## Electronic Supplemental Material

See Figures S1–S7

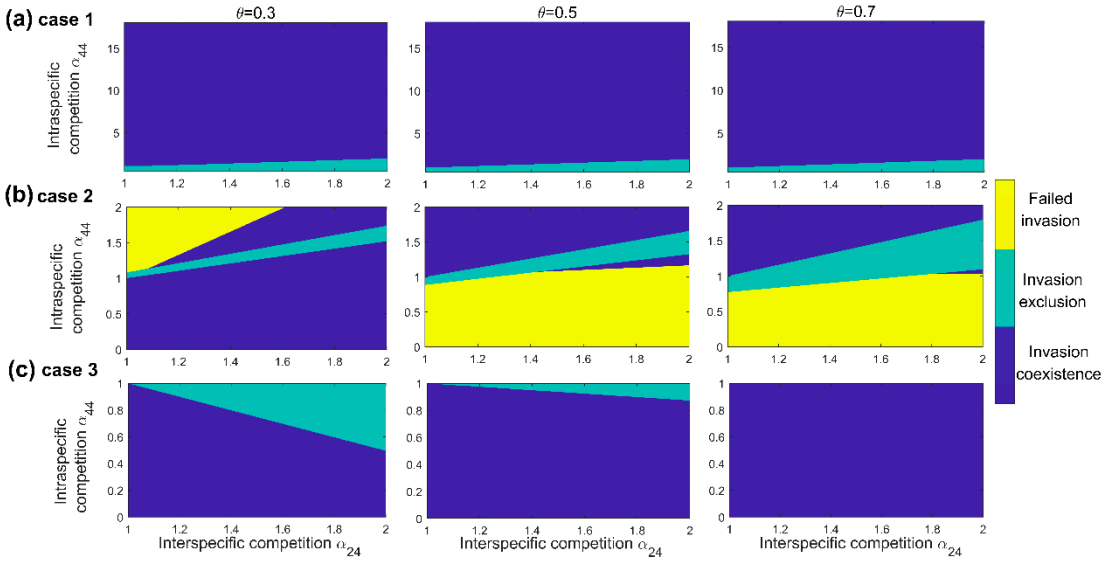


**Figure S1** Parameter ranges for different invasive consequences (assuming alien species can only compete with species 2). X axis represents the interspecific competition intensity between alien species and native species 2, $\alpha_{24}$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. Different figure rows correspond to three different native communities, which supported by (**a**) strong niche departure (case 1), (**b**) the combination of niche differentiation and intransitive competition (case 2), and (**c**) intransitive competition (case 3). Each columns exhibit three levels of competitive symmetry 1-$\theta = 0.7, 0.5, 0.3$. The parameter space is divided into several parts. Blue color area represents successful establishment of invader. Green color region suggests the conditions when alien species pose destructive effect and cause native extinctions; yellow color area identify the invasion failure.

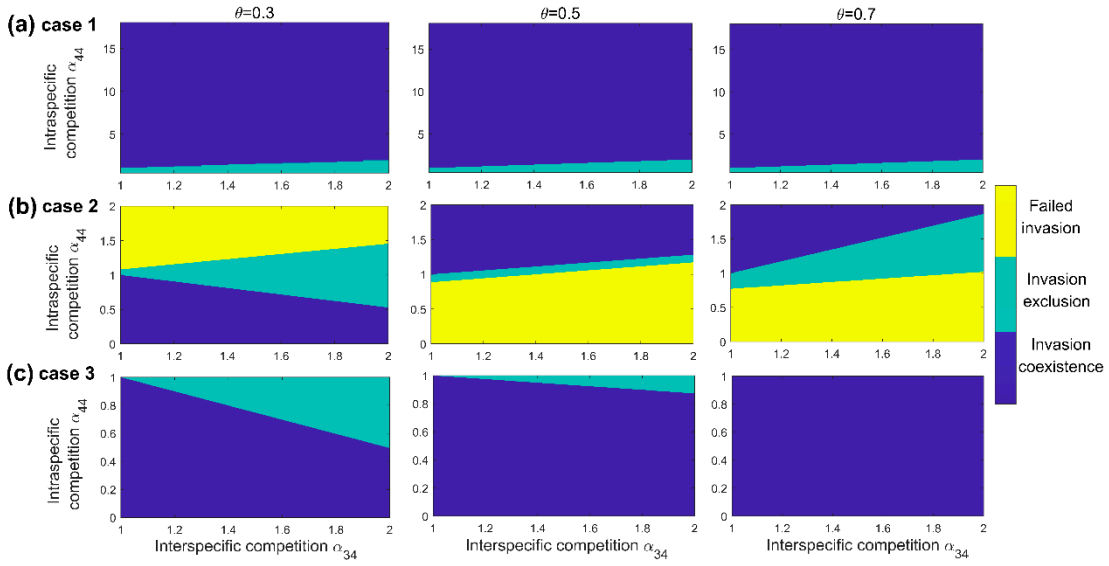


**Figure S2** Parameter ranges for different invasive consequences (assuming alien species can only compete with species 3). X axis represents the interspecific competition intensity between alien species and native species 3,$\alpha_{34}$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. Other parameters are set as Figure S1.

