

What do we really know about our eagles?

Is Adequate Mitigation Practical?

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In last weeks article we estimated how many daily flushing disturbances it would take before eagles abandoned their use of Eagle Island. We have not experimentally flushed birds from this important perch site to directly measure this. Rather, we derived our estimate from a simple model of eagle behavior. Earlier articles in this series concluded that eagles do adjust to some human disturbance. This is evidenced by the much lower eagle activity seen adjacent to the Prairie du Sac and Sauk City side of the river. But they also abandon use of areas when that level of human disturbance becomes excessive. So, can the level of disturbance from the proposed Nonn Development be adequately limited or mitigated to be compatible with keeping eagles downtown?

The greatest source of uncertainty in predicting the impact of the proposed Nonn development is estimating how much inadequately shielded human activity will occur within the flushing distance of eagles. Both proposed condominiums, and much of their grounds, lay within the distance from Eagle island and the opposite bank where flushing is a concern. Can human activities within this zone be effectively screened from eagle view?

To simplify the assessment we assumed that all ground based activity occurring behind the buildings and the parking areas will be screened with adequately tall fencing. Given the potentially large number of people using these buildings, there is virtually no chance that eagles will continue to use the area if this kind of impact mitigation is not done.

This narrows the question to how effectively will the people living in the 24 two-bedroom condominiums be screened from eagles view? This screening mitigation would be 100% effective if all their activity was somehow shielded from being seen by eagles. For example, one could imagine that during winter the residents will always keep their curtains drawn and never use their balconies. Strict adherence to such 'rules' could actually increase eagle activity downtown. But this ideal is unrealistic. Many residents would find this too restrictive, and it would be difficult to enforce.

Though human nature makes it hard to predict what mitigation standard can be maintained, it is possible to estimate how far from 100% effectiveness we can stray and not make the impact on eagles worse than it is now. This approach reflects the kind of standard that would have to be achieved and maintained by condominium owners if they were to achieve what the developer and the Prairie du Sac Village Board have said: that there will be no significant (additional) impact to eagles.

The conclusion of our analysis is that the screening must be at least 96% effective. That is, that there is a less than a 1 in 25 chance that a resident could become briefly visible to eagles from perching trees on any given day. If this level of effectiveness is achieved and maintained, the eagle use of the area will be similar to what it has been in the past. On about 70% of the days during eagle season there would be fewer than three flushing intrusions coming from residents living at the site (determined from a binomial distribution of disturbance occurrences).

This analysis also shows that even a modest decrease in effectiveness may have a large impact on eagles. By comparison, at 93% effectiveness there would be fewer than three flushing intrusions on only 34% of the days during eagle season. At 90% effectiveness this drops to only 13% of the days. These numbers suggest a significant increase in the level of disturbance and an expected concomitant decline in eagle numbers using the downtown area. As stated last week, increasing the frequency of flushing can cause eagles to abandon the use of that habitat altogether.

The central question is whether the design of the buildings, in combination with subsequent restrictions on condominium owner behavior, can achieve and maintain a 96% rate of screening, and accomplish this task over the lifetime of the building. Unfortunately, no one (including the developer) can currently provide a valid answer to this question.