, the implementation of Residue and Tillage Management, No Till/Strip Till/Direct Seed (329) will extensively reduce the sheet and rill erosion problem because of increased surface cover and decreased soil disturbance.

Therefore, a value is entered as "Substantial Improvement" to the Soil Erosion - Sheet and Rill Erosion resource concern. However, the implementation of 329 may cause a slight increase in soluble nitrate nitrogen infiltration depending on the time and method of application, rainfall, nutrient form, organic matter, soil texture, and depth to water table, and therefore a value is entered as "Moderate Worsening" to the Water Quality Degradation - Nutrients in Groundwater resource concern.

Since data on the CPPE are national in scope, State-level offices are encouraged to review and localize the information as necessary to reflect those effects expected to occur under local

conditions. Each State will review and, if needed, edit the values in the National CPPE based on local knowledge and experience to reflect typical conditions in their State. States use an interdisciplinary group to refine existing entries to ensure proper consideration of all effects to all of the resource concerns. If a State modifies the National CPPE, the State will provide a description of the local conditions and a depiction of the typical practice installation to justify the change. A well-written description of the typical practice installation will aid the planner when it comes time to conduct site-specific analysis.

Example: The national agronomist determined that, in general, the implementation of Residue Management, Seasonal (344) results in a “Slight to Moderate Reduction” in the Soil Erosion - Wind problem. However, a State agronomist observes that with the Implementation of Residue Management, Seasonal (344) the reduction of wind erosion is extensive because the critical wind erosion period occurs when the soil is covered with residue or crop. The State agronomist will change the value to “Substantial Improvement” in the Soil Erosion - Wind resource concern. With a rationale statement as to why the practice has been deemed to have an Extensive rather than a Slight to Moderate reduction in the wind erosion resource concern.

Conservation Effects Assessment Project

In addition to developing the network diagrams described above, following the 2002 Farm Bill, NRCS initiated an extensive effort to assess environmental impacts from implemented conservation practices. The resultant Conservation Effects Assessment Project (CEAP) uses literature reviews, modeling, farmer surveys, watershed assessments, and regional studies in collaboration with partners in universities, agencies, and conservation organizations to conduct this assessment. It relies, in part, on the statistical framework developed for the National Resources Inventories (NRIs). Since the early 1980s, the NRIs have provided statistically reliable nationwide information on status and trends in soil erosion and land use. Besides estimates of acres in cropland, pastureland, rangeland, and forests, the surveys also classify land with prime farmland conditions and wetland characteristics. The CEAP cropland assessments use NRI points to collect additional information through surveys with farmers, to evaluate how conservation practices may affect such trends, and to connect other resource concerns into the modeling framework. The CEAP grazing lands, wetlands, and wildlife assessments are developing ways to use the NRI as a basis for modeling regional estimates as well.

Regional studies show that existing conservation practices on cultivated cropland have reduced sediment, nitrogen, phosphorus, and pesticide losses and increased soil carbon content at the basin scale. Smaller-scale analyses of watersheds across the country have helped refine CEAP models and incorporate additional elements into the framework. Other ongoing CEAP components are evaluating the environmental impacts of conservation practices on wildlife

habitats, wetland ecosystem services and restoration, and grazing lands. Studies have so far shown positive benefits for those resources.^[1]

CEAP cropland assessments show that voluntary, incentives-based conservation approaches are achieving measurable results. Further opportunities exist to reduce soil erosion and nutrient losses from cultivate cropland. Targeting enhances effectiveness and efficiency of conservation program funding and technical assistance. Plus, comprehensive conservation planning that includes a combination of erosion-control and nutrient management practices is essential. Conservation planning should account for regional variation in pressing resource concerns. For example, in the Chesapeake Bay, the Great Lakes regions, and the Upper-Mississippi River Basin, the most significant issue is the loss of nitrogen through leaching. In the Ohio-Tennessee Basin, loss of phosphorous causes the most damage. In the Missouri Basin, wind erosion is the largest culprit.

Estimating the direct and indirect impacts of such practices is a complicated task. CEAP is the latest and most complex development toward that goal and is a continuing effort. The CEAP modeling framework allows researchers to account for variable topographical and soil characteristics as well as for the effects of weather and climate. The impact of each practice at each site is modeled through mathematical formulas based on empirical observations. Since the underlying data points are statistically distributed, results can be extended beyond the sample. Still, CEAP models currently do not have the capacity to assess the impacts on all different natural resource concerns. They focus on nutrients and pesticides in water, sediment losses, and changes in soil organic carbon, primarily on cropland. Projects within the other CEAP components—wildlife, wetlands, and grazing lands—are underway to extend the use of the models. In addition, CEAP modeling is the basis for development of decision tools that can be used in policy decision-making at the national or regional level as well as in conservation planning at the farm or field level.

Additional Resources:

CEAP National Assessments:

- Cropland (reports for individual regions are available on this page)-
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/?&cid=nrcs143_014144
- Grazing Lands -
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/?&cid=nrcs143_014159

^[1] For specific details see the NRCS website on CEAP:
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/nra/ceap>.

- Wetlands - http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/?&cid=nrcs143_014155
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CEAP Dynamic Bibliographies - <http://www.nal.usda.gov/wqic/Bibliographies/dynamic-bibliographies.shtml>

Appendix B: Integration of Environmental Considerations into NRCS Planning and Program Delivery

From soil erosion prevention, to wetland restoration, to water quality improvements, to wildlife and energy conservation efforts, the intent of NRCS conservation activities has been to improve the quality of the environment for future generations by mitigating the effects of agricultural production on our nation's natural resources using the best available science-based information and technologies.

State and local conservationists, as well as members of the public, play a pivotal role in accomplishing this mission. In each State there is a State Technical Committee comprised of representatives from Federal, State, local, and Tribal governments, as well as representatives of organizations knowledgeable about conservation and agricultural production issues, and other interested individuals. This committee provides the NRCS State Conservationist with advice and recommendations on the implementation of NRCS-administered conservation programs. Local, as well as State-wide priorities are considered so that when a local NRCS conservationist is developing a conservation plan, they are able to address natural resource concerns not only of national or state interest, but also those of most importance locally. Conservation plans can be designed to address environmental resource concerns on private, non-Federal, or Tribal government lands, or a combination. NRCS conservationists help individuals and communities take a comprehensive approach to planning the proper use and protection of natural resources on these lands through a nine-step planning process described in the NRCS National Planning Procedures Handbook. (See, <http://directives.sc.egov.usda.gov/RollupViewer.aspx?hid=17088>.)

As part of this conservation planning effort, individual environmental reviews called Environmental Evaluations (EEs) are completed which inform the conservation planning effort and assist the agency's compliance with NRCS regulations implementing NEPA. The EEs are a concurrent part of the planning process in which the potential long-term and short-term impacts of an action are briefly evaluated and alternative actions explored. The EEs and conservation plans are developed to assist the landowner in making decisions and implementing the conservation practices identified in the conservation plan.

Conservation plans include practices that meet NRCS conservation practice standards and specifications as documented in the agency's Field Office Technical Guides (FOTG) and the National Handbook of Conservation Practices (NHCP). These conservation practices are developed through a multi-disciplinary science-based process, including the opportunity for public comment, in order to minimize and mitigate the risk of unintended consequences. NRCS practice standards are established at a national level, and set the minimum level of acceptable quality for planning, designing, installing, operating, and maintaining conservation practices. At

a minimum, each conservation practice standard includes the definition and purposes of the practice, conditions in which the conservation practice applies, and the criteria supporting each purpose. (See NRCS conservation practices at http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849.) When a conservation practice standard is developed or revised, NRCS publishes a notice in the Federal Register of the availability of the standard for review and comment for a period of not less than 30 days from the date of publication. Standards from the NHCP and interim standards are used and implemented by States, as needed, and may be modified to include additional requirements to meet State or local needs. Because of wide variations in site conditions such as soils, climate, and topography, States can revise these national standards and develop specifications to add special provisions or provide additional details in the conservation practice standards. State laws and local ordinances or regulations may also dictate more stringent criteria; in no case, however, can States use standards that are lower than national standards. Only practices that meet NRCS standards and specifications are eligible for funding through NRCS programs.

Standards for conservation practices are detailed in Section IV of the local FOTG.⁸⁸ Conservation practice standards, planning criteria, and local resource data are maintained in the FOTG to provide detailed information for planners to plan and design practices in a manner consistent with local conditions and resource concerns. Commonly, suites of conservation practices are planned and installed together as part of a conservation management system designed to enhance soil, water and related natural resources for sustainable use. Conservation practice standards and State-specific conservation practice specifications include considerations that, when combined with the considerations identified during the EE process, are designed to minimize potentially adverse impacts to affected resources.

Typical effects of implementing conservation practices are summarized in each State's Conservation Practice Physical Effects, contained in Section V of the FOTG. This collection of resource-based planning, design and implementation documents provides NRCS employees and other users with the necessary information, modified for local conditions, to develop alternative approaches to addressing natural resource problems.

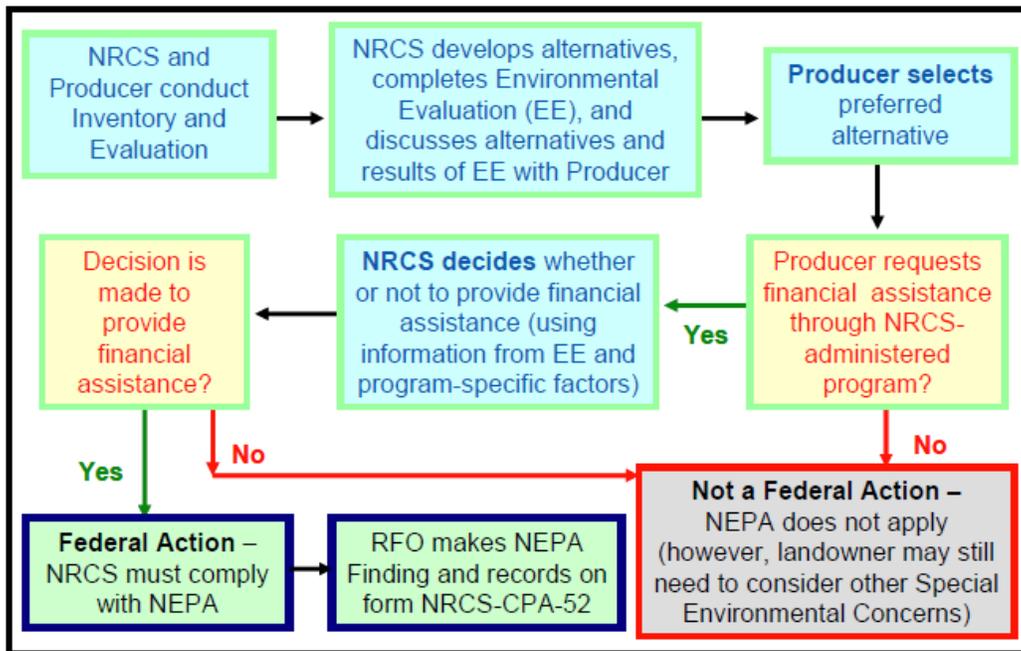
When an action has been proposed, the conservation planner conducts the EE and documents the results on the Environmental Evaluation Worksheet. The proposed action is evaluated against a No Action alternative and other alternatives being considered to address identified resource concerns to determine and quantify, to the extent feasible, impacts upon soil, water, air, plant, animal, and certain human and energy resources. The planner also considers and evaluates the proposed action and alternatives with respect to special environmental concerns identified by related laws, regulations, Executive Orders, and agency policies. Where adverse impacts or

⁸⁸ See http://efotg.sc.egov.usda.gov/efotg_locator.aspx to access the e-FOTG for an NRCS office.

extraordinary circumstances are present, the planner identifies ways in which the alternative can be modified to avoid or minimize these effects.⁸⁹ Required permits or consultations with other agencies are also identified.

The results of the EE are shared with the landowner, who then identifies the alternative and conservation practices they are willing to implement, if any. NRCS may then provide financial assistance or offer to purchase an easement if there are no significant adverse effects, funds are available, program-specific requirements are met, and the landowner is willing to follow NRCS conservation practice standards and specifications and other program requirements. The NRCS RFO reviews the results of the EE to ensure any necessary consultation has been carried out and to determine whether NRCS NEPA analysis is sufficient, before Federal funding is provided. (See figure 31).

Figure 31: NEPA and the NRCS Process



This process is followed for all NRCS farm bill conservation programs. The effects of the practices may vary somewhat depending on the local ecosystem(s), methods of practice installation, and presence of special resource concerns in a particular State, such as the presence of a coastal zone, endangered or threatened species, historic or cultural resources, and the like. While effects on these resources may be described in general terms at the national level, they must be addressed at the State and local level. This is particularly true for endangered and threatened species, historic preservation, historic and cultural resources, essential fish habitat and

⁸⁹ See NRCS General Manual Title 190 Part 410.3B.

other resources that are protected by special authorities that require consultation. NRCS will consult on a State or site-specific level as needed and appropriate, to ensure easement program actions do not adversely affect special resources of concern. NRCS will also implement practices in a manner that is consistent with the NRCS policy to avoid, minimize or otherwise mitigate adverse effects to the extent feasible.

For example, to ensure compliance with the ESA, State Conservationists will invite representatives of the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), as applicable, to all State Technical Committee meetings and encourage their involvement in the development of program criteria within the State. NRCS will also conduct additional programmatic consultations with USFWS and NMFS at the State level as needed to ensure easement program implementation is not likely to adversely affect species listed as endangered or threatened or species proposed for listing as endangered or threatened or designated or proposed critical habitat. Such consultation will also be used to identify ways NRCS programs might further the conservation of protected species and identify situations in which no site-specific consultation would be needed.⁹⁰ Site-specific consultation will also be conducted as needed to avoid adversely affecting any protected species or habitat.

To ensure compliance with the National Historic Preservation Act and associated authorities, NRCS State Offices will follow the procedures outlined in the Advisory Council on Historic Preservation's (ACHP) regulations (36 CFR Part 800) or, in accordance with NRCS' alternate procedures (nationwide Programmatic Agreement), invite State Historic Preservation Officers (SHPO's) and federally recognized Tribes (or their designated Tribal Historic Preservation Officers) to enter into consultation agreements that highlight and focus review and consultation on those resources and locations that are of special concern to these parties. In addition, if no State-level agreements are developed with the SHPO's or Tribes, and/or if other consulting parties are identified, they will be afforded, as appropriate, an opportunity to advise the NRCS State Office during project-specific planning about their historic and cultural resource concerns so that they may be taken into account in accordance with the ACHP regulations. Similar processes will be followed, as needed and appropriate, to address other special requirements for the protection of the environment.

⁹⁰ In addition to situations in which NRCS determines there is no effect on protected species or habitat, site-specific consultation should not be needed when NRCS and FWS or NMFS agree a category of proposed actions is not likely to adversely affect a protected species or habitat and NRCS obtains written concurrence based on that agreement.

Appendix C: WRP Conservation Practices Benefiting Fish & Wildlife Habitat

Land Unit Acres Receiving Conservation (including practice count) by Fiscal Year											
Practice Name	Practice Code	2009 Acres	2009 Count	2010 Acres	2010 Count	2011 Acres	2011 Count	2012 Acres	2012 Count	2013 Acres	2013 Count
Conservation Cover	327	15,120	278	11,480	177	15,221	451	31,109	561	27,934	382
Riparian Herbaceous Cover	390	7	1	1,318	8	9	2	551	6	301	4
Riparian Forest Buffer	391	650	18	1,306	30	1,929	22	1,375	21	209	7
Stream Habitat Improvement and Management	395	1,362	43	2,639	8	208	4	915	12	844	5
Aquatic Organism Passage	396	68	3	205	1	36	2	975	4	203	3
Hedgerow Planting	422	49	1	31	4	243	2	656	3	36	3
Access Control	472	13,743	147	7,247	142	7,651	153	21,356	383	14,405	230
Streambank and Shoreline Protection	580	137	7	1,517	3	1,473	7	2,727	9	678	3
Restoration and Management of Rare or Declining Habitats	643	4,375	128	12,673	143	5,704	120	8,138	245	9,001	246
Wetland Wildlife Habitat Management	644	82,940	1,407	73,757	1,016	61,377	1,070	63,994	1,178	69,345	1,375
Upland Wildlife Habitat Management	645	33,047	597	26,071	470	27,973	498	46,107	571	58,108	683
Shallow Water Development and Management	646	5,053	107	22,288	141	17,877	423	29,706	288	15,184	942
Early Successional Habitat Development/Management	647	1,416	59	1,305	31	2,375	41	2,585	74	1,570	81
Wetland Restoration	657	144,127	1,672	132,881	1,883	107,579	2,282	220,643	2,950	144,044	2,901
Wetland Creation	658	12,806	19	8,650	57	3,901	40	2,766	34	1,764	34
Wetland Enhancement	659	43,660	385	53,735	443	71,181	515	100,200	1,041	111,237	622
Total		358,560	4,872	357,104	4,557	324,736	5,632	533,803	7,380	454,865	7,521

Appendix D: WRP Conservation Practices Benefiting Water Quality

Land Unit Acres Receiving Conservation (including practice count) by Fiscal Year											
Practice Name	Practice Code	2009 Acres	2009 Count	2010 Acres	2010 Count	2011 Acres	2011 Count	2012 Acres	2012 Count	2013 Acres	2013 Count
Channel Bank Vegetation	322							982	3		
Conservation Cover	327	15,120	278	11,480	177	15,221	451	31,109	561	27,934	382
Cover Crop	340	1,202	9	285	4	757	12	1,784	19	1,865	11
Critical Area Planting	342	6,574	123	9,270	119	8,067	115	12,727	148	7,527	200
Sediment Basin	350					71	2			2,030	3
Water Well Decommissioning	351	6	1					147	2	354	3
Waste Facility Closure	360					96	1				
Diversion	362	114	1					47	2	64	2
Windbreak/Shelterbelt Establishment	380	409	3			218	4	18	1	9	1
Riparian Herbaceous Cover	390	7	1	1,318	8	9	2	551	6	301	4
Riparian Forest Buffer	391	650	18	1,306	30	1,929	22	1,375	21	209	7
Filter Strip	393	231	1	92	1	21	1	3	1		
Stream Habitat Improvement and Management	395	1,362	43	2,639	8	208	4	915	12	844	5
Grade Stabilization Structure	410	622	9	283	5	77	1	1,245	11	758	11
Grassed Waterway	412			24	1			10	1	43	1
Access Control	472	13,743	147	7,247	142	7,651	153	21,356	383	14,405	230
Mulching	484	792	11	477	22	1,112	24	4,824	46	2,189	56
Prescribed Grazing	528	4,835	43	10,633	29	5,834	51	5,973	29	10,286	48
Drainage Water Management	554			7	1						
Access Road	560	6,308	53	3,251	26	2,349	27	8,373	50	1,083	19
Heavy Use Area	561	5,933	9	497	3	1,271	3	84	3	18,179	26

Protection											
Stream Crossing	578	729	3	268	4	646	4	4,331	16	1,076	8
Streambank and Shoreline Protection	580	137	7	1,517	3	1,473	7	2,727	9	678	3
Structure for Water Control	587	18,567	188	19,796	163	21,916	170	20,514	209	20,386	200
Nutrient Management	590	1,988	14	333	4	926	19	3,278	57	538	27
Integrated Pest Management (IPM)	595	18,966	247	21,969	272	18,845	437	20,057	374	26,099	443
Terrace	600									39	1
Tree/Shrub Establishment	612	19,477	250	113,797	290	24,024	261	48,620	390	24,908	468
Water and Sediment Control Basin	638					583	4	472	5		
Constructed Wetland	656							17	1		
Wetland Restoration	657	144,127	1,672	132,881	1,883	107,579	2,282	220,643	2,950	144,044	2,901
Wetland Creation	658	12,806	19	8,650	57	3,901	40	2,766	34	1,764	34
Wetland Enhancement	659	43,660	385	53,735	443	71,181	515	100,200	1,041	111,237	622
Total		318,364	3,535	401,756	3,695	295,962	4,612	515,145	6,385	418,848	5,716

Appendix E: WRP Conservation Practices Benefiting Wetlands

Land Unit Acres Receiving Conservation (including practice count) by Fiscal Year											
Practice Name	Practice Code	2009 Acres	2009 Count	2010 Acres	2010 Count	2011 Acres	2011 Count	2012 Acres	2012 Count	2013 Acres	2013 Count
Wetland Restoration	657	144,127	1,672	132,881	1,883	107,579	2,282	220,643	2,950	144,044	2,901
Wetland Creation	658	12,806	19	8,650	57	3,901	40	2,766	34	1,764	34
Wetland Enhancement	659	43,660	385	53,735	443	71,181	515	100,200	1,041	111,237	622
Total		200,592	2,076	195,267	2,383	182,660	2,837	323,608	4,025	257,046	3,557

Appendix F: GRP Conservation Practices Benefiting Fish and Wildlife

Land Unit Acres Receiving Conservation (including practice count) by Fiscal Year											
Practice Name	Practice Code	2009 Acres	2009 Count	2010 Acres	2010 Count	2011 Acres	2011 Count	2012 Acres	2012 Count	2013 Acres	2013 Count
Conservation Cover	327	831	5	597	18	652	24	218	9	577	14
Riparian Herbaceous Cover	390	27	3	9	1						
Riparian Forest Buffer	391	27	3								
Access Control	472	177	2	410	16	384	11			26	1
Restoration and Management of Rare or Declining Habitats	643	152	4	656	16	439	12	265	4		
Wetland Wildlife Habitat Management	644	65	5								
Upland Wildlife Habitat Management	645	18,654	149	42,075	214	38,706	174	23,937	198	26,611	60
Shallow Water Development and Management	646							2	1		
Early Successional Habitat Development/Management	647	63	11	28	2			122	9	293	7
Wetland Enhancement	659	27	3								
Total		20,022	185	43,775	267	40,180	221	24,545	221	27,507	82

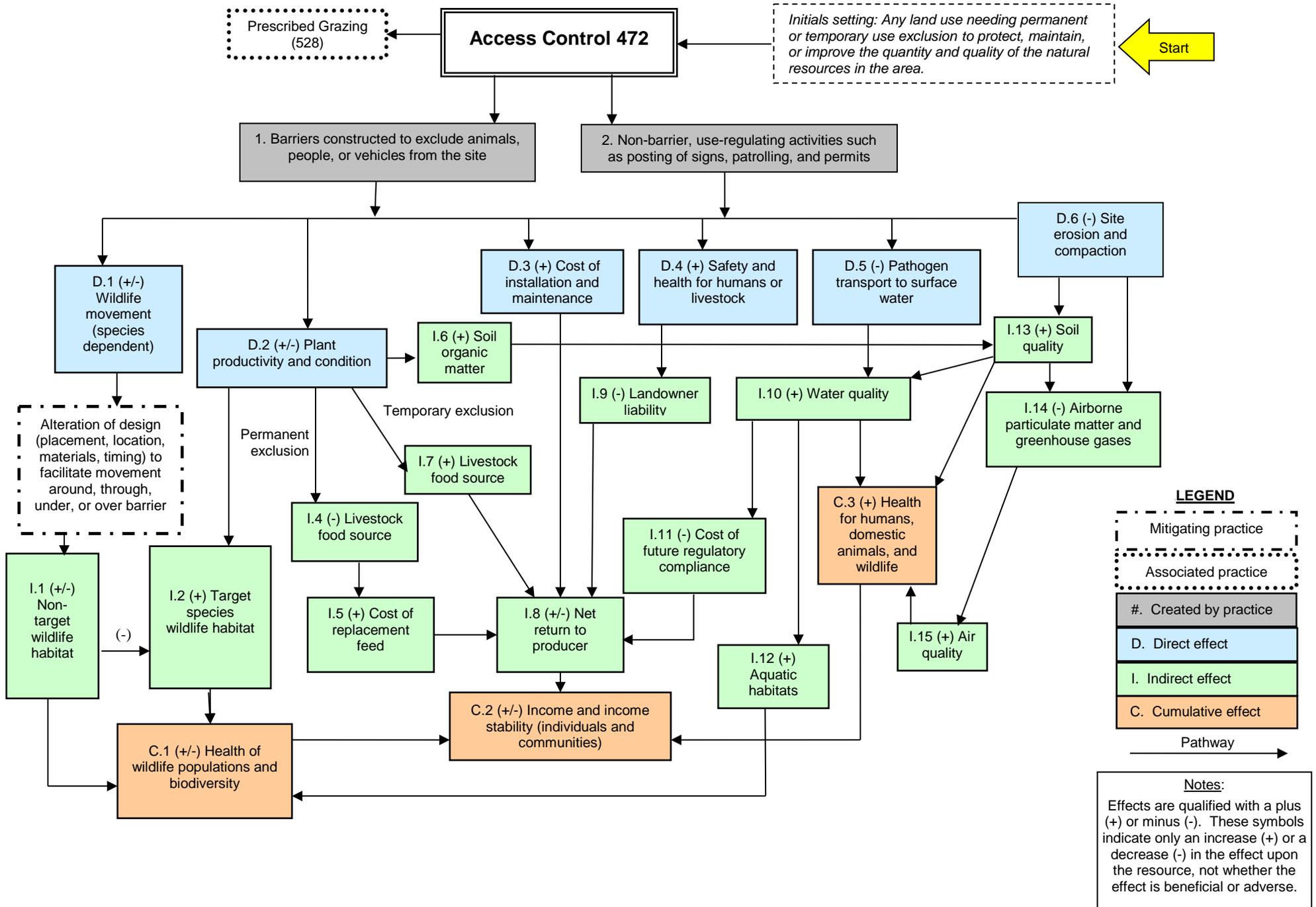
Appendix G: GRP Conservation Practices Benefiting Grazing Lands

