SALMON-SAFE CERTIFICATION STANDARDS FOR CORPORATE & UNIVERSITY CAMPUSES

DRAFT 3.1

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INTRODUCTION

Salmon-Safe's corporate & university campus project is a collaborative effort to further engage our region's business and academic communities in environmental stewardship. While this project is the nation's first certification initiative linking campus land management practices and the protection of water quality and imperiled species, the Salmon-Safe corporate & university campus program is an extension of our peer-reviewed and field tested certification program for municipal parks and natural areas.

Since 1996, Salmon-Safe has successfully defined and promoted ecologically sustainable farming practices that protect water quality and aquatic biodiversity throughout the Pacific Northwest. The program has certified more than 40,000 acres of farmland and promoted Salmon-Safe products in more than 200 supermarkets throughout the western United States. Salmon-Safe has been evaluated by Consumer's Union, publisher of Consumers Report, and received high marks for its transparency and objectivity.

In 2000, Salmon-Safe partnered with the City of Portland with the idea of applying our Salmon-Safe label to urban restoration efforts and land management practices that help preserve the Willamette River and its tributaries in the city. After a four-year project development effort, Salmon-Safe announced the certification of more than 10,000 acres managed by Portland Parks & Recreation in summer 2004 Salmon-Safe celebrated this first urban certification with a 3-month "Salmon are returning to Portland Parks" public education campaign that reached over 600,000 urban residents through bus side, newspaper, and billboard public service ads.

This document contains draft corporate & university campus certification standards and an overview description of the evaluation procedures that will be used in evaluating candidate campuses. Like Salmon-Safe's farm and park & natural area standards, these corporate & university campus standards constitute a set of best management practices that can be applied across a variety of campus landscapes, from office parks to college campuses.

Salmon-Safe recognizes that longstanding infrastructure present on some corporate and university campuses can degrade water quality and limit fish habitat. These infrastructure-related impacts, such as concrete-lined stream channels, are addressed as restoration elements of the Standards. A campus must demonstrate long term progress in addressing the impacts of existing infrastructure where feasible.

The campus standards are based on Salmon-Safe's park & natural area guidelines, which have received formal peer review by more than 20 qualified scientists, as well as technical experts, representatives of environmental organizations, and other interested parties. To further ensure the rigor and adequacy of the standards for use in evaluating a variety of campus settings, these standards received an additional scientific and expert review during fall 2004. Field trials during spring 2005 at the Nike World Headquarters provided the basis for further refinement of the standards, particularly with respect to streamlining their application for smaller campuses.

EVALUATION PROCESS FOR CERTIFICATION

Scope of the Evaluation Process: A Focus on Both Management Policies and Field Practices

The evaluation process for Salmon-Safe corporate & university campus certification features an in-depth assessment of the overall land management policies and operations that directly and indirectly affect water quality and fish habitat. This system-wide evaluation is augmented by a field level assessment of the campus. Both policy and field-level evaluations are conducted using a set of standards (the "Standards") to evaluate whether the management of the candidate campus is consistent with best management practices for avoiding harm to stream ecosystems. Restoration and enhancement projects on campus lands are also assessed in the field to determine if significant progress is occurring to address existing habitat deficiencies.

Part A of the Certification Standards lists the general standards that must be met for certification (General Standards). Part B of the Certification Standards lists additional standards and associated performance requirements that are specific to six management categories that relate to the habitat needs of salmonids (Habitat Specific Standards).

For campuses of 40 acres in total area or larger, Salmon-Safe requires additional reporting and inventory documentation to ensure that existing habitat conditions and management practices are adequately evaluated (these requirements apply only to single campuses or multiple site campus systems totaling 40 acres or larger and are designated with the symbol **L**). For smaller campuses, the field review conducted by the certification team is generally considered sufficient to assess conditions and management practices.

The Evaluation Team

Corporate & university assessments are conducted by a team of two or three qualified, independent, and credible experts hired by Salmon-Safe. The evaluation team is well versed in aquatic ecological science, as well as landscape management. Salmon-Safe makes the final decision on the composition of the team, but the selection process includes input from the certification candidate. In building an assessment team, the goal is to maximize the credibility of the evaluation process by employing individuals with recognized regional expertise in relevant disciplines that are capable of rendering independent, objective judgments.

The Evaluation Process

The evaluation process is geared towards one simple objective: to inform the evaluation team as fully as possible about the status of management practices so as to enable a robust judgment as to the level of conformance to the Certification Standards. The evaluation team assesses current management policies and field-level practices against a defined set of evaluation standards that represent best landscape management practices. The team also evaluates the extent to which existing campus design and infrastructure protect and restore aquatic ecosystems within the context of campus management goals for human use and enjoyment.

The team evaluates if a corporate or university campus complies with the Certification Standards by:

1) review of overall management policies and operations,
2) field assessment at the campus, or a representative sub-sample of sites on the campus, and (if applicable),
3) field assessment of representative restoration projects, or a sub-sample thereof.

