BIODIVERSITY FRIENDLY FORESTRY PRACTICES TAXONOMY

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Contributions and acknowledgements

Contributions

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organization for biodiversity certificates

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Practice 1. Large and very large live trees

Practice 2. Presence of deadwood

Practice 3. Wildlife-forestry balance

Practice 4. Diversification of tree species

Practice 5. Adaptation of tree species

Practice 6. Forest layers

Practice 7. Soil fertility

Practice 8. Forest edges

Practice 9. Open spaces

Practice 10. Tree-related microhabitats

Practice 11. Forest set-asides

Practice 12. Wetlands

Practice 13. Ponds network

Practice 14. Natural regeneration

Practice 15. Riparian forest

Practice 16. Forestry machinery

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Silvicultural management practices list

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Does a consensus on biodiversity-friendly practices efficiency exist ?

1. To be accompanied in management by an ecologist
2. Preserve and connect non-forested areas and ecological habitats: do not afforest on wetlands or on meadow over 6 years, do not install a wind turbine on land owned by the project owner, do not carry out major work essential to forest management.
3. No clear-cutting, unless strongly encouraged by the ecologist (e.g. for health reasons).
4. Respect organical cycles when carrying out heavy operations (felling and shredding): do not carry out operations between March 15 and July 15, and comply with the cycles of protected species.
5. Do not introduce invasive exotic species into plantations.
6. In the case of stand renewal or afforestation, obtain a minimum of three tree and shrub species.
7. No phytosanitary products, fertilizers or soil improvers are used (organic or chemical).

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Preliminary requirements

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Retain less than 2 very large live trees and less than 6 large live trees per hectare

In a riparian context: retain less than 1 very large live trees and less than 5 large live trees over a linear distance of 500m

Level 1. Retain between 2 and 4 very large live trees and between 6 and 10 large live trees per hectare

In a riparian context: retain less than 3 very large live trees and less than 5 large live trees over a linear distance of 500m

Level 2. Retain between 4 and 6 very large live trees and between 10 and 12 large live trees per hectare

In a riparian context: retain between 5 and 9 very large live trees and more than 5 large live trees over a linear distance of 500m

Level 3. Retain between 6 and 8 very large live trees and between 12 and 15 large live trees per hectare

In a riparian context: retain at least 19 very large live trees and more than 10 large live trees over a linear distance of 500m

Level 4. Retain more than 9 very large live trees and more than 15 large live trees per hectare

In a riparian context: place all large and very large live trees in free evolution

Note : Very large tree: circumference ≥ 210 cm - diameter: ≥ 67,5 cm ; large tree: circumference : ≥ 150 cm - diameter: [47,5 - 67,5[cm ;

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Practice 1. Retain large and very large live trees

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Retain less than 6 dead trees 1/ha and less than 10 types of deadwood.
In a riparian context: retain less than 5 standing dead woods and 5 medium-sized3 dead woods on the ground over a linear distance of 500m.

Level 1. Retain at least 6 dead trees/ha to reach a minimum of 20m3/ha.
In a riparian context: retain at least 5 standing dead woods and 5 medium-sized dead woods on the ground over a linear distance of 500m.

Level 2. Average dead wood diversity greater than or equal to 10 types.
In a riparian context: retain between 5 and 7 standing dead woods and between 5 and 7 large-sized4 dead woods on the ground over a linear distance of 500m.

Level 3. Retain more than 6 dead trees/ha to reach a minimum of 25m3/ha. Average dead wood diversity greater than 10 types. (species, state of decay, sizes...)
In a riparian context: retain at least 8 standing dead woods and 8 large-sized dead woods on the ground over a linear distance of 500m; set up conservatory woodpiles. Average dead wood diversity greater than or equal to 10 types.

Level 4. Reach a minimum of 30m3/ha of dead wood. Do not harvest dead wood on the ground; encourage spatial continuity by creating a network of dead wood within the forest.

Note : Dead wood = minimum 35cm diameter ; richness of dead wood types: species, diameter, decomposition stage, lying or standing position, etc. ; medium-sized: circumference [55-120]cm, diameter : [17,5 - 47,5]cm ; large-sized : circumference ≥ 120 cm, diameter: ≥ 47,5 cm.

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Practice 2. Maintain and diversify large-sized lying and standing dead wood

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Level 0. Assess the forest-wildlife balance by regularly checking for any impact or damage caused by wildlife on plantations, natural regeneration, and future trees, which could compromise the future of the stand.

Level 1. Prohibit all baiting, scattering of grains, and feeding of large game (any food supplement outside the natural environment). Protect plants and diversify food resources for deer by encouraging the emergence of accessible undergrowth.