Land Unit Acres Receiving Conservation (including practice count) by Fiscal Year											
Practice Name	Practice Code	2009 Acres	2009 Count	2010 Acres	2010 Count	2011 Acres	2011 Count	2012 Acres	2012 Count	2013 Acres	2013 Count
Brush Management	314	472	1	2,919	26	556	28	4,831	32	1,097	57
Herbaceous Weed Control	315					42	4	2,749	13	1,301	4
Prescribed Burning	338	52	3	599	6	889	29	1,334	18		
Critical Area Planting	342	44	3	321	2	16	2	147	1	20	1
Pond	378	97	2					147	1	127	1
Fence	382	618	26	2,406	12	45	2	77	3	871	18
Forage Harvest Management	511	1,503	70	3,313	140	3,683	171	5,851	228	1,145	75
Forage and Biomass Planting	512	199	11	245	15	1,302	26	95	10	253	19
Livestock Pipeline	516	140	6	6	1	22	1	34	6	923	18
Prescribed Grazing	528	37,856	453	108,495	637	92,654	593	94,049	710	117,392	700
Range Planting	550							541	2		
Heavy Use Area Protection	561	13	2							38	2
Animal Trails and Walkways	575			24	1			24	1	64	2
Nutrient Management	590	3,119	146	2,908	187	4,374	175	4,229	225	2,528	120
Integrated Pest Management (IPM)	595	5,353	233	8,232	224	9,989	334	8,011	275	3,608	185
Watering Facility	614	127	5	1,296	1	108	4	306	10	839	12
Waste Recycling	633			31	2						
Total		49,593	961	130,795	1,254	113,680	1,369	122,425	1,535	130,206	1,214

Appendix H: Network Diagrams for Conservation Practices Used Under WRP, FRPP and GRP

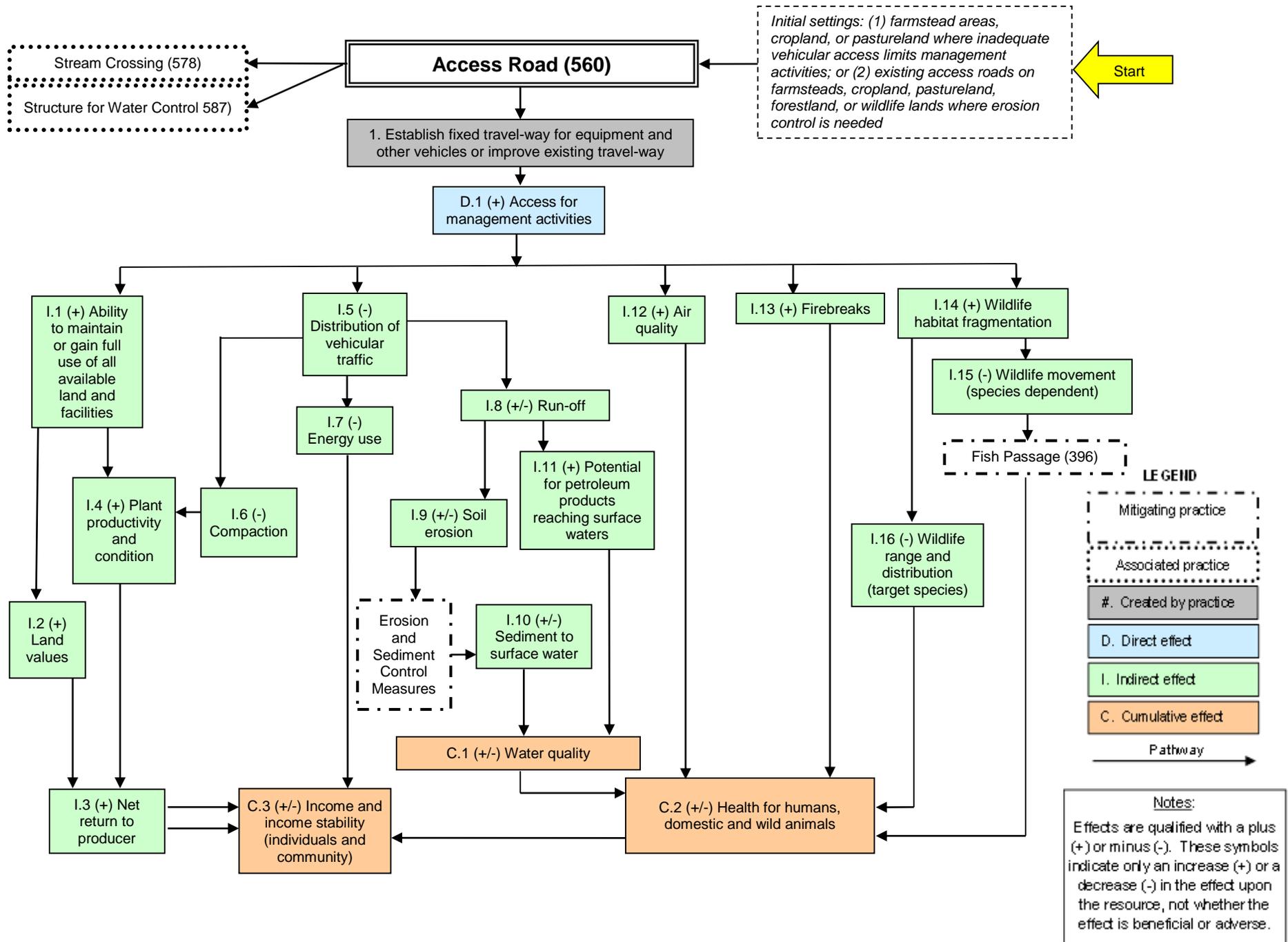
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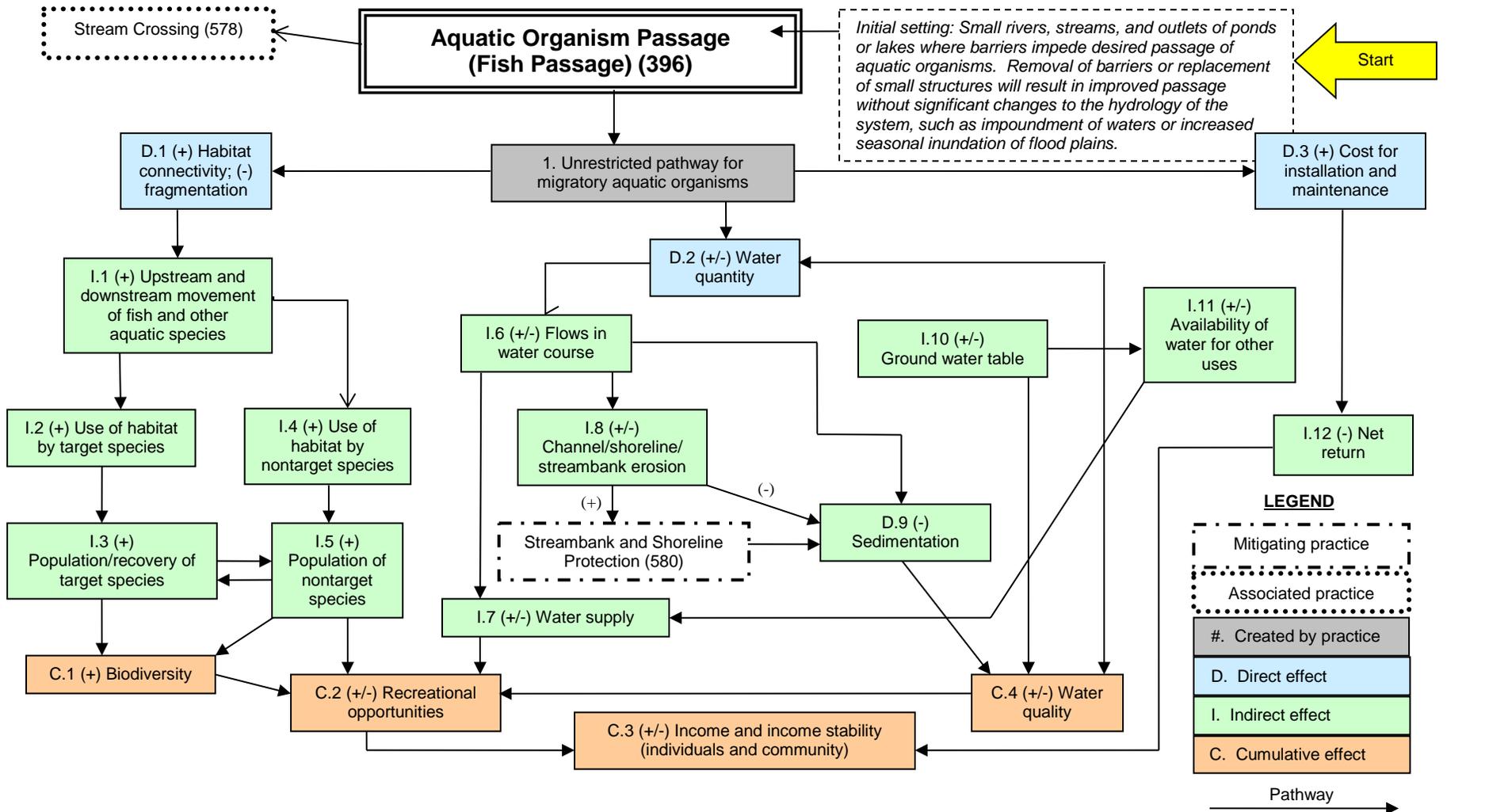
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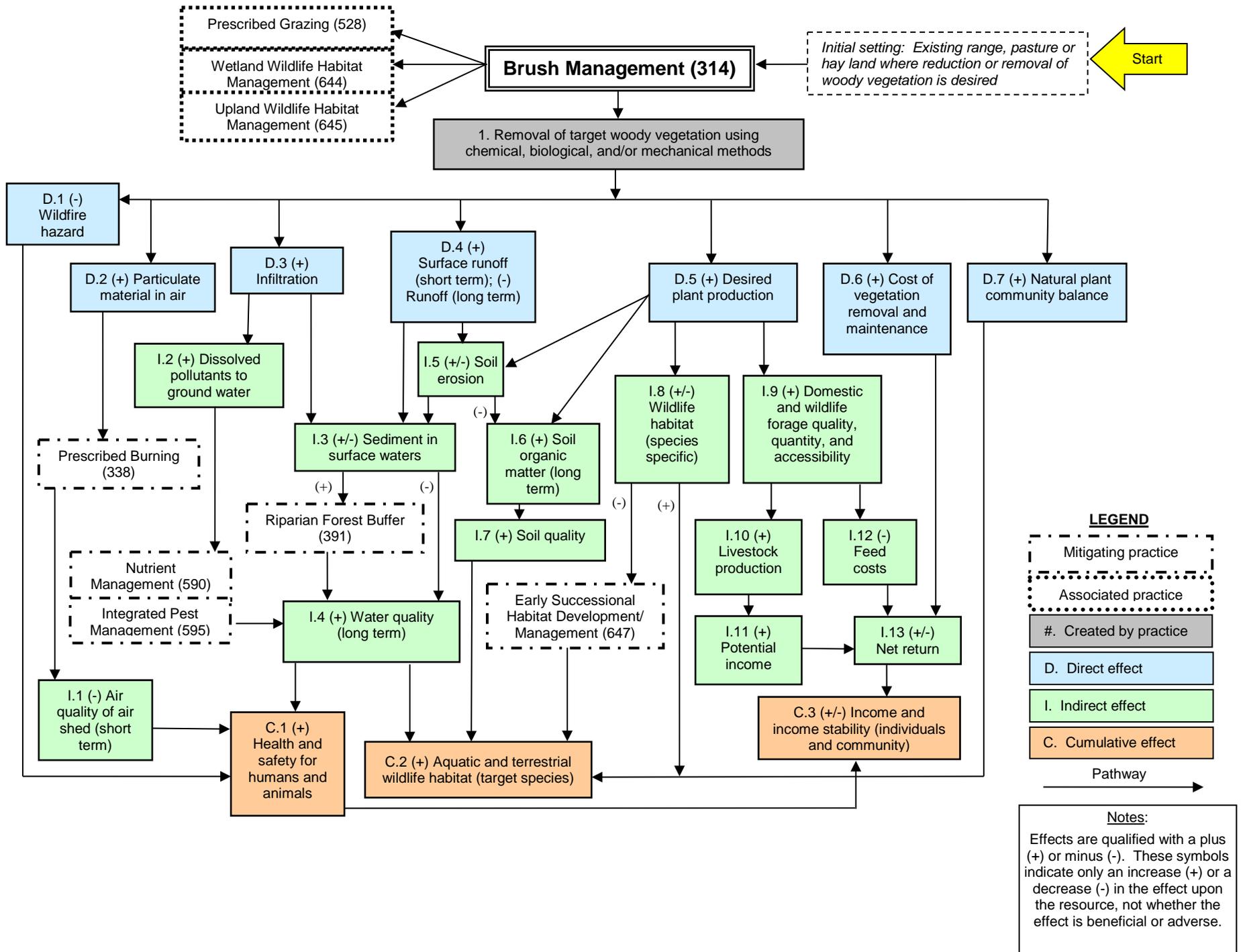
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Notes:
 Effects are qualified with a plus (+) or minus (-). These symbols indicate only an increase (+) or a decrease (-) in the effect upon the resource, not whether the effect is beneficial or adverse.
The scope of the practice implementation and resulting effects are limited to those described in the "initial setting."
Projects involving larger river systems, impoundment of waters, increased seasonal inundation of flood plains, or any other changes to the hydrologic system may need to be evaluated in a site-specific EA.

