

UTAH'S WETLAND PROGRAM PLAN 2011 - 2016

Version 3

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Preliminary version submitted to EPA 29 November, 2010
Version 3 submitted to EPA December, 2013

UTAH'S WETLANDS PROGRAM PLAN: 2011-2016

PURPOSE OF WETLAND PROGRAM PLANNING

The Wetland Division of the Environmental Protection Agency (EPA) has encouraged the development of wetland program plans to guide the direction of activities related to the Core Elements of a State or Tribal Wetland Program¹. EPA's Core Elements Framework was designed to help States and Tribes develop comprehensive wetlands programs based on a common set of program objectives. The four "Core Elements" of an effective wetland program include: Monitoring and Assessment; Regulation (including §401 certification); Voluntary Restoration and Protection; and Water Quality Standards for wetlands. Outreach and partnership development activities are integrated into all wetland programs. Each Core Element is comprised of one or more 'Objectives', a set of program-building 'Actions', and a menu of 'Activities' that advance program development. Utah Geological Survey (UGS) and Utah Division of Water Quality (UDWQ) created this Wetland Program Plan to define state wetland program objectives and develop projects that support agency objectives.

The purpose of this Wetland Program Plan (WPP) is to guide UGS and UDWQ's wetland program development activities over the next five years, and serve as a tool for communication and collaboration with other state and federal agencies, and non-governmental groups involved in wetland research, conservation, and protection. This plan will be used by UGS and UDWQ to secure financial resources, gain stakeholder acceptance, and organize partnerships to complete a wide range of statewide program development tasks. While the schedule is aggressive, progress is contingent on our continued ability to secure the necessary resources. This plan will be updated regularly by UGS and UDWQ in response to discussions with state, federal, and non-governmental partners, and will ultimately be incorporated into a more comprehensive statewide Wetland Conservation Strategy.

SUMMARY OF UTAH WETLAND PROGRAM GOALS

State agencies involved in Utah's wetland program are focused on developing an integrated wetland program that will improve wetland conservation, management, and protection efforts statewide. Both UGS and UDWQ are working to coordinate a comprehensive strategy for monitoring and managing wetlands consistent with state environmental and natural resource goals. Current efforts are focused toward developing a portfolio of scientifically validated tools to describe the abundance, health, and function of wetlands. These tools will be incorporated into wetland monitoring protocols, with the ultimate goal of assessing the ambient condition of approximately 10% of the state's wetlands per year. Wetland condition information will be made available to state and federal agencies to improve understanding of baseline wetland conditions, develop benchmarks for wetlands restoration and mitigation, prioritize wetland restoration and protection activities, and inform the development of wetland-specific water quality standards.

¹ EPA's Core Elements Framework (2009) outlines a strategic approach for states to build a comprehensive wetland program, based on a common set of program objectives. See: www.epa.gov/wetlands/initiative/pdf/cef_full.pdf, accessed March 24, 2010.

There are four main components to Utah's Wetlands program:

1. Develop scientifically valid and successfully tested approaches to evaluating the extent, abundance, and condition of Utah's various wetland systems
2. Develop a sustainable strategy to update spatial data of wetland resources in the state
3. Integrate wetlands into state water quality management and regulatory programs through the development of wetland water quality standards (WQSs)
4. Build the scientific information needed to characterize how wetland ecosystems function (i.e. how they "work") and how they respond to natural disturbance and management practices

This version (December, 2013) includes an update to UGS and UDWQ wetland program goals and activities, for 2014 to 2016. A revision of this *Wetland Program* Plan is scheduled for 2014, and will include objectives and projects from additional wetland partners.

Integrated timeline of actions supporting Utah's Wetlands Program

The following timeline provides an overview of major wetland projects to be pursued by UGS and UDWQ's Wetland Programs from 2011 to 2016. We highlight how these projects are integrated with specific actions and activities from the Core Elements Framework. Names in brackets indicate the program lead for major wetland projects. Three figures follow the text, illustrating the major projects to be proposed and completed by wetland program partners.

