Table 1 Studies selected for systematic review

Authors and country of publication	Type of design	Measures used	Predictors	Conclusions
Heeren et al.[39] France, Belgium, Switzerland.	Descriptive quantitative	Climate Change Anxiety Scale (CCAS).	Cognitive-emotional characteristics, direct experience of climate change and general concern.	Climate anxiety can lead to pro-environmental behaviors, as well as activist fatigue if these become excessive. It is important to find the middle ground of climate anxiety to generate pro-environmental behaviors, without generating fatigue.
Daeninck et al.[23] United Kingdom.	Descriptive quantitative	Climate Change Anxiety Scale (CCAS).	Environmental students tend to have greater climate anxiety than those studying other degrees. This may be due to their exposure to information and their intrinsic motivation.	Those who suffer from more climate anxiety are more likely to take climate change into consideration in their future plans such as family, studies and travel.
Ogunbode et al.[22] Australia, Brazil, Canada, Chile, China, Colombia, Egypt, Finland, Germany, Italy, India, Indonesia, Iran, Japan, Malaysia, Netherlands, Nigeria, Norway, Oman, Pakistan, Palestine, Philippines, Portugal, Romania, Russia, Slovakia, Spain, Tanzania, Turkey, Uganda, United Arab Emirates, United Kingdom.	Descriptive quantitative	7-item scale based on the state anxiety component of the State-Trait Anxiety Inventory.	The main predictors of climate change anxiety are perceived descriptive norms (the belief that others are also anxious about climate change), exposure to information about the impacts of climate change in the media, and the amount of attention paid to climate change information.	Anxiety about climate change is associated with a negative impact on mental well-being, depressive symptoms and reduced psychological health. However, it is also associated with pro-environmental behaviors and participation in environmental activism, especially in more economically developed and democratic countries.
Whitmarsh et al.[24] United Kingdom.	Descriptive quantitative	Measure of climate change concern. Climate Change Anxiety Scale (CCAS). GAD-7. FFMQ-18. New Environmental Paradigm (NEP) scale.NR-6. Specific questions relating to pro-environmental behavior. Single item measure of visits to green spaces. Summed frequency measure of information exposure. Four-point frequency scale of information seeking.	The main predictors of climate anxiety are age (younger population), greater climate concern, greater generalized anxiety, lower levels of mindfulness, greater connection to nature, and actively seeking information about climate change.	Climate Anxiety can involve cognitive and emotional impairment, including rumination – active, repetitive thinking about the climate anxiety itself. As a coping strategy, the study suggests that mindfulness may help take a particularly useful stance toward climate anxiety, as it fosters a new relationship to the experience (i.e., acceptance rather than avoidance) and may provide an alternative or complement to the problem. In turn, the study suggests that climate anxiety may be a psychological stressor, with a potential impact on mental health for some, but at the same time it may reflect a rational response that can motivate pro-environmental behavior.

Kricorian et al.[25] United States of America.	Descriptive quantitative	An online questionnaire in English was developed and distributed to collect data on attitudes towards climate change.	The main predictors of climate anxiety are increased exposure to climate change information in the media, frequent discussions about climate change with friends and family, the perception that climate change will soon impact the individual personally, being younger and being female.	Climate anxiety is associated with negative impacts on mental health, including increased stress, depression, and cognitive difficulties, such as difficulty concentrating and completing tasks. However, it is also related to an increase in pro-environmental behavior and participation in climate activism, even though information about climate change can often be overwhelming and confusing.
Asgarizadeh et al.[16] United States of America, Canada.	Descriptive quantitative	Generalized Anxiety Disorder scale (GAD-7) . Climate Change Anxiety Scale (CCAS). Measures adapted for this study from other scales and models to assess climate change knowledge; personal experience with climate change impacts; climate change risk perception; climate change worry and media exposure to climate change information.	Predictors of climate anxiety include knowledge about climate change, personal experience with climate change impacts, symptoms of generalized anxiety disorder (GAD), worry about climate change, exposure to climate change information in the media, and risk perception.	Climate anxiety is associated with negative impacts on mental health, such as increased symptoms of anxiety, depression, and cognitive difficulties, including concentration and sleep problems. On the other hand, it is also associated with pro-environmental behaviors, although severe anxiety can sometimes result in feelings of paralysis and inaction.
Hansen & Sjöstrand.[26] Denmark and Sweden.	Descriptive quantitative	A standardized index of locus of control. State-Trait Anxiety Inventory (STAI). Measures of eco-anxiety and of pro-environmental behaviors adapted from other scales for this study.	Predictors of climate change anxiety identified in the paper include trait anxiety, locus of control, media attention, political emphasis, environmental concern, social norms, and exposure to climate change information. The study concludes that eco-anxiety acts independently of general anxiety.	Climate anxiety is associated with mental health problems (increased levels of stress, anxiety, depression and feelings of helplessness or hopelessness); behavioral changes (greater involvement in pro-environmental behaviors as a coping mechanism); social and emotional impact (feelings of grief, loss and existential fear about the future and the state of the environment) and impact on daily functioning (potential for eco-anxiety to motivate constructive actions or lead to avoidance and denial behaviors).