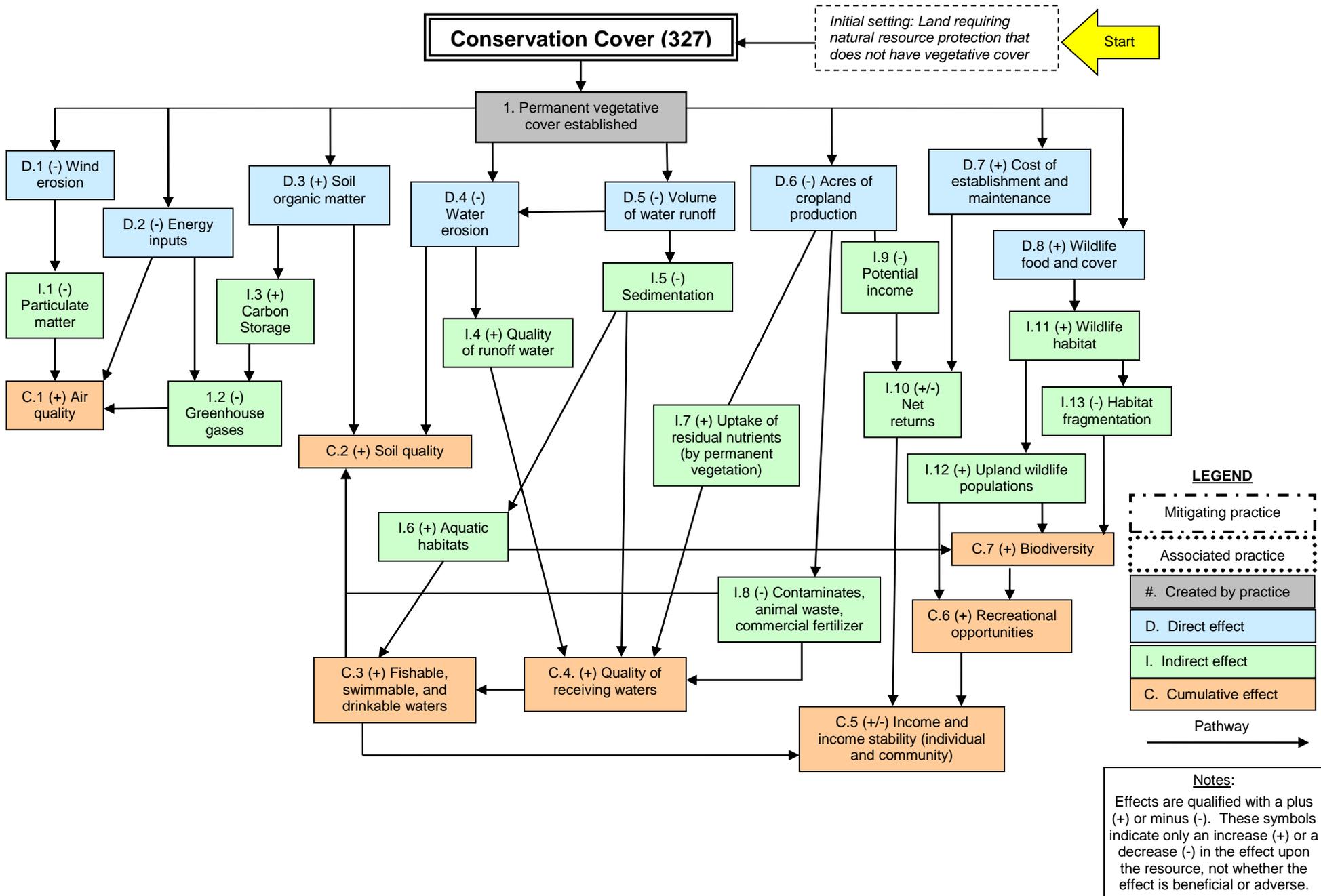
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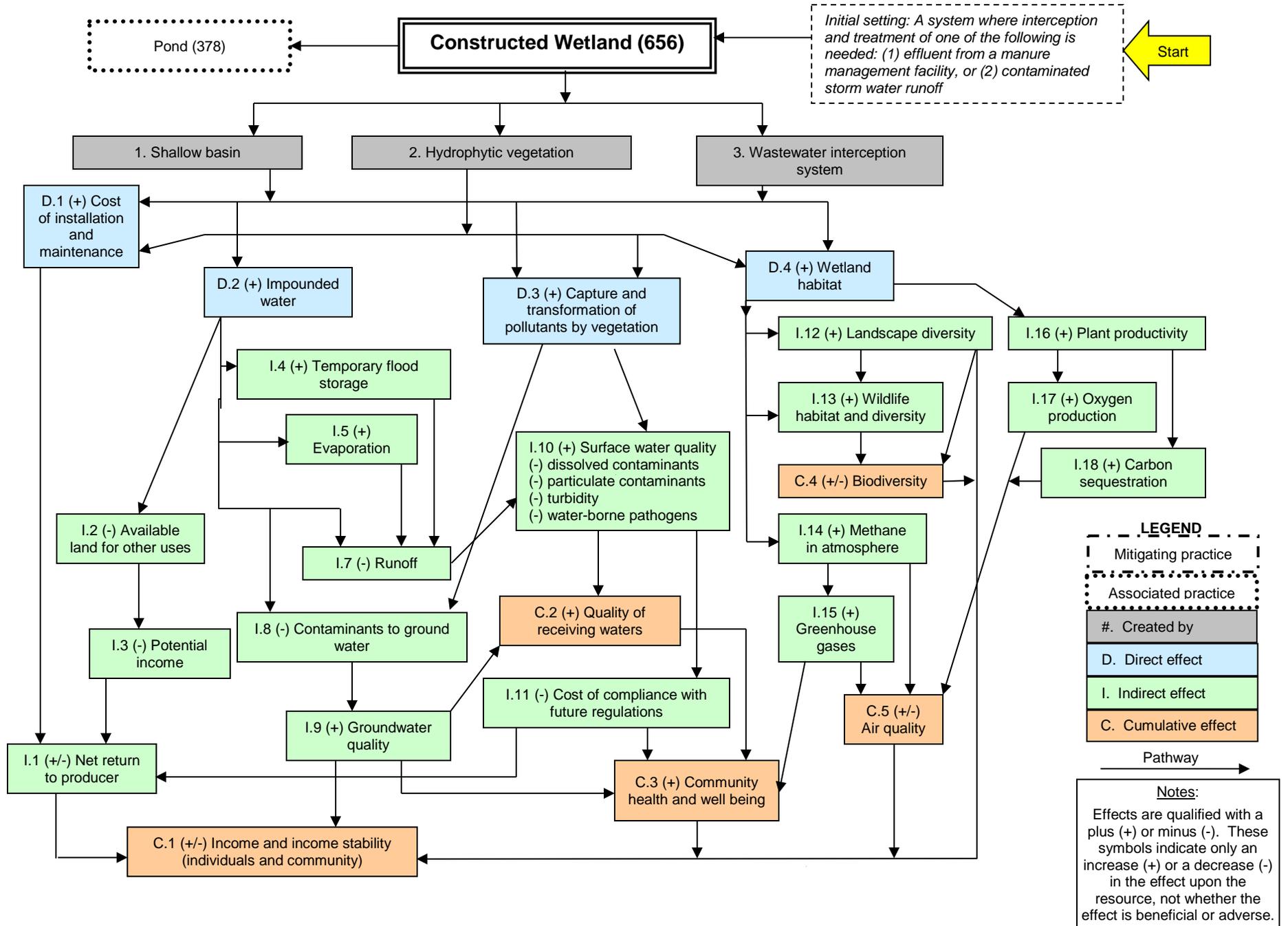
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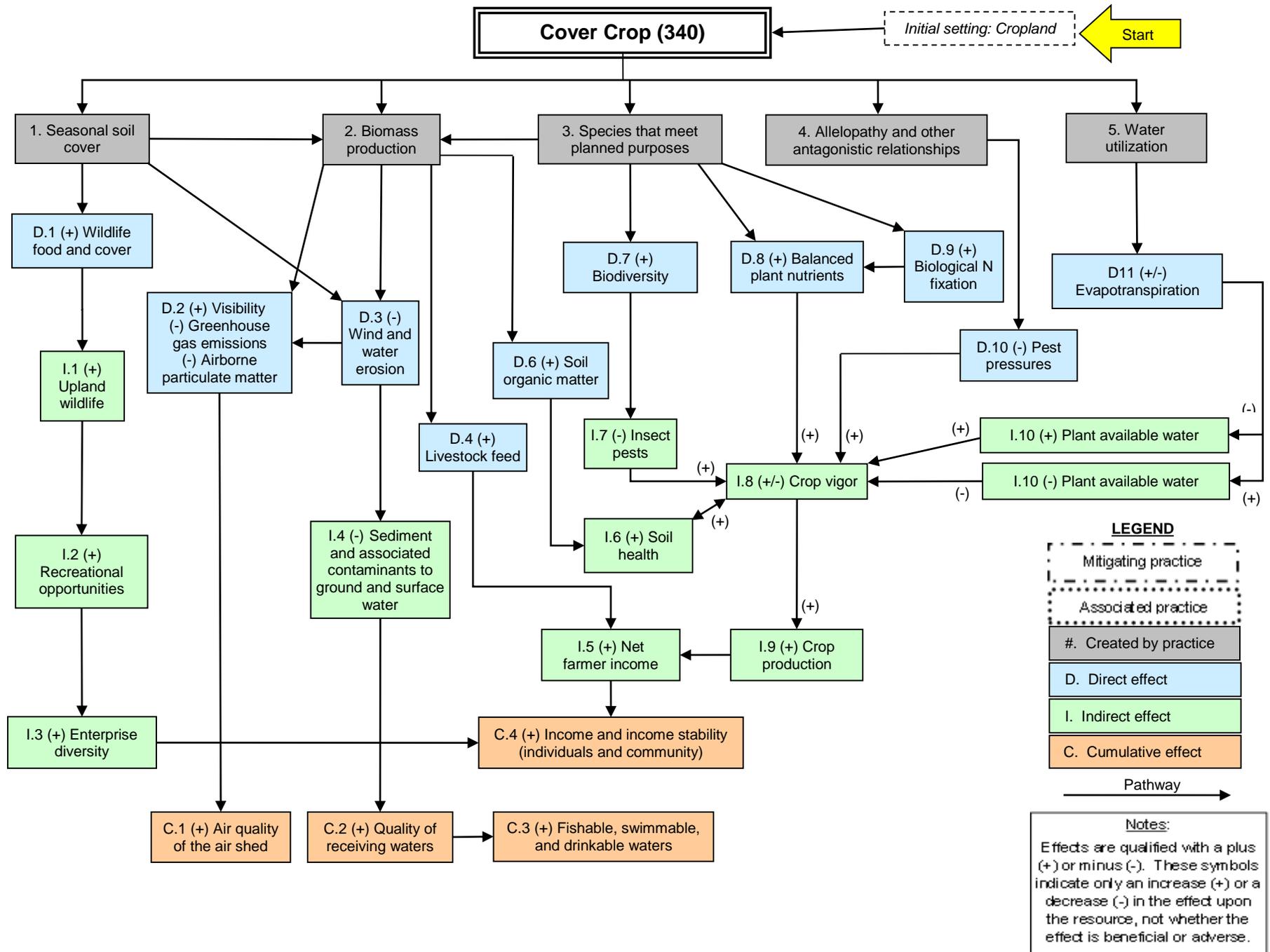
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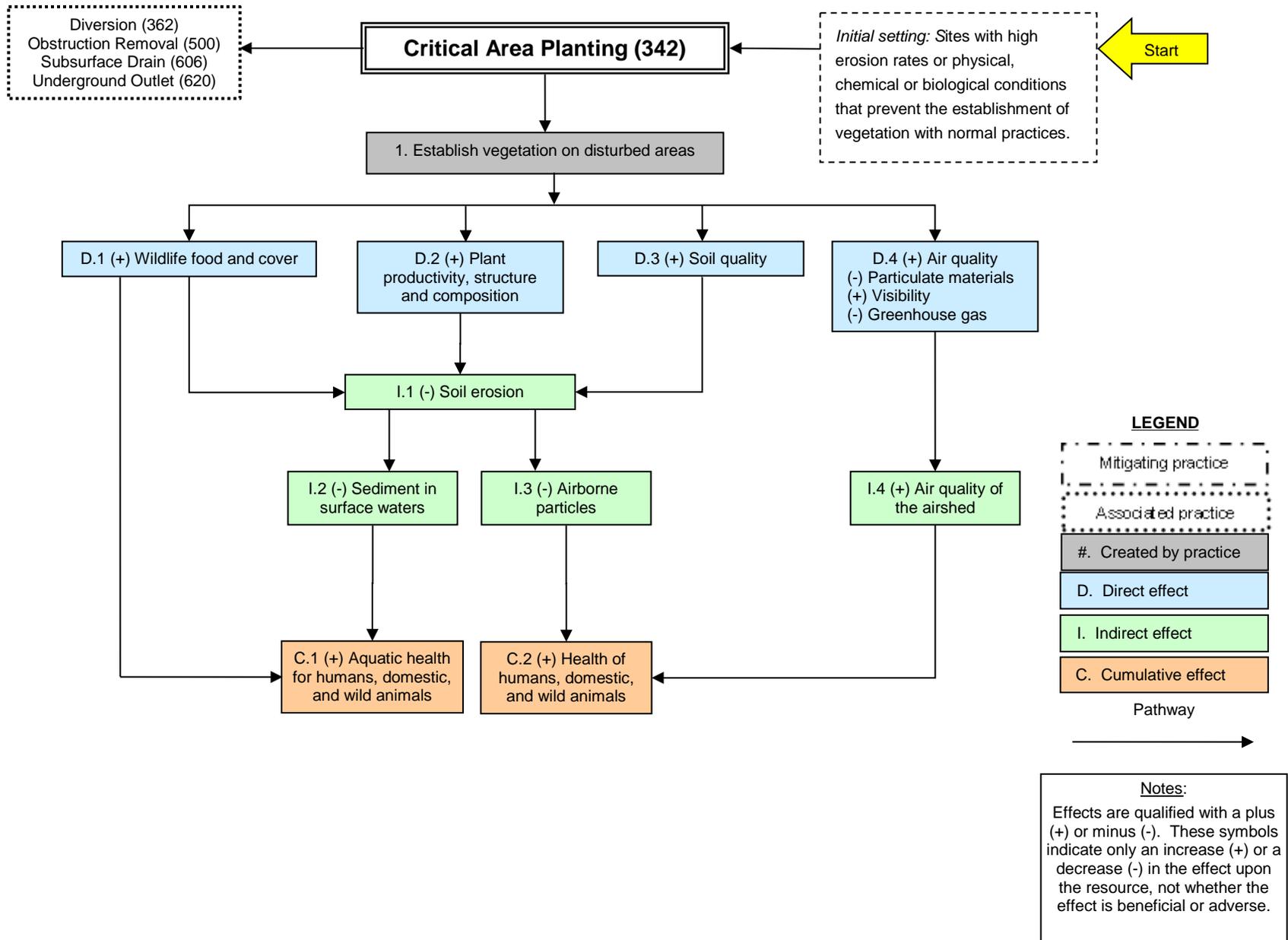
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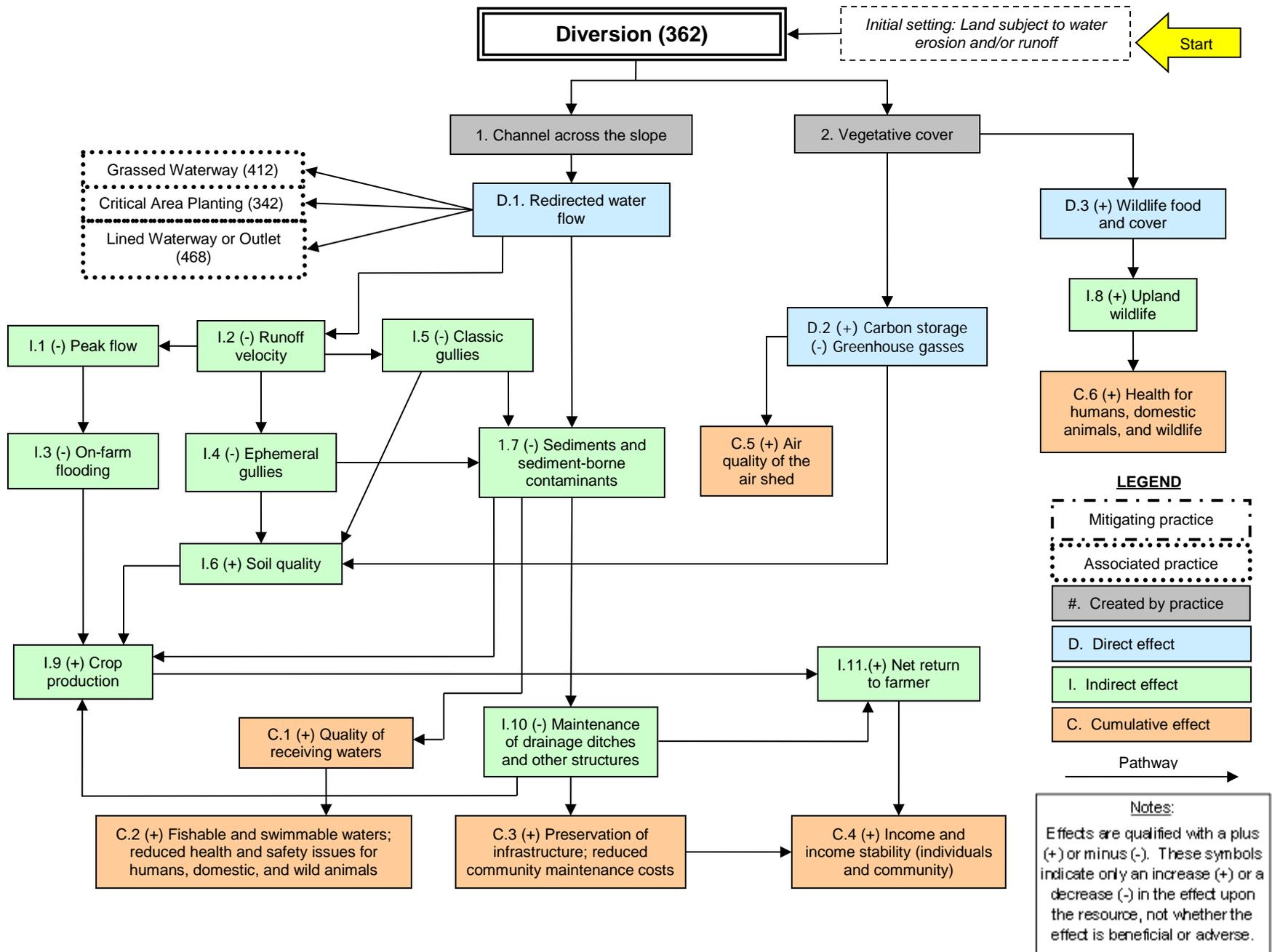
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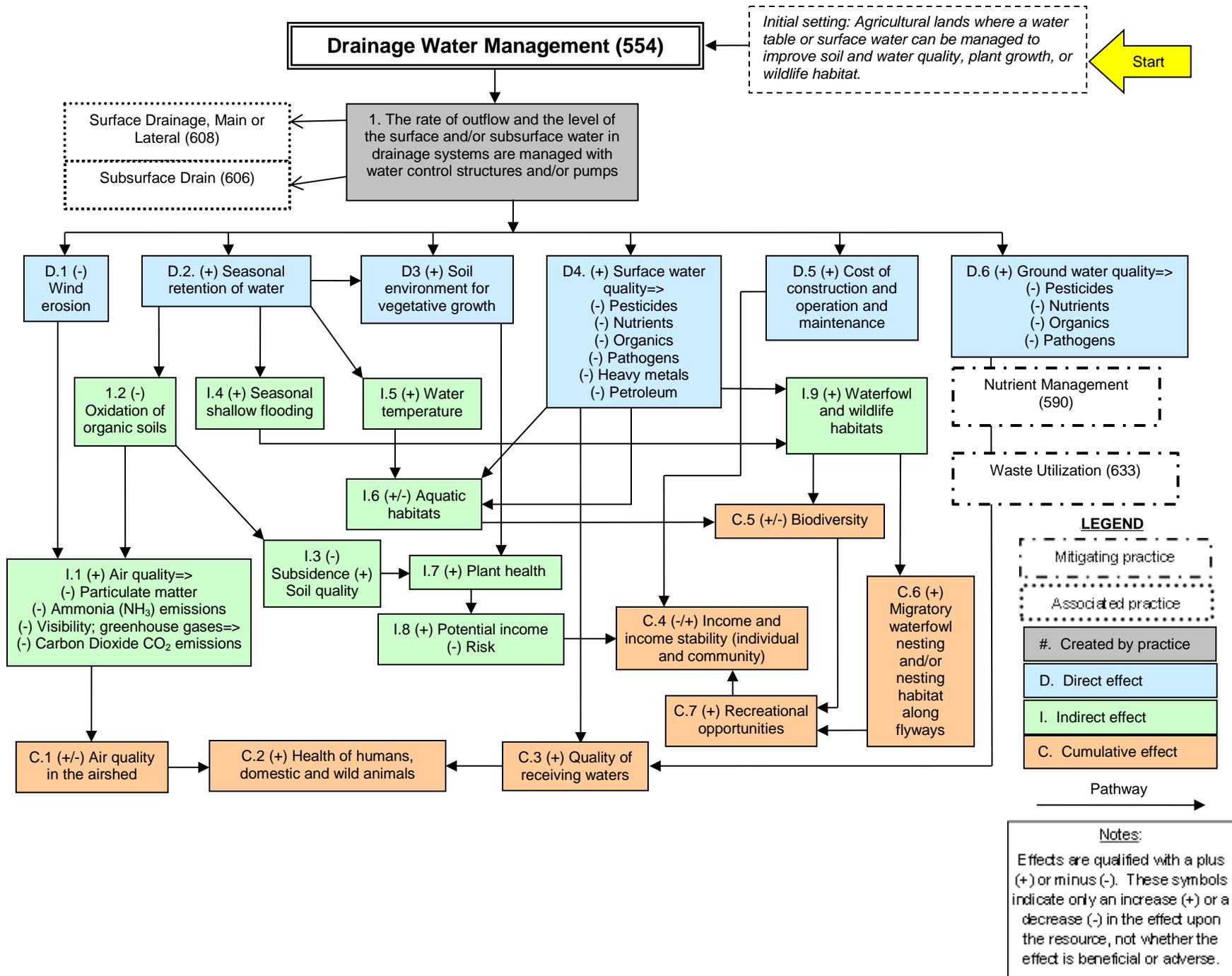
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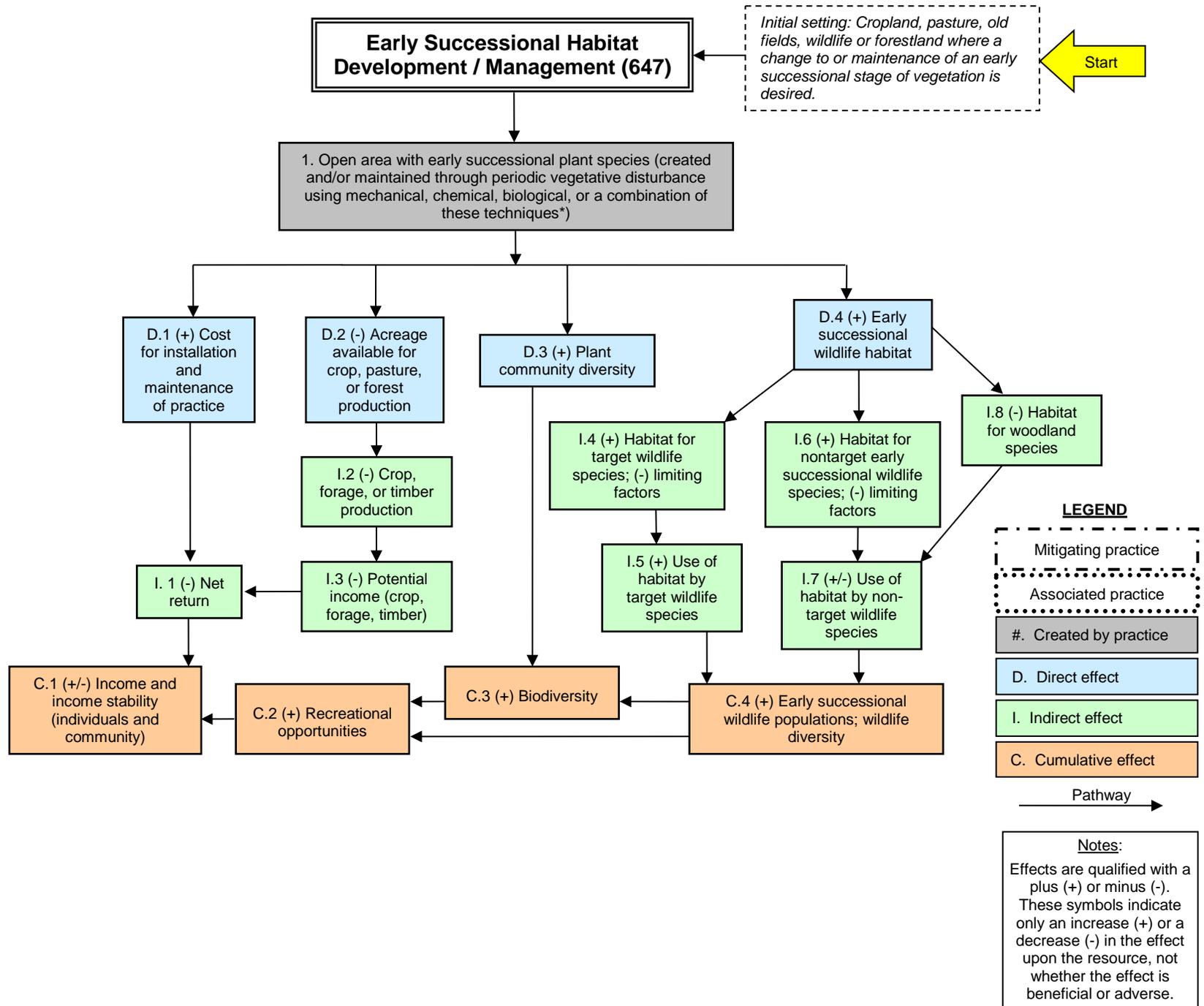
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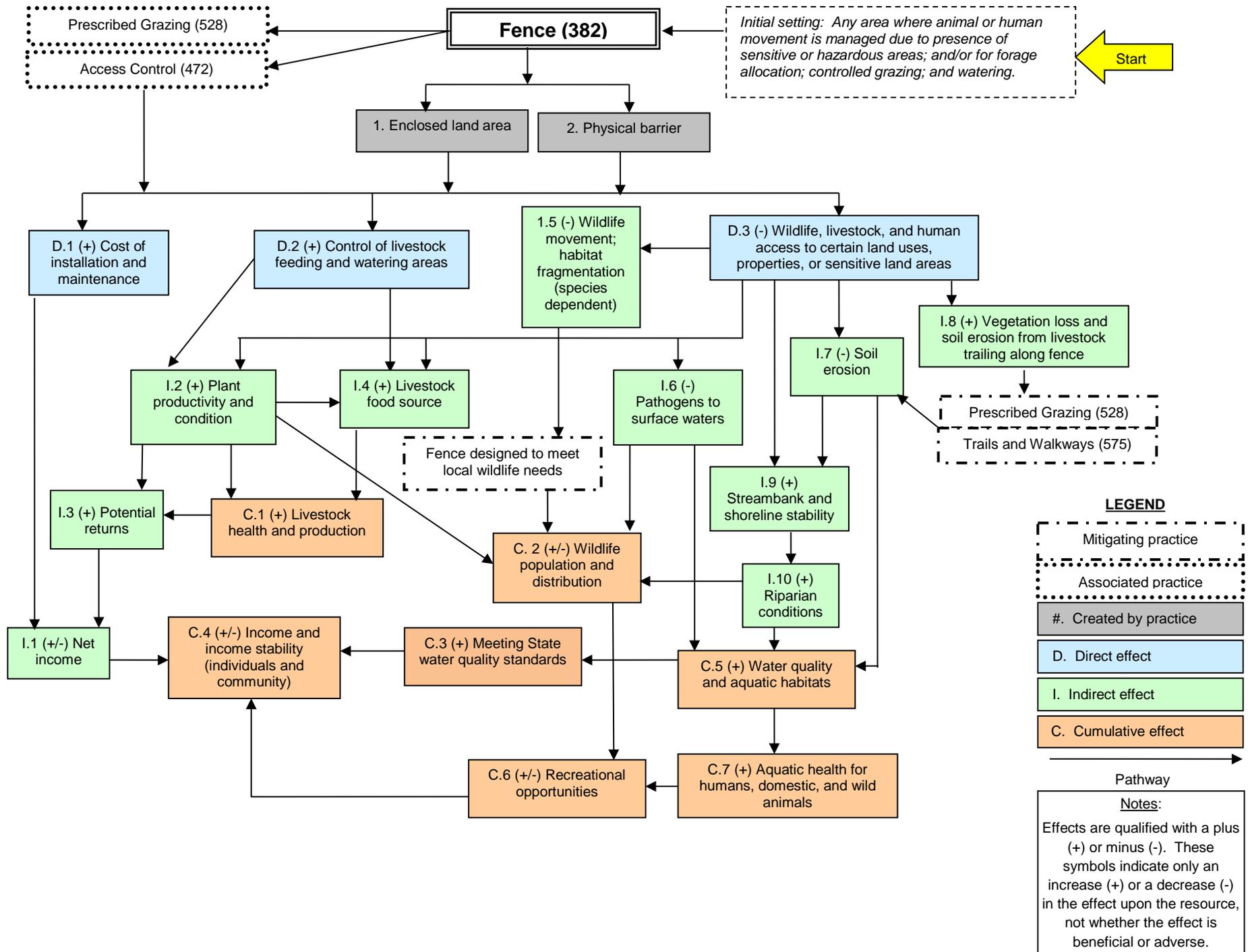
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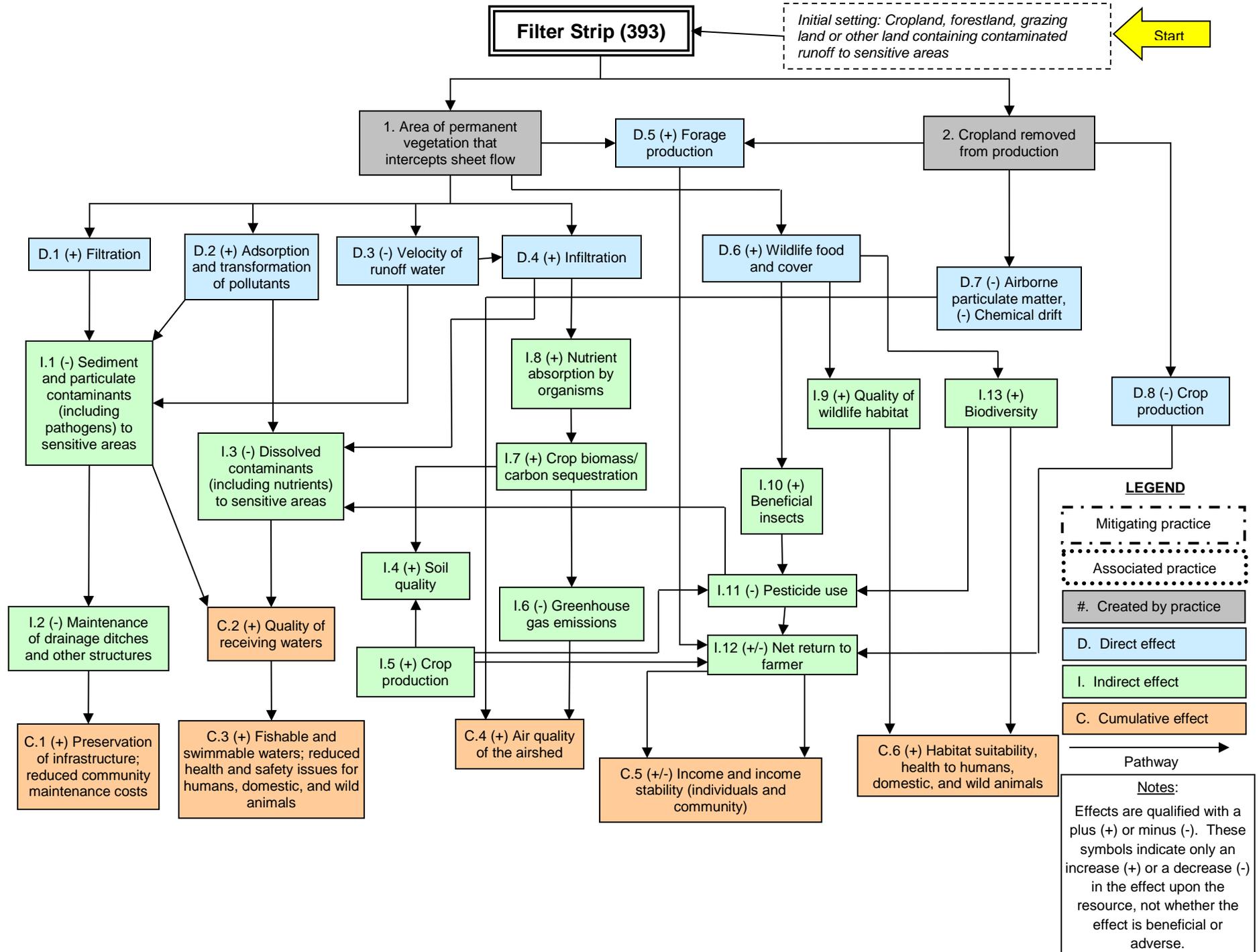
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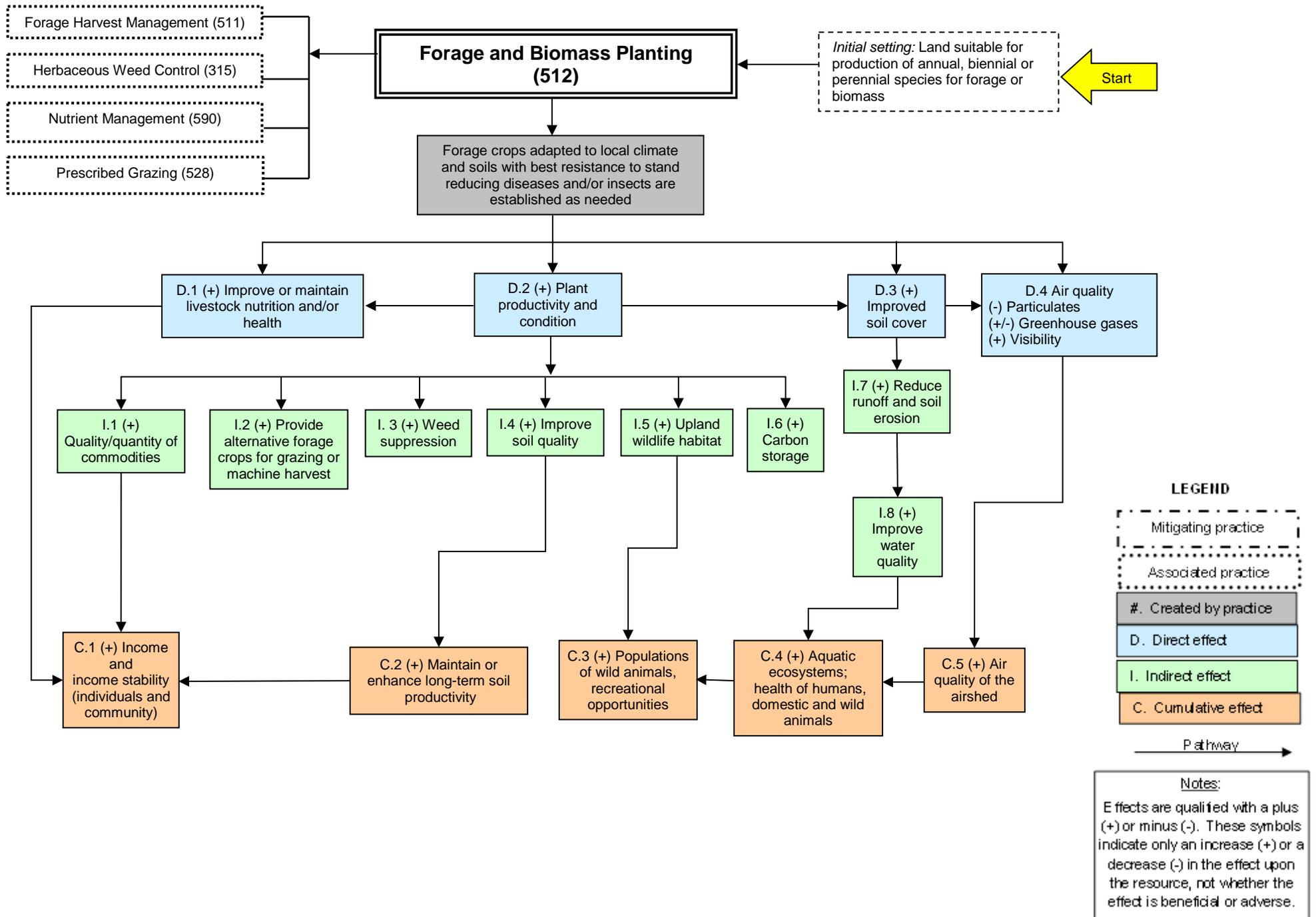
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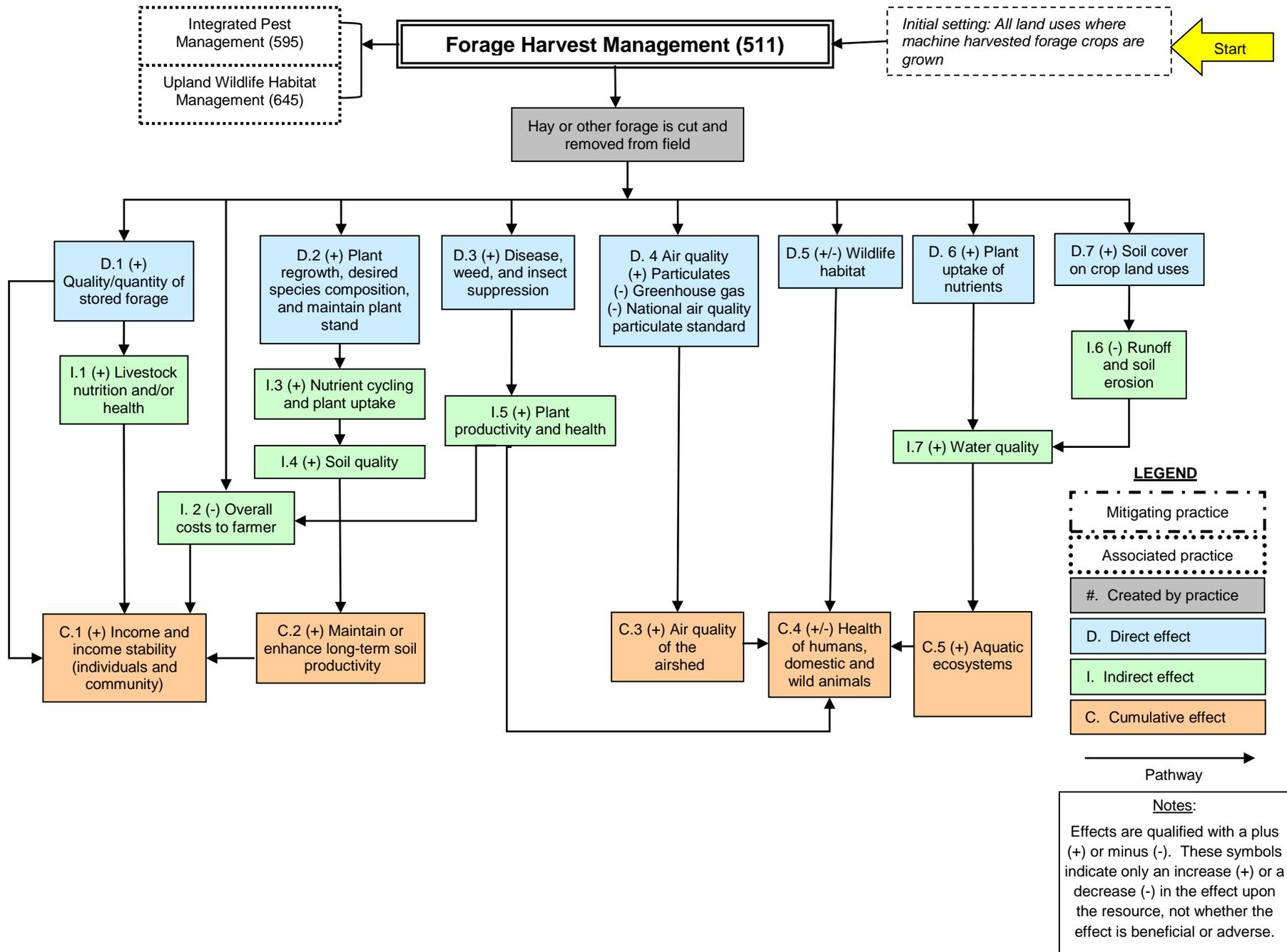
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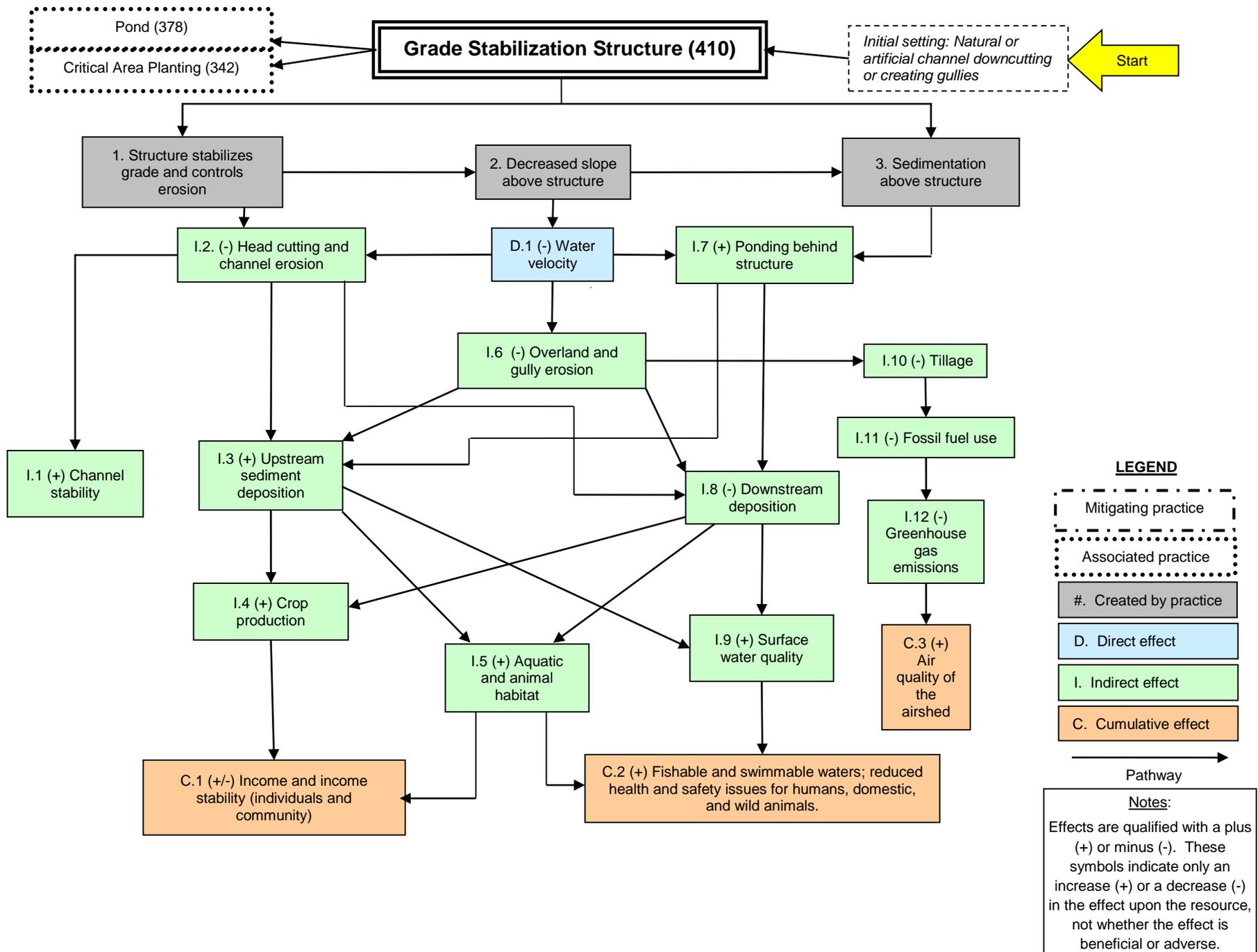
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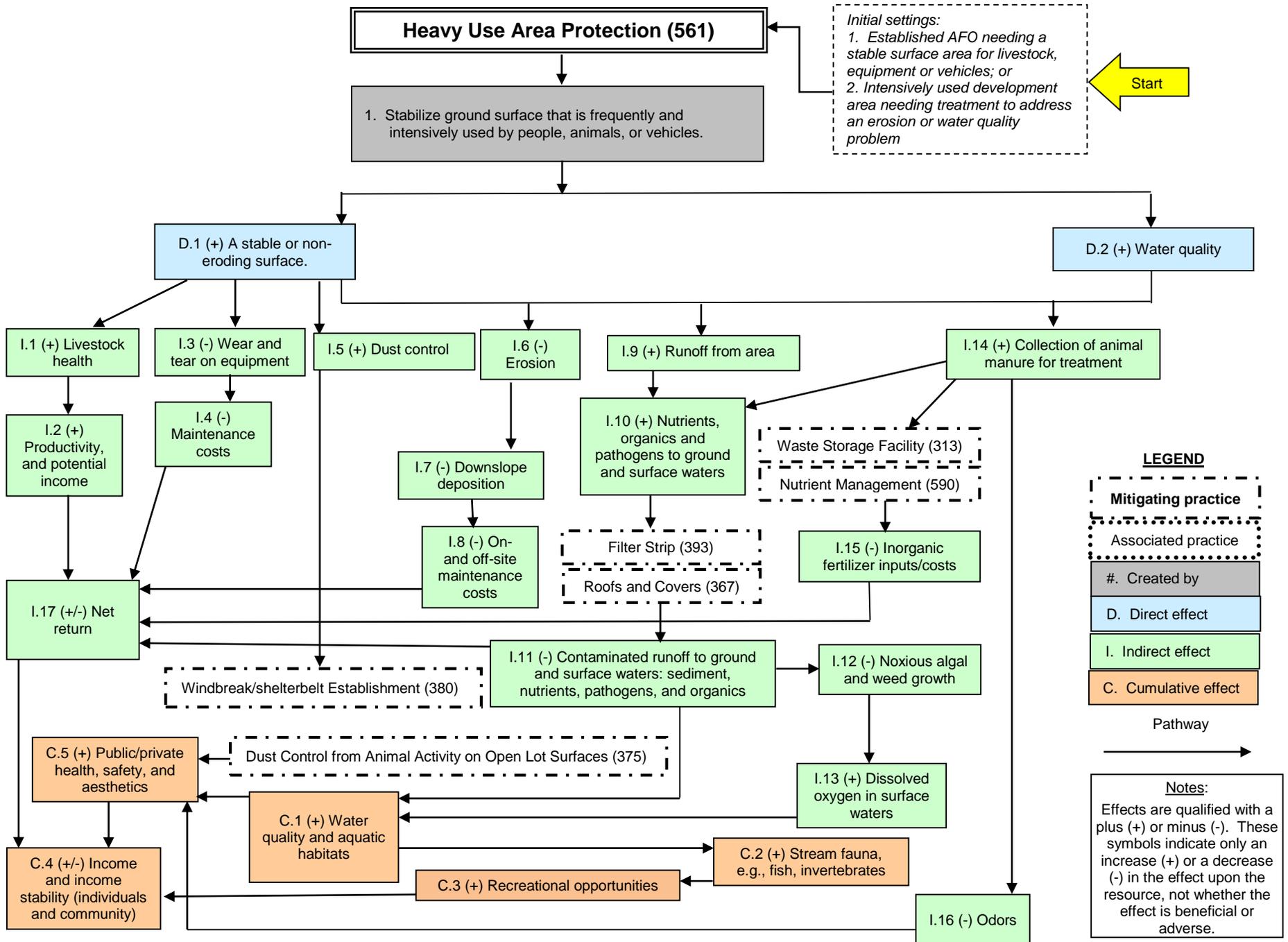
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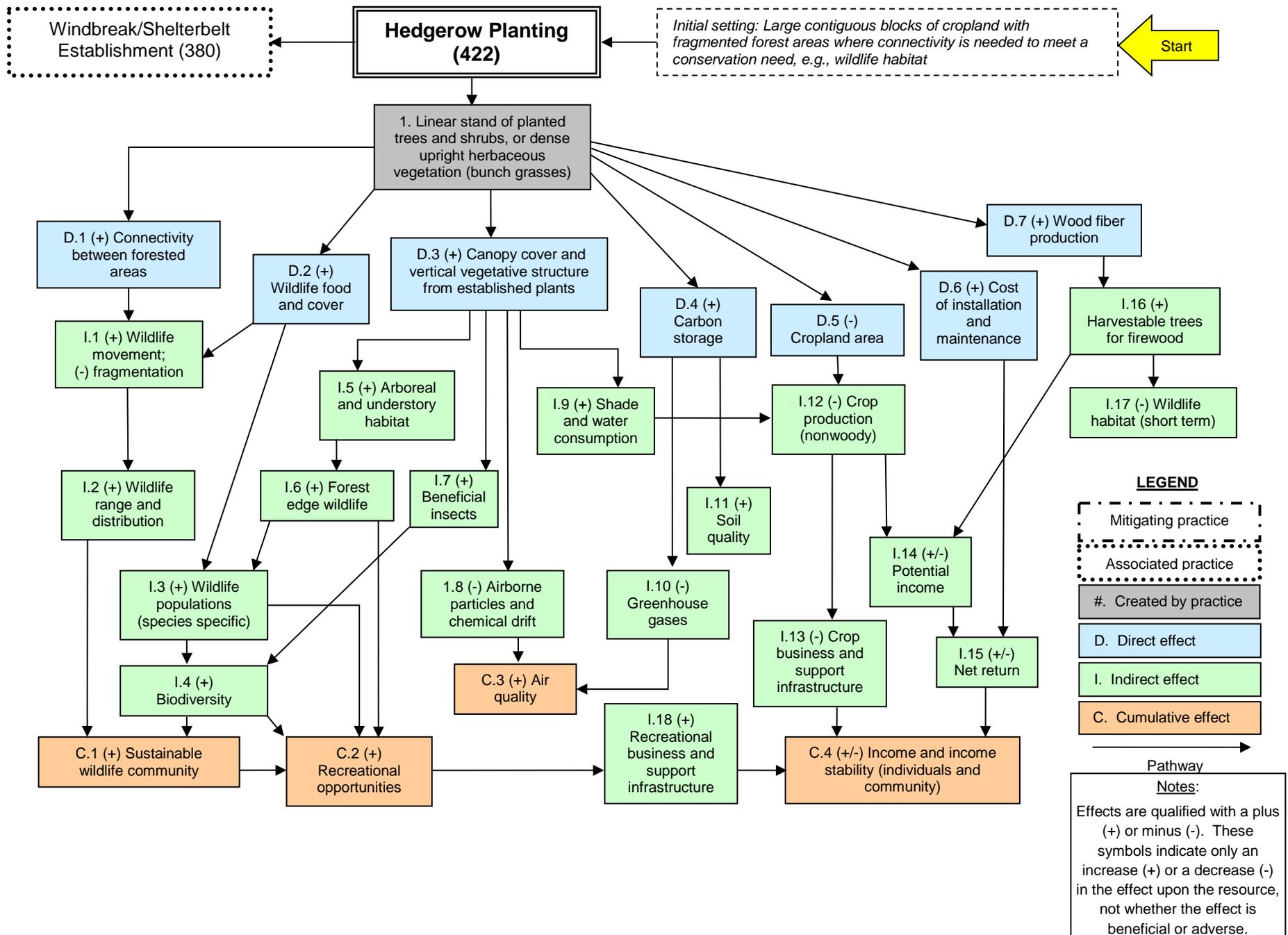
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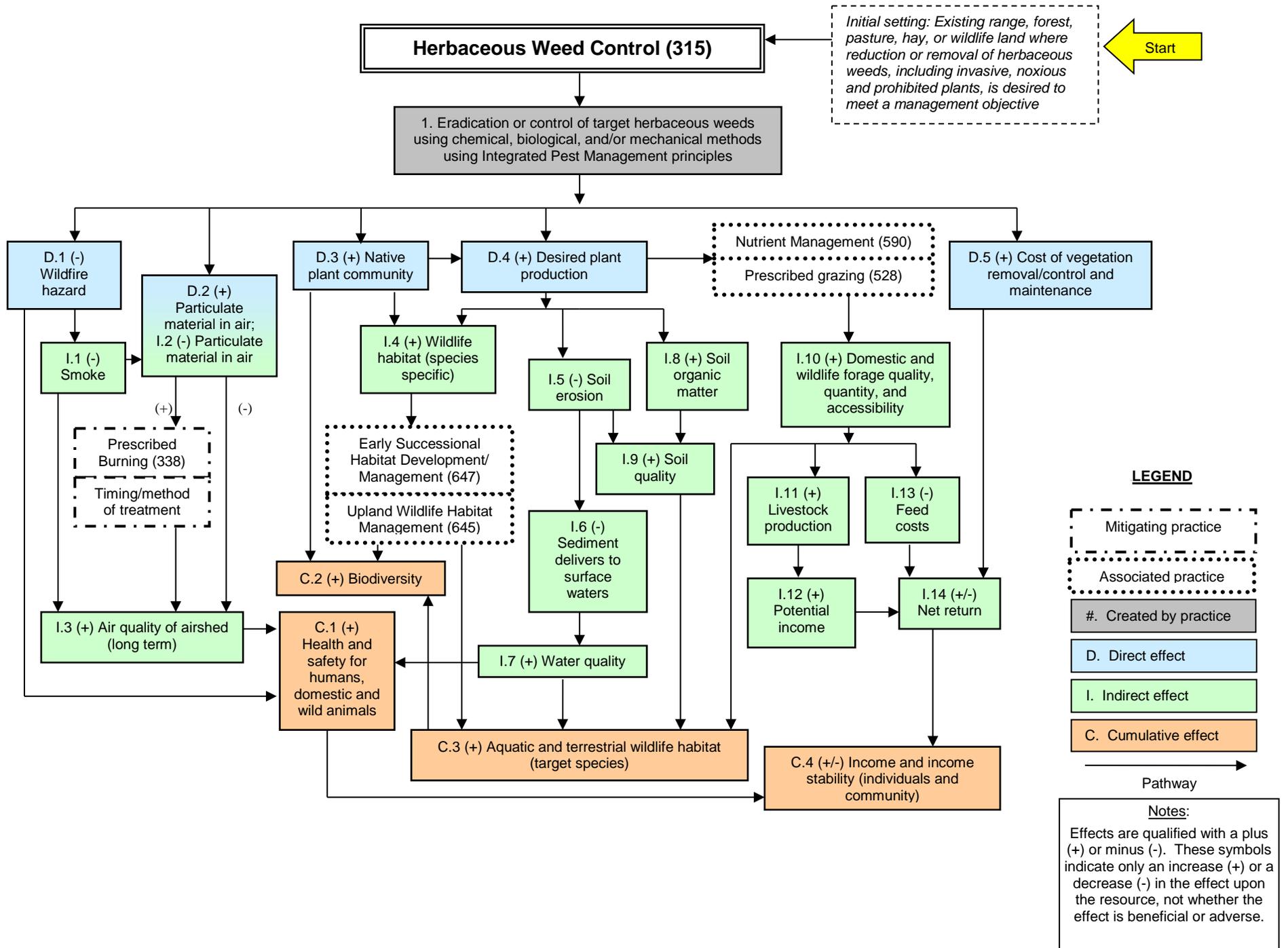
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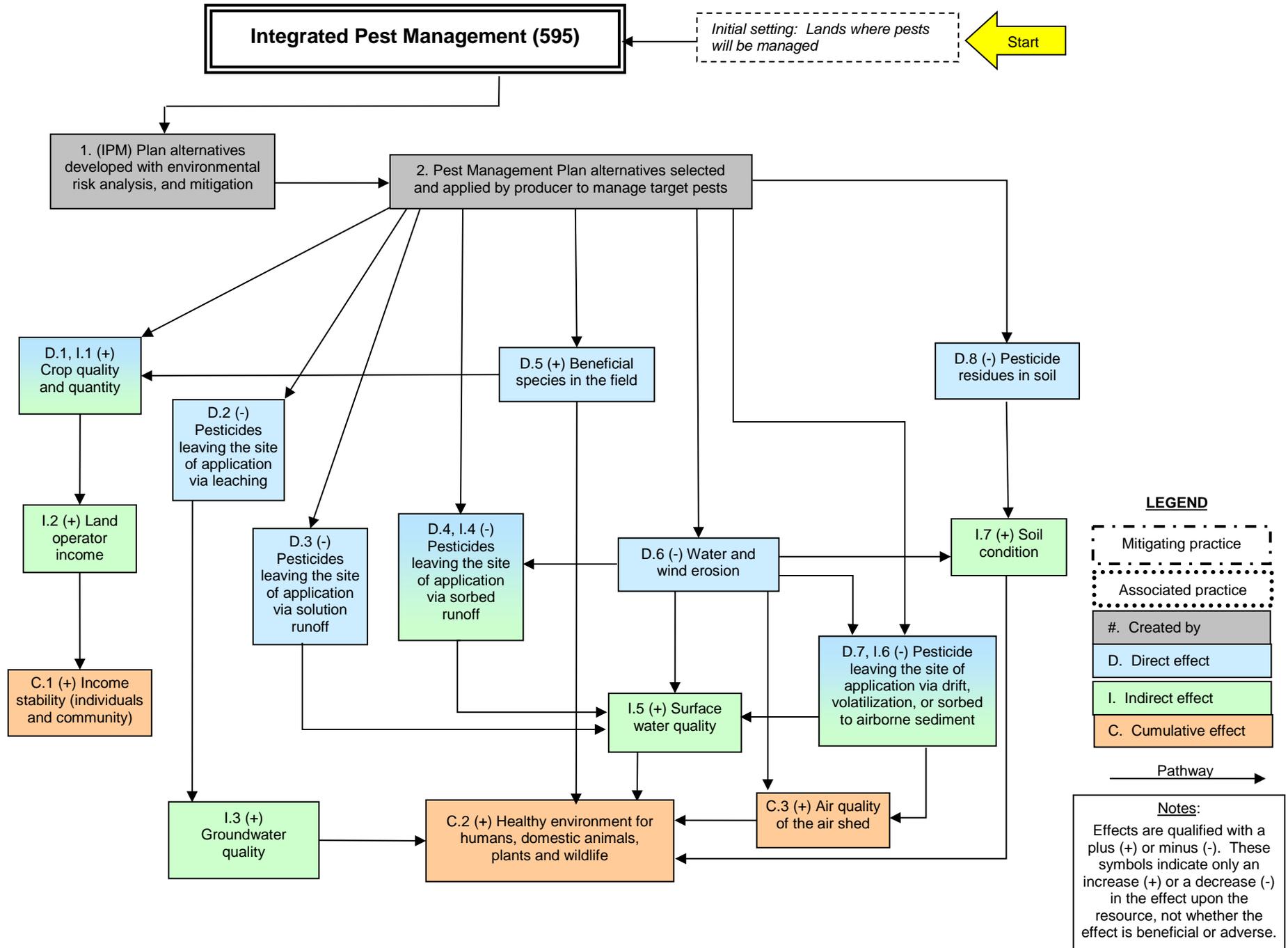
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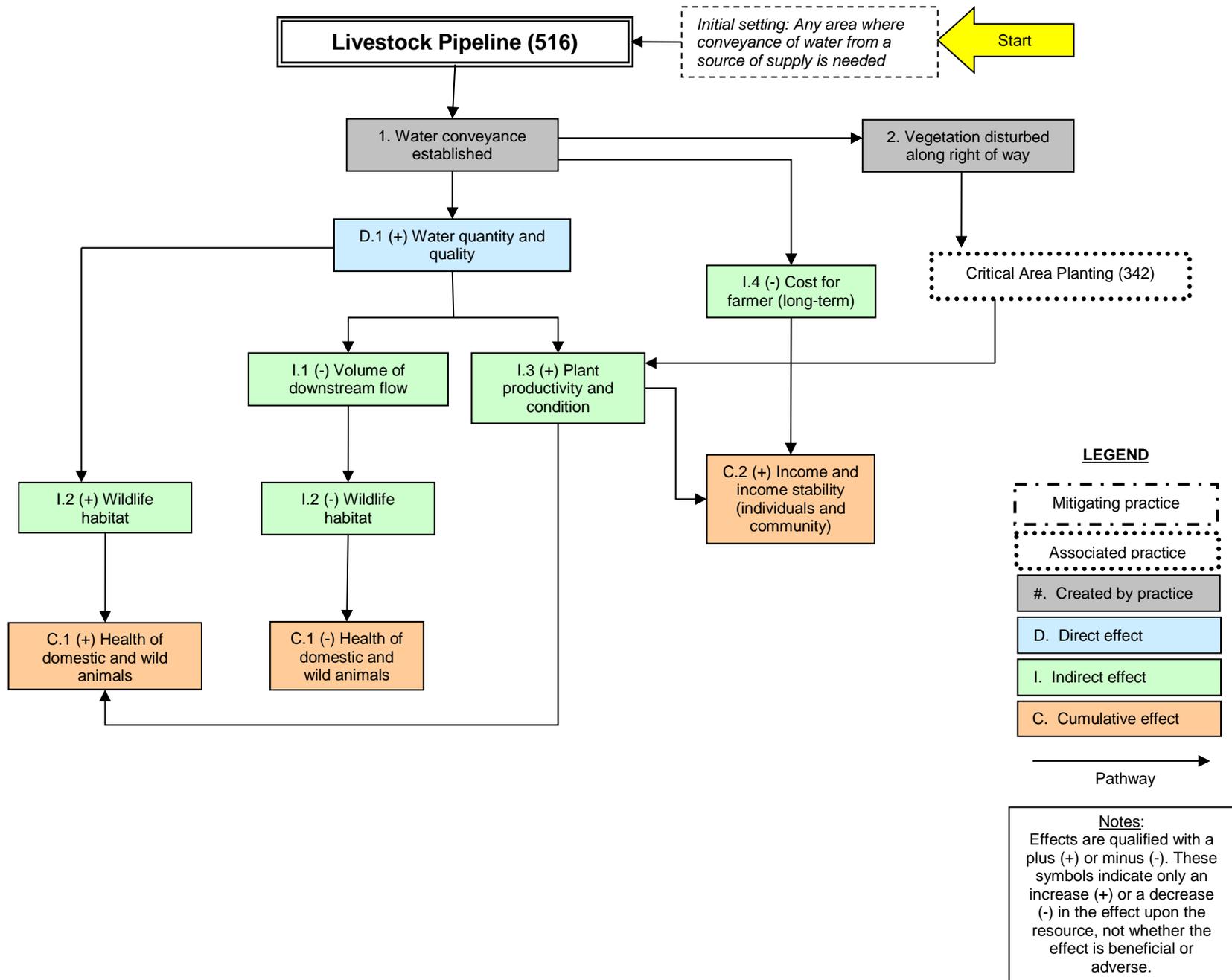
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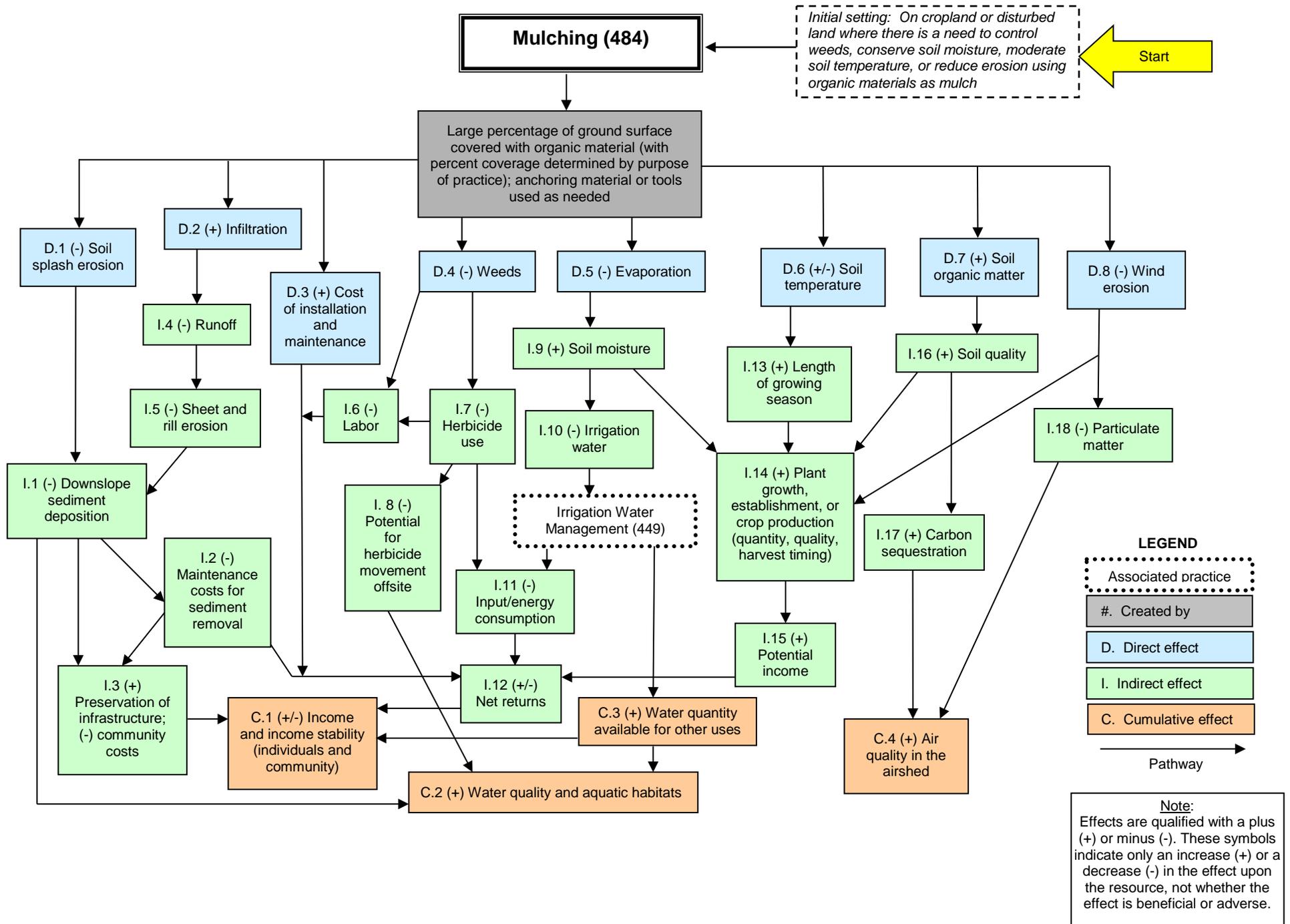
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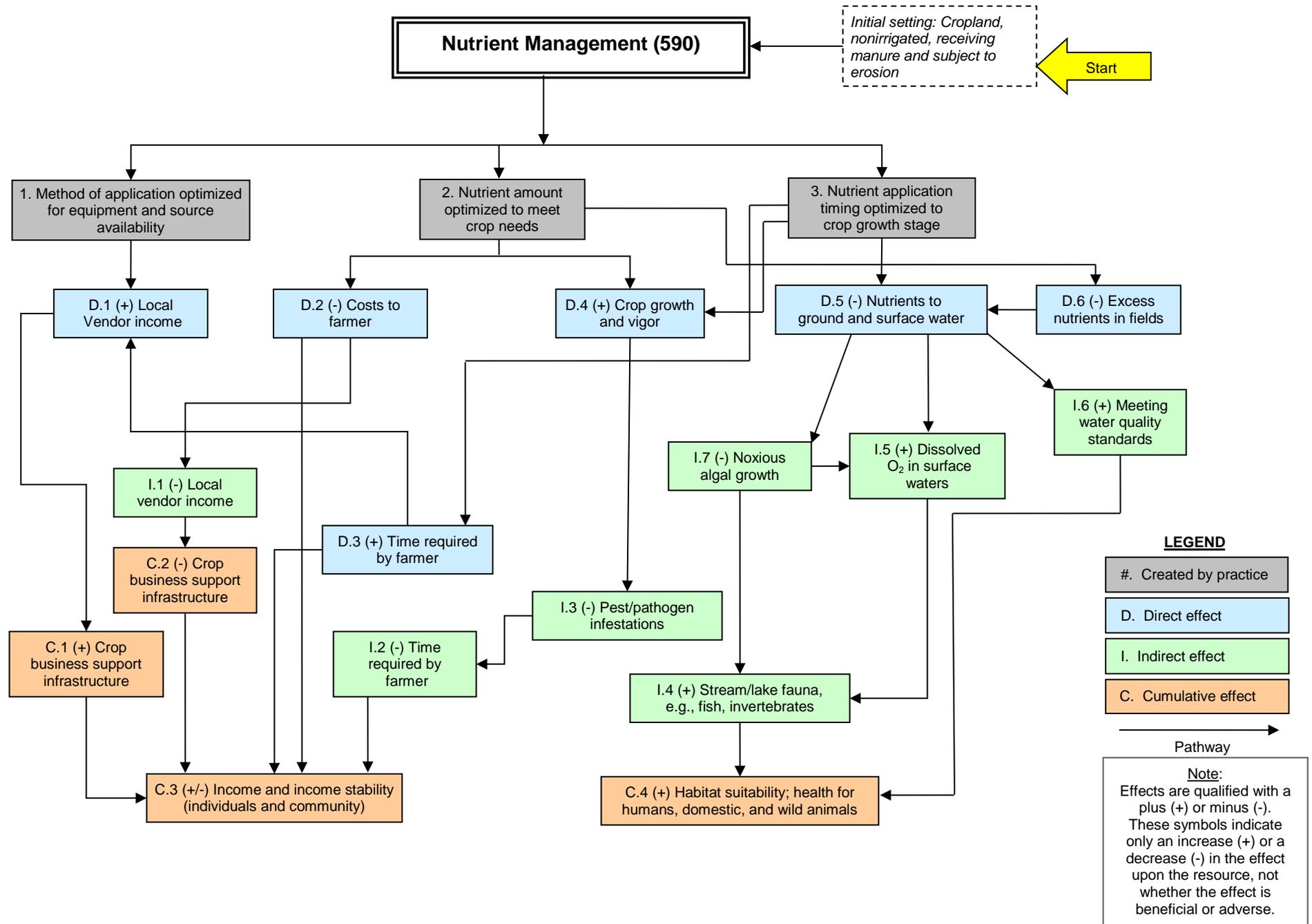
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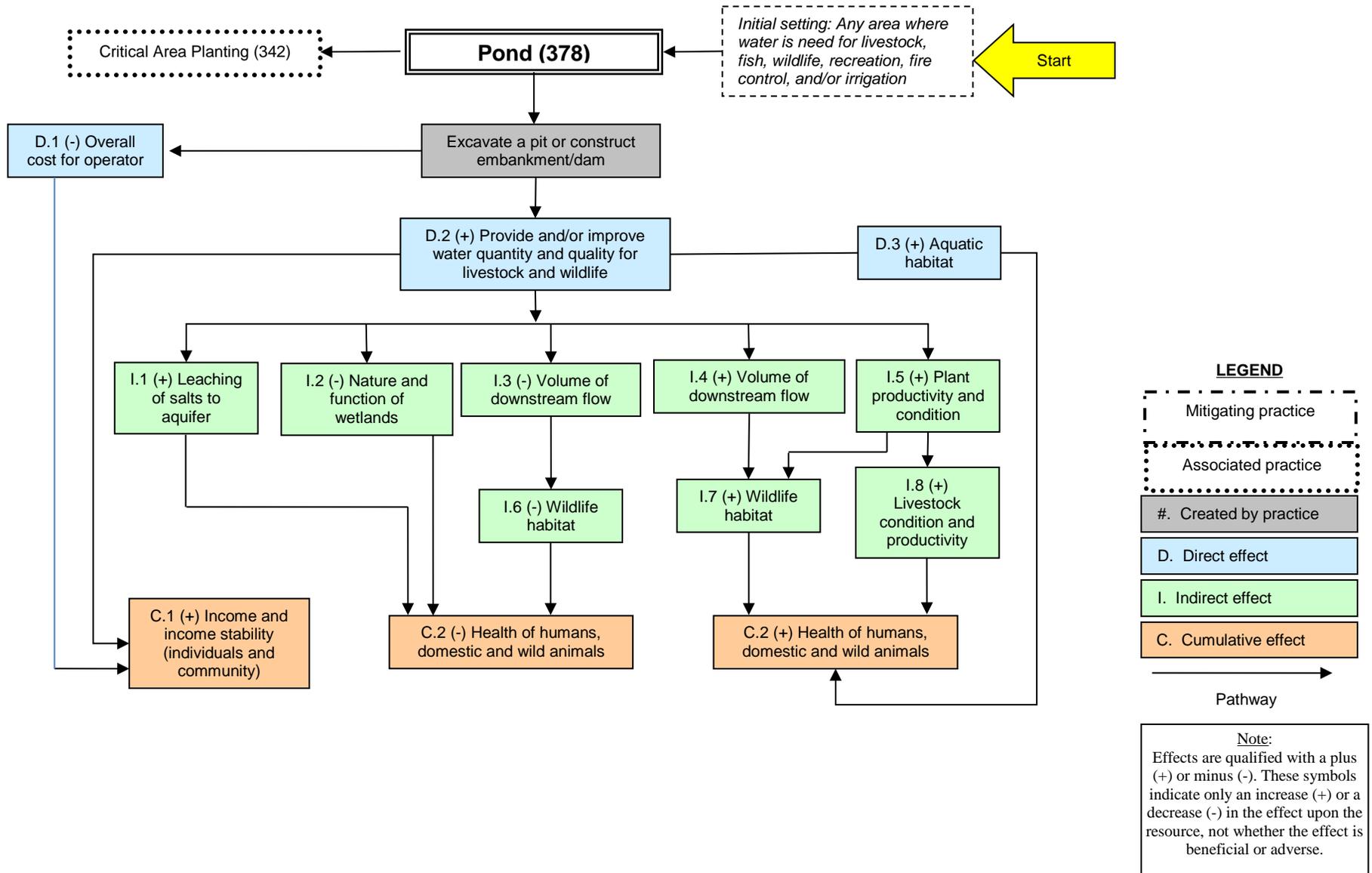
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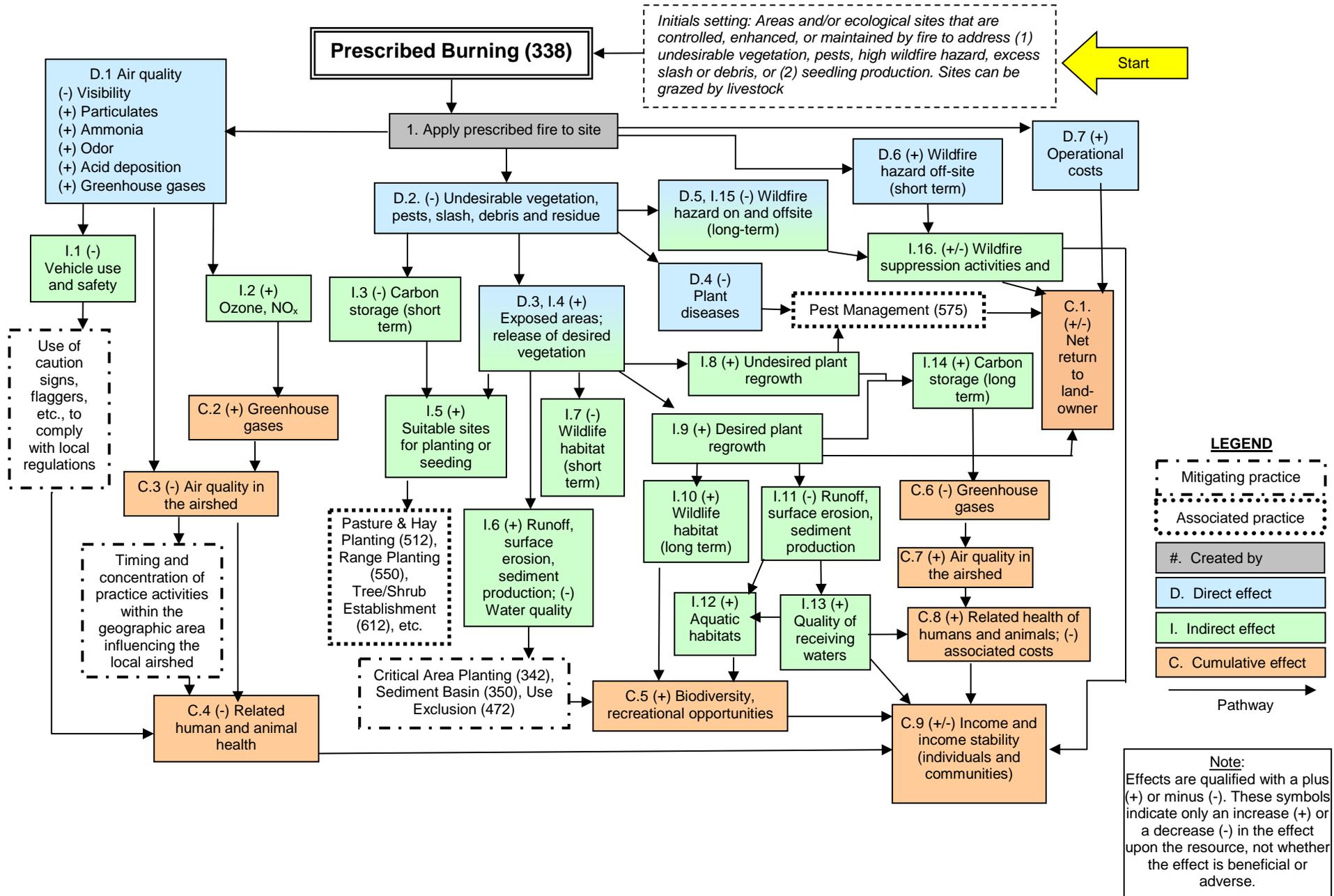
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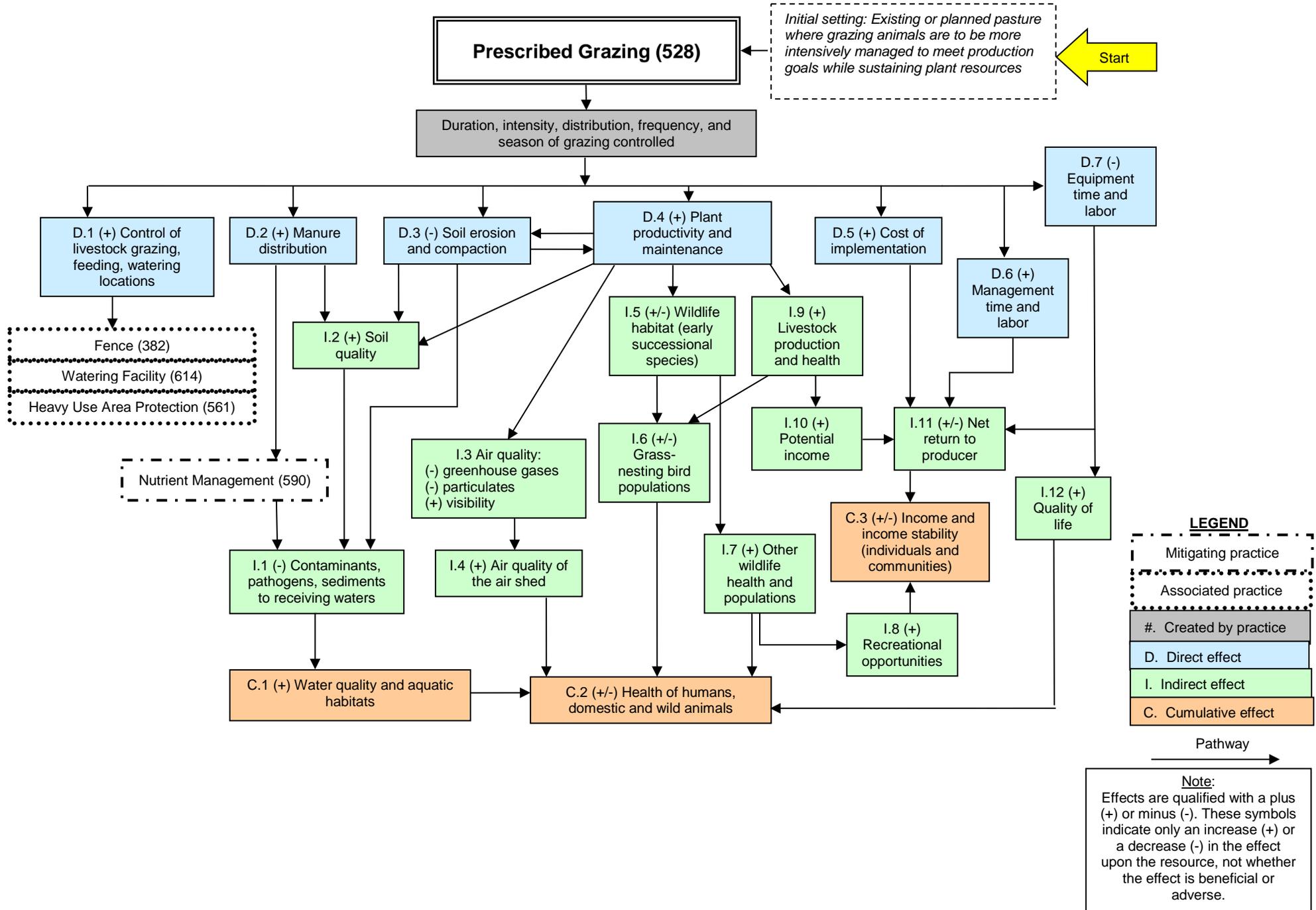
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