MAJOR PROJECTS: Year 1 (2011)

1. Evaluate the ability of two rapid assessment methods (RAM) to measure wetland condition and adapt a RAM model for Great Salt Lake (GSL) wetlands [UGS]
2. Expand hydrogeomorphic (HGM) reclassification of currently available National Wetlands Inventory (NWI) data for GSL wetlands, and obtain high resolution digital elevation data for spatial analysis of wetland geomorphology [UGS]
3. Characterize the quantity and quality of desert-basin spring-fed wetlands in Snake Valley, and relate the wetland hydrologic functions that support wetland condition to wetland-associated wildlife habitat and other ecosystem services [UGS]
4. Compile and evaluate 2011 GSL impounded wetland data to evaluate the effects of flooding on water quality indicators as part of the preliminary Multi-Metric Index (MMI) that uses multiple lines of evidence to quantify the condition of impounded Great Salt Lake (GSL) wetlands [UDWQ]
5. Design a survey to report the ecological condition of GSL impounded wetlands (50 randomly selected sites) [UDWQ]
6. Develop a Sampling Analysis Plan and Standard Operating Protocols for GSL impounded wetlands [UDWQ]
7. Initiate Great Salt Lake's Willard Spur Research Program designed to establish defensible protections (site specific numeric criteria, antidegradation protection clauses and beneficial use changes) for the Willard Spur wetlands. Year 1 activities include establishing a steering committee and science panel, developing a conceptual model, creating a sampling plan and collecting and analyzing data to characterize baseline conditions, and developing the research plan [UDWQ]
8. Benchmark with effective 401 programs developed by other states and develop draft rules for Utah's 401 certification program [UDWQ]

ELEMENT #1 - MONITORING AND ASSESSMENT

OBJECTIVE 1 - DEVELOP M&A STRATEGY TO MANAGE WETLAND OBJECTIVES

Identify program decisions and long-term environmental outcomes that benefit from wetlands M&A program

- As part of the continuing WPP process, UGS and UDWQ will meet with state and federal agencies and non-governmental wetlands-focused groups to clearly define the state's overall wetlands monitoring goals
- Identify where and how wetlands data can be used to assist in the implementation of watershed planning efforts

- Identify UDWQ programs that will use the monitoring data

Define wetlands monitoring objectives and strategies

- Identify data needs based on wetland monitoring objectives (e.g. rationale and goals for completing a state-wide inventory of wetland abundance)
- Coordinate with the most relevant partners, develop new partnerships

Develop monitoring design (approach and rationale) for site selection

- Document classification scheme to stratify wetlands by type, describe site selection process, and obtain spatial data on the domain of potentially sampled sites
- Describe site-selection process for GSL impounded wetlands

Select core set of indicators to represent wetland condition

- Through testing of rapid assessment methods, identify indicators relevant to monitoring objectives and confirm that indicators are scientifically (and ecologically) defensible
- Further develop and refine field methods for wetland condition assessment, and consider supplemental indicators when adapting assessment methods

OBJECTIVE 2 - IMPLEMENT A SUSTAINABLE MONITORING PROGRAM

Ensure scientific validity of monitoring activities

- Draft and peer review the Sampling Analysis Plan for GSL impounded wetlands

Monitor wetland resources by the development of the monitoring tools and specific wetland studies as specified in the strategy

- Identify and train staff to monitor for each indicator for GSL impounded wetlands
- Develop a schedule for monitoring GSL impounded wetlands

Track monitoring data in a system that is accessible, updated on a timely basis, and integrated with other water quality data

- Design data management system to support project objectives

Analyze monitoring data to evaluate wetlands extent and condition/function to inform decision making

- Document data analysis and assessment procedures for GSL impounded wetlands
- Refine assessment methods to determine condition for GSL impounded wetlands

ELEMENT #2 – REGULATORY PROGRAM DEVELOPMENT

OBJECTIVE 2 – ADMINISTER REGULATORY ACTIVITIES EFFICIENTLY AND CONSISTENTLY

Adopt regulation or rules to implement state water quality standards

- Adopt rules and guidance that identifies UDWQ's goals and responsibilities for the 401 certification program

Develop procedures to operate according to a clear and effected set or criteria for reviewing and responding to applications

- Develop application criteria, timelines and procedures for the 401 certification program

Coordinate among agencies, programs and industry groups to reduce duplicative efforts by the programs and regulated public