To obtain an understanding of campus management practices, the evaluation team interviews grounds and facilities managers and staff and inspects the summary reports and inventories required for certification. Campus managers provide these documents. The list of required documents is attached in Appendix A.

To field verify the information on system-wide campus management, the evaluation team inspects the campus - or for large campuses - a subsample of sites on campus. The sites chosen for field evaluation are selected randomly and represent a minimum of 10 percent of total campus system acreage. Because some management actions will not be evident to reviewers during the field review (such as pesticide application methods), landscape staff will accompany the evaluation team to describe recent management history.

The evaluation team uses all of the standards and performance requirements in this document to evaluate whether the campus as a whole will be awarded certification. If multiple sites are chosen for sub-sampling, , the team uses Part B, Habitat Specific Standards, to evaluate management practices at each site. Part A, the General Standards, and Part B, are both used in the summary evaluation of the campus as a whole.

In the case of corporate or university campuses that have undertaken major restoration efforts related to stormwater management or stream habitat enhancements, the team will also review these projects. The team evaluates restoration projects to verify that sufficient restoration progress is being made per the requirements in each Habitat Specific standard.

Decision Rule for Certification

Certification is awarded when the evaluation team and Salmon-Safe are satisfied that the campus:

- Meets all mandatory standards and requirements (i.e., those general standards and performance requirements that must be met prior to certification as designated with the symbol **R**).

- Meets all provisional standards and requirements, or has provided a written agreement to comply with specific conditions stipulated by the evaluation team to address any observed non-conformances with the provisional standards or performance requirements.

The above requirements must be met at both the policy and site verification levels. All sites in the sub-sample of sites evaluated on a large campus must meet the above requirements. Additionally, the system-wide review of established policies, reporting documents, and interviews must indicate that the campus system as a whole meets the requirements.

In the event that the candidate campus does not meet the mandatory, or non-provisional standards or performance requirements, the evaluation team will stipulate one or more preconditions. These preconditions must be completed to the satisfaction of the evaluation team prior to the award of certification.

Maintaining Certification

Salmon-Safe corporate & university campus certification is valid for five years, subject to annual evaluation that includes a performance overview focusing on any significant alterations in management objectives and practices that could affect the continued validity of Salmon-Safe certification. Satisfactory progress in meeting any outstanding conditions required by the evaluation team is confirmed during annual evaluation.

BIOLOGICAL BASIS FOR STANDARDS

In a general sense, compliance with Salmon Safe certification standards is intended to promote landscape level conservation and protection of biological diversity. However, the primary focus of Salmon-Safe's certification programs is on salmonid species and their habitat requirements. Salmon are a key species and an indicator species within the Pacific Northwest and their conservation is tightly intertwined with the health of the larger ecosystem. Thus, the evaluation focuses on the following key areas of habitat vulnerability most critical to salmonid survival:

1. *Water Quality* – Introduction of sediment, energy (temperature), or chemicals and nutrients from surface or sub-surface runoff.
2. *Water Quantity* – Increase in the magnitude and frequency of peak flows from natural soils and vegetation types converted to impervious surfaces; or reduction in instream flows due to surface or sub-surface water withdrawal for irrigation.
3. *Instream habitat* – Direct alteration of in-stream habitat, including stream bed and stream banks through bank armoring, channelization, or removal of instream wood.
4. *Riparian habitat* – Elimination or reduction of riparian vegetation that can pro vide numerous stream habitat functions including shade, bank stabilization, source of instream cover (large and small wood) and food chain support.
5. *Fish passage* – Poorly designed or inadequately maintained stream crossings that are barriers to passage by adult or juvenile fish.

Part A of the Standards lists the general requirements that broadly address these areas of habitat impact and that must be met for Salmon Safe Certification. Part B of the Standards (Habitat Specific Standards) is comprised of more specific standards organized into six habitat management categories:

- In-stream habitat protection and restoration
- Riparian and wetland protection and restoration
- Stormwater management
- Water use management (irrigation activities)
- Erosion and sediment control
- Chemical and nutrient containment

Each category addresses a different aspect of habitat management that directly relates to protection of salmonids. Each category is comprised of one to several certification standards. Each standard describes the management objective or desired outcome for habitat conditions. Under each standard are more specific performance requirements that must be met for certification. Collectively, the standards in Part B cover the range of management most directly related to protection of salmonid habitat.

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PART A: GENERAL STANDARDS FOR CERTIFICATION

Part A of the Certification Standards, below, lists the general standards that must be met by the campus for certification, including both mandatory conditions that must be met prior to certification (R) and provisional standards that can met by providing a written agreement to comply with specific conditions stipulated by the evaluation team.

R 1) Campus management is not in violation of national, state, or local environmental laws or associated administrative rules or requirements, as determined by a regulatory agency in an enforcement action.

2) Provisions are made for the identification and protection of rare, threatened, and endangered salmonids and their habitat on the campus.

3) Standard management practices used in day-to-day landscape maintenance, such as turf management, do not jeopardize salmon or their habitat, as determined by conformance with Part B of the Certification Standards. These practices are implemented campus-wide.

