

# MARINE CONSERVATION CREDITS

## Buffer Pool Management Policy v1.0

Document Reference: MCC-BPM-v1.0  
Classification: Programme Standard | Date: March 2026  
**Status: APPROVED**

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## PURPOSE AND SCOPE

**0001** The buffer pool shall serve as a programme-level permanence insurance mechanism ensuring the integrity of all MCC (Methodological Carbon Credits) issued from sequestration-based activities.

**0002** Buffer pool mechanics shall apply mandatory deductions from all issuances of sequestration-based credits classified as MCC-CC (Carbon Capture & Storage Credits).

**0003** The buffer pool shall be managed as a collective risk management instrument, pooling contributions from multiple projects to address systemic non-permanence risks.

**0004** Buffer credits shall be held in a segregated system account (BufferPoolAccount) and shall not participate in secondary market trading.

**0005** The buffer pool shall function as an insurance reserve that shall be drawn upon only in cases of documented reversal events or project failure scenarios.

**0006** Buffer credits shall maintain full equivalency to active credits in terms of carbon quantification methodology and vintage year alignment.

**0007** The buffer pool governance structure shall vest authority for buffer release decisions in the MCC Governance Board.

**0008** All buffer pool operations shall be recorded on the MCC Registry with public transparency regarding pool size, contribution history, and release schedules.

**0009** The buffer pool shall be distinct and separate from any retirement accounts, voluntary carbon offset reserve requirements, or regulatory compliance mechanisms.

**0010** Buffer contributions and releases shall be tracked individually by project identifier, credit batch, and risk assessment vintage date.

## BUFFER CONTRIBUTION RATES

**0011** All issuances of MCC-CC credits shall be subject to a mandatory buffer contribution deduction.

**0012** The default buffer contribution rate shall be 20% of gross sequestration-based credits issued in any single batch.

**0013** Risk-adjusted buffer contribution rates shall range from a minimum of 10% to a maximum of 40% of gross issuance, determined by formal non-permanence risk assessment.

**0014** MCC-CC credit types issued under the canonical marine methodology families (F01 Blue Carbon, F02 Restoration, F03 Fisheries, F04 Pollution Prevention, F05 MPA Management) shall all be subject to mandatory buffer contribution where the credit reflects a sequestration, removal, or avoided-emission component.

**0015** MCC-HYB credit types combining sequestration with biodiversity outcomes shall require buffer contribution only for the carbon (sequestration or avoided-emission) component, as determined under the applicable F01-F05 family methodology.

**0016** MCC-MCU credit types representing pure conservation outcomes (improved MPA management, avoided habitat loss, biodiversity uplift) without a quantified carbon sequestration component shall be exempt from buffer contribution requirements as these represent avoidance and prevention mechanisms rather than sequestration.

**0017** Risk factors influencing buffer rate shall include: (a) political risk and regulatory stability in project jurisdiction; (b) project longevity and technical feasibility; (c) natural disaster exposure based on geographic location; (d) financial viability and long-term funding mechanisms; (e) project management capacity and track record.

**0018** The non-permanence risk assessment process shall yield a composite risk score that shall directly determine the applicable buffer contribution percentage.

**0019** Buffer rates shall be established at validation stage and shall be subject to reassessment at each verification cycle, with adjustments applied to new issuances only.

**0020** Upward adjustment of buffer rates (increased risk) shall apply to all subsequent credit batches from the same project upon reassessment.

**0021** Downward adjustment of buffer rates (reduced risk) shall only apply upon explicit written approval from the MCC Governance Board and shall not retroactively affect previously issued credits.

**0022** For projects operating across multiple jurisdictions, the highest applicable risk factor within any single jurisdiction shall determine the composite risk score.

**0023** Buffer contribution calculations shall use gross credit quantity (pre-buffer-deduction figure) as the numerator.

**0024** Rounding of buffer contribution quantities shall occur at the individual credit unit level, with any fractional units rounded to the nearest whole number (standard commercial rounding).

**0025** The 20% default rate shall apply within 30 days of validation if the non-permanence risk assessment has not been completed.

**0026** Any buffer rate below 15% shall require explicit justification in the non-permanence risk assessment supporting documentation.

**0027** Buffer contribution rates shall be published in the project's Validation Report and shall be communicated to the project developer and the MCC Registry in writing.