- Develop system for review of 404/401 applications amongst state agencies

OBJECTIVE 3 – PERFORM PUBLIC EDUCATION AND OUTREACH ABOUT WETLAND PROTECTION, REGULATED WATERS, ACTIVITIES AND AUTHORIZATION PROCESS

Make wetland monitoring, assessment and 401 certification program outreach documents and activities available on a website

ELEMENT #3 - VOLUNTARY RESTORATION AND PROTECTION

OBJECTIVE 1 - CLEARLY DEFINE RESTORATION AND PROTECTION GOALS

Establish compatible goals across agencies

- Through meetings with state and non-governmental wetland partners, coordinate discussion of goals, strategies, and priorities for wetlands conservation and protection
- Develop pilot projects focused on RAM development and collect information on wetland extent, type, and condition

MAJOR PROJECTS: Year 2 (2012)

1. Continue RAM testing and adaptation, and analysis of wetland geomorphology [UGS]
2. Develop survey design and sampling procedures to assess wetland abundance and condition of desert basin spring-fed wetlands [UGS]
3. Initiate pilot project to identify conservation opportunities and assess condition of priority wetlands within watersheds of local and state interest (e.g. Bear River watershed) [UGS]
4. Collect and analyze data from 50 randomly selected GSL impounded wetlands to determine average condition and key stressors [UDWQ]
5. Augment and test the existing MMI for impounded GSL wetlands [UDWQ]
6. Initiate Level III monitoring and assessment program of the GSL fringe class wetlands by developing a reference network of sites along a gradient of human caused disturbance [UDWQ]
7. Develop guidance documents, applications and outreach materials for Utah's 401 certification program [UDWQ]
8. Continue GSL Willard Spur Research Program. Year 2 activities include initiating studies that cover the 3 research areas: food web, water and nutrient budgets, and eutrophication responses. [UDWQ]

ELEMENT #1 - MONITORING AND ASSESSMENT

OBJECTIVE 1 - DEVELOP M&A STRATEGY TO MANAGE WETLAND OBJECTIVES

Identify program decisions and long-term environmental outcomes that benefit from wetlands M&A program

- Continue communication with wetland partners to identify use of wetlands monitoring data, collaborate with state water quality programs, and identify how these data assist watershed

planning efforts

Define wetlands monitoring objectives and strategies

- Identify current data needs based on progress completing wetland monitoring objectives

Develop monitoring design (approach and rationale) for site selection

- Document and update wetlands classification scheme and site selection processes

Select core set of indicators to represent wetland condition

- Analyze results from RAM testing, including whether indicators are ecologically relevant and scientifically defensible; continue development of field methods

OBJECTIVE 2 - IMPLEMENT A SUSTAINABLE MONITORING PROGRAM

Ensure scientific validity of monitoring activities

- Draft and peer review Quality Assurance Project Plan
- Select, prioritize, and review candidate assessment indicators for spring-fed wetlands

Monitoring wetland resources

- Verify monitoring strategy by planning and conducting pilot projects, through evaluation of wetlands in other eco-regions and physiographic provinces
- Identify and train staff to monitor for each indicator for GSL fringe wetlands
- Develop a schedule for monitoring GSL fringe wetlands

Establish reference condition

- Define reference condition for GSL Fringe class wetlands and select sites using a systematic approach

Track monitoring data

- Design a data management system supporting program objectives, including data on wetland condition and spatial data of wetland abundance
- Administer and update data system

Analyze wetland data

- Establish baseline wetland condition for GSL palustrine emergent wetlands and targeted spring wetlands in Snake Valley
- Analyze and report on condition of GSL impounded wetlands in Utah's Integrated report

ELEMENT #2 – REGULATORY PROGRAM DEVELOPMENT

OBJECTIVE 2 – ADMINISTER REGULATORY ACTIVITIES EFFICIENTLY AND CONSISTENTLY

Adopt regulation or rules to implement state water quality standards

- Adopt rules and guidance that identifies UDWQ's goals and responsibilities for the 401 certification program

Develop procedures to operate according to a clear and effected set or criteria for reviewing and responding to applications

- Develop application criteria, timelines, and procedures for the 401 certification program