4) All pesticide use, including any applications by landscape contractors, occurs within the context of an integrated pest management (IPM) program as documented in a comprehensive written plan (Appendix A – see elements required of an IPM plan acceptable to Salmon Safe).

5) Satisfactory progress is being made in addressing landscape design and infrastructure features[1] that degrade salmon habitat, such as parking lots and other pavement areas, road crossings, or concrete lined streams. These restoration efforts may include those required by the evaluation team to address deficiencies, as well as efforts already being undertaken. This progress may include prioritized project lists for the campus, master plans for specific projects, and other planning documents as determined by the review team. There is demonstrated progress in correcting management deficiencies.

6) Summary reporting is adequate to document compliance with Salmon-Safe standards. See Appendix A for a list of written summary reports, documents, and data required for Salmon-Safe assessment.

R 7) Management allows monitoring by a third party authorized by Salmon-Safe, and fully cooperates with such monitoring in so far as possible given staffing and funding constraints. Under rare circumstances, the evaluation team may request that campus management conduct limited monitoring where such monitoring is critically needed to assess the efficacy of existing management practices in meeting Salmon Safe standards. The evaluation team will carefully weigh the need for the monitoring against campus management's guidance regarding the scientific and economic feasibility of the proposed monitoring.

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Non-provisional requirement. Required for campuses of 40 acres or larger in total area. R L

R 8) A policy addressing new campus design and development is in place. This policy requires that the design for expansion or re-development of an existing campus, or design of a new campus be consistent with Salmon-Safe standards, including restoration goals, as feasible considering human use mandates and cost considerations. For example, campus plans demonstrate that they implement green and low impact development (LID) designs. To evaluate conformance, the evaluation team will review design policy and a sample of new campus designs.

[1] An evaluation of the environmental performance of campus buildings is not included in Salmon-Safe certification.

PART B: HABITAT SPECIFIC REQUIREMENTS

Part B of the Certification Standards lists standards and performance requirements organized into 6 management categories, each covering a set of considerations important in conserving salmonid habitat. *In-stream habitat, wetland, and riparian restoration standards only applies to campuses where these features are located within campus boundaries.*

I. Instream Habitat Protection/Restoration

This category applies to certain stream types (as specified for each standard below) that occur within campus boundaries. The focus of this category is on the condition of the actual channel, including the streambed and banks. Channel modifications, such as bank armoring, wood removal, stream crossings, or channelization, can have direct adverse effects on salmonid rearing and spawning habitat for juveniles and adults of all species. This category includes two standards:

Standard B.1.1: Stream channels are in good condition for providing salmonid habitat, with naturally protected stream banks, meandering channel, and large and small wood structure.

This standard applies to a) known and potential fish-bearing streams and b) non-fish bearing perennial or intermittent streams greater than two feet in bankfull width that are connected to fish bearing streams, c) perennial seeps and springs.

Performance requirements:

L 1.1.1 Inventory – Campus management has an accurate map of fish species distribution (existing and potential distribution of native salmonid species) and stream channel types on campus property. At a minimum, these stream channel types shall include: a) fish-bearing, b) potential fish-bearing, and c) non-fish bearing, but greater than two feet in bankfull width and connected to a fish-bearing or potential fish-bearing stream. Channel inventory includes a summary of existing habitat impacts by general type (such as concrete lined channels) at each campus.

R 1.1.2 Channel protection – existing channels are protected from new impacts such as filling and excavation, straightening, unnecessary additional stream crossings, unnecessary removal of wood, or disconnection of off-channel wetlands and ponds.

1.1.3 Restoration effort – A plan is being implemented that shows significant progress toward ensuring that existing stream channel deficiencies are addressed, as feasible within financial constraints and the human use mandates, to meet the following objectives -

i) Type of bank protection – Stream banks are well stabilized by native vegetation.

Non-provisional requirement. Required for campuses of 40 acres or larger in total area. R L

ii) Channelization – The stream has an intact natural channel and floodplain.

iii) Artificial ponds – Artificial ponds located in stream channels are removed. Ponds that remain are reconstructed if needed to provide adequate fish passage, habitat, and maintain stream temperatures and oxygen levels within applicable state water quality standards.

iv) Large wood management – large wood and/or beaver dams provides channel structure and habitat, where feasible.

Standard B.1.2. Road and trail crossings of streams that are on campus property and under campus jurisdiction are minimized and have a minimal effect on instream habitat, fish passage, and constriction of flood conveyance. This standard applies to known and potential fish-bearing streams.

Performance requirements:

L 1.2.1 An inventory of stream crossings has been conducted to determine priorities for fish passage and flood conveyance.

1.2.2 Restoration effort – A plan is being implemented that, in the judgment of the evaluation team, shows significant progress, as feasible within budgetary constraints, toward:

i) ensuring that the frequency and placement of crossings contributes to the restoration of riparian habitat and reduction of water quality impacts.

ii) replacement of culvert crossing with bridges or natural bottom culverts where feasible and where there are clear benefits for fish.

