Forces when the wind blows

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Have you ever wondered why, when the wind speed increases, the affects on bodies exposed to the increase significantly.

$$pda - (pda + \frac{dp}{dx}dx\ da) = m\frac{dv}{dt} \tag{1}$$

Taking $m = da\ dx\ \rho$ then Equation 1 becomes:

$$pda - (pda + \frac{dp}{dx}dx\ da) = da\ dx\ \rho\frac{dv}{dt} \implies -\frac{dp}{dx} = \rho\frac{dv}{dt} \tag{2}$$