Coordinate among agencies, programs and industry groups to reduce duplicative efforts by the programs and regulated public

- Develop system for review of 404/401 applications amongst state agencies

ELEMENT #3 - VOLUNTARY RESTORATION AND PROTECTION

OBJECTIVE 1 - CLEARLY DEFINE RESTORATION AND PROTECTION GOALS

Consider multiple objectives when selecting restoration/protection sites

- Collaborate with local governmental agencies and non-governmental groups on prioritizing wetlands within pilot project areas

MAJOR PROJECTS: Year 3 (2013)

1. Finalize testing of three rapid assessment methods in GSL and Snake Valley wetlands and develop Great Basin rapid condition assessment protocol [UGS]
2. Host Region 8 Wetland Program Capacity Building Workshop (fall) [UGS & UDWQ]
3. Launch the Utah Wetland Information Center, providing a clearinghouse for WPDG-supported reports, a platform for access to spatial wetland data, and other useful wetland-related materials [UGS]
4. Continue watershed-focused pilot projects identifying priority wetlands [UGS]
5. Initiate a multi-agency pilot that expands the base of wetland conservation targets through sustainable, hierarchical mapping of wetlands and riparian areas in state priority watersheds; Phase I [UGS]
6. Initiate basin-wide survey of the Upper and Lower Weber River watersheds to develop a profile of wetland resources in the basin [UGS]
7. Initiate wetland geomorphology analyses for GSL wetlands [UGS]
8. Finalize the MMI for GSL impounded wetlands [UDWQ]
9. Level III monitoring of the GSL fringe class wetlands by collecting physical, chemical, and biological data for applicability as indicators of wetland condition [UDWQ]
10. Develop draft rules, guidance documents, applications and outreach materials for Utah's 401 certification program [UDWQ]
11. Continue GSL Willard Spur Research Program by conducting research to develop the food web, water quality and nutrient budgets, and eutrophication responses. [UDWQ]
12. Begin preliminary study of using constructed wetlands or other mitigation efforts to help manage pollutant loading into GSL wetlands. [UDWQ]

ELEMENT #1 - MONITORING AND ASSESSMENT

OBJECTIVE 1 - DEVELOP M&A STRATEGY TO MANAGE WETLAND OBJECTIVES

Define wetlands monitoring objectives and strategies

- Coordinate with state, federal and local agencies, and regional workgroups to update data needs and uses for wetland monitoring near GSL, within desert basins, and other priority watersheds

Develop monitoring design and approach for site selection

- Define wetland classification & mapping scheme for new wetlands data based on available data
- Identify watersheds of interest to state, federal and local partners

Select core set of indicators to represent wetland condition

- Analyze RAM results of wetland condition across a gradient of reference sites, and consider the relevance of indicators toward assessing wetland condition
- Continue to develop and refine field methods for wetland condition assessment

OBJECTIVE 2 - IMPLEMENT A SUSTAINABLE MONITORING PROGRAM

Ensure scientific validity of monitoring activities

- Draft and peer review Quality Assurance Project Plan

Monitor wetland resources

- Verify monitoring strategy through pilot projects characterizing wetland abundance and condition in other eco-regions and physiographic provinces in Utah

Establish reference condition

- Analyze RAM results across a previously described reference network
- Define and document reference condition and reference standard condition, and determine how sites representing reference standard condition will be examined

Track monitoring data

- Administer and update data system

Analyze wetland data

- Develop multi metric index for GSL Fringe class wetlands

ELEMENT #2 – REGULATORY PROGRAM DEVELOPMENT

OBJECTIVE 2 – ADMINISTER REGULATORY ACTIVITIES EFFICIENTLY AND CONSISTENTLY

Adopt regulation or rules to implement state water quality standards

- Adopt rules and guidance that identifies UDWQ's goals and responsibilities for the 401 certification program

Develop procedures to operate according to a clear and effected set or criteria for reviewing and responding to applications

- Develop application criteria, timelines and procedures for the 401 certification program

Coordinate among agencies, programs and industry groups to reduce duplicative efforts by the programs and regulated public

- Develop system for review of 404/401 applications amongst state agencies

MAJOR PROJECTS: Year 4 (2014)