Non-provisional requirement. Required for campuses of 40 acres or larger in total area. R L

II. Riparian & Wetland Protection/Restoration

The focus of this category is on measures taken and management practices employed to protect areas in closest proximity to instream habitat–the riparian vegetation zones and associated wetlands.

This category applies where streams, wetlands, or their riparian zones occur within campus boundaries. This category applies to a) known and potential fish-bearing streams and b) non-fish bearing perennial or intermittent streams greater than two feet in bankfull width that are connected to fish bearing streams. Assessment criteria vary according to stream type (see below).

Standard B.2.1: Riparian areas are in good condition, functioning to maintain and restore stream health, and provide shade, wood recruitment, leaf litter supply, stream bank stability and cover, and filtration of sediment.

Performance requirements:

L 2.1.1. Inventory – All riparian areas of these streams are identified, mapped, and classified by width of existing buffer, length of riparian vegetation free from intrusions from roads, utilities, and other clearings (riparian continuity), and general vegetation types, in order to identify riparian areas in need of restoration.

R 2.1.2 Riparian zone width – For campus lands managed as natural areas, impacts on riparian functions affecting water quality, water quantity, food web, microclimate, floodplains, and habitat shall be minimized within 200 feet of a stream, or within the riparian protection areas cited in adopted local or state plans, whichever distance is larger. Trails are generally an accepted use within these riparian areas unless they are obvious sources of sediment, chemical pollution, or bank instability.

2.1.3 Vegetation – Riparian zones are dominated by native vegetation that provides riparian functions of bank stability and shade, at a minimum.

2.1.4 Restoration effort – A comprehensive program is underway to identify riparian restoration priorities. Implementation is underway to improve riparian functions and conditions, as feasible within budgetary constraints and human use mandates, in terms of:

i) restoring riparian continuity by removal of intrusions such as road and trail crossings, where feasible, and re-planting of native riparian vegetation.

ii) identifying and removing invasive non-native vegetation.

iii) protecting riparian buffers in perpetuity by conservation easement or other means.

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iv) in developed campus lands, improving function of riparian buffers, a minimum of 50 feet and optimal distance of 200 feet from the stream channel, depending on site characteristics, with respect to:
-providing off-channel habitat,
-improving water quality (shade, erosion control),
-providing additional flood storage,
-reducing the impact of invasive species, restoring native vegetation.

v) in campus lands managed as natural area, enhancing native plant communities within the riparian zone.

Standard B.2.2: Wetlands connected to known or potential fish-bearing streams are in good condition, providing valuable slow water rearing habitats for juvenile salmonids and helping to filter and moderate flow to downstream areas.

Performance requirements:

L 2.2.1 Inventory – Wetlands are identified, classified, and mapped. Classification of existing wetlands includes types of impacts and whether the wetland historically or currently provides fish habitat.

R 2.2.2 Wetland protection – Existing wetlands are protected under campus management. Management or public impacts that are detrimental to wetland native vegetation, soils, or water quality are minimized.

2.2.3 Restoration effort – Plans are being implemented that show significant progress, where feasible within budgetary constraints and human use mandate, toward restoring naturally occurring wetlands or creating wetlands that improve stream habitat directly or indirectly by:
-providing off-channel salmonid habitat,
-improving water quality,
-providing additional flood storage,
-reducing the impacts of invasive species, and restoring native vegetation.

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III. Water Use & Irrigation Management

The focus of this category is the use of water for irrigating campus vegetation. Water withdrawals have the potential to adversely impact salmonid habitat, primarily by reducing instream flows. Impacts can be minimized by selecting alternative water sources that do not reduce instream flows, and by reducing the use of water. Water conservation methods include the use of less water-dependent landscaping, maximizing the efficiency of the application system, and reducing the area irrigated. This category includes two standards:

Standard B.3.1: The selected source of irrigation water results in the least potential impact to instream flows of fish-bearing streams.

Performance requirements:

3.1.1 Withdrawals of surface water sources are managed to avoid impact to salmonids in the source stream during cases of drought.

Standard B.3.2: Water conservation measures reduce irrigation water use to the minimum necessary to support maintenance of campus grounds.

Performance requirements:

3.2.1 Conservation plan – campus management follows a plan to conserve water by focusing watering in limited areas based on varying plant needs and human use objectives.

R 3.2.2 Water use monitoring is conducted and annual summary reporting is available. Reporting documents a decline in water use per acre for the system over the most recent five-year period or explains how no further efficiencies are feasible.

3.2.3 Restoration effort – A plan is being implemented that shows significant progress, where feasible within budgetary constraints and human use mandate, toward increased water conservation, including:

i) Low water use native landscaping – landscapes are developed that utilize native vegetation that requires less irrigation.

ii) Replacing outdated irrigation equipment with an efficient, modern irrigation system to adjust supply to vegetation requirements, infiltration, evapotranspiration, and other factors.

iii) Water use plan to further limit irrigation areas to high priority sites as determined by campus management.

iv) Utilizing rain catchment and recycled stormwater systems.

v) Using soil management practices, such as composting and mulching, and thatching and aerating turf, to reduce irrigation requirements.

vi) Minimizing total area of turf by converting turf areas to landscaping that requires less irrigation.

