Permanence Work Program Document

September 3, 2025

Section 1 of this document summarizes the current definition of permanence and the scope of affected protocols. Section 2 identifies the current approach to permanence. Section 3 describes the intended work program.

1. Definition and Scope

1.1. Definition

The Reserve defines "permanence" as being equivalent to the radiative forcing benefits of removing carbon dioxide from the atmosphere for 100 years, per section 2.10 of its program manual.

1.2. Scope

The Reserve's protocols regard permanence as a concern for projects that reduce or remove emissions by storing them in a reservoir (e.g., trees or other organic materials), given the risk that these emissions, after being credited, could later be released into the atmosphere.

In contrast, the Reserve's protocols do not regard permanence as a concern for projects that reduce or remove emissions by:

- Destroying them (e.g., industrial processes, waste handling); or
- Providing alternatives to activities that release emissions stored in reservoirs (e.g., renewable energy, cookstoves).

Of the Reserve's 30 approved protocols, ten of them issue credits for projects that store carbon in a reservoir:

- Six forestry protocols, including three applicable to the United States (forest, urban forest management, urban tree planting) and three applicable to Latin America and the Caribbean (Guatemala, Mexico, Panama);
- Two grasslands protocols (United States, Canada);
- One soil enrichment protocol (United States); and

- One biochar protocol (United States and Canada).

This document considers the latest versions of these ten protocols.

This document, and the broader work program, consider permanence in the voluntary carbon market, rather than the treatment of permanence of carbon credits used in compliance programs (e.g., California cap-and-trade).

2. Current Approach

The Reserve applies two mechanisms for addressing permanence: a permanence commitment by the project owner, and a buffer pool administered by the Reserve.

2.1. Permanence Commitment

(a) General

The Reserve requires a project owner (i.e., the organization or individual representing the owner of the land where the project is located) to accept a permanence commitment. This commitment has two broad components.

First, the project owner must monitor and verify the project. This includes monitoring of onsite carbon stocks and submitting regular third-party verification of these monitoring reports, which may include periodic site visits.

Second, the project owner must compensate for any "avoidable reversal" from the project, including:

- Any failure by the project owner to meet its monitoring and verification obligation; or
- Any release of emissions from the project that arises from the project owner's negligence, gross negligence, or willful intent.

Compensation for an avoidable reversal requires the project owner to cancel a number of carbon credits equivalent to the released emissions.

The project owner's permanence commitment lasts throughout the project's crediting period (which can run for up to 100 years) and up to 100 years after the end of the crediting period.

Chart 1 below sets out the total length of the permanence commitment by protocol.

Chart 1: Length of permanence commitment by protocol

	Length of Permanence Commitment		
Protocol	**Crediting Period (Maximum)**	**Post-Crediting Period**	**Total**
United States forestry (forest, urban forest management, urban tree planting)	100 years	100 years after last credit is issued	200 years
Latin America and the Caribbean forestry (Guatemala, Mexico, Panama)	100 years	100 years after last credit is issued	200 years
United States Grasslands	50 years	100 years after last credit is issued	150 years
Canada Grasslands	30 years	100 years after last credit is issued	130 years
United States Soil Enrichment	30 years	100 years after last credit is issued	130 years
United States & Canada Biochar	30 years	None, refer to note below	30 years

(b) Shorter Permanence Commitments

In certain protocols, the portion of a permanence commitment after the end of the crediting period can be shortened so that it is less than 100 years, as noted below.

Biochar

One protocol—United States & Canada biochar—has no permanence commitment after credit issuance. For these projects, permanence is ensured through the eligible end use(s) of the biochar, as identified in the protocol's "Eligible Biochar End Uses List". As credits are issued only for end-uses where there is a reasonable level of certainty about the long-term

fate of the applied biochar, no permanence commitment is required after the crediting period.

Tonne-year accounting

Five protocols—the three Latin America and the Caribbean forestry protocols (Guatemala, Mexico, Panama), Canada grasslands, and United States soil enrichment—enable shorter permanence commitments after the end of the crediting period, via tonne-year accounting.

The principle of tonne-year accounting is that a project is credited not for the quantity of emissions that it reduces or removes in a specific year, but for the time-value of those emissions as a percentage of 100 years. (The Reserve takes a linear approach in tonne-year accounting, calculating each year as one percent.)

For example, under conventional tonne-tonne accounting, a project that reduces or removes 100 tonnes of carbon dioxide in year 1 would be issued 100 credits for year 1. In contrast, under tonne-year accounting, the same project would be issued 1 credit for year 1 (i.e., 100 tonnes x 1 year / 100 years) but would receive an additional credit for each year that these 100 tonnes remain sequestered. Eventually, the total number of credits issued under tonne-year accounting would be identical to the number issued under tonne-tonne accounting.