1. Continue basin-wide survey of the Upper and Lower Weber River watersheds to develop a profile of wetland resources in the basin [UGS]
2. Initiate basin-wide survey of the Jordan River watershed to develop a profile of wetland resources in the basin [UGS]
3. Reference Network Development: RAM calibration and model modifications as necessary [UGS]
4. Continue multi-agency pilot identifying new wetland conservation targets in priority watersheds [UGS]
5. Develop outreach materials detailing unique and valuable wetland resources in the state [UGS]
6. Finalize and report on wetland geomorphology analyses for GSL wetlands [UGS]
7. Initiate additions to the Utah Wetland Program Plan including input from additional partners [UGS and UDWQ]
8. Initiate multi-agency working group to guide update of spatial wetland information in the state [UGS and UDWQ]
9. Initiate wetland stakeholder working group to guide development of wetland water quality standards, including stakeholder-defined wetland beneficial uses and wetland values [UDWQ and UGS]
10. Incorporate Level-2 condition & stressor metrics into impounded wetland assessment tools [UDWQ]
11. Collect and analyze data from targeted GSL fringe wetlands to identify appropriate response metrics and key stressors [UDWQ]
12. Outline plan for development of Multimetric Index for GSL fringe wetlands and incorporation of results into Utah's *Integrated Report* (§305(b)) [UDWQ]
13. Report condition of GSL impounded wetlands in Utah's §305(b) *Integrated Report* [UDWQ]
14. Continue data analysis for GSL Willard Spur Research Program, create project technical reports, and report on needs for site-specific water quality standards to Willard Spur Science Panel [UDWQ]

ELEMENT #1 - MONITORING AND ASSESSMENT**OBJECTIVE 1 - DEVELOP M&A STRATEGY TO MANAGE WETLAND OBJECTIVES****Identify program decisions and long-term environmental outcomes that benefit from wetlands M&A program**

- Continue partnerships and collaborations with state and federal agencies and non-governmental groups, focused on wetlands monitoring, conservation and protection
- Evaluate progress in wetlands program toward watershed planning efforts

Define wetlands monitoring objectives and strategies

- Continue partnerships with wetlands groups to refine monitoring objectives and strategies

Select core set of indicators to represent wetland condition

- Analyze RAM results of wetland condition across reference network, and consider the relevance of indicators toward assessing wetland condition in new wetland types
- Continue to develop and refine field methods for assessment of wetland condition

- Confirm that indicators are scientifically defensible

OBJECTIVE 2 - IMPLEMENT A SUSTAINABLE MONITORING PROGRAM

Ensure scientific validity of monitoring activities

- Draft and peer review Quality Assurance Project Plan
- Select, prioritize, and review candidate assessment indicators

Monitor wetland resources

- Develop plan to verify monitoring strategy through pilot projects assessing wetland condition in other eco-regions and physiographic provinces

Establish reference condition

- Continue to refine the data supporting a reference network for wetland condition

Track monitoring data

- Collect numerical and spatial data on wetland abundance and condition as it is gathered

Analyze monitoring data to evaluate wetland extent and condition

- Establish baseline wetland condition within pilot project areas
- Document data analysis and assessment procedures for GSL fringe wetlands
- Refine assessment methods to determine condition for GSL fringe wetlands

ELEMENT #3 - VOLUNTARY RESTORATION AND PROTECTION

OBJECTIVE 1 - CLEARLY DEFINE RESTORATION AND PROTECTION GOALS

Consider multiple objectives when selecting restoration/protection sites

- Continue governmental and non-governmental partnerships in prioritizing wetlands by class and condition for conservation, restoration, and protection

ELEMENT #4 – WATER QUALITY STANDARDS FOR WETLANDS

OBJECTIVE 1 – Ensure wetlands treated as waters within state water quality programs

Ensure an appropriate wetlands definition is included in WQS

- Develop relationships with wetland-focused stakeholders through the initiation of wetland WQS working group
- Begin dialog with working group on defining wetland boundaries and values, including potential beneficial use classes

MAJOR PROJECTS: Year 5 (2015)