Level 2. Set up a hunting lease prohibiting the hunting of small animals and migratory birds, the release of animals for shooting and systematic resettlement.

Level 3. Prohibit the installation of barbed wire, electrified deterrent systems and animal-proof fence, except in the case of plantation protection or extensive grazing. Mesh openings must be large enough to allow the passage of small wildlife, with the largest openings at ground level, and the fence must not be more than 2 m high.

Level 4. Encourage the natural return of large predators to regulate herbivorous fauna.

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Practice 3
Maintain the wildlife-forestry balance

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. The plantation is monoculture (one species represents 100% of the basal area).

Level 1. Plant at least 2 species. The target species represents a maximum of 90% of the area planted.

Level 2. Plant between 25% and 50% of the maximum number of tree species recommended for the environment. The target species represents a maximum of 80% of the area planted.

Level 3. Plant between 50% and 70% of the maximum number of tree species recommended for the environment, with at least one dissimilar mix (e.g. coniferous trees/boradleaf trees). The target species represents a maximum of 80% of the area planted.

Level 4. Plant between 70% and 85% of the maximum number of tree species recommended for the environment, with at least one dissimilar mix (e.g. coniferous trees/boradleaf trees). The target species represents a maximum of 70% of the area planted.

Level 5. Plant more than 85% of the maximum number of tree species recommended for the environment, with at least one dissimilar mix (e.g. coniferous trees/boradleaf trees). The target species represents a maximum of 60% of the area planted.

Note : The surface area exploited does not include wetlands, senescence islands and open environment.

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Practice 4. Forest diversification (planting and resumption of management)

Reference parameter:

Optimum number of tree species at forestry scale

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. No species prohibited (level 0). Use of tree species without consideration for their indigenousness or their ability to adapt to climate change.

Level 1. More than 50% of species are adapted. If non-native species need to be introduced, delimit test areas to ensure their non-propagation.

Level 2. More than 70% of species are adapted, including 20% of favorable species. If non-native species need to be introduced, delimit test areas to ensure their non-propagation and target species that are phylogenetically close to native species.

Level 3. More than 90% of species are adapted, including 40% of favorable species. If non-native species need to be introduced, delimit test areas to ensure their non-propagation and target species that are phylogenetically close to native species.

Level 4. 100% of species are adapted, including 50% of favorable species and 10% of rare species. If non-native species need to be introduced, delimit test areas to ensure their non-propagation and target species that are phylogenetically close to native species.

Level 5. 100% of species are adapted, including 70% of favorable species and 20% of rare species . If non-native species need to be introduced, delimit test areas to ensure their non-propagation and target species that are phylogenetically close to native species.

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Practice 5
Favor climatic adaptation by restoring native species

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Count only one vertical stratum (among: moss, herbaceous, shrub and arborous).
In a riparian context: count one vertical stratum (among: herbaceous, shrub and arborous).

Level 1. Count 2 vertical strata (among: moss, herbaceous, shrub and arborous), with at least 2 different functional groups per stratum (excluding arborous stratum).
In a riparian context: count 2 vertical strata (among: herbaceous, shrub and arborous).

Level 2. Count 3 vertical strata (among: moss, herbaceous, shrub and arborous), with at least 2 different functional groups per stratum (excluding arborous stratum).
In a riparian context: count the 3 following vertical strata: herbaceous, shrub and arborous.

Level 3. Count each of the 4 following vertical strata: moss, herbaceous, shrub and arborous, with at least 2 different functional groups per stratum (excluding arborous stratum).

Level 4. Count each of the 4 following vertical strata: moss, herbaceous, shrub and arborous, with different tree heights and with at least 2 different functional groups per stratum (excluding arborous stratum).

Note : A stratum must represent at least 10% of the total surface area in a riparian context (plants can be counted in all strata occupied by their foliage).

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Practice 6. Favor vertical stratification of forest (planting and resumption of management)

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Level 0. No wood drying, no measures to prevent soil compaction, no consideration of soil fertility when harvesting timber.

Level 1. Exploitation for the production of woodchips: harvest deciduous species without leaves (harvest period or sufficient time for the tree crowns to dry out) ; wood drying of 3 months before skidding. During forest renewal: renewal on areas of less than 2 hectares to avoid large-scale impacts. For all types of operations: delimit skid trails to limit the surface area covered ; leave 10% of slash on the ground.

Level 2. Leave at least 25% of slash on the ground (10% on soils that are not very sensitive to mineral export). Exploitation for the production of woodchips: rationalise small wood export by stagger harvests over time (15 years for soils not very sensitive to mineral export, 30 years for soils moderately sensitive to mineral export), leave leaves on the ground.

