

# Ecological Forecasts: An Emerging Imperative

James S. Clark,<sup>1\*</sup> Steven R. Carpenter,<sup>2</sup> Mary Barber,<sup>3</sup> Scott Collins,<sup>4</sup> Andy Dobson,<sup>5</sup> Jonathan A. Foley,<sup>6</sup> David M. Lodge,<sup>7</sup> Mercedes Pascual,<sup>8</sup> Roger Pielke Jr.,<sup>9</sup> William Pizer,<sup>10</sup> Cathy Pringle,<sup>11</sup> Walter V. Reid,<sup>12</sup> Kenneth A. Rose,<sup>13</sup> Osvaldo Sala,<sup>14</sup> William H. Schlesinger,<sup>15</sup> Diana H. Wall,<sup>16</sup> David Wear<sup>17</sup>

Planning and decision-making can be improved by access to reliable forecasts of ecosystem state, ecosystem services, and natural capital. Availability of new data sets, together with progress in computation and statistics, will increase our ability to forecast ecosystem change. An agenda that would lead toward a capacity to produce, evaluate, and communicate forecasts of critical ecosystem services requires a process that engages scientists and decision-makers. Interdisciplinary linkages are necessary because of the climate and societal controls on ecosystems, the feedbacks involving social change, and the decision-making relevance of forecasts.

SCIENCE VOL 293 27 JULY 2001