1. Finalize and report on basin-wide survey of the Upper and Lower Weber watersheds [UGS]
2. Continue basin-wide survey of the Jordan River watershed to develop a profile of wetland resources

in the basin [UGS]

3. Reference Network Development: RAM calibration and model modifications as necessary [UGS]
4. Verify the modified RAM against an independent collection of sites [UGS]
5. Continue multi-agency pilot identifying new wetland conservation targets in priority watersheds [UGS]
6. Continue development and refinement of GSL fringe and impounded wetland assessment tools [UDWQ]
7. Design probabilistic survey for GSL fringe wetlands [UDWQ]
8. Begin feasibility study of using constructed wetlands or other mitigation efforts to help manage pollutant loading into GSL wetlands [UDWQ]
9. Finalize analysis & reporting from GSL Willard Spur Research Program, with recommendations protective of Willard Spur made by the Science Panel to the Steering Committee [UDWQ]
10. Develop plan for wetland WQs, including designated (beneficial) uses of major wetland classes and evaluation of data needs supporting numeric and narrative criteria for wetlands [UDWQ]
11. Build on Willard Spur site-specific WQS work to experimentally examine wetland response to nutrient loading from point-source discharges and estimate assimilative capacity [UDWQ]

ELEMENT #1 - MONITORING AND ASSESSMENT

OBJECTIVE 1 - DEVELOP M&A STRATEGY TO MANAGE WETLAND OBJECTIVES

Define wetlands monitoring objectives and strategies

- Analyze results of RAM validation, including RAM model structure and responsiveness of indicators of wetland condition
- Confirm that indicators are scientifically defensible
- Continue to develop and refine field methods and sampling strategies

OBJECTIVE 2 - IMPLEMENT A SUSTAINABLE MONITORING PROGRAM

Monitor wetland resources

- Verify monitoring strategy and assessment methods through pilot projects in other eco-regions and physiographic provinces

ELEMENT #4 – WATER QUALITY STANDARDS FOR WETLANDS

OBJECTIVE 2 – Develop wetland-specific water quality standards

Gather and analyze monitoring data as basis of WQS

- Define wetland classes and reference conditions, including assessment endpoints

Establish and adopt appropriate wetland-specific designated uses

- Define wetland beneficial use classes through wetland-WQS working group

MAJOR PROJECTS: Year 6 (2016)

1. Finalize and report on basin-wide survey of the Jordan River watershed [UGS]
2. Continue assessment of montane-spring wetlands [UGS]
3. Continue multi-agency pilot identifying new wetland conservation targets in priority watersheds [UGS]
4. Finalize and submit changes to the Utah Wetland Program Plan based on input from local, state, and regional partners [UGS and UDWQ]
5. Field sampling and analysis of probabilistic survey of GSL fringe wetlands [UDWQ]
6. Continue refinement of GSL impounded wetland assessment tools [UDWQ]
7. Report condition of GSL impounded and fringe wetlands in Utah's *Integrated Report* [UDWQ]
8. Focus efforts to develop wetland specific standards for GSL fringe class and impounded wetlands [UDWQ]
9. Continue experimental wetland work on biological and functional responses to nutrient loading from point-source discharges [UDWQ]

ELEMENT #1 - MONITORING AND ASSESSMENT**OBJECTIVE 2 - IMPLEMENT A SUSTAINABLE MONITORING PROGRAM****Monitor wetland resources**

- Utilize a probabilistic sampling scheme of GSL-wetlands to evaluate wetland condition using the modified RAM model.
- Develop strategy for sustainable monitoring wetlands within GSL basins
- Incorporate results into a wetland monitoring database

Track monitoring data

- Georeference data as it is gathered for reporting
- Identify sites for repeated sampling for incorporation into a trend analysis network

Analyze monitoring data

- Document data analysis and assessment procedures
- Develop assessment method to determine condition thresholds relative to reference standard condition

ELEMENT #4 – WATER QUALITY STANDARDS FOR WETLANDS**OBJECTIVE 2 – DEVELOP WETLAND SPECIFIC WATER QUALITY STANDARDS****Gather and analyze monitoring data and other information as basis for WQS**