Level 3. Rationalise stumps harvesting: limit harvesting to final cuts ; avoid extracting stumps from fine-textured soils ; leave at least 10% of stumps in place; select the parts of the stump to be harvested; leave a % of the harvested volume of stumps in place by creating woodpiles to provide additional habitats for wildlife (excluding open areas and pounds).

Level 4. Leave at least 20% of stumps in place and 30% of small wood at the cutting site in soils that are sensitive or moderately sensitive to mineral export. Do not harvest in highly sensitive soils.

Level 5. Prohibit tillage (no scarification of soil, even to control bracken fern) and export of slash and stumps.

Note : Uneven-aged forest: forestry operations concern the entire plot ; even-aged forest by clump: forestry operations concern the area of the clump.

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Practice 7. Protect the biodiversity and fertility of forest soils

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Level 0. No action to protect or manage existing edges.

Level 1. Preserve the edge, without any specific management of the edge.

Level 2. Stagger the layers of vegetation along the edge by regular maintenance to allow the shrub and herbaceous layers to develop: pruning, cutting back branches, thinning the edges, late mowing of the herbaceous layer every two to three years).

Level 3. Complete the edge with refuge areas (woodpile, stump, scree, pollarded trees, etc.).

Level 4. Create additional edges (e.g. by widening the forest road verges) to bring more light and allow herbaceous and/or shrubby vegetation to develop.

Level 5. Create or maintain funtional edges on the forestry project (clearing, forest tracks, fields, wtercourses) over a width of 10 to 25m. This should include: herbaceous fringe, shrubby layer, tree layer with shade trees, with a wide variety of berry and flowering species, pollarded trees, woodpiles, screes, stumps, etc. An edge can only be permanent.

Note : Additional edges must be located at the edge of a forest track or road, or at the edge between a forest and an open space. Do not create additional forest edges outsides these categories.

Practice 8. Promote and conserve the functionality of forest edges

Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. No existing open spaces, or average of less than 1 open space per 10 hectares (area less than 1%).

Level 1. At least 2 permanent open spaces per 10 ha (on average), without any specific management to maintain them, or an area between 1% and 2% of open areas.

Level 2. At least 2 permanent open spaces per 10 ha (on average), or an area between 2% and 3% of open spaces, sustainably managed (late or differentiated mowing, brushing, grubbing-up or trimming) and in compliance with the intervention periods.

Level 3. Create temporary open spaces, as a priority in former open spaces, to connect existing open spaces and increase the resilience of the species that live there.

Level 4. Create permanent open spaces, as a priority in former open spaces, using artificial gaps, to create a structurally diverse open network.

Level 5. At least 4 open spaces per 10 ha (on average), or an area between 3% and 5% of sustainably managed open spaces.

Note : La création de milieu(x) ouvert(s) temporaire(s) ne doit pas servir de contournement pour réaliser des coupes rases. [1] Chaque zone ouverte doit faire de 1 à 1,5 fois la hauteur du peuplement pour être considérée.

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Practice 9. Create forest set-asides

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Retain less than 2 trees/ha with tree-related microhabitat

Level 1. Retain more than 2 trees/ha with tree-related microhabitat

Level 2. Retain more than 5 trees/ha with tree-related microhabitat

Level 3. Retain more than 8 trees/ha with tree-related microhabitat

Level 4. In addition, preserve or promote candle trees, the rares microhabitats, as well as those with particularly slow development times (e.g. large soil cavities).

Level 5. Retain more than 10 trees/ha with tree-related microhabitat, including: – 10 live trees/ha with tree-related microhabitat – more than 5 types of tree-related microhabitat/ha among : cavities, tree injuries and exposed wood, crown deadwood, excrescences, fungal fruiting bodies and slime moulds, epiphytic and epixylic structures, exudates

Note : A tree with the same tree-related microhabitat several times is counted only once. 1 Trees with tree-related microhabitat must be distributed throughout the plot (regular pattern).

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Practice 10. Maintain and promote tree related Microhabitats (TreMs)

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Less than 1% of the total harvest area is unharvested.

Level 1. Between 1% and 3% of the total harvest area is maintained as contiguous unharvested patch, with a management adapted to a buffer zone of at least 30m to ensure the protection of the set-aside area.

Level 2. Between 3% and 5% of the total harvest area is maintained as contiguous unharvested patch, with a management adapted to a buffer zone of at least 30m to ensure the protection of the set-aside area.

Level 3. Between 5% and 7% of the total harvest area is maintained as unharvested patch with a minimum of 5% of contiguous area, with a management adapted to a buffer zone of at least 30m to ensure the protection of the set-aside area.

Level 4. Between 7% and 10% of the total harvest area is maintained as unharvested patch, with a minimum of 5% of contiguous area, with a management adapted to a buffer zone of at least 30m to ensure the protection of the set-aside area.