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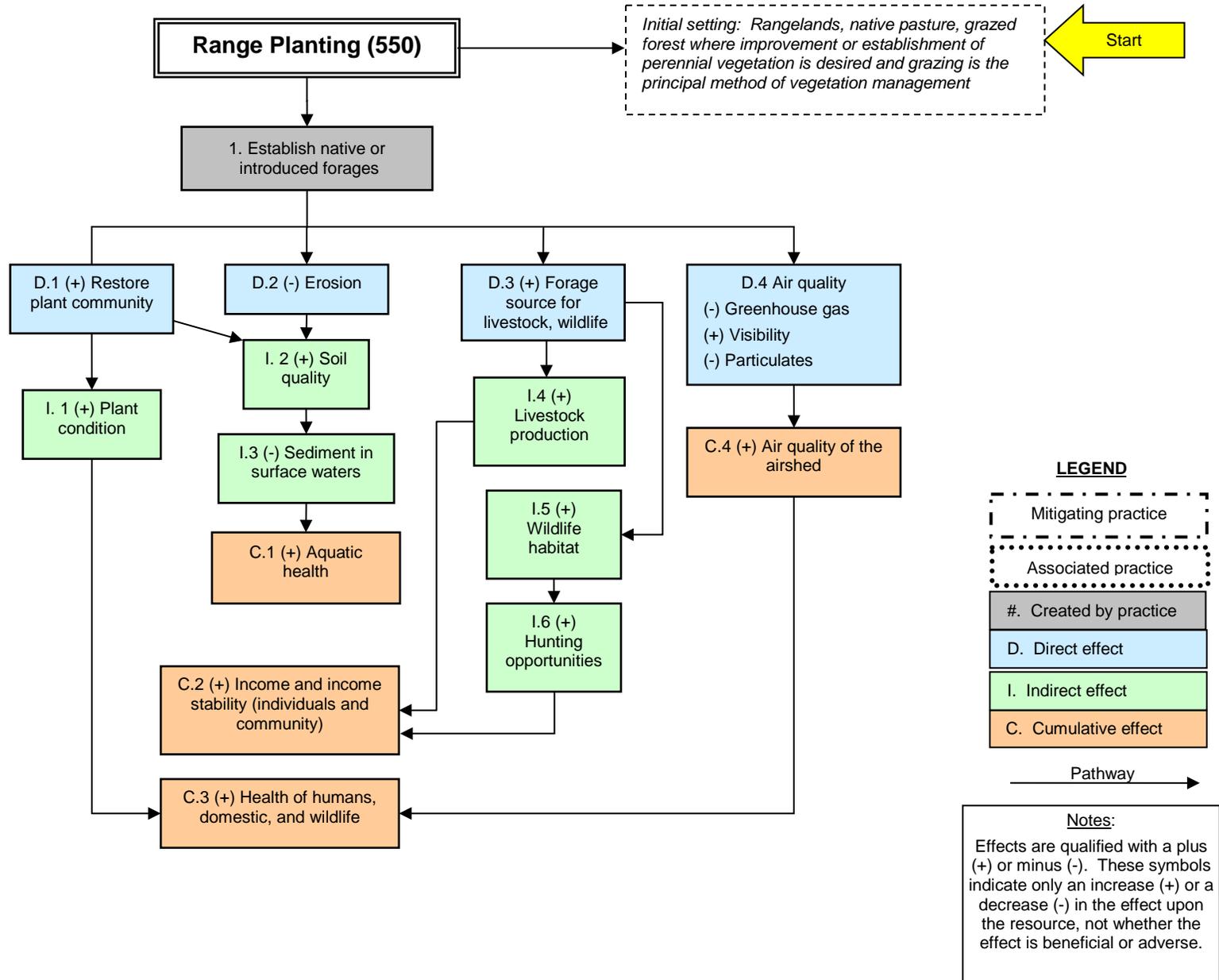
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



