1154-11-2708 **Paul Baginski*** (`pbaginski@fairfield.edu`), Fairfield University, Dept. of Mathematics, 1073 North Benson Rd., Fairfield, CT 06824, and **Jill Stifano**. *Abundant Numbers and Nonunique Factorization.*

An integer n is abundant if the sum of its divisors, $\sigma(n) = \sum_{d|n} d$, is greater than $2n$; n is perfect if $\sigma(n) = 2n$; and otherwise n is deficient. Both the set H of abundant numbers and the set H^* of non-deficient numbers are closed under multiplication, making them submonoids of $(\mathbb{N}, x)$. As a result, we can consider how elements of H^* (or H) factor into irreducible elements of H^* (resp. H), a concept related to the previously studied idea of primitive non-deficient numbers. As it turns out, non-deficient numbers (or abundant numbers) do not factor uniquely into products of irreducible non-deficient numbers (resp. irreducible abundant numbers). We describe the factorization theory of these two monoids, demonstrating them to be particular cases of a wider class of extremal submonoids of $(\mathbb{N}, x)$. Lastly, we consider questions about other arithmetic functions that will produce submonoids of $(\mathbb{N}, x)$ in this class. (Received September 17, 2019)