Clayton et al.[30] Australia, Brazil, Finland, France, India, Nigeria, Philippines, Portugal, United Kingdom, United States of America.	Descriptive quantitative	Level of concern about climate change (scale 1-5). Self-reported feeling that climate change negatively affects functioning (yes or no). Presence of 14 key positive and negative emotions about climate change (yes or no). Presence of seven key negative thoughts about climate change (yes or no). Experience of being ignored or dismissed when talking about climate change (yes, no or “I haven’t tried to talk to other people about climate change”). Presence of nine key positive and negative beliefs about the government response to climate change (yes or no). Presence and intensity of feelings related to reassurance and betrayal regarding the government's response to climate change.	Predictors of climate change anxiety include gender, with women reporting greater concern and negative emotions; age; and country, with the Philippines, India and Nigeria reporting greater impacts. In addition, personal risk perception, media exposure and culture.	Climate change anxiety is associated with increased levels of anxiety, depression, stress and other mental health problems, along with behavioral changes such as increased engagement in environmental actions. It is also related to other social and emotional factors, such as feelings of grief and uncertainty about the future, and can affect everyday decisions, such as reluctance to have children.
Pickering & Dale.[36] Canada.	Descriptive quantitative	HEXACO Personality Inventory. (HEXACO-PI) New Ecological Paradigm (NEP) Scale. Environmental Actions Questionnaire.	The article identifies trait anxiety, gender, political affiliation, and personality traits such as emotionality, openness to experience, and sociability as key predictors of climate change anxiety and pro-environmental behavior. Specifically, individuals higher in trait anxiety and emotionality, women, and those with liberal political affiliations and higher openness to experience are more likely to embrace pro-environmental values and engage in climate change action.	Climate anxiety may lead to increased pro-environmental values and a greater likelihood of taking action to mitigate climate change. However, it is also related to greater emotional distress, which can impact mental health and general well-being.
Sampaio et al.[35] Portugal.	Descriptive quantitative	Hogg Eco-Anxiety Scale (HEAS).	According to the article, predictors of climate change anxiety include higher levels of parental education, which are associated with greater eco-anxiety, especially regarding personal environmental impact. Furthermore, frequent rumination about ecological loss and concern about personal impact on the environment are significant predictors of eco-anxiety.	Eco-anxiety may increase engagement in pro-environmental behaviors, serving as a motivating force for environmental action. However, it may also exacerbate existing psychological distress, especially in those who already experience high levels of anxiety, showing a dual effect depending on the individual’s overall mental health.