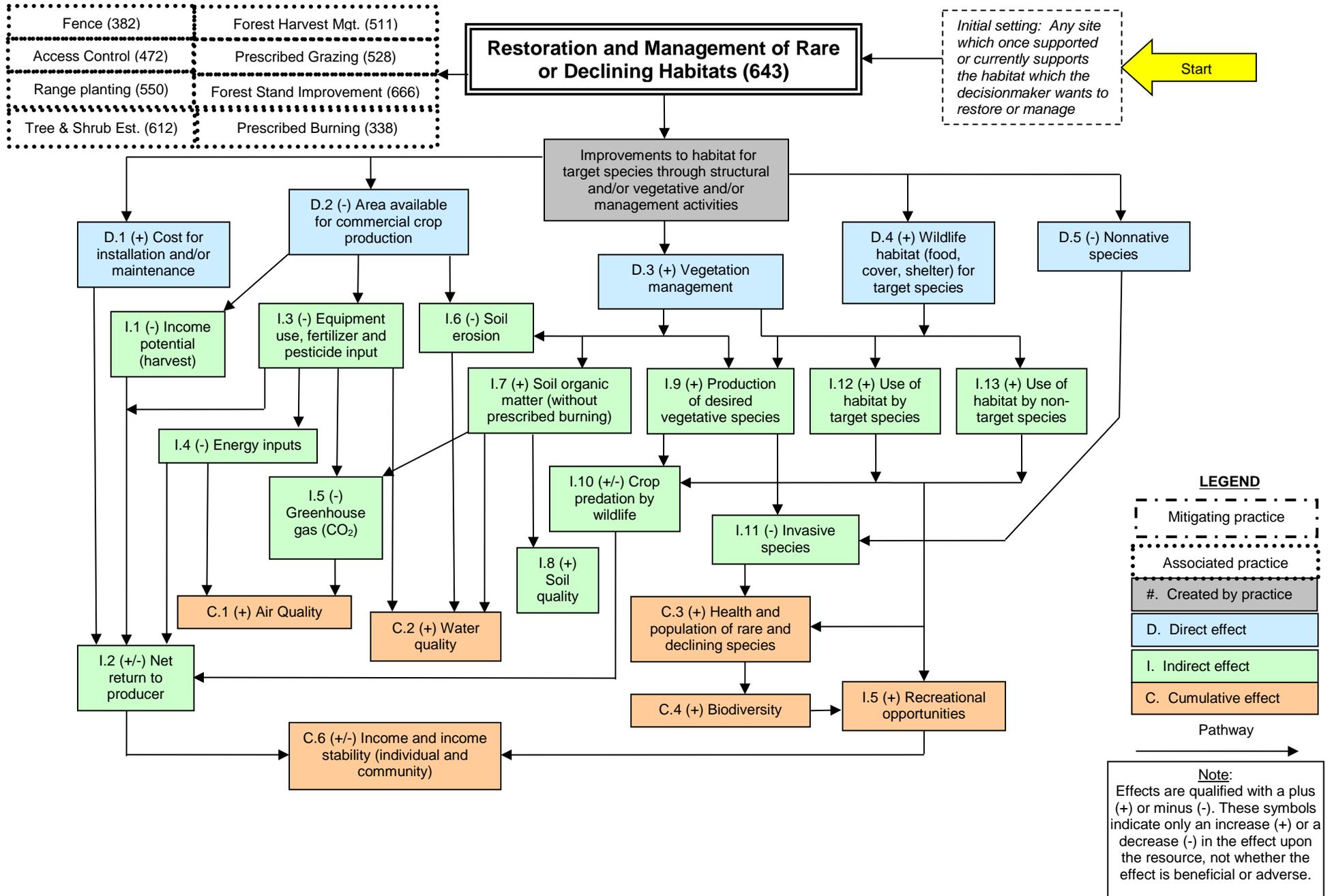
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



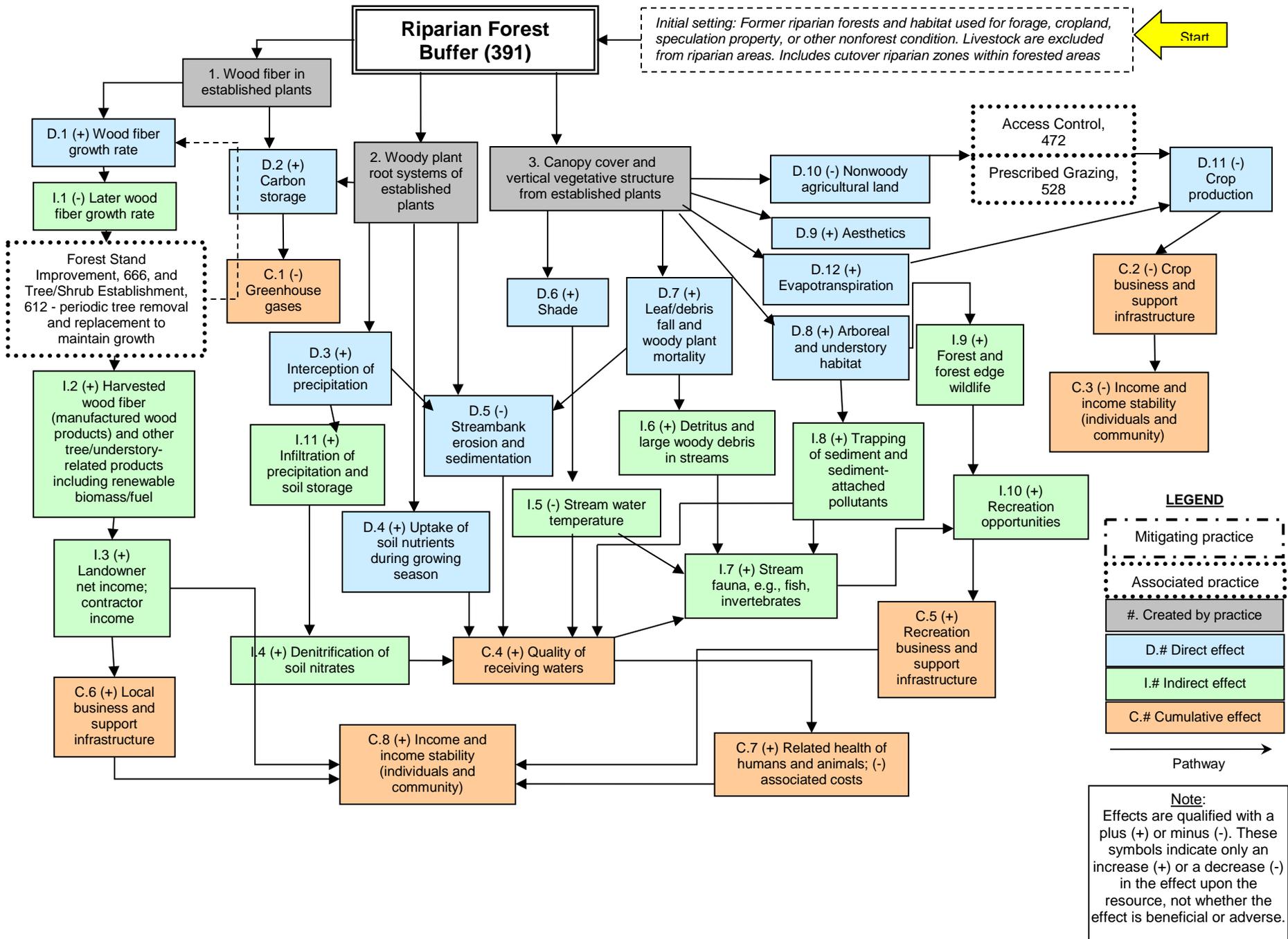
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