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R Non-provisional requirement. Required for campuses of 40 acres or larger in total area. R L

IV. STORMWATER MANAGEMENT

This category focuses on the management of stormwater runoff on the campus. High levels of impervious surface and drainage systems from roads, parking lots, buildings, and gutters reduce soil infiltration, and can increase the magnitude and frequency of peak flows in the receiving stream. Increased flooding can degrade stream habitat by eroding the channel bed and banks, scouring spawning gravels, and removing stream structures. Frequent flooding can also directly impact juvenile rearing salmonids that require stable, slower waters as over-wintering habitat. Stormwater from parking lots, roads, and landscapes can also be contaminated with oils, heavy metals, pesticides, and fertilizers (nutrients) that degrade the water quality of the receiving streams. This management category addresses practices to treat stormwater runoff to reduce both water quantity and water quality impacts. This category has a single standard:

Standard B.4.1: Stormwater runoff from campus lands is detained and treated to minimize water pollution and reduce adverse effects on stream flows.

Performance requirements:

4.1.1 Inventory – A summary report and mapping provides 1) an estimate of the percent of the campus with impervious surface (pavement and buildings), and 2) primary stormwater drainage routes, areas drained, and location of receiving stormwater drains and streams based on visual inspection of aerial photographs and field knowledge of the campus and surrounding area. The report describes stormwater treatment methods used, if any, in each drainage area, such as infiltration areas, detention ponds, bio-filtration swales, and special projects to mitigate for existing infrastructure, such as reduction in pavement areas, constructed wetlands, and installation of rain catchment systems for buildings. *A stormwater management plan is generally sufficient to meet this requirement.*

4.1.2 Water quantity treatment – The campus implements effective measures to slow run-off originating from primary drainage areas on the campus through infiltration, detention, or other means.

4.1.3. Water quality treatment – The campus implements effective measures to reduce contaminants in stormwater coming from all drainage areas on the campus through infiltration, detention, or other means.

4.1.4. Restoration effort – A plan is being implemented that shows significant progress toward increasing pervious cover types within the campus system and increasing the capacity of the non-built area to diffuse, filter, or detain stormwater flow generated within campus, as feasible within financial constraints and management mandates, including:

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i) reducing impervious surface (concrete, pavement, roof, and other) to less than 5 percent of the campus system land as a whole.

ii) Treatment for water quantity and quality - use of various methods to diffuse, store, and filter stormwater runoff, such as bio-filtration swales, bio-filtration sumps, constructed stormwater treatment wetlands, rain catchment systems, replacement of turf with areas of native landscaping and trees that has higher infiltration, and rain gardens, to meet or exceed the current state requirements and guidelines for stormwater management, as provided in standard state stormwater management manual.

V. Erosion & Sediment Control

Sediment delivery into fish-bearing streams is a major cause of habitat degradation, particularly for salmonid spawning. Stream bank erosion and upland surface soil erosion are the principle sources of sediment. Only upland sources of erosion are evaluated under this category, as bank erosion is evaluated in the instream channel category. Management practices should adequately protect soils from movement. This category has a single standard.

Standard B.5.1: Soils protection is accomplished by vegetative cover, mulch, or other methods to prevent off-site movement of sediment. Erosion control for new construction, stored soils, and potential surface erosion areas are addressed by erosion control standards adopted and used campus-wide.

Performance requirements:

5.1.1 Trail systems – Earthen trails are protected by mulch, water bars, closures or other BMPs as necessary to prevent erosion.

R 5.1.2 Vegetative cover – Bare or disturbed soils are only temporary features on campus and are treated with immediate and long term erosion control measures to prevent sediment transport to streams or off-site in stormwater.

5.1.3 Construction BMPs – all new plans and construction meet or exceed current state requirements for site pollution control, as described in the standard state erosion control management manual.

5.1.4 Restoration effort – Plans and construction of stormwater drainage systems demonstrate progress toward protecting soils from erosion and preventing the transport of sediment into streams or off-site stormwater.

Non-provisional requirement. Required for campuses of 40 acres or larger in total area. R L

VI. Chemical and Nutrient Containment

Salmon survival depends on clean water, free from harmful levels of fertilizers (nutrients), pesticides (herbicides and insecticides, fungicides, and other biocides), stormwater runoff pollutants, and organic waste. These contaminants can travel long distances in stormwater runoff, from a campus to receiving streams. The principal methods to avoid contamination of salmon bearing waters are to minimize overall inputs of these contaminants, restrict the type of inputs, and develop an acceptable method of application through a comprehensive management program, such as an Integrated Pest Management (IPM). This management category has three standards:

Standard B.6.1 Pesticides use on campus does not result in contamination of stormwater or streams with amounts of pesticides harmful to salmon or aquatic ecosystems.

Performance requirements:

6.1.1 Type of pesticides – All use of pesticides on the campus, including waterways, waterway buffers, and uplands, is limited in an IPM program by the specific policies on the method of use, including application type, rate, frequency, location, and amount. Campus management uses only those pesticides that are listed on a campus approved list. These pesticides will only be used when there is no undue risk of harm to salmon and aquatic ecosystems. This limited use list is established and reviewed on an annual basis by campus management to ensure that potential harm to salmon and aquatic ecosystems is minimized.