If a project wishes to select a shorter permanence commitment than 100 years, it can use tonne-year accounting to adjust the number of credits that it receives. For example, if a project selects a 30-year permanence commitment, it can multiply the number of credits that it receives in year 1 by 30, thereby receiving 30 credits in year 1. Each protocol specifies a minimum number of years of the permanence commitment.

To date, tonne-year accounting has been most widely used for Mexico forestry projects. Under this protocol, the project owner may select a permanence commitment of 30 years, but is invited to renew this commitment annually, effectively increasing the length of its permanence commitment by one year each year. This approach provides project owners with a long-term economic incentive to continue with their projects, as it allows them to receive credits for prior years corresponding to this extension of the permanence commitment.

2.2. Buffer Pool

(a) General

The Reserve administers a buffer pool to help ensure permanence.

The buffer pool requires projects that store carbon in a reservoir to contribute a percentage of each issuance of carbon credits. These contributions reflect a project-specific risk rating as described in the applicable protocol, and can be up to 35% of an issuance. These contributions are deposited into an account on the Reserve's registry.

In the event of an "unavoidable reversal", defined as any reversal that is not an avoidable reversal and includes, for example, wildfires or disease, the Reserve will cancel a number of buffer pool credits corresponding to the reversal. The Reserve may also cancel buffer pool credits for avoidable reversals if the project owner fails to compensate for these reversals.

Chart 2 below sets out the range of buffer pool contributions by protocol.

Chart 2: Range of buffer pool contributions

Protocol	**Range of Contribution**
United States Forest	15–35%
United States Urban Forest Management	6%
United States Urban Tree Planting	6%
Latin America and the Caribbean forest (Guatemala Forest, Mexico Forest, Panama Forest)	15–35%
United States Grasslands	2–16%
Canada Grasslands	2–16%
United States Soil Enrichment	2–17%
United States & Canada Biochar	None, refer to note below

(b) Reduced Buffer Pool Contributions

In certain cases, the size of a project's buffer pool contributions may be reduced.

One protocol—United States & Canada biochar—requires no buffer pool contributions. As noted above, the permanence of biochar projects is ensured through the eligible end use(s) of the biochar, as identified in the protocol's "Eligible Biochar End Uses List". As credits are issued only for end-uses where there is a reasonable level of certainty about the long-term fate of the applied biochar, no buffer pool contributions are required.

Various protocols allow for reduced buffer pool contributions if project-specific management activities are undertaken. For example:

- United States forestry: if the project owner enters into a conservation easement;
- The four forestry protocols (Guatemala, Mexico, Panama, United States): if fire risk reduction activities are implemented;
- The four forestry protocols and the United States Soil Enrichment Protocol: contributions may be adjusted based on project ownership;
- The two grasslands protocols (United States, Canada): if a project has a "qualified" conservation easement, a Project Implementation Agreement is recorded on the land title, and/or the project verification includes a site visit;
- The three Latin America and the Caribbean forestry protocols: if the project owner voluntarily conducts additional community trainings.

(c) Additional Notes About the Buffer Pool

The three forestry protocols in Latin America and the Caribbean (Guatemala, Mexico, Panama) return buffer pool contributions to projects over time. The rate of redistribution is based on the principles of tonne-year accounting: the Reserve calculates the time-value of the tonnes in the buffer pool and then over time returns credits from the buffer pool to the forest owner at the same rate as the atmospheric impact that is realized each year (i.e. 1 percent per year). The frequency of redistributions is scheduled to align with the cadence of site visit verifications, which are generally required every 6 years.

Other than as set out above, and unless used to compensate for a reversal, buffer pool credits are not returned, do not expire, and exist in the buffer pool in perpetuity.

2.3. Further Considerations

(a) Project Implementation Agreements

With limited exceptions, if a permanence commitment extends beyond the project's crediting period, the project owner must sign a Project Implementation Agreement with the Reserve.

The Project Implementation Agreement is a legal contract between the project owner and the Reserve that sets out:

- The project owner's obligations to monitor and verify the project and to compensate for any avoidable reversal; and
- The Reserve's rights and remedies in case of the project owner's breach.

Exceptions to this requirement include biochar (as there is no permanence commitment after credits are issued) and soil enrichment projects that opt for tonne-year accounting.