Level 5. More than 10% of the total harvest area is maintained as an unharvested patch, with a minimum of 5% of contiguous area, with a management adapted to a buffer zone of at least 30m to ensure the protection of the set-aside area.

Note : Each set-aside area must cover at least 0,3 hectare.

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Practice 11. Create forest set-asides

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. The wetlands are not preserved, the catchment and/or drainage are not prohibited.

Level 1. Prohibit catchment and drainage to preserve wetlands, with management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

Level 2. Appropriate management (scrub clearance, thinning, mowing, etc.) and adapted to a buffer zone of at least 30m to preserve functionality of the environement.

Level 3. Carry out restoration work beneficial to the biological, hydrological and biogeochemical functions of the wetland, with management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

Level 4. Create new wetlands that are relevant to the environment and connect them together, with management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

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Practice 12. Preserve wetlands

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. No action to protect or conserve ponds to maintain them in a sufficient ecological state.

Level 1. Reopen the environment: partially light the banks, do not deposit slash in the pond. Do not work on old wooded ponds.

Level 2. Carry out a partial dredging every 5 years (aim for a complete dredging every 1 (to 20 years).

Level 3. Regular clearing of undergrowth depending on vegeation dynamics, planting (if necessary) of helophytes.

Level 4. Diversify the bank profile: gentle slope for part of the bank, and successive levels of slope.

Level 5. Improve connectivity by creating new ponds nearby (maximum 100m radius).

Note : This practice is a special case of the practice on the preservation of wetlands, and onl y applies to existing ponds and/or if the ecologist's recommendations are to create a pond.

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Practice 13. Preserve the functionality of the ponds network

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Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. The harvest area under natural regeneration represents less than 20% of the identified optimal area.

Level 1. The harvest area under natural regeneration represents between 20% and 40% of the identified optimal area. Prohibit planting after clear-cutting operation to avoid cumulative impact of intervention. Stagger natural regeneration over several years to encourage cross-breading between reproductive trees.

Level 2. The harvest area under natural regeneration represents between 40% and 60% of the identified optimal area.

Level 3. The harvest area under natural regeneration represents between 60% and 80% of the identified optimal area.

Level 4. The harvest area under natural regeneration represents between 80% and 90% of the identified optimal area.

Level 5. The harvest area under natural regeneration represents more than 90% of the identified optimal area.

Note : The number of seed trees must be sufficient to guarantee a high level of genetic diversity in the future stand: depending on the species, a minimum of 30 seed trees per hectare in place at the final cutting stage; presence of surrounding mature stands in the case of progressive regeneration cutting of entire plots.

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Practice 14. Promote natural regeneration

Reference parameter:

optimal % of surface left to natural regeneration

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Level 0. Less than 25% of the sand area is covered with native willow and/or poplar, or ash and/or alder. Less than 5 dead of live trees provide sufficiently extensive aquatic root cover over 500m linear of bank.

Level 1. At least 25% of the sand area is covered with native willow and/or poplar, or ash and/or alder. Management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

Level 2. Between 5 and 9 dead or live trees provide sufficiently extensive aquatic root cover over 500m linear of bank. Management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

Level 3. At least 10 dead or live trees provide sufficiently extensive aquatic root cover over 500m linear of bank. Management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

Level 4. Alder and ash must be included among the species constituting trees offering sufficiently extensive aquatic root cover. The riparian forest must contain areas of hygrophytes (including helophytes) and lianas. Management adapted to a buffer zone of at least 30m to preserve the functionality of the environment.

Note : Indigenous poplars: black poplar, white poplar, grey poplar. Do not plant "cultivar" poplars.

Practice 15. Preserve and restore the composition and functions of riparian forests

Does a consensus on biodiversity-friendly practices efficiency exist ?

Level 0. Diagnose soil characteristics (condition, sensibility) before starting forestry operations.

Level 1. Do not allow machinery to pass within 10m of wetlands ; do not drive on wet ground. Follow the curves and the natural slopes of the land, the old tracks, to mark out the circulation zones of motorised and operating machinery. Localised maintenance only (inter-row shredding allow, excluding sensitive periods)."

Level 2. Integrate a network of skid trails at least every 20m for heavy machinery; make tracks less than 4m wide. Prohibit the use of motorised machinery and vehicles outside skid trails and tracks.

Level 3. Low-impact skidding: use of light equipment (horse, quad, micro-tractor) to evacuate firewood to skid trails, use of winches and directional felling for logs.

Level 4. Dedicate less than 10% of the area to machinery traffic (tracks, skid trails, storage areas).

Level 5. Favour manual work and small-scale mechanisation, do not use harvesters.

Note : Levels are cumulatives.

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Practice 16. Limit the impact of forestry machinery

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