R 6.1.2 Minimizing aquatic impacts from high risk pesticides - The use of any pesticides on the Salmon Safe Cautionary List of High Risk Pesticides requires written explanation for each pesticide used that details the methods of use, including timing and location, that demonstrate that the risk to aquatic systems is negligible (Appendix B – Salmon Safe's Cautionary List of High Risk Pesticides).

R 6.1.3 Restricted use zones – Pesticide use is specially managed within 1) waterways, and 2) waterway buffers. The buffer zone is defined as a corridor of land that is 60 feet in width on the sides of a stream or other body of water. Measurement of this buffer zone begins at the edge of the water line at the time of application. Anticipated seasonal or weather related changes affecting water level will be included in the decision making process when dealing with buffer zones.

R 6.1.4 Pesticide treatment of trees – Pesticides are used only on rare occasion for treating tree pests or diseases for trees within riparian buffer zones. Injection of pesticides within tree tissues, or paintbrush application, are the only application methods for trees allowed in riparian buffer zones.

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R 6.1.5 Application equipment – Within riparian buffers, pesticide application for vegetation other than trees is done by hand and using low volume, low pressure, single wand sprayers, wiping, daubing and painting equipment, or injection systems. The methods used minimize fine mists and ensure that the applied materials reach targeted plants or targeted soils surfaces.

R 6.1.6 Pesticide drift – Great care is taken to ensure that pesticide drift does not reach nearby surface waters by using appropriate equipment and methods. Spray applications are not allowed in the buffer area when wind speed is above 5 mph or wind direction would carry pesticides toward open water. Also, no spraying is done during an inversion.

6.1.7 Reduction program – An IPM plan or policies are being implemented that promote management practices that reduce the impact of, the unnecessary reliance upon, or eliminate the need for pesticides. These practices generally include careful monitoring and scouting of insects, weeds, and disease, use of non-spray control methods (cultural practices and mechanical controls), use of reduced impact pesticide controls, and/or managing specific sites without the use of pesticides (Appendix A – see required elements of an IPM plan). Pesticide applicators, whether employees or contractors, are trained in the IPM plan and implement it fully.

R 6.1.8 Pesticide applicator licensing – All persons applying pesticides must be currently licensed as private pesticide applicators by the state department of agriculture. Licensed personnel must be specifically endorsed for any of the state defined categories of pest control they undertake, such as aquatic endorsement for all aquatic pest control activities.

R 6.1.9 Pesticide storage, rinsates, disposal – the campus has rigorous policies in place to ensure that no contamination of stormwater or streams occurs due to storage, cleaning of equipment, or disposal of pesticides and these policies are adhered to by campus personnel.

6.1.10 Pesticide tracking system – Detailed records are maintained for all pesticide applications, including applications to aquatic areas and buffer zones, consistent with state requirements.

R 6.1.11 Pesticide application timing – pesticides are not applied when it is raining, unless otherwise directed by label instructions, or when there is potential for transport by runoff to stormwater drains or streams. Decisions regarding scheduling of pesticide applications should account for the expected impacts of anticipated storm events.

R Non-provisional requirement.
L Required for campuses of 40 acres or larger in total area.

Standard B.6.2: Fertilizer and lime use and potential for contamination of stormwater and streams is minimized through adherence to a program that uses alternative cultural and mechanical practices to maintain soil fertility, uses fertilizers with discretion based on soil fertility and plant needs, uses slow reacting fertilizers, and ensures proper application of fertilizer and lime in terms of amounts and timing.

Performance requirements:

R 6.2.1 Types of fertilizers – Fertilizer types are tailored to the existing soil conditions and plant requirements. Slow release, organic fertilizers, or compost are generally used. Fertilizers must be selected through a state-approved screening and approval process to ensure the fertilizer does not contain toxic contaminants. If soluble fertilizers are used the timing and rate of application is carefully considered (see below).

R 6.2.2 Fertilizer application amounts – In general campus turf and shrub bed areas soluble fertilizer rates of application are limited to no more than .5 lb N/1000 square feet with restraints on timing to minimize fertilizer in stormwater runoff.

6.2.3 Low fertilizer landscaping – plants with low fertilizer requirements are used for landscaping where feasible.

6.2.4 Focused use – Fertilizer and lime are used only on high and moderate intensity use areas, such as flowerbeds, sport fields, some turf areas and planting beds, and some plantings associated with construction and restoration projects.

R 6.2.5 Buffer zone width – Fertilizer and lime use is highly restricted within a waterway buffer zone (see 6.1.2).

R 6.2.6 Use within watercourse buffers – fertilizer use in buffer zones of waterways is restricted depending on the intensity of application and type of fertilizers. The allowable use of fertilizer also varies depending on whether they are being used for routine maintenance or for restoration and construction projects.