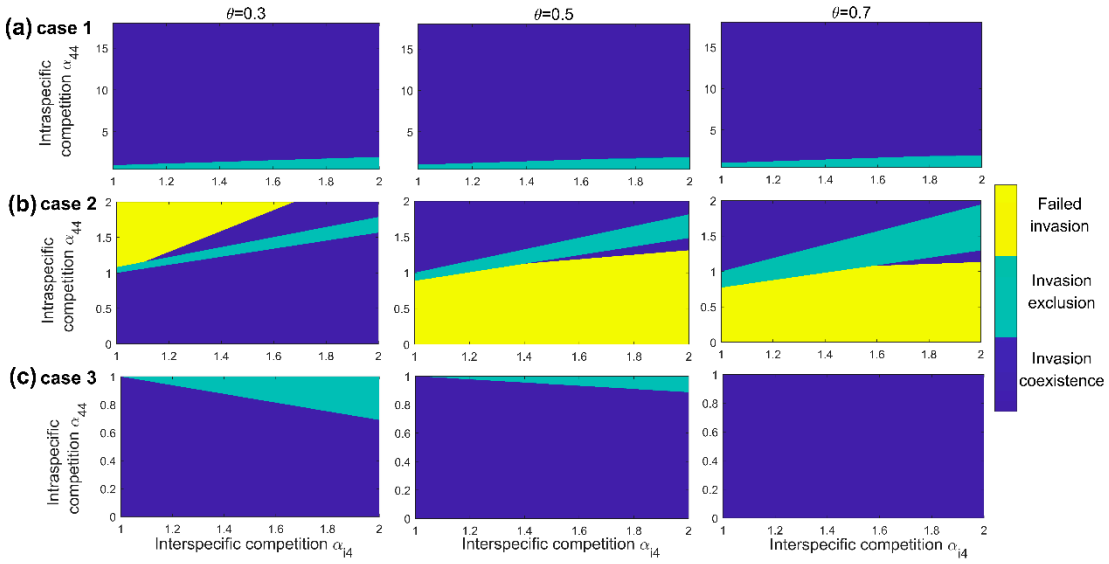


**Figure S3** Parameter ranges for different invasive consequences (assuming alien species can compete with species 1 and 2). X axis represents the interspecific competition intensity between alien species and native species 1 and 2, $\alpha_{i4}, i = 1,2$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. To facilitate the calculation, we set the intraspecific competition intensity of the invasive species against the two native species to the same value ($\alpha_{14} = \alpha_{24}$). Other parameters are set as Figure S1.