**0028** Periodic review of buffer rate benchmarks shall occur biennially, comparing MCC rates against Verra AFOLU Non-Permanence Risk Tool and Gold Standard buffer approaches.

**0029** In the event of a major policy reform affecting buffer methodology, existing projects shall have a transition period of 24 months before revised buffer rates apply to new issuances.

**0030** The buffer contribution rate shall remain fixed for the duration of the crediting period, except in cases of documented project changes requiring formal amendment and reassessment.

**0031** Documentation supporting buffer rate determination shall be retained by MCC for a minimum of ten years beyond the project's crediting period end date.

**0032** Buffer rate transparency shall be maintained through public posting of the Buffer Rate by Credit Type and Risk Level table on the MCC Registry.

**0033** Projects with historical reversal events in prior carbon credit programmes shall be assessed with a minimum buffer rate of 30%.

**0034** New project developers (fewer than two years of operational history) shall be assessed with a minimum buffer rate of 25%.

**0035** For projects in countries classified as high-risk by international governance indices, a minimum buffer rate of 25% shall apply regardless of individual risk factor scores.

**0036** The buffer contribution rate shall be denominated in whole percentage points; fractional percentages (e.g., 18.5%) shall not be used.

| Credit Type                                                                          | Classification | Default Buffer Rate           | Minimum Rate | Maximum Rate | Sequestration-Based         |
|--------------------------------------------------------------------------------------|----------------|-------------------------------|--------------|--------------|-----------------------------|
| F01: Blue Carbon (mangroves, seagrass, salt marsh, tidal wetlands, coastal peatland) | MCC-CC         | 20%                           | 10%          | 40%          | Yes                         |
| F02: Restoration (coral reefs, kelp forests, oyster reefs)                           | MCC-HYB        | 15% (sequestration component) | 10%          | 30%          | Partial                     |
| F03: Fisheries (sustainable fisheries & aquaculture, ocean habitat protection)       | MCC-HYB        | 15% (sequestration component) | 10%          | 30%          | Partial                     |
| F04: Pollution Prevention (plastic)                                                  | MCC-CC         | 15%                           | 10%          | 30%          | Yes (avoided decomposition) |

|                                                                                                                         |         |    |    |    |                                    |
|-------------------------------------------------------------------------------------------------------------------------|---------|----|----|----|------------------------------------|
| interception,<br>ghost gear,<br>nutrient runoff,<br>marine debris)                                                      |         |    |    |    |                                    |
| F05: MPA<br>Management<br>(Marine<br>Protected<br>Area<br>management<br>— avoided<br>loss +<br>improved<br>enforcement) | MCC-MCU | 0% | 0% | 0% | No<br>(avoidance/co<br>nservation) |

## NON-PERMANENCE RISK ASSESSMENT

**0037** All sequestration-based projects shall undergo a formal non-permanence risk assessment prior to credit issuance.

**0038** The non-permanence risk assessment tool shall evaluate five risk categories, each scored on a scale of 1 (lowest risk) to 5 (highest risk).

**0039** Category A (Internal Risk) shall assess project management capacity, financial stability, technical implementation feasibility, monitoring systems, and institutional continuity.

**0040** Category B (External Risk) shall assess political stability, regulatory framework permanence, land tenure security, legal disputes, and policy change likelihood.

**0041** Category C (Natural Risk) shall assess exposure to wildfires, floods, storms, pests, disease, and geological hazards based on historical frequency and severity data.

**0042** Category D (Climate Risk) shall assess exposure to climate change impacts including ocean warming, ocean acidification, changing precipitation patterns, and extreme weather intensification.

**0043** Category E (Longevity Risk) shall assess alignment between project permanence duration and the project's intended crediting period, accounting for infrastructure lifespan and biological resilience.

**0044** Each risk category shall be scored independently by a qualified third-party validator using objective criteria and supporting data.

**0045** Scoring criteria for each category shall be published in the MCC Non-Permanence Risk Assessment Methodology, which shall be updated biennially.

**0046** The composite risk score shall be calculated as the arithmetic mean of the five category scores, yielding a value between 1.0 and 5.0.