6.2.7 Soil testing– Periodic soil testing is done to determine the need for fertilizer (Phosphorus and Potassium) and lime relative to appropriate benchmarks established by campus management. Testing is conducted a minimum of twice per year and prior to fertilizer application.

6.2.8 Soil fertility - practices, such as on-site mulching of leaf and grass clippings, are used to reduce need for fertilizer.

6.2.9 A summary report of annual fertilizer use is provided that shows a stable or declining trend in synthetic fertilizer use campus-wide, taking into account changes in acreage managed, campus uses, and other factors.

Standard B.6.3: Other contaminants[2]**,** such as animal and chemical waste, do not contaminate stormwater or streams leaving the campus, recognizing that the campus may have a limited management ability to control the public and actions of other agencies.

Performance requirements:

6.3.1 Animal waste control – Campus management and education policies regarding dog or other domestic animal waste control are effective in minimizing the contamination of stormwater or streams.

R 6.3.2 Chemical waste spills/dumping – The campus is managed to avoid chemical waste dumping. The campus has a rigorous chemical material spill response policy and personnel are trained in spill response.

6.3.3 Wildlife waste control program (geese, ducks) – If necessary and practical, a management program is implemented to ensure that duck and goose waste does not contaminate stormwater or streams.

6.3.4 All vehicle washing is done at an NPDES permitted car wash.

Standard B.6.4: Material and Waste Storage and Handling Areas are used that ensure that pesticides, fertilizers, and other materials and waste do not contaminate streams or stormwater.

Performance requirements:

6.4.1 The campus stores all materials that could potentially contaminate streams or stormwater in a secure dry location.

6.4.2 Materials handling is done in dry areas and where spills can be cleaned up without risk of contamination of stormwater or streams.

6.4.3 The campus has rigorous policies in place to ensure that no contamination of stormwater or streams occurs due to storage, cleaning of equipment, or disposal of materials and these policies are adhered to by campus personnel and contractors.

[2] Stormwater contamination and treatment related to runoff from roads and landscapes are evaluated in the Stormwater management category.

GLOSSARY

Bankfull width – the average width of the stream when the flow is at the ordinary high water mark, generally considered the two year flow event and measured in the field as the stream channel below the line of perennial vegetation.

Best management practices – includes mowing, fertilizing, pesticide spraying, and other day-to-day landscape maintenance activities that are conducted in such a way as to minimize environmental impacts.

Campus – a corporate or university campus consists of buildings in close proximity to each other with centralized support, amenities and other internal functions.

Developed campus land – campus land that comprises part or all of a defined campus and is managed for moderate or intensive human uses, such as parking lots, sidewalks, sport fields, turf, or gardens.

Fish-bearing stream – a stream that is known to provide habitat for fish during at least some portion of the year. Fish-bearing includes all species of fish to ensure that potential salmonid streams are not excluded because of current degraded conditions.

Infrastructure – constructed portions of a campus, such as roads, drainage structures, road crossings of streams, and parking lots. For certification purposes, infrastructure does not include buildings.

Landscape design – the established landscaping features of a developed campus, such as areas of mowed turf grass, buffers along watercourses, areas of trees and shrubs. These areas are intermediate in campus management influence, between day to day best management practices and infrastructure.

Natural area campus land – campus land that comprises part or all of a defined campus and is managed to protect and restore native vegetation and species or is in a de facto natural area status because it has not been designated for other uses.

Pesticide –a general term for any substance used to control pests including weeds, insects, disease organisms, rodents, and burrowing mammals. Pesticides include insecticides, herbicides, fungicides, and other natural or synthetic substances used to kill pests.

Potential fish-bearing stream – a stream that either historically provided habitat, or could potentially provide habitat for fish, including salmonids, with adequate restoration.

Riparian zone – an ecological zone of varying width adjacent to a waterway or wetland that, in a natural condition, provides critical wildlife habitat and is essential for maintaining the healthy functioning of the adjacent stream, pond, or wetland. Unless otherwise stated, the width of the riparian zone is 200 feet for assessment purposes.

Waterway buffer - a corridor of land of a specified width adjacent to the stream or wetland edge in which there are special management restrictions to protect and restore aquatic habitats.

APPENDIX A: DOCUMENTS NEEDED FOR CAMPUS ASSESSMENT

Requirements 1-4 apply only if stream, wetland, or riparian habitat is present on the campus. *Furthermore, requirements 1-5, denoted with the symbol* **L** *apply only to a campus of 40 acres or larger in total area.*

L 1. Inventory and mapping of fish species distribution (existing and potential distribution of native salmonid species) and stream channel types for property managed by the campus . At a minimum, these stream channel types shall include: a) fish-bearing, b) potential fish-bearing, and c) non-fish bearing, but greater than two feet in bankfull width and connected to a fish bearing stream. The channel inventory shall include a summary of existing habitat impacts by general type, such as locations of channelized streams, severe eroding banks, and other parameters, for each campus.

L 2. Inventory and mapping of stream crossings within the campus to determine need for fish passage and flood conveyance.