(b) Permanence and Safeguards

In the Reserve's three Latin America and the Caribbean forestry protocols (Guatemala, Mexico, Panama), permanence commitments are established through, and aligned with, each country's communal governance processes and legal documentation. These processes must ensure compliance with social safeguards requiring free, prior, and informed consent as well as ongoing communal participation and transparent documentation.

For example, for a Mexico forestry project, the permanence commitments and project activities must be discussed and approved annually in the communal/ejidal General Assemblies and documented in the Assembly Acts, which are notarized and publicly recorded in the National Agrarian Registry in accordance with Mexican law.

The Reserve views the ongoing participation, understanding, and renewed commitment of the community as one of the foundational components to ensure permanence on communal lands.

(c) Cliff Liability

As a general rule, the Reserve's protocols apply "cliff liability" to compensate for a reversal. For example:

- If a reversal occurs in the last year of a permanence commitment, compensation is required equivalent to the full amount of the reversal. For example, a fire that releases 100 tonnes of carbon dioxide into the atmosphere in year 200 would require compensation of 100 credits.

- If the same fire occurs in year 201, no compensation is required.

Certain protocols (e.g., Guatemala forestry, Panama forestry) currently take into account the time-value of stored carbon dioxide and deduct this from the compensation requirement.

(d) No Cancelation of Credits Held or Used by Innocent Third Parties

In the case of a reversal, the Reserve does not, as a rule, cancel credits that are held by, or have been used by, an innocent third party. Rather, the Reserve assigns liability to the project owner or the buffer pool, as appropriate. The Reserve has adopted this stance on the basis that it would be unjust and destabilizing to require compensation from the innocent holder or user of a credit.

3. Work Program

In considering how its carbon crediting protocols should address permanence, the Reserve is motivated by the fundamental imperative of safeguarding environmental integrity, while recognizing that the evolving policy context and rapid pace of innovation in this field mean that other ways of addressing permanence may be capable of satisfying this imperative.

3.1. Questions

To help guide its work, the Reserve has generated the following list of questions.

General

1. Should the Reserve continue to consider "permanence" as being equivalent to the radiative forcing benefits of removing carbon dioxide from the atmosphere for 100 years?
2. Should there be a distinction in permanence requirements between projects that store emissions in a reservoir (e.g., afforestation) and projects that provide alternatives to activities that would release emissions stored in a reservoir (e.g., renewable energy, cookstoves)?

Permanence Commitment

3. Should the project owner be responsible for monitoring for the duration of the permanence commitment? If not, what entity should be responsible and/or which periods of time should each entity be responsible for?

4. Should the project owner be responsible for compensating for avoidable reversals for the duration of the permanence commitment? If not, what entity should be responsible and/or which periods of time should each entity be responsible for?
5. Is tonne-year accounting an effective means of addressing permanence? Are there specific protocols or practice types that particularly benefit from tonne-year accounting?

Buffer Pool

6. Is the buffer pool the appropriate mechanism to compensate for (a) unavoidable reversals and/or (b) avoidable reversals not compensated by a project owner? If not, what mechanism should be responsible and/or which periods of time should each mechanism cover?
7. What should happen to buffer pool contributions at the end of a permanence commitment?

Further Considerations

8. What are the benefits and risks of project implementation agreements? Are project implementation agreements more challenging for certain protocols and why?
9. How should the Reserve's protocols address the relationship between safeguards and permanence? Are there protocol-specific safeguards that should be considered?
10. Should the Reserve apply cliff liability for permanence (i.e., 100 percent compensation for reversals until the end of a permanence commitment, and no compensation thereafter)?
11. Should the Reserve maintain its position that carbon credits held or used by innocent third parties should not be canceled to compensate for reversals?

Other Mechanisms to Ensure Permanence

12. What role should third-party-provided insurance have in ensuring permanence?
13. What role should a permanence trust have in ensuring permanence?
14. What role should enhanced management activities (e.g., forest fuel treatments to lower severe fire risk) have in ensuring permanence?

15. Are there other entities, not listed above, that should play a role in ensuring permanence?

Closing

16. Do you have any other comments on how the Reserve addresses permanence, or about the subject of permanence more generally, not included your above responses?

3.2. Opportunities for Input

(a) Public Consultation

The Reserve opened a public consultation on the questions set out above. Comments closed on Friday, October 3, 2025 at 5pm Pacific Time. Comments will be made public unless otherwise requested.

(b) Workgroup

The Reserve is establishing a workgroup to support this work program. Expressions of interest to join the workgroup closed on Friday, October 3, 2025 at 5pm Pacific Time. The names and organizational affiliations of workgroup members will be made public.