**0047** A composite risk score of 1.0-1.8 shall map to a 10% buffer contribution rate.

**0048** A composite risk score of 1.9-2.6 shall map to a 20% buffer contribution rate.

**0049** A composite risk score of 2.7-3.4 shall map to a 30% buffer contribution rate.

**0050** A composite risk score of 3.5-4.2 shall map to a 40% buffer contribution rate.

**0051** A composite risk score of 4.3-5.0 shall classify the project as ineligible for the MCC issuance programme.

**0052** Non-permanence risk assessments shall be conducted at the validation stage prior to the first credit issuance.

**0053** Reassessment of non-permanence risk shall occur at minimum at each verification event and may be triggered by documented project changes or external events.

**0054** Documented triggers for reassessment shall include: (a) changes in project ownership or management; (b) major modifications to project scope; (c) natural disasters affecting the project site; (d) significant changes in host country regulatory environment; (e) projects entering the final 5 years of their crediting period.

**0055** Assessment reports shall be prepared by independent, qualified assessors with documented expertise in carbon permanence and the relevant credit methodology.

**0056** Assessors shall disclose any conflicts of interest and shall not have financial interest in the project outcome.

**0057** Supporting documentation for each risk category score shall include quantitative data, literature citations, expert opinion summaries, and justifications for numerical assignments.

**0058** The project developer shall have the right to submit additional risk mitigation evidence within 30 days of receiving a draft assessment.

**0059** Risk mitigation measures (e.g., insurance, long-term conservation easements, dedicated reserve funds) shall be evaluated and may result in downward score adjustments of up to 0.5 points per category.

**0060** The final non-permanence risk assessment shall be appended to the project's Validation Report and published on the MCC Registry.

**0061** Risk assessment validity shall extend for five years or until the next scheduled verification, whichever occurs first.

**0062** For projects in countries with no published international governance or stability indices, alternative data sources (e.g., NGO reports, academic studies) shall be used with documented justification.

**0063** Category scores shall be recorded as whole numbers (1, 2, 3, 4, or 5); fractional scores shall not be used.

**0064** Composite risk scores shall be recorded to one decimal place (e.g., 2.8).

**0065** Historical reversal events in the same project or by the same developer shall trigger a minimum Category E score of 4.

**0066** Projects located in countries subject to international sanctions shall be assessed with a minimum Category B score of 4.

**0067** Assessment documentation shall be retained by MCC for the duration of the project's crediting period plus 15 years.

**0068** Blind peer review of high-risk assessments (Category A-E scores of 4 or 5) shall be conducted by a second independent expert.

**0069** The MCC shall maintain a public summary database of non-permanence risk assessments by geography, credit type, and risk category, updated annually.

| Composite Risk Score | Buffer Contribution Rate | Risk Level    | Typical Project Characteristics                                                 |
|----------------------|--------------------------|---------------|---------------------------------------------------------------------------------|
| 1.0 - 1.8            | 10%                      | Very Low      | Stable jurisdiction, proven technology, strong management, short payback period |
| 1.9 - 2.6            | 20%                      | Low-Moderate  | Generally stable governance, established methodologies, adequate resources      |
| 2.7 - 3.4            | 30%                      | Moderate-High | Emerging market, newer technology, moderate management                          |



|           |            |           |                                                                                 |
|-----------|------------|-----------|---------------------------------------------------------------------------------|
|           |            |           | capacity concerns                                                               |
| 3.5 - 4.2 | 40%        | High      | Unstable jurisdiction, novel approach, resource constraints, high reversal risk |
| 4.3 - 5.0 | Ineligible | Very High | Project deemed too risky for MCC programme participation                        |