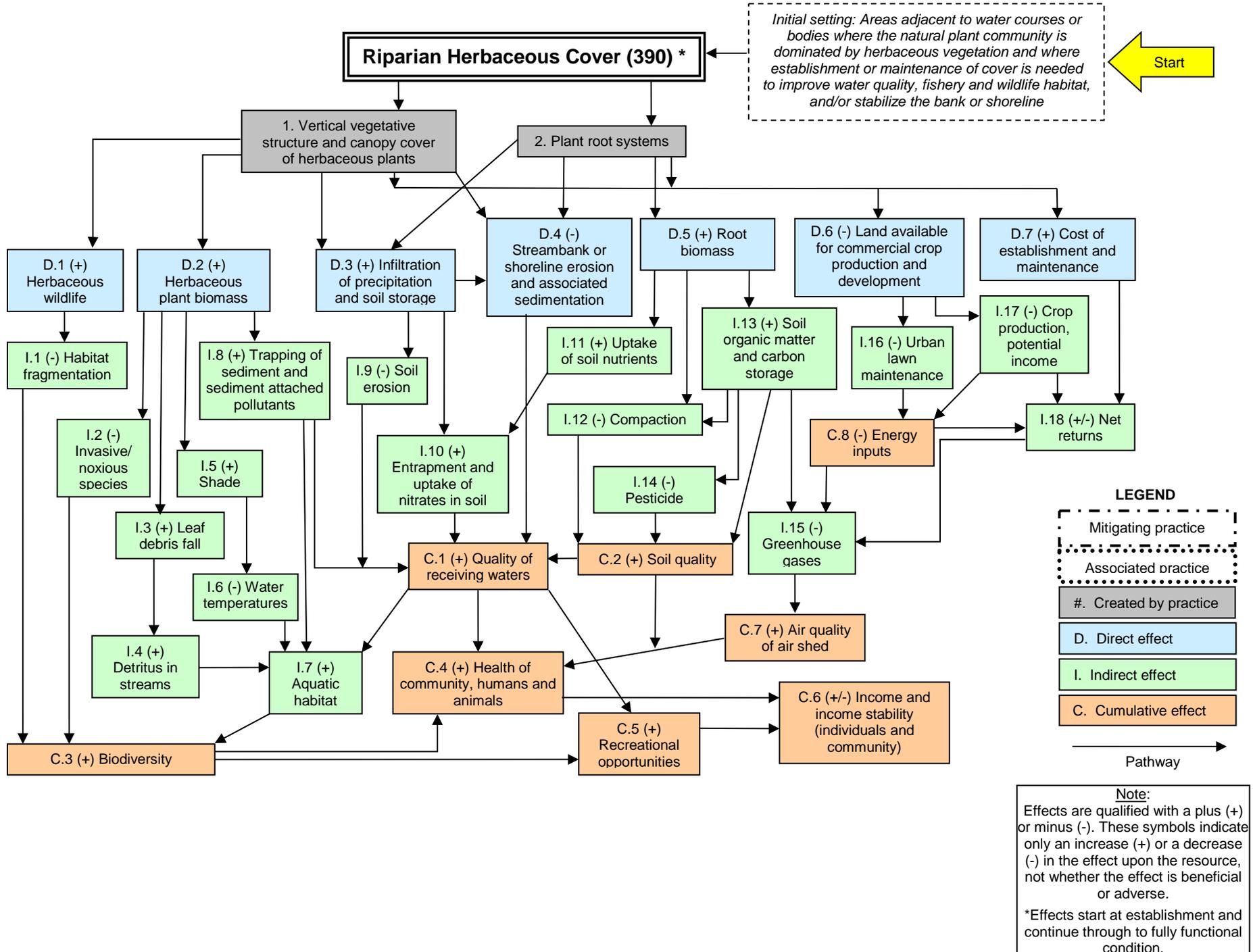
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



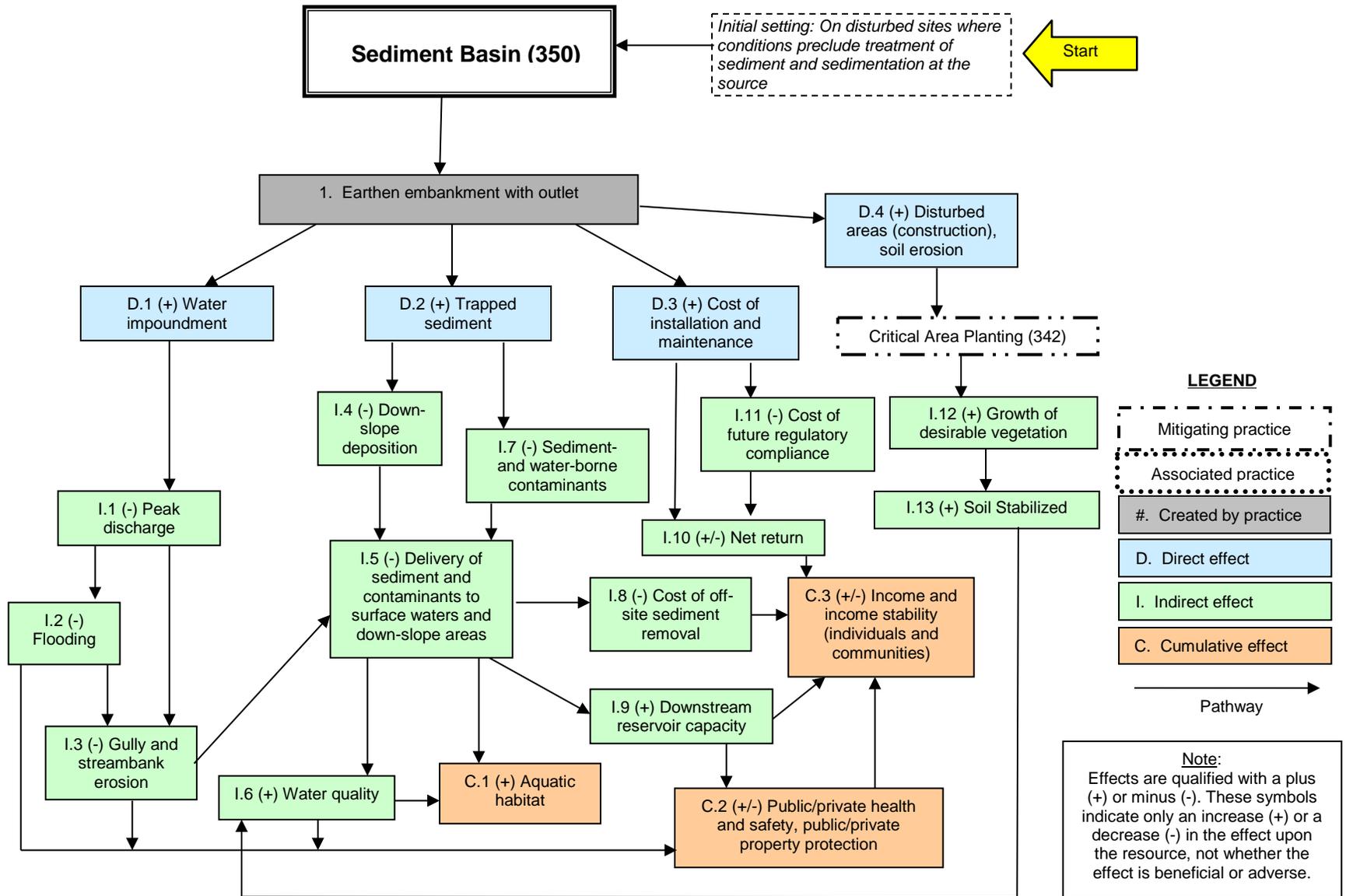
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



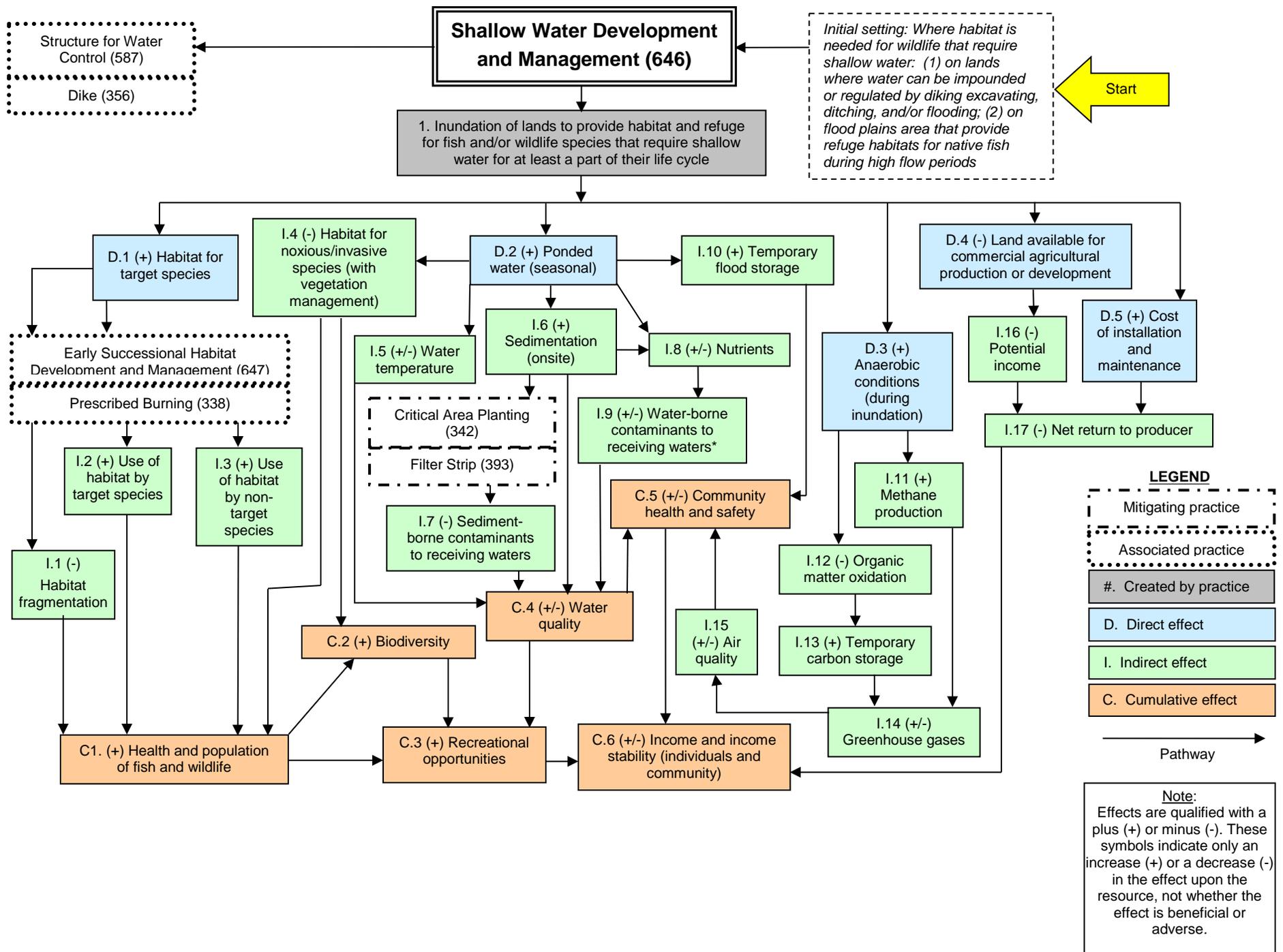
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



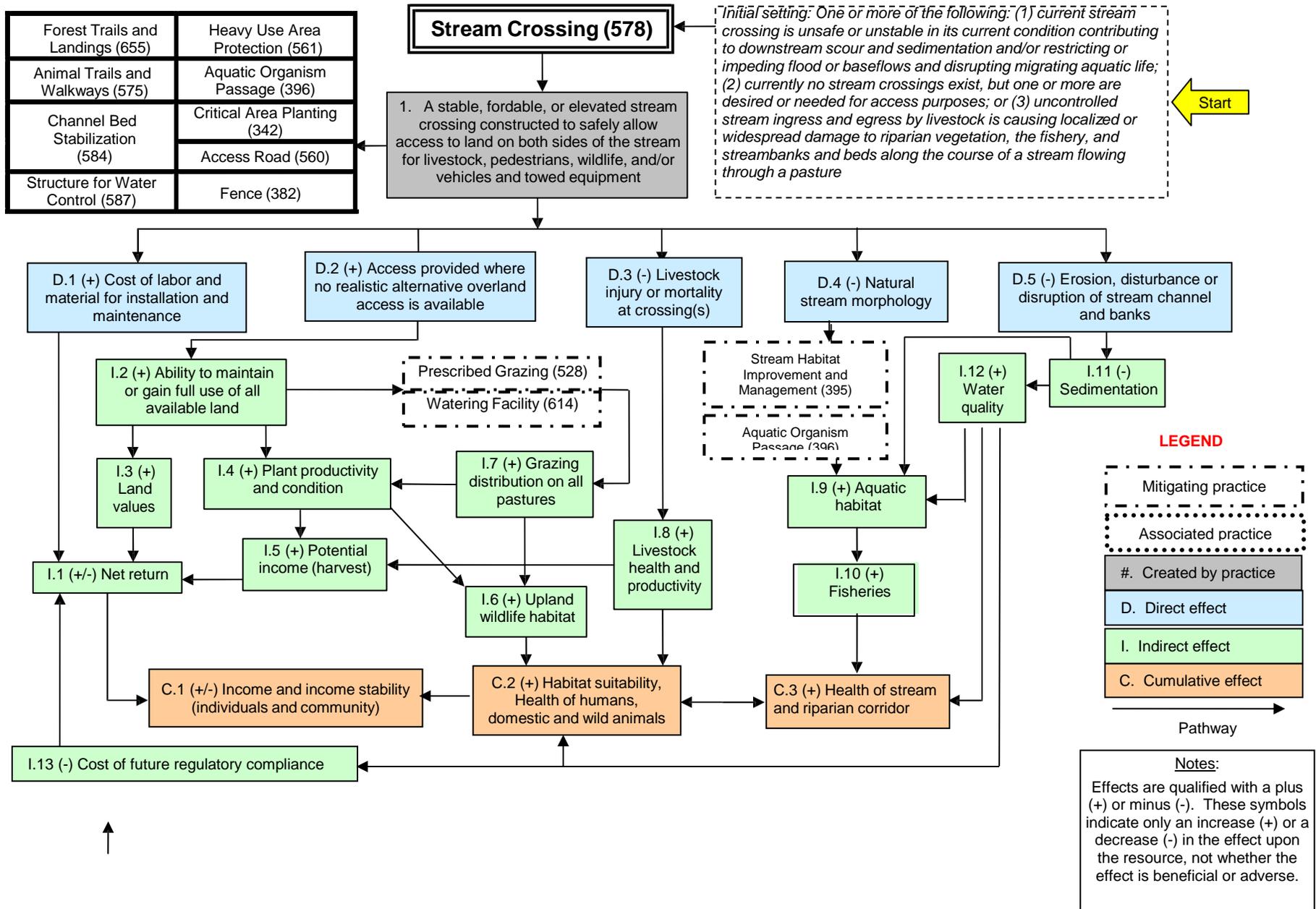
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

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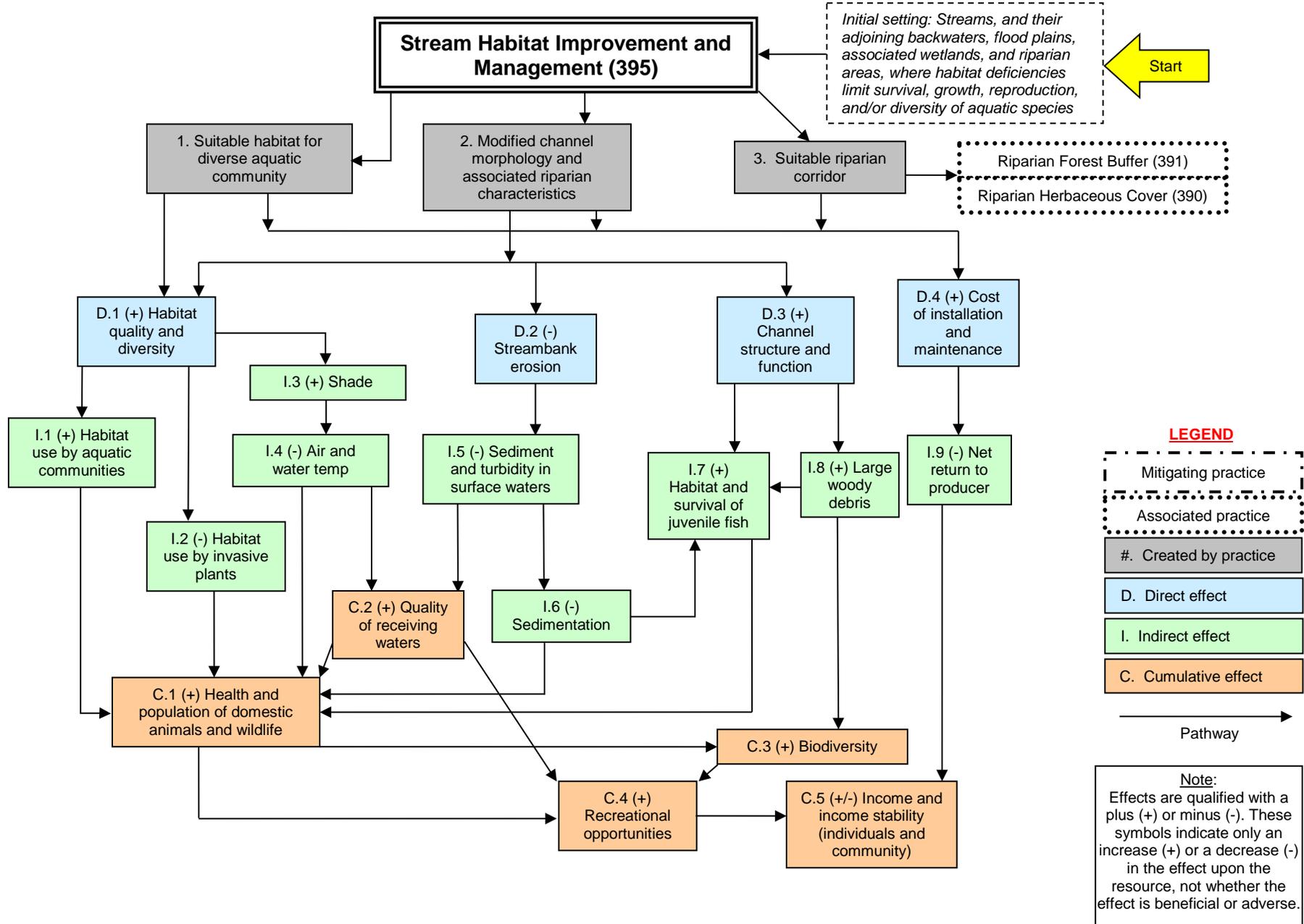
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



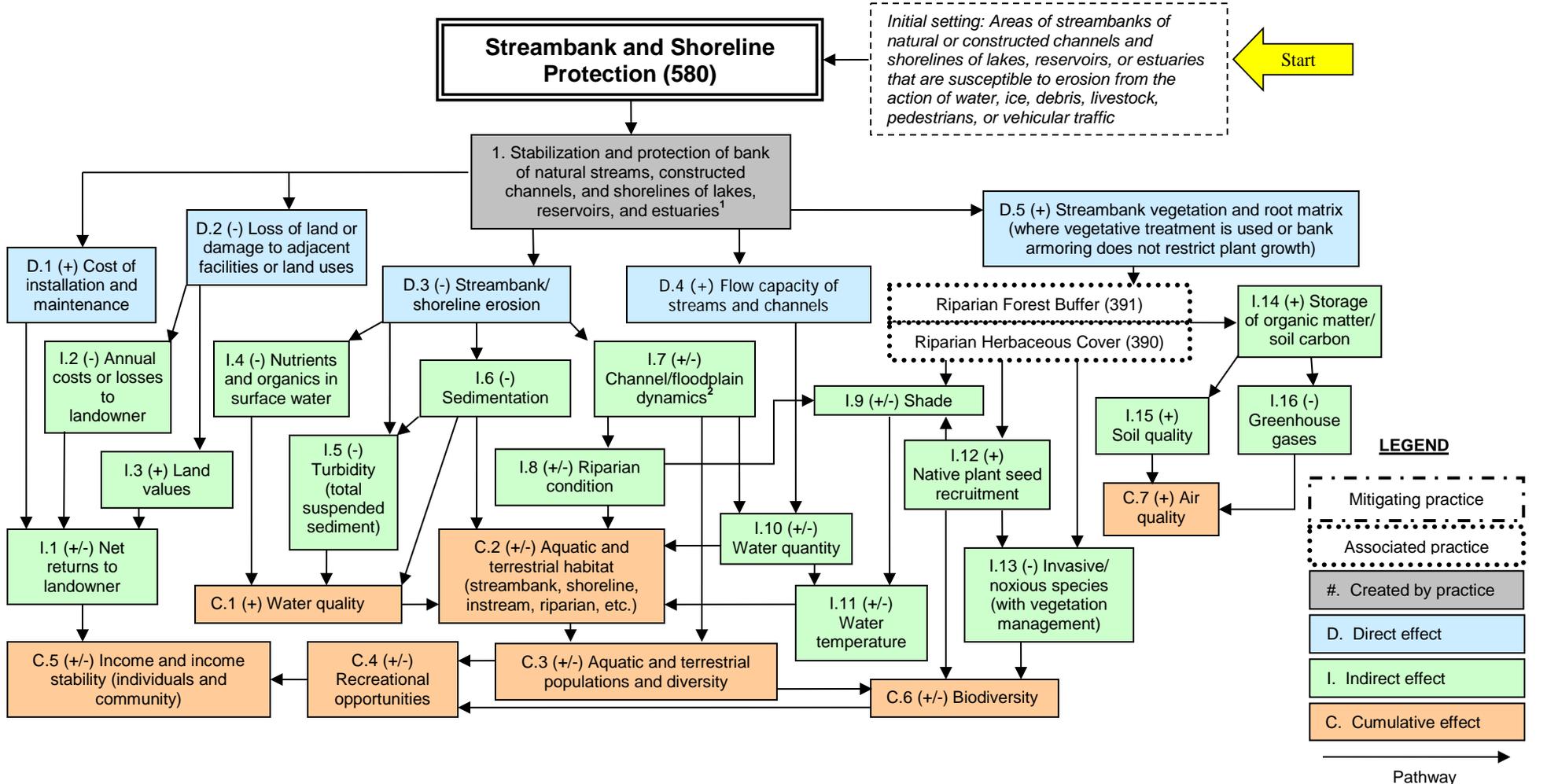
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

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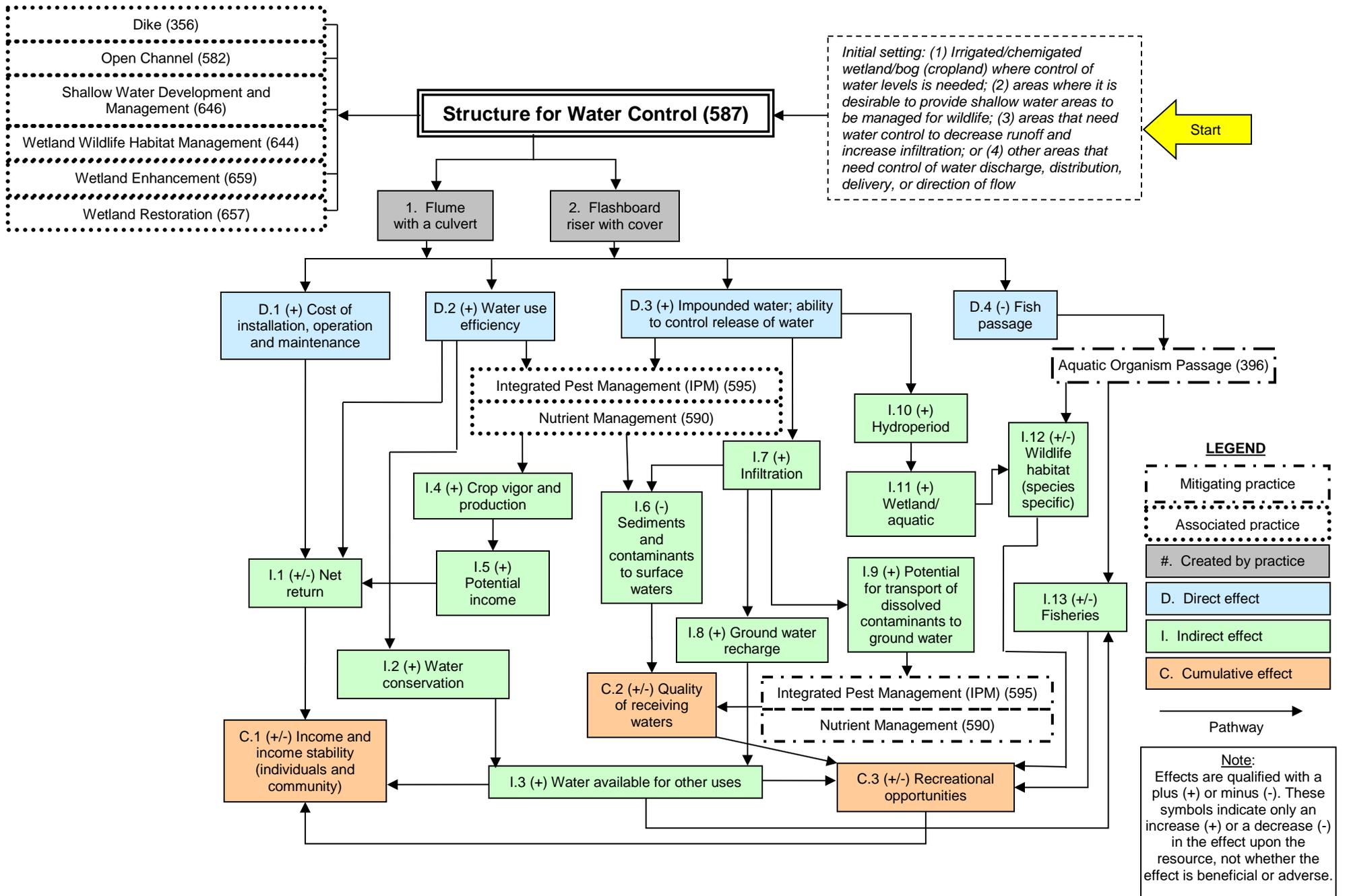


Notes:
 Effects are qualified with a plus (+) or minus (-). These symbols indicate only an increase (+) or a decrease (-) in the effect upon the resource, not whether the effect is beneficial or adverse. **Projects involving long lengths of bank or shoreline, structural controls, substantial earth moving and/or fill, or sensitive waters may need to be evaluated in a site-specific EA or EIS.**

¹ Additional information about potential protection measures and their impacts is available in the EIS for the Emergency Watershed Protection (EWP) Program.
² Conventional bank armoring (e.g., rip rap, gabions) may result in decreased (-) channel/flood plain dynamics, and associated impacts, while other less intrusive methods (e.g., stream bars, stone toes with sloped, vegetated banks) may result in increased (+) channel/flood plain dynamics.