L 3. Inventory, mapping, and description of riparian zones (of all stream types listed in 1, above) to summarize existing protected buffer widths, shade condition, general vegetation types (such as mowed grass or mature native trees) within the protected buffer and outside that area in the riparian zone), and riparian restoration opportunities. Local jurisdiction inventory & mapping of riparian areas overlaid with campus areas is generally sufficient to meet this requirement.

L 4. Inventory, mapping, and classification of wetlands. Inventory and mapping using National Wetland Inventory or local wetland inventory data is the minimum acceptable level of mapping. Classification includes types of impacts and whether the wetland historically or currently provides fish habitat.

L 5. Summary report that provides an estimate of the percent impervious surface (pavement) on campus based on visual inspection of aerial photographs and field knowledge of the campus. The report includes a summary of the total percent impervious estimate for both developed and natural areas of the campus. In addition, the report lists any special stormwater mitigation projects that have been completed in the five years preceeding the initiation of certification evaluation, such as reduction in pavement, detention ponds, or biofiltration swales.

6. An Integrated Pest Management Plan, or summary information, that contains the following information –

   i. Pest control strategy to ensure that prevention and physical, mechanical, or biological control methods are evaluated for use before pesticides are used. Pest control strategies will be re-evaluated a minimum of once a year.

Non-provisional requirement. Required for campuses of 40 acres or larger in total area. **R** **L**

ii. Criteria for choosing any method of pest control includes any potential negative impacts to aquatic systems.

iii. Limited Use List of pesticides approved for use in aquatic buffers with annual review based on available information on impacts to aquatic systems.

iv. Training and education in pest management techniques and IPM plan.

v. Buffer zone width and restrictions for use of pesticides within buffer zones.

vi. List of pesticides used on trees and discussion of methods (including equipment, frequency, timing, location, and formulation and amount used).

vii. Precautions taken to prevent pesticide drift.

viii. Pesticide applicator licensing requirements.

ix. Pesticide storage, rinsate, and disposal policies.

x. Pesticide tracking system.

7. Summary reports on monitoring activities and findings for any monitoring conducted on the campus within 5 years prior to the campus' initial application for Salmon-Safe certification. Monitoring reports include campus-wide summary reports on irrigation and water use. Reports are also provided for any water quality and habitat monitoring projects that have been conducted, including stormwater runoff testing to help determine if over-fertilization (Nitrogen) is occurring in high fertilizer use areas.

8. Annual restoration project monitoring reports summarizing the results of monitoring according to the restoration monitoring policy established by campus management.

9. Annual summary report from periodic soil testing conducted to determine the need for fertilizer and lime use and to demonstrate trends in fertilizer and lime use campus-wide. The report should include soil analysis reports, and factors responsible for the reported increase or decrease in fertilizer use and relation to soil testing.

10. Harmful chemical waste spills/dumping prevention and response policies and summary documentation on any chemical waste dumping that has occurred.

Non-provisional requirement. Required for campuses of 40 acres or larger in total area. R L

APPENDIX B: SALMON-SAFE HIGH RISK PESTICIDE LIST

Certain pesticides are a serious threat to salmon and other aquatic life. In addition, pesticide formulations can contain other ingredients that are potentially more toxic than the active ingredients, such as non-ionic surfactants nonylphenols and their parent compounds nonylphenol polyethoxylates found in the spreader R-11. In addition to killing fish, certain pesticides at sub-lethal concentrations can stress juveniles, alter swimming ability, interrupt schooling behaviors, cause salmon to seek sub-optimal water temperatures, inhibit seaward migration and delay spawning. All of these behavioral changes ultimately affect survival rates.

The following chart lists many of the pesticides known to cause problems for salmon and other fish. The list includes chemicals that could be used for campus management purposes that are listed with the EPA in various risk categories. Use this chart to help identify pesticides that require special consideration. Please note that this chart lists only some of the currently available pesticides in common usage.

A campus using any of the pesticides indicated as "High Risk" above may be certified *only* if written documentation is provided that demonstrates a clear need for use of the pesticide, that no safer alternatives exist, and that the method of application (such as timing, location, and amount used) represents a negligible risk to water quality and fish habitat.

COMMONLY USED PESTICIDES THAT POSE HIGH RISK TO SALMON AND AQUATIC LIFE IN URBAN STREAMS

1,3-dichloropropene
2,4-D
acephate
atrazine
bensulide
bentazon
bifenthrin
bromoxynil
captan
carbaryl
chlorothlonil
chlorpyrifos
cyhalothrin [3]
cypermethrin
diazinon
dicamba
dichlobenil
diflubenzuron
dimethoate
disulfoton
diuron
esfenvalerate
fenamiphos
iprodione
linuron
malathion
metolachlor
metribuzin
naled
norflurazon
oryzalin
oxyfluorfen
paraquat dichloride
pendimethalin
permethrin
R-11
simazine
tebuthiuron
triclopyr
trifluralin

This list is based on EPA hazard level for fish and fish habitat. It is subject to change as pesticide registrations are updated and as more environmental data becomes available.

[3] Chloropyrifos is not allowed for use at Salmon-Safe certified campuses.