| Risk Category  | Score 1 (Low)                                                                                  | Score 2 (Low-Mod)                                                                               | Score 3 (Moderate)                                                                              | Score 4 (Mod-High)                                                                                                               | Score 5 (High)                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Internal Risk  | Established firm, >5yr track record, no cash flow issues                                       | Known operator, solid financials, minor technical questions                                     | New firm or financial constraints, adequate technical design                                    | Unproven operator or financial stress, technical concerns                                                                        | Startup firm, financial distress, technical feasibility uncertain                                                         |
| External Risk  | Stable democracy, strong land tenure, no legal disputes                                        | Stable governance, clear land rights, minor legal issues                                        | Emerging governance, some tenure issues, manageable disputes                                    | Political instability, land tenure concerns, legal disputes                                                                      | Political conflict, unstable land rights, major legal threats                                                             |
| Natural Risk   | No major hazards, <1% historical occurrence rate                                               | Low hazard, 1-2% historical occurrence rate                                                     | Moderate hazards, 2-5% historical occurrence rate                                               | High hazard exposure, 5-10% historical occurrence rate                                                                           | Extreme hazard zone, >10% historical occurrence rate                                                                      |
| Climate Risk   | Low climate sensitivity, resilient ecosystem                                                   | Moderate climate exposure, some adaptation potential                                            | Significant climate impacts likely, limited adaptation                                          | High climate risk, adaptation difficult, uncertain outcomes                                                                      | Extreme climate risk, ecosystem viability uncertain                                                                       |
| Longevity Risk | F01 Blue Carbon: ≥30yr post-crediting permanence (100yr horizon) — Low tier — base buffer rate | F02 Restoration: 20-29yr post-crediting permanence (30yr horizon) — Medium-Low tier — base + 5% | F05 MPA Management: 10-19yr post-crediting permanence (30yr horizon) — Medium tier — base + 10% | F03 Fisheries / F04 Pollution Prevention: Not Applicable — flow measures (avoided emissions); see Avoided Emissions Verification | Composite >Tier-3 alignment: project misaligned with locked family permanence horizons — referred to Governance Board for |

|  |  |  |  | rules in<br>MCC-200<br>§0031.3 | ineligibility<br>review |
|--|--|--|--|--------------------------------|-------------------------|
|--|--|--|--|--------------------------------|-------------------------|

0069.1 Applicability: The Longevity Risk Assessment scoring rubric (Table 2, Row 5) shall apply only to MCC-CC and MCC-HYB credits with stored carbon — namely F01 Blue Carbon, F02 Restoration, and F05 MPA Management. MCC-MCU credits issued from F03 Fisheries and F04 Pollution Prevention activities (flow measures producing avoided emissions) shall not be evaluated under the Longevity Risk Category and are governed instead by the Avoided Emissions Verification rules cross-referenced at MCC-200 §0031.3.

0069.2 Family-differentiated permanence calibration: Longevity Risk scoring shall be calibrated to the locked family permanence horizons set out in MCC-200 §0031.1-0031.3 (Option C, locked 28 April 2026). The mapping is: F01 Blue Carbon — 100-year permanence with +30-year post-crediting monitoring (Low tier, base buffer rate); F02 Restoration — 30-year permanence with +20-year post-crediting monitoring (Medium-Low tier, base + 5 percentage points); F05 MPA Management — 30-year permanence with +10-year post-crediting monitoring (Medium tier, base + 10 percentage points). F03 and F04 are flow measures and are not subject to permanence/reversal logic.

0069.3 Buffer rate impact: For F01 the family-aligned Longevity score shall not impose any uplift on the composite-derived buffer contribution rate; for F02 the score shall apply a 5 percentage-point uplift to the otherwise-applicable buffer contribution rate; for F05 the score shall apply a 10 percentage-point uplift. Where a project's documented permanence falls below its family horizon, the project shall be referred to the MCC Governance Board for ineligibility review under clause 0051.

## BUFFER POOL OPERATIONS

**0070** The MCC Buffer Pool shall be managed as a single, unified, programme-level account (BufferPoolAccount) operating on a continuous basis.

**0071** Buffer credits shall be segregated in the system registry with a distinct status designation: BUFFER (as opposed to ACTIVE for tradeable credits).

**0072** Buffer credits shall retain unique serial numbers corresponding to their originating project batch for auditability and traceability.

**0073** The buffer pool shall be non-tradeable; buffer credits shall not be listed on secondary markets and shall not be transferred between external entities.

**0074** The buffer pool shall operate on a pooled insurance model whereby contributions from multiple projects create a collective reserve addressing systemic risks.

**0075** The current size (quantity) of the buffer pool shall be reported publicly on the MCC Registry at least quarterly.

**0076** Buffer pool balance shall be updated in real-time as new contributions are received and as cancellations or releases occur.

**0077** The BufferPoolAccount entity shall maintain a perpetual ledger recording all contributions, cancellations, releases, and their corresponding project identifiers.

