



2.5 Monitoring the impact of certification

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Is there a future for participatory approaches?

In spite of extensive sustainability indicators, there is a lack of quantitative evidence of the positive impact of certification on forest biodiversity. The widespread use of conventional monitoring approaches have thus far not provided conclusive information about the effects of forest certification schemes such as that of the Forest Certification Council (FSC). One of the reasons for this is thought to be the high costs of conventional monitoring (and consequently the relatively small sample sizes), which does not permit representative sampling (van der Hoeven et al. 2000; van Kuijk, Putz and Zagt 2009).

Conventional monitoring tools

Some species of vascular plants (*Mallotus* spp. and *Macaranga* spp.) have been used as indicators for forest disturbance (Kessler 1999; Slik 2001). Although most evidence indicates that single species are not good indicators, there is some scientific evidence that single fauna taxa (species or genera) in tropical rainforests have this predictive capacity (Azevedo-Ramos, de Carvalho Jr. and Nasi 2002). Johns (1987, 1997) and Grieser Johns (1996) provide good examples of structural responses — in terms of changes in species composition and guild composition of avian communities — to disturbance caused by logging in tropical lowland forests. Several authors suggest, however, that single taxa alone are not sufficient to measure the impact of logging on forest biodiversity; they also question whether such an approach is helpful (Landres et al. 1988; Sheil 2001; Azevedo-Ramos, de Carvalho Jr. and Nasi 2002; Sheil, Nasi and Johnson 2004). Some of them conclude that a suite of indicators is needed to make accurate estimates of impact.



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Ghazoul and Hellier (2000) suggest a monitoring protocol based on five indicators:

- forest structure;
- bird community structure;
- butterfly species richness;
- mammal species richness; and
- forest disturbance (dead wood and decomposition).

We suggest that this protocol is suitable to be used in a participatory approach that uses local knowledge and assigns monitoring responsibilities to local people.

Recommendations

As mentioned above, two of the reasons for the lack of conclusive results are thought to be the high costs involved in conventional monitoring and the relatively small sample size, which does not permit quantification of forest management impacts. An important question is: are there alternatives? Are there more efficient and more cost-effective systems that would lead to better results? Sheil, Nasi and Johnson (2004) and Sheil (2001) propose a range of participatory approaches, including participatory mapping, preference matrices for forest products, and inventories of indigenous knowledge.

They recommend the use of local and indigenous knowledge in monitoring the impact of logging on biodiversity in forest concessions. A participative, locally based approach is believed to be more cost-effective; it can also cover a much larger sample area than conventional methods.

Recent research that compared the results of conventional transect counts with results obtained through local knowledge showed that local communities provided accurate estimates (determined by comparing empirical research results with the results of participatory monitoring) of wildlife densities in tropical forests (van der Hoeven 2007). Danielsen et al. (2007, 2008) state that in some circumstances locally based monitoring has advantages over conventional monitoring by professionals. It can build on local capacity and relations between local people and authorities, and can result in more timely management interventions.

We believe that the use of participative monitoring methods in sustainable forest management certification schemes should be further promoted and should complement conventional methods. We also believe, however, that conventional methods cannot be abolished altogether, but should be merged with participatory monitoring to provide calibration and back-up. Little research has been done on the effectiveness of combining conventional and participative methods. A major research effort should result in applicable protocols for forest managers.

References

- Azevedo-Ramos, C., O. de Carvalho Jr. and R. Nasi. 2002. *Animal indicators: a tool to assess biotic integrity after logging in tropical forests?* Jakarta: CIFOR.
- Danielsen, F., D. Burgess, A. Balmford, P.F. Donald, M. Funder, J.O.G. Jones, P. Alviola, D.S. Balete, T. Blomley, J. Brashares, B. Child, M. Enghoff, J. Fjeldsa, S. Holt, H. Hubertz, A.E. Jensen, P.M. Jensen, J. Massao, M.M. Menoza, Y. Ngaga, M.K. Poulsen, R. Rueda, M. Sam, T. Skielboe, G. Sturat-Hill, E. Topp-Jørgensen and D. Yonten. 2008. "Local participation in natural resource monitoring: a characterization of approaches." *Conservation Biology* 23: 31–42.
- Danielsen, F., M.M. Mendoza, A. Tagtag, P.A. Alviola, D.S. Balete, A.E. Jensen, M. Enghoff and M.K. Poulsen. 2007. "Increasing conservation management action involving local people in natural resource monitoring." *Ambio* 7: 566–570.
- Ghazoul, J. and A. Hellier. 2000. "Setting limits to ecological indicators of sustainable tropical forestry." *International Forestry Review* 2: 243–253.
- Grieser Johns, A. 1996. "Bird population persistence in Sabahan logging concessions." *Biological Conservation* 75: 3–10.
- Johns, A.D. 1997. *Timber production and Biodiversity Conservation in Tropical Rainforests*. Cambridge: Cambridge University Press.
- Johns, A.D. 1987. "The use of primary and selectively logged rainforest by Malaysian hornbills (*Bucerotidae*) and implications for their conservation." *Biological Conservation* 40: 179–190.
- Kessler, M. 1999. "Plant species richness and endemism during natural landslide succession in per-humid montane forest in the Bolivian Amazon." *Ecotropicas*: 123–136.
- Landres, P.B., J. Verner and J.W. Thomas. 1988. "Ecological uses of vertebrate indicator species: a critique." *Conservation Biology* 2: 316–328.
- Sheil, D. 2001. "Conservation and biodiversity monitoring in the tropics: realities, priorities and distractions." *Conservation Biology* 15: 1179–1182.
- Sheil, D., R. Nasi and B. Johnson. 2004. "Ecological criteria and indicators for tropical forest landscapes: challenges in search for progress." *Ecology and Society* 9(1): 7. [online] www.ecologyandsociety.org/vol9/iss1/art7/.
- Slik, J.W.F. 2001. *Macaranga and Mallotus (Euphorbiaceae) as indicators in the lowland dipterocarp forests of East Kalimantan*. PhD dissertation. Tropenbos-Kalimantan Series 4. Wageningen: The Tropenbos Foundation.
- van der Hoeven, C. 2007. *The missing link: bridging the gap between science and conservation*. PhD thesis Wageningen University, 152 pp.
- van der Hoeven, C.A., H.H. de Longh, V. Nijman and B. van Balen. 2000. Biodiversity in disturbed ecosystems. A literature review of the use of fauna indicators for the assessment and monitoring of the levels of human disturbance in Bornean tropical lowland forests. Tropenbos International Documents 16, Wageningen.
- van Kuijk, M., F.E. Putz and R.J. Zagt. 2009. *Effects of Forest Certification on Biodiversity*. Wageningen: Tropenbos International, 94 pp. www.tropenbos.org/images/Tropenbos/publications_TBI/forest_certification/forest_certification_and_biodiversity.pdf.