- Establish Reference Condition for defined wetland types

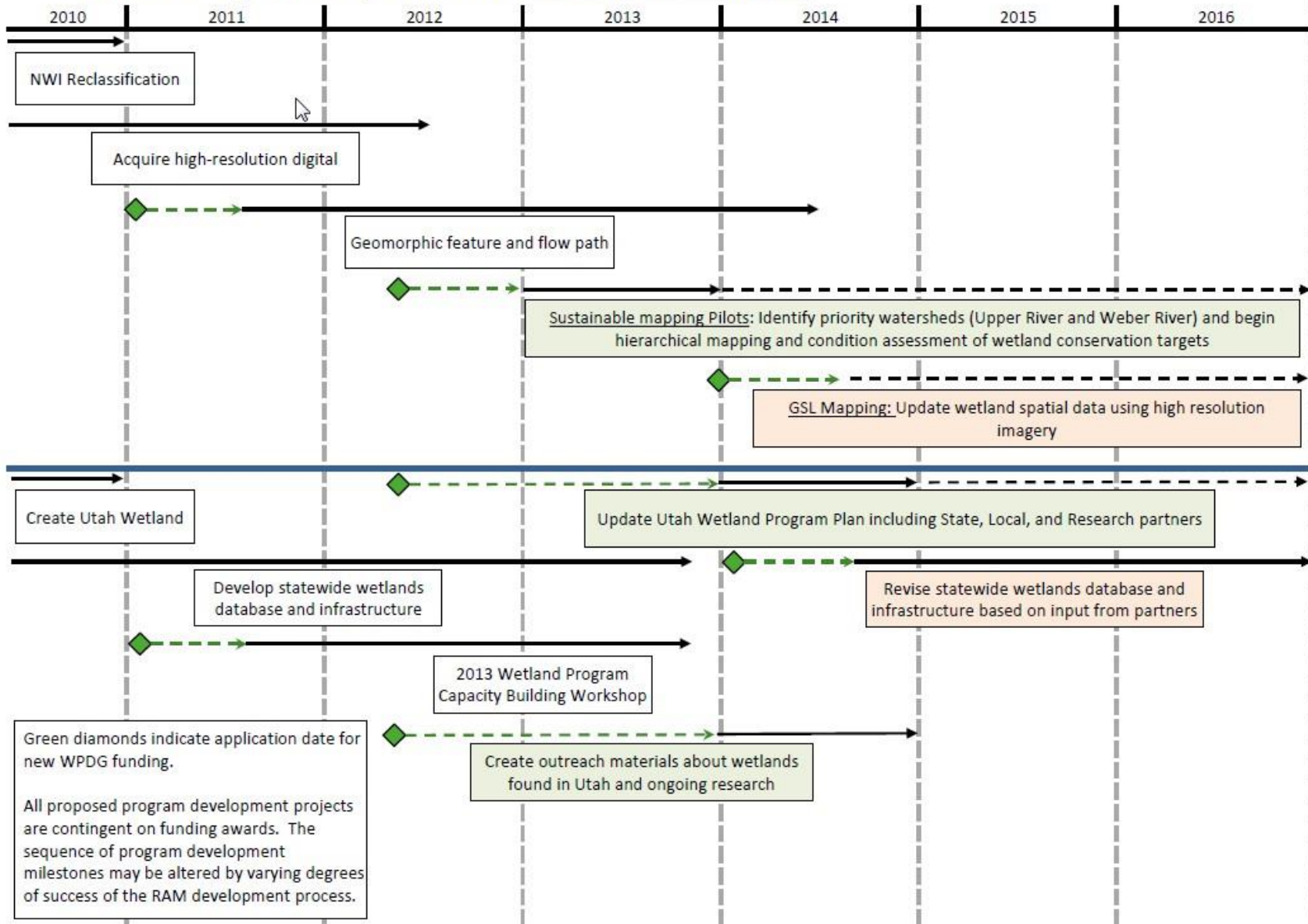
Establish and adopt wetland specific designated uses to be achieved and protected