**0078** Each buffer contribution transaction shall be logged with: (a) contributing project ID; (b) contribution date; (c) quantity of buffer credits; (d) credit batch serial number range; (e) validator name; (f) risk assessment score.

**0079** Each buffer cancellation transaction shall be logged with: (a) reversal event description; (b) cancellation date; (c) quantity of credits cancelled; (d) reversal assessment findings; (e) project liability determination if applicable.

**0080** Each buffer release transaction shall be logged with: (a) release date; (b) quantity released; (c) originating project ID; (d) release schedule milestone; (e) Governance Board approval reference.

**0081** Buffer credits shall accrue no interest and shall maintain constant carbon equivalence to the original credit vintage year.

**0082** The buffer pool shall not be subject to trading fees, transfer taxes, or secondary market levies.

**0083** Administration of the buffer pool shall be performed by the MCC Registry Operator under the oversight of the MCC Governance Board.

**0084** The Registry Operator shall maintain backup systems and disaster recovery protocols ensuring buffer pool data integrity.

**0085** Quarterly reconciliation of buffer pool ledgers shall be conducted against independent audit records.

**0086** Public access to individual project buffer contribution information shall be available through the MCC Registry interface.

**0087** Aggregated buffer pool statistics (total contributions by risk level, total cancellations, release schedules) shall be published annually.

**0088** The buffer pool shall not be commingled with general MCC operating reserves or fund accounts.

**0089** Transfer of buffer pool administration responsibilities shall only occur with explicit Governance Board approval and 120-day transition period.

**0090** System redundancy for buffer pool account data shall maintain a minimum of three geographically dispersed copies.

**0091** Buffer pool operations shall be subject to annual third-party audits verifying all transactions, balances, and compliance with this policy.

**0092** In the event of system failure, buffer pool status shall be reconstructed from archived ledger records within 48 hours.

**0093** Buffer pool visibility shall be maintained through a public dashboard displaying pool composition, contribution history, and release schedule.

**0094** The buffer pool shall operate in perpetuity or until explicitly dissolved by Governance Board resolution.

## REVERSAL EVENTS AND BUFFER CANCELLATION

**0095** A reversal event shall be defined as a documented, quantifiable loss of sequestered carbon from a MCC-funded project.

**0096** Reversal causes shall include but not be limited to: natural disasters (fire, flood, storm, pest outbreak, disease); project abandonment; land use change; technical failure; regulatory action; force majeure events.

**0097** Upon detection or allegation of a reversal event, the project developer shall notify the MCC within 10 business days.

**0098** The MCC shall initiate a formal reversal investigation within 15 business days of notification.

**0099** The reversal investigation period shall not exceed 45 days, during which time independent assessment of carbon loss shall be conducted.

**0100** Reversal investigation methodology shall employ satellite and remote sensing where applicable, ground truthing where feasible, and technical analysis of project records.

**0101** Reversal assessment shall quantify carbon loss in tonnes CO<sub>2</sub>-equivalent, with a documented margin of error not exceeding 15%.

**0102** Upon confirmation of a reversal event, the MCC shall cancel buffer credits equal to the verified reversal volume.

**0103** Buffer credit cancellation shall be recorded in the BufferPoolAccount ledger with the reversal event as justification.

**0104** Cancelled buffer credits shall be removed from the active pool balance and marked as CANCELLED (non-recoverable).

**0105** If the buffer pool contains insufficient credits to cover a reversal, the shortfall shall be the liability of the project developer.

**0106** Project developer liability for reversal shortfall shall be satisfied through: (a) replacement credits from another verified source; (b) cash compensation to the MCC at the current vintage market price; (c) participation in a remediation project funded by the developer.

**0107** Reversal liability determination shall be documented in a Reversal Event Report issued by MCC within 60 days of investigation conclusion.

**0108** The Reversal Event Report shall be published on the MCC Registry, identifying the project, reversal cause, quantified loss, buffer cancellation amount, and any developer liability.

**0109** Project developers shall have the right to appeal reversal determinations within 30 days of report issuance, with appeal heard by an independent panel.

**0110** Reversal monitoring for sequestration projects shall occur at minimum annually during the crediting period and the 10-year permanence guarantee period.

**0111** Monitoring shall employ documented methods: satellite/remote sensing annually, on-site verification every 3 years, and continuous environmental monitoring where technically feasible.