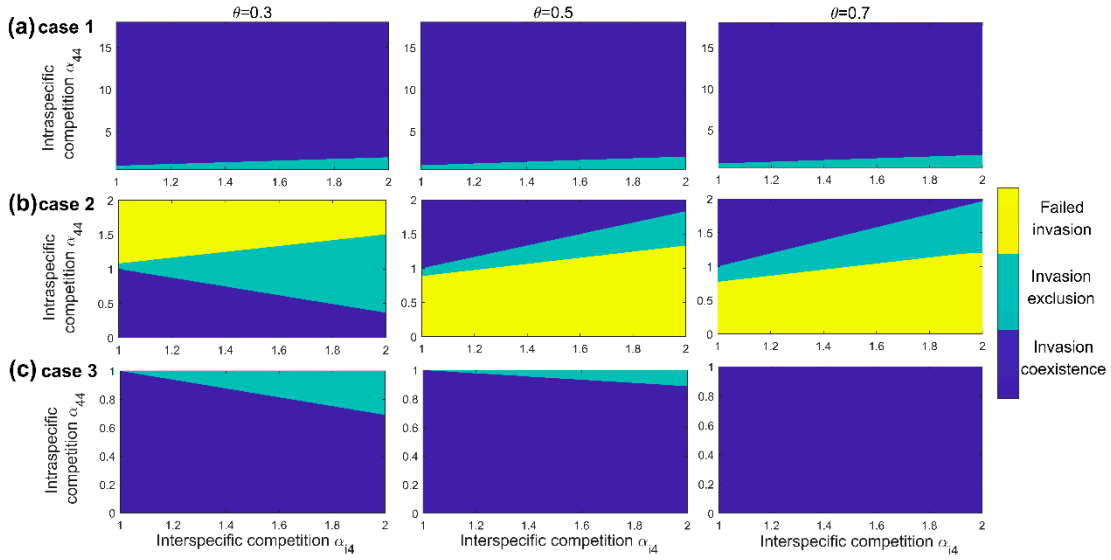


**Figure S4** Parameter ranges for different invasive consequences (assuming alien species can compete with species 1 and 3). X axis represents the interspecific competition intensity between alien species and native species 1 and 3, $\alpha_{i4}, i = 1,3$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. To facilitate the calculation, we set the intraspecific competition intensity of the invasive species against the two native species to the same value ($\alpha_{14} = \alpha_{34}$). Other parameters are set as Figure S1.

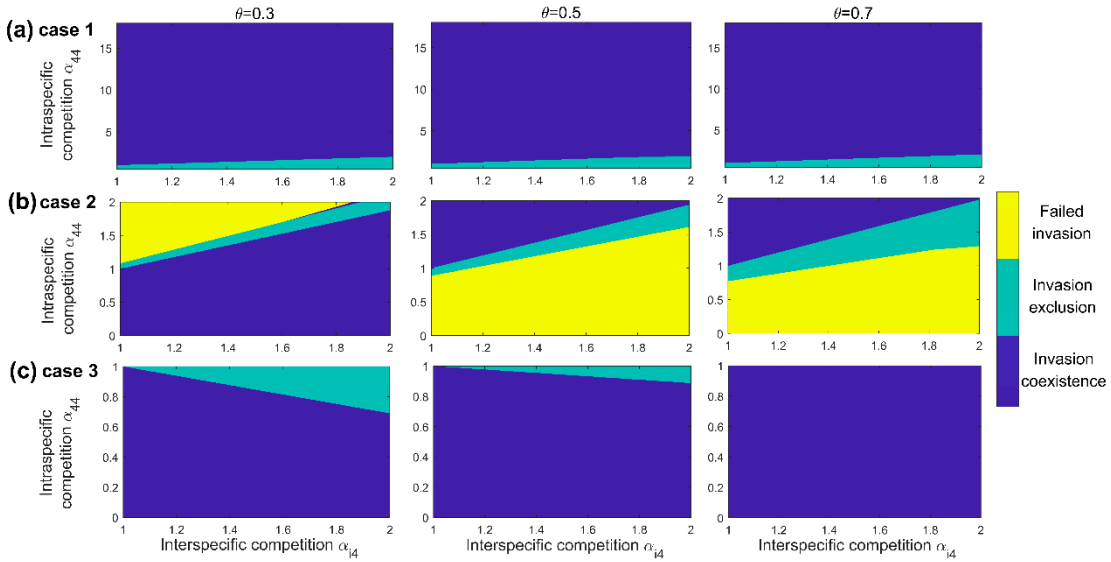


**Figure S5** Parameter ranges for different invasive consequences (assuming alien species can compete with species 2 and 3). X axis represents the interspecific competition intensity between alien species and native species 2 and 3,

$\alpha_{i4}, i = 2,3$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. To facilitate the calculation, we set the intraspecific competition intensity of the invasive species against the two native species to the same value ($\alpha_{24} = \alpha_{34}$). Other parameters are set as Figure S1.