Zacher & Rudolph.[37] Germany.	Descriptive quantitative	Environmental Knowledge Test. Climate Change Anxiety Scale (CCAS). Demographic Characteristics. Big Five Personality Inventory. Environmental Attitudes Scale.	Lower levels of general environmental knowledge and specific climate knowledge. People who have less environmental and climate knowledge are more likely to experience higher levels of anxiety about climate change.	Climate anxiety is associated with higher levels of depression, generalized anxiety, and psychological distress. Furthermore, although it may motivate pro-environmental behaviors, in people with a high level of pre-existing psychological distress, climate anxiety may exacerbate these conditions and hinder positive responses.
Işık Mercan et al.[31] Turkey.	Descriptive quantitative	Personal Information Form. Ecological Life Attitude (ELA) Scale. Climate Change Worry (CCW) Scale.	Predictors of climate anxiety include gender, with women reporting higher levels of anxiety and feelings of helplessness, and place of residence, with these feelings being higher in rural areas. In addition, age and occupation also play a role, with those over 25 and white-collar workers reporting different levels of anxiety and green attitudes.	It is essential to create educational strategies that inform people about climate change and address emotional anxiety, which facilitates a greater connection between individuals and their actions towards the environment. This study highlights how emotions influence environmental behavior and the need for an educational approach that combines information with emotional support.
Ramírez-López et al.[27] Mexico.	Descriptive quantitative	Climate Change Anxiety Scale (CCAS). Kessler General Distress Scale (K-6). Demographic Characteristics. Knowledge About Climate Change Scale. Prosocial Behavior Scale. Dichotomic Altruism Game.	Predictors of climate anxiety include gender, with women showing higher levels of climate anxiety than men. Also included are greater exposure to news, knowledge about climate change, and prosociality, all of which are associated with higher levels of climate anxiety.	Climate anxiety is associated with increased levels of depression, generalized anxiety, and psychological distress. Furthermore, it may motivate pro-environmental behaviors, leading people to take action to mitigate climate change.
Wullenkord et al.[28] Germany.	Descriptive quantitative	General Anxiety Disorder screening tool (GAD-7). Climate Anxiety Scale (CCAS). Climate Change Knowledge Quiz. Prosociality Scale. Dichotomic Altruism Game.	Gender, news exposure, climate change knowledge, and prosociality. People who identify as women, spend more time reading news, have more knowledge about climate change, and are more prosocial tend to have higher levels of climate anxiety.	Climate anxiety is associated with increased levels of depression, generalized anxiety, and psychological distress as well as difficulties in concentration, sleep disorders, and impairment in daily functioning. It may also motivate pro-environmental behaviors.
Curll et al.[29] Australia.	Descriptive quantitative	Depression Anxiety Stress Scales (DASS-21). Nature Connectedness Scale. Climate Change Anxiety Scale (CCAS).	Gender (with women being more vulnerable), exposure to news, knowledge about climate change, and prosociality. These factors contribute to higher levels of climate anxiety in students.	While climate anxiety can be related to features of mental ill health such as depression, generalized anxiety, and psychological distress as well as difficulties in concentration, sleep disorders, and impairment in daily functioning, it can also be associated with pro-environmental behaviors.

Reese et al.[32] Germany.	Descriptive quantitative	Climate Anxiety Scale (12-item validated German translation). Climate Risk Perception Scale (9-item scale). Nature Connectedness Scale (12-item state measure). Self-Efficacy Scale (4-item scale). Political Orientation Measure (left-right dimension slider). Environmental Policy Support Scale (7-item measure).	Climate risk perception, with people who perceive higher climate risks experiencing more anxiety. In addition, younger participants and women show higher levels of climate anxiety, and people with a more left-wing political orientation also report higher climate anxiety.	The consequences of climate anxiety include increased levels of generalized anxiety and psychological distress. In addition, it can motivate pro-environmental behaviors, although it can also lead to difficulties in concentration and daily functioning, negatively affecting daily life.
Casson et al.[34] Canada.	Descriptive quantitative	A survey (116 items) measured prior consideration of the link between climate change and health, affective evaluation of climate change impacts on health, spontaneous knowledge of climate change impacts on health, and concern about a variety of impacts.	Being a woman, having a left-wing political association, and higher levels of education result in greater environmental concern.	The results show that levels of concern about the health impacts of climate change are similar to levels of concern about biophysical, economic and national security impacts among Canadians. Impacts related to health, food, water, air quality and concern for future generations were of greatest concern. Heat and mental health impacts were of least concern. Climate impacts affect perceptions of future health risks.
Ediz & Yanik.[38] Turkey.	Descriptive quantitative	Climate Change Anxiety Scale (CCAS). Beck Hopelessness Scale (BHS).	Young climate activists were found to have higher levels of climate anxiety compared to non-activists. A significant relationship was identified between educational level, knowledge about climate change, participation in actions related to climate change, prior psychological support, and the average score on the Climate Change Anxiety Scale The study says that as awareness about climate change increases, so does anxiety about it.	It is observed that among climate activists, those who have greater knowledge about climate change are more likely to have feelings of hopelessness.
Prencipe et al.[33] Tanzania.	Non-randomized quantitative	Climate Change Awareness measured by the Gallup World Poll. Self-reported distress over changing weather patterns or seasons. Center for Epidemiological Studies Depression Scale (CES-D10). Self-reported engagement in farming, caring for livestock, collecting water, working in extreme temperatures, or near water. Household Water Insecurity Experiences (HWISE-4). Household Food Insecurity Access Scale (HFIAS).	The main predictors of climate anxiety among Tanzanian youth are higher awareness of climate change, being female, having a higher level of education, frequent attendance at religious services, and working in extreme temperatures. Furthermore, severe water and food insecurity is linked to higher depression, indirectly indicating a relationship with climate anxiety.	Anxiety about climate change is associated with higher levels of anxiety, depression and stress among young people and may also lead to cognitive and functional difficulties, such as concentration and sleep problems. On the other hand, it may motivate pro-environmental behaviors, although the study mainly highlights the implications for mental health.