**0112** For F01 Blue Carbon and F02 Restoration projects, ecosystem-condition monitoring (e.g., satellite imagery, in-situ habitat assessment, storm and bleaching events) shall be conducted at least annually or per regional risk protocols.

**0113 For F01 Blue Carbon projects, sediment carbon stock surveys and laboratory analysis shall occur at minimum at 5-year intervals.**

**0114** For ocean-based sequestration, ocean conditions (temperature, pH, depth stability) shall be monitored continuously or via quarterly surveys.

**0115** Historical reversal rate data by credit type shall be maintained and published to inform future buffer rate determinations.

**0116** In the event of multiple reversals from the same project, cumulative liability shall accrue without limitation.

**0117** Reversal determination shall not release the project developer from continuing obligations to maintain project infrastructure or monitoring systems.

**0118** Buffer cancellation due to reversal shall not be waived or deferred; cancellation shall occur upon verified reversal confirmation.

**0119** The buffer pool shall maintain a reversal reserve (additional buffer credits above base pool size) sized at 10% of total outstanding buffer credits to address unforeseen reversal events.

**0120** If the reversal reserve is depleted by reversal events, the Governance Board shall determine whether to increase buffer contribution rates programme-wide or establish additional reserve mechanisms.

**0121** Partial reversals affecting a portion of a project's crediting shall trigger proportional buffer cancellation tied to the loss percentage.

| Reversal Cause Category               | Typical Detection Method                        | Assessment Complexity | Expected Timeline | Developer Liability if Buffer Insufficient                 |
|---------------------------------------|-------------------------------------------------|-----------------------|-------------------|------------------------------------------------------------|
| Natural Disaster (Fire, Flood, Storm) | Satellite imagery, reports from authorities     | Moderate              | 15-30 days        | Full liability for replacement credits                     |
| Pest Outbreak or Disease              | Ground surveys, lab diagnostics, remote sensing | High                  | 30-45 days        | Full liability for replacement credits                     |
| Project Abandonment                   | Site inspection, monitoring system records      | Low                   | 10-20 days        | Full liability + potential sanctions                       |
| Land Use Change                       | Satellite imagery, local records, site visit    | Moderate              | 20-35 days        | Full liability for reversal volume                         |
| Technical System Failure              | Equipment records, performance data, inspection | Moderate              | 15-30 days        | Full liability if due to neglect; partial if force majeure |
| Regulatory Action                     | Government documentation, legal records         | Low-Moderate          | 10-25 days        | Developer shares liability if action was foreseeable       |
| Force Majeure (War, Extreme)          | Event documentation,                            | High                  | 30-45 days        | Shared or waived depending on                              |

|          |                      |  |  |               |
|----------|----------------------|--|--|---------------|
| Climate) | expert<br>assessment |  |  | circumstances |
|----------|----------------------|--|--|---------------|

## BUFFER RELEASE

**0122** Buffer credits shall only be released to active status after a project has completed its crediting period and satisfied a 10-year post-crediting permanence guarantee.

**0122.1** Family-differentiated post-crediting monitoring periods shall apply: F01 Blue Carbon (MCC-CC removals) — 30-year post-crediting monitoring; F02 Restoration (MCC-HYB) — 20-year post-crediting monitoring; F05 MPA Management (MCC-HYB) — 10-year post-crediting monitoring. F03 Fisheries and F04 Pollution Prevention (MCC-MCU avoided emissions) — no post-crediting permanence monitoring required, since avoided emissions are flow measures.

**0122.2** The phased buffer release schedule (clause 0124) shall be calibrated to the family-specific post-crediting monitoring period. For F01: 25% release at end of crediting period, 25% at the 15-year permanence milestone, 50% at the 30-year permanence milestone. For F02: 25% / 25% (10-year) / 50% (20-year). For F05: 25% / 25% (5-year) / 50% (10-year). F03/F04 buffer pool contributions, where applicable, address baseline/leakage uncertainty rather than non-permanence and follow separate release rules in MCC-200.

**0123** The 10-year permanence guarantee period shall commence on the final day of the project's crediting period.

**0124** Buffer release shall follow a phased schedule: 25% of buffer credits released at crediting period end, 25% at the 5-year permanence milestone, and 50% at the 10-year permanence milestone.