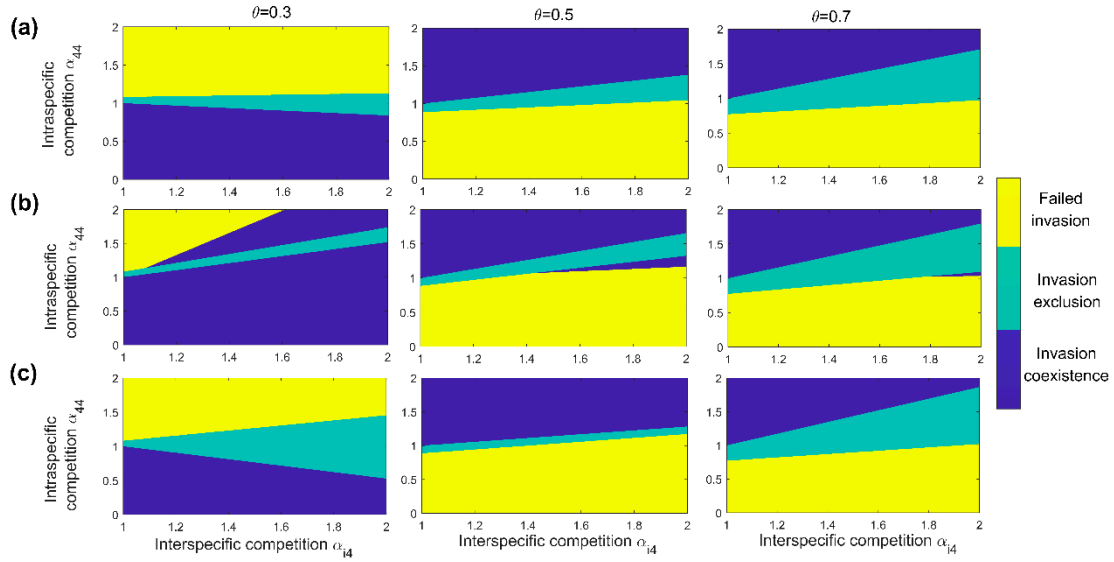


**Figure S6** Parameter ranges for different invasive consequences only under case2 (invasive species only have a competitive advantage over single species). X axis represents the interspecific competition intensity between alien species and native species (1 or 2 or 3), $\alpha_{i4}, i = 1,2,3$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. Different figure rows correspond to invasive species competing with different native species. Different figure rows represent invasive species have a competitive advantage over different native species, respectively (**a**) invasive species only have a competitive advantage over species 1, (**b**) t invasive species only have a competitive advantage over species 2, and (**c**) invasive species only have a competitive advantage over species 3. Each columns exhibit three levels of competitive symmetry 1-$\theta = 0.7, 0.5, 0.3$. The parameter space is divided into several parts. Blue color area represents successful establishment of invader. Green color region suggests the conditions when alien species pose destructive effect and cause native extinctions; yellow color area identify the invasion failure. According to the figure above, we can compare the changes in invasive outcomes when invasive species compete with different native species under case 2.

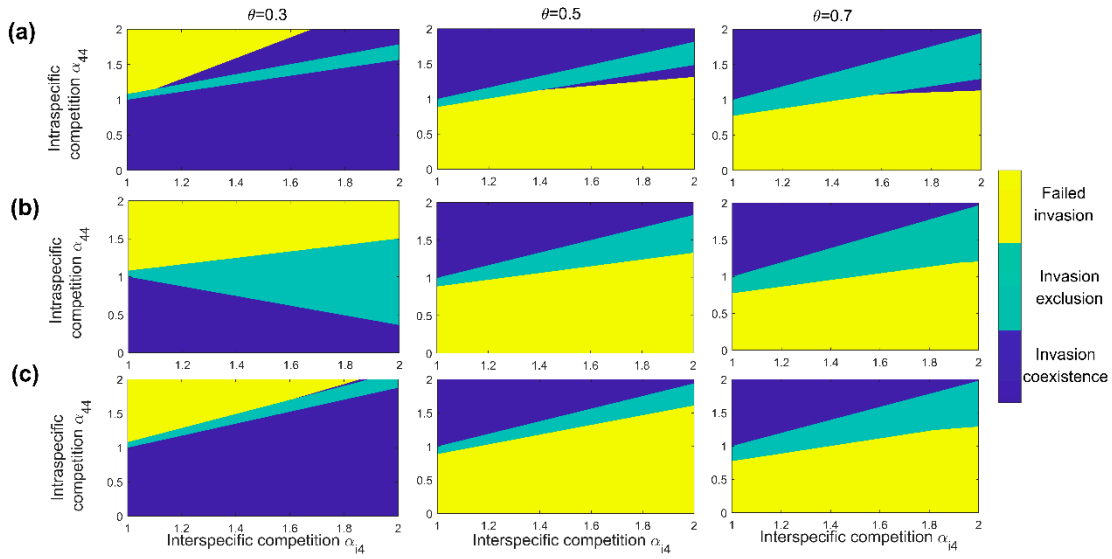


**Figure S7** Parameter ranges for different invasive consequences only under case2 (invasive species have a competitive advantage over two species). X axis represents the interspecific competition intensity between alien species and native species (1,2 or 1,3 or 2,3), $\alpha_{i4}, i = 1,2,3$. Y axis is intraspecific competition intensity of alien species $\alpha_{44}$. Different figure rows correspond to invasive species competing with different native species. Different figure rows represent invasive species have a competitive advantage over different native species, respectively (**a**) invasive species only have a competitive advantage over species 1 and 2, (**b**) t invasive species only have a competitive advantage over species 1 and 3, and (**c**) invasive species only have a competitive advantage over species 2 and 3. To facilitate the calculation, we set the intraspecific competition intensity of the invasive species against the two native species to the same value. Other parameters are set as Figure S6.