- Establish and map designated uses for different wetland types for GSL wetlands

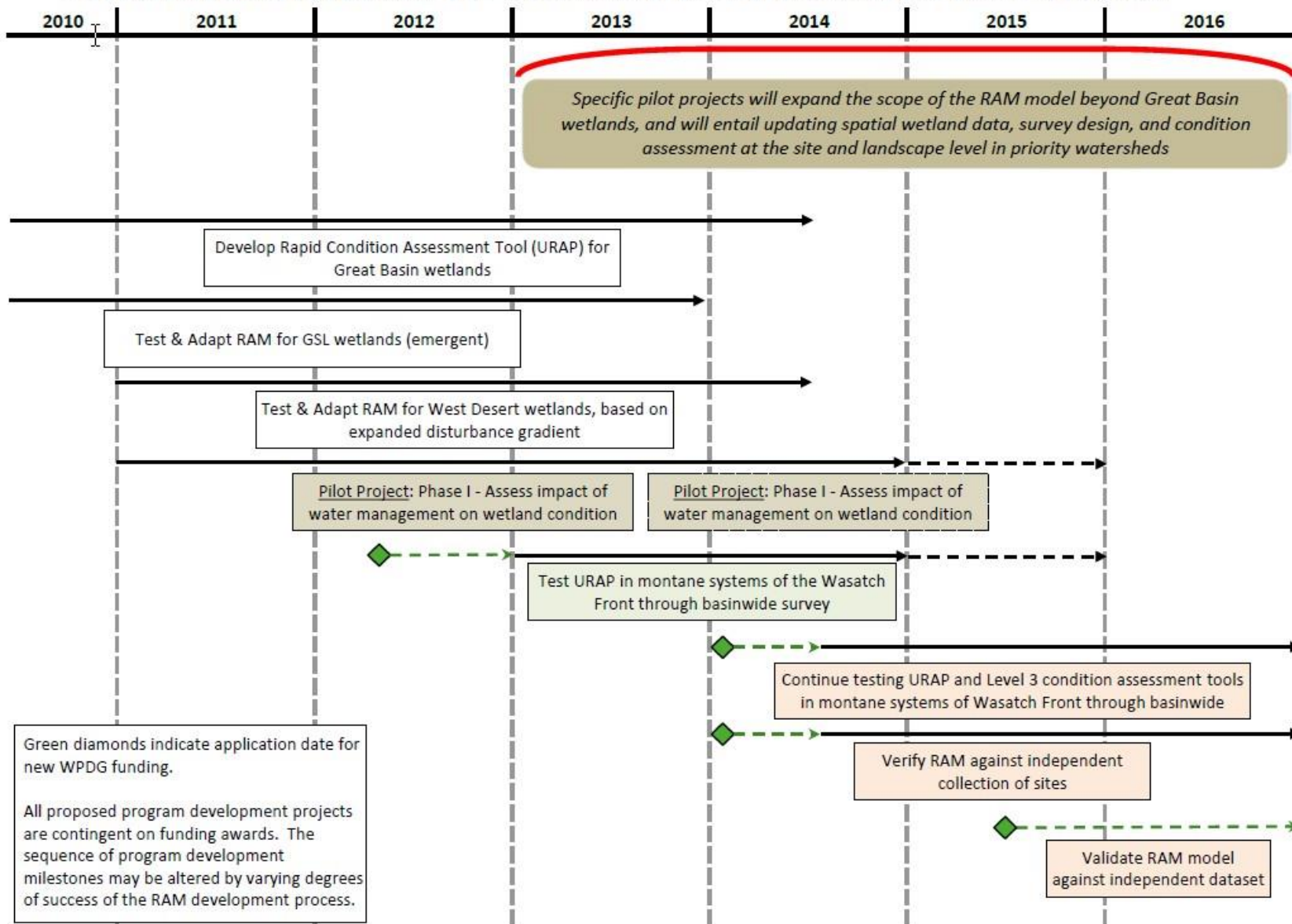
Establish and adopt narrative criteria that quantitatively describes the condition or suite of functions that must be achieved to support a designated use

- Establish narrative biological criteria for GSL Wetlands
- Develop technical documents to support the narrative criteria with numeric criteria for GSL wetlands

Wetlands Program Component: UGS - Mapping and Outreach



Wetlands Program Component: UGS - Assessment Tools Development and Basinwide Surveys



Wetland Program Plan: **UDWQ** - Assessment Tools for Great Salt Lake Wetlands and Program Development