**0125** Released buffer credits shall transition from BUFFER status to ACTIVE status and shall become eligible for trading and retirement.

**0126** Buffer release shall only occur upon explicit written approval from the MCC Governance Board.

**0127** The Governance Board shall review each project's buffer release application at least 60 days prior to the scheduled release date.

**0128** Buffer release approval shall be conditional upon: (a) no documented reversal events during the assessment period; (b) successful completion of all monitoring requirements; (c) absence of legal disputes; (d) demonstrated compliance with all MCC requirements.

**0129** If a reversal event occurs during the permanence guarantee period, the buffer release schedule shall be paused pending reversal resolution.

**0130** If a reversal event is confirmed during the permanence guarantee period, previously released buffer credits shall not be recalled, but the buffer contribution for the remaining permanence period shall be increased by 50%.

**0131** Buffer release applications shall be submitted by the project developer or their designated representative to the MCC Registry.

**0132** The Registry shall conduct a completeness review of all release applications within 15 days of submission.

**0133** Incomplete applications shall be returned with a notice indicating missing information and a 30-day cure period.

**0134** The Governance Board shall issue a written decision on each buffer release application within 90 days of receiving a complete application.



**0135** Buffer release decisions shall be published on the MCC Registry, identifying the project, release amount, release dates, and status transition details.

**0136** Released credits shall be annotated in the registry with release history: original batch number, original buffer status, release date, release milestone.

**0137** The phased release schedule shall apply uniformly to all projects regardless of credit type or risk level.

**0138** Early release of buffer credits shall not be permitted; the permanence guarantee period shall run to completion before any release occurs.

**0139** Accelerated release (faster than the phased schedule) shall not be permitted under any circumstances.

**0140** If a project's crediting period is extended beyond its original end date, the buffer release timeline shall be recalculated based on the new end date.

**0141** Projects with documented reversal events in the past shall have an extended permanence guarantee period of 15 years before first buffer release occurs.

**0142** The total quantity of credits released shall match the quantity that was contributed to the buffer pool, less any credits permanently cancelled due to reversal events.

**0143** Released credits shall carry metadata indicating their origin as buffer credits, permanence guarantee completion, and release milestone.

**0144** Buffer release shall not incur any fees or administrative charges to the project developer.

**0145** The Governance Board shall annually report on buffer releases completed during the prior year, including aggregate quantities, project identifiers, and release schedule status.

| Permanence Milestone              | Time Point Relative to Crediting Period End  | Release Percentage | Cumulative Released | Status Change   | Conditions                                  |
|-----------------------------------|----------------------------------------------|--------------------|---------------------|-----------------|---------------------------------------------|
| Milestone 1: Initial Release      | Crediting period end (Year 0)                | 25%                | 25%                 | BUFFER → ACTIVE | No reversals; monitoring complete           |
| Milestone 2: Five-Year Permanence | 5 years post-crediting period end (Year 5)   | 25%                | 50%                 | BUFFER → ACTIVE | No reversals; continued monitoring positive |
| Milestone 3: Full Release         | 10 years post-crediting period end (Year 10) | 50%                | 100%                | BUFFER → ACTIVE | No reversals; full permanence verified      |

## PLATFORM INTEGRATION

**0146** The MCC Registry platform shall incorporate five core entities to support buffer pool operations: BufferPoolAccount, BufferContribution, BufferCancellation, ReversalEvent, and NonPermanenceRiskAssessment.

**0147** BufferPoolAccount shall be a system-level account maintained in perpetuity, with properties including: total balance (quantity), contribution history, cancellation history, release history, and last updated timestamp.

**0148** BufferContribution entity shall record: project ID, contribution date, quantity contributed, credit batch serial number range, validator name, non-permanence risk score, buffer rate percentage, and approval status.

**0149** BufferCancellation entity shall record: cancellation date, quantity cancelled, reversal event reference, reversal cause code, reversal investigation report reference, and project developer liability status.

**0150** ReversalEvent entity shall record: reversal date, reversal discovery date, reversal cause, quantified carbon loss, reversal assessment findings, satellite/remote sensing data references, and appeal status.

**0151** NonPermanenceRiskAssessment entity shall record: assessment date, project ID, assessor name, five category scores (Internal, External, Natural, Climate, Longevity), composite risk score, applicable buffer rate, risk mitigation measures, and assessment validity period.