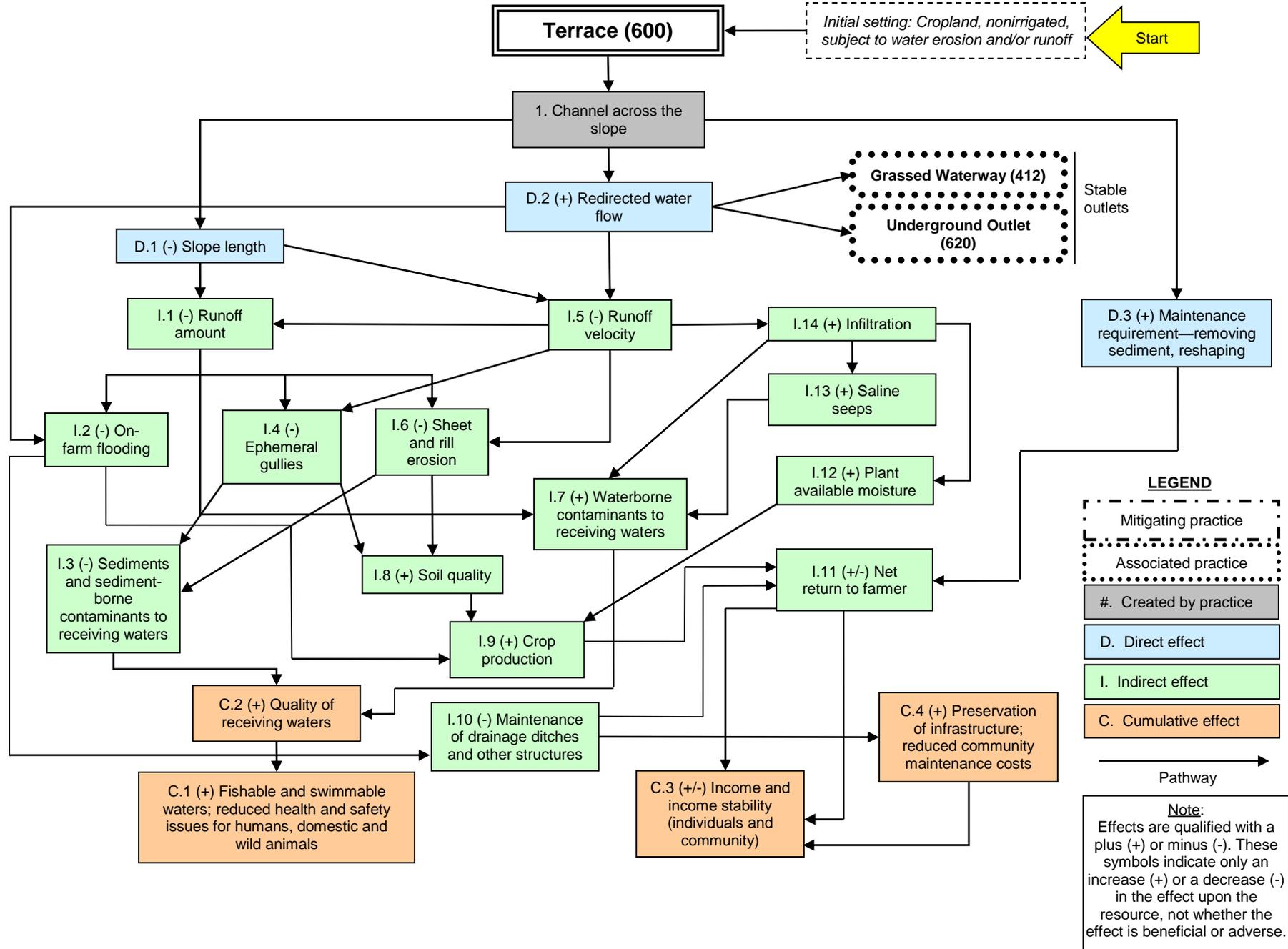
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



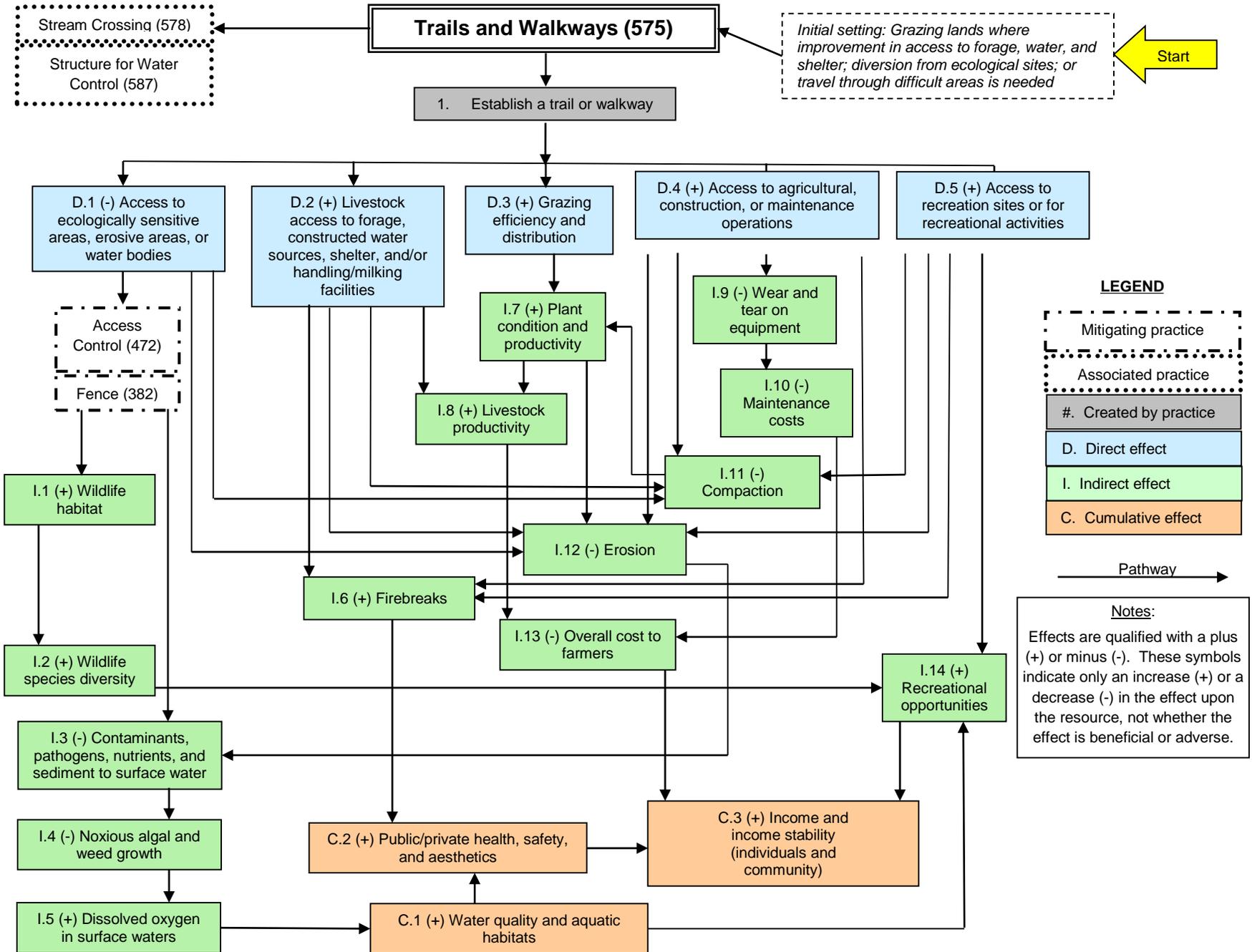
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

September 2014



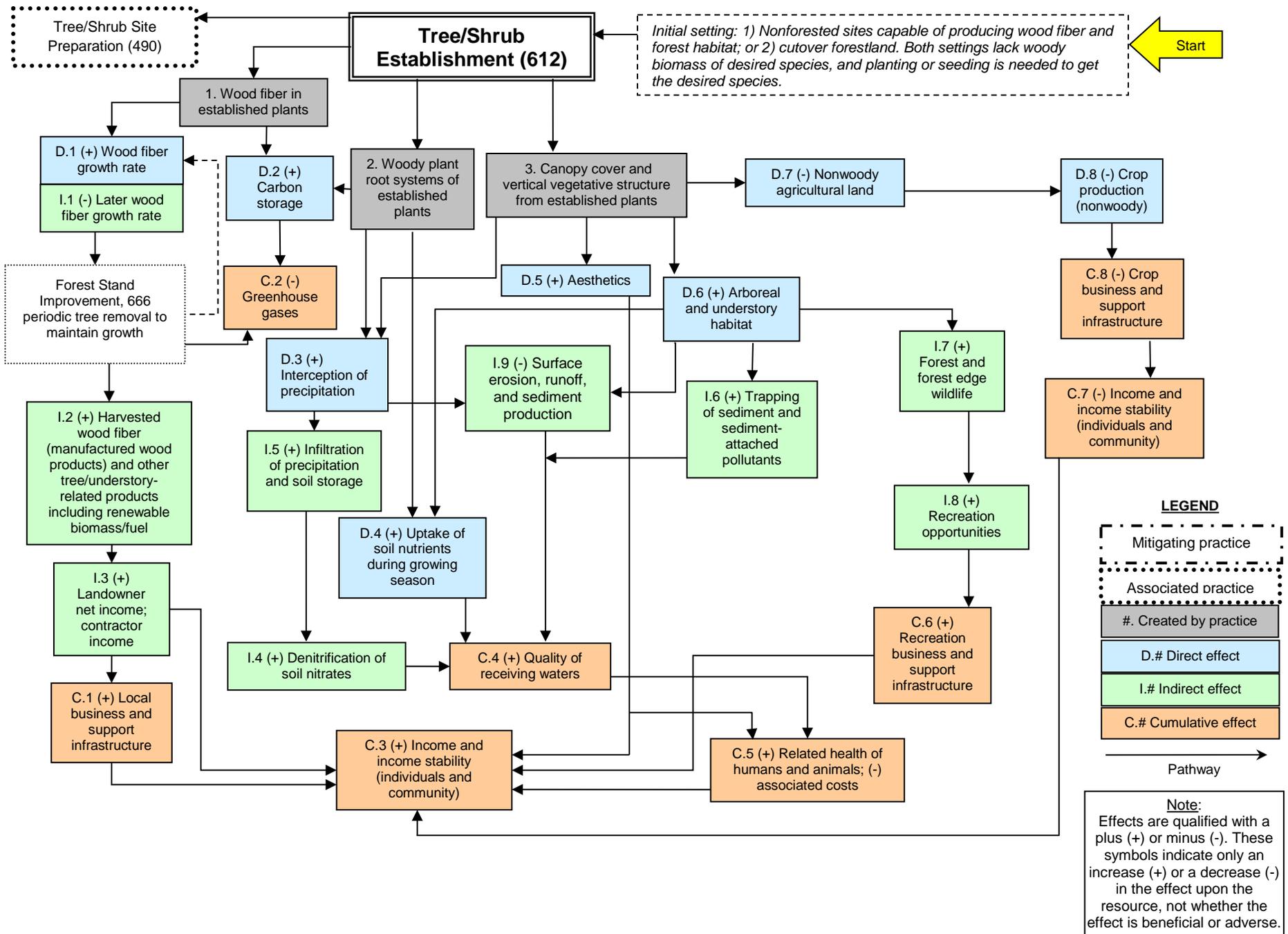
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

September 2014



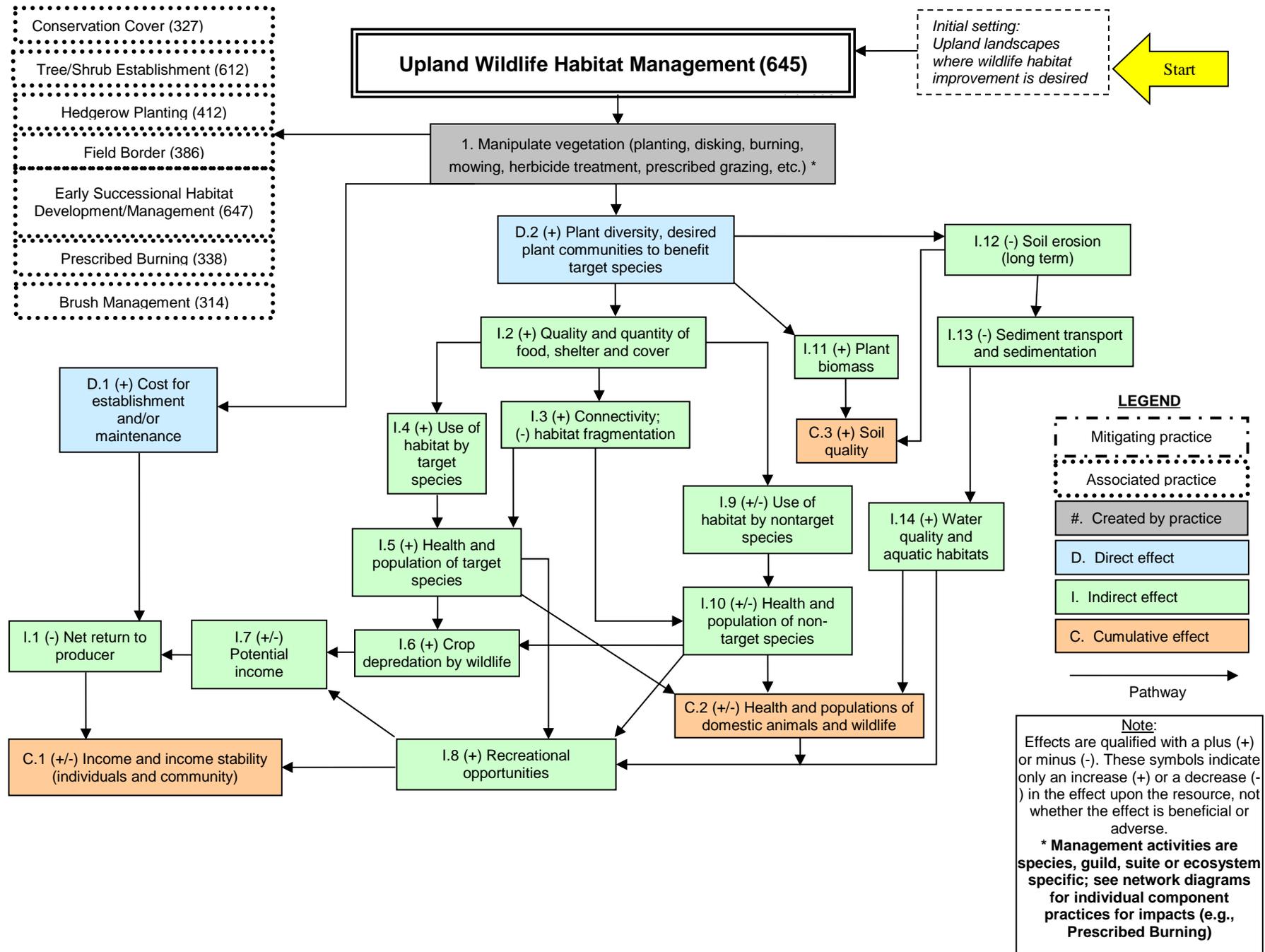
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

April 2014



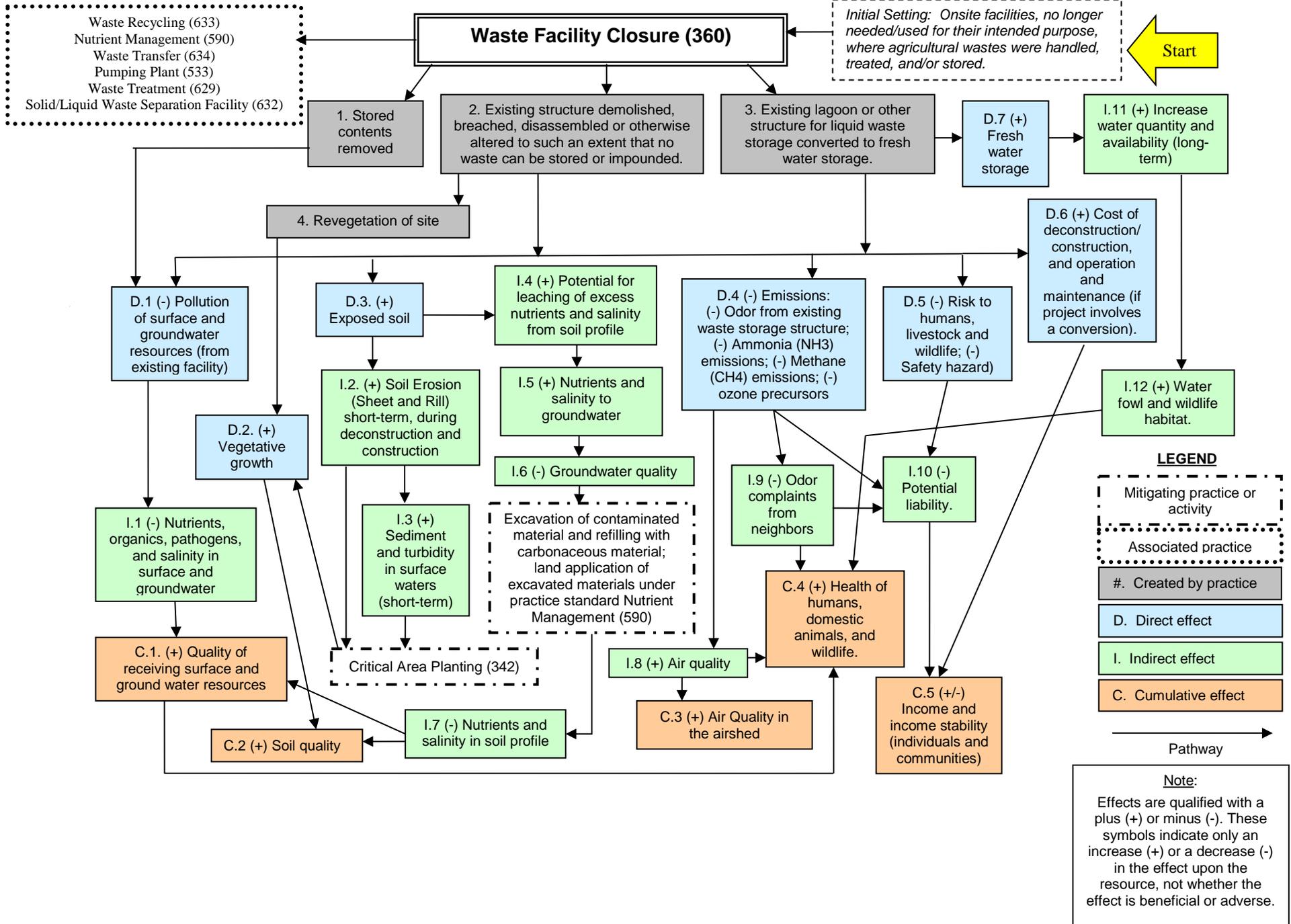
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



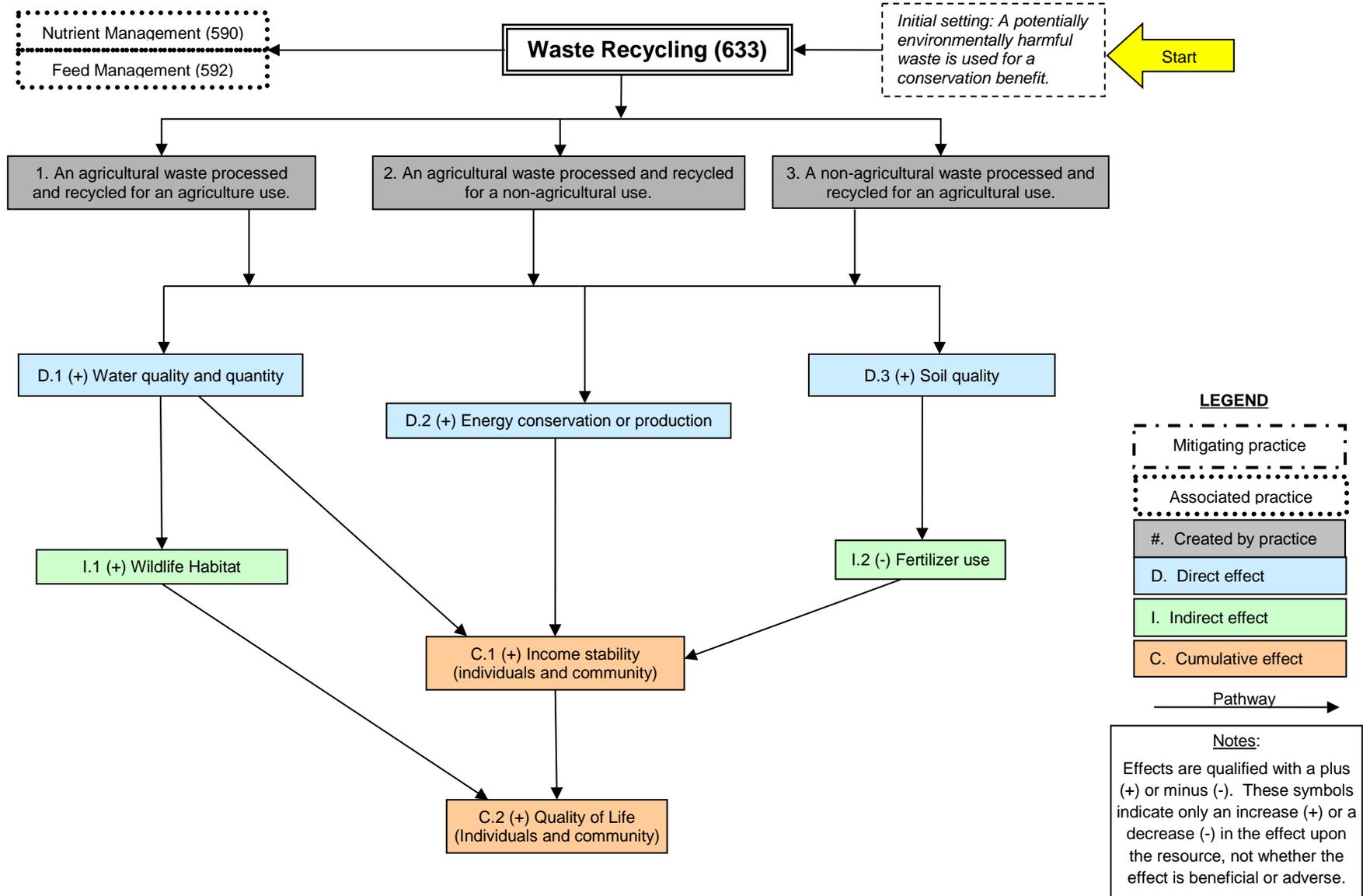
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