**0152** The issuance workflow shall automatically calculate buffer deduction based on the project's non-permanence risk assessment and applicable buffer rate.

**0153** Upon credit batch validation, the system shall: (a) calculate gross credit quantity; (b) apply buffer rate percentage; (c) subtract buffer quantity from gross; (d) issue active credits to project account; (e) create corresponding buffer credits in BufferPoolAccount with BUFFER status; (f) log BufferContribution transaction.

**0154** All buffer-related transactions shall be logged in real-time with immutable timestamp and user audit trail.

**0155** The Registry platform shall provide API endpoints for: retrieving buffer pool balance, querying contribution history, searching reversal events, submitting buffer release applications, and accessing non-permanence risk assessments.

**0156** API authentication shall require valid MCC user credentials with role-based access control limiting sensitive operations to authorized personnel.

**0157** All API requests shall be logged with user identity, request timestamp, request parameters, and response status for audit trail purposes.

**0158** The Registry dashboard shall display: current buffer pool size, contributions by risk level, contributions by credit type, cancellations year-to-date, pending release applications, and permanence guarantee status by project.

**0159** Public-facing dashboard shall display aggregated buffer pool statistics without exposing individual project identifiers for projects under regulatory review.

**0160** Integration with the MCC Verification Platform shall ensure that each verification event triggers a reassessment protocol for buffer rate evaluation.

**0161** Buffer rate modifications resulting from reassessment shall be flagged in the system with historical tracking (original rate, effective date of change, new rate).

**0162** Integration with the MCC Monitoring Platform shall facilitate reversal event detection through monitoring data alerts and automated flag generation.

**0163** Satellite and remote sensing data feeds shall be integrated where technically feasible to support automated reversal monitoring.

**0164** Data export functionality shall enable production of Buffer Pool Reports in standardized formats (CSV, XML, JSON) for external analysis.

**0165** System documentation shall include complete data schemas, API specifications, and integration workflows for third-party auditors and regulators.

**0166** The platform shall maintain backwards compatibility with historical buffer pool records, preserving all transactions and status changes from programme inception.

**0167** Database architecture shall employ multi-table normalization ensuring buffer pool data integrity and enabling efficient query performance for large datasets.

**0168** System performance benchmarks shall ensure that buffer transactions complete within 2 seconds of submission.

**0169** The Registry shall maintain encryption of all sensitive buffer pool information in transit and at rest, using industry-standard protocols (TLS 1.2+, AES-256).

**0170** User access logs shall be retained for a minimum of 7 years and shall be reviewed quarterly for security compliance.

## REPORTING AND TRANSPARENCY

**0171** The MCC shall produce an annual Buffer Pool Management Report covering all buffer pool operations conducted during the prior calendar year.

**0172** The annual report shall include: total contributions received, contributions by credit type and risk level, total buffer pool balance, cancellations by reversal cause, and buffer releases completed.

**0173** The annual report shall include analysis of reversal trends, historical reversal rates by credit type, and any policy recommendations arising from operational data.

**0174** The annual report shall be submitted to the MCC Governance Board and published on the MCC Registry within 120 days of fiscal year end.

**0175** A public Buffer Pool Dashboard shall be maintained on the MCC website displaying real-time or near-real-time buffer pool status.

**0176** The dashboard shall display: current total buffer pool size, graphical representation of pool composition by credit type, contributions year-to-date, cancellations year-to-date, and release schedule status.

**0177** The dashboard shall include a searchable database of individual projects showing buffer contribution status, risk assessment scores, permanence milestone dates, and release schedule.

**0178** Quarterly buffer pool status updates shall be distributed to all MCC stakeholders including validators, verifiers, project developers, and regulatory bodies.

**0179** Non-permanence risk assessments shall be published on the Registry within 30 days of finalization, with personally identifiable information of assessors redacted if requested.

**0180** All reversal event investigations and determinations shall be published in summary form on the Registry, providing transparency on reversal frequency and remediation.

**0181** Buffer contribution rates shall be published in a centralized, easily accessible location on the MCC website, updated as rates change.

**0182** All Governance Board decisions relating to buffer pool policy shall be documented and made public within 30 days of approval.