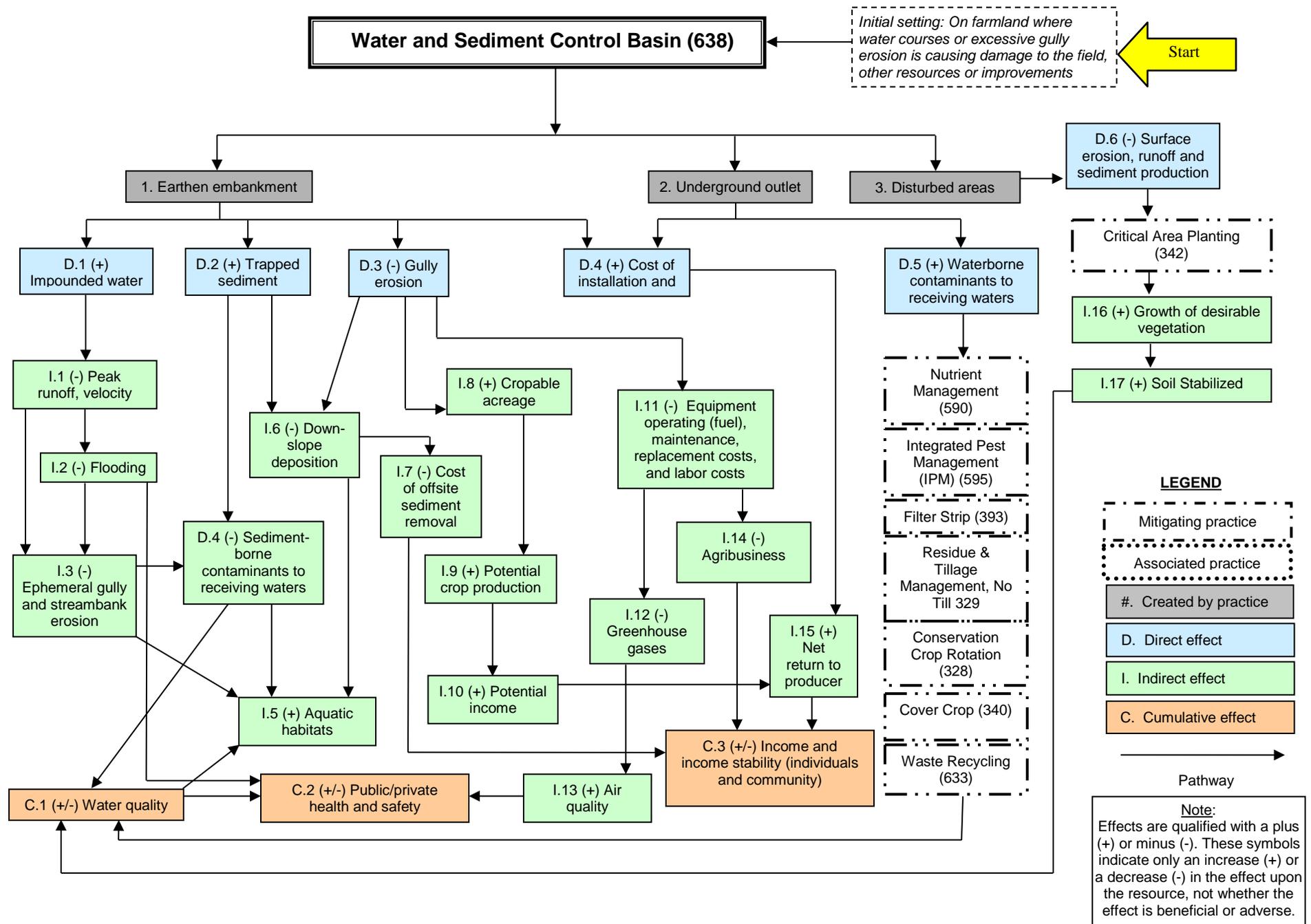
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



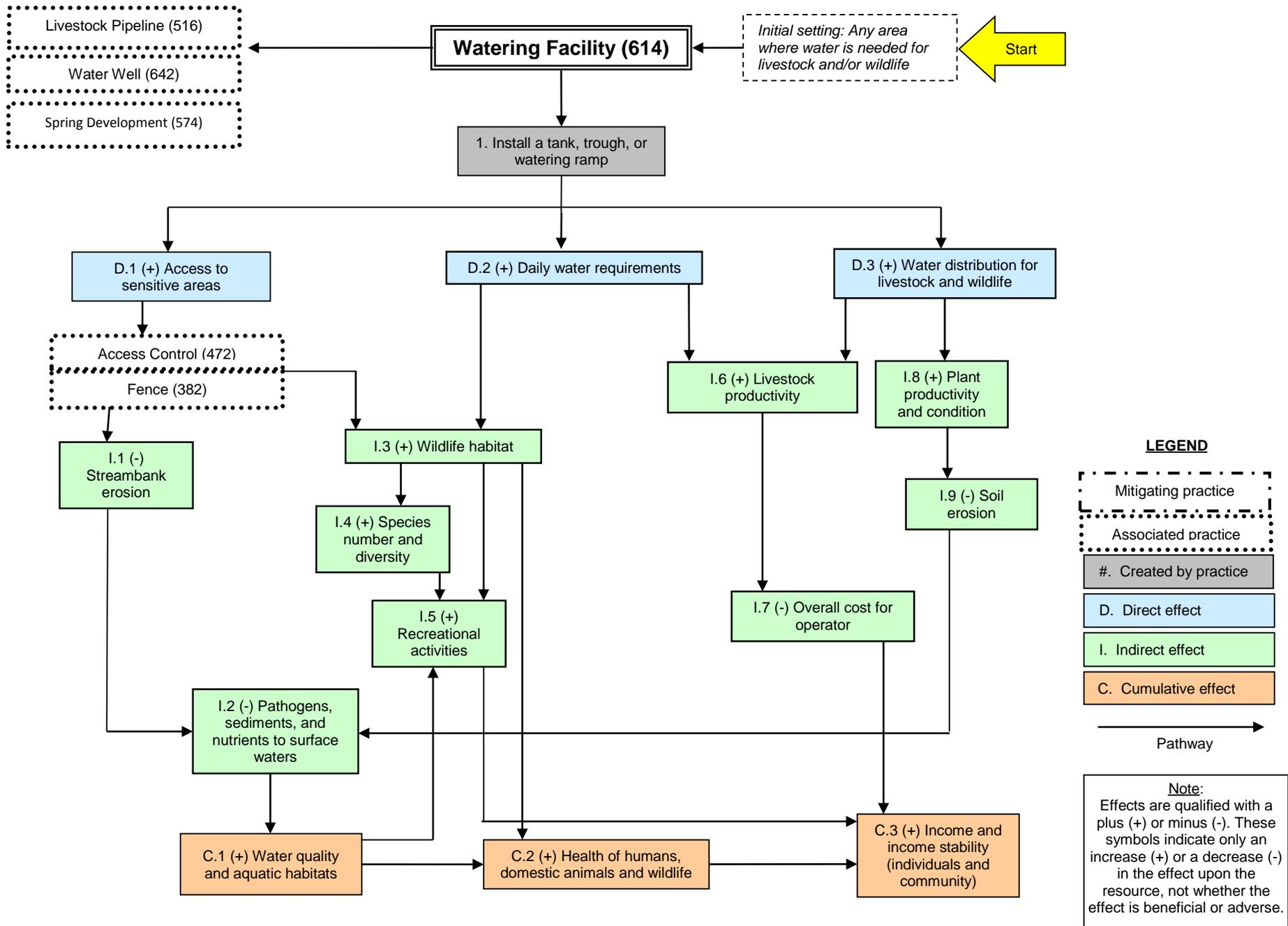
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



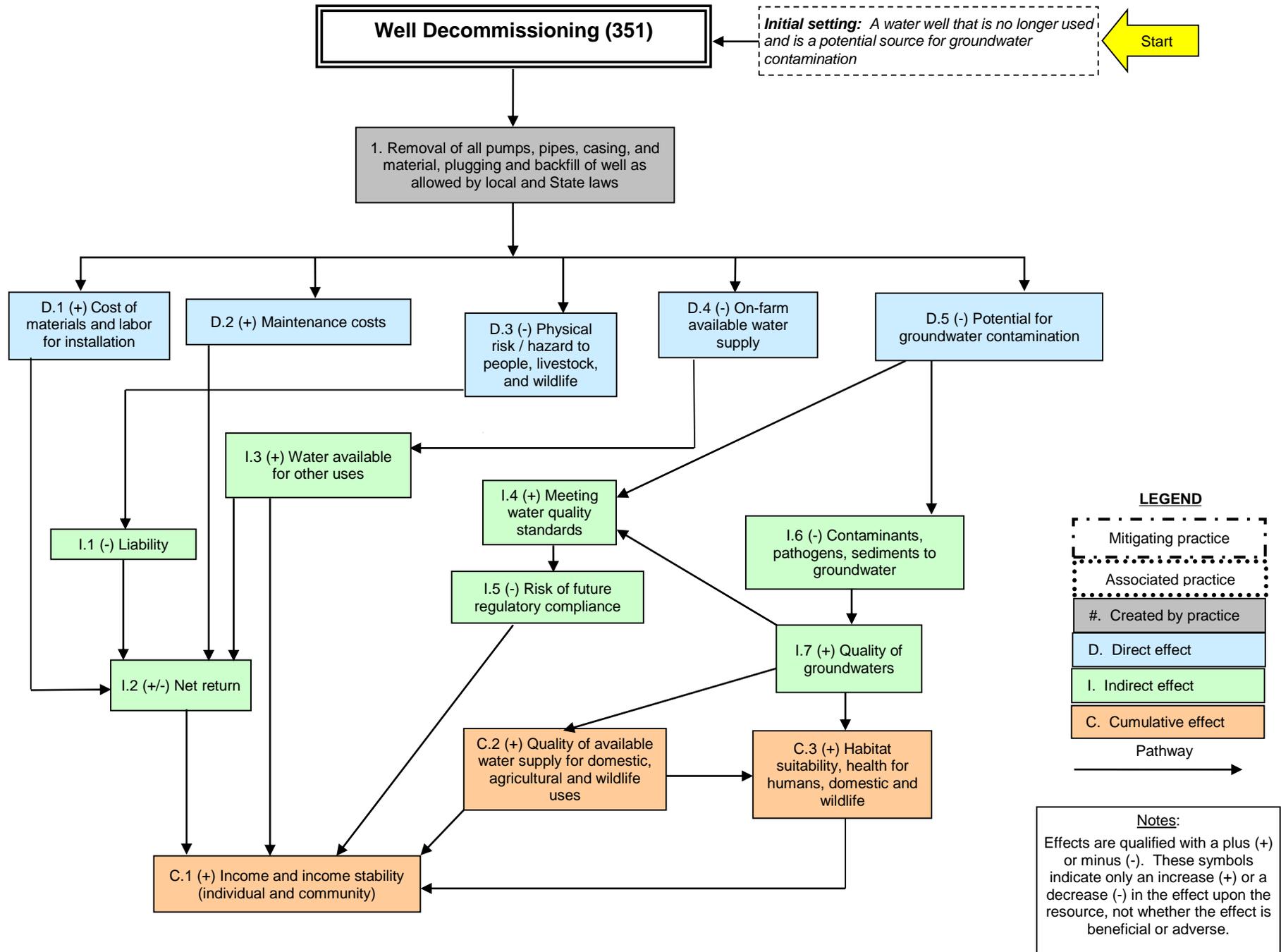
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

September 2014



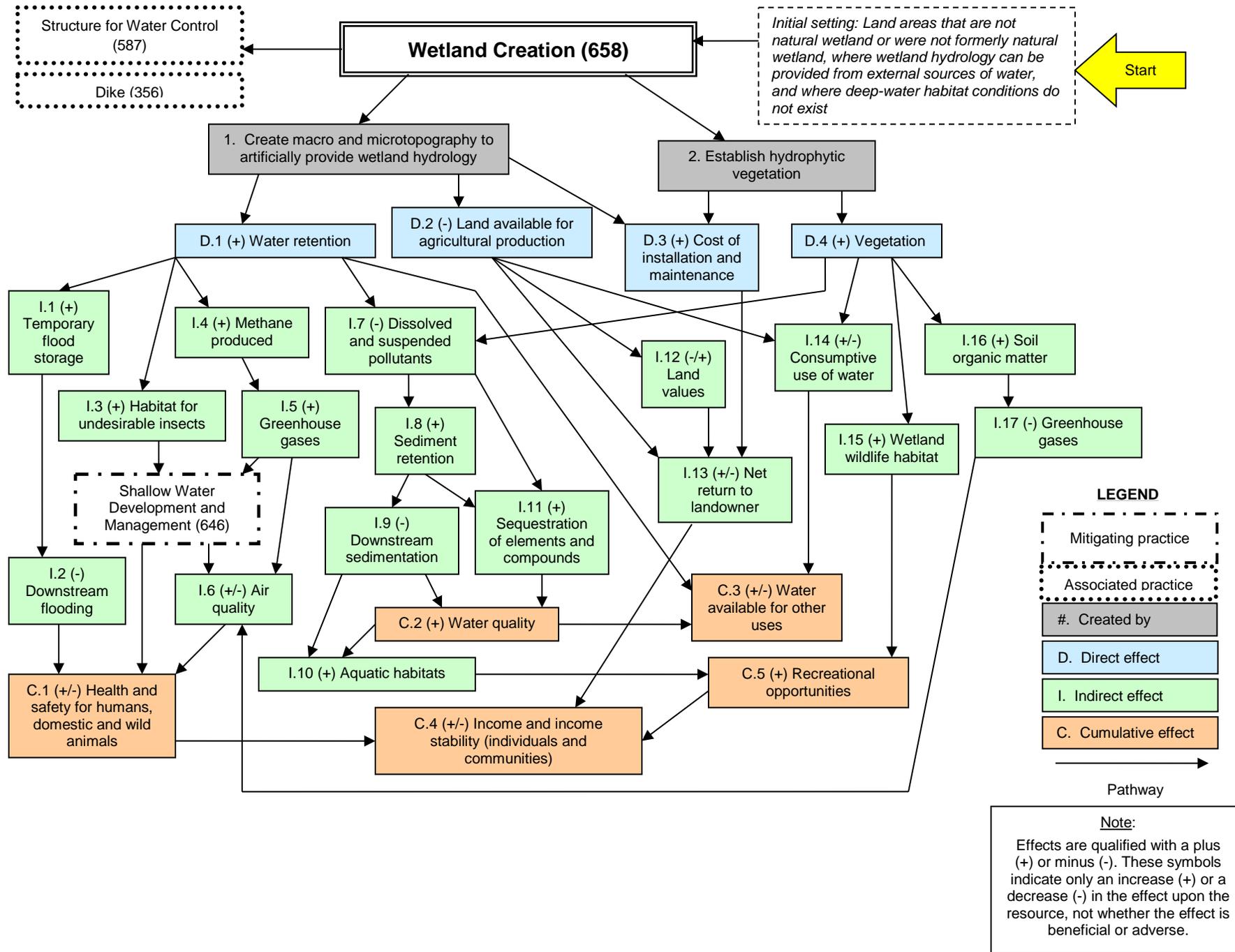
NRCS Conservation Practice Effects - Network Diagram

September 2014



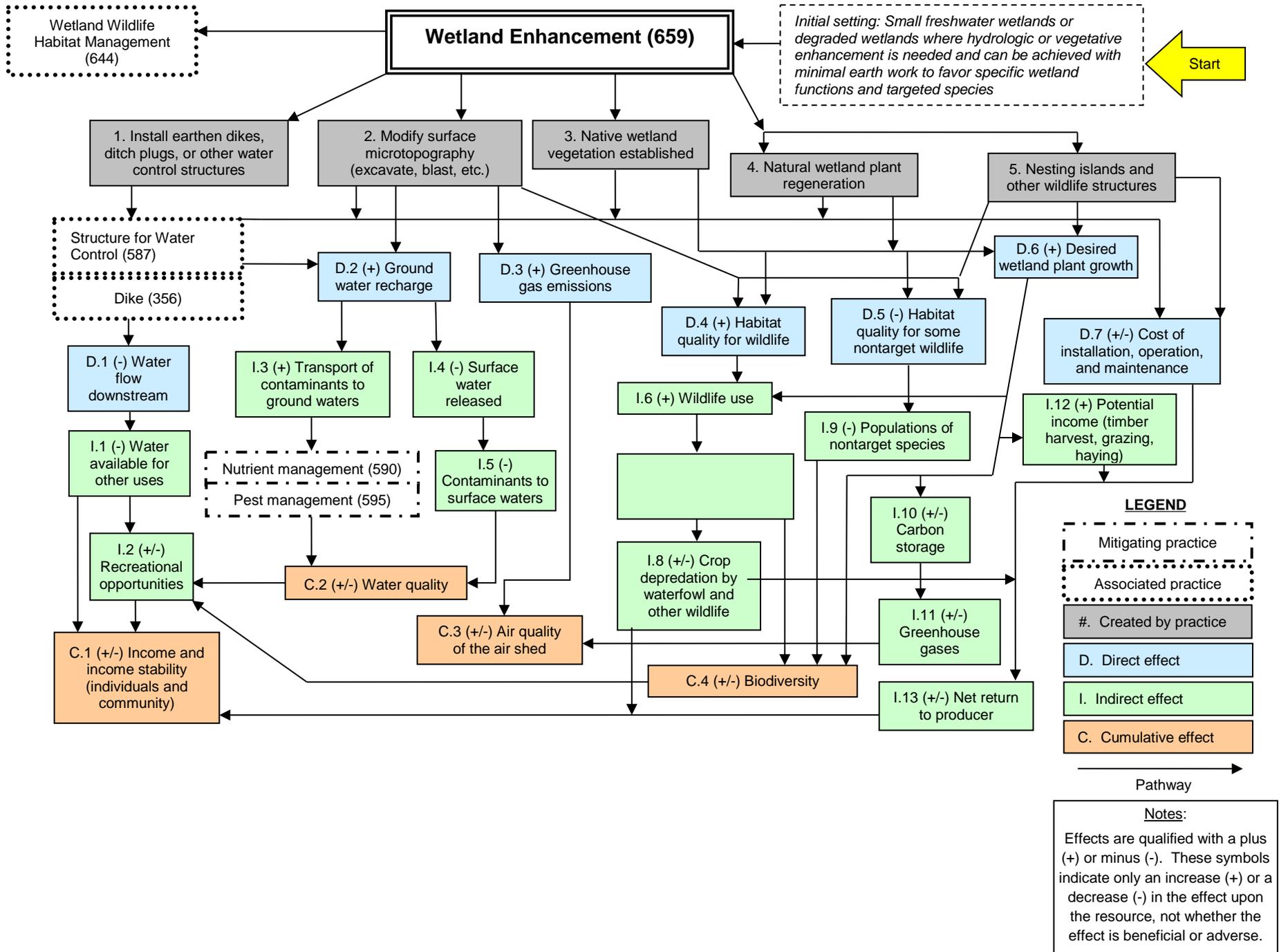
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



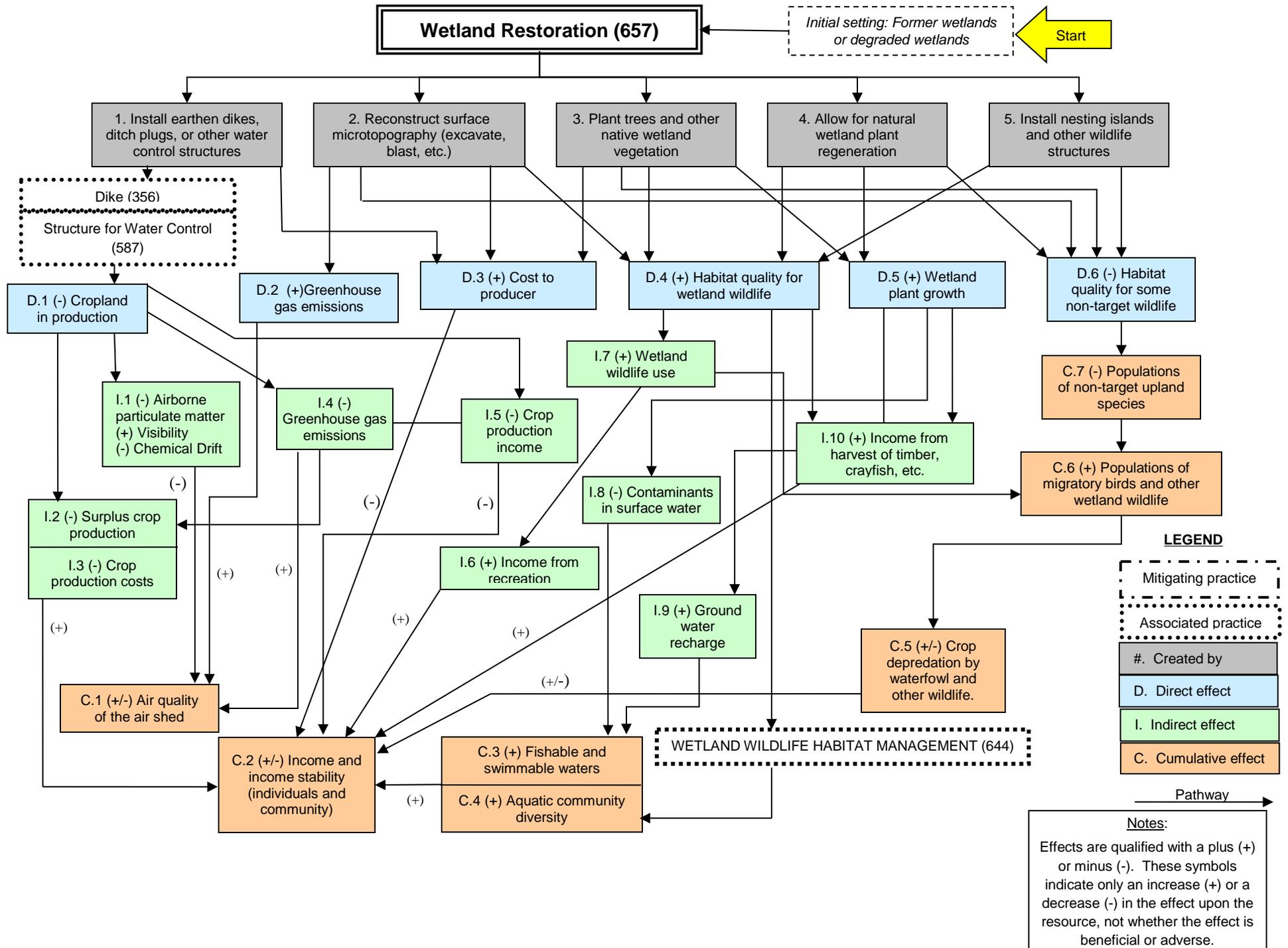
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



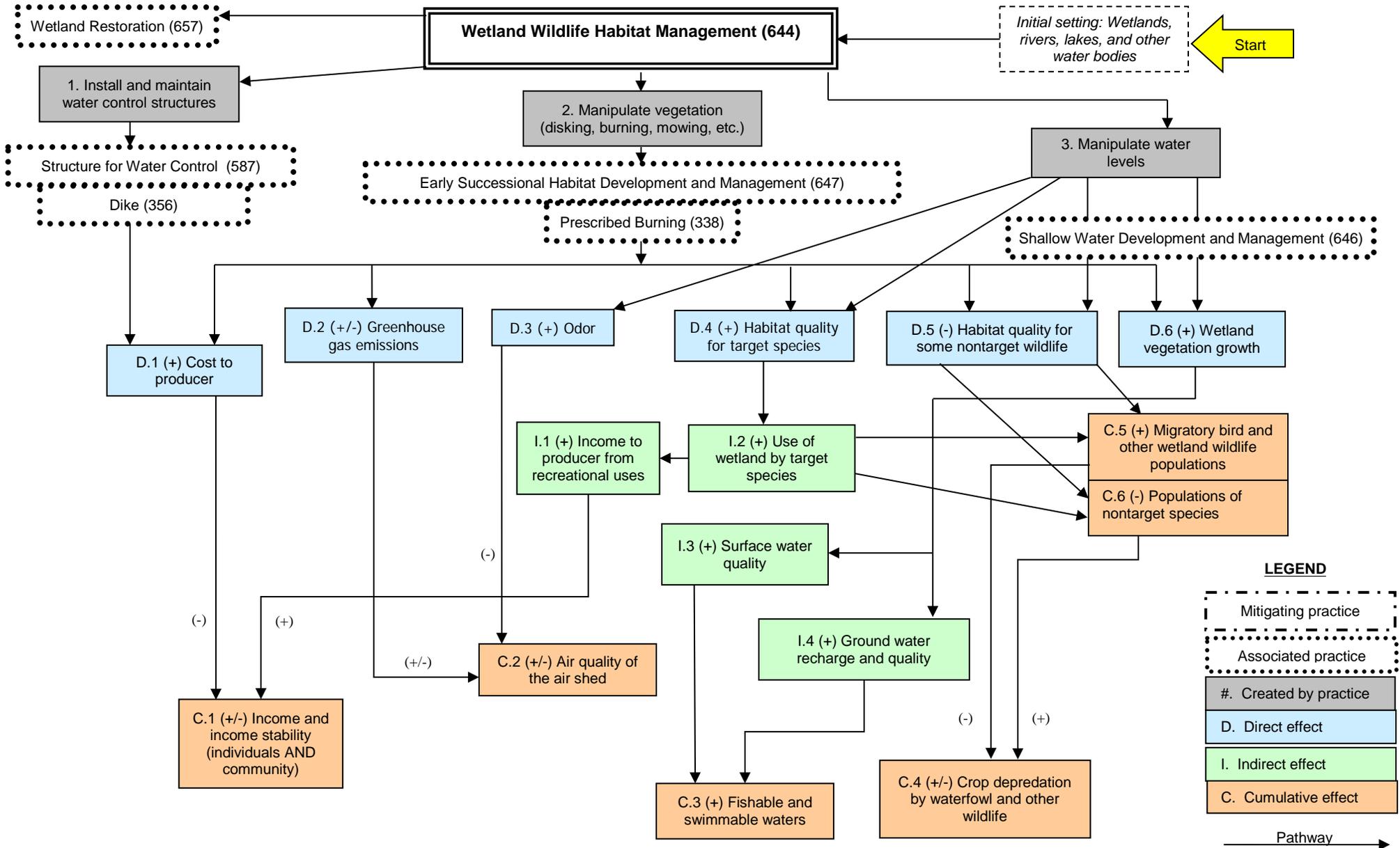
NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014

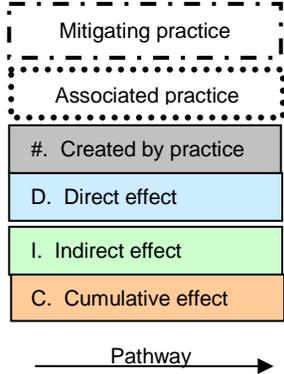


NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014



LEGEND



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NRCS CONSERVATION PRACTICE EFFECTS - NETWORK DIAGRAM

March 2014

